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February 6, 2006

VIA ELECTRONIC FILING

Oregon Public Utility Commission
Attn: Filing Center
550 Capitol Street, N.E., #215
P.O. Box 2148
Salem, Oregon 97308-2148

RE: In the Matter of the Request of Pacific Power & Light's (dba PacifiCorp) Request for a General Rate Increase in the Company's Oregon Annual Revenues
Docket No. UE 170

Dear Filing Center:

Enclosed please find an original and (5) copies of the **Rebuttal Testimony of Marc Van Camp on Behalf of the Klamath Water Users Association**, and the related Exhibits, in Docket No. UE 170.

Paper copies will also be served on all parties on the OPUC's current Service List.

Thank you for your assistance.

Respectfully submitted,

Richard Sorey FOR
Edward A. Finklea

EAF/nh
cc: Current Service List

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

In the Matter of	)	
PACIFIC POWER & LIGHT	)	
(dba PacifiCorp)	)	**UE 170**
Request for a General Rate Increase in the	)	
Company's Oregon Annual Revenues	)	

REBUTTAL TESTIMONY OF

MARC VAN CAMP

ON BEHALF OF THE

KLAMATH WATER USERS ASSOCATION

KLAMATH RIVER BASIN RATES

February 6, 2006

BEFORE THE

PUBLIC UTILITY COMMISSION OF OREGON

Docket No. UE 170

Rebuttal Testimony of Marc E. Van Camp

On behalf of the Klamath Water Users Association

Klamath River Basin Rates

Q. Mr. Van Camp, have you previously submitted testimony in this proceeding?

A. Yes, I prepared direct testimony on behalf of Klamath Water Users Association which was filed with the Commission on January 17, 2006.

Q. Does that testimony accurately describe your background, education, training, and experience?

A. Yes.

Q. Have you read the Direct Testimony of Mark H. Smith filed on behalf of PacifiCorp?

A. Yes.

Q. From the perspective of a civil engineer, what is your overall assessment of that testimony?

A. In my opinion, the testimony is general and qualitative, making it difficult to evaluate. I would be in a better position to evaluate the testimony as provided if there were supporting data, analysis, or more specific information included with it. I also believe that the testimony is sometimes unclear as to when it is discussing the Klamath Irrigation Project versus the area outside the Klamath Irrigation Project (also known as the "Off Project" lands).

Q. On page 7, lines 9-11 of his direct testimony, Mr. Smith states that water for the irrigation project is diverted from the Klamath River upstream of Link River Dam. Do you agree?

A. No. The A Canal would be considered upstream of Link River Dam because it diverts from Upper Klamath Lake. The other major diversion facilities for the Klamath Irrigation Project are located downstream of Link River Dam. I believe Mr. Smith probably meant to say that the diversions occur upstream of Keno Dam.

Q. On page 8 of his testimony, lines 3 through 5, Mr. Smith states that to his knowledge "water diverted to and from the Klamath River is not comprehensively measured, nor is it strictly accounted for." Do you agree with this statement?

A. Mr. Smith is describing only specifically what is within his knowledge, and to that extent I cannot speak to his statement. However, the diversion of water for the Klamath Irrigation Project is measured and the measured volumes are readily available. I do not know how Mr. Smith intends the use of the phrase "strictly accounted for". Most diversions for the Klamath Irrigation Project are measured and reported. The major diversions of water from the Klamath River system for the Klamath Irrigation Project are the A Canal, Station 48 and Number 1 Drain, North Canal and Ady Canal. Diversions from these locations and others (such as Miller Hill Pumping Plant) are measured and those measurements are readily available from Reclamation and districts that operate the facilities. I make use of these data routinely. There are also internal measurements of flow at various locations within the system which are not points of diversion from the Klamath River itself (such as Anderson-Rose Dam/J Canal and other facilities). In my opinion, approximately ten to fifteen percent of the diversion from the Klamath River

system for lands in the Klamath Irrigation Project is not measured. This is all from relatively small diversions. In my direct testimony, I noted that not all the diversion is measured. As I state above, the vast majority is.

The Straits Drain is the major source of return flow to the Klamath River from the Klamath Irrigation Project. That flow is measured, reported, and the data are readily available. Other sources of return flow from irrigated lands of the Klamath Irrigation Project to the river are very minor by comparison.

Q. On page 8 of his testimony, in lines 6-22, Mr. Smith discusses the subject of inflow variability to and from the irrigation project. Do you have any response to that testimony?

A. Hydrologic variability is an issue that all water resource projects must address. In the Klamath River system, variability can be controlled or dampened by structures or operations. Link River Dam and Keno Dam both can achieve this purpose to varying degrees. I also understand there to be a certain amount of operable storage in PacifiCorp's reservoirs associated with its generation facilities.

Mr. Smith's discussion of variability of flows associated with Klamath Irrigation Project operations does not provide any supporting data that are useful to determine the degree to which any Klamath Irrigation Project-induced variability may cause difficulties or lost generation. Also, it does not appear the testimony is referring to anything new in regard to operation of the Klamath Irrigation Project itself.

In regard to the statement that there are large inflow fluctuations introduced by the Klamath Irrigation Project, there is no basis to evaluate that statement, without information on the magnitude, duration, or frequency of any fluctuations. There is more

specific information in the testimony stating that "withdrawals [from the Lake Ewauna reach of the Klamath River above Keno Dam] can reach approximately 500-750 cfs during the peak irrigation season." This statement by itself does not suggest or establish that there is significant short-term variability caused by the Klamath Irrigation Project which affects generation capabilities. The testimony also states that "inflows can reach as high as approximately 3500 cfs." From the context, I assume this means inflows to Lake Ewauna. Inflows to Lake Ewauna can consist of water bypassed at Link River Dam or released from Upper Klamath Lake storage, inflow from the Lost River Diversion Channel, or inflows from Straits Drain. Mr. Smith's testimony suggests that this inflow can reach as high as 3500 cubic feet per second (cfs) during the peak irrigation season. If that is the intended meaning of the statement, 3500 cfs would be an extreme and atypical value. It does not, by itself, point to any particular conclusion related to any fluctuation or rate of fluctuation of flow.

Q. On page 9 of his testimony, in lines 10-12, Mr. Smith states that the most significant return or enhanced flows typically occur at a time when the hydroelectric project is experiencing surplus flow in the Klamath River resulting in water spilled past generation facilities. Do you have any response to that statement?

A. Yes. In my direct testimony, I noted that a complete evaluation of flow benefits to PacifiCorp's power generation would include consideration of whether the flow is usable. This concept seems to underlie Mr. Smith's statement. However, Mr. Smith's statement is general and there are no data furnished to evaluate its accuracy.

