STATE OF CALIFORNIA – THE RESOURCES AGENCY
GRAY DAVIS, Governor
DEPARTMENT OF WATER RESOURCES
1416 NINTH STREET, P.O. BOX 942836
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November 26, 2002

Ms. Celeste Cantú
Executive Director
State Water Resources Control Board
Post Office Box 200
Sacramento, California 95812-2000

Water Quality Standard at Contra Costa Canal Pumping Plant No. 1.

This letter is to inform you that the maximum daily chloride objective of 250 mg/l at the Contra Costa Canal Pumping Plant No. 1 per SWRCB Decision 1641 was exceeded on October 20, 21, and 22, 2002. These three days are in addition to the four earlier days of exceedences relayed to you by our letter of October 18. The subsequent exceedences occurred despite continuing improvements to Delta water quality in and around Rock Slough.

The exceedences of October 20, 21, and 22 were respectively at the values 252, 258, 253 mg/l. Water Quality at Pumping Plant No. 1 remained poor through most of October despite continually improving conditions in Rock Slough and more than adequate corresponding water quality in Old River. Correlated chlorides at the mouth of Contra Costa Canal averaged between 170 and 160 mg/l. Please see the enclosed graphs illustrating water quality data as electrical conductivity and correlated chlorides.

The movement of water from Old River into Rock Slough is dependent on tides, miscellaneous agricultural diversions in Rock Slough, and the pumping rate at Contra Costa Water District's Pumping Plant No. 1 at the end of Contra Costa Canal. The Department of Water Resources and Bureau of Reclamation can neither control the time needed for fresher water to displace saltier water nor the rate of degradation that seems prevalent in the immediate region. Therefore, we do not believe any action by the Board is necessary. The Department and Reclamation will continue to adjust State Water Project and Central Valley Project operations as needed to assure adequate water quality exists in Old River to meet the 250-mg/l chloride standard at Pumping Plant No. 1.

12-2-02 Date
Carl Torgersen
Chief
SWP Operations Control Office
Department of Water Resources

12-2-02 Date
Chester Bowling
Operations Manger
Central Valley Operations Office
Bureau of Reclamation

Enclosures

cc: (See attached list.)

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Nick Wilcox
State Water Resources Control Board
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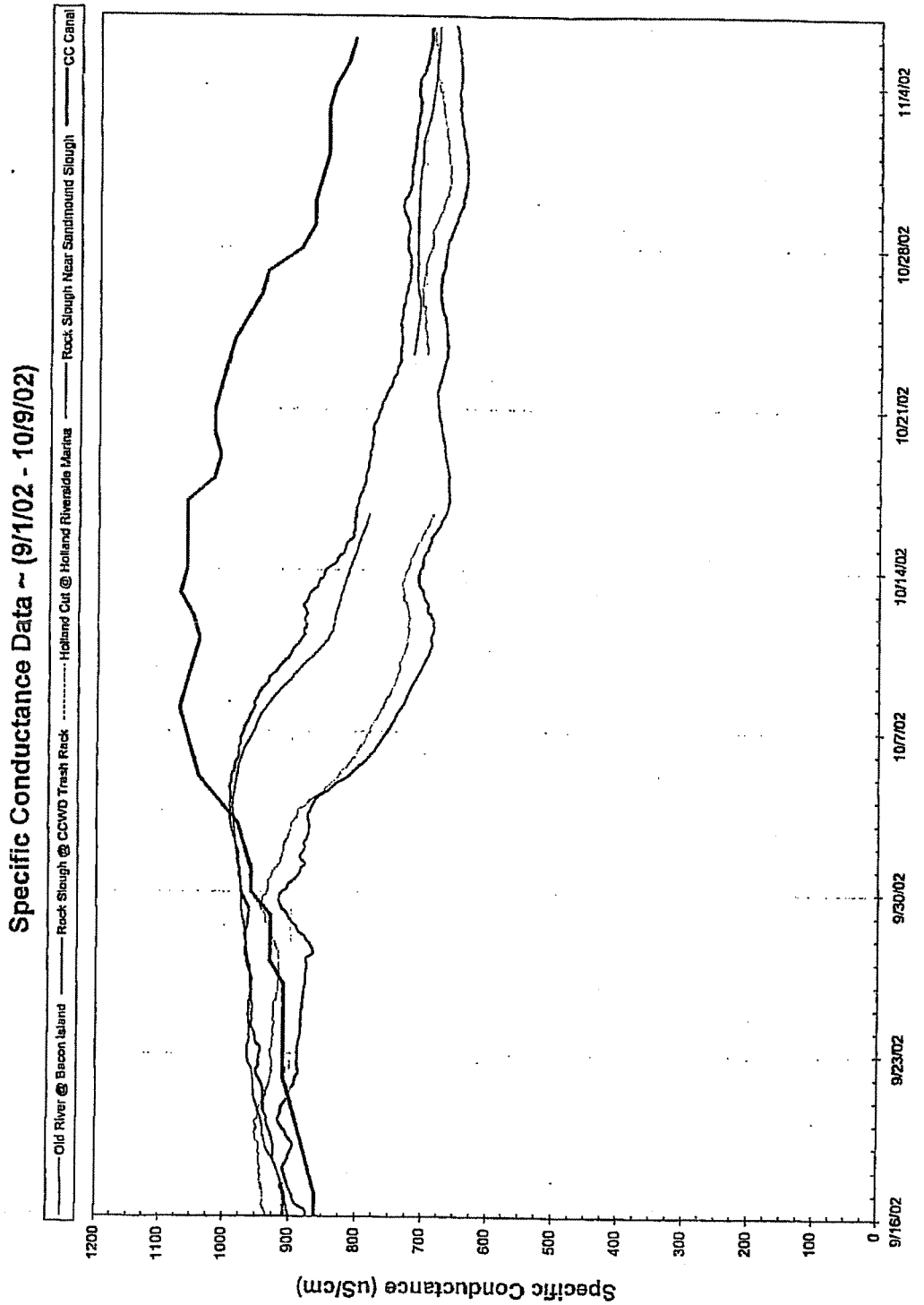
Specific Conductance Data ~ (9/1/02 - 10/9/02)
Old River @ Bacon Island
Rock Slough @ CCWD Trash Rack
Holland Cut @ Holland Riverside Marina
Rock Slough Near Sandmound Slough
CC Canal
Specific Conductance (uS/cm)
1200
1100
1000
900
800
700
600
500
400
300
200
100
0
9/16/02
9/23/02
9/30/02
10/7/02
10/14/02
10/21/02
10/28/02
11/4/02

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Chloride Data Correlated with Specific Conductance ~ (9/1/02 - 10/9/02)
Old River @ Bacon Island
Rock Slough @ CCWD Trash Rack
Holland Cut @ Holland Riverside Marina
Rock Slough near Sandmound Slough
PP#1-measured
Chloride (mg/L)
300
250
200
150
100
50
0
9/1/02
9/8/02
9/15/02
9/22/02
9/29/02
10/6/02
10/13/02
10/20/02
10/27/02
11/3/02
Date

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State Water Resources Control Board

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Winston H. Hickox
Secretary for Environmental Protection

Gray Davis
Governor

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.

NOV 2 7 2002

Mr. Carl A. Torgersen, Chief
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Department of Water Resources
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Mr. Chester V. Bowling, Operations Manager
Central Valley Operations
Bureau of Reclamation
3310 El Camino Avenue, Suite 300
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Mr. Richard Denton
Contra Costa Water District
Concord, CA 94524
P.O. Box H20

Dear Messrs. Torgersen, Bowling and Denton:

EXCEEDANCES OF THE WATER QUALITY OBJECTIVE FOR CHLORIDE AT CONTRA COSTA PUMPING #1 IN OCTOBER 2002

This letter responds to the joint letter from the Department of Water Resources (DWR) and the Bureau of Reclamation (USBR) dated October 16, 2002, notifying Celeste Cantú, Executive Director of the State Water Resources Control Board (SWRCB) that the daily maximum chloride objective of 250 mg/l at the Contra Costa Pumping Plant #1 was exceeded on October 7, 12, 13 and 14, 2002. This letter also responds to the letter from the Contra Costa Water District (CCWD) dated November 4, 2002, regarding the exceedances of the chloride objective. CCWD also points out that the chloride objective was exceeded on October 20, 21 and 22, 2002.

The DWR and the USBR point out that they are now less able to comply with the chloride objective at Pumping Plant #1 than in the past. They attribute this to changes in operation by CCWD. CCWD currently diverts most of its water from Old River for the Los Vaqueros project, whereas in the past CCWD's main point of diversion was from Rock Slough at Pumping Plant #1 in the Contra Costa Canal.

CCWD acknowledges that low rates of diversion at Pumping Plant #1 exacerbate the problem. Local seepage of salty groundwater can cause elevated chloride concentrations, particularly when the Pumping Plant #1 diversion rate is low. When chloride-laden water stagnates in Rock Slough and in the Canal, it can take several days to pump out the water and replace it with fresher water from the Delta, thus increasing the number of days the objective is exceeded. CCWD also believes that the chloride exceedances in October may have been related to antecedent Delta outflow conditions.

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The SWRCB appreciates your notification of the exceedances and understands that the exceedances are due to a combination of factors, only some of which are under the control of the DWR and the USBR. In the past there has been talk of moving the compliance point away from Pumping Plant #1. To consider moving the compliance point or implementing CCWD's recommendations to change the Delta outflow objective and to adjust downward the chloride objective to achieve a higher degree of protection for drinking water supplies, the SWRCB would have to conduct formal proceedings. Such proceedings would include reviewing the objectives in the 1995 Bay-Delta Water Quality Control Plan (1995 Plan) under Water Code section 13240, preparing draft revisions to the objectives, and conducting a hearing on the proposed revisions. To apply any revised objectives to the DWR and the USBR, the SWRCB then would have to amend the water right permits of the DWR and the USBR, which could require a water right hearing. Water Code section 13240 requires periodic reviews of water quality control plans, and accordingly, the SWRCB may soon commence a review of the 1995 Plan. If it does so, you will be notified and will have an opportunity to participate in the review.

With regard to the exceedances of the chloride objective in October of this year, it appears that CCWD is not requesting any specific action at this time. Accordingly, the SWRCB will take no further action.

If you have questions, please contact Nick Wilcox, Chief of the Bay-Delta Unit at (916) 341-5424, or Barbara Leidigh, Staff Counsel IV, at (916) 341-5190.

Sincerely,

David R. Beringer

for Harry M. Schueller
Chief Deputy Director

cc: Mr. Curtis Creel
SWP Operations Control Office
Department of Water Resources
3310 El Camino Avenue, Suite 300
Sacramento, CA 95821

Mr. Paul Fujitani
Central Valley Operations
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Gray Davis
Governor

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.

JAN - 9 2003

In Reference Refer to:NW:
A005626, A005630

Mr. Carl A. Torgersen, Chief
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Department of Water Resources
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Sacramento, CA 95821

Mr. Chester V. Bowling, Operations Manager
Central Valley Operations
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3310 El Camino Avenue, Suite 300
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Dear Messrs. Torgersen and Bowling:

EXCEEDANCES OF THE WATER QUALITY OBJECTIVE AT CONTRA COSTA PUMPING #1 FOR OCTOBER 20 THROUGH OCTOBER 22, 2002.

This letter responds to the joint letter from the Department of Water Resources (DWR) and the Bureau of Reclamation (USBR) dated November 26, 2002, notifying me that the daily maximum chloride objective of 250 mg/l at the Contra Costa Pumping Plant #1 was exceeded on October 20, 21 and 22, 2002.

You point out that the DWR and the USBR can neither control the time needed for fresher water to displace saltier water in Rock Slough nor the rate of degradation that appears to be related to local seepage in the immediate region. You also point out that joint State Water Project and Central Valley Project operations are adjusted to assure that adequate water quality exists in Old River at the entrance to Rock Slough and that the State Water Resources Control Board (SWRCB) should take no specific action at this time regarding the exceedances.

The SWRCB reached a similar conclusion in our November 27, 2002 response to your notification regarding the chloride exceedances that occurred throughout the month of October. Relocation of the compliance point for the Contra Costa chloride objective away from Pumping Plant #1 is an issue appropriate for triennial review of the 1995 Bay-Delta Water Quality Control Plan. Water Code Section 13240 requires periodic reviews of water quality control plans and the SWRCB may soon commence such a review.

If you have questions, please contact Nick Wilcox, Chief of the Bay-Delta Unit at (916) 341-5424, or Barbara Leidigh, Staff Counsel IV, at (916) 341-5190.

Sincerely,

Celeste Cantú
Executive Director

cc: Mr. Richard Denton
Contra Costa Water District
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SWRCB Workshop on Amending the 1995 WQCP
Comments on Topic 4
By
Department of Water Resources and U.S. Bureau of Reclamation [1]
January 10, 2005

The State Water Resources Control Board (SWRCB) has requested comments on issues described in the September 30, 2004 Staff Report "Periodic Review of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary" to consider amending the 1995 Plan. The Department of Water Resources (DWR) and U.S. Bureau of Reclamation submit these joint comments regarding Workshop Topic 4 on three issues: chloride objectives, compliance location at Pumping Plant #1, and potential new objectives. Our comments follow the specific issues as described by the SWRCB in its Revised Notice of Public Workshop (Sept. 17, 2004).

A. 150 mg/l Chloride Objective

Should the SWRCB amend the value or description of the 150 mg/l Chloride Objective in the Water Quality Objectives for Municipal and Industrial Beneficial Uses (Table 1 of the 1995 Plan)? How should the value or description be modified and what are the scientific and legal arguments in support of and against such modifications?

Reclamation and DWR recommend that the SWRCB not change the 150 mg/l Chloride (150 Cl) objective for Municipal and Industrial (M&I) beneficial uses found on Table 1 of the 1995 Water Quality Control Plan (WQCP), except with respect to the compliance location under specified conditions as discussed below in Section B. The objective requires that the maximum mean daily chloride level be no more than 150 mg/l for a minimum number of days each calendar year, varying between 155 to 240 days depending on the water year type. The objective is measured at either Antioch Water Works or Contra Costa Canal Pumping Plant #1 (PP#1). In Section B below, Reclamation and DWR recommend adding an additional compliance station for the 150 Cl and 250 Cl objectives to be located in Old River, at Holland Tract.

