

ASSIGNED

Application No. 69829 E

Permit No. 53060

Certificate No. 8.3671

Stream Index, Page No. 14.28A

14.0090-0010.6270

Raymond J. Driscoll

RC 30, Box 138 G 43411 Hwy 62

Chiloquin, OR 97624

(GR) 783-2450

February 1, 1989

suspended until 6/05

to applicant

approval 12-26-96

CONSTRUCTION

beginning 12-26-97

completion 10-1-98

ended to 10-1-05

application of water 10-1-99

ended to 10-1-05

PROSECUTION OF WORK

" filed

" filed

" filed

FINAL PROOF

ailed

ceived

tificate issued DECEMBER 5, 2007

FEES PAID

| Date | Amount | Receipt No. |
|---------|--------------------|-------------|
| 2-1-89 | 300. ⁰⁰ | 57233 |
| 9-28-94 | 100.00 | 33292 |
| 9-20-04 | 25.00 | 70223 |

Cert. Fee

FEES REFUNDED

| Date | Amount | Check No. |
|------|--------|-----------|
|------|--------|-----------|

ASSIGNMENTS

| Date | To Whom | Address | Volume | Page |
|---------|-------------------------|----------------------------|--------|-------|
| 9/20/04 | Warran + Yolanda Renner | 2693 Willow Way Medford OR | | 47501 |

REMARKS

TELEPHONE HEARING 9 AM 5/20/96 - Elmer
POSTPONED TO TUES. 11/19/96 9AM - Elmer

Grantor's name and address:
Norman Renner, Trustee
3526 Cherry Lane
Medford, Oregon 97504

Send Tax Statements to:

Undivided #1:
Norman Renner
3526 Cherry Lane
Medford, Oregon 97504

Undivided #2:
Carrie Linnemeyer
780 NE 12th Street
Grants Pass OR 97526

Undivided #3:
Marnie Gilbert
33293 Neacoxie Ln
Warrenton, Oregon 97146

Tax lot #
3407 - 018CC - 00100 - 000

After recording return to person recording
or Richard Fairclo
409 Pine Street, Suite 209
Klamath Falls, Oregon, 97601

BARGAIN AND SALE DEED
Conveyance of Real Property

I, Norman Renner, TRUSTEE OF THE RENNER FAMILY REVOCABLE TRUST UDA MAY 23, 2008, Grantor, convey, grant, bargain and sell unto the following three persons: 1.) myself, Norman Renner, individually; 2.) Carrie Linnemeyer individually; and 3.) Marnie Gilbert individually, each as to an undivided one third (1/3) interest, Grantees, as Tenants in Common the following described real property located in Klamath County, Oregon, free of liens and encumbrances, except as specifically set forth herein:

(3407-018CC-00100-000)

Parcel 2 of Land Partition No. 57-94 filed January 9, 1995 in the office of the County Clerk of Klamath County, Oregon and begin located in the SW1/4 SW1/4 of Section 18, Township 34 South, Range 8 East of the Willamette Meridian.

EXCEPTING THEREFROM the following: Commencing at the South 1/16 corner of Section 18, thence South 88° 56' 26" East, 515.76 feet to the East right of way of State Highway 62; thence South 11° 39' 58" East along said right of way, 41.01 feet; thence South 88° 56' 26" East, 130.00 feet; thence South 19° 25' 00" East, 135.64 feet to the true point of beginning, thence continuing South 19° 25' 00" East, 120.00 feet, thence South 84° 17' 00" West, 30.88 feet, thence North 19° 25' 00" West, 120.00 feet, thence North 84° 17' 00" East, 30.88 feet to the point of beginning.

SUBJECT TO reservations and restrictions of record, easements and rights of way of record and those apparent on the land, contracts and/or liens for irrigation and/or drainage. The true and actual consideration for this conveyance is \$1.00 and other valuable consideration, including as distribution to the residual beneficiaries according to the estate planning of Warren and Yolanda Renner.

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OCT 03 2016

SALEM, OR


I am conveying as TRUSTEE OF THE RENNER FAMILY REVOCABLE TRUST UDA MAY 23, 2008, and in my capacity as authorized by the Circuit Court of Jackson County, Oregon (Probate Department) "In the Matter of the Estate of WARREN RENNER, aka WARREN S. RENNER," Case No. 09 191P6. I am also named by Warren Renner and Yolanda Renner to be their Personal Representatives. Both Warren Renner and Yolanda Renner are deceased.

Consideration: By reason of the deaths of Warren Renner and Yolanda Renner, the real property has vested in Grantees, as residual beneficiaries of the above estate planning of Warren Renner and Yolanda Renner. Consideration for this transfer is \$1.00 and as distributions according to said estate planning and for Records of Klamath County to reflect vesting of real property in the names of Grantees named herein.

Statutory Provision:

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.


Dated this 31st day of SEPT 2016.


Norman Renner

STATE OF OREGON COUNTY OF JACKSON] ss.

The foregoing instrument was acknowledged before me this 26 day of September 2016 by Norman Renner, who stated he is the Trustee of the above named trust, and is signing individually and in capacities as above stated.




Sandra Joanne Scott
Notary Public for Oregon
My Commission expires: 9-22-2018

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Conveyance of Water Rights

Grantor's name and address:

Norman Renner, Trustee and as below stated (representing interests of Warren and Yolanda Renner regarding below referenced water right)

NR ~~1282 South Oakdale~~ *3526 Cherry Lane*
Medford, OR 97504

Grantee #1:

Norman Renner
~~1282 South Oakdale~~
Medford, OR 97504

NR 3526 Cherry Lane

Grantee #2:

Carrie Linnemeyer
780 NE 12th Street
Grants Pass OR 97526

Grantee #3:

Marnie Gilbert
~~1627 8th Avenue~~ *33283 Nea Coxie Ln*
~~Hammond, OR 9712~~ *W ARBENTON, Oregon*
97146

I, Norman Renner, the undersigned, recite, convey, transfer, bargain and sell as follows:

1. I am conveying and transferring in my capacity as TRUSTEE OF THE RENNER FAMILY REVOCABLE TRUST UDA MAY 23, 2008, and in my capacity as authorized by the Circuit Court of Jackson County, Oregon (Probate Department) "In the Matter of the Estate of WARREN RENNER, aka WARREN S. RENNER," Case No. 09 191P6. I was also named by Warren Renner and Yolanda Renner to be their Personal Representatives. Both Warren Renner and Yolanda Renner are deceased, and their beneficiaries and heirs are Grantees as herein named.
2. Reference is made to that certain water right as evidenced by State of Oregon Certificate of Water Right Number 83671, Application File Number S69829, Permit Number: S53060, herein referred to as "said water right." A copy of said Certificate is attached hereto, as Exhibit "A."
3. By reason of the deaths of Warren Renner and Yolanda Renner, Certain real property at the location of the Point of Diversion for the subject water right has vested in the below Grantees, as beneficiaries of the above estate planning of Warren Renner and Yolanda Renner, and as owners of the land where the Point of Diversion of said water right is located and as owners of the land at the location of Lake Glacid, as shown on Final Proof Map of said water right, page four of Exhibit "A."
4. Grantor hereby grants, sells and conveys said water right to the following

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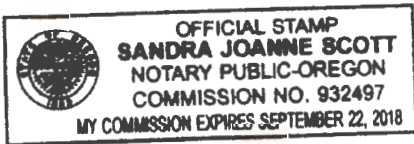
three individuals, herein referred to as Grantees: 1.) the undersigned Norman Renner, individually; 2.) Carrie Linnemeyer individually; and 3.) Marnie Gilbert individually, each as to an undivided one third (1/3) interest as Tenants in Common.

Dated this 26 day of Sept, 2016.

Norman Renner
Norman Renner

STATE OF OREGON, COUNTY OF JACKSON] ss.

The foregoing instrument was acknowledged before me this 26 day of September 2016 by Norman Renner, who stated he is the Trustee of the above named trust, and is signing in capacities as above stated.



Sandra J Scott
Notary Public for Oregon
My Commission expires: 9-22-2018

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SALEM, OR

Exhibit "A" to Water Right Conveyance

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied. In addition, under ORS 537.260 any person with an application, permit or water right certificate subsequent in priority may jointly or severally contest the issuance of the certificate at any time before it has issued, and after the time has expired for the completion of the appropriation under the permit, or within three months after issuance of the certificate.

STATE OF OREGON

COUNTY OF KLAMATH

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WARREN AND YOLANDA RENNER
1430 SOUTH OAKDALE
MEDFORD, OREGON 97501

This Certificate confirms the right to use the waters perfected under the terms of the Permit. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed the amount described, or its equivalent in case of rotation, measured at the point of diversion from the source. The specific limits and conditions of this right are listed below.

APPLICATION FILE NUMBER: S-69829

PERMIT NUMBER: S-53060

SOURCE OF WATER: AGENCY SPRING, A TRIBUTARY OF AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

MAXIMUM RATE ALLOWED: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

S-69829.RA

Certificate 83671

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THE POINT OF DIVERSION IS LOCATED AS FOLLOWS:

SW ¼ SW ¼, SECTION 18, T 34 S, R 7 E, W.M.; 880 FEET NORTH AND
1175 FEET EAST FROM THE SW CORNER, SECTION 18.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW ¼ SW ¼
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Measurement, recording and reporting conditions:

- A. The water user shall maintain the meter or measuring device in good working order.
- B. The water user shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the water user to keep and maintain a record of the amount (volume) of water used and may require the water user to report water use on a periodic schedule as established by the Director. In addition, the Director may require the water user to report general water use information, the periods of water use and the place and nature of use of water under the right. The Director may provide an opportunity for the water user to submit alternative reporting procedures for review and approval.

Use of water under authority of this right may be regulated if analysis of data available discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

Failure to comply with any of the provisions of this right may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the right.

S-69829.RA

Certificate 83671

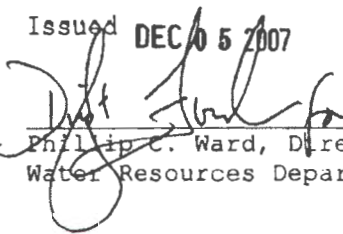
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This right is for the beneficial use of the water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

Issued DEC 05 2007


Phillip C. Ward, Director
Water Resources Department

Recorded in State Record of Water Right Certificates Number 83671

S-69829.RA

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FINAL PROOF SURVEY MAP

WARREN & YOLANDA RENNER

Application S-69829 Permit S-53060

T 34 S, R 7 W, W.M.
SW SW Section 18

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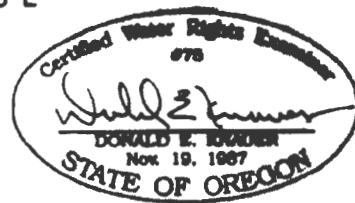
AUG 18 2016

WATER RESOURCES DEPT
SALEM OREGON



Diversion Point and meter: 880' N & 1175' E
From the SW corner section 18
Scale 1" = 400'

This map is not intended to provide legal dimensions or locations of property ownership lines.



RENEWAL DATE: 6/30/2009

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SALEM, OR

2010-014087
Klamath County, Oregon



12/13/2010 09:00:34 AM

Fee: \$47.00

Information Required by Statute:

Type of Instrument: **BARGAIN AND SALE DEED**
(Statutory Form)

Grantor: **Norman Renner, Trustee of the Renner Family Revocable Trust udo May 23, 2008**

Grantee: **Carrie Linnemeyer**

True and Actual Consideration: \$0, other valuable consideration given, love and affection

Until a change is requested, all tax statements should be sent to: Carrie Linnemeyer, 1019 SW Central Avenue, Grants Pass, OR 97526

After recording, return to:

CHARLES M. McNAIR, OSB #75254, FOWLER & McNAIR, 210 Laurel Street, PO Box 1746, Medford, OR 97501

=====

BARGAIN AND SALE DEED

NORMAN RENNER, Trustee of the RENNER FAMILY REVOCABLE TRUST udo May 23, 2008, GRANTOR, conveys to **CARRIE LINNEMEYER**, or to her successors in interest, GRANTEE, the following described real property situated in the County of Klamath, State of Oregon:

See Exhibit A attached hereto and made a part hereof.

Commonly known as 43643 Highway 62, Chiloquin, OR 97624

Map Tax Lot: R-3407-018CC-00200-000

Property ID Number: R188674

Tax Roll Description: Twp 34 Rnge 7, Block Sec 18, Tract POR SW4SW4, Acres .68

The true and actual consideration is other value given.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 and 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO

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VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009.

DATED: December 3, 2010

Norman Renner, Trustee
NORMAN RENNER, Trustee of the
RENNER FAMILY REVOCABLE TRUST of
MAY 23, 2008

STATE OF OREGON)
) ss.
County of Jackson)

This instrument was acknowledged before me on December 3rd, 2010, by NORMAN RENNER as Trustee of the RENNER FAMILY REVOCABLE TRUST of MAY 23, 2008.



Diana A. Lewis
Notary Public for Oregon
My commission expires 4-13-14

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EXHIBIT A

LEGAL DESCRIPTION:

Parcel 1:

A parcel of land in Section 18, Township 34 South, Range 7 East of the Willamette Meridian, in the County of Klamath, State of Oregon, being more particularly described as follows:

Commencing at the South 1/16 corner of Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88°56'26" East, 515.76 feet to the East right of way line of State Highway 62; thence South 11°39'58" East along the right of way, 41.01 feet; thence South 88°56'26" East, 130 feet to the true point of beginning; thence South 88°56'26" East, 70.00 feet to the beginning of a 100.00 foot radius curve to the right; thence along the arc of 100.00 foot radius curve to the right, 75.05 feet (delta 43°00') to the end of said curve; thence South 0°20'00" East, 275.35 feet; thence North 82°10'00" West, 33.80 feet; thence North 19°25'00" West, 318.25 feet to the true point of beginning.

Parcel 2:

A parcel of land situated in the SW 1/4 SW 1/4 of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, in the County of Klamath, State of Oregon. Said parcel being a portion of Parcel 2 of Land Partition #57-94 as recorded in the Klamath County Clerk's Office, more particularly described as follows:

Commencing at the South 1/16 corner of said Section 18; thence South 88°56'26" East, 515.76 feet to the East right of way of State Highway 62; thence South 11°39'58" East along said right of way 41.01 feet; thence South 88°56'26" East 130.00 feet; thence South 19°25'00" East, 135.64 feet to the true point of beginning; thence continuing South 19°25'00" East 120.00 feet; thence South 84°17'00" West 30.88 feet; thence North 19°25'00" West 120.00 feet; thence North 84°17'00" East 30.88 feet to the point of beginning.

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OCT 03 2016

SALEM, OR

Exhibit
Page

A
1 of 1

COPY

2010-014088
Klamath County, Oregon



12/13/2010 09:00:41 AM

Fee: \$47.00

Information Required by Statute:

Type of Instrument: **BARGAIN AND SALE DEED**
(Statutory Form)

Grantor: **Norman Renner, Trustee of the Renner
Family Revocable Trust UDO May 23, 2008**

Grantee: **Carrie Linnemeyer**

True and Actual Consideration: \$0, other valuable
consideration given, love and affection

Until a change is requested, all tax statements should be
sent to: Carrie Linnemeyer, 1019 SW Central Avenue,
Grants Pass, OR 97526

After recording, return to:

CHARLES M. McNAIR, OSB #75254, FOWLER &
McNAIR, 210 Laurel Street, PO Box 1746, Medford, OR
97501

=====

BARGAIN AND SALE DEED

**NORMAN RENNER, Trustee of the RENNER FAMILY REVOCABLE TRUST UDO
May 23, 2008, or to his successor(s) in interest, GRANTOR, conveys to CARRIE
LINNEMEYER, or to her successor(s) in interest, GRANTEE, the following described real
property situated in the County of Klamath, State of Oregon:**

See Exhibit A attached hereto and made a part hereof.

Commonly known as 43411 Highway 62, Chiloquin, OR 97624

Map Tax Lot: R-3407-018CC-00300-000

Property ID Number: R189076

Tax Roll Description: Twp 34 Rnge 7, Block Sec 18, Tract POR SW4SW4, Acres 1.20

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OCT 08 2010

SALEM, OR

The true and actual consideration is other value given.

**BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON
TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF
ANY, UNDER ORS 195.300, 195.301 and 195.305 TO 195.336 AND SECTIONS 5 TO 11,
CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 855,
OREGON LAWS 2009. THIS INSTRUMENT DOES NOT ALLOW USE OF THE
PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE
LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS
INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD
CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO**

VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, AND SECTIONS 2 TO 9 AND 17, CHAPTER 55, OREGON LAWS 2009.

DATED: December 3, 2010

Norman Renner TRUSTEE
(NORMAN RENNER, Trustee of the RENNER FAMILY REVOCABLE TRUST UDO May 23, 2008

STATE OF OREGON)
) ss.
County of Jackson)

This instrument was acknowledged before me on December 3rd, 2010, by NORMAN RENNER as Trustee of the RENNER FAMILY REVOCABLE TRUST UDO May 23, 2008.



Diana G. Lewis

Notary Public for Oregon
My commission expires 4-13-14

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DEC 23 2010

SALEM, OR

EXHIBIT A

✓ LEGAL DESCRIPTION:

Parcel 1: Lot 4 of proposed Glacid Development, being a portion of the SW ¼ SW ¼ of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 ½ East of the Willamette Meridian and Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88°56'26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1°0'29" East, 162.82 feet to a ¾ inch iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87°56'26" West, 125.90 feet to a ¾ inch iron pipe and the true point of beginning of this description; thence South 35°25'00" West, 250.62 feet to a point in the center line of Lake Glacid; thence North 82°10'00" West along center line of said Lake 55.89 feet to a point; thence North 18°03'34" East to a ¾ inch iron pipe; thence South 87°56'26" East 135.00 feet to the true point of beginning. AND

Lot 5 of proposed Glacid Development, being a portion of the SW ¼ SW ¼ of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 ½ E. W. M., and Section 18, Township 34 South, Range 7 E. W. M., thence South 88°56'26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1°01'29" East, 162.82 feet to a ¾ inch iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87°56'26" West 55.90 feet to a ¾ inch iron pipe, being the true point of beginning of this description; thence South 1°01'29" West 50.00 feet to a ¾ inch iron pipe; thence South 30°45'00" West 240.11 feet to a point in the center line of Lake Glacid; thence North 59°40'00" West along said center line 108.12 feet to a point; thence North 35°25'00" East 250.62 feet to a ¾ inch iron pipe; thence South 87°56'26" East 70.00 feet to the true point of beginning.

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OCT 10 2016

SALEM, OR

Richard Fairclo, Attorney at Law

409 Pine Street, Suite 209
Klamath Falls, Oregon 97601
Email: rfair7@earthlink.net
Tel.: (541) 273-2215 Fax: (541) 882-8819

September 29, 2016

Memo to:
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266

Regarding Water Certificate 83671, Ownership update to Norman Renner, Carrie Linnemeyer and Marnie Gilbert.

This memo is cover for the enclosure.

Please find enclosed signed Ownership Update for the above water right, including attachments of Deeds, Certificate, Final Proof Survey, Conveyance of Water Rights.

If you have any questions or concerns, please contact me.

Thank you for your consideration.

A handwritten signature in blue ink, appearing to be 'RFairclo', is centered on the page.

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied. In addition, under ORS 537.260 any person with an application, permit or water right certificate subsequent in priority may jointly or severally contest the issuance of the certificate at any time before it has issued, and after the time has expired for the completion of the appropriation under the permit, or within three months after issuance of the certificate.

STATE OF OREGON

COUNTY OF KLAMATH

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WARREN AND YOLANDA RENNER
1430 SOUTH OAKDALE
MEDFORD, OREGON 97501

This Certificate confirms the right to use the waters perfected under the terms of the Permit. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed the amount described, or its equivalent in case of rotation, measured at the point of diversion from the source. The specific limits and conditions of this right are listed below.

APPLICATION FILE NUMBER: S-69829

PERMIT NUMBER: S-53060

SOURCE OF WATER: AGENCY SPRING, A TRIBUTARY OF AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

MAXIMUM RATE ALLOWED: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

S-69829.RA

Certificate 83671

THE POINT OF DIVERSION IS LOCATED AS FOLLOWS:

SW $\frac{1}{4}$ SW $\frac{1}{4}$, SECTION 18, T 34 S, R 7 E, W.M.; 880 FEET NORTH AND 1175 FEET EAST FROM THE SW CORNER, SECTION 18.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW $\frac{1}{4}$ SW $\frac{1}{4}$
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Measurement, recording and reporting conditions:

- A. The water user shall maintain the meter or measuring device in good working order.
- B. The water user shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the water user to keep and maintain a record of the amount (volume) of water used and may require the water user to report water use on a periodic schedule as established by the Director. In addition, the Director may require the water user to report general water use information, the periods of water use and the place and nature of use of water under the right. The Director may provide an opportunity for the water user to submit alternative reporting procedures for review and approval.

Use of water under authority of this right may be regulated if analysis of data available discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

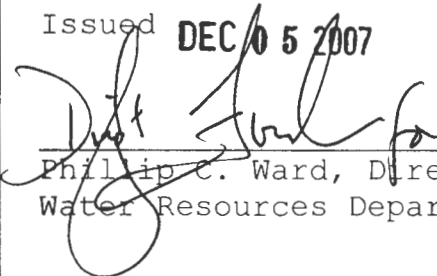
Failure to comply with any of the provisions of this right may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the right.

This right is for the beneficial use of the water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

Issued **DEC 05 2007**



Phillip C. Ward, Director
Water Resources Department

Recorded in State Record of Water Right Certificates Number 83671

S-69829.RA



Oregon

Theodore R. Kulongoski, Governor

Water Resources Department
North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

Date Mailed: December 5, 2007

NOTICE OF CERTIFICATE ISSUANCE

The attached certificate confirms the water right established under the terms of a permit issued by this department. The water right is now appurtenant to the specific place where the use was established as described by the certificate. The water right is limited to a specific amount of water, but not more than can be beneficially used for the purposes stated within the certificate.

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within **60 days of the mailing date stated above** as specified by ORS 183.484(2).

This statement of judicial review rights is required under ORS 536.075; it does not alter or add to existing review rights or create review rights that are not otherwise provided by law.

Under ORS 537.260 and 537.270, a water right certificate may be contested before the Water Resources Department within three (3) months of the date it is issued. If a certificate is contested, the qualifying contestant shall be offered an administrative hearing.

Oregon law does not allow the Director to reissue a certificate because of a change in the ownership of the appurtenant place of use. The water must be controlled and not wasted. To change the location of the point of diversion, the character of use, or the location of use requires the advance approval of the Water Resources Director.

If any portion of this water right is not used for five or more consecutive years, that portion of the right may be subject to forfeiture according to ORS 540.610. Land enrolled in a Federal Reserve Program is not subject to forfeiture during the period of enrollment. Other exceptions to forfeiture are explained in ORS 540.610.

If you have any questions please contact Gerry Clark at 503-986-0811.

Mailing List for Certificate

Mailing Date:

Application: S-69829

Permit: S-53060

Certificate: 83671

Permit/Certificate Holder: (include copy of map)

Warren and Yolanda Renner ✓
1430 South Oakdale
Medford, Oregon 97501

| |
|------------------------------------|
| Copies Mailed |
| By: <i>Connie Vance</i> (STAFF) |
| on: DEC 05 2007 (DATE) |

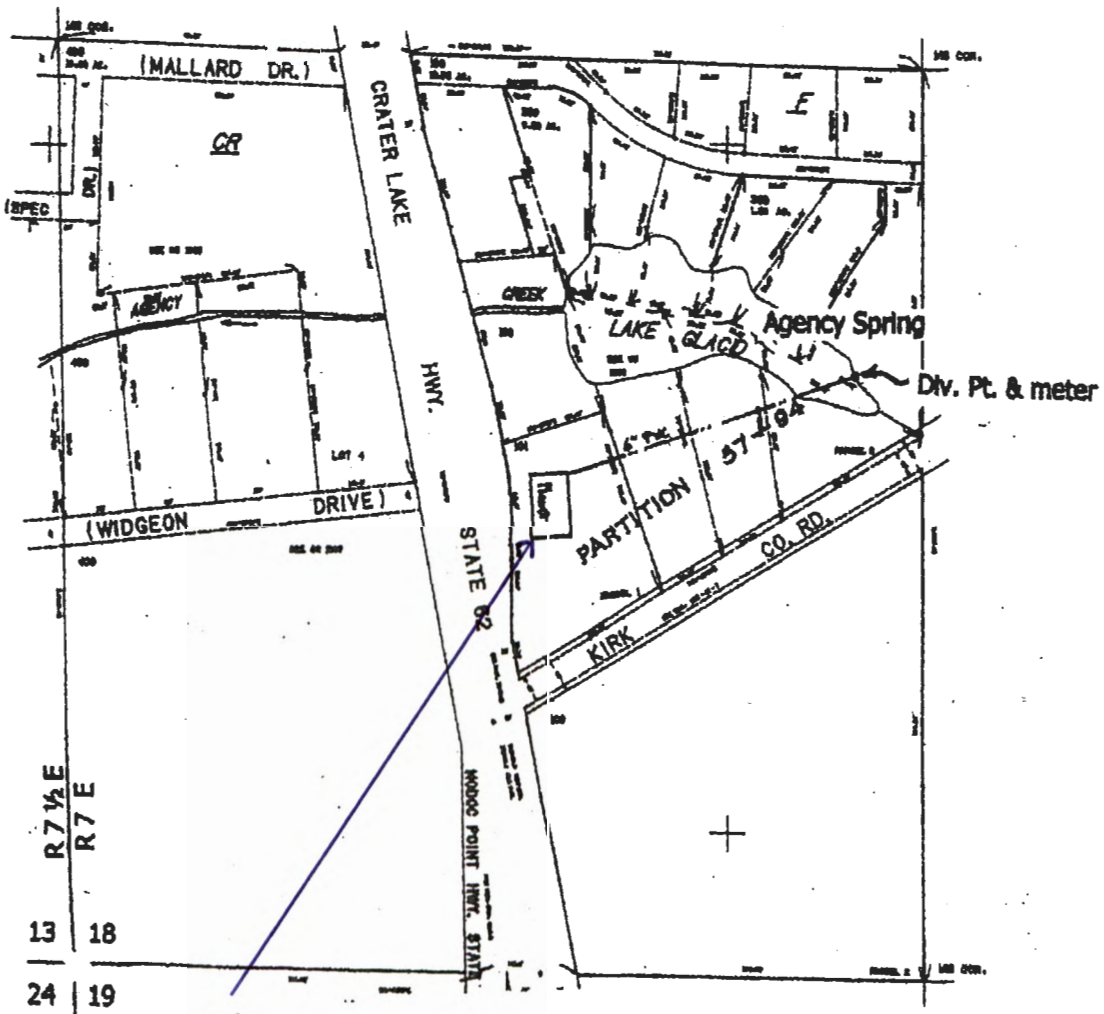
Copies of Final Certificate to be sent to:

1. Watermaster # 17: (include copy of map) ✓
2. Data Center (include copy of map) ✓
3. Water Availability ✓
4. Vault ✓
5. File

Other persons to receive copies: (Include map)

1. Donald Knauer, CWRE ✓
2. Alex Jaureguui, 48 Ranger Ct, Alamo CA 94507 ✓

T 34 S, R 7 W, W.M. SW SW Section 18



PLANT

Diversion Point and meter: 880' N & 1175' E
 From the SW corner section 18
 Scale 1" = 400'

Certified Water Rights Examiner
 #75
Walter E. ...
 WATER RIGHTS EXAMINER

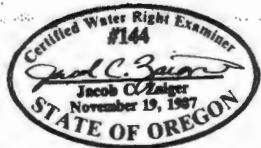
APPLICATION 69829
PERMIT 53060

24
19
R. 7W2E.
R. 7E.
Section
Corner
T. 34S.

RECEIVED

FEB 01 1989

WATER RESOURCES
DIVISION
STATE OF OREGON



PERMIT APPLICATION
IN THE NAME OF
RAYMOND J. Driscoll
HC 30 Box 138G
CHILOQUIN, OR

MAP BY: JACOB ZAIGER C.W.R.E. #144
1373 LAKESHORE DR
KLAMATH FALLS OR
97601

MAP OF PROPOSED APPROPRIATION OF SURFACE WATER
FOR INDUSTRIAL PURPOSES
SCALE: 1" = 100 FT. IN SW 1/4 SW 1/4 SEC. 18, T34S, R7E.

NOTE: THIS MAP IS FOR THE PURPOSE
OF A WATER RIGHT APPLICATION
AND IS NOT INTENDED TO BE
CONSTRUED AS A LEGAL SURVEY

N 45° 41' 43" E

CRATER LAKE HWY. No 62

KIRK ROAD

AGENCY

Proposed Loading
AREA

CREEK

TURBINE AND
Pump Station

Spillway

Mad Gate

LAKE GLACID

U.S. BOUNDARY LINE
(Cont'd from page 1)

DIVERSION POINT
Encased Spring

1309 ±

RECEIVED

AUG 16 2007

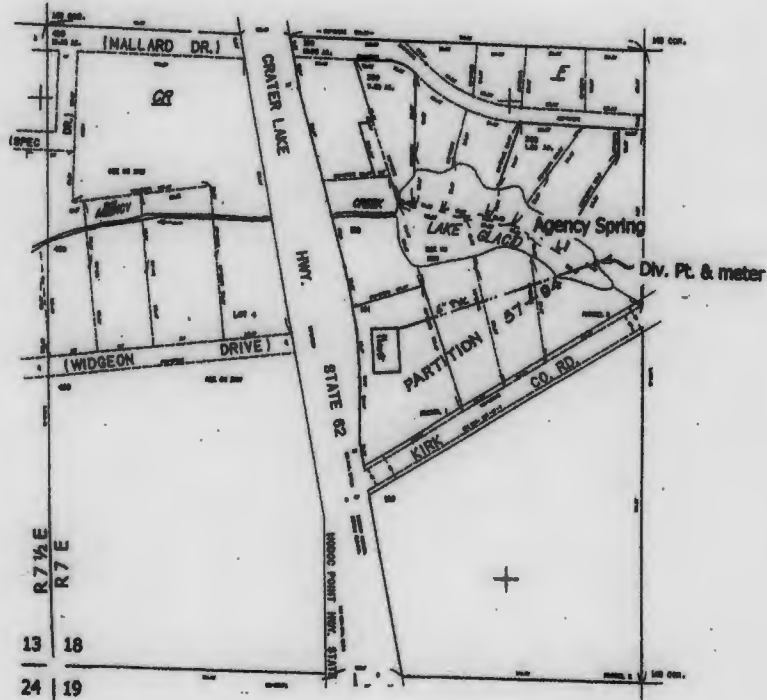
WATER RESOURCES DEPT
SALEM, OREGON

FINAL PROOF SURVEY MAP

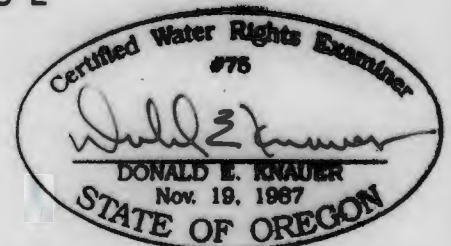
WARREN & YOLANDA RENNER

Application S-69829 Permit S-53060

T 34 S, R 7 W, W.M. SW SW Section 18



Diversion Point and meter: 880' N & 1175' E
From the SW corner section 18
Scale 1" = 400'



This map is not intended to provide legal dimensions or locations of property ownership lines.

RENEWAL DATE: 6/30/2009

Herb Mosgar

From: Joel Plahn
Sent: Monday, February 14, 2011 9:43 AM
To: Herb Mosgar
Subject: water right question

Hi Herb,

Application S-69829 Cert 83671. Could you look at this file to see if the application or any information in the file calls out a place of use? We received a call from the public and I cant tell by the cert map if there is a particular POU. Thanks for the help.

Thanks, Joel Plahn

Assistant Watermaster District 17
5170 Summers Ln
Klamath Falls, Oregon 97603
Ph: 541-883-4182
Cell: 541-891-4631
Fax: 541-885-3324

← AGENCY

CRATER LAKE HWY. No 62

Proposed Loading AREA

CREEK

TURBINE AND Pump Station

Irrigation Canal

DAM

Spillway

Head Gate

LAKE GLACID

Supply Line (underground)

DIVERSON POINT Encased Spring

1309 ±

KIRK ROAD

FOR THE PURPOSE RIGHT APPLICATION INTENDED TO BE AS A LEGAL SURVEY

PROPRIATION OF SURFACE WATER FOR AGRICULTURAL PURPOSES

IN SW 1/4 SW 1/4 SEC. 18, T.34S, R.7E.

Gerry Clark

From: Don Knauer [donknauer@comcast.net]
Sent: Thursday, November 29, 2007 12:50 PM
To: Gerry Clark
Subject: Re: file S-69829 - Renner

Gerry,

Thanks for the reply. I am requesting a copy of the certificate be sent to myself and to Alex Jauregui, 48 Ranger Court, Alamo, CA. 94507. I appreciate your help.

Don Knauer

----- Original Message -----

From: Gerry Clark
To: Don Knauer
Sent: Thursday, November 29, 2007 12:24 PM
Subject: RE: file S-69829 - Renner

Don,

The Contractor submitted the final deliverables within the last few days. We have reviewed the file and prepared the certificate. The certificate should be signed and mailed early next week.

It does not appear that there is any additional work remaining to be completed by either you or the water user.

Gerry

Gerry Clark
Water Rights Specialist/Certificates
725 Summer St. NE, Ste. A
Salem, OR 97303

Phone: 503-986-0811
Fax: 503-986-0901

<http://www.wrd.state.or.us/>

From: Don Knauer [mailto:donknauer@comcast.net]
Sent: Thursday, November 29, 2007 9:40 AM
To: Gerry Clark
Subject: file S-69829 - Renner

Gerry,

I would appreciate an update on the status of this file. Has the contractor completed the required work? Is there anything left for the applicant or myself to do? Has a proposed certificate been issued?

Thank you,

Don Knauer

11/29/2007

STATE OF OREGON

COUNTY OF KLAMATH

PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS PERMIT IS HEREBY ISSUED TO

RAYMOND J. DRISCOLL
HC 30, BOX 138G
CHILOQUIN, OREGON 97624

PHONE: (541) 783-2450

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: S-69829

SOURCE OF WATER: AGENCY SPRING, TRIBUTARY TO AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

RATE OF USE: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF ALLOWED USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

POINT OF DIVERSION LOCATION: SW 1/4 SW 1/4, SECTION 18, T34S, R7E, W.M.; 1309 FEET NORTH 45 DEGREES 41 MINUTES AND 43 SECONDS EAST FROM SW CORNER, SECTION 18

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW 1/4 SW 1/4
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Measurement, recording and reporting conditions:

- A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.
- B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may

Application S-69829 Water Resources Department

PERMIT S-53060

require the permittee to report general water use information, the periods of water use and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

Use of water under authority of this permit may be regulated if analysis of data available after the permit is issued discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

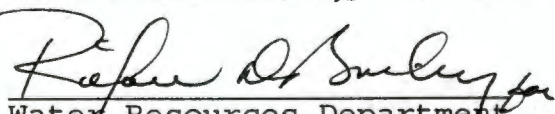
By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction work shall begin within one year from permit issuance and shall be completed on or before October 1, 1998. Complete application of the water to the use shall be made on or before October 1, 1999.

Issued *December 26*, 1996


Water Resources Department
Director

Oregon Water Resources Department
Water Rights Division

Water Rights Application
Number S-69829

Final Order

Application History

On February 1, 1989, Raymond J. Driscoll submitted an application to the Department for a water use permit. On March 19, 1996, the Department issued a Proposed Final Order proposing to approve the use from Agency Spring, tributary to Lake Glacid, a tributary of Agency Creek. However, the proposed use was limited to the period October 1 to October 31 and December 1 through June 30. The proposed limitation was due to the Department's finding that, during portions of the year, pumping water from the proposed source would negatively impact the flows necessary to maintain the highest and best uses of the Klamath River Scenic Waterway. The protest period closed May 3, 1996; the applicant protested the Proposed Final Order on March 29, 1996. On April 22, 1996, the applicant requested a contested case hearing be held. On April 26, 1996, Administrative Law Judge (ALJ) Stephen H. Elmore scheduled a contested case hearing for May 20, 1996. On May 20, 1996, at the request of the applicant, the hearing was rescheduled for November 19, 1996. On November 18, 1996, at the request of the Department, the hearing was postponed. On December 16, 1996, the protest and request for contested case hearing was withdrawn by the applicant. On December 18, 1996, ALJ Stephen H. Elmore issued an order dismissing the hearing.

Based on additional information provided by the applicant and Douglas E. Adkins, Professional Engineer and consultant for the applicant, the Department finds that the findings of the Proposed Final Order require modification. The Department's original analysis of the proposed use found that, due to the requirements of the Klamath River Scenic Waterway, water was not available year-round. However, information submitted by Douglas E. Adkins, P.E., demonstrates that pumping Agency Spring at a rate of 150 gallons per minute has no effect upon the surface water level of Lake Glacid and no impact on the outflow of the Lake to Agency Creek, a tributary of the Klamath River Scenic Waterway.


In addition to the findings of Mr. Adkins, the applicant, in a letter dated March 26, 1996, indicated that the flow rate of the proposed use should be modified to allow 150 GPM (0.334 CFS).

The Department finds that the proposed use, amended to a rate of 150 gallons per minute, may be allowed year-round without impairing the highest and best uses of the Klamath River Scenic Waterway. Therefore, the Department finds that, if exercised in accordance with the attached permit, the proposed use will not impair or be detrimental to the public interest.

Order

Application S-69829 therefore is approved with the above modifications to the Proposed Final Order, and Permit Number S-53060 is issued as limited by the conditions set forth in the attached permit.

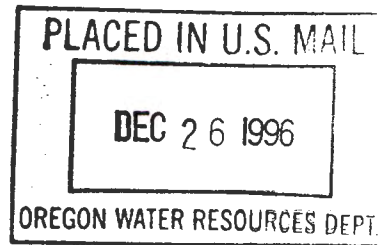
DATED *December 26, 1996*


Martha O. Pagel
Director

Hearing and Appeal Rights

Under the provisions of ORS 537.170, the applicant may request a contested case hearing by submitting the information required for a protest under ORS 537.153(6) to the Department within 14 days after the date of mailing of this order as shown below. If a contested case hearing is requested, the Department must schedule one. In the contested case hearing, however, only those issues based on the above modifications to the proposed final order may be addressed.

Under the provisions of ORS 183.484, the applicant or any person having standing may appeal this order by filing a petition for review in the Circuit Court for Marion County or the circuit court for the county in which the applicant resides or has a principal business office. The petition for review must be filed within 60 days after the date this order is served.



Map Review (check map for the following features/items):

- Permanent quality map (mylar or linen)
- CWRE stamp and signature
- Disclaimer
- Application & permit #; or transfer #
- North arrow
- Township, range and section
- Appropriate scale (1" = 1320', 1" = 400', or scale of assessor's map)
- Source
- Point(s) of diversion
- Point(s) of diversion (coordinates) Check with scale
- Conveyances (pump, pipelines, ditches, etc.) Permanent features shown?
- Place of use (1/4 1/4, DLC, or Gov Lot; if irrigation, # of acres in each legal government subdivision)
- Tax lot lines and numbers

Report Review:

- Application & permit #; or transfer #
- CWRE stamp and signature
- Permittee's signature
- Time limits
- Date of survey
- Type of use
- Extent of use
- Source(s) of water
- Rate and Duty
- Diversion rate for each use
- Description of conveyances system (from POD to POU)
- Diversion works description (pump make, serial model, capacity, and description)
- System capacity
 - Calculated capacity of system
 - OR
 - Measured amount of use
- Permit conditions
 - Fish screening
 - Meter/measuring device
 - Water use reporting
 - Other conditions

Other:

- Conflict Check

RECEIVED

NOV 26 2007

WATER RESOURCES DEPT
SALEM, OREGON

CWRE Claims of Beneficial Use Intake Form

Application #69829
Permit # 53060
Transfer # _____
Date 8/16/2007
Reviewer J Gainey

"A" DATE: December 26, 1997
"B" DATE: October 1, 1998
"C" DATE: October 1, 2005 PER EXTENSION ORDER

Map Review:

- YES Map on polyester film (OAR 690-014-0170(1) & 310-0050(1)(b))
- YES Application & permit #; or transfer # (OAR 690-014-0100(1))
- YES Disclaimer (OAR 690-014-0170(5))
- YES North arrow (OAR 690-310-0050(2)(c))
- YES CWRE stamp and signature (OAR 690-014 & 310-0050)
- YES Appropriate scale (1" = 1320', 1" = 400', or the original full-size scale of the county assessor map) (014 & 310)
- YES Township, range, section, and tax lot numbers (OAR 690-310-0050(4))
- YES Source illustrated if surface water (OAR 690-014-0170(3))
- YES Point(s) of diversion or appropriation (illustrated) (OAR 690-014(4) & 690-310-0050)
- YES Point(s) of diversion or appropriation (coordinates)(OAR 690-014(4) & 690-310-0050)
- YES Conveyance structures illustrated (pump, pipelines, ditches, etc.) (OAR 690-310-0050)
- YES Description of the location, in relation to the point of diversion or appropriation, of any fish screens, by-pass devices, and measuring devices required (OAR 690-014(4))
- YES Place of use (1/4 1/4, or projected 1/4 1/4 lines within DLCs, or Gov Lots; if irrigation, # of acres in each subdivision; if for domestic or human consumption, location of dwelling or spigot) (OAR 690-310-0050)

Report Review:

- YES On form or format provided by the Department (OAR 690-014-0100(1))
- YES Application & permit #; or transfer # (OAR 690-014)
- YES Ownership information (OAR 690-014)
- YES Date of survey (OAR 690-014)
- YES Person interviewed (OAR 690-014)
- YES County (OAR 690-014)
- YES Tax lot information (OAR 690-014)
- YES Description of conveyances system (from POD to POU) (OAR 690-014-0100)
- YES Source(s) of water (OAR 690-014-0100)
- YES Point of diversion/appropriation location (OAR 690-014-0100)
- YES Use, period of use, and rate for use (OAR 690-014-0100)
- YES Place of use location (OAR 690-014-0100)
- YES Type of use (OAR 690-014-0100)
- YES Extent of use (OAR 690-014-0100)
- N/A Rate and Duty (OAR 690-014-0100)
- YES Diversion rate for each use (OAR 690-014-0100)
- YES Diversion works description (pump make, serial model, capacity, and description) (OAR 690-014-0100)
- YES System capacity (OAR 690-014-0100)

YES Calculated capacity of system (required)

COMMENT: Pump system providing more than permitted. - yes

Measured amount of use (optional)

YES Permit/Transfer Final Order Conditions (OAR 690-014-0100)

Time limits - Extension Approved - to 2005

Initial water level measurements

Annual static water level measurements

Measurement, recording, and reporting

YES Meter/measuring device - OK

Water use reporting

Fish screening and/or by-pass

Pump test (ground water) -

Other conditions

YES CWRE stamp and signature (OAR 690-014-0100)

YES Signature(s) of permittee of transfer holder (OAR 690-014-0100)

RECEIVED

NOV 20 2007

WATER RESOURCES DEPT
SALEM, OREGON

Meter installed 1994

Complet Check - OK

This is a final order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied. In addition, under ORS 537.260 any person with an application, permit or water right certificate subsequent in priority may jointly or severally contest the issuance of the certificate at any time before it has issued, and after the time has expired for the completion of the appropriation under the permit, or within three months after issuance of the certificate.

STATE OF OREGON

COUNTY OF KLAMATH

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WARREN AND YOLANDA RENNER
1430 SOUTH OAKDALE
MEDFORD, OREGON 97501

This Certificate confirms the right to use the waters perfected under the terms of the Permit. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed the amount described, or its equivalent in case of rotation, measured at the point of diversion from the source. The specific limits and conditions of this right are listed below.

APPLICATION FILE NUMBER: S-69829

PERMIT NUMBER: S-53060

SOURCE OF WATER: AGENCY SPRING, A TRIBUTARY OF AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

MAXIMUM RATE ALLOWED: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

S-69829.RA

Certificate 83671

THE POINT OF DIVERSION IS LOCATED AS FOLLOWS:

SW $\frac{1}{4}$ X SW $\frac{1}{4}$, SECTION 18, T 34 S, R 7 E, W.M.; 880 FEET NORTH AND
1175 FEET EAST FROM THE SW CORNER, SECTION 18.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW $\frac{1}{4}$ X SW $\frac{1}{4}$ ✓
SECTION 18 ✓
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M. ✓

Measurement, recording and reporting conditions: ✓

- A. The water user shall maintain the flow meter in good working order. ✓
- B. The water user shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice. ✓
- C. The Director may require the water user to keep and maintain a record of the amount (volume) of water used and may require the water user to report water use on a periodic schedule as established by the Director. In addition, the Director may require the water user to report general water use information, the periods of water use and the place and nature of use of water under the right. The Director may provide an opportunity for the water user to submit alternative reporting procedures for review and approval. ✓

Use of water under authority of this right may be regulated if analysis of data available discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife ^{IN} effect as of the priority date of the right or as those quantities may be subsequently reduced. ✓

Failure to comply with any of the provisions of this right may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the right. ✓

is for beneficial

The right ^{is} to the use of ~~the~~ water for the above purpose is restricted to ~~beneficial use~~ ^{use} without waste, ~~on the lands or place of use~~ described. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

of water allowed

The use ~~confirmed~~ herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

Issued

Phillip C. Ward, Director
Water Resources Department

Recorded in State Record of Water Right Certificates Number 83671

S-69829.RA

Mailing List for Certificate

Mailing Date:

Application: S-69829

Permit: S-53060

Certificate: 83671

Permit/Certificate Holder: (include copy of map)

Warren and Yolanda Renner

1430 South Oakdale

Medford, Oregon 97501

~~541-772-2117~~

Copies Mailed

By:

(STAFF)

on:

(DATE)

Copies of Final Certificate to be sent to:

1. Watermaster # 17: (include copy of map)
2. Data Center (include copy of map)
3. Water Availability
4. Vault
5. File

Other persons to receive copies: (Include map)

1. Donald Knauer, CWRE
2. Alex Jaureguui, 48 Ranger Ct, Alamo CA 94507

Recorded in State Record of Water Right Certificates Number
PROPOSED.

App Number

MEMORANDUM

TO: Water Resources Commission

FROM: Director

SUBJECT: Agenda Item 2, March 11, 1993
Water Resources Commission Work Session

WATER
RESOURCES
DEPARTMENT

Informational Report: Water Availability Program, A Progress Report: 1993

I. Background

In May 1991, staff issued three reports detailing work accomplished under the Water Availability Program to that time. In the methodology described in those reports, 80 percent exceedance streamflows were based on mean *monthly* flows. Subsequent to the reports, staff recommended that the exceedance flows be based on mean *daily* flows, that a new methodology be defined, and that the water availability database be recalculated. The Commission concurred with the recommendation, and work on a new methodology was initiated in February 1992.

The new methodology is now defined, and the tools necessary to implement the methodology in Western Oregon have been developed. A draft progress report (Attachment 1) describing the new methodology has been prepared for the 1993 Legislature. This staff report serves as an introduction to the progress report, briefly highlighting the differences between the new methodology and the previous one.

II. Discussion

The new methodology is similar in concept to the old. In both, water availability is estimated from measured streamflows where measurements are available, and where measurements are not available, water availability is estimated by means of a regional regression analysis. The ways in which water availability is estimated within this general framework are very different, however. The switch to mean daily flows necessitated many changes, especially in the way the 80 percent exceedance flow is determined. In addition, a number of improvements were made to the regression analysis. The more significant of these changes and improvements are listed below.

1. In the new methodology, 80 percent exceedance streamflows all are based on a common time period: 1957 to 1987. In the old methodology, the time period varied from basin to basin. (See Page 8, Attachment 1)



3850 Portland Rd NE
Salem, OR 97310
(503) 378-3739
FAX (503) 378-8130

MEMO

January 26, 1994

To: Water Availability File

From: Barry Norris

Re: Informational Report: Water Availability Program, A
Progress Report

Currently this is the basic document available for consideration of the water availability program. A draft of this document was presented to the Water Resources Commission at their work session in April 1993.

The report basically describes the water availability model that has been developed for western Oregon. There are two revisions (different from what is described in the report) that have evolved since compiling the report:

1. The method for determining consumptive use is slightly different. Please refer to document #5 for this methodology.
2. A method for correcting estimated flows based on gaged flows was added. Please refer to document #4 for a detailed description.

EXH2B

2. In the new methodology, only gages reflecting natural streamflows are considered in the regression analysis. In the old methodology, an attempt was made to include streamflows that are impacted by out-of-stream withdrawals. The attempt led to poor regression models with large error bands in basins where withdrawals are significant. (See Page 12, Attachment 1)
3. In the new methodology, the 80 percent exceedance streamflows estimated from the regression analysis represent natural streamflow. To estimate water availability for these watersheds, an estimate must be made of consumptive uses. Methods for calculating consumptive uses for municipal, industrial, and agricultural uses have been developed. (See Page 14, Attachment 1)
4. Thirty-one watershed characteristics are included in the regression analysis in the new methodology. The old methodology included only four watershed characteristics. (See Page 12, Attachment 1)
5. In the new methodology, specific Water Availability Subbasins are defined. Water availability will be calculated for these subbasins. (See Page 3, Attachment 1)

The two methodologies give different results. In general, water availability estimates based on mean daily flows are less than those based on mean monthly flows. This effect is most pronounced in winter and spring months. In summer months, when daily streamflows are more uniform, differences are smaller.

III. Director's Recommendation

This is an informational report only. Staff would appreciate comments on the draft of the progress report to the Legislature.

Attachments: 1) Water Availability Program, A Progress Report - 1993

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February 9, 1993

**THE WATER AVAILABILITY
PROGRAM
A PROGRESS REPORT - 1993**

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Acknowledgements

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Adam Sussman of the Resource Management Division originated the Water Availability Subbasin concept. He is largely responsible for delineating these basins for the North Coast. In addition, Adam deserves credit for the methodology employed to calculate consumptive use. He wrote the section in this report detailing that work.

Ken Rauscher of the Technical Services Division has labored long and hard to develop the Geographic Information System coverages required to generate the many watershed characteristics. This has been a huge and frustrating undertaking. Ken is to be commended for his considerable patience and persistence.

Michael Ciscell of the Technical Services Division was instrumental in developing the program required to isolate the existing water rights for a given watershed. In addition to his contributions to developing the conceptual model for the program, he worked out and coded the interface with the Geographic Information System. As coordinator of Geographic Information System activities for the Department, Michael deserves many thanks for his continued cooperation and enthusiastic support of the Water Availability Program.

Kathy Geers of the Technical Services Division spent many hours coding the program that isolates existing water rights for a given watershed. The many subtleties of the Water Rights Information System made this a long and difficult task. This program is integral to the water availability methodology. Kathy deserves many thanks for bringing the conceptual model to reality.

Bernadette Williams and Virginia Gabert of the Resource Management and Technical Services Divisions, respectively, have put Kathy Geer's water rights program to good use. They have spent many hours collecting water rights information for gaged watersheds in western Oregon and for Water Availability Subbasins in the North Coast Basin. In addition they have searched water use reports for actual municipal water use and have made many phone calls to reporting users to clarify their water use. Their continued hard work is greatly appreciated.

Introduction

The 1989 Oregon Legislature directed the Oregon Water Resources Department to create a water availability database to be used in basin planning and in evaluation of water rights applications. The Water Availability Program was established to develop methodologies and tools necessary to create and use the water availability database.

Knowledge of water availability is required to prevent over-appropriation of the surface water resource. "Over-appropriated", as defined for surface water in the Oregon Water Management Program, "means a condition of water allocation in which . . . the quantity of surface water available during a specified period is not sufficient to meet the expected demands from all water rights at least 80 percent of the time during that period".

In May of 1991, three reports (Robison, 1991a, b, c) were issued detailing work accomplished to that time. The reports analyzed water availability at stream gage locations around the state and described a methodology for estimating water availability for *most* areas of the state. The methodology did not work in the Deschutes and Klamath Basins and in Southeastern Oregon. Appendices list the monthly water available for major streams in areas of the state where the methodology was applied.

Subsequent to the 1991 reports, Department staff recommended that the methodology described in those reports be revised and that the water availability database be recalculated. The Water Resources Commission concurred with the recommendation, and work on a new methodology was initiated in February 1992.

The new methodology is now defined, and the tools necessary to implement the methodology have been developed. This report provides an overview of the new methodology and highlights the differences between this and the work by Robison. A trial implementation of the methodology is currently under way for the North Coast Basin.

The report begins with a definition of water availability. Where water availability calculations will be made is considered in the second section. The third section describes the methodology used to estimate water availability, and the fourth section discusses the uncertainty associated with the water availability estimates. The fifth and last section discusses the status of the new methodology and the work in progress to implement it.

Water Availability - A Definition

Water availability is the amount of water that is available for appropriation from a given point on a given stream for *new* out-of-stream *consumptive* uses. It is obtained from the *natural* streamflow by subtracting existing instream water rights and out-of-stream consumptive uses.

$$WA = Q_{NSF} - CU - ISWR$$

where

WA = Water available

Q_{NSF} = The natural streamflow at the given point on the given stream.

CU = The consumptive use from out-of-stream water rights on the stream and its tributaries upstream from the specified point

ISWR = Instream water right for a stream reach that includes the specified point.

Natural streamflow is the flow that occurs when there are no consumptive uses of water on the stream. Consumptive uses represent water withdrawn from a stream and lost to evaporation or transpiration or transferred out of the watershed. In the case of evaporation and transpiration, unconsumed water is assumed to return to the stream; only the consumptive part is subtracted from the natural streamflow. For out of watershed transfers, all of the withdrawn water is assumed to be 'consumed'. The face value of an instream water right is applied directly to the calculation without modification.

For the water availability calculation, streamflow must be represented by some descriptive *statistic*, e.g., mean flow or an exceedance streamflow. Water availability will depend on what statistic is selected to represent streamflow in the calculation. The Department's Water Allocation Policy limits total allocation to the amount of water flowing in a stream 80 percent of the time in any given month. This amount of water is called the 80 percent exceedance flow and is the standard from which water availability is determined. Since the

standard is applied on a monthly basis, all water availability calculations are made on a monthly basis.

Where Water Availability is Calculated - Water Availability Subbasins

Water availability is determined by out-of-stream consumptive uses and by instream water rights. *Ideally* a water availability calculation would be done for every watershed associated with a point of diversion or an instream water right. Because there are so many existing water rights, the ideal approach is impractical.

The alternative is to limit the number of watersheds for which water availability is calculated. The delineation of these watersheds depends on the locations of gages and of instream water rights and on the physiography of affected streams. These watersheds are referred to as Water Availability Subbasins. Water availability is estimated at the outlet of each of these subbasins.

Large hydrologic units like the Rogue River Basin are broken into a number of Water Availability Subbasins. The Water Availability Subbasins are 'nested', each basin being included in a basin downstream. For water to be available in a given Water Availability Subbasin, it must be available in all the other subbasins in which it is nested. Figure 1 gives a hypothetical example of a set of nested Water Availability Subbasins. In the figure, for water to be available in subbasin 6, it must also be available in subbasins 1, 2, and 5.

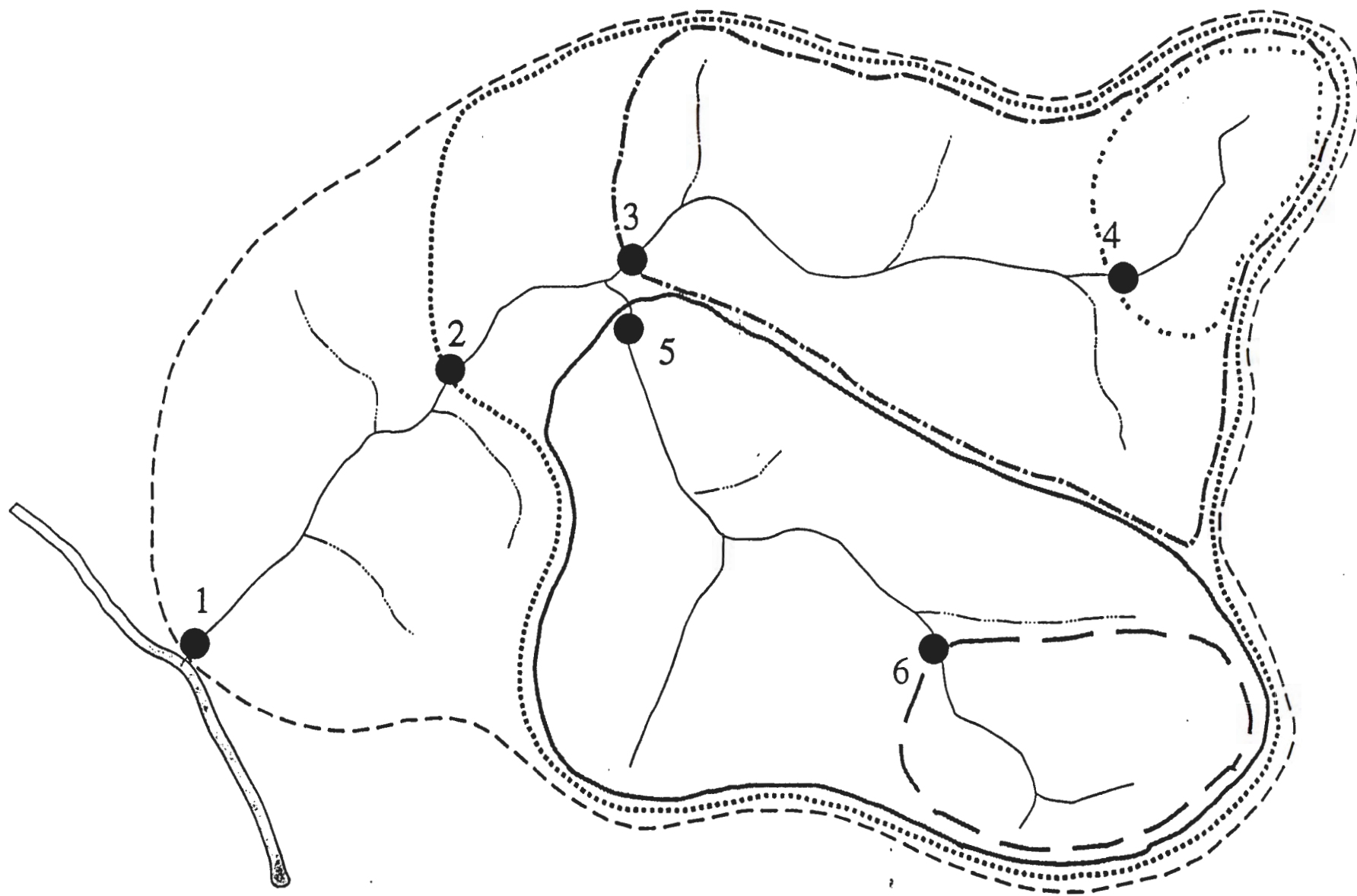


Figure 1. Water Availability Subbasins

How Water Availability is Estimated - The Methodology

Estimation of 80 percent exceedance streamflows and consumptive uses are considered in detail in this section. How these estimates are combined with an instream water right in an *actual* calculation of water availability is also considered. The methodology followed in estimating 80 percent exceedance streamflows and consumptive uses and transforming those estimates into a water availability estimate is shown schematically in Figure 2. In the figure, rectangular boxes represent stored information or a database. Ellipses represent processes that act on the stored information. Arrows show the direction of data movement.

The 80 Percent Exceedance Streamflow Statistic

More than one statistic is available to represent 80 percent exceedance streamflow. Robison (1991c) used mean *monthly* flows in a standard frequency analysis to determine an 80 percent exceedance streamflow statistic. This statistic represents the mean monthly flow exceeded in 8 out of 10 years. A more representative statistic is based on mean *daily* flows. This is the approach recommended by Robison to the Water Resources Commission in 1991 and is the approach used in the new methodology.

The *meaning* of the statistic when based on mean daily flows is best illustrated by an example. In Table 1 are listed 11 mean daily streamflows (Chronological Data) for some imaginary stream. In the second column of the table, these same streamflows are sorted smallest to largest. In the third column, exceedance values are assigned to the sorted streamflows. The smallest streamflow is assigned an exceedance value of 100 percent because 100 percent of the remaining streamflows exceed this smallest value. Similarly the largest streamflow is assigned an exceedance value of 0 percent because none of the other streamflows exceeds it. The 80 percent exceedance streamflow is the streamflow that is exceeded by 80 percent of the other streamflows.

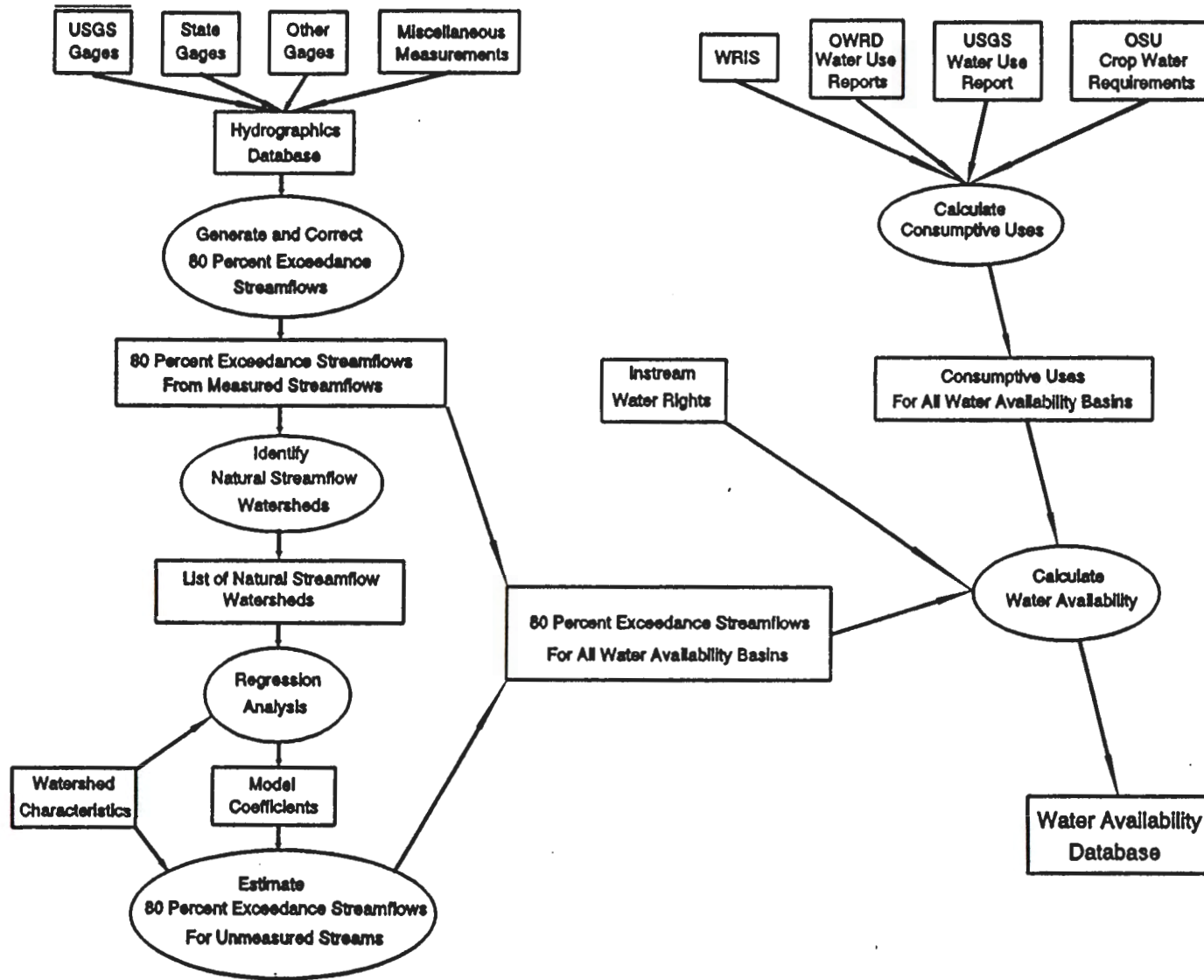


Figure 2. The Water Availability Methodology: 1991 - 1993

Table 1. Assigning Exceedance Levels to Mean Daily Streamflows: An Example.

| Chronological Data | Sorted Data | % Exceedance |
|-----------------------|----------------|--------------|
| 175 | 106 | 100 |
| 123 | 123 | 90 |
| 106 | 143 | 80 |
| 187 | 151 | 70 |
| 199 | 156 | 60 |
| 302 | 165 | 50 |
| 151 | 175 | 40 |
| 156 | 187 | 30 |
| 210 | 199 | 20 |
| 143 | 210 | 10 |
| 165 | 302 | 00 |

On a real stream, many more mean daily streamflows are used to assign exceedance levels. For 30 years of record for January, for example, there are 930 mean daily flows.

Estimating 80 Percent Exceedance Streamflow

Measured streamflows form the basis for all estimates of 80 percent exceedance streamflow. They are reported in the Department's hydrographics database as mean daily flows or as miscellaneous measurements. In Oregon, streamflows are measured by the United States Geological Survey (USGS), the Oregon Water Resources Department, and some county governments.

Where measured streamflows are available, 80 percent exceedance streamflow can be calculated directly from the streamflow measurements. Measured streamflows, however, are available for only some of the locations where water availability will be required. In this new methodology, as in the old, streamflow estimates for unmeasured sites are made by way

of a regional regression analysis. Underlying assumptions and the implementation of the regression are different in the new methodology, however.

Statistical regression models depend on measured streamflows. The models 'interpolate' between measured streamflow locations to unmeasured locations. These models are relatively easy and quick to set up and execute. They are a good choice when many estimates are required over a large area.

Estimating 80 percent exceedance streamflows directly from streamflow measurements and from statistical regression models is discussed in more detail in the next two sub-sections.

Estimating From Streamflow Measurements

There are two kinds of measured streamflows: (1) continuous and (2) miscellaneous.

Continuous streamflow measurements are obtained from streamflow *gages* located on various streams around the state. A gage in this context can be thought of as an instrument that continuously records streamflow at its location. The measurements from these gages are represented in the database as mean daily flows. Including USGS and State of Oregon gages, there are continuous records for about 400 locations around the state. 260 of these are west of the Cascade crest. The periods of record vary from 2 years to nearly 100 for the Willamette River gage at Albany.

The 80 percent exceedance streamflow is specific to the time period for which it is calculated. Exceedance streamflows calculated on measured streamflows from different time periods give different results for the same stream. To best represent actual streamflow over some area, exceedance flows should be calculated relative to the same period of time, or *base period*.

The base period used in the new methodology was selected based on observations of streamflow for gages with periods of record of 70 years or more. Plots of these streamflows show that the first part of this century was drier than average for the whole century, the middle part wetter, and the latter part more or less average - at least through 1987. The period from 1957 to 1987 was chosen as the most suitable base period because it best represents the long term average conditions for this century and because this is the period for which most streamflow information is available.

Since the periods of record for all gages do not coincide with the base period of 1957 to 1987, the *short* or out of phase records must be adjusted or corrected to represent the base period. The correction (Searcy, 1959) is based on a linear association of the short record with the record of a nearby gage that does coincide with the base period.

Miscellaneous measurements are periodic or occasional measurements of streamflow. There are several thousand of these measurements in the hydrographics database. Since the inception of the surface water availability program, a formal program of taking miscellaneous measurements has been under way.

To be useful in the water availability analysis, a minimum of 24 to 36 miscellaneous measurements are required for each measurement site. The measurements must be distributed throughout the year and some care must be taken to ensure they are independent of one another (e.g., two measurements not taken during the same run off event). In a method similar to the one used to correct continuous measurements to the base period (Searcy, 1959), miscellaneous measurements are used in association with a long term continuous streamflow record to estimate the 80 percent exceedance streamflow for the measurement site for the base period.

Estimating From a Statistical Regression Model

Regression analysis is based on the assumption that streamflow is related in some way to various watershed characteristics. For example, streamflow increases with watershed size, other factors like precipitation being equal. A 100 square mile watershed will produce more runoff than a 25 square mile watershed. The relationship between streamflow and watershed area for gaged streams in the North Coast Basin is shown in Figure 3. Similar relationships exist between streamflow and other watershed characteristics, each characteristic accounting for part of the variability in streamflow. These relationships can be quantified in a mathematical form. For example:

$$Q_{NSF} = 0.004 A^{1.0023} P^{2.1343} E^{0.5639} T^{-0.0024}$$

where

- Q_{NSF} = natural streamflow
- A = area
- P = precipitation
- E = mean elevation
- T = minimum temperature

A regression equation like this is derived from measured streamflows and their associated watershed characteristics. For a watershed where the 80 percent exceedance streamflow is unknown, an estimate of the streamflow can be made by inserting the known characteristics for the watershed into the regression equation and performing the calculations.

Generally it is required that the known streamflow statistics used in formulating the regression equations represent *natural* streamflow (Thomas and Benson, 1969). Flow regulation by reservoirs or withdrawals from the stream cannot be accounted for in the

regression model. Including them results in a poor regression model that gives biased streamflow estimates.

Figure 3. The Relationship Between Streamflow and Basin Area for Gaged Streams in the North Coast Basin.

Suppose, for example, a regression model is formulated using measured streamflows some of which are impacted by withdrawals. Based on this model, streamflow estimates for a stream with no withdrawals will tend to be underestimated, and for a stream with withdrawals, streamflow estimates will tend to be overestimated.

In his regression analysis, Robison (1991c) attempted to account for withdrawals from streams with a watershed characteristic he called a water rights index. This index was based on the number of acres that could be irrigated according to existing water rights. The index did not work as intended and lead to poor regression models in areas of the state where stream withdrawals are significant (e.g., Rogue and Umpqua Basins). The index is a significant characteristic in some of Robison's regressions, not because it accounts for water use, but because it is highly correlated to another watershed characteristic, mean monthly minimum temperature. In Robison's analysis, the water rights index acts as a surrogate for temperature. Preliminary regressions with the new methodology suggest that temperature is an important watershed characteristic.

The new methodology does not attempt to account for water withdrawals in the regression analysis. Only measured streamflows that are not significantly impacted by withdrawals are included. Significant withdrawals are those that reduce the natural streamflow by more than five percent. Streamflows that are estimated by regression equations formulated from natural streamflows also represent natural streamflows.

Another difference between the old methodology and the new is inclusion of many more watershed characteristics. Robison's analysis included only four: watershed area, mean annual precipitation, a soils index, and the water rights index. The new methodology considers thirty-one characteristics most of which were not available to Robison. They are listed in Table 2. Not all of these characteristics are used in each regression model. The Department's Geographic Information Services section was responsible for generating the coverages required to estimate all of these watershed characteristics.

Table 2. Watershed Characteristics Used in the New Regression Analysis

1. Longitude of the watershed centroid
 2. Latitude of the watershed centroid
 3. Watershed area*
 4. Length of the watershed perimeter
 5. Percent of lakes and ponds by area
 6. Underlying rock hydraulic conductivity index
 7. Underlying rock porosity index
 8. Underlying rock combined hydraulic conductivity and porosity index
 9. Mean basin soils index*
 10. Maximum watershed relief
 11. Mean watershed slope
 12. Mean slope aspect
 13. Percent of the watershed above 3000 feet
 14. Percent of the watershed above 4000 feet
 15. Percent of the watershed above 5000 feet
 16. Percent of the watershed above 6000 feet
 17. Mean annual precipitation*
 18. Mean annual minimum temperature
 19. Mean January minimum temperature
 20. Mean February minimum temperature
 21. Mean March minimum temperature
 22. Mean April minimum temperature
 23. Mean May minimum temperature
 24. Mean June minimum temperature
 25. Mean July minimum temperature
 26. Mean August minimum temperature
 27. Mean September minimum temperature
 28. Mean October minimum temperature
 29. Mean November minimum temperature
 30. Mean December minimum temperature
 31. Percent forest cover
-

* The indicated watershed characteristics were used by Robison. A fourth characteristic used by Robison, the water rights index, is not included here.

Estimating Consumptive Uses

Consumptive uses are those that cause a net reduction in streamflow. Generally, some evaporative or transpirative loss is associated with the use. In this analysis, consumptive uses are restricted to those likely to be significant: (1) municipal, (2) industrial - manufacturing, and (3) irrigation.

Calculation of the amount of water consumed by these uses is based on existing *allocations*. The existing allocations, or 'paper rights', associated with a Water Availability Subbasin are isolated by means of a computer program that interacts with both the Geographic Information System and the Water Rights Information System. How these paper rights are used to determine consumptive use is described in the following sub-sections.

Municipal

Municipal use is approximately 20 percent consumptive (Broad, 1992). An estimate of consumptive use for a particular municipal diversion is made by multiplying the municipal allocation by 0.20. This calculation assumes the unconsumed water is returned to the stream in the same Water Availability Subbasin. In many cases, however, the point of diversion for a municipal water supply will be near the head waters of a stream and the sewage treatment plant return flow near the mouth or on another stream. Where the return flow and the point of diversion are not in the same Water Availability Subbasin the consumptive use is considered to be 100 percent. In this case, the consumptive use coefficient is 1.0.

Not all municipal rights are *developed*, i.e., there are facilities in place to divert water. Of those that are developed not all are exercised to their full allocation. Based on the Department's water use reporting data and other available sources (e.g., phone contact and water use surveys) the status of each municipal right is determined. Where a right is

developed, the full value of that right (regardless of actual withdrawals) is multiplied by the appropriate coefficient (i.e., 0.2 or 1.0) to obtain the consumptive use. Where a right is found to be *undeveloped* the consumptive use is considered to be zero.

Industrial - Manufacturing

All industrial water rights are taken at their face value and multiplied by a consumption coefficient of 0.15 (Broad, 1992). If the amount of water estimated to be consumed is less than 0.01 cfs, it is disregarded.

Irrigation

Water consumption by irrigation cannot be calculated directly from either the allocated withdrawals for irrigation or the number of acres to be irrigated by each right. Actual irrigation withdrawals may vary significantly from those permitted by the paper rights and may be as little as 50 percent of that permitted (Paul, 1992). Many growers probably do not exercise their rights to the fullest extent nor irrigate as many acres as they are permitted. Non-use due to agricultural practices such as crop rotation and leaving fields fallow also may account for part of the differences.

In this methodology, water consumption by irrigation is obtained from the Portland office of the U.S. Geological Survey which reports on water use in the state every five years (Broad, 1993). The number of irrigated acres and total annual consumptive use is tabulated for areas, called hydrologic units, delineated by the USGS. The number of irrigated acres is based on a combination of the 1987 Census of Agriculture, 1990 crop statistics provided by the Cooperative Extension Office at Oregon State University, and the 1989 - 90 Oregon Agriculture and Fisheries statistics. Consumptive use is based on the number of irrigated

acres by crop type, irrigation method, and an Oregon State University study on crop water requirements (Cuenca, 1992).

Only rarely will a Water Availability Subbasin also be a hydrologic unit (e.g., the North Umpqua River above the mouth). Generally the Water Availability Subbasin will be either larger than a single hydrologic unit (e.g., the Willamette River above Salem) or most often, smaller than and contained within a hydrologic unit (e.g., the Tillamook River). Where the Water Availability Subbasin is larger than a hydrologic unit, the annual consumptive uses from the hydrologic units within the Water Availability Subbasin must be combined to get the consumptive use for the Water Availability Subbasin. Where the Water Availability Subbasin is smaller than a hydrologic unit, consumptive use for the Water Availability Subbasin is calculated as a fraction of the consumptive use for the hydrologic unit.

To calculate this fraction, the number of *acres permitted* to be irrigated is determined for both the Water Availability Subbasin and the hydrologic unit. The fraction is found by dividing the number of acres found for the Water Availability Subbasin by the number of acres for the hydrologic unit. Multiplying this fraction by the annual water consumption in the hydrologic unit gives an estimate of the annual water consumption for the Water Availability Subbasin.

Since the water consumption must be calculated on a monthly basis, the annual value obtained from the Survey's report must be distributed over the course of the growing season for the Water Availability Subbasin. This is accomplished by means of monthly irrigation requirements developed at Oregon State University (Cuenca, 1992). The monthly irrigation requirements for the most common crop serve as a pattern for distributing the annual consumption.

The Water Availability Calculation

Actual water availability calculations are done in one of three ways depending on what information is available to estimate the 80 percent exceedance streamflow.

1. Where measured streamflows are available for Water Availability Subbasins with no consumptive uses, the 80 percent exceedance streamflow represents natural streamflow. Since there are no consumptive uses, the calculation is given by

$$WA = Q_{NSF} - ISWR$$

2. Where measured streamflows are available for Water Availability Subbasins with consumptive uses, the consumptive uses are accounted for in the streamflow measurement. The 80 percent exceedance streamflow represents *net* streamflow.

$$Q_{NET} = \text{Net Streamflow} = Q_{NSF} - CU$$

The water availability calculation for net streamflow is given by

$$WA = Q_{NET} - ISWR$$

3. Where measured streamflows are not available and the 80 percent exceedance streamflow is estimated from a regression model, the exceedance streamflow represents natural streamflow. In this case, consumptive uses, if any, must be estimated and subtracted from the natural streamflow. This calculation is given by

$$WA = Q_{NSF} - CU - ISWR$$

Water is available when the result of the water availability calculation is *positive* (i.e., the sum of consumptive uses and any instream water right is *less* than the natural streamflow).

The Effect of New Uses on Water Availability

An estimate of water availability for a given Water Availability Subbasin represents water use in the subbasin *at the time of the calculation*. As new uses are permitted in the subbasin, the amount of water available for further appropriation is reduced by the amount of the new consumptive use. Because Water Availability Subbasins are nested, a new use likely will impact several subbasins.

A computer program has been developed to calculate the consumptive use associated with an individual new use and to do the complicated bookkeeping required in assigning the new consumptive use to all nested basins. For a user specified Water Availability Subbasin, the program displays a table showing water available by month for the subbasin and all of the subbasins in which it is nested. Subbasins where water is no longer available are flagged as such. Since new uses are input to the program on a regular basis, the table of water availability displayed by the program represents the *current* status of water availability in the subbasin.

Uncertainty of Water Availability Estimates

The water availability calculation provides an *estimate* of water availability. The *true* water availability and therefore the error of the estimate are unknown. The reliability of an estimate is described by the *uncertainty* of the estimate. Taking measured streamflow as an example, the true streamflow might be described as being within plus or minus 5 percent of the measured streamflow in 95 percent of such measurements. In this example, streamflow estimates (i.e., the streamflow measurements) are believed to be quite close to their true values most the time; the uncertainty of the estimates is small.

In calculating water availability, there is uncertainty associated with both measured and calculated data. For the measured streamflows and for streamflow estimates made from the regression models the uncertainty can be calculated. For correction of the 80 percent exceedance flows to the base period and for calculation of consumptive uses, the uncertainty is unknown. The overall uncertainty depends on how the water availability calculation is made. In general, the more directly the calculation is made from measured streamflow data, the smaller the uncertainty.

The methodology is designed so that the errors, though unknown, are random. To the extent this is true, the *average* error of all the estimates is zero. The errors associated with the water availability estimates are scattered randomly about zero; half being positive errors (overestimates) and half being negative errors (underestimates).

The object of the analysis is to determine water availability based on an 80 percent exceedance standard. On *average* for all Water Availability Subbasins, this is true. For a basin where water availability is underestimated, the estimate reflects a stricter standard, e.g., a 90 or 95 percent exceedance standard. Where water availability is overestimated, the estimate reflects a less strict standard, e.g., a 60 or 70 percent exceedance standard.

Current Program Status

The new methodology is substantially in place. Staff developed the necessary computer software and databases, and work was begun on basins west of the Cascade crest. Measured streamflows are available for 260 watersheds on the west side. For these watersheds, staff calculated 80 percent exceedance streamflows corrected to the base period and determined the 31 watershed characteristics.

The North Coast Basin was selected as a test case for the methodology. For this basin, staff formulated a regression model for each month and identified 144 Water Availability Subbasins. The regression models were used to calculate 80 percent exceedance streamflows for those Water Availability Subbasins where measured streamflows were not available. Consumptive uses were calculated for each subbasin and the water availability calculation performed.

The results from the North Coast Basin are being used to check the methodology and all computer programs for accuracy and consistency. Any errors or inconsistencies will be corrected before proceeding to other basins.

It is expected that the methodology outlined here will work for all basins on the west side and that water availability for these Water Availability Subbasins will be completed within six months. Work on the east side will begin subsequent to west side analysis. The new methodology is expected to work for the John Day basin and for basins in northeastern Oregon. Water availability calculations for those areas of the state should be completed in the six to eight months following completion of the west side work.

Because regression models do not work everywhere, water availability for the remainder of the state will be more difficult to determine. In the analysis performed by Robison (1991a,b), the regressions failed in the Deschutes and Klamath basins and for Southeastern

Oregon. Water availability was not determined for those areas. It is not known yet how the new methodology will perform in these areas. At least some of the problems that afflicted the old methodology are likely to prevail in the new one. The reason for much of the poor performance apparently is related to hydrologic processes (i.e., large spring flow) that cannot be accounted for in the existing models.

Some of the difficulty with the regression modeling in eastern Oregon probably is related to significant impacts on streamflow by withdrawals. It is unlikely that enough gages measuring natural streamflow are located in these areas to formulate good regression models. It may be necessary to re-create natural streamflow by estimating consumptive uses in these areas and adding that amount back to the measured streamflows. These additional 'natural streamflows' should improve the chances of formulating good regression models for these areas.

Where regression modeling fails, the Department may try other methods. One method for estimating streamflow at unmeasured sites is from computer implemented models that simulate the physical attributes of a watershed mathematically. Some measured streamflows are required to calibrate the model. Where good input data (e.g., precipitation, evapotranspiration) are available these models can do a very good job estimating streamflow. They are typically used where detailed information about only a particular watershed is required. Physically based models may be useful in those areas of the state where regression modeling has failed. Considerable effort and time would be required to develop and implement these models.

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Searcy, J.K. 1959. Flow-duration curves: U.S. Geological Survey Water- Supply Paper 1542-A. 33 p.

Thomas, D.M. and Benson M.A. 1969. Generalization of streamflow characteristics from drainage watershed characteristics. Open file report, U.S. Geological Survey. 45 p.

STATE OF OREGON

WATER RESOURCES DEPARTMENT

In the matter of the Water Right Application) Appl. S-69829
of)
Raymond J. Driscoll,)
Protestant.)
DISCLOSURE
OF WITNESSES

To: Raymond J. Driscoll
HC-30, Box 138-G
Chiloquin, OR 97635


Hearing Date, Time and Location: Monday, May 20, 1996,
9:00 a.m., by telephone.

We hereby advise that we intend to call the following
witnesses to testify at the hearing in this matter:

Rick Cooper, Hydrologist
Oregon Water Resources Department
158 12th Street, NE
Salem, OR 97310

Bill Fujii, Planner
Oregon Water Resources Department
158 12th Street, NE
Salem, OR 97310

Dated: May 13, 1996



Stephen E. A. Sanders, Asst. Attorney General
Department of Justice
1162 Court Street, NE
Salem, OR 97310

cc: Stephen H. Elmore, Administrative Law Judge, OWRD
Rick Cooper, Hydrologist
Bill Fujii, Planner
Steve Applegate, Administrator, Water Rights
Dwight French, Manager, Water Rights

MEMO

January 13, 1994

To: Water Availability File

From: Barry Norris, Administrator
Technical Services Division

Re: Water Availability Analysis Evolution

Following is an compilation of reports and memorandums concerning our water availability analysis project. This information has been assembled at the request of the Water Resources Commission, and it is intended for distribution to interested parties. The information is quite technical. It is intended for review by hydrologists, engineers, and other technical people. The information is difficult to understand for someone that does not have a background in statistics and hydrology. I have included a few notes of explanation with some of the documents. These notes are intended to give reviewers a little background, and highlight areas where changes have been made from previous documents.

Reviewers are encouraged to submit written comments to Rick Cooper, Water Resources Department Hydrologist.

Currently, water availability analysis is essentially complete on the west side of the Cascades. Work east of the Cascades is expected to be complete by January 1, 1995. At that time we expect to have a final technical report available for review by interested parties.

RECEIVED

MAY 13 1996

WATER RESOURCES DEPT.
SALEM, OREGON

Exh 2A

MEMO

January 25, 1994

To: Water Availability File

From: Barry Norris

Re: Index of Documents

| DOC # | DOCUMENT TITLE |
|-------|-------------------------------------------------------------------------------------------------------------------|
| 1 | Water Availability Program -A progress Report 1993 |
| 2 | GIS Use for Basin Characteristics |
| 3 | Informational Report: Follow-up Report on Comments Raised About the Methodology for Estimating Water Availability |
| 4 | A Methodology for Estimating Water Availability Based on Mean Daily Flows |
| 5 | Consumptive Use Outline |
| 6 | Peer Review of Methodology for Estimating Water Availability Based on Mean Daily Flows |
| 7 | Policy Issues |

RECEIVED

MAY 13 1996

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON

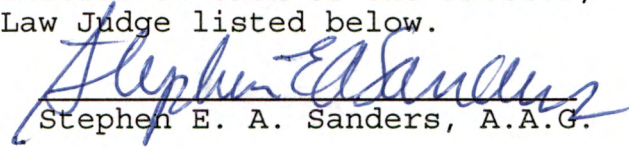
WATER RESOURCES DEPARTMENT

| | |
|------------------------------------------------|---------------|
| In the matter of the Water Right Application) | Appl. S-69829 |
| of) | |
| Raymond J. Driscoll,) | INDEX OF |
| Protestant.) | EXHIBITS |
|) | |

Hearing Date, Time and Location: Monday, May 20, 1996,
9:00 a.m., by telephone

Submitted by: Stephen E. A. Sanders, Asst. Attorney General
Department of Justice
1162 Court Street, NE
Salem, OR 97310

I hereby certify that I served a copy of the Index of Exhibits and Packet of enclosed Exhibits on each of the Parties, Attorneys and the Administrative Law Judge listed below.



Stephen E. A. Sanders, A.A.G.

Copies sent to: Raymond J. Driscoll
HC-30, Box 138-G
Chiloquin, OR 97624

Stephen H. Elmore, Administrative Law Judge
Oregon Water Resources Department
158 12th Street, NE
Salem, OR 97310

Date of Submission: May 13, 1996

| <u>NO.</u> | <u>DESCRIPTION</u> | <u>DATE</u> |
|------------|---------------------------------------------------------------------------------------------|-------------|
| 1 | Status Report of Scenic Waterway Studies, Agenda Item W, Water Resources Commission Meeting | 3/30/90 |
| 2A | Water Availability Analysis Evolution, Memo, OWRD | 1/13/94 |
| 2B | Water Availability Program, 1993 Progress Report, OWRD | 1/26/94 |
| 2C | GIS User for Basin Characteristics, Report, OWRD | 1/25/94 |

| | | |
|----|---------------------------------------------------------------------------------------------------|---------------------|
| 2D | Follow-up Report on Comments Raised About the Methodology for Estimating Water Availability, OWRD | 1/25/94 |
| 2E | A Methodology for Estimating Water Availability Based on Mean Daily Flows, OWRD | 1/26/94 |
| 2F | Consumptive Use Outline, OWRD | 1/25/94 |
| 2G | Peer Review of Methodology for Estimating Water Availability Based on Mean Daily Flows, OWRD | 1/25/94 |
| 2H | Policy Issues, OWRD | 1/27/94 |
| 2I | Various Water Availability Memos, OWRD | 4/18/94- 2/01/96 |

RECEIVED

MAY 13 1996

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON

WATER RESOURCES DEPARTMENT

In the matter of the Water Right Application)
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Raymond J. Driscoll,)
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Appl. S-69829

DISCLOSURE
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To: Raymond J. Driscoll
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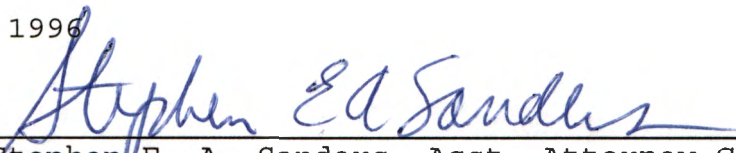
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Dated: May 13, 1996



Stephen E. A. Sanders, Asst. Attorney General
Department of Justice
1162 Court Street, NE
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cc: Stephen H. Elmore, Administrative Law Judge, OWRD
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STATE OF OREGON

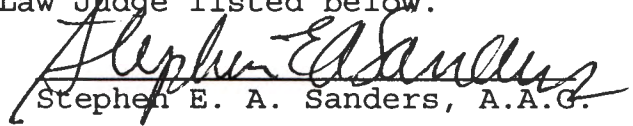
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Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE

MEMORANDUM

TO: Water Resources Commission

FROM: Director

SUBJECT: Agenda Item W, March 30, 1990, Water Resources Commission meeting
Status Report of Scenic Waterway studies

Background

Attached is the first in a series of recreation assessments on State Scenic Waterways. The report on the Klamath Scenic Waterway was created using a method presented to the Commission by the Parks and Recreation Division (now Department) during its meeting of July 7, 1989.

