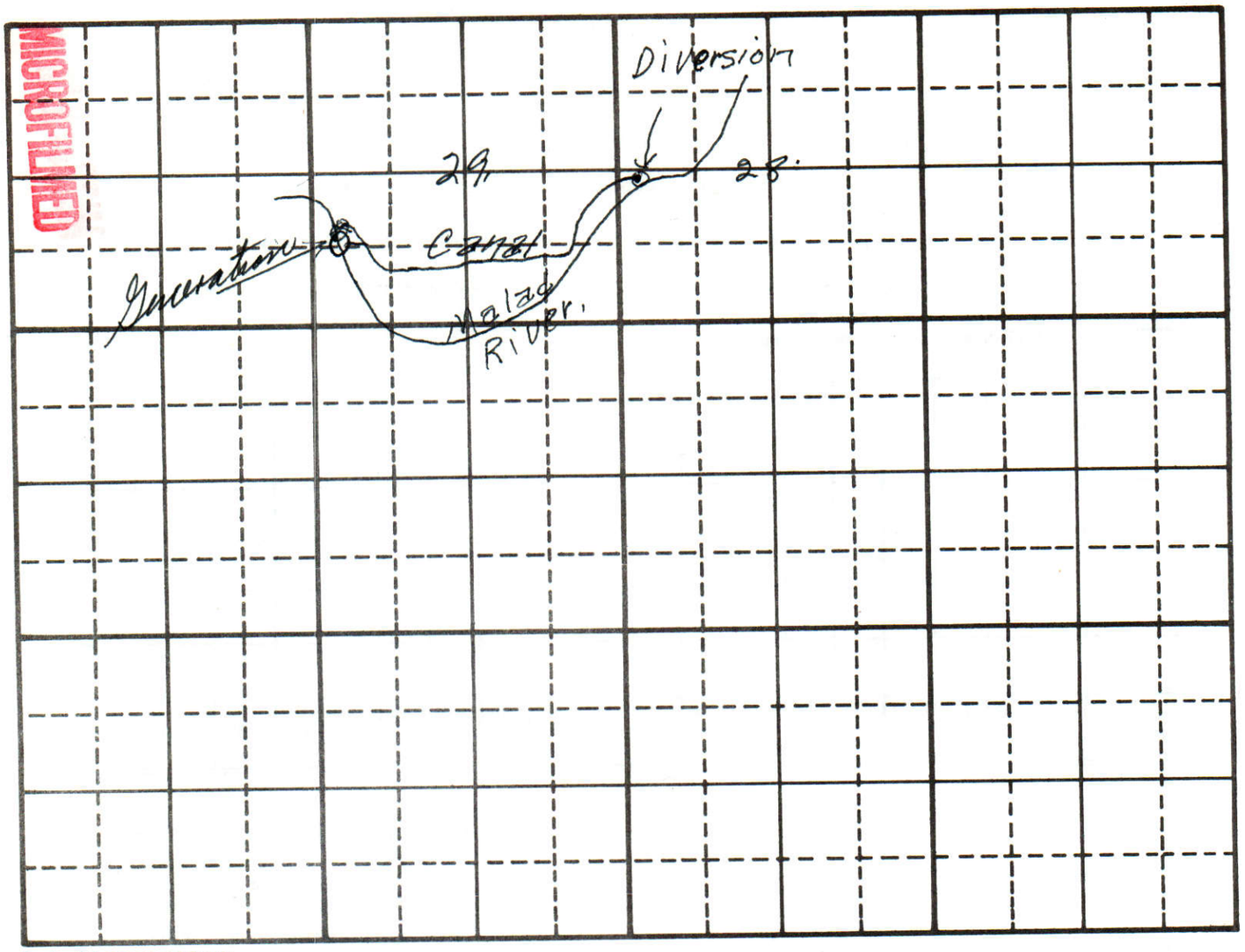
Complete the following map by showing land and point of diversion as proposed by this amendment.

Show 40-acre subdivisions, townships, ranges and ditches.



Scale: 2 inches equal 1 mile.

That no one will be injured by such change, and that such change will be made at permit holder's own risk.

Signed at Burley, Idaho, this 19 day of November 1982.

Vernon Lawrencraft
(Signature)

FOR DEPARTMENT USE ONLY

#25280

Preliminary check by DRT Fee = $20.00 Receipted by ~~~ Date 11-19-82

Publication prepared by _____ Date _____ Published in _____

Publication dates NOT REQ'D PER CONV W/ REG SUPV DRT 11/19/82

ACTION OF THE DEPARTMENT OF WATER RESOURCES

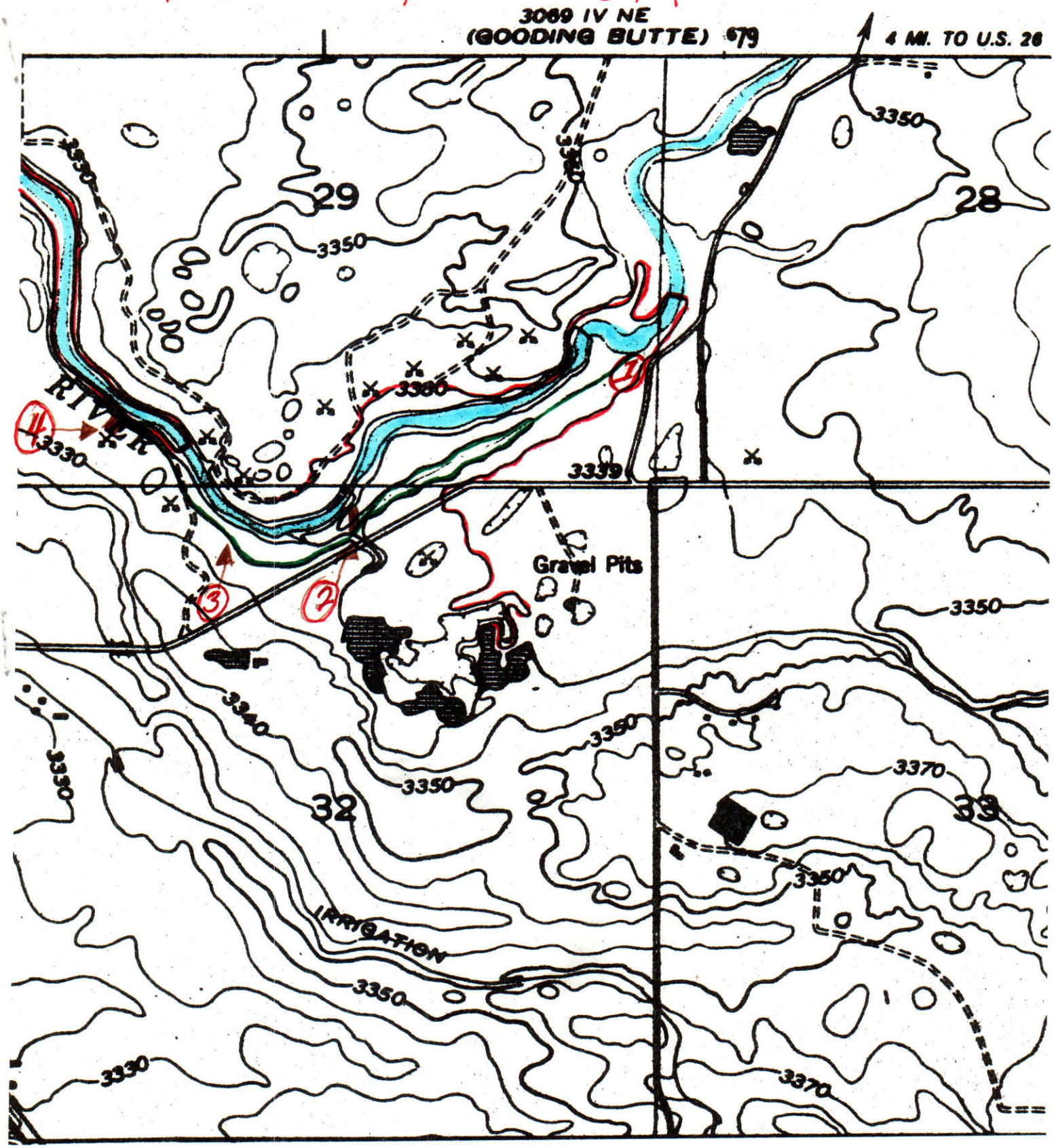
I, L. Glen Saxton, of the Department of Water Resources hereby

APPROVE THE ABOVE APPLICATION FOR AMENDMENT FOR PERMIT NO. 37-7857.

Witness my hand this 22nd day of Nov., 1982.

L. Glen Saxton

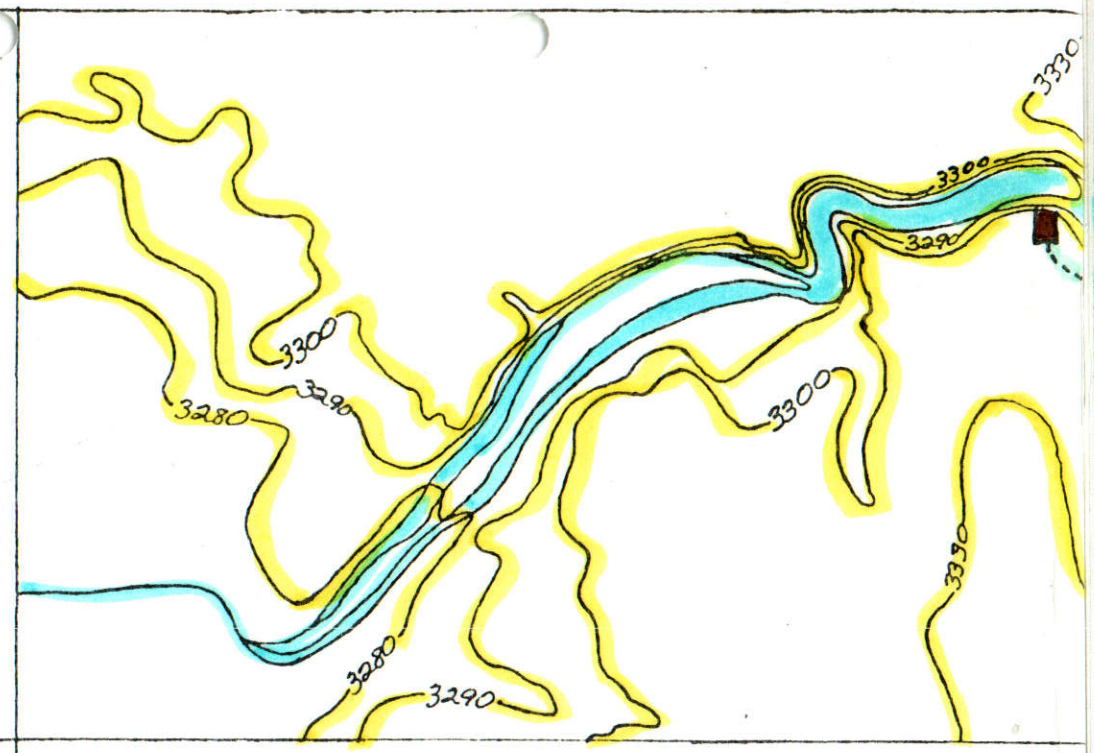
T6S - R-14E. BM.

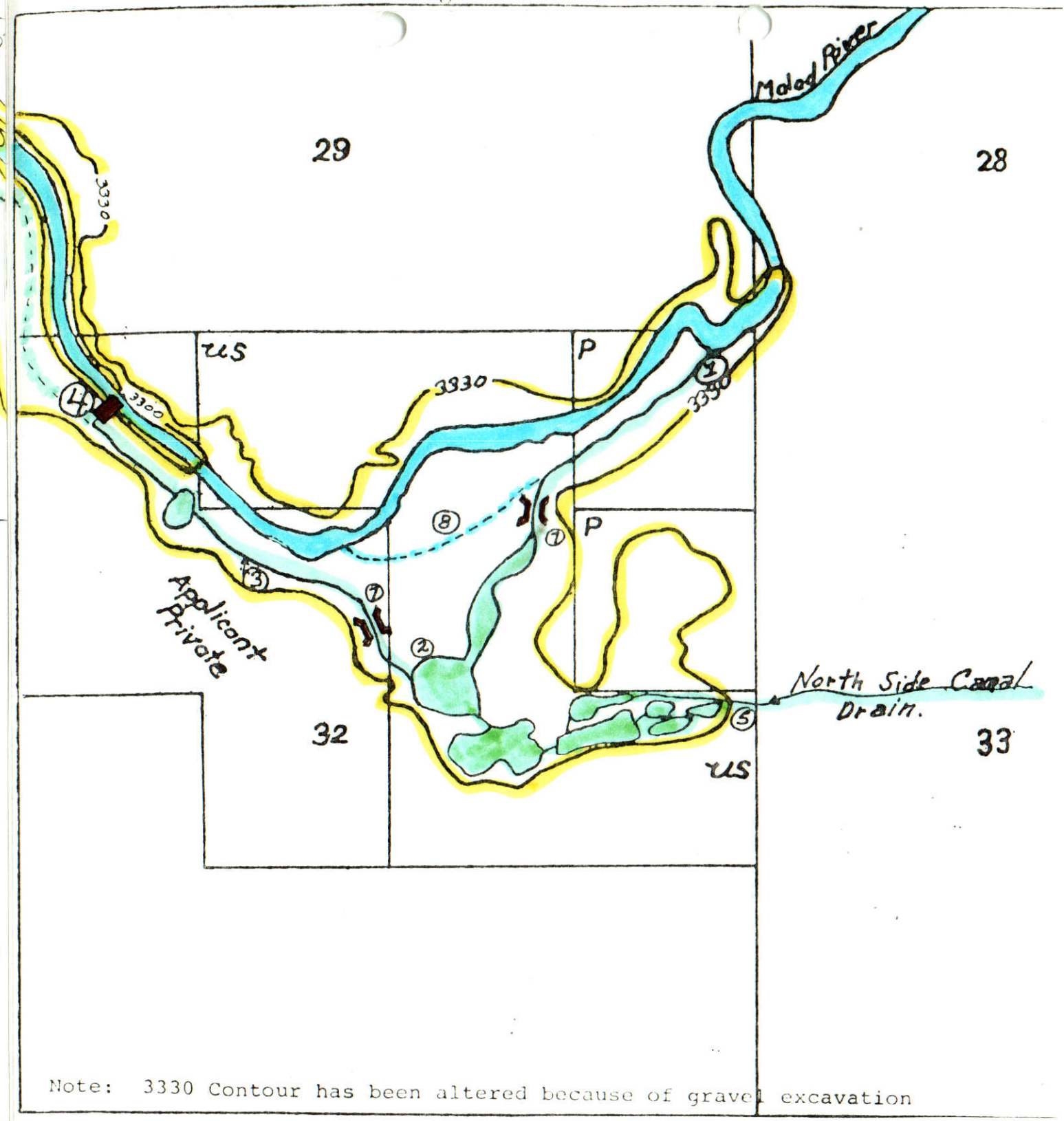


1. Dry Bed Natural Diversion
2. Diversion Dam in Natural Dry Bed
3. Constructed Canal or Pipe Syphons
4. Power Plant Site

Range 14 E

T 6 S





Note: 3330 Contour has been altered because of gravel excavation

1. Point of diversion - approximately 3330'.
2. Settling pond, approximately 10 acres - 1 to 15 feet deep - enlarged by dykes to hold maximum elevation.
3. Canal to power site.
4. Power drop - turbine level approximately 3290' elevation.
5. North Side Canal drain through old gravel pits to be improved and sealed to gain flow and improve wildlife habitat.
6. Optional additional canal and power site- approximate turbine elevation 3285'.
7. Culverts under county road.
8. Natural drain to river.

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PHONE 934-4449 BOX 56

GOODING, IDAHO 83330

GOODING COUNTY LEADER

ONE MEDIUM • ONE COVERAGE • ONE COST

ACCOUNT NO.	DATE
	10/15/80

M Board of Control

CASH ☐
CHARGE ☑
ON ACCT. ☐
PAID OUT ☐
DISPLAY ☐
CLASS ☐
SUPPLIES ☐
MISC.

QUAN.	DESCRIPTION	AMOUNT	
32	3757 Ravenscroft	15	20

JE	SPECIAL RATE	START DATE	EXPIRE DATE

NEW ACCT	RENEWAL	PZ	STATE	BILL	CYCLE

LEGAL NO. 3286

PSA	NO. PAP.	RATE	SORT KEY	SACK

PRINTING NO.

35283 BY

PLEASE RETAIN THIS TICKET FOR YOUR RECORDS
MOORE DEALER - GOODING COUNTY LEADER

NOTICE OF APPLICATION FOR WATER RIGHT

Notice is hereby given that the following application(s) have been submitted for permit to appropriate the public waters of the State of Idaho:

37-7857

RAVENSCROFT, VERNON P.O. BOX 893, BOISE, ID 83701

Source: MALAD RIVER tributary to SNAKE RIVER

Date Filed: 9/19/1980

Amount: 20.00 CFS

Diversion Point: SESE Sec 29 T 06S R 14E; GOODING Co.

Use: POWER [20.00 CFS] from 01/01 to 12/31

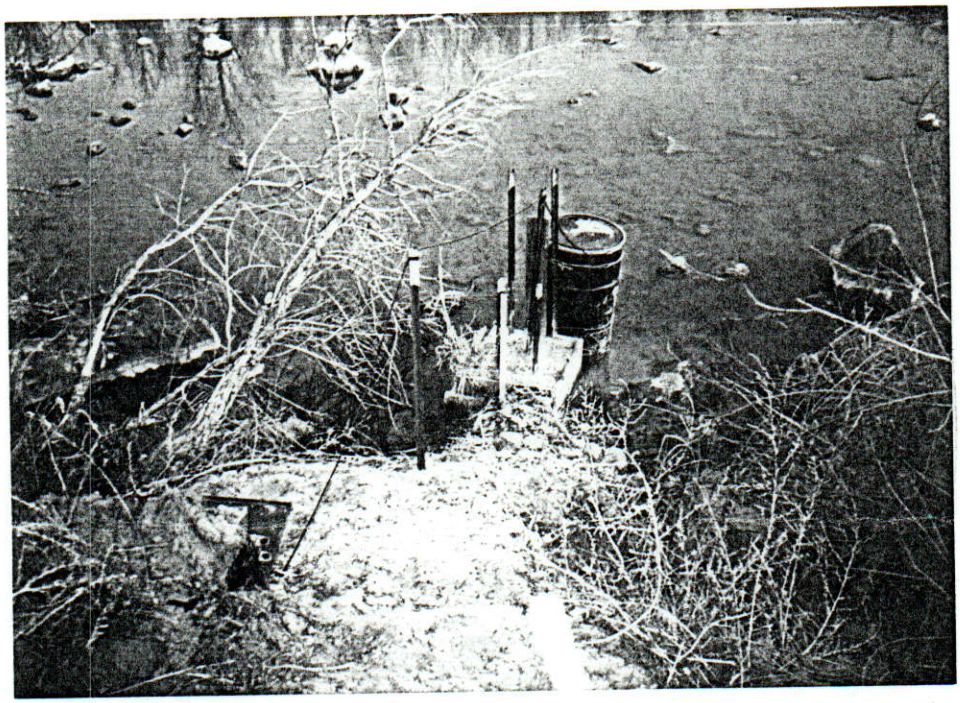
Place of Use: SWSW Sec 29 T 06S R 14E

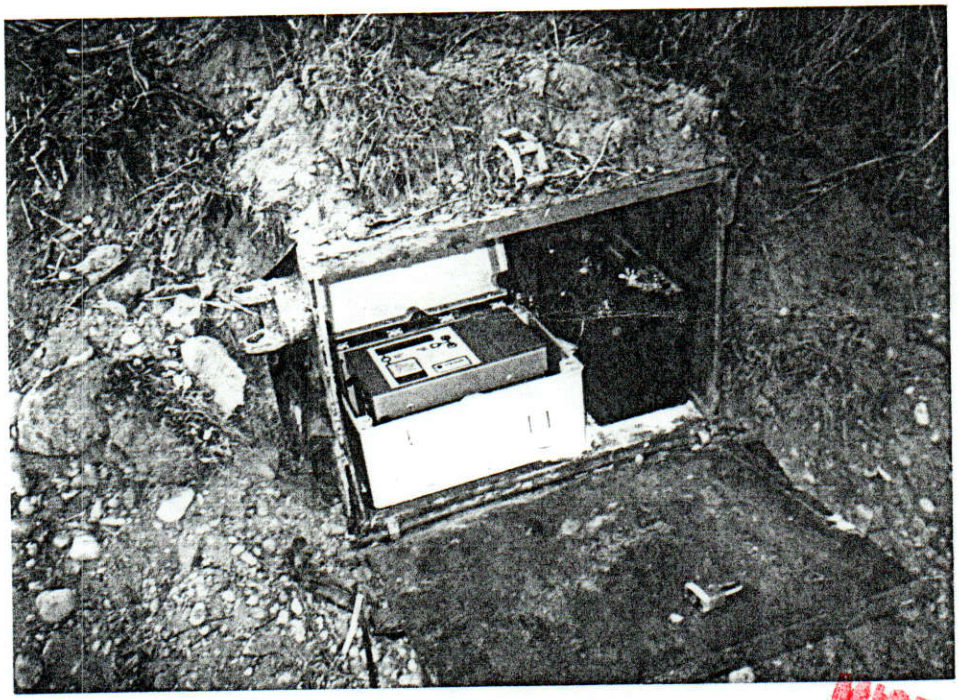
Diversion Means: CONTROL GATE AND NATURAL CHANNEL

If issued, the permit(s) will be subject to all prior water rights. Protests against the granting of any permit must be filed with the Director of the Idaho Department of Water Resources, 1041 Blue Lakes Blvd. North, Twin Falls, Idaho 83301 and received on or before OCTOBER 27, 1980.

/s/ C. STEPHEN ALLRED
Director

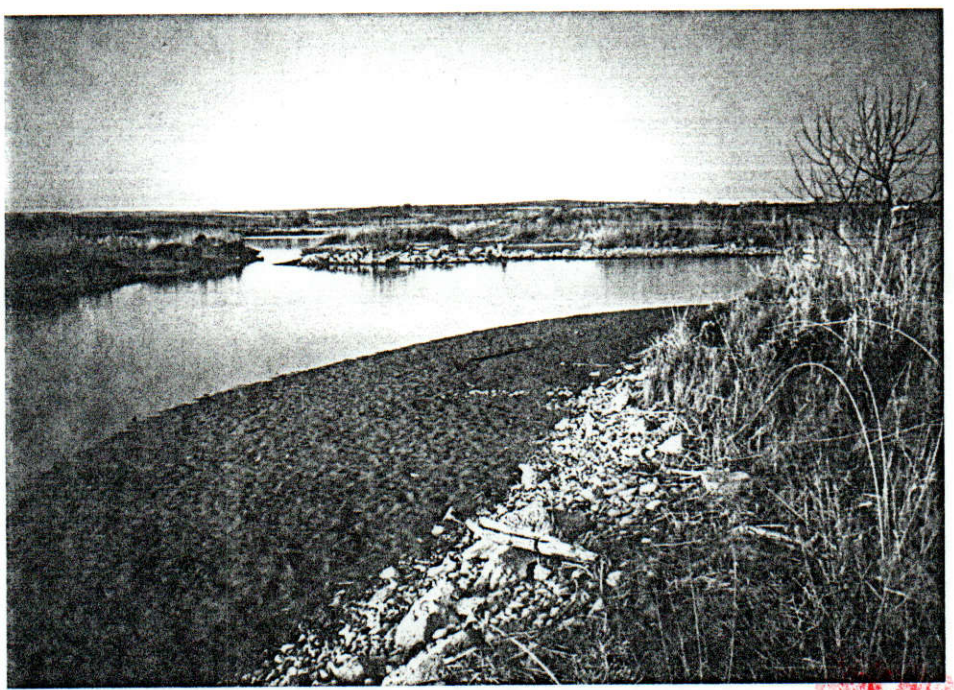
Pub: 10-8, 15





DEC 05 1994





DEC 05 1994

DEC 0 5 1994

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									116	110		
2									0	110		
3										110		
4								0		113		
5								75	0	116		
6								106	0	114		
7								103		110		
8								100	0	112		
9								114	56	114		
10								118	112	116		
11								138	112	116		
12								131	118	112		
13		40 18 ave.						127	118	110		
14								127	114	108		
15								127	110	114		
16								127	112	113		
17								80	114	112		
18								95	112	116		
19								112	110	0		
20								106	116	0		
21								116	116	0		
22								116	118			
23								116	118			
24								116	118			
25								116	118			
26								121	1116			
27								118	116			
28								116	110			
29								114	110			
30								111	110			
31								108				
								3,054	2,570	2,026		
Mean								113	112	113		
Acre-Feet												

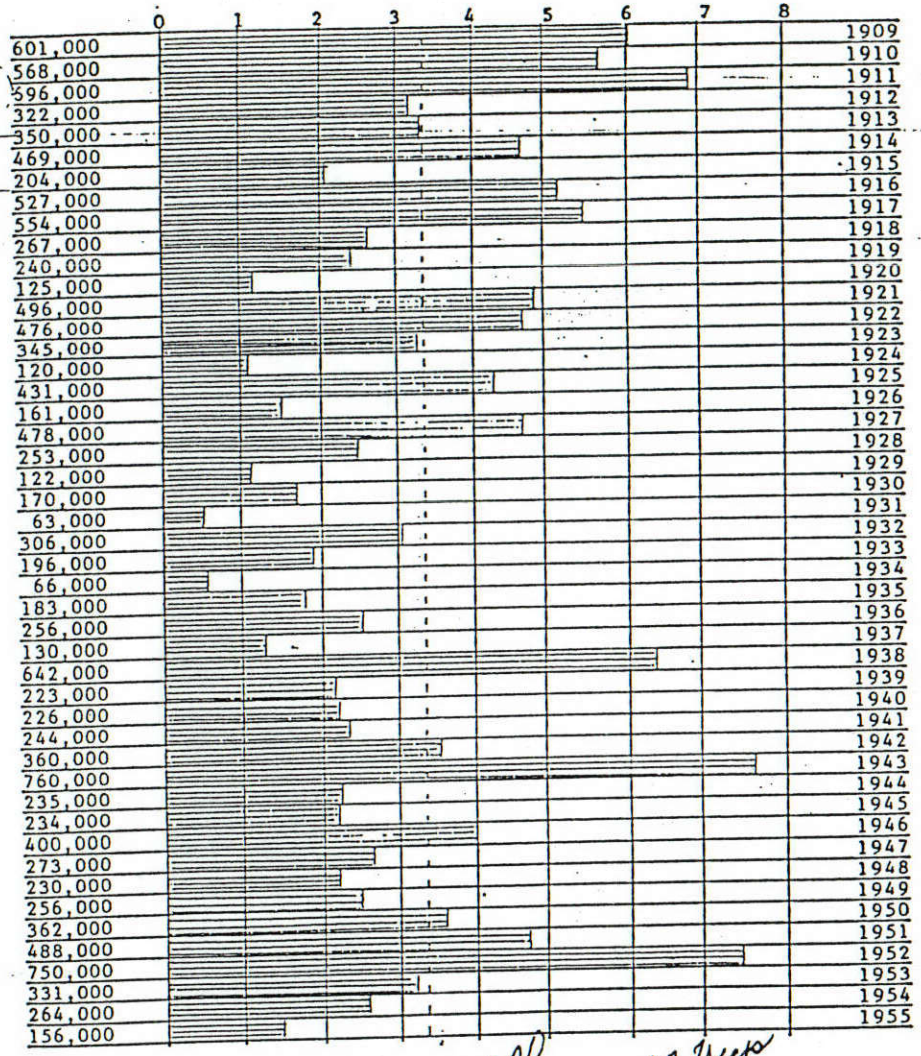
U. S. GOVERNMENT PRINTING OFFICE 16—60006-1

YEAR OR PERIOD MEAN _____ ACRE-FEET _____

#49

42

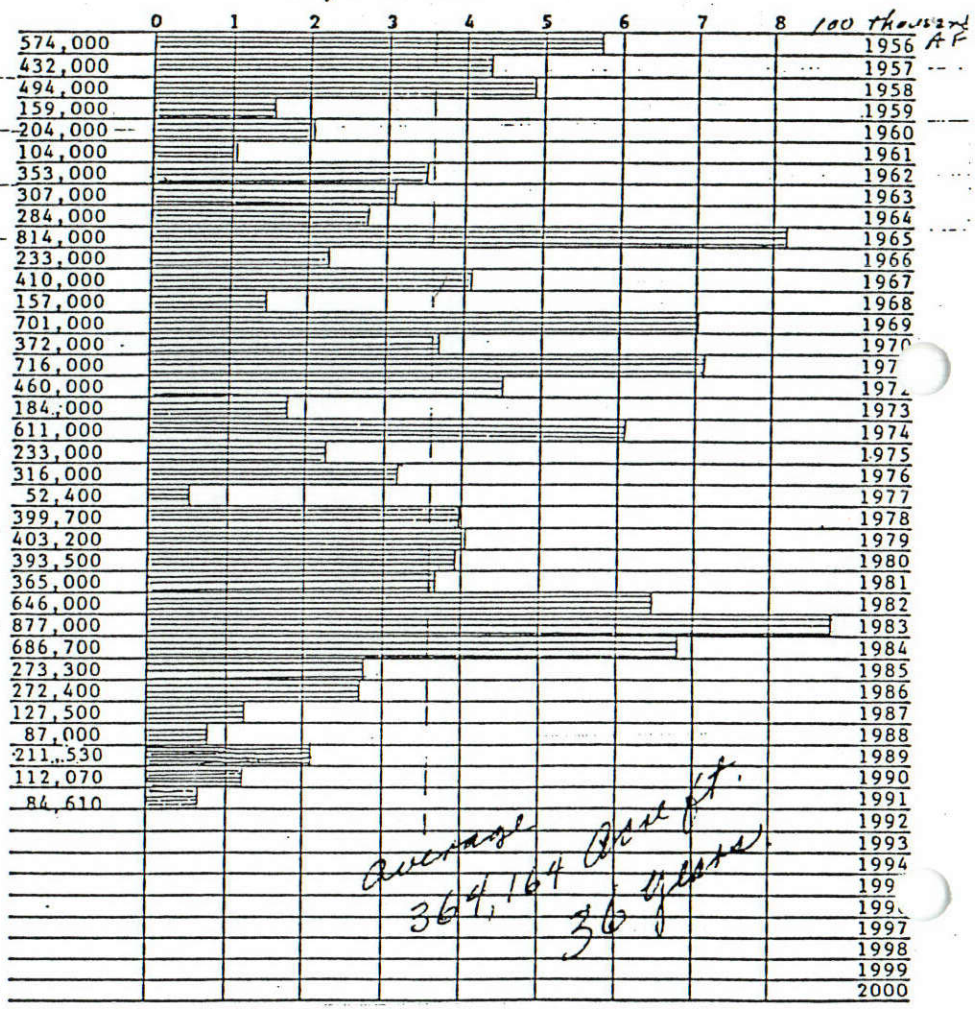
DIAGRAM SHOWING ACRE FEET, TOTAL ANNUAL
RUNOFF INTO MAGIC RESERVOIR



332,000
average. 47 years

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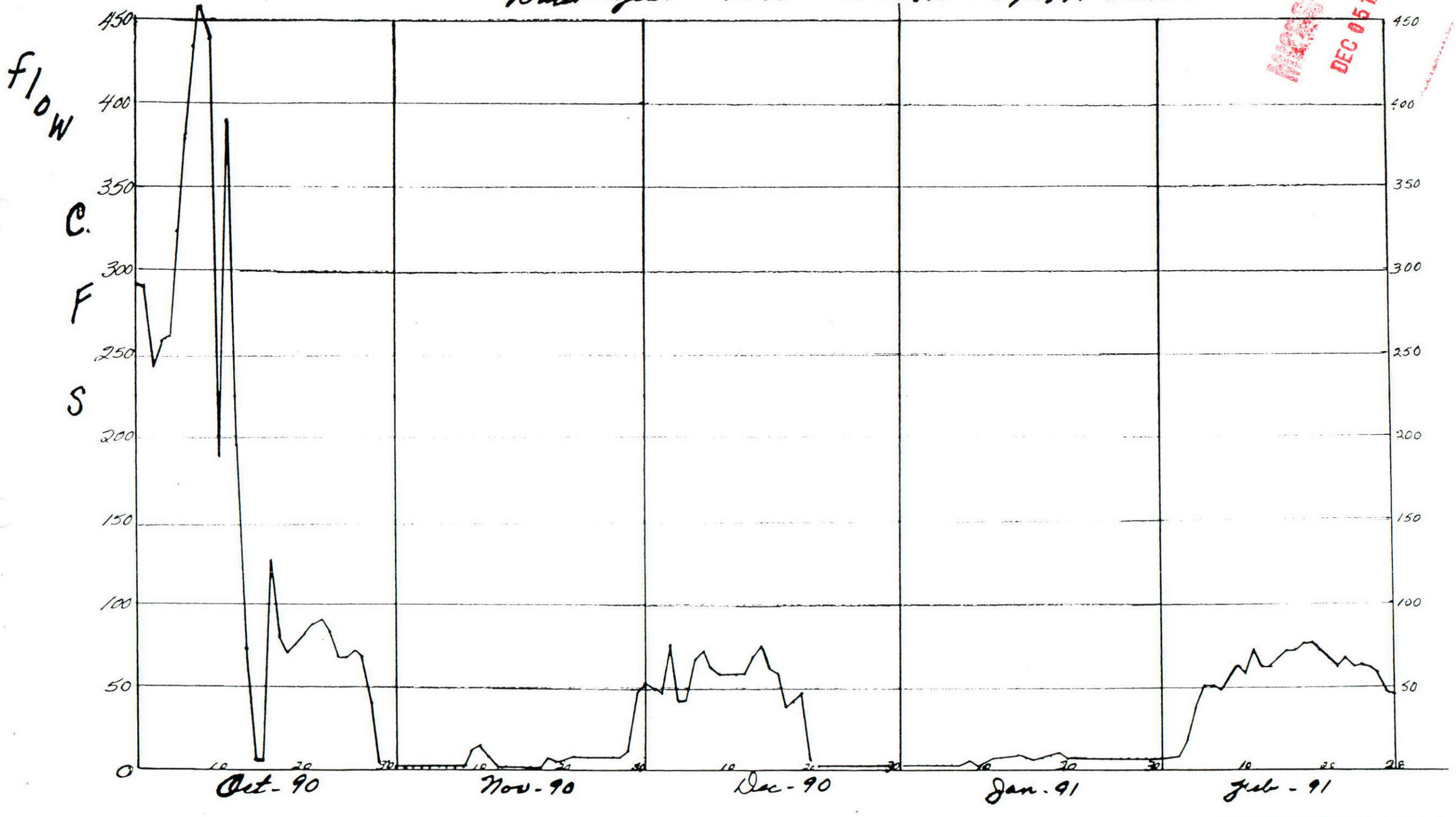
DIAGRAM SHOWING ACRE FEET, TOTAL ANNUAL
RUNOFF INTO MAGIC RESERVOIR
191,500 Full