Reclamation and DWR agree with the SWRCB staff that the 150 Cl objective provides ancillary protection for other M&I beneficial uses in the absence of more specific objectives. The SWRCB may at some later time determine that some other objective should be adopted in which case the 150 Cl may not be appropriate. In addition, we do not recommend changing the time period of measurement for achieving the objective from a calendar year to a water year. This change was suggested with the expectation that it might reduce

[1] For purposes of this Workshop on Topic 4, U.S. Bureau of Reclamation is representing the Department of Interior.

the water supply impact of complying with the objective. DWR and Reclamation staff have reviewed historical data and determined that this change would not result in any significant difference in availability of water for other beneficial uses and therefore is unnecessary.

Discussion

In 1978 the SWRCB adopted the 150 mg/l Cl objective in its Bay-Delta WQCP to protect industrial uses in the vicinity of Antioch. At that time manufacturers producing salt sensitive paper diverted water directly offshore of Antioch. However, all the principal water users in the vicinity of Antioch have alternate sources of water from the Contra Costa Canal and the SWRCB included both areas to measure the 150 mg/l Cl objective. CCWD supplied higher quality water from the Contra Costa Canal to the paper manufacturers when the industrial process required improved water quality. In the 1990's DWR entered into settlement agreements with these users to compensate them for increased costs of diverting water from the Canal.

Many changes have occurred in the Delta since the 1978 adoption of the 150 Cl objective, including the closure of the paper production industries, increases in required Delta outflow, the commencement of Los Vaqueros Reservoir operations, and commencement of the CALFED Bay Delta Program projects and actions. Thus, the purpose of continuing the 150 Cl objective is ripe for review.

In the 1995 WQCP the SWRCB maintained the 150 Cl objective to provide "ancillary protection" for M&I uses related to drinking water needs. In 1991, the SWRCB reviewed potential objectives to protect source water used in drinking water treatment operations from high levels of source water constituents, such as bromides and organic carbons. Some of these constituents are considered precursors to trihalomethanes and other byproducts of water treatment disinfection processes, and are considered to be carcinogenic. As discussed below in the Section C, the CALFED Bay-Delta Water Quality Program is preparing a proposal regarding how to best implement water quality protection for municipal diversions from the Delta. The California Bay Delta Authority (CBDA) administers the CALFED program and after it has prepared a proposal, it could present the information to the SWRCB for consideration in a future review of the Bay-Delta WQCP, if appropriate. Therefore, DWR and Reclamation believe it is reasonable to maintain the 150 Cl objective for protection of these ancillary purposes until the CBDA develops a proposal for consideration by the SWRCB.

As to the issue of changing the period for measuring the number of days of 150 Cl objective to the water year, October through September, DWR and Reclamation staff reviewed the historical seasonal CVP-SWP compliance with the 150 Cl objective. Based on this review, we found that water used to achieve the required days of the objective was not significantly different during a water

year compared to a calendar year. In other words, we did not find any benefit to changing the WQCP time period for this objective.

Therefore, DWR and Reclamation recommend that the SWRCB continue to include the 150 mg/l Cl objective on Table 1 and continue to apply the time period based on a calendar year. However, as discussed below in Section B, we recommend that an additional compliance location for this objective be established.

B. Chloride Objective Compliance Location

Should the SWRCB amend compliance location C-5 (CHCCC06) in the Water Quality Objectives for Municipal and Industrial Beneficial Uses (Table 1 of the 1995 Plan)? This location is at the entrance to the Contra Costa Canal at Pumping Plant #1. How should the location be modified and what are the scientific and legal arguments in support of and against such a modification?

DWR and Reclamation recommend that the SWRCB amend Table 1 to provide a second way to achieve the 250 and 150 mg/l Chloride Objectives at Pumping Plant #1 (PP#1). The WQCP establishes the 250 Cl objective at PP#1, as well as at four other municipal intakes in the Delta.[2] The 250 Cl objective applies all year and measured chloride is not to exceed the maximum mean daily value of 250 mg/l. This objective is consistent with the Environmental Protection Agency's secondary maximum contaminant level for chloride and protects the public drinking water as to health and taste considerations. The 150 mg/l Cl value is described above in Section A

DWR and Reclamation met with CCWD to discuss developing an alternative to achieving the existing objectives of 250 and 150 Cl at PP#1. The agencies have reached agreement on the basis of an alternative, i.e. using a second compliance location under specified conditions when chlorides measured at PP#1 are not a reliable indicator of CVP/SWP management of water quality in Old River, near Rock Slough. However, some details are not yet resolved, such as specific values to use at the new measurement location. Subject to discussions that take place during the SWRCB Workshop, DWR and Reclamation may request the SWRCB allow the agencies to return to this topic in a later Workshop.

In brief and for the reasons discussed below, DWR and Reclamation propose that a reasonable objective for protection of M&I uses in the Rock

[2] The four other locations in the Delta with the 250 mg/l Chloride objective are: West Canal at the mouth of Clifton Court Forebay; Delta-Mendota Canal at Tracy Pumping Plant; Barker Slough at North Bay Aqueduct Intake; and Cache Slough at City of Vallejo Intake.

Slough area would include a water quality objective at a second compliance point when the 250 mg/l Cl and 150 mg/l Cl objectives at PP#1 are exceeded during specified pumping rates at PP#1. The existing objectives would continue to apply, but if measurements of 250 and 150 Cl at PP#1 are exceeded, then the second compliance location would be used to determine if the basis of the exceedence was local water quality problems and not related to water quality available in Old River. Ancillary to the recommendation to add a second station as part of the objective, Table 4 of the WQCP that describes the Water Quality Compliance and Baseline Monitoring stations would need revision to include the station. Reclamation and DWR have been collecting data from a station in Old River at Holland Tract that could be considered by the SWRCB as appropriate for this objective, depending on the outcome of these Workshops.

DWR and Reclamation believe change to the WQCP is necessary because water quality objectives are to provide reasonable protection of beneficial uses. DWR and Reclamation, when required to implement the objective through their water rights, cannot reasonably achieve this objective under certain conditions and therefore cannot reasonably protect the beneficial uses. Thus, DWR and Reclamation propose amending the objective through use of an additional compliance location in Old River near the mouth of Rock Slough to avoid the unreasonable use and waste of water to meet an objective where other actions can and should be taken to meet that objective. To show support of such actions, the agencies recommend the SWRCB update the WQCP Program of Implementation with respect to CBDA agricultural drainage projects in the Rock Slough and Contra Costal Canal area that will be implemented in the near future and will improve local water quality conditions in the area.

Discussion

In 1998, the Executive Director of the SWRCB sent a letter to DWR and USBR noting the concern of DWR and USBR regarding degradation of water quality in Rock Slough and their suggestion to move the compliance location of the 250 Cl and 150 Cl objective from PP#1 to Old River, an area more controllable by the State Water Project (SWP) and Central Valley Project (CVP) (**Attachment 1**, Letter from Walt Petit to Larry Gage and Lowell Ploss, January 27, 1998). The Executive Director indicated that this issue could be raised at the next review of the Bay-Delta water quality objectives or as an issue during the Bay-Delta water rights hearing. DWR and Reclamation have for many years informed the SWRCB of their concern with the chloride objectives measured at PP#1 because of their responsibility for meeting the objectives as a condition of their water rights.

As noted in the 1998 letter, DWR and Reclamation have found that SWP and CVP operations cannot reasonably control salinity and/or chlorides in Rock Slough. Accordingly, they have had significant difficulty at times in achieving the 250 Cl objective at PP #1. Part of the difficulty occurs because of the physical

structure of Rock Slough, which is essentially a dead-end slough with poor circulation. Although a tide gate is located in approximately the middle of Rock Slough, at Sand Mound Slough, unless PP#1 is operated by CCWD at a rate sufficient to pull water through the slough, tidal circulation is not effective in significantly moving water to clear accumulated poor water quality.

The existing water quality monitoring site for the 250 and 150 chloride objectives is located within the Contra Costa Canal just downstream of PP#1and about 4 miles from the canal intake at one end of Rock Slough (See **Attachments 2 and 3**, Maps showing Delta and Rock Slough). Rock Slough is about 3 miles long and connects at its other end to Old River. Consequently, between the chloride monitoring station at PP#1 and Old River there are about seven miles of canal and slough that are subject to seepage and local drainage that degrade water quality and are out of the control of the Projects. Old River in the vicinity of Holland Tract is a location where the Projects can reasonably control water quality.

The CVP and SWP operations[3] cannot control salinity within Rock Slough under certain conditions related to diversion rates at PP#1. Factors affecting water quality in Rock Slough and the relationship of salinity in Rock Slough, Old River and the changes in pumping rate at PP#1 are discussed below. Reclamation and DWR have prepared graphs of data that support the conclusion that the operations at PP#1 since Los Vaqueros became operational have exacerbated DWR and Reclamation's inability to control water quality in Rock Slough and at PP#1.

- In late 1997, CCWD began diverting water from its then new Los Vaqueros Reservoir Intake Facility on Old River. Since then CCWD has significantly changed its diversion practices and seasonal operation at PP#1. With the addition of CCWD's Old River diversion facility, significant PP#1 diversion rates occur only seasonally and under specific conditions. (DWR and Reclamations consider a significant diversion rate as greater than 70 cfs.) PP #1 is generally used to meet CCWD diversion needs when good water quality in the interior Delta can be put into Los Vaqueros storage. When water quality in the Delta has seasonally degraded, CCWD's operations generally favor the better quality water at the Old River diversion facility. Thus, the CCWD operations used to attain Los Vaqueros water quality goals since 1998 result in PP #1 diversion rates that are much lower than occurred before the Los Vaqueros Project. This change in operations greatly affects water circulation patterns in the Rock Slough vicinity.

[3] CVP and SWP operations that are used to control Delta water quality conditions include reservoir storage releases, changes in Delta pumping, and operating the Delta Cross Channel gates.

Attachment 4, is a graph showing EC at Old River (Bacon Island) compared to EC at PP#1 before and after Los Vaqueros began operating and the change in pumping rate at PP#1. After November 1997, when PP#1 pumping rate is significantly reduced, the EC measurements between Old River and PP#1 diverge. **Attachment 5** shows a graph depicting changes in PP#1 during the period October 1997 through April 1998 when Los Vaqueros intake diverts water and PP#1 diversions are significantly reduced, and chloride levels measured at PP# 1 rise.

- Local drainage facilities and land practices can introduce land based salts, rather than ocean based salts, into Rock Slough and channels draining into Rock Slough. CCWD, through the California Bay Delta Authority (CBDA) CALFED Program, is actively addressing local drainage problems to reduce effects in Rock slough. CBDA is funding the project, which is being implemented in 2005 and will redirect local agricultural drainage away from Rock Slough. **Attachment 6** demonstrates the apparent effect of precipitation on EC values measured at 4 locations in the Rock Slough vicinity, with increased EC measured near the Veal Tract drain during December 2002.

- Local land based salts seep into the unlined Contra Costa Canal upstream of the PP#1 compliance location affecting Chloride measurements at PP#1. CCWD, through CBDA, has proposed a project to reduce seepage into the Canal.

- Rock Slough is essentially a dead-end slough with poor water circulation and mixing characteristics. CVP and SWP operations do not significantly influence the water circulation pattern in the Rock Slough vicinity. Although there is a one-way tidal gate at Sand Mound Slough, circulation through this gate appears to be limited unless PP#1 pumping rate is sufficiently high to pull water through the Slough.

Attachment 7 graphs the difference in Electrical Conductivity (EC) between Old River and PP#1 (the vertical axis) as a function of the pumping rate at PP#1 (the horizontal axis). The graph demonstrates that when the pumping rate at PP#1 is significantly reduced, the "difference" between EC in Old River and P#1 increases. In other words, when PP#1 diversions are significantly low, water quality in Old River does not influence water quality at the PP#1 compliance location.

Proposed Amendment

Reclamation and DWR propose that the SWRCB adopt a secondary compliance location in Table 1 of the WQCP to protect M&I uses in the vicinity of Rock Slough as this would result in an objective that could more reasonably protect these beneficial uses. Also, recognizing that local issues affect water

quality in Rock Slough, DWR and Reclamation recommend that the SWRCB affirm support, in the WQCP Program of Implementation, of the continuing efforts by CBDA to remedy the introduction of land based salts in Rock Slough drainage channels by improving facilities or relocating drainage facilities.

DWR and Reclamation have discussed with CCWD a second way to achieve the 250 and 150 chloride objectives at PP#1. Although some details remain to be resolved, the following proposed amendment to the WQCP would settle the basic disagreement regarding the uncontrollable factors that can cause chloride objectives to increase as measured at PP # 1. The proposed amendment could be inserted as a footnote to the 250 and 150 Cl objectives in Table 1. The objectives at PP#1 would continue to be effective but the second way to achieve compliance when 250 Cl or 150 Cl were exceeded would be to measure compliance at a new compliance location in Old River, near Rock Slough and Holland Tract.[4] The new location would only be used when the pumping rate at PP#1 is less than a 3-day average of 70 cfs.

The proposed amendment could read as follows:

"Footnote 4. If measurement at PP#1 is greater than 250 mg/l Chloride when the pumping rate at PP #1 is less than a 3-day average of 70 cfs, then the 3-day running average electrical conductivity as measured in Old River, near Rock Slough and Holland Tract, on a daily basis must be equal to or less than 1.00 mS/cm, and these conditions must exist on the 3 days prior to the exceedence of 250 mg/l Chloride at PP#1. The measurement in Old River is only used when the pumping rate at PP#1 is less than a 3-day average of 70 cfs.

In the above circumstance, even with a low pumping rate at PP#1, if the value of 1.00 mS/cm in Old River is exceeded, it is likely that ocean salt contributed to the exceedence within Rock Slough. However, if pumping at PP#1 is less than 70 cfs and the measurement at Holland Tract is less than 1.00 mS/cm, a measurement of greater than 250 Cl at PP#1 indicates a local problem most likely caused by lack of circulation in Rock Slough and local drainage. Achieving the objective at PP#1 under the second circumstance is beyond the reasonable control of project operations by DWR and Reclamation.

In addition to the second way to achieve the 250 Cl objective, DWR and Reclamation propose a second way to achieve the 150 Cl objective using the

[4] DWR and Reclamation currently operate a monitoring station near this location. Historically Reclamation and DWR use monitoring at Holland Tract in Old River as a point of operational control to achieve the chloride objectives at PP#1. Also, much of the salinity data used to develop the graphs attached to these comments were collected at this station.

same method of alternate compliance location in Old River measured at Holland Tract. The proposed amendment would read:

> "Footnote 5. If measurement at PP#1 is greater than 150 mg/l Chloride when the pumping rate at PP #1 is less than a 3-day average of 70 cfs, then the 3-day running average electrical conductivity as measured in Old River, near Rock Slough and Holland Tract, on a daily basis must be equal to or less than 0.7 mS/cm, and these conditions must exist on the 3 days prior to the exceedence of 150 mg/l Chloride at PP#1." The measurement in Old River is only used when the pumping rate at PP#1 is less than a 3-day average of 70 cfs.