During the same July 7th meeting the Commission requested the Sandy Scenic Waterway be added to the other Scenic Waterway recreation assessments. The Sandy Scenic Waterway would fall into the recreation flow study schedule for December 1992 under the priority criteria.

Discussion

Klamath River

The Klamath Scenic Waterway is unique because flows from John Boyle Reservoir are regulated on an hourly basis by Pacific Power and Light. The report shows that during operational periods, to maintain recreation boating on the Klamath River, 1500 cubic feet per second (cfs) is required for a period of at least six hours per day. Flows of 550 cfs are required to optimize fishing during the non-hydro operation. Parks and ODFW had previously filed a joint instream water right application for the Scenic Waterway. Parks review of the report and found it consistent with the application.

Sandy River

Parks and Recreation Department reviewed the recreation flow for the Sandy Scenic Waterway completed as part of the City of Portland hydroelectric project application, and later cited in the Diack decision. In May of 1989 Parks staff indicated that those recreation flows were sufficient to meet the requirements of the Diack decision. At that time Parks staff stated that it expected the Commission to be able use this information to make findings on new applications. In the Commission's findings there are specific flow recommendations for the period December through May and a stipulated flow of 1500 cfs for months not otherwise limited by naturally occurring low flows.

Exh 1

Agenda Item W
March 30, 1990
Page 2 of 2

For the period of June through December, the Sandy Basin is withdrawn from appropriations by statute except for domestic, stock, municipal, fish culture, aesthetic, recreational, or public park purposes and all uses are allowed on Big Creek, Beaver Creek and Buck Creek. If such applications are accepted, public interest and water availability findings must be made in addition to the recreation findings before a permit can be issued or denied.

John Day River

Staff is completing a study of the John Day Scenic Waterway and will be submitting this report to Parks for its review. Parks staff do not expect to have instream water right rules approved by its commission until May or June. At that time the Parks Department may submit an instream water right application and use the report to substantiate its request.

Summary

In the future, once Parks has accepted a Scenic Waterway recreation assessment report, we expect them to respond to the data with analysis sufficient to provide findings on water right applications held in abeyance regardless of the instream water right.

Director's Recommendation

This is an information report only no action is required. Staff welcomes any comment on the Klamath Scenic Waterway. The Commission may also wish to direct staff to process water right applications in the Klamath River and Sandy River based on the findings discussed in this report.

Attachments: 1) Klamath River Scenic Waterway Recreation Analysis

2) Letter from Alan Cook, Planning and Grants Manager, Oregon State Parks and Recreation Department.

Bill Fujii
378-3671
March 15, 1990

MARCH30.SIR bf

KLAMATH RIVER
SCENIC WATERWAY
RECREATION ANALYSIS

OREGON WATER RESOURCES DEPARTMENT

OREGON STATE PARKS AND RECREATION DEPARTMENT

MARCH 1990

INTRODUCTION

PURPOSE

The purpose of this report is to analyze the instream flow requirements for recreation on the Klamath River Scenic Waterway. The report outlines the recreation uses of the river, and uses existing information to identify the range of flows sustaining current recreation. The report does not address potential recreation opportunities that may be considered in future management of the scenic waterway.

The Scenic Waterways Act was created to protect rivers with outstanding natural resources, scenic beauty, and recreational opportunity. Scenic Waterway designation identifies the highest and best use of the waters within the waterway as being recreation, fish and wildlife. The Water Resources Department (WRD), Department of Fish and Wildlife (ODFW) and Parks and Recreation Department (Parks) are cooperating in an effort to quantify instream flows necessary to protect the fish, wildlife, scenic and recreation values on State Scenic Waterways.

METHOD FOR ASSESSING RECREATION STREAMFLOW

The method for determining flow requirements by recreation use is based on the presumption that river recreation is both adaptive to existing conditions and opportunistic for the time the flow conditions allow use. Current use by the public displays the range of recreation activities needing protection. Other assumptions used in the report are:

- 1) In cases where there is no recreation use, flow levels identified by ODFW for fish and wildlife or Department of Environmental Quality (DEQ) for pollution abatement (whichever is higher) shall be the baseline.
- 2) In cases where there is no current recreation use, a land managing agency can identify a flow to support recreation.

- 3) Some high-flow periods may have impact on recreation, but not on recreation use. An example of this would be a high wintertime flow that flushes sediment from a gravel bar important for fish spawning or deposits sand for camping.

Portions of other methodologies, such as the RIVERS (U.S. Forest Service (USFS)) and the "Hyra" instream flow incremental method (IFIM) were borrowed to develop the framework for this recreation assesment. This assessment is weighted towards preserving the existing opportunities for the full range of recreation activities that are present during a "typical" year. The study uses historical use data rather than user surveys, cross section points, or other factors. The assessment of current use provides an indication of the streamflow levels necessary to protect recreational opportunities.

The data and conclusions from this report may be valuable to the development of river management plans for both State Scenic Waterways and Federal Wild and Scenic Rivers. The River Management Plan process (both state and federal), instream water right application process, and Parks' rulemaking for recreation instream water rights will provide opportunities to determine policies relating to flows for recreation activities.

BACKGROUND INFORMATION

LOCATION AND SETTING

The Klamath River Scenic Waterway was added to the Scenic Waterway through the initiative petition process. Ballot Measure 7 passed in November 1988 designated the area of the Klamath River from the John C. Boyle Dam Powerhouse (River Mile 220) to the Oregon-California border (RM 209.3).

The Klamath River Scenic Waterway is located in Klamath County in south-central Oregon. The scenic waterway is approximately 20 miles southwest of the City of Klamath Falls. The nearest community is Keno, located approximately seven miles east of the Klamath River. The scenic waterway flows in a southwesterly direction from the John Boyle Powerhouse to the Oregon-California border. The Scenic Waterway is accessed from Highway 66, just west of where the highway crosses the river (see Map 1).

A. Setting

The Klamath is one of two Oregon rivers to cut through the Cascades. The river flows from south central Oregon through northern California to Klamath, California, where it discharges to the Pacific Ocean. This unique geographical aspect gives the Klamath diversity of setting. Just below John Boyle Power Plant at the USGS Gage the Klamath River drains approximately 4080 square miles¹. Upper Klamath Lake (Oregon's largest natural water body) feeds Lake Ewauna which is the beginning of the main stem Klamath river. Upper Klamath Lake's major tributaries are the Sprague, Wood and the Williamson Rivers.

The Scenic Waterway is located within the area known as the Klamath River Canyon. Below John Boyle Powerhouse the evidence of man's activities cease to dominate Klamath Canyon's visual features. The Canyon is a contrast to all of the surrounding landscape features. Visitors coming from the west will have just crossed a mountain pass; those coming from the east will have just left pastoral farmlands. The perspective from the bottom is vertically confined by canyon walls of 400 to 1000 feet high, and horizontally by a 100 to 800 foot-wide canyon floor. The canyon contains a combination of nearly vertical basalt cliffs, talus slopes, upland benches and alluvial terraces of recent volcanic origin. The geologic features are framed by open

¹source Friday and Miller, USGS 1984

forests, grass lands and riparian areas. The feeling of remoteness and the landform of the canyon combine to create a magnificent aesthetic experience.

The Klamath basin is characterized by dry summers with high temperatures and wet winters with moderately low temperatures. Average annual precipitation at Klamath Falls is about 14 inches. Because of the elevation difference, the climatic conditions from the canyon rim to floor can be substantial. The floor of the canyon is not as dominated by conifers as the rim. The temperatures in the canyon tend to be more moderate and tends to have earlier spring conditions. In the fall, daytime temperatures can be cool on the rim while the canyon floor warm by comparison.

B. Plant communities

The vegetative cover is a mixture of ponderosa pine, juniper, deciduous trees such as Oregon white oak and grass lands. The plant communities found in the canyon are mixed conifer forest, pine/juniper, pine/oak forest, oak forest, oak shrub, rock/talus, oak/grassland, meadow, steppe, and riparian². Small areas may have some wetland characteristics, but there is no evidence of any large areas of hydric soils.

The Klamath Canyon also offers unique opportunities to view wildlife. According to the Bureau of Land Management (BLM), there are 98 species of birds, 31 species of mammals, and 15 species of reptiles and amphibians known to make use of the Klamath Canyon. The bird species include raptors (16), water fowl (8), upland game birds (8) and non-game birds (66). Big game mammals include black tailed deer, black bear, roosevelt elk, and cougar. Furbearers include beaver, mink, fisher, coyote, bobcat, muskrat, and raccoon.

² source: Draft Environmental Impact Statement Proposed Salt Caves Hydroelectric Project (FERC July 1989)

C. Development

Below the John Boyle Powerhouse the river canyon is largely undeveloped. On the west side (right bank³) there is a graveled road, maintained by Pacific Power and Light (PP&L), to access the John Boyle Powerhouse. Beyond the powerhouse the access road is unimproved, and closely follows the river to Frain Ranch at RM 214.5. At this point there is a secondary access point and the main road turns slightly away from the river and follows a bench above the river. An additional secondary access to the right bank is from Ward Road, which connects with the Powerhouse Road at about RM 211 and RM 209.5. High above the left bank the Topsy Road follows the canyon from Highway 66 to below the Oregon-California border. The Topsy Road connects with two right bank secondary access roads. One follows the river between two access points at about RM 217 and RM 214.8 (Map 2).

Approximately seventy-five percent of the corridor⁴ land is managed by the BLM Klamath Resource Area headquartered in Klamath Falls. This land is a combination of regular BLM land and O&C property reverted back to BLM. Other owners are Pacific Power and Light, Weyerhaeuser, and private individuals (Map 3).

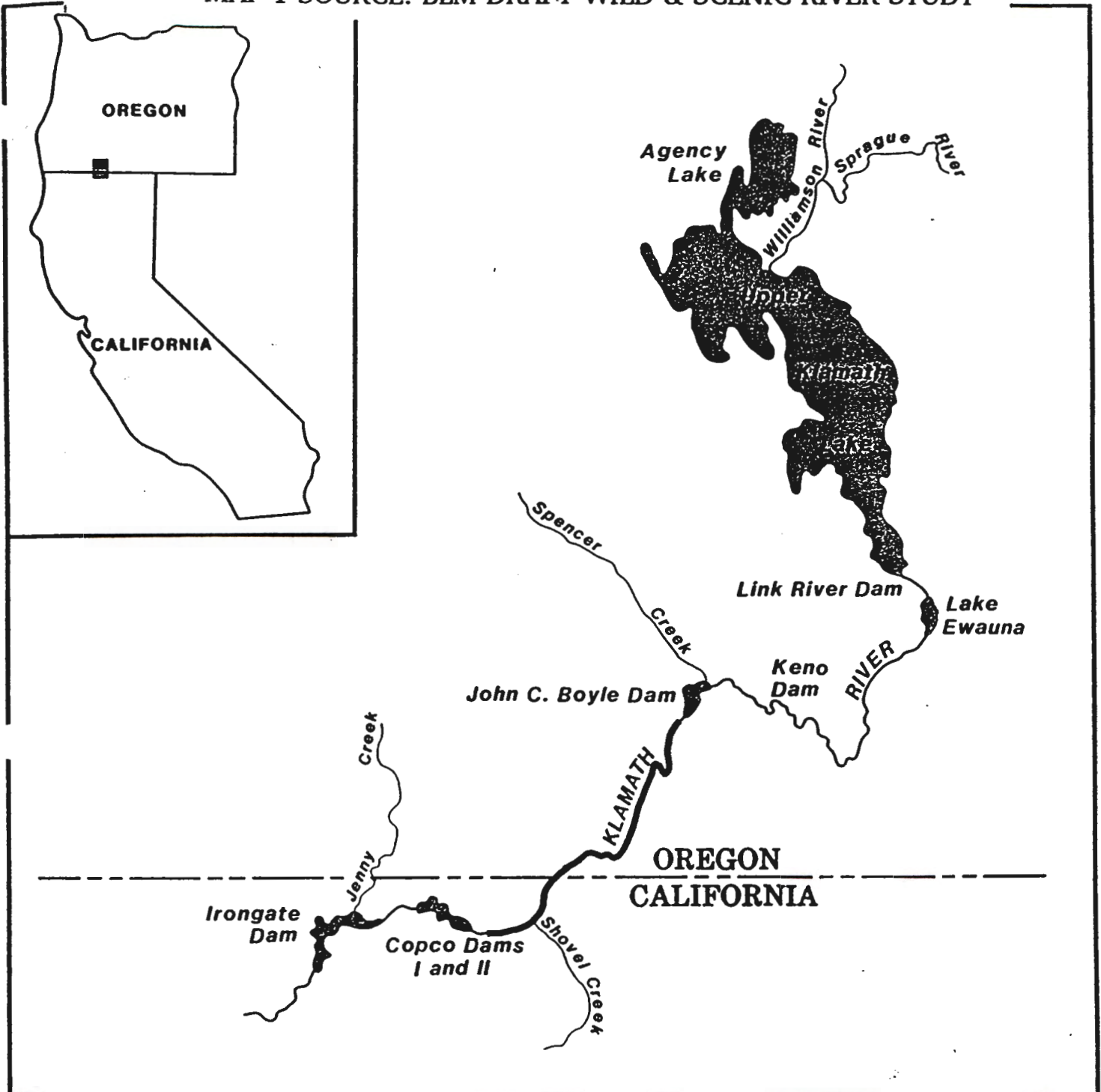
D. River Attributes

In addition to the other physical features of the canyon, the river itself adds diversity to the setting. The river has 52 rapids within the scenic waterway⁵. The river is wider in the upper reaches from the BLM launch site (RM 220.1) to Caldera rapids (RM 214.3); the boating experience in this stretch is less demanding. At the beginning of Caldera rapids, the river narrows and it also begins to drop faster. This whitewater experience has made the Klamath

³ facing down stream

⁴ 1/4 mile on each side of the river defined in Scenic Waterways Act

⁵. source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

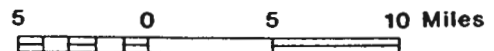


MAP 1-1

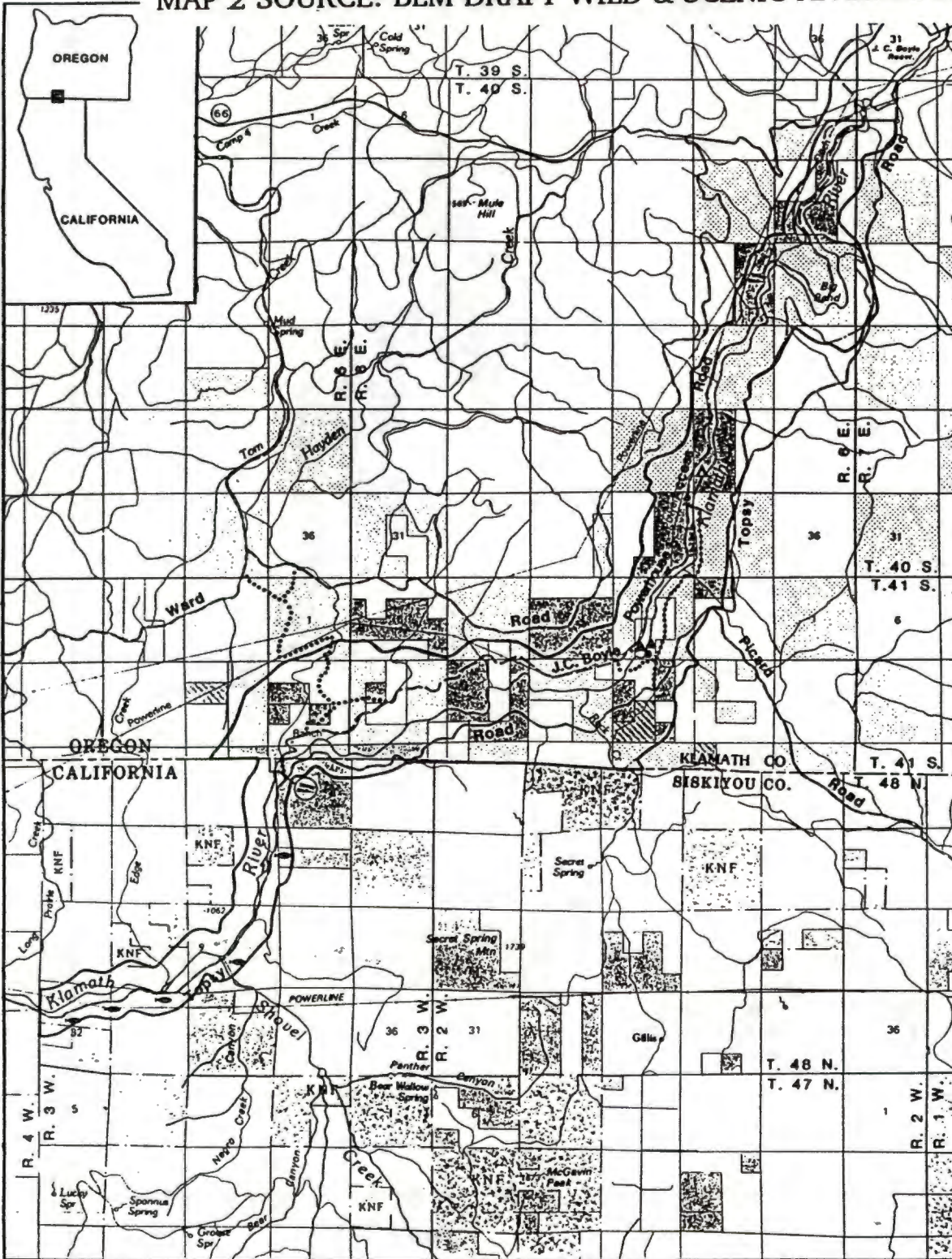
UPPER KLAMATH RIVER



1989



MAP 2 SOURCE: BLM DRAFT WILD & SCENIC RIVER STUDY



LEGEND

- Highway 66
- - - Primary Access Roads
- Secondary Access Roads
- ▨ BLM Raft Launch Area
- ▲ BLM Semi-Primitive Campsites
- ▲ Primitive Campsite (Private Property)
- ▲ Primitive Campsites with Fire Rings
- Frain Ranch (Recreational Use Area)
- ⊖ BLM Raft Take-Out Area
- Fishing Access Points
- SRMA Boundary



MAP 2-3

UPPER KLAMATH RIVER
ACCESS ROADS
AND
RECREATION SITES

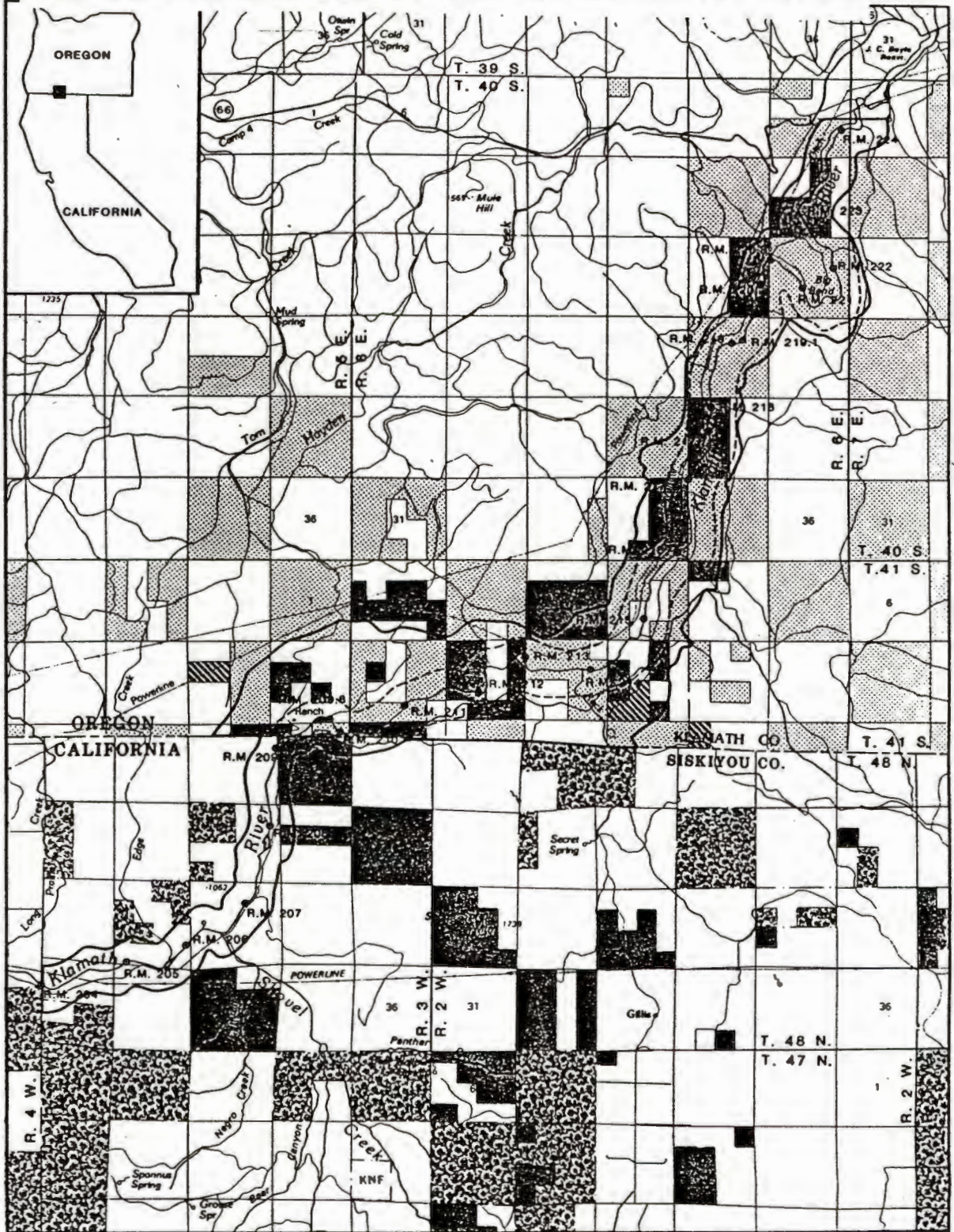
1989








famous. The rapids from Caldera rapids (RM 214.3) to the Oregon-California border (RM 209.3) are more frequent and more difficult than the upper reach. Below the Scenic Waterway, in California the river widens again and the whitewater boating is similar to the first stretch.

The flow characteristics of the scenic reach of the Klamath River are displayed on Table 1. The average annual rate of flow is 1903 cubic feet per second (cfs). The highest flows occur from December through April. Only about ten percent of the average annual flow is available during the low flow months, June through August. The character of the flow in the Klamath Canyon is unique. During the late spring through fall the flow can "bounce" from 350 cfs to over 1500 cfs in a single day. This flow regime is due to operation of John C. Boyle Powerhouse (see Daily hydrograph chart). During the winter and early spring, flow is fairly constant.

MAP 3 SOURCE: BLM DRAFT WILD & SCENIC RIVER STUDY



LEGEND

-  Public Lands (Admin. by BLM)
-  Oregon and California Lands (O&C Lands)
-  National Forest
-  State Lands
-  Private Lands



R.M. 204 River Miles

MAP 2-1

UPPER KLAMATH RIVER
LAND OWNERSHIP
AND
RIVER MILES

1989

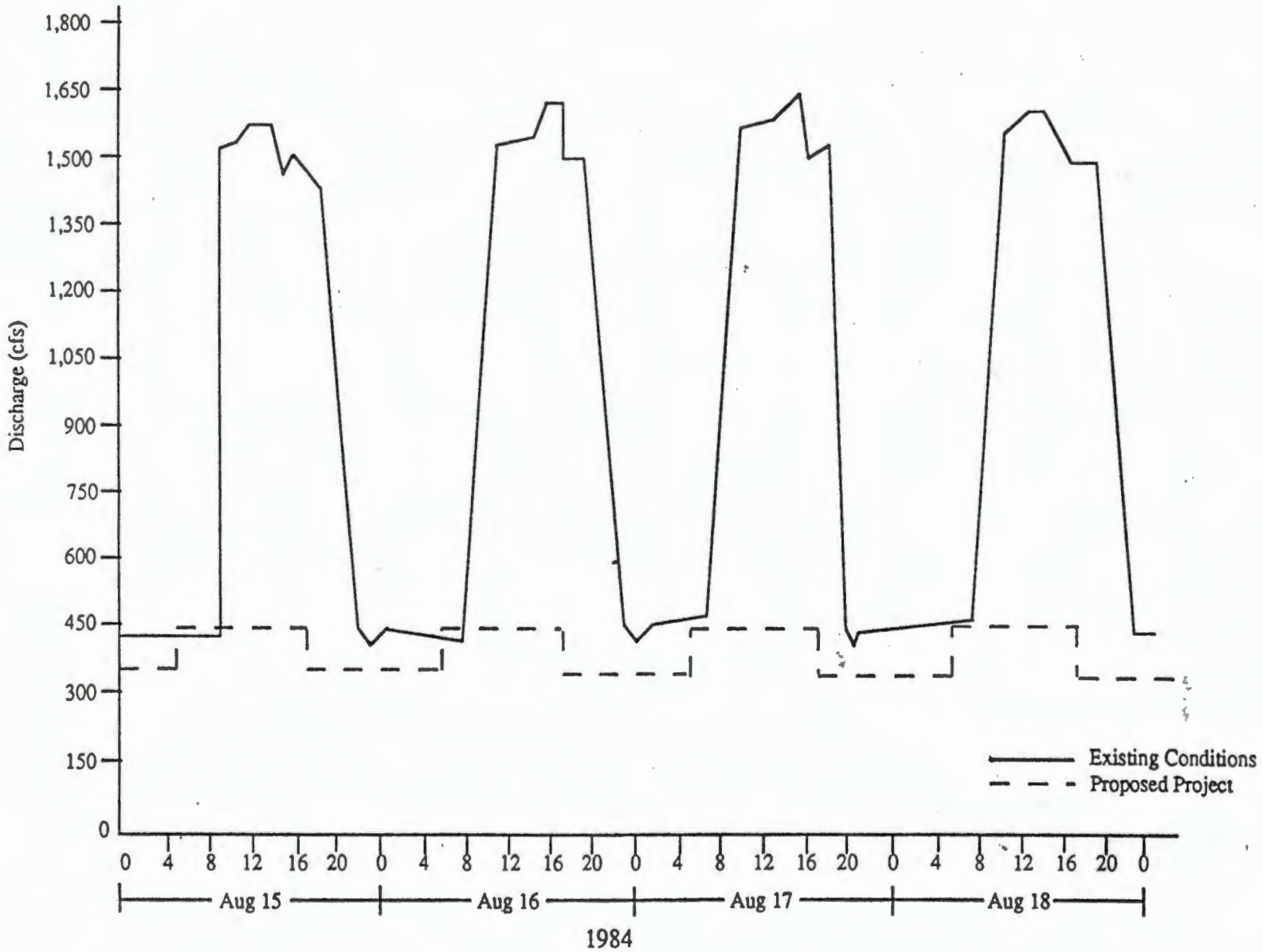


TABLE 1

AVERAGE MONTHLY FLOW, 1962-1988 KLAMATH RIVER

BELOW JOHN C. BOYLE POWER PLANT

| MONTH | MIN CFS | MAX CFS | MEAN CFS | % RUNOFF |
|-------|---------|---------|----------|----------|
| OCT | 786 | 3157 | 1685 | 7.2 |
| NOV | 897 | 4506 | 2196 | 9.3 |
| DEC | 1112 | 5733 | 2700 | 11.6 |
| JAN | 1174 | 7905 | 2668 | 12.5 |
| FEB | 1091 | 7780 | 2723 | 11.8 |
| MAR | 634 | 8755 | 3153 | 13 |
| APRIL | 723 | 5645 | 2550 | 11 |
| MAY | 591 | 3935 | 1725 | 7.6 |
| JUNE | 550 | 2327 | 872 | 3.5 |
| JULY | 502 | 1339 | 651 | 2.9 |
| AUG | 590 | 1054 | 903 | 4 |
| SEPT | 776 | 1876 | 1258 | 5.6 |



4-7

Figure 4-1. Daily hydrographs for the Klamath River below the proposed Salt Caves powerplant site (Beak lower gage) under existing and proposed project conditions during the summer based on data from August 15 to 18, 1984. (Source: the staff, modified from Klamath Falls, 1986).

INSTITUTIONAL CONSTRAINTS:

A. Recreation Resource Management:

Since 1984 the BLM has managed the area from the John Boyle Reservoir to just below the Oregon-California Boarder as the Klamath River Special Recreation Management Area. The river canyon has been classified Scenic Quality A and is managed under the Visual Resource Management (VRM) class II rules. Recreation opportunities are managed under Recreation Opportunity Spectrum (ROS), as semi-primitive motorized and roaded natural classes. The canyon area on the right side of the river is managed by the BLM as the Pokegama Wild Horse Management Area.

The Klamath River Scenic Waterway (designated in November of 1988) under the State Scenic Waterway system would likely fall into the Scenic Class, the mid-level of six classifications.

NATIONAL WILD AND SCENIC RIVER STATUS:

The Klamath River is being studied by the BLM as a result of direction from Congress through the 1988 Oregon Omnibus Rivers Bill. The report is to establish if any areas are eligible for designation as a National Wild and Scenic River, recommend the most likely classification for the designation and analyze the suitability for eligible area designations.

Under the provisions of the Omnibus Bill the study must be submitted to Congress by April 1, 1990. The Klamath River study area differs from the other Wild and Scenic River Studies. Other rivers have a three-year study period and the designated areas during this study period are managed in a protected status. The language of the Omnibus Bill specifically allowed the FERC process on the Salt Caves Hydroelectric Project to continue during the Wild and Scenic

study period. Since the release of the BLM study, Senator Hatfield has sent a letter to FERC requesting it delay its findings until Congress has had the opportunity to review the final BLM Wild and Scenic River study. The BLM draft Federal Wild and Scenic River system eligibility study recommended a classification of Scenic for most of the Scenic Waterway.

STATE MANAGEMENT

The State Scenic Waterway is being managed under the general rules for land management specified in the Scenic Waterways Act. ODFW manages the river as a wild trout fishery and the Klamath River Canyon as critical winter deer range and bald eagle habitat. The Division of State Lands has determined the Klamath to be navigable. The Northwest Power Planning Council has included the river in the protected status areas.

The DEQ has established beneficial uses for which water quality will be managed. These uses are domestic water supply, industrial water supply, irrigation, livestock watering, salmonid fish rearing and spawning, resident fish and aquatic life, wildlife, hunting, fishing, boating, water contact recreation, and aesthetic quality.

B. Water Resource Management:

The appropriation of the surface waters of the Klamath River has been governed by the Klamath River Basin Compact (ORS 542.620), since 1957. The compact was ratified by Oregon and California, and approved by the U.S. Congress. It established the following priority of beneficial uses in the situation where sufficient water is not available to satisfy all applications:

- a) domestic use,
- b) irrigation use,
- c) recreational use, including use for fish and wildlife,
- d) industrial use,
- e) generation of hydroelectric power, and

f) other uses.

The Compact also established priorities for irrigation uses limited to the quantity of water needed to irrigate 200,000 acres in Oregon and 100,000 acres in California.

There are no minimum streamflows established in the Klamath River. However, WRD is processing an application for an instream water right from Parks and ODFW of 1500 cfs (when available) for whitewater floating and 550 cfs for fishing.

Other water rights total of 1.9 cfs in the study area⁶. There are some small hand-built instream structures in the river related to irrigation.

There are three dams above the Scenic Waterway, John C. Boyle Dam and upstream from that, Link and Keno Dams. Below the Scenic Waterway in California there are three dams, Copco 1 and 2 and Iron Gate Dams. All six dams are operated by PP&L under FERC licence #2082. Satisfying the needs of the steelhead below Iron Gate Dam is the only instream flow requirement in the FERC licence for the PP&L dams on the Klamath River. The minimum releases from Iron Gate are to be: September 1 - April 30 1300 cfs, May 1 - May 31 1000 cfs, June 1 - July 31 710 cfs and August 1 - August 31 1000 cfs⁷.

The John Boyle Project (originally named Big Bend) is licenced by the State of Oregon through the Hydroelectric Act (ORS 543.010 to 543.655); this licence (HE 180) will expire in 2006. The original licence required a minimum flow of 200 cfs below the powerhouse at all times.

⁶source: Pam Homer, Oregon Water Resources Department September 1989.

⁷article 52 of FERC license for project 2082

The flows in the Klamath Canyon are comprised of three elements: releases from the John Boyle Dam, releases from John Boyle Powerhouse and natural flow from within the canyon. The percentage of flow released from the two structures varies with the season. The bulk of the summertime flow in the Scenic Waterway is comprised of stored water released for hydroelectric generation. PP&L determines the releases based on several sets of criteria. The first criteria is to satisfy the requirements of its operating permits from FERC and the Bureau of Reclamation (BOR). The instream requirements below Iron Gate Dam is the larger consideration. The release schedule is based on the fish flows required at Iron Gate. Next in priority of the criteria is the supply of the BOR irrigation projects. The BOR owns Link and Keno Dams and holds the storage permits for the water. Some of PP&L's other criteria are not required by FERC and BOR permits. Peak power demand, fish requirements within the Klamath Canyon reach, and recreation are among these elements.

During early July there is a two-week period in which PP&L performs turbine maintenance at the powerhouse and makes no releases from this facility. During this time, the releases from John Boyle Dam may be higher (from 500-700 cfs) and/or water can be stored to prolong the summertime power releases.

There is flow from John Boyle Dam fisheries structures, several small springs and scheduled release from John Boyle Powerhouse. This cumulative flow provides the streamflow regime for rafting. Summertime power-related releases are to turn one generator. Releases last about six hours and have a two-hour ramp⁸ time. In 1979 PP&L investigated the Klamath Canyon recreation use and the current pattern of release was determined to balance the needs for generating efficiency, whitewater floating and fish needs. This process led PP&L to install and maintain the "flow phone" and to favor the hours that allowed the rafters to adequately float

⁸ ramp time is the period of transition from the low and high flow, typically this term indicates that there is a gradual change

the river⁹. The summer season release times are slightly later than PP&L's actual peak demand times. The amount of release is predicated on the amount of water that is needed for efficient operation of the turbine¹⁰.

TABLE 2

NUMBER OF DAYS WITH FLOWS EQUAL TO OR GREATER THAN 1500 CFS¹¹

| <u>MONTH/YEAR</u> | <u>6+ HRS</u> | <u>MONTH/YEAR</u> | <u>6+ HRS</u> |
|-------------------|---------------|-------------------|---------------|
| 10/87 | 30 | 10/88 | 24 |
| 11/87 | 23 | 11/88 | 25 |
| 12/87 | 22 | 12/88 | 31 |
| 1/88 | 29 | 1/89 | 27 |
| 2/88 | 28 | 2/89 | 28 |
| 3/88 | 25 | 3/89 | 31 |
| 4/88 | 23 | 4/89 | 30 |
| 5/88 | 8 | 5/89 | 31 |
| 6/88 | 6 | 6/89 | 7 |
| 7/88 | 25 | 7/89 | 0 |
| 8/88 | 22 | 8/89 | 19 |
| 9/88 | 31 | 9/89 | 18 |

⁹source: personal contact with Les Lingschiet, Pacific Power and Light

¹⁰source: personal contact with Ed Wies, Pacific Power and Light

¹¹source: USGS gauge records

RECREATION FLOW ANALYSIS

INSTREAM USES

There are two major recreation instream uses of the river: whitewater boating and fishing.

A. Whitewater boating:

Whitewater boating occurs in three forms: rafting, kayaking, and drift boating. There is no difference in the minimum flow required for these activities. Although the Klamath has been run in an open canoe by professionals¹², it is not generally recommended¹³. There is no evidence of any power boat use in the Klamath Canyon. At 1500 cfs the Scenic Waterway has 15 class I rapids, 18 class II rapids, 14 class III rapids, 3 class IV rapids and 2 class V rapids¹⁴. At higher flows or colder temperatures many of these rapids increase in difficulty. Kayakers should be expert or intermediate with a "bomb-proof roll"¹⁵ (a "bomb-proof roll" means that the kayaker should be able to return the boat to the upright position in difficult situations).

1.) Location of use: Most use appears to be from the BLM launch site (RM 220.1) to the BLM access site #1 (RM 203.7) or the Copco Store (RM 203). This float trip runs from .2 miles below the John Boyle Powerhouse to 5.6 miles below the Oregon-California Border, total length of 16.4 miles.

¹²source: Dave Steele, 1989 BLM contractor for Klamath River recreation

¹³source: River Information Digest

¹⁴ Class refers to the American Whitewater Affiliation International Scale of River Difficulty, source: Soggy Sneakers Guide to Oregon Rivers - Willamette Kayak and Canoe Club July 1988 see attached

¹⁵source: Soggy Sneakers Guide - Willamette Canoe and Kayak Club

Some shorter trips occur on the upper end from the BLM launch site (RM 220.1) to Frain Ranch (RM 215). These trips take advantage of the easier stretch of rapids. In this area the river is wider, drops 27 feet per mile and has 14 class I, 9 class II and 1 class III rapids.

The lower section from Frain Ranch (RM) 215 to the Oregon-California Border (RM 209.3) contains more difficult rapids. This area has 1 class I, 9 class II, 13 class III, 3 class IV, and 2 class V rapids. At the entrance to Caldera Rapids (RM 214.3) the river turns a corner, narrows, and the drop increases to 77 feet per mile. The rapids become more difficult and frequent. This is one of the most demanding sections of whitewater in the region.

2) Time of use: The opportunity for whitewater boating is year-round. Most boating use on the Klamath River occurs on weekends from mid-May through mid-September. Some other boating occurs during other months when the flows are high. The unique whitewater boating opportunities on the upper Klamath River attract visitors from outside the region who are willing to travel long distances to experience the quality, late-season Class II-V run that is not found on other rivers¹⁶.

Peak use occurs during the months of July and August when there is at least one generator at the John Boyle Powerhouse operating. Typically there is a two-week period that the generators are shut down in July. Generally it is not possible for the generator(s) to be efficiently operated on a twenty-four-hour basis and the summertime rafting release is about 6 hours. PP&L has installed a special "flow phone" to help rafters schedule trips. PP&L slowly increases the flow (ramps) in the river at the beginning of the release and also slowly decreases the flow at the end of the release.

¹⁶ source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

During the period from November through March it is likely that more than one generator may operate. Most early season (before June) use is from private boaters, who are predominately from within the region. Most late-season use (after August) is from commercial outfitters due to the lack of compatible whitewater boating opportunities elsewhere¹⁷.

3.) Amount of use: BLM does not have a permit system for private boating for the Klamath. Its records for private boating are based on a voluntary registration system. BLM has stated that private boating records are used to depict trends in use and the actual use is higher than their records indicate.

¹⁷ see above

TABLE 3

ESTIMATED WHITEWATER BOATING USE BY MONTH¹⁸

| <u>MONTH</u> | <u>1987 BOATERS</u> | <u>1988 BOATERS</u> |
|--------------|---------------------|---------------------|
| JULY | 289 | 541 |
| AUGUST | 890 | 1256 |
| SEPTEMBER | 386 | 357 |

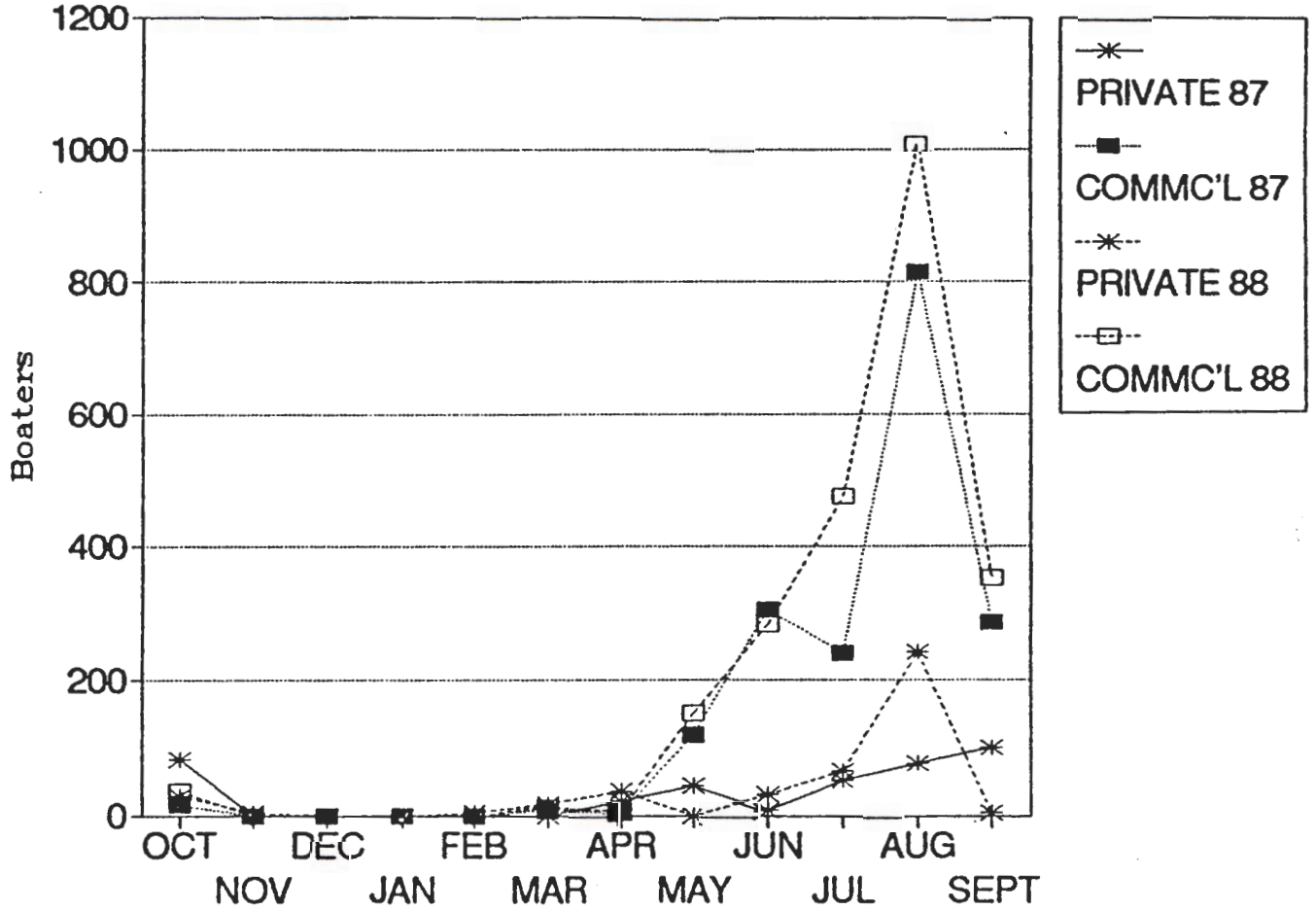
WHITEWATER BOATING USE ESTIMATES¹⁹

| <u>WHITEWATER</u> <u>BOATERS</u> | <u>1986</u> | <u>1987</u> | <u>1988</u> |
|-------------------------------------|-------------|-------------|-------------|
| COMMERCIAL | 1751 | 2163 | 2621 |
| PRIVATE | 210 | 291 | 450 |

¹⁸source: compiled by staff from BLM records

¹⁹source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

KLAMATH RIVER BOATING USE



B. Fishing:

All of the documents reviewed rated the Klamath high for its trout fishery, because it is one of the most productive fisheries for wild trout for both size and numbers.

1) Location of use: Fishing use occurs from the BLM Launch site to the BLM Landing with the majority of bank use occurring from the Powerhouse to Frain Ranch. Past this point, bank access becomes more difficult, though in a few places the river is accessible with a 4-wheel-drive vehicle. Some private fishing trips in boats take place from the put-in to Frain Ranch. These trips take advantage of the easier stretch of river²⁰.

One of the reasons for the popularity of the Klamath River Scenic Waterway among fishermen is the number and size of the river's wild trout. These trout are unique because they have not only adapted to the biological circumstances of the river, but have adapted to the extreme changes in daily flows. Their size relates directly to the food supplies from the flows supplied from John Boyle Reservoir.

Time of use: Below John Boyle Dam, the Klamath River is open to angling all year long. The trout fishery is especially popular during the spring months when run-of-the-river flows average 1500-3000. June 15 through September 30 are reserved for catch and release with barbless flies and lures only. This restriction is to prevent waste of fish because, during this time period, the fish are unpalatable²¹.

4) Amount of use: There are no exact counts of current fishing use on the Scenic Waterway. The Resident Fish Creel Census Summary by ODFW indicates that since 1984 there has been

²⁰source: John Fortune, ODFW

²¹ Comments on Salt Caves Draft Environmental Impact Statement by ODFW

a rise in the number of anglers on the river. Creel census data (table 4) is not a count of all users within the canyon, but is a method to track user trends and provides a rough indication of angling effort.

TABLE 4

RESIDENT FISH CREEL SUMMARY²²

| <u>TIME PERIOD</u> | <u>ANGLERS</u> | <u>HOURS FISHED</u> |
|--------------------|----------------|---------------------|
| 1984 | | |
| FEB/MARCH | 2 | 1 |
| APRIL/MAY | 3 | 6 |
| JULY/AUG | 3 | 8 |
| SEPT/OCT | 6 | 18 |
| 1985 | | |
| JAN/FEB | 2 | 5 |
| MAY/JUNE | 3 | 9 |
| JUNE/JULY | 6 | 21 |
| JULY/AUG | 11 | 27 |
| SEPT/OCT | 2 | 10 |
| OCT/NOV | 11 | 33 |
| 1986 | | |
| JUNE/JULY | 2 | 4 |
| AUG/SEPT | 10 | 13 |
| 1987 | | |
| DEC 86/JAN | 3 | 6 |
| FEB/MAR | 10 | 13.5 |
| APRIL/MAY | 6 | 21 |
| MAY/JUNE | 10 | 20 |
| AUG/SEPT | 8 | 13 |
| SEPT/OCT | 9 | 26 |

²²source ODFW

STREAM RELATED USES:

The Klamath Canyon offers opportunity for many stream-related uses such as camping, hiking, wildlife viewing/nature appreciation, hunting, trapping, and off-road vehicle use.

A. CAMPING:

Most camping in the canyon is related to other recreational activity. The BLM rates the camping opportunities within the Canyon as semi-primitive. Topsy Campground, upstream from John Boyle Dam, is operated for those wishing a less demanding camping experience. The Klamath River Special Recreation Management Area Plan estimates use of Topsy Campground at 15,000 per year for both camping and day use. Much of the non-local day use of the canyon starts from Topsy Campground.

Location of use: Most camping occurs on the upland benches at Frain Ranch (RM 215) or at the BLM sites. BLM maintains semi-primitive sites (RM 217.7) and 5 primitive campsites (RM 217 to RM 216). There are also two other primitive campsites on private land at RM 215.

Time of use: Summer use is primarily from commercial whitewater boaters and some anglers. Spring and fall camping is generally related to hunting and fishing.

Amount of use:

BLM Semi-developed sites: 1000 camping visits.

Topsy Campground: 1358 camping visits (outside of the Scenic Waterway but most of the camping-related day use originates from this point).

Relation to stream flow: The majority of camping within the canyon area is in combination with rafting and occurs on the upland terraces.

B. Hunting:

Hunting in the canyon is primarily for black-tailed deer, silver-grey squirrels, mountain and valley quail, chukar, and turkey. Hunting is regulated by ODFW as part of the Keno Unit.

Location of use: use occurs along open benches along the river and in draws along the canyon rim.

Time of use: Some type of hunting is allowed in all but February and March.

Deer: September/October (rifle), October/November (bow)

Elk: October

Silver gray squirrel: August through November

Birds: October/November (quail), April/May (turkey), October through January (chukar)

Amount of use: Hunter use figures specifically for the Klamath Canyon are not available from ODFW, but the BLM estimates 300 hunting visits annually.

Relation to flow: No dependent relation known.

C. Trapping:

The major species of interest for trappers in the Klamath Canyon are weasel, muskrat, mink, racoon, otter and beaver.

Time of use: November through March

Amount of use: Less than ten local individuals²³

Relation to flow: wetted perimeter of riparian area is the habitat for many of these species.

D. Other uses:

Other uses such as hiking, wildlife viewing/nature appreciation, and off-road vehicle operation; can often be independent from any other recreation activity. Many people use the Klamath Canyon for these activities, particularly nature appreciation²⁴.

Location of use: Dispersed throughout reach

Time of use: Year-round

Amount of use:²⁵

Other land-based visits: 400

Non-motorized travel visits: 280

Off-road visits: 1250

Winter sports visits: 500

Other motorized travel visits: 1000

Relation to flow: No dependent relation known.

²³source: Ralph Opp, ODFW

²⁴source: personal contact with Kattie Ardt and Charlotte Opp, Klamath Falls Chapter Audubon

²⁵source: BLM estimates

INSTREAM RECREATION FLOW NEEDS:

In summer and fall natural flows would not be sufficient for instream recreational activities. Use of stored water at these times is the key to preserving the opportunity for recreation activities. The Klamath Scenic Waterway is a good example of recreation uses filling different niches in both time of use and flow requirements. Although the activities can and do overlap, both rafting and fishing occur within the current flow regimes. There is no evidence of a recreational conflict at this time.

A. Whitewater boating:

Recreation use on the Klamath Scenic Waterway has been adapted to the conditions created by the release regime established by the John Boyle Powerhouse. Summertime rafting is dependent on the current flow regime. The following sources were used to determine flow needs.

Soggy Sneakers Guide (Willamette Kayak and Canoe Club, July 1988)

Location of description: John Boyle Powerhouse to Copco Reservoir.

Use listed: CLASS 4-5 RAFTING/KAYAK - Discussion in this document does not differentiate between rafting flows and kayak flows. It does suggest that the kayakers be expert or intermediate with a "bomb-proof roll."

Time of use: Lists season as all year. This guide refers to the releases from the powerhouse providing "some of the best class 4 summertime paddling in Oregon. "

Handbook to the Klamath River (Quinn and Quinn 1983)

Location of description: John Boyle Powerhouse to Copco Reservoir

Use listed: CLASS 4-5 RAFTING/KAYAK - Discussion in this document does not differentiate between flows and kayak flows.

Time of use and flows suggested: This guide listed 1650 cfs as the flow at which its log was written. The guide lists flows above 3000 cfs to be unsafe.

Recreation Value Study (PNWPPC 1987).

This study was done for the Northwest Power Plan, by the Oregon State Parks Division, to determine the value of instream recreation. Uses are rated on a scale 1 - 5, with 1 being the highest rating for recreation quality.

Location of description: Klamath River below Boyle reservoir.

Use listed: The activities ratings listed as 1 are canoe/kayak, rafting, trout fishing and hiking, swimming, camping, and nature viewing. Drift boating was given a 3 rating.

Klamath River Special Recreation Management Area Plan (BLM 1983)

Location of description: John Boyle reservoir to the BLM landing just below the California border.

Use listed: Discussion of boating in this document is listed as "floating" and does not assign the standard rating for the river.

Time of use: The canyon is used year-round, with most of the rafting occurring during the late spring and summer. High water and cold temperatures keep all but the most avid floaters off the river in winter and early spring.

River Information Digest

Location of description: John Boyle Dam to California border.

Use listed: "Not suitable for open canoes, first 5 miles Class II-III, miles 5-11 Class III-V"

Time of use and flows suggested: Year-round use was listed. This document does not suggest flows but does cite low flows and hazardous high flows as limiting factors.

DEIS Salt Caves Hydro Electric Project (FERC July 1989)

Location of description: The DEIS refers to the area in relation to the reaches affected by the proposed hydro project, the whitewater boating uses are largely within the same reach of the river.

Use listed: "The lower reach contains all of the class 4 and class 5 rapids and the majority of the class 3 rapids. The river is much wider in the upper reach, which has only one class 3 rapid".

Time of use and flows required: "Whitewater boaters include both rafters and kayakers. Rafting use, in particular, is dependent upon the J.C. Boyle hydroelectric powerhouse, and generally occurs only when at least one generator is operating. The J.C. Boyle Project operates in a peaking mode during the summer and fall months, creating large daily fluctuations in flow. During the typical summer operations, one generator is operated daily from approximately 10 a.m. to 4 p.m., increasing the river flow from approximately 350 cfs to approximately 1,500 cfs. In the upper reach the flows have to be at least 380 cfs to be raftable (Klamath Falls, 1988). Scoping meeting comments and conversations with whitewater outfitters indicate that most rafters prefer flows at or above 1500 cfs. Additionally the BLM considers 1500 cfs the minimum raftable flow (letter from Lance Nimmo, Manager, Klamath Resource Area, BLM, Medford, Oregon, February 19, 1989)."

Nationwide River Inventory

Location of description: John Boyle Dam to Copco Reservoir

Use listed: Discussion in this document does not differentiate between rafting flows and kayak flows, "among the best whitewater rafting rivers in the West; with long, sustained rapids of class IV and V difficulty."

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

(BLM)

Location of description: River mile 220.1 - 204. The Wild and Scenic River study examined a portion of the river that extended below the state line.

Type of use: This document does not differentiate between rafting and kayaking. Whitewater boating was broken down by class and river section (see chart). This study showed 15 class I rapids, 18 class II rapids, 14 class III rapids, 3 class IV rapids and 2 class V rapids within the Scenic Waterway (this data is no doubt predicated on flows of 1500 cfs, flows higher or lower may result in a different classifications).

Time of use: "Most boating use on the upper Klamath occurs on weekends from mid-May through mid-September. Some boating occurs during other months when flows are high. The unique whitewater boating opportunities on the upper Klamath River attract visitors from outside the region who are willing to travel long distances to experience the quality, late season Class III-V run that is not found on other rivers. Most of the early season use is from private boaters who are predominantly from inside the region. Most of the late season use is from commercial outfitters due to the lack of comparable whitewater boating opportunities elsewhere."

Oregon Rivers Initiative Information Packet

Location of description: John C. Boyle Dam powerhouse to Oregon-California Border.

Type of use: "The Klamath is also well known for its spectacular whitewater rafting. 41 companies currently use the river for their business. It provides a thrilling succession of class III,IV and V rapids (Class VI are virtually unraftable). One particular steep stretch drops 225 feet in just three miles. The Klamath is only one of two on the west coast with summertime class IV and V rapids."

Application for Licence Salt Caves Hydroelectric Project April 1988 Response to Additional Information Requests

This document compiles the comments of some of the user groups, commercial outfitters and the BLM covering the proposed hydroelectric project.

Location of description: Proposed Salt Caves diversion structure to Oregon-California border.

BLM statement: The BLM considers the minimum raftable flow to be 1500 cfs. Rafting the Upper Klamath has occurred with flow greater than 4000 cfs. The analysis of the project predicts that with a stable flow of 350 cfs there would be encroachment of vegetation into the river channel. This encroachment may reduce or eliminate rafting possibilities in the future.

Whitewater Voyages/Rivers Exploration Ltd. statement: "As a bare minimum, we would propose a flow of 1,600 cfs, while for long term operations we require minimum flows of 1,700 cfs and prefer average flows of 1,800 to 2,400 cfs. "

Southern Oregon Association of Kayakers (SOAK) statement: "The Klamath River is a particularly rocky river, demanding great skill and care to run. Exposure to the rocks, which are extremely sharp, is naturally much greater as the water level decreases. To avoid wrapping, pinning or ripping a raft or kayak, a minimum flow of 1500 cfs is required. Although kayaks may get through in somewhat lower water than rafts, Klamath River kayakers agree that the nature of the rocks here demand a safer level of water, which is the 1500 cfs flow. "

Klamath Canyon River Outfitters statement by Dean Munroe: "I have run the river at many levels, and 1500 is satisfactory. For comparative purposes, 1700 cfs is better and 1900 cfs would probably be ideal. A flow of 2700 cfs is great. At 5900 cfs the river is incredibly demanding. However, is my opinion alone the real measure of ideal? At 1200 cfs the river may

be runnable, or it may not. If it is, it would not be a Class IV-V experience. The rafts would [be] constantly hitting rocks through Caldera, Satan's Gate, Hell's Corner, Dance Hall, Ambush, Salt Cave, Captain Jack, Roughshod, and Snag Island. The 1200 cfs. experience would not approach the exciting and exhilarating experience it is at 1500 cfs. "

Eagle Sun Inc. statement: "A minimum of 1500 cfs is need to do the job and do it right.... As for release times, we could run everyday June through September if there was enough water. Plus, we would need a six hour release from 9:00 am till 3:00 pm for optimum use. "

Ouzel Outfitters statement: "PP&L has established their own idea of a reasonable level to be a minimum of 1500 cfs, and that barely does it."

B. Fishing:

Fishing is less dependent on the high flow regime. Sufficient flows from John Boyle Reservoir must occur to meet food and temperature needs to maintain the high quality of the fish. Fishing use seems to occur at all flows but is most evident at low flows due to better access. Some fishing enthusiasts prefer those times of the year when a more constant flow is available.

Location of use: DEIS Salt Caves Hydro Electric Project reaches.

The DEIS refers to the area in relation to the reaches affected by the proposed hydro project. The reaches utilized for fishing are same for the purposes of this report. The project reach is extremely productive, supporting a high quality wild rainbow trout population.

Comments on Salt Caves DEIS by ODFW

Page 1 Fishery Resources: Harvest of trout in the Salt Caves reach is not allowed during summer months because of poor palatability. However, cooler summer water temperatures in the Salt Caves reach allow catch and release angling.

Page 3 River and Land Management Plans: The EIS should also include a discussion of the Department's statewide Wild Trout Policy and statewide Trout Management Plan, both of which are elements of Oregon's Comprehensive Waterway Management Plan. These plans recognize the importance of conserving genetic resources of wild trout populations. The Klamath trout adapted both to lacustrine and riverine environments, represents unique genetic resource among Oregon wild trout populations. The ODFW statewide plans also recognize the need to conserve and to provide a diversity of angling opportunities within the state, including the opportunity to enjoy angling in semi-primitive settings such as the Klamath Canyon.

Time of use and flows needed:

Page 3 Recreational Setting: The EIS should be reworded to state that good fishing, both in terms of catch rate and access, is enjoyed within the Salt Caves reach at a variety of flows. The trout fishery is especially popular during the spring months when run-of-the-river flows average 1500-3000 cfs with out the complications of peaking below J.C. Boyle Powerhouse.

Page 4 Recreation Setting: The DEIS itself states that the "most preferred " period for summer angling is when J.C. Boyle Powerhouse is shut down for maintenance. At this time, there is no peaking, and steady flow below the powerhouse averages about 650 cfs. ODFW field observations also indicate that 350 cfs in the project reach above Frain Ranch precludes boat angling, as now occurs (John Fortune, ODFW, September 1989).

Page 6 Fishery Resources: Tennant (1975), cited in the DEIS, recommended 0.3 of the mean daily flow as a minimum continuous flow required to support good survival of aquatic life. In the case of the Salt Caves reach this base flow would be $0.3 * 1900 = 570$ cfs. This is

consistent with the 550 cfs recommended by ODFW as the minimum flow needed to support the trout population.

Special resource identified:

ODFW Central Region Administrative Report No 83 - 5, (John Tolman, June 1983)

The Klamath River was stocked with legal size rainbow from 1954 to 1978. Stocking was discontinued after 1978 when Klamath River was classified for wild trout management. Also Ceratomyxa shasta (a parasitic protozoa) has been identified in the Klamath River below Iron Gate Dam and in Klamath Lake.

Recreation Value Study (PNWPPC 1987).

(see: boating section)

KLAMATH RIVER SPECIAL RECREATION MANAGEMENT AREA (BLM 1983)

Location of description: John Boyle reservoir to the BLM landing just below the California border.

Use listed: "The Upper Klamath also provides exceptional trout fishing and it is considered by many to be one of the best fly fishing rivers in the Northwest."

Amount of use: "Fishing use within the canyon is estimated at 2,000 visitors per year."

Nationwide River Inventory

Location of description: John Boyle Dam to Copco Reservoir

Use listed: "Excellent wild trout fishery."

Oregon Rivers Initiative Information Packet

Location of description: John C. Boyle Dam powerhouse to Oregon-California Border.

Use listed: "The river is well-known as one of the best wild trout fishing streams in Oregon. It is managed by the state as a 'wild trout fishery' (no hatchery stocking), and it was one of the first to receive the designation by the state."

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study (BLM)

Location of description: River mile 220.1 - 204; the 5d Wild and Scenic River study examined a portion of the river that extended below the state line.

Use listed: " The upper Klamath River is, managed as a wild trout river in all three segments, provides an excellent trout fishery and is among the better fly fishing rivers in Oregon. The Klamath Basin provides a wide variety of angling opportunities, but only the upper Klamath River provides such an excellent catch rate for large wild rainbow trout on a major river. It is rivaled in Oregon only by the Deschutes River."

Time of use: "Currently, the upper Klamath, Rogue, and the lower Klamath are the only major rivers in the region that are open to trout angling year round." "Spring comes early to the upper Klamath River Canyon, providing the earliest angling opportunity for a river fishery in Klamath County. The majority of fishing use occurs during spring and fall."

SUMMARY: Flow Ranges Identified for Boating and Fishing.

Whitewater boating the Klamath Scenic Waterway is for advanced and expert boating skills. Some whitewater boating can be done at flows less than 1500 cfs, but the majority of use occurs at 1500 cfs. There may not be an upper flow limit for some experts. The Quinn and Quinn guide lists 3200 cfs as their upper limit, the BLM records indicate that rafting has been done as high as 4000 cfs, and the Klamath River Rafters letter to FERC said that 5900 cfs is

incredibly demanding. This suggests two flow ranges: 1500 cfs - 3200 cfs for the majority of the public use; and 3200 cfs - 5900 cfs for expert or professional boaters when the opportunity is available.

Fishing opportunities occur on a year-round basis, 550 cfs is the flow that ODFW has determined as the optimum flow for fish, through the Oregon method. They have further confirmed this figure using the Tenant method. Fishing is also very popular during times of constant flow.

TABLE 5

RECREATION FLOW CHART

| REC USE | MIN FLOW | MAX FLOW | SEASON OF USE |
|---------|----------|----------|---------------|
| GENERAL | | | MAY-SEPT |
| BOATING | 1500 | 3200 | |
| EXPERT | | | OCT-APR |
| BOATING | 3200 | 5900 | YEAR-ROUND |
| FISHING | 550 | 3000 | |

WATER RIGHT APPLICATIONS:

Instream uses:

Parks/ODFW have submitted to WRD an instream water right application for 1500 cfs (when available) for whitewater floating and 550 cfs for fishing.

Out of stream uses:

The City of Klamath Falls no longer has a water right application for hydro development pending with WRD. The City has an appeal before the circuit court to require WRD to accept the "no dam" application even though it is located within the Scenic Waterway. The status of this application is pending a court decision.

There are 38 pending surface water applications in the Klamath basin that are above or tributary to the Klamath Scenic Waterway. The purposes of these applications are: domestic (1), irrigation (9), live stock (3), hydroelectric (2), and road watering (23). Some of these

application are from parties in current adjudication of the Klamath Basin and do not represent new water uses.

CONCLUSIONS

During the critical periods of highest recreation use, the Upper Klamath flows are dependent on the release of stored water from John Boyle Reservoir and other upstream impoundments.

The time periods with fairly constant flows, early spring and during July maintenance shutdown, are highly valued by anglers. Below John Boyle Powerhouse recreation activities require a minimum 1500 cfs of six or more hours per day and 550 cfs for the remainder of the day, during May through September.

FLOWS NEEDED TO SUPPORT CURRENT RECREATION ACTIVITIES BY MONTH

| <u>MONTH</u> | <u>MIN FLOW NEEDS</u> <u>(CFS)</u> | <u>SIGNIFICANT</u> <u>RECREATION</u> <u>OPPORTUNITY</u> | <u>EXTENT OF USE</u> | <u>MEAN FLOW**</u> |
|--------------|---------------------------------------|---------------------------------------------------------------|----------------------|--------------------|
| OCTOBER | 1500(6HRS)/550 | GEN BOAT/FISH | MEDIUM | 1685 |
| NOVEMBER | 1500 | EXP BOAT/FISH | LOW | 2196 |
| DECEMBER | 1500 | EXP BOAT/FISH | LOW | 2700 |
| JANUARY | 1500 | EXP BOAT/FISH | LOW | 2668 |
| FEBRUARY | 1500 | EXP BOAT/FISH | LOW | 2723 |
| MARCH | 1500 | EXP BOAT/FISH | LOW | 3153 |
| APRIL | 1500 | GEN BOAT/FISH | LOW | 2550 |
| MAY | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 1725 |
| JUNE | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 872 |
| JULY* | 1500(6HRS)/550 | FISH/GEN BOAT | HIGH | 651 |
| AUGUST | 1500(6HRS)/550 | GEN BOAT/FISH | HIGH | 903 |
| SEPTEMBER | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 1258 |

*550 CFS+ during non-hydro operation period 550 cfs / 1500 cfs (six hours) during hydro operation

**Serves as an indicator of the possibility of supply only 1500 cfs (six hours) / 550 cfs (18 hours) is approximately equal to an average daily flow of 788 cfs.

REFERENCES

The following are the data sources that were used to determine recreation use patterns and streamflow requirements.

a) Recreation Value Study (Pacific Northwest Power Planning Council).

b) Agency reports and records

Klamath River Special Recreation Management Area Plan (BLM 1983)

River Information Digest (Interagency Whitewater Committee 1985)

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study (BLM 1989)

Private Trip registration cards (BLM)

Information on Annual Visitor Use October 1987 to September 1988 (BLM)

Resident Fish Creel Census Summary (ODFW 1987, 1988, 1989)

ODFW Central Region Administrative Report No. 83-5 Klamath River: Summary of Biological Parameters John Tolman June 1983

c) User Fee Reports supplied by BLM (Guide service records) 1987 1988.

d) River guide publications

Soggy Sneakers Guide (Willamette Kayak and Canoe Club, July 1988)

Handbook to the Klamath River (Quinn and Quinn 1983)

e) Professional/expert opinion

Dave Steele, BLM contractor

Dean Munroe, Klamath Canyon River Outfitters

Kattie Ardt, Klamath Falls Audubon

Charlotte Opp, Klamath Falls Audubon

Les Lingschite, Pacific Power and Light

Scott Senter, BLM

Kathy Humphery, BLM

- f) Hydrologic records (Friday and Miller 1984)
- g) WRD records.

The Klamath River Scenic Waterway Water Resources Summary - Homer, September 1989

Summary of Klamath Basin water right applications - WRIS December 1989

- h) USGS records Gauge number 11510700
- i) Salt Caves Hydroelectric Project Documents

Application for Licence Salt Caves Hydroelectric Project April 1988 Response to Additional Information Requests

DEIS Salt Caves Hydro Electric Project (FERC July 1989)

Comments on Salt Caves DEIS by ODFW

- j) Nationwide River Inventory (HCRS)

WHITEWATER CLASSIFICATIONS

CLASS: The class designations given in this book indicate the class of the majority of the run, according to the American Whitewater Affiliation international scale of river difficulty, which is described below. If only one or two spots are more difficult than the majority of the run, parentheses are used, e.g., South Santiam as 4(6) or Lower McKenzie as 1(2). The letter "t" is used after the number designation to indicate that a run is predominantly technical in nature, and the letter "P" is used in to indicate that at least one portage is mandatory.

Class 1. Moving water with a few riffles and small waves. Few or no obstructions.

Class 2. Easy rapids with waves up to 3 feet, and wide clear channels that are obvious without scouting. Some maneuvering is required.

Class 3. Rapids with high, irregular waves often capable of swamping an open canoe. Narrow passages that often require complex maneuvering. May require scouting from shore.

Class 4. Long difficult rapids with constricted passages that often require complex maneuvering. May require scouting from shore.

Class 5. Extremely difficult, long, and very violent rapids with highly congested routes which nearly always must be scouted from shore. Rescue conditions are difficult and there is significant hazard to life in event of a mishap. Ability to Eskimo roll is essential for kayaks and canoes.

Class 6. Difficulties of class 5 carried to the extreme of navigability. Nearly impossible and very dangerous. For teams of experts only, after close study and with all precautions taken.

If the water temperature is below 50 degrees F, the AWA states that the river should be considered one class more difficult than normal.

Still water and class 1 are sometimes subdivided according to water speed:

Class A. Standing or slow flowing water, not more than 2.5 mph.

Class B. Current between 2.5 and 4.5 mph, but backpaddling can effectively neutralize the speed.

Class C. Current more than 4.5 mph, but backpaddling cannot neutralize the speed of the current. Simple obstacles may occur that require a certain amount of boat control.

GRADIENT: The average gradient of the section, reported in feet of elevation change per mile of river length. The letters "PD" are used to indicate that a run is primarily "pool-drop" in nature. Most of the elevation change on such a run occurs over relatively steep sections, which are separated by relatively level stretches. The letter "C" is used to indicate that a run is primarily "continuous" in nature. The elevation change on such a run is relatively uniform over the length of the section.

SEASON: The time of year that a river can normally be run is related to the weather and the source of the river. West of the Cascade Range, it rains more or less continuously from

November through May, and is dry from typically June or July through September or October. East of the Cascade Range, conditions are mostly dry and desert-like throughout the year, although significant snowfall accumulates in mountainous regions during the winter months. The classifications according to weather and source of water are:

ALL YEAR - There is adequate water for boating year-round. The sources of these rivers are generally dam controlled. Examples: North Santiam, Metolius, the lower Deschutes, Rogue.

DAM CONTROLLED - The flow of these rivers is controlled by dams or irrigation diversions, but there is no requirement for minimum flow. Water may be shut off or reduced below runnable flows by the controlling agency. Examples: the upper Deschutes runs, and the Middle Santiam between the dams.

RAINY - These rivers reach runnable levels after several days of rain. Many of the rivers of western Oregon are in this group. Examples: Coquille, Siletz, Wilson, Molalla, Calapooia.

SNOWMELT - These rivers generally receive the bulk of their water from melting snow in the spring and early summer. Such rivers are at high elevations or in Eastern Oregon. Examples: White Salmon, John Day, Owyhee.

RAINY/SNOWMELT - These rivers receive their water both from rain and from snow. They will be runnable after a few days of good rain and into early summer because of melting snowpack. Examples: Breitenbush, Sandy, Quartzville Creek.

KLMFNL



Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE

MEMORANDUM

TO: Water Resources Commission

FROM: Director

SUBJECT: Agenda Item W, March 30, 1990, Water Resources Commission meeting
Status Report of Scenic Waterway studies

RECEIVED
MAY 13 1996
WATER RESOURCES DEPT.
SALEM, OREGON

Background

Attached is the first in a series of recreation assessments on State Scenic Waterways. The report on the Klamath Scenic Waterway was created using a method presented to the Commission by the Parks and Recreation Division (now Department) during its meeting of July 7, 1989.

During the same July 7th meeting the Commission requested the Sandy Scenic Waterway be added to the other Scenic Waterway recreation assessments. The Sandy Scenic Waterway would fall into the recreation flow study schedule for December 1992 under the priority criteria.

Discussion

Klamath River

The Klamath Scenic Waterway is unique because flows from John Boyle Reservoir are regulated on an hourly basis by Pacific Power and Light. The report shows that during operational periods, to maintain recreation boating on the Klamath River, 1500 cubic feet per second (cfs) is required for a period of at least six hours per day. Flows of 550 cfs are required to optimize fishing during the non-hydro operation. Parks and ODFW had previously filed a joint instream water right application for the Scenic Waterway. Parks review of the report and found it consistent with the application.

Sandy River

Parks and Recreation Department reviewed the recreation flow for the Sandy Scenic Waterway completed as part of the City of Portland hydroelectric project application, and later cited in the Diack decision. In May of 1989 Parks staff indicated that those recreation flows were sufficient to meet the requirements of the Diack decision. At that time Parks staff stated that it expected the Commission to be able use this information to make findings on new applications. In the Commission's findings there are specific flow recommendations for the period December through May and a stipulated flow of 1500 cfs for months not otherwise limited by naturally occurring low flows.

Exh 1

Agenda Item W
March 30, 1990
Page 2 of 2

For the period of June through December, the Sandy Basin is withdrawn from appropriations by statute except for domestic, stock, municipal, fish culture, aesthetic, recreational, or public park purposes and all uses are allowed on Big Creek, Beaver Creek and Buck Creek. If such applications are accepted, public interest and water availability findings must be made in addition to the recreation findings before a permit can be issued or denied.

John Day River

Staff is completing a study of the John Day Scenic Waterway and will be submitting this report to Parks for its review. Parks staff do not expect to have instream water right rules approved by its commission until May or June. At that time the Parks Department may submit an instream water right application and use the report to substantiate its request.

Summary

In the future, once Parks has accepted a Scenic Waterway recreation assessment report, we expect them to respond to the data with analysis sufficient to provide findings on water right applications held in abeyance regardless of the instream water right.

Director's Recommendation

This is an information report only no action is required. Staff welcomes any comment on the Klamath Scenic Waterway. The Commission may also wish to direct staff to process water right applications in the Klamath River and Sandy River based on the findings discussed in this report.

Attachments: 1) Klamath River Scenic Waterway Recreation Analysis

2) Letter from Alan Cook, Planning and Grants Manager, Oregon State Parks and Recreation Department.

Bill Fujii
378-3671
March 15, 1990

MARCH30.SIR bf

KLAMATH RIVER
SCENIC WATERWAY
RECREATION ANALYSIS

OREGON WATER RESOURCES DEPARTMENT

OREGON STATE PARKS AND RECREATION DEPARTMENT

MARCH 1990

INTRODUCTION

PURPOSE

The purpose of this report is to analyze the instream flow requirements for recreation on the Klamath River Scenic Waterway. The report outlines the recreation uses of the river, and uses existing information to identify the range of flows sustaining current recreation. The report does not address potential recreation opportunities that may be considered in future management of the scenic waterway.

The Scenic Waterways Act was created to protect rivers with outstanding natural resources, scenic beauty, and recreational opportunity. Scenic Waterway designation identifies the highest and best use of the waters within the waterway as being recreation, fish and wildlife. The Water Resources Department (WRD), Department of Fish and Wildlife (ODFW) and Parks and Recreation Department (Parks) are cooperating in an effort to quantify instream flows necessary to protect the fish, wildlife, scenic and recreation values on State Scenic Waterways.

METHOD FOR ASSESSING RECREATION STREAMFLOW

The method for determining flow requirements by recreation use is based on the presumption that river recreation is both adaptive to existing conditions and opportunistic for the time the flow conditions allow use. Current use by the public displays the range of recreation activities needing protection. Other assumptions used in the report are:

- 1) In cases where there is no recreation use, flow levels identified by ODFW for fish and wildlife or Department of Environmental Quality (DEQ) for pollution abatement (whichever is higher) shall be the baseline.
- 2) In cases where there is no current recreation use, a land managing agency can identify a flow to support recreation.

- 3) Some high-flow periods may have impact on recreation, but not on recreation use. An example of this would be a high wintertime flow that flushes sediment from a gravel bar important for fish spawning or deposits sand for camping.

Portions of other methodologies, such as the RIVERS (U.S. Forest Service (USFS)) and the "Hyra" instream flow incremental method (IFIM) were borrowed to develop the framework for this recreation assesment. This assessment is weighted towards preserving the existing opportunities for the full range of recreation activities that are present during a "typical" year. The study uses historical use data rather than user surveys, cross section points, or other factors. The assessment of current use provides an indication of the streamflow levels necessary to protect recreational opportunities.

The data and conclusions from this report may be valuable to the development of river management plans for both State Scenic Waterways and Federal Wild and Scenic Rivers. The River Management Plan process (both state and federal), instream water right application process, and Parks' rulemaking for recreation instream water rights will provide opportunities to determine policies relating to flows for recreation activities.

BACKGROUND INFORMATION

LOCATION AND SETTING

The Klamath River Scenic Waterway was added to the Scenic Waterway through the initiative petition process. Ballot Measure 7 passed in November 1988 designated the area of the Klamath River from the John C. Boyle Dam Powerhouse (River Mile 220) to the Oregon-California border (RM 209.3).

The Klamath River Scenic Waterway is located in Klamath County in south-central Oregon. The scenic waterway is approximately 20 miles southwest of the City of Klamath Falls. The nearest community is Keno, located approximately seven miles east of the Klamath River. The scenic waterway flows in a southwesterly direction from the John Boyle Powerhouse to the Oregon-California border. The Scenic Waterway is accessed from Highway 66, just west of where the highway crosses the river (see Map 1).

A. Setting

The Klamath is one of two Oregon rivers to cut through the Cascades. The river flows from south central Oregon through northern California to Klamath, California, where it discharges to the Pacific Ocean. This unique geographical aspect gives the Klamath diversity of setting. Just below John Boyle Power Plant at the USGS Gage the Klamath River drains approximately 4080 square miles¹. Upper Klamath Lake (Oregon's largest natural water body) feeds Lake Ewauna which is the beginning of the main stem Klamath river. Upper Klamath Lake's major tributaries are the Sprague, Wood and the Williamson Rivers.

The Scenic Waterway is located within the area known as the Klamath River Canyon. Below John Boyle Powerhouse the evidence of man's activities cease to dominate Klamath Canyon's visual features. The Canyon is a contrast to all of the surrounding landscape features. Visitors coming from the west will have just crossed a mountain pass; those coming from the east will have just left pastoral farmlands. The perspective from the bottom is vertically confined by canyon walls of 400 to 1000 feet high, and horizontally by a 100 to 800 foot-wide canyon floor. The canyon contains a combination of nearly vertical basalt cliffs, talus slopes, upland benches and alluvial terraces of recent volcanic origin. The geologic features are framed by open

¹source Friday and Miller, USGS 1984

forests, grass lands and riparian areas. The feeling of remoteness and the landform of the canyon combine to create a magnificent aesthetic experience.

The Klamath basin is characterized by dry summers with high temperatures and wet winters with moderately low temperatures. Average annual precipitation at Klamath Falls is about 14 inches. Because of the elevation difference, the climatic conditions from the canyon rim to floor can be substantial. The floor of the canyon is not as dominated by conifers as the rim. The temperatures in the canyon tend to be more moderate and tends to have earlier spring conditions. In the fall, daytime temperatures can be cool on the rim while the canyon floor warm by comparison.

B. Plant communities

The vegetative cover is a mixture of ponderosa pine, juniper, deciduous trees such as Oregon white oak and grass lands. The plant communities found in the canyon are mixed conifer forest, pine/juniper, pine/oak forest, oak forest, oak shrub, rock/talus, oak/grassland, meadow, steppe, and riparian². Small areas may have some wetland characteristics, but there is no evidence of any large areas of hydric soils.

The Klamath Canyon also offers unique opportunities to view wildlife. According to the Bureau of Land Management (BLM), there are 98 species of birds, 31 species of mammals, and 15 species of reptiles and amphibians known to make use of the Klamath Canyon. The bird species include raptors (16), water fowl (8), upland game birds (8) and non-game birds (66). Big game mammals include black tailed deer, black bear, roosevelt elk, and cougar. Furbearers include beaver, mink, fisher, coyote, bobcat, muskrat, and raccoon.

² source: Draft Environmental Impact Statement Proposed Salt Caves Hydroelectric Project (FERC July 1989)

C. Development

Below the John Boyle Powerhouse the river canyon is largely undeveloped. On the west side (right bank³) there is a graveled road, maintained by Pacific Power and Light (PP&L), to access the John Boyle Powerhouse. Beyond the powerhouse the access road is unimproved, and closely follows the river to Frain Ranch at RM 214.5. At this point there is a secondary access point and the main road turns slightly away from the river and follows a bench above the river. An additional secondary access to the right bank is from Ward Road, which connects with the Powerhouse Road at about RM 211 and RM 209.5. High above the left bank the Topsy Road follows the canyon from Highway 66 to below the Oregon-California border. The Topsy Road connects with two right bank secondary access roads. One follows the river between two access points at about RM 217 and RM 214.8 (Map 2).

Approximately seventy-five percent of the corridor⁴ land is managed by the BLM Klamath Resource Area headquartered in Klamath Falls. This land is a combination of regular BLM land and O&C property reverted back to BLM. Other owners are Pacific Power and Light, Weyerhaeuser, and private individuals (Map 3).

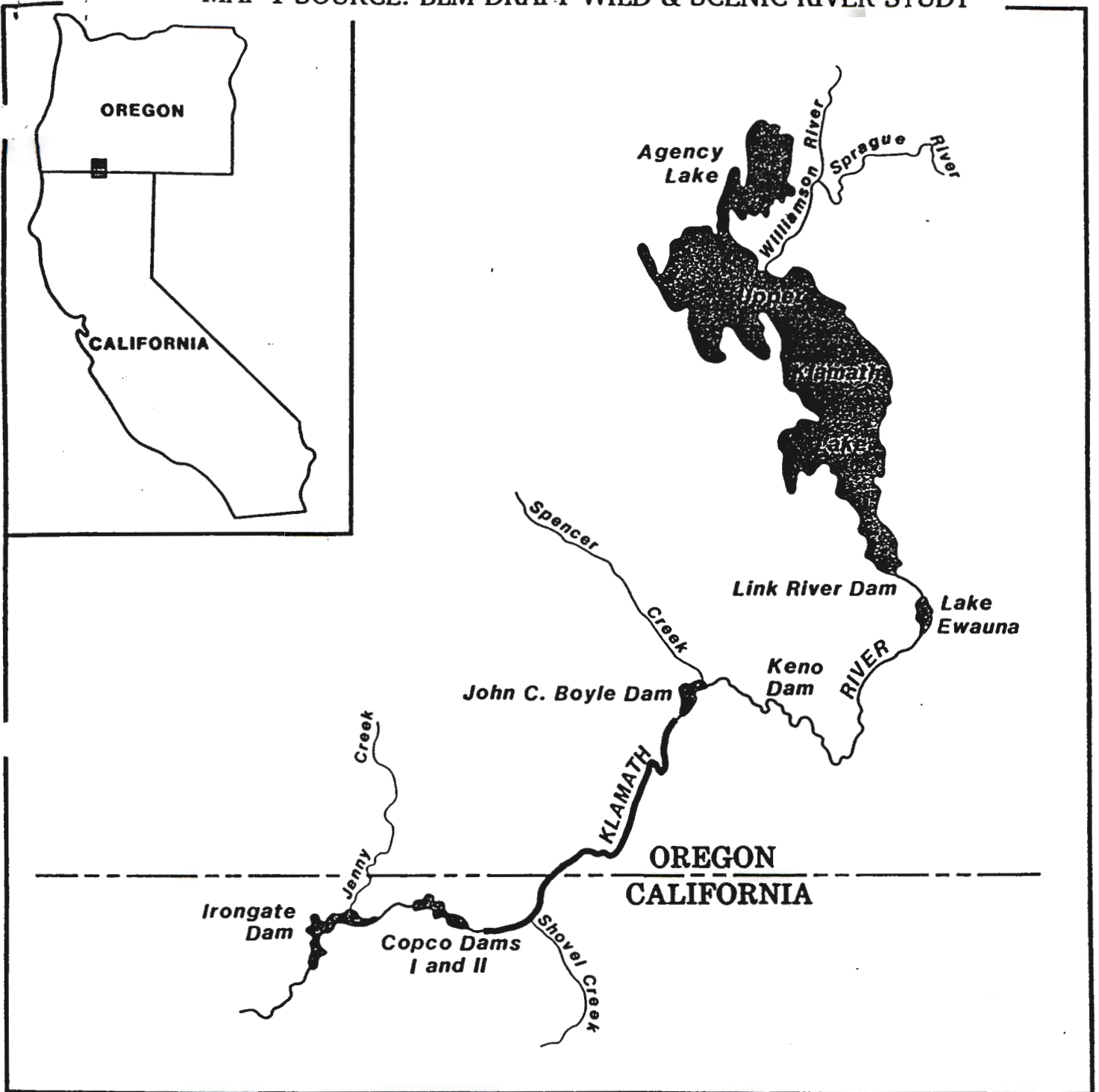
D. River Attributes

In addition to the other physical features of the canyon, the river itself adds diversity to the setting. The river has 52 rapids within the scenic waterway⁵. The river is wider in the upper reaches from the BLM launch site (RM 220.1) to Caldera rapids (RM 214.3); the boating experience in this stretch is less demanding. At the beginning of Caldera rapids, the river narrows and it also begins to drop faster. This whitewater experience has made the Klamath

³ facing down stream

⁴ 1/4 mile on each side of the river defined in Scenic Waterways Act

⁵ source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

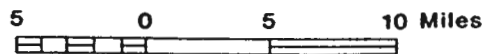


MAP 1-1

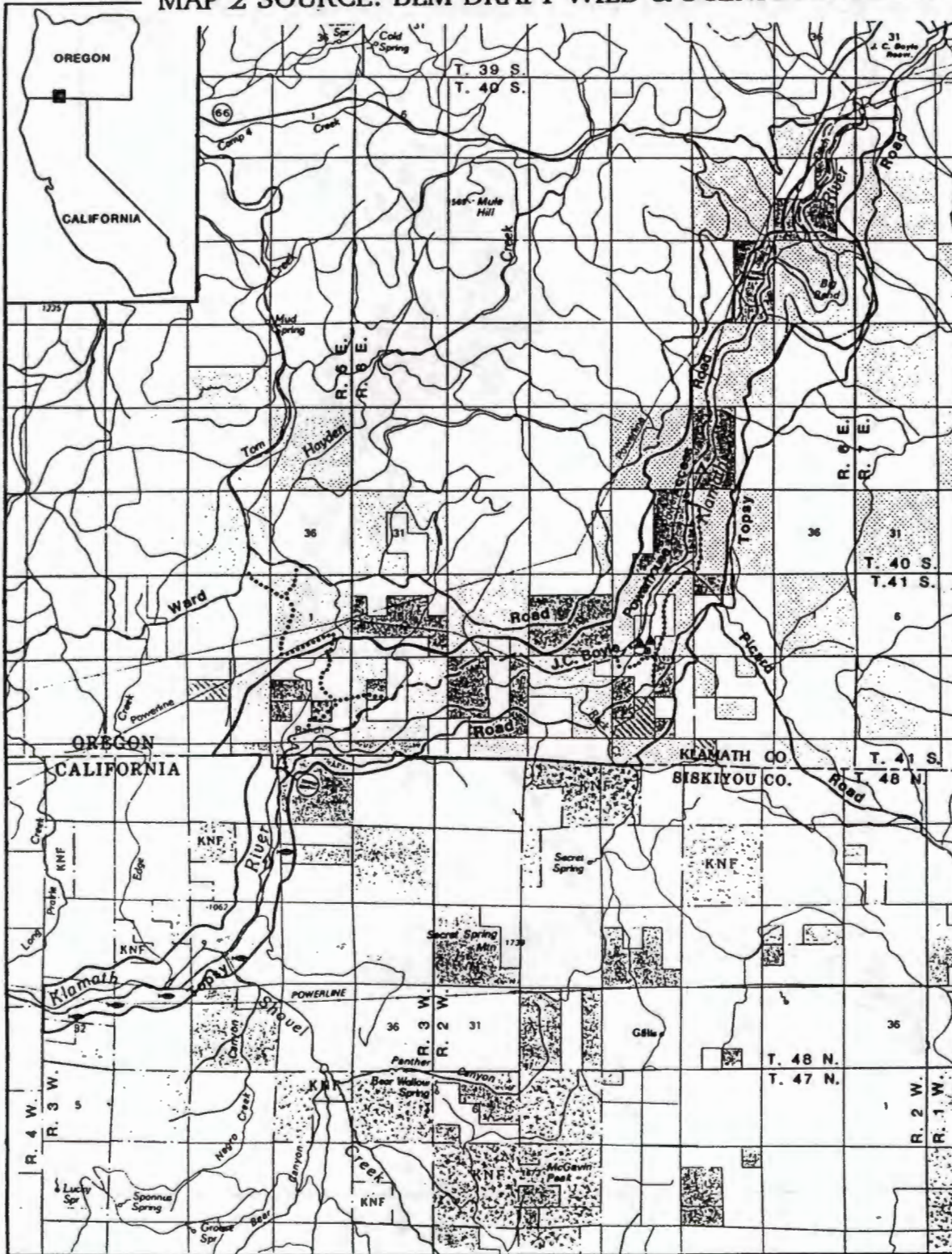
UPPER KLAMATH RIVER



1989



MAP 2 SOURCE: BLM DRAFT WILD & SCENIC RIVER STUDY



LEGEND

- Highway 66
- Primary Access Roads
- Secondary Access Roads
- /// BLM Raft Launch Area
- ▲ BLM Semi-Primitive Campsites
- ▲ Primitive Campsite (Private Property)
- ▲ Primitive Campsites with Fire Rings
- Frain Ranch (Recreational Use Area)
- ⊖ BLM Raft Take-Out Area
- Fishing Access Points
- SRMA Boundary



MAP 2-3

UPPER KLAMATH RIVER
ACCESS ROADS
AND
RECREATION SITES

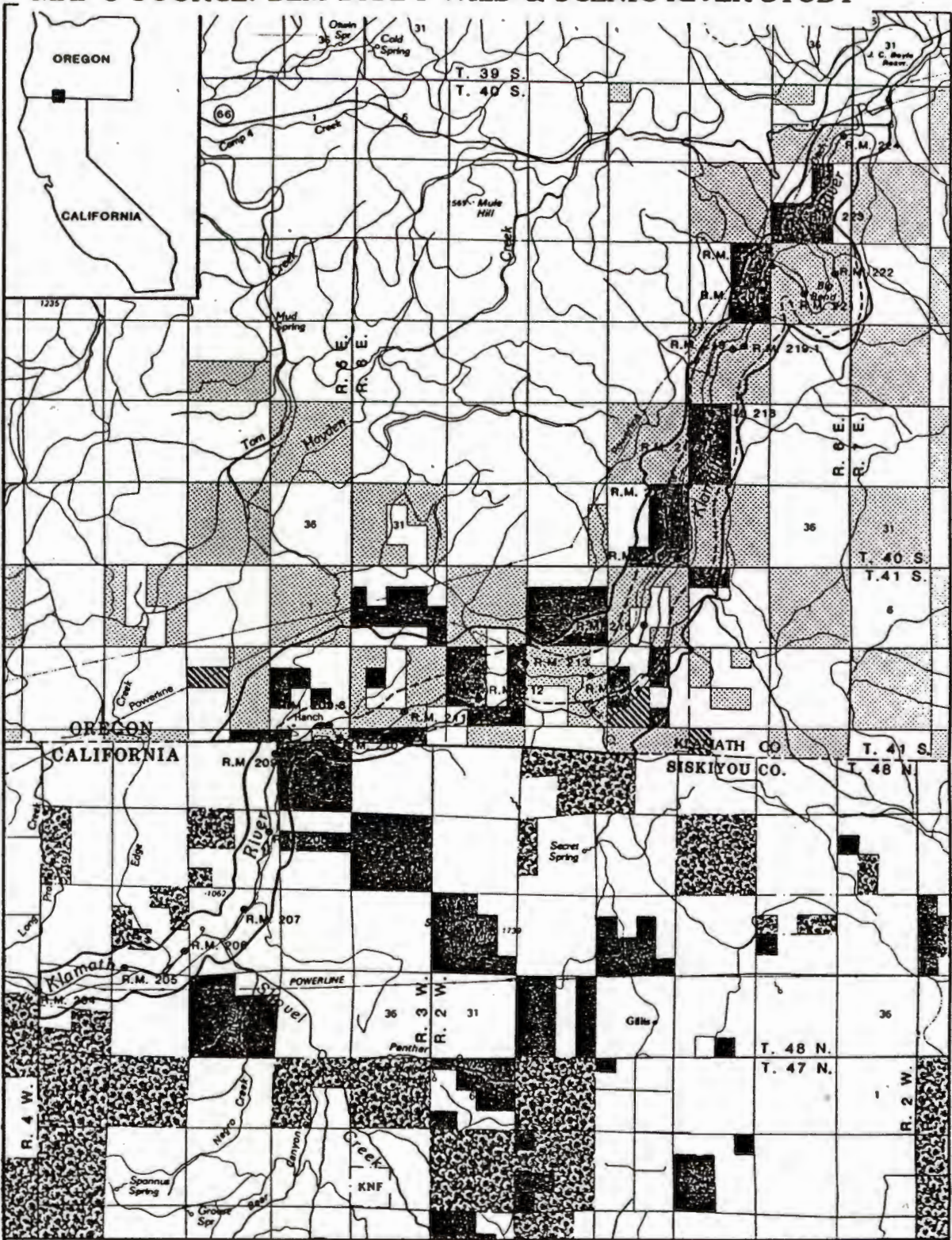
1989








famous. The rapids from Caldera rapids (RM 214.3) to the Oregon-California border (RM 209.3) are more frequent and more difficult than the upper reach. Below the Scenic Waterway, in California the river widens again and the whitewater boating is similar to the first stretch.