I have independently examined data to allow a more objective evaluation, which is discussed below. I conducted the evaluation in reference to the J.C. Boyle facility, which

is the first generation facility downstream of Keno. According to PacifiCorp's FERC relicensing application, the flow capacity and licensed rate of the J.C. Boyle Powerhouse is 2500 cfs. Other relicensing application materials show higher values. Exhibit 308 to this rebuttal testimony are plots of various flow data for each of the years 1997-2004. The line in blue shows the 2500 cfs capacity of J.C. Boyle Powerhouse. The green line shows inflow from Straits Drain to the Klamath River. This data is available from Reclamation and is measured at the F and FF Pumping Plants. The red line shows the flows below the J.C. Boyle Diversion Dam. This data is from the U.S. Geological Survey water supply papers, Gage Number 11510700. Based on these graphs, when there is spill at J.C. Boyle (i.e. flows in excess of generation capacity), the spill predominantly occurs in winter or early spring, and does not occur in all years. For example, in 2001-2004 spill occurred very infrequently and not at all in 2001, and only on one day in 2004;

Q. Mr. Smith testified, particularly on page 5, line 25 through line 6 on page 6 of his testimony that PacifiCorp's operational flexibility at Link River Dam has been reduced and "the option to use water for hydroelectric production in high electricity demand months or to store water in low demand months is not consistently available to PacifiCorp." Do you have any response to this testimony?

A. Yes. I have previously addressed this issue to some degree in my direct testimony, which states on page 15:

"[M]y approach to calculating benefit is not affected by who operates the dam or the criteria for operation. It simply calculates consequences of operations on the quantity and timing of flow at Keno. Any effects of regulatory constraints on dam operations are a

separate matter from whether there are, in fact, benefits that result from the operation of Link River Dam, whoever may operate it and whatever constraints may apply."

Beyond this, Mr. Smith's testimony does not provide any data or analysis to allow any meaningful conclusion as to the consequence of any loss of flexibility at Link River Dam due to regulatory constraints. I understand that he generally is referring to a reduced ability to shape flows in order to generate power when most desired. I reviewed the shape and volume of Keno flows during water years before 1997 (which is the year PacifiCorp identifies as limits on flexibility occurring) to 1998 through 2000. To ensure a fair basis for comparison, I compared years when inflows to Upper Klamath Lake were similar both in volume and monthly distribution. These post 1997 years were used as the data necessary for comparison, particularly as to Upper Klamath Lake inflow, were readily available. Exhibit 309 compares the shape and volume of flow at Keno in 1998 to the shape and volume of flow at Keno in 1971, 1975, and 1983. Similarly, Exhibit 310 compares 1999 to 1954, 1971, and 1975; and Exhibit 311 compares 2000 to 1959, 1966, and 1976. Based on my review of Exhibit 309, for water year 1998, it suggests a shift of flow pattern with relatively higher flows during the spring and relatively lower fall flows than the similar years, but a similar pattern in the summers. From Exhibit 311, water year 2000 suggests a similar shift in flow pattern at Keno compared to the similar years. Exhibit 310 for 1999 does not suggest a clear shift in the flow pattern at Keno when compared to similar years. Any identified shift in any year could be due to factors such as short-term hydrologic variability not reflected in the exhibits.

Whether or not any shift in pattern of flow at Keno for 1998 and 2000 supports Mr. Smith's testimony is not clear to me. From this limited set of data, together with the

information contained in my Exhibit 308, I am not able to verify Mr. Smith's statements. In many years, independent of when the water was released past Keno, it would have been available to generate electricity at J.C. Boyle Powerhouse. Also, as my direct testimony quoted above indicates, the existence of regulatory constraints is not determinative of whether there are in fact benefits from the operation of Upper Klamath Lake storage.

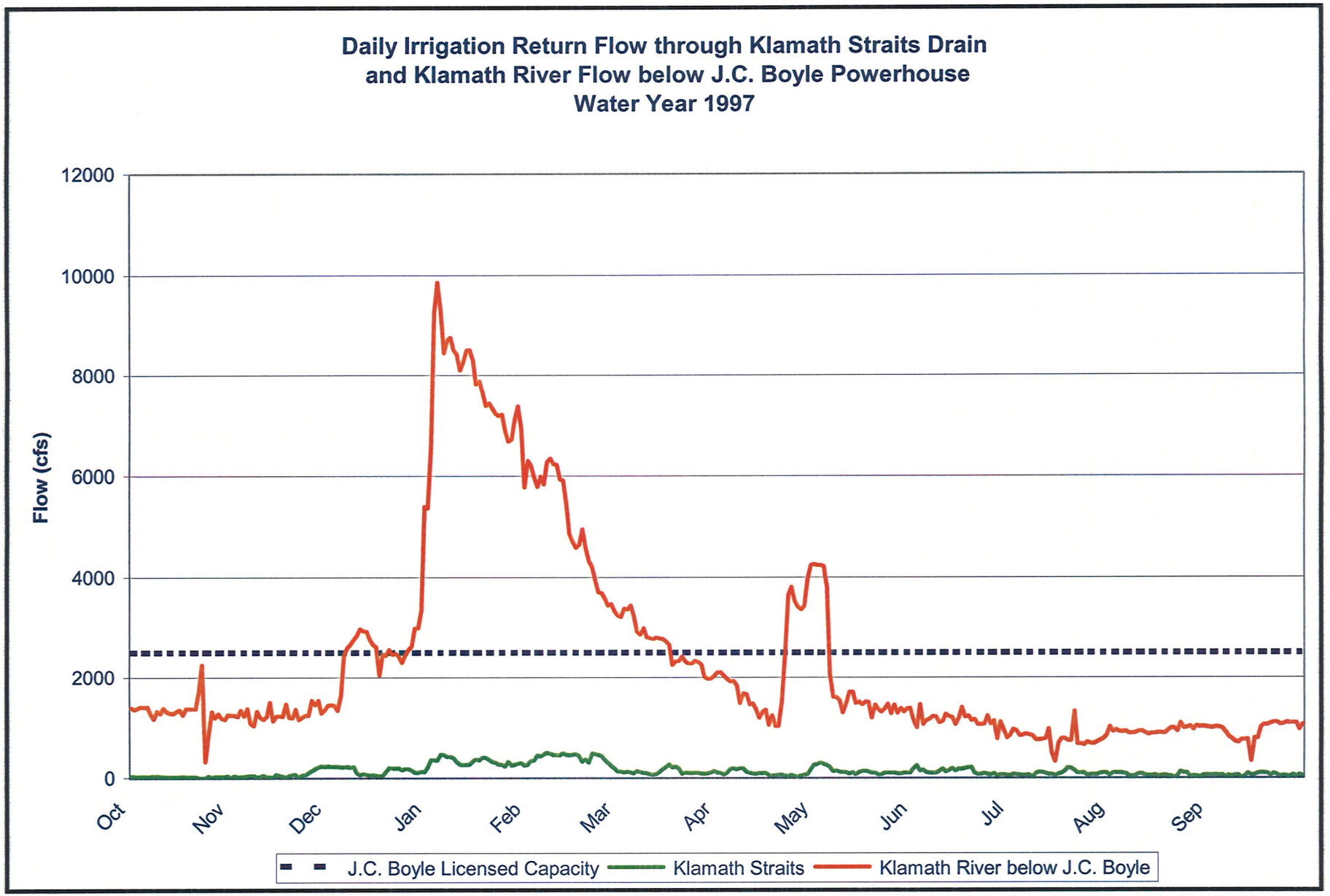
Q. On page 7 of his testimony, in lines 7-8, Mr. Smith states: "we would need to assume that any such incremental flow is not offset by reduced flow in the River as a result of increased diversion[.]" Do you understand this testimony or have any response?