As explained above, exceedence of 150 mg/l Chloride at PP#1 when pumping is less than 70 cfs and Old River at Holland Tract measures less than 0.7 mS/cm, then an increase of chlorides at PP#1 is a local problem most likely caused by lack of circulation in Rock Slough and local drainage.

The addition of the second location to measure the chloride objectives at PP#1 would provide an equivalent protection of M&I beneficial uses in this area of the Delta as provided by the CVP and SWP prior to operation of the Los Vaqueros Project. DWR and Reclamation intend that the values proposed will provide the same water quality benefits in the area without impacting water supply. Reclamation and DWR determined that 1.0 mS/cm and 0.7 mS/cm (also referred to as electrical conductivity (EC)) in Old River are appropriate values to provide equivalent water quality protection by analyzing historical data prior to 1998.

Attachment 8 shows a regression line through data points of measured chloride at PP#1 compared to EC at Holland Tract in Old River. This line demonstrates that a value of 1.0 mS/cm in Old River is about the same as the 250 mg/l Cl value at PP#1 and that a value of 0.7 mS/cm in Old River is about the same as 150 mg/l Cl at PP#1. Although there is some scatter in the data, the regression line provides a statistical basis for the relationship between mS/cm in Old River and chloride at PP#1. Some of the scatter appears to be due to effects of local drainage in Rock Slough. Some of the data points are above the regression line because it is a line representing averages of the data to establish the best fitting line. If local drainage effects are reduced, the data probably would be closer to the line. In addition, operators of the CVP and SWP would actually be maintaining EC in the Old River at lower levels than required as a buffer to avoid exceeding the objectives, i.e. resulting in an EC value closer to an equivalent level of about 230 Cl instead of 250 Cl. **Attachment 9** shows data that includes measured values after Los Vaqueros operations began. The graph demonstrates how the reduced pumping rates at PP#1 changes the regression line slope, affecting the relationship of EC and Cl.

The addition of a second compliance location for the PP#1 objective would enable DWR and Reclamation to more directly manage the CVP and SWP to achieve the objectives through reservoir release and export management changes. This would eliminate the need of CCWD or Reclamation and DWR to send letters to the SWRCB when local conditions degrade water quality and result in increased chlorides, as has been occurring fairly regularly since CCWD began operating the Los Vaqueros Reservoir. The effect of a second location should not result in changes in Delta water quality conditions but would better describe a water quality objective that provides reasonable protection of the intended beneficial uses. From an operational perspective, revising the objective to include a second location will enable the SWP, CVP and Los Vaqueros Reservoir Projects to be operated more effectively.

However, as mentioned previously, CCWD and DWR and Reclamation have not yet reached agreement on the specific values that would apply at the new compliance location in Old River. Although DWR and Reclamation believe their analysis supports their values proposed above, the agencies are willing to continue discussing the issue with CCWD during the next few weeks to come to resolution. The agencies might then be able to propose a mutually agreeable value to the SWRCB.

C. New Water Quality Objectives for M&I

Should the SWRCB adopt new water quality objectives for the Municipal and Industrial Beneficial Uses (Table 1 of the 1995 Plan) for constituents such as bromides and total organic carbons or other precursors of disinfection by-products? What are the scientific and legal arguments in support of and against the adoption of such objectives?

DWR and Reclamation recommend that the SWRCB not adopt new water quality objectives for M&I beneficial uses in the Delta because the California Bay Delta Authority (CBDA) CALFED Water Quality Program is developing proposals and projects related to drinking water quality in the Delta that the SWRCB should first consider before addressing new objectives.

Discussion

The CALFED ROD Water Quality Program adopts a general target of continuously improving Delta water quality for all uses by developing a goal through achieving either bromide and total organic carbon (TOC) values or an equivalent level of public health protection (ELPH) using a combination of cost effective actions (CALFED ROD p. 65). The CALFED ROD identifies drinking water targets for bromide and total organic carbon with the understanding that these targets could rarely be achieved without substantial changes in the Delta's water conveyance facilities and operations. The California Bay-Delta Public Advisory Committee (BDPAC) Drinking Water Subcommittee and other

stakeholders determined that due to the complex geographical distribution of utilities receiving Delta water, one set of standards would not provide equitable protection for all. Therefore, CBDA developed the following approach:

> "The CALFED Program is committed to achieving continuous improvement in the quality of the waters of the Bay-Delta system with the goal of minimizing ecological, drinking water and other water quality problems. CALFED Agencies' target for providing safe, reliable, and affordable drinking water in a cost-effective way, is to achieve either: (a) average concentrations at Clifton Court Forebay and other southern and central Delta drinking water intakes of 50 ug/L bromide and 3.0 mg/L total organic carbon, **or** (b) an equivalent level of public health protection using a cost-effective combination of alternative source waters, source control and treatment technologies. Work is progressing on all of the Record of Decision commitments with emphasis on source water improvement and treatment technologies."
>
> (From the Drinking Water Quality Program, Multi-Year Program Plan (Years 5 – 8) (July 2004) (Implementing Agencies: State Water Resources Control Board, Regional Water Quality Control Boards, Department of Health Services, United States Environmental Protection Agency))

Because it is infeasible to use outflow in the Delta to achieve the ROD bromide and TOC targets, a reasonable focus to achieve the CALFED goal to improve Delta water quality is through development of the ELPH alternative. CBDA's Drinking Water and Conveyance Programs are evaluating the feasibility of several projects to reduce bromide and carbon concentrations in water diverted from the central and south Delta as part of the ELPH.

DWR and Reclamation support the CBDA approach that is investigating means to achieve the ELPH through projects or facilities as well as advances in treatment plant technology. DWR and Reclamation believe it is appropriate to provide information to the SWRCB on the work being done to develop the ELPH but believe it is premature for the SWRCB to take any action regarding this matter. The CBDA Drinking Water Program is in the process of defining the ELPH strategy and until this culminates as a final proposal, the protection of municipal uses in the area could continue through application of the 150 mg/l Chloride objective. As discussed above in Section A, Reclamation and DWR agree with the SWRCB staff that the 150 mg/l Cl objective at the Contra Costa Canal PP#1 provides ancillary protection of municipal beneficial uses until the ELPH is obtained. Therefore, the SWRCB need not address this issue in the WQCP for purposes of adopting new water quality objectives for M&I uses at this time.

Attachment 1

Cal/EPA

Pete Wilson
Governor

JAN 27 1998

State Water Resources Control Board

Division of Water Rights

Mailing Address:
P.O. Box 2000
Sacramento, CA
95812-2000

901 P Street
Sacramento, CA
95814
(916) 657-0446
FAX (916) 657-1485

Mr. Larry K. Gage
Department of Water Resources
Chief, SWP Operations Control Office
3100 El Camino Ave., Suite 300
Sacramento, CA 95821

Mr. Lowell F. Ploss
U.S. Bureau of Reclamation
Operations Manager
Central Valley Project Operations
3100 El Camino Ave., Suite 300
Sacramento, CA 95821

Dear Messrs. Gage and Ploss:

MUNICIPAL AND WATER QUALITY OBJECTIVE FOR CONTRA COSTA CANAL PUMPING PLANT #1

This letter is in response to your December 3, 1997 memorandum regarding compliance with the municipal and industrial water quality objective established for chlorides at Contra Costa Canal (CCC) Pumping Plant #1. You point out in your letter that chloride concentrations have been steadily rising due to a combination of unfavorable tides, declining Delta inflow, and the shifting of Contra Costa Water District (CCWD) pumping operations to their new Old River intake. You express concern that CCWD has not provided monitoring data from Pumping Plant #1 in a timely manner since mid-November and that the mean maximum daily chloride concentration of 250 mg/l may be exceeded under current operating conditions.

State Water Resources Control Board (SWRCB) staff has been in contact with Mr. Greg Gartrell of CCWD and received a letter from CCWD manager Walter Bishop regarding this matter. The data which they supplied indicate that the objective was exceeded on December 4 and 5 and that concentrations have declined in an irregular fashion since that time. CCWD investigated the problem and found a significant chloride source associated with levee repair work about 100 feet upstream of CCC Pumping Plant #1. CCWD considers the high values to be an anomaly related to the repairs, and not an indication of noncompliance with the objective.

In your memo, you also raise a general concern regarding the chloride objective at CCC Pumping Plant #1. You point out that Rock Slough is a dead end slough susceptible to degradation from local sources. In the past, when CCWD used the Rock Slough intake as the sole point of diversion, the effects of additional sources of chlorides along the slough were minimized. With CCWD temporarily moving their diversion point to Old River, as allowed under their Los Vaqueros water rights, stagnant conditions in Rock Slough could develop which might result in a violation of the standard. You suggest that moving the compliance point to Old River, an area directly controllable by State Water Project/ Central Valley Project operations, would be desirable from the perspective of the projects. You have raised this issue before the SWRCB in past Bay/Delta hearings. This issue could be raised in connection with the SWRCB's next triennial review of Bay/Delta water quality objectives. Alternatively, you could raise the issue of the projects' relative degree of responsibility toward meeting the water quality objectives at the existing location during the upcoming Bay/Delta water right hearing.

Thank you for informing us of your concerns. If you have any questions please call Victoria Whitney at 916 653-2516.

Sincerely,

Original Signed By:

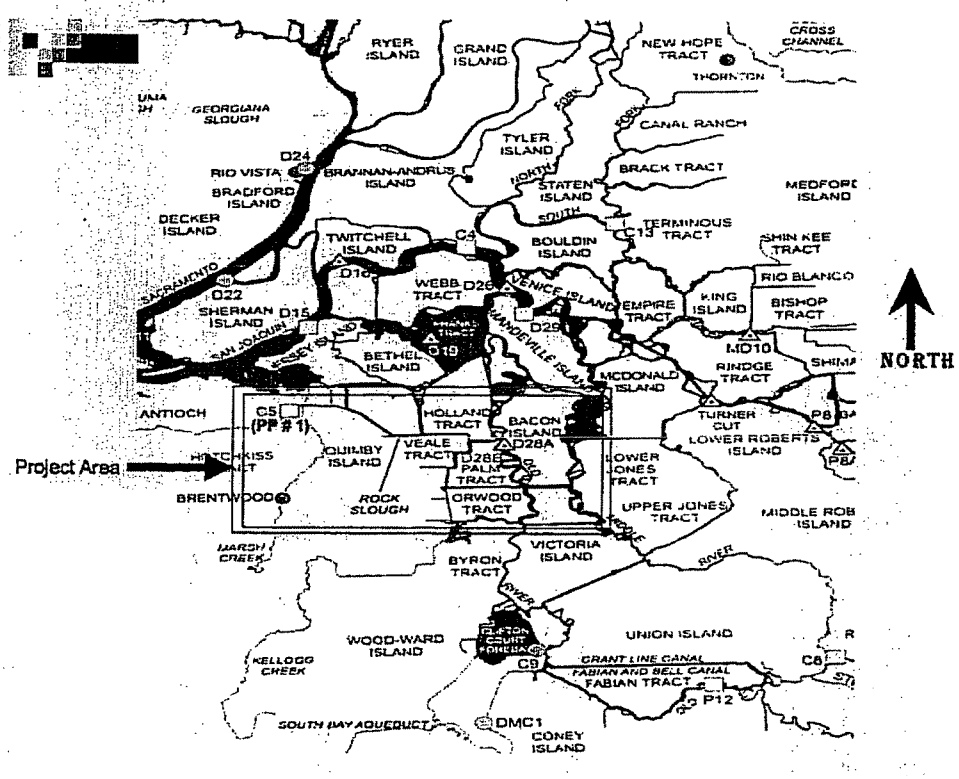
Walt Pettit
Executive Director

cc: Mr. Greg Gartrell
P.O. Box H2O
Concord, CA 94524

Mr. Robert G. Potter
Department of Water Resources
1416 9th Street
Sacramento, CA 95814

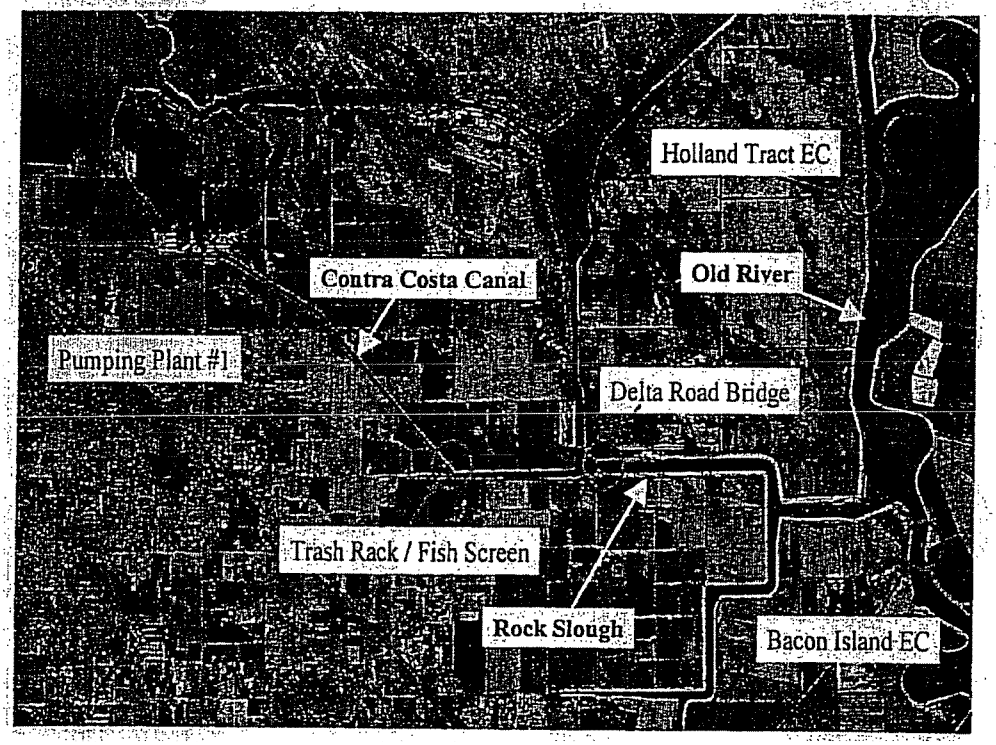
Attachment 2
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Map of Delta and Location of Old River, Rock Slough, Contra Costa Canal, and Monitoring Compliance Location at Station Number C5 at PP#1.