Average
364,164 Acre ft.
36 years

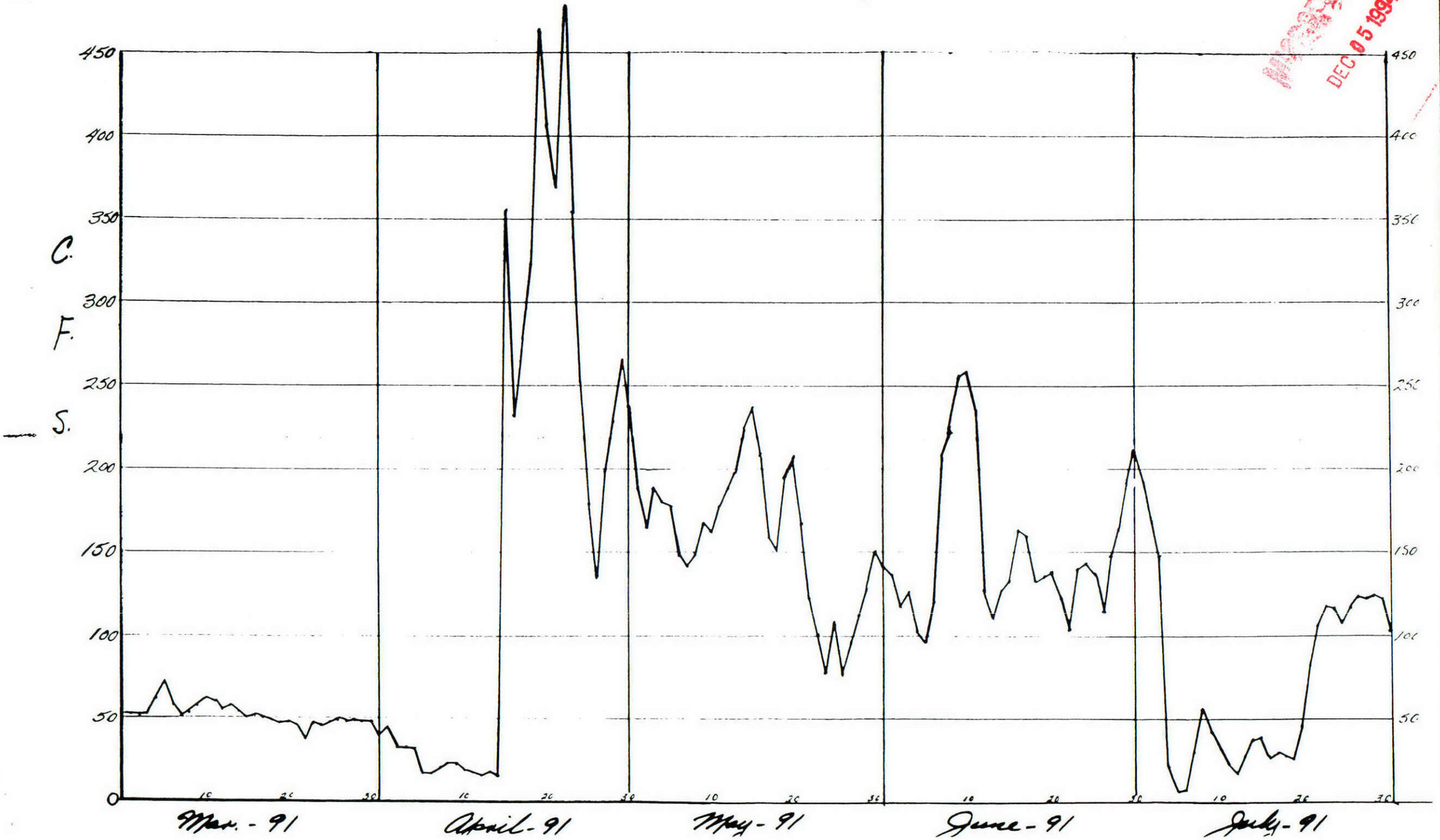
Graph Station 13152500 Upper Kuskokwim Gauging
Water year 1991 - Oct. 90 - Sept. 91 inclusive

DEC 05 1994



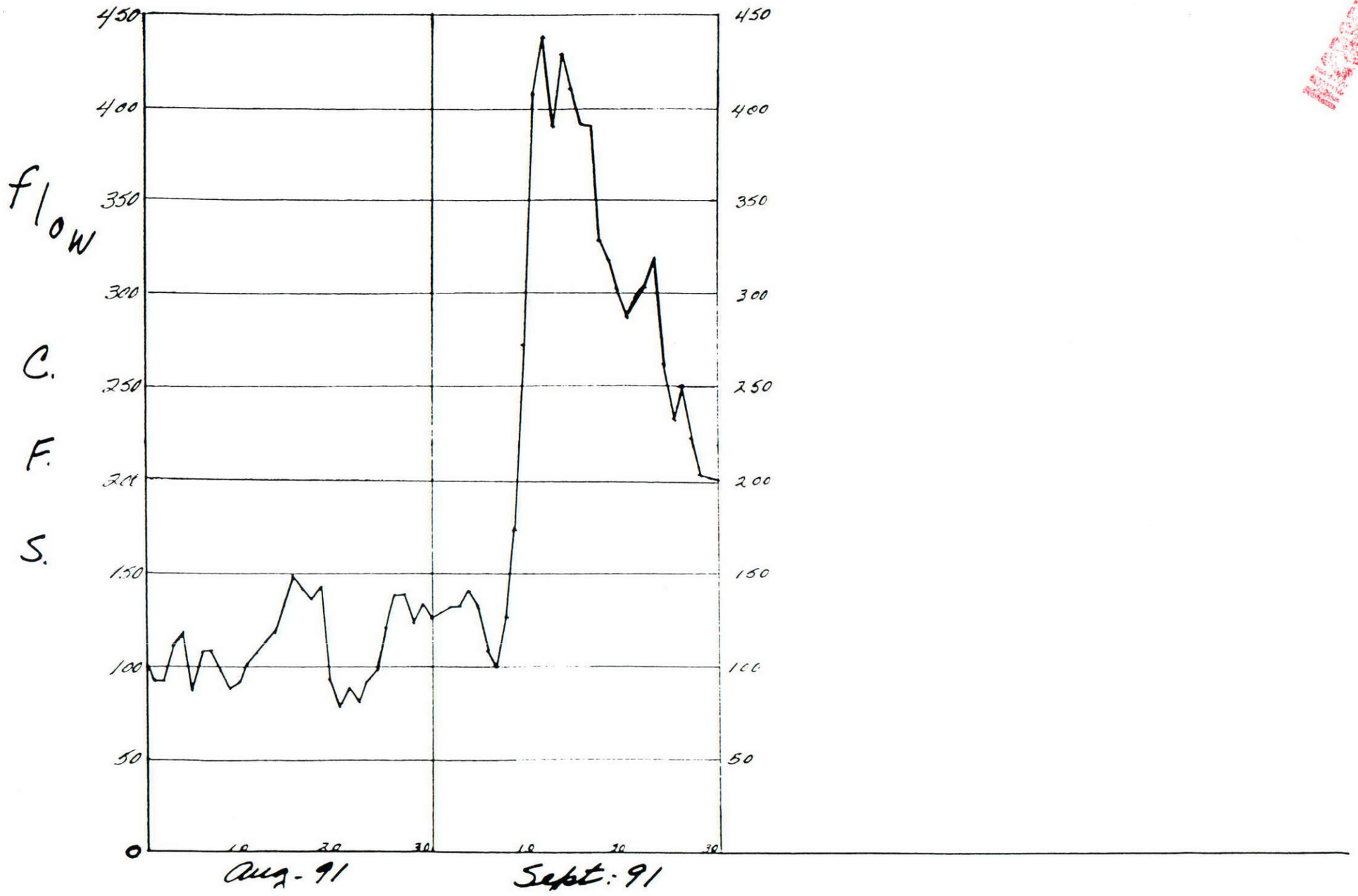
Station 13152500 - Water year 1991.

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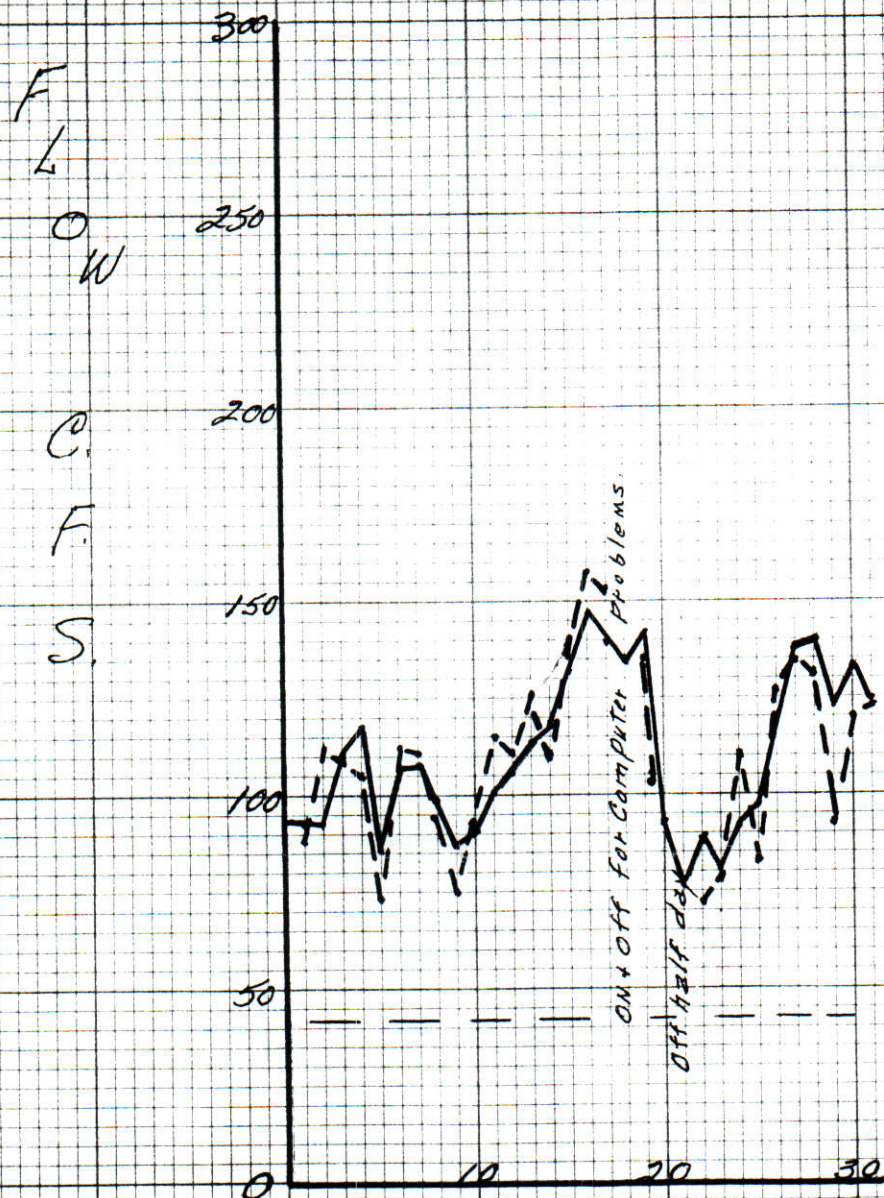


Station 13152500 - Water year 1991

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Ravenscroft Hydro
Comparison Inflow ——
Vs. Consumption
plus leg-pass - - - -
Down time noted.



Where is flow measurement station?

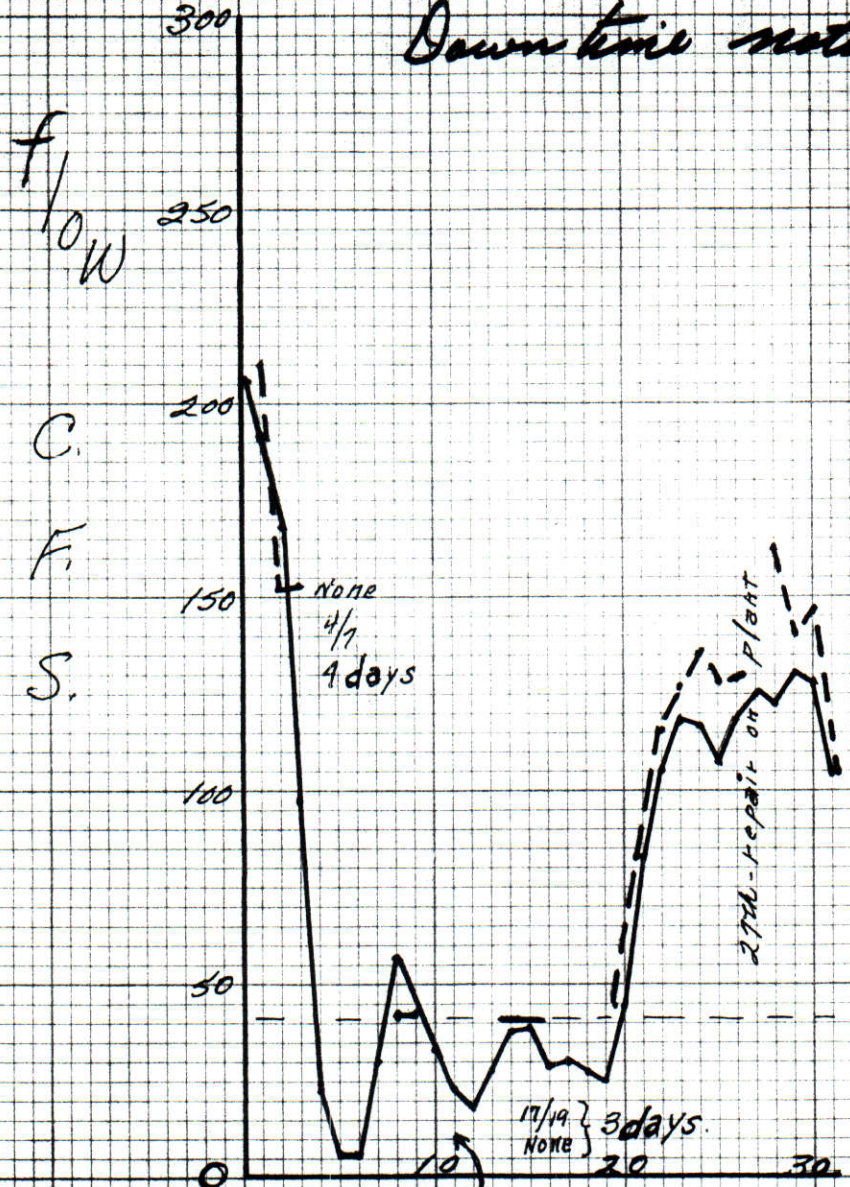
Historic Minimum Flow at Gage to assure irrigion rights - - - 43 C.F.S.
Irrigation decreed right approximately 19 C.F.S.
Constitutional Claim
Additional 20 C.F.S. Pend.

Aug. 1991.

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Bancroft Hydro

Comparison - Inflow ——
vs. Consumptive plus
Leg. Pass - - - - -
Downtime noted.



flow C.F.S.

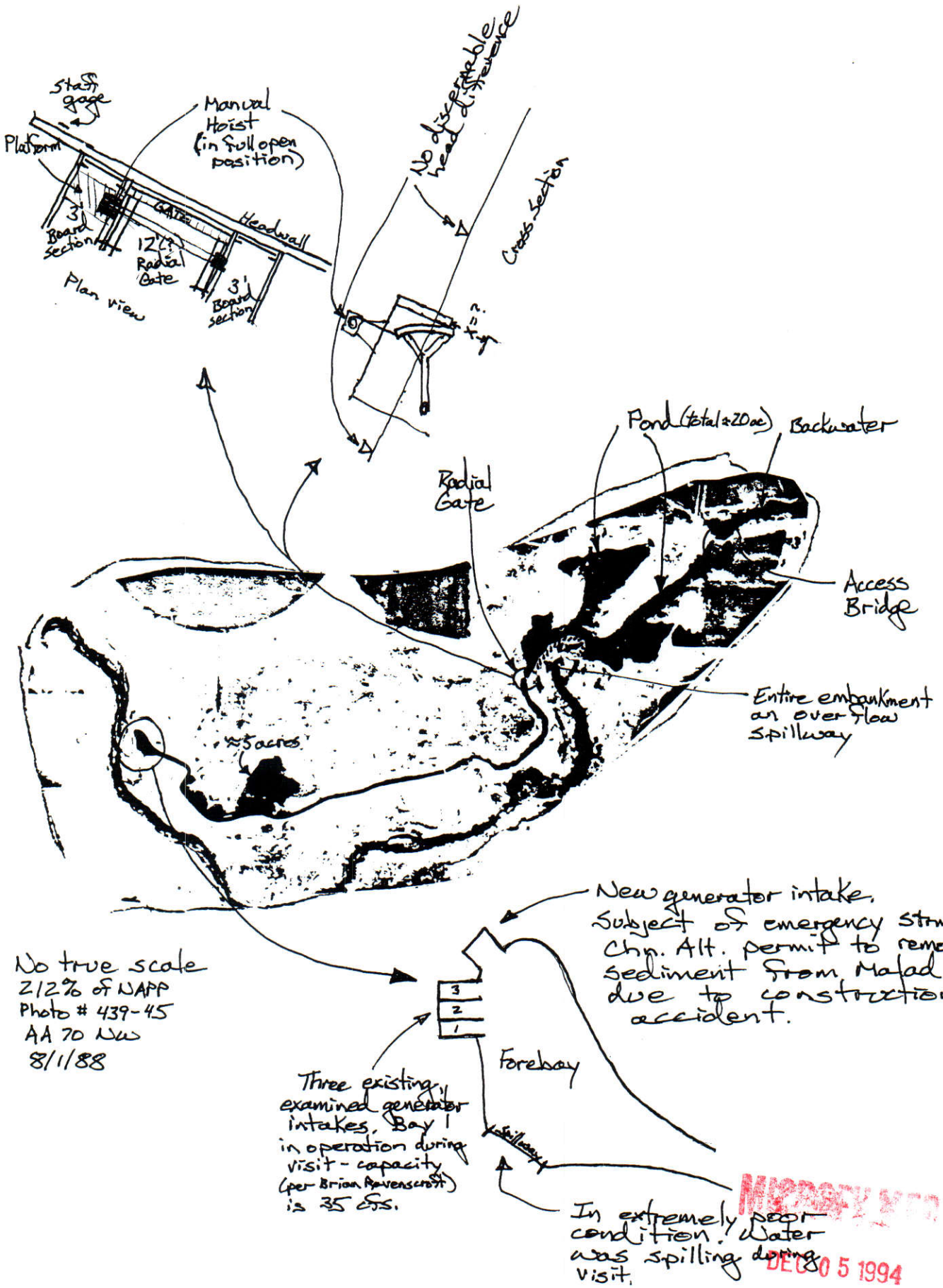
Historic Minimum at Gage
To assure irrigation
Flow 43 C.F.S.

Irrigation Rights - (decreed)
approximately 19 C.F.S.

Constitutional Claim
additional 20 C.F.S.
Prox.

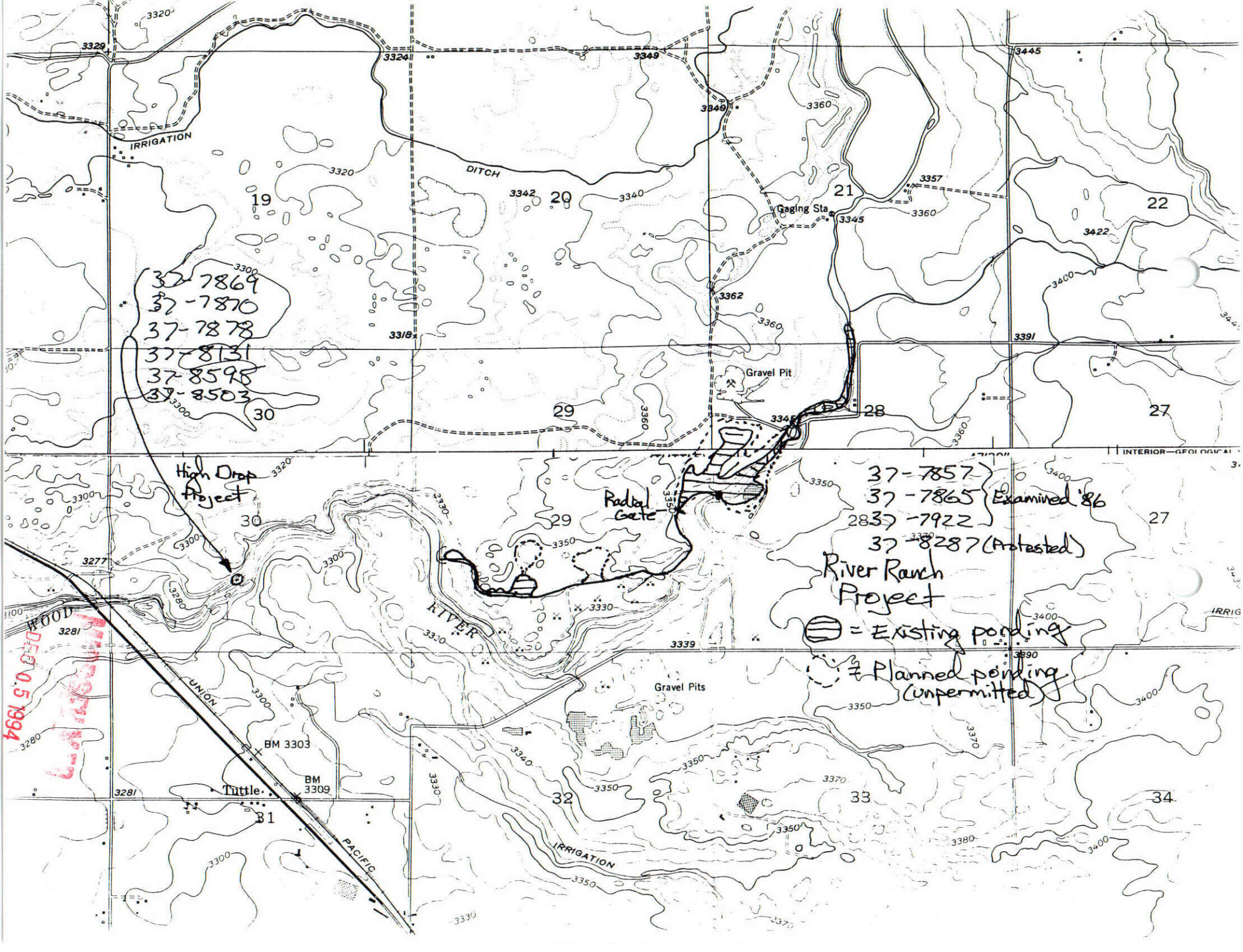
July - 1991

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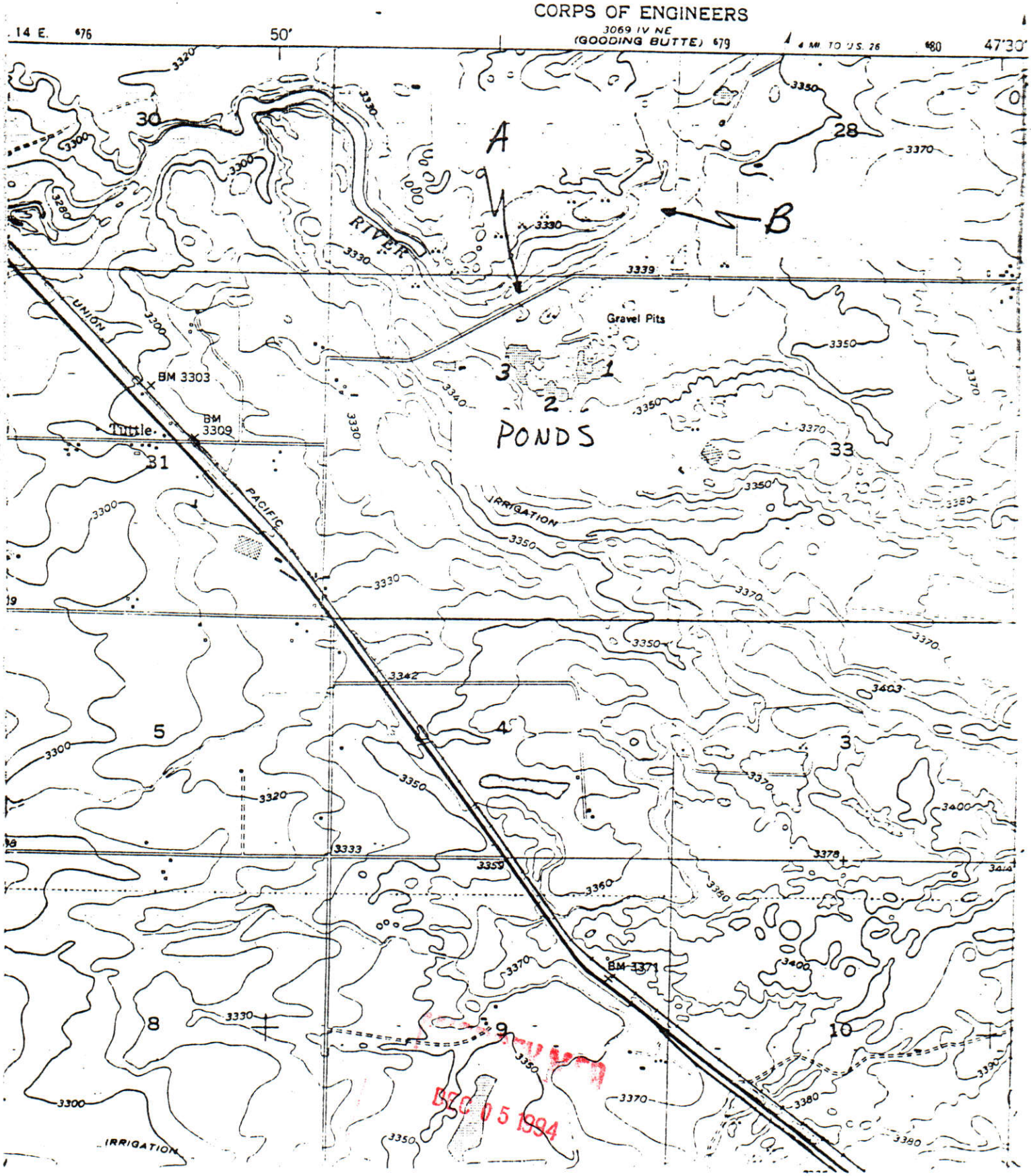


No true scale
212% of NAPP
Photo # 439-45
AA 70 NW
8/1/88

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37-7869
37-7870
37-7878
37-8131
37-8595
37-8503
High Drop Project
Radial Gate
37-7857
37-7865 Examined '86
37-7922
37-8287 (Protested)
River Ranch Project
= Existing ponding
= Planned ponding (unpermitted)
Gaging Sta
Gravel Pit
Gravel Pits
IRRIGATION DITCH
WOOD RIVER
UNION PACIFIC
IRRIGATION
Tuttle
BM 3303
BM 3309
INTERIOR—GEOLOGICAL
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UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS



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STEVENS 420 Level Logger

Single Parameter Data Logger

Industry Standard 4-20 mA Input Circuit

Large Capacity Removable Memory

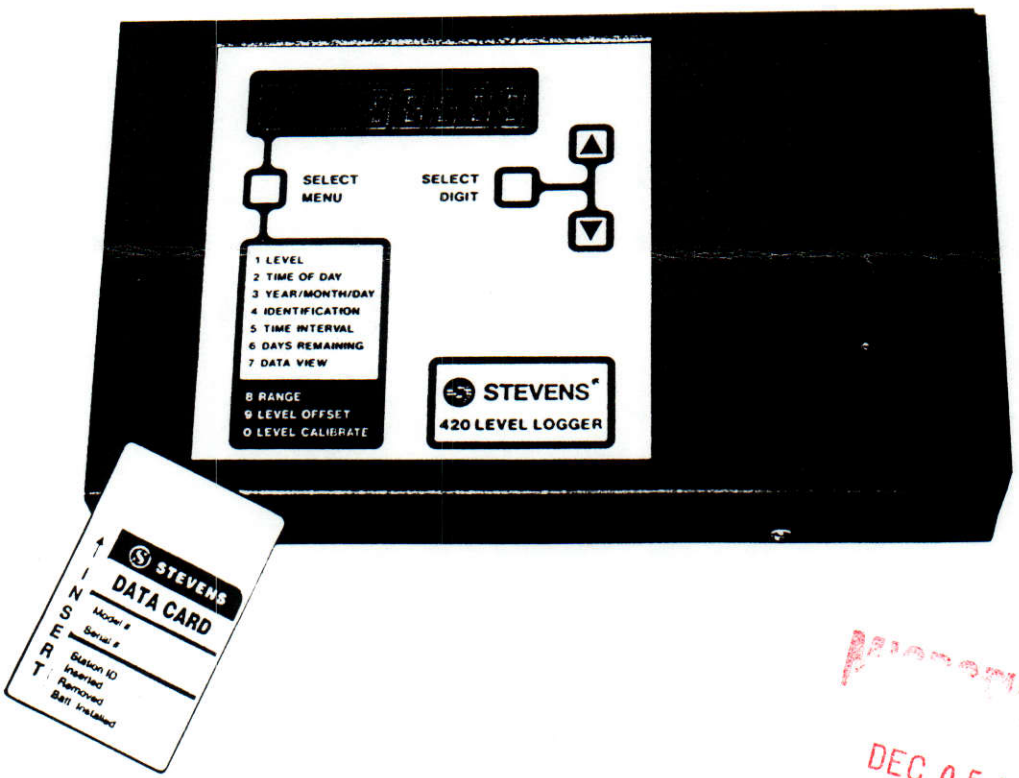
Integral Keyboard and Display

Input Devices Available for Water-level and Water-temperature Applications

The STEVENS 420 Level Logger is a microprocessor-based, low power data logger used for remote short- or long-term data logging applications. The unit is designed to provide single input electronic data logging for such parameters as water level, temperature, humidity, and other similar parameters.

The 420 Level Logger is a single-input recorder which features removable solid-state memory, permitting faster data reduction. The unit offers a large memory capacity in a removable Stevens Data Card module which can be brought in from the field and read into a computer.

The 420 Level Logger includes a 4-20 mA interface, and can accept a variety of input devices. The unit is designed specifically to work with the Stevens Submersible Depth Transmitter II (SDT-II) or Stevens Position Analog Transmitter.



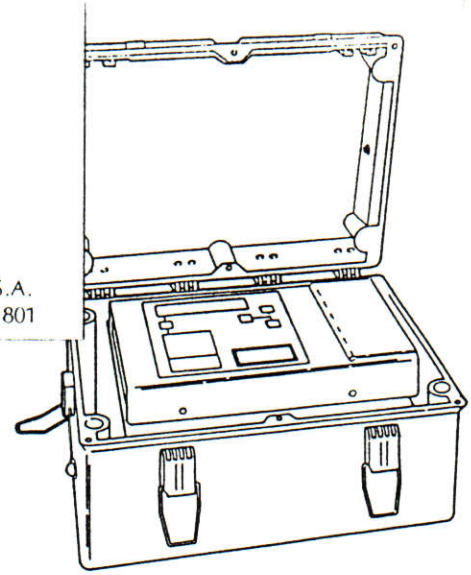
DEC 05 1994

Stevens 420 Level Logger

STEVENS®
Water Resources Products

HAROLD G. LEE, P.E.
Products Manager

Leupold & Stevens, Inc.
P.O. Box 688, Beaverton, Oregon 97075-0688 U.S.A.
Phone: 503 646-9171 • Telex: 15-1227 • Fax: (503) 646-1801



Stevens 420 Logger in Stevens Weatherproof Enclosure

Basic Instrument Specifications

Serial Channel:

- Serial ASCII through RS-232 interface at a minimum ± 5 volt levels. Supports both hardware and software (XON/XOFF) hand-shaking. Provides telemetry of current level, total memory readout of the Data Card, and Data Card erasure.