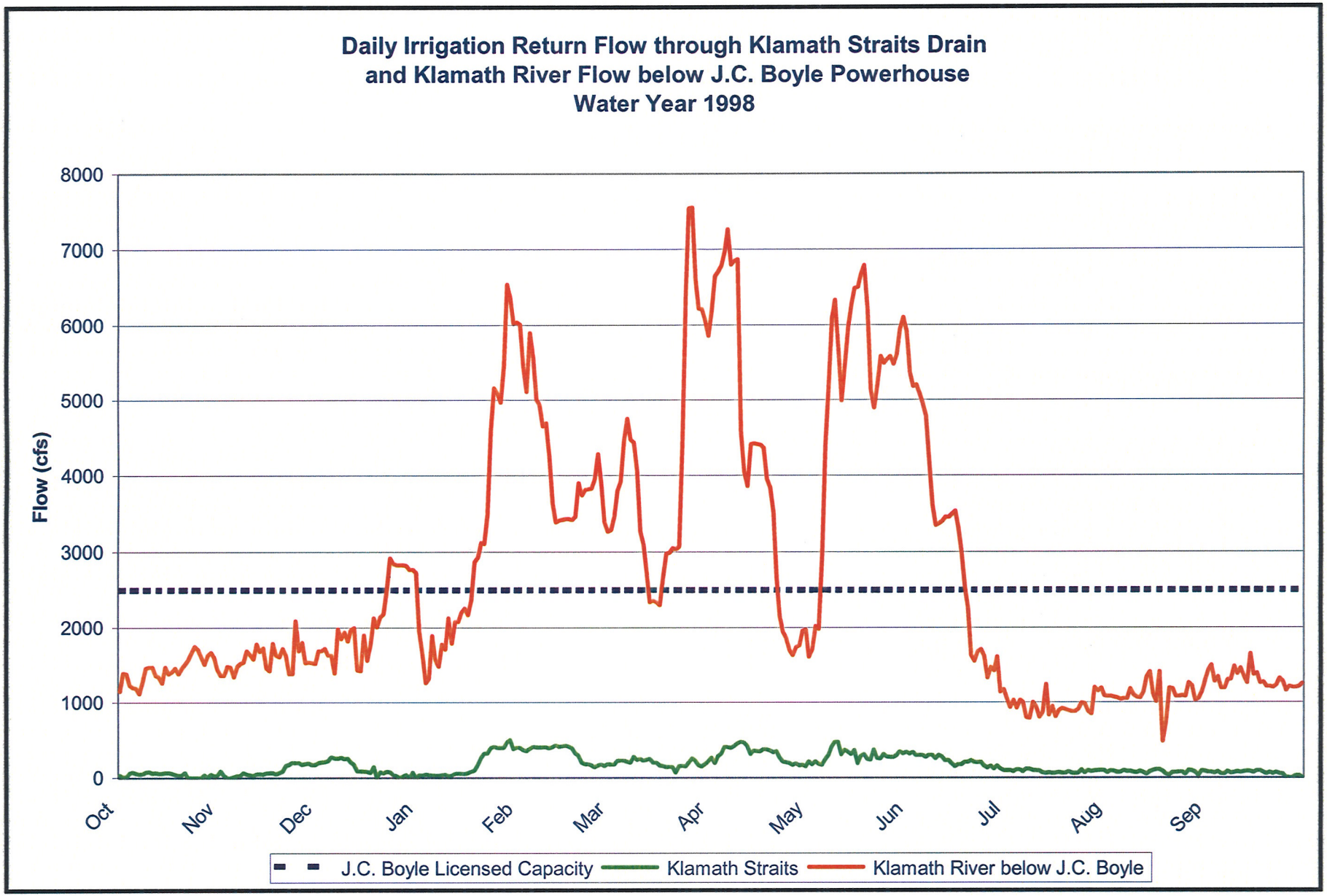
A. Mr. Smith makes this statement in the context of discussing return flow from off-project areas. I know of no reason that variability or differences in the amount of the inflow from that area to Upper Klamath Lake would alter irrigation demand in the Klamath Irrigation Project.

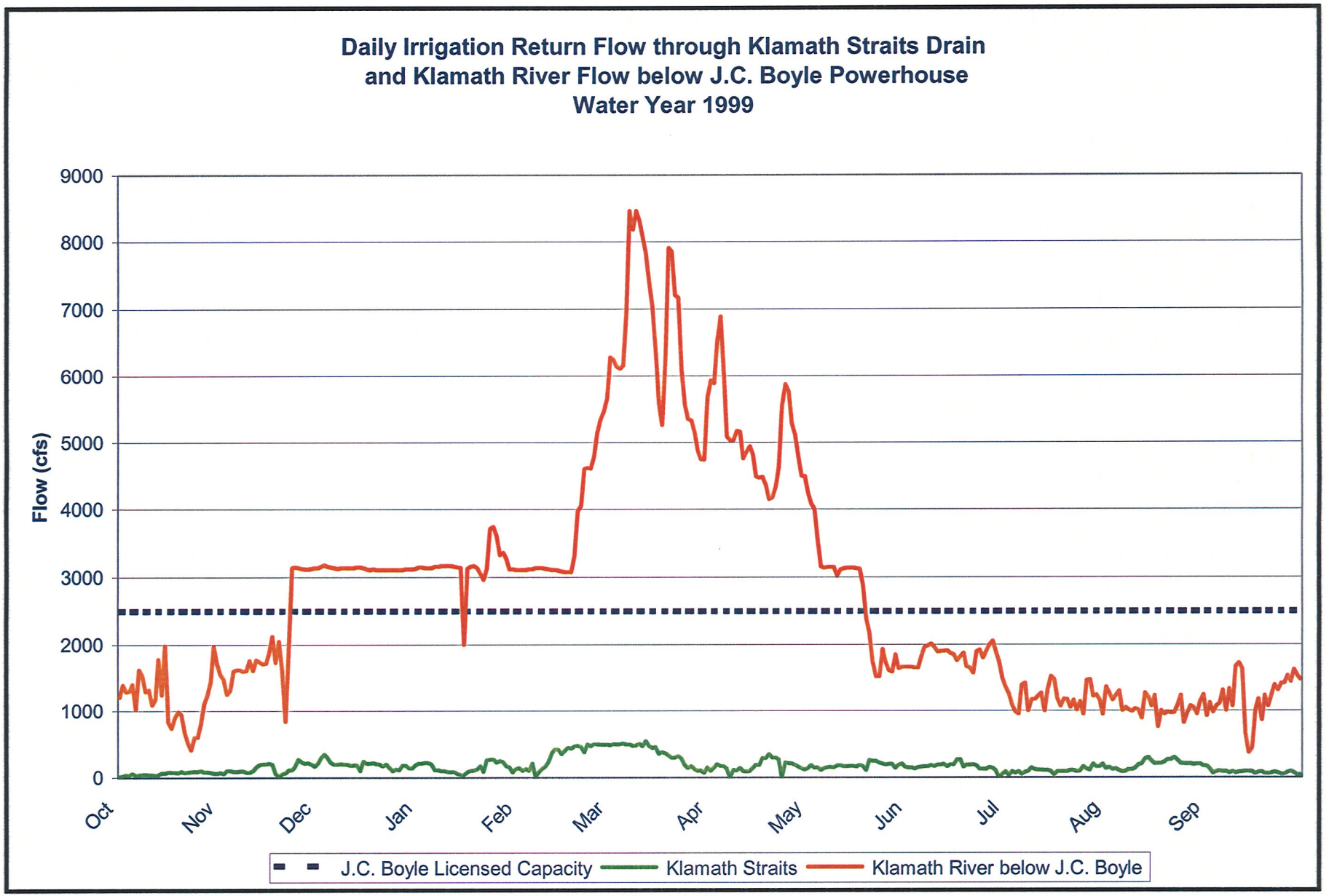
The methodology identified in my direct testimony for calculation of benefit from Klamath Irrigation Project operations is applicable irrespective of the extent to which upstream activities influence Upper Klamath Lake inflow.

