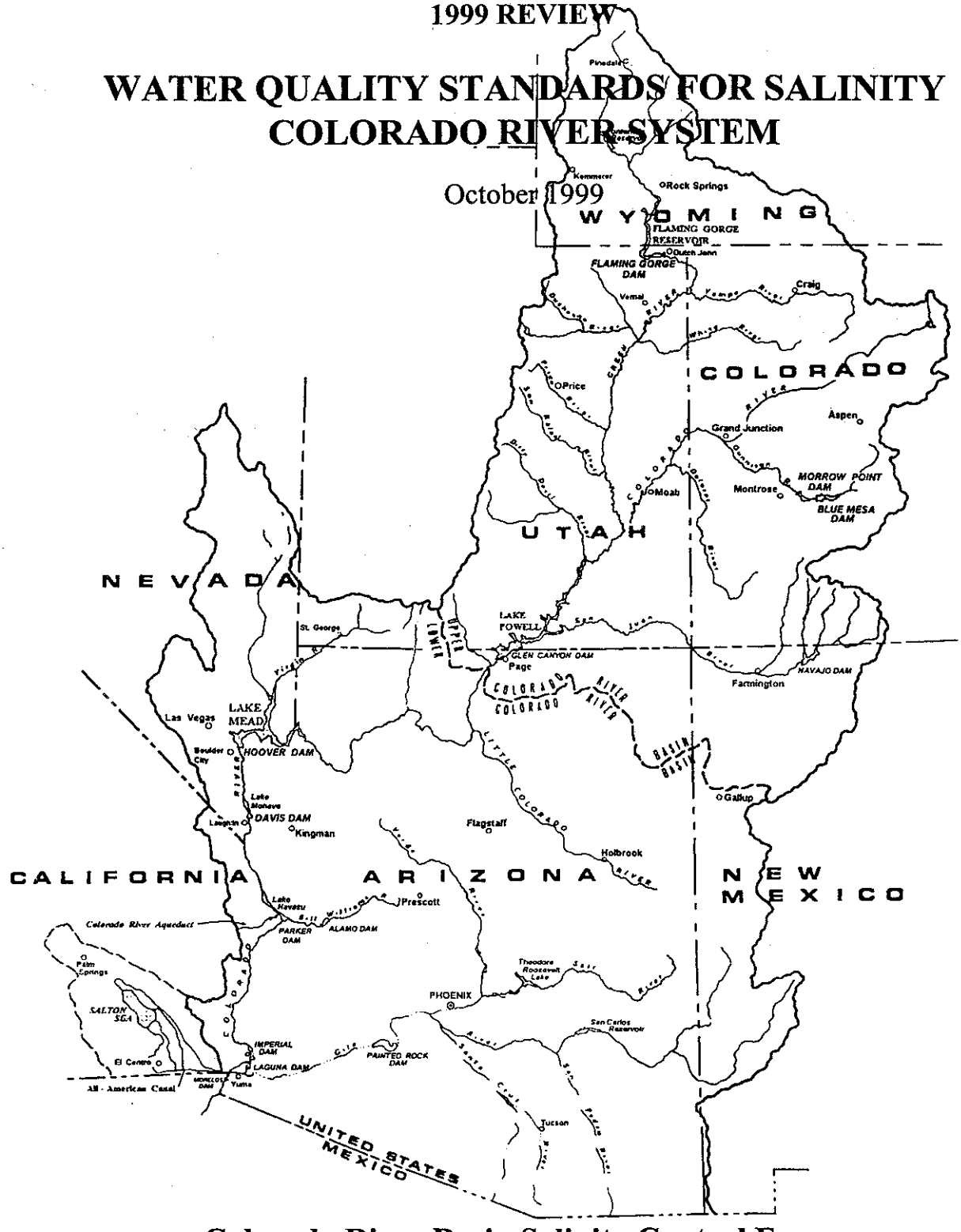
Supplemental Report
on the

1999 REVIEW

WATER QUALITY STANDARDS FOR SALINITY COLORADO RIVER SYSTEM

October 1999



Colorado River Basin Salinity Control Forum

Supplemental Report
on the

1999 REVIEW

WATER QUALITY STANDARDS FOR SALINITY
COLORADO RIVER SYSTEM

October 1999

Prepared by
Colorado River Basin Salinity Control Forum

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TABLE OF CONTENTS

Forum Members i

Table of Contents ii

Transmittal Letters 1

Introduction 4

Statements, Comments, and Forum Response 5

- Overview of Public Meeting 6
- Forum Response 7
- Bryner Hansen Ditch Co. 12
- California Regional Water Quality Control Board, Colorado River Basin Region 13
- Carbon County Commission 16
- Carbon-Emery Work Group 17
- Eden Valley Irrigation & Drainage District 18
- Ferron Canal & Reservoir Company 19
- Los Angeles Water And Power Associates, Inc. 20
- Metropolitan Water District of Southern California 21
- Moore Group 25
- Price River Soil Conservation District 26
- Price Wellington Control Board 27
- San Diego County Water Authority, General Manager 28
- San Diego County Water Authority, Director 30
- San Rafael Soil Conservation District 32
- Stowell Mutual Canal Company 33
- Uintah County Soil Conservation District 34
- Upper Colorado River Commission 35
- U.S. Department of Agriculture 37
- Utah Division of Water Quality 38
- Utah Division of Water Resources 39
- WateReuse Association of California 40
- Wyoming State Engineer's Office. 43

Corrections and Additions 45

TRANSMITTAL LETTERS

Section 303 of the Clean Water Act requires that at least once every three years the states of the Colorado River Basin review water quality standards relating to the salinity of the waters of the Colorado River. The states collectively initiate this review under the auspices of the Colorado River Basin Salinity Control Forum and prepare a report and, after holding public meetings, prepare a supplemental report.

Upon the Forum's adoption of these two reports, they are transmitted to the individual states for their own independent action. The following is an example copy of the transmittal letter to the Governor of the State of Arizona. Following this letter is a listing of the Governors in each of the other six Colorado River Basin states who will receive identical letters.

December 3, 1999

Honorable Jane Dee Hull
Governor of Arizona
Statehouse
Phoenix, AZ 85007

Dear Governor Hull:

Enclosed is a copy of the Report on the 1999 Review, Water Quality Standards for Salinity, Colorado River System, approved on May 27, 1999 by the seven-state Colorado River Basin Salinity Control Forum.

Subsequent to the May approval, two regional public meetings were held to provide an opportunity for those who desired to present comments or suggestions on the report. The meetings were held on August 23, 1999 in Los Angeles, California, and on August 24, 1999 in Lyman, Wyoming.

Also enclosed is a copy of the Forum's Supplemental Report which includes modifications to the June report based on comments and suggestions received. The supplement was approved by the Forum on October 27, 1999. The June report and the October supplement constitute the 1999 Review of the water quality standards for salinity of the Colorado River system.

Section 303(c)(1) of the Clean Water Act requires:

> *The Governor of a State or the State water pollution control agency of such State shall from time to time (but at least once each three-year period beginning with the date of enactment of the Federal Water Pollution Control Act Amendments of 1972) hold public hearings for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards. Results of such review shall be available to the Administrator.*

The enclosed report and supplement recommend no change in the numeric criteria for salinity, but reflect changes in the plan of implementation previously adopted by the Forum. The Forum urges that each state's water quality control agency adopt the 1999 Review as appropriate, thus preserving the basinwide approach to salinity control developed by the Basin states over the last 24 years. The Forum urges your state to take prompt action in adopting this review.

Sincerely,

Gordon W. Fassett
Chairman

enclosure

cc: Arizona Forum Members

Identical transmittal letters to be sent to each of the following:

Honorable Gray Davis
Governor of California
State Capitol
Sacramento, CA 95814

Honorable Bill F. Owens
Governor of Colorado
State Capitol
Denver, CO 80203

Honorable Kenny Guinn
Governor of Nevada
State Capitol
Carson City, NV 89701

Honorable Gary Johnson
Governor of New Mexico
State Capitol
Santa Fe, NM 87503

Honorable Mike Leavitt
Governor of Utah
State Capitol
Salt Lake City, UT 84114

Honorable Jim Geringer
Governor of Wyoming
State Capitol
Cheyenne, WY 82002

INTRODUCTION

The Supplemental Report on the 1999 Review, Water Quality Standards for Salinity, Colorado River System, contains statements and comments received by the Forum and the Forum's responses. Statements and comments were received at public meetings held in Los Angeles, California on August 23, 1999 and in Lyman, Wyoming on August 24, 1999. Written comments received by August 20, 1999 were also accepted. This supplement also includes the correction of typographical errors or deletions. All written comments or statements received by August 20 are included as a part of this supplemental report. All oral comments received at the public meetings were considered. It was determined that nearly all comments given orally that were related to the 1999 Review were supportive of the Review and the general thrust of the comments was represented by written statements of others. Thus, these oral comments will not be repeated in this supplemental report. However, one oral comment was received stating that the numeric criteria should be reviewed to determine whether the criteria should be lowered and a response to this oral statement is included in the Forum Response section of this report.