The flow characteristics of the scenic reach of the Klamath River are displayed on Table 1. The average annual rate of flow is 1903 cubic feet per second (cfs). The highest flows occur from December through April. Only about ten percent of the average annual flow is available during the low flow months, June through August. The character of the flow in the Klamath Canyon is unique. During the late spring through fall the flow can "bounce" from 350 cfs to over 1500 cfs in a single day. This flow regime is due to operation of John C. Boyle Powerhouse (see Daily hydrograph chart). During the winter and early spring, flow is fairly constant.

MAP 3 SOURCE: BLM DRAFT WILD & SCENIC RIVER STUDY



LEGEND

-  Public Lands (Admin. by BLM)
-  Oregon and California Lands (O&C Lands)
-  National Forest
-  State Lands
-  Private Lands



MAP 2-1
**UPPER KLAMATH RIVER
 LAND OWNERSHIP
 AND
 RIVER MILES**

1989



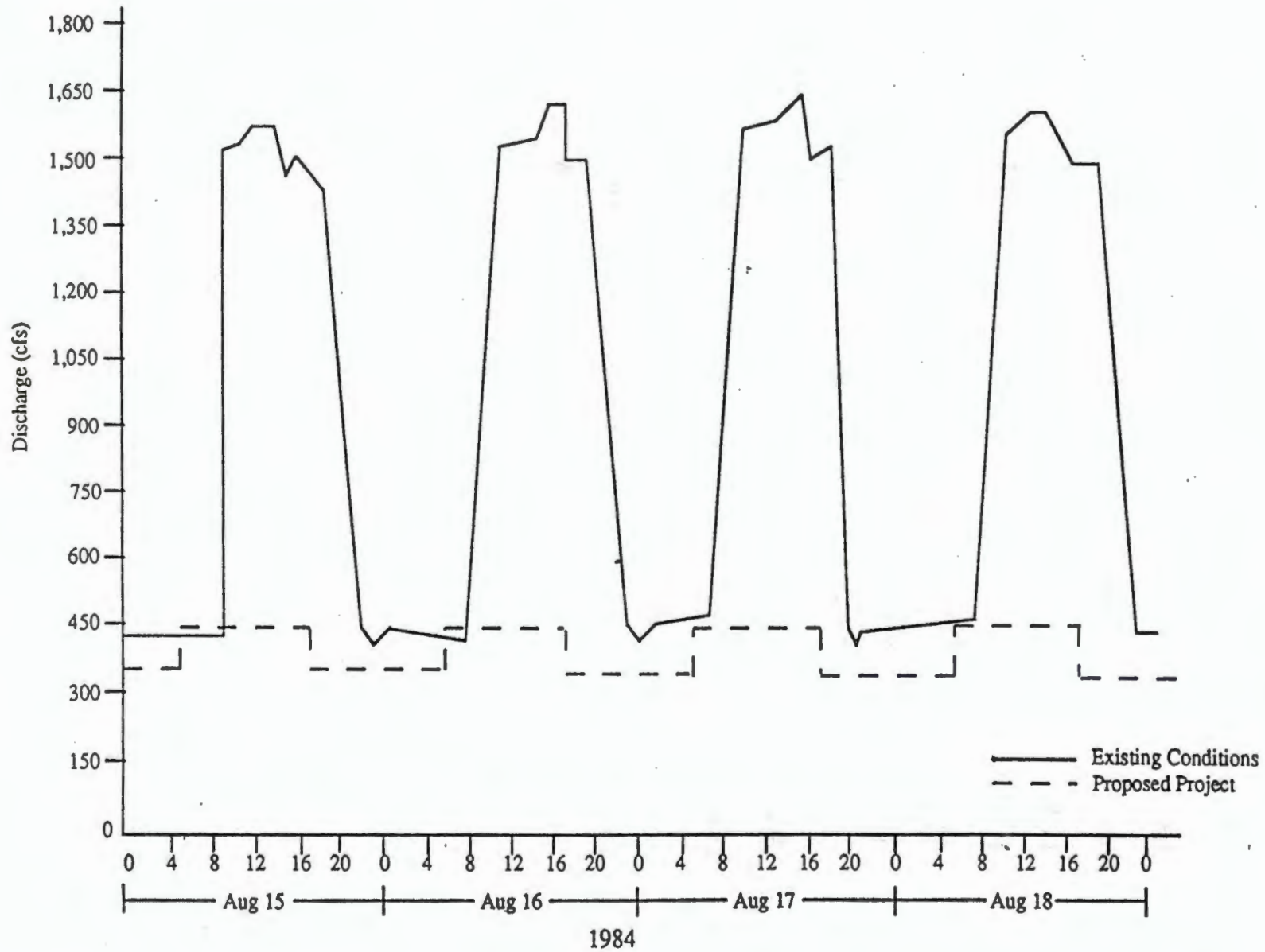
R.M. 204 River Miles

TABLE 1

AVERAGE MONTHLY FLOW, 1962-1988 KLAMATH RIVER

BELOW JOHN C. BOYLE POWER PLANT

| MONTH | MIN CFS | MAX CFS | MEAN CFS | % RUNOFF |
|-------|---------|---------|----------|----------|
| OCT | 786 | 3157 | 1685 | 7.2 |
| NOV | 897 | 4506 | 2196 | 9.3 |
| DEC | 1112 | 5733 | 2700 | 11.6 |
| JAN | 1174 | 7905 | 2668 | 12.5 |
| FEB | 1091 | 7780 | 2723 | 11.8 |
| MAR | 634 | 8755 | 3153 | 13 |
| APRIL | 723 | 5645 | 2550 | 11 |
| MAY | 591 | 3935 | 1725 | 7.6 |
| JUNE | 550 | 2327 | 872 | 3.5 |
| JULY | 502 | 1339 | 651 | 2.9 |
| AUG | 590 | 1054 | 903 | 4 |
| SEPT | 776 | 1876 | 1258 | 5.6 |



4-7

Figure 4-1. Daily hydrographs for the Klamath River below the proposed Salt Caves powerplant site (Beak lower gage) under existing and proposed project conditions during the summer based on data from August 15 to 18, 1984. (Source: the staff, modified from Klamath Falls, 1986).

INSTITUTIONAL CONSTRAINTS:

A. Recreation Resource Management:

Since 1984 the BLM has managed the area from the John Boyle Reservoir to just below the Oregon-California Boarder as the Klamath River Special Recreation Management Area. The river canyon has been classified Scenic Quality A and is managed under the Visual Resource Management (VRM) class II rules. Recreation opportunities are managed under Recreation Opportunity Spectrum (ROS), as semi-primitive motorized and roaded natural classes. The canyon area on the right side of the river is managed by the BLM as the Pokegama Wild Horse Management Area.

The Klamath River Scenic Waterway (designated in November of 1988) under the State Scenic Waterway system would likely fall into the Scenic Class, the mid-level of six classifications.

NATIONAL WILD AND SCENIC RIVER STATUS:

The Klamath River is being studied by the BLM as a result of direction from Congress through the 1988 Oregon Omnibus Rivers Bill. The report is to establish if any areas are eligible for designation as a National Wild and Scenic River, recommend the most likely classification for the designation and analyze the suitability for eligible area designations.

Under the provisions of the Omnibus Bill the study must be submitted to Congress by April 1, 1990. The Klamath River study area differs from the other Wild and Scenic River Studies. Other rivers have a three-year study period and the designated areas during this study period are managed in a protected status. The language of the Omnibus Bill specifically allowed the FERC process on the Salt Caves Hydroelectric Project to continue during the Wild and Scenic

study period. Since the release of the BLM study, Senator Hatfield has sent a letter to FERC requesting it delay its findings until Congress has had the opportunity to review the final BLM Wild and Scenic River study. The BLM draft Federal Wild and Scenic River system eligibility study recommended a classification of Scenic for most of the Scenic Waterway.

STATE MANAGEMENT

The State Scenic Waterway is being managed under the general rules for land management specified in the Scenic Waterways Act. ODFW manages the river as a wild trout fishery and the Klamath River Canyon as critical winter deer range and bald eagle habitat. The Division of State Lands has determined the Klamath to be navigable. The Northwest Power Planning Council has included the river in the protected status areas.

The DEQ has established beneficial uses for which water quality will be managed. These uses are domestic water supply, industrial water supply, irrigation, livestock watering, salmonid fish rearing and spawning, resident fish and aquatic life, wildlife, hunting, fishing, boating, water contact recreation, and aesthetic quality.

B. Water Resource Management:

The appropriation of the surface waters of the Klamath River has been governed by the Klamath River Basin Compact (ORS 542.620), since 1957. The compact was ratified by Oregon and California, and approved by the U.S. Congress. It established the following priority of beneficial uses in the situation where sufficient water is not available to satisfy all applications:

- a) domestic use,
- b) irrigation use,
- c) recreational use, including use for fish and wildlife,
- d) industrial use,
- e) generation of hydroelectric power, and

f) other uses.

The Compact also established priorities for irrigation uses limited to the quantity of water needed to irrigate 200,000 acres in Oregon and 100,000 acres in California.

There are no minimum streamflows established in the Klamath River. However, WRD is processing an application for an instream water right from Parks and ODFW of 1500 cfs (when available) for whitewater floating and 550 cfs for fishing.

Other water rights total of 1.9 cfs in the study area⁶. There are some small hand-built instream structures in the river related to irrigation.

There are three dams above the Scenic Waterway, John C. Boyle Dam and upstream from that, Link and Keno Dams. Below the Scenic Waterway in California there are three dams, Copco 1 and 2 and Iron Gate Dams. All six dams are operated by PP&L under FERC licence #2082. Satisfying the needs of the steelhead below Iron Gate Dam is the only instream flow requirement in the FERC licence for the PP&L dams on the Klamath River. The minimum releases from Iron Gate are to be: September 1 - April 30 1300 cfs, May 1 - May 31 1000 cfs, June 1 - July 31 710 cfs and August 1 - August 31 1000 cfs⁷.

The John Boyle Project (originally named Big Bend) is licenced by the State of Oregon through the Hydroelectric Act (ORS 543.010 to 543.655); this licence (HE 180) will expire in 2006. The original licence required a minimum flow of 200 cfs below the powerhouse at all times.

⁶source: Pam Homer, Oregon Water Resources Department September 1989.

⁷article 52 of FERC license for project 2082

The flows in the Klamath Canyon are comprised of three elements: releases from the John Boyle Dam, releases from John Boyle Powerhouse and natural flow from within the canyon. The percentage of flow released from the two structures varies with the season. The bulk of the summertime flow in the Scenic Waterway is comprised of stored water released for hydroelectric generation. PP&L determines the releases based on several sets of criteria. The first criteria is to satisfy the requirements of its operating permits from FERC and the Bureau of Reclamation (BOR). The instream requirements below Iron Gate Dam is the larger consideration. The release schedule is based on the fish flows required at Iron Gate. Next in priority of the criteria is the supply of the BOR irrigation projects. The BOR owns Link and Keno Dams and holds the storage permits for the water. Some of PP&L's other criteria are not required by FERC and BOR permits. Peak power demand, fish requirements within the Klamath Canyon reach, and recreation are among these elements.

During early July there is a two-week period in which PP&L performs turbine maintenance at the powerhouse and makes no releases from this facility. During this time, the releases from John Boyle Dam may be higher (from 500-700 cfs) and/or water can be stored to prolong the summertime power releases.

There is flow from John Boyle Dam fisheries structures, several small springs and scheduled release from John Boyle Powerhouse. This cumulative flow provides the streamflow regime for rafting. Summertime power-related releases are to turn one generator. Releases last about six hours and have a two-hour ramp⁸ time. In 1979 PP&L investigated the Klamath Canyon recreation use and the current pattern of release was determined to balance the needs for generating efficiency, whitewater floating and fish needs. This process led PP&L to install and maintain the "flow phone" and to favor the hours that allowed the rafters to adequately float

⁸ ramp time is the period of transition from the low and high flow, typically this term indicates that there is a gradual change

the river⁹. The summer season release times are slightly later than PP&L's actual peak demand times. The amount of release is predicated on the amount of water that is needed for efficient operation of the turbine¹⁰.

TABLE 2

NUMBER OF DAYS WITH FLOWS EQUAL TO OR GREATER THAN 1500 CFS¹¹

| <u>MONTH/YEAR</u> | <u>6+ HRS</u> | <u>MONTH/YEAR</u> | <u>6+ HRS</u> |
|-------------------|---------------|-------------------|---------------|
| 10/87 | 30 | 10/88 | 24 |
| 11/87 | 23 | 11/88 | 25 |
| 12/87 | 22 | 12/88 | 31 |
| 1/88 | 29 | 1/89 | 27 |
| 2/88 | 28 | 2/89 | 28 |
| 3/88 | 25 | 3/89 | 31 |
| 4/88 | 23 | 4/89 | 30 |
| 5/88 | 8 | 5/89 | 31 |
| 6/88 | 6 | 6/89 | 7 |
| 7/88 | 25 | 7/89 | 0 |
| 8/88 | 22 | 8/89 | 19 |
| 9/88 | 31 | 9/89 | 18 |

⁹source: personal contact with Les Lingschiet, Pacific Power and Light

¹⁰source: personal contact with Ed Wies, Pacific Power and Light

¹¹source: USGS gauge records

RECREATION FLOW ANALYSIS

INSTREAM USES

There are two major recreation instream uses of the river: whitewater boating and fishing.

A. Whitewater boating:

Whitewater boating occurs in three forms: rafting, kayaking, and drift boating. There is no difference in the minimum flow required for these activities. Although the Klamath has been run in an open canoe by professionals¹², it is not generally recommended¹³. There is no evidence of any power boat use in the Klamath Canyon. At 1500 cfs the Scenic Waterway has 15 class I rapids, 18 class II rapids, 14 class III rapids, 3 class IV rapids and 2 class V rapids¹⁴. At higher flows or colder temperatures many of these rapids increase in difficulty. Kayakers should be expert or intermediate with a "bomb-proof roll"¹⁵ (a "bomb-proof roll" means that the kayaker should be able to return the boat to the upright position in difficult situations).

1.) Location of use: Most use appears to be from the BLM launch site (RM 220.1) to the BLM access site #1 (RM 203.7) or the Copco Store (RM 203). This float trip runs from .2 miles below the John Boyle Powerhouse to 5.6 miles below the Oregon-California Border, total length of 16.4 miles.

¹²source: Dave Steele, 1989 BLM contractor for Klamath River recreation

¹³source: River Information Digest

¹⁴ Class refers to the American Whitewater Affiliation International Scale of River Difficulty, source: Soggy Sneakers Guide to Oregon Rivers - Willamette Kayak and Canoe Club July 1988 see attached

¹⁵source: Soggy Sneakers Guide - Willamette Canoe and Kayak Club

Some shorter trips occur on the upper end from the BLM launch site (RM 220.1) to Frain Ranch (RM 215). These trips take advantage of the easier stretch of rapids. In this area the river is wider, drops 27 feet per mile and has 14 class I, 9 class II and 1 class III rapids.

The lower section from Frain Ranch (RM) 215 to the Oregon-California Border (RM 209.3) contains more difficult rapids. This area has 1 class I, 9 class II, 13 class III, 3 class IV, and 2 class V rapids. At the entrance to Caldera Rapids (RM 214.3) the river turns a corner, narrows, and the drop increases to 77 feet per mile. The rapids become more difficult and frequent. This is one of the most demanding sections of whitewater in the region.

2) Time of use: The opportunity for whitewater boating is year-round. Most boating use on the Klamath River occurs on weekends from mid-May through mid-September. Some other boating occurs during other months when the flows are high. The unique whitewater boating opportunities on the upper Klamath River attract visitors from outside the region who are willing to travel long distances to experience the quality, late-season Class II-V run that is not found on other rivers¹⁶.

Peak use occurs during the months of July and August when there is at least one generator at the John Boyle Powerhouse operating. Typically there is a two-week period that the generators are shut down in July. Generally it is not possible for the generator(s) to be efficiently operated on a twenty-four-hour basis and the summertime rafting release is about 6 hours. PP&L has installed a special "flow phone" to help rafters schedule trips. PP&L slowly increases the flow (ramps) in the river at the beginning of the release and also slowly decreases the flow at the end of the release.

¹⁶ source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

During the period from November through March it is likely that more than one generator may operate. Most early season (before June) use is from private boaters, who are predominately from within the region. Most late-season use (after August) is from commercial outfitters due to the lack of compatible whitewater boating opportunities elsewhere¹⁷.

3.) Amount of use: BLM does not have a permit system for private boating for the Klamath. Its records for private boating are based on a voluntary registration system. BLM has stated that private boating records are used to depict trends in use and the actual use is higher than their records indicate.

¹⁷ see above

TABLE 3

ESTIMATED WHITEWATER BOATING USE BY MONTH¹⁸

| <u>MONTH</u> | <u>1987 BOATERS</u> | <u>1988 BOATERS</u> |
|--------------|---------------------|---------------------|
| JULY | 289 | 541 |
| AUGUST | 890 | 1256 |
| SEPTEMBER | 386 | 357 |

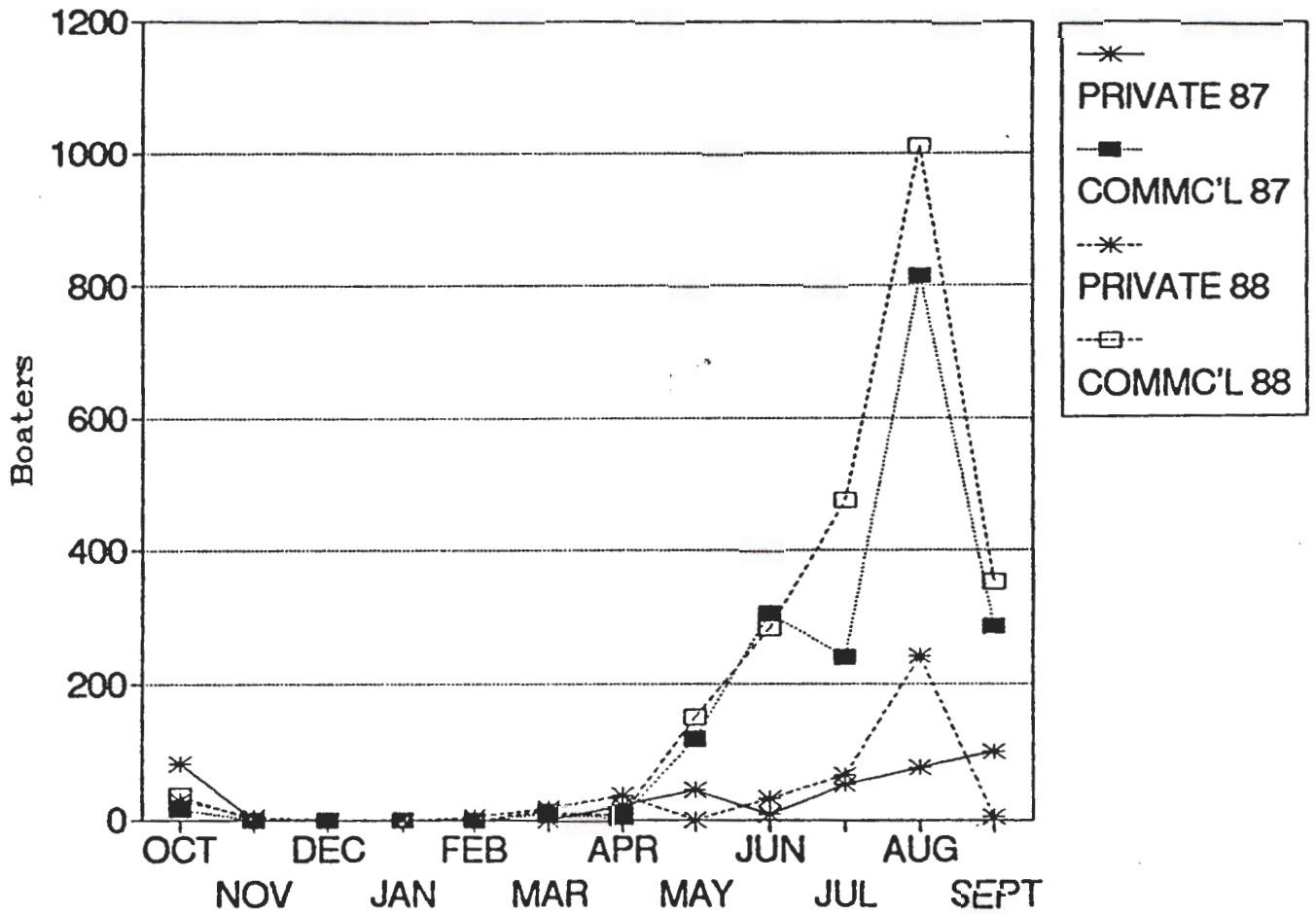
WHITEWATER BOATING USE ESTIMATES¹⁹

| WHITEWATER BOATERS | <u>1986</u> | <u>1987</u> | <u>1988</u> |
|-----------------------|-------------|-------------|-------------|
| COMMERCIAL | 1751 | 2163 | 2621 |
| PRIVATE | 210 | 291 | 450 |

¹⁸source: compiled by staff from BLM records

¹⁹source: Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

KLAMATH RIVER BOATING USE



B. Fishing:

All of the documents reviewed rated the Klamath high for its trout fishery, because it is one of the most productive fisheries for wild trout for both size and numbers.

1) Location of use: Fishing use occurs from the BLM Launch site to the BLM Landing with the majority of bank use occurring from the Powerhouse to Frain Ranch. Past this point, bank access becomes more difficult, though in a few places the river is accessible with a 4-wheel-drive vehicle. Some private fishing trips in boats take place from the put-in to Frain Ranch. These trips take advantage of the easier stretch of river²⁰.

One of the reasons for the popularity of the Klamath River Scenic Waterway among fishermen is the number and size of the river's wild trout. These trout are unique because they have not only adapted to the biological circumstances of the river, but have adapted to the extreme changes in daily flows. Their size relates directly to the food supplies from the flows supplied from John Boyle Reservoir.

Time of use: Below John Boyle Dam, the Klamath River is open to angling all year long. The trout fishery is especially popular during the spring months when run-of-the-river flows average 1500-3000. June 15 through September 30 are reserved for catch and release with barbless flies and lures only. This restriction is to prevent waste of fish because, during this time period, the fish are unpalatable²¹.

4) Amount of use: There are no exact counts of current fishing use on the Scenic Waterway. The Resident Fish Creel Census Summary by ODFW indicates that since 1984 there has been

²⁰source: John Fortune, ODFW

²¹ Comments on Salt Caves Draft Environmental Impact Statement by ODFW

a rise in the number of anglers on the river. Creel census data (table 4) is not a count of all users within the canyon, but is a method to track user trends and provides a rough indication of angling effort.

TABLE 4

RESIDENT FISH CREEL SUMMARY²²

| <u>TIME PERIOD</u> | <u>ANGLERS</u> | <u>HOURS FISHED</u> |
|--------------------|----------------|---------------------|
| 1984 | | |
| FEB/MARCH | 2 | 1 |
| APRIL/MAY | 3 | 6 |
| JULY/AUG | 3 | 8 |
| SEPT/OCT | 6 | 18 |
| 1985 | | |
| JAN/FEB | 2 | 5 |
| MAY/JUNE | 3 | 9 |
| JUNE/JULY | 6 | 21 |
| JULY/AUG | 11 | 27 |
| SEPT/OCT | 2 | 10 |
| OCT/NOV | 11 | 33 |
| 1986 | | |
| JUNE/JULY | 2 | 4 |
| AUG/SEPT | 10 | 13 |
| 1987 | | |
| DEC 86/JAN | 3 | 6 |
| FEB/MAR | 10 | 13.5 |
| APRIL/MAY | 6 | 21 |
| MAY/JUNE | 10 | 20 |
| AUG/SEPT | 8 | 13 |
| SEPT/OCT | 9 | 26 |

²²source ODFW

STREAM RELATED USES:

The Klamath Canyon offers opportunity for many stream-related uses such as camping, hiking, wildlife viewing/nature appreciation, hunting, trapping, and off-road vehicle use.

A. CAMPING:

Most camping in the canyon is related to other recreational activity. The BLM rates the camping opportunities within the Canyon as semi-primitive. Topsy Campground, upstream from John Boyle Dam, is operated for those wishing a less demanding camping experience. The Klamath River Special Recreation Management Area Plan estimates use of Topsy Campground at 15,000 per year for both camping and day use. Much of the non-local day use of the canyon starts from Topsy Campground.

Location of use: Most camping occurs on the upland benches at Frain Ranch (RM 215) or at the BLM sites. BLM maintains semi-primitive sites (RM 217.7) and 5 primitive campsites (RM 217 to RM 216). There are also two other primitive campsites on private land at RM 215.

Time of use: Summer use is primarily from commercial whitewater boaters and some anglers. Spring and fall camping is generally related to hunting and fishing.

Amount of use:

BLM Semi-developed sites: 1000 camping visits.

Topsy Campground: 1358 camping visits (outside of the Scenic Waterway but most of the camping-related day use originates from this point).

Relation to stream flow: The majority of camping within the canyon area is in combination with rafting and occurs on the upland terraces.

B. Hunting:

Hunting in the canyon is primarily for black-tailed deer, silver-grey squirrels, mountain and valley quail, chukar, and turkey. Hunting is regulated by ODFW as part of the Keno Unit.

Location of use: use occurs along open benches along the river and in draws along the canyon rim.

Time of use: Some type of hunting is allowed in all but February and March.

Deer: September/October (rifle), October/November (bow)

Elk: October

Silver gray squirrel: August through November

Birds: October/November (quail), April/May (turkey), October through January (chukar)

Amount of use: Hunter use figures specifically for the Klamath Canyon are not available from ODFW, but the BLM estimates 300 hunting visits annually.

Relation to flow: No dependent relation known.

C. Trapping:

The major species of interest for trappers in the Klamath Canyon are weasel, muskrat, mink, racoon, otter and beaver.

Time of use: November through March

Amount of use: Less than ten local individuals²³

Relation to flow: wetted perimeter of riparian area is the habitat for many of these species.

D. Other uses:

Other uses such as hiking, wildlife viewing/nature appreciation, and off-road vehicle operation; can often be independent from any other recreation activity. Many people use the Klamath Canyon for these activities, particularly nature appreciation²⁴.

Location of use: Dispersed throughout reach

Time of use: Year-round

Amount of use:²⁵

Other land-based visits: 400

Non-motorized travel visits: 280

Off-road visits: 1250

Winter sports visits: 500

Other motorized travel visits: 1000

Relation to flow: No dependent relation known.

²³source: Ralph Opp, ODFW

²⁴source: personal contact with Kattie Ardt and Charlotte Opp, Klamath Falls Chapter Audubon

²⁵source: BLM estimates

INSTREAM RECREATION FLOW NEEDS:

In summer and fall natural flows would not be sufficient for instream recreational activities. Use of stored water at these times is the key to preserving the opportunity for recreation activities. The Klamath Scenic Waterway is a good example of recreation uses filling different niches in both time of use and flow requirements. Although the activities can and do overlap, both rafting and fishing occur within the current flow regimes. There is no evidence of a recreational conflict at this time.

A. Whitewater boating:

Recreation use on the Klamath Scenic Waterway has been adapted to the conditions created by the release regime established by the John Boyle Powerhouse. Summertime rafting is dependent on the current flow regime. The following sources were used to determine flow needs.

Soggy Sneakers Guide (Willamette Kayak and Canoe Club, July 1988)

Location of description: John Boyle Powerhouse to Copco Reservoir.

Use listed: CLASS 4-5 RAFTING/KAYAK - Discussion in this document does not differentiate between rafting flows and kayak flows. It does suggest that the kayakers be expert or intermediate with a "bomb-proof roll."

Time of use: Lists season as all year. This guide refers to the releases from the powerhouse providing "some of the best class 4 summertime paddling in Oregon. "

Handbook to the Klamath River (Quinn and Quinn 1983)

Location of description: John Boyle Powerhouse to Copco Reservoir

Use listed: CLASS 4-5 RAFTING/KAYAK - Discussion in this document does not differentiate between flows and kayak flows.

Time of use and flows suggested: This guide listed 1650 cfs as the flow at which its log was written. The guide lists flows above 3000 cfs to be unsafe.

Recreation Value Study (PNWPPC 1987).

This study was done for the Northwest Power Plan, by the Oregon State Parks Division, to determine the value of instream recreation. Uses are rated on a scale 1 - 5, with 1 being the highest rating for recreation quality.

Location of description: Klamath River below Boyle reservoir.

Use listed: The activities ratings listed as 1 are canoe/kayak, rafting, trout fishing and hiking, swimming, camping, and nature viewing. Drift boating was given a 3 rating.

Klamath River Special Recreation Management Area Plan (BLM 1983)

Location of description: John Boyle reservoir to the BLM landing just below the California border.

Use listed: Discussion of boating in this document is listed as "floating" and does not assign the standard rating for the river.

Time of use: The canyon is used year-round, with most of the rafting occurring during the late spring and summer. High water and cold temperatures keep all but the most avid floaters off the river in winter and early spring.

River Information Digest

Location of description: John Boyle Dam to California border.

Use listed: "Not suitable for open canoes, first 5 miles Class II-III, miles 5-11 Class III-V"

Time of use and flows suggested: Year-round use was listed. This document does not suggest flows but does cite low flows and hazardous high flows as limiting factors.

DEIS Salt Caves Hydro Electric Project (FERC July 1989)

Location of description: The DEIS refers to the area in relation to the reaches affected by the proposed hydro project, the whitewater boating uses are largely within the same reach of the river.

Use listed: "The lower reach contains all of the class 4 and class 5 rapids and the majority of the class 3 rapids. The river is much wider in the upper reach, which has only one class 3 rapid".

Time of use and flows required: "Whitewater boaters include both rafters and kayakers. Rafting use, in particular, is dependent upon the J.C. Boyle hydroelectric powerhouse, and generally occurs only when at least one generator is operating. The J.C. Boyle Project operates in a peaking mode during the summer and fall months, creating large daily fluctuations in flow. During the typical summer operations, one generator is operated daily from approximately 10 a.m. to 4 p.m., increasing the river flow from approximately 350 cfs to approximately 1,500 cfs. In the upper reach the flows have to be at least 380 cfs to be raftable (Klamath Falls, 1988). Scoping meeting comments and conversations with whitewater outfitters indicate that most rafters prefer flows at or above 1500 cfs. Additionally the BLM considers 1500 cfs the minimum raftable flow (letter from Lance Nimmo, Manager, Klamath Resource Area, BLM, Medford, Oregon, February 19, 1989)."

Nationwide River Inventory

Location of description: John Boyle Dam to Copco Reservoir

Use listed: Discussion in this document does not differentiate between rafting flows and kayak flows, "among the best whitewater rafting rivers in the West; with long, sustained rapids of class IV and V difficulty."

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study

(BLM)

Location of description: River mile 220.1 - 204. The Wild and Scenic River study examined a portion of the river that extended below the state line.

Type of use: This document does not differentiate between rafting and kayaking. Whitewater boating was broken down by class and river section (see chart). This study showed 15 class I rapids, 18 class II rapids, 14 class III rapids, 3 class IV rapids and 2 class V rapids within the Scenic Waterway (this data is no doubt predicated on flows of 1500 cfs, flows higher or lower may result in a different classifications).

Time of use: "Most boating use on the upper Klamath occurs on weekends from mid-May through mid-September. Some boating occurs during other months when flows are high. The unique whitewater boating opportunities on the upper Klamath River attract visitors from outside the region who are willing to travel long distances to experience the quality, late season Class III-V run that is not found on other rivers. Most of the early season use is from private boaters who are predominantly from inside the region. Most of the late season use is from commercial outfitters due to the lack of comparable whitewater boating opportunities elsewhere."

Oregon Rivers Initiative Information Packet

Location of description: John C. Boyle Dam powerhouse to Oregon-California Border.

Type of use: "The Klamath is also well known for its spectacular whitewater rafting. 41 companies currently use the river for their business. It provides a thrilling succession of class III,IV and V rapids (Class VI are virtually unraftable). One particular steep stretch drops 225 feet in just three miles. The Klamath is only one of two on the west coast with summertime class IV and V rapids."

Application for Licence Salt Caves Hydroelectric Project April 1988 Response to Additional Information Requests

This document compiles the comments of some of the user groups, commercial outfitters and the BLM covering the proposed hydroelectric project.

Location of description: Proposed Salt Caves diversion structure to Oregon-California border.

BLM statement: The BLM considers the minimum raftable flow to be 1500 cfs. Rafting the Upper Klamath has occurred with flow greater than 4000 cfs. The analysis of the project predicts that with a stable flow of 350 cfs there would be encroachment of vegetation into the river channel. This encroachment may reduce or eliminate rafting possibilities in the future.

Whitewater Voyages/Rivers Exploration Ltd. statement: "As a bare minimum, we would propose a flow of 1,600 cfs, while for long term operations we require minimum flows of 1,700 cfs and prefer average flows of 1,800 to 2,400 cfs. "

Southern Oregon Association of Kayakers (SOAK) statement: "The Klamath River is a particularly rocky river, demanding great skill and care to run. Exposure to the rocks, which are extremely sharp, is naturally much greater as the water level decreases. To avoid wrapping, pinning or ripping a raft or kayak, a minimum flow of 1500 cfs is required. Although kayakers may get through in somewhat lower water than rafts, Klamath River kayakers agree that the nature of the rocks here demand a safer level of water, which is the 1500 cfs flow. "

Klamath Canyon River Outfitters statement by Dean Munroe: "I have run the river at many levels, and 1500 is satisfactory. For comparative purposes, 1700 cfs is better and 1900 cfs would probably be ideal. A flow of 2700 cfs is great. At 5900 cfs the river is incredibly demanding. However, is my opinion alone the real measure of ideal? At 1200 cfs the river may

be runnable, or it may not. If it is, it would not be a Class IV-V experience. The rafts would [be] constantly hitting rocks through Caldera, Satan's Gate, Hell's Corner, Dance Hall, Ambush, Salt Cave, Captain Jack, Roughshod, and Snag Island. The 1200 cfs. experience would not approach the exciting and exhilarating experience it is at 1500 cfs. "

Eagle Sun Inc. statement: "A minimum of 1500 cfs is need to do the job and do it right.... As for release times, we could run everyday June through September if there was enough water. Plus, we would need a six hour release from 9:00 am till 3:00 pm for optimum use. "

Ouzel Outfitters statement: "PP&L has established their own idea of a reasonable level to be a minimum of 1500 cfs, and that barely does it."

B. Fishing:

Fishing is less dependent on the high flow regime. Sufficient flows from John Boyle Reservoir must occur to meet food and temperature needs to maintain the high quality of the fish. Fishing use seems to occur at all flows but is most evident at low flows due to better access. Some fishing enthusiasts prefer those times of the year when a more constant flow is available.

Location of use: DEIS Salt Caves Hydro Electric Project reaches.

The DEIS refers to the area in relation to the reaches affected by the proposed hydro project. The reaches utilized for fishing are same for the purposes of this report. The project reach is extremely productive, supporting a high quality wild rainbow trout population.

Comments on Salt Caves DEIS by ODFW

Page 1 Fishery Resources: Harvest of trout in the Salt Caves reach is not allowed during summer months because of poor palatability. However, cooler summer water temperatures in the Salt Caves reach allow catch and release angling.

Page 3 River and Land Management Plans: The EIS should also include a discussion of the Department's statewide Wild Trout Policy and statewide Trout Management Plan, both of which are elements of Oregon's Comprehensive Waterway Management Plan. These plans recognize the importance of conserving genetic resources of wild trout populations. The Klamath trout adapted both to lacustrine and riverine environments, represents unique genetic resource among Oregon wild trout populations. The ODFW statewide plans also recognize the need to conserve and to provide a diversity of angling opportunities within the state, including the opportunity to enjoy angling in semi-primitive settings such as the Klamath Canyon.

Time of use and flows needed:

Page 3 Recreational Setting: The EIS should be reworded to state that good fishing, both in terms of catch rate and access, is enjoyed within the Salt Caves reach at a variety of flows. The trout fishery is especially popular during the spring months when run-of-the-river flows average 1500-3000 cfs with out the complications of peaking below J.C. Boyle Powerhouse.

Page 4 Recreation Setting: The DEIS itself states that the "most preferred " period for summer angling is when J.C. Boyle Powerhouse is shut down for maintenance. At this time, there is no peaking, and steady flow below the powerhouse averages about 650 cfs. ODFW field observations also indicate that 350 cfs in the project reach above Frairn Ranch precludes boat angling, as now occurs (John Fortune, ODFW, September 1989).

Page 6 Fishery Resources: Tennant (1975), cited in the DEIS, recommended 0.3 of the mean daily flow as a minimum continuous flow required to support good survival of aquatic life. In the case of the Salt Caves reach this base flow would be $0.3 * 1900 = 570$ cfs. This is

consistent with the 550 cfs recommended by ODFW as the minimum flow needed to support the trout population.

Special resource identified:

ODFW Central Region Administrative Report No 83 - 5, (John Tolman, June 1983)

The Klamath River was stocked with legal size rainbow from 1954 to 1978. Stocking was discontinued after 1978 when Klamath River was classified for wild trout management. Also Ceratomyxa shasta (a parasitic protozoa) has been identified in the Klamath River below Iron Gate Dam and in Klamath Lake.

Recreation Value Study (PNWPPC 1987).

(see: boating section)

KLAMATH RIVER SPECIAL RECREATION MANAGEMENT AREA (BLM 1983)

Location of description: John Boyle reservoir to the BLM landing just below the California border.

Use listed: "The Upper Klamath also provides exceptional trout fishing and it is considered by many to be one of the best fly fishing rivers in the Northwest."

Amount of use: "Fishing use within the canyon is estimated at 2,000 visitors per year."

Nationwide River Inventory

Location of description: John Boyle Dam to Copco Reservoir

Use listed: "Excellent wild trout fishery."

Oregon Rivers Initiative Information Packet

Location of description: John C. Boyle Dam powerhouse to Oregon-California Border.

Use listed: "The river is well-known as one of the best wild trout fishing streams in Oregon. It is managed by the state as a 'wild trout fishery' (no hatchery stocking), and it was one of the first to receive the designation by the state."

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study (BLM)

Location of description: River mile 220.1 - 204; the 5d Wild and Scenic River study examined a portion of the river that extended below the state line.

Use listed: " The upper Klamath River is, managed as a wild trout river in all three segments, provides an excellent trout fishery and is among the better fly fishing rivers in Oregon. The Klamath Basin provides a wide variety of angling opportunities, but only the upper Klamath River provides such an excellent catch rate for large wild rainbow trout on a major river. It is rivaled in Oregon only by the Deschutes River."

Time of use: "Currently, the upper Klamath, Rogue, and the lower Klamath are the only major rivers in the region that are open to trout angling year round." "Spring comes early to the upper Klamath River Canyon, providing the earliest angling opportunity for a river fishery in Klamath County. The majority of fishing use occurs during spring and fall."

SUMMARY: Flow Ranges Identified for Boating and Fishing.

Whitewater boating the Klamath Scenic Waterway is for advanced and expert boating skills. Some whitewater boating can be done at flows less than 1500 cfs, but the majority of use occurs at 1500 cfs. There may not be an upper flow limit for some experts. The Quinn and Quinn guide lists 3200 cfs as their upper limit, the BLM records indicate that rafting has been done as high as 4000 cfs, and the Klamath River Rafters letter to FERC said that 5900 cfs is

incredibly demanding. This suggests two flow ranges: 1500 cfs - 3200 cfs for the majority of the public use; and 3200 cfs - 5900 cfs for expert or professional boaters when the opportunity is available.

Fishing opportunities occur on a year-round basis, 550 cfs is the flow that ODFW has determined as the optimum flow for fish, through the Oregon method. They have further confirmed this figure using the Tenant method. Fishing is also very popular during times of constant flow.

TABLE 5

RECREATION FLOW CHART

| REC USE | MIN FLOW | MAX FLOW | SEASON OF USE |
|---------------|----------|----------|---------------|
| G E N E R A L | | | MAY-SEPT |
| BOATING | 1500 | 3200 | |
| E X P E R T | | | OCT-APR |
| BOATING | 3200 | 5900 | YEAR-ROUND |
| FISHING | 550 | 3000 | |

WATER RIGHT APPLICATIONS:

Instream uses:

Parks/ODFW have submitted to WRD an instream water right application for 1500 cfs (when available) for whitewater floating and 550 cfs for fishing.

Out of stream uses:

The City of Klamath Falls no longer has a water right application for hydro development pending with WRD. The City has an appeal before the circuit court to require WRD to accept the "no dam" application even though it is located within the Scenic Waterway. The status of this application is pending a court decision.

There are 38 pending surface water applications in the Klamath basin that are above or tributary to the Klamath Scenic Waterway. The purposes of these applications are: domestic (1), irrigation (9), live stock (3), hydroelectric (2), and road watering (23). Some of these

application are from parties in current adjudication of the Klamath Basin and do not represent new water uses.

CONCLUSIONS

During the critical periods of highest recreation use, the Upper Klamath flows are dependent on the release of stored water from John Boyle Reservoir and other upstream impoundments.

The time periods with fairly constant flows, early spring and during July maintenance shutdown, are highly valued by anglers. Below John Boyle Powerhouse recreation activities require a minimum 1500 cfs of six or more hours per day and 550 cfs for the remainder of the day, during May through September.

FLOWS NEEDED TO SUPPORT CURRENT RECREATION ACTIVITIES BY MONTH

| <u>MONTH</u> | <u>MIN FLOW NEEDS</u> <u>(CFS)</u> | <u>S I G N I F I C A N T</u> <u>R E C R E A T I O N</u> <u>OPPORTUNITY</u> | <u>EXTENT OF USE</u> | <u>MEAN FLOW**</u> |
|--------------|---------------------------------------|----------------------------------------------------------------------------------|----------------------|--------------------|
| OCTOBER | 1500(6HRS)/550 | GEN BOAT/FISH | MEDIUM | 1685 |
| NOVEMBER | 1500 | EXP BOAT/FISH | LOW | 2196 |
| DECEMBER | 1500 | EXP BOAT/FISH | LOW | 2700 |
| JANUARY | 1500 | EXP BOAT/FISH | LOW | 2668 |
| FEBRUARY | 1500 | EXP BOAT/FISH | LOW | 2723 |
| MARCH | 1500 | EXP BOAT/FISH | LOW | 3153 |
| APRIL | 1500 | GEN BOAT/FISH | LOW | 2550 |
| MAY | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 1725 |
| JUNE | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 872 |
| JULY* | 1500(6HRS)/550 | FISH/GEN BOAT | HIGH | 651 |
| AUGUST | 1500(6HRS)/550 | GEN BOAT/FISH | HIGH | 903 |
| SEPTEMBER | 1500(6HRS)/550 | GEN BOAT/FISH | MED | 1258 |

*550 CFS+ during non-hydro operation period 550 cfs / 1500 cfs (six hours) during hydro operation

**Serves as an indicator of the possibility of supply only 1500 cfs (six hours) / 550 cfs (18 hours) is approximately equal to an average daily flow of 788 cfs.

REFERENCES

The following are the data sources that were used to determine recreation use patterns and streamflow requirements.

a) Recreation Value Study (Pacific Northwest Power Planning Council).

b) Agency reports and records

Klamath River Special Recreation Management Area Plan (BLM 1983)

River Information Digest (Interagency Whitewater Committee 1985)

Draft Eligibility and Suitability Report for the Upper Klamath Wild and Scenic River Study (BLM 1989)

Private Trip registration cards (BLM)

Information on Annual Visitor Use October 1987 to September 1988 (BLM)

Resident Fish Creel Census Summary (ODFW 1987, 1988, 1989)

ODFW Central Region Administrative Report No. 83-5 Klamath River: Summary of Biological Parameters John Tolman June 1983

c) User Fee Reports supplied by BLM (Guide service records) 1987 1988.

d) River guide publications

Soggy Sneakers Guide (Willamette Kayak and Canoe Club, July 1988)

Handbook to the Klamath River (Quinn and Quinn 1983)

e) Professional/expert opinion

Dave Steele, BLM contractor

Dean Munroe, Klamath Canyon River Outfitters

Kattie Ardt, Klamath Falls Audubon

Charlotte Opp, Klamath Falls Audubon

Les Lingschite, Pacific Power and Light

Scott Senter, BLM

Kathy Humphery, BLM

- f) Hydrologic records (Friday and Miller 1984)
- g) WRD records.

The Klamath River Scenic Waterway Water Resources Summary - Homer, September 1989

Summary of Klamath Basin water right applications - WRIS December 1989

- h) USGS records Gauge number 11510700
- i) Salt Caves Hydroelectric Project Documents

Application for Licence Salt Caves Hydroelectric Project April 1988 Response to Additional Information Requests

DEIS Salt Caves Hydro Electric Project (FERC July 1989)

Comments on Salt Caves DEIS by ODFW

- j) Nationwide River Inventory (HCRS)

WHITEWATER CLASSIFICATIONS

CLASS: The class designations given in this book indicate the class of the majority of the run, according to the American Whitewater Affiliation international scale of river difficulty, which is described below. If only one or two spots are more difficult than the majority of the run, parentheses are used, e.g., South Santiam as 4(6) or Lower McKenzie as 1(2). The letter "t" is used after the number designation to indicate that a run is predominantly technical in nature, and the letter "P" is used in to indicate that at least one portage is mandatory.

Class 1. Moving water with a few riffles and small waves. Few or no obstructions.

Class 2. Easy rapids with waves up to 3 feet, and wide clear channels that are obvious without scouting. Some maneuvering is required.

Class 3. Rapids with high, irregular waves often capable of swamping an open canoe. Narrow passages that often require complex maneuvering. May require scouting from shore.

Class 4. Long difficult rapids with constricted passages that often require complex maneuvering. May require scouting from shore.

Class 5. Extremely difficult, long, and very violent rapids with highly congested routes which nearly always must be scouted from shore. Rescue conditions are difficult and there is significant hazard to life in event of a mishap. Ability to Eskimo roll is essential for kayaks and canoes.

Class 6. Difficulties of class 5 carried to the extreme of navigability. Nearly impossible and very dangerous. For teams of experts only, after close study and with all precautions taken.

If the water temperature is below 50 degrees F, the AWA states that the river should be considered one class more difficult than normal.

Still water and class 1 are sometimes subdivided according to water speed:

Class A. Standing or slow flowing water, not more than 2.5 mph.

Class B. Current between 2.5 and 4.5 mph, but backpaddling can effectively neutralize the speed.

Class C. Current more than 4.5 mph, but backpaddling cannot neutralize the speed of the current. Simple obstacles may occur that require a certain amount of boat control.

GRADIENT: The average gradient of the section, reported in feet of elevation change per mile of river length. The letters "PD" are used to indicate that a run is primarily "pool-drop" in nature. Most of the elevation change on such a run occurs over relatively steep sections, which are separated by relatively level stretches. The letter "C" is used to indicate that a run is primarily "continuous" in nature. The elevation change on such a run is relatively uniform over the length of the section.

SEASON: The time of year that a river can normally be run is related to the weather and the source of the river. West of the Cascade Range, it rains more or less continuously from

November through May, and is dry from typically June or July through September or October. East of the Cascade Range, conditions are mostly dry and desert-like throughout the year, although significant snowfall accumulates in mountainous regions during the winter months. The classifications according to weather and source of water are:

ALL YEAR - There is adequate water for boating year-round. The sources of these rivers are generally dam controlled. Examples: North Santiam, Metolius, the lower Deschutes, Rogue.

DAM CONTROLLED - The flow of these rivers is controlled by dams or irrigation diversions, but there is no requirement for minimum flow. Water may be shut off or reduced below runnable flows by the controlling agency. Examples: the upper Deschutes runs, and the Middle Santiam between the dams.

RAINY - These rivers reach runnable levels after several days of rain. Many of the rivers of western Oregon are in this group. Examples: Coquille, Siletz, Wilson, Molalla, Calapooia.

SNOWMELT - These rivers generally receive the bulk of their water from melting snow in the spring and early summer. Such rivers are at high elevations or in Eastern Oregon. Examples: White Salmon, John Day, Owyhee.

RAINY/SNOWMELT - These rivers receive their water both from rain and from snow. They will be runnable after a few days of good rain and into early summer because of melting snowpack. Examples: Breitenbush, Sandy, Quartzville Creek.

KLMFNL

June 13, 1996

Raymond J. Driscoll
HC 30, Box 138-G
Chiloquin, Oregon 97624

RE: Application S-69829

Mr Driscoll:

On April 22, 1996, you specifically requested a contested case hearing on the proposed final order conditionally approving application 69829. The hearing was set for May 20, 1996. On May 20, 1996, you requested and the Department agreed to postpone the hearing so that you would be provided additional time to collect data on the proposed spring. The hearing has been postponed until November 19, 1996.

Your water use request has been proposed to be limited to the months of October and December through June. This limitation is based on the Department's finding that the proposed use will, during the months of July through September and the month of November, impair the flows necessary for the Klamath River Scenic Waterway. You have argued that the use of water from your spring does not decrease the flow in Agency Creek and therefore would have no impact on the flow contributing to the scenic waterway. You have indicated that you plan to collect data to substantiate your claim.

By telephone I have indicated to you that the study of the spring must be scientifically credible and should be conducted by a licensed professional such as a Certified Water Rights Examiner, Registered Geologist, Certified Engineering Geologist, or a Professional Engineer. To assure the data collected are acceptable to the Department I urge you or your consultant to discuss the study design with your local watermaster Del Sparks and myself prior to any actual testing. I will share the design plans with one of the Department's Registered Geologists.

The question to be addressed by the study is "does the pond outflow change in response to pumping the spring?" There are probably a number of ways to test whether or not the proposed use of water impacts the flow of Agency Creek. One possible test would be as follows:



A) With the spring pump idle

- accurately measure the out-flow of the pond
- measure the flow from the spring box into the pond at the spring box.

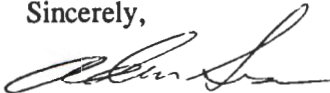
B) With the spring pump running at maximum capacity

- measure the pond outflow several times.
- the spring pump should be running at maximum capacity for at least 24 hours and likely even longer if the maximum capacity of the spring pump is a small proportion of the pond outflow.
- the discharge from the spring pump needs to be directed away from the pond
- the discharge of the pump when running at maximum capacity must also be measured.
- measure the spring flow into the pond at the spring box

Again, this is only a suggested "general" test design. As stated above I will be happy to share your consultant's test plans with one of the Department's Registered Geologists or Professional Engineers prior to conducting the test.

If you should have further questions please feel free to contact me at 378-8455 ex. 262.

Sincerely,



Adam Sussman
Program Analyst, Water Rights Section

cc: Del Sparks, Watermaster District 17
Mike Zwart
File

To: Adam Sussman

Fax: 378-6203

Pages: 2, including this cover sheet.

From: Del Sparks

Watermaster District 17

(541) 883-4182

Fax: (541) 885-3324

Comments: as requested Per File # S-69829

fax

T R A N S M I S S I O N

interoffice

MEMORANDUM

to: Adam Sussman
from: Del Sparks
re: File #S-69829, Per Telephone Conversation.
date: May 16, 1996

At Agency Springs there is a "Spring Box" that sits in the pond, the box is approximately 4" x 6" and the top is above the pond waterline. The water from some of the springs come into the box and flow out over the top. Note there is also springs below (downstream) and outside of the spring box. When Mr. Driscoll pumps from the spring box there is no decrease in the amount of water flowing over the top of the box. When the pump is not running there is no increase in the flow of water over the top of the box. It is like the spring outflow is directly proportional to the amount of pressure placed upon it.

from the desk of...

Del Sparks
Watermaster
Watermaster District 17
6937 Washburn Way
Klamath Falls, Oregon 97603

(541) 883-4182
Fax: (541) 885-3324

RECEIVED



File

FAX TRANSMITTAL NOV 21 1996

WATER RESOURCES DEPT
SALEM, OREGON

Engineers ▲ Planners ▲ Surveyors

ATTENTION Mr. Adam Sussman DATE 11/20/96

COMPANY Dept. of Water Quality FAX NUMBER 503/378-6203

FROM Doug Adkins JOB NUMBER 1823-01

Fax includes cover page plus Three3 page(s).

IF FAX IS NOT RECEIVED PROPERLY, PLEASE NOTIFY US IMMEDIATELY. THANK YOU!

Sender Lynn DeMello

Message: Dear Mr. Sussman:

Enclosed is the final inspection report for the Agency Spring Water Measurement Certification ODWR Application File S-69829.

Please feel free to call if we can be of any further assistance.

Sincerely,

Douglas E. Adkins
Douglas E. Adkins, P.E.
President

lad
enclosures (3)

cc: 1823-01

COPY OF FAX TO BE MAILED: YES [x] NO []

2950 Shasta Way • Klamath Falls, Oregon 97603 • (541) 884-4666 • FAX (541) 884-5335

Klamath Falls • Medford • Alturas

RECEIVED

NOV 21 1996

WATER RESOURCES DEPT.
SALEM, OREGON

ADKINS CONSULTING ENGINEERS, INC.
INSPECTION REPORT

CLIENT: Ray Driscoll

JOB NO.: 1823-01

PROJECT: Agency Spring
Water Measurement Certification
ODWR Application File S-69829

REPORT DATE: 10/21/96

OBSERVED BY: Jaime Viramontes and Doug Adkins

WEATHER: Clear and Calm 20°F-50°F

SCOPE: Determine impact of 150gpm diversion on stream flow.

EQUIPMENT: Pump #1 - 3" Wacker trash pump equipped with a
2" Sensus meter.
Pump #2 - 2" Wacker trash pump equipped with a
5/8" Rockwell meter.

DATES & TIMES OF OBSERVATIONS:

Wednesday, 10/16/96 11:00 a.m. - 12:00 p.m.

Thursday, 10/17/96 12:00 p.m. - 11:00 a.m.

PROCEDURE:

To determine the impact of a minimum diversion discharge of 150 gpm, two (2) water pumps were situated on the southwest bank of the pond, and discharged into an irrigation canal.

RECEIVED

NOV 21 1996

WATER RESOURCES DEPT.
SALEM, OREGON

INSPECTION REPORT - Continued

On Wednesday October 16, 1996, at 10:45 a.m., both pumps were started. The first pond level and flow rate measurements were taken at 10:30 a.m.. Flow rate readings were taken on the hour for twenty four hours to insure that a minimum discharge (flow rate) of 150 gpm was being produced by the pumps. In addition to the flow rate readings, pond water levels were measured and recorded. (See attached sheet for pump flow rates and pond level measurement information).

Measurements were taken from the top of a vertical concrete wall down to the surface of the water.

"Central" and "North" pond water levels were measured prior to initializing the pumps (see attached sheet for initial measurements). The "Central" reading was located 57'-8" north, measured from the center of the irrigation canal gate adjustment wheel, with the gate to the irrigation canal partially open. "North" readings were taken north east of the board spillway located on the northwest side of the pond. Location of the "North" measurement was offset 2.75 ft. north and 7.50 ft. east, measured from the north edge of the board spillway.

| | | |
|-----------------------------|-------------------------------|---------|
| OBSERVATION RESULTS: | Average flow rate in 24 hours | 156 gpm |
| | "Central" average pond level | 1.61 ft |
| | "West" average pond level | 1.41 ft |

CONCLUSION:

Since springs flow into the pond at various locations along the north and east sides of the pond and based on the configuration of the channel below the pond dam, it was determined the most practicable method of measuring an impact on the total flow was to measure the head decrease near the weir overflow. A second water

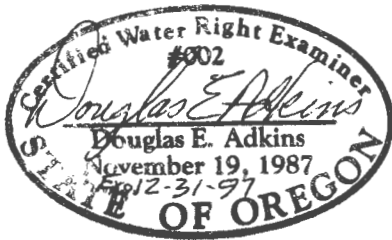
RECEIVED

NOV 21 1996

WATER RESOURCES DEPT.
SALEM, OREGON

CONCLUSION - (Continued)

level measurement location was also used to verify the measurements near the weir. The pond surface area is approximately 0.75 acres. The theory was that 1) the inflow to the pond remained constant, and 2) as additional water (150 gpm or 0.334 cfs) was released from the pond the water surface level would drop. Based on the surface level measurements there was no draw-down of the water level. If the pond were in a steady state (inflow=outflow) in this theory, a surface level drop of approximately 0.88 feet would have been measured. Therefore, it is our conclusion that as additional water is released from the pond (which should lower the back-pressure on the springs) the springs release additional water to create the steady-state backflow pressure. Hence, no measurable impact on the stream flows was observed.



SADKINS

FAX TRANSMITTAL

CONSULTING ENGINEERS INC

Engineers Planners Environmental

ATTENTION Mr. Adam Sussman DATE 11/20/96

COMPANY Dept. of Water Quality FAX NUMBER 503/378-6201

FROM Doug Adkins JOB NUMBER 1823-01

Fax includes cover page plus Three3 page(s).

IF FAX IS NOT RECEIVED PROPERLY, PLEASE NOTIFY US IMMEDIATELY. THANK YOU!

Sender Lynn DeMello

Message: Dear Mr. Sussman,

Enclosed is the final inspection report for the Agency Spring Water Measurement Certification CDWA Application File S-69829.

Please feel free to call if we can be of any further assistance.

Sincerely,

Douglas E. Adkins, P.E. President

1cc enclosures (3)

COPY OF FAX TO BE MAILED: YES [X] NO []

2950 Shasta Way • Klamath Falls, Oregon 97603 • (541) 884-4666 • FAX (541) 884-5335

Klamath Falls • Medford • Astoria

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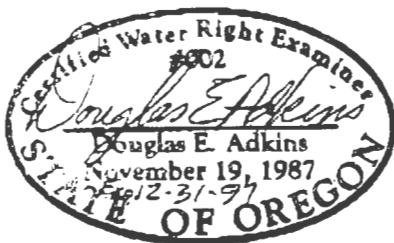
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November 15, 1996

VIA FAX AND U.S. MAIL

WATER
RESOURCES
DEPARTMENT

Steve Elmore
Administrative Law Judge
Oregon Employment Department
Hearing Section Room 208
875 Union Street NE
Salem, Oregon 97311

RE: Postponement of Contested Case Hearings on G-13268 (McMahon)
and S-69829 (Driscoll).

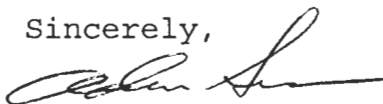
Judge Elmore:

The two cases listed above are set for hearing November 19, 1996. As Agency Representative, I respectfully request these hearings be postponed. In both cases the Department is in the final stages of settlement. You have already received a request from Attorney Ron Yockim to postpone Mr. McMahon's other water right application S-73190.

I have contacted the protestants and they are not opposed to this request. I estimate that settlement will be reached on the above listed applications within two weeks.

If you should have any questions feel free to contact me at 378-8455 ex 262.

Sincerely,



Adam Sussman
Program Analyst and
Agency Representative

cc: Geoff Huntington



Commerce Building
158 12th Street NE
Salem, OR 97310-0210
(503) 378-3739
FAX (503) 378-8130

CERTIFICATE OF SERVICE

I certify that on November 15, 1996, I served a true and correct copy of the foregoing Request for Extension of Time by mailing in the U.S. mail to the following persons:

Raymond Driscoll (S-69829)
HC-30, Box 138 G
Chiloquin, OR 97624

Ron Yockim (G-13268)
Attorney at Law
PO Box 2456
Roseburg, OR 97470



Adam Sussman, Agency Representative OWRD

**State of Oregon
Water Resources Department**

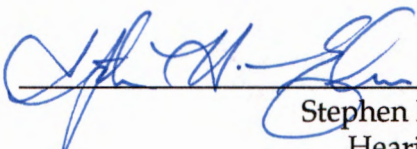
In the Matter of the Water Right Applications |
of Raymond Driscoll, |
Protestant |

Application No. S-69829

Order

At the request of the Department, the contested case hearing in the above matter scheduled for Tuesday, November 19, 1996, is postponed. The parties will be notified of the new hearing date and time.

Dated November 18, 1996.

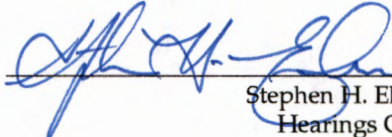


Stephen H. Elmore,
Hearings Officer

Certificate of Service

I certify that on November 18, 1996, I mailed in a sealed envelope, first-class postage prepaid, copies of this Notice to Adam Sussman; Water Rights Division; 158 12th St. NE; Salem, OR 97310, and to Raymond Driscoll, HC-30, Box 138 G; Chiloquin, OR 97624.

Dated November 18, 1996.



Stephen H. Elmore,
Hearings Officer

November 15, 1996

VIA FAX AND U.S. MAIL

WATER
RESOURCES
DEPARTMENT

Steve Elmore
Administrative Law Judge
Oregon Employment Department
Hearing Section Room 208
875 Union Street NE
Salem, Oregon 97311

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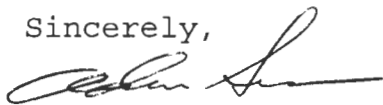
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Adam Sussman
Program Analyst and
Agency Representative

cc: Geoff Huntington



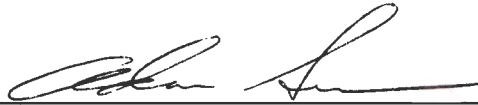
Commerce Building
158 12th Street NE
Salem, OR 97310-0210
(503) 378-3739
FAX (503) 378-8130

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HC-30, Box 138 G
Chiloquin, OR 97624

Ron Yockim (G-13268)
Attorney at Law
PO Box 2456
Roseburg, OR 97470



Adam Sussman, Agency Representative OWRD

RECEIVED

NOV 21 1996

WATER RESOURCES DEPT.
SALEM, OREGON

**State of Oregon
Water Resources Department**

Application No. S-69829

In the Matter of the Water Right Applications
of Raymond Driscoll,
Protestant

File

Order

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Dated November 18, 1996.


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Hearings Officer

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Dated November 18, 1996.


Stephen H. Elmore,
Hearings Officer

FILE # 569829

FO CHECKLIST

REVIEW DATE: 11/26/96

PFO TO PROTEST TO FO CONVERSION

INITIALS: Rnk

In preparing the FO, you should check the following:

1. Protests from whom APPLICANT
2. Verify names and addresses on the PFO CC list. **ALL** commentors (regardless of comment date), **affected landowners (were they notified?)**, and those who paid the \$10 fee should be listed.
3. Verify payment of recording fees (circle the appropriate option)
 - (1) Issue FO w/permit if fees are paid -- Prepare refund request for excess fees, including standing fees if no protest is filed and no modifications are being made to the PFO
 - (2) Issue FO w/o permit if fees are lacking ^{pd 300} ^{200 (EXAM)} ^{100 (MO)}
4. Y / N Is the file lacking a signed oath of accuracy for the application?
5. Y / N Has ODFW asked for self certification on screening condition?
6. Y / N / NA Is short season letter on file? Note: If short season letter is lacking prepare FO with Draft permit giving applicant 60 days to submit letter.
7. Y / N Is further processing possible? If not state reason: _____
- * 8. Y / N / NA Notify applicant of additional information or fees required prior to permit issuance (use standard wording from M:\T\FO\TOOLS if possible)

Modify FO as needed to:

9. Respond to significant comments, issues, or disputes related to the proposed use of water (see notes, if any, listed above)
10. Y / N Include or exclude permit conditions and management codes _____
11. Correct PFO errors (such as POD or POU location (verify from map), Permit format)
12. Permit number *53060 (to files with oath, fees, and other issues)

Once FO document is completed:

13. _____ Save WordPerfect document in M:\T\FO\DONE\WEEK & M:\T\FO\PROTESTS\DONE\WEEK Ⓜ: \t\fo\tools\chkprot

REDUCE TO 150 GPM

* NEEDS TO V/DRAW PROTEST & REQUEST FOR HEARING

CHRONOLOGY

APPLICATION DATE 2/1/89

TR/IR DATE 1/24/96

PFO DATE 3/19/96

PROTEST DEADLINE 5/3/96

PROTEST DATE 3/29/96

REQUESTED HEARING 4/22/96

HEARING DATE SCHEDULED 4/26/96 5/20/96

HEARING DATE 5/20/96 11/19/96

POSTPONED 11/18/96

HEARING WITHDRAWAL DATE letter dated _____

letter received _____

HEARING DISMISSAL DATE _____

SUBMITTED ADDITIONAL INFO 10/31/96

RECEIVED

DEC 16 1996

WATER RESOURCES DEPT.
SALEM, OREGON

File

December 11, 1996

Water Resources Department
Commerce Building
158 12th St. NE
Salem, OR 97310-0210

Dear Sirs,

After reviewing your findings, I am withdrawing my protest and contested case hearing. And I am looking forward to receiving my permit. Thank you

Sincerely,



Ray Driscoll

HC 30, Box 138-6
Chiloquin, OR 97624

OREGON WATER RESOURCES DEPARTMENT



Commerce Building
158 12th Street NE
Salem OR 97310-0210

To

Steve Elmore

Date:

12/18/96 Page 1 of *2*

Fax #

373-7990

From

Adam Jussman

Comments:

Fax. 503-378-2496

| | | |
|--------------------|---------------------------------|-------------------------------|
| Dam Safety | Director's Office | GIS / Mapping |
| Groundwater | Hanford Studies | Hearings |
| Hydrographics | Information (Computer) Services | Legislative & Rules Coord. |
| Public Information | Strat. Planning & Policy Coord. | Water Resources Comm. Liaison |

Fax. 503-378-8130

| | | |
|---------------------|-----------------------------|-------------------------|
| Accounting / Fiscal | CWRE Coordination | Columbia / Snake Issues |
| Conservation | District 16 Watermaster | Enforcement |
| GWEB Liaison | Land Use Coordination | Northwest Region |
| Office Services | Personnel | Planning |
| Resource Management | Water Development Loan Fund | Water Use Reporting |
| Well Construction | Well Driller Licensing | |

Fax. 503-378-6203

| | | |
|---------------|---------------------|-----------------------|
| Adjudications | Final Proof Surveys | Hydroelectric Permits |
| Transfers | Water Rights | |

RECEIVED
DEC 16 1996
WATER RESOURCES DEPT.
SALEM, OREGON

December 11, 1996

Water Resources Department
Commerce Building
158 12th St. NE
Salem, OR 97310-0210

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Sincerely,



Ray Driscoll

RECEIVED

DEC 20 1996

WATER RESOURCES DEPT.
SALEM, OREGON

**State of Oregon
Water Resources Department**

In the Matter of the Water Right Applications |
of Raymond Driscoll, |
Protestant |

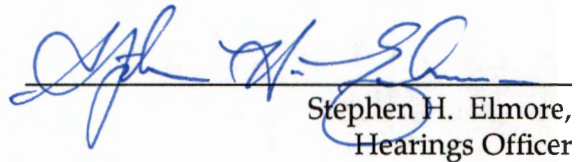
Application No. S-69829

Protestant

Order

By letter dated December 11, 1996, the Applicant/Protestant withdrew his protest and request for contested case hearing. The hearing therefore is dismissed.

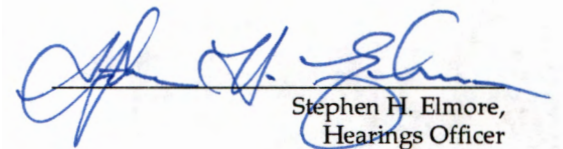
Dated December 18, 1996.


Stephen H. Elmore,
Hearings Officer

Certificate of Service

I certify that on December 18, 1996, I mailed in a sealed envelope, first-class postage prepaid, copies of this Notice to Adam Sussman; Water Rights Division; 158 12th St. NE; Salem, OR 97310, and to Raymond Driscoll, HC-30, Box 138 G; Chiloquin, OR 97624.

Dated December 18, 1996.


Stephen H. Elmore,
Hearings Officer

RECEIVED

DEC 23 1996

WATER RESOURCES DEPT.
SALEM, OREGON

State of Oregon
Water Resources Department

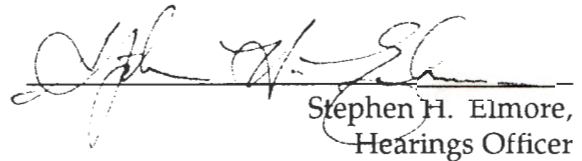
In the Matter of the Water Right Applications |
of Raymond Driscoll, |
Protestant |

Application No. S-69829

Order

By letter dated December 11, 1996, the Applicant/Protestant withdrew his protest and request for contested case hearing. The hearing therefore is dismissed.

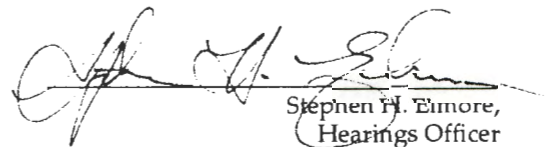
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Dated December 18, 1996.


Stephen H. Elmore,
Hearings Officer

COPY CHECK-OFF SHEET FOR ~~PROPOSED~~ FINAL ORDERS

CC: FILE # S-69829

WATERMASTER # 17

REGIONAL MANAGER: BOB MAIN

ODF&W - Klamath County: KLAMATH COUNTY

CWRE (if agent): JACOB C. ZAIGER

DEO

OTHER STATE AGENCY IF NECESSARY:

DIVISION 33 LIST: _____ COLUMBIA RIVER INTERTRIBAL FISH COMMISSION; U.S. FISH & WILDLIFE;
(CHECK ONLY IF APPLICABLE) _____ NORTHWEST POWER PLANNING COUNCIL & NATIONAL MARINE FISHERIES

POWER BUILDER UPDATER; FRONT COUNTER

OTHER ADDRESSES OF PEOPLE WHO PAID THE \$10 FEE:

Douglas E Adkins
2950 SHASTA WAY
KLAMATH FALLS, OR 97603

PEOPLE WITH OBJECTIONS, COMMENTS OR REQUESTED COPY W/O \$10 (SEND THE \$10 LETTER):

WATER ADJUDICATION PROJECT, THE KLAMATH TRIBE, PO BOX 957, CHILOQUIN, OR 97624
BUREAU OF RECLAMATION MID-PACIFIC REGIONAL OFFICE, 2800 COTTAGE WAY, SACRAMENTO, CA 95825
KLAMATH RIVER COMPACT COMMISSION
CALIFORNIA DEPARTMENT OF WATER RESOURCES
WATER RESOURCES CONTROL BOARD

CASEWORKER : ~~_____~~ RWK

↑



86313

FAX TRANSMITTAL

Engineers ▲ Planners ▲ Surveyors

ATTENTION Mr. Adam Sussman DATE 10/31/96

COMPANY Dept. of Water Quality FAX NUMBER 503/378-6203

FROM Doug Adkins JOB NUMBER 1823-01

Fax includes cover page plus Three 3page(s).

RE: Revised Inspection Report for ODWR App. File S-69829 (CERTIFIED)

IF FAX IS NOT RECEIVED PROPERLY, PLEASE NOTIFY US IMMEDIATELY. THANK YOU!

Sender Lynn DeMello

Message: Dear Mr. Sussman:

Enclosed for your information is a copy of the Inspection Report for Ray Driscoll.

Please feel free to contact our office in the event you may have questions. Thank you.

1d
enclosures (3)

cc: 1823-01
Ray Driscoll

COPY OF FAX TO BE MAILED: YES [] NO [X]

2950 Shasta Way • Klamath Falls, Oregon 97603 • (541) 884-4666 • FAX (541) 884-5335

Klamath Falls • Medford • Alturas

ADKINS CONSULTING ENGINEERS, INC.
INSPECTION REPORT

CLIENT: Ray Driscoll

JOB NO.: 1823-01

PROJECT: Agency Spring
Water Measurement Certification
ODWR Application File S-69829

REPORT DATE: 10/21/96

OBSERVED BY: Jaime Viramontes and Doug Adkins

WEATHER: Clear and Calm 20°F-50°F

SCOPE: Determine impact of 150gpm diversion on stream flow.

EQUIPMENT: Pump #1 - 3" Wacker trash pump equipped with a
2" Sensus meter.
Pump #2 - 2" Wacker trash pump equipped with a
5/8" Rockwell meter.

DATES & TIMES OF OBSERVATIONS:

Wednesday, 10/16/96 11:00 a.m. - 12:00 p.m.

Thursday, 10/17/96 12:00 p.m. - 11:00 a.m.

PROCEDURE:

To determine the impact of a minimum diversion discharge of 150 gpm, two (2) water pumps were situated on the southwest bank of the pond, and discharged into an irrigation canal.

INSPECTION REPORT - Continued

On Wednesday October 16, 1996, at 10:45 a.m., both pumps were started. The first pond level and flow rate measurements were taken at 10:30 a.m.. Flow rate readings were taken on the hour for twenty four hours to insure that a minimum discharge (flow rate) of 150 gpm was being produced by the pumps. In addition to the flow rate readings, pond water levels were measured and recorded. (See attached sheet for pump flow rates and pond level measurement information).

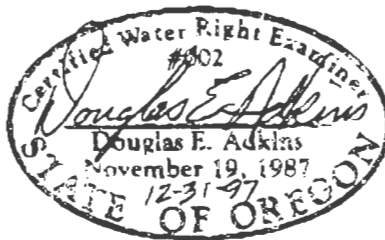
Measurements were taken from the top of a vertical concrete wall down to the surface of the water.

"Central" and "North" pond water levels were measured prior to initializing the pumps (see attached sheet for initial measurements). The "Central" reading was located 57'-8" north, measured from the center of the irrigation canal gate adjustment wheel, with the gate to the irrigation canal partially open. "North" readings were taken north east of the board spillway located on the northwest side of the pond. Location of the "North" measurement was offset 2.75 ft. north and 7.50 ft. east, measured from the north edge of the board spillway.

| | | |
|-----------------------------|-------------------------------|---------|
| OBSERVATION RESULTS: | Average flow rate in 24 hours | 156 gpm |
| | "Central" average pond level | 1.61 ft |
| | "West" average pond level | 1.41 ft |

CONCLUSION:

No measurable effect on the flow from the springs was identified throughout the 24 hour 150 gpm pump test.



FLOW RATES AND POND LEVEL MEASUREMENTS

| <u>TIME</u> | <u>PUMP #1</u> (GPM) | <u>PUMP #2</u> (GPM) | <u>PUMP TOTALS</u> (GPM) | <u>CENTRAL</u> (FT) | <u>NORTH</u> (FT) |
|-------------|---------------------------------|-------------------------|-----------------------------|------------------------|----------------------|
| 10:30am - | Initial Pond Level Measurements | | | 1.61 | 1.41 |
| 11:00am | 133 | 28 | 161 | 1.61 | 1.41 |
| 12:00pm | 130 | 29 | 159 | 1.61 | 1.41 |
| 1:00pm | 130 | 29 | 159 | 1.61 | 1.41 |
| 2:00pm | 128 | 29 | 157 | 1.61 | 1.41 |
| 3:00pm | 128 | 28 | 156 | 1.61 | 1.41 |
| 4:00pm | 128 | 29 | 157 | 1.61 | 1.41 |
| 5:00pm | 128 | 28 | 156 | 1.61 | 1.41 |
| 6:00pm | 128 | 28 | 156 | 1.61 | 1.41 |
| 7:00pm | 128 | 28 | 156 | 1.61 | 1.41 |
| 8:00pm | 128 | 28 | 156 | 1.61 | 1.41 |
| 9:00pm | 130 | 28 | 158 | 1.61 | 1.41 |
| 10:00pm | 125 | 28 | 153 | 1.61 | 1.41 |
| 11:00pm | 125 | 28 | 153 | 1.61 | 1.41 |
| 12:00am | 125 | 28 | 153 | 1.61 | 1.41 |
| 1:00am | 125 | 28 | 153 | 1.61 | 1.41 |
| 2:00am | 120 | 28 | 148 | 1.61 | 1.41 |
| 3:00am | 128 | 28 | 156 | 1.61 | 1.41 |
| 4:00am | 128 | 28 | 156 | 1.61 | 1.41 |
| 5:00am | 128 | 28 | 156 | 1.61 | 1.41 |
| 6:00am | 128 | 28 | 156 | 1.61 | 1.41 |
| 7:00am | 125 | 28 | 153 | 1.61 | 1.41 |
| 8:00am | 125 | 28 | 153 | 1.61 | 1.41 |
| 9:00am | 129 | 28 | 157 | 1.61 | 1.41 |
| 10:00am | 129 | 28 | 157 | 1.61 | 1.41 |
| 11:00am | 129 | 28 | 157 | 1.61 | 1.41 |

6-19-00

Peak Phone Call

Ray Driscoll

Mr Driscoll says Peak
use at this time 506PM

DSM

RECEIVED

SEP 28 1999

WATER RESOURCES DEPT.
SALEM, OREGON

APPLICATION FOR EXTENSION OF TIME TO THE WATER RESOURCES DIRECTOR OF OREGON

I, Ray Deiscoll (Crater Lake Water)
NAME

43411 Hwy 62 Chiloquin Or 97624 541-783-2450
ADDRESS CITY STATE ZIP PHONE

owner of record, or duly authorized agent, of Application No. 569829 Permit No. 553060 do hereby request that the time in which to:

complete the construction of diversion/appropriation works and/or purchase and installation of the equipment necessary to the use of water, which time now expires on October 1, 1999, be extended to October 1, 2005,

and/or the time in which to:

accomplish beneficial use of water to the full extent under the terms of the permit, which time now expires on October 1, 1999, be extended to October 1, 2005.

NOTE: The extension of time requested should be long enough to finish the project. Should this request be approved, it will be the Department's expectation that you will complete your project within the new time period allowed. Future extensions may not be granted.

Attached is an instruction sheet to assist you in completing the information on the permit extensions application form. Oregon Water Law and Administrative Rules requires this information to be considered by the Water Resources Department when reviewing a permit extension. All items must be completed or the application will be returned. Please feel free to provide the Department with any additional information that would aid us in making our decision. Please use additional sheets of paper as needed to fully respond to the questions.

After reviewing the application form and the instruction sheet, if you have any questions, please contact the Department at 1-800-624-3199, or locally in the Salem vicinity at (503) 378-3739, and request assistance from the Water Rights Division, permit extensions personnel.

1-Did water system construction/well drilling begin within the time specified in the permit [yes/no]?
YES

2-Has construction of diversion/appropriation works, distribution system, and use of water, if any, been accomplished consistent with the limitations and conditions of this permit [yes/no]? YES

db ✓

A) Please describe how you have complied with each applicable permit condition (NOTE: the instruction sheet for permit extension applications provides some direction as to what is an "applicable" condition at time of permit extension review).

I have in a timely fashion as is documented, all paper work and all other requirements needed to move forward. This includes measuring device, having a measurement taken by an engineer to prove no ill effects on in stream flow at 150 gal per min.

B) If you have not complied with all applicable conditions, please explain the reasons why and indicate a date certain, in the near future, by which time you will be in compliance with applicable conditions.

3-I have accomplished the following described works, purchases and installation of equipment necessary to the use of water under said permit:

A) Within the past year or, if a prior extension was authorized, during the last permit extension period:

B) Prior to the past year or, if a prior extension was authorized, prior to the last extension period:

C) I have accomplished beneficial use of water under the permit to the extent of (amount of water used or acres irrigated):

I have had no extensions up to date. We have installed all equipment, pumps, pipe line, tanks etc approx 9 years ago. The only thing holding us from complete use of water is over market which is growing yearly. We will install larger pumps and pipe line in near future to handle demand.

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SEP 28 1999

WATER RESOURCES DEPT
SALEM, OREGON

A) Has there been any change in this market since the permit was issued? YES - There is a steady increase

B) Have these changes, if any, affected the economic feasibility of your project? YES

7-Are there other present competing demands for water in your community? YES - BUT NOT FROM THIS SPRING, AS IT HAS NO NEGATIVE EFFECT ON WATER LEVELS BY PUMPING FOR OUR USE. I HAD TO PROVE THAT TO YOUR DEPT. SEVERAL YEARS AGO. CONTACT ADAM SUSSMAN.

A) Has there been any change in these demands for water since the permit was issued? No

B) Are you aware of alternative sources of water that may be able to satisfy the competing demands? No

C) Are you aware of any adverse affects on your source of water that may have been caused by recent changes in use of water in your community? No

4-Cost of project to date ^{Approx} 100,000. Estimated remaining cost to complete the project ^{Approx} 20,000.00. This would be for new larger gump + pipeline. This is only approx.

5-Please list the reasons why the project was not constructed, and/or water not beneficially used within permit time limits under the appropriate categories below. Please provide supporting information for each reason identified.

A) The project is of a size and scope that the original intent was to phase it in over a period longer than the timeframes allowed in the permit. Water is used for bottled water. Reaching a goal in this market is time and cost intense. We are working very hard to use the amount of water requested.

B) Financing and/or cash-flow needs to develop the project precluded completion of the project within authorized timeframes. This has also been a problem

C) Good faith attempts to comply with permit conditions and/or to acquire permits from other agencies, or otherwise comply with government regulations, delayed completion of the project.

D) Acts of God or other unforeseen events delayed full development of the water system and use of water.

6-Please identify the economic market or markets to which beneficial use of water under the permit is responding. Very good response. But this is a very competitive market. So reaching our goal is slower than expected

RECEIVED

SEP 28 1999

WATER RESOURCES DEPT.
SALEM, OREGON

8-Will the income or use from the water development project authorized by this permit provide reasonable returns against the investment in the project? YES

9-If the extension request is denied, is the current level of water use economically feasible?

No

I am the permittee, or have authorization from the permittee, to apply for an extension of time under this permit. I understand that false or misleading statements in this extension application are grounds for the Department to suspend processing of the request and/or reason to deny the extension.

Ray Driscoll
Signature

9-24-99
Date

MAIL COMPLETED APPLICATION AND STATUTORY FEE OF \$ 100 TO:

WATER RIGHT PERMIT EXTENSIONS
WATER RESOURCES
158 12TH ST NE
SALEM, OREGON 97310



Oregon

John A. Kitzhaber, M.D., Governor

Water Resources Department

Commerce Building
158 12th Street NE
Salem, OR 97301-4172
(503) 378-3739
FAX (503) 378-8130

August 15, 2000

Raymond Driscoll
43411 Hwy 62
Chiloquin, Oregon 97624

RE: Your Question

Dear Mr. Driscoll:

As we have discussed, you are the holder of water right permit 53060 which authorizes use of 150 gallons per minute from Agency Spring for industrial use (drinking water). You also have filed a claim for a similar use of water (claim # 50) in the Klamath Basin Adjudication. If you do not pursue your claim you will still maintain the legal right to withdraw water from Agency Spring under the terms and conditions outlined in permit 53060.