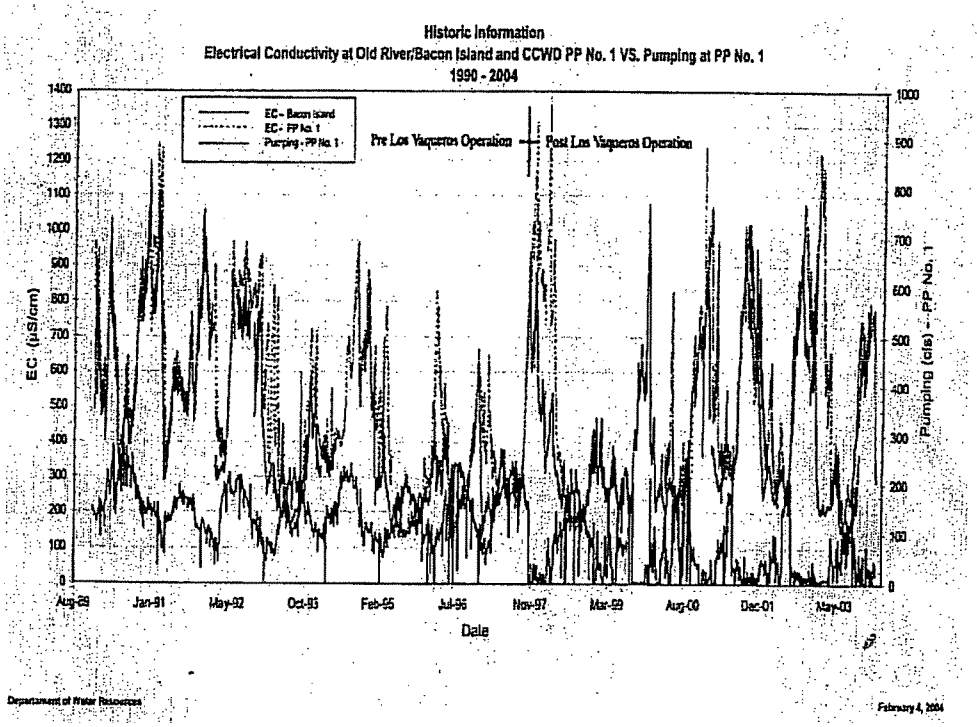
Attachment 3
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Map of Old River, Rock Slough, Contra Costa Canal and facilities.



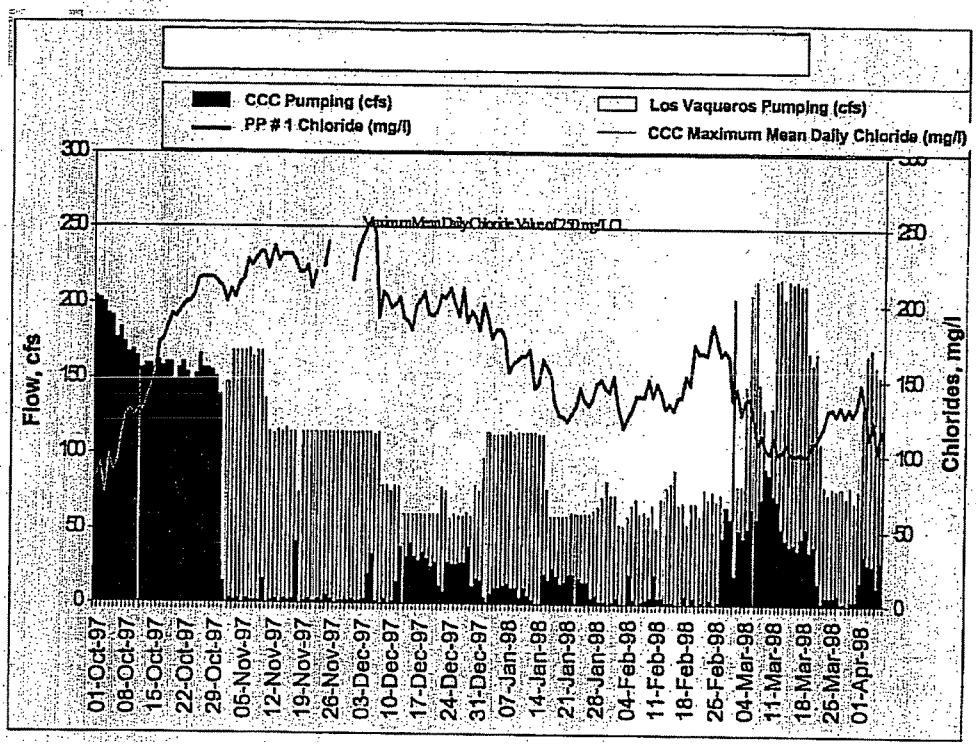
Attachment 4
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Comparison of EC in Old River and at PP#1 before and after Los Vaqueros Reservoir Project began operations and change in pumping rate at PP#1.



Attachment 5
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Comparison of changes when Los Vaqueros Reservoir Project operations began with PP#1 pumping rates and Chloride measurements at PP#1.



Attachment 6
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Difference in EC between Old River and PP#1 compared to the pumping rate at PP#1 from June 1978 to June 2002.

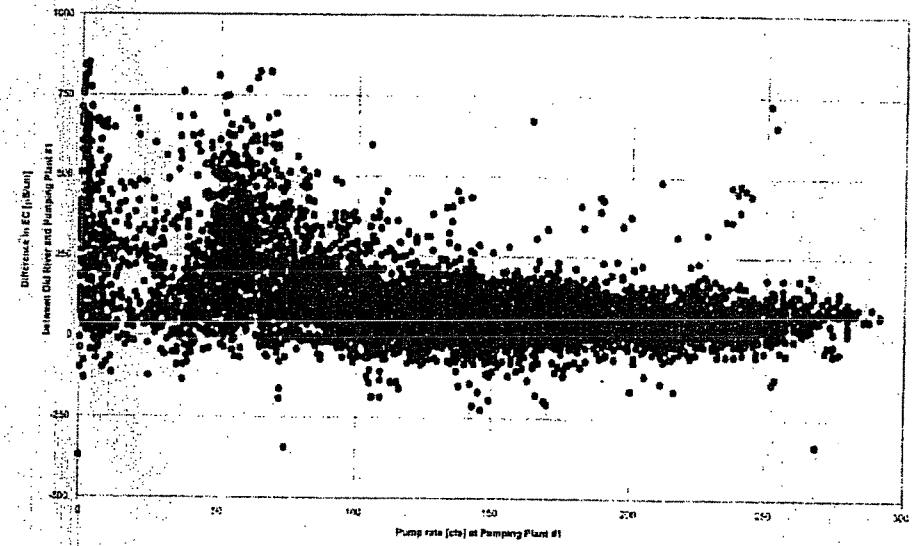
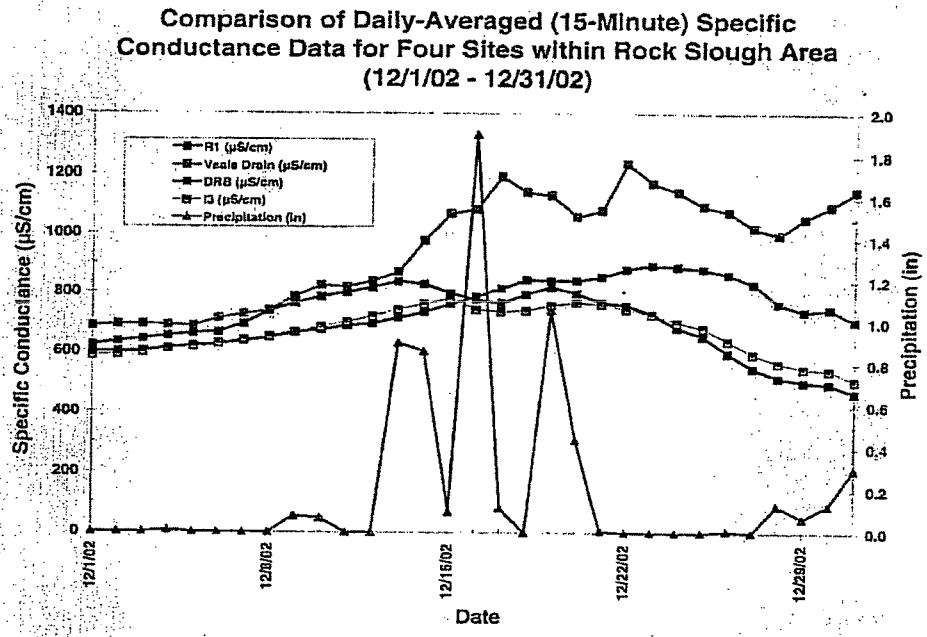


Figure 1.7
DIFFERENCE IN ELECTRICAL CONDUCTIVITY
BETWEEN OLD RIVER AND PP1
AS A FUNCTION OF THE PUMP RATE AT PP1 (5/78 - 6/02)
CALFED ROCK SLOUGH DRAINAGE MANAGEMENT PROJECT

Attachment 7
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Monitoring results of measuring EC in Rock Slough area showing increase in EC near the Veal Tract Drain after increased precipitation in December 2002.



Monitoring Station Locations

R1 = monitoring site in Rock Slough near connection to Old River.

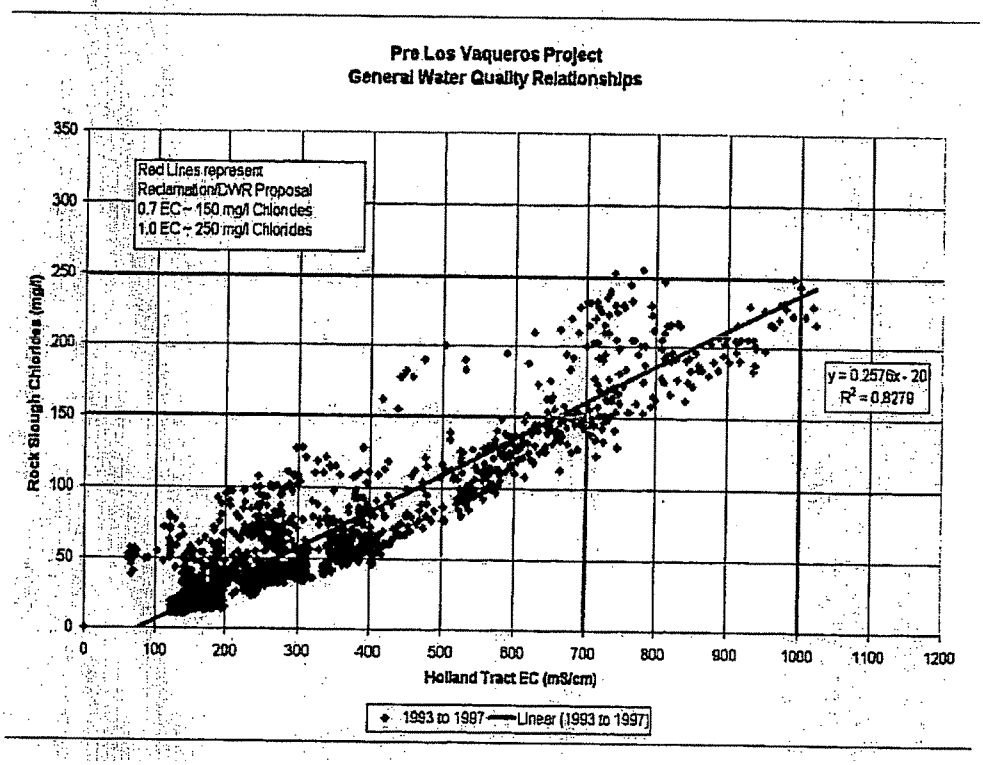
Veale Drain = monitoring site in Rock Slough near Veale drain.

DRB = monitoring site in Rock Slough near Delta Road Bridge.

I3 = monitoring site in Indian Slough near Rock Slough.

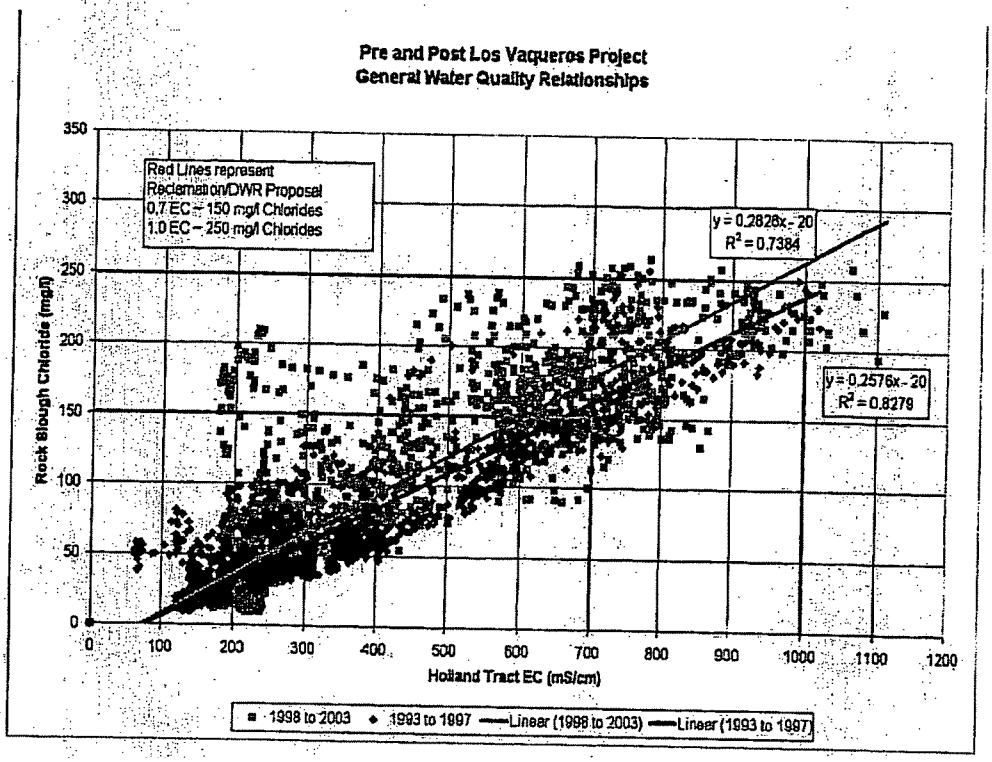
Attachment 8
DWR/Reclamation Comment
SWRCB Workshop Topic 4