STATEMENTS, COMMENTS, AND FORUM RESPONSES

Overview of Public Meeting

At the two public meetings and through correspondence, the Forum received advice and comment from a number of organizations. Some provided written comment, some oral comment and some gave both oral and written comments. Those providing written comment are listed below and their written comment is included in this supplemental report.

Bryner Hansen Ditch Co.
California Regional Water Quality Control Board, Colorado River Basin Region
Carbon County Commission
Carbon-Emery Work Group
Eden Valley Irrigation & Drainage District
Ferron Canal & Reservoir Company
Los Angeles Water and Power Associates, Inc.
Metropolitan Water District of Southern California
Moore Group
Price River Soil Conservation District
Price Wellington Control Board
San Diego County Water Authority, General Manager
San Diego County Water Authority, Director
San Rafael Soil Conservation District
Stowell Mutual Canal Company
Uintah County Soil Conservation District
Upper Colorado River Commission
U.S. Department of Agriculture
Utah Division of Water Quality
Utah Division of Water Resources
WateReuse Association of California
Wyoming State Engineer's Office

The meetings were well attended, most important and, for the most part, supportive testimony was received. The first meeting was held in Los Angeles on August 23. There were 32 in attendance and several attending represented large organizations responsible for delivering water to millions of people primarily in the Southern California coastal plain. Testimony was given by representatives of the Department of the Interior and the Department of Agriculture supporting the 1999 Review. Also, the Upper Colorado River Commission supported, on behalf of the four Upper Basin States, the Review. In total, there were 14 oral testimonies given.

The second meeting was held in Lyman, Wyoming on August 24. There were 71 in attendance. Several people came to learn more about the salinity control program and some rose to express their views concerning a possible salinity control effort in the Bridger Valley of Wyoming and Utah. Those that addressed the 1999 Review were supportive of the report. There were 13 oral testimonies given.

From all of the testimonies given, there were four issues that the Forum believes should be addressed in this supplemental report. The issues are: 1) salinity control program implementation needs to be accelerated; 2) salinity control in the Big Sandy Unit has not been accomplished as projected; 3) salinity and selenium control efforts should be advanced jointly as a part of the program's plan; and 4) the numeric criteria should be reviewed to determine whether the criteria should be lowered. The following is the Forum response to each of these issues.

Forum Response

Acceleration of the Program

Many comments were received that stated support of the program outlined in the 1999 Review. Several also commented that the implementation of the program should be accelerated. The Forum agrees. Three years ago, while conducting the 1996 Review, the Forum found that the rate of implementation of the program had fallen behind the rate of needed implementation which had been projected in 1993. In 1999, the Forum again finds this to be true. The greatest lack of the needed level of support is in the U.S. Department of Agriculture (USDA) program, while the U.S. Bureau of Reclamation (Reclamation) program comes closer to the needed level and the U.S. Bureau of Land Management (BLM) program cost effectiveness will be judged in the near future as it implements a separate cost code for salinity control. The Basin states' cost sharing dollars are available to match the needed federal appropriation and local water users stand ready with their cost sharing funds for projects requiring local cost sharing. The Forum will continue to review the BLM program to ensure that BLM funding expended to control salinity is obtaining cost effective results.

On page 2-9 of the 1999 Review, the Forum found that there is a shortfall of 384,000 tons of salt control which was to have been in place by 1998. The Forum went on to find that the shortfall "should be eliminated as soon as possible and at least within the next six years." The Review states that 87,000 tons/year should be controlled through 2005, with 64,000 tons/year of this control addressing elimination of the shortfall. On page 4-2 of the Review, the Forum found that to fund this accelerated program, there needs to be appropriated each year $17.5 million for Reclamation, $12 million for USDA and $5.2 million for BLM.

On page 1-5 of the Review, the actual funding is reported. Historic federal funding levels are also shown graphically in Figure 1-2 on that same page. The Forum has consistently found the need for a funding level of $17.5 million for Reclamation's program and $12 million for the USDA program over the last several years and has reported this need to the Administration and to Congress. In 1999, Congress only appropriated $12 million to Reclamation and the USDA Environmental Quality Incentives Program (EQIP) administrators only allocated $5.1 million to the program.

Salinity Control in the Big Sandy Unit

Mr. Gary Zakotnik provided testimony in behalf of the Eden Valley Irrigation & Drainage District. Mr. Zakotnik contended that as USDA has proceeded with its Big Sandy "Project," that from 1989 until 1997 there has been an increase in tons of salt coming from the project. He quoted from the Draft Environmental Assessment (EA) for the Big Sandy Rock Sills Project dated March 1999 and prepared by Reclamation. It appears that Mr. Zakotnik has confused the USDA "project" with other projects. He correctly points out that the EA states that salinity contributions have increased since the construction of the project, however the EA does not refer to the salinity control project. The project referred to in the EA is the long-ago constructed Eden Project built by Reclamation. The EA was prepared to evaluate and disclose the environmental consequences of expanding a cooperative agreement with Trout Unlimited that provides for work to enhance 41 miles of stream channel. The EA states that salinity had increased as a result of the construction of the Big Sandy Reservoir and associated irrigation.

Studies have documented that salt control is occurring in the USDA project as planned. The following is a table that summarizes the results of the onfarm program as reported by USDA in Monitoring and Evaluation reports that have been prepared each year since the beginning of the USDA salinity control effort.

Big Sandy Unit of the USDA Colorado River Salinity Control Program (now EQIP)

Data as Reported in the Natural Resources Conservation Service's Monitoring and Evaluation Reports for the Big Sandy Unit of the Colorado River Salinity Control Program

Federal Fiscal Year	Cumulative Systems - Number and Acreage	Cumulative Reduction in Deep Percolation Acre-feet per year	Cumulative Salt Load Reduction Tons per year
1998	105 and 8,327	11,791	30,657
1997	101 and 7,983	11,496	29,890
1996	81 and 6904	9,790	25,454
1995	79 and 6682	9,477	24,641
1994	72 and 5896	8,582	22,313
1993	60 and 4993	7,222	18,774
1992	38 and 3,263	4,831	12,557
1991	25 and 2,162	3,246	8,440
1990	12 and 1,175	1,896	4,931

The table shows that from the beginning of the USDA salinity control project at Big Sandy through the 1998 fiscal year, 105 systems have been improved. These systems irrigate 8,327 acres. From the total effort through 1998, there has been a reduction of 11,791 acre-feet of deep percolation per year. That has resulted in a total reduction of 30,657 tons of salt loading from the Big Sandy area per year.

Mr. Zakotnik's letter also addressed the fact that the Big Sandy Project is not an integrated project with both Reclamation and USDA components and that the 1999 Review report (at page 4-3) noted that the two programs have purposely been designed to be highly integrated. The Forum notes

that Reclamation did study opportunities for a Reclamation salinity control project at Big Sandy and concluded (in a 1985 report) that there was not a cost-effective project for Reclamation to pursue at that area.

The final comment made in Mr. Zakotnik's letter concerned the effects that the installation of sprinklers has had on the delivery of water and asserted that consideration has not been given, many times, to what happens to the overflow from ponds used to supply water to the sprinklers. The USDA advises that proposals have been made in the past to improve the delivery of water to the individual sprinklers and that such activities could have been cost-share funded under the now-defunct USDA Colorado River Salinity Control Program (CRSCP - now combined into EQIP). The local irrigation district board has been unwilling to allow pump diversion points for the numerous sprinkler systems that have been installed to be located in canal laterals, nor has the board been willing to consent to the design and installation of automated wasteways and regulating reservoirs within the canal system. Funding was provided by the Wyoming Water Development Commission in the early 1990's for a study on the feasibility of constructing additional canal wasteway and storage regulation features within the Eden Valley Irrigation and Drainage District. The District declined to proceed with project improvements identified in the study that would have improved the system's water delivery and regulation capabilities to accommodate the sprinklers. It is true, as Mr. Zakotnik states, that the irrigation delivery system was not designed for sprinklers and that without modification, the present system will continue to be unable to only deliver the water the sprinklers need.

Selenium Control

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Board), with headquarters in Palm Desert, California, provided both oral and written comment. While the Regional Board applauded the efforts of the Colorado River Basin Salinity Control Forum and encouraged the acceleration of the Salinity Control Program, the Regional Board commented that the control of selenium in the Colorado River Basin would be most important. The Regional Board cited the impacts of selenium in the area of Southern California under its administration. The Regional Board wrote "we recommend that the Colorado River Basin Salinity Control Forum take efforts to address selenium as a part of its overall salinity reduction efforts. Specifically, we recommend that member agencies of the Salinity Control Forum take efforts to identify the sources of selenium in the Colorado River Basin, determine which sources of selenium are controllable, and take actions to address these controllable sources." As a point of clarification, it should be noted that there are no formal member agencies of the Salinity Control Forum. The Forum is composed of Forum members appointed by the Governors of the seven Colorado River Basin States to represent their respective state at the Forum. However, a number of the Forum members are employed by state water quality agencies, and there are many federal and state agencies involved in investigating salinity issues and implementing salinity control measures.

The Forum has previously discussed the issue of potential damages that may be experienced by Colorado River water users from specific ions such as selenium. The Forum has concluded in the past and reaffirms its conclusions now that the Salinity Control Program, and the associated

water quality standards, only relate to the combined concentration of all total dissolved solids and not to any particular constituent. The Forum has decided, by the adoption of the 1999 Review report, to reaffirm its commitments to the water quality standards that call for the control of total dissolved solids at three downstream measuring points. However, the Forum, its members, and the referenced agencies are aware of impacts that can result when selenium reaches toxic levels.