Format (fixed):

- 7 data bits, 1 stop bit, even parity.

Baud rate (selectable):

- 300, 1200, 2400, or 9600.

Power:

- 10-17 VDC.

Current:

- Less than 1 mA DC, during normal recording. Data Logger in "Data Logger" mode enters a low current "sleep" mode when no activity is required.

In-line fuse:

- External 1/4 A, fast-acting, 3AG or equivalent.

Real-time Clock:

- Accuracy ±3 minutes per month. Built-in leap-year correction. Battery backed.

Display:

- Eight-digit numeric LCD. Integral four-key touchpad.

Operating Temperature:

- Logger: Operation and storage from -40 to +70° C. Data Card: -20 to +50° C (-40 to +50° C optional)

Relative humidity:

- 0 - 95%, non-condensing.
- Optional NEMA 4 housing available for 100% humidity operating conditions.

Size:

- Logger - 11 x 6-1/2 x 2 inches.
- NEMA 4 Housing - 15 x 12 x 7-1/2 inches.

Recording Intervals

- 1 second.
- 1, 5, 6, 10, 15, and 30 minutes.
- 1, 2, and 4 hours.

Weight:

- Less than 3 pounds.

Input:

- Industry standard 4-20 mA input circuit, with internal 24 VDC, short-circuit protected loop supply under software control. Input circuit voltage drop less than 0.5 VDC. Accuracy: 0.25%, resolution 0.1%. User selectable scaling in two bands: 0 - 49.999, 0 - 499.99.

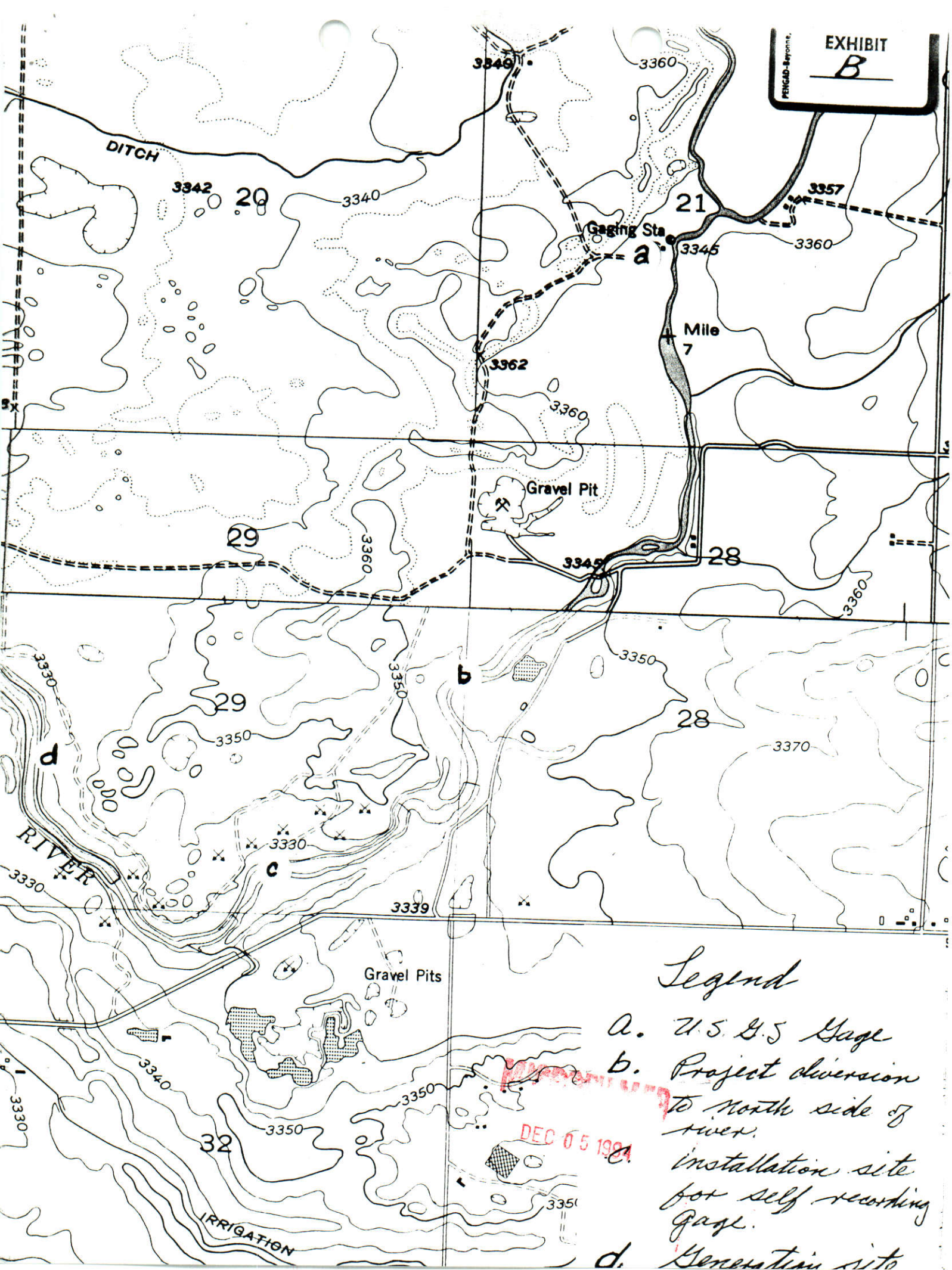
STEVENS® WATER RESOURCES PRODUCTS
Leupold & Stevens, Inc.
P.O. Box 688, Beaverton, OR 97075-0688 U.S.A.
Tel. 503 646-9171, Telex 15-1227, Cable LEUSTEV, FAX 503 526-1455

DEC 05 1994

Printed in U.S.A.

STEVENS is a Registered Trademark of Leupold & Stevens, Inc.
Leupold & Stevens reserves the right to alter specifications and features of the product shown in this bulletin without prior notice.

2M 10/90



Legend

a. U.S.G.S Gage

b. Project diversion to north side of river.

c. installation site for self recording gage.