I apologize for my delay in responding to your question. Please contact me at 1-800-624-3199 ext. 262 if you have any more questions.

Sincerely,

Adam Sussman
Manager, Enforcement Section

cc: Del Sparks



**Oregon Water Resources Department
Water Rights Division**

Water Right Permit Extension Application
for Permit Number 53060

Water Right Application Number 69829

Proposed Final Order

Please read this Proposed Final Order in it's entirety, it contains additional conditions, not included in the original permit.

This Proposed Final Order applies only to permit number 53060.

Summary of Recommendation

The Department proposes to:

- grant the extension for complete construction of the water system from October 1, 1998 to October 1, 2005, and
- grant the extension for complete application of water from October 1, 1999 to October 1, 2005.

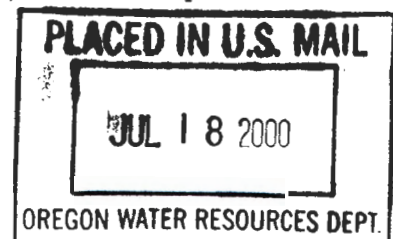
Application History

Permit no. 53060 was granted by the Water Resources Department on DECEMBER 26, 1996. The permit authorizes use of 0.334 CFS (150 GPM) of water from AGENCY SPRING for INDUSTRIAL USE (DRINKING WATER) in the AGENCY CREEK basin. It specified that construction must be completed by October 1, 1998, and water applied to full beneficial use by October 1, 1999. A copy of permit no. 53060 is attached.

On SEPTEMBER 28, 1999, the Department received an application from RAYMOND DRISCOLL for an extension of time to complete construction and to apply water to full beneficial use. The applicant has requested until October 1, 2005 to complete construction of the water system and to apply water to full beneficial use. This is the first permit extension request.

Findings of Fact

ORS 537.230(2) and 537.630 (1) allows the Department to grant an extension of time to perfect a water right for good cause. In evaluating good cause, the Department has considered the written record in the permit application file in relation to the requirements



of ORS 537.230(2), ORS 537.630 (1) and ORS 539.010(5) and makes the following findings.

1. The applicant is legally entitled to apply for an extension on this permit.
2. The applicant has submitted a completed permit extension form and the required fee.
3. The water project development made to date has been accomplished in accordance with the terms and conditions contained in the permit.
4. Progress in perfecting the permit is being held up by the time necessary to increase business and to finance the project. At this time it is necessary to sell more water before the quantity allowed under the permit is used. The applicant needs more time to build more of the water system as the increased use demands more pumping capacity.
5. The applicant has pursued perfection of the right in good faith and with reasonable diligence.
 - a) Work on the water development project completed to date includes construction of the water system. Water has been applied to the use at a rate of 50 gpm.
 - b) The applicant has invested approximately \$ 1,000,000 of an estimated total water system project cost of \$ 1,020,000.
 - c) The work remaining to be completed consists of the remaining construction of the water delivery system and complete application of water.
6. Based on the written record, the Department finds there is good cause to approve the extension request. The applicant has pursued perfection of the right in good faith and with reasonable diligence.
7. Due to the reasons outlined above in item 4 and the water development progress to date, the Department finds that the length of time requested for completion of construction and the length of time requested for completion of the application of water should be extended to October 1, 2005 as requested by the applicant.

Conclusions of Law

1. The applicant is entitled to apply for an extension of time to complete construction and/or completely apply water to the full beneficial use pursuant to ORS 537.230, and ORS 537.630.
2. The applicant has submitted an extension application form and the fee required by ORS 536.050(1)(L).
3. The applicant has pursued perfection of the right in good faith and prosecuted construction with reasonable diligence.
4. The applicant has shown good cause for the untimely completion of the water development project and complete application of water to full beneficial use pursuant to ORS 537.230(2), and ORS 537.630 (1).

5. The permit extension should be approved until October 1, 2005 to complete construction and until October 1, 2005 to complete the application of water.

Conditions

The permittee must submit a written progress report to the Department by October 1, 2003. The report must be received by the Department not sooner than 90 days prior to the due date. The permittee's report must describe in detail the work done each year since the last extension was granted or the last progress report submitted. The report shall include:

- a) The amount of construction completed;
- b) The amount of beneficial use of water being made, including the total volume of water used, water used relative to the specific authorizations (types of use, acres irrigated, etc.) contained in the permit, and the percent of the total allowable water use that this represents;
- c) A review of the permittee's compliance with terms and conditions of the permit and/or previous extension; and
- d) Financial investments made toward developing the beneficial water use.

The Department will review the progress report to determine whether the permittee is exercising diligence towards completion of the project and complying with the terms and conditions of the permit and extension.

Failure to submit a progress report by the due date above will result in cancellation of the undeveloped portion of the permit by the Department pursuant to ORS 537.260 or 537.410 to 537.450. Within one year after cancellation, the permittee must submit a final proof survey pursuant to ORS 537.230 and 537.250. The Department will take into consideration annual reports submitted under OAR 690, Division 86 or ORS 537.099, and any other reports that demonstrate diligence. Other reports however, are not a substitute for the progress reports, and anything submitted must clearly show that diligence towards perfecting the water right permit is being attempted.

If the Department finds that diligence is questionable, the Department may:

- a) request the permittee to submit additional information with which to evaluate diligence; or
- b) apply additional conditions and performance criteria for perfection of the right; or
- c) cancel the undeveloped portion of the permit pursuant to ORS 537.260 or 537.410 to 537.450. The Department will grant the permittee a hearing on the cancellation, if one is requested.

In determining whether the permittee has been diligent, the Department will consider information submitted to the Department by the permittee and any information submitted during the 30-day public comment period following public notice of submittal of the progress report.

If information is received through the public notice process indicating that the applicant has not been diligent toward completing the project, and if the director determines there are significant disputes related to the use of water, the Department will conduct a hearing.

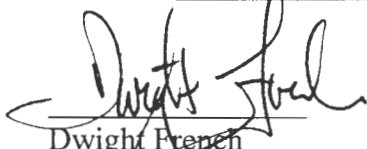
Recommendation

The Department proposes to issue an order to:

extend the permit time to complete construction from October 1, 1998 to October 1, 2005 and

extend the permit time to complete application of water from October 1, 1999 to October 1, 2005.

DATED: JULY 18, 2000



Dwight French
Water Rights Section Manager

*If you have any questions,
please check the information
box on the last page for the
appropriate names and
phone numbers.*

Protest Rights and Comments

1. Under the provisions of OAR 690-320-0010(8) you have the right to protest this proposed final order. Your protest must be in writing and must include the following:
 - a) Your name, address and telephone number;
 - b) Your interest in this proposed final order, and if you claim to represent the public interest, a precise statement of the public interest represented;
 - c) A detailed description of how the action in the proposed final order would impair or be detrimental to your interest;
 - d) A detailed description of how the proposed final order is in error or deficient and how to correct the alleged error or deficiency;
 - e) Any citation of legal authority supporting your protest, if known; and
 - f) The \$25 protest fee required under ORS 536.050 (1)(j).
2. Each person submitting a protest shall raise all reasonably ascertainable issues and all reasonably available arguments supporting the person's position by the close of the comment period.
3. The Water Resources Department must receive written protests or written comments no later than **SEPTEMBER 5, 2000**.
4. After the close of the comment and protest period, the Director will either issue a final order, or schedule a contested case hearing if the Director finds there are significant disputes related to the use of water.

This document was prepared by Dallas Miller. If you have any questions about any of the statements contained in this document I am most likely the best person to answer your questions. You can reach me toll free within Oregon at 1-800-624-3199 extension 272. Outside of Oregon you can dial 1-503-378-8455.

If you have questions about how to file a protest or if you have previously filed a protest and want to know the status, please contact Brendalee Wilson. Her extension number is 276.

If you have other questions about the Department or any of its programs please contact our Water Rights Information Group at extension 201. Address all other correspondence to: Water Rights Section, Oregon Water Resources Department, 158 12th ST. NE Salem, OR 97310, Fax: (503)378-2496.

**STATE OF OREGON
WATER RESOURCES DEPARTMENT**

RECEIPT # **70223**

725 Summer St. N.E. Ste. A
SALEM, OR 97301-4172
(503) 986-0900 / (503) 986-0904 (fax)

INVOICE # _____

RECEIVED FROM: Raymond G Driscoll Inc
BY: _____

| | |
|-------------|-------|
| APPLICATION | 69829 |
| PERMIT | |
| TRANSFER | |

CASH: CHECK:# 4062 OTHER: (IDENTIFY)

TOTAL REC'D \$ 25.00

1083 TREASURY 4170 WRD MISC CASH ACCT

0407 COPIES \$ _____
OTHER: (IDENTIFY) \$ _____
0243 I/S Lease _____ 0244 Muni Water Mgmt. Plan _____ 0245 Cons. Water _____

4270 WRD OPERATING ACCT

MISCELLANEOUS

0407 COPY & TAPE FEES \$ _____
0410 RESEARCH FEES \$ _____
0408 MISC REVENUE: (IDENTIFY) Assign \$ 25.00
TC162 DEPOSIT LIAB. (IDENTIFY) \$ _____
0240 EXTENSION OF TIME \$ _____

WATER RIGHTS:

| | | | |
|--------------------|----------|------|------------|
| 0201 SURFACE WATER | EXAM FEE | 0202 | RECORD FEE |
| 0203 GROUND WATER | \$ _____ | 0204 | \$ _____ |
| 0205 TRANSFER | \$ _____ | | |

WELL CONSTRUCTION

| | | | |
|-----------------------------|----------|------|-------------|
| 0218 WELL DRILL CONSTRUCTOR | EXAM FEE | 0219 | LICENSE FEE |
| LANDOWNER'S PERMIT | \$ _____ | 0220 | \$ _____ |

OTHER (IDENTIFY) _____

0536 TREASURY 0437 WELL CONST. START FEE

0211 WELL CONST START FEE \$ _____ CARD # _____
0210 MONITORING WELLS \$ _____ CARD # _____
OTHER (IDENTIFY) _____

0607 TREASURY 0467 HYDRO ACTIVITY LIC NUMBER

0233 POWER LICENSE FEE (FW/WRD) \$ _____
0231 HYDRO LICENSE FEE (FW/WRD) \$ _____
HYDRO APPLICATION \$ _____

TREASURY OTHER / RDX

FUND _____ TITLE _____
OBJ. CODE _____ VENDOR # _____
DESCRIPTION _____ \$ _____

RECEIPT: **70223**

DATED: 9/20/04 BY: J. Albin

**Oregon Water Resources Department
Water Rights Division**

Water Right Permit Extension Application
for Permit Number 53060

Water Right Application Number 69829

Proposed Final Order

Please read this Proposed Final Order in it's entirety, it contains additional conditions, not included in the original permit.

This Proposed Final Order applies only to permit number 53060.

Summary of Recommendation

The Department proposes to:

- grant the extension for complete construction of the water system from October 1, 1998 to October 1, 2005, and
- grant the extension for complete application of water from October 1, 1999 to October 1, 2005.

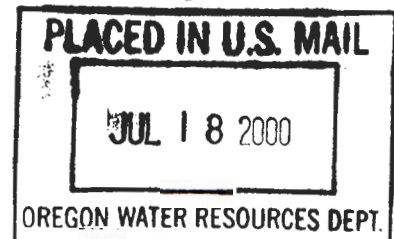
Application History

Permit no. 53060 was granted by the Water Resources Department on DECEMBER 26, 1996. The permit authorizes use of 0.334 CFS (150 GPM) of water from AGENCY SPRING for INDUSTRIAL USE (DRINKING WATER) in the AGENCY CREEK basin. It specified that construction must be completed by October 1, 1998, and water applied to full beneficial use by October 1, 1999. A copy of permit no. 53060 is attached.

On SEPTEMBER 28, 1999, the Department received an application from RAYMOND DRISCOLL for an extension of time to complete construction and to apply water to full beneficial use. The applicant has requested until October 1, 2005 to complete construction of the water system and to apply water to full beneficial use. This is the first permit extension request.

Findings of Fact

ORS 537.230(2) and 537.630 (1) allows the Department to grant an extension of time to perfect a water right for good cause. In evaluating good cause, the Department has considered the written record in the permit application file in relation to the requirements



of ORS 537.230(2), ORS 537.630 (1) and ORS 539.010(5) and makes the following findings.

1. The applicant is legally entitled to apply for an extension on this permit.
2. The applicant has submitted a completed permit extension form and the required fee.
3. The water project development made to date has been accomplished in accordance with the terms and conditions contained in the permit.
4. Progress in perfecting the permit is being held up by the time necessary to increase business and to finance the project. At this time it is necessary to sell more water before the quantity allowed under the permit is used. The applicant needs more time to build more of the water system as the increased use demands more pumping capacity.
5. The applicant has pursued perfection of the right in good faith and with reasonable diligence.
 - a) Work on the water development project completed to date includes construction of the water system. Water has been applied to the use at a rate of 50 gpm.
 - b) The applicant has invested approximately \$ 1,000,000 of an estimated total water system project cost of \$ 1,020,000.
 - c) The work remaining to be completed consists of the remaining construction of the water delivery system and complete application of water.
6. Based on the written record, the Department finds there is good cause to approve the extension request. The applicant has pursued perfection of the right in good faith and with reasonable diligence.
7. Due to the reasons outlined above in item 4 and the water development progress to date, the Department finds that the length of time requested for completion of construction and the length of time requested for completion of the application of water should be extended to October 1, 2005 as requested by the applicant.

Conclusions of Law

1. The applicant is entitled to apply for an extension of time to complete construction and/or completely apply water to the full beneficial use pursuant to ORS 537.230, and ORS 537.630.
2. The applicant has submitted an extension application form and the fee required by ORS 536.050(1)(L).
3. The applicant has pursued perfection of the right in good faith and prosecuted construction with reasonable diligence.
4. The applicant has shown good cause for the untimely completion of the water development project and complete application of water to full beneficial use pursuant to ORS 537.230(2), and ORS 537.630 (1).

5. The permit extension should be approved until October 1, 2005 to complete construction and until October 1, 2005 to complete the application of water.

Conditions

The permittee must submit a written progress report to the Department by October 1, 2003. The report must be received by the Department not sooner than 90 days prior to the due date. The permittee's report must describe in detail the work done each year since the last extension was granted or the last progress report submitted. The report shall include:

- a) The amount of construction completed;
- b) The amount of beneficial use of water being made, including the total volume of water used, water used relative to the specific authorizations (types of use, acres irrigated, etc.) contained in the permit, and the percent of the total allowable water use that this represents;
- c) A review of the permittee's compliance with terms and conditions of the permit and/or previous extension; and
- d) Financial investments made toward developing the beneficial water use.

The Department will review the progress report to determine whether the permittee is exercising diligence towards completion of the project and complying with the terms and conditions of the permit and extension.

Failure to submit a progress report by the due date above will result in cancellation of the undeveloped portion of the permit by the Department pursuant to ORS 537.260 or 537.410 to 537.450. Within one year after cancellation, the permittee must submit a final proof survey pursuant to ORS 537.230 and 537.250. The Department will take into consideration annual reports submitted under OAR 690, Division 86 or ORS 537.099, and any other reports that demonstrate diligence. Other reports however, are not a substitute for the progress reports, and anything submitted must clearly show that diligence towards perfecting the water right permit is being attempted.

If the Department finds that diligence is questionable, the Department may:

- a) request the permittee to submit additional information with which to evaluate diligence; or
- b) apply additional conditions and performance criteria for perfection of the right; or
- c) cancel the undeveloped portion of the permit pursuant to ORS 537.260 or 537.410 to 537.450. The Department will grant the permittee a hearing on the cancellation, if one is requested.

In determining whether the permittee has been diligent, the Department will consider information submitted to the Department by the permittee and any information submitted during the 30-day public comment period following public notice of submittal of the progress report.

If information is received through the public notice process indicating that the applicant has not been diligent toward completing the project, and if the director determines there are significant disputes related to the use of water, the Department will conduct a hearing.

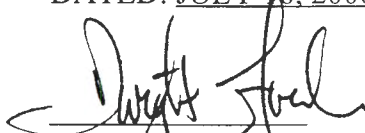
Recommendation

The Department proposes to issue an order to:

extend the permit time to complete construction from October 1, 1998 to October 1, 2005 and

extend the permit time to complete application of water from October 1, 1999 to October 1, 2005.

DATED: JULY 18, 2000


Dwight French
Water Rights Section Manager

*If you have any questions,
please check the information
box on the last page for the
appropriate names and
phone numbers.*

Protest Rights and Comments

1. Under the provisions of OAR 690-320-0010(8) you have the right to protest this proposed final order. Your protest must be in writing and must include the following:
 - a) Your name, address and telephone number;
 - b) Your interest in this proposed final order, and if you claim to represent the public interest, a precise statement of the public interest represented;
 - c) A detailed description of how the action in the proposed final order would impair or be detrimental to your interest;
 - d) A detailed description of how the proposed final order is in error or deficient and how to correct the alleged error or deficiency;
 - e) Any citation of legal authority supporting your protest, if known; and
 - f) The \$25 protest fee required under ORS 536.050 (1)(j).
2. Each person submitting a protest shall raise all reasonably ascertainable issues and all reasonably available arguments supporting the person's position by the close of the comment period.
3. The Water Resources Department must receive written protests or written comments no later than **SEPTEMBER 5, 2000**.
4. After the close of the comment and protest period, the Director will either issue a final order, or schedule a contested case hearing if the Director finds there are significant disputes related to the use of water.

This document was prepared by Dallas Miller. If you have any questions about any of the statements contained in this document I am most likely the best person to answer your questions. You can reach me toll free within Oregon at 1-800-624-3199 extension 272. Outside of Oregon you can dial 1-503-378-8455.

If you have questions about how to file a protest or if you have previously filed a protest and want to know the status, please contact Brendalee Wilson. Her extension number is 276.

If you have other questions about the Department or any of its programs please contact our Water Rights Information Group at extension 201. Address all other correspondence to: Water Rights Section, Oregon Water Resources Department, 158 12th ST. NE Salem, OR 97310, Fax: (503)378-2496.



Oregon

Theodore R. Kulongoski, Governor

Water Resources Department

North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

September 21, 2004

Raymond J. Driscoll
43411 Highway 62
Chiloquin, Oregon 97624

Reference: Application S-69829, Permit S-53060

The assignment from Raymond J. Driscoll to Warran and Yolanda Renner, has been recorded in the records of the Water Resources Department.

Our records have been changed accordingly and the original request is enclosed. Receipt number 70223 covering the recording fee of \$25.00 is also enclosed.

Sincerely,

Jerry Sauter
Water Rights Program Analyst

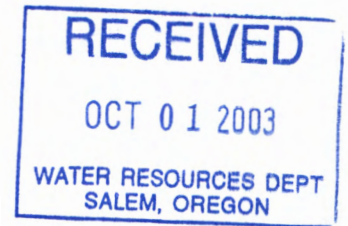
Enclosure: receipt 70223

cc: Watermaster 17
Warran and Yolanda Renner
Data Center, OWRD
Mary Rohling
File

September 21, 2003

File # S-69829

Lisa J. Juul
Water Rights Specialist
Water Resources Department
Commerce Building
158 12th Street NE
Salem, OR 97301-4172



Dear Water Resources Department,

This letter is in response to the correspondence received from the Water Resources Department of the state of Oregon dated August 29th, 2003 pertaining to the application file number 60820 (permit # 53060). The department issued a final order approving an extension of time on September 18th, 2000 for the permittee to complete the construction of a water system and accomplish the beneficial use of water to the full extent under the terms of said permit. The permittee was granted from October 1, 1999 to October 1, 2005 to complete the task. The permittee is also required to submit a report providing information to the Water Resources Department on progress made each year from the date of the last extension. The progress report must be submitted no later than October 1st, 2003. This letter shall fulfill the requirements of said progress report and document the due diligence performed as of the date of last extension September 18th, 2000 by the permittee, (and/or permittees assign or agent), to meet the requirements of the permit.

For the purpose of this this writing, the term company, management team, or operator shall refer to the business entity or personal working on behalf of the permittee. The term plant, bottling plant, building, or facility shall refer to the actual physical building facility located at 43441 highway 62, Chiloquin, Oregon, 97624 that gathers water from its spring, and purifies & packages the product for sale to the general market place.

ANNUAL ACTIVITY SINCE DATE OF LAST EXTENSION

9/18/2000 to 12/31/2000 - During the final quarter of 2000, the bottling plant and business is tied up in litigation and not able to perform up to spec due to a dispute with an operator. Clients are maintained but operations are limited.

1/1/2001 to 12/31/2001 - The bottling plant and business litigation is resolved and settled in court. During this time, a local bottled water delivery company is brought in to manage and maintain plant operations as well as keep up facility equipment and distribution channels. Facility works consistently through the year with the existing bottling equipment and utilizes less than 20% of the licensed water allotment during this time. A new operator is sought.

1/1/2002 to 12/31/2002 - A new operator (management team) takes over the facility. Working capital is provided. A market study is undertaken and a new business plan is developed. Product distribution is continued through existing Oregon channels. A license is obtained to do business in California with the goal of entering the largest bottled water market in the United States. An expansion plan is implemented on the facility and an additional 2000 square feet are added to the bottling plant. The principals undertake training, attend conventions, and complete in depth beverage industry research. At the end of the year plans and designs are reviewed for a new bottling equipment line (See exhibit A). Crater Lake Pure Spring Water continues to be marketed through distributors and a variety of grocery and convenience store chains. Equity and debt capital is raised over the last quarter of the year to maintain operations. An

engineering firm examines the existing water system pipeline to determine the extent of the upgrade requirements.

Facility works consistently through the year with the existing bottling equipment and utilizes less than 25% of the licensed water allotment during this time.

1/1/2003 to 9/18,2003 - Supplemental capital is raised in the first quarter of the year. An additional 300 feet of new fencing is placed around the perimeter of the plant in anticipation of an 8,000 square foot building addition to accommodate blow molding machinery. Engineering firms are consulted and company prepares to purchase its new equipment. Distribution agreements are negotiated with large industry players but company is unable to capitalize on the opportunities. Severe industry consolidation, price wars, new competition, as well as negative economic and market conditions strain investment capital sources. In addition, major Multi-National Beverage Corporations try to force smaller players out of business with a variety of techniques. Investment funding is postponed to review and modify the business model. It is decided that the implementation of a new bottling line may not be enough to stabilize the company during the turbulent economic environment. As an alternative program, it is decided that the company should implement a service delivery division prior to making the major capital investment in blow molding and high capacity production equipment which would cost several million dollars to complete. The Company prepares to enter the market place with its service division by the end of the year. A new product label and marketing campaign is designed for the company (See exhibit B). Also explored is the possibility of tankering water to municipalities and large water users as an additional business division. Plans are included to set up a tankering filling system from the facility grounds.

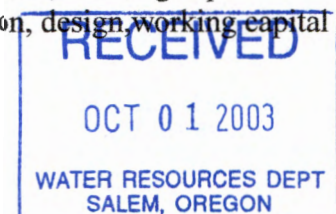
Plant works inconsistently this year with the existing bottling equipment and utilizes less than 15% of the licensed water allotment during this time. However, this year is the most productive period in determining the future market niche of the company and ability to effectively realize the full beneficial use of the water right. Company is on track and ready to proceed on new campaign.

CONSUMPTION: To date the usage of the water license has varied considerable since the time of the most recent extension. Although the usage has only been several million gallons per year to date, it is not a good representation of the volume to be utilized by the company upon the execution of its new business model which shall be targeted to several states. To accomplish the full beneficial use of water, the permittee will implement a new system as discussed above to be put in place within an 18 month window. Said implementation window shall take effect upon the execution of the companies new service delivery division. At the targeted point in time, with the Service Delivery Business active in Oregon, California, and other neighboring states, state of the art blow molding and bottling equipment shall be put in place. The licensee shall achieve full beneficial use of its 78 million gallon per year water permit allotment, and in fact, seek to increase its designated allotment if possible.

Estimated Water consumption has averaged 5 to 15 million gallons per year running on a part time basis.

CAPITAL EXPENDED TO DATE: As of 9/20/2003, a capital sum in excess of \$300,000 has been invested into the water plant in upgrades, professional services, analysis, business and market studies, equipment, and construction over the last 36 months. The following breakdown shall define the investment:

| | | | |
|------|--------------|-----------|--------------------------------------------------------------------------------------------------|
| 2001 | Last Quarter | \$80,000 | legal and professional fess settlement |
| 2002 | Full Year | \$150,000 | production upgrades, personal, market studies, facility expansion, construction, working capital |
| 2003 | To Date | \$100,000 | market research, construction, design, working capital |



Additional capital of \$200,000 will be invested in the service division for trucks, dispensers, bottles, labeling, and production machinery shortly(estimated time - last quarter 2003). The plant facility shall be refinanced over the next 12 months to assist in providing the needed capital to add the new manufacturing division. In the last quarter of 2004 to the end of 2005 we anticipate the additional funding from investors. This capital shall total the budgeted sum of \$1.5 to \$1.7 million dollars to purchase the manufacturing equipment needed to allow us to compete in the current competitive bottled water environment.

COMPLIANCE: Per the requirements of the permit, the operators have conducted regular laboratory tests, maintained records, and fulfilled state and Federal Licensing requirements. In addition the company has met or exceeded the safety and bottling requirements of the Bottled Water Industry and the FDA. Over the Last several months during the reorganization of the company and implementation of a new business plan, bottling and testing has been temporarily postponed. Regular lab testing shall be implemented upon the commencement of regular bottling operations.

CLOSING REMARKS: The permittee has demonstrated Due Diligence in his attempt to realize the full beneficial use of the water right through a challenging economic and business environment. Almost any other licensee would have given up against the great competition and obstacles faced by the permittee to date. The Investment made into developing the facility, company brand, marketing plan, and equipment system has been substantial. In addition, countless hours have been spent to research the ever changing social economic factors affecting the Bottled Water Industry. Although, the full use of the permit has not been realized to date, it is obvious that the commitment and diligent effort to fulfill the requirements of the license are being executed. It is with confidence that we continue, understanding that in a short matter of time we will realize full funding and thus complete all associated planning and construction of the Water System and Business. The Company/Plant will become an icon representing Oregon's natural resources, bringing revenue to the State and ultimately creating jobs. We hope that this brief report addresses all concerns of the Department of Agriculture as we proceed to complete the full beneficial use of permit # 53060 by the date of completion October 1st, 2005. Thank You.

Sincerely,



Raymond Driscoll
Permit Holder

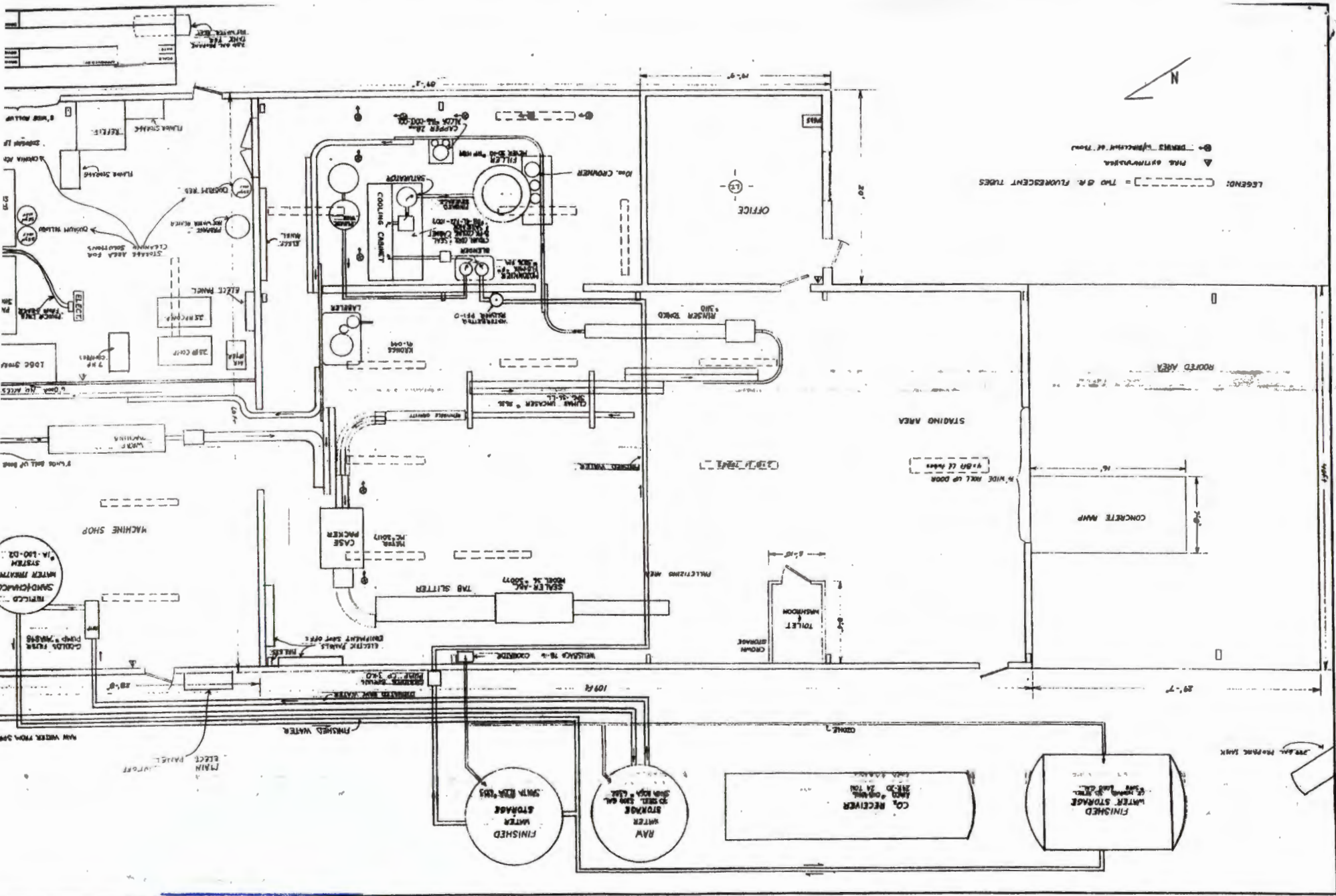


Exhibit A

RECEIVED

OCT 01 2003

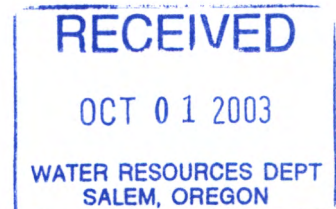
WATER RESOURCES DEPT
SALEM, OREGON



LEGEND:
 - - - - - = TWO 8" FLUORESCENT TUBES
 ▲ PNE. DISTRIBUTION
 ⊙ - DIMENSIONS UNLESS NOTED OTHERWISE

RECEIVED
 OCT 01 2003
 WATER RESOURCES DEPT
 SALEM, OREGON

Exhibit B



SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

S-69829
RAYMOND J DRISCOLL
43411 HWY 62
CHILOQUIN, OR 97624

2. Article Number

(Transfer from service label)

7002 2030 0001 5444 4998

PS Form 3811, August 2001

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

[Handwritten Signature]

Agent

Addressee

B. Received by (Printed Name)

Rich Larson

C. Date of Delivery

10-8-03

D. Is delivery address different from item 1?

Yes

if YES, enter delivery address below:

No

3. Service Type

Certified Mail

Express Mail

Registered

Return Receipt for Merchandise

Insured Mail

C.O.D.

4. Restricted Delivery? (Extra Fee)

Yes

Domestic Return Receipt

2ACPRI-03-Z-0885

New Label Design

RECEIVED
OCT 01 2003
WATER RESOURCES DEPT
SALEM, OREGON

Not too far from icy depths of Crater Lake located in the Pristine Cascade Mountains of Oregon, our spring flows from the earth. We believe it is the purest most refreshing water available.

TASTE AND ENJOY THE QUALITY !

Nutrition Facts

| Amount/Serving | %DV* | Amount/Serving | %DV* |
|----------------|------|----------------|------|
| Total Fat 0g | 0% | Total Carb. 0g | 0% |
| Sodium 0mg | 0% | Protein 0g | |

Serve Size 5 oz. (149ml)
Serves Per Container About 4

NOT a significant source of saturated fat, cholesterol or dietary fiber.
*Percent Daily Values (DV) are based on a 2000 calorie diet.

Calories 0

CA CASH REFUND



16.9 FL OZ / 500 ML

A PREMIUM OREGON PRODUCT
Pure Like Snow & Bottled at Source

Crater Lake Pure Spring Water
P.O. Box 185, Chiloquin, Oregon 97624

"AMERICA'S WATER COMPANY"

This product meets or exceeds State & Federal bottled water quality standards.



PLEASE RECYCLE



Oregon

Theodore R. Kulongoski, Governor

CERTIFIED MAIL
Return Receipt Requested

Water Resources Department

Commerce Building
158 12th Street NE
Salem, OR 97301-4172
503-378-3739
FAX 503-378-8130

File # S-69829

October 6, 2003

Raymond J. Driscoll
43411 Hwy 62
Chiloquin, OR 97624

REFERENCE: Application #S-69829 (Permit #S-53060)

Dear Permit Holder:

The Department is currently in the process of evaluating your written progress report for the above referenced water use permit. Based upon continued review, however, the Department has determined some items are not sufficiently addressed. In order to comply with the extension of time condition to submit a progress report, the following information must be received by the Department:

1. Permit #S-69829 contains the following condition: "Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order."

Has the water meter been installed, as the permit requires? If not, please explain why you are not in compliance with this permit condition.

Please submit this information by **Wednesday, November 5, 2003**.

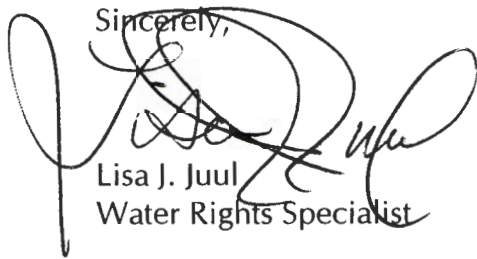
Failure to submit the requested information by this deadline may result in the Department pursuing actions to cancel the undeveloped portion of the permit pursuant to ORS 537.260 or ORS 537.410 to 537.450. Within one year after cancellation, the permittee must submit a Claim of Beneficial Use and Final Proof Survey, pursuant to ORS 537.230 and 537.250, for the portion of the permit developed as October 1, 2003.

If you need to request additional time to submit the information requested above, a written request must be received in the Salem office of the Department by the deadline above. The Department will evaluate timely requests and determine whether or not the request may be granted.



If you have any questions concerning the Department's request for additional information, you may contact me by telephone at (503) 986-0808.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa J. Juul', written over the typed name and title.

Lisa J. Juul
Water Rights Specialist

cc: Application #S-69829 (Permit #S-53060)
Del Sparks, Watermaster District #17

Extension of Time Progress Reports Procedure

Div 320

1. Progress Report complete?

YES - proceed to Item #2.

NO - Send certified letter requesting missing information.

> Certified letter mailed on: ~~10-1-03~~ ✓ OK

2. Published on the Department's Public Notice, dated: 10/14/03

3. Return File to Filing Cabinet after published on the Public Notice.

Extension of Time Checkpoint Progress Report
PUBLIC NOTICE INFORMATION

Permit Holder: Raymond J. Driscoll
Mailing Address: 43411 Hwy 62, Chiloquin, OR 97624
Application #: S-69829 Permit #: S-53060
County: Klamath
Quantity of Water: 0.334 cfs
Source of Water: Agency Spring, trib to Agency Creek
Permitted Use: Industrial Use (Drinking Water)
Current Authorized Extension Date: October 1, 2005

Raymond J. Driscoll
Appl # S-69829 / Permit # S-53060

Progress Report Review

OK
a.

The amount of construction completed;

OK
b.

The amount of beneficial use of water being made, including the total volume of water used, water used relative to the specific authorizations (types of use, acres irrigated, etc.) contained in the permit, and the percent of the total allowable water use that this represents; *15 million gallons/year = approx 20% of allowed "Q".*

OK
c.

A review of the permittee's compliance with terms and conditions of the permit and/or previous extension; and *- meter installed (see FAX received on 10-10-03)*

OK
d.

Financial investments made toward developing the beneficial water use.
- from year 2001 to October 2003 - invested \$330,000.00 for development of industrial facility, & assoc. costs of project.

** Diligence Shown*

Reviewed by: *[Signature]* Date: 10-2-03

REQUEST FOR ASSIGNMENT

1. Raymond J. Driscoll
(Name of Applicant / Permit / Transfer Holder)

43411 Hwy 62 Chiloquin OR 97624 541-783-2450
(mailing address) (City) (State) (Zip) (Phone #)

RECEIVED
SEP 20 2004
WATER RESOURCES DEPT
SALEM, OREGON

CHECK ONE

- ...hereby assign **all my interest** in and to application/permit/transfer;
- ...hereby assign **all my interest** in and to a **portion** of application/permit/transfer
(You must include a map showing the portion of the application/permit to be assigned.)
- ...hereby assign **a portion of my interest** in and to the **entire** application/permit/transfer;

Application # S-69829, Permit # S-53060, Transfer # _____

-OR-

GR Statement # _____, GR Certificate of Registration # _____

as filed in the office of the Water Resources Director, to:

WARREN AND YOLANDA RENNER
(Name of New Owner)

2693 Willow Way Medford OR 97501 541-772-2117
(mailing address) (City) (State) (Zip) (Phone #)

NOTE: If there are other owners of the property described in this Application, Permit, Transfer or Certificate of Ground Water Registration, you must provide a list of all other owners' names and mailing addresses and attach it to this form.

I hereby certify that I have notified all other owners of the property described in this Application, Permit or Certificate of Registration of this request for assignment.

Witness my hand this 14 day of Oct, 2004.

Applicant/Permit holder Raymond J. Driscoll

Applicant/Permit holder _____

Handwritten signature and date: [Signature] 9/20/04

DO NOT WRITE IN THIS BOX

This certifies assignment and record change at Oregon Water Resources Department effective 8:00a.m. on date of receipt at Salem, Oregon.
Fee receipt # 70223
For Director by Jerry Sauter, Program Analyst in Water Rights Division
[Signature]

The completed "Request for Assignment" form must be submitted to the Department along with the appropriate recording fees:

- ◆ \$25 for the first page, and
- ◆ \$5 for **each** additional page.
[as required by ORS 536.050(1)(d)]

WATER RESOURCES DEPARTMENT
725 SUMMER STREET NE, SUITE A
SALEM, OREGON 97301-1271

Jerry Sauter

From: Don Knauer [donknauer@comcast.net]
Sent: Tuesday, March 27, 2007 11:42 AM
To: Jerry Sauter
Subject: file S-69829

Jerry,

I have been hired to complete a claim of beneficial use to include a map and report for the above referenced file. I will complete the field survey during this year survey season and will submit the map and report as soon as possible following the field work. If you have any questions please give me a call.

Don Knauer

Gerry Clark

From: Gerry Clark [Gerald.E.CLARK@wrd.state.or.us]
Sent: Wednesday, January 24, 2007 3:35 PM
To: 'producerii@sbcglobal.net'
Subject: Renner Water Right application 69829

Alex,

My review of the file indicates that the time allowed in the permit to complete the construction of the system and to completely apply the water to beneficial use was extended to October 1, 2005.

On October 1, 2003, Ray Driscoll submitted a Progress Report to the Department indicating that "...the full use of the permit has not been realized to date." In addition, the Report indicates that he was proceeding to complete the full beneficial use of the permit by October 1, 2005.

The next step in the process, if the water use was completed by October 1, 2005, would be the submittal of a Claim of Beneficial Use (COBU) with one year of that date or the date that water was completely applied. The file does not contain any indication that the COBU prepared by a Certified Water Right Examiner was submitted. The following CWREs appear to have performed work related to this use for Mr. Driscoll:

Jacob Zaiger (Klamath Falls)
Doug Adkins, Adkins Consulting Engineers, Inc. (Klamath Falls) Thomas Del Santo (Klamath Falls)

If the water use was not fully developed by October 1, 2005, the water user may consider filing for a permit extension of time.

Here is a link to the list of Certified Water Right Examiners:

http://www1.wrd.state.or.us/pdfs/oct_2003_wre_listing.pdf

I realize that you interested in getting this project completed. Upon submittal of the COBU, you may consider having the file reviewed under the Reimbursement Authority Program that we previously discussed:

CWRE Listing:

http://www1.wrd.state.or.us/pdfs/oct_2003_wre_listing.pdf

Claim of Beneficial Use Form:

<http://www1.wrd.state.or.us/pdfs/COBUForm.pdf>

Reimbursement Authority Program (Expedited Process):

http://www.wrd.state.or.us/OWRD/mgmt_reimbursement.shtml

If you have any additional questions, please feel free to contact me.

Gerry

Gerry Clark
Water Rights Specialist/Certificates
725 Summer St. NE, Ste. A
Salem, OR 97303

Phone: 503-986-0811

Fax: 503-986-0901

<http://www.wrd.state.or.us/>

DON KNAUER / Water Right Consultation and Water Right Surveys
PO Box 5416 Salem OR 97304 phone: 503-508-7862 fax: 503-585-8474

March 29, 2007

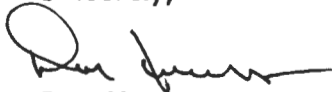
Jerry Sauter, Water Rights Section
Oregon Water Resources Department
725 Summer Street NE Suite A
Salem Oregon 97301-1271

Re: File S-69829

Dear Jerry,

I have been hired to complete a claim of beneficial use to include a map and report for the above referenced file. I will complete the field survey during this year survey season and will submit the map and report as soon as possible following the field work. If you have any questions please give me a call.

Sincerely,



Don Knauer

C: Alex Jauregui

RECEIVED

APR 02 2007

WATER RESOURCES DEPT
SALEM, OREGON

Need NOTICE OF Right
HEADING

~~PROPOSED~~

STATE OF OREGON

~~PROPOSED~~

COUNTY OF KLAMATH ✓

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WARREN AND YOLANDA RENNER ✓
1430 SOUTH OAKDALE ✓
MEDFORD, OREGON 97501 ✓

^{SEE} This Certificate confirms the right to use the waters perfected under the terms of the Permit. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed the amount described, or its equivalent in case of rotation, measured at the point of diversion from the source. The specific limits and conditions of this right are listed below.

APPLICATION FILE NUMBER: S-69829 ✓

PERMIT NUMBER: S-53060 ✓

SOURCE OF WATER: AGENCY SPRING, X TRIBUTARY TO AGENCY CREEK ✓

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

MAXIMUM RATE ALLOWED: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989 .

THE POINT OF DIVERSION IS LOCATED AS FOLLOWS: ~~THE~~ SW ¼, SW ¼, SECTION 18, TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M. ; 880 FEET NORTH AND 1175 FEET EAST FROM THE SW CORNER OF SECTION 18.

~~delete lines~~

THE PLACE OF USE IS LOCATED AS FOLLOWS: ~~SW ¼, SW ¼~~ ^{add a line}
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

~~Application S-69829.RA~~ ~~Permit S-53060~~

Certificate ~~PROPOSED~~

Measurement, recording and reporting conditions:

- A. ~~The water user shall install a meter or other suitable measuring device as approved by the Director. The water user shall maintain the meter or measuring device in good working order.~~ X
↑ flow
- B. The water user shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the water user to keep and maintain a record of the amount (volume) of water used and may require the water user to report water use on a periodic schedule as established by the Director. In addition, the Director may require the water user to report general water use information, the periods of water use and the place and nature of use of water under the right. The Director may provide an opportunity for the water user to submit alternative reporting procedures for review and approval.

See Permit - Use of H₂O

STANDARD CONDITIONS

~~The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.~~

Failure to comply with any of the provisions of this right may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the right.

The right to the use of the water for the above purpose is restricted to beneficial use without waste on the lands or place of use described. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use ^{*of water allowed*} ~~confirmed~~ herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

~~The Director finds the use of water described by this right, as~~

~~conditioned, will not impair or be detrimental to the public interest.~~

Issued

PROPOSED

Paul R. Cleary, Director
Water Resources Department

Recorded in State Record of Water Right Certificates Number **PROPOSED**

Application S-69829

Permit S-53060

Certificate PROPOSED

Mailing List for Proposed Certificate

Mailing Date:

Application S-69829

Permit S-53060

Certificate

Permit/Certificate Holder: (include copy of map)

Warren and Yolanda Renner

1430 South Oak Dale

Medford, Oregon 97501

541-772-2117

| |
|-----------------------|
| Copies Mailed |
| By: (STAFF) |
| on: (DATE) |

Copies of Final Certificate to be sent to:

1. Watermaster # 17: (include copy of map)
2. Data Center (include copy of map)
3. Water Availability
4. Vault File

5- Other persons to receive copies: (Include map)

1. Donald Knauer, CWRE

ANDERSON

ENGINEERING & SURVEYING, INC.

TRANSMITTAL LETTER



PO Box 28
17681 Hwy 395
Lakeview, Oregon 97630
(541) 947-4407
(541) 947-2321 FAX



Oregon Water Resources Department

725 Summer Street NE, Suite A

Salem, OR 97301

| | |
|------------------------|------------------|
| DATE: 11/19/2007 | JOB NO: 2007.159 |
| ATTENTION: Gerry Clark | |
| RE: renner Final Proof | |
| | |
| | |

WE ARE SENDING YOU ATTACHED:

PRINTS PLANS

OTHER _____

| COPIES | DATE | DESCRIPTION |
|--------|------|---------------------------------------------------------|
| 1 | | CWRE Claims of Beneficial Use Intake Form with comments |
| | | |
| | | |
| | | |
| | | |
| | | |

THESE ARE TRANSMITTED AS CHECKED BELOW:

FOR APPROVAL FOR REVIEW AND COMMENT

AS REQUESTED FOR SIGNATURE

OTHER _____

REMARKS Please call if you have any questions.

Thank you!

RECEIVED

NOV 20 2007

**WATER RESOURCES DEPT
SALEM, OREGON**

COPY TO _____

SIGNED Carmen Tague, Business Manager

If enclosures are not as noted, please notify us at once

CWRE Claims of Beneficial Use Intake Form

Application #69829

Permit # 53060

Transfer # _____

Date 8/16/2007

Reviewer J Gainey

"A" DATE: December 26, 1997

"B" DATE: October 1, 1998

"C" DATE: October 1, 2005 PER EXTENSION ORDER

Map Review:

- YES Map on polyester film (OAR 690-014-0170(1) & 310-0050(1)(b))
- YES Application & permit #; or transfer # (OAR 690-014-0100(1))
- YES Disclaimer (OAR 690-014-0170(5))
- YES North arrow (OAR 690-310-0050(2)(c))
- YES CWRE stamp and signature (OAR 690-014 & 310-0050)
- YES Appropriate scale (1" = 1320', 1" = 400', or the original full-size scale of the county assessor map) (014 & 310)
- YES Township, range, section, and tax lot numbers (OAR 690-310-0050(4))
- YES Source illustrated if surface water (OAR 690-014-0170(3))
- YES Point(s) of diversion or appropriation (illustrated) (OAR 690-014(4) & 690-310-0050)
- YES Point(s) of diversion or appropriation (coordinates)(OAR 690-014(4) & 690-310-0050)
- YES Conveyance structures illustrated (pump, pipelines, ditches, etc.) (OAR 690-310-0050)
- YES Description of the location, in relation to the point of diversion or appropriation, of any fish screens, by-pass devices, and measuring devices required (OAR 690-014(4))
- YES Place of use (1/4 1/4, or projected 1/4 1/4 lines within DLCs, or Gov Lots; if irrigation, # of acres in each subdivision; if for domestic or human consumption, location of dwelling or spigot) (OAR 690-310-0050)

Report Review:

- YES On form or format provided by the Department (OAR 690-014-0100(1))
- YES Application & permit #; or transfer # (OAR 690-014)
- YES Ownership information (OAR 690-014)
- YES Date of survey (OAR 690-014)
- YES Person interviewed (OAR 690-014)
- YES County (OAR 690-014)
- YES Tax lot information (OAR 690-014)
- YES Description of conveyances system (from POD to POU) (OAR 690-014-0100)
- YES Source(s) of water (OAR 690-014-0100)
- YES Point of diversion/appropriation location (OAR 690-014-0100)
- YES Use, period of use, and rate for use (OAR 690-014-0100)
- YES Place of use location (OAR 690-014-0100)
- YES Type of use (OAR 690-014-0100)
- YES Extent of use (OAR 690-014-0100)
- N/A Rate and Duty (OAR 690-014-0100)
- YES Diversion rate for each use (OAR 690-014-0100)
- YES Diversion works description (pump make, serial model, capacity, and description) (OAR 690-014-0100)
- YES System capacity (OAR 690-014-0100)
 - YES Calculated capacity of system (required)
 - COMMENT: Pump system providing more than permitted. - yes?
 - _____ Measured amount of use (optional)
- YES Permit/Transfer Final Order Conditions (OAR 690-014-0100)
 - _____ Time limits - Extension Approved - to 2005
 - X Initial water level measurements
 - X Annual static water level measurements
 - _____ Measurement, recording, and reporting
 - YES Meter/measuring device - OK
 - _____ Water use reporting
 - N/A Fish screening and/or by-pass
 - N/A Pump test (ground water) -
 - _____ Other conditions

RECEIVED

NOV 20 2007

WATER RESOURCES DEPT
SALEM, OREGON

- YES CWRE stamp and signature (OAR 690-014-0100)
- YES Signature(s) of permittee of transfer holder (OAR 690-014-0100)

Meter installed 1994

Conflict check - OK

ANDERSON

ENGINEERING & SURVEYING, INC.

TRANSMITTAL LETTER



PO Box 28
17681 Hwy 395
Lakeview, Oregon 97630
(541) 947-4407
(541) 947-2321 FAX



Oregon Water Resources Department

725 Summer Street NE, Suite A

Salem, OR 97301

| | |
|-------------------------|------------------|
| DATE: 11/21/2007 | JOB NO: 2007.159 |
| ATTENTION: Jerry Gainey | |
| RE: Renner Final Proof | |
| | |
| | |

WE ARE SENDING YOU ATTACHED:

PRINTS PLANS

OTHER _____

| COPIES | DATE | DESCRIPTION |
|--------|------|-----------------|
| 1 | | COBU Checklist |
| 1 | | Platcard Report |
| | | |
| | | |
| | | |
| | | |

THESE ARE TRANSMITTED AS CHECKED BELOW:

FOR APPROVAL FOR REVIEW AND COMMENT

AS REQUESTED FOR SIGNATURE

OTHER _____

REMARKS Please call if you have any questions.

Thank you!

RECEIVED

NOV 26 2007

**WATER RESOURCES DEPT
SALEM, OREGON**

COPY TO _____ SIGNED Carmen Tague, Business Manager

If enclosures are not as noted, please notify us at once

Reimbursement Authority COBU Checklist (CWRE)

Application # 69829

Permit # 53060

Transfer #



Contractor's Name Anderson Engineering & Surveying, Inc.

This purpose of this checklist is to document the extent the completeness of the referenced file. This worksheet represents the review performed by a contractor. OWRD staff will perform a review and make a recommendation to the Director concerning the extent of beneficial use if any.

Review Results:

 X My review indicates that the use has been developed to the full extent as described in the permit or transfer order.

 My review indicates that the use has not been developed to the full extent as described in the permit or transfer order and I would recommend the following limitations:

 A copy of the "COBU Beneficial Use Determination Form" is attached.

 My review indicates that the use has not been developed as described in the permit or transfer order for the following reasons:

Proposed Actions:

Send letter recommending extension to cure deficiencies (attach draft copy of letter to this document in addition to an electronic copy submitted to WRD):

Other:

RECEIVED
NOV 26 2007
WATER RESOURCES DEPT
SALEM, OREGON

Map Review (check map for the following features/items):

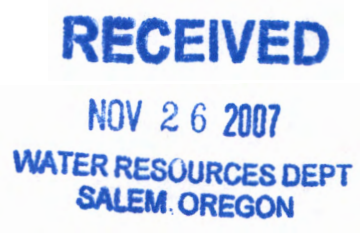
- Permanent quality map (mylar or linen)
- CWRE stamp and signature
- Disclaimer
- Application & permit #; or transfer #
- North arrow
- Township, range and section
- Appropriate scale (1" = 1320', 1" = 400', or scale of assessor's map)
- Source
- Point(s) of diversion
- Point(s) of diversion (coordinates) Check with scale
- Conveyances (pump, pipelines, ditches, etc.) Permanent features shown?
- Place of use (1/4 1/4, DLC, or Gov Lot; if irrigation, # of acres in each legal government subdivision)
- Tax lot lines and numbers

Report Review:

- Application & permit #; or transfer #
- CWRE stamp and signature
- Permittee's signature
- Time limits
- Date of survey
- Type of use
- Extent of use
- Source(s) of water
- Rate and Duty
- Diversion rate for each use
- Description of conveyances system (from POD to POU)
- Diversion works description (pump make, serial model, capacity, and description)
- System capacity
 - Calculated capacity of system
 - OR
 - Measured amount of use
- Permit conditions
 - Fish screening
 - Meter/measuring device
 - Water use reporting
 - Other conditions

Other:

- Conflict Check



Gerry Clark

From: Darryl Anderson [darryla@andersonengineering.com]
Sent: Friday, November 16, 2007 12:46 PM
To: Gerry Clark
Subject: Renner Certificate
Attachments: certificate S-53060.rtf

Hi Gerry:

Here is the Renner Certificate. I assume the progress report required by the extension of time issued in 2000 was OK.

Sorry for the delay on this one

Darryl Anderson
Anderson Engineering and Surveying inc.
Lakeview, Oregon 97630
541-947-4407

11/29/2007

PROPOSED

STATE OF OREGON

PROPOSED

COUNTY OF KLAMATH

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WARREN AND YOLANDA RENNER
1430 SOUTH OAK DALE
MEDFORD, OREGON 97501

This Certificate confirms the right to use the waters perfected under the terms of the Permit. The amount of water to which this right is entitled is limited to an amount actually beneficially used and shall not exceed the amount described, or its equivalent in case of rotation, measured at the point of diversion from the source. The specific limits and conditions of this right are listed below.

APPLICATION FILE NUMBER: S-69829

PERMIT NUMBER: S-53060

SOURCE OF WATER: AGENCY SPRING A TRIBUTARY TO AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

MAXIMUM RATE ALLOWED: 0.334 CUBIC FOOT PER SECOND (150 GPM)

PERIOD OF USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

THE POINT OF DIVERSION IS LOCATED AS FOLLOWS: THE SW $\frac{1}{4}$, SW $\frac{1}{4}$, SECTION 18, TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M. ; 880 FEET NORTH AND 1175 FEET EAST FROM THE SW CORNER OF SECTION 18.

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW $\frac{1}{4}$, SW $\frac{1}{4}$
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Application S-69829

Permit S-53060

Certificate PROPOSED

Measurement, recording and reporting conditions:

- A. The water user shall install a meter or other suitable measuring device as approved by the Director. The water user shall maintain the meter or measuring device in good working order.
- B. The water user shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the water user to keep and maintain a record of the amount (volume) of water used and may require the water user to report water use on a periodic schedule as established by the Director. In addition, the Director may require the water user to report general water use information, the periods of water use and the place and nature of use of water under the right. The Director may provide an opportunity for the water user to submit alternative reporting procedures for review and approval.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this right may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the right.

The right to the use of the water for the above purpose is restricted to beneficial use without waste on the lands or place of use described. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use confirmed herein may be made only at times when sufficient water is available to satisfy all prior rights, including rights for maintaining instream flows.

The Director finds the use of water described by this right, as

conditioned, will not impair or be detrimental to the public interest.

Issued

PROPOSED

Phillip C. Ward, Director
Water Resources Department

Recorded in State Record of Water Right Certificates Number **PROPOSED**

Mailing List for Proposed Certificate

Mailing Date:

Application S-69829

PermitS-53060

Certificate

Permit/Certificate Holder: (include copy of map)

Warren and Yolanda Renner

1430 South Oak Dale

Medford, Oregon 97501

541-772-2117

| |
|-----------------------|
| Copies Mailed |
| By: (STAFF) |
| on: (DATE) |

Copies of Final Certificate to be sent to:

1. Watermaster # 17: (include copy of map)
2. Data Center (include copy of map)
3. Water Availability

Other persons to receive copies: (Include map)

RECEIVED

SEP 12 2007

WATER RESOURCES DEPARTMENT
REIMBURSEMENT AUTHORITY ESTIMATE APPLICATION

WATER RESOURCES DEPT
SALEM, OREGON

House Bill 2551 (2003 Oregon Laws) authorizes the Oregon Water Resources Department to expedite or enhance regulatory processes voluntarily requested under the agreement. The voluntary agreement can be entered into with any person requesting services and agreeing to pay the Department's costs of providing the service.

The Department has established a pool of qualified contractors to perform expedited services for water right transfers, water right permits extensions, and water right certificates.

The purpose of this application is to obtain an estimate from the next qualified contractor in the appropriate pool. There is a non-refundable application fee of \$125.00 per request. The contractor will provide an estimate of the cost and of the time required to process and develop a recommendation on the request of a: (check one):

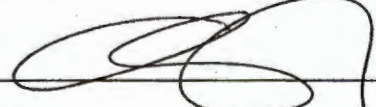
| <u>REQUEST</u> | <u>TYPE</u> | <u>FILE NUMBER</u> |
|-------------------------------------|---------------------------|--------------------|
| <input type="checkbox"/> | Transfer Application | _____ |
| <input checked="" type="checkbox"/> | Certificate Request | S-69829 |
| <input type="checkbox"/> | Extension of Time Request | _____ |

| <u>Applicant Information</u> | | <u>Applicant's Representative/Contact</u> |
|------------------------------|-------------------------|-------------------------------------------|
| Name: (Please Print) | Warren & Yolanda Renner | Alex Jauregui, Project Manager |
| Address: | 1430 South Oakdale | 48 Ranger Court |
| | Medford, Oregon 97501 | Alamo, CA 94507 |
| Phone: | 541-772-2117 | 925-362-8593 or 650-291-6947 |
| Fax | | |
| E-Mail Address: | | |

I understand the following:

- There is a non-refundable application fee of \$125.00 per request.
- That upon receipt of my non-refundable application fee in the amount of \$ 125.00, OWRD will assign my request to the next contractor in the pool of contractors performing expedited services.
- That this fee covers the copying, the mailing cost, as well as the cost for the contractor to evaluate and provide the estimate for processing of the request.
- That OWRD will provide all pertinent information to the assigned contractor within three (3) business days.
- That OWRD will, within fourteen (14) days, notify me in writing of the estimates of costs and time frame for the expedited service.
- That upon receiving the estimates I may agree or decline to enter into a formal contract to pay the estimated cost in advance to initiate the expedited service.
- An incomplete or inaccurate application may delay the process and increase the cost to process my request.
- Expedited processing does not guarantee a favorable review of my request.
- Send completed Application and payment to: **OWRD - Reimbursement Authority Program**
725 Summer St. NE, Suite A
Salem, OR 97301-1266.

I certify that I am the (check one) Applicant Applicant's Representative Other (Please specify) _____

Signature:  Name: Alex Jauregui

| <u>OWRD USE ONLY</u> | |
|-------------------------------|---------------------------|
| Contractor Assigned: Anderson | Total Amount Paid: \$ 125 |
| OWRD Approval: | |

17 copies
9/13/2007
C.U.

MEMORANDUM

TO: DARRYL ANDERSON
FROM: GERRY CLARK *GC*
SUBJECT: REIMBURSEMENT AUTHORITY CERTIFICATE PROJECT
S-69829 (RENNER)
DATE: 9/13/2007

Additional project information:

1. The original maps are on mylar/polyester film.
2. The extension order required the water user to provide a progress report. The progress report was submitted and approved by the Department.
3. If a positive determination is made, the certificate must be in the same format as the permit. An electronic template/example will be provided upon request.



Oregon

Theodore R. Kulongoski, Governor

CERTIFIED LETTER Return Receipt Requested

Water Resources Department

Commerce Building
158 12th Street NE
Salem, OR 97301-4172
503-378-3739
FAX 503-378-8130

File # S-69829

August 29, 2003

Raymond J. Driscoll
43411 Hwy 62
Chiloquin, OR 97624

REFERENCE: Application File #S-69829 (Permit #S-53060)

Dear Permit Holder:

On September 18, 2000, the Department issued a Final Order approving an Extension of Time for Permit #S-53060. The Final Order extended the time in which to complete construction of the water system from October 1, 1998, to October 1, 2005, and the time in which to accomplish beneficial use of water to the full extent under the terms of Permit #S-53060 from October 1, 1999, to October 1, 2005.

The Final Order approving the Extension of Time also included the following condition that requires:

The permittee must submit a written progress report to the Department by **October 1, 2003**. The report must be received by the Department not sooner than 90 days prior to the due date. The permittee's report must describe in detail the work done each year since the last extension was granted or the last progress report submitted.

The report shall include:

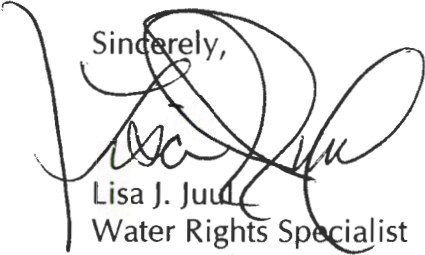
- a) The amount of construction completed;
- b) The amount of beneficial use of water being made, including the total volume of water used, water used relative to the specific authorizations (types of use, acres irrigated, etc.) contained in the permit, and the percent of the total allowable water use that this represents;
- c) A review of the permittee's compliance with terms and conditions of the permit and/or previous extension; and
- d) Financial investments made toward developing the beneficial water use.

Failure to submit a progress report by the due date above will result in cancellation of the undeveloped portion of the permit by the Department pursuant to ORS 537.260 or ORS 537.410 to 537.450. Within one year after cancellation, the permittee must submit a Claim of Beneficial Use and Final Proof Survey, pursuant to ORS 537.230 and 537.250, for the portion of the permit developed as of October 1, 2003.

To date, the Department has not received this progress report from you. In order to maintain the ability to continue developing water under this permit, you should submit this progress report immediately. For your reference, I have enclosed a copy of the Extension of Time Final Order containing this condition.

If you have any questions concerning this matter, please feel free to contact me by telephone at 503-378-8455, extension 272.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lisa J. Juul', is written over the typed name and title.

Lisa J. Juul
Water Rights Specialist
Water Rights Section

Enclosure

cc: Application File #S-69829 (Permit #S-53060)
Del Sparks, Watermaster Dist. #17

Oregon Water Resources Department
Water Rights Division

Water Rights Application
Number 69829

PLACED IN U.S. MAIL

SEP 20 2000

OREGON WATER RESOURCES DEPT.

Final Order
Extension of Time for Permit Number 53060

Appeal Rights

Under the provisions of ORS 536.075, the applicant may appeal this order by filing a petition for review in the Circuit Court for Marion County or the circuit court for the county in which the applicant resides or has a principal business office. The petition for review must be filed within 60 days after the date this order is served. ORS 183.484.

Application History

On SEPTEMBER 28, 1999, RAYMOND DRISCOLL submitted an application to the Department for an extension of time for permit number 53060. The Department issued Permit number 53060 on DECEMBER 26, 1996. The permit called for completion of construction of the water development project by October 1, 1998 and complete application of water to the full beneficial use by October 1, 1999. In accordance with OAR 690-320-0010(8), on JULY 18, 2000, the Department issued a Proposed Final Order proposing to extend the time to complete development of the water development project to October 1, 2005, and/or the time to fully apply water to beneficial use to October 1, 2005. The protest period closed SEPTEMBER 5, 2000. No protest was filed.

At time of issuance of the PFO the Department concluded that, based on the factors demonstrated by the applicant, the permit may be extended subject to the following conditions:

The permittee must submit a written progress report to the Department by October 1, 2003. The report must be received by the Department not sooner than 90 days prior to the due date. The permittee's report must describe in detail the work done each year since the last extension was granted or the last progress report submitted. The report shall include:

- a) The amount of construction completed;
- b) The amount of beneficial use of water being made, including the total volume of water used, water used relative to the specific authorizations (types of use,

acres irrigated, etc.) contained in the permit, and the percent of the total allowable water use that this represents;

- c) A review of the permittee's compliance with terms and conditions of the permit and/or previous extension; and
- d) Financial investments made toward developing the beneficial water use.

The Department will review the progress report to determine whether the permittee is exercising diligence towards completion of the project and complying with the terms and conditions of the permit and extension.

Failure to submit a progress report by the due date above will result in cancellation of the undeveloped portion of the permit by the Department pursuant to ORS 537.260 or 537.410 to 537.450. Within one year after cancellation, the permittee must submit a final proof survey pursuant to ORS 537.230 and 537.250.

If the Department finds that diligence is questionable, the Department may:

- a) request the permittee to submit additional information with which to evaluate diligence;
- b) apply additional conditions and performance criteria for perfection of the right; or
- c) cancel the undeveloped portion of the permit pursuant to ORS 537.260 or 537.410 to 537.450. The Department will grant the permittee a hearing on the cancellation, if one is requested.

In determining whether the permittee has been diligent, the Department will consider information submitted to the Department by the permittee and any information submitted during the 30-day public comment period following public notice of submittal of the progress report.

If information is received through the public notice process indicating that the applicant has not been diligent toward completing the project, and if the director determines there are significant disputes related to the use of water, the Department will conduct a hearing.

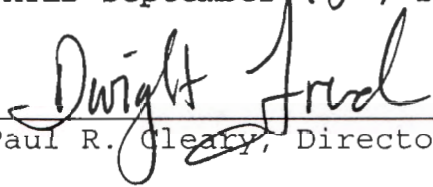
The applicant has demonstrated good cause for the permit extension pursuant to ORS 537.230, 537.248, 537.630 and 539.010(5) (as appropriate).

SEE NEXT PAGE

Order

The extension of time for Application 69829, Permit Number 53060, therefore, is approved. The deadline for completing construction is extended to October 1, 2005. The deadline for applying water to full beneficial use is extended to October 1, 2005.

DATED September 18, 2000



Paul R. Cleary, Director

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

RAYMOND J. DRISCOLL S-69829
43411 HWY 62
CHILOQUIN, OR 97624

2. Article Number
(Transfer from service label)

7002 3150 0005 3664 0055

PS Form 3811, August 2001

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent
 Addressee

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: No

3. Service Type
 Certified Mail Express Mail
 Registered Return Receipt for Merchandise
 Insured Mail C.O.D.

4. Restricted Delivery? (Extra Fee) Yes

Domestic Return Receipt

WR / LJJ

102595-02-M-1540



Oregon

Theodore R. Kulongoski, Governor

Water Resources Department

North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

November 20, 2003

RAYMOND DRISCOLL
43411 HWY 62
CHILOQUIN, OR 97624

REFERENCE: Application #S-69829 (Permit #S-53060)

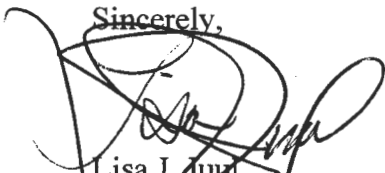
Dear Permit Holder:

The Water Rights Section received your written progress report for Permit #S-53060 (Application #S-69829). Receipt of the progress report was published on the Department's weekly Public Notice, dated October 14, 2003. The Department did not receive any public comment on the progress report.

Additionally, the Department determined that diligence toward completion of the project and compliance with the terms and conditions of the permit and extension has been demonstrated.

If you have any questions, please feel free to contact me by telephone at (503) 986-0808.

Sincerely,



Lisa J. Junt
Water Rights Specialist
Water Rights Section

cc: Appl #S-69829 (Permit #S-53060)
Del Sparks, Watermaster District #17

ATT Lisa Juhl

File #s-69829

**Aqua Pump Inc.
12843 Hwy. 66,
Klamath Falls, Or. 97601
CBB # 73403
541-882-6825**



October 10, 2003

To whom it may concern: The winter of 1994, we installed a Sensus brand, 2" flow meter, for Crater Spring Water at Chiloquin, Or. The flow meter was installed at the spring, in the waterline which supplies water to the bottling plant.

Dan Lown President of Aqua Pump Inc.

Handwritten signature of Dan Lown.

CWRE Claims of Beneficial Use Intake Form

Application #69829

Permit # 53060

Transfer # _____

Date 8/16/2007

Reviewer J Gainey

“A” DATE: December 26, 1997

“B” DATE: October 1, 1998

“C” DATE: October 1, 2005 PER EXTENSION ORDER

Map Review:

YES Map on polyester film (OAR 690-014-0170(1) & 310-0050(1)(b))

YES Application & permit #; or transfer # (OAR 690-014-0100(1))

YES Disclaimer (OAR 690-014-0170(5))

YES North arrow (OAR 690-310-0050(2)(c))

YES CWRE stamp and signature (OAR 690-014 & 310-0050)

YES Appropriate scale (1" = 1320', 1" = 400', or the original full-size scale of the county assessor map) (014 & 310)

YES Township, range, section, and tax lot numbers (OAR 690-310-0050(4))

YES Source illustrated if surface water (OAR 690-014-0170(3))

YES Point(s) of diversion or appropriation (illustrated) (OAR 690-014(4) & 690-310-0050)

YES Point(s) of diversion or appropriation (coordinates)(OAR 690-014(4) & 690-310-0050)

YES Conveyance structures illustrated (pump, pipelines, ditches, etc.) (OAR 690-310-0050)

YES Description of the location, in relation to the point of diversion or appropriation, of any fish screens, by-pass devices, and measuring devices required (OAR 690-014(4))

YES Place of use (1/4 1/4, or projected 1/4 1/4 lines within DLCs, or Gov Lots; if irrigation, # of acres in each subdivision; if for domestic or human consumption, location of dwelling or spigot) (OAR 690-310-0050)

Report Review:

YES On form or format provided by the Department (OAR 690-014-0100(1))

YES Application & permit #; or transfer # (OAR 690-014)

YES Ownership information (OAR 690-014)

YES Date of survey (OAR 690-014)

YES Person interviewed (OAR 690-014)

YES County (OAR 690-014)

YES Tax lot information (OAR 690-014)

YES Description of conveyances system (from POD to POU) (OAR 690-014-0100)

YES Source(s) of water (OAR 690-014-0100)

YES Point of diversion/appropriation location (OAR 690-014-0100)

YES Use, period of use, and rate for use (OAR 690-014-0100)

YES Place of use location (OAR 690-014-0100)

YES Type of use (OAR 690-014-0100)

YES Extent of use (OAR 690-014-0100)

N/A Rate and Duty (OAR 690-014-0100)

YES Diversion rate for each use (OAR 690-014-0100)

YES Diversion works description (pump make, serial model, capacity, and description) (OAR 690-014-0100)

YES System capacity (OAR 690-014-0100)

YES Calculated capacity of system (required)

COMMENT: Pump system providing more than permitted.

_____ Measured amount of use (optional)

YES Permit/Transfer Final Order Conditions (OAR 690-014-0100)

_____ Time limits

_____ Initial water level measurements

_____ Annual static water level measurements

_____ Measurement, recording, and reporting

YES Meter/measuring device

_____ Water use reporting

_____ Fish screening and/or by-pass

_____ Pump test (ground water)

_____ Other conditions

YES CWRE stamp and signature (OAR 690-014-0100)

YES Signature(s) of permittee of transfer holder (OAR 690-014-0100)

CLAIM OF BENEFICIAL USE

RECEIVED

AUG 16 2007

WATER RESOURCES DEPT
SALEM, OREGON

I. General Information

1. File Information

| | |
|-----------------------------------|-------------------------------|
| Application Number (G, R, S or T) | Permit Number (if applicable) |
| S-69829 | S-53060 |

2. Property owner (current owner information)

a. Individuals

| | | |
|-----------------|-------------------------|--|
| Name | Warren & Yolanda Renner | |
| Mailing Address | 1430 S. Oak Dale | |
| City/State/Zip | Medford Oregon 97501 | |
| Phone # | 541-772-2117 | |

3. Permittee / Transferee of record (this may, or may not, be the current property owner)

b. Individuals

| | | |
|-----------------|--------------|--------------|
| | Individual 1 | Individual 2 |
| Name | same | |
| Mailing Address | | |
| City/State/Zip | | |

4. Date of Site Inspection: 7/23/2007

5. Person(s) interviewed and description of their association with the project:

| | | |
|---------------|-----------|------------------------------|
| Name | Date | Association with the project |
| Alex Jauregui | 7/23/2007 | Project Manager |
| | | |

6. County:

Klamath

7. Tax Lot Information:

| | |
|----------------|------------------|
| Tax map number | Tax lot number |
| 34718CC | 100, 101,200,300 |
| | |

II. Points of Diversion/Appropriation and Place of Use

1. Provide a general narrative description of the distribution works from the point of diversion to the place of use:

There is a concrete spring box at Agency Spring with a 5 HP submersible pump with a flow meter which pumps directly into a 6" PVC pipe that goes directly to the bottling plant.

2. Point of diversion/appropriation name or number (correspond to map):

| | | |
|------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------|
| Point of diversion/appropriation name or number (correspond to map) | Well log ID # for all work performed on the well (if applicable) | Well tag # (if applicable) |
| Diversion Point and meter | | |

4. Point of diversion/appropriation location:

| | |
|----------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| (DLC, Government Lot, 1/4 1/4, Section, Township, Range) | Reference to a recognized public land survey corner by distance and bearing or by coordinates |
| SW SW section 18 T34S R7E, WM | 880' N & 1175' E from the SW corner section 18 |

5. Actual use(s), period of use, and rate for each use:

| Uses | When water is used | Rate for use |
|-------------------------------------|--------------------|--------------|
| Industrial, bottling drinking water | Year round | 162 gpm |

Total Quantity of Water 162 gpm

6. Place of use for the point of diversion or appropriation:

| DLC | Gov lot | 1/4 1/4 | Section | Township | Range | Use |
|-----|---------|---------|---------|----------|-------|-------------------------------------|
| | | SWSW | 18 | 34S | 7E | Industrial, bottling drinking water |

RECEIVED

AUG 16 2007

WATER RESOURCES DEPT

System Information:

1. Pump information

| Brand | Model | Serial Number | Type (centrifugal, turbine or submersible) | Intake size | Discharge size |
|--------|-------|---------------|--------------------------------------------|-------------|----------------|
| Goulds | BF 50 | | Submersible | | 6" |

2. Motor information

| Brand | Model | Horsepower | Max RPM | Voltage |
|---------------|------------|------------|---------|---------|
| Franklin Elec | 2343175202 | 5 | 3450 | |

3. Meter information (if required in permit or transfer final order)

| Make | Serial # | Condition (working or not) | Current meter reading | Notes |
|--------|----------|----------------------------|-----------------------|-------|
| Sensus | 1476099 | working | 34890.2 | |

6. Theoretical pump capacity

| Horsepower | Operating psi | Lift from source to pump *If a well, the water level during pumping (see pump test results) | Lift from pump to place of use | Total pump output |
|------------|---------------|------------------------------------------------------------------------------------------------|--------------------------------|-------------------|
| 5 | 35 | 0 | 10' | 162 gpm |

7. Provide pump calculations in the box below:

| |
|------------------------------------------------------------------------|
| $\frac{7.04 \times 5}{10 + 88.9} = 0.36 \text{ cfs} = 162 \text{ gpm}$ |
|------------------------------------------------------------------------|

8. Mainline information

| Mainline size | Length | Type of pipe | Buried or above ground |
|---------------|--------|--------------|------------------------|
| 6" | 500' | pvc | both |
| | | | |

RECEIVED
AUG 16 2007

11. Additional notes or comments related to the system:

WATER RESOURCES DEPT
SALEM, OREGON

III. CONDITIONS

1. Time Limits:

Describe how the water user has complied with each of the development timelines established in the permit or transfer final order:

| | Dates from permit or transfer final order | Date accomplished | Description of actions taken by water user to comply with the time limits |
|-------------------------------|-------------------------------------------|-------------------|---------------------------------------------------------------------------|
| Begin construction | 12/26/1996 | prior | Construction began prior to permit issuance |
| Complete construction | 10/1/2005 | prior | Construction completed prior to 10/1/2005 |
| Complete application of water | 10/1/2005 | | Beneficial use of water completed prior to 10/1/2005 |

4. Measurement, recording, and reporting conditions:

a. Does the permit or transfer final order require the installation of a meter or approved measuring device?

YES

b. Has a meter been installed? YES

c. Provide the date the meter was installed:

Prior to water use, date unknown.

f. Is the water user required to report the water use to the Department? NO

5. Fish Screening and/or By-pass Device:

a. Are any points of diversion required to be screened and/or have a by-pass device to prevent fish from entering the point of diversion? NO

IV. Variations, Attachments, Conclusions, Map and Signatures

Variations: none

Attachments: none

Permit and Transfer Final Order Rates and System Rates Comparisons:

| POD or POA name or # | Maximum rate allowed by permit or transfer final order | Calculated theoretical rate of water based on system | Actual amount of water measured (if measured) | Developed use | # of acres allowed by permit or transfer final order | # of acres developed |
|----------------------|--------------------------------------------------------|------------------------------------------------------|-----------------------------------------------|-------------------------------------|------------------------------------------------------|----------------------|
| Div. Pt. | 150 gpm | 162 gpm | | Industrial, bottling drinking water | | |
| | | | | | | |
| | | | | | | |

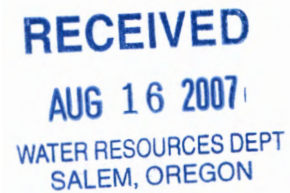
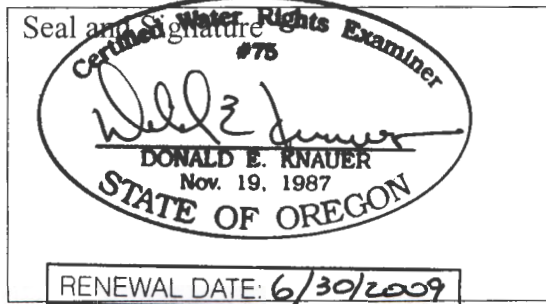
Claim of Beneficial Use Map

In the following box, provide a general description of the survey method used to prepare the map.

A field survey using measurements from found and established property corners for reference was used to locate the source, diversion point and place of use.


CWRE Statement, Seal and Signature

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge.

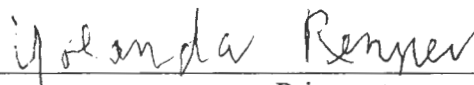


Permit or Transfer Holders Signature or Acknowledgement

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge. I request that the Department issue a water right certificate.


8/8 2007

Signature Print or type name Date


8-8-07

Signature Print or type name Date

December 2, 1996

Raymond J. Driscoll
HC 30, Box 138-G
Chiloquin, Oregon 97624

RE: Application S-69829

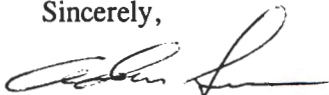
Mr. Driscoll:

Enclosed you will find a draft Final Order and Permit for your review. This material is based on the Department's evaluation of the information submitted by Mr. Adkins. I believe you will find that the draft Permit and Final Order address your concerns.

Please submit, in writing, a request to withdraw your protest and request for a contested case hearing. Once I receive your withdrawal I will forward the Permit and Final Order to the Director for approval.

If you have any questions feel free to contact me at (503) 378-8455 ex. 262.

Sincerely,



Adam Sussman
Program Analyst, Water Rights Section

cc: Del Sparks, Watermaster, District 17

enclosures



Oregon Water Resources Department
Water Rights Division

Water Rights Application
Number S-69829

DRAFT

Final Order

Application History

On February 1, 1989, Raymond J. Driscoll submitted an application to the Department for a water use permit. On March 19, 1996, the Department issued a Proposed Final Order proposing to approve the use from Agency Spring, tributary to Lake Glacid, a tributary of Agency Creek. However, the proposed use was limited to the period October 1 to October 31 and December 1 through June 30. The proposed limitation was due to the Department's finding that, during portions of the year, pumping water from the proposed source would negatively impact the flows necessary to maintain the highest and best uses of the Klamath River Scenic Waterway. The protest period closed May 3, 1996; the applicant protested the Proposed Final Order on March 29, 1996. On April 22, 1996, the applicant requested a contested case hearing be held. On April 26, 1996, Administrative Law Judge (ALJ) Stephen H. Elmore scheduled a contested case hearing for May 20, 1996. On May 20, 1996, at the request of the applicant, the hearing was rescheduled for November 19, 1996. On November 18, 1996, at the request of the Department, the hearing was postponed. On December ____ 1996, the protest and request for contested case hearing was withdrawn by the applicant. On _____, ALJ Stephen H. Elmore issued an order dismissing the hearing.

Based on additional information provided by the applicant and Douglas E. Adkins, Professional Engineer and consultant for the applicant, the Department finds that the findings of the Proposed Final Order require modification. The Department's original analysis of the proposed use found that, due to the requirements of the Klamath River Scenic Waterway, water was not available year-round. However, information submitted by Douglas E. Adkins, P.E., demonstrates that pumping Agency Spring at a rate of 150 gallons per minute has no effect upon the surface water level of Lake Glacid and no impact on the outflow of the Lake to Agency Creek, a tributary of the Klamath River Scenic Waterway.

In addition to the findings of Mr. Adkins, the applicant, in a letter dated March 26, 1996, indicated that the flow rate of the proposed use should be modified to allow 150 GPM (0.334 CFS).

The Department finds that the proposed use, amended to a rate of 150 gallons per minute, may be allowed year-round without impairing the highest and best uses of the Klamath River Scenic Waterway. Therefore, the Department finds that, if exercised in accordance

with the attached permit, the proposed use will not impair or be detrimental to the public interest.

Order

Application S-69829 therefore is approved with the above modifications to the Proposed Final Order, and Permit Number - _____ is issued as limited by the conditions set forth in the attached permit.

DATED December, 1996

DRAFT

Martha O. Pagel
Director

Hearing and Appeal Rights

Under the provisions of ORS 537.170, the applicant may request a contested case hearing by submitting the information required for a protest under ORS 537.153(6) to the Department within 14 days after the date of mailing of this order as shown below. If a contested case hearing is requested, the Department must schedule one. In the contested case hearing, however, only those issues based on the above modifications to the proposed final order may be addressed.

Under the provisions of ORS 183.484, the applicant or any person having standing may appeal this order by filing a petition for review in the Circuit Court for Marion County or the circuit court for the county in which the applicant resides or has a principal business office. The petition for review must be filed within 60 days after the date this order is served.

DRAFT
STATE OF OREGON
COUNTY OF KLAMATH

DRAFT PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS DRAFT PERMIT IS HEREBY ISSUED TO

RAYMOND J. DRISCOLL
HC 30, BOX 138G
CHILOQUIN, OREGON 97624

PHONE: (541) 783-2450

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: S-69829

SOURCE OF WATER: AGENCY SPRING, TRIBUTARY TO AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

RATE OF USE: 0.334 CUBIC FOOT PER SECOND (150 GPM)

DRAFT

PERIOD OF ALLOWED USE: YEAR ROUND

DATE OF PRIORITY: FEBRUARY 1, 1989

POINT OF DIVERSION LOCATION: SW 1/4 SW 1/4, SECTION 18, T34S, R7E, W.M.; 1309 FEET NORTH 45 DEGREES 41 MINUTES AND 43 SECONDS EAST FROM SW CORNER, SECTION 18

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW 1/4 SW 1/4
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Measurement, recording and reporting conditions:

- A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.
- B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.
- C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may

require the permittee to report general water use information, the periods of water use and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

Use of water under authority of this permit may be regulated if analysis of data available after the permit is issued discloses that the appropriation will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife in effect as of the priority date of the right or as those quantities may be subsequently reduced.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction work shall begin within one year from permit issuance and shall be completed on or before October 1, 1998. Complete application of the water to the use shall be made on or before October 1, 1999.

Issued _____, 199_

DRAFT

Water Resources Department
Director

MEMO

January 25, 1994

To: Water Availability File

From: Barry Norris

Re: GIS Use for Basin Characteristics

GIS is used extensively to determine basin characteristics for the regression analyses. This document illustrates the following:

1. Method for watershed nesting determination and designations.
2. Listing of basin characteristics used in regression analyses.
3. Example of precipitation overlay used in determination of precipitation indices.
4. Example of actual basin characteristics used in model.
5. Map of digitized watershed boundaries used in western Oregon.