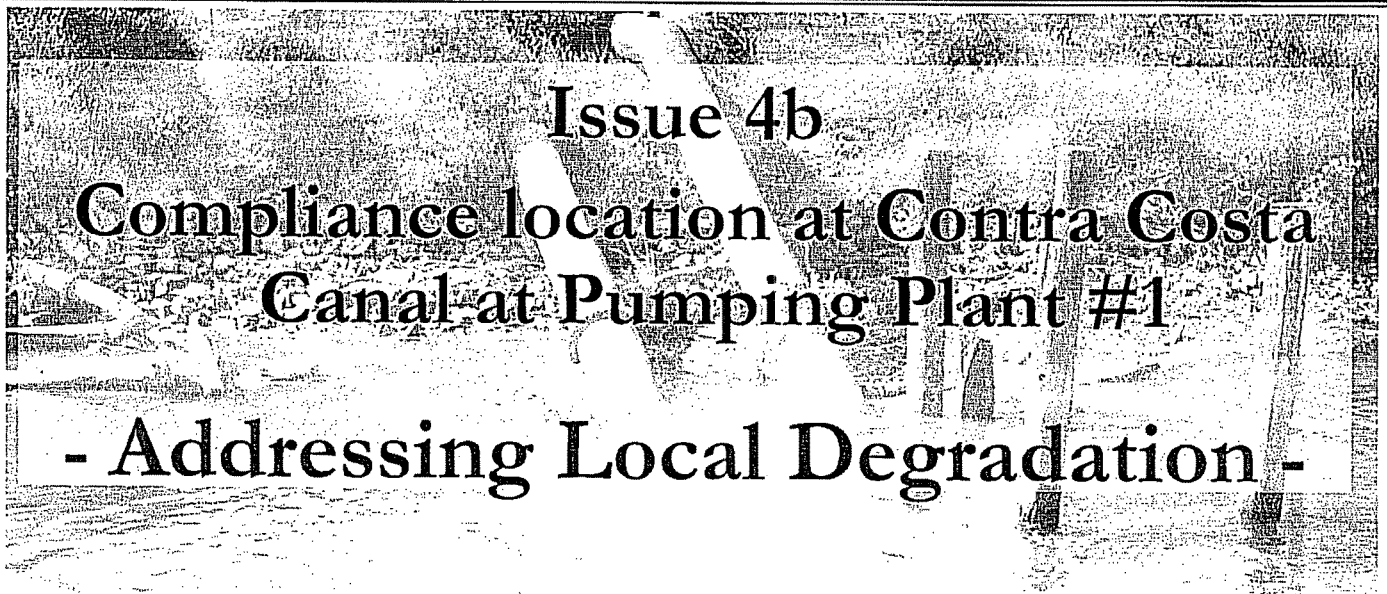
Statistical analysis showing relationship of Old River at Holland Tract EC and PP#1 Chloride values obtained during 1993 to 1997, prior to Los Vaqueros Reservoir Project operations.



Attachment 9
DWR/Reclamation Comment
SWRCB Workshop Topic 4

Statistical analysis showing relationship of Old River at Holland Tract EC and PP#1 Chloride values obtained during 1998 to 2003 after Los Vaqueros Project began operations, and 1993 to 1997 prior to Los Vaqueros Project began operations.



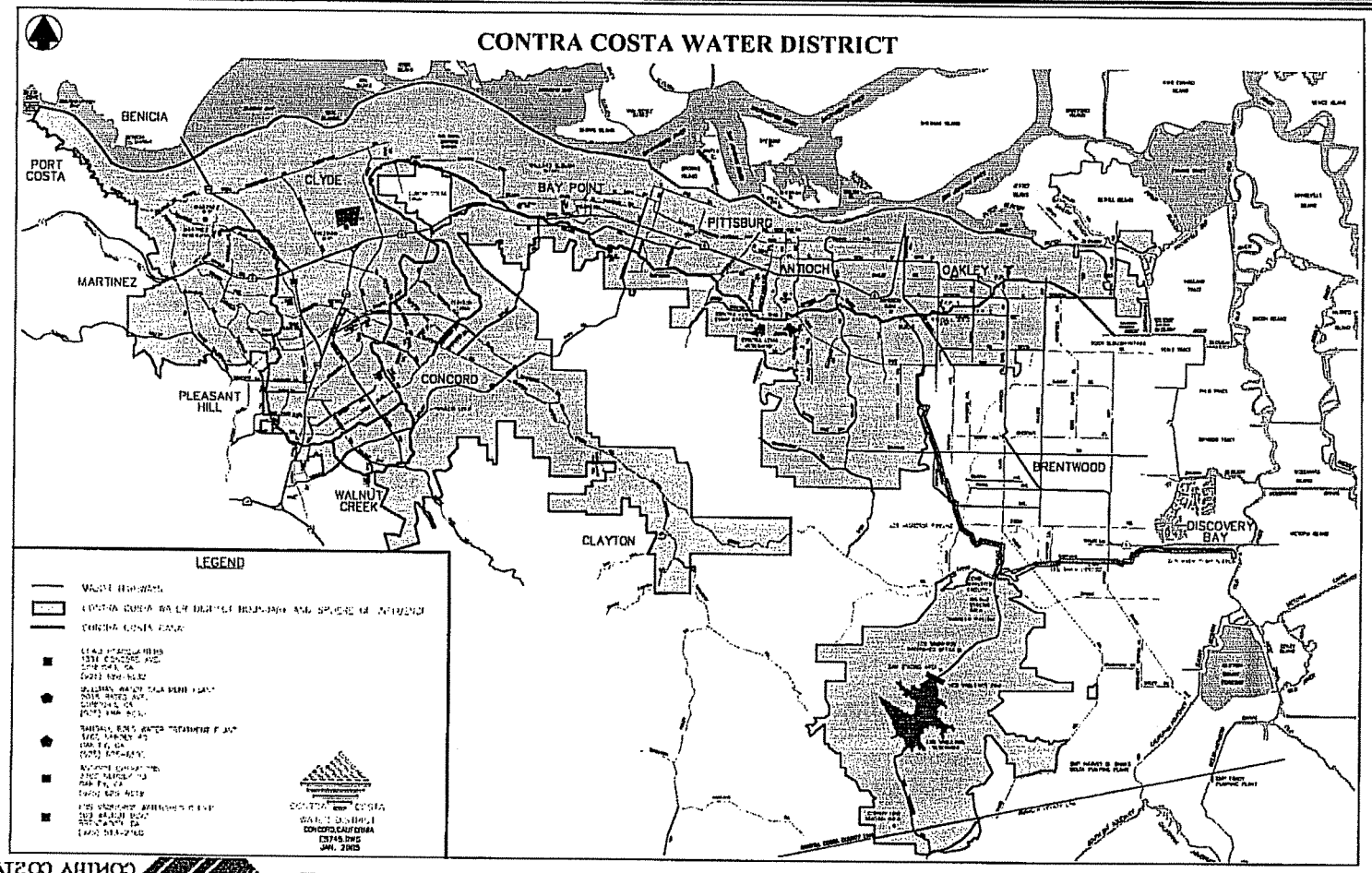


Issue 4b
Compliance location at Contra Costa Canal at Pumping Plant #1
- Addressing Local Degradation -

David A. Briggs

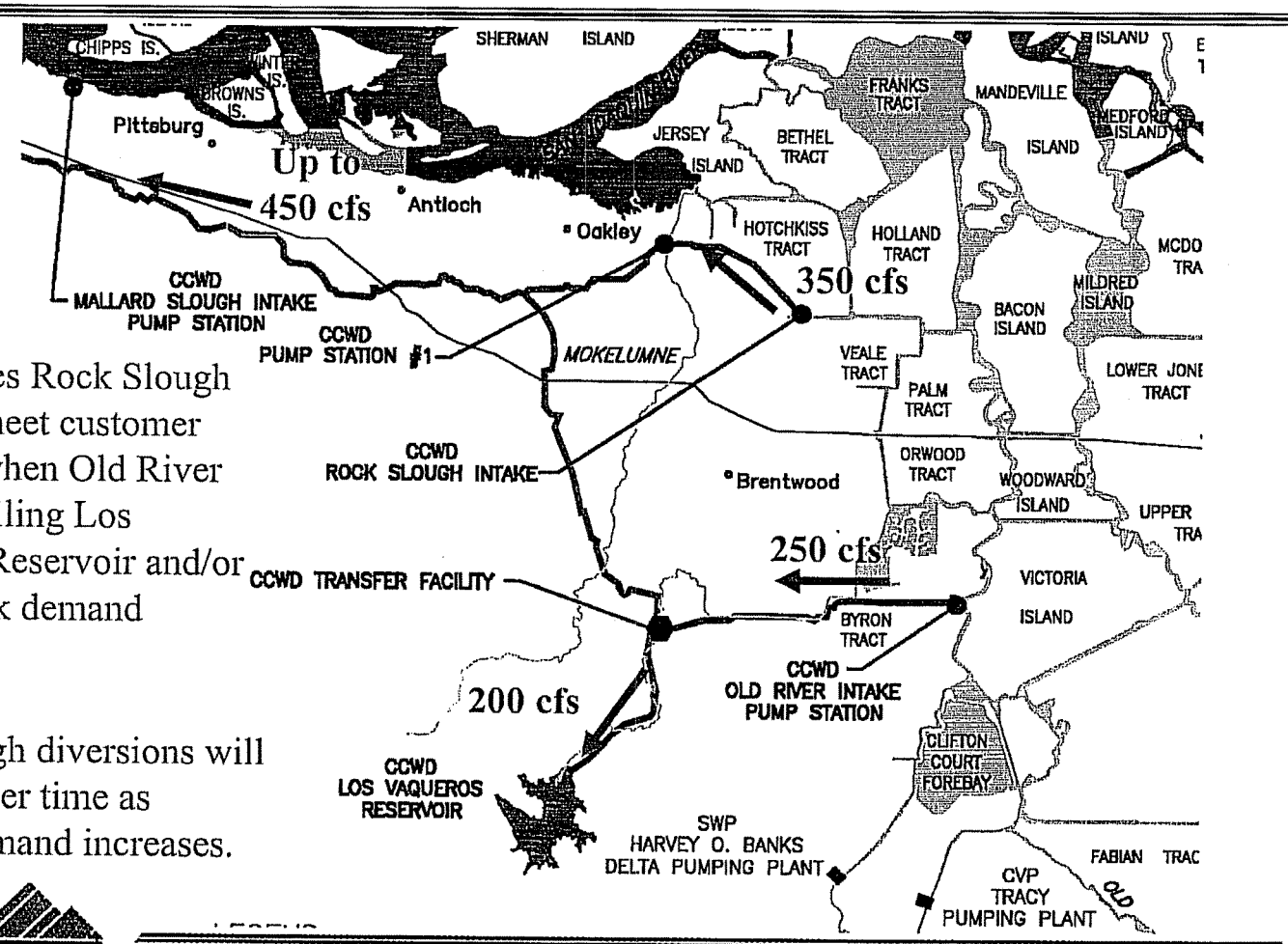
Special Projects Manager
Contra Costa Water District

Contra Costa Water District Service Area



SWRCB Public Workshop for Periodic Review
January 10-12, 2005 Slide 2

Diversions from Rock Slough are critical to CCWD



CCWD uses Rock Slough Intake to meet customer demands when Old River Intake is filling Los Vaqueros Reservoir and/or during peak demand periods.

Rock Slough diversions will increase over time as CCWD demand increases.

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January 10-12, 2005 Slide 3

Two local conditions affect compliance at PP1

1. Diversion rate at PP1 affects local circulation:

In July 1997, CCWD began using the Old River intake which reduced diversions from Rock Slough.

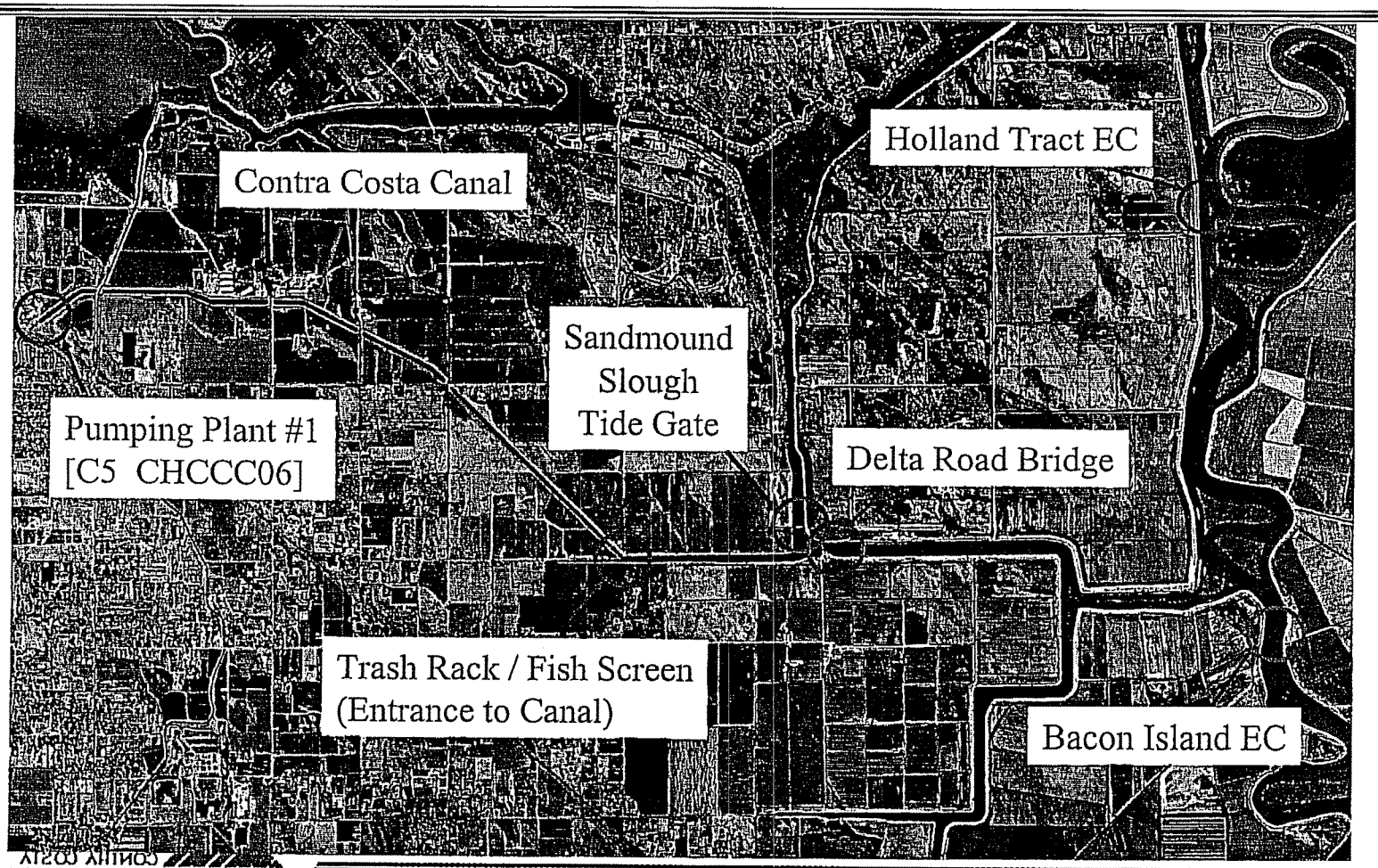
- However, Rock Slough use will increase as CCWD demand increases because diversions from the Old River Pump Station are already maximized.