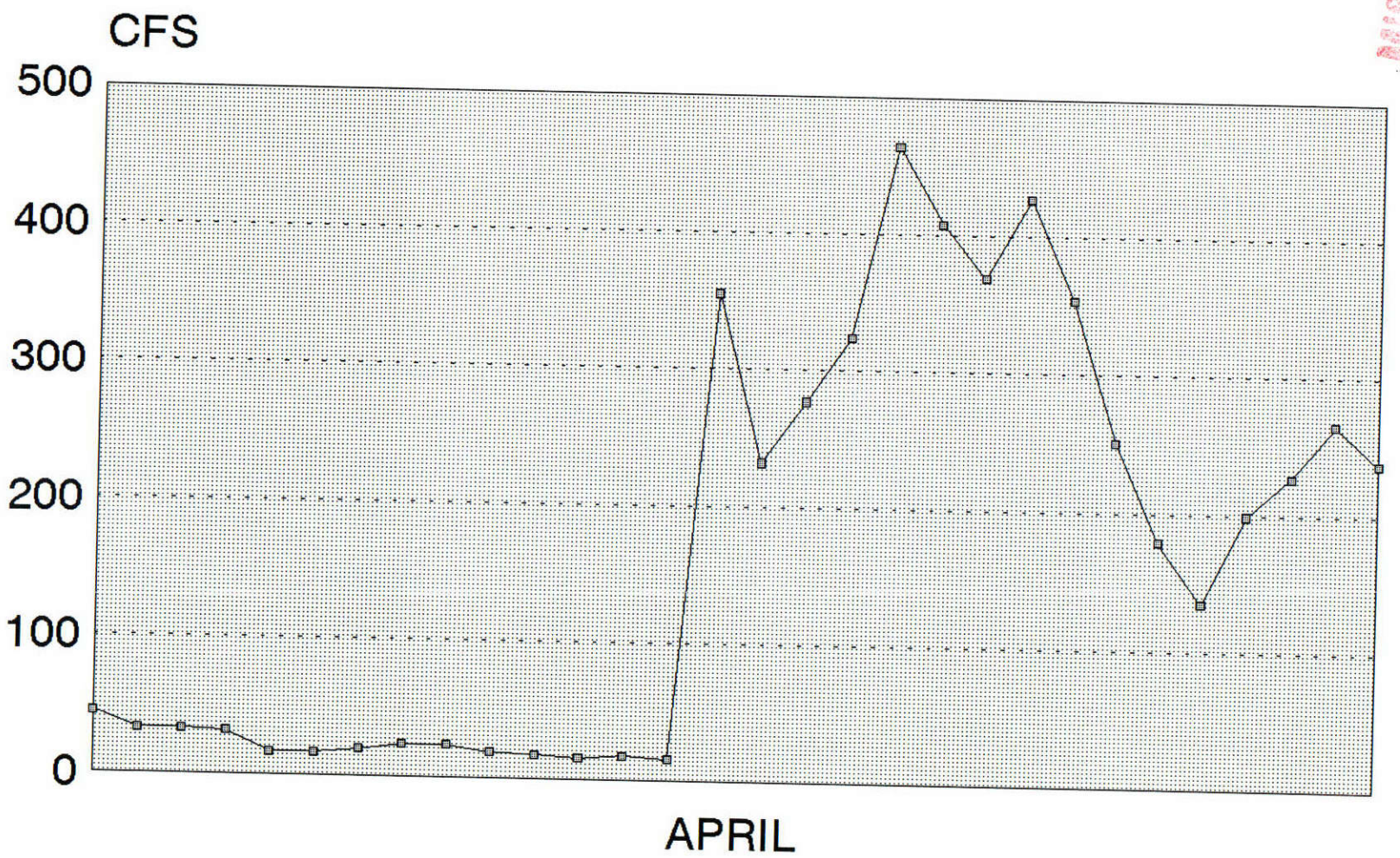
d. Generation site

MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

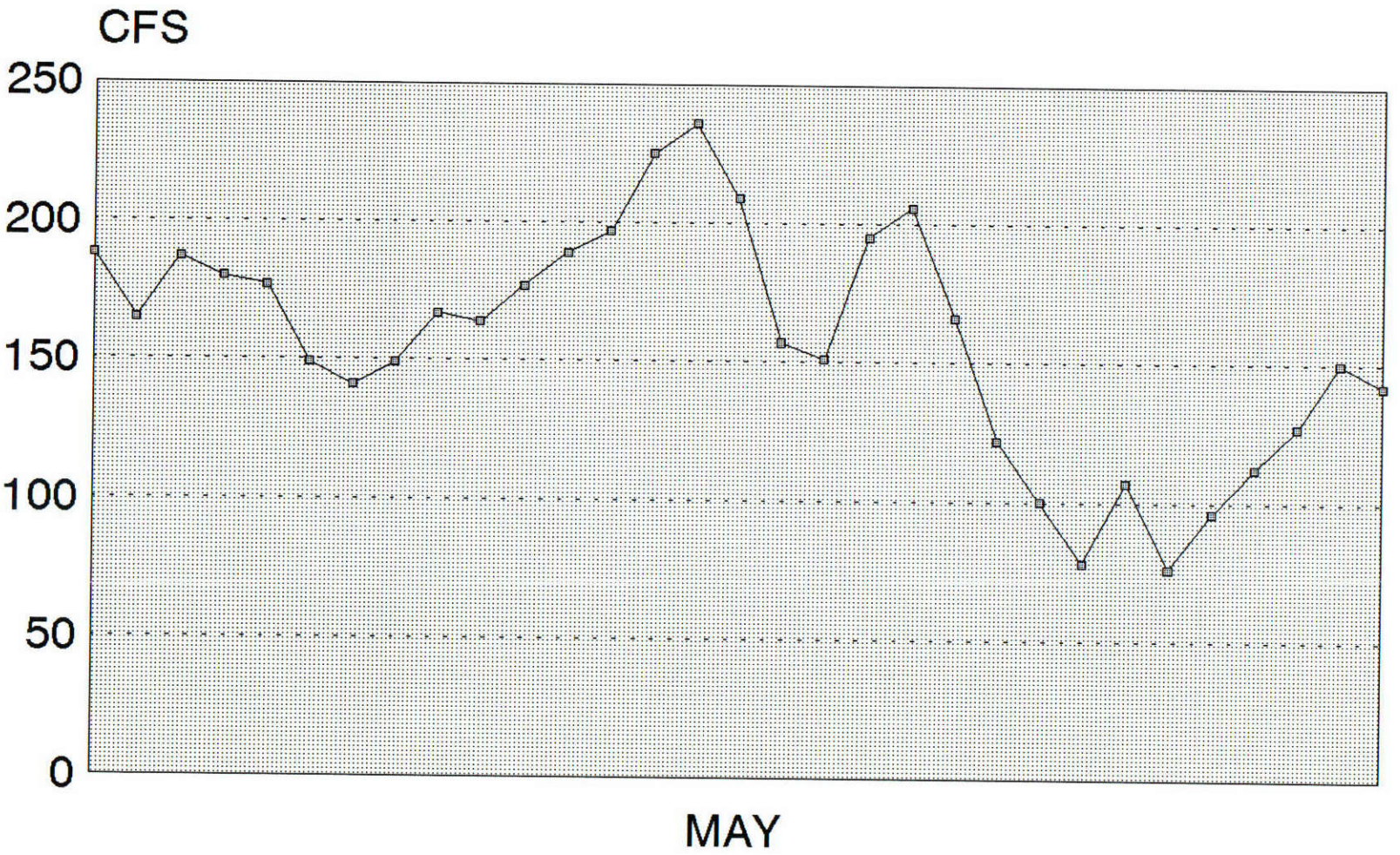


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

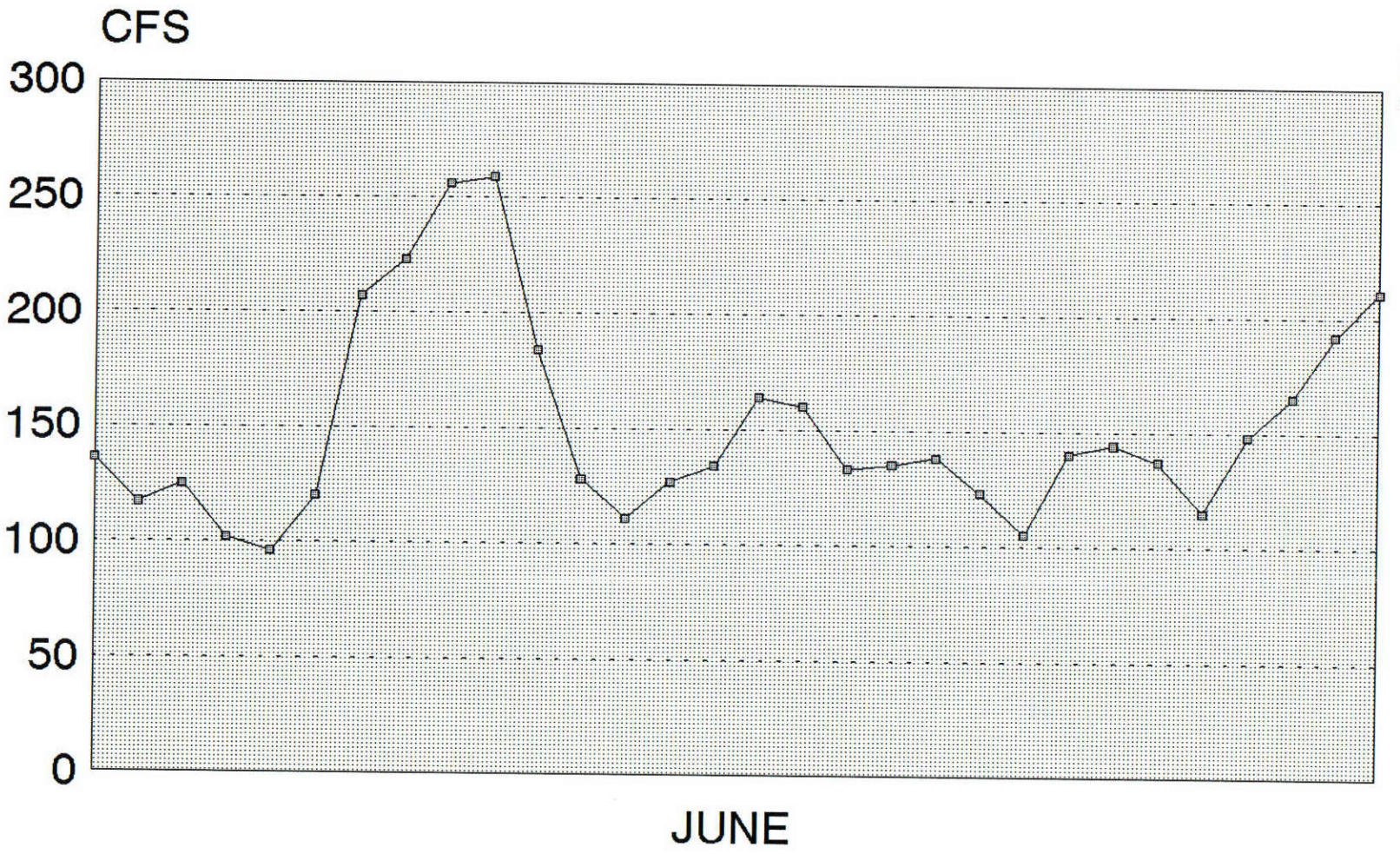


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

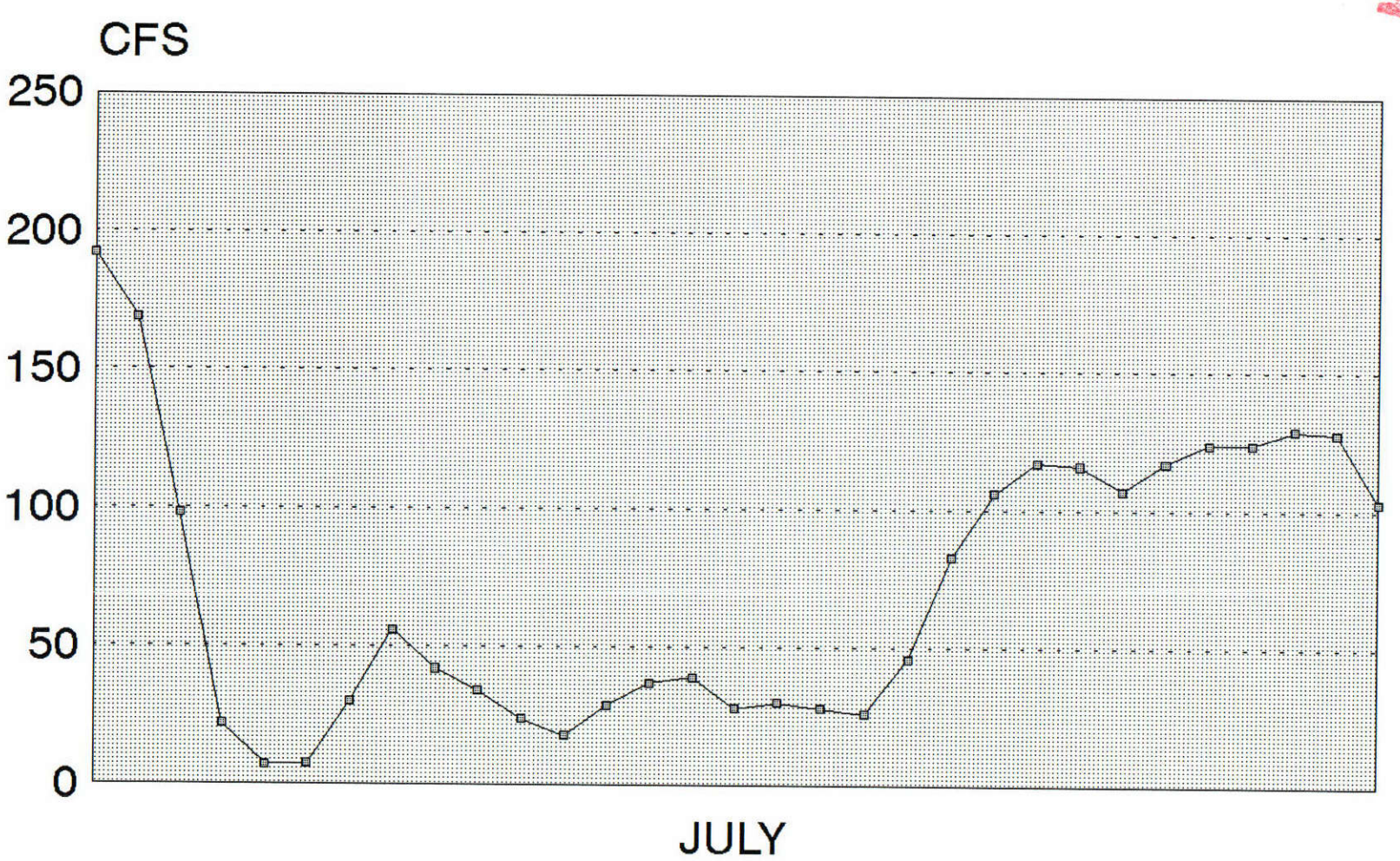


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

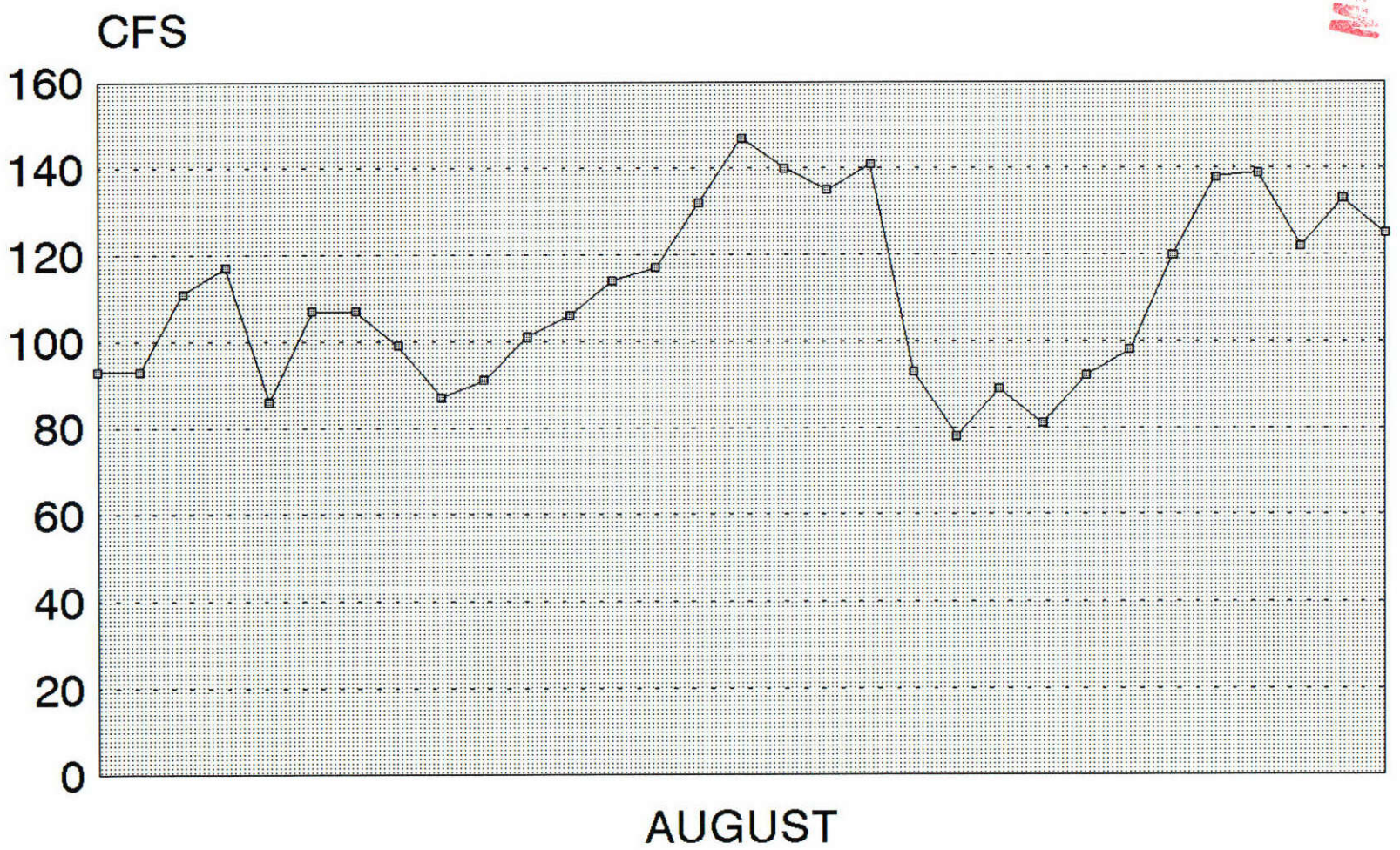


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

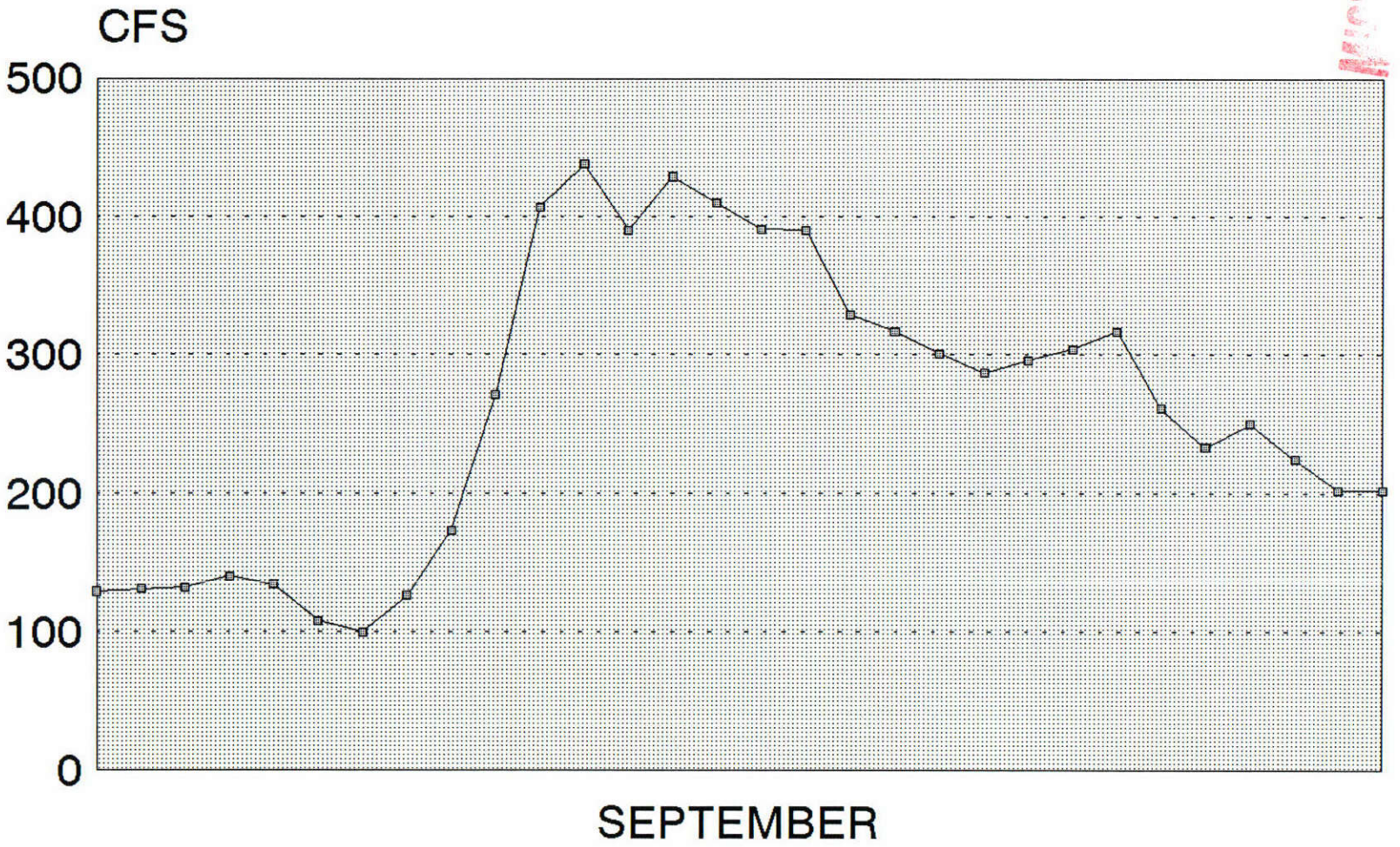


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

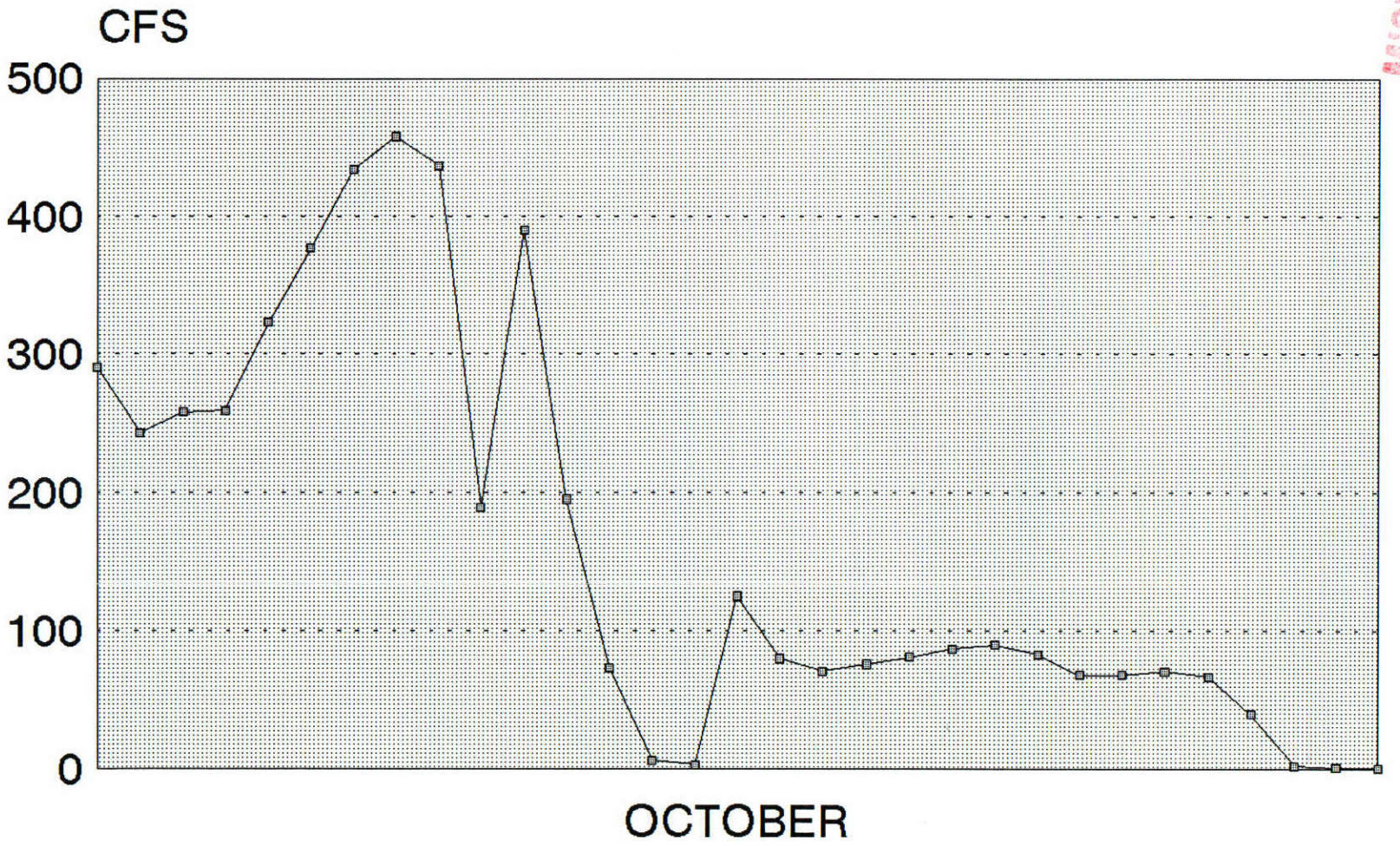


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

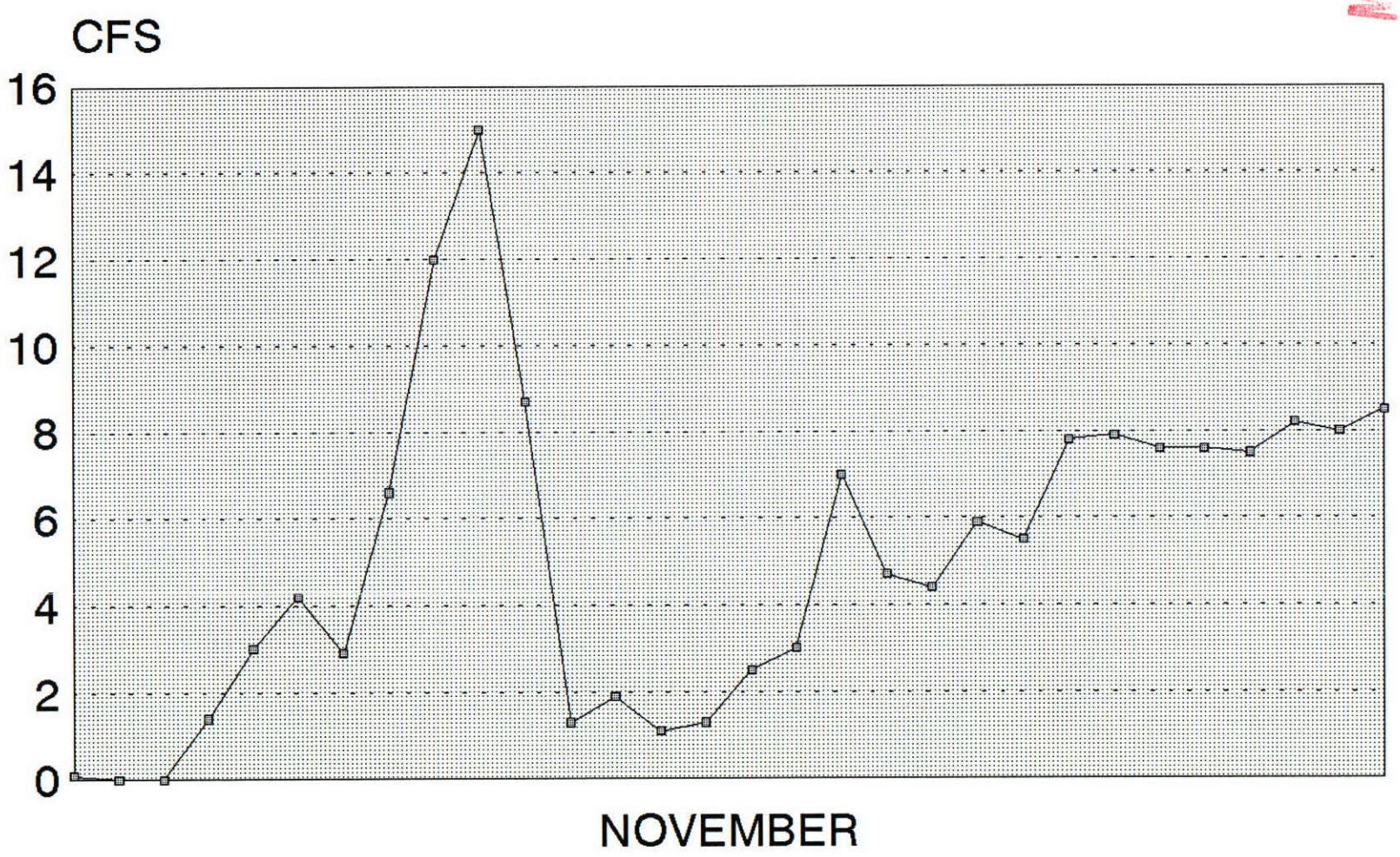


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

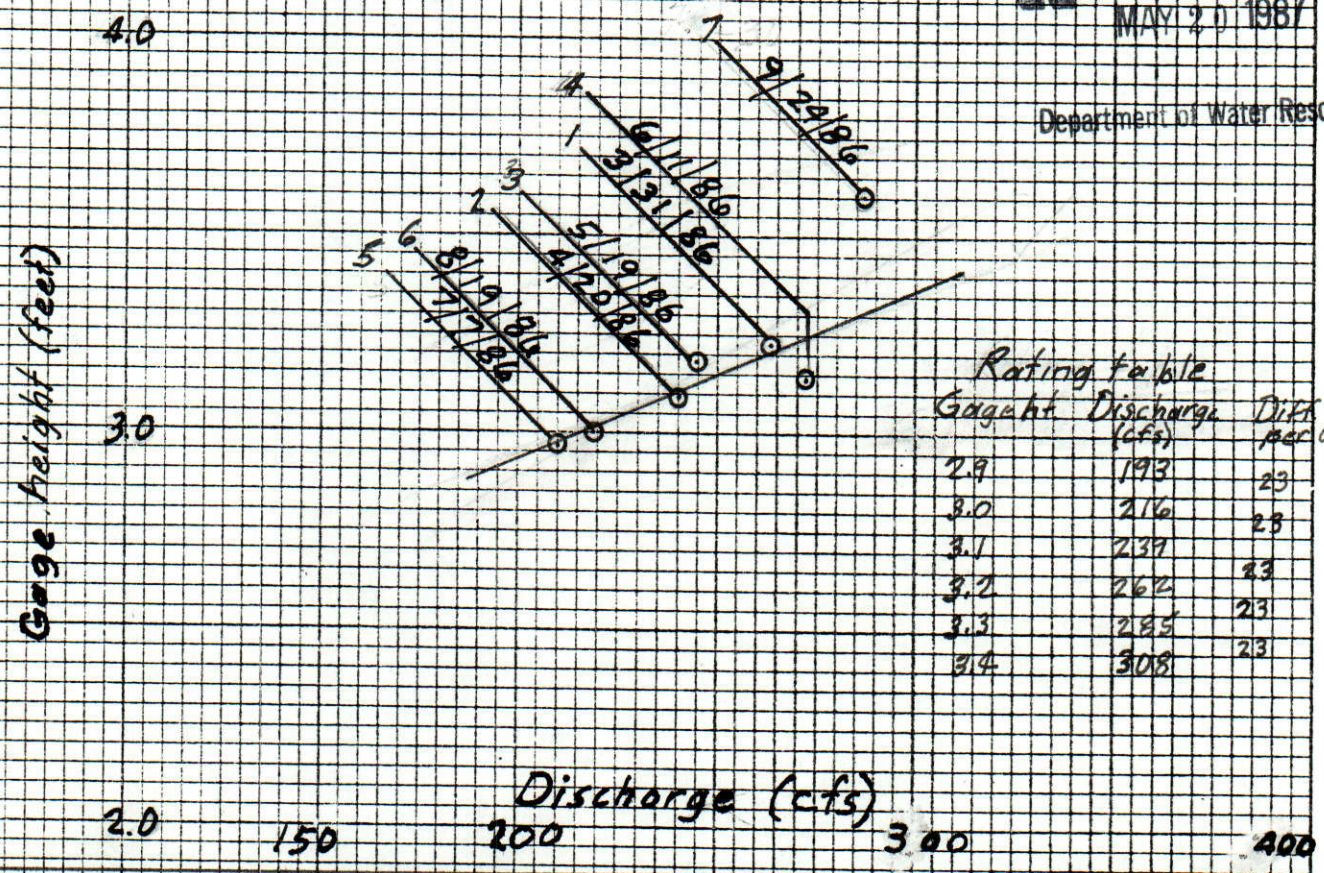


Station Number ----------

FIGURE 3

Ravenscroft Power Diversion Canal near Tuttle, Idaho
Stage-Discharge Relation

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MAY 20 1987
Department of Water Resources



Rating table

Gage ht.	Discharge (cfs)	Diff. per 0.1
2.9	193	23
3.0	216	23
3.1	239	23
3.2	262	23
3.3	285	23
3.4	308	

DISCHARGE MEASUREMENTS

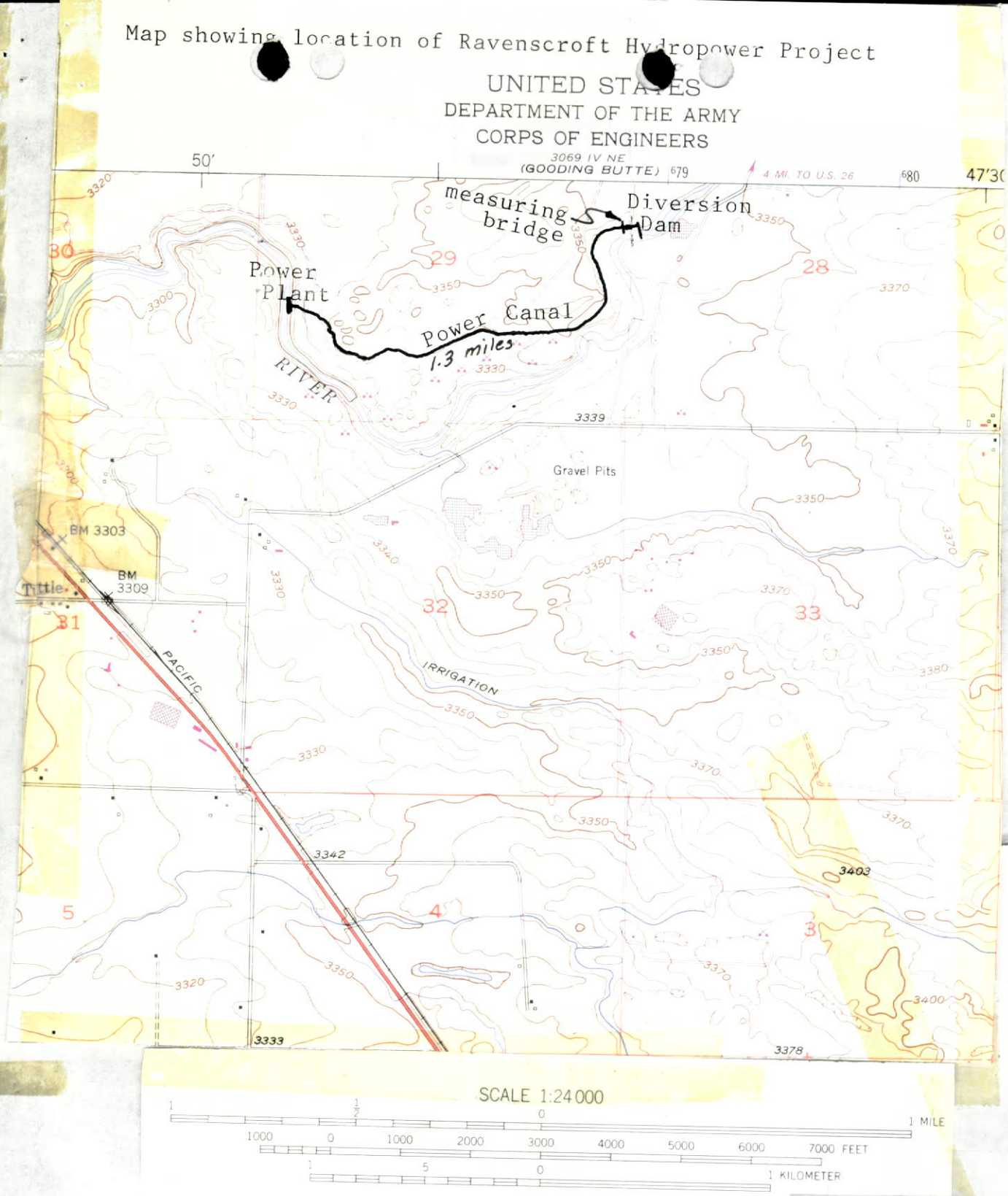
No.	Date	Gage height	Discharge (cfs)	% diff. from curve	made by	
1	3/31/86	3.23	264	-2.9	R.J. Newby	
2	4/20/86	3.09	240	+0.8	"	
3	5/19/86	3.18	244	-5.1	"	shift +.06
4	6/11/86	3.13	272	+10.6	"	shift +.11
5	7/7/86	2.96	210	+1.5	"	
6	8/19/86	3.00	218	-1.4	"	
7	9/24/86	3.60	S 287	* shift -.29	C.A. Thomas	shift -.29

S Spill of 52 cfs above penstocks
* Measurement made after forebay spillway was raised. More measurements are needed for new relation.

Note: Small shifts evidently occur from channel shifts and moss.

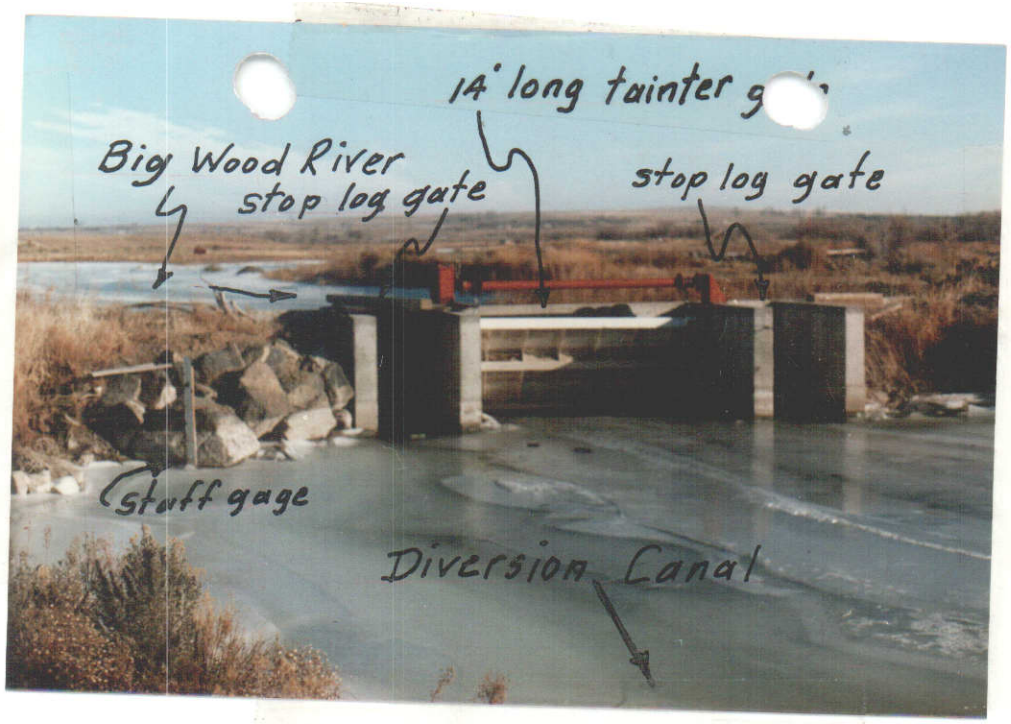
t No. ---------- of ---------- sheets. Prepared by CAT Date 3/16/87 Checked by ---------- Date ----------

Map showing location of Ravenscroft Hydropower Project



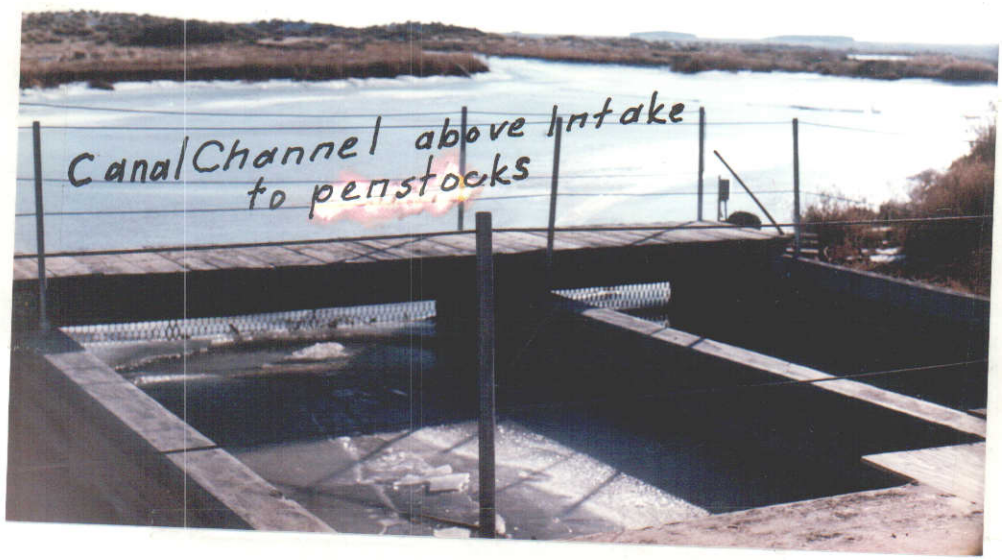
RECEIVED
MAY 20 1987
Department of Water Resources

FIGURE 1

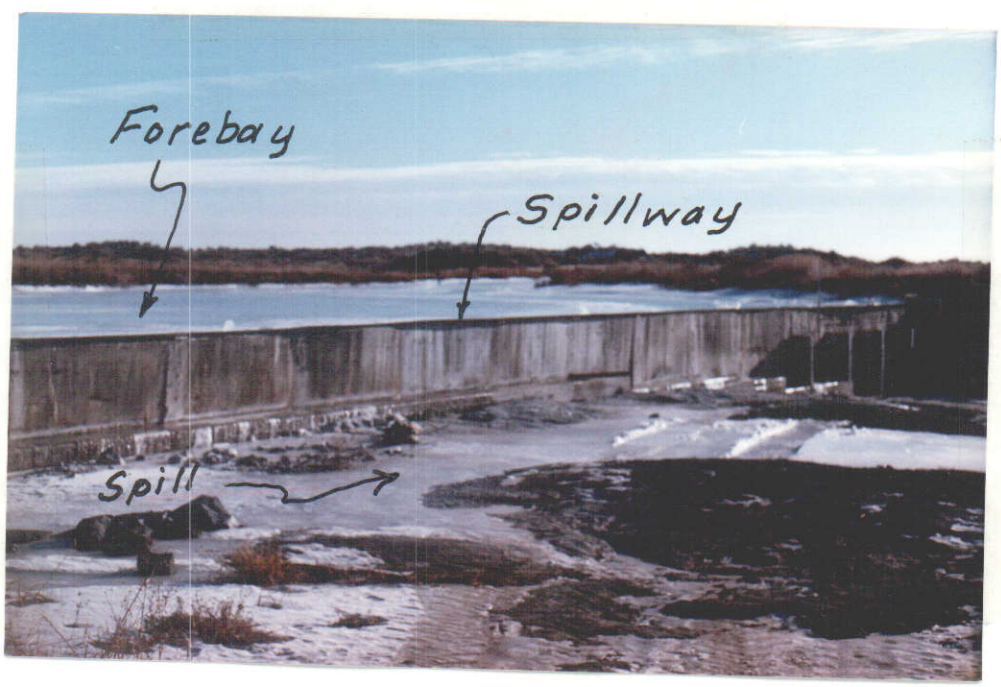


Diversion

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MAY 20 1987
Department of Water Resources

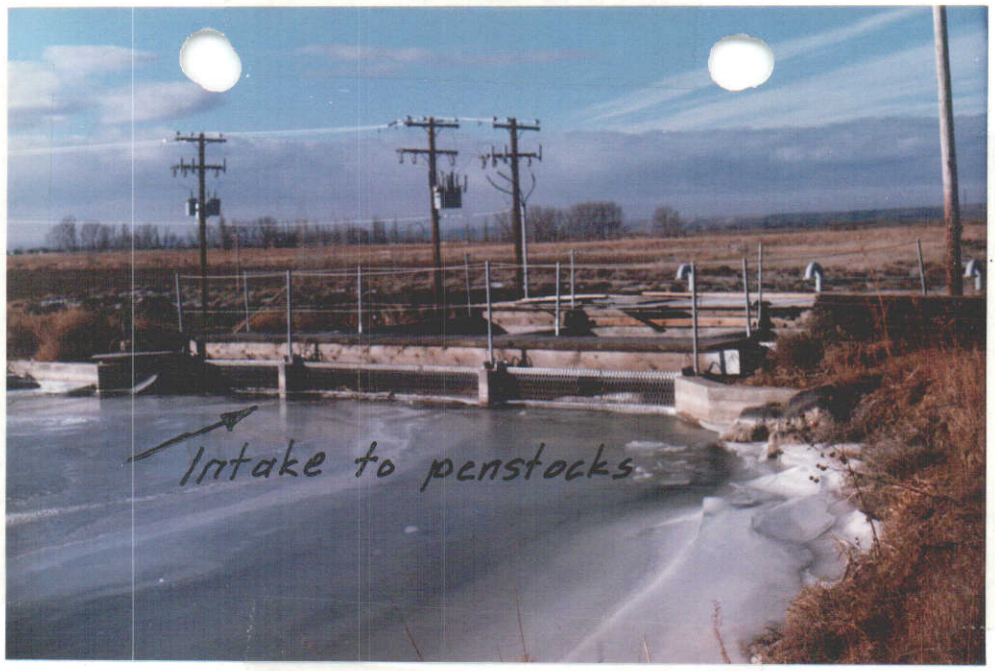


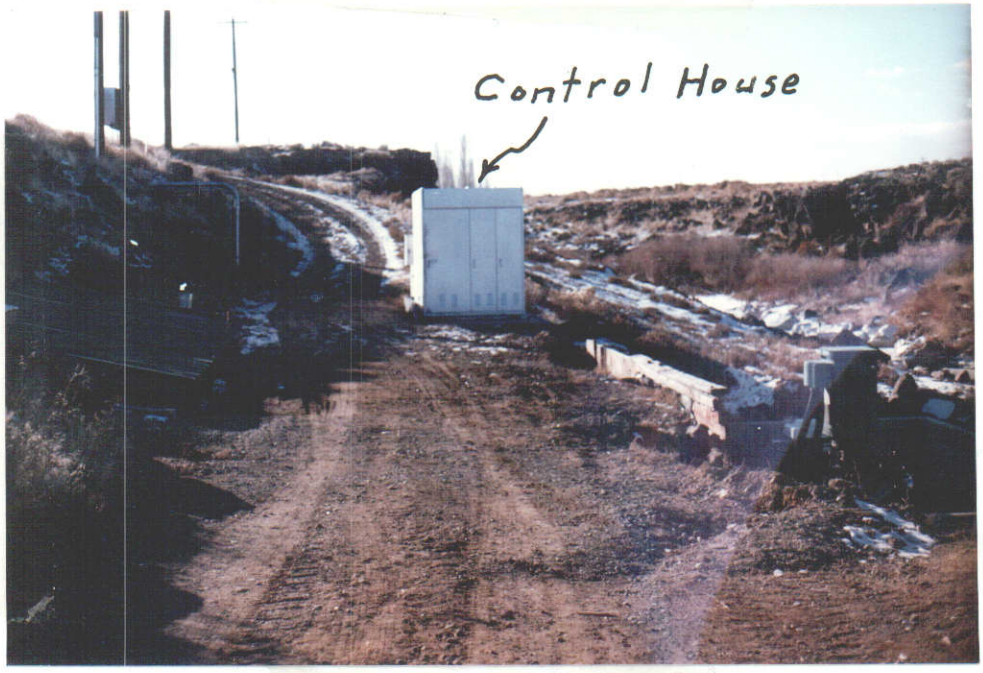
Canal above Penstocks

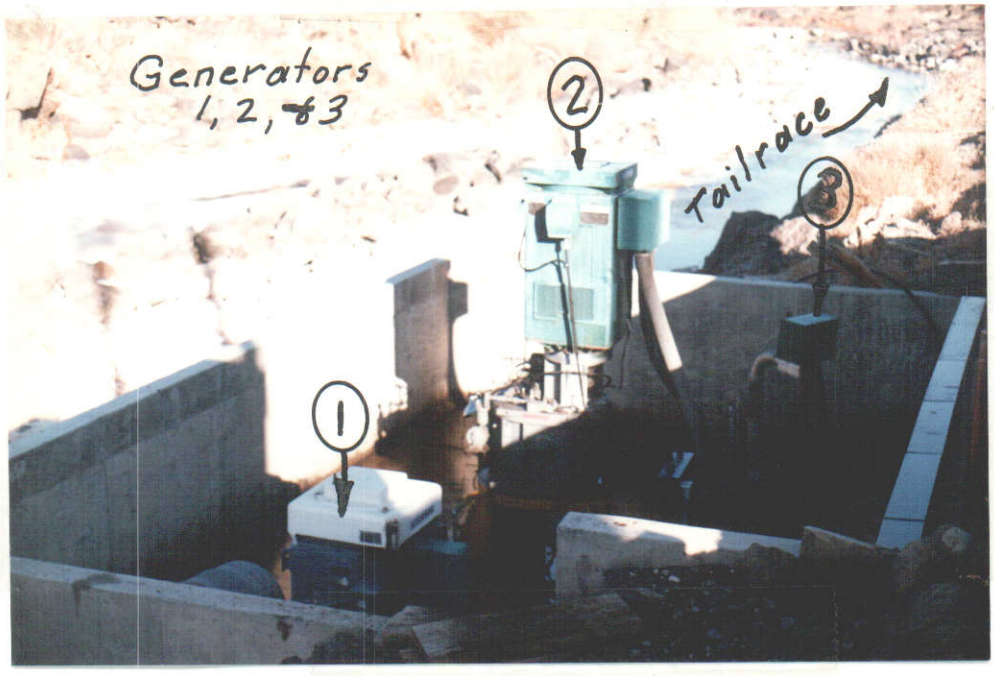


Forebay at Spillway

FIGURE 2 A







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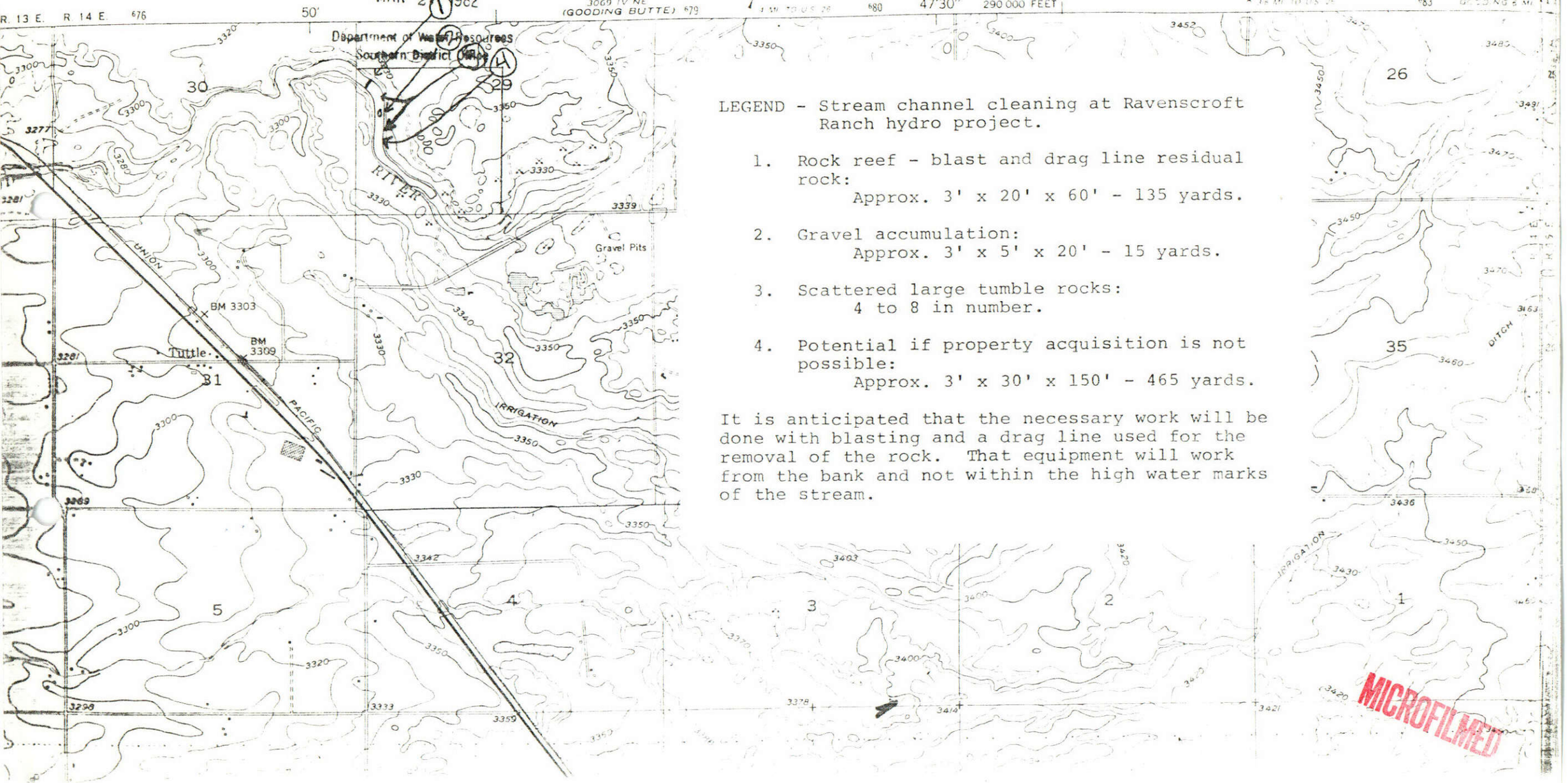
FIGURE 2 B

Ravenscroft Channel Alteration
Water Rights 37-7857, 37-7865, 37-7922

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MAR 27 1982
Department of Water Resources
Southern District Office

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

TUTTLE QUADRANGLE
IDAHO
7.5 MINUTE SERIES (TOPOGRAPHIC)



LEGEND - Stream channel cleaning at Ravenscroft Ranch hydro project.

1. Rock reef - blast and drag line residual rock:
   Approx. 3' x 20' x 60' - 135 yards.

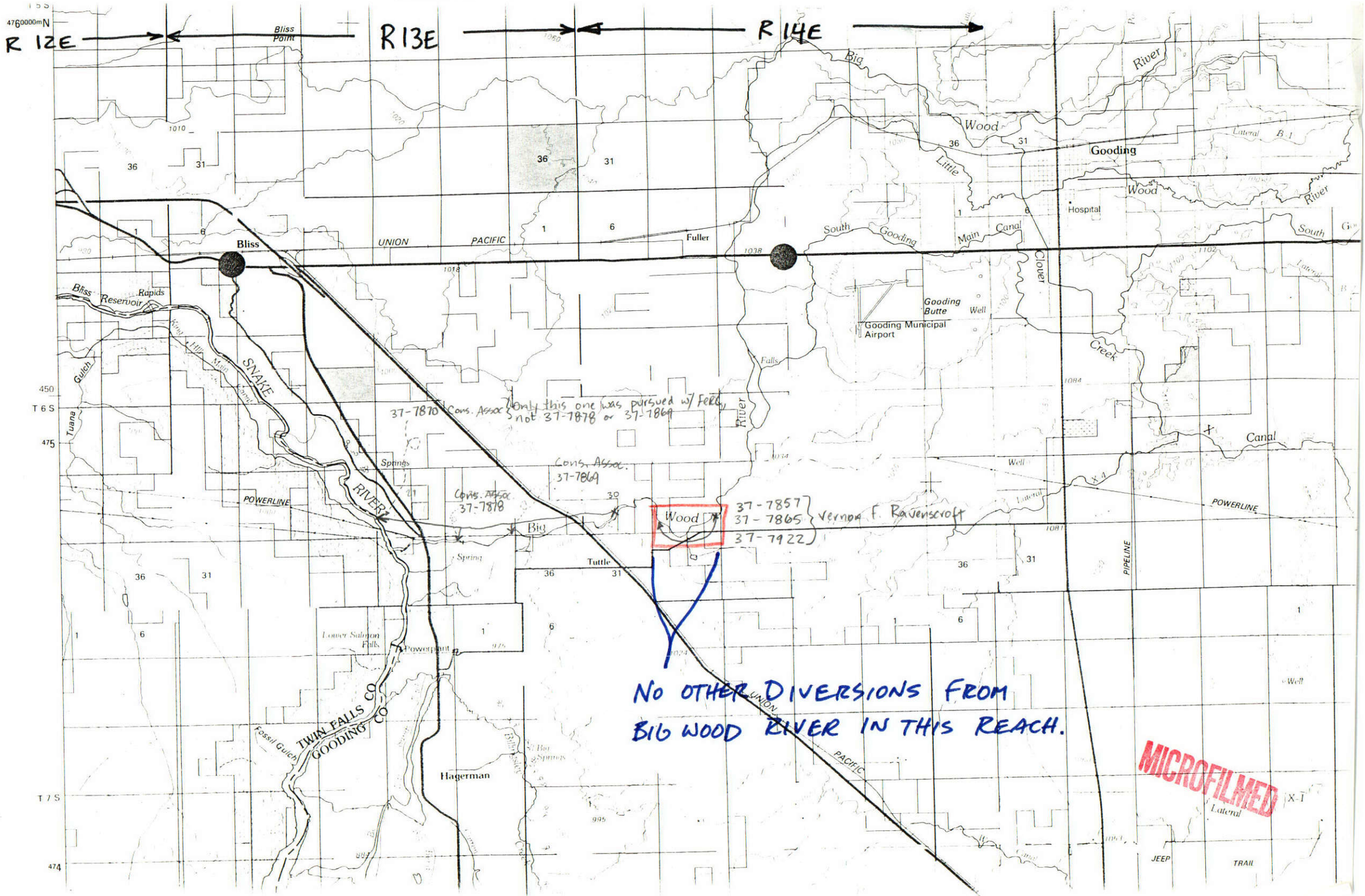
2. Gravel accumulation:
   Approx. 3' x 5' x 20' - 15 yards.

3. Scattered large tumble rocks:
   4 to 8 in number.

4. Potential if property acquisition is not possible:
   Approx. 3' x 30' x 150' - 465 yards.

It is anticipated that the necessary work will be done with blasting and a drag line used for the removal of the rock. That equipment will work from the bank and not within the high water marks of the stream.