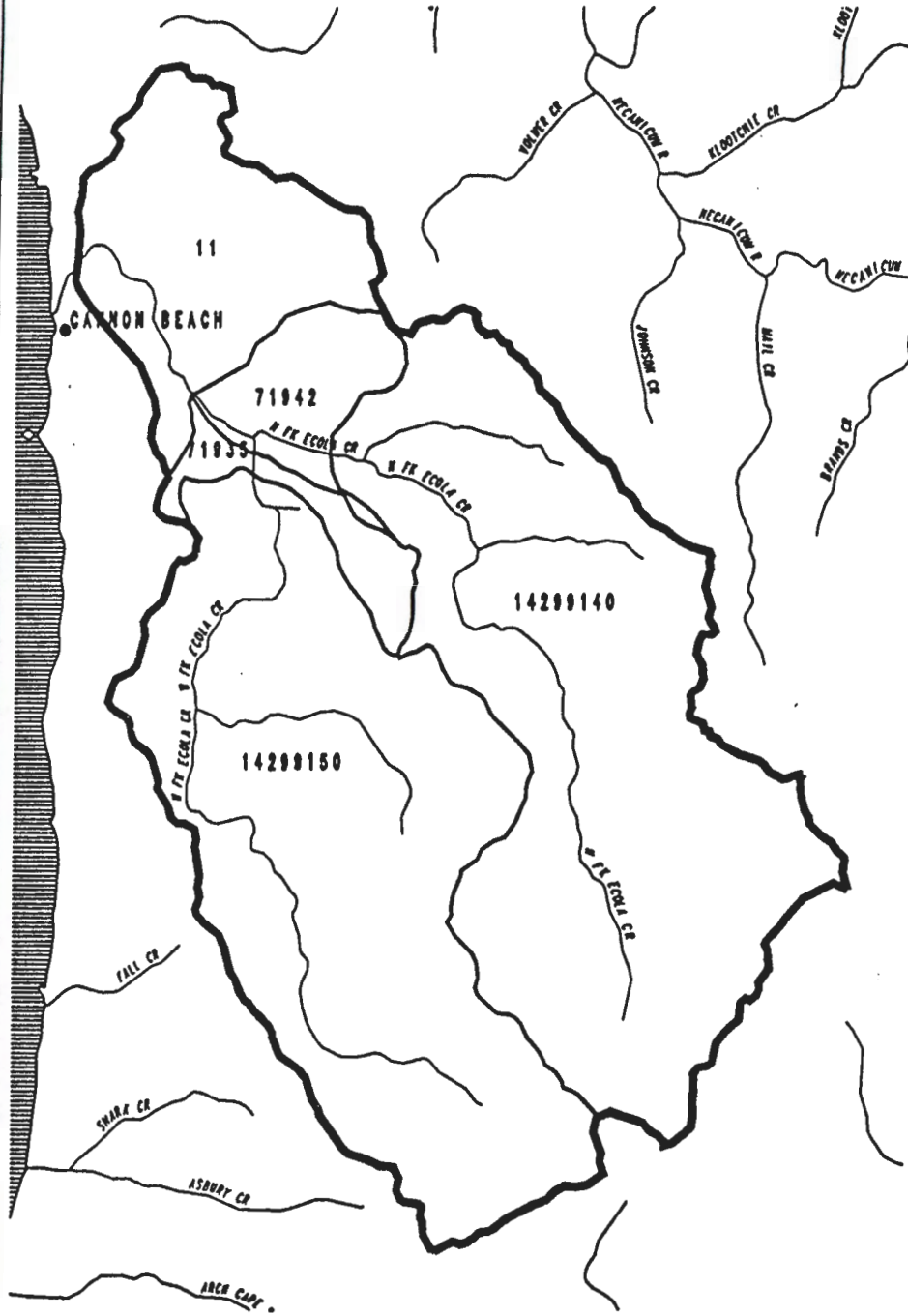
GIS USE FOR BASIN CHARACTERISTICS

SOFTWARE USED AND GENERAL CONCEPTS

- ARC/INFO GIS software
- Digitize watershed boundaries
 - Definition of watershed
 - Scale
- Code watershed polygons for nesting
- Overlay watersheds with data layers
 - Lakes (polygons) 100k scale
 - Precipitation (polygons)
 - Soils/Aquifers (polygons) 500k scale
 - Elevation/Slope/Aspect (points) 450 ft.
 - Minimum Temperature (points) 30°
 - Latitude/Longitude (points)
- Mean data values for each watershed
 - Weighted mean for polygon data
 - Mean for point data

WATERSHED BOUNDARIES AND WATERSHED ID'S

AN EXAMPLE: ÉCOLA CREEK



EXAMPLE OF DATABASE 'NESTING' CODING

GAGE IS WATERSHED ID

| | | |
|------|---|----|
| GAGE | . | 11 |
| G1 | . | 0 |
| G2 | . | 0 |
| G3 | . | 11 |
| G4 | . | 0 |

| | | |
|------|---|--------|
| GAGE | . | 71,942 |
| G1 | . | 0 |
| G2 | . | 71,942 |
| G3 | . | 11 |
| G4 | . | 0 |

| | | |
|------|---|--------|
| GAGE | . | 71,935 |
| G1 | . | 0 |
| G2 | . | 71,935 |
| G3 | . | 11 |
| G4 | . | 0 |

| | | |
|------|---|----------|
| GAGE | . | 14299140 |
| G1 | . | 14299140 |
| G2 | . | 71,942 |
| G3 | . | 11 |
| G4 | . | 0 |

| | | |
|------|---|----------|
| GAGE | . | 14299150 |
| G1 | . | 14299150 |
| G2 | . | 71,935 |
| G3 | . | 11 |
| G4 | . | 0 |

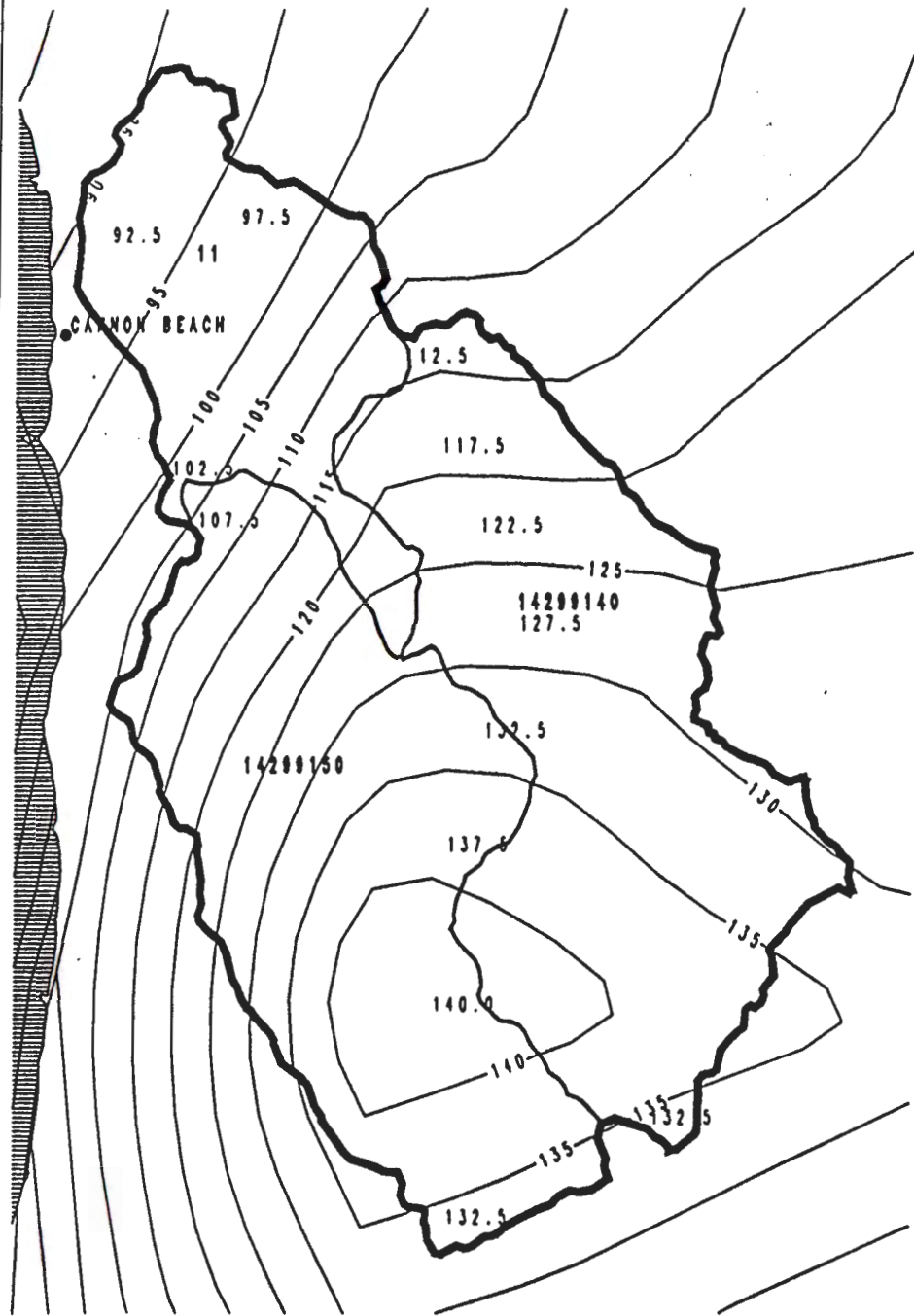
51 ITEMS: STARTING IN POSITION

1

| COL | ITEM NAME | WIDTH | OPUT | TYP | N.DEC | COMMENTS |
|-----|------------|-------|------|-----|-------|------------------------------------|
| 1 | OWRD-BASIN | 5 | 5 | C | - | OWRD BASIN ABBREVIATION |
| 6 | GAGE | 8 | 8 | I | - | WATERSHED ID |
| 14 | LAT-G | 9 | 9 | N | 3 | LATITUDE OF GAGE OR MOUTH |
| 23 | LONG-G | 9 | 9 | N | 3 | LONGITUDE OF GAGE OR MOUTH |
| 32 | LAT | 9 | 9 | N | 3 | LATITUDE OF WATERSHED CENTER |
| 41 | LONG | 9 | 9 | N | 3 | LONGITUDE OF WATERSHED CENTER |
| 50 | SQ-MI | 9 | 9 | N | 3 | WATERSHED AREA |
| 59 | AREA-RATIO | 9 | 9 | N | 3 | WATERSHED AREA TO TOPOGRAPHIC AREA |
| 68 | PERIM | 9 | 9 | N | 3 | WATERSHED PERIMETER |
| 77 | LAKES | 9 | 9 | N | 3 | AREA OF LAKES |
| 86 | COND(K) | 9 | 9 | N | 3 | SOIL PROPERTY BASED ON AQUIFER |
| 95 | POROS(O) | 9 | 9 | N | 3 | SOIL PROPERTY BASED ON AQUIFER |
| 104 | COND+POROS | 9 | 9 | N | 3 | SOIL PROPERTY BASED ON AQUIFER |
| 113 | SOILS | 9 | 9 | N | 3 | HYDRAULIC CONDUCTIVITY |
| 122 | RELIEF | 9 | 9 | N | 3 | TOTAL WATERSHED RELIEF |
| 131 | SLOPE | 9 | 9 | N | 3 | MEAN WATERSHED SLOPE |
| 140 | ASPECT | 9 | 9 | N | 3 | MEAN WATERSHED ASPECT |
| 149 | MEAN-ELEV | 9 | 9 | N | 3 | MEAN WATERSHED ELEVATION |
| 158 | EL-3000 | 9 | 9 | N | 3 | ELEVATION ABOVE 3000 |
| 167 | EL-4000 | 9 | 9 | N | 3 | ELEVATION ABOVE 4000 |
| 176 | EL-5000 | 9 | 9 | N | 3 | ELEVATION ABOVE 5000 |
| 185 | EL-6000 | 9 | 9 | N | 3 | ELEVATION ABOVE 6000 |
| 194 | PRECIP-ANN | 9 | 9 | N | 3 | MEAN ANNUAL PRECIP |
| 203 | PRECIP-JAN | 9 | 9 | N | 3 | MEAN MONTHLY PRECIP |
| 212 | PRECIP-FEB | 9 | 9 | N | 3 | . |
| 221 | PRECIP-MAR | 9 | 9 | N | 3 | . |
| 230 | PRECIP-APR | 9 | 9 | N | 3 | . |
| 239 | PRECIP-MAY | 9 | 9 | N | 3 | . |
| 248 | PRECIP-JUN | 9 | 9 | N | 3 | . |
| 257 | PRECIP-JUL | 9 | 9 | N | 3 | . |
| 266 | PRECIP-AUG | 9 | 9 | N | 3 | . |
| 275 | PRECIP-SEP | 9 | 9 | N | 3 | . |
| 284 | PRECIP-OCT | 9 | 9 | N | 3 | . |
| 293 | PRECIP-NOV | 9 | 9 | N | 3 | . |
| 302 | PRECIP-DEC | 9 | 9 | N | 3 | . |
| 311 | TEMP-ANN | 9 | 9 | N | 3 | MEAN ANNUAL MINIMUM TEMP |
| 320 | TEMP-JAN | 9 | 9 | N | 3 | MEAN MONTHLY MINIMUM TEMP |
| 329 | TEMP-FEB | 9 | 9 | N | 3 | . |
| 338 | TEMP-MAR | 9 | 9 | N | 3 | . |
| 347 | TEMP-APR | 9 | 9 | N | 3 | . |
| 356 | TEMP-MAY | 9 | 9 | N | 3 | . |
| 365 | TEMP-JUN | 9 | 9 | N | 3 | . |
| 374 | TEMP-JUL | 9 | 9 | N | 3 | . |
| 383 | TEMP-AUG | 9 | 9 | N | 3 | . |
| 392 | TEMP-SEP | 9 | 9 | N | 3 | . |
| 401 | TEMP-OCT | 9 | 9 | N | 3 | . |
| 410 | TEMP-NOV | 9 | 9 | N | 3 | . |
| 419 | TEMP-DEC | 9 | 9 | N | 3 | . |
| 428 | FOREST | 9 | 9 | N | 3 | N/A |
| 437 | SUR-IRR | 9 | 9 | N | 3 | N/A |
| 446 | ALL-IRR | 9 | 9 | N | 3 | N/A |

PRECIPITATION CONTOURS AND AVERAGES

AN EXAMPLE: ECOLA CREEK



| GAGE | AREA (sq mi) | PRECIP (in) |
|----------|--------------|-------------|
| | | |
| 11 | 21.147 | 124.136 |
| 14299140 | 8.625 | 129.739 |
| 14299150 | 8.294 | 129.655 |

| | |
|------------|------------|
| OWRD-BASIN | =NORCO |
| GAGE | = 11 |
| LAT-G | = 0.000 |
| LONG-G | = 0.000 |
| LAT | = 45.861 |
| LONG | = 123.911 |
| SQ-MI | = 21.147 |
| AREA-RATIO | = 99.000 |
| PERIM | = 23.233 |
| LAKES | = 0.000 |
| COND(K) | = 3.061 |
| POROS(O) | = 12.960 |
| COND+POROS | = 16.020 |
| SOILS | = 4.326 |
| RELIEF | =2,795.656 |
| SLOPE | = 10.111 |
| ASPECT | = 210.053 |
| MEAN-ELEV | = 998.566 |
| EL-3000 | = |
| EL-4000 | = |
| EL-5000 | = |
| EL-6000 | = |
| PRECIP-ANN | = 124.136 |
| PRECIP-JAN | = 0.000 |
| PRECIP-FEB | = 0.000 |
| PRECIP-MAR | = 0.000 |
| PRECIP-APR | = 0.000 |
| PRECIP-MAY | = 0.000 |
| PRECIP-JUN | = 0.000 |
| PRECIP-JUL | = 0.000 |
| PRECIP-AUG | = 0.000 |
| PRECIP-SEP | = 0.000 |
| PRECIP-OCT | = 0.000 |
| PRECIP-NOV | = 0.000 |
| PRECIP-DEC | = 0.000 |
| TEMP-ANN | = 37.474 |
| TEMP-JAN | = 28.368 |
| TEMP-FEB | = 30.897 |
| TEMP-MAR | = 32.549 |
| TEMP-APR | = 34.790 |
| TEMP-MAY | = 39.401 |
| TEMP-JUN | = 45.055 |
| TEMP-JUL | = 47.598 |
| TEMP-AUG | = 47.510 |
| TEMP-SEP | = 42.968 |
| TEMP-OCT | = 37.577 |
| TEMP-NOV | = 33.575 |
| TEMP-DEC | = 29.374 |
| FOREST | = 0.000 |
| SUR-IRR | = 0.000 |
| ALL-IRR | = 0.000 |

WESTERN OREGON WATERSHEDS

— OWRD basin boundaries
— Watershed boundaries



MEMO

January 25, 1994

To: Water Availability File

From: Barry Norris

Re: Informational Report: Follow-up Report on Comments Raised
About the Methodology for Estimating Water Availabilty

This document was presented to the Water Resources Commission at
their work session on April 29, 1993.

Exh 2D

MEMORANDUM

TO: Water Resources Commission

FROM: Director *MDP*

SUBJECT: Work Session Item 1, April 29, 1993
Water Resources Commission Work Session

Informational Report: Follow-up Report on Comments Raised About the
Methodology for Estimating Water Availability

I. Background

This report addresses comments and concerns raised by the Commission and others about the Department's new methodology for estimating water availability based on mean daily flows. Staff presented this methodology to the Commission at the March 11, 1993 Work Session. The Commission had a number of questions and concerns, which staff addressed during the presentation, except for a concern about seasonality in the municipal consumptive use coefficient.

During public comment on the presentation, Doug Heiken of WaterWatch of Oregon voiced a number of concerns regarding the methodology. Mr. Heiken had previously sent a letter to staff detailing WaterWatch's concerns (Attachment 1). Gail Achterman, attorney representing the firm of Stoel, Rives, Boley, Jones, and Grey, commented that the methodology should be the subject of a technical peer review and that a technical advisory steering committee be formed. Jan Boettcher of the Water Resources Congress did not make comments to the Commission regarding the methodology, but later provided written comments describing several concerns (Attachment 2).

At the March 11 Work Session, staff were directed to schedule meetings with WaterWatch and the Water Resources Congress to discuss their concerns. Concerns and questions not resolved in those meetings were to be addressed in a report to the Commission on April 29, 1993. Staff also were directed to respond to the idea of a technical peer review and to address the Commission's concerns about seasonal municipal consumptive use coefficients.



For municipal allocations the full face value of the rights of record is often much more than present diversions. Because of population growth, the amount of water diverted for a municipal right is likely to increase with time even though no new allocation is made, i.e., there is a *potential* for water use to increase under existing allocations. For that reason, staff have based the municipal consumptive use calculation on the full face value of developed municipal rights rather than present diversions. The full allocation is multiplied by a consumptive use coefficient to obtain the consumptive use.

WaterWatch is concerned that the new methodology underestimates the increase in water use that could occur under existing allocations. As new water allocations are restricted, pressure will build to use already allocated water more fully. There are several mechanisms by which this could happen. A municipal or industrial user, for example, could sell their effluent to another user rather than returning it to the stream as staff have assumed. Water marketing and transfer of rights also may lead to increases in water use for the same allocation.

To account for these possible future increases in water use, WaterWatch has suggested that the most resource protective approach possible be taken. For example, WaterWatch has suggested that either all water diverted by industrial and municipal users be considered to be consumed or that it be made a condition of all such water rights that all unconsumed water be returned to streamflow. (This latter option is not possible for rights already issued.) WaterWatch also suggests that the full face value of irrigation rights be used because of the potential for these rights to be transferred to other uses that may be more consumptive.

WaterWatch's suggestion protects streams from future over-appropriation under the worst possible case of water reuse, water marketing and transfer of rights. To realize this worst possible case, all water that could legally be diverted in a watershed would have to be diverted *and* be 100 percent consumed. Three unlikely events would have to happen for this to occur:

1. Municipal users in the watershed would have to divert their full allocation for all their rights of record.
2. All the effluent from all municipal and industrial users would have to be sold or given to uses that are 100 percent consumptive.
3. All irrigation rights of record would have to be either used 100 percent consumptively to the full amount of their allocation, or transferred or marketed to uses that are 100 percent consumptive.

Staff recognize that there is a potential for water use to increase under existing allocations. There is little chance, however, that the whole potential for increase will be realized as is assumed by WaterWatch. Following WaterWatch's approach would lead to all future allocations being held to a standard more strict than 80 percent. The opposite and equally extreme approach would be to make no account for future increases in water use. Following

(e.g., the Deschutes and Klamath Basins). WaterWatch will defer their questions and concerns about how transmission losses are accounted for until staff have developed methods to deal with them.

C. Exclusion of De Minimus Uses (Attachment 1, page 4)

In developing this methodology, staff assumed that many consumptive uses (e.g., domestic and livestock) are insignificant, i.e., they are smaller than the error in measuring or modeling the streamflow. Only those consumptive uses considered to be significant (i.e., municipal, irrigation, and industrial) have been included in the consumptive use calculations. Staff's limited experience with the methodology in the North Coast suggests that this assumption is true in almost all cases. Even where relatively "large" de minimus uses occur, the impact on the water availability calculation is small. However, staff do not intend to leave out any significant use from the estimation of total consumptive use for any watershed. Where de minimus uses are identified as being a significant part (more than 1 percent) of the 80 percent exceedance flow, they will be included in the water availability calculation.

D. Water Availability Analysis for the Columbia River (Attachment 1, page 2)

There is significant public interest in protecting instream values for the Columbia and Snake Rivers (e.g., threatened and endangered species, navigation, and hydropower). The Commission is currently evaluating how this public interest can be incorporated into an allocation policy for the Columbia and Snake Rivers. This issue is addressed separately in Agenda Item G of this Water Resources Commission Meeting.

WaterWatch has suggested water availability analyses on the mainstems of these rivers as a means to protect the instream values. In this case, a water availability analysis will not protect instream values. The water availability methodology is based on an 80 percent exceedance standard. By itself, the 80 percent exceedance standard does not protect instream values. It is designed to ensure a reasonable expectation of water availability to anyone granted a water right and to minimize the need for regulation by Department staff. The instream water right is the mechanism by which instream values are protected. However, because there are not instream water rights for the Columbia and Snake Rivers, a water availability analysis anywhere on the mainstems of these rivers would not limit allocations anywhere in the Columbia basin until the rivers were dry 20 percent of the time.

Given these factors, staff do not have plans to perform any water availability analyses on the mainstems of the Columbia or Snake Rivers at this time. However, water availability

G. Municipal Consumptive Use Coefficient

The Commission directed staff to explore the possible benefits of using different municipal consumptive use coefficients for summer and winter. Currently staff are using a consumptive use coefficient of 15 percent for all months. This number was obtained from the USGS in Portland and represents average annual consumption. Although it is clear that water demand is higher in summer months due to irrigation of lawns and gardens, it is not clear how much consumptive use may increase with this extra demand. Staff are investigating how significantly consumption increases in summer, and if the increase is significant, how a reasonable consumptive use coefficient for summer months could be determined.

III. Director's Recommendation

This is an informational report only, no Commission action is required. The Director and staff intend to proceed with the water availability program as outlined in this report and Agenda Item 3 from the March 11, 1993 Work Session unless otherwise directed by the Commission. The Director and staff intend to utilize the new water availability data as they become available.

Attachments: 1) Letter from WaterWatch, dated March 4, 1993
 2) Written Comments from the Water Resources Congress, March 29, 1993

Rick Cooper
Ph. 378-8455 Ext. 253

Adam Sussman
Ph. 378-8455 Ext. 267

April 14, 1993

Water Watch
OF OREGON

4 March 1993

Adam Sussman
Rick Cooper
Oregon Water Resources Department
3850 Portland Rd NE
Salem OR 97310

MAR - 6 1993

SALEM, OREGON

Subject: Comments on the Department's Water Availability Modelling Program.

Dear Water Resources Staff:

I would like to take this opportunity to thank you for spending the afternoon with me on Tuesday, January 5. Your patience and openness are appreciated. As requested, I have prepared this letter to provide some feedback on your modelling efforts. We realize that your task is complicated by imperfect information, but we hope the following comments will help you address public concerns as you develop and refine your models.

WHY IS THE DEPARTMENT USING TWO DIFFERENT METHODS TO DETERMINE WATER AVAILABILITY?

One question we have is why you are using two different methods to determine water availability in different contexts— one for processing the backlog of water right applications and another for basin planning and possible basin reclassification. Which method is better (more accurate)? Effective coordination and communication between the planning staff and the water rights staff is very important. If one method of analysis is more accurate for determining whether water is available or whether the resource is over-appropriated there is no reasonable justification for using two different methods in the two divisions of the Department. For the benefit of the public and the Commission, you should explain how the two methods differ and describe the pluses and minuses of both.

"BOTTOM-UP" ANALYSIS IS APPROPRIATE FOR PROCESSING WATER RIGHT APPLICATIONS

Your choice of the downstream end of instream water rights as the point of analysis for many water availability basins makes some sense to us. WaterWatch also likes your "bottom-up" approach to water availability analysis, in which you start the analysis at the bottom of the basin and work upstream. According to this approach, whenever the water availability analysis determines that water is unavailable at a given point for a given month (i.e. the stream is fully appropriated), all permit applications in the basin which lay upstream from that point and which may affect the over-appropriated river reach should be denied. In order to overcome the water unavailability determination and receive a water right the applicant must show a high public interest in the proposed water use and that the use is

If rights-of-record do not reflect actual water use, then something is wrong with the Department's record keeping. If the Department assumes that using rights-of-record to determine water availability will over-estimate water use and under-estimate water availability, then the Department must get its records in order by canceling the unused water rights in the basin. Rights-of-record should serve several functions within the Department, not just to allocate water among discrete users (the *distributive function*), but also to keep track of the cumulative allocation of a stream vis-a-vis the natural streamflow (the *limiting function*). As it stands, the Department has voluminous information on water rights but all this information serves only half of its intended function; it serves the distributive function but not the limiting function. In order to serve their intended functions, rights-of-record should be corrected, and until they are it is bad policy to ignore already permitted or certificated but unexercised uses of water when considering whether to grant new water rights.

WaterWatch recognizes that because return flow quantities are unknown, rights-of-record reflect rights of water *diversion* not the actual quantity of water *consumed*. WaterWatch hopes that we are all working toward a world where rights-of-record do closely reflect actual water use. To realize this goal the Department must actively cancel forfeited and abandoned water rights and they must increase water use efficiency by actively pursuing the Commission's water conservation policy. Canceling water rights would remove unused water rights from the books and make rights-of-record more accurately reflect actual use. Increasing water use efficiency, will not only free-up water for other important uses, such as instream flows and economic development, but it will also reduce return flows thereby helping to converge rates of diversion and rates of consumptive use.

AVERAGE FLOWS OVER A PERIOD OF DECLINING FLOWS TENDS TO OVER-ESTIMATE WATER AVAILABILITY FOR THE PRESENT PERIOD

The problem of under-estimation of water use and over-estimation of water availability exists in other parts of your model as well. You are basing your 80% exceedance analysis on long-term average monthly stream-flow measurements from 1957-1987. The problem is water use was not static during the thirty year period that you are using as a baseline. Tens of thousands of permits for consumptive uses of water were issued between 1957 and 1987, so an accurate water availability analysis cannot be based on the average of those years. The average flows from 1957-1987 are skewed by the fact that fewer water rights were being exercised during the earlier part of the period, so those long-term averages are not accurate reflections of water availability today. To your credit you are subtracting consumptive uses issued after the end of the 1987 base period, but why not subtract all the permits issued during the 1970s and 1980s because those water withdrawals also get lost in the long-term average.

CONSUMPTIVE USE IN AGRICULTURE DOES NOT REFLECT REAL WORLD

Your calculation of consumptive use for agricultural purposes is more complex. As we understand it, you first determine the number of irrigated acres in the "water availability basin" under consideration and then you multiply those acres by the monthly crop water requirements for a typical crop in that region. Since not all water permits are fully exercised, the Department's Water Rights Information System (WRIS) is assumed to overestimate the number of acres irrigated. To avoid this over-estimation, you determine the number of acres irrigated using a combination of USGS data and WRIS data. Since USGS data is not available on the scale of the water availability basins you first look at larger areas for which USGS does have data, then generate representative ratios of how fully developed the area's irrigation permits are based on a comparison of USGS data and WRIS data, and finally you apply the ratio to the smaller area's WRIS numbers to determine the number of irrigated acres in the relevant water availability basin.

This process has several problems:

- First, the assumption that WRIS overestimates irrigated acreage should be questioned. As mentioned above rights-of-record must be given some consideration, because the water right holders can at any time increase their use up to the amount reflected in their water right. The partially exercised permits are still valid rights that may, without further review by the Commission, be more fully developed in the future, thereby altering future water availability. For example, the Dalles ID recently applied for a small reclamation loan to increase their pumping capacity and max out their rate and duty under their water rights, even though seven years ago the District told the Department that they were done perfecting their permit and were ready for certification. This under-counting of agricultural water use could conflict with the policy behind the 80% exceedance standard.
- Second, the smaller area (the water availability basin) may not be representative of the larger area (the USGS data area) in terms of the ratio of acres irrigated according to USGS data vs. WRIS data. One or two large permits that differ from the norm because they are either more developed or less developed than the average for the local area could substantially skew the results and ultimately make the water availability determination inaccurate.
- Third, the crop water use requirements which are applied to the number of acres irrigated are derived from OSU studies. These crop water use requirements may fail to account for transmission losses. This could be a major problem. Water lost in transmission may not make it back to the stream for miles, if ever, thereby dewatering the stream and impacting water availability. For example, North Unit Irrigation District in the Deschutes Basin loses 50% of the water conveyed in its forty mile long canal, because the canal is crudely blasted out of porous volcanic material. Some of the water probably makes it back to the river, but much of it may not, and the river is dewatered for miles downstream of their



March 29

RE: WATER AVAILABILITY

What are the various methodologies used for water availability calculation?

- 1) Two methods described earlier?
 - a) one for backlog: based on water availability process at time of application prior to '92 policy adoption?
 - b) basin planning/reclassification under '92 process
- 2) Why, if not because of policy date?
- 3) How do you determine groundwater availability?
- 4) Are ponds treated the same as reservoirs in water availability analysis? (50% exceedance versus 80% exceedance)
- 5) To what figure is the exceedance factor applied?

How does the bottom-up approach deal with storage?

- 1) Doesn't new storage provide an analytical change? Is the calculation redone when storage is effected?
- 2) What exceptions will the department use if they adopt a bottom-up approach?
- 3) The bottom up approach can have a number of variable that could make it unreliable is it is the only factor used in water availability determination.
- 4) We would argue that it would be inappropriate to use a bottom-up approach on the Columbia River system as setting flow that are not generally attainable on the Columbia would have the effect of skewing the whole system. In addition, the Columbia is affected by out-of-state and international decisions not under Oregon's control.

How will the WRIS system be used in calculating water availability?

- 1) We would not support any methodology based on the WRIS program because
 - a) WRIS data is not refined enough to provide the correct level of accuracy, which we became aware of after a recent project:
 - 1) e.g., double and triple counting of face of water rights in irrigation districts as same number of acres recounted from each source
 - 2) e.g., power projects reusing the same water used for another primary (such as Owyhee irrigation/hydropower) double counts large flows which are counted as both irrigation and industrial

Attachment to Work Session Item 1, April 29, 1993

Estimating Consumptive Use (When There Is a Potential for Increased Use Under Existing Allocations)

Current Methodology

Irrigation Consumptive Uses

1. Estimated as current *actual* consumptive use. Based on work done by the USGS for the period 1985 to 1990.
2. Assumes that non-consumed water is returned to the same water availability subbasin from which it is taken.
3. Assumes that cropping patterns and agricultural practice in the future will be similar to present patterns and practice.
4. Assumes that actual consumptive use relative to existing allocations will not increase significantly with time.

Industrial and De Minimus Consumptive Uses

1. Estimated as current *actual* consumptive use. Based on rights of record.
2. Assumes that the face value of a right of record represents the current actual diversion under that right.
3. Consumptive use is calculated by multiplying the face value by a consumptive use coefficient.
4. Assumes that non-consumed water is returned to the water availability subbasin from which it is taken (unless known to be otherwise).
5. Assumes that actual consumptive use relative to existing allocations will not increase significantly with time.

Municipal Consumptive Uses

1. Estimated as *potential* consumptive use. Based on *developed* municipal rights.
2. Assumes that the face value of the developed rights for a municipality represents the maximum probable future diversion for that municipality.
3. Consumptive use is calculated by multiplying the face value by a consumptive use coefficient when the non-consumed water is returned to the same water availability subbasin from which it is taken. Otherwise all of the diverted water is assumed to be consumed for that basin.
4. Assumes that actual consumptive use relative to existing allocations will increase significantly with time.

MEMO

January 26, 1994

To: Water Availability File

From: Barry Norris

Re: A Methodology for Estimating Water Availability Based on
Mean Daily flows

This document is a packet of slides and handouts that were presented to a peer review committee on November 15, 1993. The committee was established at the request of the Water Resources Commission. Members were asked to give staff their technical assessment of the project as it had been developed to date. Although not as comprehensive as document #1, these documents provide a full schematic of the project.

Exh 2E

**A Methodology for Estimating
Water Availability
Based on Mean Daily Flows**

**The Water Availability Program
Oregon Water Resources Department
November 15, 1993**

Presenters

- Rick Cooper Hydrologist, Technical Services Division**
- Adam Sussman Planner, Resource Planning Division**
- Michael Ciscell GIS Coordinator, Technical Services Division**
- Kathy Geers Data Base Programmer, Technical Services Division**
- Ken Stahr Hydrographer, Technical Services Division**

Why Are We All Here?

- **Our Job**

To present the Water Availability Methodology to you in such a way that you understand what we did, how we did it, and why.

- **Your Job**

To make sure we do our job - ask lots of questions and make lots of comments.

To provide us with formal, *written* comments detailing what you think we have done right, what we have done wrong, and in what ways we could make the methodology better.

Presentation Outline

- I. A Definition of Water Availability.**
- II. Where Water Availability is Estimated - Water Availability Subbasins.**
- III. How Water Availability is Estimated - The Methodology.**

Water Availability - A Definition

- Water availability is the amount of water that can be appropriated from a given point on a given stream for *new* out-of-stream *consumptive* uses.
- It is obtained from the *natural* streamflow by subtracting existing instream water rights and out-of-stream consumptive uses.

$$WA = Q_{NSF} - CU - ISWR$$

where

- WA = Water available.
- Q_{NSF} = The natural streamflow at the given point on the given stream.
- CU = The consumptive use from out-of-stream water rights on the stream and its tributaries upstream from the specified point.
- ISWR = Instream water right for a stream reach that includes the specified point.

Natural Streamflow

- The flow in a stream when there are no consumptive uses and there is no flow regulation.
- For the water availability calculation:
 1. The Department's Water Allocation Policy limits total allocation on a stream to the amount of water flowing in the stream 80 percent of the time.
 2. Q_{NSF} represents the natural streamflow that occurs in a stream at least 80 percent of the time.

In-Stream Water Right

- **A water right held in trust by the Water Resources Department for the benefit of the people of Oregon to maintain water instream for public use.**
- **Public use includes:**
 - 1. Fish and wildlife**
 - 2. Recreation**
 - 3. Pollution abatement**
- **Department policy limits the amount of an instream water right to the 50 percent exceedance natural streamflow.**
- **50 and 80 percent exceedance streamflows are obtained from a flow duration curve.**

Consumptive Use

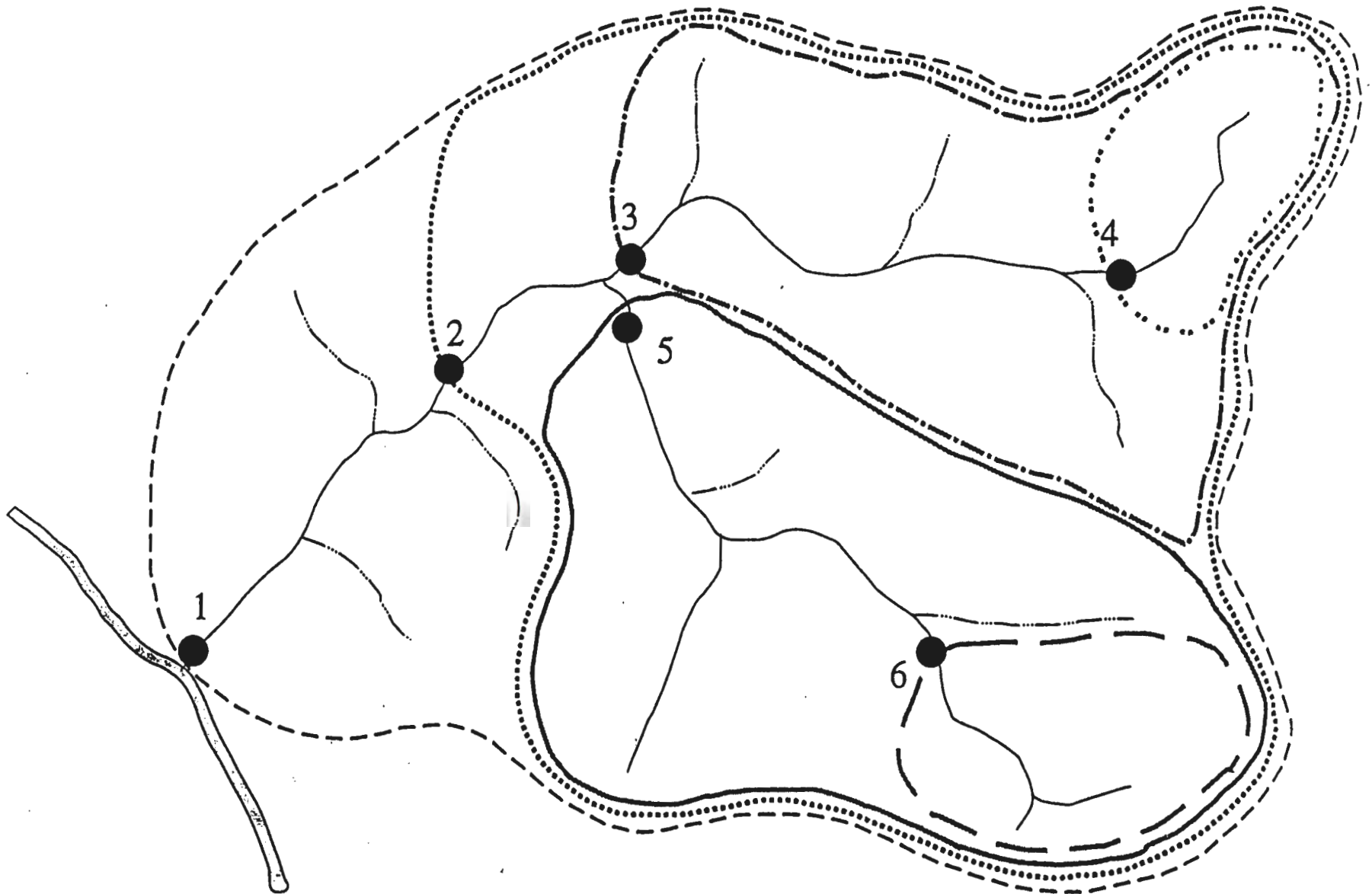
- **Causes a net reduction in stream flow.**
- **Usually associated with an evaporative or transpirative loss.**
- **Five major categories of Consumptive Use:**
 - 1. Irrigation**
 - 2. Industrial - Manufacturing**
 - 3. Municipal**
 - 4. Storage**
 - 5. All others (e.g., domestic, livestock)**

Where Water Availability is Calculated Water Availability Sub-basins

- ***Ideally*** water availability would be calculated for every watershed associated with a point of diversion or an instream water right.
- ***Practically*** the number of watersheds must be limited.
- These selected watersheds are called ***Water Availability Subbasins***.
- The number and delineation of water availability subbasins depends on the location of gages and instream water rights and the physiography of affected streams.

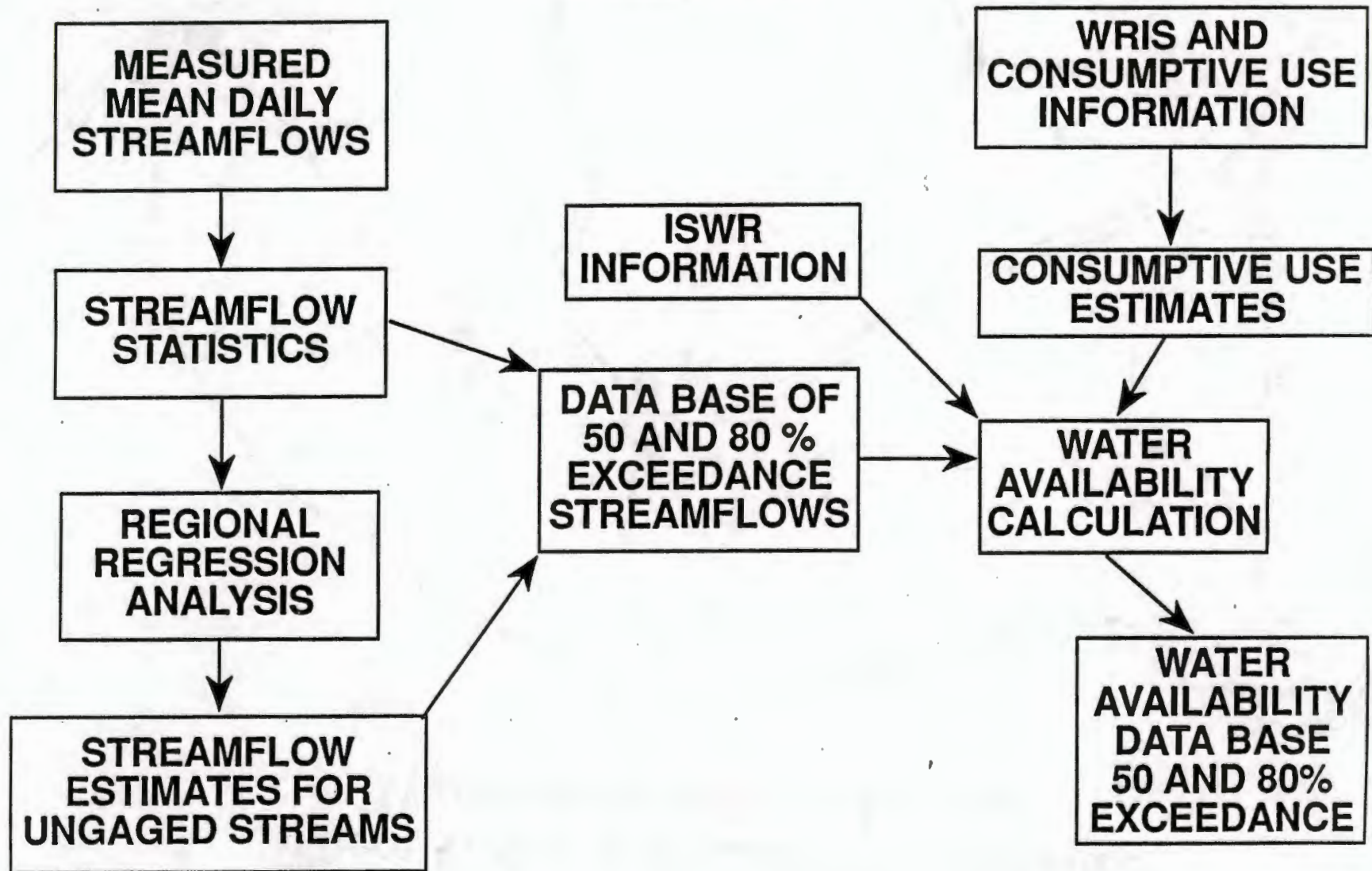
Where Water Availability is Calculated

Water Availability Sub-basins



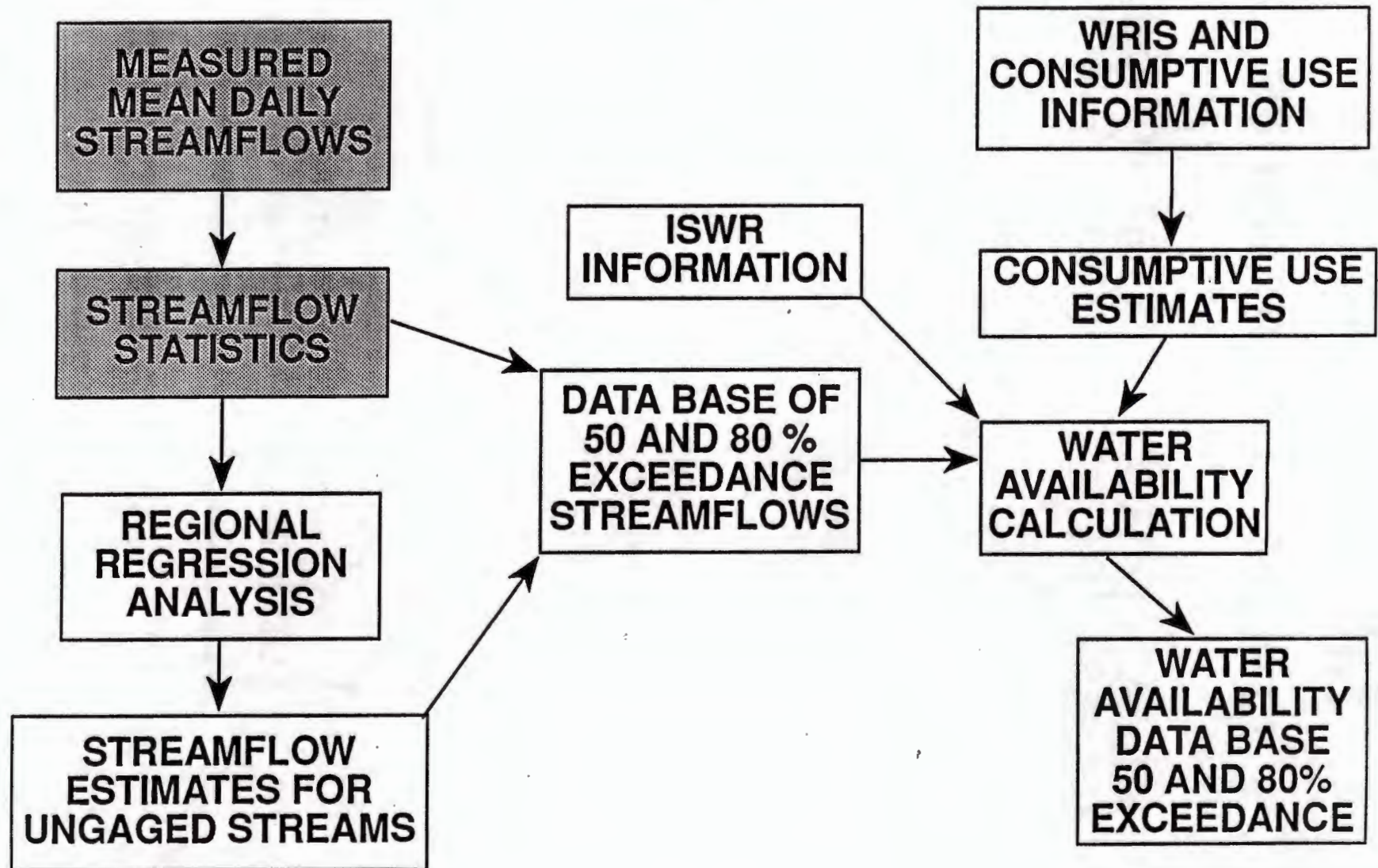
WATER AVAILABILITY METHODOLOGY

OVERVIEW



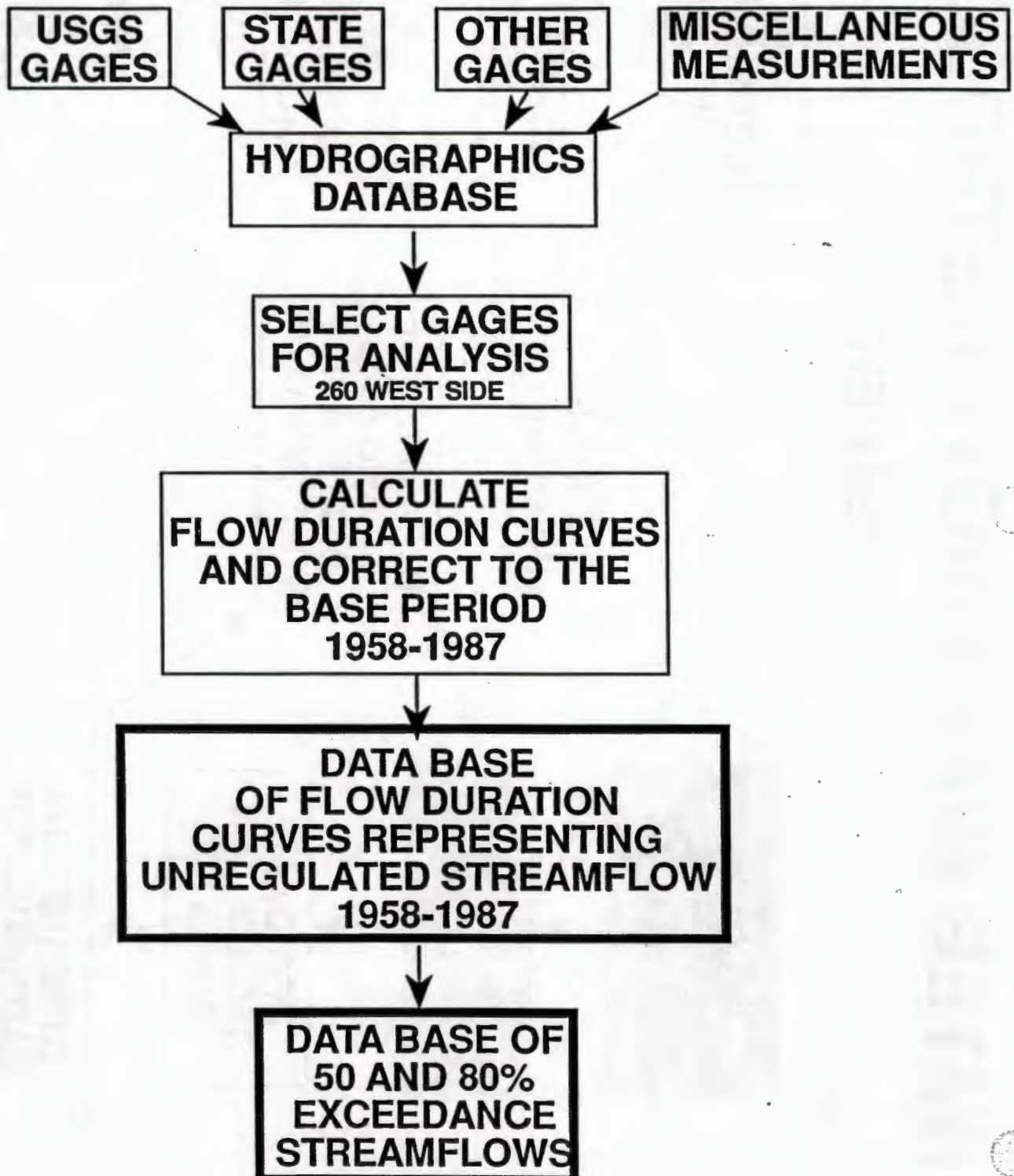
WATER AVAILABILITY METHODOLOGY

OVERVIEW



WATER AVAILABILITY METHODOLOGY

STREAMFLOW STATISTICS



Selecting Gages for Analysis

- **Unregulated streamflow.**
- **Unaffected by large diversions.**
- **At least three years of record (mean daily flows).**
- **West of the Cascades 256 gages meet these criteria.**

| | |
|--------------------------|------------------|
| North Coast Basin | 16 gages |
| Mid Coast Basin | 25 gages |
| South Coast Basin | 11 gages |
| Willamette Basin | 106 gages |
| Sandy Basin | 15 gages |
| Umpqua Basin | 32 gages |
| Rogue Basin | 51 gages |

Calculating Flow Duration Curves

- **Example Calculation:**

| Chronological Data | Sorted Data | % Exceedance |
|---------------------------|--------------------|---------------------|
| 175 | 106 | 90 |
| 123 | 123 | 80 |
| 106 | 143 | 70 |
| 187 | 156 | 60 |
| 199 | 165 | 50 |
| 302 | 175 | 40 |
| 156 | 187 | 30 |
| 210 | 199 | 20 |
| 143 | 210 | 10 |
| 165 | 302 | 00 |

- **Reference: Searcy, J.K. 1959. Flow-duration curves: U.S. Geological Survey Water-Supply Paper 1542-A. 33 p.**
- **Reference: Yevjevich, V. 1982. Probability and Statistics in Hydrology. Water Resources Publications. Littleton, Co. 302 p.**

Correcting the Flow Duration Curves to a Base Period

- **A flow duration curve is specific to the time period for which it is calculated.**
- **Different time periods give different results for the same stream.**

For example: The first part of this century was drier than average for the whole century, the middle part wetter, and the latter part more or less average - at least through 1987.

- **1958 to 1987 was selected as the *base* period.**
 - 1. Best represents the long term average conditions for this century.**
 - 2. The period for which most stream flow information is available.**
- **All flow duration curves are corrected to the base period.**
- **Reference: Searcy, J.K. 1959. Flow-duration curves: U.S. Geological Survey Water-Supply Paper 1542-A. 33 p.**

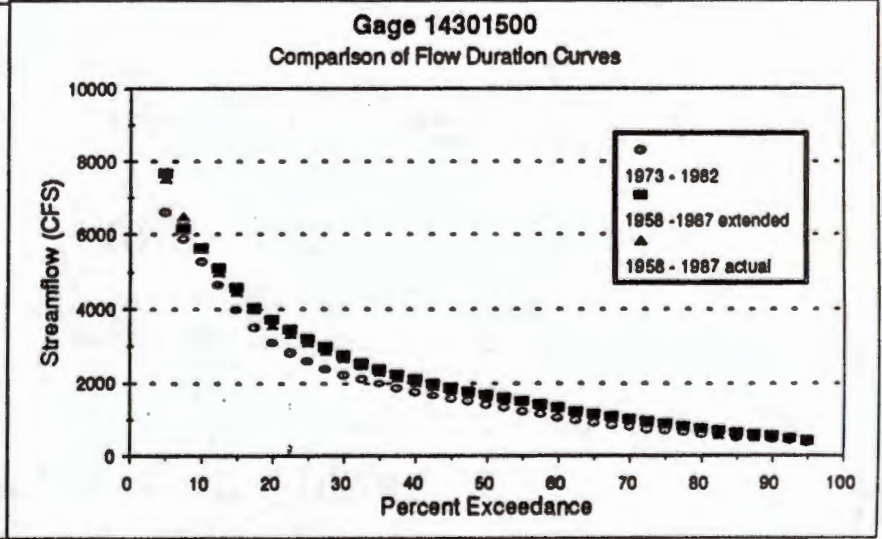
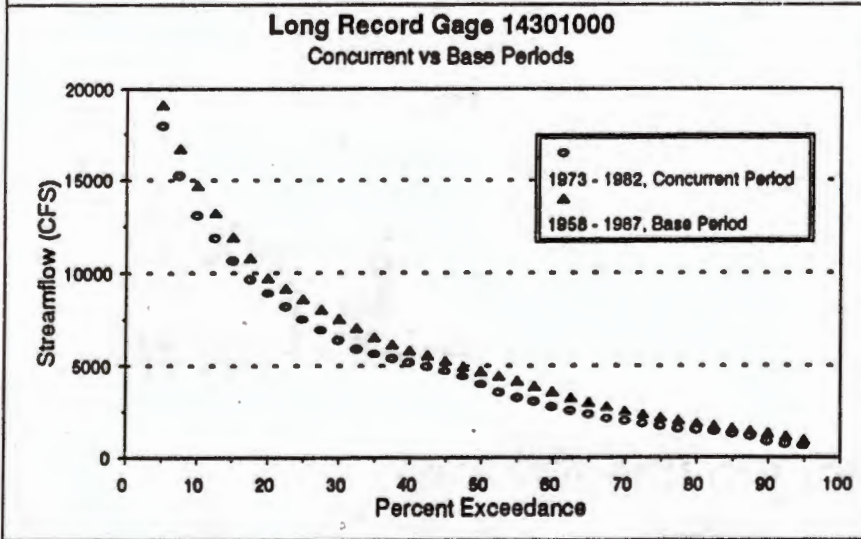
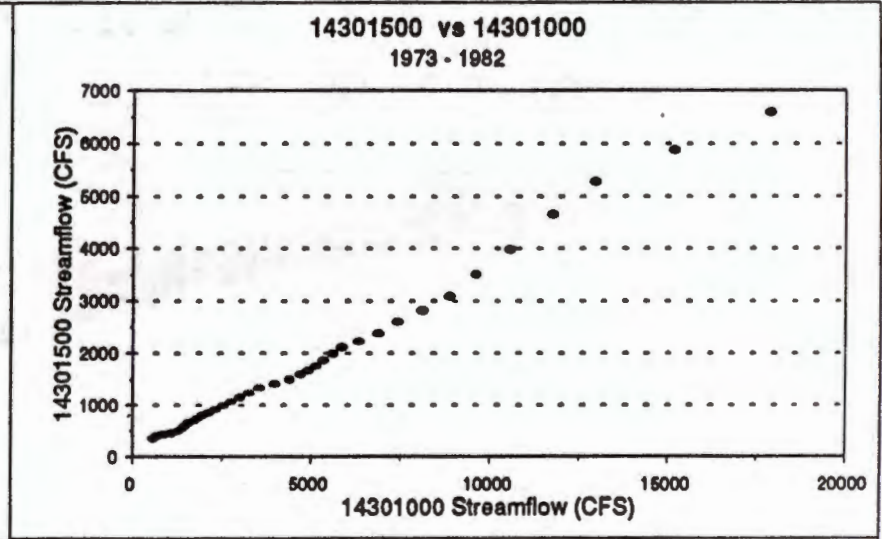
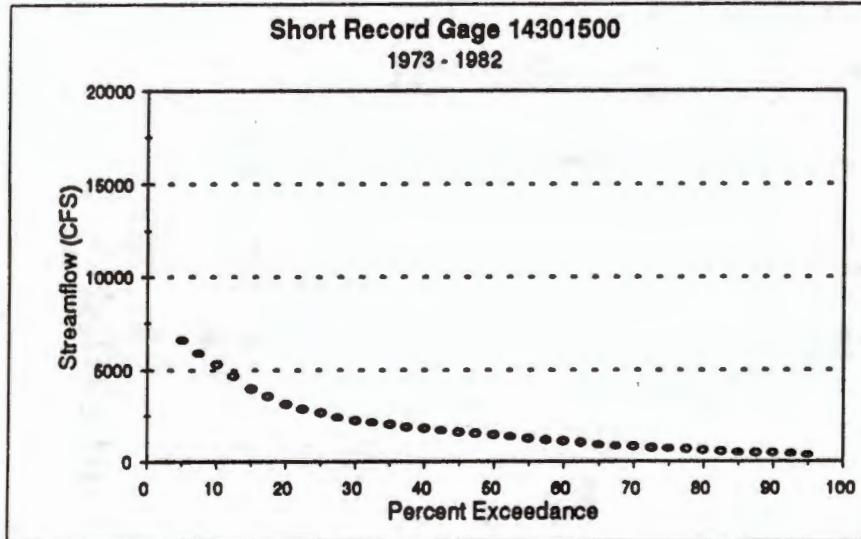
Correcting the Flow Duration Curves to a Base Period

An Example

- **Consider these streamflow gages in the North Coast Basin:**
 - 14301000 - Nehalem River near Foss, Or - 1939 to 1987**
 - 14301500 - Wilson River near Tillamook, Or - 1931 to 1987**
- **Assume that the Wilson River gage has only a short record, say from 1973 to 1982.**
- **A relationship between the two gages is established based on the flow duration curves for the two stations for their concurrent periods of record, 1973 to 1982.**
- **This relationship is used to generate a flow duration curve at 14301500 for the base period 1958 to 1987 from the flow duration curve for 14301000 for the base period.**
- **Since, in this example case, 14301500 has record from 1958 to 1987 the estimated flow duration curve for the base period can be checked against the real flow duration curve.**

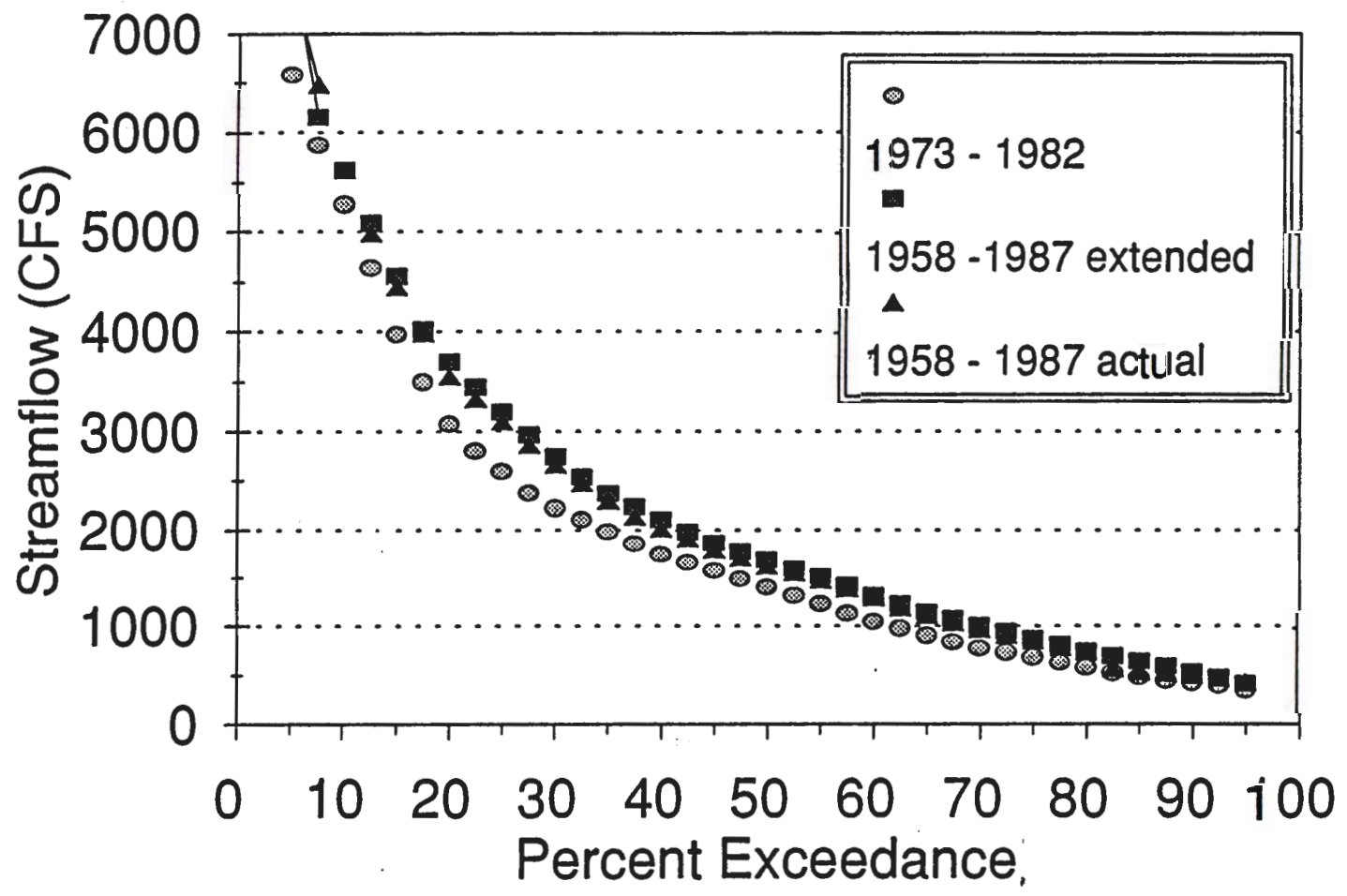
Correcting a Short Record Flow Duration Curve

An Example: Correcting January Flows for Gage 14301500



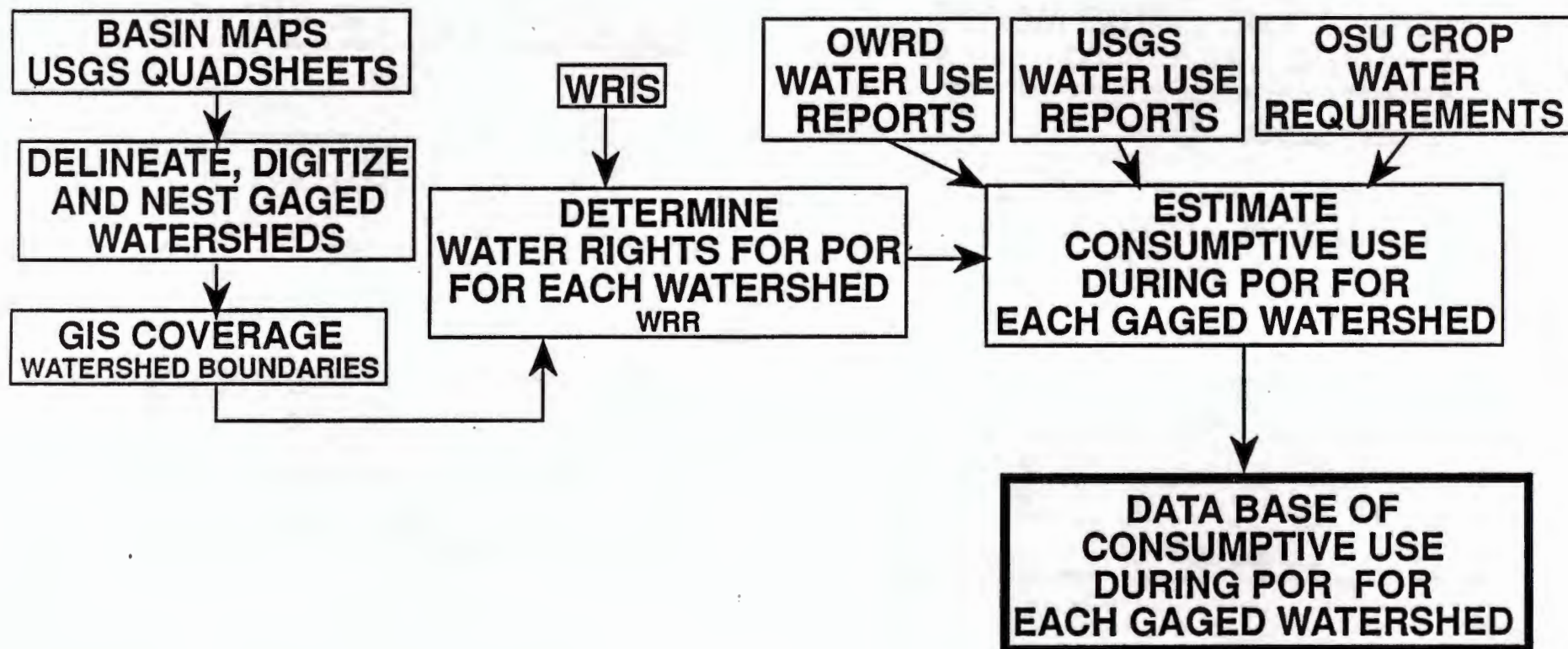
Gage 14301500

Comparison of Flow Duration Curves



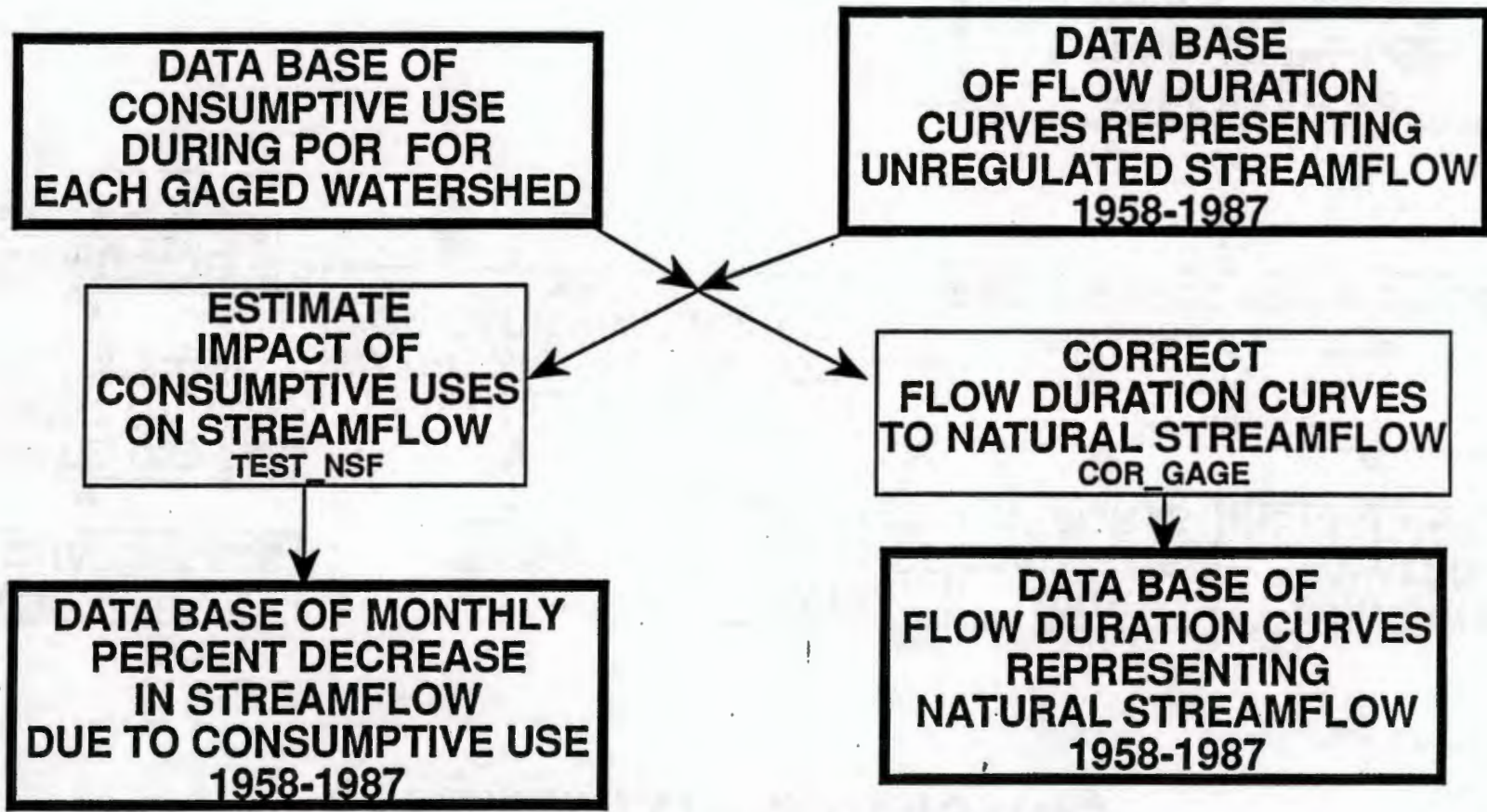
WATER AVAILABILITY METHODOLOGY

STREAMFLOW STATISTICS



WATER AVAILABILITY METHODOLOGY

STREAMFLOW STATISTICS



Impact of Consumptive Use on Streamflow

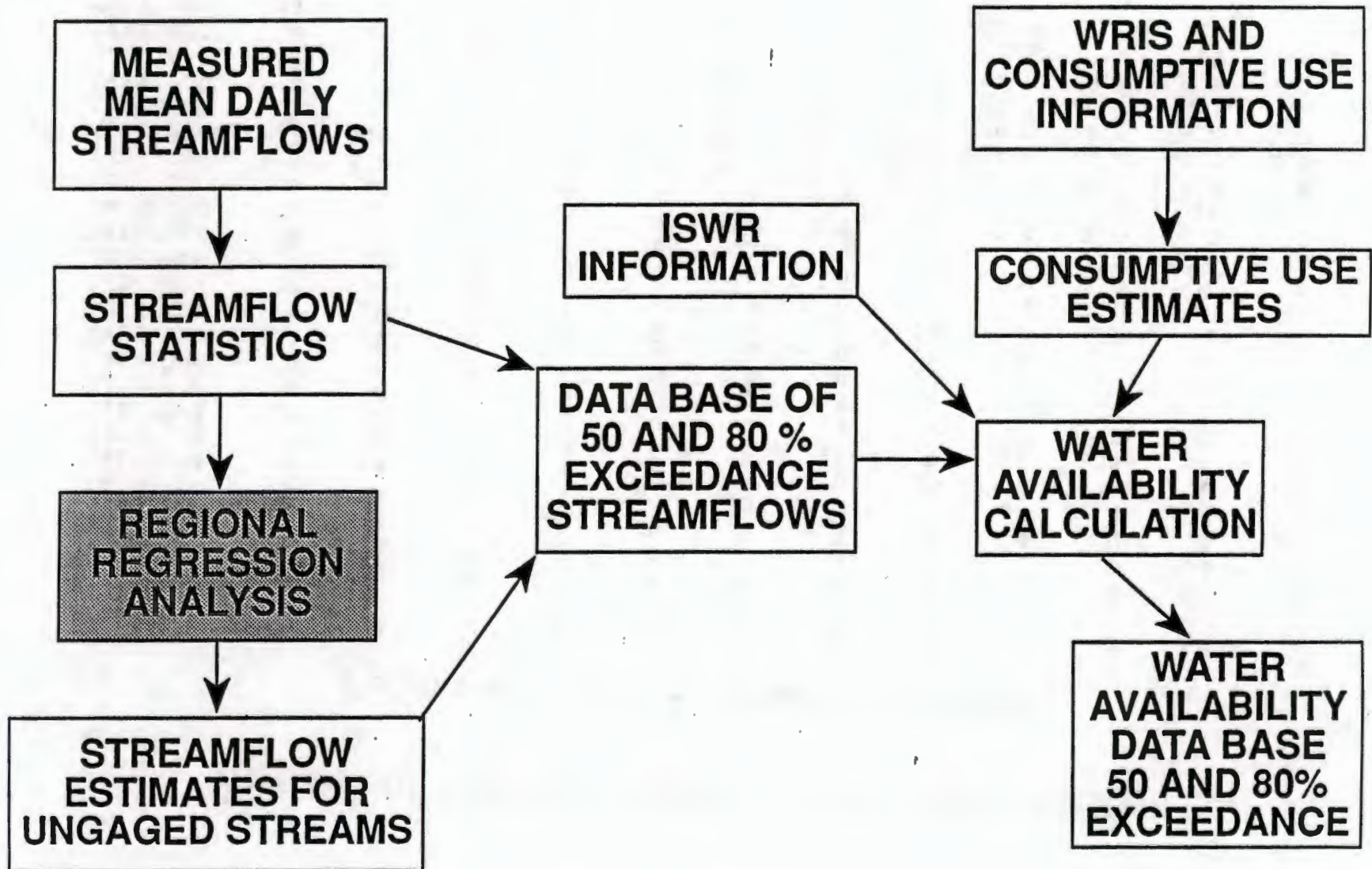
Percent of Natural Streamflow Consumed

| Gage # | J | F | M | A | M | J | J | A | S | O | N | D |
|----------|-----|-----|-----|-----|-----|------|------|-------|-------|------|-----|-----|
| 14158500 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14158700 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14158790 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14158930 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14159000 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14159100 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14159200 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14159500 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14161000 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14161100 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14161500 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14162000 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14162500 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 | .0 |
| 14163000 | .0 | .0 | .0 | .0 | .0 | .1 | .3 | .4 | .3 | .1 | .0 | .0 |
| 14165000 | .1 | .1 | .1 | .2 | .9 | 2.8 | 9.5 | 13.7 | 7.9 | 2.0 | .5 | .1 |
| 14165500 | .3 | .3 | .3 | .4 | .6 | 1.1 | 2.0 | 2.2 | 1.7 | 1.1 | .6 | .4 |
| 14166500 | 2.0 | 1.6 | 1.7 | 2.6 | 5.6 | 12.6 | 33.2 | 43.6 | 33.9 | 19.8 | 8.8 | 3.0 |
| 14167000 | 1.1 | 1.2 | .2 | .6 | 4.3 | 24.8 | 96.9 | 100.0 | 100.0 | 72.2 | 4.3 | 1.3 |
| 14170000 | .3 | .3 | .4 | .6 | 1.4 | 3.8 | 15.2 | 20.3 | 20.5 | 11.3 | 5.1 | .7 |
| 14171000 | .2 | .1 | .2 | .3 | 1.5 | 5.3 | 21.2 | 29.6 | 19.3 | 4.4 | 1.1 | .2 |
| 14171500 | .1 | .1 | .1 | .5 | 4.7 | 17.2 | 57.6 | 77.1 | 52.6 | 5.6 | .9 | .2 |
| 14172000 | .0 | .0 | .0 | .0 | .2 | .6 | 2.0 | 2.5 | 1.5 | .4 | .1 | .0 |
| 14173500 | .0 | .0 | .0 | .0 | .9 | 3.7 | 14.7 | 22.2 | 12.6 | .3 | .1 | .0 |

$$\% \text{ Impact} = 100\{\text{CU}/(\text{CU} + \text{Streamflow})\}$$

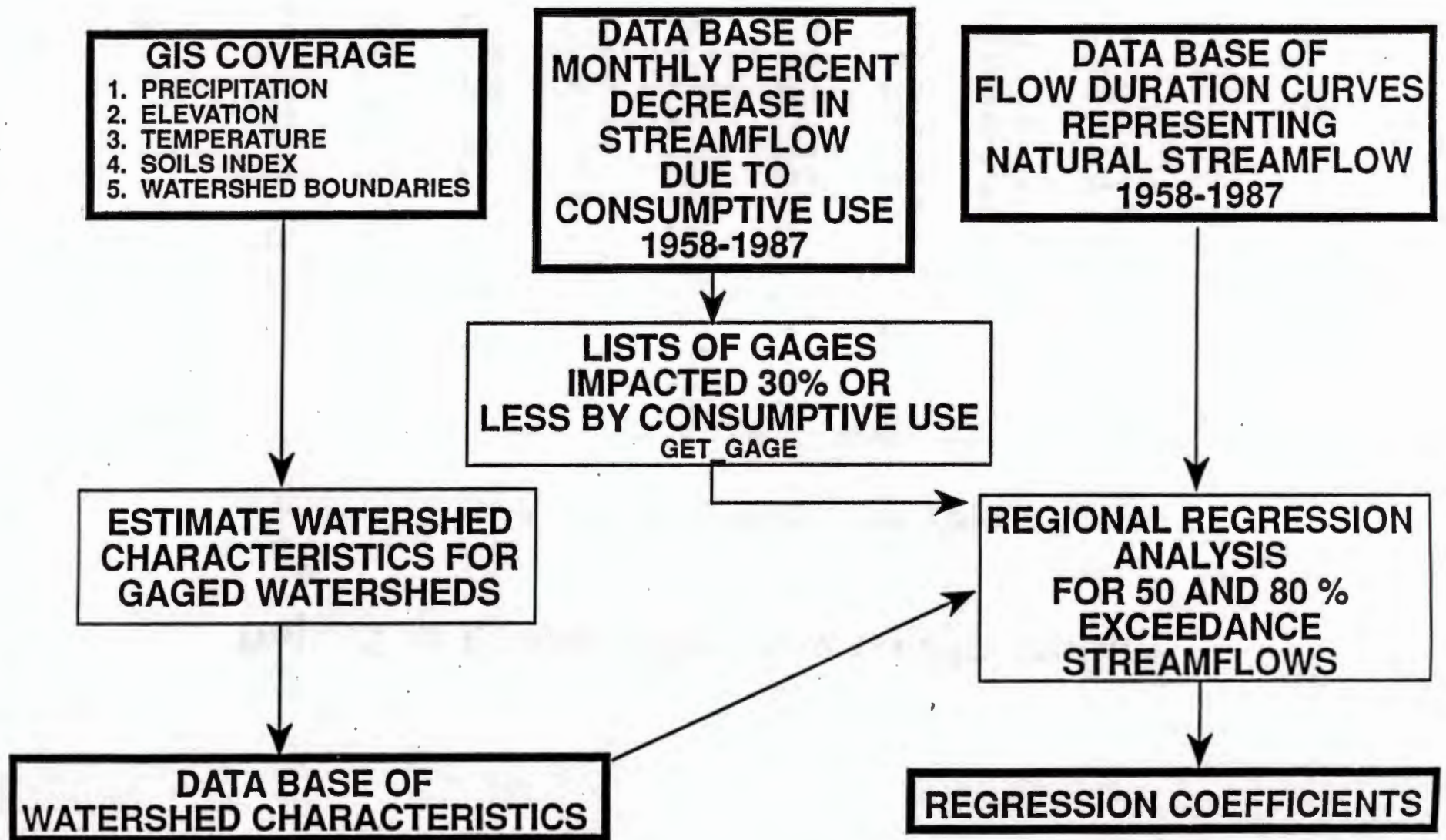
WATER AVAILABILITY METHODOLOGY

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WATER AVAILABILITY METHODOLOGY

REGIONAL REGRESSION ANALYSIS

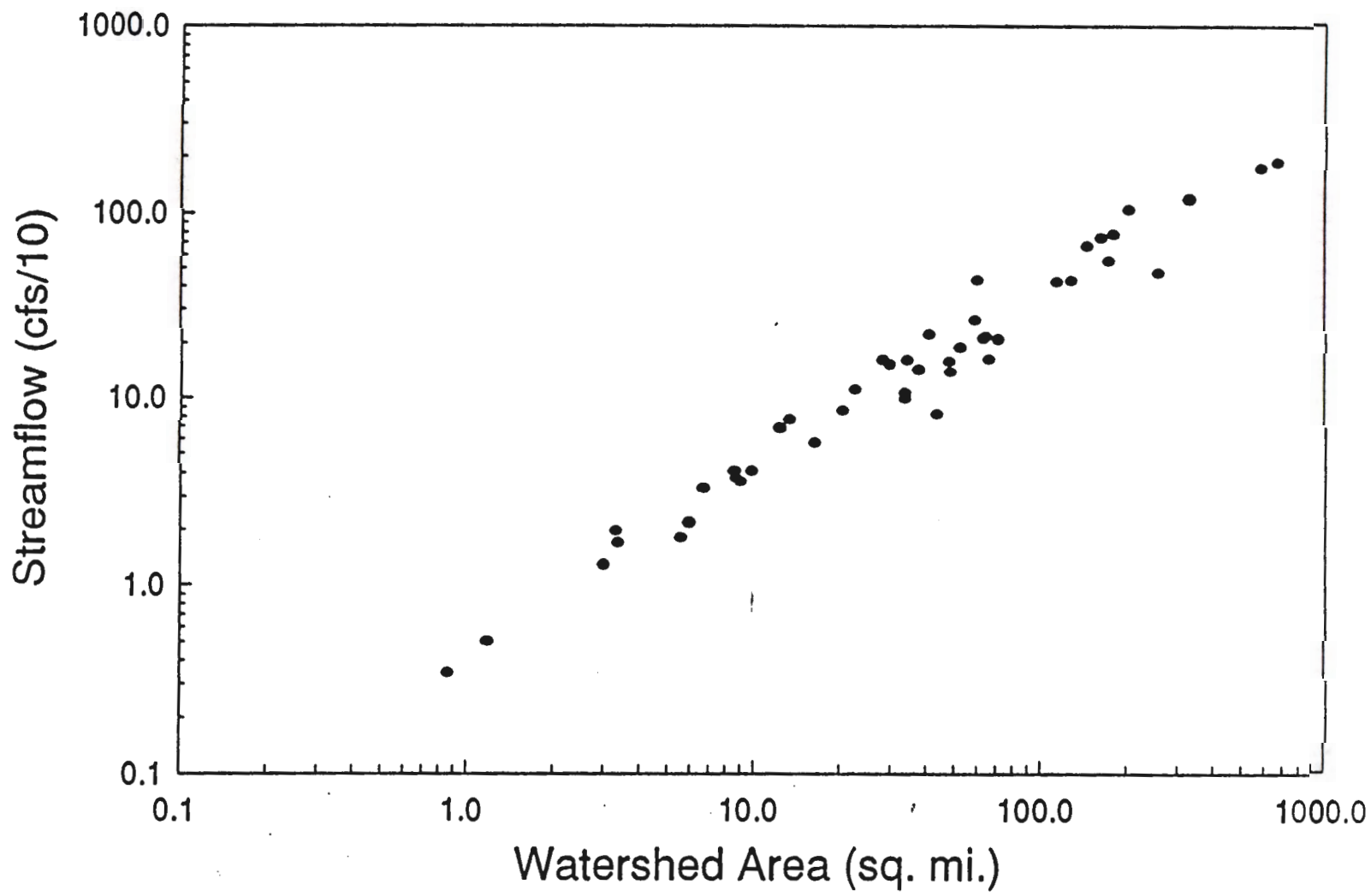


Regional Regression Analysis

- **The analysis is based on the assumption that streamflow is related in some way to various basin characteristics.**
- **For example, a large watershed produces more streamflow than a small one, other factors like precipitation being equal.**
- **Similar relationships exist between streamflow and other characteristics.**
- **This methodology considers 31 watershed characteristics.**
- **Reference: Thomas, D.M. and Benson, M.A. 1969. Generalization of streamflow characteristics from drainage watershed characteristics. Open file report, U.S. Geological Survey. 45 p.**

Regional Regression Analysis

The Relationship Between Streamflow and Watershed Area



Watershed Characteristics

1. Longitude of the watershed centroid
2. Latitude of the watershed centroid
3. Watershed area
4. Length of the watershed perimeter
5. Percent of lakes and ponds by area
6. Underlying rock hydraulic conductivity index
7. Underlying rock porosity index
8. Underlying rock hydraulic conductivity/porosity index
9. Average soils index
10. Maximum watershed relief
11. Mean watershed slope
12. Mean slope aspect
13. Percent of the watershed above 3000 feet
14. Percent of the watershed above 4000 feet
15. Percent of the watershed above 5000 feet
16. Percent of the watershed above 6000 feet
17. Mean annual precipitation
18. Mean annual minimum temperature
19. Mean January minimum temperature
20. Mean February minimum temperature
21. Mean March minimum temperature
22. Mean April minimum temperature
23. Mean May minimum temperature
24. Mean June minimum temperature
25. Mean July minimum temperature
26. Mean August minimum temperature
27. Mean September minimum temperature
28. Mean October minimum temperature
29. Mean November minimum temperature
30. Mean December minimum temperature
31. Percent forest cover

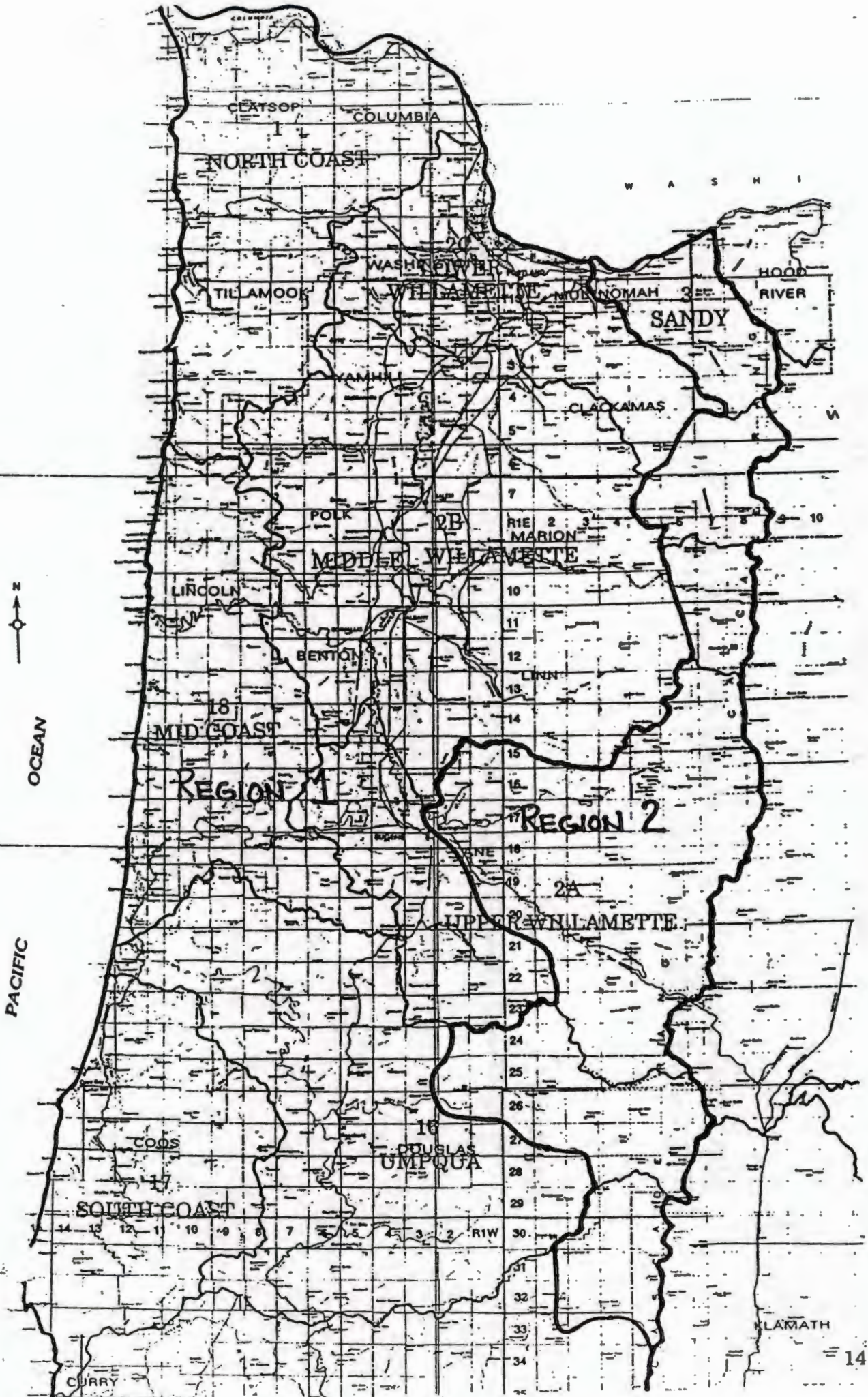
Regional Regression Analysis

- The relationships between streamflow and watershed characteristics can be formulated mathematically.
- **Example:**
Regression equation for January for Oregon West of the Cascades,

$$Q_{NSF} = \exp(-32.24)A^{1.02} P^{1.26} L^{7.00} T^{0.55}$$

where

A = Watershed Area
P = Mean Annual Precipitation
L = Latitude of Basin Centroid
T = Mean Minimum January Temperature



Regional Regression Analysis

- **Developed a computer program in house to do the regional regression analysis.**
- **Capacities:**
 1. **50 watershed characteristics (independent variables).**
 2. **260 gages (dependent variable).**
- **Features:**
 1. **Forward and backward step options to optimize the regression analysis (i.e., minimize the standard error).**
 2. **Error analysis.**
 3. **Screen plots for:**
 - a. **Watershed characteristics.**
 - b. **Error functions (e.g., residuals, leverage).**
- **Reference: Press, W.H., Flannery, B.P., Teukolsy, S.A., and Vetterling, W.T. 1986. Numerical Recipes - The Art of Scientific Computing. Cambridge University Press, New York.**

Regional Regression Analysis

Watershed Characteristics Used for Region 1 - 50% Exceedance

| | J | F | M | A | M | J | J | A | S | O | N | D |
|----------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude | √ | √ | √ | √ | | | √ | √ | √ | √ | √ | √ |
| Longitude | | | | | √ | √ | √ | √ | | | | |
| Area | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Relief | | | | | | | | | | | | |
| Slope | | | | | | | | | | | | |
| Aspect | | | | | | √ | √ | √ | √ | √ | √ | |
| Elevation | | | | | | | | | | | | |
| Precipitation | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ | √ |
| Jan Temp | √ | √ | | √ | √ | √ | √ | √ | √ | | √ | √ |
| Jul Temp | | | | | | √ | √ | √ | √ | √ | √ | |

Regional Regression Analysis

Goodness of Fit and Error Checking

- Residuals (e)

$$e_i = y_{\text{est}_i} - y_i$$

- Standard Error (SE)

SE = s_e , the standard deviation of the residuals, e_i .