2. Local degradation increases salinity under some conditions:

Monitoring and field investigations in Rock Slough and Contra Costa Canal confirmed Veale Tract drainage and seepage near PP1 are the two major local sources

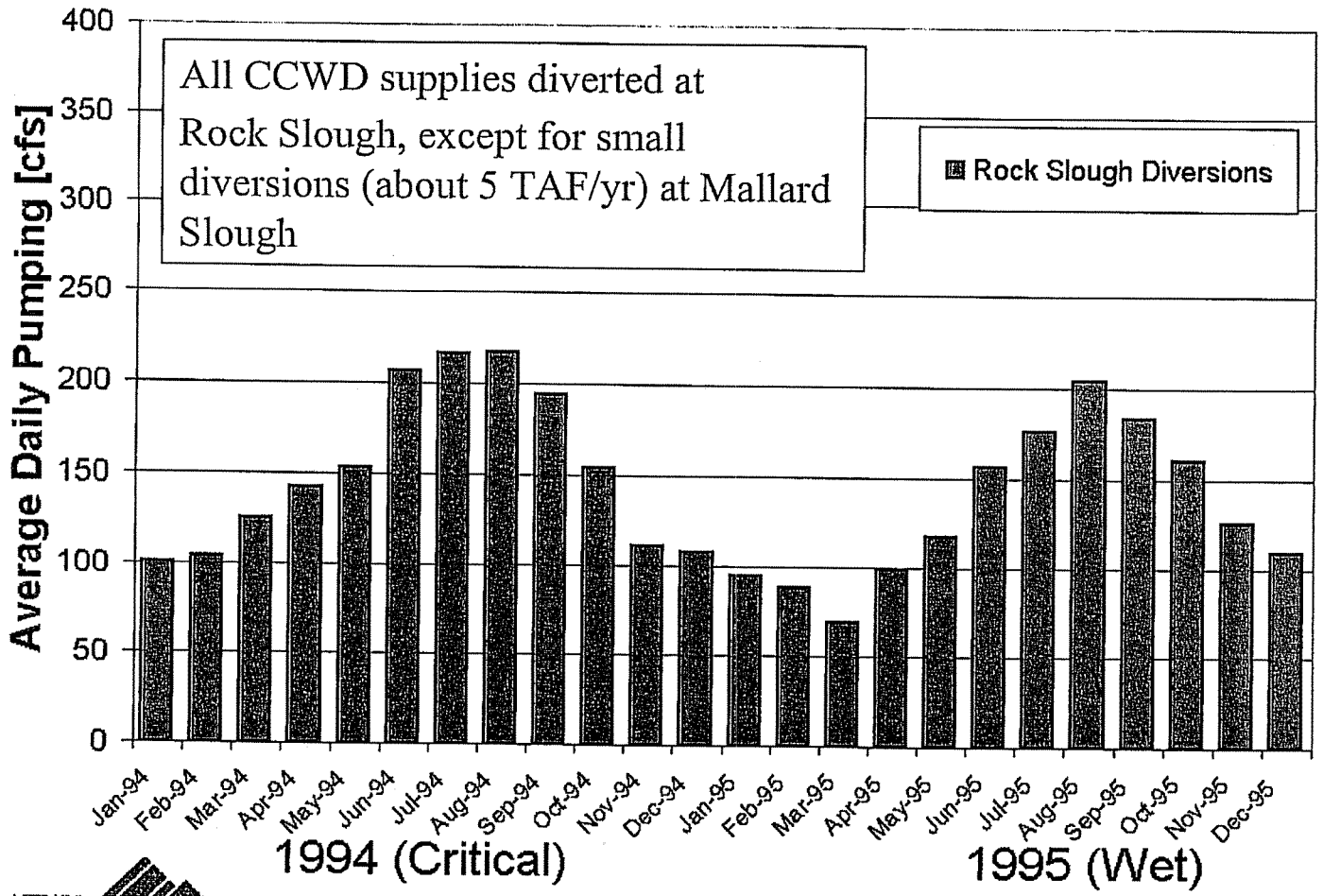
- CALFED projects will address sources by 2007.