MICROFILMED


R 12E
R 13E
R 14E
Bliss Point
Bliss
UNION PACIFIC
Fuller
Bliss Reservoir Rapids
Tuana Gulch
SNAKE RIVER
POWERLINE
Springs
Big Spring
Tuttle
Lower Salmon Falls
Powerplant
TWIN FALLS
GOODING
Fossil Gulch
Hagerman
Big Wood River
Wood
Little Wood River
Gooding
Hospital
South Gooding Main Canal
Clover Creek
Gooding Butte Well
Gooding Municipal Airport
Falls
Canal
Lateral B-1
Lateral X-4
PIPELINE
JEEP TRAIL
T 6 S
T 7 S
37-7870 Cons. Assoc. Only this one was pursued w/ FERC not 37-7878 or 37-7869
Cons. Assoc. 37-7869
Cons. Assoc. 37-7878
37-7857
37-7865
37-7922
Vernon F. Ravenscroft
NO OTHER DIVERSIONS FROM BIG WOOD RIVER IN THIS REACH.
MICROFILMED



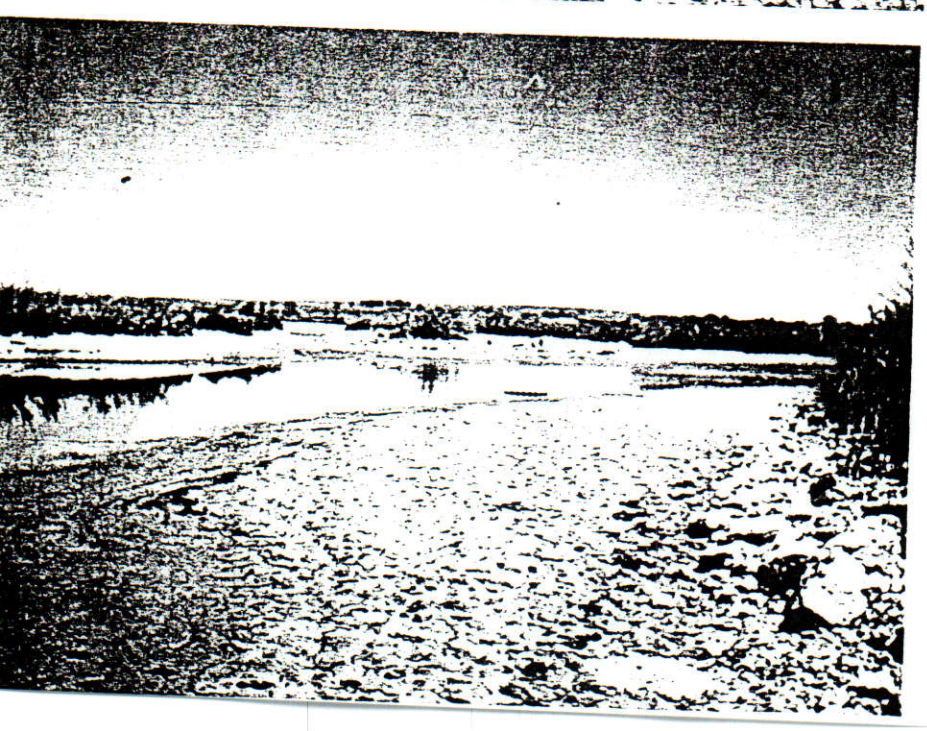




During low-water periods there is abundant evidence of heavy siltation in the re-regulating ponds.



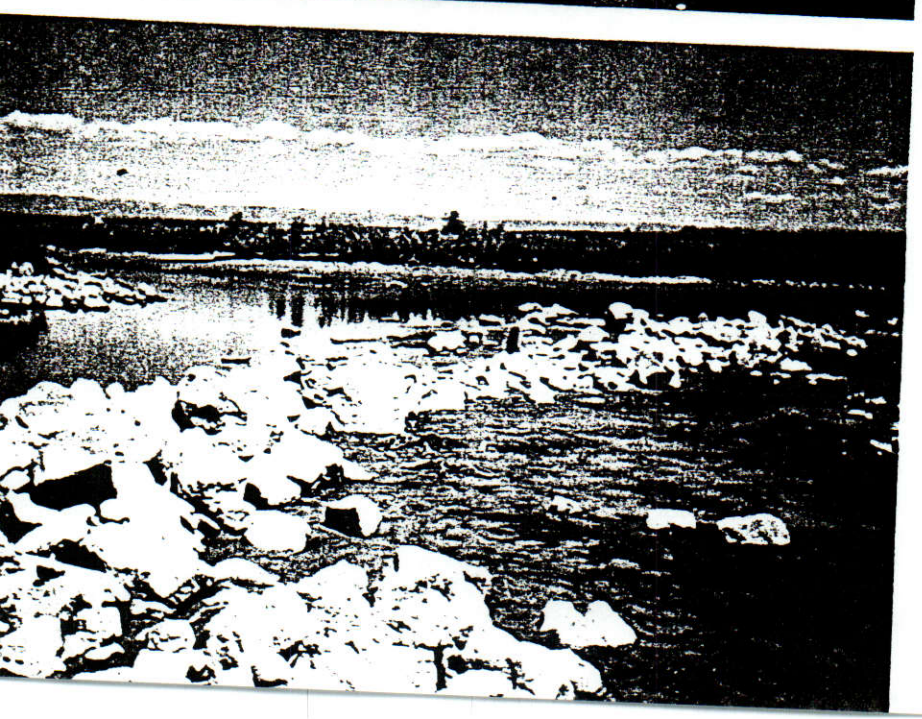




During low water periods there is abundant evidence of heavy siltation in the project backwater.

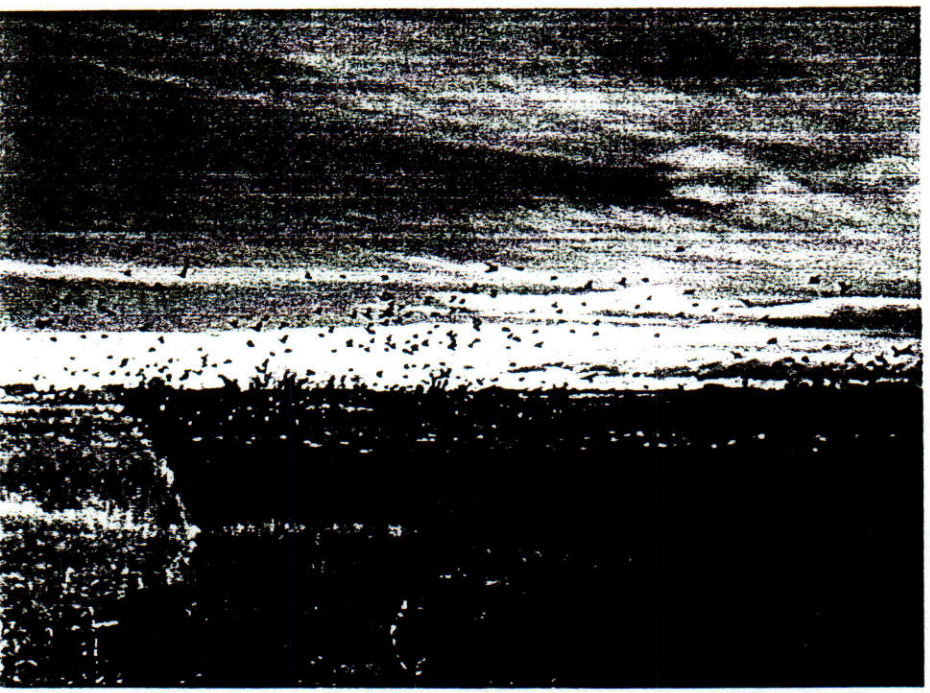


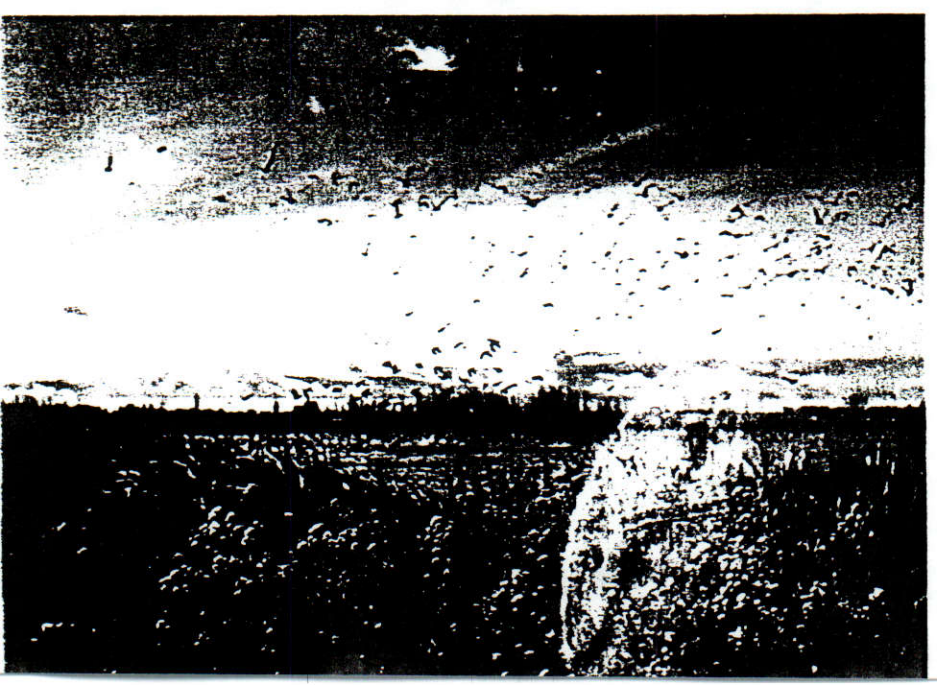




During low water periods there is abundant evidence of heavy siltation in the project backwater.







During the Fall season the re-regulating ponds provide resting habitat for thousands of ducks.

EXHIBIT PAGE 5

As Now Operating

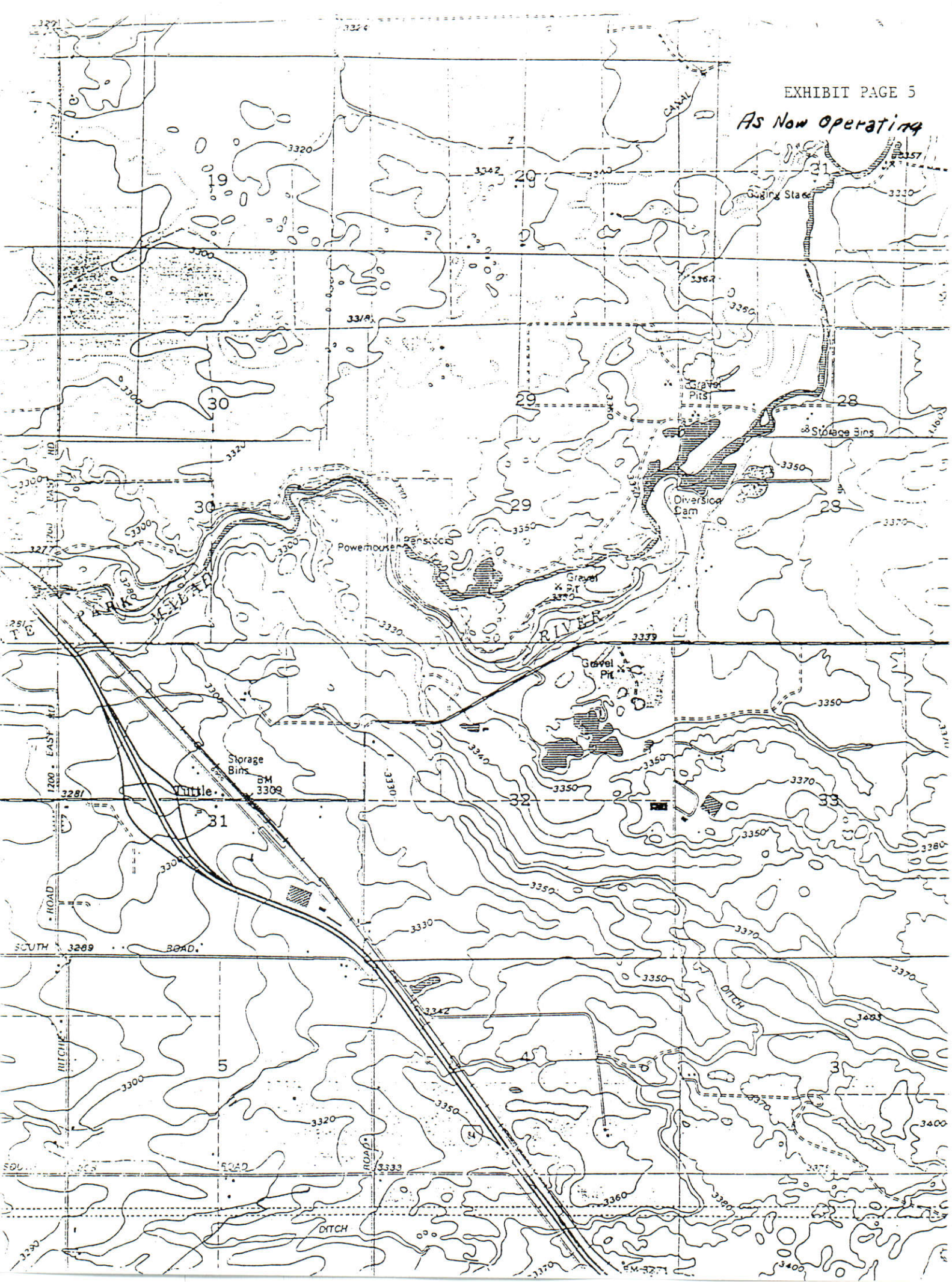


EXHIBIT PAGE 6.

Primarily private property or existing R.O.W.

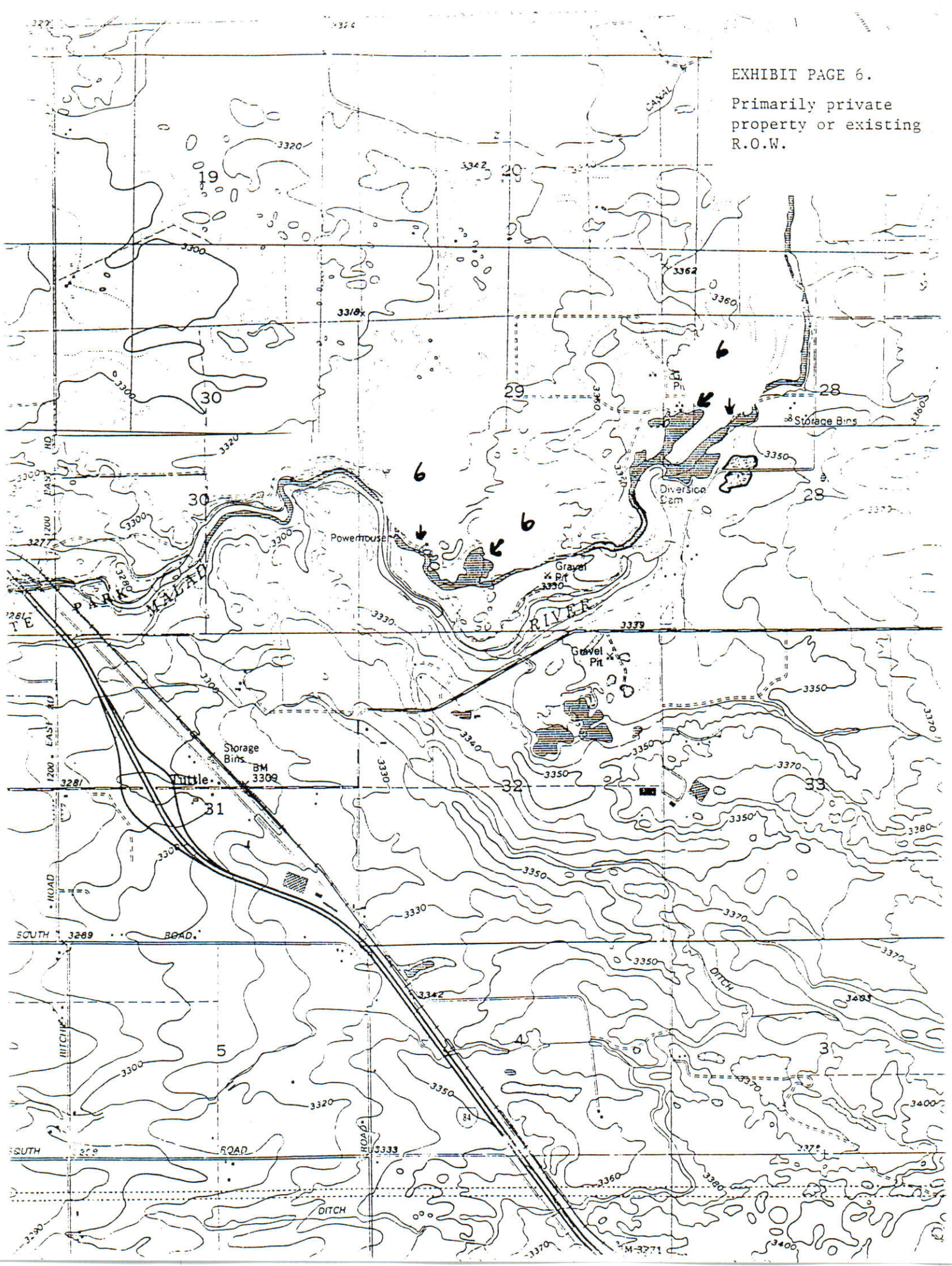
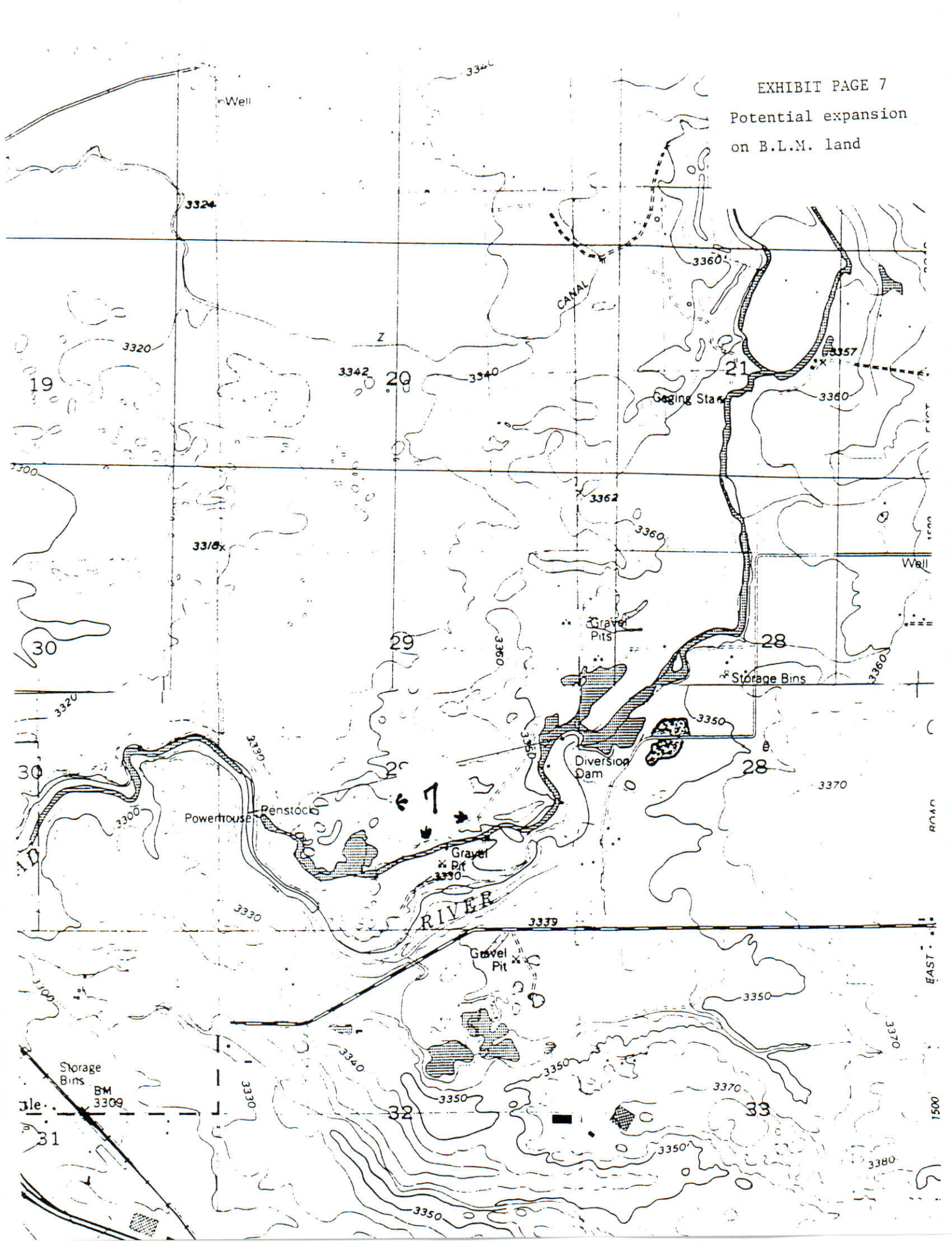


EXHIBIT PAGE 7

Potential expansion on B.L.M. land

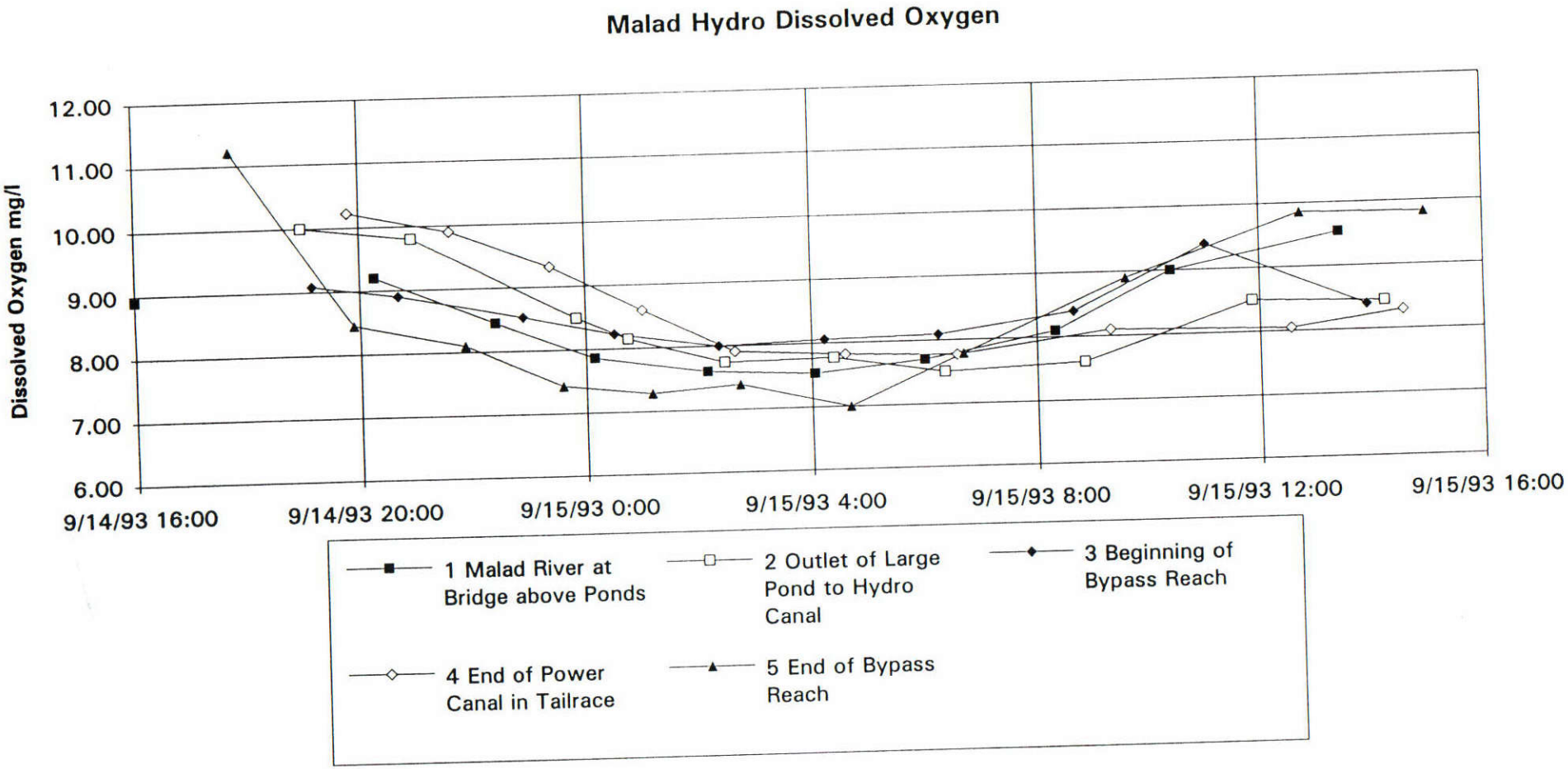


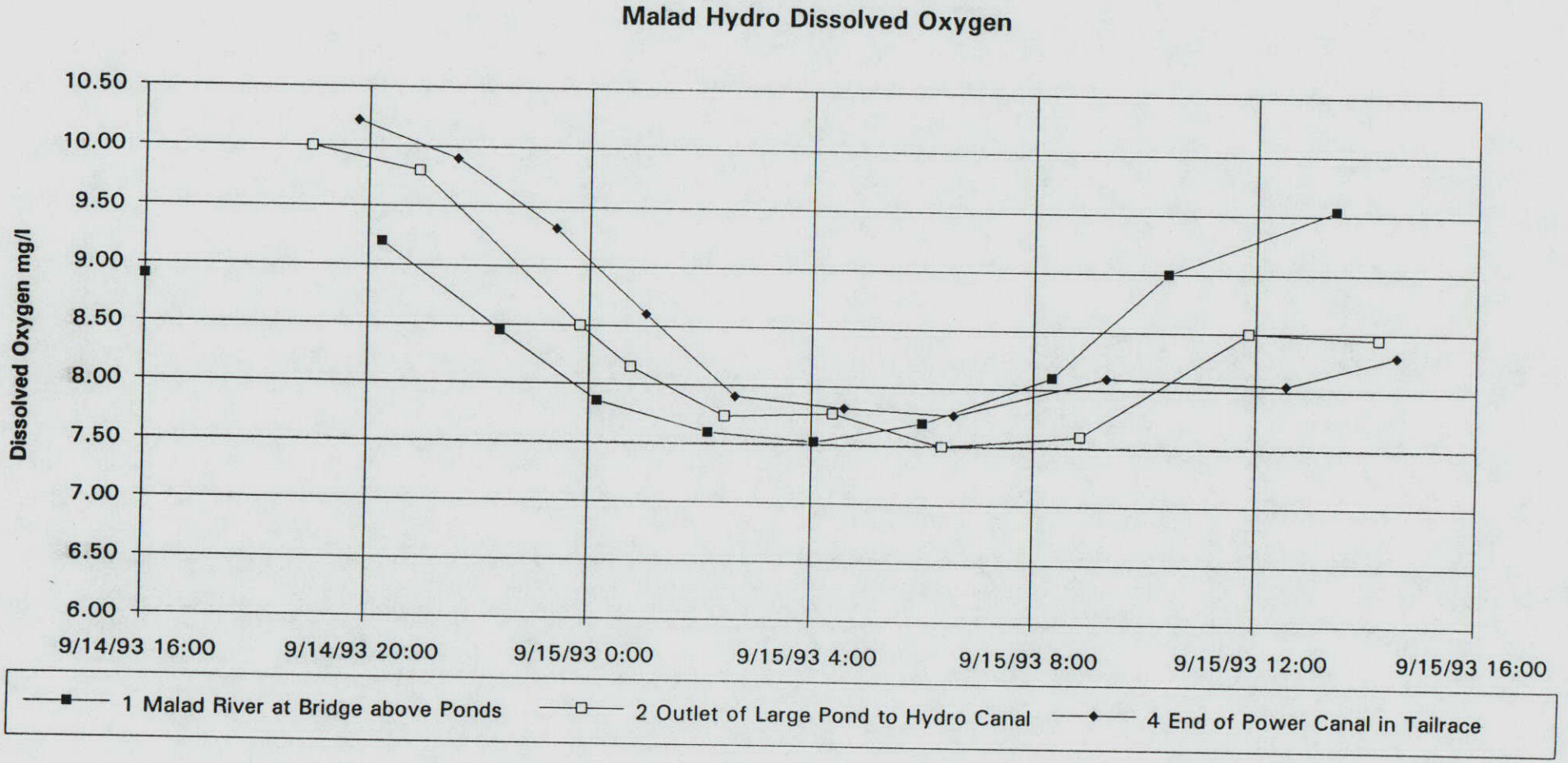
RIGHT-OF-WAY AS BUILT PLANS

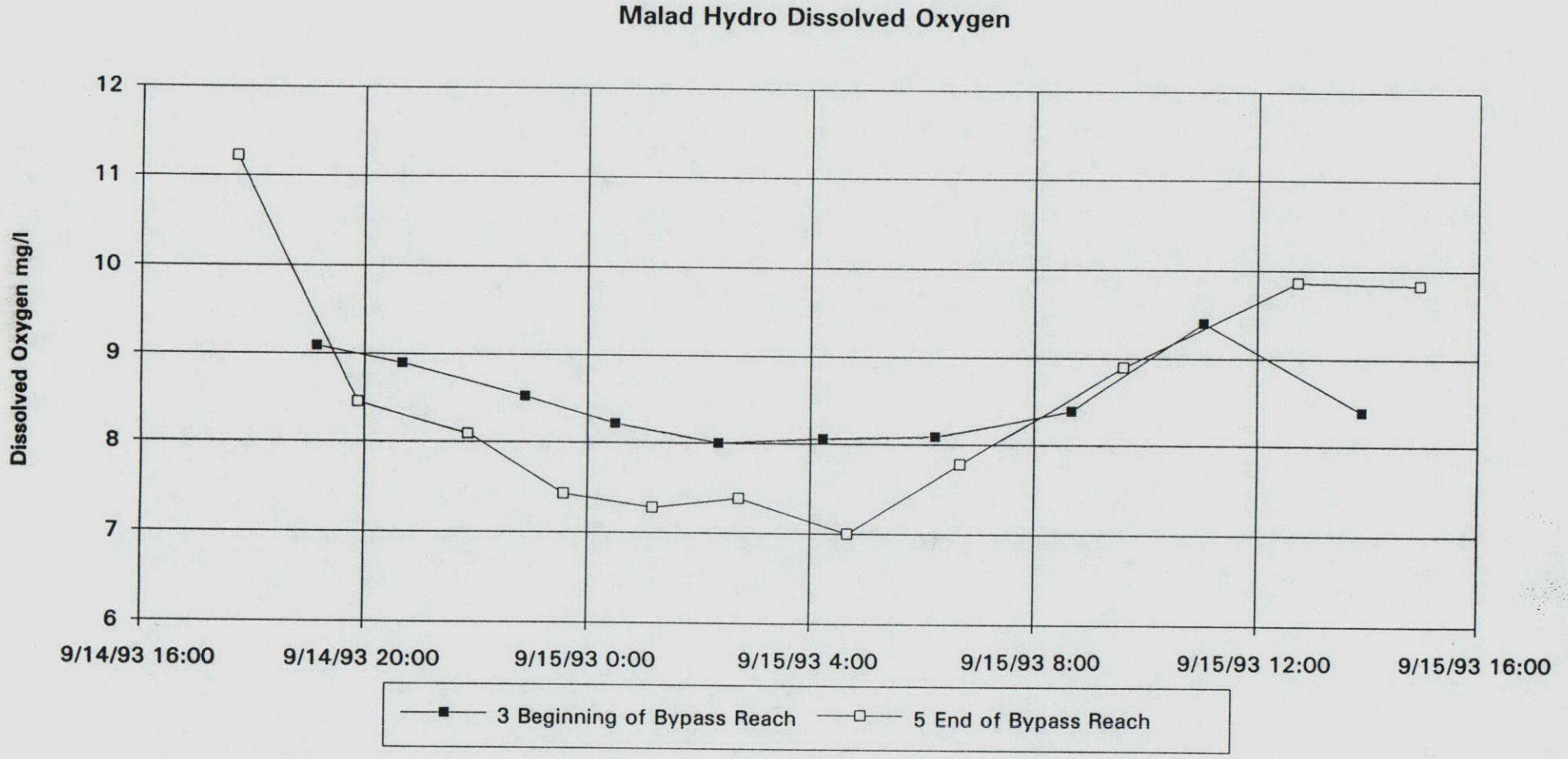
EXHIBIT 2 PAGE 3

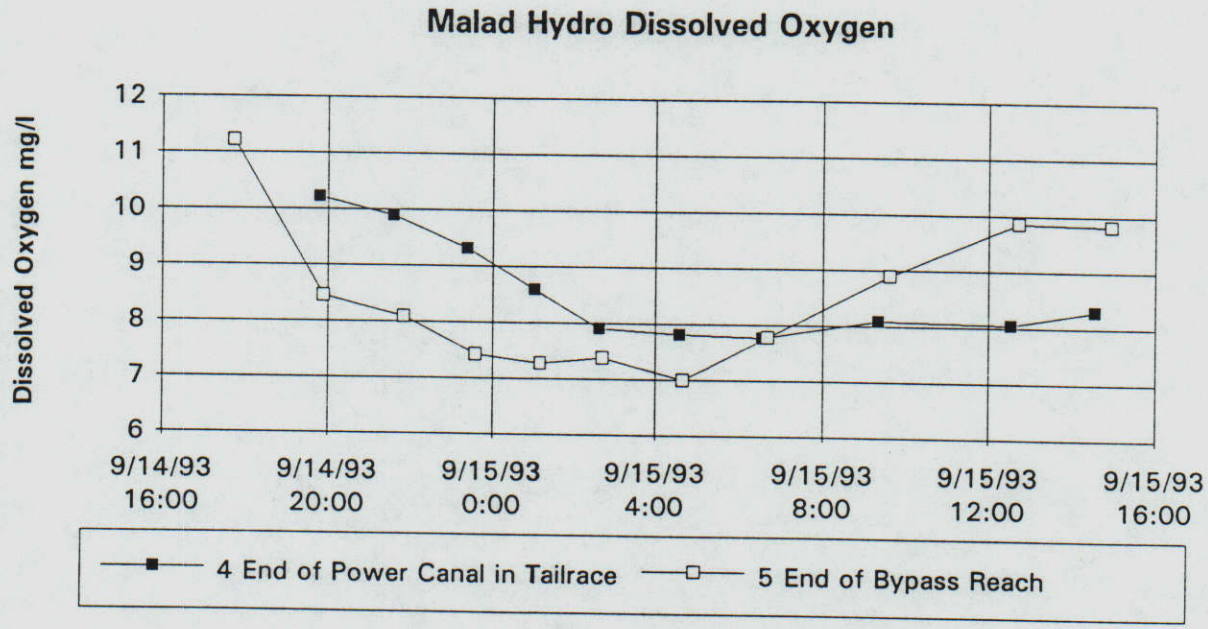
SCALE 1" = 200'