- Standardized Residuals (es)

$$es_i = (e_i - \bar{e})/s_e$$

so that $E(es) = 0.0$ and $\text{Var}(es) = 1.0$

- Percent Standard Error (%SE)

The coefficient of variation of the residuals.

$$\%SE = 100(SE/\bar{e})$$

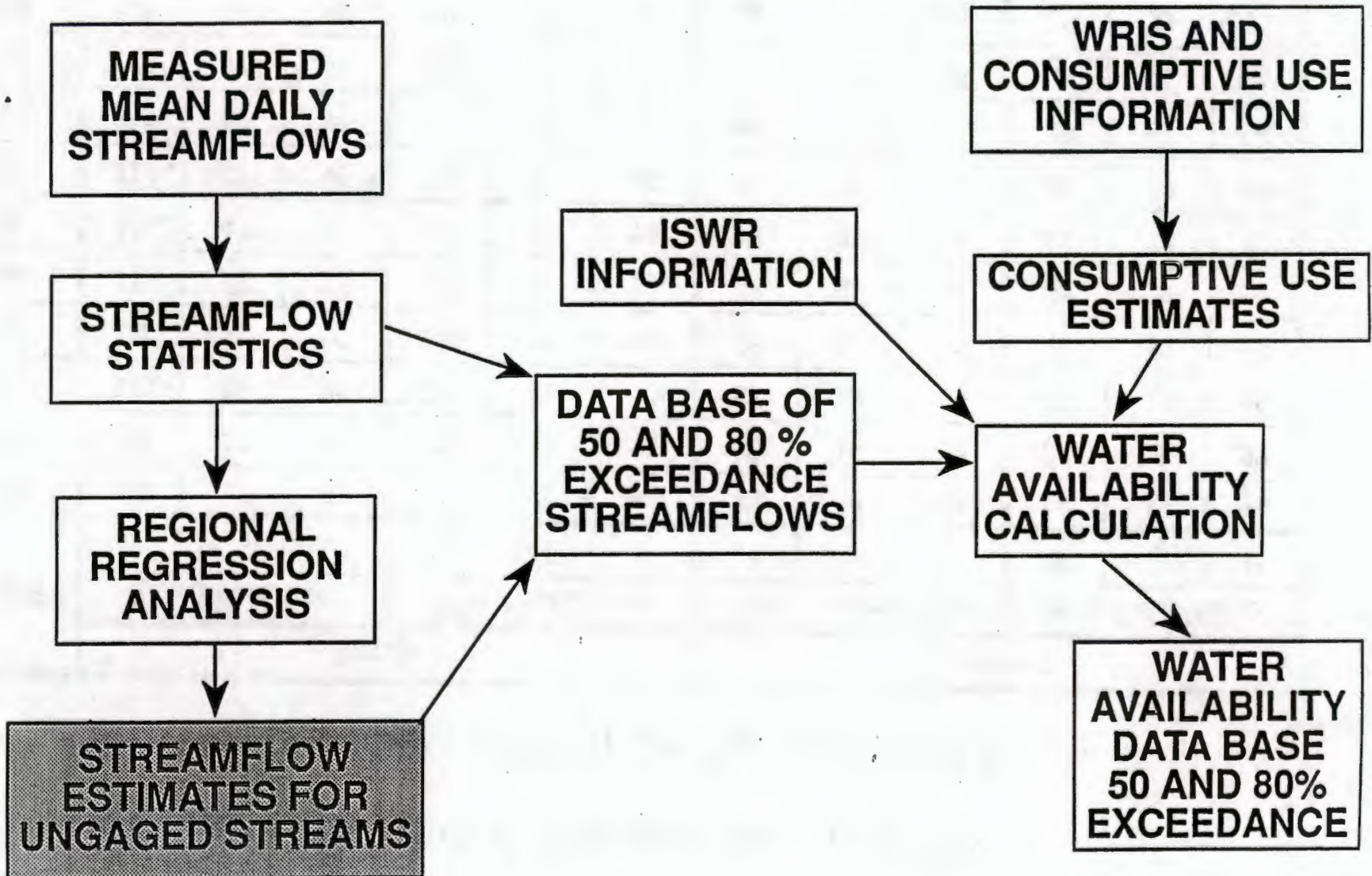
Regional Regression Analysis

Goodness of Fit for the Regression Models

| Month | Region 1 | | | | | | Region 2 | | | | | |
|-------|----------------|------|----------------|----------------|------|----------------|----------------|------|----------------|----------------|------|----------------|
| | 80% Exceedance | | | 50% Exceedance | | | 80% Exceedance | | | 50% Exceedance | | |
| | N | % SE | r ² | N | % SE | r ² | N | % SE | r ² | N | % SE | r ² |
| Jan | 248 | 31 | 97 | 248 | 25 | 98 | 88 | 20 | 99 | 88 | 16 | 99 |
| Feb | 248 | 27 | 97 | 248 | 23 | 98 | 88 | 19 | 99 | 88 | 15 | 99 |
| Mar | 248 | 26 | 98 | 248 | 22 | 98 | 88 | 18 | 99 | 88 | 16 | 99 |
| Apr | 248 | 31 | 97 | 248 | 28 | 97 | 88 | 17 | 99 | 88 | 17 | 99 |
| May | 246 | 38 | 96 | 248 | 36 | 96 | 88 | 22 | 98 | 88 | 20 | 99 |
| Jun | 244 | 43 | 95 | 245 | 36 | 96 | 88 | 27 | 98 | 88 | 23 | 98 |
| Jul | 214 | 57 | 95 | 228 | 47 | 95 | 88 | 38 | 96 | 88 | 33 | 97 |
| Aug | 205 | 67 | 91 | 215 | 56 | 93 | 88 | 45 | 96 | 88 | 41 | 96 |
| Sep | 219 | 67 | 91 | 230 | 59 | 93 | 88 | 46 | 95 | 88 | 42 | 96 |
| Oct | 248 | 61 | 87 | 246 | 57 | 92 | 88 | 42 | 96 | 88 | 33 | 97 |
| Nov | 248 | 49 | 94 | 248 | 41 | 95 | 88 | 27 | 98 | 88 | 23 | 98 |
| Dec | 248 | 34 | 96 | 248 | 27 | 97 | 88 | 21 | 98 | 88 | 16 | 99 |

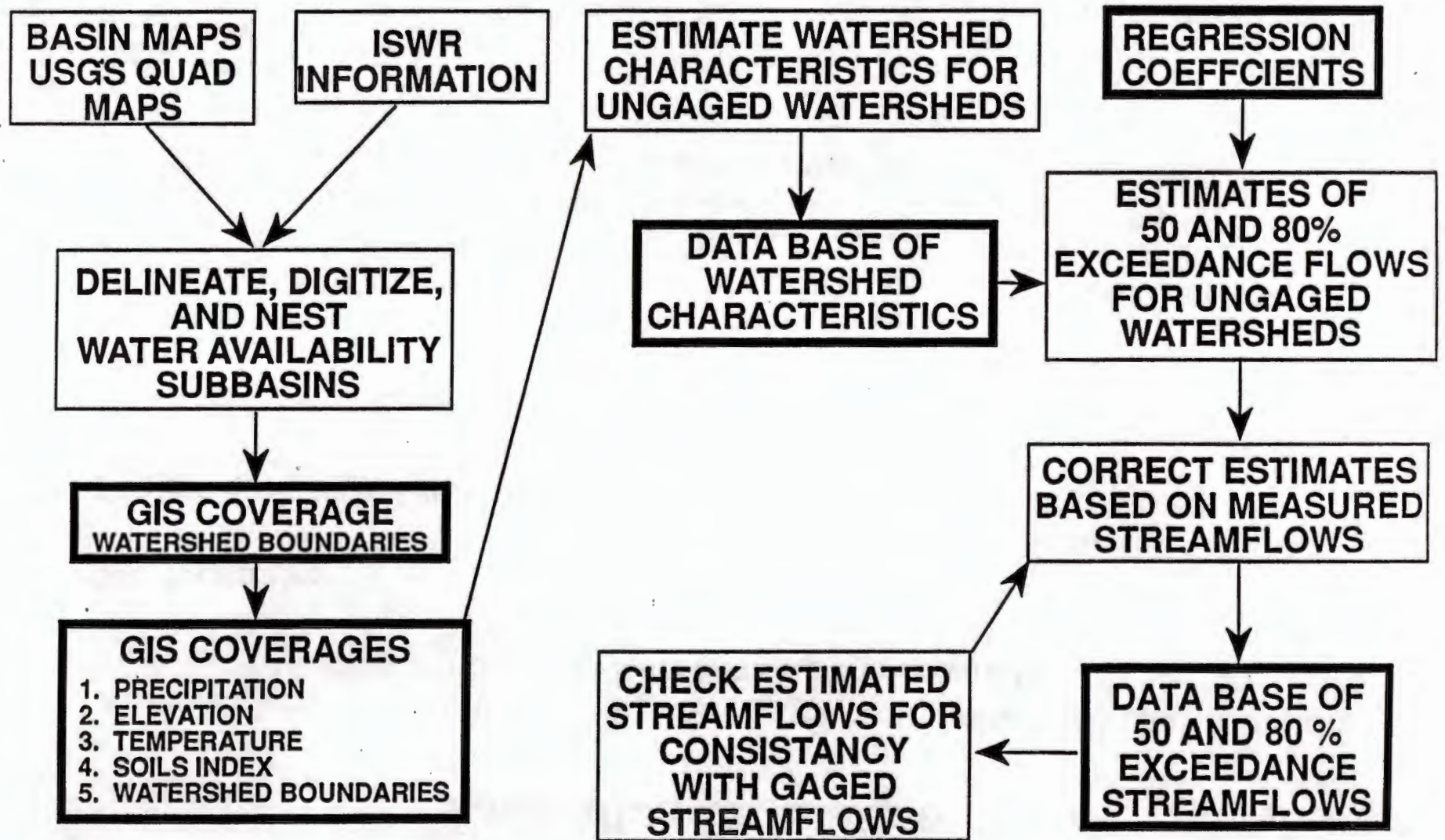
WATER AVAILABILITY METHODOLOGY

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WATER AVAILABILITY METHODOLOGY

STREAMFLOW ESTIMATES



Estimating Streamflow

- A streamflow estimate is made by inserting known watershed characteristics into the regression equation and performing the calculation.
- For Example:

Ecola Creek near Cannon Beach,

$$Q_{NSF} = \exp(-32.24)A^{1.02} P^{1.26} L^{7.00} T^{0.55}$$

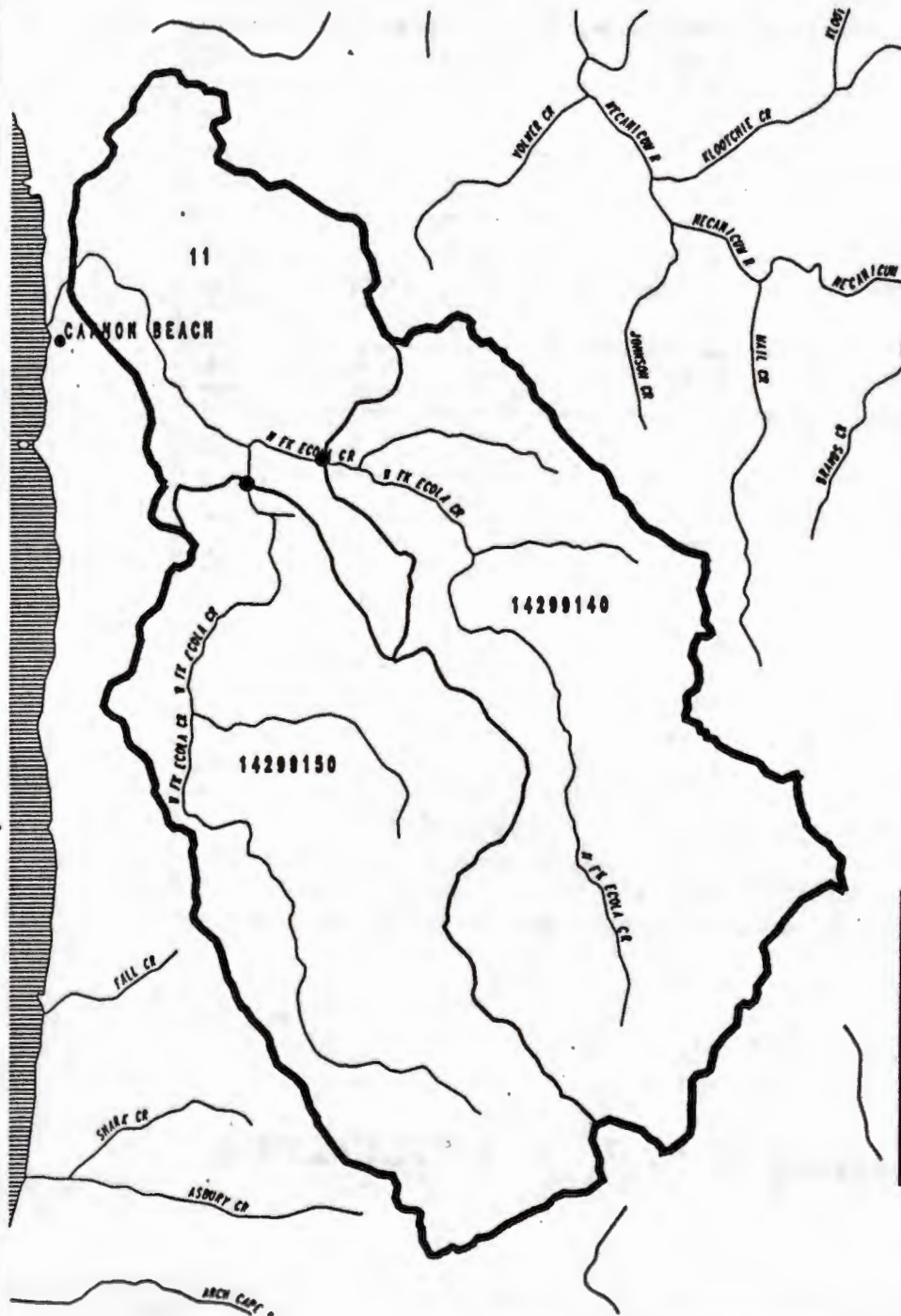
where

| | | | | |
|---|---|----------------------------------|---|---------------|
| A | = | Watershed Area | = | 21.15 sq. mi. |
| P | = | Mean Annual Precipitation | = | 124.14 in. |
| L | = | Latitude of Basin Centroid | = | 45.86 °N |
| T | = | Mean Minimum January Temperature | = | 28.37 °F |

Substituting

$$\begin{aligned} Q_{NSF} &= \exp(-32.24)(21.15)^{1.02} (124.14)^{1.26} (45.86)^{7.00} (28.37)^{0.55} \\ &= 266 \text{ cfs} \end{aligned}$$

CORRECTION OF MODEL ESTIMATES WITH GAGED STREAMFLOW AN EXAMPLE: ECOLA CREEK



| Waterhshed | Area (sq. mi) | Precipitation (in) |
|------------|---------------|--------------------|
| 11 | 21.15 | 124.14 |
| 14299140 | 8.63 | 129.74 |
| 14299150 | 8.29 | 129.66 |

Area Ratio = $21.15 / (8.63 + 8.29) = 1.25$

Correction of Model Estimates with Gaged Streamflow

An Example: Ecola Creek

| Month | Measured Streamflow | | | Modeled Streamflow | | |
|-------|---------------------|----------|------|--------------------|----------|------|
| | 142991400 | 14299150 | Sum1 | 14299140 | 14299150 | Sum2 |
| Jan | 82.2 | 71.1 | 153 | 110 | 107 | 217 |
| Feb | 88.2 | 80.0 | 168 | 103 | 99.8 | 203 |
| Mar | 67.3 | 64.3 | 132 | 82.4 | 79.1 | 162 |
| Apr | 38.1 | 38.7 | 76.8 | 59.2 | 55.4 | 115 |
| May | 25.7 | 24.2 | 49.9 | 35.1 | 31.8 | 66.9 |
| Jun | 15.0 | 19.1 | 34.1 | 15.3 | 15.5 | 30.8 |
| Jul | 8.1 | 12.0 | 20.1 | 9.4 | 9.9 | 19.3 |
| Aug | 5.8 | 9.5 | 15.3 | 6.2 | 6.6 | 12.8 |
| Sep | 7.8 | 9.9 | 17.7 | 8.6 | 8.5 | 17.1 |
| Oct | 17.6 | 14.3 | 31.9 | 15.3 | 14.9 | 30.2 |
| Nov | 61.4 | 65.2 | 127 | 87.8 | 85.0 | 173 |
| Dec | 89.1 | 89.5 | 179 | 119 | 115 | 234 |

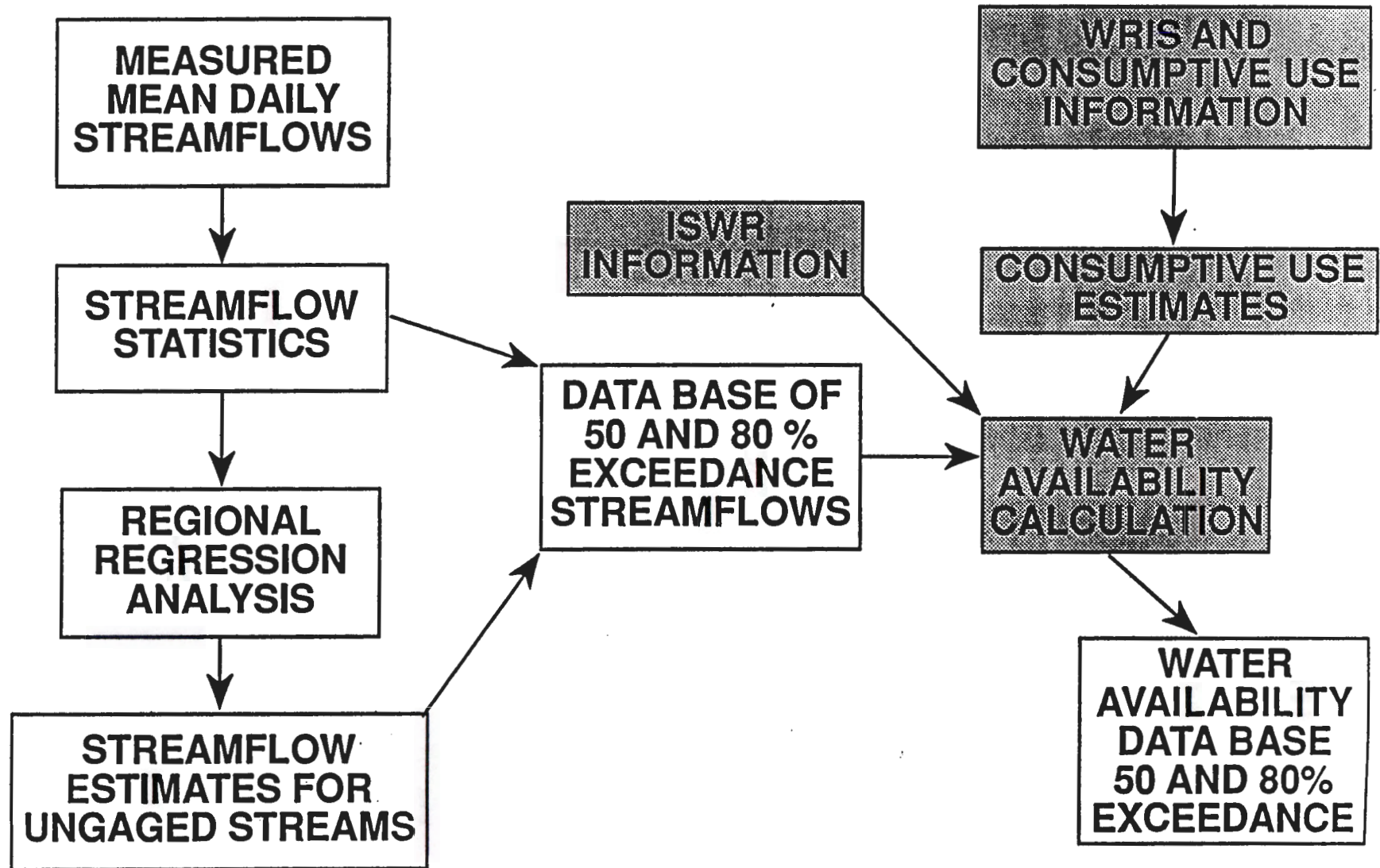
Correction of Model Estimates with Gaged Streamflow

An Example: Ecola Creek

| Month | Ratio Sum1 to Sum2 | Modeled 11 | Corrected 11 | Sum1 x 1.25 |
|-------|--------------------------|------------|--------------|----------------|
| Jan | 0.705 | 266 | 188 | 191 |
| Feb | 0.828 | 247 | 205 | 210 |
| Mar | 0.815 | 193 | 157 | 165 |
| Apr | 0.668 | 134 | 89.5 | 96.0 |
| May | 0.746 | 76.0 | 56.7 | 62.4 |
| Jun | 1.107 | 36.2 | 40.1 | 42.6 |
| Jul | 1.041 | 23.4 | 24.4 | 25.1 |
| Aug | 1.195 | 15.8 | 18.9 | 19.1 |
| Sep | 1.035 | 20.7 | 21.4 | 22.1 |
| Oct | 1.056 | 35.8 | 37.8 | 39.9 |
| Nov | 0.734 | 204 | 150 | 159 |
| Dec | 0.765 | 287 | 220 | 224 |

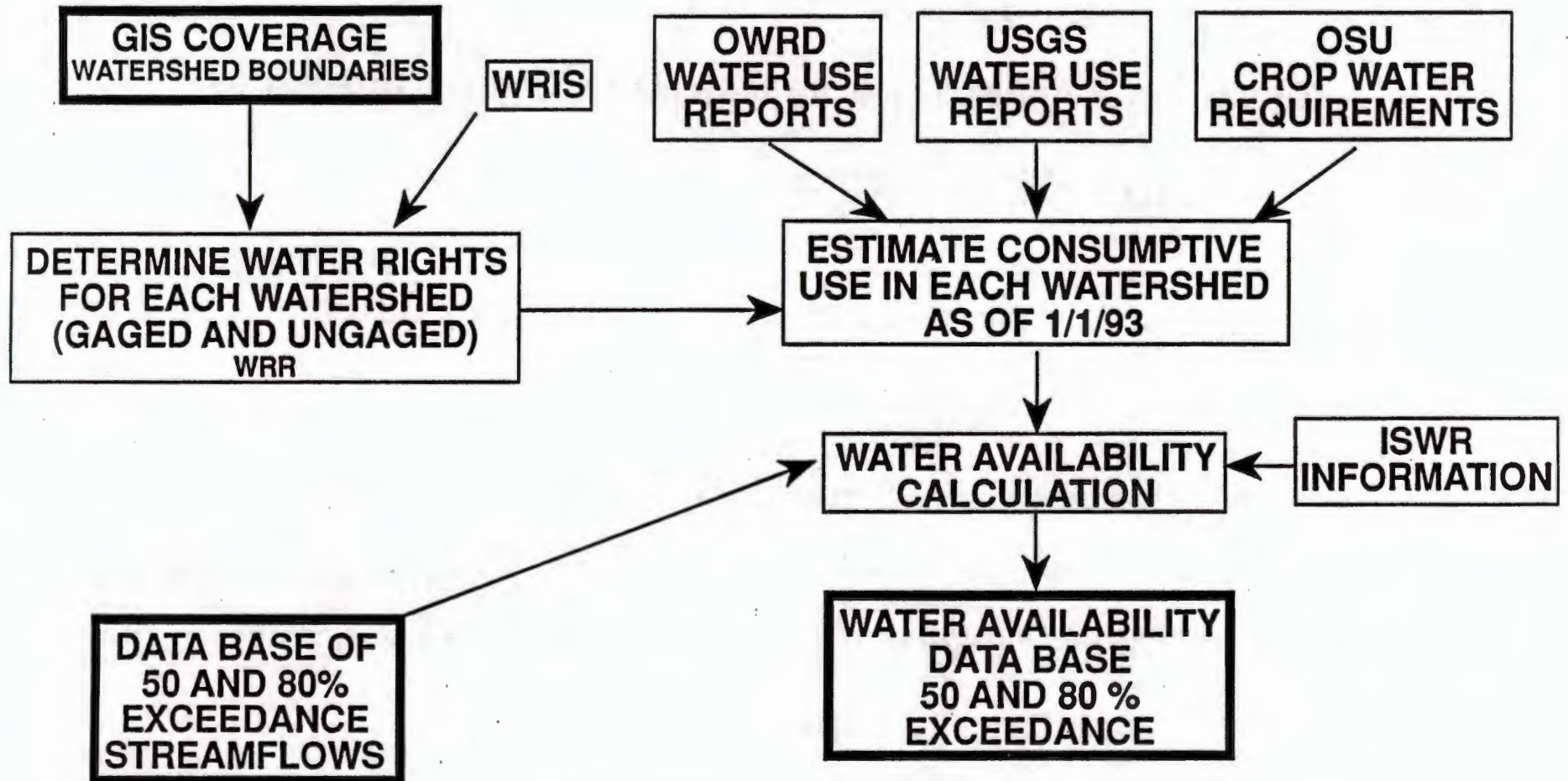
WATER AVAILABILITY METHODOLOGY

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WATER AVAILABILITY METHODOLOGY

WATER AVAILABILITY CALCULATION



Actual Water Availability Calculations

Water is available when WA is *positive*.

The calculation depends on the information available to estimate the 80 percent exceedance streamflow.

1. From measured streamflow representing natural streamflow.

$$WA = Q_{NSF} - ISWR$$

2. From measured streamflow representing streamflow impacted by withdrawals.

$$Q_{NET} = \text{Net Streamflow} = Q_{NSF} - CU$$

The water availability calculation for net streamflow is given by

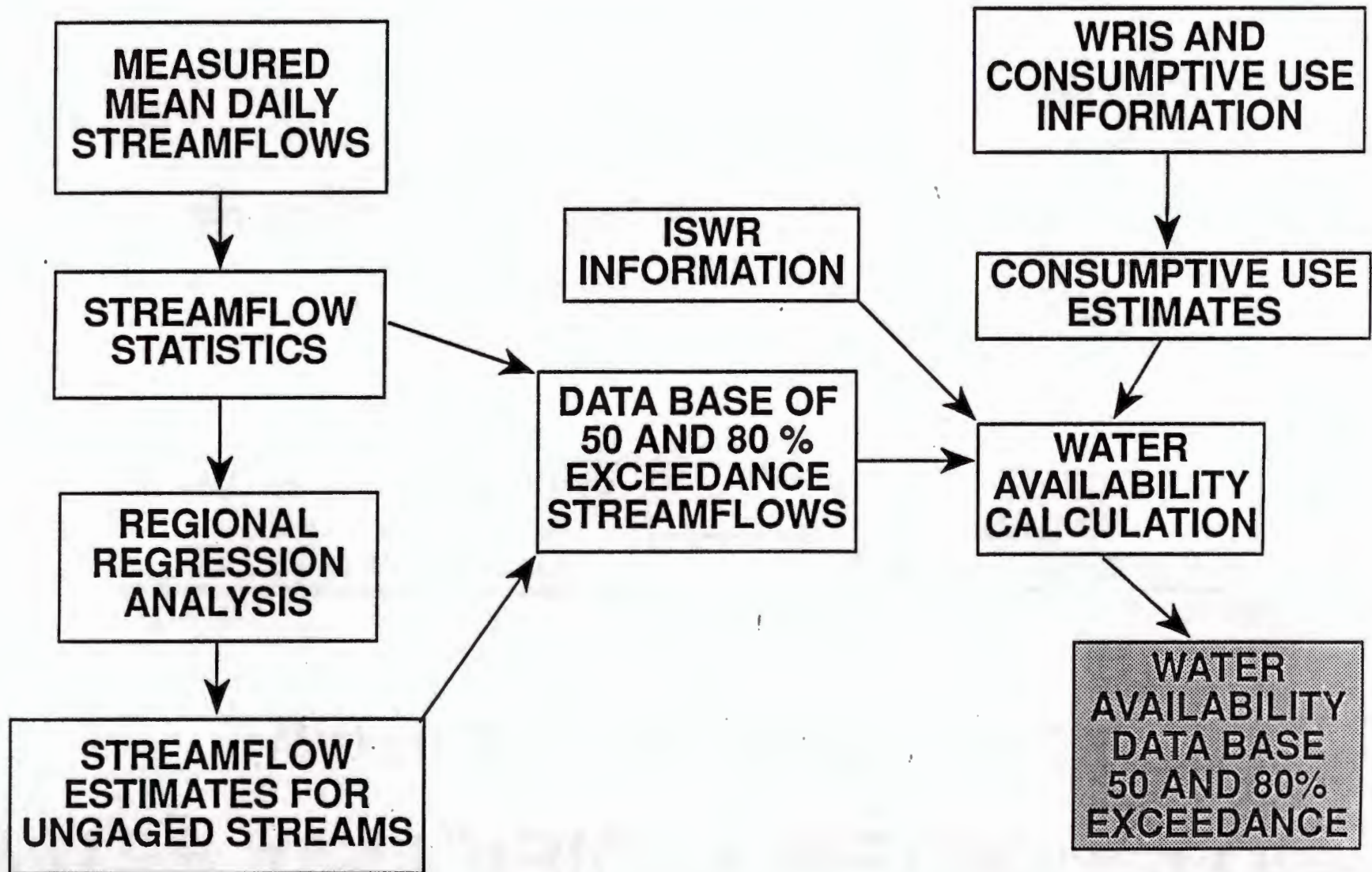
$$WA = Q_{NET} - ISWR$$

3. From a regression model representing natural streamflow.

$$WA = Q_{NSF} - CU - ISWR$$

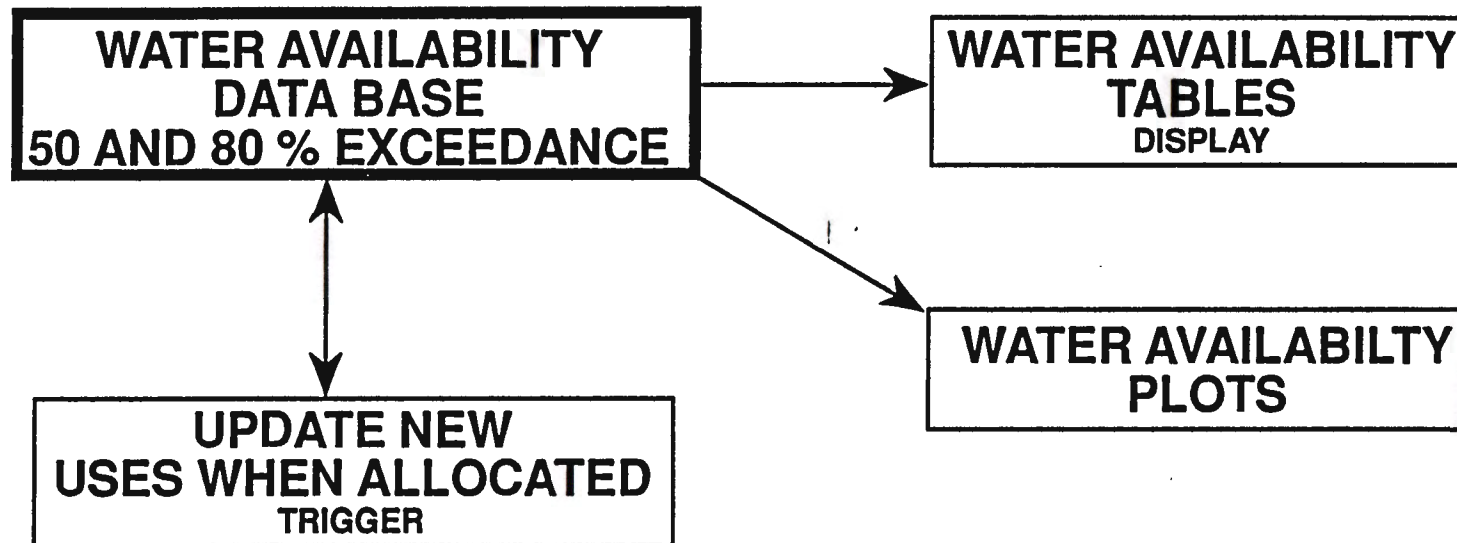
WATER AVAILABILITY METHODOLOGY

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WATER AVAILABILITY METHODOLOGY

WATER AVAILABILITY DATA BASE



Uncertainty of Water Availability Estimates

- Water availability cannot be estimated precisely. The *true* water availability and therefore the error of an estimate are unknown.
- The methodology is designed so that the average error over lots of estimates is zero.

Half the errors are positive (overestimates).

Half the errors are negative (underestimates).

Uncertainty of Water Availability Estimates

- **Implications for the stated objective of allocating water on an 80 percent exceedance standard:**
 1. **On average the 80 percent exceedance standard is met.**
 2. **Where water availability is underestimated, the estimate reflects a stricter standard, say 90 or 95 percent exceedance.**
 3. **Where water availability is overestimated, the estimate reflects a less strict standard, say 60 or 70 percent exceedance.**

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MEMO

January 25, 1994

To: Water Availability File

From: Barry Norris

Re: Consumptive Use Outline

This document is a series of slides and handouts that were presented to a peer review committee on november 15, 1993. The committee was established at the request of the Water Resources Commission, and was asked to give staff a technical assessment of the project to date. This document provides an update of consumptive use procedures from those described in document #1.

Fvh 2.E

Consumptive Use Outline

1. **Consumptive Use Defined**
2. **Uses Considered (Uses Not Considered)**
3. **Rights of Record vs. Actual Use**
4. **Data Availability**
5. **Overview of the Process**
 - **Natural Streamflow & Water Availability**
6. **Consumptive Use Estimate Specifics**

Consumptive Water Uses

Water uses that cause a net reduction in streamflow. Water generally is lost to evaporation, transpiration, or is transferred out of basin.

Uses Considered:

Municipal

Irrigation

Industrial

Storage

Others (domestic, livestock etc.)

Water Uses Not Considered Consumptive

Water uses that cause no reduction or a negligible reduction in streamflow, or if consumptive, infrequent enough to be negligible.

For example:

- Power**
- Frost Protection**
- Fire Protection**

Rights of Record vs. Actual Use

Actual reduction in streamflow is less than amount allocated by rights of record.

- Withdrawals do not equal allocation (municipal esp.)**
- Withdrawals are rarely 100% consumptive**

No water use data for most categories of water use

Data Available For Estimating Water Use

| | |
|-------------------|----------------------------------------------------------|
| Irrigation | WRIS, USGS, OSU Crop Water Requirements |
| Municipal | WRIS, Water Use Reports, PSU Population Estimates |
| Industrial | WRIS, USGS, 83 Census of Manufacturing |
| Storage | WRIS, Department Files, Rule Curves |
| Others | WRIS, Water Use Coefficient Data |

WRIS = Water Rights Information System

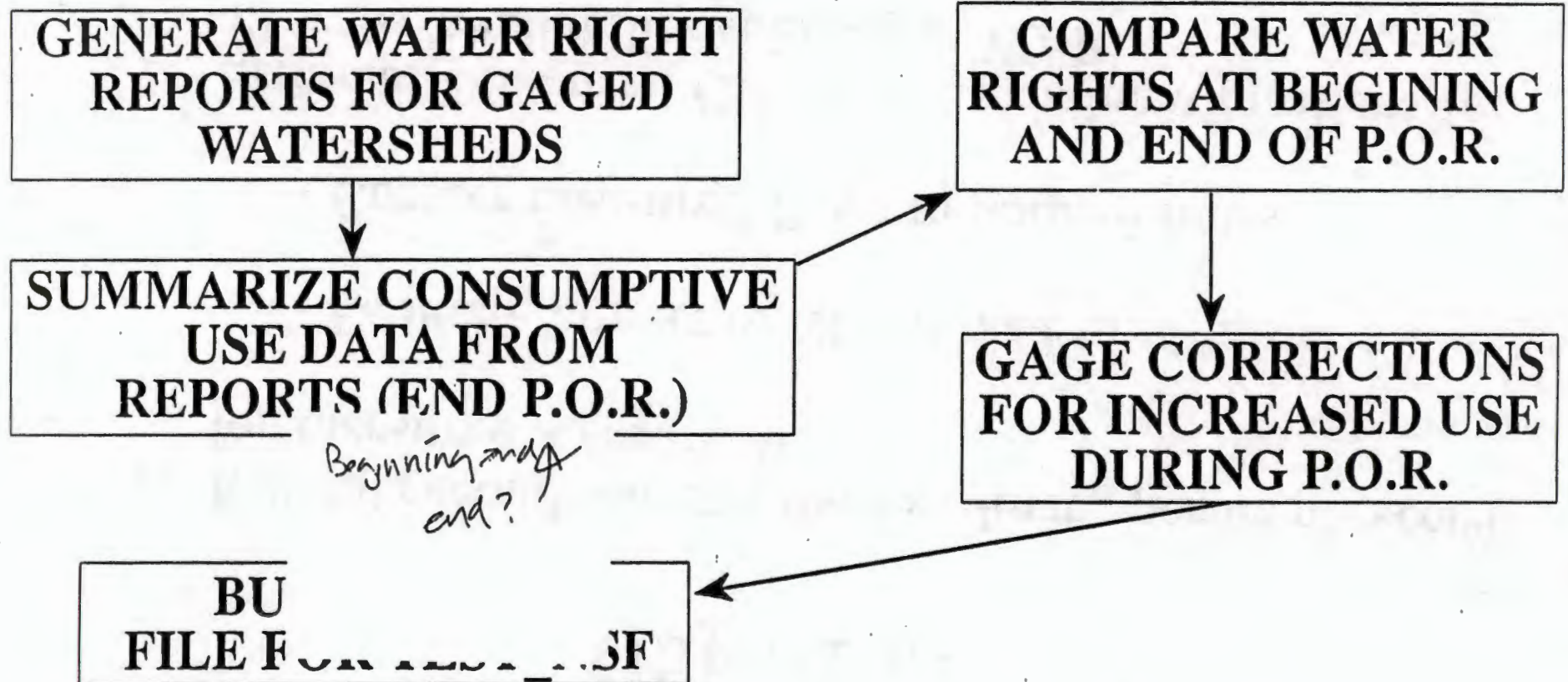
Consumptive Use (CU) Estimate Objectives

- 1. Estimate actual consumptive use during period of record for measured streamflow.**
 - Estimate impact of CU on measured flows**
 - Correct measured flows to natural flows**

- 2. Estimate "potential CU" under existing allocations for all water availability subbasins (WAB).**
 - What is the likely impact of current allocations**
 - Some uses could increase under existing allocations**
 - Determine water available for new allocations**

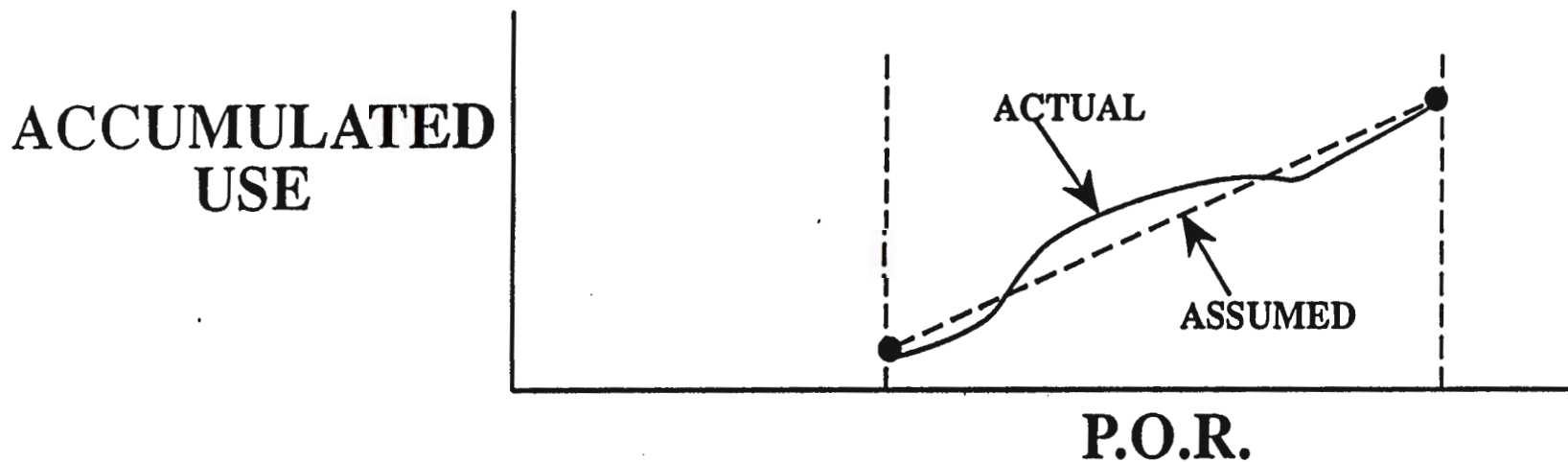
CONSUMPTIVE USE ESTIMATES

ESTIMATING ACTUAL USE



GAGE CORRECTIONS

-WATER USE INCREASES DURING P.O.R.



-CU AT END OF P.O.R. IS AN OVERESTIMATE

-ASSUME LINEAR INCREASE OVER P.O.R. AND CORRECT

CONSUMPTIVE USE ESTIMATES

ESTIMATING POTENTIAL WATER USE

**GENERATE WATER RIGHT
REPORTS FOR
WATER AVAILABILITY
SUBBASINS (WAB)**

```
graph TD; A[GENERATE WATER RIGHT REPORTS FOR WATER AVAILABILITY SUBBASINS (WAB)] --> B[SUMMARIZE CONSUMPTIVE USE DATA FROM REPORTS (1/1/1840 TO 12/31/92)]; B --> C[BUILD INPUT FILE FOR GET_WA];
```

**SUMMARIZE CONSUMPTIVE
USE DATA FROM REPORTS
(1/1/1840 TO 12/31/92)**

BUILD INPUT FILE FOR GET_WA

Municipal Consumptive Use

Issues: Rights of record overestimate actual use

**Municipal preferences
(ORS 540.610)**

- Reserved water**
- Non-cancellation**

Data Sources:

- WRIS**
- Water Use Reports (1989)**
- PSU Population Data**

Municipal Consumptive Use Estimate

Actual Use Estimate

- **Water use reports (actual use)**
- **Phone contact (start dates, end dates etc.)**
- **PSU population data (per capita consumption)**
- **Gage corrections for increased population over POR**
- **Determine use coefficient**

Municipal Consumptive Use Estimate

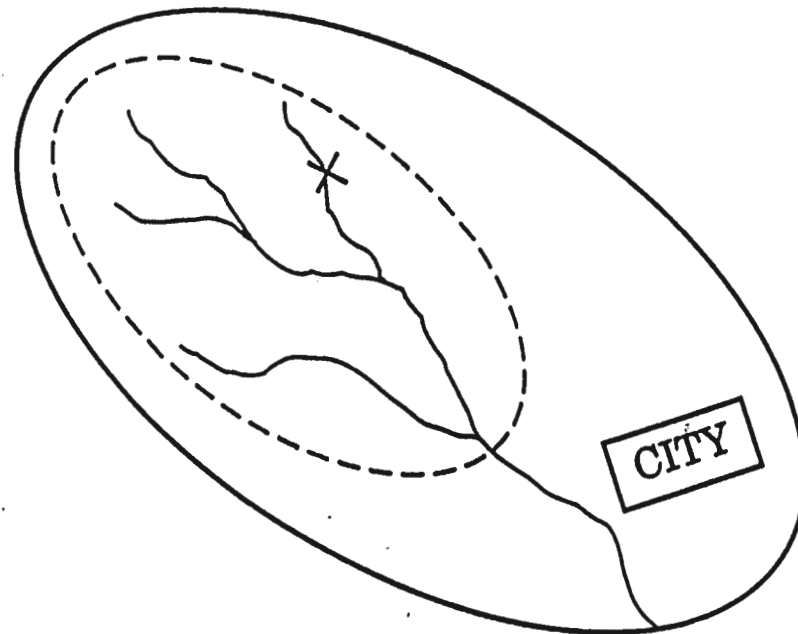
Potential Use Estimate

- 1. Identify municipal rights that are "on" - developed systems that are currently used or periodically used**
 - 2. Identify municipal rights that are "off" - undeveloped, abandoned, no infrastructure**
 - 3. Take face value of "on" rights (consider return flow)**
- Do not consider "off" rights**

Municipal Water Use Coefficient

Three Possibilities

- Summer
- Winter
- 100% Consumed (out of water availability basin)



Municipal Water Use Coefficient

Break state west of the Cascades into three climate regions

For each region gather:

- 1. Water use information**
 - 2. Discharge monitoring reports (DMR)**
- Coastal Areas (7 municipalities)**
 - Willamette Valley (6 municipalities)**
 - Southwest Region (5 municipalities)**

Municipal Water Use Coefficient

Winter months (Oct-Mar):

Sewer leakage & combined flows prevented the calculation of winter water use coefficients

Assumed generally accepted coefficients

Summer months (Jun- Sept):

CU Coeff. = [water withdrawn - DMR] / water withdrawn

| | SUMMER | WINTER |
|-----------|--------|--------|
| Coast | 0.15 | 0.10 |
| Valley | 0.45 | 0.15 |
| Southwest | 0.64 | 0.15 |

Irrigation Consumptive Use Estimates

Rights of record do not represent actual use

- Non-use of water rights**
- Normal agricultural practices**
 - crop rotations**
 - fallow fields**
- Changing land use patterns**

Irrigation Consumptive Use Estimates

Method identical for actual use and potential use estimates

- Assume it is not likely for use to increase under existing allocations**

Data Sources:

USGS - Estimated Water Use in the United States, 1990. Unpublished Report.

OSU - Oregon Crop Water Use and Irrigation Requirements. (Cuenca, 1992).

WRIS - Water Rights of Record

USGS Report

Stream Withdrawals by Hydrologic Unit (HUC) =

$$\frac{\text{(irrigated acreage by crop type)} \times \text{(crop water needs)}}{\text{irrigation application efficiency}}$$

Annual Consumptive Use by HUC =

$$\text{(irrigated acreage by crop type)} \times \text{(crop water need)}$$

Assumes water lost through application is returned to the stream

Assume a 15% loss (evaporation) from sprinklers

USGS Annual Consumptive Use

Annual CU = (irrigated acreage by type) x (crop water need)

Crop Water Need:

Modified Blaney-Criddle formula (Cuenca, 1992)

**mean monthly air temp
daylight hours
growing season
humidity**

Assumptions: Irrigators make most efficient use of the water. Crop not limited

USGS Annual Consumptive Use

Irrigated Acreage by Crop Type

- **1987 Census of Agriculture (crop type)**
- **OSU Extension Service (irrigated acres)**
- **USDA**

Irrigation Application

- **OSU Extension Service (application type)**
- **U.S. Dept of Energy (application efficiency)**

Five Steps to Estimate Irrigation CU

Problem : USGS data are for annual consumptive use (CU) for hydrologic units (HUC). We need monthly CU for water availability basins (WAB).

1. **CU per Acre = Annual USGS CU / USGS Acres**

$$1103 \text{ acft} / 1330 \text{ ac} = .829 \text{ acft/ac/yr}$$

2. **"Correction" = USGS HUC Acres / WRIS HUC Acres**

$$\text{USGS} = 1330 \text{ ac} \quad \text{WRIS} = 2065 \text{ ac} \quad \text{Correction} = .64$$

3. **Estimated Actual Acres = WRIS WAB x Correction**

$$1900 \text{ ac (WRIS)} \times .64 \text{ (correction)} = 1274 \text{ "actual" acres}$$

5 Steps to Estimate Irrigation CU (cont.)

4. Annual CU for WAB = Estimated Actual Acres x CU per Acre

$$1274 \text{ ac} \times .829 \text{ acft/ac/yr} = 1056 \text{ acft/yr}$$

5. To get monthly values fit annual CU to crop water requirements over the irrigation season for the region

| MAR | APR | MAY | JUN | JUL | AUG | SEPT | OCT |
|------|------|------|-------|-------|-------|------|------|
| 0.0% | 1.1% | 4.5% | 15.2% | 41.8% | 32.2% | 4.0% | 1.1% |

$$\text{July } 41.8\% = (.418) \times (1056 \text{ acft}) = 441 \text{ acft or aprox } 7 \text{ cfs}$$

Assumptions

USGS data are correct

Correction factor assumes non-use, abandonment, and under-use are homogeneous throughout a HUC

Irrigation is distributed in the theoretical fashion indicated by crop water requirements

Example CU Calculation

Nehalem R WAB =10

HUC = 17100201

Annual CU (USGS) = 1103 acft

WRIS HUC Acres = 2065

USGS HUC Acres = 1330

OSU Crop Region = 1

Irrigation Season = 3 to 10

WAB Acres = 1990

1. $1103 \text{ acft} / 1330 \text{ ac} = .829 \text{ acft/ac/yr}$
2. $1330 / 2065 = .64$ (correction)
3. $1990 \times .64 = 1274$ "actual acres"
4. $1274 \text{ ac} \times .829 \text{ acft/ac} = 1056 \text{ acft/yr}$
5. July = 41.8% of the CU (41.8% of 1056 = 443ac/ft) aprox 7 cfs

Industrial Consumptive Use Estimates

Issues : Rights of Record vs. Actual Use

Data Sources:

WRIS - Industrial and manufacturing water rights

USGS - Unpublished data by name and location

Census - 1982 Census of Manufacturing

8% CU state-wide average

Industrial Consumptive Use Estimates

Method: Apply 10% Use Coefficient to Rights of Record

Assumes that non-consumed water is returned to the same water availability basin (unless other information)

- No historic water use information**
- USGS data not reasonable to use**
- Method identical for actual use and potential use**

Consumptive Use Due To Storage

Assumptions

Storage can have a significant impact on streamflow (decrease or increase)

Streamflow due to reservoir releases is not "live" streamflow and is not considered in the water availability calculations.

Stored water is considered to be "consumed" at the time of storage, not at the time of actual use

- stored irrigation water "consumed" in winter

Consumptive Use Due To Storage

Estimating actual use

In general, try to avoid gaged records significantly impacted by storage

Where some storage occurred during the period of record

- 1. Assume face value volume (right of record) unless other information**
- 2. If storage for irrigation, when possible, calculate consumptive use by considering acres irrigated from stored water. Subtract use from winter months**

Consumptive Use Due To Storage

Estimating potential water use

1. Downstream of large reservoirs with rule curves

- Rule curves govern filling and drawdown
- When filling water is considered consumed, water released during drawdown not considered live flow

Consumptive Use Due To Storage

Estimating potential water use

2. Downstream of small reservoirs without rule curves

- Sum the face value storage volume
- Distribute volume over the storage season based on 80% streamflows in the months of the storage season
- For example, if 20% of the storage season streamflow occurred in January then 20% of the storage is assigned to January

Consumptive Use Estimates For Other Uses (Domestic, Livestock etc.)

Method: Apply Use Coefficient to Rights of Record

Assumes that non-consumed water is returned to the same water availability basin (unless other information)

- No historic water use information**
- USGS data not reasonable to use**
- Method identical for actual use and potential use**

Data Sources

- WRIS rights of record**
- USGS water use coefficient data**

Consumptive Use Estimates For Other Uses (Domestic, Livestock etc.)

| WATER USE COEFFICIENTS FOR OTHER USES | |
|--------------------------------------------------|--------------------|
| USE | COEFFICIENT |
| Domestic | .20 |
| Livestock | .50 |
| Agriculture | .50 |
| Commercial | .15 |
| Greenhouse | .50 |
| School | .20 |
| Dairy barn | .50 |
| Sawmill | .10 |

Example Input File For Get_WA

```
2 '0103122000000000'      101    80  1 11
  1  4  5  9 3812.98  1 17090010
  2  1  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0
  2  1  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0  1.0
  2  1  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0
  2  1  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0  3.0
  3  0.15  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02  0.02
  3  0.20  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33  1.33
  3  0.10  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53  8.53
  3  0.50  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04  0.04
  4  2 292.72  1  1  1  1  0  0  0  0  0  1  1  1
  5 101 100.0 100.0 100.0 100.0 100.0 35.0 35.0 12.0 12.0 12.0 100.0 100.0
```

MEMO

January 25, 1994

To: Water Availability File

From: Barry Norris

Re: Peer Review of a Methodology for Estimating Water
Availability Based on Daily Flows

This report was presented to the Water Resources Commission at their meeting on January 6, 1994. It results from a peer review held on November 15, 1993.

Exh 26

MEMORANDUM

TO: Water Resources Commission

FROM: Director *MWP*

SUBJECT: Work Session Item 1, January 6, 1994
Water Resources Commission Work Session

WATER
RESOURCES
DEPARTMENT

Peer Review of a Methodology for Estimating Water Availability Based on Mean Daily Flows

I. Issue Statement

This is an informational report describing the results of a recent peer review of a methodology for estimating water availability based on mean daily streamflows. It also discusses staff plans for future review of this methodology and others that may be developed in support of the Water Availability Program.

II. Background

In March and April of 1993, staff presented reports to the Commission that described a methodology for estimating water availability based on mean daily flows. During public comment on the methodology, Gail Achterman, attorney representing the firm of Stoel, Rives, Boley, Jones and Grey, suggested that the methodology be the subject of a technical peer review. Staff and the Commission concurred with this and agreed to subject this and other methodologies developed in support of the Water Availability Program to peer review.

III. Discussion

Since April of this year, staff have been working to determine water availability for streams west of the Cascades. As of the end of October, water availability had been determined for 1,200 watersheds in the North Coast, Mid Coast, South Coast, Willamette, Sandy, Umpqua and Rogue basins. This information was



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Salem, OR 97310
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WRC Work Session Item 1

January 6, 1994

Page 3

- Attachments:
- 1) List of Participants
 - 2) Letter from Stan Fox, Soil Conservation Service, dated 11/30/93
 - 3) Letter from Dan Moore, Soil Conservation Service, dated 11/24/93
 - 4) Letter from Bob Rallison, Art Crook Co, dated 11/18/93
 - 5) Letter from George Taylor, State Climatologist, dated 12/1/93
 - 6) Letter from Mike Ziolk, Oregon Department of Forestry, dated 12/9/93
 - 7) Letter from Ves Garner, Oregon Department of Agriculture, dated 12/9/93
 - 8) Letter from Gary Gallino, U.S. Geological Survey, dated 12/13/93
 - 9) Staff Response to Comments

Rick Cooper / Adam Sussman

378-8455

December 20, 1993

List of Participants

| | |
|------------------------------|--------------------------------------------------------|
| Art Crook | A. G. Crook Co |
| Bob Baumgardner ¹ | Department of Environmental Quality |
| Stan Fox ² | USDA Soil Conservation Service |
| Gary Gallino ² | U.S. Geological Survey |
| Ves Garner ² | Oregon Department of Agriculture |
| Al Mirati ¹ | Oregon Department of Fish and Wildlife |
| Dan Moore ² | USDA Soil Conservation Service |
| Bob Rallison ² | A. G. Crook Co |
| George Taylor ² | Oregon State Climatologist, Oregon State University |
| Ed Weber | Oregon Department of Agriculture |
| Mike Ziolko ² | Oregon Department of Forestry |

¹ Invited, but did not attend.

² Provided written comments.

RECEIVED

TO: RICK COOPER, HYDROLOGIST
WATER RESOURCES DEPT.
3850 PORTLAND ROAD NE
SALEM, OR 97310

FROM: STAN FOX, SNOW SURVEY DCO SUPERVISOR

DATE: NOV. 30, 1993

SUBJECT: PEER REVIEW OF MEAN DAILY FLOW ESTIMATES

DEC - 2 1993
WATER RESOURCES DEPT.
SALEM, OREGON

I congratulate you and the others involved in the referenced study. It is a rigorous, professional hydrologic analysis.

I have three (3) comments/concerns on the methodology which was used in the analysis.

--- my strongest comment deals with using latitude and longitude as a watershed characteristic in a regression equation. Latitude and longitude are not hydrologic parameters while all the other characteristics listed in the handouts are strong hydrologic indicators. A point could be made that longitude 123° "produces" more runoff in Oregon than longitude 121° does, but it is not because of these numbers -- it is because of the mountains between the longitudes.

I'm not sure if I heard this correctly, but I remember a statement that the latitudes and longitudes were kept because the resulting regression correlations were better. This is not a good reason for keeping a weak parameter.

--- using snow data will improve the analysis, especially on the east side of the Cascades. When using snow data, some of the previous month's temperature and precipitation data could be eliminated. This would provide an opportunity to use additional data while keeping the statistical degrees of freedom down.

--- This comment was addressed during the November 15 presentation. For estimating monthly flows it is much better to use monthly precipitation data, not annual data.

U

for

FOR STAN FOX



24 November 1993

Rick Cooper
Hydrologist
Oregon Water Resources Department
3850 Portland Road NE
Salem OR 97310

NOV 26 1993

NATIONAL TECHNICAL CENTER
PORTLAND, OREGON

Dear Mr. Cooper,

Thank you for the opportunity to learn about your water availability methodology and your request for peer review. Our use of statistics in the field of water resources is primarily for forecasting water supply, i.e. what rivers will be flowing during the runoff season, given the mountain snowpack, etc. In a former job I had experience with developing predictive equations more similar to those of your methodology. A major difference there, however, was that we were after yearly peak flows of various frequencies in river basins, rather than frequencies on a duration curve.

I agree with your approach, especially given the use primary use which will be made of the water availability estimates -- that is, for making water-right allocation decisions. I believe my concerns, therefore, to be minor. In addition, you are already aware of them I am sure, and have already addressed them. But since you asked...

Any hydrologist, using statistics, wants the hard-core mathematical results to make good hydrologic sense in the end. The fact that latitude and longitude correlate so highly in your equations leaves one asking, "Well, now what hydrologic phenomenon must that be approximating?" I cannot think of anything that removes for me the nagging feeling that it is some kind of statistical fluke.

Secondly, I note that you are having to estimate a very large number of ungaged basins. It seems that perhaps many of these are actually gaged, but not in the needed places. Not having looked into it as much as I am sure you have, I wonder if it might not have been worth it to take gages with upstream reservoirs or major gaged diversions and adjust them using the records to obtain "natural flow conditions." How many ungaged basins would have been eliminated or made easier to estimate by doing this?



November 30, 1993

Rick Cooper
Hydrologist
Water Resources Department
3850 Portland Road NE
Salem, Or 97310

RECEIVED

DEC - 3 1993

WATER RESOURCES DEPT.
SALEM, OREGON

Dear Mr. Cooper,

Re: Review of a Methodology for Estimating Water Availability Based on Mean Daily Flows

I appreciated the opportunity to be a part of the peer review group to review the subject methodology. I regret that we did not have sufficient time to thoroughly discuss each of the technical items as they were presented. My overall impression was that you faced a monumental task in attempting to develop usable data for the literally thousands of watershed areas in Oregon within a limited time period and I commend your effort. Your overall plan is rational and you appear to have a framework which will accept new information and data. My specific comments will have to be somewhat general, since we were presented only a small sample of the documentation that makes up the procedure.

Development of Basic Data

To much emphasis cannot be made on the need to start a study with the most accurate and reliable basic watershed data, which includes items such as drainage area, precipitation, elevation, etc and where available stream flow information. The GIS used in the study appears to satisfy this fundamental requirement for a study.

Methodology for Estimating Water Availability

Water Availability This definition is certainly acceptable from a conceptual standpoint. This definition together with the Departments policy on limiting water allocations to the natural streamflow that occurs 80% of the time and instream water rights to the natural streamflow that occurs 50% of the time provides a definitive statement of what is needed.

Consumptive Use The process for estimating consumptive use is reasonable. Hydrologists and others involved in estimating consumptive use, particularly for irrigated crops, have argued for years as to which is the *best* procedure. In my opinion, the procedure you have selected, a modified Blaney-Criddle is perfectly acceptable. It is far more important, in a general study such as this, to be consistent in the way that you assign coefficients, etc. than to be concerned as to which of several procedures to use.

mantle, the underlying geology, the drainage density or in the case of high elevation snow country, the ability to store snow for later release as stream flow. For the example of the regression equation for January, West of the Cascades, it would be useful to know how much the estimate was improved by including L (latitude of the basin centroid) and T (mean minimum Jan temperature).

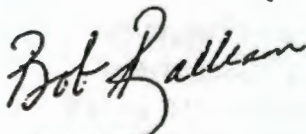
If I understand correctly, a single relationship was calculated for each exceedance frequency for each region. Were the regions defined arbitrarily? Is there any reason to expect that a further subdivision of regions may result in improved estimates? A gratuitous comment, as you work in other basins in the state, you will be fortunate to keep standard errors less than 100%

Comparison of Estimates With Gaged Streamflow The true test of any method and a sure way to silence your critics is to show that the results are reasonable. The example of comparing Ecola Creek calculated values with measured streamflow is useful and I have no problem with the development of a *correction* factor. Does the development of this one correction factor infer that this same correction factor is to be applied throughout the entire region?

Uncertainty of Water Availability Estimates Unfortunately we had to leave before there was an opportunity to review and discuss this section. It is extremely important , in my opinion, to make sure that those who make policy regarding allocation of water resources understand that there may be significant errors in the estimates of ungaged areas using these procedures, even though they may be the best that can be done at this time.

Conclusions

I appreciated the opportunity to be a part of the peer group to review the Methodology for Estimating Water Availability. If there are future reviews planned, it would be useful to those involved to have material in advance of the review, which would result in more relevant questions and comments. The end product of the procedure developed by Water Resources Department staff requires the solution of a number of difficult hydrologic problems for which there is no consensus among hydrologists as to which procedure may work best and under what conditions. Staff should be commended for coming up with a rational procedure, which may be far from perfect, but which incorporates a framework that can be added to and improved as new data and time permit.



Bob Rallison
A.G. Crook Co.
1800 NW 169th Place, B-100
Beaverton, Or 97006

December 1, 1993

Rick Cooper
Water Resources Department
3850 Portland Road NE
Salem OR 97310

Dear Rick:

Thank you for inviting me to participate in the recent workshop on estimating water availability using mean daily flows. I have a general comment and several specific ones.

1. General comment. In general, I believe the proposed method is superior to the current method using mean monthly flows. Although the proposed method requires greater resources and more detailed data, I believe that the accuracy and precision to be gained from the new method will prove to be very valuable. You and your staff have obviously thought a great deal about this issue and have done considerable research. Your presentation was very knowledgeable and thorough, and I commend you for the work you have put into the project so far. I enthusiastically endorse your effort and will be happy to be of assistance to you where possible.
2. Precipitation data. As I mentioned to you in the meeting, we are currently updating the Oregon precipitation map and will soon have monthly and annual coverages at 2.5 minute resolution. I believe that the data layer will be far superior to our earlier data, and will keep you and Michael Ciscell informed about progress of the data.
3. Temperature data. Your plans currently call for use of the Zedex Hi-Rez data layer for temperature. In my opinion, this data set is seriously flawed. By early 1994, I expect to have monthly and annual temperature coverage for Oregon in GIS format, and urge you to make use of this, if your schedule permits. Several of the assumptions made in the Zedex data set are overly simplistic (e.g., the assumption of distance weighting for interpolation) while others are incorrect (use of free-air lapse rates for estimating surface temperature changes with height). The updated coverage that I can provide will, I believe, be much more accurate.
4. Quality Assurance. Are you satisfied that appropriate quality assurance procedures were followed with regard to the input data used in your analysis?

Land Ag Hall, Room 316
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Corvallis, Oregon 97331

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DEC 13 1993

WATER RESOURCES DIV.
SALEM, OREGON

DEPARTMENT OF
FORESTRY

December 09, 1993

Mr. Rick Cooper
Water Resources Department
3850 Portland Road NE
Salem, OR 97310

State Forester's Office



"STEWARDSHIP IN
FORESTRY"

Dear Rick,

Thank you for the opportunity to participate in the review of the methodology for estimating water availability based on mean daily flows. I believe you have done a good job in the approach you have taken to make the estimates.

Minimizing biases in flows as a result of extremely wet or dry periods is important as you do your work as we discussed at the review meeting. When you make corrections for short record flow duration curves you might want to consider giving more weight to values near or greater than the 50 percent exceedance value since you are interested in the 50 and 80 percent exceedance values.

For example, the illustration you showed comparing the Nehalem River base period and concurrent period values seemed to track well at all values, but was especially good above 40 percent exceedance. Perhaps your statistics and the model would improve when you extend the data to the Wilson River by weighing the data above 40 percent more heavily. Then the more critical, lower flow periods may be more adequately modeled.

Overall, your approach seems to be a logical and reasonable method to solve the problem at hand.

Sincerely,

Mike

Mike Ziolko, Meteorology Manager
Smoke Management Section

MEZ:bn
cc: file



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DEPARTMENT OF
AGRICULTURE

Natural Resources
Division

(503) 378-3810
(503) 378-2590 FAX

FAX TRANSMITTAL

DATE: 12-10-93

FAX NO: 378-8130

ATTN: Rick Cooper, ~~WRD~~ WRD

FROM: Ed Weber, ODA

Attached please find comments re: water availability methodology. These comments were prepared by Les Garner and reviewed by myself. They represent our understanding of the process, its needs and uses.

Ed Weber

Document contains 4 pages
including cover sheet.

Barbara Roberts
Governor



635 Capitol Street NE
Salem, OR 97310-0110

4. Estimating natural streamflow for ungaged basins or portions of basins. These estimated flows are based upon values adjusted for length of record (in time), time of record (years) and basin characteristics (elevation, precipitation, area, temperature, etc). This analysis is identified as a Regional Regression Analysis.

This process used 256 gaged flows to estimate natural streamflows in more than 1200 subbasins in Western Oregon. When conservative flow values and over-estimated consumptive use values are used in the water availability formula, the results are a very conservative values for the amount of available water.

This analysis is used for both permitting and basin planning. We agree with this conservative approach for the planning process because the results will tend to promote storage and conservation of this essential natural resource; however, this same approach defeats the goal of making wise use of the water resource within the permitting process. Even though the Water Resources Department is required by law to issue permits based upon there being water available, errors or incorrect assumptions in this analysis which may tend to be liberal rather than conservative are easily overcome, after the fact, by proper regulation of the available supply at any given moment by priority dates.

RECOMMENDATIONS

1. The Water Resources Department should broaden the peer group to include more users or user representatives. The group needs to include more people that have a direct interest in the use of the process. However, because the process includes statistical analysis and regressions, it is very difficult to understand. A specialist in statistics should be consulted.
2. Rather than rely upon guesswork, the Water Resources Department could conduct actual surveys of use for sample basins. One way to get accurate estimates of use is to consult with the major power companies. Other than a few gravity systems, most diversions for irrigation in the Willamette Basin are pumped systems. A base formula could be developed to convert energy consumption directly into acre feet of water used. Data on acres irrigated and crop types would not be necessary using this process. Additionally, power consumption records would establish trends for future forecasting of consumptive use.
3. Another alternative is to allow permit applicants to submit their own water availability analyses when the data or method used by the Water Resources Department does not seem to accurately reflect a particular subbasin's characteristics.
4. Uncontracted water released from Corp impoundments should be considered as part of the natural flow of a stream. Contracts for use or instream flows would be part of the determination of consumptive use.
5. Return flows from diversions should be considered as available water.



United States Department of the Interior



GEOLOGICAL SURVEY

Water Resources Division
Pacific Northwest Area
Oregon District
10615 S.E. Cherry Blossom Drive
Portland, Oregon 97216

December 13, 1993

RECEIVED

DEC 16 1993

WATER RESOURCES DEPT.
SALEM, OREGON

Mr. Rick Cooper
Oregon Water Resources Department
3850 Portland Road, N.E.
Salem, OR 97310

Dear Rick:

Thank you for including the U.S. Geological Survey in the review process for the work you and your colleagues have done to develop a methodology for estimating water availability. There was not time for a rigorous review so many of the responses will be in the form of questions and comments rather than suggestions on how to improve the analysis.

1. The data used for the analysis came from existing data bases. Was it carefully checked or assumed to be okay?
2. Data for many streams used in the analysis represent changes in regulation and/or distribution during the 30-year base period. Flow duration curves were used to adjust the regulated flow to natural conditions. Some regulation is obvious; some is more subtle. What criteria was used to classify streams as regulated and how far down stream does the classification continue. The example stations are very similar. How well did the flow duration curve approach work for dis-similar basins?
3. Most of the available, long-term streamflow data represents the downstream section of larger basins. How well will equations developed from these data represent flow from small, headwaters basins?
4. Using surface divides to define basin area doesn't work in some basins; particularly basins underlain by porous bedrock or coarse gravels. Channel length has proven to be a more reliable parameter in these areas. Because the parameters cross-correlate, channel length and drainage area should not be used at the same time. Basins with subtle basin divides are very difficult to define accurately using GIS techniques.
5. Regional regression equations with latitude and/or longitude of the basin centroid as an independent variable look suspicious. These parameters are a surrogate for one or a combination of natural basin characteristics. It is hard to visualize a substantial difference in runoff characteristics for north and south coast streams based on location. Basin aspect (related to Storm track),

Staff Response to Comments

The following list of comments has been distilled from the verbal and written comments (Attachments 2 - 7) presented to staff by the peer review panel. The comments are grouped under more general headings. Staff's response to each comment follows the comment.

General

1. A concern that the methodology is over-complicated.

The methodology was developed to use as much of the data available as possible and to be as accurate as possible. Every effort was made to make the methodology as simple as possible within those limits. In order to make the methodology more understandable to the lay person, staff will put together a simplified fact sheet of two or three pages that will explain the general principles of the methodology.

2. A suggestion to broaden the peer review group to include more users and users' representatives in order to include more people who have a direct interest in the results.

The water availability methodology does not set policy. Its purpose is to implement policies established by the Commission. The intent of this peer review and those planned for the future is to ensure that the methodology is technically sound, provides the best results possible given the data and time available and meets the objectives of Department policy. Peers are selected based on their technical qualifications. Interest groups are encouraged to come before the Commission if they wish to influence the policy on which the methodology is based.

3. A suggestion that water right applicants be allowed to submit their own water availability analyses when the applicant disagrees with the Department's determination.

Applicants have had and continue to have this right under Department policy.

4. A concern that the methodology is very conservative in the sense that it underestimates water availability.

There are two parts to this concern: 1) That the streamflow estimates are conservative; and 2) That the consumptive use is overestimated. Staff called Ves Garner (Oregon Department of Agriculture) whose concern this was and discussed it with him. He believes that storage releases ought to be treated as live flow and that

Table 1. Methodology Data and Sources

| | |
|------------------------------|---------------------------------------------------------------------------|
| Streamflow - | U.S. Geological Survey, State of Oregon Department of Water Resources |
| Topographic maps - | U.S. Geological Survey |
| Digital Elevation model - | U.S. Defense Department / U.S. Geological Survey |
| Temperature coverage - | ZedX, Inc, Bolesburg, PA |
| Precipitation coverage - | George Taylor, Oregon State Climatologist and Chris Daily, PRISM services |
| Irrigation consumptive use - | U.S. Geological Survey |
| Water rights - | State of Oregon Department of Water Resources |

The Water Rights Information System (WRIS) that houses all of the water rights issued in the state was the subject of considerable checking and correcting. Staff believe information extracted from the data base to be a reasonable representation of the rights *issued* in specific watersheds.

There were two parts to the irrigation consumptive use. One part was the actual estimates of irrigation consumptive use that are based on crop census and crop water requirements. Staff had no way to verify the validity of these data, and they were used as received. The other part had to do with distributing the consumptive use by county and hydrologic unit based on water rights obtained from WRIS. Because of problems staff had found and corrected in WRIS, there were errors in this part of the analysis. Staff corrected these.

Streamflow information was assumed to be correct as received. In general, there is no way for staff to check this data other than by looking for outliers and extreme values in the analysis. Some errors were discovered in this way in the data as it was loaded on the Department's data base. The fault, however, was the Department's, not the supplier.

7. A concern as to whether the streamflow data had been checked to see if they meet the requirements of the regression analysis. A trend analysis was suggested.

The regression analysis used in this methodology assumes that streamflow is *stationary*, i.e., for any given stream, streamflow varies around an average value that does not change in time. This assumption is not true for very long periods of time (thousands of years) because of shifts in climate. Within the last 100 years, however, climate has been fairly stable, and the assumption of stationarity for streamflow with regard to climate is reasonable. Streamflow, however, may exhibit non-stationarity,

Difficult to delineate watersheds have been the subject of considerable attention and discussion among staff. Where possible, watershed areas based on staff's delineations and the Department's GIS have been compared to published values. In general, there has been very good agreement. Occasionally, this comparison has revealed errors in staff's delineations and in other cases, errors in published values have been discovered.

Staff believe that the methodology is adequate in regard to watershed delineation. No action is planned. There is a separate issue addressing how poorly-defined watersheds might be better treated in the analysis. That is the subject of the response to Comment 23.

Calculating Flow Duration Curves from Measured Streamflows

9. A suggestion to weight some exceedance streamflows more than others when correcting flow duration curves to the base period.

The streamflow statistics used in this methodology are the 50 and 80 percent exceedance streamflows for the period 1958 to 1987. These exceedance streamflows are obtained from flow duration curves generated from measured streamflows. Some flow duration curves represent records that are not coincident with or are shorter than the base period 1958 to 1987. As part of the methodology, these flow duration curves are "corrected" to the base period. To do this, a relationship is established between the flow duration curve of the short record gage and the flow duration curve of a gage record that does cover the base period.

A flow duration curve in this methodology is represented by 37 exceedance streamflows ranging from 5 percent to 95 percent exceedance (every 2.5 percent). To establish the relationship between the two gages, the points on the flow duration curves are plotted against one another. For example, the five percent exceedance streamflow for one gage is plotted against the five percent exceedance streamflow for the other gage. If the two gages have a good relationship, the plotted streamflows fall more or less on a straight line. Typically this line will have one or two break points where the slope changes.

It was suggested that more weight be given to some points than others in determining the relationship between the two gages. This would be appropriate if only one line were fitted to the whole set of points. That part of the curve that included the exceedance values of interest would be weighted most heavily, ensuring a good fit through those points.

The computer program that does the flow duration curve correction, however, allows the plotted points to be split into a maximum of three parts and a straight line fitted to each of the parts. The user determines on a case-by-case basis into how many

11. A concern about how well the method used for correcting flow duration curves to the base period worked for watersheds that were not very similar to each other.

In the peer review presentation, an example was given of how flow duration curves are corrected to the base period (see response to Comment 9). In the example, gages for two similar watersheds (i.e., the Wilson and Nehalem Rivers) were used, and the relationship between them was very good. This comment asks how good the relationship is between other, more dissimilar watersheds.

In general, the relationships have been good. Considerable effort was put into matching watersheds.

In correcting the short record flow duration curve to the base period, the short record gage is called the target and the long record is called the index. On the west side of the Cascades, there are 49 index gages that can be used to correct the flow duration curves for the 212 remaining target gages. These 49 gages were selected because they coincide with the base period and are not significantly impacted by regulation or diversion.

A computer program was written to help match an index gage to each target gage. Each target gage is compared to each index gage to find the best match. Staff generated twelve monthly flow duration curves for each of the gages in the matched pairs of target and index gages. The calculations were based on the concurrent period of record for the matched pairs. Since it is the shape of the flow duration that is critical in comparing them, all of the curves are standardized by dividing through by the maximum value in each curve. All curves have the same maximum value of one, and only their shapes differ. The absolute difference between the sets of twelve monthly flow duration curves is found. The pair of gages with the lowest absolute difference represents the sets of curves that are most similar in shape.

A list of the five most similar index gages is generated for each target gage. In general, an index gage can be selected from these five based on criteria like proximity to the target, similarity in size and elevation, and so on. In most cases, nearby watersheds are most likely to appear on the list of five. Sometimes a suitable match cannot be found among these five and others, not on the list, are tried. The list is used only as a guide in selecting an index gage for each target. The actual selection is based on how well-correlated the two gages appear to be.

In all but a few cases for the work done so far, suitable matches have been found. Generally, the relationship between the gages has been good. Four gages have been removed from further consideration because suitable index stations could not be found.

In any regional regression analysis, if the streamflow during the base period is either higher or lower than the long-term average streamflow, correcting the streamflow statistics to the base period will introduce a bias into the results. There are three reasons, however, why staff believe using a base period in the water availability analysis was reasonable and appropriate. First, the base period was selected to be as representative as possible of long-term streamflow (see response to Comment 12). Second, the streamflow statistics used (i.e., 50 and 80 percent exceedance) do not represent rare events. Thirty years of record should fairly represent these statistics.

The third reason is best illustrated by considering a regional regression analysis that is done without first adjusting the streamflow statistics to a common base period. The streamflow estimates made from the resulting regression models are not comparable to the unadjusted measured streamflows used to develop the models. They represent different periods of time. This result has important implications for the water availability calculations.

The results of the water availability calculations are used to determine if there is water available for out of stream appropriation. Both measured streamflows and streamflow estimates based on a regression analysis are used to calculate water availability. All of these streamflows have to be based on the same time period. If they are not, the water availability calculation for one location could be based on a time period different from another location. As an example, suppose there are two water availability sites. One site uses streamflow based on a gage record from 1921 to 1943. The other uses streamflow based on a gage record from 1946 to 1976. The latter period was much wetter than the former. Water availability calculated for the drier site represents a stricter standard than for the wetter site. Fairness to the applicants requires the same standard be applied to all sites.

For these reasons, staff adjusts the flow duration curves to the same base period before doing the regression analysis. All water availability calculations are based on the same standard.

No further action is planned in regard to this comment.

14. A concern about the effects of extreme hydrologic events (e.g., the 1964 flood) on calculation of the flow duration curves.

Extreme hydrologic events of limited duration (e.g., the 1964 flood or the dry winter of 1976-77) probably have small effect on the estimation of 50 and 80 percent exceedance streamflows for the base period. The number of mean daily streamflows affected by a relatively short event are small in comparison to the total number of mean daily streamflows used in the calculations. Extreme exceedance streamflows (e.g., 5 and 95 percent exceedance), however, probably are affected by short duration extreme events. In any case, all flow duration curves are corrected to the same base

that are located downstream from reservoirs and are impacted by reservoir operation. None of these were used in the various regression analyses done so far.

The suggestion was made that the streamflows measured at these gages could be corrected for reservoir operation to make them suitable for inclusion in the regression analysis. This kind of correction is a common procedure when working with monthly or annual streamflow statistics. In this methodology, however, mean daily streamflows are used. Mean daily streamflows can be corrected for reservoir operation, but it is much more involved than for monthly or annual streamflows and much of the information required to make the corrections is not readily available. In particular, daily water surface elevations are not available for most reservoirs. There are additional requirements for hard-to-get information about stream channel characteristics and reservoir evaporation.

Staff do not plan to pursue this suggestion.

Regression Analysis

The first seven of the following nine suggested improvements to the regression methodology have to do with adding or deleting watershed characteristics from consideration in the regression analysis. In developing this methodology, 31 watershed characteristics were originally considered.

For the regression analyses done so far on the west side, just a few of the 31 watershed characteristics proved to be significant in accounting for variability in streamflow. Depending on the month, various combinations of watershed area, mean annual precipitation, January and July minimum monthly temperatures, average slope, average slope aspect and latitude and longitude of the watershed centroid accounted for 87 to 98 percent of total streamflow variability. Of these characteristics, area, precipitation and temperature were much more important than the others.

Many more characteristics can be conceived of and calculated, but it is likely each will account for only a small part of the total variability. When the effect of a characteristic on streamflow is small, it is difficult to determine whether the effect is real or coincidental. Characteristics that reduce the unaccounted for variability by only a few percent should not be included in a regression model.

17. A strong suggestion not to use latitude and longitude as watershed characteristics because they are not related to hydrologic processes.

All but two reviewers made this comment. Staff do not have a strong case for retaining these characteristics in the analysis. Latitude and longitude are among the least significant characteristics used in the regression analyses. Staff expect that eliminating them from the regression analyses will not have a large impact on the

20. A suggestion to use monthly mean temperatures rather than monthly mean minimum temperatures.

It was suggested that monthly mean temperatures rather than monthly mean minimum temperatures may be a better index of the effects of temperature on streamflow. Monthly mean temperatures are not currently available. The temperature data George Taylor (Oregon State Climatologist) intends to supply the Department in early 1994 includes monthly mean temperatures.

Staff will evaluate the possible benefit of using monthly mean temperatures when they become available.

21. A suggestion to use a snow index as a watershed characteristic.

It was suggested that some index of the effect of snow on runoff be incorporated into the regression analysis. Though snowfall is not accounted for directly in the current methodology, it is accounted for indirectly by considering precipitation (see response to Comment 18) and other characteristics. This is shown by the results of the regression analyses already performed. Monthly models for the entire west side of the state do a good job of estimating streamflow for *both* high and low elevation watersheds. For example, the models predict peak streamflows for high elevation watersheds to be in April and May when the snow melts. The same models predict peak flows for low elevation and coastal watersheds to be in January and February when most of the rain falls.

Better regression models for high elevation watersheds were obtained by performing the regression analyses on just the high elevation watersheds of the Cascades separate from the rest of the west side (see response to Comment 24). This result suggests that not all of the effects of snowfall on streamflow were being accounted for in the original models for the west side of the state.

A snow index may do an even better job of accounting for the variability in streamflow caused by part of precipitation being in the form of snow. Thomas and Benson (1969) used the average April 1 water content of the snowpack as a index for the Sierra Nevada in California. Such an index seems likely to work in the Cascades in Oregon. Other indices may be possible.

If a reasonable index and its associated data layer can be developed, staff will incorporate the index into the analysis and will evaluate its possible benefit.

24. A suggestion to divide the west side of state into more subregions than two for purposes of the regression analyses.

As noted under the response to Comment 21, the state west of the Cascades was divided into two regions in order to improve the results of the regression analyses for high elevation watersheds. It was suggested in the peer review that benefit might be derived from further subdividing the west side. Some effort was made to do just this when the analyses for the west side were being developed. Finding appropriate subregions and testing them to see if the analyses are an improvement over more general analyses is time consuming. The urgency to get water availability numbers for the west side precluded doing more.

Staff plan to return to this area for more work as time permits.

25. A concern about how well the regression models represent small, headwater basins.

How well a regression model represents a particular class of watersheds (in this case, small ones) depends on how well-represented that class of watersheds is in developing the regression model. Of the 248 gages that have been used in the regression analyses, 30 (12 percent) are for watersheds smaller than 10 square miles. These small watersheds are as well or better represented than other classes of larger watersheds though a good case probably can be made that all classes of watersheds are under-represented.

Small watersheds are more subject to local conditions than are larger watersheds. For this kind of regression analysis, the better represented they are, the better. There is little that can be done immediately, however, to augment what data are already available. Even if the gage network in the state were reorganized to reflect this concern and if funds were available to install numerous new gages, it would be years before sufficient data were available for analysis.

Staff share the concern raised here and share in the frustration of the reviewer who submitted it. All staff can do presently, however, is lobby for more stream gaging in the future.

Streamflow Estimates

26. A suggestion that the estimated streamflow statistics for ungaged watersheds be compared to miscellaneous measurements where they are available.

In some cases, miscellaneous measurements have been used to verify streamflows estimated by way of the regression analyses. This is a difficult comparison, however. A few random measurements are difficult to interpret in terms of 50 and 80 percent

Staff methodology for estimating irrigation consumptive uses for a given water availability basin requires that the irrigated acres associated with the water rights of record in the water availability basin be accumulated. These acres are obtained from the Department's WRIS. In some cases, irrigated acres can be counted more than once. As an example, some irrigated acreages are associated with more than one primary water right. When the acres associated with these rights are accumulated, the same acres are counted for each primary right with which they are associated. Over-counting can lead to errors in distributing the irrigation consumptive use.

The double counting problem was brought to staff's attention during the development of the consumptive use methodology. Early on, staff recognized that some of the acreages associated with over-counting are substantial and could lead to significant errors. Staff have worked hard to identify and rectify errors associated with double counted acres. In order for the water availability program to proceed, staff in the Technical Services Division devised a computer routine that checks the number of irrigated acres in each quarter-quarter section. The routine checks to make sure the total is less than forty-two and a half acres for each quarter-quarter section. If it is greater, the total acres is reduced to forty-two and a half. Forty-two and a half was chosen as the threshold because often a quarter-quarter section is slightly greater than forty acres.

Staff are confident that the acres associated with water rights for irrigation are not being over-estimated significantly.

29. A concern regarding the estimate of municipal water use: using all rights of record and the handling of partially-perfected water rights.

Oregon law affords preferences to municipalities which allow them to hold water rights in excess of current needs. Typically, municipalities have been allocated more water than can be used at the time of allocation in anticipation that populations will grow and water use will increase. Municipalities also may have extra water rights for back-up sources in case of low flows, turbidity or contamination.

Municipal water use would be overestimated if one summed the face value of the rights of record. For the water availability program, consumptive use estimates represent the *expected* demands from all water rights. The total of municipal rights of record is not a good indication of expected demands.

To estimate expected municipal water use, staff determine the status of each municipal water right. Where a right is developed, i.e., there are facilities in place to divert water, the full value of that right (regardless of actual withdrawals) is multiplied by the appropriate coefficient to obtain the consumptive use. Where a right is found to be undeveloped, the consumptive use is considered to be zero.

recognizing the scope and magnitude of work to be completed. At this point it is not feasible for staff to drop their current work to conduct field surveys. Possibly, future iterations of the water availability program may incorporate field studies.

32. A concern that return flows from diversions should be considered as available water.

In estimating consumptive use, the return flow from a diversion is considered as available water in almost all cases. The exception to this is when water is diverted in one water availability basin and returned into another (or in the ocean). In this case, for the purposes of the subject water availability basin, the water is 100 percent consumed, i.e., it is no longer available for use in that water availability basin.

33. A concern that the method assumes that the full face value of all rights of record are being diverted and that all water diverted is consumed without return flow.

The method used by staff does not assume that in all cases the full face value of water rights are diverted. For municipal and irrigation water use, the two most significant consumptive water uses, staff have gone to great lengths to identify the *expected* and *actual* use, respectively, regardless of the face value of the associated water rights of record.

For other uses where water use information is not available (domestic, industrial, commercial, livestock, small reservoirs), staff have assumed that the rights of record reflect the actual diversions. Only part of each assumed diversion is considered to be consumptive. Non-consumed water is considered to be returned to the stream. Only in the cases mentioned in the response to Comment 32 above is the face value of the diversion considered 100 percent consumed.

References

Riggs, H.C., 1973. Regional analysis of streamflow characteristics: U.S. Geological Survey Techniques of Water Resources Investigations, book 4, chapter B3, 15 p.

Searcy, J.K. 1959. Flow-duration curves: U.S. Geological Survey Water-Supply Paper 1542-A. 33 p.

Thomas, D.M. and Benson M.A. 1969. Generalization of streamflow characteristics from drainage watershed characteristics. Open file report, U.S. Geological Survey. 45 p.

MEMO

January 27, 1994

To: Water Availability File

From: Barry Norris

Re: Policy Issues

Development of the water availability methodology has been mostly an application of scientific and engineering principals. However, the basis for much of the work relies on policy decisions that have been made over time. Policy issues affecting the project include:

1. 80% exceedance standard for out of stream uses.

The 80% exceedance standard is set by rule in the Water Allocation Policy. It has been presented to the Commission for discussion on several occasions.

2. 50% exceedance standard for storage

Storage is not subject to the 80% exceedance standard. Historical practice by the Department has been to consider storage on a natural flow or 50% exceedance standard.

3. In stream water rights are allowed up to the average natural flow.

This is set by rule in Division 77. The Department uses the 50% exceedance standard for computations.

4. Storage releases are not considered in calculations of natural flow.

This is described in Division 77 and has been discussed at several Commission meetings.