There have been numerous discussions at the Forum meetings and at the Forum's Work Group meetings about ways that the Salinity Control Program can be used in a symbiotic way with other programs that are designed to control selenium. It is intuitive that in areas where selenium is being leached from the soil that measures to control the leaching of other salts will also be effective in reducing the leaching of selenium. However, quantitative studies are lacking in this regard and within the last two years the Basin states have agreed on the implementation of a demonstration selenium control project in the Montrose area of the Gunnison Basin in Colorado, where salinity control funds and National Irrigation Water Quality Program funds available to the Department of the Interior are being used to line a canal. This project includes a monitoring program so that the potential relationships between salinity and selenium loading and control in this specific area can be observed. The project is more than 50% complete and total expenditures are expected to reach approximately $1 million. The seven Colorado River Basin states are cost-sharing in the salinity control portion of this effort.

The Bureau of Reclamation's current Basinwide Salinity Control Program has also supported the conversion of the sewage treatment facility operated by the Ashley Valley Sewer Management Board for Vernal City and others from sewage lagoons to a mechanical system with a cement lined oxidation ditch. The lagoons have been found to be responsible for the leaching of a significant amount of salts, including selenium. The project is now under construction and is expected to be in operation by December, 2000. This project will control both salinity and selenium in a cost-effective way.

A most recent report, dated August 1999, in the Journal of the American Water Resources Association, authored by Richard A. Engberg, was entitled "Selenium Budgets For Lake Powell and the Upper Colorado River Basin System." Insight as to the selenium loading mechanism in the Colorado River system can be gained by reading this report. The report finds that of the selenium loading that occurs in the Colorado River above the Colorado/Utah state line, approximately 95% of that selenium loading occurs in the Grand Valley of Colorado and from the Lower Gunnison and Uncompahgre Valley area near Delta and Montrose. The Forum notes that the largest single salinity control effort that has been undertaken by the Salinity Control Program is in the Grand Valley of Colorado. Additionally, significant efforts have been undertaken in the area of the Gunnison River, and it is in this area that the above referenced salinity/selenium control effort is being undertaken and monitoring is occurring. The report further finds that about 51% of the selenium loading that is occurring in the Green River Basin is occurring along Ashley Creek near Jensen, Utah. This is the precise area where the aforementioned Ashley Salinity Control Project has been undertaken. Thus the salinity control program is already active in areas with known selenium loading and has probably already had positive impacts on basinwide selenium levels.

In summary, it is the belief of the Forum that it must keep its focus on cost effective salinity control and not assume obligations to address particular constituents such as selenium. However, the Forum will continue to encourage cost shared partnerships that control salinity and also mitigate other environmental concerns, with special attention given to selenium control possibilities. Over the next three years, prior to the 2002 Triennial Review, the Forum will evaluate the role it might play in addressing selenium problems.

Review of Numeric Criteria to Determine Whether Criteria Should be Lowered

The Mono Lake Committee and the Education for Sustainable Living comments given orally at the Los Angeles meeting included a statement that the numeric criteria should be reviewed to determine if the criteria should be lowered. One of the purposes for the triennial review effort is to review the numeric criteria. This has been done during each of the triennial review efforts and it was done in connection with the 1999 Review. In fact, in the 1999 Review, the Forum chose to, for the first time, include a separate chapter, Chapter 3, on the numeric criteria. On page 3-4 of the Review, the statement is made that "the Forum finds the current numeric criteria are adequate and that no changes are required at this time." This statement is part of a section of the chapter in the Review that is entitled "Review of the Numeric Criteria." In the section, the review of the numeric criteria is explained. The Forum can review the numeric criteria at any time and most certainly will review the criteria in connection with the next review, the 2002 Review.

BRYNER HANSEN DITCH CO.
390 WEST 1ST NORTH
HELPER, UTAH 84526

August 14, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite101
Bountiful, Utah 84010

To the Colorado River Salinity Control Forum,

I refer to the Colorado River Salinity Control triennial review report detailing salinity control practices within the Colorado River Basin. We conclude from the report that much progress is being made in implementing salinity control practices within the area. Be advised that we support the adoption of these control practices. The salinity control practices by the Bureau of Reclamation, from which we are a recent project funding recipient,and USDA programs have benefited us along with many down stream users of Coloado River water.

Our water users are prepared and willing to install salinity control practices provided financial assistance is available.. We, therefore, support and urge that the USDA be provided with adequate resourses to fund their portion of the program. We feel it is imparative that a commitment is made to USDA funding to meet the objectives of the Forum in meeting the water quality standards for lower basin states.

Sincerely
Albert J. Breznick

Bryner, Hansen Ditch Co.
Albert J. Breznick
Secretary & Treasurer

California Regional Water Quality Control Board
Colorado River Basin Region

Winston H. Hickox
Secretary for Environmental Protection

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73-720 Fred Waring Drive, Suite 100, Palm Desert, California 92260
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Gray Davis
Governor

TO: Colorado River Basin Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

SUBJECT: Selenium in the Colorado River

DATE: AUG 23 1999

We applaud the efforts of the Colorado River Basin Salinity Control Forum and all of its members in working to control salt in the Colorado River. In our region, located in the southeastern corner of California, one component of the salinity in the Colorado River that is of particular concern is selenium.

Selenium occurs in natural waters most commonly as selenious acid and selenic acid, which correspond, respectively, to the salts selenite and selenate. Selenium is present in many rock and soil formations in the Colorado River Basin, and its concentration in the Colorado River is increased by activities such as agriculture and mining, which increase erosion in these seleniforous formations. Selenium is a constituent of concern when it is present at elevated levels, due to its ability to bioaccumulate in animal tissue, and its harmful effects at elevated concentrations. Selenium toxicity can lead to reproductive failure, deformities, and death among aquatic organisms and water birds and can also adversely affect people.

The Salton Sea, located in Southeastern California, is fed almost entirely by Colorado River water that is imported for agricultural purposes via the All-American Canal. The Salton Sea provides vital habitat for more than 380 species of birds, including threatened and endangered birds such as the Brown Pelican and the Yuma Clapper Rail, and is an important link on the Pacific Flyway. The Salton Sea also supports several fish species, including the endangered desert pupfish, and a productive sport fishery.

Due to the high rates of evaporation in the Salton Sea watershed, salts that are present in Colorado River water are further concentrated in the watershed. This evaporation causes the concentration of selenium in the New and Alamo Rivers, the main tributaries to the Salton Sea, to be approximately three times the concentration of selenium in the lower Colorado River; the concentration of selenium in the New and Alamo Rivers is approximately 6 ppb, while the concentration of selenium in the lower Colorado River is approximately 2 ppb (1). Nearly all of the selenium present in the Salton Sea Watershed is imported via Colorado River Water (2). In addition, efforts to conserve water in the Imperial Valley by reducing agricultural surface runoff threaten to further increase the concentrations of selenium in the waterbodies feeding the Salton Sea, due to the high concentrations of selenium present in subsurface agricultural drain water (approximately 25 ppb). This potential increase in selenium concentrations due to water conservation may have the effect of impeding water conservation efforts in the Imperial Valley.

Biological effects of the concentrations of selenium present in the tissues of fish and birds in the Salton Sea watershed include reproductive depression in migratory birds and hazards to the reproduction of the desert pupfish (3). In addition, the concentrations of selenium present in fish in the Salton Sea watershed make these fish hazardous food items for birds and potentially humans. In response to concerns about health effects of selenium accumulation, California's Heath Advisory Board has issued a warning stating that people should not consume more than four ounces of fish caught in the Salton Sea in any two week period.

In addition to the effects of concentrated levels of selenium in the Salton Sea watershed, preliminary data from both Arizona (4) and California (5) have shown elevated levels of selenium in the tissues of some fish samples taken from backwaters of the lower Colorado River itself. The levels of selenium present in these fish tissue samples were above the 2 ppm (wet weight) Health Advisory Threshold for fish consumption (6). Also, selenium concentrations found in the tissues of asiatic clams taken from the lower

Colorado River indicate that sufficient bioaccumulation of selenium is occurring in the clams to present a possible threat to higher trophic organisms (1).

Due to these concerns, we recommend that the Colorado River Basin Salinity Control Forum take efforts to address selenium as part of its overall salinity reduction efforts. Specifically, we recommend that the member agencies of the Salinity Control Forum take efforts to identify the sources of selenium in the Colorado River Basin, determine which sources of selenium are controllable, and take action to address these controllable sources.