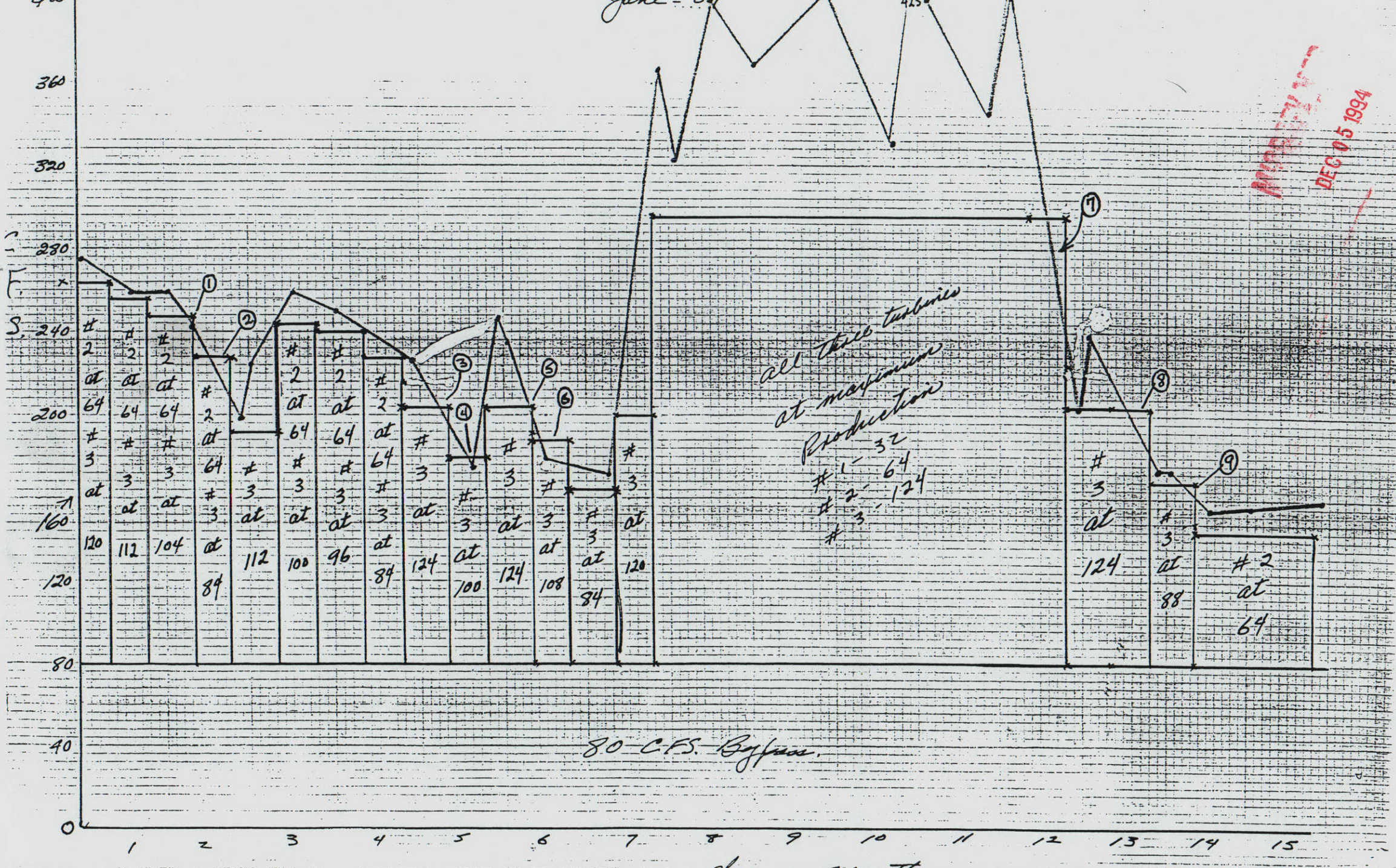
VERIFICATION CERTIFICATE


Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
12.00
11.00
10.00
9.00
8.00
7.00
6.00
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
1 Malad River at Bridge above Ponds
2 Outlet of Large Pond to Hydro Canal
3 Beginning of Bypass Reach
4 End of Power Canal in Tailrace
5 End of Bypass Reach


Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
10.50
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
1 Malad River at Bridge above Ponds
2 Outlet of Large Pond to Hydro Canal
4 End of Power Canal in Tailrace


Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
12
11
10
9
8
7
6
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
3 Beginning of Bypass Reach
5 End of Bypass Reach


Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
12
11
10
9
8
7
6
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
4 End of Power Canal in Tailrace
5 End of Bypass Reach


360
320
280
240
200
160
120
80
40
0
C.F.S.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
day of month.
#2 at 64 #3 at 120
#2 at 64 #3 at 112
#2 at 64 #3 at 104
#2 at 64 #3 at 84
#2 at 64 #3 at 112
#2 at 64 #3 at 100
#2 at 64 #3 at 96
#2 at 64 #3 at 84
#3 at 124
#3 at 100
#3 at 124
#3 at 108
#3 at 84
#3 at 120
#3 at 124
#3 at 88
#2 at 64
all three turbines at maximum production
#1 - 32 - 64
#2 - 124
#3 -
80 C.F.S. Bypass.
DEC 05 1994

June 1987

Summary June 87

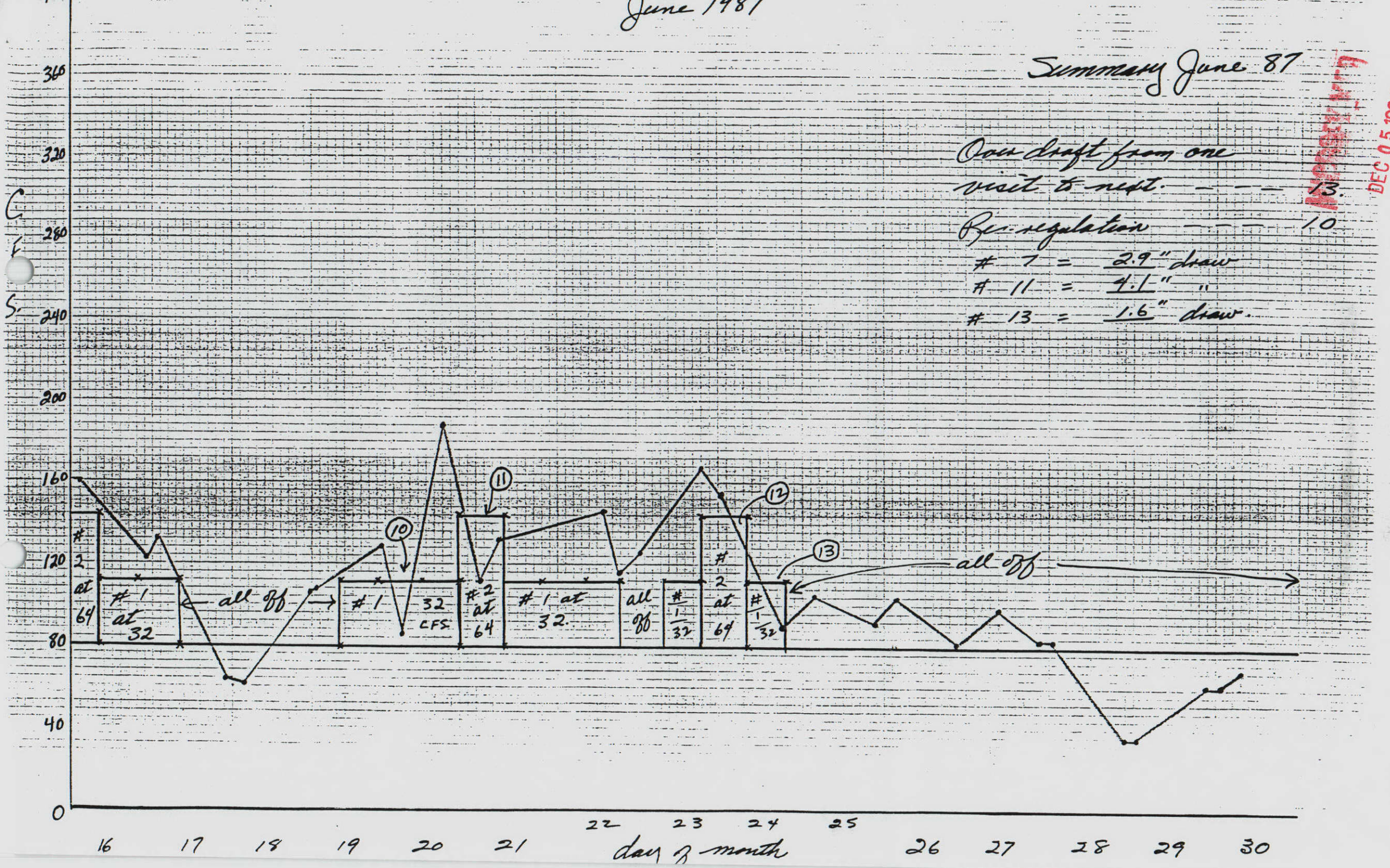
Over draft from one visit to next. ——— 13.

Re-regulation ——— 10

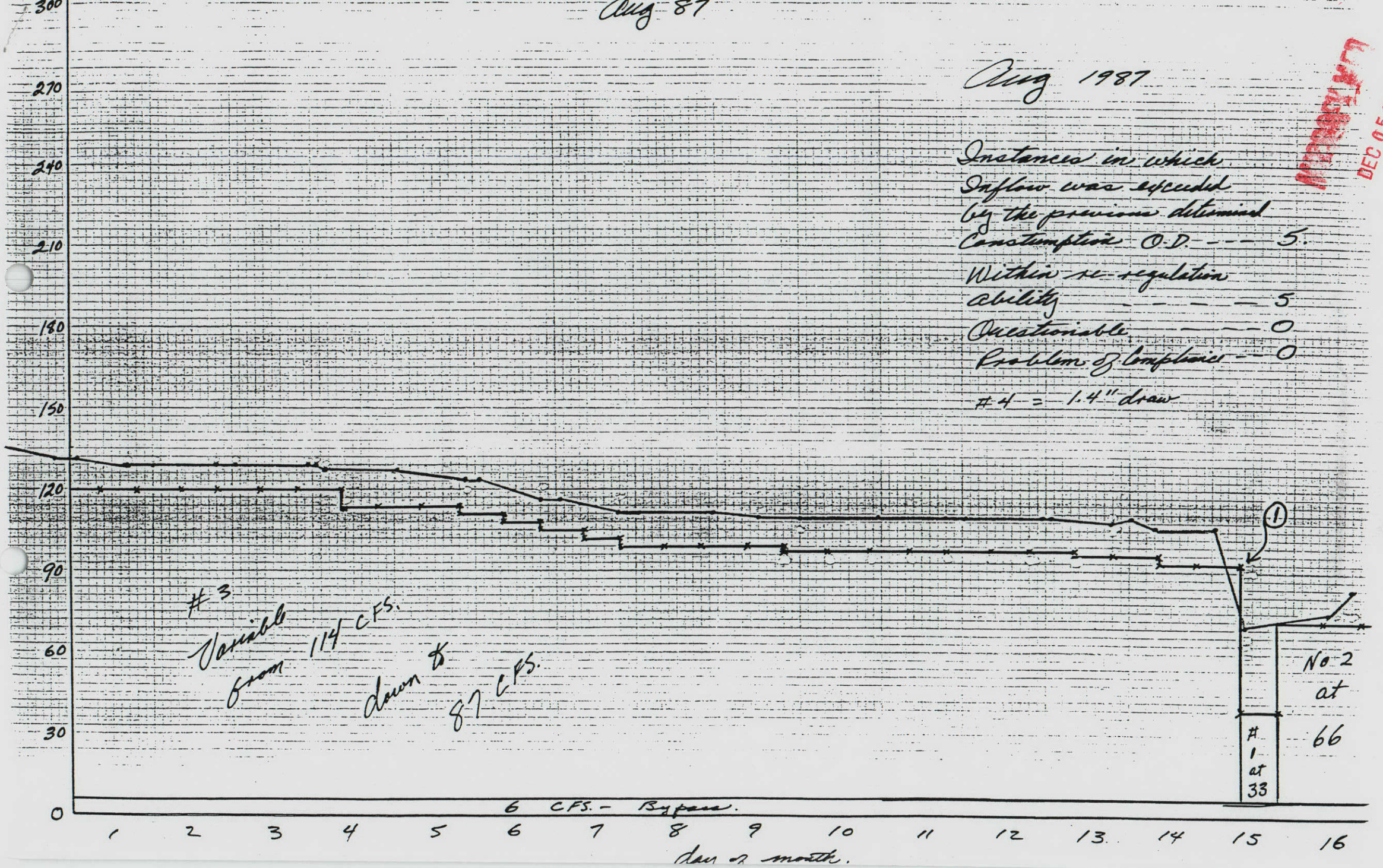
1 = 2.9" draw

11 = 4.1" "

13 = 1.6" draw.

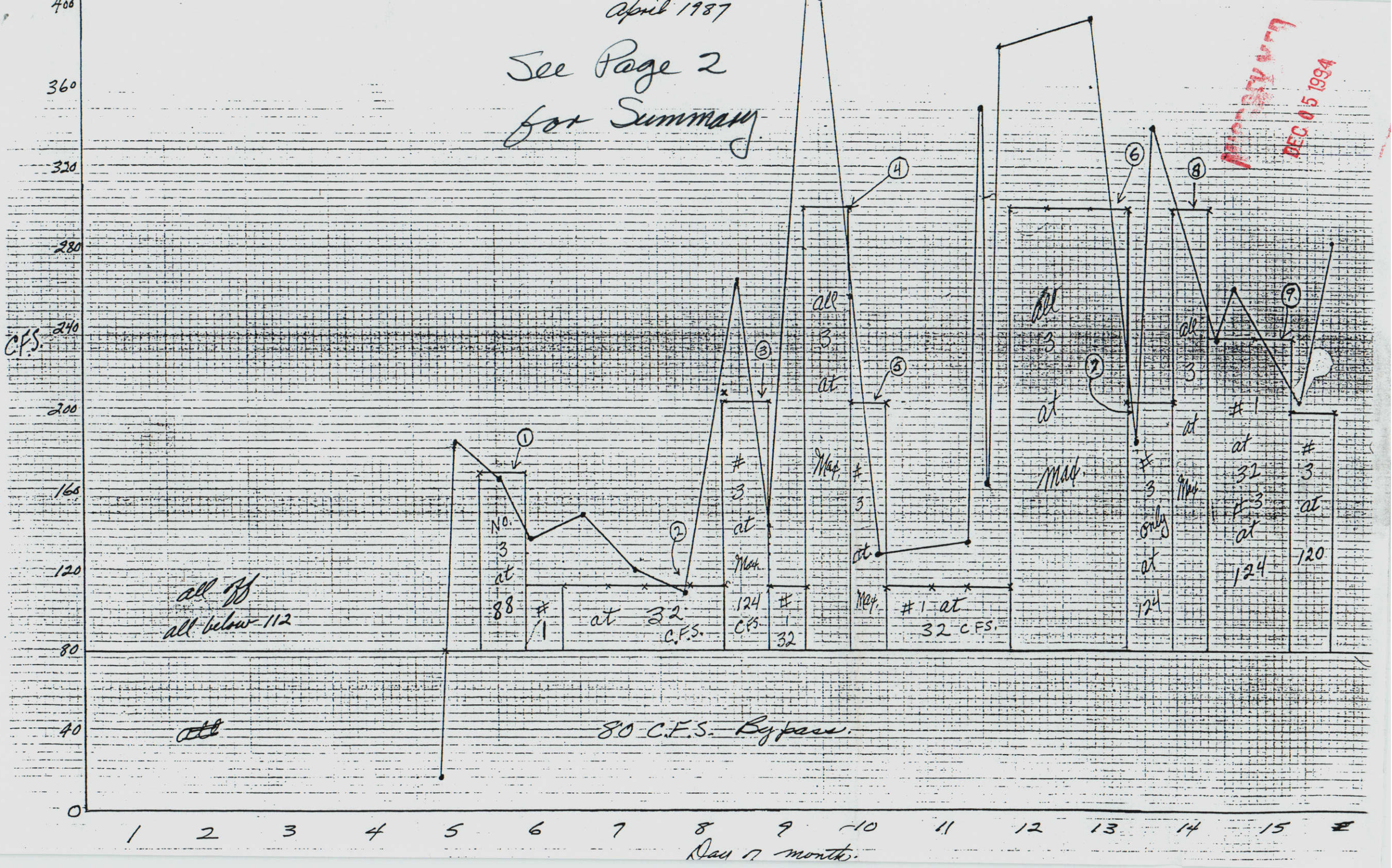


DEC 05 1994


Aug 87
Aug 1987
Instances in which
Inflow was exceeded
by the previous determined
Consumption O.D. --- 5.
Within re-regulation
ability ------ 5
Occationable ------ 0
Problem & Complaints -- 0
#4 = 1.4" draw
DEC 05 1994
300
270
240
210
180
150
120
90
60
30
0
#3
Variable
from 114 CFS.
down to
87 CFS.
①
#1
at
33
No 2
at
66
6 CFS. - Bypass.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
day of month.

Aug-87.


300
270
240
210
180
150
120
90
60
30
0
C F S
2
3
4
5
1.4"
2 at 66
3 33
2 at 66
3 84
2 66
3 at 33
2 at 66
2 at 66
2 at 66
By-Pass 6 CFS.
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
Day of month.
DEC 05 1994


April 1987
See Page 2
for Summary
C.F.S.
400
360
320
280
240
200
160
120
80
40
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Days of month.
all 3 at Map.
all below 112
No. 3 at 88
1 at 32 C.F.S.
3 at Map. 124 CFS
1 32
Map. # 3 at
Map. # 1 at 32 C.F.S.
all 3 at Map.
3 only at 124
all 3 at Map.
1 at 32 # 3 at 124
3 at 120
80 C.F.S. Bypass.
DEC 05 1994

April 1987

Summary - Page 2.

April 87 Summary.

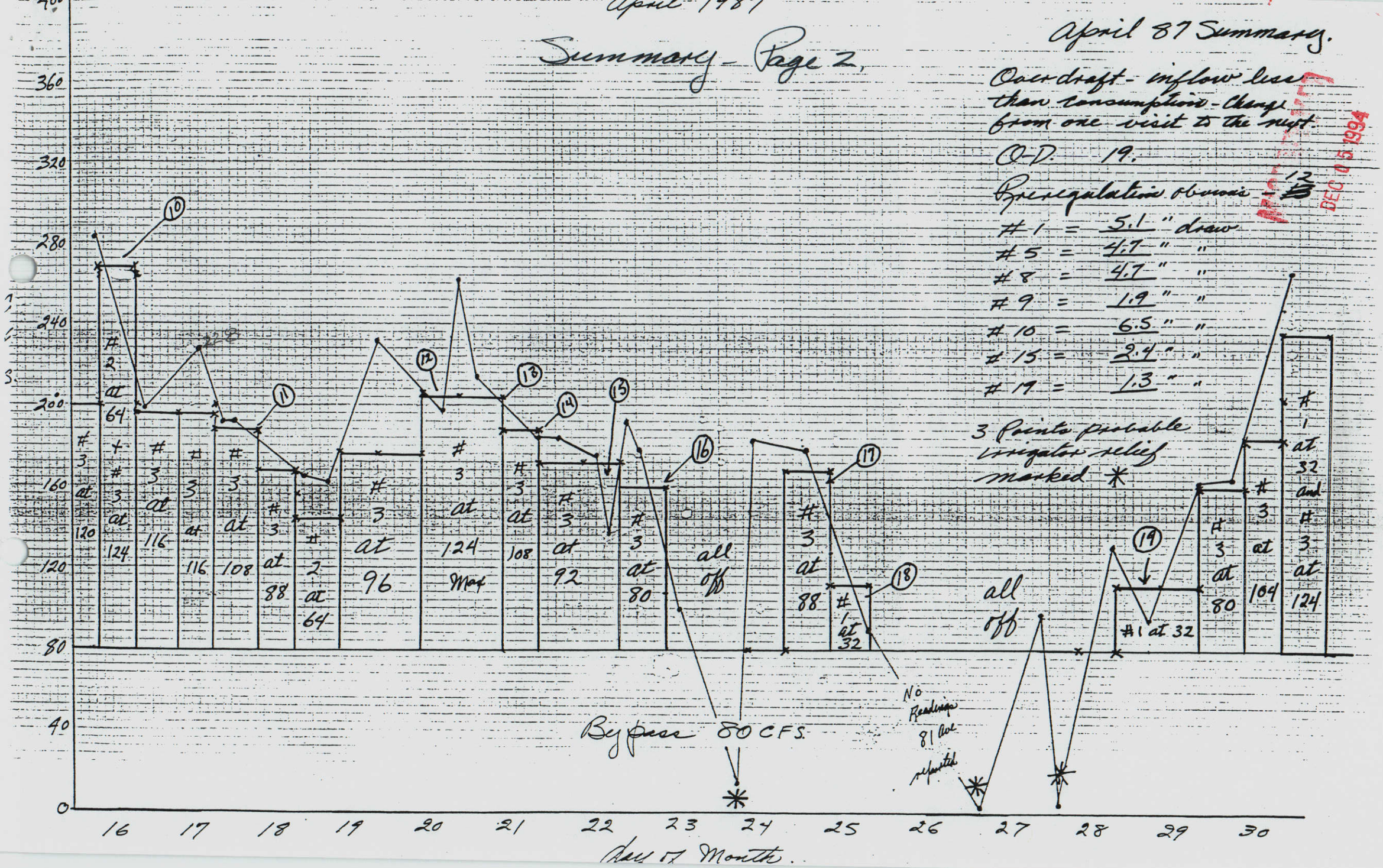
Over draft - inflow less than consumption - Change from one visit to the next.

O-D. 19.

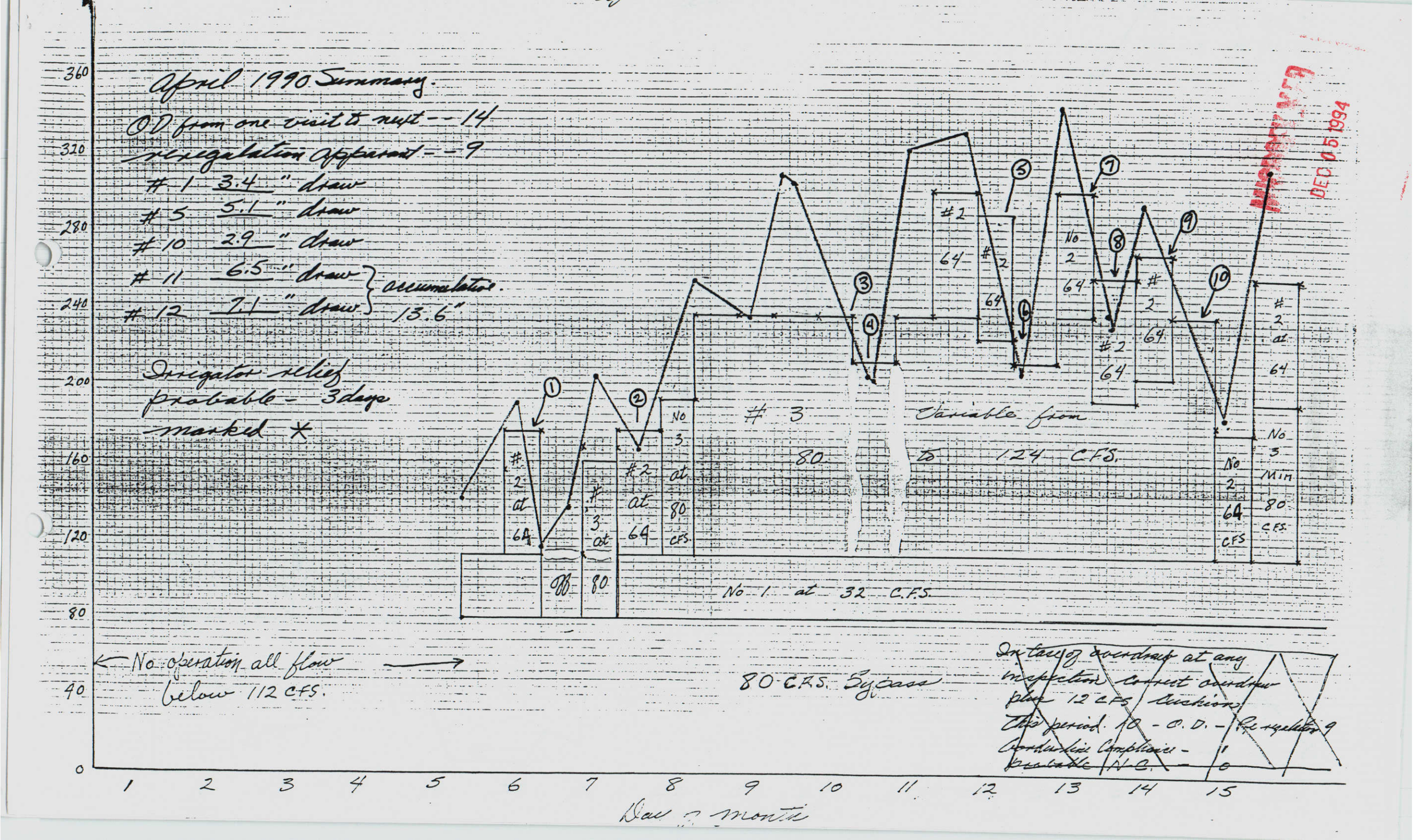
Spurregulation observed - ~~13~~ 12

#1 = 5.1" draw
#5 = 4.7" "
#8 = 4.7" "
#9 = 1.9" "
#10 = 6.5" "
#15 = 2.4" "
#19 = 1.3" "

3 Points possible irrigator relief marked *



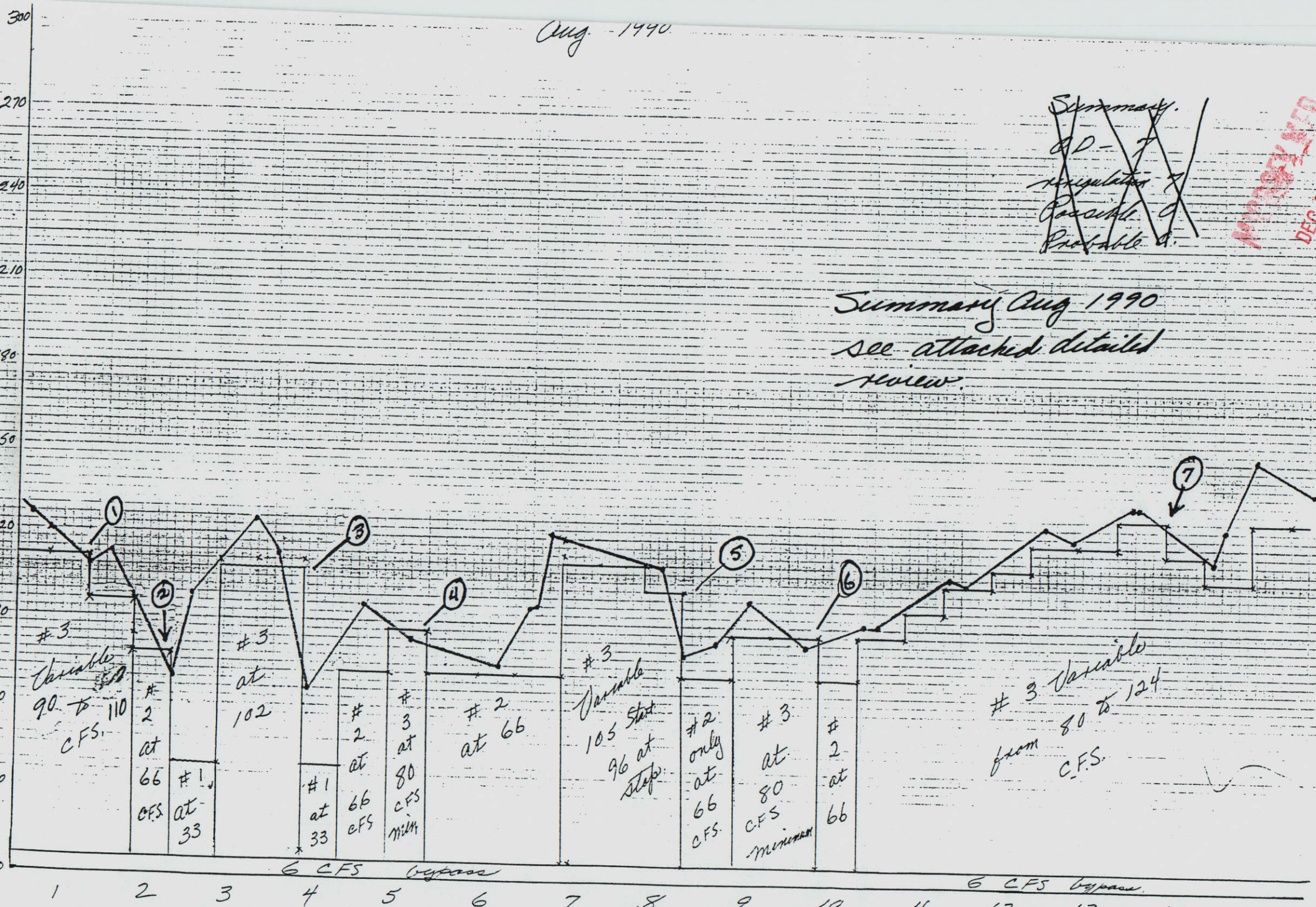
DEC 05 1994

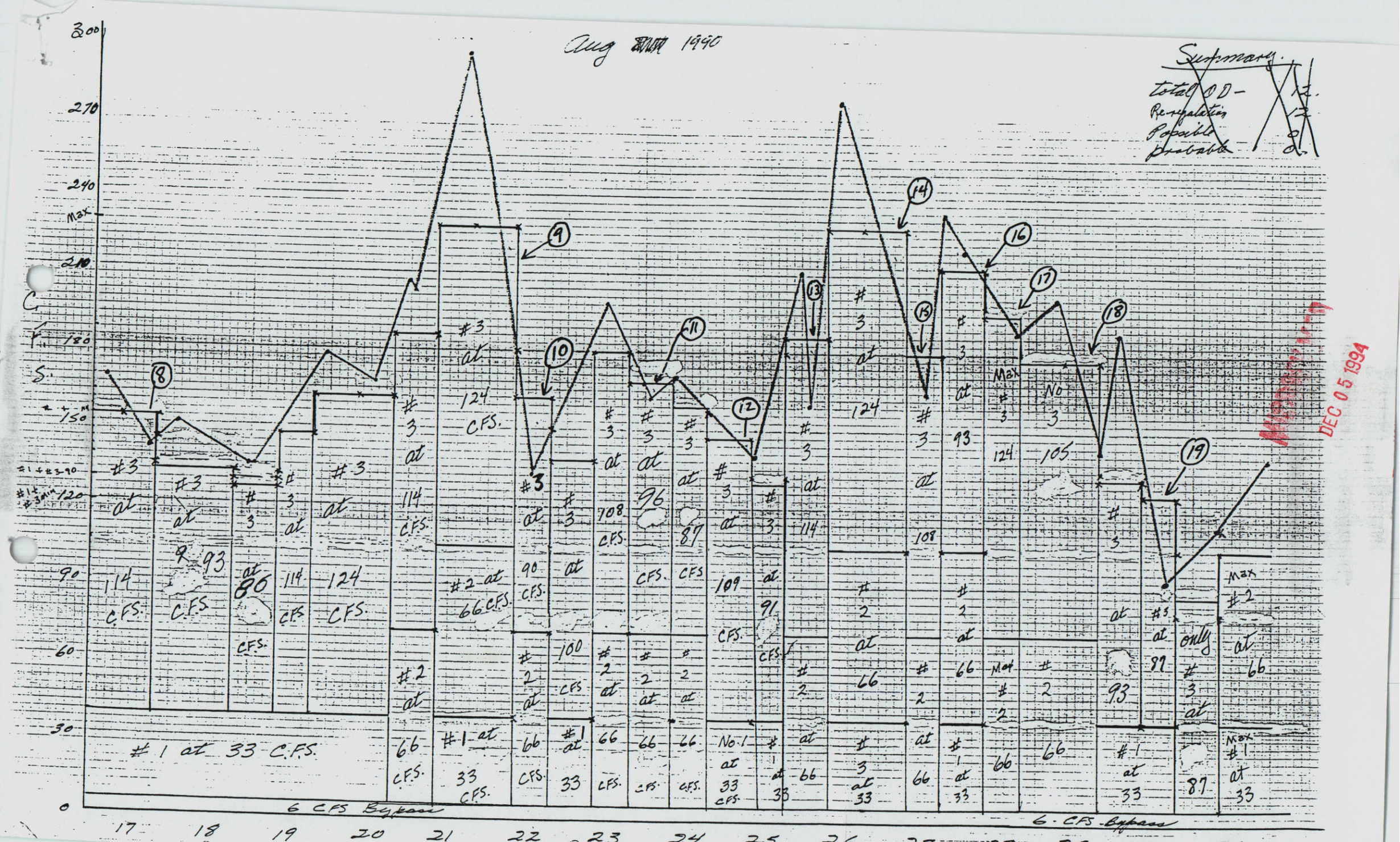

April 1990 Summary.
OD from one visit to next -- 14
regulation apparent -- 9
#1 3.4" draw
#5 5.1" draw
#10 2.9" draw
#11 6.5" draw
#12 7.1" draw
accumulation 13.6"
Irrigator relief probable - 3 days marked *
360
320
280
240
200
160
120
80
40
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Day of month
#2 at 64
#3 at 80
No 3 at 80 CFS.
#2 at 64
#1 64
#2 64
No 2 64
#2 64
#2 64
No 2 64 CFS
#2 at 64
No 3 Min 80 CFS.
Variable from 80 to 124 CFS.
No 1 at 32 C.F.S.
80 C.F.S. Bypass
← No operation all flow below 112 CFS. →
In case of overdraw at any inspection correct overdraw plus 12 CFS duction.
This period 10 - O.D. - Regulation 9
Corrections Compliance - probable N.C. - 1 - 0
DEC 05 1994