5. Municipal right consumptive use calculations

In consideration of municipal water rights, only those rights that are currently being used by the municipality are subtracted (100% of face value) for calculation of available water. This is to take into consideration the potential expansion of existing rights. Those rights that are held in reserve, and not being used, are not considered. This policy has been presented to the Commission and accepted as the basis for modeling in 1993 & 1994.

Exh 2H

6. Irrigation right consumptive use calculations

Actual use is considered to be the consumptive use in the calculations. There has been considerable discussion concerning this approach instead of using full, face value of the rights of record. This has been discussed at Commission meetings.

7. Location of water availability analysis involving in stream water rights.

The analysis is done at the lower end of the reach, or at the lower end of an intervening water availability subbasin. This approach was chosen to facilitate a logical approach to the statistical calculations. This has not been discussed with the Commission.

8. Some small consumptive rights are not considered.

Examples of consumptive uses that are not considered in the calculations include frost prevention, road watering, and fire protection. The reason the decision was made to ignore these uses is that they are small and quite difficult to quantify.

9. Some larger nonconsumptive uses are not considered.

These uses include fish hatcheries and recreational ponds. It can be argued that these uses do not consume water and are inconsequential. However, by not considering them all rights on the stream do not benefit from the full protection of the water availability process. Protection is still afforded by the doctrine of prior appropriation.

10. In consideration of storage facilities, the storage season is considered to be opposite of the irrigation season.

In calculating consumptive use from storage, an assumption is made that the reservoir is not filled during the normal irrigation season. Total capacity is apportioned according to the monthly water available during the non-irrigation months.

Memorandum

To: File
From: Rick Cooper
Date: April 18, 1994
Subject: Changes to Water Availability Database

Effective April 15, 1994, the following changes have been made to the water availability database.

Water Availability Subbasins Added

Mid Coast Basin

| | |
|---------------------------------------------------------|------------------|
| D River, at the mouth, tributary to the Pacific Ocean. | 0200000000000000 |
| Unnamed stream, at the mouth, tributary to the D River. | 0201000000000000 |

South Coast Basin

| | |
|----------------------------------------------------------|------------------|
| Davis Creek, at the mouth, tributary to Croft Lake. | 5008000000000000 |
| Cut Creek, at the mouth, tributary to the Pacific Ocean. | 7900000000000000 |

Water Availability Subbasins Renumbered

Mid Coast Basin

| | |
|-------------------------------------------------------------|------------------------|
| Rock Creek, at the mouth, tributary to Devils Lake. | 0202000000000000 (new) |
| | 0200000000000000 (old) |
| Rock Creek, above unnamed stream, tributary to Devils Lake. | 0202100000000000 (new) |
| | 0210000000000000 (old) |

Exh 2I

Base Water Availability Revised

The 'base water availability' is the water availability as of 1/1/93. An estimate of water use as of 1/1/93 for a given watershed is subtracted from an estimate of the natural stream flow for that watershed to obtain the water availability estimate.

For the watersheds that follow, the estimates of natural stream flow were revised shortly after the base water availability calculations were done. The base water availability numbers were not updated, however. The error was discovered and corrected April 15, 1994. The old (incorrect) and new (correct) base water availability numbers are shown. These numbers represent water availability on 1/1/93, and in general do not reflect water availability at any later date.

North Coast Basin

| Goble Creek, at the mouth, tributary to the Columbia River. | | | | | | | | | | | | 2300000000000000 |
|-------------------------------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------------------|
| old 80% | 26.30 | 28.10 | 19.40 | 13.10 | 8.39 | 3.78 | 1.88 | 1.58 | 1.58 | 1.49 | 1.91 | 11.80 |
| new 80% | 24.50 | 29.10 | 26.00 | 16.60 | 8.87 | 4.43 | 1.97 | 1.34 | 1.12 | 1.68 | 3.46 | 13.50 |
| old 50% | 44.00 | 43.00 | 28.40 | 20.30 | 11.70 | 7.49 | 3.64 | 2.43 | 2.00 | 1.54 | 5.45 | 32.60 |
| new 50% | 44.60 | 56.80 | 40.20 | 24.20 | 13.10 | 8.24 | 3.62 | 2.08 | 2.02 | 2.45 | 7.25 | 41.30 |

Mid Coast Basin

| Drift Creek, at the mouth, tributary to the Pacific Ocean. | | | | | | | | | | | | 0400000000000000 |
|------------------------------------------------------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|--------|------------------|
| old 80% | 266.00 | 264.00 | 245.00 | 94.00 | 143.00 | 81.50 | 54.40 | 37.70 | 32.20 | 40.90 | 177.00 | 319.00 |
| new 80% | 144.00 | 178.00 | 182.00 | 109.00 | 64.20 | 35.70 | 20.20 | 11.40 | 10.20 | 16.10 | 88.70 | 167.00 |
| old 50% | 534.00 | 453.00 | 414.00 | 272.00 | 192.00 | 119.00 | 74.00 | 48.20 | 44.70 | 85.20 | 381.00 | 554.00 |
| new 50% | 337.00 | 353.00 | 288.00 | 171.00 | 96.90 | 57.50 | 32.70 | 18.40 | 17.40 | 43.90 | 226.00 | 367.00 |
| Bear Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | | 0501000000000000 |
| old 80% | 15.70 | 16.40 | 14.70 | 10.40 | 6.91 | 4.03 | 2.74 | 1.97 | 1.66 | 1.98 | 7.98 | 17.00 |
| new 80% | 13.50 | 15.30 | 13.70 | 10.70 | 7.03 | 4.86 | 3.18 | 2.13 | 1.61 | 1.95 | 5.60 | 16.50 |
| old 50% | 33.80 | 29.20 | 26.10 | 15.50 | 9.64 | 7.15 | 4.48 | 2.81 | 2.32 | 3.94 | 18.60 | 33.40 |
| new 50% | 27.20 | 22.70 | 22.70 | 16.40 | 10.00 | 6.81 | 4.38 | 3.01 | 2.69 | 2.90 | 14.70 | 28.30 |
| Cedar Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | | 0502000000000000 |
| old 80% | 70.10 | 71.40 | 65.70 | 50.60 | 36.90 | 22.90 | 17.50 | 13.90 | 12.00 | 13.30 | 44.10 | 77.40 |
| new 80% | 60.20 | 66.60 | 61.10 | 51.90 | 37.50 | 27.60 | 20.40 | 15.00 | 11.70 | 13.10 | 30.90 | 75.00 |
| old 50% | 143.00 | 124.00 | 112.00 | 71.50 | 48.80 | 33.80 | 23.30 | 16.50 | 15.40 | 24.60 | 89.80 | 143.00 |
| new 50% | 115.00 | 95.90 | 97.10 | 75.70 | 50.60 | 32.20 | 22.80 | 17.60 | 17.90 | 18.10 | 70.80 | 121.00 |
| Euchre Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | | 0503000000000000 |
| old 80% | 73.70 | 75.10 | 69.10 | 53.00 | 38.10 | 23.20 | 16.80 | 12.70 | 11.10 | 12.90 | 46.20 | 82.50 |
| new 80% | 63.20 | 70.10 | 64.20 | 54.30 | 38.80 | 28.00 | 19.50 | 13.80 | 10.70 | 12.80 | 32.40 | 80.00 |
| old 50% | 150.00 | 130.00 | 118.00 | 76.00 | 52.20 | 34.70 | 22.80 | 15.60 | 14.60 | 24.70 | 96.70 | 151.00 |
| new 50% | 121.00 | 101.00 | 103.00 | 80.50 | 54.20 | 33.10 | 22.30 | 16.70 | 16.90 | 18.20 | 76.30 | 128.00 |

| | |
|------------------------------------------------------------------------------------------|------------------|
| Alsea River, above Five Rivers, tributary to Pacific Ocean. | 0802120000000000 |
| old 80% 687.00 799.00 657.00 446.00 255.00 139.00 70.20 44.20 39.60 49.00 178.00 613.00 | |
| new 80% 710.00 814.00 672.00 454.00 260.00 145.00 72.50 45.40 42.30 52.80 195.00 634.00 | |
| old 50% 1370.0 1370.0 1080.00 690.00 375.00 199.00 97.80 57.50 55.50 75.40 537.0 1270.00 | |
| new 50% 1390.0 1390.0 1090.00 702.00 384.00 194.00 95.80 57.40 58.00 83.50 576.0 1310.00 | |

Willamette Basin @ 50 %

| | |
|---------------------------------------------------------------------------------------------|------------------|
| Long Tom River, at the mouth, tributary to Willamette River. | 0105344000000000 |
| old 50% 1210.0 1210.0 562.0 437.0 281.0 114.0 17.2 .55 16.0 40.4 200.0 1050.0 | |
| new 50% 1110.0 812.0 436.0 357.0 252.0 114.0 17.2 .55 16.0 40.4 200.0 1050.0 | |
| McKenzie River, at the mouth, tributary to Willamette River. | 0105345000000000 |
| old 50% 7600.0 7470.0 6740.0 5730.0 5180.0 3640.0 2230.0 1810.0 1830.0 2240.0 4310.0 6720.0 | |
| new 50% 7400.0 7180.0 6540.0 5530.0 5080.0 3640.0 2230.0 1810.0 1830.0 2240.0 4310.0 6720.0 | |
| McKenzie River, above Bear Creek, tributary to Willamette River. | 0105345300000000 |
| old 50% 5110.0 4530.0 4130.0 4230.0 4150.0 3240.0 2200.0 1850.0 1850.0 2010.0 3420.0 4700.0 | |
| new 50% 4910.0 4240.0 3940.0 4040.0 4040.0 3240.0 2200.0 1850.0 1850.0 2010.0 3420.0 4700.0 | |

Willamette Basin @ 80 %

| | |
|---------------------------------------------------------------------------|------------------|
| Willamette River, above Glenn Creek, tributary to Columbia River. | 0105300000000000 |
| old 80% 17900 16700 14700 13600 13400 7390 3610 2610 2850 4240 8970 16300 | |
| new 80% 17100 12400 13100 11500 12100 7210 3610 2610 2850 4240 8960 16300 | |
| Willamette River, above Periwinkle Creek, tributary to Columbia River. | 0105400000000000 |
| old 80% 10100 9780 8150 7270 7260 5070 2870 2160 2220 2860 4200 8200 | |
| new 80% 9390 7330 7080 5940 6380 4970 2870 2160 2220 2860 4190 8200 | |

cc: Barry Norris
 Fred Lissner
 Steve Brown
 Reed Marbut
 Becky Kreag

Memorandum

To: File
From: Rick Cooper
Date: May 11, 1994
Subject: Changes to Water Availability Database

John Drolet pointed out that estimates of the 50 and 80 percent exceedance streamflows for summer months for three south coast streams were too high (memo to Jake Szramek, January 10, 1994). The streams in question are Floras Creek, Fourmile Creek, and Willow Creek. He made his observation based on his experience with these creeks and on various miscellaneous measurements.

None of these streams has sufficient measurements to calculate the 50 and 80 percent exceedance streamflows directly. Streamflows for these streams were estimated from a regional regression model. The estimates from the regression model were corrected based on the error of the model for some nearby gaged watershed. Estimates made for these streams were corrected based on the gage on Elk River.

As a result of John's comments, the matter was investigated further and it was determined that streams tributary to the Pacific Ocean between the Coquille River and the Elk River have a different hydrologic response from the Elk River. The Elk River has high summer base flows, while streams between the Coquille and Elk Rivers have low summer base flows. They are more like streams in the Coquille basin.

In order to improve the streamflow estimates for streams between the Coquille and Elk Rivers, the model estimates were corrected based on a gage in the Coquille basin, the gage on the South Fork Coquille at Powers. The new streamflows are significantly different. The new numbers were sent to John. He believes they better represent streamflow in the area (FAX to Rick Cooper, May 9, 1994). They look more like the miscellaneous measurements we have in the area.

Attached is a comparison of the base water availability at the 50 percent exceedance level.. These number reflect water use to January 1, 1994, but do not include *any* instream water rights.

cc: Barry Norris
Fred Lissner
Becky Kreag
Reed Marbut
Steve Brown

WATER AVAIL E AS OF 1/1/93
50% EXCESSANCE
(DOES NOT INCLUDE ANY ISWRs)

| | | | | | | | | | | | | | |
|--------|------------------|---------|---------|---------|--------|--------|--------|--------|--------|-------|--------|--------|---------|
| NEW -> | 1700000000000000 | 14.40 | 17.10 | 14.30 | 6.87 | 1.73 | 1.35 | .34 | .06 | .18 | .54 | 4.22 | 13.80 |
| OLD -> | 1700000000000000 | 23.90 | 26.50 | 21.70 | 10.40 | 3.93 | 3.80 | 2.63 | 1.77 | 1.49 | 1.73 | 7.73 | 24.90 |
| | 1800000000000000 | 7.50 | 8.97 | 7.53 | 3.33 | .77 | .53 | -.11 | -.19 | .02 | .35 | 2.41 | 7.14 |
| | 1800000000000000 | 12.50 | 14.00 | 11.40 | 5.29 | 1.88 | 1.93 | 1.32 | .92 | .88 | 1.12 | 4.42 | 12.90 |
| | 1900000000000000 | 56.90 | 67.50 | 57.10 | 28.80 | 8.18 | 7.77 | 4.19 | 2.51 | 1.77 | 2.77 | 20.30 | 56.30 |
| | 1900000000000000 | 94.40 | 105.00 | 86.30 | 43.10 | 17.80 | 18.80 | 14.40 | 10.40 | 7.72 | 8.50 | 37.00 | 101.00 |
| | 2000000000000000 | 78.10 | 92.10 | 79.90 | 41.80 | 12.60 | 10.40 | 5.04 | 2.70 | 1.89 | 3.34 | 30.10 | 79.00 |
| | 2000000000000000 | 130.00 | 143.00 | 121.00 | 62.50 | 27.10 | 24.60 | 16.60 | 10.80 | 8.11 | 10.30 | 55.00 | 142.00 |
| | 2001000000000000 | 45.40 | 53.70 | 46.90 | 24.60 | 7.71 | 6.88 | 4.08 | 2.46 | 1.46 | 1.92 | 17.10 | 45.60 |
| | 2001000000000000 | 75.30 | 83.20 | 70.90 | 36.80 | 16.30 | 15.20 | 10.70 | 7.00 | 4.94 | 5.81 | 31.30 | 82.20 |
| | 2100000000000000 | 1.13 | 1.37 | 1.18 | .50 | .10 | .10 | .04 | .00 | -.02 | -.01 | .30 | 1.08 |
| | 2100000000000000 | 1.90 | 2.15 | 1.80 | .77 | .25 | .28 | .16 | .07 | .02 | .04 | .58 | 1.97 |
| | 2200000000000000 | 744.00 | 871.00 | 782.00 | 445.00 | 151.00 | 113.00 | 58.20 | 33.80 | 21.10 | 33.80 | 344.00 | 787.00 |
| | 2200000000000000 | 1230.00 | 1350.00 | 1180.00 | 666.00 | 321.00 | 252.00 | 158.00 | 101.00 | 73.70 | 102.00 | 628.00 | 1420.00 |
| | 2201000000000000 | 52.70 | 62.00 | 56.40 | 30.40 | 9.69 | 9.18 | 5.13 | 2.95 | 1.83 | 3.11 | 29.10 | 54.80 |
| | 2201000000000000 | 87.30 | 96.00 | 85.30 | 45.50 | 20.70 | 20.60 | 14.20 | 9.10 | 6.57 | 9.42 | 53.00 | 98.60 |
| | 2202000000000000 | 648.00 | 759.00 | 684.00 | 393.00 | 135.00 | 99.50 | 51.90 | 30.40 | 18.50 | 28.80 | 296.00 | 683.00 |
| | 2202000000000000 | 1070.00 | 1180.00 | 1030.00 | 587.00 | 286.00 | 220.00 | 137.00 | 86.80 | 62.80 | 86.70 | 540.00 | 1230.00 |
| | 2202100000000000 | 64.40 | 75.80 | 69.30 | 38.10 | 12.60 | 11.00 | 6.07 | 3.48 | 2.06 | 3.26 | 32.70 | 66.90 |
| | 2202100000000000 | 107.00 | 117.00 | 105.00 | 57.00 | 26.70 | 24.30 | 15.90 | 9.86 | 6.93 | 9.81 | 59.70 | 120.00 |
| | 2202200000000000 | 532.00 | 624.00 | 564.00 | 325.00 | 113.00 | 81.00 | 41.80 | 24.40 | 15.10 | 23.20 | 237.00 | 559.00 |
| | 2202200000000000 | 881.00 | 967.00 | 853.00 | 487.00 | 239.00 | 179.00 | 110.00 | 69.60 | 50.90 | 69.80 | 433.00 | 1010.00 |
| | 2202210000000000 | 85.30 | 101.00 | 92.20 | 51.30 | 17.20 | 13.00 | 6.86 | 3.92 | 2.42 | 3.73 | 38.30 | 87.80 |
| | 2202210000000000 | 141.00 | 156.00 | 139.00 | 76.80 | 36.50 | 28.70 | 17.90 | 11.10 | 8.13 | 11.20 | 69.90 | 158.00 |
| | 2202220000000000 | 34.70 | 41.10 | 37.50 | 20.40 | 6.71 | 5.88 | 3.13 | 1.74 | .98 | 1.48 | 15.30 | 35.50 |
| | 2202220000000000 | 57.60 | 63.70 | 56.70 | 30.50 | 14.20 | 13.00 | 8.18 | 4.93 | 3.31 | 4.46 | 27.90 | 63.90 |
| | 2202230000000000 | 82.80 | 98.00 | 92.30 | 54.90 | 20.20 | 12.00 | 5.79 | 3.23 | 2.22 | 3.71 | 39.00 | 88.80 |
| | 2202230000000000 | 137.00 | 152.00 | 140.00 | 82.10 | 42.70 | 26.40 | 15.10 | 9.17 | 7.46 | 11.10 | 71.20 | 154.00 |
| | 2202240000000000 | 253.00 | 299.00 | 269.00 | 152.00 | 51.70 | 38.30 | 19.80 | 11.40 | 6.83 | 10.30 | 105.00 | 263.00 |
| | 2202240000000000 | 420.00 | 462.00 | 406.00 | 227.00 | 109.00 | 84.30 | 51.70 | 32.30 | 23.00 | 30.90 | 192.00 | 473.00 |
| | 2202241000000000 | 15.10 | 17.90 | 16.20 | 8.52 | 2.68 | 2.53 | 1.38 | .76 | .43 | .66 | 6.68 | 15.20 |
| | 2202241000000000 | 24.90 | 27.70 | 24.50 | 12.70 | 5.68 | 5.58 | 3.59 | 2.16 | 1.43 | 1.98 | 12.20 | 27.40 |
| | 2202242000000000 | 36.10 | 42.70 | 38.70 | 21.10 | 6.94 | 5.82 | 2.96 | 1.60 | .89 | 1.33 | 14.50 | 36.80 |
| | 2202242000000000 | 59.90 | 66.20 | 58.50 | 31.50 | 14.70 | 12.80 | 7.74 | 4.53 | 2.98 | 4.01 | 26.40 | 66.20 |
| | 2202243000000000 | 110.00 | 130.00 | 116.00 | 64.00 | 21.30 | 17.40 | 9.24 | 5.29 | 3.03 | 4.25 | 41.70 | 111.00 |
| | 2202243000000000 | 182.00 | 201.00 | 175.00 | 95.70 | 45.00 | 38.40 | 24.20 | 15.10 | 10.20 | 12.80 | 76.10 | 201.00 |
| | 2202243100000000 | 7.84 | 9.37 | 8.30 | 4.16 | 1.24 | 1.01 | .43 | .20 | .09 | .14 | 2.18 | 7.74 |
| | 2202243100000000 | 13.00 | 14.50 | 12.50 | 6.22 | 2.61 | 2.22 | 1.13 | .56 | .31 | .43 | 3.98 | 13.90 |
| | 2202243200000000 | 50.90 | 60.20 | 54.60 | 30.10 | 10.00 | 7.85 | 3.76 | 1.96 | 1.06 | 1.60 | 19.20 | 52.00 |
| | 2202243200000000 | 84.30 | 93.20 | 82.60 | 45.00 | 21.20 | 17.30 | 9.84 | 5.55 | 3.56 | 4.80 | 35.00 | 93.60 |
| | 2202243300000000 | 13.60 | 16.30 | 14.70 | 7.93 | 2.61 | 2.33 | 1.36 | .81 | .49 | .65 | 5.28 | 13.40 |
| | 2202243300000000 | 22.60 | 25.30 | 22.20 | 11.90 | 5.52 | 5.14 | 3.55 | 2.30 | 1.64 | 1.96 | 9.64 | 24.20 |

Johnson Cr > Pacific Ocean
 Crooked Cr > Pacific Ocean
 Two mile Cr > Pacific Ocean
 Four mile Cr > Pacific Ocean
 Four mile Cr ab S Flk Four mile Cr
 Gold Run Cr > Pacific Ocean
 Sixes R > Pacific Ocean
 Crystal Cr > Sixes R
 Sixes R @ old gage 1432715C
 Edson Cr > Sixes R
 Sixes R ab Edson Cr
 Dry Cr > Sixes R
 Elephant Rock Cr > Sixes R
 SFlk Sixes R > Sixes R
 Sixes R ab SFlk Sixes R
 Otter Cr > Sixes R
 M Flk Sixes R > Sixes R
 Sixes R ab M Flk Sixes R
 Sugar Cr > Sixes R
 N Flk Sixes R > Sixes R
 Hays Cr > Sixes R

| | | | | | | | | | | | | | |
|-------|------------------|---------|---------|--------|--------|--------|--------|--------|-------|-------|-------|--------|---------|
| NEW → | 5000000000000000 | 622.00 | 723.00 | 642.00 | 355.00 | 115.00 | 90.10 | 43.20 | 23.70 | 16.50 | 31.50 | 307.00 | 659.00 |
| OLD → | 5000000000000000 | 1030.00 | 1120.00 | 972.00 | 532.00 | 246.00 | 209.00 | 135.00 | 87.80 | 66.80 | 96.00 | 562.00 | 1190.00 |
| | 5001000000000000 | 25.20 | 29.70 | 26.10 | 13.30 | 3.93 | 3.95 | 2.25 | 1.28 | .76 | 1.20 | 11.30 | 25.60 |
| | 5001000000000000 | 41.70 | 46.00 | 39.50 | 19.80 | 8.38 | 8.87 | 6.26 | 3.99 | 2.76 | 3.64 | 20.60 | 46.00 |
| | 5002000000000000 | 11.90 | 14.10 | 12.30 | 6.12 | 1.79 | 1.95 | 1.26 | .78 | .47 | .68 | 5.64 | 11.90 |
| | 5002000000000000 | 19.70 | 21.80 | 18.70 | 9.15 | 3.79 | 4.29 | 3.30 | 2.21 | 1.57 | 2.03 | 10.30 | 21.50 |
| | 5003000000000000 | 15.20 | 18.00 | 16.00 | 8.08 | 2.41 | 2.52 | 1.52 | .89 | .51 | .78 | 7.44 | 15.50 |
| | 5003000000000000 | 25.30 | 27.90 | 24.20 | 12.10 | 5.13 | 5.57 | 4.01 | 2.55 | 1.75 | 2.39 | 13.60 | 27.90 |
| | 5004000000000000 | 14.90 | 17.70 | 15.30 | 7.42 | 2.09 | 2.42 | 1.63 | 1.03 | .61 | .88 | 7.08 | 14.90 |
| | 5004000000000000 | 24.70 | 27.40 | 23.20 | 11.10 | 4.42 | 5.32 | 4.26 | 2.93 | 2.07 | 2.64 | 12.90 | 26.80 |
| | 5005000000000000 | 17.30 | 20.50 | 17.70 | 8.43 | 2.27 | 2.24 | 1.13 | .58 | .33 | .59 | 6.49 | 17.30 |
| | 5005000000000000 | 28.70 | 31.90 | 26.80 | 12.60 | 4.87 | 5.13 | 3.36 | 2.00 | 1.31 | 1.79 | 11.90 | 31.20 |
| | 5006000000000000 | 4.14 | 4.97 | 4.22 | 1.92 | .46 | .31 | -.02 | -.08 | -.03 | .06 | 1.04 | 4.02 |
| | 5006000000000000 | 6.87 | 7.69 | 6.38 | 2.87 | 1.02 | .86 | .34 | .11 | .09 | .20 | 1.89 | 7.24 |
| | 5007000000000000 | 439.00 | 512.00 | 464.00 | 266.00 | 89.70 | 62.10 | 27.80 | 14.30 | 10.20 | 21.30 | 228.00 | 468.00 |
| | 5007000000000000 | 729.00 | 793.00 | 703.00 | 398.00 | 193.00 | 144.00 | 87.10 | 54.30 | 43.30 | 66.80 | 417.00 | 844.00 |
| | 5007100000000000 | 41.20 | 48.50 | 44.70 | 24.70 | 7.61 | 3.30 | -.46 | -1.01 | .20 | 2.30 | 22.70 | 42.70 |
| | 5007100000000000 | 68.30 | 75.20 | 67.60 | 37.10 | 16.90 | 10.00 | 4.57 | 2.45 | 3.53 | 7.17 | 41.40 | 76.90 |
| | 5008000000000000 | 8.88 | 11.40 | 9.46 | 2.05 | -3.21 | -3.36 | -4.35 | -4.74 | -4.75 | -4.30 | .94 | 8.69 |
| | 5008000000000000 | 22.70 | 25.60 | 21.60 | 7.93 | .09 | .47 | -1.26 | -2.66 | -3.16 | -2.28 | 9.42 | |

New R > Pacific Ocean
 Bethel Cr > New L
 Butte Cr > Matton Cr
 Matton Cr > New L
 Unn str > Flavas Cr
 Unn str > Flavas Cr
 Unn str > Flavas Cr
 Flavas Cr > New R
 Willow Cr > Flavas Cr
 Davis Cr > Croft Cr

Memorandum

To: File
From: Rick Cooper
Date: June 10, 1994
Subject: Changes to Water Availability Database

The water availability numbers for four watersheds were found to be in error. They are the watersheds above the following gages:

| | |
|----------|----------------------------|
| 14145000 | Hills Creek near Oakridge |
| 14170000 | Long Tom River at Monroe |
| 14174000 | Willamette River at Albany |
| 14363000 | Applegate River near Ruch |

The water availability for the watershed above gage 14174000 was in error because of flows added to the Willamette River above the gage by the Albany Power Canal. These flows had not been subtracted from the gaged flows as they should have been. The corrected water availability numbers are about 200 cfs lower than previously, but water is still available in all months. Water availability for the other watersheds was in error because of errors in accounting for consumptive uses. For Hills Creek and for the Applegate River water availability decreased slightly, but water is still available in all months. For the Long Tom River water availability decreased slightly in the winter but increased in the summer. Although the amount of use was increased overall, some irrigated acres were moved from live flow to storage. The change in acres irrigated from live flow was sufficient to increase summer water availability. At the 80 percent level, water availability for July went from not available to available. Water was and still is available in all months at the 50 percent level.

Attached is a comparison of the base water availability at the 50 and 80 percent exceedance level. These number reflect water use to January 1, 1994, but do not include *any* instream water rights.

cc: Barry Norris
Fred Lissner
Becky Kreag
Reed Marbut
Steve Brown

14145000

80%

| | | | | | | | | | | | | |
|--------|------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| Old WA | 99.0 | 111.0 | 111.0 | 133.0 | 155.0 | 71.8 | 34.0 | 24.2 | 21.3 | 24.3 | 40.1 | 80.7 |
| New Wa | 98.8 | 111.0 | 111.0 | 133.0 | 155.0 | 71.6 | 33.8 | 24.0 | 21.1 | 24.1 | 39.9 | 80.5 |

50%

| | | | | | | | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|-------|
| Old WA | 191.0 | 179.0 | 167.0 | 210.0 | 229.0 | 125.0 | 49.3 | 31.0 | 27.3 | 33.3 | 98.7 | 194.0 |
| New Wa | 191.0 | 179.0 | 167.0 | 210.0 | 229.0 | 125.0 | 49.1 | 30.8 | 27.1 | 33.1 | 98.5 | 194.0 |

14170000

80%

| | | | | | | | | | | | | |
|--------|-----|-----|-----|-----|-----|------|-------|-------|------|------|------|-----|
| Old WA | 560 | 576 | 174 | 220 | 195 | 72.8 | -1.13 | -6.86 | 8.75 | 28.5 | 74.7 | 359 |
| New Wa | 557 | 573 | 172 | 218 | 195 | 74.6 | 3.32 | -3.67 | 9.45 | 27.0 | 72.9 | 357 |

50%

| | | | | | | | | | | | | |
|--------|------|-----|-----|-----|-----|-----|------|------|------|------|-----|------|
| Old WA | 1110 | 812 | 436 | 357 | 252 | 114 | 17.2 | 0.55 | 16.0 | 40.4 | 200 | 1050 |
| New Wa | 1100 | 810 | 434 | 355 | 252 | 116 | 21.6 | 3.73 | 16.7 | 38.9 | 199 | 1040 |

14174000

80%

| | | | | | | | | | | | | |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|
| Old WA | 9390 | 7330 | 7080 | 5940 | 6380 | 4970 | 2870 | 2160 | 2220 | 2860 | 4190 | 8200 |
| New Wa | 9880 | 9580 | 7950 | 7030 | 7020 | 4850 | 2660 | 2000 | 2080 | 2700 | 4010 | 7980 |

50%

| | | | | | | | | | | | | |
|--------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|
| Old WA | 16600 | 13100 | 11900 | 9940 | 9330 | 6980 | 3730 | 2580 | 2650 | 3550 | 8190 | 19100 |
| New Wa | 16400 | 12900 | 11700 | 9740 | 9130 | 6760 | 3520 | 2420 | 2510 | 3390 | 8000 | 18900 |

14363000

80%

| | | | | | | | | | | | | |
|--------|-------|------|------|------|-------|-------|------|------|------|------|------|-------|
| Old WA | 174.0 | 27.1 | 63.4 | 69.6 | 420.0 | 168.0 | 71.3 | 45.4 | 39.3 | 41.5 | 73.1 | 129.0 |
| New Wa | 173.0 | 26.8 | 63.0 | 67.2 | 416.0 | 163.0 | 64.5 | 39.8 | 35.6 | 40.2 | 73.0 | 128.0 |

50%

| | | | | | | | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|
| Old WA | 438.0 | 197.0 | 208.0 | 190.0 | 669.0 | 228.0 | 106.0 | 57.5 | 48.1 | 61.1 | 132.0 | 312.0 |
| New Wa | 437.0 | 197.0 | 208.0 | 188.0 | 665.0 | 283.0 | 99.6 | 51.9 | 44.4 | 59.8 | 132.0 | 311.0 |

Memorandum

To: Barry Norris
From: Rick Cooper
Date: January 3, 1995

Subject: Water Availability for the Owyhee Basin and some internally draining, intermittent streams in the Malheur Lakes and Goose and Summer Lakes

As we have discussed previously, there are a number of mostly intermittent streams in southeast Oregon for which it will be difficult to do reasonable water availability analyses. These streams include internally draining streams in the Owyhee, Malheur Lakes, and Goose and Summer Lakes Basins. The time and effort required to do water availability analyses for these streams probably exceeds the benefit to be gained from doing so because there are so few applications for water use on these streams. I believe it would be more valuable to go back to other east side basins to complete the analyses there and to estimate 50 percent exceedance flows for the review of the remaining instream water right applications.

Most of these intermittent streams in southeast Oregon flow only during rain or snow melt events and do not have a base flow. It is very likely that for most months these streams have no water available 80 percent of the time and probably not 50 percent of the time. Unfortunately there is very little information available to characterize streamflow for these streams. There are no daily records stations and few miscellaneous measurements. Available streamflow records are for streams more productive than these. Streamflow estimates made for these intermittent streams based on the available streamflow measurements would be overestimates and would indicate flow where it is unlikely to occur.

Streamflow estimates for these intermittent streams could be made with information available now, but they would be poor. It *may* be possible to improve on the estimates if more information could be found, say of gage records in Idaho or Nevada that are currently not available to us. I do not know if suitable records exist, but if they do, a *lot* of work would be necessary to be able to use them.

There are so few applications for water use on these streams that I question whether the work required to do the usual water availability analyses is worth the effort. Most applications on these streams have been for BLM ponds and have not required a formal water availability analysis. In these cases, whether water is available has been determined by the water masters based on their experience in the area. I propose that the Department extend this idea to all water uses for these types of streams. Attached is a list of questions that might be included on a form for the water masters to fill out in deciding whether water should be allocated or not.

I had originally thought to include the tributaries to the Owyhee River in this discussion, but some of these tributaries are not intermittent and three have applications for instream water rights. In

any case, all of the tributaries contribute flow to the Owyhee River and water use on these streams impacts flow in the Owyhee. Unfortunately most of these streams will be difficult to analyze for the reasons already discussed. Additionally the Owyhee itself will be difficult to analyze because most of its contributing area lies outside the state and the information available to us about flow in the river is affected by regulation and water use for which we cannot easily account. Again there will be a lot of work for what I expect will be little benefit. There are few applications for water use in the Owyhee basin. Although I expect at least some of these streams, if not all, must be analyzed, I recommend we save them until after the work on the other east side basins is complete.

4/5/95

To: Barry Norris
From: Ken Stahr
Subject: Klamath Basin Consumptive Use Figures

The list of claims for the Klamath Basin adjudication did not, in most cases, include cfs rates for specific uses such as domestic, livestock, or wildlife. The claims for irrigation included acreage but no cfs rate.

In order to determine consumptive use the following decisions were necessary:

Domestic 0.01 cfs per household.
Livestock 0.01 cfs.
Stock/Wildlife 0.01 cfs.

No attempt was made to estimate a cfs rate for irrigation, it is not necessary in determining water availability, acreage is sufficient.

The rates for other uses such as municipal, agriculture, power etc., were indeterminable. However, these uses do not appear to be of any consequence in the list of claims.


The rates listed above were based on precedence in similar basins.

cc file

WRD INTERNAL MEMO

September 15, 1995

To: Rick Cooper

From: Barry Norris 

Subject: Nestucca Scenic Waterway

It is my understanding that when you consider a scenic waterway flow in water availability analysis, you apply the same flow requirement throughout the designated reach. In general this approach is correct, but is inappropriate for the scenic waterway flow in the Nestucca River. I've reviewed the information that is available concerning the Commission's adoption of that flow, and I've discussed the matter with Bill Fuji. Bill is the author of the document that defines the scenic waterway flows and adopted by the Commission. As you know, the language that defines the scenic flow for the Nestucca River is unique. It specifies that a specific flow be maintained at the gage at Beaver which is below the scenic waterway reach. Bill has confirmed that the language is specific and his intent when drafting the document was exactly as it is written.

Please modify your water availability calculations to reflect the language that defines the flow requirements for the scenic waterway in the Nestucca River. It will be necessary for you to calculate flows within the reach that must be maintained in order to meet the flow requirements at the Beaver gage. Your method should comply with acceptable scientific hydrologic methods, and it should define flow within the reach in sufficient terms to facilitate future water availability analyses. I expect the results of your calculations will provide for a reduction in flow requirements as you proceed upstream.

cc: Water Availability Documentation Notebook
Steve Applegate
Tom Paul

Date: Mon, 18 Sep 1995 11:22:30 -0700

X-Sender: cooperm@mailhub.wrd.state.or.us

To: norrisbf

From: cooperm@chetco.wrd.state.or.us (Richard M. Cooper)

Subject: Nestucca Scenic Waterway Flows

Cc: applegsp, frenchdw, paultj

X-UIDL: 811448667.000

I have modified the scenic waterway flow requirements on the Nestucca as we discussed. They now represent the flow necessary from each basin to meet the required scenic waterway flow at Beaver.

The new numbers have been entered into the data base. Water Availability for the upper Nestucca has changed considerably. There is now water available for storage (50% percent exceedance) through the winter months.

WRD INTERNAL MEMO

November 16, 1995

To: Dwight French

From: Barry Norris *BN*

Subject: Water Availability

The attached is a listing, by basin, of non-consumptive water uses not considered in the water availability calculations. However, in some instances consideration should be given (such as the 838 cfs right for the wildlife on the Doner und Blitzen River in the Malheur Lake Basin).

I suggest a quick scan of this list is in order as part of your water availability determinations.

If you have any questions please discuss with me or Ken Stahr.

CC: Ken Stahr

3-1-89

DEL SPARKS, W.A. #17

CALLED AND STATED THAT THIS

SPRING IS COMMONLY CALLED AGENCY

SPRINGS AND IS TRIBUTARY TO

WOOD RIVER NOT 4 MILE CREEK

AS STATED ON APPLICATION

John W.

14-0090-0010-0270

MEMO

January 10, 1996

To: Dwight French

From: Barry Norris



Attached is some information concerning water availability determinations for the areas where we do not have a model. As you can see from the form, the region offices will provide you sufficient information for your staff to make the determination.

The process should work as follows:

Your staff, in concert with you, will determine that this process is necessary and they will complete section 1 of the form. The form will be passed through you to Rick Cooper. Rick will review and pass the form on to Tom Paul. Tom will distribute to the appropriate region. Region staff will return the completed form to Tom who will pass it along to Rick Cooper. Rick will review the completed form and send it back to you.

cc: Tom Paul
Rick Cooper

Watermaster Determination of Water Availability

The following application for use of water is from a surface water source for which a reasonable water availability analysis can not be made. The use is out of stream and consumptive. The determination of water availability is to be made by the Watermaster based on observations of the water source and knowledge of existing water use from that source.

SECTION 1 - COMPLETED BY WATER RIGHTS DIVISION

Application # _____

Source _____

Tributary To _____

Basin _____

POD T _____ R _____ S _____
 $\frac{1}{4}$ _____ $\frac{1}{4}$ _____

Proposed Use _____

Requested Rate _____

Duty _____

Allowable Rate _____

SECTION 2 - COMPLETED BY REGION OFFICE STAFF

1. Are there existing diversions for water use downstream?

2. What impact could the existing diversions have on availability for the proposed use?

3. Are there periods when there is insufficient water to satisfy existing rights?

4. Is there sufficient water from this source to meet the proposed use a reasonable amount of the time?

5. Will the user have use of water at least 80 percent of the time (list by months)?

Watermaster _____

Region _____

Signature _____

Date _____

Memorandum

To: Mike Mattick
From: Rick Cooper
Date: February 1, 1996
Subject: Instream Water Right Application # 71551 - Crystal Springs Creek

My estimates of 50 percent exceedance natural streamflow for Crystal Springs Creek tributary to Johnson Creek are much too low. The models I use do not account for the considerable spring contribution to streamflow. There are not enough data to determine streamflows accurately, but the limited information we have suggests ODFW's request for instream flows is reasonable.

In lieu of 50 percent exceedance flows I recommend that you accept ODFW's request as submitted.

The available information supports this recommendation. There are six miscellaneous measurements all greater than 13 cfs and all taken in the months of June, July, and August. Greg Beaman thinks that the streamflow in late summer is probably somewhat less than 10 cfs. His observations, however, have been during an extended drought. Oregon Water Law (538.170) withdraws Johnson Creek and its tributaries from appropriation except for flows in Crystal Springs Creek in *excess* of 10 cfs.

I will make estimates of streamflow for Crystal Springs Creek by adding 10 cfs to the estimates I have already made. The original estimates represent runoff and the 10 cfs represents spring flow. I think these numbers are low, and I will revise them when more information is available. Greg Beaman may be able to take a series of miscellaneous measurements over the next year. With those I may be able to more reasonably estimate the spring flow contribution.

c: Barry Norris

Memorandum

To: File
From: Rick Cooper
Date: April 18, 1994
Subject: Changes to Water Availability Database

Effective April 15, 1994, the following changes have been made to the water availability database.

Water Availability Subbasins Added

Mid Coast Basin

| | |
|---------------------------------------------------------|------------------|
| D River, at the mouth, tributary to the Pacific Ocean. | 0200000000000000 |
| Unnamed stream, at the mouth, tributary to the D River. | 0201000000000000 |

South Coast Basin

| | |
|----------------------------------------------------------|------------------|
| Davis Creek, at the mouth, tributary to Croft Lake. | 5008000000000000 |
| Cut Creek, at the mouth, tributary to the Pacific Ocean. | 7900000000000000 |

Water Availability Subbasins Renumbered

Mid Coast Basin

| | |
|-------------------------------------------------------------|------------------------|
| Rock Creek, at the mouth, tributary to Devils Lake. | 0202000000000000 (new) |
| | 0200000000000000 (old) |
| Rock Creek, above unnamed stream, tributary to Devils Lake. | 0202100000000000 (new) |
| | 0210000000000000 (old) |

Base Water Availability Revised

The 'base water availability' is the water availability as of 1/1/93. An estimate of water use as of 1/1/93 for a given watershed is subtracted from an estimate of the natural stream flow for that watershed to obtain the water availability estimate.

For the watersheds that follow, the estimates of natural stream flow were revised shortly after the base water availability calculations were done. The base water availability numbers were not updated, however. The error was discovered and corrected April 15, 1994. The old (incorrect) and new (correct) base water availability numbers are shown. These numbers represent water availability on 1/1/93, and in general do not reflect water availability at any later date.

North Coast Basin

| | | | | | | | | | | | | |
|-------------------------------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------------------|-------|
| Goble Creek, at the mouth, tributary to the Columbia River. | | | | | | | | | | | 2300000000000000 | |
| old 80% | 26.30 | 28.10 | 19.40 | 13.10 | 8.39 | 3.78 | 1.88 | 1.58 | 1.58 | 1.49 | 1.91 | 11.80 |
| new 80% | 24.50 | 29.10 | 26.00 | 16.60 | 8.87 | 4.43 | 1.97 | 1.34 | 1.12 | 1.68 | 3.46 | 13.50 |
| old 50% | 44.00 | 43.00 | 28.40 | 20.30 | 11.70 | 7.49 | 3.64 | 2.43 | 2.00 | 1.54 | 5.45 | 32.60 |
| new 50% | 44.60 | 56.80 | 40.20 | 24.20 | 13.10 | 8.24 | 3.62 | 2.08 | 2.02 | 2.45 | 7.25 | 41.30 |

Mid Coast Basin

| | | | | | | | | | | | | |
|------------------------------------------------------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|------------------|--------|
| Drift Creek, at the mouth, tributary to the Pacific Ocean. | | | | | | | | | | | 0400000000000000 | |
| old 80% | 266.00 | 264.00 | 245.00 | 94.00 | 143.00 | 81.50 | 54.40 | 37.70 | 32.20 | 40.90 | 177.00 | 319.00 |
| new 80% | 144.00 | 178.00 | 182.00 | 109.00 | 64.20 | 35.70 | 20.20 | 11.40 | 10.20 | 16.10 | 88.70 | 167.00 |
| old 50% | 534.00 | 453.00 | 414.00 | 272.00 | 192.00 | 119.00 | 74.00 | 48.20 | 44.70 | 85.20 | 381.00 | 554.00 |
| new 50% | 337.00 | 353.00 | 288.00 | 171.00 | 96.90 | 57.50 | 32.70 | 18.40 | 17.40 | 43.90 | 226.00 | 367.00 |
| Bear Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | 0501000000000000 | |
| old 80% | 15.70 | 16.40 | 14.70 | 10.40 | 6.91 | 4.03 | 2.74 | 1.97 | 1.66 | 1.98 | 7.98 | 17.00 |
| new 80% | 13.50 | 15.30 | 13.70 | 10.70 | 7.03 | 4.86 | 3.18 | 2.13 | 1.61 | 1.95 | 5.60 | 16.50 |
| old 50% | 33.80 | 29.20 | 26.10 | 15.50 | 9.64 | 7.15 | 4.48 | 2.81 | 2.32 | 3.94 | 18.60 | 33.40 |
| new 50% | 27.20 | 22.70 | 22.70 | 16.40 | 10.00 | 6.81 | 4.38 | 3.01 | 2.69 | 2.90 | 14.70 | 28.30 |
| Cedar Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | 0502000000000000 | |
| old 80% | 70.10 | 71.40 | 65.70 | 50.60 | 36.90 | 22.90 | 17.50 | 13.90 | 12.00 | 13.30 | 44.10 | 77.40 |
| new 80% | 60.20 | 66.60 | 61.10 | 51.90 | 37.50 | 27.60 | 20.40 | 15.00 | 11.70 | 13.10 | 30.90 | 75.00 |
| old 50% | 143.00 | 124.00 | 112.00 | 71.50 | 48.80 | 33.80 | 23.30 | 16.50 | 15.40 | 24.60 | 89.80 | 143.00 |
| new 50% | 115.00 | 95.90 | 97.10 | 75.70 | 50.60 | 32.20 | 22.80 | 17.60 | 17.90 | 18.10 | 70.80 | 121.00 |
| Euchre Creek, at the mouth, tributary to Siletz River. | | | | | | | | | | | 0503000000000000 | |
| old 80% | 73.70 | 75.10 | 69.10 | 53.00 | 38.10 | 23.20 | 16.80 | 12.70 | 11.10 | 12.90 | 46.20 | 82.50 |
| new 80% | 63.20 | 70.10 | 64.20 | 54.30 | 38.80 | 28.00 | 19.50 | 13.80 | 10.70 | 12.80 | 32.40 | 80.00 |
| old 50% | 150.00 | 130.00 | 118.00 | 76.00 | 52.20 | 34.70 | 22.80 | 15.60 | 14.60 | 24.70 | 96.70 | 151.00 |
| new 50% | 121.00 | 101.00 | 103.00 | 80.50 | 54.20 | 33.10 | 22.30 | 16.70 | 16.90 | 18.20 | 76.30 | 128.00 |

| | | | | | | | | | | | | |
|-------------------------------------------------------------|--------|--------|---------|--------|--------|--------|-------|-------|-------|-------|--------|------------------|
| Alsea River, above Five Rivers, tributary to Pacific Ocean. | | | | | | | | | | | | 0802120000000000 |
| old 80% | 687.00 | 799.00 | 657.00 | 446.00 | 255.00 | 139.00 | 70.20 | 44.20 | 39.60 | 49.00 | 178.00 | 613.00 |
| new 80% | 710.00 | 814.00 | 672.00 | 454.00 | 260.00 | 145.00 | 72.50 | 45.40 | 42.30 | 52.80 | 195.00 | 634.00 |
| old 50% | 1370.0 | 1370.0 | 1080.00 | 690.00 | 375.00 | 199.00 | 97.80 | 57.50 | 55.50 | 75.40 | 537.0 | 1270.00 |
| new 50% | 1390.0 | 1390.0 | 1090.00 | 702.00 | 384.00 | 194.00 | 95.80 | 57.40 | 58.00 | 83.50 | 576.0 | 1310.00 |

Willamette Basin @ 50 %

| | | | | | | | | | | | | | |
|------------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------------------|--------|
| Long Tom River, at the mouth, tributary to Willamette River. | | | | | | | | | | | | 0105344000000000 | |
| old 50% | 1210.0 | 1210.0 | 562.0 | 437.0 | 281.0 | 114.0 | 17.2 | | .55 | 16.0 | 40.4 | 200.0 | 1050.0 |
| new 50% | 1110.0 | 812.0 | 436.0 | 357.0 | 252.0 | 114.0 | 17.2 | | .55 | 16.0 | 40.4 | 200.0 | 1050.0 |
| McKenzie River, at the mouth, tributary to Willamette River. | | | | | | | | | | | | 0105345000000000 | |
| old 50% | 7600.0 | 7470.0 | 6740.0 | 5730.0 | 5180.0 | 3640.0 | 2230.0 | 1810.0 | 1830.0 | 2240.0 | 4310.0 | 6720.0 | |
| new 50% | 7400.0 | 7180.0 | 6540.0 | 5530.0 | 5080.0 | 3640.0 | 2230.0 | 1810.0 | 1830.0 | 2240.0 | 4310.0 | 6720.0 | |
| McKenzie River, above Bear Creek, tributary to Willamette River. | | | | | | | | | | | | 0105345300000000 | |
| old 50% | 5110.0 | 4530.0 | 4130.0 | 4230.0 | 4150.0 | 3240.0 | 2200.0 | 1850.0 | 1850.0 | 2010.0 | 3420.0 | 4700.0 | |
| new 50% | 4910.0 | 4240.0 | 3940.0 | 4040.0 | 4040.0 | 3240.0 | 2200.0 | 1850.0 | 1850.0 | 2010.0 | 3420.0 | 4700.0 | |

Willamette Basin @ 80 %

| | | | | | | | | | | | | |
|------------------------------------------------------------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------------------|
| Willamette River, above Glenn Creek, tributary to Columbia River. | | | | | | | | | | | | 0105300000000000 |
| old 80% | 17900 | 16700 | 14700 | 13600 | 13400 | 7390 | 3610 | 2610 | 2850 | 4240 | 8970 | 16300 |
| new 80% | 17100 | 12400 | 13100 | 11500 | 12100 | 7210 | 3610 | 2610 | 2850 | 4240 | 8960 | 16300 |
| Willamette River, above Periwinkle Creek, tributary to Columbia River. | | | | | | | | | | | | 0105400000000000 |
| old 80% | 10100 | 9780 | 8150 | 7270 | 7260 | 5070 | 2870 | 2160 | 2220 | 2860 | 4200 | 8200 |
| new 80% | 9390 | 7330 | 7080 | 5940 | 6380 | 4970 | 2870 | 2160 | 2220 | 2860 | 4190 | 8200 |

cc: Barry Norris
 Fred Lissner
 Steve Brown
 Reed Marbut
 Becky Kreag

C05

Application No. 69829

Permit No. 53060

Name RAYMOND J Driscoll

Address HC 30 Box 138-G - Chilogaquin OR 97624

Assigned

Address

Beginning construction 12-26-97

Completion of construction 10-1-98

Extended to

Complete application of water 10-1-99

Extended to

NOTICE!!

This case now is scheduled for contested case hearing. This agency file also is the hearings file.

DO NOT remove *anything* from this file, do not add anything to this file, and do not change the order of anything in this file without first obtaining explicit permission from the Administrative Law Judge to whom this case has been assigned.

- Weisha Mize, extension 311
- Steve Elmore, extension 301

If you have any questions, contact either of them or Joanne Urbigkeit, Hearings Section Coordinator, at extension 300.

3-15-89
Del Sparks called to
mention that the spring
is trib. Wood River
— Jim

Basin: Klamath

Application #

5-69829

Applicant Name

Driscoll

Date: May 14, 1996

AREA

Y Sensitive, threatened, endangered fish presence.

Source Watershed

INFORMATION/CONDITIONS

1. Are there water quality concerns? Y

Are there water quality concerns related to sensitive, threatened or endangered fish? Y N
Should the application be denied? Y N
Should the application be restricted? Y N

| Jan | Feb | Mar | Apr | May | Jun 1-15 | June 16-30 | Jul | Aug | Sep 1-15 | Sep 16-30 | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|----------|------------|-----|-----|----------|-----------|-----|-----|-----|
| | | | | | | | | | | | | | |

2. Are there adequate flows to protect sensitive, threatened or endangered fish? Y N

Should the application be denied? Y N
Should the application be restricted beyond water availability limitations? Y N

| Jan | Feb | Mar | Apr | May | Jun 1-15 | June 16-30 | Jul | Aug | Sep 1-15 | Sep 16-30 | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|----------|------------|-----|-----|----------|-----------|-----|-----|-----|
| | | | | | | | | | | | | | |

3. Domestic

Should domestic use be conditioned to human consumption? Y N

4. Fish Screening and Passage

- A. Requires fish screening and passage, with ODFW certification (applications > 0.5 cfs).
- B. Requires fish screening and passage, without ODFW certification (applications < 0.5 cfs).
- C. No dam or obstruction without a fishway.
- M. Screening may be required.

5. Miscellaneous

- A. Reservoir Filling _____
- B. Water Quality Permits _____
- C. Return Flow _____
- D. Time Limited Water Right _____
- E. Other _____
- F. Livestock Limitation _____

6. Measurement and Reporting

- A. Small diversions (<0.1 cfs or <9.2 ac/ft. may/may)
- B. Medium diversions (0.1 cfs or >9.2 and <1.5 cfs or <100 ac/ft. shall/may)
- C. Large diversions (1.5 cfs or >100 ac/ft. shall/shall)
- T. Totalizing

FINDINGS

- Deny permit due to fishery concerns.
- Condition permit due to fishery concerns listed above.
- No sensitive, threatened or endangered fish present, therefore, no additional conditions.

State of Oregon
Water Resources Department

In the Matter of the Water Right Application
of Raymond J. Driscoll,
Protestant

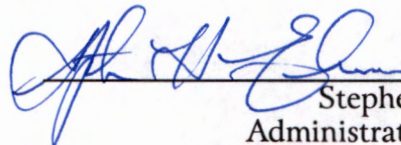
Application No. S 69829

Order of Postponement and Notice of Contested Case Hearing

A contested case hearing was scheduled in this matter for 9:00 a.m., Monday, May 20, 1996. At the request of the applicant/protestant, however, *it is ordered* that the hearing be postponed to 9:00 a.m., Tuesday, November 19, 1996.

Both the Protestant and the Department are ordered to provide each other and the Administrative Law Judge lists of any witnesses--including telephone numbers--whom they propose to call and copies of any exhibits that they propose to introduce, **hand-delivered or postmarked no later than Monday, November 4, 1996.** Failure to deliver or mail witness lists and copies of exhibits by that postmark date may result in exclusion of the proposed evidence.

Dated May 20, 1996.

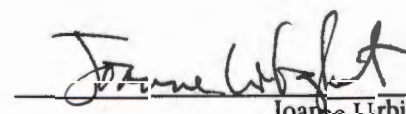


Stephen H. Elmore,
Administrative Law Judge
Water Resources Department
158 12th Street NE
Salem, OR 97310

Certificate of Service

I certify that on May 20, 1996, I hand-delivered a copy of this Order and Notice in a sealed envelope to the office of Steven P. Applegate, Acting Administrator; Water Rights Division; 158 12th St. NE; Salem, OR 97310; and mailed first-class postage prepaid, copies to Stephen E.A. Sanders, Assistant Attorney General; Oregon Dept. of Justice; 1162 Court St. NE; Salem, OR 97310; and to Raymond J. Driscoll; HC-30, Box 138-G; Chiloquin, OR 97624.

Dated May 20, 1996.



Joanne Urbigkeit,
Hearings Section Coordinator

Basin: Klamath

WAB #

Application #

S-69829

Applicant Name

Raymond J. Driscoll

Date: May 14, 1996

AREA

Source Watershed

INFORMATION/CONDITIONS

1. Are there water quality concerns related to sensitive, threatened or endangered fish? Y N

if yes summer temperature

Should the application be denied? Y N

Should the application be restricted? Y N

| Jan | Feb | Mar | Apr | May | Jun 1-15 | June 16-30 | Jul | Aug | Sep 1-15 | Sep 16-30 | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|----------|------------|-----|-----|----------|-----------|-----|-----|-----|
| | | | | | | | | | | | | | |

2. Are there adequate flows to protect sensitive, threatened or endangered fish? Y N

Should the application be denied? Y N

Should the application be restricted? Y N base on WA

| Jan | Feb | Mar | Apr | May | Jun 1-15 | June 16-30 | Jul | Aug | Sep 1-15 | Sep 16-30 | Oct | Nov | Dec |
|-----|-----|-----|-----|-----|----------|------------|-----|-----|----------|-----------|-----|-----|-----|
| | | | | | | | | | | | | | |

3. Domestic

Should domestic use be conditioned to human consumption? Y N

4. Fish Screening and Passage

- A. Requires fish screening and passage, with ODFW certification (applications > 0.5 cfs).
- B. Requires fish screening and passage, without ODFW certification (applications < 0.5 cfs).
- C. No dam or obstruction without a fishway.
- M. Screening may be required.

5. Miscellaneous

- A. Reservoir Filling _____
- B. Water Quality Permits _____
- C. Return Flow _____
- D. Time Limited Water Right _____
- E. Other _____
- F. Livestock Special _____

6. Measurement and Reporting

- A. Small diversions (<0.1 cfs or <9.2 ac/ft. may/may)
- B. Medium diversions (0.1 cfs or >9.2 and <1.5 cfs or <100 ac/ft. shall/may)
- C. Large diversions (1.5 cfs or >100 ac/ft. shall/shall)
- T. Totalizing

FINDINGS

Deny permit due to fishery concerns.

Condition permit due to fishery concerns listed above.

State of Oregon
Water Resources Department

In the Matter of the Water Right Application
of Raymond J. Driscoll,
Protestant

Application No. S 69829

Notice of Contested Case Hearing

A contested case hearing in the above matter will commence at 9:00 a.m., Monday, May 20, 1996. The hearing will be conducted by telephone by Administrative Law Judge Stephen H. Elmore, and will examine the following issues:

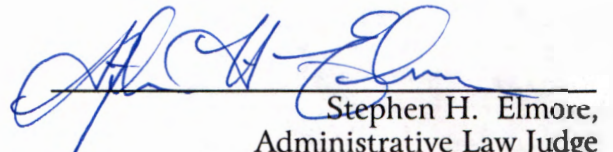
Whether the application should be denied.

The hearing will commence promptly at 9:00 a.m., and will conclude no later than noon. The agency file will be a proposed exhibit. Any objections to its entry into the record should be raised at the hearing.

Both the Protestant and the Department are ordered to provide each other and the Administrative Law Judge lists of any witnesses--including telephone numbers--whom they propose to call and copies of any exhibits that they propose to introduce, **hand-delivered or postmarked no later than Monday, May 13, 1996**. Failure to deliver or mail witness lists and copies of exhibits by that postmark date may result in exclusion of the proposed evidence.

Enclosed is a copy of STATEMENT OF PARTIES' RIGHTS IN CONTESTED CASE HEARINGS.

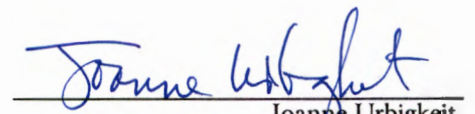
Dated April 26, 1996.


Stephen H. Elmore,
Administrative Law Judge
Water Resources Department
158 12th Street NE
Salem, OR 97310

Certificate of Service

I certify that on April 26, 1996, I hand-delivered a copy of this Notice of Hearing in a sealed envelope to the office of Steven P. Applegate, Acting Administrator; Water Rights Division; 158 12th St. NE; Salem, OR 97310, and mailed first-class postage prepaid, a copy of this Notice and the agency's file to Raymond J. Driscoll; HC-30, Box 138-G; Chiloquin, OR 97624.

Dated April 26, 1996.


Joanne Urbigkeit,
Hearings Section Coordinator

RECEIVED

APR 22 1996

WATER RESOURCES DEPT.
SALEM, OREGON

Oregon

WATER
RESOURCES
DEPARTMENT

April 8, 1996

Raymond J. Driscoll
HC 30, Box 138-G
Chiloquin, Oregon 97624

RE: Application S-69829

Mr Driscoll:

The records of the Department's Hearings Section indicate that you have filed a protest against the Department's proposed final order or its denial of your objection to its technical review regarding your application for a water-use permit. A new law enacted by the legislature in 1995 requires that if you want a contested case hearing, the Department is required by law to conduct one.

A contested case hearing is a legal proceeding similar to a hearing in court. It is conducted by an impartial administrative law judge (ALJ) who determines whether the proposed final order was factually or legally incorrect, and then issues a new proposed final order. Exceptions to the ALJ's order then can send the case to the Water Resources Commission for a final order, but if no exceptions are filed, then the ALJ's order is issued as a final order. After the final order has been issued, any appeal of the order will be heard by the Oregon Court of Appeals.

If you do not request a contested case hearing, the Department nevertheless may schedule one at its own discretion. If, however, the Department chooses not to schedule a contested case hearing, the Department will issue a final order that either adopts or modifies the proposed final order. Any challenge to that final order will be heard in the Marion County Circuit Court or in the circuit court of the county in which you reside.

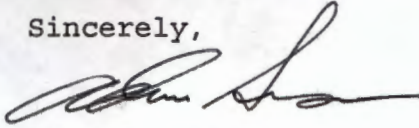
Even though you may be negotiating with Department representatives about your application, you still must tell us specifically whether you do or do not want a contested case hearing. Please check the appropriate box below, and return the letter to my attention **postmarked no later than 15 days after the above date**, so that we will know whether to



Commerce Building
158 12th Street NE
Salem, OR 97310-0210
(503) 378-3739
FAX (503) 378-8130

schedule a contested case hearing. If you do not return the letter within that time, we will presume that you do not want a contested case hearing, and will proceed with our own determination of whether one should be scheduled.

Sincerely,



Adam Sussman
Program Analyst
Water Rights and Adjudications Division

RECEIVED

APR 22 1996

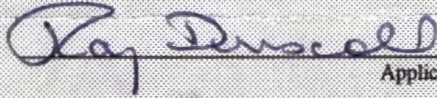
WATER RESOURCES DEPT.
SALEM, OREGON

I am the applicant and have filed a protest in the above water rights application.

I do not request a contested case hearing.

I do request a contested case hearing.

4-20-96
Date



Applicant Signature

Human consumption may be possible. No W.A. because of SWW. No way!

— Go to hearing if desired

— If not desired see if he wants H.C. then issue! F.O.

March 26, 1996

Director
Water Resources Department
Commerce Building
158 12th Street NE
Salem, Oregon 97310-0210

Attn: Steve Brown

Re: In the Matter of Surface Water Application
S-69829 submitted by Raymond J. Driscoll

Dear Mr. Brown:

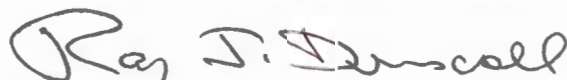
The Proposed Final Order is not acceptable in its proposed form. Several items as applied for are in error in the proposed final form. These items are:

1. Pipeline sizes,
2. Amount of water applied for is less than the amount granted,
3. Use of water is for human consumption,
4. Water should be allocated during each month of the year,
5. The size of the pump in use is incorrect.

The spring is used by myself to provide water to my residence and to Crater Lake Water Company for their commercial use. This company, which I started with my deceased wife, bottles water for resale. I must have the 150 gallons per minute to supply my domestic needs, as well as to provide ample water for the bottling facility throughout the year. The proposed final order would not let me have any water during several months of the year. The amount of water allowed seems to be excessive. My calculations indicate that I would be entitled to approximately 450 gallons per minute. This is not necessary and should be corrected.

The spring in question is not affected by the present use of domestic water or the commercial use of the water. The flow is constant throughout the year and has been so for the twenty odd years that I have lived here. I do not believe that my continued use of the water, as applied for, will have any negative impact of any other use of the water that flows from the spring.

I would appreciate your review of my request to allow the applied for uses of the water from the spring during each month of the year. It appears that the Department is concerned that the my use of the water, as applied for, would cause a decrease of the water available for downstream users during the summer months from July 1 through September 30. This is not the case as the flow remains constant throughout the year. Thank you for your consideration of my proposal.


Raymond J. Driscoll

RECEIVED

MAR 29 1996

WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON
WATER RESOURCES DEPARTMENT
WATER RIGHTS DIVISION

Before the Director Water Resources Department

In the matter of) PROPOSED
Surface Water Application) FINAL
S-69829 submitted by) ORDER
RAYMOND J. DRISCOLL

FINDINGS OF FACT

Water Use Request

1. RAYMOND J. DRISCOLL requested use of 1.0 CUBIC FOOT PER SECOND (CFS) of water from AGENCY SPRING, TRIBUTARY TO AGENCY CREEK, for INDUSTRIAL USE (DRINKING WATER), within the Klamath Basin.
2. The area of proposed use is in Klamath County within SECTION 18, TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.
3. The water delivery system is described by the applicant as APPROXIMATELY 480 FEET OF 6 INCH DIAMETER PIPE, WHICH NARROWS INTO 3 FEET OF 2 INCH DIAMETER PIPE THAT GOES INTO A 15 HORSEPOWER ELECTRIC CENTRIFUGAL PUMP, AND THEN OUT THROUGH 3 FEET OF 2 INCH DIAMETER OUTLET PIPE AND THEN INTO A 6 INCH DIAMETER PIPE. THE PUMP AND THE SUPPLY LINE ARE ALREADY IN EXISTENCE AND PART OF AN EXISTING GOVERNMENT DAM AND TURBINE PROJECT WHICH IS NOW ABANDONED. THE PROPOSED CONSTRUCTION IS OF THE PIPELINE TO THE LOADING AREA.
4. The request was made in Application S-69829 which was received by the Water Resources Department on February 1, 1989.

Affected Waters

1. AGENCY SPRING, TRIBUTARY TO AGENCY CREEK, is above a State Scenic Waterway.
2. There is no evidence in the record as to the presence of fish at the point of diversion. The installation of fish screening and by-pass devices though not required at this time may be required in the future.
3. There are senior water rights on AGENCY SPRING, TRIBUTARY TO AGENCY CREEK, or on downstream waters.

Department Actions

1. The application was determined to be complete and not defective.
2. An Initial Review of the application was completed and a report of the results of that review was mailed to the applicant on JANUARY 24, 1996.

3. The Initial Review determined:
 - a. INDUSTRIAL USE (DRINKING WATER) is allowed under the Klamath River Basin Compact.
 - b. The use is not prohibited by Statute.
 - c. Water is available for further appropriation (at a 50 percent exceedance probability) for the period DECEMBER 1 THROUGH JUNE 30 AND DURING THE MONTH OF OCTOBER.
 - d. The use would not injure existing water rights.
4. The report of Initial Review listed these determinations and disclosed a number of conditions and restrictions that would likely be included in the permit if issued. These conditions and restrictions are listed in the attached draft permit.
5. The applicant did not notify the Department to stop processing this application within 14 days after the report was mailed as provided in ORS 537.150(5).
6. The Department proceeded with processing the application and on FEBRUARY 13, 1996 published notice of the application in its weekly Public Notice of Water Rights.
7. At the close of the 30 day comment period provided in ORS 537.150(7), the Department had not received comments on the application.

Assessment

1. In proceeding with evaluation of Application S-69829, the following criteria were found to be relevant by the Department.
 - a. The Klamath River Basin Compact (ORS 542.610)
 - b. The amount of water available in AGENCY SPRING, TRIBUTARY TO AGENCY CREEK
 - c. The established rate and duty for the proposed use
 - d. Pending, senior applications and existing water rights of record
 - e. Compliance with Statewide Planning Goals, Compatibility with Comprehensive Plans, and Coordination on Land Use Matters (OAR 690, Division 5)
 - f. Comments received

CONCLUSIONS OF LAW

1. Based upon continued evaluation, the Department finds the determinations of the Initial Review remain valid.
2. The period of allowed use is OCTOBER 1 THROUGH OCTOBER 31 AND DECEMBER 1 THROUGH JUNE 30.
3. The Department proposes to issue the attached permit contingent on the receipt of the attached "Limited Period of Use Acknowledgement Letter." This letter must be signed and returned to the Department within 45 days. Failure to return the letter may result in the

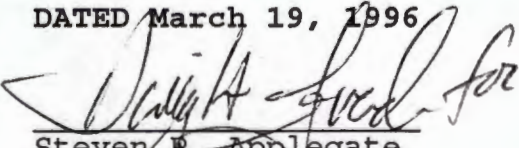
Department withholding issuance of the permit and may result in the eventual **rejection** of your application.

4. The Department finds that no more than 1.0 CFS would be necessary for the proposed use. The amount of water requested, 1.0 CFS, is allowable.
5. The application was filed prior to the adoption of OAR 690-05; therefore, the submission of land use information with the application is not required.
6. Pursuant to ORS 390.835, the proposed use, as conditioned, will not reduce streamflows needed to maintain the free-flowing character of the KLAMATH River Scenic Waterway in quantities necessary for recreation, fish and wildlife uses.
7. The proposed use would not conflict with existing water rights, and, if exercised in accordance with law, rule, and the proposed conditions would not result in injury to existing water users.
8. The proposed use complies with all other rules of the Commission.
9. Pursuant to Chapter 416, Oregon laws, 1995, enacted by the 68th Oregon Legislative Assembly, and given the findings listed above, a rebuttable presumption has been established that the use will not impair or be detrimental to the public interest if exercised in the manner described in the attached draft permit.
10. Therefore, the proposed use, as conditioned, and described in the attached draft permit, would not impair or be detrimental to the public interest.

PROPOSED ORDER

IT IS PROPOSED that Application S-69829 in the name of RAYMOND J. DRISCOLL be approved for INDUSTRIAL USE (DRINKING WATER) as provided in the attached draft permit.

DATED March 19, 1996


Steven P. Applegate
Administrator
Water Rights and Adjudications Division

NOTICE:

This Proposed Final Order is issued by the Department pursuant to Chapter 416, Oregon laws, 1995, enacted by the 68th Oregon Legislative Assembly.

To seek changes in this proposed final order, you must file a formal protest.

Formal protests to this proposed final order must be made in proper form and accompanied by the statutory fee in the amount of \$200. Note: The applicant is not subject to this fee.

For other than the applicant, if you agree with the findings in this proposed order, but wish to maintain your right to participate in any contested case proceeding or judicial review, you must file a written request for standing. Requests for standing in proceedings relating to this application must be made in the proper form and accompanied by the statutory fee in the amount of \$50.

Protests or requests for standing, along with the appropriate fees must be received by the Water Resources Department in Salem, Oregon by 5:00 pm on May 3, 1996.

Only the applicant and any persons who timely file a protest or request for standing may participate in further proceedings before the Department or the Commission which deal with this Application.

DRAFT
STATE OF OREGON
COUNTY OF KLAMATH

DRAFT PERMIT TO APPROPRIATE THE PUBLIC WATERS

THIS DRAFT PERMIT IS HEREBY ISSUED TO

RAYMOND J. DRISCOLL
HC 30, BOX 138G
CHILOQUIN, OREGON 97624

PHONE: (541) 783-2450

The specific limits for the use are listed below along with conditions of use.

APPLICATION FILE NUMBER: S-69829

SOURCE OF WATER: AGENCY SPRING, TRIBUTARY TO AGENCY CREEK

PURPOSE OR USE: INDUSTRIAL USE (DRINKING WATER)

RATE OF USE: 1.0 CUBIC FOOT PER SECOND

PERIOD OF ALLOWED USE: OCTOBER 1 THROUGH OCTOBER 31 AND DECEMBER 1 THROUGH JUNE 30

DATE OF PRIORITY: FEBRUARY 1, 1989

POINT OF DIVERSION LOCATION: SW 1/4 SW 1/4, SECTION 18, T34S, R7E, W.M.; 910 FEET NORTH & 1180 FEET EAST FROM SW CORNER, SECTION 18

THE PLACE OF USE IS LOCATED AS FOLLOWS:

SW 1/4 SW 1/4
SECTION 18
TOWNSHIP 34 SOUTH, RANGE 7 EAST, W.M.

Measurement, recording and reporting conditions:

- A. Before water use may begin under this permit, the permittee shall install a meter or other suitable measuring device as approved by the Director. The permittee shall maintain the meter or measuring device in good working order.
- B. The permittee shall allow the watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the watermaster shall request access upon reasonable notice.

- C. The Director may require the permittee to keep and maintain a record of the amount (volume) of water used and may require the permittee to report water use on a periodic schedule as established by the Director. In addition, the Director may require the permittee to report general water use information, the periods of water use and the place and nature of use of water under the permit. The Director may provide an opportunity for the permittee to submit alternative reporting procedures for review and approval.

STANDARD CONDITIONS

The use shall conform to such reasonable rotation system as may be ordered by the proper state officer.

Failure to comply with any of the provisions of this permit may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the permit.

This permit is for the beneficial use of water without waste. The water user is advised that new regulations may require the use of best practical technologies or conservation practices to achieve this end.

By law, the land use associated with this water use must be in compliance with statewide land-use goals and any local acknowledged land-use plan.

The use of water allowed herein may be made only at times when sufficient water is available to satisfy all prior rights, including prior rights for maintaining instream flows.

The Director finds that the proposed use(s) of water described by this permit, as conditioned, will not impair or be detrimental to the public interest.

Actual construction work shall begin within one year from permit issuance and shall be completed on or before October 1, 1998. Complete application of the water to the use shall be made on or before October 1, 1999.

Issued _____, 199_

DRAFT

Water Resources Department
Director

Application S-69829 Water Resources Department
Basin 14 Volume 2 Crooked Creek & Misc.
LKS MGMT.CODE

PERMIT DRAFT
District 17

LIMITED PERIOD OF USE ACKNOWLEDGEMENT LETTER

Application Number: _____

I, the applicant, acknowledge and agree that if a permit is issued, water use will only occur during the allowed period of use.

Signature

Date

COPY CHECK-OFF SHEET FOR PROPOSED FINAL ORDERS

CC: FILE # S-69829

WATERMASTER # 17

REGIONAL MANAGER: BOB MAIN

ODF&W - Klamath County: KLAMATH COUNTY

CWRE (if agent): JACOB C. ZAIGER

DEQ

OTHER STATE AGENCY IF NECESSARY:

DIVISION 33 LIST: _____ COLUMBIA RIVER INTERTRIBAL FISH COMMISSION; U.S. FISH & WILDLIFE;
(CHECK ONLY IF APPLICABLE) _____ NORTHWEST POWER PLANNING COUNCIL & NATIONAL MARINE FISHERIES

POWER BUILDER UPDATER; FRONT COUNTER

OTHER ADDRESSES OF PEOPLE WHO PAID THE \$10 FEE:

PEOPLE WITH OBJECTIONS, COMMENTS OR REQUESTED COPY W/O \$10 (SEND THE \$10 LETTER):

WATER ADJUDICATION PROJECT, THE KLAMATH TRIBE, PO BOX 957, CHILOQUIN, OR 97624
BUREAU OF RECLAMATION MID-PACIFIC REGIONAL OFFICE, 2800 COTTAGE WAY, SACRAMENTO, CA 95825
KLAMATH RIVER COMPACT COMMISSION
CALIFORNIA DEPARTMENT OF WATER RESOURCES
WATER RESOURCES CONTROL BOARD

CASEWORKER : LKS

T

PFO ACCURACY CHECKLIST

Application #: S-69829

1. CHECK NAME(S)/COMPANY NAME
 - * Assigned
 - * Signature Name
 - * Correct Name(s)/Company throughout PFO
 - * Correct Address & Phone Number on Draft Permit
2. CHECK SOURCE AND TRIBUTARY
 - * Consistent throughout PFO and Draft Permit
3. CHECK RATE OF USE
4. CHECK PRIORITY DATE & TR/IR DATES
5. CHECK POD IN DRAFT PERMIT
 - * Check Map against permit
 - * Check Township, Range and Section
6. CHECK POU IN PFO AND DRAFT PERMIT
 - * Check Map against both
 - * If Acres on Application do not agree with Map, use Map info
 - * Check Township, Range and Section
7. ADD VOLUME NUMBER/NAME AT END OF DRAFT PERMIT
8. COMPLETE READ THROUGH OF PFO
 - * Sentence Structure
 - * Punctuation
 - * Spelling, etc.

Name:
LKS

Laura Suedaker

Date: 3-11-96

No Land Use

PFO CHECKLIST

Public Notice 2/13/96

Application #: 569829

Basin: Klamath

WAB:

Township 34S Range 7E Section 18 1/4 1/4 SW SW

- A1. Public Interest Screen Criteria No
- 1. Is the file complete by the Completeness Checklist? Yes
- 2. Fees or other shortcomings (items needed before a permit and/or FO can be issued) No
200 + 100 = 300 Paid
- 3. Check file for indicators that the process should not continue until a later date (ie - protest, letter to file indicating hold, or other) None
- 4. A groundwater review has been evaluated for substantial interference with surface water (convert old gw conditions to the 7 series and add to the PFO, if necessary)
 - a. Is second groundwater review necessary? (objection)
 - b. Is HB 1033 review complete?
- 5. Is the source withdrawn or limited? - State Engineer, Legislative (ORS 538), etc. No
- 6. Is the Proposed Use located in or above a Scenic Waterway? Klamath R.
- 7. Is the proposed use located in a TMDL Basin? (Tualatin, Yamhill, Pudding) No
- 8. Is the use allowed or limited by the Basin Program? Compact Allowed
- 9. If source is groundwater, is the well located in a groundwater limited area? (If applicable, include map with POD)
- 10. Water Availability Data has been verified (50% before July 17, 1992; 80% live flow & 50% storage after July 17, 1992) Oct & Dec -> June
- 11. Rate _____ Duty _____ Irrigation Season _____
- 12. Period of Allowed Use Oct & Dec -> June - PFO Short
- 13. Is use from a B.O.R. project and if so, is a signed contract in the file?
- 14. Division 33 has been addressed - if applicable (Above Bonn after July 17, 1992 & Below Bonn after April 8, 1994 or June 3, 1994)
- 15. Have conflicts been identified, verified and/or addressed? None identified by I.R.
- 16. Is the use Small (<0.1cfs, <=9.2AF), Medium (>0.1 or <1.5cfs, >9.2 or <100AF) or Large (>=1.5 cfs, >=100 AF)? 1.0 cfs
- 17. Check TR/IR for permit conditions not included in the Draft Permit attached to the PFO
- 18. Fill out Accuracy Checklist
- 19. Spell Check
- 20. Documents used in determination are attached and highlighted See I.R. info packet
- 21. Fill out PFO CC List (a.k.a. the Check-Off Sheet) - don't forget to check for other property owners.
 - a. Does Ken Stahr need to be on the CC list (Rate, Duty and Period of Allowed Use changes) No -> over
- 22. Final PFO report hard copy check (format, margins, etc.)
- 23. Final PFO has been saved to m:\t\pfo\done\week#\application #

Agency SPR -> Elk G. Acid
Agency Cr: Wood R.
Crooked Cr -> Wood R.

V.2
Crooked Cr & Misc

Name: Laura Smedley Kier

Date: 3-8-96

Water Adjudication Project
The Klamath Tribe
P.O. Box 957
Chiloquin OR 97624

B. of Reclamation
Mid-Pacific Regional Office
2800 Cottage Way
Sacramento, CA 95825

✓ Jacob C. Zeinger (CWRE)
1373 Lakeshore Dr.
Klamath Falls OR 97601

Klamath R. Compact Commission
CA Dept of Water Resources
Water Resources Control Board

Oregon and consented to by the Congress of the United States.

B. This compact shall remain in full force and effect until amended in the same manner as is required for it to be ratified to become operative or until terminated.

C. A copy of any proposed amendments to or termination of this compact shall be filed with the Board of Supervisors of Modoc County, California, and the County Court of Lake County, Oregon, at least 30 days prior to any legislative consideration by the legislatures of the States of California and Oregon.

ARTICLE VIII FEDERAL RIGHTS

Nothing in this compact shall be deemed:

A. To impair or affect the existing rights or powers of the United States of America, its agencies, or instrumentalities, in and to the use of the waters of the Goose Lake Basin nor its capacity to acquire rights in and to the use of said waters.

B. To subject any property of the United States of America, its agencies or instrumentalities to taxation by any state or subdivision thereof, nor to create an obligation on the part of the United States of America, its agencies or instrumentalities by reason of the acquisition, construction or operation of any property or works of whatsoever kind, to make any payments to any state or political subdivision thereof, state agency, municipality or entity, whatsoever in reimbursement for the loss of taxes.

C. To subject any property of the United States of America, its agencies or instrumentalities, to the laws of any state to any extent other than the extent to which these laws would apply without regard to the compact.

[1963 c.473 §2]

NEGOTIATIONS FOR INTERSTATE COMPACT ON COLUMBIA RIVER BASIN

Note: Sections 1 and 2, chapter 391, Oregon Laws 1989, provide:

Sec. 1. (1) The Governor shall request the chairperson of the Columbia River Compact Commission, created pursuant to P.L. 82-572, to convene a meeting of representatives of the seven participating states to begin work preliminary to formal negotiations for an interstate compact to manage the waters of the Columbia River Basin.

(2) The Governor shall designate a representative of the State of Oregon to attend preliminary meetings of the Columbia River Compact Commission as Oregon's representative to the commission.

(3) Upon receiving the report required under section 2 of this Act, the Governor shall request that the chairperson of the Columbia River Compact Commission convene formal negotiations to develop the interstate compact for the management of the waters of the Columbia River Basin [1989 c.391 §1]

Sec. 2. The representative designated under section 1 of this Act shall participate in discussions with other members of the commission regarding areas of agreements between the states and areas of conflict which need to be resolved. After the areas of agreement and conflict are identified, the representative shall report to the Governor and to the legislative leadership. [1989 c.391 §2]

KLAMATH RIVER BASIN COMPACT

542.610 Klamath River Basin Compact ratified; when effective. (1) The Legislative Assembly of the State of Oregon hereby ratifies the Klamath River Basin Compact set forth in ORS 542.620, and the provisions of such compact hereby are declared to be the law of this state upon such compact becoming effective as provided in subsection (2) of this section.

(2) The compact shall become effective when it has been ratified by the legislatures of the States of California and Oregon, and has been consented to by the Congress of the United States as provided in Article XIII of the compact. [1957 c.142 §1]

Note: The Klamath River Basin Compact became effective on September 11, 1957. The compact was ratified by the State of California by chapter 113, California Statutes 1957 (signed by Governor on April 17, 1957, and effective on September 11, 1957). The Congress of the United States consented to the compact by Public Law 222, 85th Congress (signed by President on August 30, 1957).

542.620 Klamath River Basin Compact. The provisions of the Klamath River Basin Compact are as follows:

ARTICLE I
PURPOSES

The major purposes of this compact are, with respect to the water resources of the Klamath River Basin:

A. To facilitate and promote the orderly, integrated and comprehensive development, use, conservation and control thereof for various purposes, including, among others: The use of water for domestic purposes; the development of lands by irrigation and other means; the protection and enhancement of fish, wildlife and recreational resources; the use of water for industrial purposes and hydroelectric power production; and the use and control of water for navigation and flood prevention.

B. To further intergovernmental cooperation and comity with respect to these resources and programs for their use and development and to remove causes of present and future controversies by providing (1) for equitable distribution and use of water among the two states and the Federal Government, (2) for preferential rights to the use of water after the effective date of this compact for the anticipated ultimate requirements for domestic and irrigation purposes in the Upper Klamath River Basin in Oregon and California, and (3) for prescribed relationships between beneficial uses of water as a practicable means of accomplishing such distribution and use.

ARTICLE II
DEFINITION OF TERMS

As used in this compact:

A. "Klamath River Basin" shall mean the drainage area of the Klamath River and all its tributaries within the States of California and Oregon and all closed basins included in the Upper Klamath River Basin.

B. "Upper Klamath River Basin" shall mean the drainage area of the Klamath River and all its tributaries upstream from the boundary between the States of California and Oregon and the closed basins of Butte Valley, Red Rock Valley, Lost River Valley, Swan Lake Valley and Crater Lake, as delineated on the official map of the Upper Klamath

River Basin approved on September 6, 1956, by the commissions negotiating this compact and filed with the Secretaries of State of the two states and the General Services Administration of the United States, which map is incorporated by reference and made a part hereof.

C. "Commission" shall mean the Klamath River Compact Commission as created by Article IX of this compact.

D. "Klamath Project" of the Bureau of Reclamation of the Department of the Interior of the United States shall mean that area as delineated by appropriate legend on the official map incorporated by reference under subdivision B of this Article.

E. "Person" shall mean any individual or any other entity, public or private, including either state, but excluding the United States.

F. "Keno" shall mean a point on the Klamath River at the present needle dam, or any substitute control dam constructed in section 36, township 39 south, range 7 east, Willamette Base and Meridian.

G. "Water" or "waters" shall mean waters appearing on the surface of the ground in streams, lakes or otherwise, regardless of whether such waters at any time were or will become ground water, but shall not include water extracted from underground sources until after such water is used and becomes surface return flow or waste water.

H. "Domestic use" shall mean the use of water for human sustenance, sanitation and comfort; for municipal purposes; for livestock watering; for irrigation of family gardens; and for other like purposes.

I. "Industrial use" shall mean the use of water in manufacturing operations.

J. "Irrigation use" shall mean the use of water for production of agricultural crops, including grain grown for feeding wildfowl.

ARTICLE III
DISTRIBUTION AND USE OF WATER

A. There are hereby recognized vested rights to the use of waters originating in the Upper Klamath River Basin validly established and subsisting as of the effective date of this compact under the laws of the state in which the use or diversion is made, including rights to the use of waters for domestic and irrigation uses within the

Klamath Project. There are also hereby recognized rights to the use of all waters reasonably required for domestic and irrigation uses which may hereafter be made within the Klamath Project.

B. Subject to the rights described in subdivision A of this Article and excepting the uses of water set forth in subdivision E of Article XI, rights to the use of unappropriated waters originating within the Upper Klamath River Basin for any beneficial use in the Upper Klamath River Basin, by direct diversion or by storage for later use, may be acquired by any person after the effective date of this compact by appropriation under the laws of the state where the use is to be made, as modified by the following provisions of this subdivision B and subdivision C of this Article, and may not be acquired in any other way:

1. In granting permits to appropriate waters under this subdivision B, as among conflicting applications to appropriate when there is insufficient water to satisfy all such applications, each state shall give preference to applications for a higher use over applications for a lower use in accordance with the following order of uses:

- (a) Domestic use,
- (b) Irrigation use,
- (c) Recreational use, including use for fish and wildlife,
- (d) Industrial use,
- (e) Generation of hydroelectric power,
- (f) Such other uses as are recognized under the laws of the state involved.

These uses are referred to in this compact as uses (a), (b), (c), (d), (e) and (f), respectively. Except as to the superiority of rights to the use of water for use (a) or (b) over the rights to the use of water for use (c), (d), (e) or (f), as governed by subdivision C of this Article, upon a permit being granted and a right becoming vested and perfected by use, priority in right to the use of water shall be governed by priority in time within the entire Upper Klamath River Basin regardless of state boundaries. The date of priority of any right to the use of water appropriated for the purposes above enumerated shall be the date of the filing of the application therefor, but such priority shall be dependent on commencement and completion of construction of

the necessary works and application of the water to beneficial use with due diligence and within the times specified under the laws of the state where the use is to be made. Each state shall promptly provide the commission and the appropriate official of the other state with complete information as to such applications and as to all actions taken thereon.

2. Conditions on the use of water under this subdivision B in Oregon shall be:

(a) That there shall be no diversion of waters from the Upper Klamath River Basin, but this limitation shall not apply to out-of-basin diversions of waters originating within the drainage area of Fourmile Lake.

(b) That water diverted from Upper Klamath Lake and the Klamath River and its tributaries upstream from Keno, Oregon, for use in Oregon and not consumed therein and appearing as surface return flow and waste water within the Upper Klamath River Basin shall be returned to the Klamath River or its tributaries above Keno, Oregon.

3. Conditions on the use of water under this subdivision B in California shall be:

(a) That the waters diverted from the Klamath River within the Upper Klamath River Basin for use in California shall not be taken outside the Upper Klamath River Basin.

(b) That substantially all of the return flows and waste water finally resulting from such diversions and use appearing as surface waters in the Upper Klamath River Basin shall be made to drain so as to be eventually returned to the Klamath River upstream from Keno, Oregon.

C. 1. All rights, acquired by appropriation after the effective date of this compact, to use waters originating within the Upper Klamath River Basin for use (a) or (b) in the Upper Klamath River Basin in either state shall be superior to any rights, acquired after the effective date of this compact, to use such waters (i) for any purpose outside the Klamath River Basin by diversion in California or (ii) for use (c), (d), (e) or (f) anywhere in the Klamath River Basin. Such superior rights shall exist regardless of their priority in time and may be exercised with respect to inferior rights without the payment of compensation. But such superior rights to use water for use (b) in California shall be limited to the quantity of water necessary to irrigate 100,000

WATER LAWS

acres of land, and in Oregon shall be limited to the quantity of water necessary to irrigate 200,000 acres of land.

2. The provisions of paragraph 1 of this subdivision C shall not prohibit the acquisition and exercise after the effective date of this compact of rights to store waters originating within the Upper Klamath River Basin and to make later use of such stored water for any purpose, as long as the storing of waters for such later use, while being effected, does not interfere with the direct diversion or storage of such waters for use (a) or (b) in the Upper Klamath River Basin.