Sincerely,

PHIL GRUENBERG
Executive Officer

CC: Gerald Zimmerman, Colorado River Board of California
Region 7 Board Members
Tom Kirk, Salton Sea Authority, La Quinta
Jesse Silva, Imperial Irrigation District, Imperial
Clark Bloom, Sonny Bono Salton Sea National Wildlife Refuge Complex, Brawley
Carol Roberts, US Fish and Wildlife Service, Carlsbad
Al Goff, International Boundary and Water Commission, Yuma, AZ
Walt Pettit, State Water Resources Control Board, Sacramento
Jim Stubchaer, State Water Resources Control Board, Sacramento
Bill Steele, US Bureau of Reclamation, Boulder City, NV
Arizona Dept. of Environmental Quality, Phoenix, AZ

DM/pg

File: TMDL SE
CR SC

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(1) Setmire, James. 1998. Selenium in Water, Sediment and Transplanted Corbicula in Irrigation Drainage and Wildlife Use of Drains in the Imperial Valley, California 1994-1995. National Irrigation Water Quality Program , US Department of the Interior, Washington, D.C.

(2) Setmire, J. G., and R.A. Schroeder, J.N. Densmore, S.L. Goodbred, D.J. Audet, and W.R. Radke. 1993. Detailed study of water quality, bottom sediment, and biota associated with irrigation drainage in the Salton Sea Area, California. U.S. Geological Survey , Washington, D.C.

(3) Bennett, Jewel. 1998. Biological Effects of Selenium and Other Contaminants Associated With Irrigation Drainage in the Salton Sea Area, California 1992-1994. National Irrigation Water Quality Program, US Department of the Interior , Washington, D.C.

(4) Metz, G. D., Field Supervisor, FWS Ecological Services. October 1985 memorandum to FWS Regional Director summarizing Arizona Selenium Data.

(5) California State Water Resources Control Board. Toxic Substances Monitoring Program 1976-1995.

(6) U.S. Department of the Interior, National Irrigation Water Quality Program. 1998. Guidelines for Interpretations of the Biological Effects of Selected Constituents in Biota, Water, and Sediment. U.S. Department of the Interior.

CARBON COUNTY
18 COAL IS KING 94

August 17, 1999

"Strength Through Diversity"

Mr. Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, Utah 84010

Michael Milovich
Commissioner
(435) 636-3272

William D. Krompel
Commissioner
(435) 636-3273

Tom Matthews
Commissioner
(435) 636-3271

To the Colorado River Salinity Control Forum,

This letter is written in support of the findings of the Colorado river Salinity Control triennial review report. The report detailed the progress of the Forum in implementing salinity control practices within the Colorado River Basin. Our organization fully supports the adoption and application of salinity control practices within our watershed areas. The salinity control programs of the Bureau of Reclamation, and USDA programs, and basin states cost sharing programs have benefitted millions of downstream water users of the Colorado River, but there is much more work to reduce salinity levels left to accomplish.

Our organization supports acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequate funding levels of twelve million dollars per year from the EQIP program. Local producers are ready, willing and able to install salinity control practices, if adequate financial and technical assistance is available. It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for lower basin states.

Sincerely,

William D. Krompel Mike Milovich Tom Matthews

Carbon County Commission

August 18, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

To the Colorado River Salinity Control Forum,

The Carbon-Emery Work Group is actively pursuing salinity control to improve the soil, water, and crop yields to cooperators. The "Forum" has placed funds into the Carbon and Emery areas for on- farm improvements. The funds greatly benefit the downstream water users but help local landowners to offset the cost of irrigation improvements, a burden that most could not afford to implement. Your support has helped us secure other funds from EQIP, ARDL, and others.

Our work group certainly supports the adoption and application of salinity control practices within our watershed areas. The salinity control programs of the Bureau of Reclamation, the USDA programs, and basin states cost sharing programs have benefited many downstream water users of the Colorado River, but there is still much to accomplish.

We support the acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequately fund levels of twelve million dollars per year from the EQIP program. It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for lower basin states.

Sincerely,

Roger O. Barton, Chairman
Carbon-Emery Work Group

EDEN VALLEY IRRIGATION & DRAINAGE DISTRICT
P O BOX 174
FARSON, WYOMING 82932
(307) 273-9566

August 24, 1999

Colorado River Basin Control Forum

Eden Valley Irrigation and Drainage District wishes to comment on the 1999 Review of the Colorado River Water Quality Standards for Salinity, Colorado River System. We would recommend that there be more cooperation between federal agencies and also with the local governments when salinity control plans are being developed. The plans should use a holistic approach. Page 4-3 states that Reclamation projects and the USDA program have been designed to be highly integrated. We have not found this to be the case.

The focus of the Big Sandy project has been entirely on-farm improvements. When the project was being considered the Bureau of Reclamation decided that the cost of improving the irrigation delivery system would be too high. The irrigation delivery system was not designed for sprinklers and it is not possible to only deliver the water that the sprinklers need. Ditch loss, which may be a higher percentage now than when the project was all flood irrigated, also contributes to the seepage into the shallow aquifers.

We are particularly concerned about this because the Monitoring and Evaluation Report for the Big Sandy Unit has shown an increase in the Tons of salt per year from 1989 until 1997. NRCS does not seem to be concerned because they are using their computer models, which predict the tons of salt saved per year. However, in the Draft Environmental Assessment for the Big Sandy Rock Sills Project issued by the Bureau of Reclamation, March 1999, pg. III-5 states: " The U.S. Geologic Survey gauging station monitoring at Gasson Bridge has shown that pre-Eden Project salinity rates were in excess of 300 tons per day TDS for 13 out of 36 months. After the Project monitoring has shown increases in TDS in excess of 300 tons per day for 27 out of 36 months.

We are being told that the Big Sandy River Unit project is viable and cost effective. Information in the Monitoring and Evaluation Report, which the public reads, should reflect this or the project should be reevaluated with new recommendations for salinity control.

There is also a lack of coordination with local government. It has been the Eden Valley Irrigation and Drainage District's experience that when sprinklers have been designed, many times how the sprinklers will effect the delivery of water and what happens to the overflow from the ponds needed to supply water to the sprinklers has not been considered. This has caused Eden Valley Irrigation and Drainage District considerable expense and headaches.

Thank you for considering our comments.

Gary Zakolnik

August 18, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

To the Colorado River Salinity Control Forum,

Ferron Canal and Reservoir Company is currently into its second phase of the Ferron Salinity Project. Forum funds have been used in Ferron to help landowners install sprinkling systems on their farms. We could not afford to make such improvements on our own and the landowners are showing great willingness with a 100% participation rate on the South Lateral, and an overall projected participation rate of 95-98%.

We appreciate the help of "Forum" dollars and have already noticed salty areas drying up. This will benefit those who are downstream by improving the water quality. Our project is 50% funded for on-farm projects and we certainly need to secure funds for the remainder. Therefore, we fully support the adoption and application of salinity control practices within our watershed. The salinity control programs of the Bureau of Reclamation, and USDA programs, and basin states cost sharing programs have benefited millions of downstream water users of the Colorado River, but there is much more that needs to be done.

Water is vital to us and to increase efficiency of use plus improve the soil and water quality is a big benefit of "Forum" dollars.

Sincerely,

Tracy F. Behling, Pres.
Ferron Canal & Reservoir Company

Los Angeles
WATER AND POWER ASSOCIATES, INC.
A Non-Profit Corporation Dedicated to the Public Interest

Robert V. Phillips
President Emeritus

Vincent J. Foley
President

Catherine Mulholland
Vice President

David J. Oliphant
Secretary

Beverly McReynolds
Treasurer

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Le Val Lund
Richard Marcoullier
Kenneth S. Miyoshi
Michael T. Moore
Robert V. Phillips
Anthony Provenzano
John O. Russell
Abe Tamarin
James F. Wickser
Beverly Ziegler

Mr. Jack Barnett
Executive Director
Colorado River Basin Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

Colorado River Basin Salinity Control Forum

Dear Mr. Barnett:

The Water and Power Associates, Inc. is a nonprofit, independent, private organization, incorporated in 1971, for informing and educating its members, public officials and the general public on critical water and energy issues affecting the citizens of Southern California and the state.

Our organization has reviewed the "1999 Review, Water Quality Standards for Salinity, Colorado River System" and support the plan and the proposed budget to implement the plan.

The plan of implementation as set forth in this review is designed to meet the objective of maintaining the salinity concentrations at or below the numeric criteria while the basin states continue to develop their compact water apportionment.

Southern California is concerned with the salinity concentrations in Colorado River water. We are concerned about scaling problems in plumbing, appliances and equipment in residences, businesses, industry and salinity in the water used for agricultural purposes. Salinity also has a negative impact on recycled water and groundwater basins.

The Associates urge the Bureau of Reclamation, Bureau of Land Management and the Department of Agriculture to work together to develop jointly salinity control measures which are viable and cost effective. Water conservation within irrigation projects on saline soils is the single most effective salinity control measure found. By integrating the USDA on-farm irrigation improvements with USBR off-farm improvements, high efficiencies can be obtained.

We support the Forum in urging Congress to insure the funds necessary to successfully fulfill this plan of implementation. In order to restore funding to the 1992-94 levels, We support S. 1211 (Bennett, UT) Colorado River Basin Salinity Control Act of 1999 which proposes to increase the ceiling for the USBR basinwide salinity control plan from $75 million to $ 175 million.