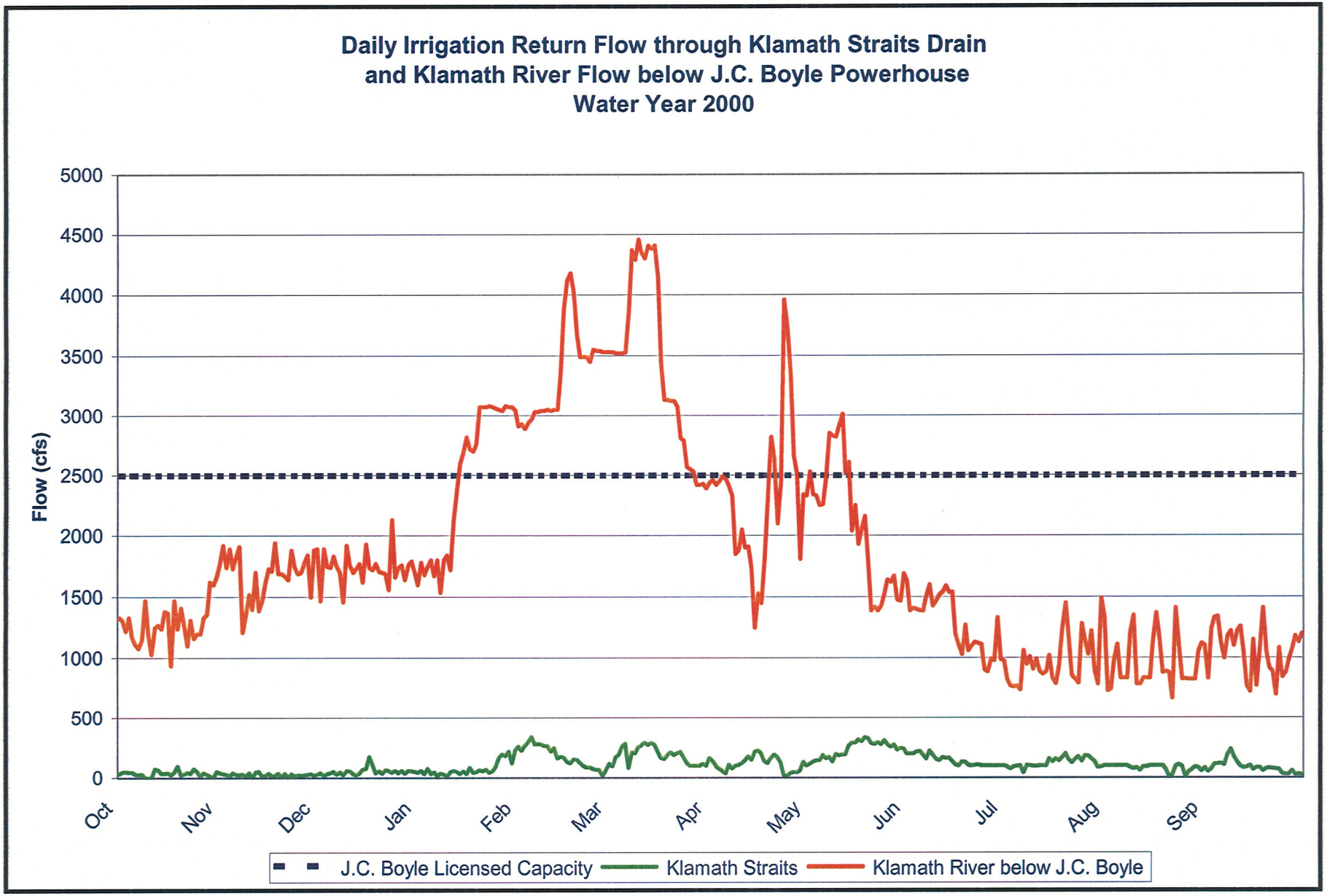
Q. Does this conclude your rebuttal testimony?