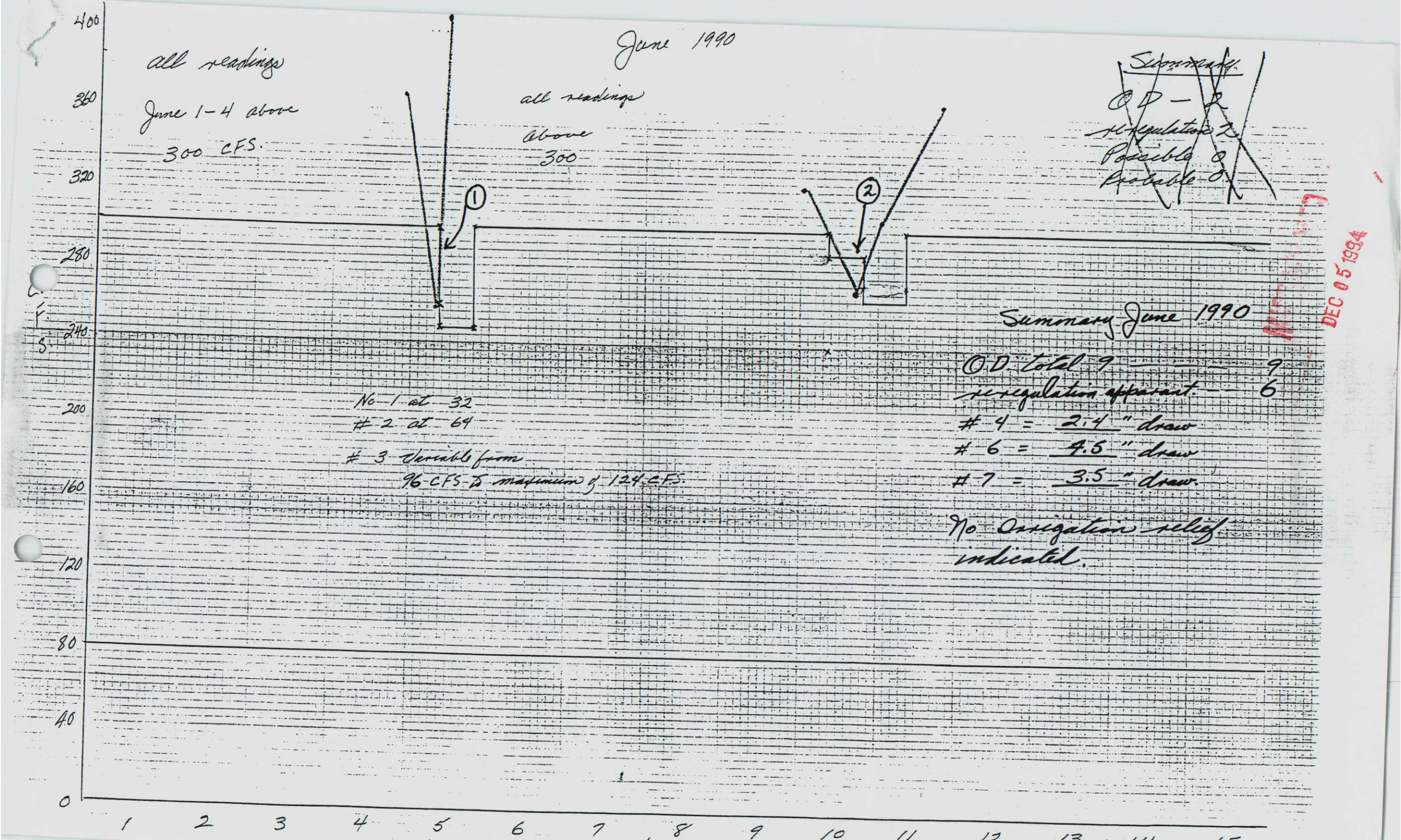
Aug. 1990

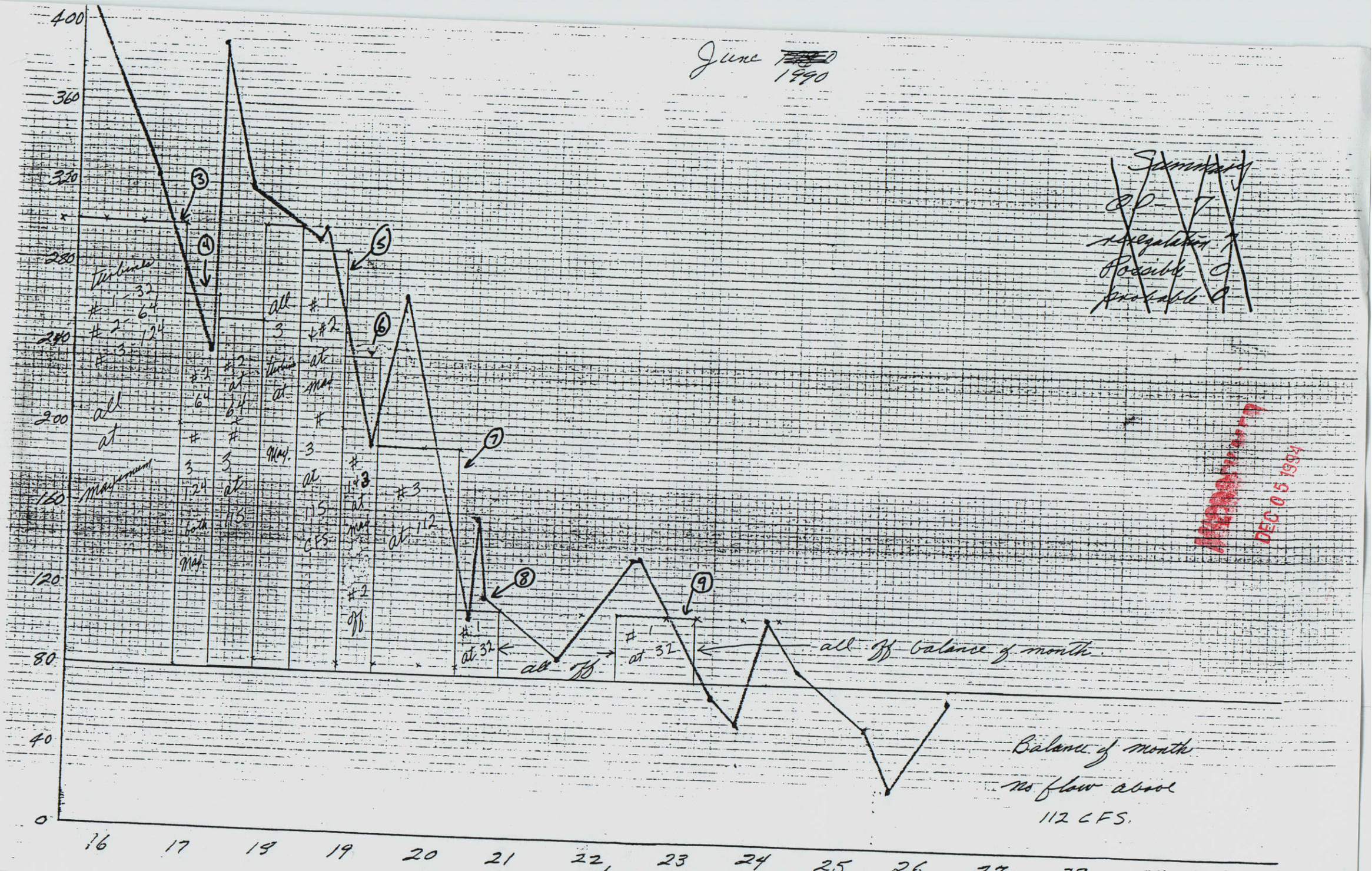
MICROFILMED
DEC 05 1994

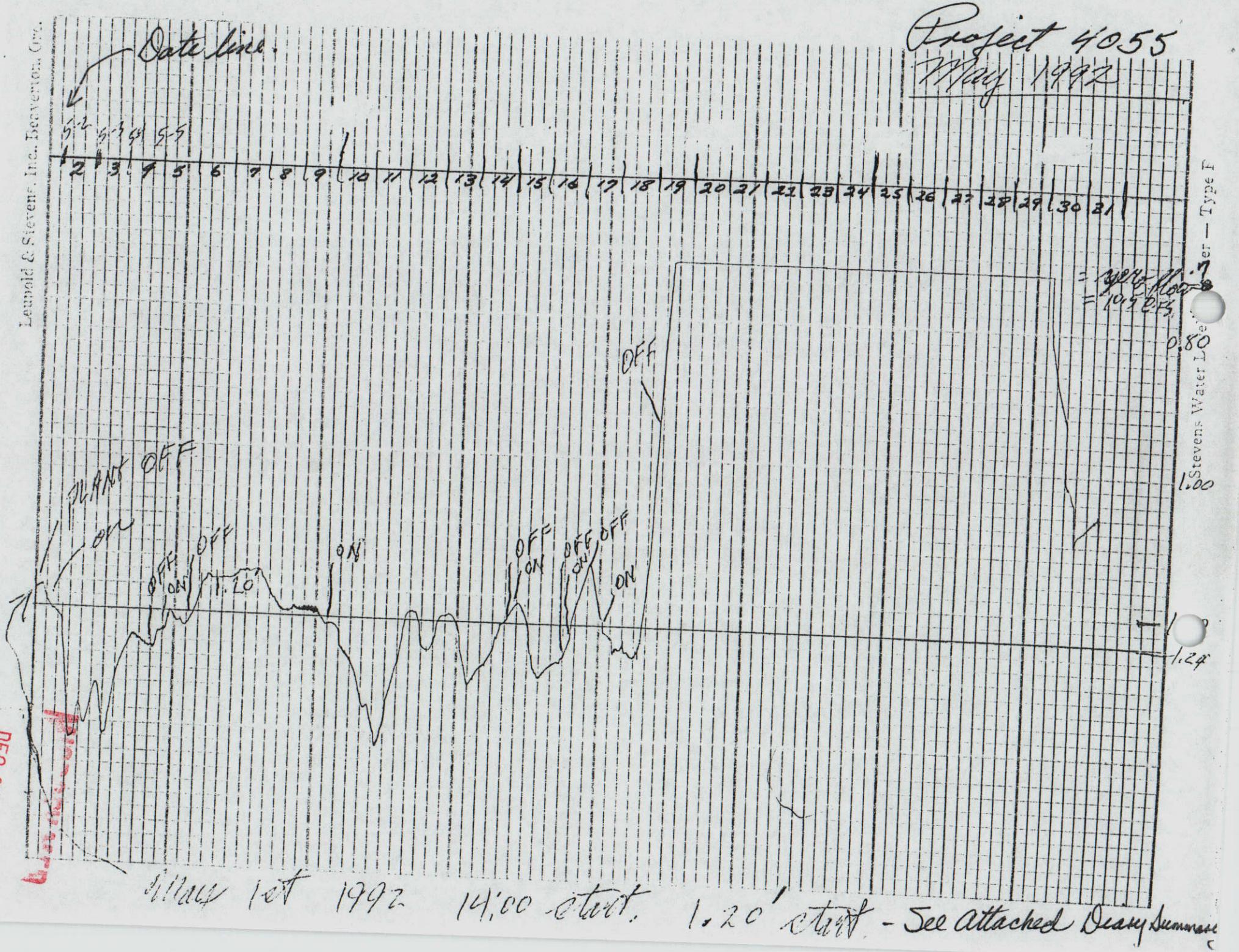
Summary Aug 1990
See attached detailed review.




Aug 1990
Summary
Total OD -
Regulation
Possible
Probable
DEC 05 1994
C.F.S.
Max
6 CFS Bypass
6 CFS Bypass
#1 at 33 C.F.S.
#3 at 124 C.F.S.
#2 at 66 C.F.S.
#1 at 33 C.F.S.
#3 at 114 C.F.S.
#3 at 93 C.F.S.
#3 at 86 C.F.S.
#3 at 114 C.F.S.
#3 at 124 C.F.S.
#3 at 114 C.F.S.
#2 at 66 C.F.S.
#3 at 90 C.F.S.
#3 at 100 C.F.S.
#3 at 108 C.F.S.
#3 at 96 C.F.S.
#3 at 87 C.F.S.
#3 at 109 C.F.S.
#3 at 91 C.F.S.
#3 at 114 C.F.S.
#3 at 124 C.F.S.
#3 at 108 C.F.S.
#3 at 93 C.F.S.
#3 at 124 C.F.S.
No 3 at 105 C.F.S.
#3 at 93 C.F.S.
#3 at 87 C.F.S.
Max #2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
Max #2 at 66 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
No 1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 33 C.F.S.
#3 at 87 C.F.S.
only #3 at 87 C.F.S.
Max #1 at 33 C.F.S.
8
9
10
11
12
13
14
15
16
17
18
19
17
18
19
20
21
22
23
24
25
26


June 1990
all readings
June 1-4 above
300 CFS.
all readings
above
300
1
2
Summary
OD - 9
regulation 2
Possible 0
Probable 0
400
360
320
280
240
200
160
120
80
40
0
1
2
3
4
5
6
7
8
9
10
11
12
13
No 1 at 32
#2 at 64
#3 Variable from
96 CFS to maximum of 124 CFS.
Summary June 1990
OD total 9 — 9
regulation apparent — 6
#4 = 2.4" draw
#6 = 4.5" draw
#7 = 3.5" draw.
No irrigation relief
indicated.
DEC 05 1994


June 1990
400
360
320
280
240
200
160
120
80
40
0
16
17
18
19
20
21
22
23
24
25
Turbines
#1 - 32
#2 - 64
#3 - 124
all at maximum
#2 64
#3 124
both max.
all 3 Turbines at max.
#2 at 64
#3 at 115
#1 #2 at max
#3 at 115 CFS
#3 at max
#2 off
#3 at 112
#1 at 32
all ff
#1 at 32
all ff balance of month.
Balance of month
no flow about
112 CFS.
Summary
of
regulation
Possible
available
DEC 05 1991

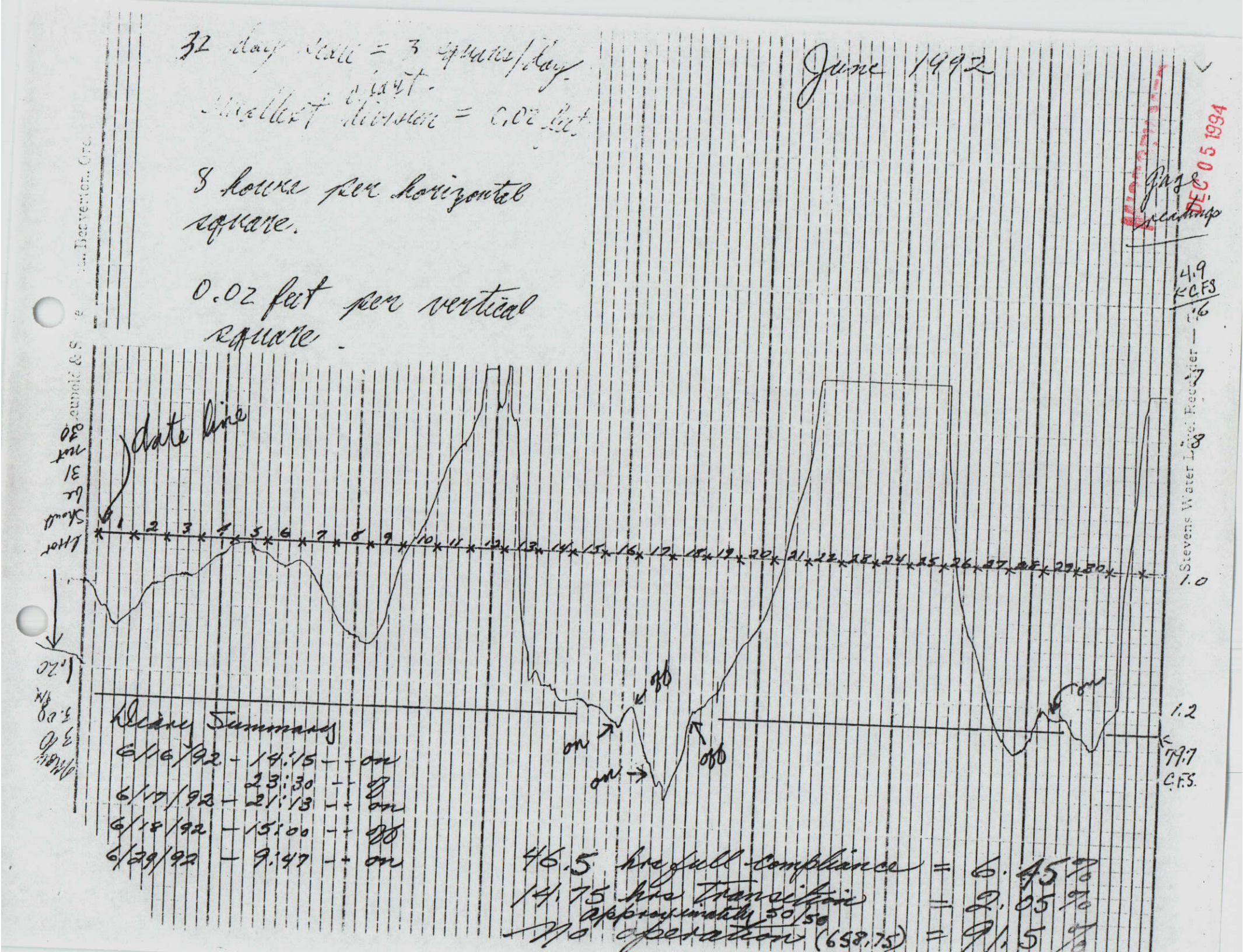

Project 4055
May 1992
Date line.
S-2
S-3
S-4
S-5
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
PLANT OFF
ON
OFF
ON
OFF
1.20
ON
OFF
ON
OFF
ON
OFF
ON
OFF
= Typ. Flow
= 10.5 CFS
0.80
1.00
1.24
Leupold & Stevens, Inc. Beaverton, Ore.
Stevens Water Level Recorder — Type F
DEC 05 1994
May 1st 1992 14:00 start. 1.20' start - See attached Diary Summary

32 day scale = 3 squares/day.
Smallest div. = 0.02 ft.

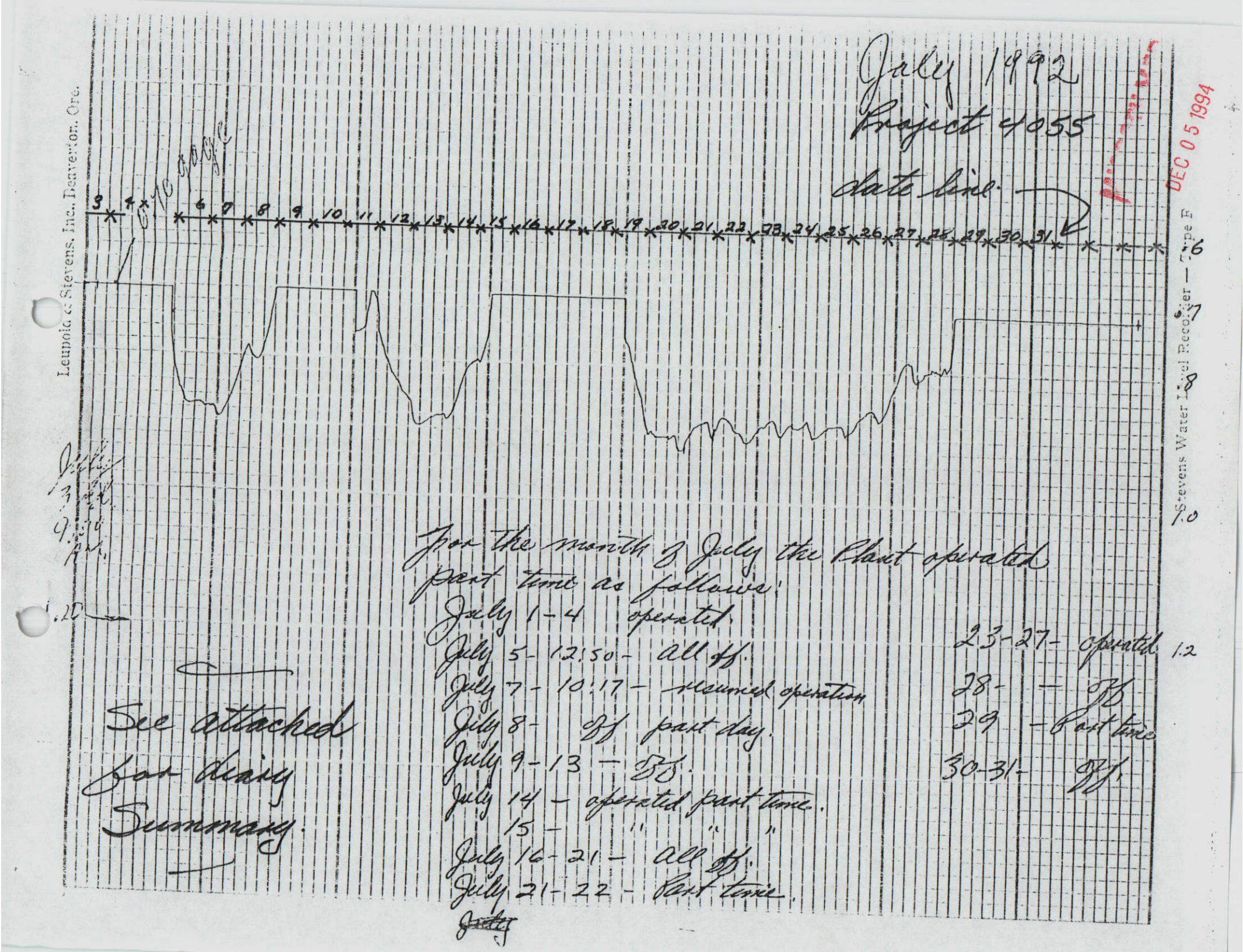
8 hours per horizontal square.

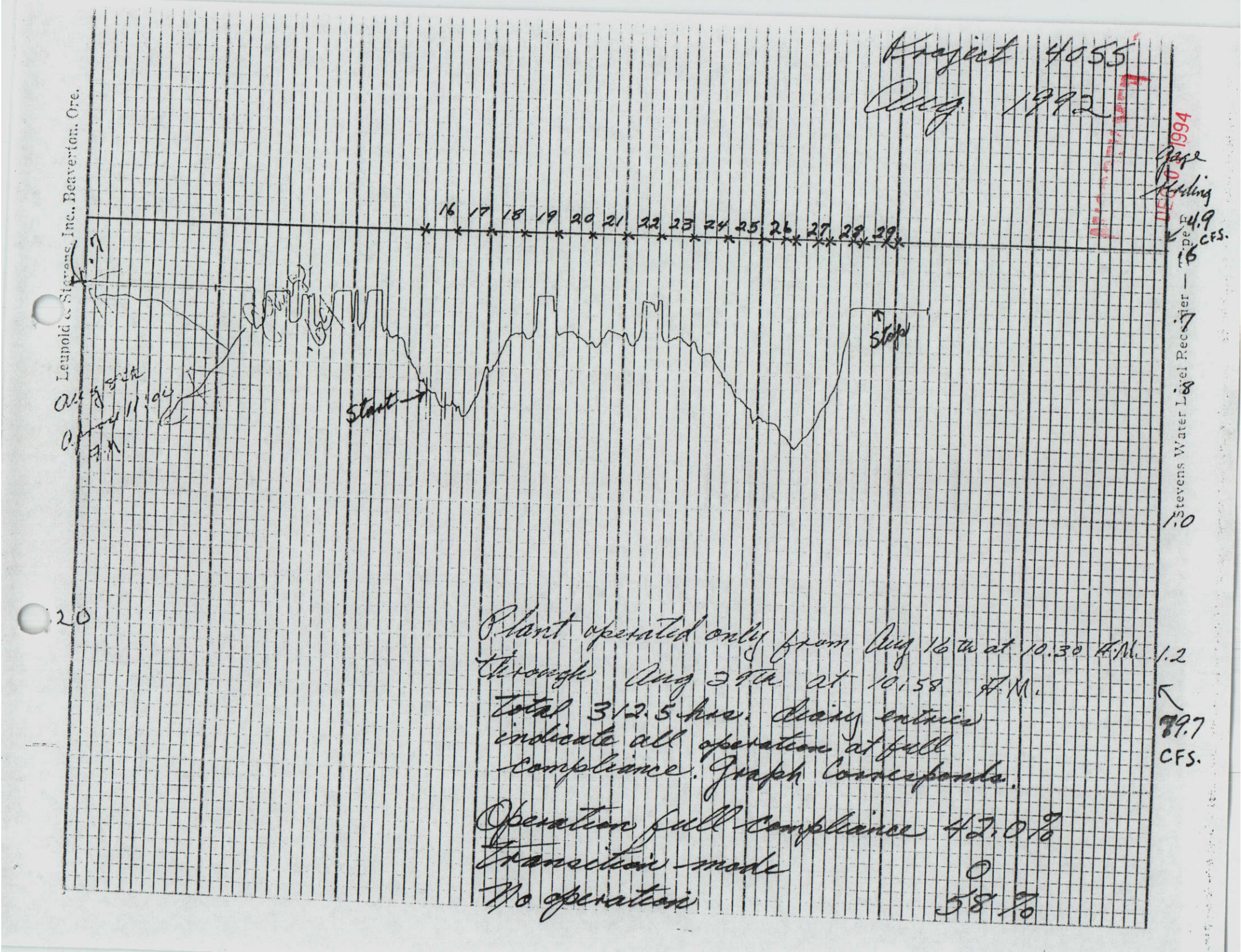
0.02 feet per vertical square.

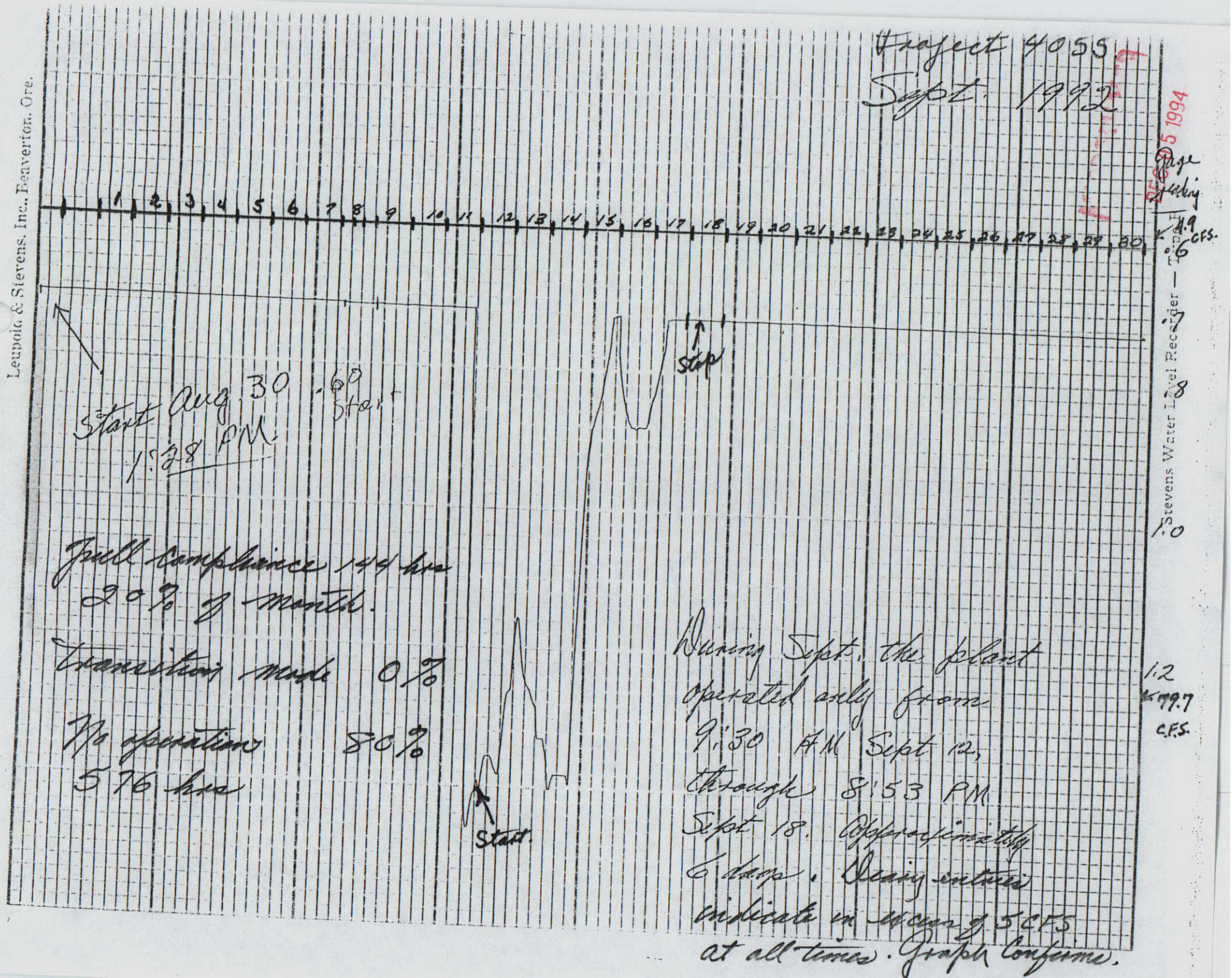
June 1992



DEC 05 1994


July 1992
Project 4055
date line.
Leupold & Stevens, Inc., Beaverton, Ore.
Stevens Water Level Recorder — Type F
DEC 05 1994
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
1.6
1.7
1.8
1.0
1.2
July 3 4:16 P.M.
For the month 3 July the Plant operated part time as follows:
July 1-4 operated.
July 5- 12:50- all day.
July 7- 10:17- resumed operation
July 8- 8½ part day.
July 9-13 — 55.
July 14 — operated part time.
15 — " " "
July 16-21 — all day.
July 21-22 — part time.
23-27- operated
28- — 8½
29 — part time
30-31- 8½.
See attached for daily Summary.