Yours truly
FOR Vincent J. Foley
President

c Mr. Gerald R. Zimmerman

LL 8-22-99

2616 E. Timberlake Drive ~ La Crescenta, California ~ 91214
(818) 957-0826

STATEMENT

OF

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BEFORE THE COLORADO RIVER BASIN SALINITY CONTROL FORUM[1]

AUGUST 23, 1999

EXECUTIVE DIRECTOR BARNETT AND MEMBERS OF THE FORUM:

The Metropolitan Water District of Southern California (Metropolitan) appreciates the opportunity to submit this statement regarding the report "1999 Review, Water Quality Standards for Salinity, Colorado River System" (1999 Review) prepared by the Colorado River Basin Salinity Control Forum (Forum). Metropolitan supports the report's plan of implementation to maintain the salinity concentrations at or below the numeric criteria through the year 2015. We urge the adoption of the 1999 Review by each of the Colorado River Basin states. Metropolitan is a public agency created in 1928 to meet supplemental water demands of those people living in what is now portions of a six-county region of Southern California. Today, the region served by Metropolitan includes over 16 million people living on the coastal plain between Ventura and the international boundary with Mexico. It is an area larger than the State of Connecticut and, if it were a separate nation, would rank in the top ten economies of the world.

Included in our region are more than 225 cities and unincorporated areas in the counties of Los Angeles, Orange, San Diego, Riverside, San Bernardino, and Ventura. We provide more than half the water consumed in our 5,200-square-mile service area. Metropolitan's water supplies come from the Colorado River via the Colorado River Aqueduct and from northern California via the State Water Project's (State project) California Aqueduct.

Introduction

Metropolitan supports the federal funding level recommended in the 1999 Review. It is important that water source controls for salinity continue to be implemented to assist in achieving Metropolitan's imported water salinity target of 500 milligrams per liter. The high salinity concentration of Colorado River water results in financial impacts to residential, commercial, industrial, and agricultural water users as well as groundwater and recycled water resources and utility distribution systems. It is vital that the President and Congress provide the U.S. Bureau of Reclamation, the U.S. Department of Agriculture, and the U.S. Bureau of Land Management with the funding necessary to successfully carry out their commitment to natural resources conservation.

[1] Presented by Dennis B. Underwood, Executive Assistant to the General Manager in Los Angeles, California.

Salinity Impacts In Southern California

Salinity has always been a concern of water resource managers in Southern California. When salinity concentrations of imported water are reduced, the region benefits from improved use of local groundwater and recycled water and reduced costs to water consumers and utilities. Metropolitan estimates that $95 million of economic benefits would result annually if the Colorado River Aqueduct and State project waters were to simultaneously experience a 100 milligram per liter reduction in salt content from their historic average. Conversely, about the same dollar amount of impacts would result if imported water salinity increased by 100 milligrams per liter.

Recently, Metropolitan conducted a Salinity Management Study (Study) in close collaboration with its member agencies and numerous other concerned agencies including the U.S. Bureau of Reclamation. The Study identifies the impacts of salinity on the coastal plain of Southern California and recommends a long term strategy and action plan.

About half of the region's salt is contributed by imported water, and the other half comes from local sources. Colorado River water constitutes Metropolitan's highest source of salinity, varying from 535 to 734 milligrams per liter since 1972. Hardness comprises about one-half of the Colorado River Aqueduct salt load and causes troublesome scaling problems to indoor plumbing appliances and equipment in homes, businesses and industries.

The State project provides Metropolitan with lower salinity water, which can be used to blend down Colorado River Aqueduct concentrations. State project salinity levels can change rapidly in response to hydrologic conditions, and such changes are noticeable and disruptive as compared to the very gradual, almost imperceptible changes that occur in local streams, groundwater and wastewater collection systems. A CALFED Bay-Delta solution could lower State project salinity by 100 milligrams per liter and reduce its short-term variability. Local salinity sources include naturally occurring salts, salts added by urban water users, infiltration of brackish groundwater into sewers, irrigated agriculture, and confined animal waste management practices. Urban use salt contributions to wastewater range from 250 to 400 milligrams per liter or more in some locations.

Metropolitan's Action Plan

Metropolitan's Board of Directors adopted a salinity management policy and corresponding Action Plan in April 1999. Metropolitan is committed to the following long-term policy to control salinity:

- Protect Metropolitan's imported source supplies from additional salinity, and where feasible seek reductions.

- Achieve, to the extent reasonable and practical, a total dissolved solids concentration objective of 500 milligrams per liter in Metropolitan's distribution system.

- Recognize that natural events beyond Metropolitan's control will at times increase the salinity of imported water supplies, hindering Metropolitan's ability to continuously meet its 500 milligram per liter objective.
- Optimize the long-term use of State project supplies in conjunction with Colorado River water in pursuing salinity management objectives and Metropolitan's integrated resource plan.
- Integrate water quality and quantity objectives in planning facilities and resources.
- Support regional regulatory and management actions to minimize salinity contributions to groundwater and recycled water resources.
- Make the Salinity Action Management Plan the primary strategy to carry out this policy. Regularly assess the implementation and results of the Action Plan, and make revisions based upon experience gained and changing conditions.

The Action Plan consists of four basic components:

- Imported water source control actions,
- Distribution system salinity management actions,
- Collaborative actions with other agencies, and
- Local actions to protect groundwater and recycled water supplies.

The foundation of Metropolitan's action plan is an imported water salinity target of 500 milligrams per liter. Managing imported water salinity through blending would be supplemented by source control in the two imported water river systems, storage and exchange operations along the Colorado River Aqueduct, and a CALFED solution. Blending in Metropolitan's system is achieved by curtailing delivery of higher-salinity Colorado River Aqueduct water and substituting it with comparable amounts of lower-salinity State project water.

Colorado River Basin Salinity Control Program Funding

Metropolitan is greatly concerned with the shortfall of salinity control reported by the Forum. By 1998, an additional 384,000 tons of salinity control were to have been in place to offset water development. This shortfall in salinity control can be attributed to the limited federal funding which has been made available for salinity control over the past five years.

It is imperative that adequate federal funding be provided to meet the goals of the Colorado River Basin Salinity Control Program (Program). Metropolitan supports the 1999 Review's conclusion that about $17.5 million in federal funding is needed each year through the planning period for the Bureau of Reclamation's portion of the Program. We agree that the U.S. Department of Agriculture should increase federal funding for the Colorado River salinity control activities of the Environmental Quality Incentives Program to $12 million per year and designate the Colorado River Basin as a national conservation priority area. Metropolitan also recognizes the important role that the Bureau of Land Management plays in controlling salt contributions from non-point sources and the necessity for adequate federal funding.

On June 10th, Senator Robert F. Bennett (R-UT) introduced S. 1211, the Colorado River Basin Salinity Control Reauthorization Act of 1999, to increase the authorized ceiling for Reclamation's Basinwide Salinity Control Program from $75 million to $175 million. The Basinwide Program,

which awards federal funds for salinity control projects based on competitive bids from the private sector and local and state governments, has proven to be a very successful program, with an average cost effectiveness of $27 per ton of salt controlled thus far, compared to the original program with a cost effectiveness of $76 per ton. Metropolitan supports the enactment of S. 1211.

Conclusion

We urge the adoption of the 1999 Review by the Basin states and its approval by the U. S. EPA, and increased federal funding for the Colorado River Basin Salinity Control Program. Thank you for your consideration of our statement.

Moore Group Salinity Project
Perry Bunderson
Moore Route
Ferron, Utah 84523

August 20, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

To the Colorado River Salinity Control Forum

Our group is writing in support of accelerated funding for the EQIP program in order to keep pace with the BOR portion of the Colorado River Salinity Control program.

Our understanding is that twelve million dollars per year is needed from the EQIP program.

Please add our name to those who believe the best use of USDA dollars is to complete each project as rapidly as possible. Our group fully supports the application of salinity Control within our watershed and is hoping there will be funding to do the on farm portion this coming year.

We compliment you on the many excellent projects completed to date and hope for the continued success of the Forum.

Sincerely,

Perry Bunderson

The Moore Group
Perry Bunderson Group Leader

Price River Soil Conservation District
350 North 400 East
Price, Utah 84501
(435) 637-0041 ext. 21

August 16, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, Ut. 84010

Dear Mr. Barnett:

Subject: EQIP Funding

This letter is written in support of the findings of the Colorado River Salinity Control triennial review report. The report detailed the progress of the Forum in implementing salinity control practices within the Colorado River Basin. Our organization fully supports the adoption and application of programs of the Bureau of Reclamation, and USDA programs, and basin states cost sharing programs have benefited millions of downstream water users of the Colorado River, but there is much more work left to be accomplished to reduce salinity levels.

Our organization supports acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequate funding levels of twelve million dollars per year from the EQIP program. Local producers are ready, willing and able to install salinity control practices, if adequate financial and technical assistance is available. It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for the lower basin states.

Sincerely,

Lyle Bryner

Chairman, Price River Soil Conservation District

Price Wellington Control Board
643South 200 East
Price, Utah 84501
(435) 637-7610

August 19, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, Ut. 84010

Dear Mr. Barnett:

Subject: EQIP Funding

This letter is written in support of the findings of the Colorado River Salinity Control triennial review report. The report detailed the progress of the Forum in implementing salinity control practices within the Colorado River Basin. Our organization fully supports the adoption and application of programs of the Bureau of Reclamation, and USDA programs, and basin states cost sharing programs have benefited millions of downstream water users of the Colorado River, but there is much more work left to be accomplished to reduce salinity levels.