Rock Slough and Contra Costa Canal

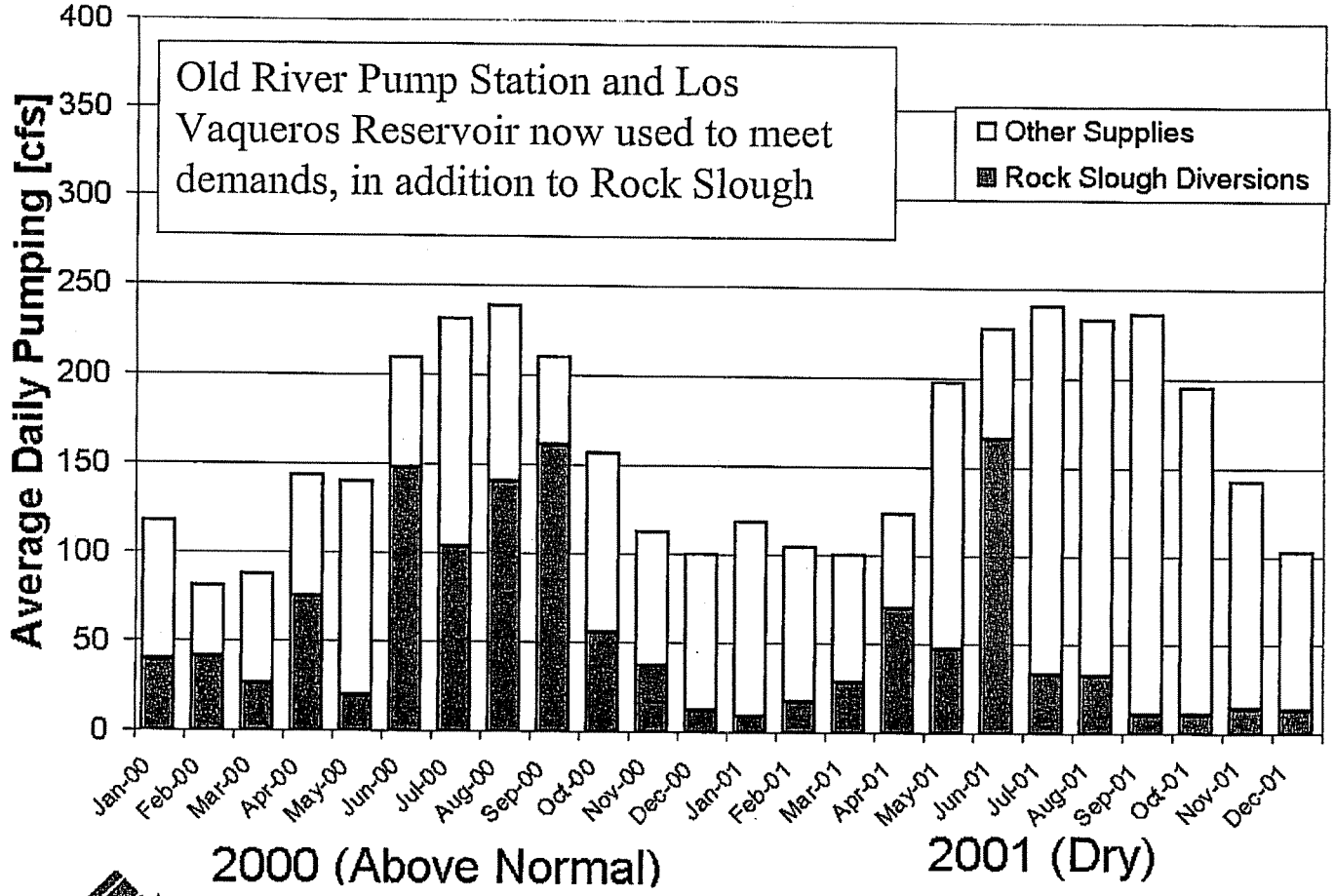


SWRCB Public Workshop for Periodic Review
January 10-12, 2005 Slide 5

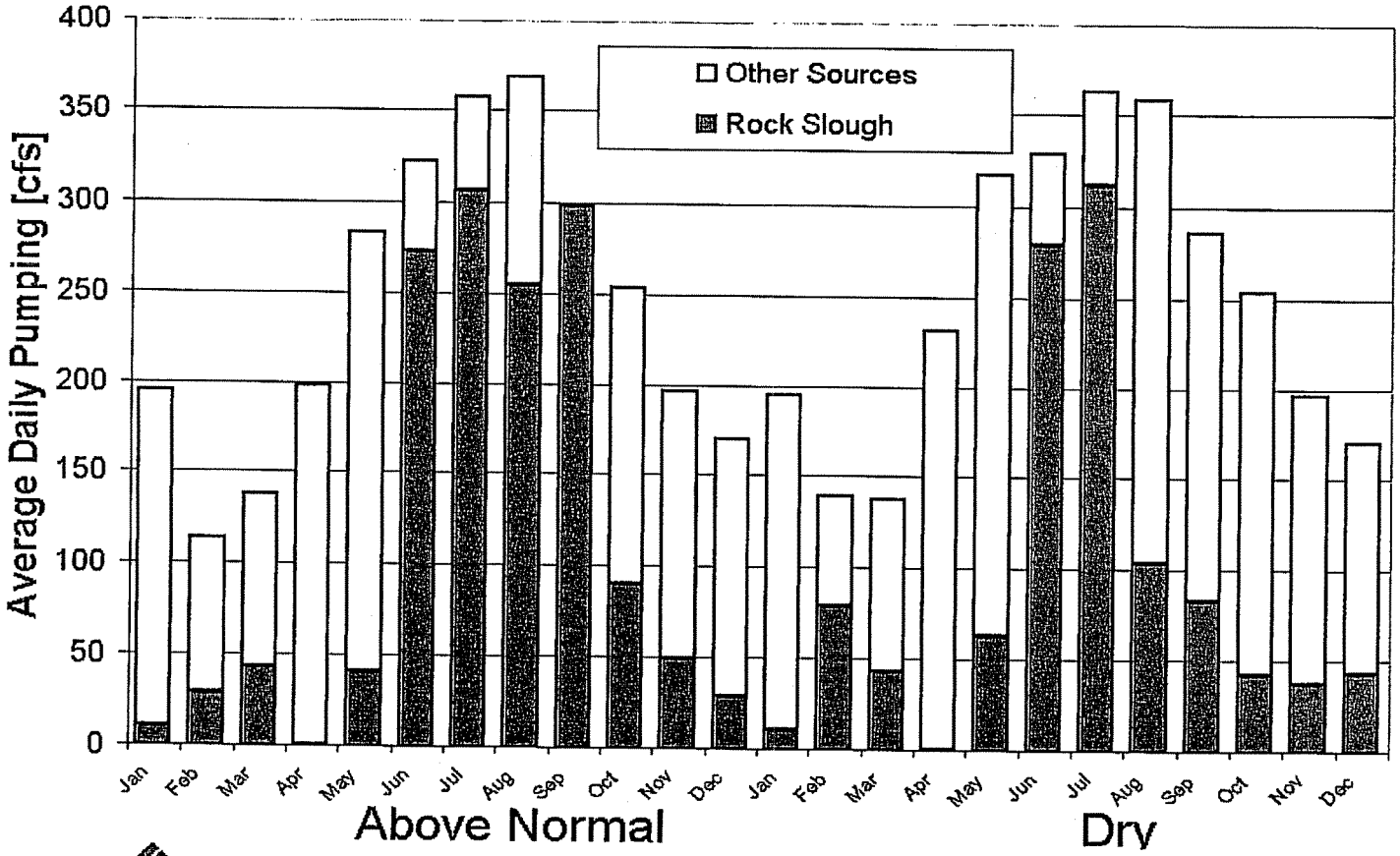
CCWD operations: Prior to 1997



CCWD operations: 1997 to present



Future CCWD Operations: 2020 forecast



CONTRA COSTA WATER DISTRICT

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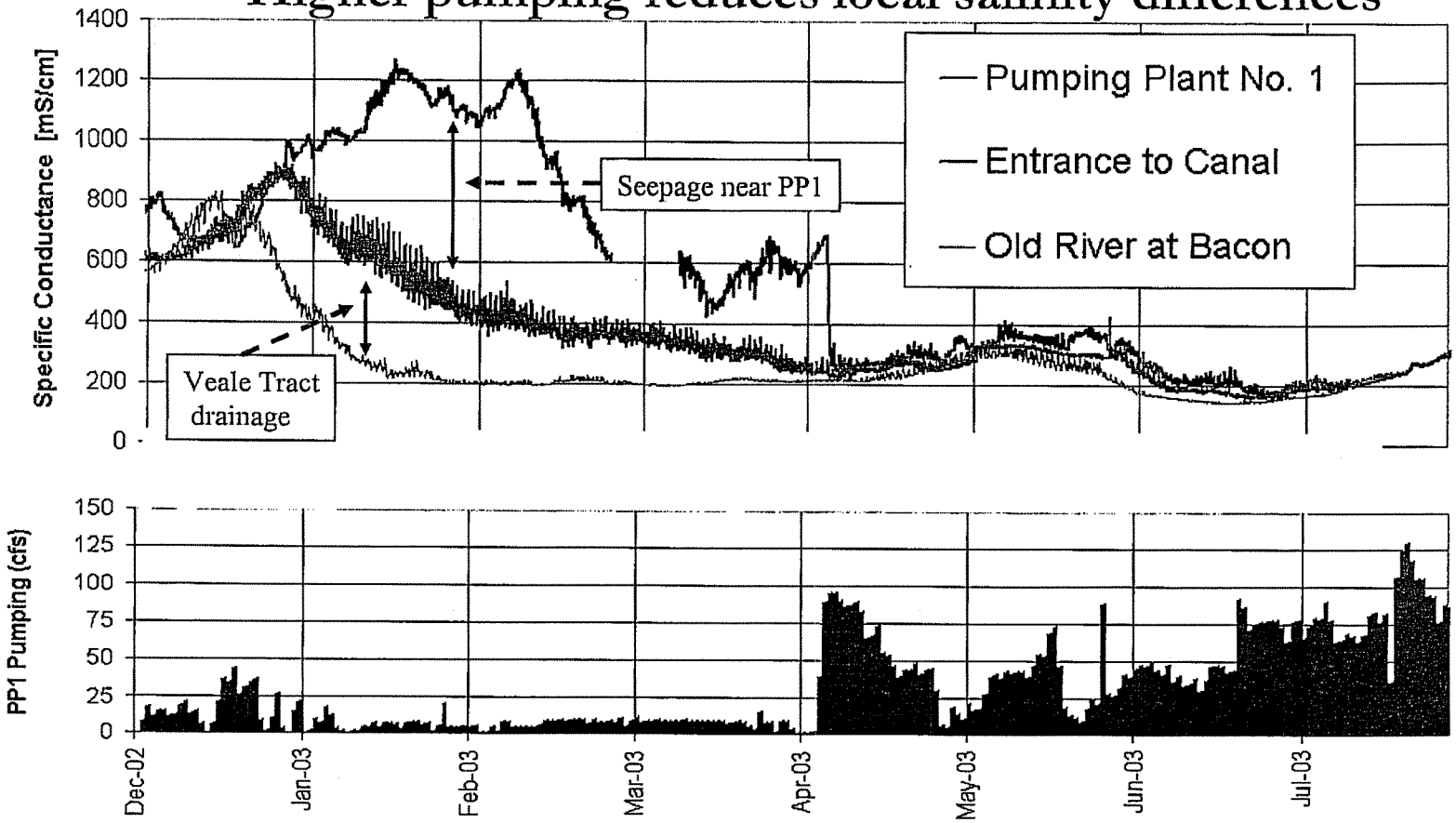
January 10-12, 2005 Slide 8

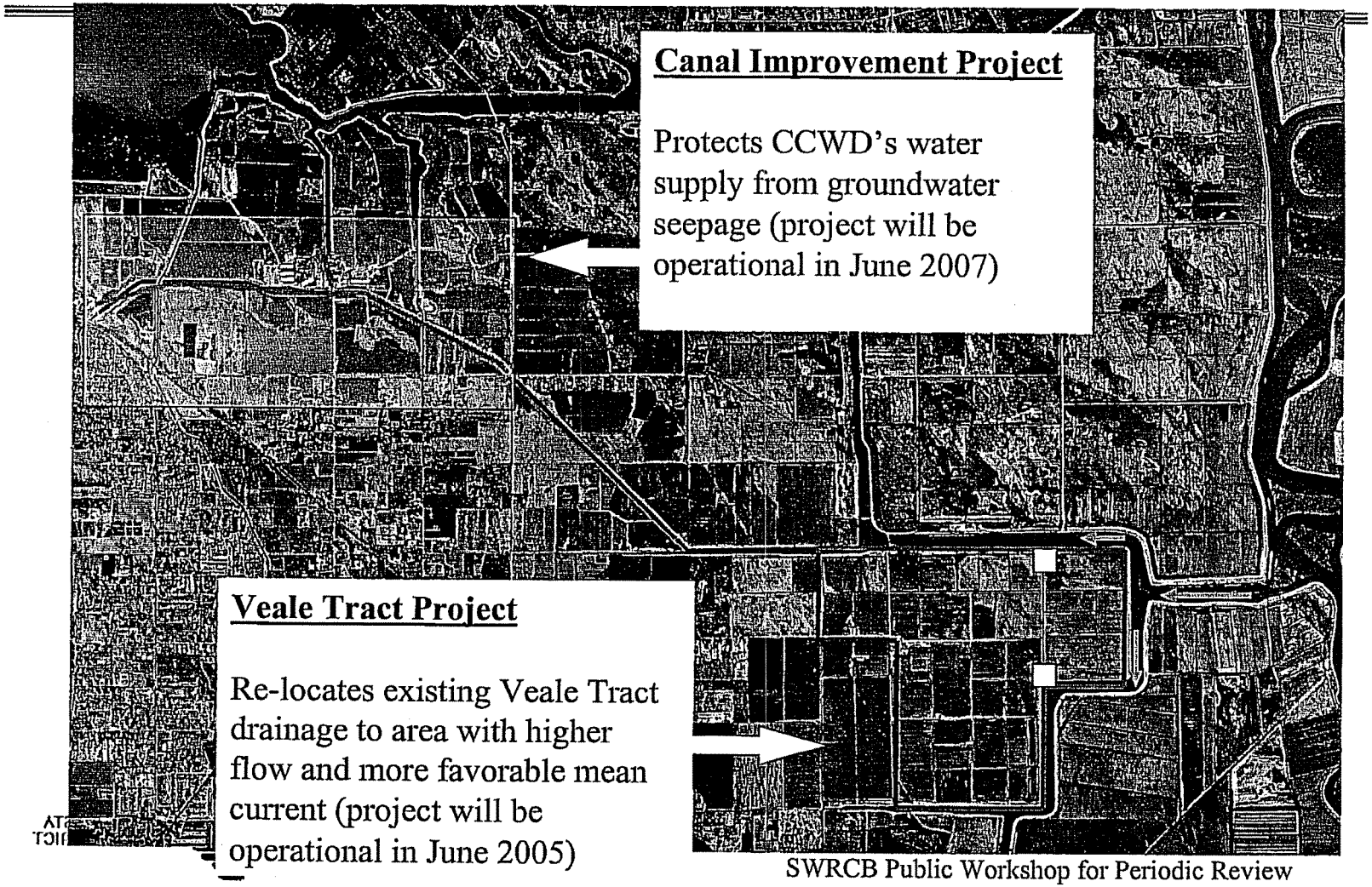
Higher pumping reduces local salinity differences



CONTRA COSTA WATER DISTRICT

SWRCB Public Workshop for Periodic Review
January 10-12, 2005 Slide 9

CALFED Projects provide sustainable solutions



SWRCB Public Workshop for Periodic Review
January 10-12, 2005 Slide 10

Conclusions

Approach suggested by CCWD and DWR is sustainable:

- No re-directed impacts, no change in protection of beneficial uses;
- Reduces conflicts;
- Reliance on alternative location will likely decrease in future because:
  - ❖ CALFED projects will be on-line in 1-3 years, reducing the two major sources of degradation in Rock Slough and Contra Costa Canal;
  - ❖ CCWD's demand and use of Rock Slough will increase in future. Increased circulation in Rock Slough will reduce need to use alternative compliance location.

Letter SLDMA & WWD Response

Diepenbrock Harrison
A Professional Corporation
Jon D. Rubin, Attorney for the San Luis Delta-Mendota Authority and Westlands Water District
August 22, 2006

SLDMA&WWD-1 The Draft EIR/EIS provides sufficient information to allow the public to adequately comment and allow CCWD and Reclamation to make an informed decision on the project. Furthermore, the analyses show that the project would not have significant adverse impacts to water resources, including water quality, water supply, and water levels. Additional information related to specific comments from SLDMA and WWD is provided in the following responses as well.

SLDMA&WWD-2 The Draft EIR/EIS discloses all impacts appropriately and meets requisite CEQA and NEPA requirements. Additional information related to specific comments from SLDMA and WWD is provided in the following responses as well.

SLDMA&WWD-3 The Draft EIR/EIS provides necessary and adequate analysis of all required impact areas under CEQA and NEPA. All impacts are disclosed as required and based on substantial evidence. Additional information addressing the commenters' concerns about water quality and water supply issues is provided in responses to Comments SLDMA&WWD-4 through -6, -8, and -9, as well as in Master Responses 3, "Rock Slough Water Quality Standards and Compliance," and 5, "Cumulative Analysis."

SLDMA&WWD-4 Information on Rock Slough water quality is provided in Master Response 3, "Rock Slough Water Quality Standards and Compliance." Additionally, this comment suggested that statements in the Draft EIR/EIS regarding reduced use of the Rock Slough Intake are inconsistent with statements made by CCWD to SWRCB during the periodic review of the 1995 Bay-Delta Water Quality Control Plan, in which CCWD staff explained that diversions from Rock Slough are anticipated to increase in the future due to increases in CCWD water demand. CCWD's statements and the Draft EIR/EIS are both accurate and consistent. Rock Slough diversions are projected to increase in the future from present levels in response to increasing CCWD demand, but operation of the Alternative Intake Project would reduce this increase. This can be seen in Table 3-2, which provides the anticipated average diversion amounts under each circumstance.

Table 3-2
Annual Average CCWD Rock Slough Diversions With and Without Proposed Action Under Existing and Future Conditions

	Base Case [TAF]	Proposed Action [TAF]
Existing Conditions	23.3	16.6
Future Conditions	37.8	23.9
Change in use of Rock Slough from existing to future conditions	+14.5	+7.3

Source: Operations Modeling for Alternative Intake Project Draft EIR/EIS

As shown in Table 3-2, the Alternative Intake Project would keep Rock Slough use in the future about the same level as it is currently.

These results are consistent with previous statements made by CCWD and Reclamation as part of the periodic review of the 1995 Water Quality Control Plan. CCWD has not stated that reduced pumping at the Rock Slough Intake "likely results in exceedances" of water quality objectives.

The CCWD statement quoted in this comment is truncated in a manner that eliminates relevant information pertaining to the history of exceedances in the past and ignores the fact that CVP and SWP reoperation has not been required due to reduced CCWD diversions at Rock Slough. The entire paragraph of the statement as submitted to SWRCB by CCWD is as follows:

> *During periods of low diversions at Pumping Plant #1, local seepage and drainage into Rock Slough and the Contra Costa Canal intake channel can sometimes degrade water quality between Old River and CCWD Pumping Plant #1. Under such conditions, the ability of the State Water Project (SWP) and Central Valley Project (CVP) to fully control water quality at Pumping Plant #1 is limited. When exceedances of the M&I objective at this location have occurred in the past, CCWD, California Department of Water Resources (DWR) and the U.S. Bureau of Reclamation (Reclamation) have each reported to the Water Board that exceedances of the 250 mg/L M&I objective are not attributable to the actions of the SWP and CVP because water quality in Old River was otherwise sufficient to meet the objective. Without exception, the Water Board has concurred, and has not levied fines or other enforcement actions in response to the M&I exceedances linked to low diversions at Pumping Plant #1. Examples of this*

correspondence are included as Attachment B. (CCWD letter to SWRCB dated February 14, 2005)

This issue regarding the effects of reduced pumping in Rock Slough is discussed in more detail below and in Master Response 3, "Rock Slough Water Quality Standards and Compliance," where it is shown that the Alternative Intake Project would not affect the ability of the CVP and SWP to meet water quality standards.

SLDMA&WWD-5 The comment does not necessarily raise an environmental issue, but a response is provided. CCWD's position has been and remains that Delta projects need to go forward in a balanced way that provides for continuous improvement in Delta drinking water quality. That is, projects that improve water supply or provide ecosystem benefits should go forward, but they must be balanced by and support projects that improve water quality, consistent with the CALFED ROD. This is evidenced by CCWD's support for the Delta Improvements Package (including projects that may degrade water quality but that are balanced by projects that would improve water quality, such as the Alternative Intake Project) and it is consistent with comments CCWD has made on other Delta projects. The criteria used in the Alternative Intake Project Draft EIR/EIS to assess water quality effects are consistent with the criteria CCWD has applied to other projects it has reviewed. The Alternative Intake Project would not have any significant water quality impacts on other Delta users and it would provide significant drinking water quality benefits to CCWD customers.

See also Master Response 5, "Cumulative Analysis."

SLDMA&WWD-6 See Master Response 3, "Rock Slough Water Quality Standards and Compliance."

SLDMA&WWD-7 See response to SLDMA&WWD-4 and Master Response 3, "Rock Slough Water Quality Standards and Compliance," where detailed information is provided on water quality and the ability of the CVP and SWP to meet water quality objectives. The comment states that the Draft EIR/EIS analysis shows that the Alternative Intake Project "will likely result in exceedances of water quality objectives." This is mistaken; the analysis in the Draft EIR/EIS shows that the Alternative Intake Project would not affect the ability of the CVP and SWP to meet water quality objectives and that no changes will be required of the SWP and CVP in order to meet these objectives. There are no significant impacts in this regard, and no mitigation is required.

SLDMA&WWD-8 As explained in the other responses, there would be no impact to the CVP or its contractors from the Alternative Intake Project that would require mitigation. CCWD and Reclamation would like to clarify and/or correct some of the information provided in the comment. CCWD, Reclamation, and DWR began discussions about revising the Rock Slough water quality compliance location during the periodic review of the 1995 Water Quality Control Plan in fall 2004. Discussions continued over the course of several months, but no agreement was reached on the technical aspects of the proposal. Discussions between CCWD, Reclamation, and DWR may resume as part of the periodic review process; however, it appears that such an agreement will not be necessary in light of the water quality improvement projects being implemented by CCWD in Rock Slough. These projects are effectively removing the sources of degradation that are at issue and are addressing the problem directly and in a way that benefits all parties (CCWD, Reclamation, DWR, and the water project contractors).

See also Master Response 3, "Rock Slough Water Quality Standards and Compliance," for a complete discussion of the effects of reduced pumping in Rock Slough on water quality, including the steps that CCWD has taken to eliminate the sources of water quality degradation and this issue.

SLDMA&WWD-9 CCWD and Reclamation carefully evaluated the potential for direct, indirect, and cumulative effects to water supplies of other CVP users as a result of Alternative Intake Project operations and concluded that the Alternative Intake Project would not significantly affect the water supplies of CVP water users, or any other Delta water users. In all but one of the eight critically dry periods, CVP storage actually increased, indicating that the Alternative Intake Project would provide a potential benefit. The analysis shows that the project would not adversely affect water supplies or operations of the CVP and its contractors.