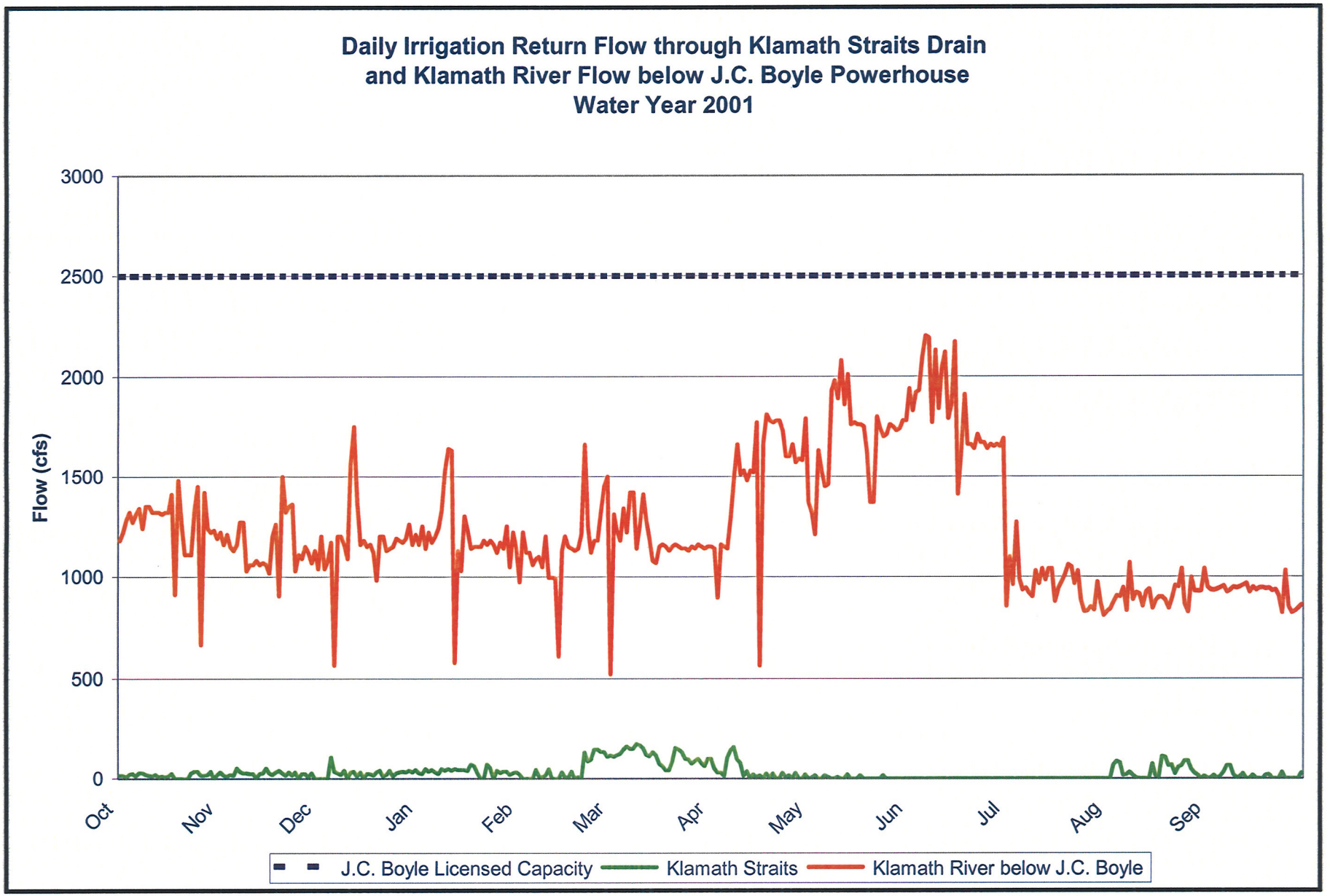
A. Yes.

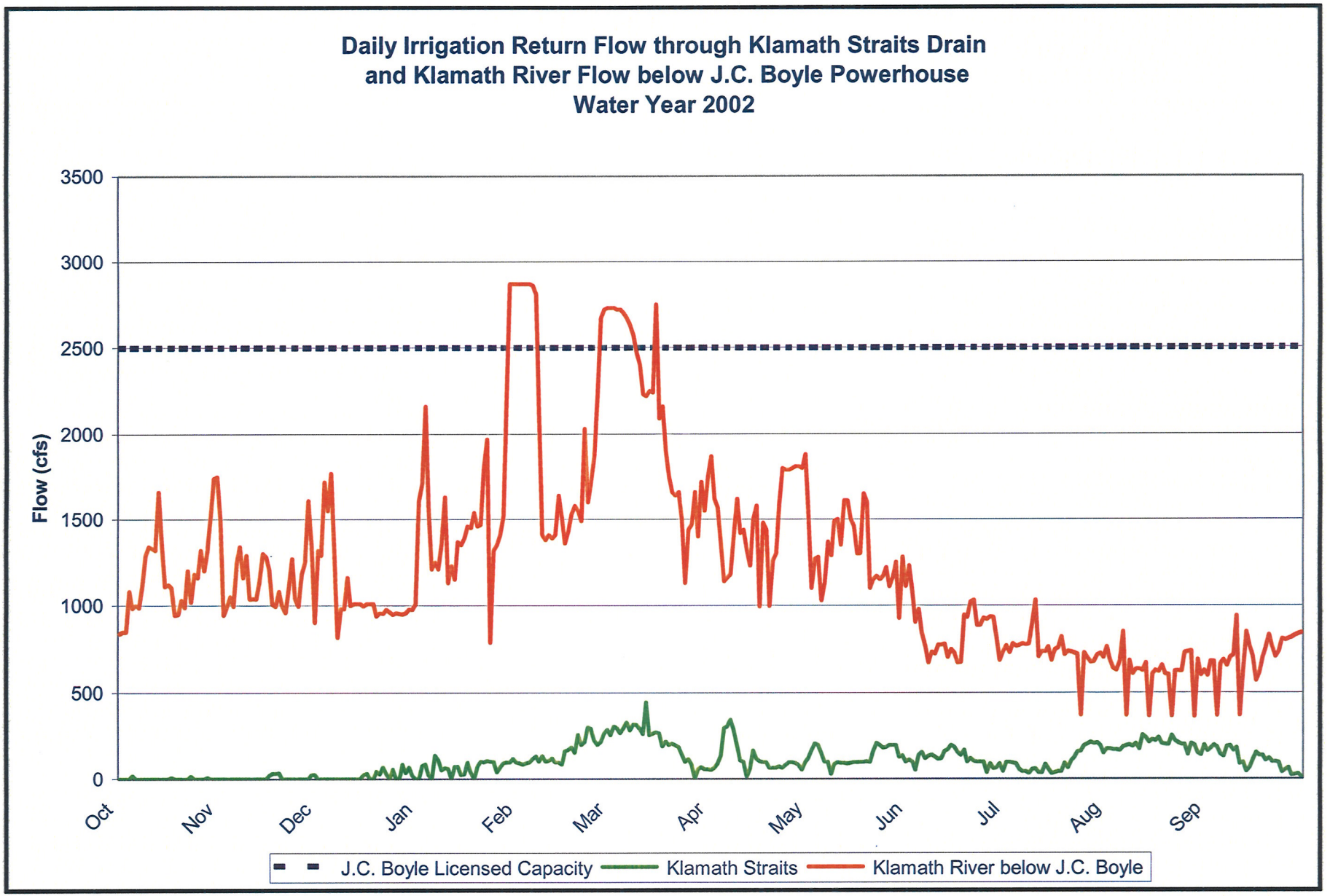

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 1997
Flow (cfs)
12000
10000
8000
6000
4000
2000
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle

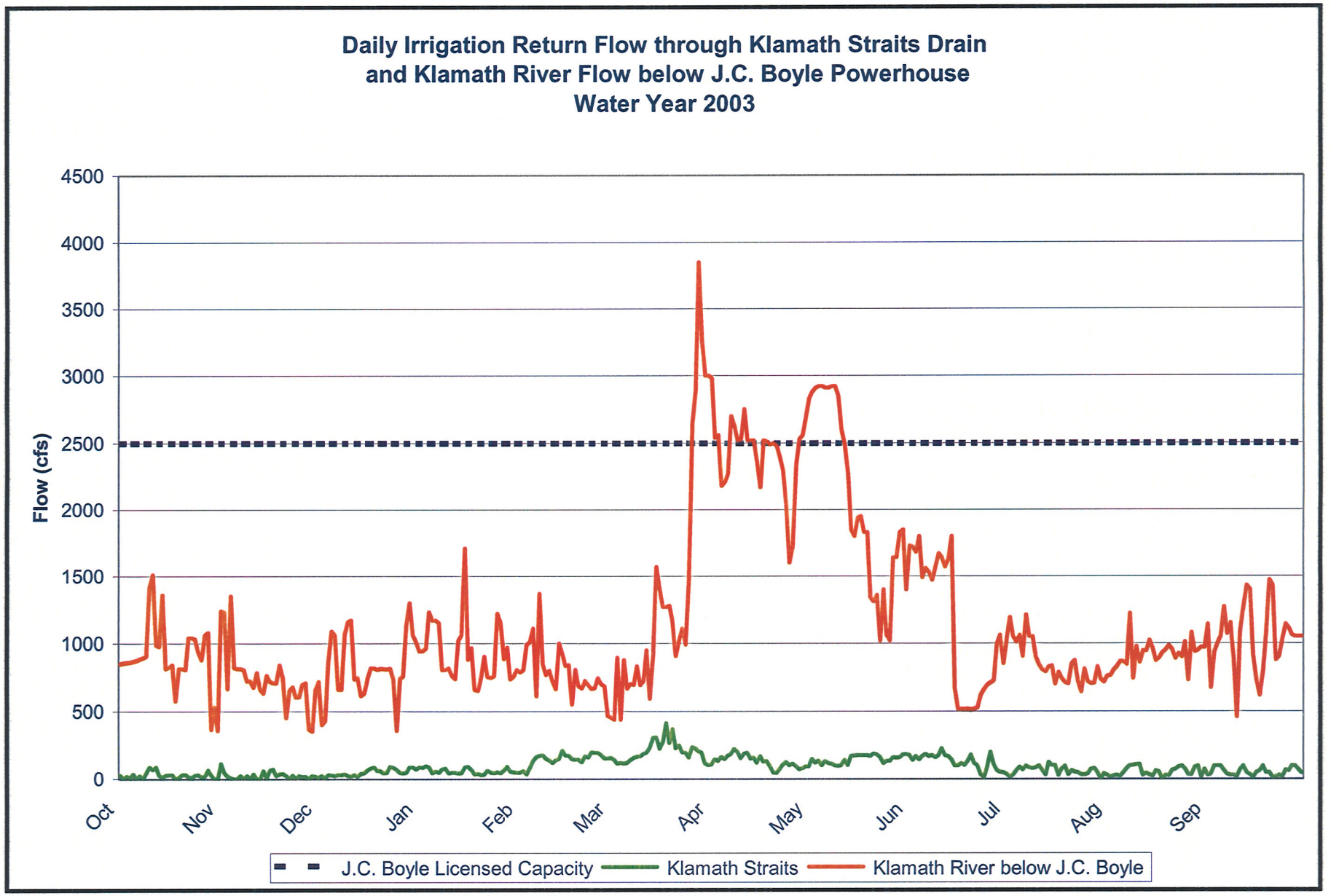

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 1998
Flow (cfs)
8000
7000
6000
5000
4000
3000
2000
1000
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle

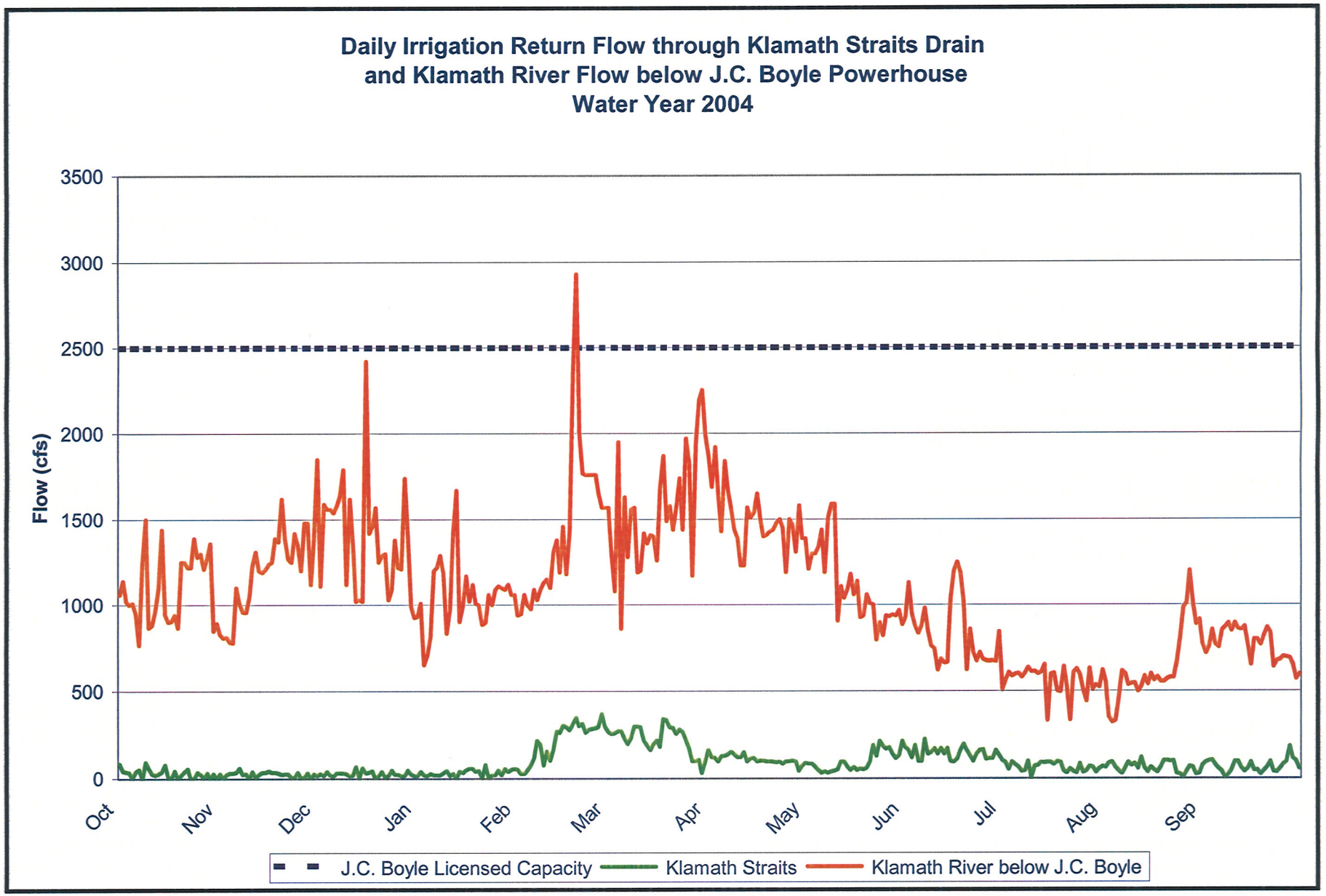

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 1999
Flow (cfs)
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle

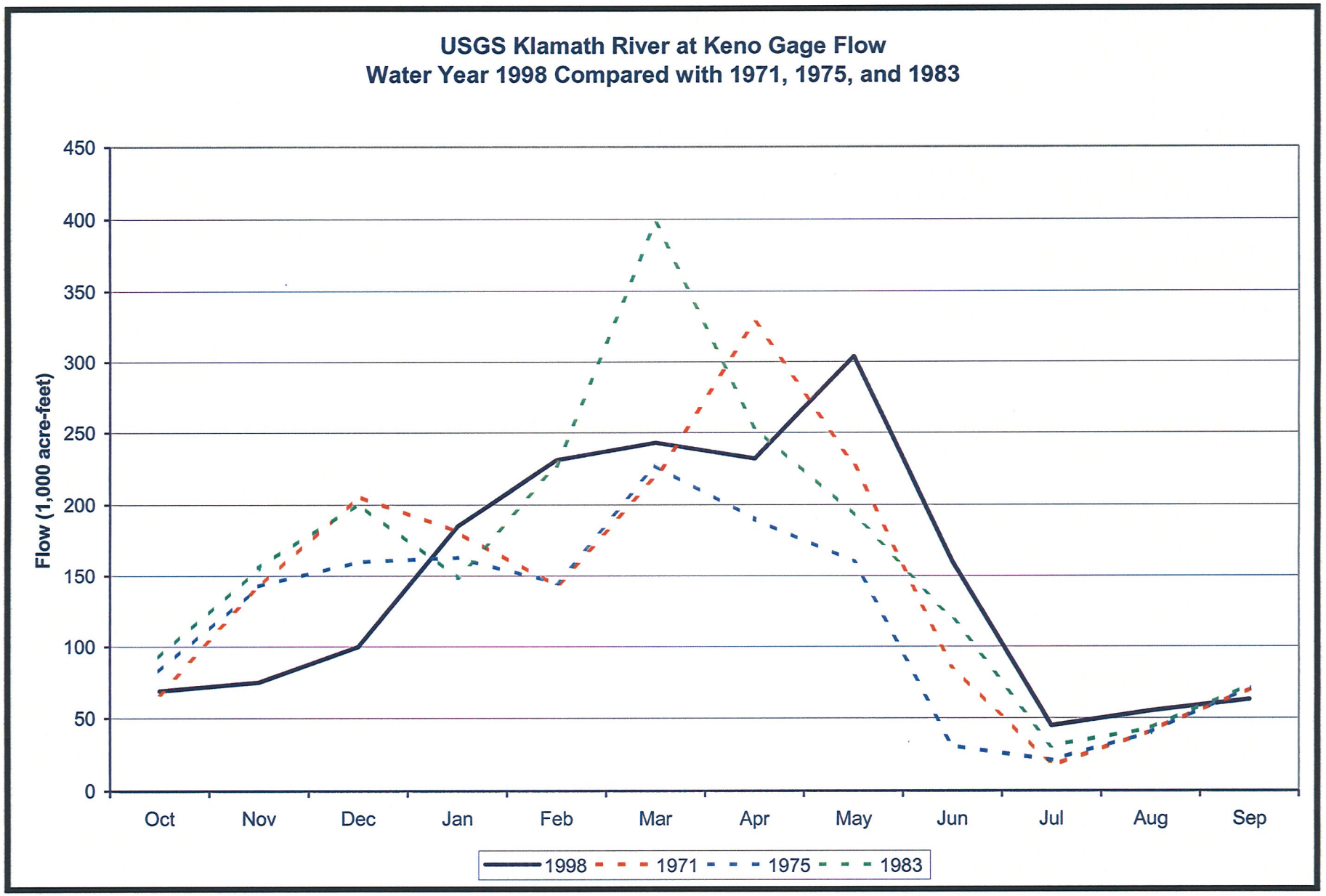

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 2000
Flow (cfs)
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle

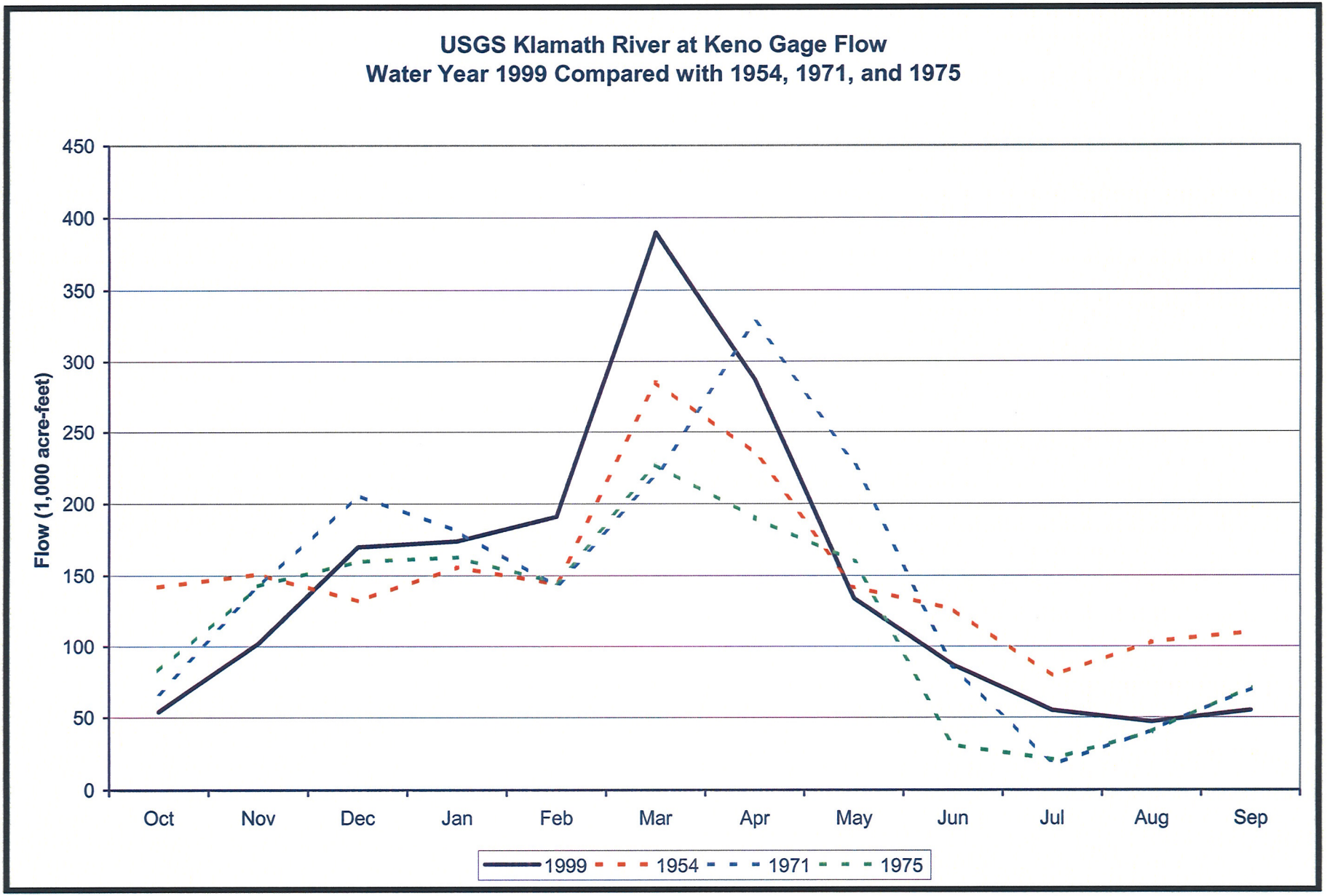

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 2001
Flow (cfs)
3000
2500
2000
1500
1000
500
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle

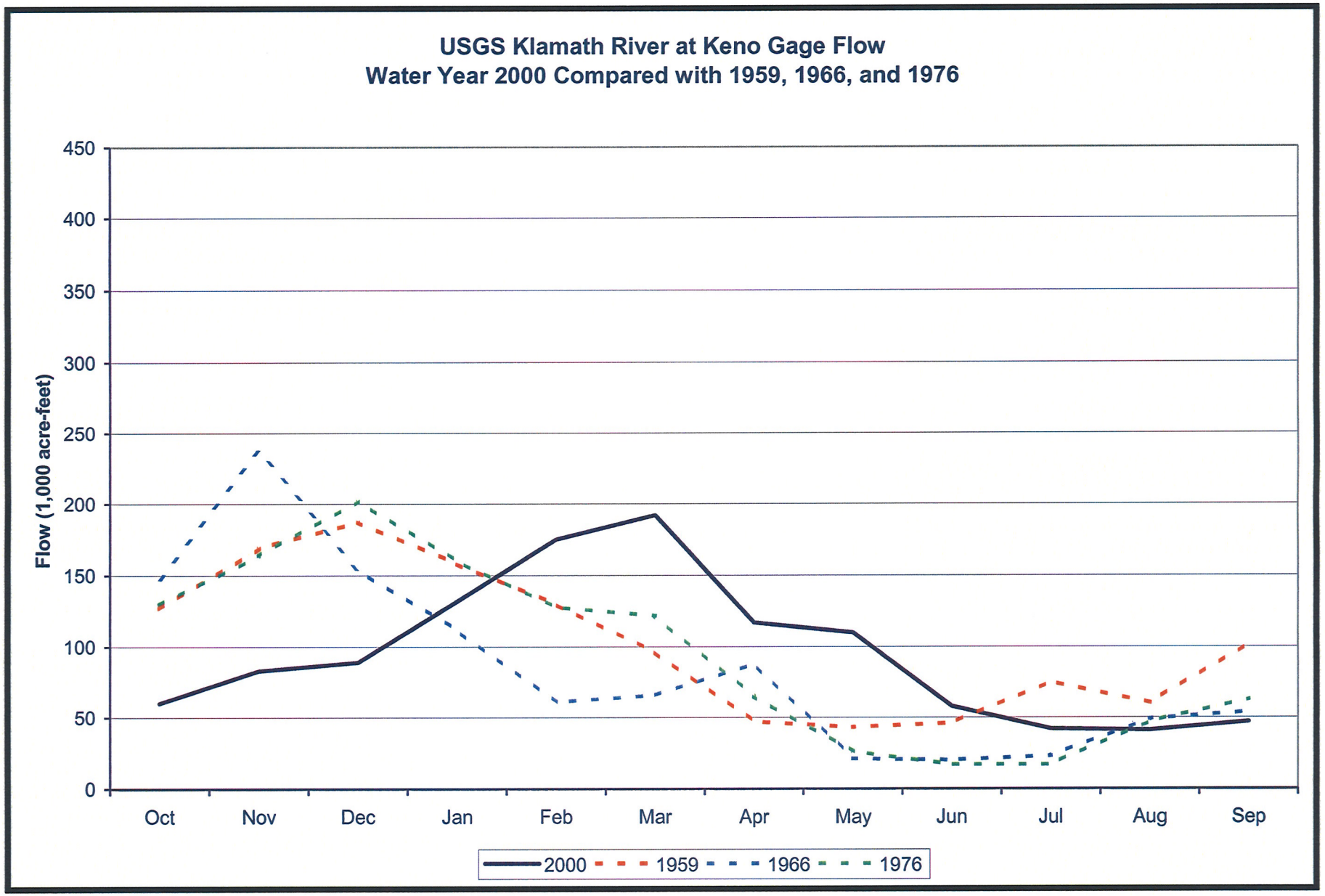

Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 2002
Flow (cfs)
3500
3000
2500
2000
1500
1000
500
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle


Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 2003
Flow (cfs)
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle


Daily Irrigation Return Flow through Klamath Straits Drain
and Klamath River Flow below J.C. Boyle Powerhouse
Water Year 2004
Flow (cfs)
3500
3000
2500
2000
1500
1000
500
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
J.C. Boyle Licensed Capacity
Klamath Straits
Klamath River below J.C. Boyle


USGS Klamath River at Keno Gage Flow
Water Year 1998 Compared with 1971, 1975, and 1983
Flow (1,000 acre-feet)
450
400
350
300
250
200
150
100
50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
1998
1971
1975
1983


USGS Klamath River at Keno Gage Flow
Water Year 1999 Compared with 1954, 1971, and 1975
Flow (1,000 acre-feet)
450
400
350
300
250
200
150
100
50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
1999
1954
1971
1975


USGS Klamath River at Keno Gage Flow
Water Year 2000 Compared with 1959, 1966, and 1976
Flow (1,000 acre-feet)
450
400
350
300
250
200
150
100
50
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
2000
1959
1966
1976

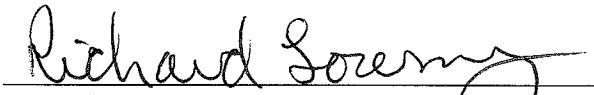
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on February 6, 2006 I caused to be served the foregoing **REBUTTAL TESTIMONY OF MARC VAN CAMP ON BEHALF OF THE KLAMATH WATER USERS ASSOCIATION** on the attached Service List obtained on this date from the Oregon Public Utility Commission's Website as follows:

[XX] by **MAILING** a full, true and correct copy thereof in a sealed, postage-paid envelope, addressed as shown on the attached Service List, and deposited with the U.S. Postal Service at Portland, Oregon, on the date set forth below;

[XX] **and** by **electronic mail** ("e-mail") to those parties on the Oregon Public Utility Commission's Website Service List who listed an e-mail address.

DATED Wednesday, February 6, 2006.



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