Our organization supports acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequate funding levels of twelve million dollars per year from the EQIP program. Local producers are ready, willing and able to install salinity control practices, if adequate financial and technical assistance is available. It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for the lower basin states.

Sincerely,

Wm Dale Mathis

Wm. Dale Mathis

President, Price Wellington Control Board

San Diego County Water Authority
A Public Agency
3211 Fifth Avenue • San Diego, California 92103-5718
(619) 682-4100 FAX (619) 297-0511

August 20, 1999

Jack A. Barnett, Executive Director,
Colorado River Basin Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010-6232

Dear Mr. Barnett:

The San Diego County Water Authority has received the 1999 Review of Water Quality Standards for Salinity in the Colorado River System (1999 Review) and appreciates the opportunity to comment on this document's findings. This letter provides the Authority's comments on the 1999 Review.

In recent years, about 85 percent of the Authority's imported water supply has come from the Colorado River, via the Metropolitan Water District. We are a water wholesaler to 23 member agencies, which have relatively few local resources. Depending upon the availability of local supplies, the Authority provides between 75 to 95 percent of the water used by the region's 2.7 million people. Thus, the Colorado River has a tremendous impact on water quality in San Diego County.

The Authority has long advocated ways in which to reduce the salinity of its water supply. Excess salinity causes large, measurable economic damage to our region and adds significant costs to recycled water projects, which are an important component of our future water supply. The city of San Diego, for example, is spending millions of dollars to demineralize recycled product water so that it may be beneficially used. The Authority and its member agencies are also working hard to reduce salts introduced locally that affect such projects. However, about half the salt load in the water used for recycling comes from the Authority's water supply. A recent study by the Metropolitan Water District and the U.S. Bureau of Reclamation (Reclamation) provided data showing that a 100 mg/L reduction in TDS would avoid $28 million in annual costs to the San Diego region.

The Authority supports the recommendations made in the 1999 Review, including the numeric salinity criteria and plan of implementation. However, we are concerned with the pace of salt load reduction and whether the long-term salinity targets may be met. As the 1999 Review indicates, the 1998 target of 1.105 million tons of salt reduction fell short by about 35 percent, leaving 384,000 tons of reduction to be made up. A similar type of shortfall was also described in the 1996 Review. The Authority hopes that the Forum's plan of implementation and recommended funding levels are sufficient for the recommended acceleration in salt removal.

MEMBER AGENCIES

CITIES
• Del Mar • Escondido • National City
• Oceanside • Poway • San Diego

COUNTY
• San Diego
(ex officio)

IRRIGATION DISTRICTS
• Santa Fe • South Bay
• Vista

PUBLIC UTILITY DISTRICT
• Fallbrook

WATER DISTRICTS
• Helix • Otay
• San Dieguito
• Vallecitos

FEDERAL AGENCY
• Pendleton Military Reservation

MUNICIPAL WATER DISTRICTS
• Carlsbad
• Olivenhain
• Padre Dam
• Rainbow
• Ramona
• Rincon del Diablo
• Valley Center
• Yuima

PRINTED ON RECYCLED PAPER

The Authority recognizes the need for increased and sustained federal funding to make reductions in salt loading possible, especially on an accelerated schedule. We urge the Forum to pursue its recommendation of $17.5 million in annual appropriations for Reclamation programs, as well as $12.0 million for U.S. Department of Agriculture (USDA) programs and $5.2 million for Bureau of Land Management (BLM) programs. All of these programs should be held accountable for cost-effective results. The 1999 Review notes difficulties that the BLM has in both accounting for salinity control expenditures and for measuring salinity reduction accomplishments. While the 1999 Review also states that the BLM is taking actions to enable appropriate accounting, the Forum should follow this issue closely to ensure that BLM funding for salt reduction is obtaining the desired results.

The Authority recognizes that salinity reduction on the Colorado River is an intensive effort, requiring the coordination of many public and private entities. We appreciate the efforts of the Forum to achieve a program that will obtain the recommended salinity reduction results. The Authority urges all seven Colorado River Basin states to adopt the 1999 Review and its approval by the U.S. Environmental Protection Agency.

Sincerely,

Maureen A. Stapleton,
General Manager

Statement of Harold Ball,
Director, San Diego County Water Authority

For the 1999 Review
Water Quality Standards for Salinity
Colorado River System

Colorado River Basin Salinity Control Forum
August 23, 1999

- The Authority is a water wholesaler for San Diego County. We purchase supplies from the Metropolitan Water District and provide water for 23 member agencies and their 2.7 million individual water customers. Our water users and water agencies are a diverse group, ranging from big urban users such as the city of San Diego, to small, agricultural irrigation districts. Most of our water use is for M&I purposes, but although it doesn't use a lot of water, agriculture in San Diego County is a $1 billion-a-year business. The one thing we all have in common is the need for a reliable, high-quality water supply.

- In the recent past, the Authority has received about 85 percent of its water supply from the Colorado River. San Diego County has relatively few local water resources, mostly from runoff into surface reservoirs, and these local supplies are not reliable. During 1991, near the end of a six-year drought, our local supply provided only 5 percent of our total water needs. We are working to diversify our water supply portfolio with transfers of Colorado River water from the Imperial Valley. Because of our heavy reliance on the Colorado River, water quality issues associated with the river translate almost directly to water quality impacts felt by our region. And salinity has been one of our biggest water quality issues.

- The impacts of excessive salinity in San Diego County include damages to water-using appliances at every level, from homes and small businesses to industrial processes used by manufacturing firms. High-value farm products experience reduced yields or must increase water use by leaching. Additional costs are incurred by businesses that must have high-quality water, such as our growing biotechnology sector. And additional costs are incurred to produce marketable recycled water, which is an important element of the Authority's future water supply. A recent study by the Metropolitan Water District and the U.S. Bureau of Reclamation showed that a 100 mg/L decrease in the TDS of Metropolitan's water supply would result in $95 million of avoided costs over entire Metropolitan service area. For the San Diego region, the avoided damages of such a salinity decrease would be $28 million per year.

- Let me give you one example of how salinity affects the cost of our local resources development. The city of San Diego recently constructed a 30-mgd water reclamation plant to meet a portion of its future needs. To meet the water quality needs of its customers, the city has to further construct a 7.6 mgd demineralization component to the plant, which will reduce TDS of the product water from 1,200 ppm to less than 1,000 ppm. The additional cost of the demineralization component will be more than $10 million in capital and more than $600,000 per year for operations. The excess salinity that requires demineralization comes from a variety of local

sources, but about half is from the Authority's water supply. Thus, reducing the salt load of the Colorado River is an important part of reducing local water supply costs.

- With this as background, you can understand why the Authority appreciates the efforts of the Colorado River Basin Salinity Control Forum and the many local, regional, state, and federal agencies that are working to improve Colorado River water quality. We understand that it takes an intense effort and great coordination among many public and private organizations to achieve the goals outlined in the 1999 Review.

- We agree with the Forum's findings in the 1999 Review concerning TDS targets, the Forum's plan of implementation, and recommended funding levels necessary to achieve those targets. We are concerned that TDS reduction has not occurred at the pace recommended in the 1996 Review, and urge the Forum and others to continue efforts to secure the funding needed to meet the long-term salinity goals. As the 1999 Review concludes, we must accelerate the pace of existing salt reduction programs to ensure that long-term goals can be met. We are currently enjoying relatively low TDS from current Colorado River supplies, due to hydrological reasons. But we must use this period to play "catch up" on salt reduction, and not fall behind to the point where salinity goals cannot be met when the hydrology changes.

- We urge the seven Colorado River Basin states to adopt the 1999 Review and the EPA to approve the Review. Thank you for the opportunity to present these comments and thank you for considering them.

August 18, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

To the Colorado River Salinity Control Forum,

The San Rafael SCD is actively pursuing salinity control to improve the soil, water, and crop yields to cooperators. The "Forum" has placed funds into the Ferron area for on-farm improvements. The funds greatly benefit the downstream water users but help local landowners to offset the cost of irrigation improvements, a burden that most could not afford to implement. Your support has helped us secure other funds from EQIP, ARDL, and others.

Our district certainly supports the adoption and application of salinity control practices within our watershed areas. The salinity control programs of the Bureau of Reclamation, the USDA programs, and basin states cost sharing programs have benefited many downstream water users of the Colorado River, but there is still much to accomplish.

We support the acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequately fund levels of twelve million dollars per year from the EQIP program. It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for lower basin states.

Sincerely,

Roger O. Barton, Chairman
San Rafael Soil Conservation District

August 16, 1999

Mr. Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, Utah 84010

To the Colorado River Salinity Control Forum,

The Colorado River Salinity Control report detailed the progress of the Forum in implementing salinity control practices on the Colorado River Basin. Our canal company (Stowell Mutual Canal Company) fully supports the adoption and application of salinity control within our watershed and we are writing this letter to show our support of these findings. All of the downstream water users of the Colorado River have benefited from the salinity control programs of the Bureau of Reclamation, USDA, and Basin States cost sharing programs. But as much as it has helped, there is still a tremendous amount of work to be done in order to reduce the salinity levels.