ARTICLE IV HYDROELECTRIC POWER

It shall be the objective of each state, in the formulation and the execution and the granting of authority for the formulation and execution of plans for the distribution and use of the water of the Klamath River Basin, to provide for the most efficient use of available power head and its economic integration with the distribution of water for other beneficial uses in order to secure the most economical distribution and use of water and lowest power rates which may be reasonable for irrigation and drainage pumping, including pumping from wells.

ARTICLE V INTERSTATE DIVERSION AND STORAGE RIGHTS; MEASURING DEVICES

A. Each state hereby grants for the benefit of the other and its designees the right to construct and operate facilities for the measurement, diversion, storage and conveyance of water from the Upper Klamath River Basin in one state for use in the other insofar as the exercise of such right may be necessary to effectuate and comply with the terms of this compact. The location of such facilities shall be subject to approval by the commission.

B. Each state or its designee, exercising within the jurisdiction of the other a right granted under subdivision A of this Article, shall make provision for the establishment, operation and maintenance of permanent gaging stations at such

points on streams or reservoir or conveyance facilities as may be required by the commission for the purpose of ascertaining and recording the volume of diversions by the streams or facilities involved. Said stations shall be equipped with suitable devices for determining the flow of water at all times. All information obtained from such stations shall be compiled in accordance with the standards of the United States Geological Survey, shall be filed with the commission, and shall be available to the public.

ARTICLE VI ACQUISITION OF PROPERTY FOR STORAGE AND DIVERSION; IN LIEU TAXES

A. Subject to approval of the commission, either state shall have the right (1) to acquire such property rights in the other state as are necessary for the diversion, storage, conveyance, measurement and use of water in conformity with this compact, by donation or purchase, or (2) to elect to have the other state acquire such property rights for it by purchase or through the exercise of the power of eminent domain. A state making the latter election shall make a written request therefor and the other state shall expeditiously acquire said property rights either by purchase at a price satisfactory to the requesting state, or, if such purchase cannot be made, then through the exercise of its power of eminent domain, and shall convey said property rights to the requesting state or its designee. All costs of such acquisition shall be paid by the requesting state. Neither state shall have any greater power to acquire property rights for the other state through the exercise of the power of eminent domain than it would have under its laws to acquire the same property rights for itself.

B. Should any diversion, storage or conveyance facilities be constructed or acquired in either state for the benefit of the other state, as herein provided, the construction, repair, replacement, maintenance and operation of such facilities shall be subject to the laws of the state in which the facilities are located, except that the proper officials of that state shall permit the storage, release and conveyance of any water to which the other state is entitled under this compact.

C. Either state having property rights other than water rights in the other state acquired as provided in this Article shall pay to each political subdivision of the state in which such property rights are located, each and every year during which such rights are held, a sum of money equivalent to the average annual amount of taxes assessed against those rights during the 10 years preceding the acquisition of such rights in reimbursement for the loss of taxes to such political subdivisions of the state. Payments so made to a political subdivision shall be in lieu of any and all taxes by that subdivision on the property rights for which the payments are made.

ARTICLE VII POLLUTION CONTROL

A. The states recognize that the growth of population and the economy of the Upper Klamath River Basin can result in pollution of the waters of the Upper Klamath River Basin constituting a menace to the health and welfare of, and occasioning economic loss to, people living or having interests in the Klamath River Basin. The states recognize further that protection of the beneficial uses of the waters of the Klamath River Basin requires cooperative action of the two states in pollution abatement and control.

B. To aid in such pollution abatement and control, the commission shall have the duty and power:

1. To cooperate with the states or agencies thereof or other entities and with the United States for the purpose of promoting effective laws and the adoption of effective regulations for abatement and control of pollution of the waters of the Klamath River Basin, and from time to time to recommend to the governments reasonable minimum standards for the quality of such waters.

2. To disseminate to the public by any and all appropriate means information respecting pollution abatement and control in the waters of the Klamath River Basin and on the harmful and uneconomic results of such pollution.

C. Each state shall have the primary obligation to take appropriate action under its own laws to abate and control interstate pollution, which is defined as the deterioration of the quality of the

waters of the Upper Klamath River Basin within the boundaries of such state which materially and adversely affects beneficial uses of waters of the Klamath River Basin in the other state. Upon complaint to the commission by the state water pollution control agency of one state that interstate pollution originating in the other state is not being prevented or abated, the procedure shall be as follows:

1. The commission shall make an investigation and hold a conference on the alleged interstate pollution with the water pollution control agencies of the two states, after which the commission shall recommend appropriate corrective action.

2. If appropriate corrective action is not taken within a reasonable time, the commission shall call a hearing, giving reasonable notice in writing thereof to the water pollution control agencies of the two states and to the person or persons which it is believed are causing the alleged interstate pollution. Such hearing shall be held in accordance with rules and regulations of the commission, which shall conform as nearly as practicable with the laws of the two states governing administrative hearings. At the conclusion of such hearing, the commission shall make a finding as to whether interstate pollution exists, and if so, shall issue to any person or persons which the commission finds are causing such interstate pollution an order or orders for correction thereof.

3. It shall be the duty of the person against whom any such order is issued to comply therewith. Any court of general jurisdiction of the state where such discharge is occurring or the United States District Court for the district where the discharge is occurring shall have jurisdiction, on petition of the commission for enforcement of such order, to compel action by mandamus, injunction, specific performance, or any other appropriate remedy, or on petition of the person against whom the order is issued to review any order. At the conclusion of such enforcement or review proceedings, the court may enter such decree or judgment affirming, reversing, modifying, or remanding such order as in its judgment is proper in the circumstances on the basis of the rules customarily applicable in proceedings for court enforcement or review of

WATER LAWS

administrative actions.

D. The water pollution control agencies of the two states shall, from time to time, make available to the commission all data relating to the quality of the waters of the Upper Klamath River Basin which they possess as the result of studies, surveys and investigations thereof which they may have made.

ARTICLE VIII MISCELLANEOUS

A. Subject to vested rights as of the effective date of this compact, there shall be no diversion of waters from the basin of Jenny Creek to the extent that such waters are required, as determined by the commission, for use on land within the basin of Jenny Creek.

B. Each state shall exercise whatever administrative, judicial, legislative or police powers it has that are required to provide any necessary reregulation or other control over the flow of the Klamath River downstream from any hydroelectric power plant for protection of fish, human life or property from damage caused by fluctuations resulting from the operation of such plant.

ARTICLE IX ADMINISTRATION

A. 1. There is hereby created a commission to administer this compact. The commission shall consist of three members. The representative of the State of California shall be the Department of Water Resources. The representative of the State of Oregon shall be the Water Resources Commission of Oregon who shall serve as ex officio representative of the Water Resources Commission of Oregon. The President is requested to appoint a federal representative who shall be designated and shall serve as provided by the laws of the United States.

2. The representative of each state shall be entitled to one vote in the commission. The representative of the United States shall serve as chairman of the commission without vote. The compensation and expenses of each representative shall be fixed and paid by the government which he represents. Any action by the commission shall be effective only if it be agreed to by both voting

members.

3. The commission shall meet to establish its formal organization within 60 days after the effective date of this compact, such meeting to be at the call of the Governors of the two states. The commission shall then adopt its initial set of rules and regulations governing the management of its internal affairs providing for, among other things, the calling and holding of meetings, the adoption of a seal, and the authority and duties of the chairman and executive director. The commission shall establish its office within the Upper Klamath River Basin.

4. The commission shall appoint an executive director, who shall also act as secretary, to serve at the pleasure of the commission and at such compensation, under such terms and conditions and performing such duties as it may fix. The executive director shall be the custodian of the records of the commission with authority to affix the commission's official seal, and to attest to and certify such records or copies thereof. The commission, without regard to the provisions of the civil service laws of either state, may appoint and discharge such consulting, clerical and other personnel as may be necessary for the performance of the commission's functions, may define their duties, and may fix and pay their compensation. The commission may require the executive director and any of its employees to post official bonds, and the cost thereof shall be paid by the commission.

5. All records, files and documents of the commission shall be open for public inspection at its office during established office hours.

6. No member, officer or employee of the commission shall be liable for injury or damage resulting from (a) action taken by such member, officer or employee in good faith and without malice under the apparent authority of this compact, even though such action is later judicially determined to be unauthorized, or (b) the negligent or wrongful act or omission of any other person, employed by the commission and serving under such officer, member or employee, unless such member, officer or employee either failed to exercise due care in the selection, appointment or supervision of such other person, or failed to take all available action to suspend or discharge such other person after

knowledge or notice that such other person was inefficient or incompetent to perform the work for which he was employed. No suit may be instituted against a member, officer or employee of the commission for damages alleged to have resulted from the negligent or wrongful act or omission of such member, officer or employee or a subordinate thereof occurring during the performance of his official duties unless, within 90 days after occurrence of the incident, a verified claim for damages is presented in writing and filed with such member, officer or employee and with the commission. In the event of a suit for damages against any member, officer or employee of the commission on account of any act or omission in the performance of his or his subordinates' official duties, the commission shall arrange for the defense of such suit and may pay all expenses therefor on behalf of such member, officer or employee. The commission may at its expense insure its members, officers and employees against liability resulting from their acts or omissions in the performance of their official duties. Nothing in this paragraph shall be construed as imposing any liability upon any member, officer or employee of the commission that he would otherwise not have.

7. The commission may incur obligations and pay expenses which are necessary for the performance of its functions. But it shall not pledge the credit of any government except by and with the authority of the legislative body thereof given pursuant to and in keeping with the constitution of such government, nor shall the commission incur any obligations prior to the availability of funds adequate to meet them.

8. The commission may:

(a) Borrow, accept or contract for the services of personnel from any government or agency thereof, from any intergovernmental agency, or from any other entity.

(b) Accept for any of its purposes and functions under this compact any and all donations, gifts, grants of money, equipment, supplies, materials and services from any government or agency thereof or intergovernmental agency or from any other entity.

(c) Acquire, hold and dispose of real and personal property as may be necessary in the

performance of its functions.

(d) Make such studies, surveys and investigations as are necessary in carrying out the provisions of this compact.

9. All meetings of the commission for the consideration of and action on any matters coming before the commission, except matters involving the management of internal affairs of the commission and its staff, shall be open to the public. Matters coming within the exception of this paragraph may be considered and acted upon by the commission in executive sessions under such rules and regulations as may be established therefor.

10. In the case of the failure of the two voting members of the commission to agree on any matter relating to the administration of this compact as provided in paragraph 2 of this subdivision A, the representative from each state shall appoint one person and the two appointed persons shall appoint a third person. The three appointees shall sit as an arbitration forum. The terms of appointment and the compensation of the members of the arbitration forum shall be fixed by the commission. Matters on which the two voting members of the commission have failed to agree shall be decided by a majority vote of the members of the arbitration forum. Each state obligates itself to abide by the decision of the arbitration forum, subject, however, to the right of each state to have the decision reviewed by a court of competent jurisdiction.

11. The commission shall have the right of access, through its authorized representatives, to all properties in the Klamath River Basin whenever necessary for the purpose of administration of this compact. The commission may obtain a court order to enforce its right of access.

B. 1. The commission shall submit to the Governor or designated officer of each state a budget of its estimated expenditures for such period and at such times as may be required by the laws of that state for presentation to the legislature thereof. Each state pledges itself to appropriate and pay over to the commission one-half of the amount required to finance the commission's estimated expenditures as set forth in each of its budgets, and pledges further that concurrently with approval of this compact by its legislature the sum of not less than \$12,000 will be appropriated by it to be paid over to

WATER LAWS

the commission at its first meeting for use in financing the commission's functions until the commission can prepare its first budget and receive its first appropriation thereunder from the states.

2. The commission shall keep accurate accounts of all receipts and disbursements, which shall be audited yearly by a certified public accountant, and the report of the audit shall be made a part of its annual report. The accounts of the commission shall be open for public inspection during established office hours.

3. The commission shall make and transmit to the legislature and Governor of each state and to the President of the United States an annual report covering the finances and activities of the commission and embodying such plans, recommendations and findings as may have been adopted by the commission.

C. 1. The commission shall have the power to adopt, and to amend or repeal, such rules and regulations to effectuate the purposes of this compact as in its judgment may be appropriate.

2. Except as to matters involving exclusively the management of the internal affairs of the commission and its staff or involving emergency matters, prior to the adoption, amendment or repeal of any rule or regulation the commission shall hold a hearing at which any interested person shall have the opportunity to present his views on the proposed action in writing, with or without the opportunity to present the same orally. The commission shall give adequate advance notice in a reasonable manner of the time, place and subject of such hearings.

3. Emergency rules and regulations may be adopted without a prior hearing, but in such case they may be effective for not longer than 90 days.

4. The commission shall publish its rules and regulations in convenient form.

ARTICLE X

STATUS OF INDIAN RIGHTS

A. Nothing in this compact shall be deemed:

1. To affect adversely the present rights of any individual Indian, tribe, band or community of Indians to the use of the waters of the Klamath River Basin for irrigation.

2. To deprive any individual Indian, tribe, band or community of Indians of any rights,

privileges, or immunities afforded under federal treaty, agreement or statute.

3. To affect the obligations of the United States of America to the Indians, tribes, bands or communities of Indians, and their reservations.

4. To alter, amend or repeal any of the provisions of the Act of August 13, 1954, (68 Stat. 718) as it may be amended.

B. Lands within the Klamath Indian Reservation which are brought under irrigation after the effective date of this compact, whether before or after section 14 of said Act of August 13, 1954, becomes fully operative, shall be taken into account in determining whether the 200,000 acre limitation provided in paragraph 1 of subdivision C of Article III has been reached.

ARTICLE XI

FEDERAL RIGHTS

Nothing in this compact shall be deemed:

A. To impair or affect any rights, powers or jurisdiction of the United States, its agencies or those acting by or under its authority, in, over and to the waters of the Klamath River Basin, nor to impair or affect the capacity of the United States, its agencies or those acting by or under its authority in any manner whatsoever, except as otherwise provided by the federal legislation enacted for the implementation of this compact as specified in Article XIII.

B. To subject any property of the United States, its agencies or instrumentalities, to taxation by either state or any subdivision thereof, unless otherwise provided by Act of Congress.

C. To subject any works or property of the United States, its agencies, instrumentalities or those acting by or under its authority, used in connection with the control or use of waters which are the subject of this compact, to the laws of any state to an extent other than the extent to which those laws would apply without regard to this compact, except as otherwise provided by the federal legislation enacted for the implementation of this compact as specified in Article XIII.

D. To affect adversely the existing areas of Crater Lake National Park or Lava Beds National Monument, or to limit the operation of laws relating to the preservation thereof.

E. To apply to the use of water for the maintenance, on the scale at which such land and water areas are maintained as of the effective date of this compact, of officially designated waterfowl management areas, including water consumed by evaporation and transpiration on water surface areas and water used for irrigation or otherwise in the Upper Klamath River Basin; nor to affect the rights and obligations of the United States under any migratory bird treaty or the Migratory Bird Conservation Act (45 Stat. 1222), as amended to the effective date of this compact.

ARTICLE XII GENERAL PROVISIONS

A. Each state and all persons using, claiming or in any manner asserting any right to the use of the waters of the Klamath River Basin under the authority of either state shall be subject to the terms of this compact.

B. Nothing in this compact shall be construed to limit or prevent either state from instituting or maintaining any action or proceeding, legal or equitable, in any court of competent jurisdiction for the protection of any right under this compact or the enforcement of any of its provisions.

C. Should a court of competent jurisdiction hold any part of this compact to be contrary to the Constitution of either state or the United States, all other provisions shall continue in full force and effect, unless it is authoritatively and finally determined judicially that the remaining provisions cannot operate for the purposes, or substantially in the manner, intended by the states independently of the portions declared unconstitutional or invalid.

D. Except as to matters requiring the exercise of discretion by the commission, the provisions of this compact shall be self-executing and shall by operation of law be conditions of the various state permits, licenses or other authorizations relating to the waters of the Klamath River Basin issued after the effective date of this compact.

E. The physical and other conditions peculiar to the Klamath River Basin constitute the basis for this compact, and neither of the states hereby, nor the Congress of the United States by its consent, considers that this compact establishes any general principle or precedent with respect to any other

interstate stream.

ARTICLE XIII RATIFICATION

A. This compact shall become effective when ratified by the legislature of each signatory state, and when consented to by an Act of Congress of the United States which will, in substance, meet the provisions hereinafter set forth in this Article.

B. The Act of Congress referred to in subdivision A of this Article shall provide that the United States or any agency thereof, and any entity acting under any license or other authority granted under the laws of the United States (referred to in this Article as "the United States"), in connection with developments undertaken after the effective date of this compact pursuant to laws of the United States, shall comply with the following requirements:

1. The United States shall recognize and be bound by the provisions of subdivision A of Article III.

2. The United States shall not, without payment of just compensation, impair any rights to the use of water for use (a) or (b) within the Upper Klamath River Basin by the exercise of any powers or rights to use or control water (i) for any purpose whatsoever outside the Klamath River Basin by diversions in California or (ii) for any purpose whatsoever within the Klamath River Basin other than use (a) or (b). But the exercise of powers and rights by the United States shall be limited under this paragraph 2 only as against rights to the use of water for use (a) or (b) within the Upper Klamath River Basin which are acquired as provided in subdivision B of Article III after the effective date of this compact, but only to the extent that annual depletions in the flow of the Klamath River at Keno resulting from the exercise of such rights to use water for uses (a) and (b) do not exceed 340,000 acre-feet in any one calendar year.

3. The United States shall be subject to the limitation on diversions of waters from the basin of Jenny Creek as provided in subdivision A of Article VIII.

4. The United States shall be governed by all the limitations and provisions of paragraph 2 and subparagraph (a) of paragraph 3 of subdivision B of

Article III.

5. The United States, with respect to any irrigation or reclamation development undertaken by the United States in the Upper Klamath River Basin in California, shall provide that substantially all of the return flows and waste water finally resulting from such diversions and use appearing as surface waters in the Upper Klamath River Basin shall be made to drain so as to be eventually returned to the Klamath River upstream from Keno, unless the Secretary of the Interior shall determine that compliance with this requirement would render it less feasible than under an alternate plan of development, in which event such return flows and waste waters shall be returned to the Klamath River at a point above Copco Lake.

C. Upon enactment of the Act of Congress referred to in subdivision A of this Article and so long as such Act shall be in effect, the United States, when exercising rights to use water pursuant to state law, shall be entitled to all of the same privileges and benefits of this compact as any person exercising similar rights.

D. Such Act of Congress shall not be construed as relieving the United States of any requirement of compliance with state law which may be provided by other federal statutes.

ARTICLE XIV TERMINATION

This compact may be terminated at any time by legislative consent of both states, but despite such termination, all rights then established hereunder or recognized hereby shall continue to be recognized as valid by the states.

[1957 c.142 §2]

542.630 Water Resources Director to represent state in administering the Klamath River Basin Compact. The Water Resources Director shall be the only representative of this state in administering the Klamath River Basin Compact set forth in ORS 546.620. The director shall receive no additional compensation for services as such representative, but, subject to any other applicable

law regulating mileage and traveling and other expenses for state officers, shall receive actual and necessary traveling and other expenses incurred in the performance of official functions as such representative, to be paid in the same manner and out of the same moneys as other similar expenses of the director are paid. [1957 c.142 §3]

TEST STUDY OF INTEGRATED LAND-WATER MANAGEMENT

542.710 Test stream and watershed study.

(1) The Department of Higher Education, under the direction of the State Board of Higher Education acting through the Agricultural Experiment Station of Oregon State University, is authorized to conduct a test stream and watershed study in order to ascertain in a scientific manner the interrelation between all factors operating in watersheds upon maximum resource productivity of the area for the greatest public benefit.

(2) In conducting the study the Department of Higher Education, under the direction of the State Board of Higher Education acting through the Agricultural Experiment Station of Oregon State University, may:

(a) Enlist the cooperation of other state agencies concerned with fields under study and may reimburse such agencies for use made of facilities and personnel.

(b) Acquire the services of other persons as necessary for the purposes of this section. [Formerly 184.460]

542.720 Assistance and grants for study.

For purposes of ORS 542.710, the State Board of Higher Education may accept assistance and grants in the form of real or personal property, money, labor, equipment or technical assistance from the United States or any of its agencies, political subdivisions or from other persons subject to the conditions imposed thereon regardless of conflicting state law and may, unless enjoined by the terms of the grant or donation, convert the same into money to be used for the purposes of ORS 542.710. [Formerly 184.470]

file

JANUARY 24, 1996

WATER
RESOURCES
DEPARTMENT

RAYMOND J. DRISCOLL
HC 30, BOX 138G
CHILOQUIN, OREGON 97624

Reference: File S-69829

Dear Applicant:

**THIS IS NOT A PERMIT AND IS
SUBJECT TO CHANGE AT NEXT PHASE OF PROCESS**

This letter is to inform you of the potential limitations to your proposed use of water and to describe some of your options. Based on the information you have supplied, the Water Resources Department has reached the following conclusions:

Initial Review Determinations:

1. Your application is complete and not defective.
2. The proposed use is not prohibited by law or rule.
3. The use of water for INDUSTRIAL USE (DRINKING WATER) **is allowed** under OAR 514, the Klamath Basin Program.
4. The use of 1.0 cubic foot per second from a Spring tributary to Wood River for Industrial use **is not available** July 1 through September 30 and during the month of November.

Summary of Initial Determinations

The use of 1.0 cfs from a Spring tributary to Wood River for Industrial use from December 1 through June 30 and during the month of October of each year may be allowed.

Because of the Departments determination, your application can be moved to the next phase of the water rights application review process. However, due to #4 above your application will likely be limited as summarized above.



Commerce Building
158 12th Street NE
Salem, OR 97310-0210
(503) 378-3739
FAX (503) 378-8130

S-69829
January 24, 1996
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Please reference the application number when sending any correspondence regarding the conclusions of this initial review. Comments received within the comment period, will be evaluated at the next phase of the process.

At this time, you must decide whether to proceed or to withdraw your application as described below.

Withdrawal Refunds:

If you choose not to proceed, you may withdraw your application and receive a refund (minus a \$50 processing charge per application.) To accomplish this you must notify the Department in writing by **JANUARY 31, 1996**. For your convenience you may use the enclosed "STOP PROCESSING" form.

To Proceed With Your Application:

If you choose to proceed with your application, you do not have to notify the Department. Your application will automatically be placed on the Department's Public Notice to allow others the opportunity to comment. After the comment period the Department will complete a public interest review and issue a proposed final order.

If A Permit Is Issued It Will Likely Include The Following Conditions:

1. You may be required to measure the amount of water used and report that use annually.
2. You may be required to install fish screens at the diversion to meet Oregon Department of Fish and Wildlife specifications for adequate protection of aquatic life.
3. The priority date for this application is February 1, 1989.

S-69829

January 24, 1996

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If you have any questions:

Feel free to call me at (503) 378-8455 ext. 454 or 1 (800) 624-3199 if you have any questions. Please have your application number available if you call.

Sincerely,



Gary Holliday
Initial Reviewer

cc: Regional Manager, Watermaster, Water Availability
Section
enclosures: Flow Chart of Water Right Process
Stop Processing Form

IR CHECKLIST

Application #: G 19829 Vol _____ Subbasin _____

Basin: 14 WAB: 01021200 POU-WAB 01021200

Township _____ Range _____ Section _____ 1/4 1/4 _____

- 1. Items have been verified on Completeness Checklist.
- 2. Check file for indicators that the process should not continue until a later date (ie - protest, items (other than oath) missing from the completeness check, letter to file indicating hold, or other)
- N/A 3. A groundwater review has been evaluated for substantial interference with surface water (convert old gw conditions to the 7 series and add to the PFO, if necessary)
 - a. Is the well located in a groundwater limited area?
 - b. A B C
- Yes 4. Is the Proposed Use located in or above a Scenic Waterway?
- NO 5. Is the proposed use located in a TMDL Basin? (Tualatin, Yamhill, Pudding)
- NO 6. Is the use allowed or limited by the Basin Program? _____ OAR(s) _____
- NO 7. Is the source withdrawn or limited? - State Engineer, Legislative (ORS 538), etc.
- 8. Basin Maps (metal cabinet) have been checked and River Mile (_____) has been identified
- 9. Water Availability Data has been verified (50% < July 17, 1992/80% [50% storage] > July 17, 1992)
Dec - June + Oct.
- N/A 10. Rate _____ Duty _____ Season _____
- 11. Use Industrial Period of Allowed Use _____
- 12. Priority Date(s) Feb. 11, 1989
- NO 13. Is use from a B.O.R. project and if so, is a signed contract in the file? _____
- N/A 14. Division 33 (Abv Bonn > July 17, 1992 & Blw Bonn > April 18, 1994 or June 3, 1994) _____
- 15. Plat cards have been checked and a copy of the map is attached showing the conflict with _____
- 17. Land use approval OK'd needs approval county notified
- 19. conditions? (BOR, GW, etc.) _____
- 20. Watermaster District #: 17
- 21. Regional Office (NWR, NCR, ER, SCR, or SWR)
- 22. IR has been saved to m:\t\ir\sent\app # from m:\t\ir\work\app #

Name: [Signature] Date: 1-23-96

WATER AVAILABILITY TABLE

Basin: KLAMATH Exceedance Level: 50
 Water Availability Subbasin: 0102120000000000 (and Nested Subbasins)
 Time: 15:09 Date: 01/22/1996

| Item # | W.A. Subbasin | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Sto |
|--------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 1 | 0100000000000000 | YES | YES | YES | YES | YES | YES | NO | NO | NO | YES | NO | YES | YES |
| 2 | 0102000000000000 | YES | YES | YES | YES | YES | YES | NO | NO | NO | YES | NO | YES | YES |
| 3 | 0102100000000000 | YES | YES | YES | YES | YES | YES | NO | NO | NO | YES | NO | YES | YES |
| 4 | 0102120000000000 | YES | YES | YES | YES | YES | YES | NO | NO | NO | YES | NO | YES | YES |

STREAM NAMES

Basin: KLAMATH
 Water Availability Subbasin: 0102120000000000 (and Nested Subbasins)
 Time: 15:09 Date: 01/22/1996

| WAB # | Stream Name | Tributary to |
|------------------|-------------|---------------|
| 0100000000000000 | KLAMATH R | PACIFIC OCEAN |
| 0102000000000000 | KLAMATH R | PACIFIC OCEAN |
| 0102100000000000 | KLAMATH R | PACIFIC OCEAN |
| 0102120000000000 | CROOKED CR | WOOD R |

LIMITING WATER AVAILABILITY SUBBASINS

Water Availability Subbasin: 0102120000000000
 Basin: KLAMATH
 Exceedance Level: 50
 Time: 15:09 Date: 01/22/1996

| Month | Limiting Subbasin | Stream Name | Water Available? | Net Water Available |
|-------|-------------------|-------------|------------------|---------------------|
| 1 | 0102120000000000 | CROOKED CR | YES | 84.7 |
| 2 | 0102120000000000 | CROOKED CR | YES | 85.0 |
| 3 | 0102120000000000 | CROOKED CR | YES | 92.5 |
| 4 | 0102120000000000 | CROOKED CR | YES | 90.6 |
| 5 | 0102120000000000 | CROOKED CR | YES | 77.8 |
| 6 | 0100000000000000 | KLAMATH R | YES | 36.0 |
| 7 | 0100000000000000 | KLAMATH R | NO | -479.0 |
| 8 | 0100000000000000 | KLAMATH R | NO | -657.0 |
| 9 | 0100000000000000 | KLAMATH R | NO | -530.0 |
| 10 | 0102120000000000 | CROOKED CR | YES | 91.2 |
| 11 | 0100000000000000 | KLAMATH R | NO | -20.0 |
| 12 | 0102120000000000 | CROOKED CR | YES | 89.6 |
| Stor | 0102120000000000 | CROOKED CR | YES | 38800.0 |

DETAILED REPORT ON WATER AVAILABILITY

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0100000000000000
 Exceedance Level: 50
 Time: 15:09

Date: 01/22/1996

| Month | Natural Stream Flow | CU + Stor Prior to 1/1/93 | Net Min. Flow 1/1/93 | CU + Stor After 1/1/93 | Net Min. Flow Now | Instream Water Rights | Net Water Available |
|-------|---------------------|---------------------------|----------------------|------------------------|-------------------|-----------------------|---------------------|
| 1 | 2170.00 | 30.00 | 2140.00 | 0.00 | 2140.00 | 1500.00 | 640.00 |
| 2 | 2290.00 | 340.00 | 1950.00 | 0.00 | 1950.00 | 1500.00 | 450.00 |
| 3 | 2840.00 | 910.00 | 1930.00 | 0.00 | 1930.00 | 1500.00 | 430.00 |
| 4 | 3390.00 | 1570.00 | 1820.00 | 0.00 | 1820.00 | 1500.00 | 320.00 |
| 5 | 3230.00 | 2020.00 | 1210.00 | 0.00 | 1210.00 | 788.00 | 422.00 |
| 6 | 2780.00 | 1960.00 | 824.00 | 0.00 | 824.00 | 788.00 | 36.00 |
| 7 | 1900.00 | 1590.00 | 309.00 | 0.00 | 309.00 | 788.00 | -479.00 |
| 8 | 1330.00 | 1200.00 | 131.00 | 0.00 | 131.00 | 788.00 | -657.00 |
| 9 | 1160.00 | 902.00 | 258.00 | 0.00 | 258.00 | 788.00 | -530.00 |
| 10 | 1260.00 | 321.00 | 939.00 | 0.00 | 939.00 | 788.00 | 151.00 |
| 11 | 1500.00 | 20.00 | 1480.00 | 0.00 | 1480.00 | 1500.00 | -20.00 |
| 12 | 1810.00 | 20.00 | 1790.00 | 0.00 | 1790.00 | 1500.00 | 290.00 |
| Stor | 1540000 | 652000 | 885000 | 0 | 885000 | 822000 | 164000 |

DETAILED REPORT OF ISWRs

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0100000000000000
 Time: 15:09

Date: 01/22/1996

| APP # | ISWRs | RESULTANT |
|-------------------|----------------------------|-----------|
| -91401X | 0 0 0 0 | |
| STATUS: Scenic WW | | |
| 1 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |
| 2 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |
| 3 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |
| 4 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |
| 5 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 6 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 7 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 8 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 9 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 10 | 788.0 0.0 0.0 0.0 0.0 0.0 | 788.0 X |
| 11 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |
| 12 | 1500.0 0.0 0.0 0.0 0.0 0.0 | 1500.0 X |

DETAILED REPORT ON WATER AVAILABILITY

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0102000000000000
 Exceedance Level: 50
 Time: 15:09

Date: 01/22/1996

| Month | Natural Stream Flow | CU + Stor Prior to 1/1/93 | Net Min. Flow 1/1/93 | CU + Stor After 1/1/93 | Net Min. Flow Now | Instream Water Rights | Net Water Available |
|-------|---------------------|---------------------------|----------------------|------------------------|-------------------|-----------------------|---------------------|
| 1 | 2130.00 | 30.00 | 2100.00 | 0.00 | 2100.00 | 0.00 | 2100.00 |
| 2 | 2230.00 | 340.00 | 1890.00 | 0.00 | 1890.00 | 0.00 | 1890.00 |
| 3 | 2730.00 | 910.00 | 1820.00 | 0.00 | 1820.00 | 0.00 | 1820.00 |
| 4 | 3260.00 | 1570.00 | 1690.00 | 0.00 | 1690.00 | 0.00 | 1690.00 |
| 5 | 3140.00 | 2020.00 | 1120.00 | 0.00 | 1120.00 | 0.00 | 1120.00 |
| 6 | 2740.00 | 1950.00 | 794.00 | 0.00 | 794.00 | 0.00 | 794.00 |
| 7 | 1880.00 | 1580.00 | 301.00 | 0.00 | 301.00 | 0.00 | 301.00 |
| 8 | 1310.00 | 1190.00 | 121.00 | 0.00 | 121.00 | 0.00 | 121.00 |
| 9 | 1140.00 | 895.00 | 245.00 | 0.00 | 245.00 | 0.00 | 245.00 |
| 10 | 1240.00 | 319.00 | 921.00 | 0.00 | 921.00 | 0.00 | 921.00 |
| 11 | 1470.00 | 20.00 | 1450.00 | 0.00 | 1450.00 | 0.00 | 1450.00 |
| 12 | 1770.00 | 20.00 | 1750.00 | 0.00 | 1750.00 | 0.00 | 1750.00 |
| Stor | 1500000 | 649000 | 851000 | 0 | 851000 | 0 | 851000 |

DETAILED REPORT OF ISWRs

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0102000000000000
 Time: 15:09

Date: 01/22/1996

| APP # : | 0 | 0 | 0 | 0 | 0 | 0 | RESULTANT |
|---------|-----|-----|-----|-----|-----|-----|-----------|
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |

DETAILED REPORT ON WATER AVAILABILITY

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0102100000000000
 Exceedance Level: 50
 Time: 15:09

Date: 01/22/1996

| Month | Natural Stream Flow | CU + Stor Prior to 1/1/93 | Net Min. Flow 1/1/93 | CU + Stor After 1/1/93 | Net Min. Flow Now | Instream Water Rights | Net Water Available |
|-------|---------------------|---------------------------|----------------------|------------------------|-------------------|-----------------------|---------------------|
| 1 | 2120.00 | 30.00 | 2090.00 | 0.00 | 2090.00 | 0.00 | 2090.00 |
| 2 | 2210.00 | 340.00 | 1870.00 | 0.00 | 1870.00 | 0.00 | 1870.00 |
| 3 | 2680.00 | 910.00 | 1770.00 | 0.00 | 1770.00 | 0.00 | 1770.00 |
| 4 | 3210.00 | 1560.00 | 1650.00 | 0.00 | 1650.00 | 0.00 | 1650.00 |
| 5 | 3120.00 | 1970.00 | 1150.00 | 0.00 | 1150.00 | 0.00 | 1150.00 |
| 6 | 2740.00 | 1880.00 | 859.00 | 0.00 | 859.00 | 0.00 | 859.00 |
| 7 | 1880.00 | 1510.00 | 373.00 | 0.00 | 373.00 | 0.00 | 373.00 |
| 8 | 1310.00 | 1130.00 | 180.00 | 0.00 | 180.00 | 0.00 | 180.00 |
| 9 | 1140.00 | 849.00 | 291.00 | 0.00 | 291.00 | 0.00 | 291.00 |
| 10 | 1240.00 | 306.00 | 934.00 | 0.00 | 934.00 | 0.00 | 934.00 |
| 11 | 1470.00 | 20.00 | 1450.00 | 0.00 | 1450.00 | 0.00 | 1450.00 |
| 12 | 1760.00 | 20.00 | 1740.00 | 0.00 | 1740.00 | 0.00 | 1740.00 |
| Stor | 1490000 | 630000 | 860000 | 0 | 860000 | 0 | 860000 |

DETAILED REPORT OF ISWRs

Basin: KLAMATH
 Stream: KLAMATH R > PACIFIC OCEAN
 Water Availability Subbasin: 0102100000000000
 Time: 15:09

Date: 01/22/1996

| APP # : | 0 | 0 | 0 | 0 | 0 | 0 | RESULTANT |
|---------|-----|-----|-----|-----|-----|-----|-----------|
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |

DETAILED REPORT ON WATER AVAILABILITY

Basin: KLAMATH
 Stream: CROOKED CR > WOOD R
 Water Availability Subbasin: 0102120000000000
 Exceedance Level: 50
 Time: 15:09

Date: 01/22/1996

| Month | Natural Stream Flow | CU + Stor Prior to 1/1/93 | Net Min. Flow 1/1/93 | CU + Stor After 1/1/93 | Net Min. Flow Now | Instream Water Rights | Net Water Available |
|-------|---------------------|---------------------------|----------------------|------------------------|-------------------|-----------------------|---------------------|
| 1 | 84.70 | 0.00 | 84.70 | 0.00 | 84.70 | 0.00 | 84.70 |
| 2 | 85.00 | 0.00 | 85.00 | 0.00 | 85.00 | 0.00 | 85.00 |
| 3 | 93.00 | 0.50 | 92.50 | 0.00 | 92.50 | 0.00 | 92.50 |
| 4 | 93.20 | 2.60 | 90.60 | 0.00 | 90.60 | 0.00 | 90.60 |
| 5 | 83.10 | 5.30 | 77.80 | 0.00 | 77.80 | 0.00 | 77.80 |
| 6 | 82.50 | 7.10 | 75.40 | 0.00 | 75.40 | 0.00 | 75.40 |
| 7 | 77.20 | 7.60 | 69.60 | 0.00 | 69.60 | 0.00 | 69.60 |
| 8 | 79.50 | 5.60 | 73.90 | 0.00 | 73.90 | 0.00 | 73.90 |
| 9 | 80.10 | 4.20 | 75.90 | 0.00 | 75.90 | 0.00 | 75.90 |
| 10 | 92.40 | 1.20 | 91.20 | 0.00 | 91.20 | 0.00 | 91.20 |
| 11 | 90.40 | 0.00 | 90.40 | 0.00 | 90.40 | 0.00 | 90.40 |
| 12 | 89.60 | 0.00 | 89.60 | 0.00 | 89.60 | 0.00 | 89.60 |
| Stor | 61700 | 2040 | 59700 | 0 | 59700 | 0 | 59700 |

DETAILED REPORT OF ISWRs

Basin: KLAMATH
 Stream: CROOKED CR > WOOD R
 Water Availability Subbasin: 0102120000000000
 Time: 15:09

Date: 01/22/1996

| APP # : | 0 | 0 | 0 | 0 | 0 | 0 | RESULTANT |
|---------|-----|-----|-----|-----|-----|-----|-----------|
| 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 11 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |
| 12 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 X |

July 27, 1995

*Complete
8/4/95*

Raymond J. Driscoll
HC 30, Box 138-G
Chiloquin, OR 97624

RE: Application #S-69829

Dear Raymond Driscoll,

The Water Resources Department is currently reviewing your application for water use. Preliminary review indicates the following items were not included with your application:

- ▶ Sign and return the enclosed oath.

In order to expedite the processing of your application, we request that you submit these items by August 17, 1995. We have enclosed a stamped envelope for your use.

Should you have any questions regarding your application or the required materials listed above, please call me personally at 1-800-624-3199 extension 256.

Sincerely,

Michael Munks
Completeness Team

enclosure

cc: general correspondence



Complete
8/4/95

COMPLETENESS DETERMINATION CHECKLIST

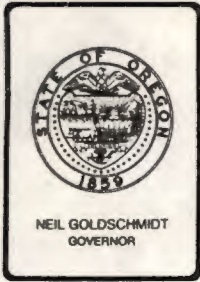
| Application # | Review Date | Reviewer Initials |
|---------------|-------------|-------------------|
| 5 - 69829 | 7/27/95 | MNM |

A checkmark (✓) indicates that the item is incomplete or defective.

- 1. Examination fees. *\$100 Recording fee paid*
- 2. Name and address of the applicant, and title if applicable.
- 3. Source of water.
- 4. Use of water.
- 5. Amount of water.
- 6. Location & description of delivery system.
- 7. Name(s) and address(es) of the owners of any lands involved, but not owned by the applicant.
- 8. A statement declaring the existence of written authorization or easement permitting access to lands involved, but not owned by the applicant.
- 9. Proposed dates of beginning and completion of construction, and complete application of water.
- 10. If for **municipal use**, the present population to be served and expected future water requirements.
- 11. If for **mining use**, the type of mines and methods of supplying & utilizing the water.
- 12. If for a **reservoir**:
 - The height of the dam and the storage capacity.
 - The area submerged and the maximum depth.
 - The construction method (earthfill, concrete, flashboard, etc.).
 - A description of the outlet conduit and spillway.
- 13. If for **groundwater**, the horizontal distance from the well to the nearest surface water source (if within one mile), and the difference in land surface elevation between them.
- 14. If the application was made under **HB 2107**:
 - Name and address of each adjacent property owner and verification that each owner has been mailed a copy of the completed notice.
 - A description of the proposed water used and related project, the condition it will address, and the benefits that are expected to result from the project.
 - The number of reservoirs per application is appropriate as per OAR 690-11-049 (3)(b)
- 15. An oath that the application information is true and correct.
- 16. The signature of the applicant(s).
- 17. A satisfactory map of the proposed POD & POU.
- 18. A Land Use Information Form or receipt signed by appropriate planning official.

Rec.
8/4

MP



Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE 378-3739

July 21, 1989

RAYMOND J. DRISCOLL
HC 30, BOX 138G
CHILOQUIN, OR 97624

File: 69829

You are receiving this notice because you have a water right application pending with the Water Resources Department. Your proposed water development project is located within or upstream from a state scenic waterway. A recent Oregon Supreme Court decision (Diack) requires the Water Resources Commission to make certain findings about applications in these locations.

The Commission has directed the Department to postpone further processing of applications in these locations until the streamflows necessary for recreation and fish and wildlife uses within the scenic waterway have been determined. We are working with the State Parks Division and the Departments of Fish & Wildlife and Environmental Quality to make these determinations as quickly as possible.

We expect the scenic waterway flows will be determined by December 1989 for your area.

Even though your application is within or above a scenic waterway, we will process your application in the normal manner if it fits any one of the criteria listed below:

- A. You propose to use groundwater that is not hydraulically connected to the stream located within or tributary to the state scenic waterway. Usually this means that your well would need to be at least one mile away from the nearest stream.
- B. Your proposed use of water is nonconsumptive. It would pass through your project and return in equal amounts at a location upstream from the scenic waterway.
- C. You propose to contract for stored water as either your primary or supplemental source of supply and the owner of the stored water is willing to give you a contract.
- D. You propose to transfer an existing water right certificate by moving either the point of diversion or the place of use. You believe that such a move will not change the amount of water in the stream from your current practices.

If your project does not fit into one of the above categories (A-D), you may want to modify your application so that it does. Submit those modifications to us.

If you can not modify your application to fit one of the above categories, you may want to consider one of the options below:

1. Leave your current application pending with us to hold your tentative priority date. After the flows are quantified, we will resume processing your application. If it turns out that not enough water is available to meet the recreational demands for the scenic waterway, we may have to deny your request. The examination fees will not be refunded, but any recording fees you submitted will be refunded.
2. Withdraw your application. The examination fee is non-refundable, but any recording fees which were submitted will be refunded. If after flows needed for the scenic waterway are quantified you believe that there is enough water left for your proposed use, file a new application with the appropriate fees to establish a new priority date. Your new application will then be processed using more definite information regarding the availability of water for your proposed use.
3. Conduct sufficient flow studies of your own using methods approved by the Parks Division and Fish & Wildlife. Then, submit information demonstrating that your proposed use of water will not impair the flows needed for the scenic waterway.

We advise you to avoid committing any resources toward your project on the assumption that your permit will be issued. Use of water cannot legally be made without the permit, and the outcome of the scenic waterway study is not predictable at this time. Some streams are likely to have no water available except during high flow periods. It is possible that there will not be enough water left for your proposal after the studies are done.

If you want to wait for the results of the flow studies, you do not need to contact us. We will assume that you want to leave your application pending (alternative #1, above).

If your choice is either alternative #2 or #3, please return this letter with your comments.

If you have any questions not answered by this letter, please contact the Applications and Permits Section at 378-3739.

Sincerely,

William H. Young by *John E. Borden*

William H. Young
Director

Water Adjudication Project
The Klamath Tribe

P.O. Box 957
Chiloquin, Oregon 97624
Telephone (503) 783-3081

July 12, 1989

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JUL 14 1989

WATER RESOURCES DEPT.
SALEM, OREGON

John Woodruff
Water Resources Department
3850 Portland Road, N.E.
Salem, Oregon 97310

RE: Application for Permit to Appropriate Water, File No. 69829,
Lake Glacid Springs (Wood River System)

Dear Mr. Woodruff:

The Klamath Indian Tribe is opposed to the granting of permit application #69829 because of the impact on the fisheries in the Wood River system.

Specifically, these springs contribute significantly to the flow and to maintaining water temperature and quality of Crooked Creek, which is a tributary of the Wood River. Crooked Creek provides habitat for all life stages of rainbow trout. Mr. Driscoll proposes to appropriate 1 c.f.s.; this amount would be 20-50% of the flow of Lake Glacid Springs. The Tribe is concerned that the proposed appropriation would have the adverse impacts of substantially reducing rainbow trout habitat and restricting fisheries of Crooked Creek, because of the significant contribution that the springs make to the creek.

Thank you for your attention to these comments. If we can provide you with additional information please feel free to contact us.

Very truly yours,

Melinda Badgley

Melinda Badgley
Attorney
Water Adjudication Coordinator

MB/cw

W/M# 17

WATER AVAILABILITY-SURFACE WATER APPLICATIONS

Name of Applicant Raymond J. Driscoll Application Number 69829

1. Is there a gaging station at or nearby the point of diversion for this application that gives a record of water supply?

Yes _____ No

If yes, how long is the record? _____ years, from 19 ____ through 19 ____.

Does the record include any extremely low flows years?

Yes _____ No _____

If yes, list low flow years.

RECEIVED

APR 14 1989

WATER RESOURCES DEPT.
SALEM, OREGON

2. Have any miscellaneous measurements been made at or near the point of diversion?

Yes _____ No

If yes, list measured flows and dates.

3. Has the stream or basin that is the source for this application ever been regulated for prior rights or minimum streamflows?

Yes _____ No

If yes, explain by giving dates and rights involved.

4. Do you observe this stream system in your routine, regular field work?

Yes No _____

If yes, list number of years of observation. 10

5. Based on routine observation, do you think there would be enough water available in the quantity and at time needed to supply this application and do you think use may be made without harming vested and inchoate rights?

Yes No _____

If yes, what would you recommend for conditions for this permit.

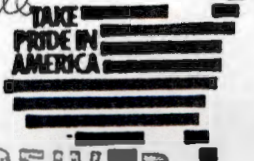
none



wky Young
qrb Borden
Applegate

United States Department of the Interior

BUREAU OF RECLAMATION
MID-PACIFIC REGIONAL OFFICE
2800 COTTAGE WAY
SACRAMENTO, CALIFORNIA 95825-1898



RECEIVED

IN REPLY
REFER TO:
MP-710
871.

APR 14 1989

APR 20 1989

WATER RESOURCES DEPT.
SALEM, OREGON

Mr. Raymond J. Driscoll
HC 30 Box 138G
Chiloquin OR 97624

Subject: Notice of Filing Application For a Permit to Appropriate Water-
Klamath Project (Water Rights)

Dear Mr. Driscoll:

Our policy is to examine all applications filed with the Oregon Water Resources Department for the appropriation of water in the Klamath River Basin that could possibly affect the Klamath Project.

This letter is to give you notice that the United States claims a water right with a priority date of 1905 for:

"All the waters of the Klamath Basin in Oregon constituting the entire drainage basin of the Klamath River and Lost River and all the lakes, streams, and rivers supplying water thereto or receiving water therefrom, . . ."

This is affirmed in the 1957 Klamath River Basin Compact between the State of Oregon and State of California.

Therefore, your permit will be junior in priority to all other rights on the Klamath River, downstream from your point of diversion, existing before the date of Application 69829. Because of the junior status of your permit, during years of low runoff, the water available to you might be less than the amount stated in your permit.

Sincerely,

Donald L. Paff

Acting Assistant Regional Director

For cc's - see next page

cc: William H. Young
Director
Water Resources Department
3850 Portland Road NE
Salem OR 97310

Walter G. Pettit
Chief, Division of Water Rights
State Water Resources Control Board
PO Box 2000
Sacramento CA 95810
(with copy of incoming)



Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE 503-378-3066

NOTICE OF FILING APPLICATION FOR A PERMIT TO APPROPRIATE WATER

FILE No. 69829

NAME Raymond J. Driscoll

ADDRESS HC 30, Box 138G, Chiloquin, OR 97624

WATER SOURCE Lake Glacid-Springs, tribs. Wood River

USE industrial/loading trucks with water to be processed as drinking water

POINT OF DIVERSION SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 18, T. 34S, R. 7E, W.M., Klamath Co.

AMOUNT OF WATER 1.0 cfs or 300,000 gal./day

| | |
|-------------------------------------------------------|------|
| BUREAU OF RECLAMATION OFFICE FILE COPY RECEIVED | |
| APR 03 1989 | |
| CODE | TIME |
| 710 | |
| | |
| | |
| | |
| | |
| | |

DESCRIPTION OF LAND TO BE IRRIGATED OR PLACE OF USE

| Twp | Rng | Sec | NE 1/4 | | | | NW 1/4 | | | | SW 1/4 | | | | SE 1/4 | | | | |
|-----|-----|-----|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--|
| | | | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | |
| 34S | 7E | 18 | | | | | | | | | | | XX | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

The above described application will NOT be considered for approval for at least thirty days from the date of this notice to allow opportunity for any interested person to seek intervention in the processing of the application.

Any person desiring to protest approval of the application shall file a written protest in the office of the Water Resources Department, Salem, Oregon 97310, together with proof of service of a copy of the protest on the application and payment of the \$25 protest filing fee. Protest and proof of service forms and a copy of the administrative rules pertaining to the filling of a protest will be supplied free upon request.

Dated at Salem, Oregon, this 29th day of March, 19 89.

William H. Young
 Water Resources Director



Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE 378-3066

March 20, 1989

Raymond J. Driscoll
HC 30, Box 138-G
Chiloquin, OR 97624

Dear Mr. Driscoll:

REFERENCE: File 69829

We received the application you submitted on February 1, 1989, describing the proposed use of 1.0 cubic foot per second of water from a spring for loading trucks with water to be processed as drinking water. The supporting data and fees were also received. Our Receipt 57233 is enclosed. The application has been filed and assigned number 69829.

Applications which are defective, conflict with existing rights or require additional information will, if necessary, be returned for correction and/or completion. Due to the present backlog of applications and other matters needing attention, we have been unable to process applications as rapidly as would be liked.

Your proposed source is upstream from the Klamath River Scenic Waterway. The Water Resources Commission is studying the possibility that recreational flows might need to be identified for the scenic waterway before the application is considered.

We have several pending applications submitted by other parties proposing the use of waters within or upstream from the Klamath River Scenic Waterway. It may be necessary to make a cumulative evaluation of the impact all pending applications have on the flows. This evaluation process may take several months, but the actual time needed is unknown at this time. If uses of water as proposed by the applications are found to adversely effect the flows in the scenic waterway, rejection of the applications after hearings is a possibility.

As time allows, your application will be reviewed in detail and you will be advised of any other matters needing your attention.

You will be required to hire a Certified Water Right Examiner to survey the extent of use of water perfected under the terms of the permit that may be issued approving the application. Within one year of application of water to beneficial use or the date to make complete application of water allowed in the permit, you will submit a map of the survey prepared by the Certified Water Right Examiner.

Raymond J. Driscoll
March 20, 1989
Page two

If the application is approved, the project described in the application will be subject to the Water Resources Commission's Basin Program statements, existing minimum flows, recreational flows within the scenic waterway and demands of prior rights.

Sincerely,

WAYNE J. OVERCASH
Water Rights Specialist

WJO:tcb

Enclosure

RECEIVED

FEB - 1 1989

WATER RESOURCES DEPT.
SALEM, OREGON

Note: Please send correspondence
or copies of correspondence
and corrections to:

Joeb & Zangr [#] WRE 144
1373 Lakeshore DR
Klamath Falls OR
97601

Application No. 69829

Permit No.

#H 884-2336



The Klamath Tribe
 California Department of Water Resources
 Klamath River Compact Commission

Notice Sent To: Bureau of Reclamation
 Water Resources Control Board
 Rick Glick

Water Resources Department

3850 PORTLAND ROAD NE, SALEM, OREGON 97310

PHONE 503-378-3066

NOTICE OF FILING APPLICATION FOR A PERMIT TO APPROPRIATE WATER FILE No. 69829

NAME Raymond J. Driscoll

ADDRESS HC 30, Box 138G, Chiloquin, OR 97624

WATER SOURCE Lake Glacid-Springs, tribs. Wood River

USE industrial/loading trucks with water to be processed as drinking water

POINT OF DIVERSION SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 18, T. 34S, R. 7E, W.M., Klamath Co.

AMOUNT OF WATER 1.0 cfs or 300,000 gal./day

DESCRIPTION OF LAND TO BE IRRIGATED OR PLACE OF USE

| Twp | Rng | Sec | NE 1/4 | | | | NW 1/4 | | | | SW 1/4 | | | | SE 1/4 | | | |
|-----|-----|-----|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|--------|-------|-------|-------|
| | | | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 | NE1/4 | NW1/4 | SW1/4 | SE1/4 |
| 34S | 7E | 18 | | | | | | | | | | | XX | | | | | |
| | | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | | |

The above described application will NOT be considered for approval for at least thirty days from the date of this notice to allow opportunity for any interested person to seek intervention in the processing of the application.

Any person desiring to protest approval of the application shall file a written protest in the office of the Water Resources Department, Salem, Oregon 97310, together with proof of service of a copy of the protest on the application and payment of the \$25 protest filing fee. Protest and proof of service forms and a copy of the administrative rules pertaining to the filling of a protest will be supplied free upon request.

Dated at Salem, Oregon, this 29th day of March, 19 89.

William H. Young
 Water Resources Director



STATE OF OREGON

INTEROFFICE MEMO

TO: Wayne / Jake

DATE: 3/21/89

FROM: S. Brown

SUBJECT: file 69829 - Mr. Driscoll called & stated he may have rights on spring for irr. or something to transfer the char. of use to the use described by app. check it out & return. call when possible.

returned call *[Signature]*

Application No. **69829**

Permit No.

STATE OF OREGON WATER RESOURCES DEPARTMENT

RECEIVED

Application for Permit to Appropriate Surface Water FEB - 1 1989

WATER RESOURCES DEPT.
SALEM, OREGON

I, **Raymond J. Driscoll**
(Name of Applicant)

of **H.C. 30 Box 138G**, **Chiloquin**
(Mailing Address) (City)

State of **OR**, **97624** Phone No. **783-2450**
(Zip Code) do hereby

make application for a permit to appropriate the following described waters of the State of Oregon:

1. The source of the proposed appropriation is **LAKE GLACID, Springs**
....., a tributary of **Wood R**

2. The point of diversion is to be located **910** ft. **N** and **1180** ft. **E**
(N. or S.) (E. or W.)
from the **Southwest** corner of **Section 18 Twp. 34 S. R. 7 E.**
(Public Land Survey Corner)
W. M.
(If there is more than one point of diversion, each must be described)

..... being within the **SW** $\frac{1}{4}$ of the **SW** $\frac{1}{4}$ of
Sec. **18** Tp. **34 S** R. **7 E**, W. M., in the county of **KLAMATH**
(N. or S.) (E. or W.)

3. Location of area to be irrigated, or place of use if other than irrigation.

| Township | Range | Section | List $\frac{1}{4}$ $\frac{1}{4}$ of Section | List use and/or number of acres to be irrigated |
|------------|-----------|-----------|---------------------------------------------|-------------------------------------------------|
| 34s | 7E | 18 | SW SW | Industrial |
| | | | | |
| | | | | |
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| | | | | |

4. The amount of water which the applicant intends to apply to beneficial use is 1
cubic feet per second. OR 300,000 gal per DAY
(If water is to be used from more than one source, give quantity from each)

5. The use to which the water is to be applied is Industrial / Loading Trucks
with water to be processed as drinking water

6. DESCRIPTION OF WORKS

Include dimensions and type of construction of diversion dam and headgate, length and dimensions of supply ditch or pipeline, size and type of pump and motor, type of irrigation system to adequately describe the proposed distribution system.

THE DISTRIBUTION SYSTEM INCLUDES APPROXIMATELY
180 FT OF 6" DIA. PIPE NARROWING INTO 3 FT OF
2" DIA PIPE THROUGH A 15 HP. ELECTRIC CENTRIFUGAL
PUMP THEN OUT THROUGH A 2" DIA x 3 FT OUTLET
INTO A 6" DIA. PIPE.

THE PUMP AND SUPPLY LINE ARE EXISTING
AND PART OF AN EXISTING GOV. DAM AND
TURBINE PROJECT. NOW ABANDONED

PROPOSED CONSTRUCTION IS THE PIPE TO
THE LOADING AREA.

If for domestic use state number of families to be supplied ~~01/30/93~~

7. Construction work will begin on or before 01/30/90

8. Construction work will be completed on or before 01/30/93

9. The water will be completely applied to the proposed use on or before 01/30/93

Application No. 69829

Permit No.

Remarks:.....
.....
.....
.....
.....
.....
.....

RECEIVED
AUG - 4 1995
WATER RESOURCES DEP
SALEM, OREGON

I/We certify that the information I have provided in application # 5-69829 is an accurate representation of the proposed water use and is true and correct to the best of my knowledge.

| Name | Title | Date |
|--------------------------|--------------|---------------|
| <u>Raymond J Duncall</u> | <u>Pres.</u> | <u>8-1-95</u> |
| | | |
| | | |
| | | |

This instrument was first received in the office of the Water Resources Director at Salem, Oregon, on the 1st day of February, 19 89, at 8:00 o'clock A.M.

Application No. 69829 Permit No.

Application No. 69829

Permit No.

NCR

Permit to Appropriate the Public Waters of the State of Oregon

This is to certify that I have examined the foregoing application and do hereby grant the same SUBJECT TO EXISTING RIGHTS INCLUDING THE EXISTING FLOW POLICIES ESTABLISHED BY THE WATER POLICY REVIEW BOARD and the following limitations and conditions:

The right herein granted is limited to the amount of water which can be applied to beneficial use and shall not exceed cubic feet per second measured at the point of diversion from the stream, or its equivalent in case of rotation with other water users, from

.....
.....

The use to which this water is to be applied is

.....
.....

If for irrigation, this appropriation shall be limited to of one cubic foot per second or its equivalent for each acre irrigated.....

.....
.....
.....
.....
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.....
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.....

and shall be subject to such reasonable rotation system as may be ordered by the proper state officer.

The priority date of this permit is

Actual construction work shall begin on or before..... and shall thereafter be prosecuted with reasonable diligence and be completed on or before October 1, 19.....

Complete application of the water to the proposed use shall be made on or before October 1, 19.....

WITNESS my hand this day of....., 19.....

DA 43148 Vol. 184 Page 19214

KNOW ALL MEN BY THESE PRESENTS, That MRS. J. LEE REYNOLDS hereinafter called the grantor, for the consideration hereinafter stated, to grantor paid by RAYMOND J. DRISCOLL, INC., an Oregon Corporation, hereinafter called the grantee, does hereby grant, bargain, sell and convey unto the said grantee and grantee's heirs, successors and assigns, that certain real property, with the tenements, hereditaments and appurtenances thereunto belonging or appertaining, situated in the County of Klamath and State of Oregon, described as follows, to-wit:

SEE EXHIBIT "A" ATTACHED

RECEIVED

FEB - 1 1989

Application No. 69829 Permit No.

WATER RESOURCES DEPT SALEM, OREGON

84 NOV 13 PM 3 17

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE (S)) To Have and to Hold the same unto the said grantee and grantee's heirs, successors and assigns forever. And said grantor hereby covenants to and with said grantee and grantee's heirs, successors and assigns, that grantor is lawfully seized in fee simple of the above granted premises, free from all encumbrances

and that grantor will warrant and forever defend the said premises and every part and parcel thereof against the lawful claims and demands of all persons whomsoever, except those claiming under the above described encumbrances.

The true and actual consideration paid for this transfer, stated in terms of dollars, is \$ 65,000.00. However, the actual consideration consists of or includes other property or value given or promised which is the whole consideration (indicate which). (The contents between the symbols @, if not applicable, should be deleted. See ORS 93.030.)

In construing this deed and where the context so requires, the singular includes the plural and all grammatical changes shall be implied to make the provisions hereof apply equally to corporations and to individuals.

In Witness Whereof, the grantor has executed this instrument this 26th day of October, 1984; if a corporate grantor, it has caused its name to be signed and seal affixed by its officers, duly authorized thereto by order of its board of directors.

THIS INSTRUMENT DOES NOT GUARANTEE THAT ANY PARTICULAR USE MAY BE MADE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT. A BUYER SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES.

Mrs. J. Lee Reynolds (Mrs.) MRS. J. LEE REYNOLDS

STATE OF OREGON, County of Klamath 10/26/84

STATE OF OREGON, County of ss. Personally appeared

Personally appeared the above named Mrs. J. Lee Reynolds

who, being duly sworn, each for himself and not one for the other, did say that the former is the president and that the latter is the secretary of

and acknowledged the foregoing instrument to be his voluntary act and deed.

a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors; and each of them acknowledged said instrument to be his voluntary act and deed.

NOTARY PUBLIC My commission expires: 4-10-87

Notary Public for Oregon My commission expires: (If executed by a corporation, affix corporate seal)

GRANTOR'S NAME AND ADDRESS

STATE OF OREGON, County of ss. I certify that the within instrument was received for record on the day of 19, at o'clock M., and recorded in book/reel/volume No. on page or as fee/file/instrument/microfilm/reception No. Record of Deeds of said county. Witness my hand and seal of County affixed.

GRANTEE'S NAME AND ADDRESS

By Deputy

After recording return to: Raymond J. Driscoll, Inc. Box 54 B, Harriman Rt. Klamath Falls, OR 97601

Mail a change is requested all fee statements shall be sent to the following address: Same as above

SPACE RESERVED FOR RECORDER'S USE

EXHIBIT "A"

19215

DESCRIPTION OF PROPERTY

The following described real property in Klamath County, Oregon:

Lot 4 of proposed Glacid Development, being a portion of the SW1/4 Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 East of the Willamette Meridian and Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88° 56' 26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1° 01' 29" East, 162.82 feet to a 3/4 inch iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87° 56' 26" West, 125.90 feet to a 3/4 inch iron pipe and the true point of beginning of this description; thence South 35° 25' 00" West, 250.62 feet to a point in the center line of Lake Glacid; thence North 82° 10' 00" West along center line of said Lake 55.89 feet to a point; thence North 18° 03' 34" East to a 3/4 inch iron pipe; thence South 87° 56' 26" East 135.00 feet to the true point of beginning. AND

Lot 5 of proposed Glacid Development, being a portion of the SW1/4 Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 E.W.M., and Section 18, Township 34 South, Range 7 E.W.M., thence South 88° 56' 26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1° 01' 29" East, 162.82 feet to a 3/4" iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87° 56' 26" West 55.90 feet to a 3/4" iron pipe, being the true point of beginning of this description; thence South 1° 01' 29" West 50.00 feet to a 3/4" iron pipe; thence South 30° 45' 00" West 240.11 feet to a point in the center line of Lake Glacid; thence North 59° 40' 00" West along said center line 108.12 feet to a point; thence North 35° 25' 00" East 250.62 feet to a 3/4" iron pipe; thence South 87° 56' 26" East 70.00 feet to the true point of beginning.

SUBJECT TO reservations, restrictions, rights of way of record and those apparent upon the land.

STATE OF OREGON,
County of Klamath

Filed for record at request of

on this 13th day of Nov. D. 19 84

at 3:17 o'clock P. M. and duly

recorded in Vol. 184 of Deeds

Page 19215

EBELYN BIEHM, County Clerk

[Signature] Deputy

Fee 8.00 Index \$1.00

Application No. 69829

Permit No.

43149

R-2446 TRUST DEED

Vol. 181 Page 19216

THIS TRUST DEED, made this 26th day of October, 1984, between RAYMOND J. DRISCOLL, INC., an Oregon Corporation

as Grantor, Klamath County Title Company, as Trustee, and

MRS. J. LEE REYNOLDS as Beneficiary.

WITNESSETH:

Grantor irrevocably grants, bargains, sells and conveys to trustee in trust, with power of sale, the property in Klamath County, Oregon, described as:

SEE EXHIBIT "A" ATTACHED

TRUST DEED

Application No. 69829 Permit No.

together with all and singular the tenements, hereditaments and appurtenances and all other rights thereto belonging or in anywise now or hereafter accruing, and the rents, issues and profits thereof and all fixtures now or hereafter attached to or used in connection with said real estate.

FOR THE PURPOSE OF SECURING PERFORMANCE of each agreement of grantor herein contained and payment of the sum of FORTY THOUSAND AND NO/100s Dollars, with interest thereon according to the terms of a promissory note of even date herewith, payable to beneficiary or order and made by grantor, the final payment of principal and interest hereof, if not sooner paid, to be due and payable

MARCH 1, 1995

The date of maturity of the debt secured by this instrument is the date, stated above, on which the final installment of said note becomes due and payable.

The above described real property is not currently used for agricultural, timber or grazing purposes.

To protect the security of this trust deed, grantor agrees:

1. To protect, preserve and maintain said premises in good condition and repair; not to remove or demolish any building or improvement thereon; not to commit or permit any waste of said property.
2. To complete or restore promptly and in good and workmanlike manner any building or improvement which may be constructed, damaged or destroyed thereon, and pay when due all costs incurred therefor.
3. To comply with all laws, ordinances, regulations, covenants, conditions and restrictions affecting said property; if the beneficiary so requests, to join in executing such financing statements pursuant to the Uniform Commercial Code as the beneficiary may require and to pay for filing same in the proper public office or offices, as well as the cost of all lien searches made by filing officers or searching agencies as may be deemed desirable by the beneficiary.
4. To provide and continuously maintain insurance on the buildings now or hereafter erected on the said premises against loss or damage by fire and such other hazards as the beneficiary may from time to time require, in an amount not less than \$1,000,000.00. All policies of insurance shall be delivered to the beneficiary as soon as insured; if the grantor shall fail for any reason to procure any such insurance and to deliver said policy to the beneficiary at least fifteen days prior to the expiration of any policy of insurance now or hereafter placed on said buildings, the beneficiary may procure the same at grantor's expense. The amount collected under any fire or other insurance policy may be applied by beneficiary upon any indebtedness secured hereby and in such order as beneficiary may determine, or at option of beneficiary the amount so collected, or may determine, or at option of grantor, such application or release shall not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.
5. To keep said premises free from construction liens and to pay all taxes, assessments and other charges that may be levied or assessed upon or against said property before any part of such taxes, assessments and other charges become past due or delinquent and promptly deliver receipts therefor to beneficiary; should the grantor fail to make payment of any such taxes, assessments, insurance premiums, liens or other charges payable by grantor, either by direct payment or by providing beneficiary with funds with which to make such payment, beneficiary may, at its option, make payment thereof, and the amount so paid, with interest at the rate set forth in the note secured hereby, together with the obligations described in paragraphs 6 and 7 of this deed, shall be added to and become a part of the debt secured by this trust deed, without waiver of any rights arising from breach of any of the covenants hereof and for such payments, with interest as aforesaid, the proper costs and charges as well as the grantor, shall be bound to the beneficiary to the extent that they are bound for the payment of the obligation herein described, and all such payments shall be immediately due and payable without notice, and the nonpayment thereof shall, at the option of the beneficiary, constitute a breach of this trust deed.
6. To pay all costs, fees and expenses of this trust including the cost of this deed as well as the other costs and expenses of the trustee and attorney's fees actually incurred.
7. To appear in and defend any action or proceeding purporting to affect the security rights or powers of beneficiary or trustee; and in any suit action or proceeding in which the beneficiary or trustee may appear, including any suit for the foreclosure of this deed, to pay all costs and expenses, including evidence of title and the beneficiary's or trustee's attorney's fees, the amount of attorney's fees mentioned in this paragraph in all cases shall be fixed by the trial court and in the event of an appeal from any judgment or decree of the trial court, grantor further agrees to pay such sum as the appellate court shall adjudge reasonable as the beneficiary's or trustee's attorney's fees on such appeal.

It is mutually agreed that:

1. In the event that any portion or all of said property shall be taken under the right of eminent domain or condemnation, beneficiary shall have the right, if it so elects, to require that all or any portion of the monies payable as compensation for such taking, which are in excess of the amount required to pay all reasonable costs, expenses and attorney's fees necessarily paid or incurred by grantor in such proceedings, shall be paid to beneficiary and applied by it first upon any reasonable costs and expenses and attorney's fees, both in the trial and appellate courts, necessarily paid or incurred by beneficiary in such proceedings, and the balance applied upon the indebtedness secured hereby; and grantor agrees, at its own expense, to take such actions and execute such instruments as shall be necessary in obtaining such compensation, promptly upon beneficiary's request.
2. At any time and from time to time upon written request of beneficiary, payment of its fees and presentation of this deed and the note for endorsement (in case of full reconveyances, for cancellation), without affecting the liability of any person for the payment of the indebtedness, trustee may

- (a) consent to the making of any map or plat of said property; (b) file in granting any easement or creating any restriction thereon; (c) join in any subdivision or other agreement affecting this deed or the land or things thereon; (d) reconvey, without warranty, all or any part of the property; (e) grant any reconveyance; may be described as the "person or persons legally entitled thereto," and the recitals therein of any matters or facts shall be conclusive proof of the truthfulness thereof. Trustee's fees for any of the services mentioned in this paragraph shall be not less than \$5.
10. Upon any default by grantor hereunder, beneficiary may at any time without notice, either in person, by agent or by a trustee to be appointed by a court, and without regard to the adequacy of any security for the indebtedness hereby secured, enter upon and take possession of said property, or any part thereof, or in its own name sue or otherwise collect the rents, issues and profits, including those past due and unpaid, and apply the same, less costs and expenses of operation and collection, including reasonable attorney's fees upon any indebtedness secured hereby, and in such order as beneficiary may determine.
11. The entering upon and taking possession of said property, the collection of such rents, issues and profits, or the proceeds of fire and other insurance policies or compensation or awards for any taking or damage to the property, and the application or release thereof as aforesaid, shall not cure or waive any default or notice of default hereunder or invalidate any act done pursuant to such notice.
12. Upon default by grantor in payment of any indebtedness secured hereby or in his performance of any agreement hereunder, the beneficiary may declare all sums secured hereby immediately due and payable. In such event the beneficiary at his option may proceed to foreclose this trust deed by advertisement and sale. In the latter event the beneficiary or the trustee shall accrete and cause to be recorded his written notice of default and his election hereby, whereupon the trustee shall fix the time and place of sale, give notice thereof as then required by law and proceed to foreclose this trust deed in the manner provided in ORS 88.740 to 88.795.
13. Should the beneficiary elect to foreclose by advertisement and sale then after default at any time prior to five days before the date set by the trustee for the trustee's sale, the grantor or other person so privileged by ORS 88.740, may pay to the beneficiary or his successors in interest, respectively, the entire amount then due under the terms of the trust deed and the obligation secured thereby (including costs and expenses actually incurred in enforcing the terms of the obligation and trustee's and attorney's fees not exceeding the amounts provided by law) other than such portion of the principal as would not then be due had no default occurred, and thereby cure the default, in which event all foreclosure proceedings shall be dismissed by the trustee.
14. Otherwise, the sale shall be held on the date and at the time and place designated in the notice of sale or the time to which said sale may be postponed as provided by law. The trustee may sell said property either in one parcel or in separate parcels and shall sell the parcel or parcels at the highest price for cash, payable at the time of sale. Trustee shall deliver to the purchaser its deed in form as required by law conveying the property so sold, but without any covenant or warranty, express or implied. The recitals in the deed of any matters of fact shall be conclusive proof the grantor and beneficiary, may purchase at the sale.
15. When trustee sells pursuant to the powers provided herein, trustee shall apply the proceeds of sale to payment of (1) the expenses of sale, in accordance with the provisions of the trust deed and a reasonable charge by trustee's attorney, (2) to the obligation secured by the trust deed, (3) to all persons having recorded liens subsequent to the interest of the trustee in the trust deed as their interests may appear in the order of their priority and (4) the surplus, if any, to the grantor or to his successor in interest entitled to such surplus.
16. For any reason permitted by law beneficiary may from time to time appoint a successor or successors to any trustee named herein or to any successor trustee appointed hereunder. Upon such appointment, and without conveyance to the successor trustee, the latter shall be vested with all title, powers and duties conferred upon any trustee herein named or appointed hereunder. Each such appointment and substitution shall be made by written instrument executed by beneficiary, containing reference to this trust deed and its place of record, and which when recorded in the office of the County Clerk or Recorder of the county or counties in which the property is situated, shall be conclusive proof of proper appointment of the successor trustee.
17. Trustee accepts this trust when this deed, duly executed and acknowledged in made a public record as provided by law. Trustee is not obligated to notify any party hereto of pending sale under any other deed of trust or of any action or proceeding in which grantor, beneficiary or trustee shall be a party unless such action or proceeding is brought by trustee.

PH 3 17

1987

The grantor covenants and agrees to and with the beneficiary, and those claiming under him, that he is lawfully seized in fee simple of said described real property and has a valid, unencumbered title thereto.

and that he will warrant and forever defend the same against all persons whatsoever.

Application No. 69829

Permit No.

The grantor warrants that the proceeds of the loan represented by the above described note and this trust deed are: (a) primarily for grantor's personal, family, household or agricultural purposes (see Important Notice Below), (b) for an organization, or (even if grantor is a natural person) are for business or commercial purposes other than agricultural purposes.

This deed applies to, inures to the benefit of and binds all parties hereto, their heirs, legatees, devisees, administrators, executors, personal representatives, successors and assigns. The term beneficiary shall mean the holder and owner, including pledgee, of the contract secured hereby, whether or not named as a beneficiary herein. In construing this deed and whenever the context so requires, the masculine gender includes the feminine and the neuter, and the singular number includes the plural.

IN WITNESS WHEREOF, said grantor has hereunto set his hand the day and year first above written.

IMPORTANT NOTICE: Debits, by lining out, whichever warranty (a) or (b) is not applicable; if warranty (a) is applicable and the beneficiary is a creditor as such used is defined in the Truth-in-Lending Act and Regulation Z, the beneficiary MUST comply with the Act and Regulation by making required disclosures; for this purpose, if this instrument is to be a FIRST lien to finance the purchase of a dwelling, use Stevens-Hess Form No. 1255 or equivalent; if this instrument is NOT to be a first lien, or is not to finance the purchase of a dwelling use Stevens-Hess Form No. 1900, or equivalent. If compliance with this Act is not required, disregard this notice.

If the signer of this deed is a corporation use the form of acknowledgment appropriate.

RAYMOND J. DRISCOLL, INC.
By: Raymond J. Driscoll, President
Barbara A. Driscoll, Secretary

STATE OF OREGON,

County of _____

Personally appeared the above named _____

and acknowledged the foregoing instrument to be _____ voluntary act and deed.

(OFFICIAL SEAL) Notary Public for Oregon

ORS 93.490

STATE OF OREGON, County of Klamath

Personally appeared Raymond J. Driscoll and Barbara A. Driscoll who, each being first

duly sworn, did say that the former is the

president and that the latter is the

secretary of Raymond J. Driscoll, Inc.

a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that the instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors and each of them acknowledged said instrument to be a voluntary act and deed.

Notary Public for Oregon
8/27/87



TO: Trustee

The undersigned is the legal owner and holder of all indebtedness secured by the foregoing trust deed. All sums secured by said trust deed have been fully paid and satisfied. You hereby are directed, on payment to you of any sums owing to you under the terms of said trust deed (or pursuant to statute, in cancel all evidence of indebtedness caused by said trust deed (which are delivered to you herewith together with said trust deed) and to reconvey, without warranty, to the parties designated by the terms of said trust deed the same to you under the same.

DATED: _____

Beneficiary

Do not lose or destroy this Trust Deed OR THE NOTES which it secures. Both must be delivered to the trustee for cancellation before reconveyance will be made.

TRUST DEED

FORM No. 897-1

STEVENS-HESS LAW PUB. CO., PORTLAND, ORE.

EXHIBIT JV, VOLVCHEN

STATE OF OREGON,

County of _____ } 80.

I certify that the within instrument was received for record on the _____ day of _____, 19____,

at _____ o'clock _____ M., and recorded in book/reel/volume No. _____ on page _____ or as document/leg./file/instrument/microfilm No. _____

Record of Mortgages of said County.

Witness my hand and seal of _____

County of _____

Mrs. J. Lee Reynolds
P. O. Box 1497
Palm Desert, CA

RAYMOND J. DRISCOLL, INC.
1987 DEED

Deputy

Application No. 69829

Permit No.

19218

EXHIBIT "A"

DESCRIPTION OF PROPERTY

The following described real property in Klamath County, Oregon:

Lot 4 of proposed Glacid Development, being a portion of the SW1/4 Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 East of the Willamette Meridian and Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88° 56' 26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1° 01' 29" East, 162.82 feet to a 3/4 inch iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87° 56' 26" West, 125.90 feet to a 3/4 inch iron pipe and the true point of beginning of this description; thence South 35° 25' 00" West, 250.62 feet to a point in the center line of Lake Glacid; thence North 82° 10' 00" West along center line of said Lake 55.89 feet to a point; thence North 18° 03' 34" East to a 3/4 inch iron pipe; thence South 87° 56' 26" East 135.00 feet to the true point of beginning. AND

Lot 5 of proposed Glacid Development, being a portion of the SW1/4 of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 E.W.M., and Section 18, Township 34 South, Range 7 E.W.M., thence South 88°56'26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1°01'29" East, 162.82 feet to a 3/4" iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87°56'26" West 55.90 feet to a 3/4" iron pipe, being the true point of beginning of this description; thence South 1°01'29" West 50.00 feet to a 3/4" iron pipe; thence South 30°45'00" West 240.11 feet to a point in the center line of Lake Glacid; thence North 59°40'00" West along said center line 108.12 feet to a point; thence North 35°25'00" East 250.62 feet to a 3/4" iron pipe; thence South 87°56'26" East 70.00 feet to the true point of beginning.

STATE OF OREGON,
County of Klamath)
Filed for record at request of

After Recording Return To:

Mrs. J. Lee Reynolds
P. O. Box 1597
Palm Desert, CA 92260

on this 13th day of Nov. A.D. 19 84
at 3:17 o'clock P M, and duly
recorded in Vol. MB4 of Mortgages
Page 19216

EVELYN BIEHN, County Clerk

By *[Signature]* Deputy

Fee 12.00 Index: \$1.00

OA

43150

WARRANTY DEED

Vol. 1484 Page 19219

KNOW ALL MEN BY THESE PRESENTS, That AGENCY INVESTORS, INC., a
Partnership consisting of WALLY WATKINS and JACK H. REYNOLDS
 hereinafter called the grantor, for the consideration hereinafter stated, to grantor paid by RAYMOND J.
DRISCOLL, INC., an Oregon Corporation, hereinafter called
 the grantee, does hereby grant, bargain, sell and convey unto the said grantee and grantee's heirs, successors and
 assigns, that certain real property, with the tenements, hereditaments and appurtenances thereunto belonging or ap-
 pertaining, situated in the County of Klamath and State of Oregon, described as follows, to-wit:

SEE EXHIBIT 'A' ATTACHED

Application No. 69829
 Permit No.

84 NOV 13 PM 3 17

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

To Have and to Hold the same unto the said grantee and grantee's heirs, successors and assigns forever.
 And said grantor hereby covenants to and with said grantee and grantee's heirs, successors and assigns, that
 grantor is lawfully seized in fee simple of the above granted premises, free from all encumbrances

and that
 grantor will warrant and forever defend the said premises and every part and parcel thereof against the lawful claims
 and demands of all persons whomsoever, except those claiming under the above described encumbrances.

The true and actual consideration paid for this transfer, stated in terms of dollars, is \$ 60,000.00.....
 However, the actual consideration consists of or includes other property or value given or promised which is
 the whole consideration (indicate which). (The sentence between the symbols @, if not applicable, should be deleted. See ORS 93.030.)

In construing this deed and where the context so requires, the singular includes the plural and all grammatical
 changes shall be implied to make the provisions hereof apply equally to corporations and to individuals.

In Witness Whereof, the grantor has executed this instrument this 29th day of October, 1984;
 if a corporate grantor, it has caused its name to be signed and seal affixed by its officers, duly authorized thereto by
 order of its board of directors.

THIS INSTRUMENT DOES NOT GUARANTEE THAT ANY
 PARTICULAR USE MAY BE MADE OF THE PROPERTY
 DESCRIBED IN THIS INSTRUMENT. A BUYER SHOULD
 CHECK WITH THE APPROPRIATE CITY OR COUNTY
 PLANNING DEPARTMENT TO VERIFY APPROVED USES.

AGENCY INVESTORS, INC. Partner
 By: Wally Watkins
 By: Jack H. Reynolds Partner

STATE OF OREGON

STATE OF OREGON

STATE OF OREGON,)
 County of Klamath) ss.

Be it Remembered, That on this 29 day of October, 1984, before me,
 the undersigned, a Notary Public in and for said County and State,
 personally appeared the within named Jack H. Reynolds, one of the
 partners of Agency Investors, Inc., and acknowledged to me that he
 executed the within instrument for and on behalf of said Partnership.
 In Testimony whereof I have hereunto set my hand and affixed
 my official seal the day and year last above written.



Frank A. Steh
 Notary Public for Oregon
 My commission expires 4-18-87

STATE OF OREGON,)
 County of Klamath) ss.

Be it Remembered, That on this 10 day of November, 1984, before me,
 the undersigned, a Notary Public in and for said County and State,
 personally appeared the within named Wally Watkins, aka Wallace W. Watkins,
 one of the partners of Agency Investors, Inc., and acknowledged to me that
 he executed the within instrument for and on behalf of said Partnership.

In Testimony whereof I have hereunto set my hand and affixed my
 official seal the day and year last above written.



Shirley Reynolds
 Notary Public for Oregon
 My commission expires 9/23/87

19220

The following described real property situate in Klamath County, Oregon:

SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, lying Easterly of Highway 62, EXCEPTING THEREFROM the following:

Lot 1 of Proposed Glacid Development, being a portion of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner of Section 16, Township 34 South, Range 7 East of the Willamette Meridian; thence S. 88°56'26" E., 515.76 feet to the East right of way line of State Highway 62; thence S. 11°39'58" E. along the right of way, 41.01 feet; thence S. 88°56'26" E., 130 feet to the true point of beginning; thence S. 88°56'26" E., 70.00 feet to the beginning of a 100.00 foot radius curve to the right; thence along the arc of a 100.00 foot radius curve to the right, 75.05 feet (Δ 43°00') to the end of said curve; thence S. 0°20'00" E., 275.35 feet; thence N. 82°10'00" W., 33.80 feet; thence N. 19°25'00" W., 318.25 feet to the point of beginning.

Lot 4 of proposed Glacid Development, being a portion of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 East of the Willamette Meridian and Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88° 56' 26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1° 01' 29" East, 162.82 feet to a 3/4 inch iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87° 56' 26" West, 125.90 feet to a 3/4 inch iron pipe and the true point of beginning of this description; thence South 35° 25' 00" West, 250.62 feet to a point in the center line of Lake Glacid; thence North 82° 10' 00" West along center line of said Lake 55.89 feet to a point; thence North 18° 03' 34" East to a 3/4 inch iron pipe; thence South 87° 56' 26" East 155.00 feet to the true point of beginning. AND

Lot 5 of proposed Glacid Development, being a portion of the SW $\frac{1}{4}$ SW $\frac{1}{4}$ of Section 18, Township 34 South, Range 7 East of the Willamette Meridian, more particularly described as follows:

Commencing at the South 1/16 corner between Section 13, Township 34 South, Range 7 East of the Willamette Meridian and Section 18, Township 34 South, Range 7 East of the Willamette Meridian; thence South 88°56'26" East 1273.88 feet to the SW 1/16 corner monument of said Section 18; thence South 1°01'29" East, 162.82 feet to a 3/4" iron pipe, being the most Northeasterly corner of Lot 6 of said Glacid Development; thence North 87°56'26" West 55.90 feet to a 3/4" iron pipe, being the true point of beginning of this description; thence South 1°01'29" West 50.00 feet to a 3/4" iron pipe; thence South 30°45'00" West 240.11 feet to a point in the center line of Lake Glacid; thence North 59°40'00" West along said center line 108.12 feet to a point; thence North 35°25'00" East 250.62 feet to a 3/4" iron pipe; thence South 87°56'26" East 70.00 feet to the true point of beginning.

SUBJECT TO reservations, restrictions, rights of way of record and those apparent upon the land.

After Recording Return to:
Raymond J. Driscoll, Inc.
Box 54 B, Harriman Rt.
Klamath Falls, OR 97601

STATE OF OREGON,
County of Klamath)
Filed for record at request of

on this 15th day of Nov. A.D. 19 64
at 3:17 o'clock P. M. and duly
recorded in Vol. 186 of Deeds
Page 19219

EMELYN BIERH, County Clerk
By *[Signature]* Deputy
Fee 8.00 Index \$1.00

Application No. 69829

Permit No.

APPLICATION PROCESSING OUTLINE

Basin: Klamath

Sub-basin: _____

Fees paid: Examination fee: 200⁰⁰
 Recording fees: 100⁰⁰
 Total: 300⁰⁰

Application No. 69829
 Permit No. _____

RATE AND DUTY _____ for irrigation

1. Check for minimum information (OAR 690-11-020)

- | yes | no | |
|-------------------------------------|--------------------------|--------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Name and mailing address of the applicant. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Source of the water. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Quantity of water to be appropriated. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Location of point of diversion to 1/4 1/4 Section. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Nature and place of use. |
| <input type="checkbox"/> | <input type="checkbox"/> | Name and mailing address of all legal owners of the properties involved. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Signature of the applicant |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Examination fees. |

If minimum information not supplied, excepting legal owner information, then return to applicant with letter explaining deficiencies.

- | | | |
|-------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Water Resources Commission classification limits or restrictions -- If yes, note: |
| _____ | _____ | _____ |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | State Engineer's withdrawals -- If yes, note: |
| _____ | _____ | _____ |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Legislative withdrawals -- If yes, note: |
| _____ | _____ | _____ |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | If policy statement is unclear check with Resources Management Division. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Scenic Watervay: <u>Klamath River</u> |
| _____ | <input type="checkbox"/> | _____ on _____ up-stream _____ w/in 1/4 mile |
| _____ | <input type="checkbox"/> | Notify Parks and Recreation Department |
| _____ | <input checked="" type="checkbox"/> | Out-of-basin diversion |
| _____ | <input type="checkbox"/> | Need to route to Geology Section due to: |
| _____ | <input type="checkbox"/> | well within one mile of a stream |
| _____ | <input type="checkbox"/> | well within restricted surface water area |
| _____ | <input type="checkbox"/> | wells with request for greater than 5 cfs |
| _____ | <input type="checkbox"/> | well is for heating &/or cooling |
| _____ | <input type="checkbox"/> | well constructed by land owner |
| _____ | <input type="checkbox"/> | well is artesian |
| _____ | <input type="checkbox"/> | artificial ground water recharge project |
| _____ | <input type="checkbox"/> | ground water area under study |
| _____ | <input type="checkbox"/> | Within Irrigation District: |
| _____ | <input type="checkbox"/> | Notify _____ Need excerpt from District |
| _____ | <input type="checkbox"/> | Legal description of property |
| _____ | <input type="checkbox"/> | Ownership statement |
| _____ | <input type="checkbox"/> | Other parties to Notify: _____ |
| _____ | <input type="checkbox"/> | Water Resources Commission review if: |
| _____ | <input type="checkbox"/> | Request for greater than 5 cfs |
| _____ | <input type="checkbox"/> | Dam height greater than 10 feet |
| _____ | <input type="checkbox"/> | Storage of more than 9.2 acre-feet |
| _____ | <input type="checkbox"/> | Out-of-basin diversion |
| _____ | <input type="checkbox"/> | within or above a scenic watervay |
| _____ | <input type="checkbox"/> | conditional uses under basin programs |
| _____ | <input type="checkbox"/> | requests for larger rate or duty than allowed |
| _____ | <input type="checkbox"/> | ground water recharge project |
| _____ | <input type="checkbox"/> | other substantial public interest issues |
| _____ | <input type="checkbox"/> | requests for review by an agency or person |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Watermaster comment form sent with copy of application and map. |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Watermaster comments received _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Hydrographic section comments requested _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Hydrographic section comments received _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | O. D. F. W. sent copy of application and map(except groundwater) requesting comment _____ |
| <input type="checkbox"/> | <input type="checkbox"/> | O. D. F. W. comments received _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Report from D.E.G. received _____ |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Publish application information in weekly public notice. |
| <input type="checkbox"/> | <input type="checkbox"/> | Notify other owners of development |
| <input type="checkbox"/> | <input type="checkbox"/> | PROTESTED |
| _____ | <input type="checkbox"/> | filed _____ |
| _____ | <input type="checkbox"/> | resolved _____ |