Further, CCWD's practical experience with operating the Los Vaqueros Project has indicated that operational modeling tends to underestimate the storage benefits created during actual operations. This adds further support to the conclusions of the Alternative Intake Project Draft EIR/EIS analysis.

In asserting that the Alternative Intake Project would negatively affect the CVP, the commenters have also failed to establish a link between the modeled changes in storage at Shasta Reservoir and an environmental effect. Fluctuations in storage at Shasta Reservoir or other CVP reservoirs do not translate directly to reduced deliveries

to water users. For example, data highlighted by the commenters show end of September storage; it is unlikely that these small levels would translate into changed water allocations that are made the following spring after winter rain and snowfall are included.

The Alternative Intake Project would use CCWD's existing water supplies, including supply from its CVP contract and supplies under the Los Vaqueros Reservoir and Mallard Slough water rights. The Alternative Intake Project would not substantially change CCWD's average annual Delta diversions, but would slightly shift the timing of some diversions because of differences in Los Vaqueros Reservoir operations.

CCWD and Reclamation used a conservative analysis to determine whether or not these shifts in timing of diversions could result in significant negative impacts on CVP deliveries. The analysis was conservative in several respects, including the assumption that any increased CCWD diversions during balanced conditions were provided exclusively from Shasta Reservoir; in reality, any actual storage changes would likely be spread over several reservoirs (Shasta, Oroville, and San Luis Reservoirs with the portion differing each year depending on operational decisions). Because the changes in reservoir storage associated with the Alternative Intake Project would in reality be spread over several reservoirs, they are less likely to result in CVP operational changes than if all the changes occurred at Shasta Reservoir. By aggregating them into one reservoir, this assumption provided an easy way to discern any potential impacts.

To analyze the shifts in CCWD operations caused by the Alternative Intake Project, CCWD and Reclamation utilized computer simulations combined with Reclamation's experience in operating the CVP and CCWD's experience in operating its facilities. Computer simulation is an important tool in evaluating the potential effects of changes in operations within the overall Delta system. It is not a perfect tool, however, and cannot perfectly represent real world conditions and real world operations. As such, some analysis and interpretation is required to understand how modeled changes translate to actual physical impacts.

The comments correctly note that in the existing case modeling runs for the Proposed Action, there are 41 out of 73 years that show reductions in Shasta Reservoir storage. There are 19 years in which there is no change in storage and 13 years in which there is an increase in Shasta Reservoir storage. However, changes in storage at Shasta Reservoir or other CVP reservoirs do not

translate directly to reduced deliveries to CVP water users. For example, in many of the 73 years, flood control releases are made from Shasta Reservoir in winter to meet maximum storage limitations and minor changes in storage during the preceding summer and fall have no effect on the following year's CVP deliveries. As such, when evaluating the modeling results for the Alternative Intake Project, CCWD and Reclamation focused their evaluation not solely on modeled changes in Shasta Reservoir storage, but on whether those changes would likely affect deliveries to water users.

Effects on the CVP could be most significant over the course of several consecutive dry or critical years. Of the four major dry periods in the modeling simulation, existing conditions simulation results show a decrease in accumulated Shasta Reservoir storage at the end of one of the periods (1924-1926), an increase at the end of one period (1987-1992), and two dry periods where the accumulated end-of-period storage was essentially unchanged. Under future conditions, the Proposed Action shows an increase in accumulated storage at the end-of-each period by an average of 14 TAF. This is not unexpected, because while the Alternative Intake Project would allow CCWD to shift some of its pumping to the fall by providing access to better water quality at its intakes, it would also enable CCWD to maintain more storage in Los Vaqueros Reservoir that it can draw upon during prolonged dry periods, taking less CVP water from the Delta.

After thorough analysis, CCWD and Reclamation determined the modeled changes in Shasta Reservoir storage (both increases and decreases) are of a magnitude that is too small to affect deliveries to other water users.

In citing the amount of evaporation that occurs from Shasta Reservoir each year, CCWD and Reclamation were not attempting to discount the effects of evaporation or of the Alternative Intake Project. Rather, the quantities of evaporation give a sense of the scale of fluctuations in the CVP system – be they in storage, outflow, or contractor demands – with which CVP operators routinely contend.

Summary

The modeling results suggest that the Alternative Intake Project could result in both decreases and increases in Shasta Reservoir storage. However, these changes are very small relative to the total size of the reservoir (10-40 TAF compared to 4,552 TAF), overall CVP deliveries, and model precision. Changes of this magnitude

are not large enough to change CVP operations or contractor allocations and deliveries. This is especially true given the fact that, as explained earlier, these very minor changes would likely be spread to multiple reservoirs and would be undetectable. These changes are well within the operational buffer of flows and storage in which the CVP is operated and are unlikely to translate into any physical impacts on existing or future contract deliveries. Given the modeling results and CCWD's and Reclamation's analysis of operational considerations, the impacts of the Alternative Intake Project on CVP contractors would be less than significant.

Additional Analysis

In the analysis for the Draft EIR/EIS, annual changes in Shasta Reservoir storage were summed cumulatively for each year during periods when Shasta Reservoir was below flood control release levels, based on the assumption that small storage changes could accumulate and carry over from year to year until the reservoir is spilled for flood control. The cumulative changes were then examined in the years when Shasta Reservoir storage was at or below 1.9 MAF at the end of September in the base case. CCWD and Reclamation identified the 1.9 MAF storage level at the end of September as an important indicator level for reservoir storage. This is because storage at this time of year is related to the CVP's ability to maintain Sacramento River water temperature for winter-run Chinook salmon, as specified by one of the biological opinions that affects CVP operations. Evaluating changes in storage at these storage levels assessed how project alternatives could affect water supply during periods when Shasta Reservoir and CVP supplies are most vulnerable to changes in the system.

The comments question the use of 1.9 MAF in the project analysis. CCWD and Reclamation used the 1.9 MAF as an indicator of when changes on the order of magnitude of those caused by the Alternative Intake Project would be most likely to affect project deliveries. If the analysis is repeated looking at *any* changes to storage in Shasta Reservoir, the conclusions would be the same. CCWD and Reclamation believe these changes are too small to affect CVP operations or deliveries. This analysis is summarized in Table 3-3.

Table 3-3
Comparison of Simulated Changes in Shasta Reservoir End-of-Year Storages*

Type of Storage Change	Existing Conditions Alternatives 1 & 2	Existing Conditions Alternative 3	Future Conditions Alternatives 1 , 2, & 3
No change	19 (0 TAF)	18 (0 TAF)	18 (0 TAF)
Reduction	41 (-13 TAF)	40 (-13 TAF)	41 (-12 TAF)
Increase	13 (+12 TAF)	15 (+11 TAF)	14 (+11 TAF)
Overall	73(-5 TAF)	73(-5 TAF)	73(-5 TAF)

* Number of years out of 73 simulation years and average magnitude of change

SLDMA&WWD-10 Reclamation and CCWD have provided adequate analysis of the commenter's concerns in the Draft EIR/EIS, as well as providing the additional information in response to SLDMA&WWD-1 through -10, above.

MWD

MWD
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

June 26, 2006

Ms. Erika Kegel
Bureau of Reclamation
2800 Cottage Way, MP-730
Sacramento, CA 95825

Dear Ms. Kegel:

Draft Environmental Impact Statement/Report for the Alternative Intake Project (SCH #2005012101)

The Metropolitan Water District of Southern California (Metropolitan) has received a copy of the Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) for the Alternative Intake Project (AIP). The AIP proposes construction and operation of a new drinking water intake for Contra Costa Water District (CCWD) in the central Delta and several alternatives. The basic project purpose is to protect and improve the quality of water delivered to CCWD's untreated- and treated-water customers. Key objectives of the AIP purpose are as follows: 1) Improve delivered water quality, especially during drought periods; 2) Protect and improve health and/or aesthetic benefits to consumers; 3) Improve operational flexibility; and 4) Protect delivered water quality during emergencies. The proposed project includes a new, 250 cubic foot per second (cfs) screened water intake and pump station located along the lower third of Victoria Canal on Victoria Island in the central Delta where water quality is typically better than at CCWD's existing intakes. A buried pipeline would extend 12,000-14,000 feet from the new intake across Victoria Island and beneath Old River and tie into CCWD's existing Old River conveyance system on Byron Tract. The proposed project would involve adding a new point of diversion to certain existing water rights held by CCWD and by Reclamation.

Metropolitan is a cooperative of 26 cities and water agencies charged with providing a reliable supply of high quality drinking water to 18 million people in six counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies, and helps its members to develop increased water conservation, recycling, storage and other water-management programs. Metropolitan depends on the Sacramento-San Joaquin Delta for its water supply via the State Water Project (SWP), and it is directly and substantially affected by source water.

Metropolitan is providing comment on this Draft EIS/EIR as a potentially affected public agency. Comments are organized under five headings.

AIP Would Transfer Salt to Downstream Users

The AIP would enable CCWD to select between alternative water sources and leave the saltier water for downstream users. However, the SWP *(including Metropolitan)* and the Central Valley Project

MWD-1

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(CVP) are downstream much of the time. When CCWD withdraws superior quality water upstream, it results in significant water quality impacts to downstream users.

In Impact 4.2-c, CCWD asserts, "Modeling results show that water quality changes caused by the Proposed Action would be too small to adversely affect Delta diversions or other beneficial uses. Therefore, this indirect impact would be less than significant." Metropolitan disagrees with CCWD's less than significant determination based on Metropolitan's analysis, using a 71-year-long Fisher Delta Model, which shows that as currently proposed, the AIP would remove salt from CCWD's water supply but would add 7,500 tons of salt per year to Metropolitan's water supply. Greater amounts of salt in the water interfere with water recycling, groundwater recharge, and the ability to comply with wastewater discharge permits; cause industrial users to incur extra treatment costs for cooling towers, boilers, and manufacturing processes; cause laundry detergents to work less effectively; cause plumbing fixtures and home appliances to wear out faster; and cause drinking water to have an undesirable taste, resulting in increased buying of bottled water or home treatment devices. In addition, this added salt costs Metropolitan ratepayers $3.3 million per year. (Reference: Metropolitan and US Bureau of Reclamation, Salinity Management Study, June 1999.) The EIS/EIR must evaluate the full environmental impacts of transferring salt from one user to another and propose appropriate mitigation to minimize those impacts. As an example, CCWD could schedule AIP operations to minimize impacts to Metropolitan.

MWD-1 Cont'd

MWD-2

AIP Operations Would Negatively Impact SWP & CVP Project Operations

In Impact 4.2-b, CCWD asserts, "The modeling analysis shows that there would be no significant changes in water quality at Jersey Point, Rock Slough, and other key Delta stations that would result in the violation of water quality standards or require significant changes to the CVP/SWP operations to avoid water quality violations at those stations. Therefore, this direct impact would be less than significant." With the AIP, CCWD proposes less pumping from its Rock Slough intake. Less pumping would reduce water circulation in Rock Slough, and result in more stagnation and poorer water quality at this water quality compliance station, making it more difficult for the SWP and CVP to meet water quality objectives including D-1641. CCWD must address impacts on the SWP and CVP operations in the AIP EIS/EIR and provide appropriate mitigation, such as lending its support to removing or moving the compliance station from Rock Slough.

MWD-3

AIP Analysis is Segmented

The Draft EIS/EIR improperly segments, or "piecemeals" the environmental analysis. The rule against segmentation is designed to ensure that an agency thoroughly considers the environmental impacts of the entire project before granting its approval, so that environmental considerations are not submerged by segmenting a large project into smaller incremental projects, with fewer negative impacts.

MWD-4

The Draft EIS/EIR violates the rule against segmentation by limiting the environmental analysis to AIP export pumping of 320 cfs, and by failing to evaluate further reasonably foreseeable increases up to 1,750 cfs, which is the pumping capacity identified in Los Vaqueros Expansion Investigation (Table

ES-2). The Draft EIS/EIR segments the AIP into pieces, by analyzing only the 320 cfs diversion, and by not evaluating the impacts of the ultimate increase to 1,750 cfs. Because the Draft EIS/EIR analyzes only the first phase of increased pumping at the AIP, and not the whole of the action, it does not fully analyze the environmental impacts of the entire project.

MWD-4 Cont'd

Cumulative Impacts Are Not Adequately Addressed

The AIP EIR/EIS asserts on page 4.2-52 the following: "Based upon the available information in the Planning Report and studies completed to date, it does not appear that the Los Vaqueros Reservoir Expansion Project and the Proposed Action would result in significant cumulative effects on Delta water supplies, quality, or levels." Metropolitan disagrees with this statement. Only after CCWD defines the combined operation of the AIP and Los Vaqueros Expansion Project will it be possible to technically determine their impact on the SWP and CVP operations. The AIP EIS/EIR needs to adequately address this issue in the impacts analysis.

MWD-5

Mitigation Measures Are Available To Reduce Downstream Impacts

The AIP should only proceed as part of a balanced Delta Improvements Package (DIP) that also improves drinking water quality. Balanced implementation of water supply, water quality, ecosystem, and levee improvements is the cornerstone of the CALFED effort. The AIP will improve water quality for CCWD at the expense of water quality for others, including Metropolitan. The DIP provides a mechanism to ensure that the AIP goes forward as part of a package that provides necessary water quality improvements. Since CCWD participates in CALFED and supports the DIP and the concepts behind it, CCWD should propose the AIP only as a part of the complete DIP.

MWD-6

We appreciate the opportunity to provide input to your planning process and we look forward to receiving the Final EIS/EIR on this project. If we can be of further assistance, please contact me at (213) 217-6242.

Very truly yours,

for Laura J. Simonek
Manager, Environmental Planning Team

LIM/lim
(Public Folders/EPU/Letters/19-JUN-06A.doc –Erika Kegel)

Letter MWD Response	Metropolitan Water District of Southern California Laura J. Simonek, Manager June 26, 2006

MWD-1 See Master Response 1, "Delta Water Quality Analysis."

MWD-2 See Master Response 1, "Delta Water Quality Analysis."

MWD-3 See Master Response 3, "Rock Slough Water Quality Standards and Compliance."

MWD-4 See Master Response 4, "Los Vaqueros Reservoir Expansion Project Analysis."

MWD-5 See Master Response 4, "Los Vaqueros Reservoir Expansion Project Analysis."

MWD-6 See Master Response 6, "Project Relationship to CALFED Goals, Delta Improvements Package, and Future Delta Water Quality."