The Stowell Mutual Canal Company would especially support any efforts to attempt to get the USDA to adequately fund levels of twelve million dollars per year for the EQIP program and supports the acceleration of the salinity control programs. If adequate financial and technical assistance is available, the local producers are ready, willing and able to install salinity control practices. It will take a strong funding commitment to the USDA and Bureau of Reclamation to keep & maintain the progress that has been made by the forum to date and to meet the water quality needs for the lower basin states in the future.

Thank you for your consideration..

Sincerely,

Tom Bruno

Tom Bruno, Director
Stowell Mutual Canal Company
Rt. # 1 Box 155
Helper, Utah 84526

wp6.1/salconpr.wpd

Uintah County Soil Conservation District

475 W. 100 N. - VERNAL, UT 84078

August 23, 1999

Jack Barnett, Executive Director
Colorado River Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, UT 84010

To the Colorado River Salinity Control Forum:

This letter is written in support of the findings of the Colorado River Salinity Control triennial review report. The report detailed the progress of the Forum in implementing salinity control practices within the Colorado River Basin. Out organization fully supports the adoption and application of salinity control practices within our watershed areas. The salinity control programs of the Bureau of Reclamation, and USDA programs and basin states cost sharing programs have benefited millions of downstream water users of the Colorado River, but there is still much more work needed to reduce salinity to acceptable levels.

The Uintah County Soil Conservation District supports acceleration of the salinity control programs, especially in getting the USDA portion of the program to adequate funding levels of twelve million dollars per year from the EQIP program. Local producers are ready, willing and able to install salinity control practices, if adequate financial and technical assistance is available.

It will take a strong USDA funding commitment to keep up the progress made by the Forum to date, and in the future to meet the water quality criteria for lower basin states and to complete the goals set for salt savings from the Uintah Basin into the Colorado River.

Sincerely,

UINTAH COUNTY SOIL CONSERVATION DISTRICT
Errol Merkley, Chairman

Gilbert Brough, Vice Chairman

Bill Rasmussen, Secretary Treasurer

Merlin McKee, Member

Cloyd Harrison, Member

Statement of
The Upper Colorado River Commission
to
The Colorado River Basin Salinity Control Forum
August 23, 1999

The Upper Colorado River Commission is an interstate compact administrative agency created by the Upper Colorado River Basin Compact of 1948. The member States of the Upper Colorado River Commission are: Colorado, New Mexico, Utah and Wyoming. Since its inception, the Commission has actively participated in the development, utilization and conservation of the water resources of the Colorado River Basin.

On behalf of the four Upper Division States, we appreciate the opportunity to provide comments to endorse past accomplishments and the proposed plan of implementation set forth by the Colorado River Basin Salinity Control Forum as outlined in the 1999 tri-annual review.

Salinity has long been recognized as one of the major problems in the Colorado River. Salinity damages in the United States portion of the Colorado River Basin range between $500 million and $750 million per year and could exceed $1.5 billion per year if future increases in salinity are not controlled. Salinity control is both a western interstate water quality issue as well as an international water quality issue in meeting the requirements of Minute No. 242 pursuant to the Treaty with the United Mexican States. The Colorado River Basin Salinity Control Program is designed to maintain salinity levels in the Colorado River system within established numeric criteria while the Upper Basin States continue to develop their Colorado River Compact-apportioned waters.

Salinity of the river has fluctuated significantly over the period of record. Since the adoption of the numeric criteria by the Forum in 1975, and as a result of the implemented salinity control projects, the numeric criteria have not been exceeded. Most recently, in part because of favorable hydrologic conditions, salinity levels at the three stations on the Lower Colorado River were well below the numeric criteria. Salinity levels below Hoover Dam measured 588 mg/l, below Parker Dam measured 609 mg/l and below Imperial Dam measured 713 mg/l. The Commission supports the "1999 REVIEW, WATER QUALITY STANDARDS FOR SALINITY, COLORADO RIVER SYSTEM" and it's conclusion that there is no need to modify the existing standards at this time. However, without additional salinity control measures, the salinity of the Colorado River is projected to increase above the water quality numeric criteria at the three downstream water quality stations below Hoover Dam, below Parker Dam and at Imperial Dam as a result of continued water development.

For this tri-annual review, a plan of implementation has been recommended to maintain the salinities of the Colorado River at or below the numeric criteria below Hoover Dam through the year 2015. The Forum has determined that based on average hydrology,1.477 million tons of salt must be removed or prevented from entering the system annually to maintain the numeric criteria through 2015. With normal hydrology, 1.105 million tons of salt load reduction would have been required by 1998 in order to not violate downstream standards. However, only 721,000 tons of salt load reduction has been achieved, a shortfall of 384,000 tons. The Salinity Control Program is behind schedule; to make up this shortfall will require increased funding as outlined in the 1999 tri-annual review. Should the necessary funding levels not be provided for

the Colorado River Salinity Control Program, the probability of the water quality numeric criteria being exceeded before 2015 is greatly increased. Therefore, the Commission urges Congress and Federal agencies to provide the necessary support for the salinity control program by designating the Colorado River Basin as a national conservation priority area and allocating sufficient funding to implement the plan recommended in this tri-annual review.

On behalf of the Upper Colorado River Commission, we thank you for granting the Commission the opportunity to express its full support for the seven-state Colorado River Basin Salinity Control Forum and the plan of implementation.

USDA Comments for Public Meetings on 1999 Triennial Review
Los Angeles, California and Lyman, Wyoming
August 23-24, 1999

- The Natural Resources Conservation Service of United States Department of Agriculture is pleased to be present at this meeting to hear comments for the 1999 Review of the Water Quality Standards for Salinity in the Colorado River System.

- NRCS has been closely involved in the preparation of the 1999 Review document being presented for comments at this meeting.

- NRCS has been an active partner in working to accomplish the plan of implementation for the Colorado River Basin in order to comply with the established water quality standards of the Clean Water Act.

- Initial agriculture salinity cost share practices began in 1979 and 1980 with the Grand Valley and Uinta Basin projects through the Agriculture Conservation Program (ACP).

- In 1984 the Salinity Control Act was amended by Public Law 98-569.
  - This amendment permitted the Secretary of Agriculture to establish a voluntary onfarm salinity control program to be administered by USDA.
  - Funding for the USDA program was initiated in 1987.
  - Financial, technical and information and education assistance was provided to farmers and ranchers through line item funding of the program through FY 1996.

- In April 1996, the Federal Agriculture Improvement Reform Act (FAIRA) combined the functions of several USDA conservation programs including the Colorado River Salinity Control program into the Environmental Quality Incentives Program (EQIP).

- Within the last two years, the Basin states have been providing cost share funds which has greatly increased USDA's ability to implement agricultural salinity control measures on irrigated lands in the Basin within the established project areas.

- The Basin fund contributions are based on the annual amount of EQIP funding expended on agricultural irrigation practices in the 6 project areas in Colorado, Utah and Wyoming

- The functions of the Colorado River Salinity Control program are continuing on through EQIP.

- In closing, NRCS-USDA supports the 1999 Review and looks forward to continuing a major federal agency partner in salinity control efforts in the Colorado River Basin.

State of Utah
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

Michael O. Leavitt
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Statement of Support
to the

Colorado River Basin Salinity Control Forum
on August 23, 1999

I am an Assistant Director of the Utah Division of Water Quality; I represent Utah as a member of the Colorado River Basin Salinity Control Forum and wish to submit the following statement on behalf of the State of Utah.

The State of Utah, through the Divisions of Water Resources and Water Quality, strongly supports the efforts of the Forum and salinity control activities in the Colorado River Basin. The State of Utah has actively provided technical assistance through the Divisions of Water Resources and Water Quality to this worthy effort. Landowner interest and participation in the salinity control activities in the Colorado River Basin portion of Utah have been outstanding. Utah looks forward to the continuation of this important work in improving water quality for water users in Utah as well as those downstream.

Utah has examined the "1999 REVIEW - WATER QUALITY STANDARDS FOR SALINITY COLORADO RIVER SYSTEM" and concurs that there is no need to modify the standards at this time. Utah also supports the plan of implementation and urges the United States Congress to provide sufficient funds to proceed with the plan of implementation in order to meet the water quality treaty obligations of the United States to Mexico on the Colorado River as well as the water quality objectives of the federal Clean Water Act. These obligations are federal in nature and thus Congress and the federal agencies have responsibility to provide the resources necessary to meet these obligations.

Jay B. Pitkin, Assistant Director
Utah Division of Water Quality

State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WATER RESOURCES

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Statement of Support
from
D. Larry Anderson
to
The Colorado River Basin Salinity Control Forum
on August 23, 1999

As the Director of the Utah Division of Water Resources and Interstate Streams Commissioner for Utah, I represent Utah as a member of the Colorado River Basin Salinity Control Forum and wish to submit the following statement on behalf of the state of Utah.

The state of Utah, through the Divisions of Water Resources and Water Quality, strongly supports the efforts of the Forum and salinity control activities in the Colorado River Basin. The state of Utah has actively provided technical assistance through the Divisions of Water Resources and Water Quality to this worthy effort. Landowner interest and participation in the salinity control activities in the Colorado River Basin portion of Utah has been outstanding. Utah looks forward to the continuation of this important work in improving water quality for water users in Utah as well as those downstream. As tangible evidence of Utah's support, the Utah Board of Water Resources has provided funding to meet non-federal portions of some of the salinity control efforts and intends to continue this practice.

Utah has examined the "1999 REVIEW - WATER QUALITY STANDARDS FOR SALINITY COLORADO RIVER SYSTEM" and concurs there is no need to modify the standards at this time. Utah also supports the plan of implementation and urges the United States Congress to provide sufficient funds to proceed with the plan of implementation in order to meet the treaty water quality obligations of the United States to Mexico on the Colorado River as well as the water quality objectives of the Clean Water Act. These obligations are federal in nature and Utah would like to remind Congress and the federal agencies of their responsibility to provide the resources necessary to meet these obligations.

Thank you,

D. Larry Anderson

D. Larry Anderson, P.E.
Director

President
Lois Humphreys

First Vice President
David Requa

Second Vice President
Vacant

WATEREUSE
ASSOCIATION OF CALIFORNIA

Executive Director
Peter MacLaggan

Administrative/Finance Director
Karen Roberts

Member Programs Director
Kathy Snelson

STATEMENT
OF
WATEREUSE ASSOCIATION OF CALIFORNIA
BEFORE THE COLORAD RIVER BASIN SALINITY CONTROL FORUM

AUGUST 23, 1999

Executive Director Barnett and Members of the Colorado River Basin Salinity Control Forum, thank you for this opportunity to submit this statement regarding the report "1999 Review, Water Quality Standards for Salinity, Colorado River System" (1999 Review) prepared by the Colorado River Basin Salinity Control Forum (Forum). My name is Peter MacLaggan. I am the Executive Director of the WateReuse Association of California, a non-profit public-private partnership formed in 1990 to help shape public policy affecting the use of recycled water in California. The Association's membership consists of more than 250 public agencies and professionals responsible for providing water and wastewater services to more than 20 million Californians.

Our membership is recycling one-half million acre-feet of water each year for a variety of urban and agricultural uses, offsetting an equivalent demand on the state's limited surface and groundwater supplies. Over one billion dollars in public monies have been invested in recycled water infrastructure since 1990. We have identified the potential to develop an additional million acre-feet of recycled water by the year 2020. Realization of this potential will require a significant public investment.

Salt management is the single largest problem facing the water recycling industry today. The water and wastewater utilities have spent tens of millions of dollars to

improve source water quality, control salt discharges from the industrial and commercial sector and prevent saline water intrusion into the wastewater collection system to ensure an adequate water quality for the recycled water customer.

In communities receiving water from the Colorado River, the additional salt load in the source water supply significantly increases the cost of recycling water. Generally, recycled water with a salt content of over 1,000 milligrams per liter (mg/L) will be a problem for its irrigation and industrial recycled water customers. Project operators prefer to supply recycled water with a salinity of 800 mg/L or less to ensure the long-term viability of the recycled water market. Through normal use of water we generally are able to produce a reclaimed water supply with a salinity of 250 to 400 mg/L over that of the supply quality. Thus, with the Colorado River water quality varying between 535 and 734 mg/L and an adopted salinity standard of 747 mg/L at Lake Havasu, expensive source control, blending and treatment practices are necessary to ensure that recycled water is of a suitable quality to meet customer expectations. While these practices represent viable options for addressing the salinity problem, they also present serious problems. For example, the level of source control, blending and treatment required to provide recycled water of suitable quality can result in critically important water recycling project not being economically feasible.

WateReuse is greatly concerned with the shortfall of salinity control reported by the Forum. This shortfall in salinity control can be attributed to limited federal funding which has been made available for salinity control over the past five years. We urge the adoption of the 1999 Review by the Basin states and its approval by the U.S. EPA and

increased federal funding for the Colorado River Basin Salinity Control Program. Thank you for your consideration of this statement.

State Engineer's Office

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JIM GERINGER
GOVERNOR

GORDON W. FASSETT
STATE ENGINEER

August 13, 1999

Mr. Jack A. Barnett
Executive Director
Colorado River Basin Salinity Control Forum
106 West 500 South, Suite 101
Bountiful, Utah 84010

Re: June 1999 report on "1999 Review - Water Quality Standards for Salinity - Colorado River System" prepared by the Colorado River Basin Salinity Control Forum

Dear Jack:

The basin-wide water quality standards for salinity consists of numeric water quality criteria for three Lower Colorado River stations and a Plan of Implementation that describes the overall Program and the specific salinity control projects that are being and will be implemented to remove sufficient salt from the River system so the salinity concentrations of the River's waters arriving at the three stations do not exceed the numeric criteria values. Under the provisions of the Clean Water Act, the water quality standards for salinity are reviewed at least once each three years and the Plan of Implementation is jointly adjusted and revised by the States and involved Federal agencies, including representatives of the Department of Agriculture, to ensure continuing compliance with the numeric criteria for salinity.

The State of Wyoming, as a Forum member, has participated in the preparation of the report entitled "1999 Review - Water Quality Standards for Salinity - Colorado River System" prepared by the Colorado River Basin Salinity Control Forum (Forum). The State of Wyoming fully concurs with the report's conclusion that the Colorado River water quality standards' numeric criteria should not be revised and should remain at the current values. We fully support the revision of the plan of implementation to maintain the salinity concentrations of Colorado River water at or below the numeric criteria.

Wyoming is convinced that the Forum's basin-wide approach to controlling salt loading is the most logical and workable means of maintaining salinity levels in the Lower Colorado River Basin at or below the established numeric criteria while water resources development continues throughout the Basin.

In our view, one of, if not the most critical issue facing the Colorado River Basin Salinity Control Program and the maintenance of the Water Quality Standards for Salinity in the Colorado River System is funding for U.S. Department of Agriculture

salinity control activities through the Environmental Quality Incentives Program (EQIP). As noted in the 1999 Review Report (page 5-5):

> "While the USDA program has proven to be a cost-effective component of the Colorado River Basin Salinity Control Program, Administration and Congressional funding support for the program has dramatically declined. Table 5-1 reflects the significant reduction in USDA appropriations between 1994 and 1999. Funding of the USDA program at recent levels jeopardizes the ability of the plan of implementation to be executed in a manner that assures compliance with the numeric criteria (emphasis supplied)."

The State of Wyoming has actively been seeking increased appropriations for the USDA's salinity control efforts through a variety of means. We encourage other Forum members and all beneficiaries of the Colorado River Basin Salinity Control Program to vigorously work to increase Program funding. This is a critical part of the ongoing salinity control effort and it merits both concern and renewed and redoubled effort on the part of all involved to assure adequate funding is obtained for this important basin-wide program.

Thank you for the opportunity to present these views. I would ask that this letter be provided to the attendees at each of the Forum's upcoming public meetings concerning the "1999 Review - Water Quality Standards for Salinity - Colorado River System." Should you have any questions, please don't hesitate to contact me or John Shields of my staff.

With best regards,

John W. Shields
for

Gordon W. "Jeff" Fassett
Wyoming State Engineer
Chairman and Wyoming Member,
Colorado River Basin Salinity
Control Forum

GWF/JWS/js

cc: Dan S. Budd, Wyoming Forum Member
Gary Beach, Wyoming Forum Member

CORRECTIONS AND ADDITIONS

The Forum, having adopted the 1999 Review in June of 1999, now finds that with the publication of this supplemental report in October of 1999, there is opportunity to identify any corrections or additions that the Forum has determined need to be made to the originally adopted report.

There is one addition to the text of the report and one minor correction and several additions to the NPDES list (Appendix C) that the Forum has determined is appropriate to make. The changes are as follows:

On page 2-5 of the Review, in Table 2-1, the data from the 1998 calendar year can now be added. The values are Below Hoover Dam, 560; Below Parker Dam, 560; and At Imperial Dam, 656. It should be noted that 1996, 1997 and 1998 values are from provisional records.

On page C-8 of Appendix C, with respect to NPDES #NW0026751, the code should be changed from M-1 to M-2.

The following NPDES permits need to be added to the NPDES list (Appendix C):

NPDES #	REACH	NAME	CONCENTRATION MG/L	FLOW RATE MGD	SALT LOAD TONS/DAY	EXPLANATION CODE
CO0039683	510	ANDRIKOPOULUS, A.G., RESOURCES	1250	0.006	0.03	M
COG310093	100	ASPEN SKIING COMPANY LLC	113	0.013	0.01	I
COG600155	801	BOC GASES	750	0.001	0.00	I
COG850013	500	COLORADO YAMPA COAL COMPANY	2008	0.031	0.26	I
CO0043095	801	DURANGO WEST METRO DISTRICT #2	148	0.058	0.04	M
CO0000141	100	GLENWOOD HOT SPRGS LODGE	16650	2.558	177.43	M-5A
COG850018	500	H-G COAL COMPANY	2083	0.218	1.89	I-6
CO0041548	801	MK-FERGUSON CO-UMTRA/DURANGO	247	0.021	0.02	I
COG850005		NCIG FINANCIAL, INC.	68	0.002	0.00	
COG640012	100	RED CLIFF, TOWN OF	156	0.001	0.00	I
CO0037206	220	WALKER RUBY TRUST MINING CO.	33	0.005	0.00	I