Project 4055
Aug. 1992
Leupold & Stevens, Inc., Beaverton, Ore.
Stevens Water Level Recorder — Type F
DEC 0 1994
Gage Reading
4.9 CFS.
16 17 18 19 20 21 22 23 24 25 26 27 28 29
Start
Stop
79.7 CFS.
Plant operated only from Aug 16th at 10.30 A.M.
through Aug 29th at 10:58 A.M.
Total 312.5 hrs. Chart entries
indicate all operation at full
compliance. Graph Corresponds.
Operation full compliance 42.0%
Connection made
No operation
58%


Leupold & Stevens, Inc., Beaverton, Ore.
Project 4055
Sept. 1992
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Start Aug. 30 - 60 Stat
1:28 PM.
Start
Stop
Full compliance 144 hrs
100% of month.
Transition mode 0%
No operation 80%
576 hrs
During Sept. the plant
operated only from
9:30 AM Sept 12,
through 8:53 PM
Sept 18. Approximately
6 days. Gaging entries
indicate in excess of 5 CFS
at all times. Graph conforms.
Stevens Water Level Recorder — Type F
Gage reading
4.9
.6 CFS.
7
8
.0
1.2
79.7
C.F.S.
DEC 05 1994

Leupold & Stevens, Inc., Beaverton, Ore.

Stevens Water Level Recorder — Type F

Oct 1992

Project 40055

RECD 3/1994

Gage reading 4.9 cfs.

Start
5 Oct 92
17:25

Start Reading = 10.5 CFS. + (Breakaway)
Gage bottomed - out at
.7.2 or 10.5 CFS.

Project operated only hours 9:02 Oct 5th through 18:00 Oct 12th.
Diary Summary.

10/5/92 - time	9:02	Klein cfs	9.4	CFS.
	18:30	Reart "	36.4	"
10/6/92 -	9:36	Klein cfs	11.6	"
	16:51	" "	9.4	"
10/7/92 -	9:33	" "	10.5	"
	16:50	" "	9.4	"
10/8/92	8:29	" "	9.4	"
	17:20	" "	9.4	"
10/9/92	9:45	" "	5.5 +	"
	18:08	" "	6.6	"
10/10/92	11:04	" "	8.4	"
	20:17	" "	8.4	"
10/11/92	8:04	" "	6.5	"
	18:40	" "	8.4	"
10/12/92	8:37	" "	9.4	"
	18:00	— cut off.		

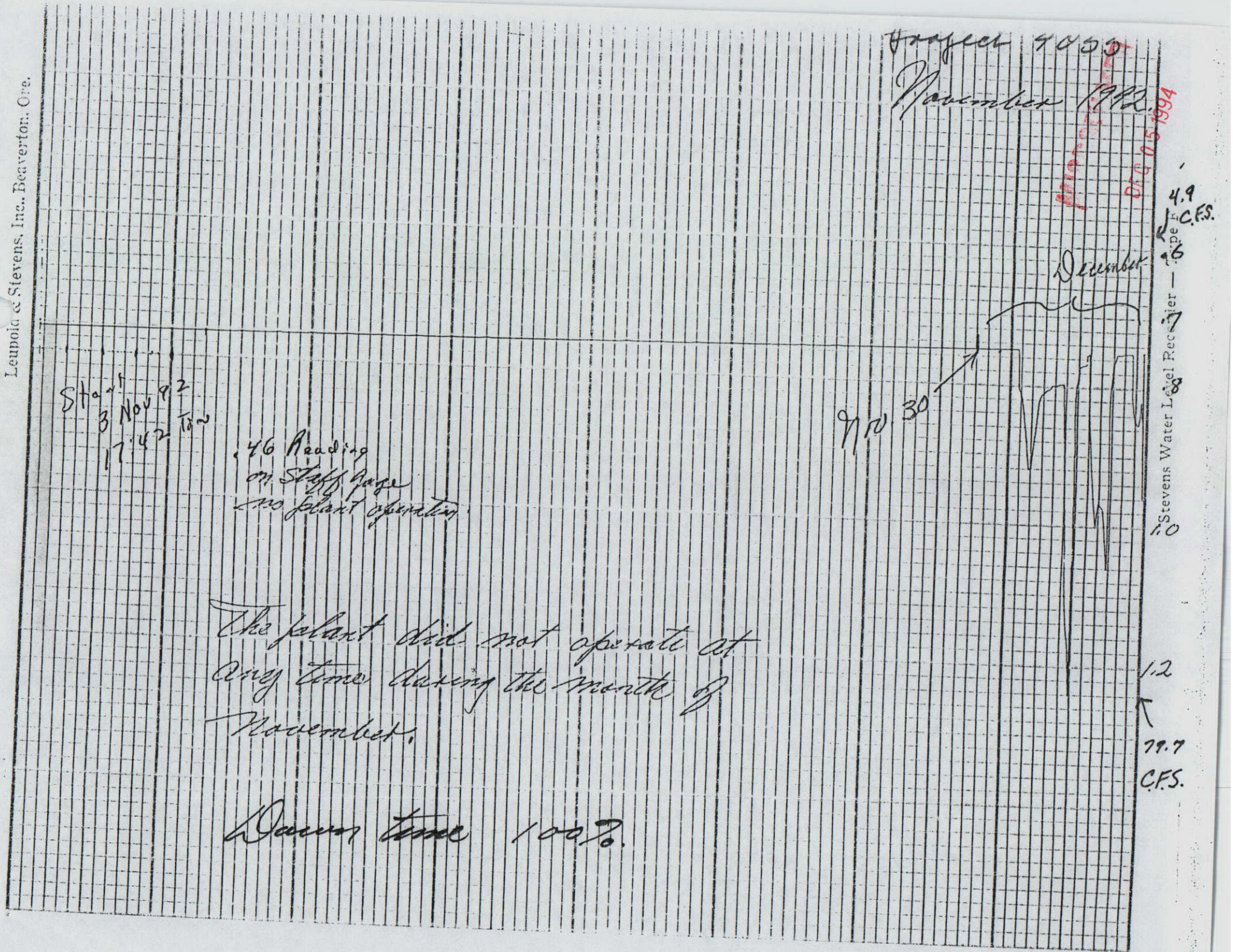
Operation full Compliance 167 hrs or 27.95%

Operation transition made to the 1.39% hour night only.

No operation 9 567 hrs = 76.21%

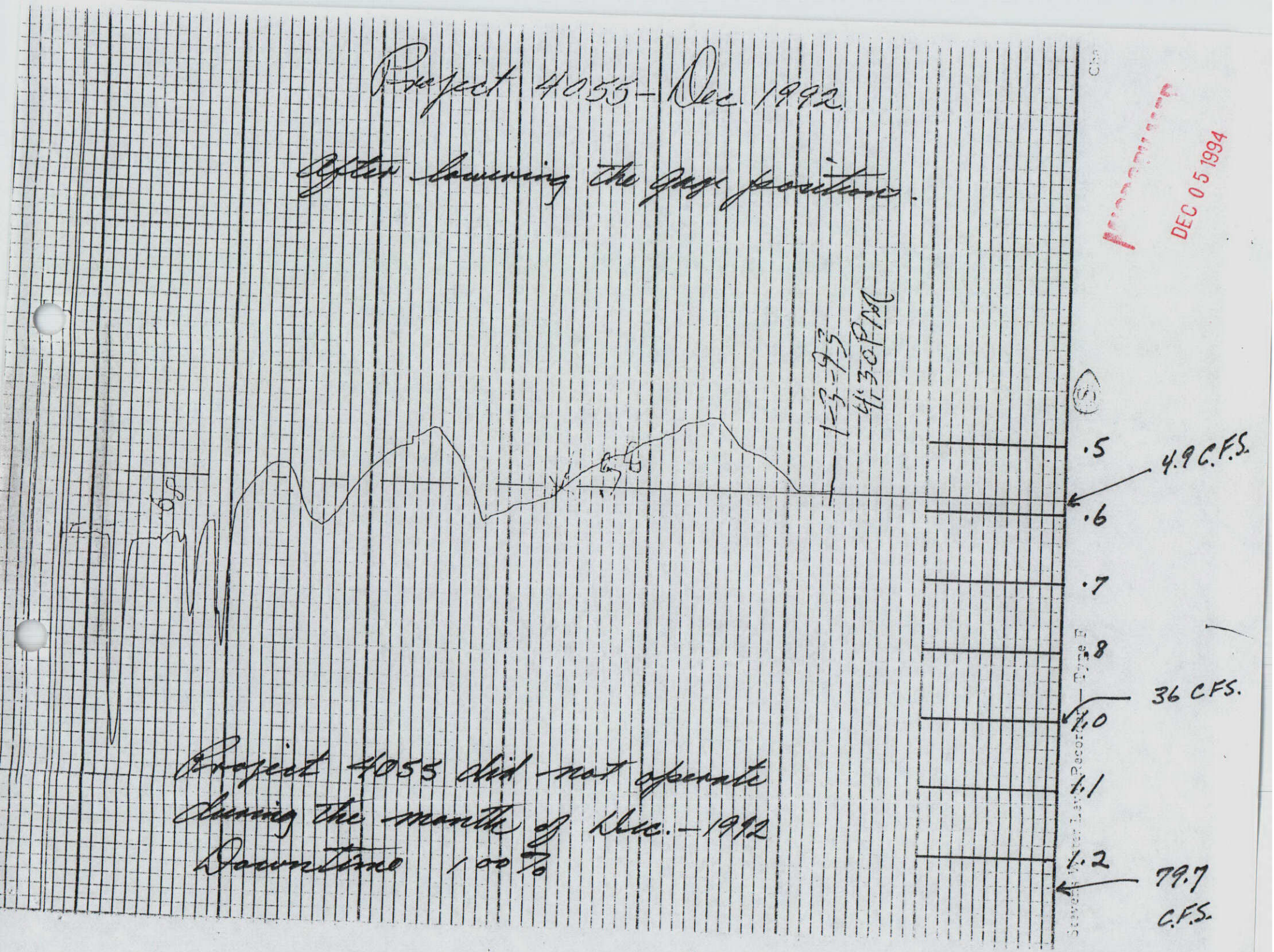
Plans 1+2 drawn transmitted to field teams.

1.2 = 19.7 CFS.


Project 4050
November 1972.
December
Start
3 Nov 9 2
1:42 PM
.46 Reading
on Staff Gage
no plant operating
NOV 30
The plant did not operate at
any time during the month of
November.
Recorder time 1000.
Stevens Water Level Recorder — Type F
4.9
C.F.S.
1.2
79.7
C.F.S.
DEC 05 1994

Project 4055 - Dec. 1992.

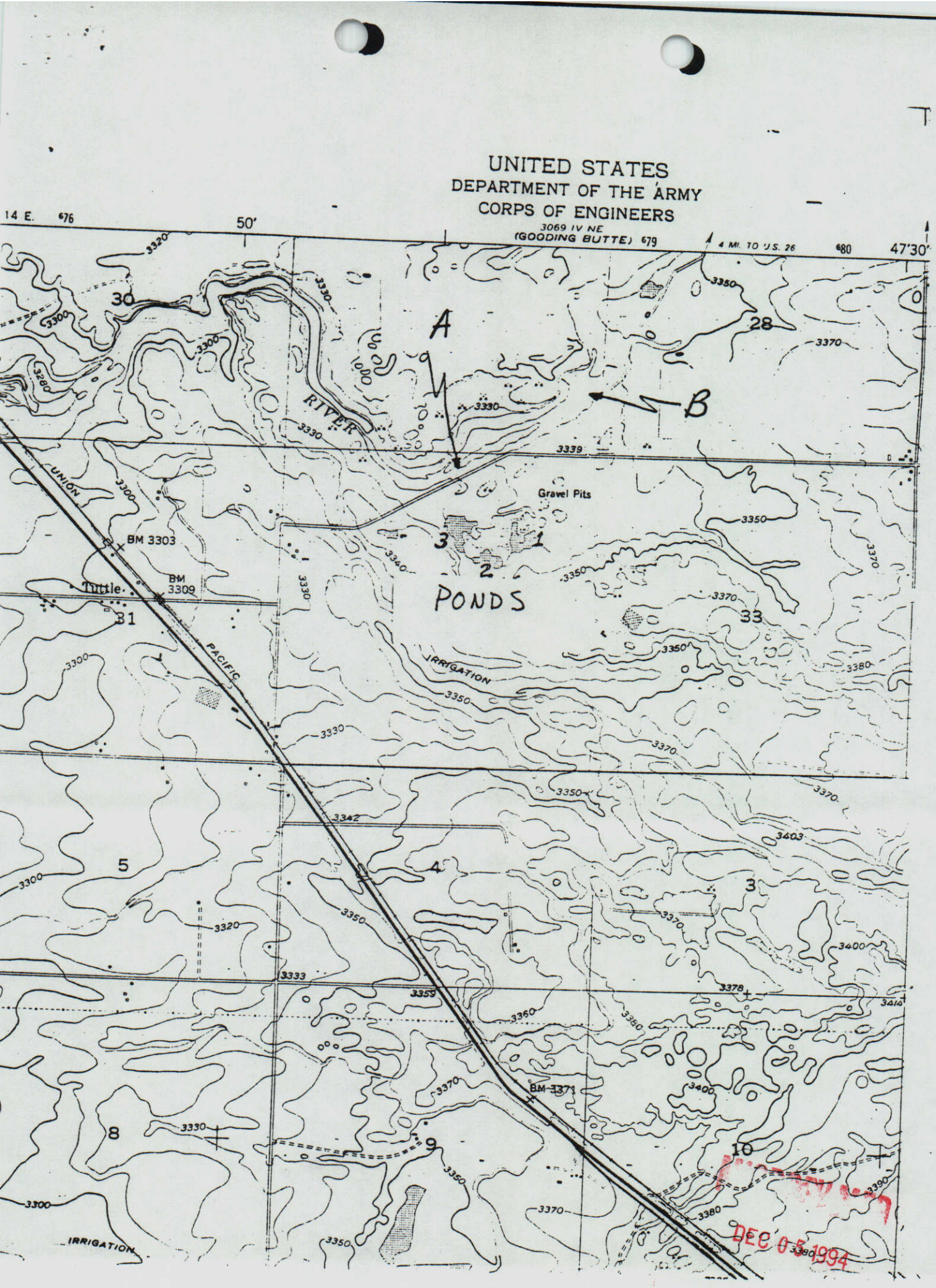
After cleaning the gage location.



Project 4055 did not operate during the month of Dec. - 1992

Rainfall 1.00 In.

DEC 05 1994


UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
3069 IV NE
(GOODING BUTTE)
14 E.
676
50'
679
4 MI. TO U.S. 26
680
47'30"
A
B
RIVER
Gravel Pits
PONDS
UNION PACIFIC
BM 3303
BM 3309
Tuttle
BM 3371
IRRIGATION
IRRIGATION
30
28
31
33
5
4
3
8
9
10
3320
3300
3280
3330
3339
3340
3350
3370
3380
3342
3403
3333
3359
3360
3400
3378
3414
3390
DEC 05 1994



PREPARED FOR BLM
PROJECT INSPECTION
6/19/92



During low water periods there is abundant evidence of heavy siltation in the project backwater.





PREPARED FOR BLM
PROJECT INSPECTION
6/19/92



During low water periods there is abundant evidence of heavy siltation in the project backwater.





PREPARED FOR BLM
PROJECT INSPECTION
JUNE 19, 1992



The beaver have been a persistent problem which have made it difficult to maintain uninterrupted by-pass flow.



PREPARED FOR BLM
PROJECT FIELD
INSPECTION
JUNE 19, 1992



The Idaho State Fish and Game Department are cooperating in an experiment to eliminate and/or minimize the beaver problem.



WATER RIGHT SPLIT

SUMMARY

ACTION	RIGHT NO.	NAME	AMOUNT CFS
Original Permit	37-7857	Vernon Ravenscroft	20.0 cfs
Full Assignment	37-7857	Bonneville Pacific Corporation and Vernon F. Ravenscroft and Harriett B. Ravenscroft	20.0 cfs
Full Assignment of Security Interest. Permit remains in the name of Bonneville Pacific Corp and Vernon F. Ravenscroft and Harriett B. Ravenscroft	37-7857	Prudential Leasing Company	20.0 cfs
Full Assignment	37-7857	Ravenscroft, Vernon F. Harriett B. Bonneville Pacific Corp.	20.0

MICROFILMED
MAR 00 1501

RECEIVED
JAN 26 1987
Department of Water Resources

State of Idaho
Department of Water Resources

ASSIGNMENT OF PERMIT

I, Prudential Leasing Company, a Utah corporation, hereby assign to Vernon F. Ravenscroft and Harriett B. Ravenscroft, husband and wife, and Bonneville Pacific Corporation, a Delaware corporation

of c/o Vernon F. Ravenscroft, P.O. Box 893, Boise, Idaho 83701
Address

CHECK ONE

[X] All my right, title, and interest in and to Permits No. 37-7857, 37-7865 and 37-7922 to appropriate the public waters of the State of Idaho.

[ ] The following described portion of my right, title, and interest in and to Permit No. _____ to appropriate the public waters of the State of Idaho.

(Describe that portion of the permit being assigned by listing the acreage within each 40 acre subdivision, the point of diversion and the amount of water in cubic feet per second for direct diversion, or acre feet for storage)

_____

_____

_____

_____

Made this 23rd day of January, 19 87.

PRUDENTIAL LEASING COMPANY, a Utah corporation

By Kathy L Hale
Permit Holder

Its President

_____
Spouse of Permit Holder

State of ~~Idaho~~ Utah)
) ss.
County of Salt Lake)

On this 23rd day of January, 19 87, personally appeared before me the signer(s) of the above instrument, who duly acknowledged to me that ~~he~~ (she) ~~(they)~~ executed the same.

Notary Public residing at
SLC Ut

seal

My commission expires:
6/28/87

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MAR 06 1987

ASSIGNMENT AND SECURITY AGREEMENT

THIS ASSIGNMENT AND SECURITY AGREEMENT is executed as of the 1st day of February, 1986, by VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife (the "Ravenscrofts"), whose address is P. O. Box 893, Boise, Idaho 83701, and BONNEVILLE PACIFIC CORPORATION, a Utah corporation ("Bonneville"), whose address is 200 East South Temple, Suite 300, Salt Lake City, Utah 84111 (the Ravenscrofts and Bonneville are hereinafter sometimes collectively referred to as "Borrower"), in favor of PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION, a corporation chartered under the laws of the United States of America, whose address is 127 East 3300 South, Salt Lake City, Utah 84115 (hereinafter referred to as "Prudential").

Recitals:

A. As of the date hereof, Prudential has loaned to the Ravenscrofts the aggregate principal amount of $1,170,000.00 (the "Loan") and, as evidence of the Loan, the Ravenscrofts have executed and delivered to Prudential the Note (as herein defined).

B. Bonneville will receive substantial economic benefit as a result of the Loan.

C. Prudential has made the Loan to the Ravenscrofts on the condition that Borrower assign to Prudential, as security for the Note, certain Contracts (as herein defined) held by Borrower, together with the interests of Borrower in the Equipment (as herein defined).

Agreement:

In consideration of the covenants, promises and agreements set forth herein and in the Note, Borrower and Prudential do hereby agree as follows:

SECTION 1. DEFINITIONS

The following terms, when used herein, shall have the meanings indicated:

1.1 Agreement. This Assignment and Security Agreement.

1.2 Contracts. The agreements, instruments and documents which are listed or described in Exhibit "A" attached

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MAR 06 1987

EXHIBIT A

to

ASSIGNMENT AND SECURITY AGREEMENT

CONTRACTS

The Contracts referred to in the foregoing Assignment and Security Agreement (the "Agreement") are as follows:

(1) Power Sales Agreement dated September 2, 1982, between Vernon F. Ravenscroft and Idaho Power Company, identified as Idaho Power Company Facility No. 31515009, amended by Amendment No. 1 dated March 7, 1984.

(2) Water Permit Nos. 37-7857, 37-7865 and 37-7922, as amended on November 22, 1982, granted by the State of Idaho, Department of Water Resources, to Vernon F. Ravenscroft.

(3) Federal Energy Regulatory Commission Order Granting Exemptions from Licensing issued to Vernon F. Ravenscroft on February 5, 1982, at 18 FERC paragraph 62,161.

(4) Bureau of Land Management Right-of-Way I-17053 granted March 5, 1982 to Vernon F. Ravenscroft.

(5) Lease Agreement dated November 8, 1982 between Vernon F. Ravenscroft and Dean Shaffer and Eileen Shaffer for certain real property located in Gooding County, Idaho, described as Tract IV on Exhibit D attached to the Agreement, as amended by an Addendum to Lease dated December 1, 1982.

(6) Lease Agreement dated November 3, 1982, from Ben and Fae Slatter to Vernon F. Ravenscroft, for certain real property located in Gooding County, Idaho, described as Tract III on Exhibit D attached to the Agreement.

(7) Assignment and/or Sublease of Real Property, Leases and Easements dated November 30, 1982, between Vernon F. Ravenscroft and Harriett B. Ravenscroft (the "Ravenscrofts") and the Ravenscrofts and Bonneville Pacific Corporation, a Utah corporation, recorded on December 21, 1982 as Instrument No. 98427 in the Records of Gooding County, Idaho.

ACKNOWLEDGED

MAR 06 1987

hereto and by this reference made a part hereof, and any other agreement, instrument or document in which Borrower has an interest which relates to or is connected with the Real Property.

1.3 Note. The Promissory Note dated as of the date hereof executed by the Ravenscrofts and payable to Prudential in the principal amount of One Million One Hundred Seventy Thousand Dollars ($1,170,000.00), together with interest thereon at the rate specified in the Note. A copy of the Note is attached hereto as Exhibit "B" and by this reference made a part hereof.

1.4 Event of Default. As defined in Section V hereof.

1.5 Equipment. The equipment, inventory, machinery, fixtures and improvements which are described or referred to in Exhibit "C" attached hereto and by this reference made a part hereof, and any other equipment, inventory, machinery, fixtures and improvements located on the Real Property in which Borrower has an interest.

1.6 Mortgage. The Real Estate Mortgage dated as of the date hereof executed by Borrower, as mortgagor, to and in favor of Prudential, as mortgagee, covering the Real Property. The Mortgage is additional security for the Obligations.

1.7 Obligations. The payment and performance of each and every obligation of Borrower evidenced by the Note, this Agreement and the Mortgage, together with any extensions, renewals or modifications of the Note, this Agreement or the Mortgage or of the obligations evidenced thereby, regardless of the extent of or the subject matter of any such extension, renewal or modification, and all sums expended or advanced by Prudential pursuant to the terms of the Note, this Agreement or the Mortgage, or any instrument further evidencing or securing any obligations secured hereby, together with interest and/or costs thereon as herein and therein provided.

1.8 Real Property. The Real Property located in the County of Gooding, State of Idaho, described in Exhibit "D" attached hereto and by this reference made a part hereof.

1.9 Security Property. The property and interests described in Sections II and III hereof, including all proceeds thereof or income or receipts therefrom.

SECTION II. ASSIGNMENT OF CONTRACTS

Borrower hereby assigns, transfers and conveys to Prudential, as security for the Obligations, all of the right, title

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MAR 06 1987

and interest of Borrower in and to the Contracts, including, but not limited to the right, title and interest of Borrower in and to any and all real property, personal property, fixtures, licenses or other rights covered by or relating to the Contracts. By accepting this assignment, Prudential does not assume any obligations or liabilities of Borrower under the Contracts. The security interests and the assignments hereby granted in this Section II are to secure the payment and performance by Borrower of the Obligations. At any time from and after the date hereof during which all or any portion of the Obligations is outstanding, Prudential shall have the right, at its option, without notice, if an Event of Default has occurred, and without regard to the adequacy of security for the Obligations, to collect from the parties to any one or more of the Contracts any payments to be made to Borrower thereunder. In the event of any such collection, Prudential shall have the right to apply the amount collected either to payments of interest and/or principal on the Note, or to cause such amounts to be remitted to Borrower. Borrower agrees that at the request of Prudential, Borrower will cause such notices to be given to the parties to the Contracts with respect to the assignment to Prudential as Prudential may deem appropriate and will take such other actions with regard thereto as Prudential may request.

SECTION III. THE SECURITY AGREEMENT

Borrower hereby grants to Prudential a security interest in the Contracts and in the Equipment, together with all future increases, replacements and substitutions for, betterments of and accessions and additions thereto, and all cash and non-cash proceeds thereof. The security interest hereby granted in this Section III is to secure the payment and performance by Borrower of the Obligations.

SECTION IV. REPRESENTATIONS AND WARRANTIES OF BORROWER

Borrower represents and warrants to Prudential as follows:

4.1 All information furnished by Borrower to Prudential in connection with the Obligations and/or this Agreement is accurate and complete in all material respects.

4.2 Borrower will pay promptly when due all taxes, assessments and governmental charges imposed upon the Security Property.

4.3 Borrower owns the Security Property, and the same is free and clear from all security interests and encumbrances of every nature superior to Prudential. Borrower will not permit or

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MAR 06 1987

suffer to exist any other security interest in or lien upon the Security Property nor any other financing statement covering the Security Property to be on file in any public office.

4.4 Borrower shall do, make, execute and deliver all such additional and further acts, things, deeds, assurances and instruments as Prudential may reasonably require for the purpose of more completely vesting in and assuring to Prudential its rights hereunder and in or to the Security Property.

4.5 Borrower agrees to comply with any governmental regulations affecting the use of the Security Property and will not use or permit the use of the Security Property in any unlawful manner.

4.6 Borrower will not permit the Security Property to be misused or abused, wasted or allowed to deteriorate, and Borrower will keep the Security Property in good condition and repair. Prudential may inspect the Security Property at reasonable times and intervals and upon reasonable notice and may, for this purpose, enter the premises upon which any of the Security Property is located.

4.7 Any or all of the Obligations shall, at the option of Prudential and notwithstanding any time or credit allowed by any instrument evidencing a liability, be immediately due and payable without notice or demand upon the occurrence of any of the Events of Default as specified in Section V hereof.

4.8 Borrower will make joint application with Prudential to the Federal Energy Regulatory Commission or otherwise do whatever is necessary to transfer any rights or permits with respect to the Real Property or Equipment to Prudential if it ever becomes necessary to do so in order to carry out the intention of this Agreement.

4.9 Borrower acknowledges that a principal purpose of this Agreement is to assure that Prudential has the right to be substituted for Borrower to operate the Equipment if Borrower does not pay the Note or, in the alternative, to arrange to remove the Equipment and terminate all obligations of Borrower with respect thereto.

SECTION V. EVENTS OF DEFAULT; REMEDIES

5.1 Any of the following events shall constitute an "Event of Default" hereunder:

(a) Any failure to pay or perform any of the

RECORDED

MAR 06 1987

Obligations;

(b) The falsity of any representation or warranty by Borrower herein or the making by Borrower of any misrepresentation to Prudential;

(c) Issuance of an injunction or attachment against any of the Security Property;

(d) Calling of a meeting of creditors, appointment of a committee of creditors or liquidating agents or offering of a composition or extension to creditors by, for or against Borrower which action, if involuntary, is not rescinded or dismissed within forty-five (45) days;

(e) The insolvency of Borrower, or Borrower is the subject of a voluntary petition in bankruptcy, is in any other proceeding under the federal bankruptcy laws, or is the subject of an involuntary petition in bankruptcy or in any other proceeding under the federal bankruptcy laws which is not dismissed within forty-five (45) days, or Borrower makes an assignment for the benefit of creditors, or Borrower is named in, or the Security Property is subjected to, a suit for the appointment of a receiver which is not dismissed within forty-five (45) days; or

(f) Such a change in the condition or affairs (financial or otherwise) of Borrower as in the reasonable opinion of Prudential materially impairs Prudential's security or increases its risks.

5.2 Upon the occurrence of an Event of Default, Prudential shall have all remedies provided by law and, without limiting the generality of the foregoing, shall be entitled as follows:

(a) Borrower agrees to put Prudential in possession of the Security Property on demand.

(b) Prudential is authorized to enter any premises where the Security Property is situated and take possession of said Security Property without notice or demand and without legal proceedings. Prudential is further authorized to:

(i) Negotiate with prospective buyers for the sale of Security Property;

(ii) Compromise and satisfy priority lien claims of other creditors out of the sale proceeds

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MAR 06 1987

or otherwise;

(iii) Sell or otherwise dispose of all or part of the Security Property at private or public sale, through bidding or at negotiated sales prices; and

(iv) Otherwise manage and dispose of the Security Property, in whole or in part, in a manner which, in the judgment of Prudential, will minimize the indebtedness to Prudential after sale or other disposition of the Security Property.

(c) Borrower agrees that a period of thirty (30) days from the time a notice is sent, by first-class mail (or by airmail or certified mail, if Prudential deems it proper), shall be a reasonable notification of the time and place after which any private sale or other intended disposition is to be made.

(d) The Ravenscrofts agree to pay on demand the amount of all expenses reasonably incurred by Prudential in protecting or realizing on the Security Property. In the event that this Agreement or any Obligations secured hereby is referred to an attorney for protecting or defending the priority of Prudential's interest or for collection or realization procedures, the Ravenscrofts agree to pay a reasonable attorney's fee, including fees incurred in both trial and appellate court, or fees incurred without suit, and expenses of title search and all court costs and costs of public officials. The sums agreed to be paid in this subparagraph shall be secured hereby.

(e) If Prudential disposes of the Security Property, the Ravenscrofts agree to pay any deficiency remaining after application of the net proceeds to any indebtedness secured hereby.

(f) Any payment made by Borrower and any sum received by Prudential through the disposition of the Security Property may be applied as Prudential may elect to any Obligation, whether matured or not matured.

SECTION VI. NOTICE

As used in this Agreement, notice includes but is not limited to the communication of notice, request, approval, statement, report, acceptance, consent, waiver and appointment. No notice of the exercise of any option or election is required unless the provision giving the election or option expressly requires notice. All notices must be in writing; provided that

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MAR 06 1987

no writing other than a check or other instrument representing a payment itself is expressly required by the terms hereof. Notice is considered given either (a) on the date when such notice is delivered in person to the recipient named below, or (b) on the date when such notice is deposited in the United States mail in a sealed envelope or container, either registered or certified mail, return receipt requested, postage and postal charges prepaid, addressed by name and address to the person intended as set forth above. Either Borrower or Prudential may, by notice given at any time or from time to time, require subsequent notices to be given to another individual person, whether a party or an officer or representative, or to a different address, or both. Notices given before actual receipt of notice of such change shall not be invalidated by the change. If more than one such recipient is named, delivery of notice to any one such recipient is sufficient.

SECTION VII. MISCELLANEOUS

7.1 All Section titles or captions of this Agreement are for convenience only and shall not be deemed to define, limit, augment, extend or describe the scope, content or intent of any part or parts of this Agreement.

7.2 Whenever the context may require, any pronoun used herein shall include the corresponding masculine, feminine or neuter forms, and the singular form of nouns, pronouns and verbs shall include the plural and vice versa. Each of the foregoing genders and plurals is understood to refer to a corporation, partnership or other legal entity when the context so requires.

7.3 Borrower shall execute and deliver all documents, provide all information and take or forebear from all such action as may be reasonably necessary to achieve the purposes of this Agreement.

7.4 Borrower will join with Prudential in executing one or more financing statements, pursuant to the Uniform Commercial Code, in form satisfactory to Prudential and will pay the costs of filing the same or recording this Agreement in all public offices whenever filing or recording is deemed by Prudential to be necessary or desirable.

7.5 Prudential is not required to, but may at its option, pay any tax, assessment, insurance premium, expense or other charge payable by Borrower, and any filing or recording fee; and any amount so paid, with interest thereon at the rate of eighteen percent (18%) per annum from the date of payment until repaid, shall be secured hereby and shall be repayable by

RECORDED
MAR 06 1987

the Ravenscrofts on demand. The rights granted by this paragraph are not a waiver of any other rights of Prudential arising from the breach of any covenants hereof by Borrower.

7.6 Any payment made by Borrower and any sum received by Prudential through the disposition of the Security Property may be applied as Prudential may elect to any Obligations secured by this Agreement, whether matured or not matured.

7.7 This Agreement shall be construed in accordance with and governed by the laws of the State of Idaho.

7.8 The rights and interests of Borrower under this Agreement shall not be sold, assigned, conveyed or otherwise transferred, except as permitted by the Mortgage, and the duties and obligations of Borrower hereunder shall not be assigned or delegated without the express written consent of Prudential. This Agreement shall be binding upon Borrower and inure to the benefit of Prudential and their respective heirs, executors, administrators, successors, legal representatives and assigns; provided, that this provision shall not be construed as permitting assignment, substitution, delegation or other transfer of rights or obligations except strictly in accordance with the provisions of the other Sections of this Agreement.

7.9 No failure by Prudential to insist upon the strict performance of any covenant, duty, agreement or condition of this Agreement or to exercise any right or remedy consequent upon a breach thereof shall constitute a waiver of any such breach or of such or any other covenant, agreement, term or condition. Prudential may, by notice delivered in the manner provided in this Agreement, but shall be under no obligation to, waive any of its rights or any conditions to its Obligations hereunder, or any duty, obligation or covenant of Borrower. No waiver shall affect or alter the remainder of this Agreement, but each and every other covenant, agreement, term and condition hereof shall continue in full force and effect with respect to any other then existing or subsequently occurring breach.

7.10 The rights and remedies of Prudential hereunder shall not be mutually exclusive, and the exercise of one or more of the provisions of this Agreement shall not preclude the exercise of any other provisions.

7.11 In the event that any condition, covenant or other provisions herein contained is held to be invalid or void by any court of competent jurisdiction, the same shall be deemed severable from the remainder of this Agreement and shall in no way affect any other covenant or condition herein contained. If such

condition, covenant or other provision shall be deemed invalid due to its scope or breadth, such provision shall be deemed valid to the extent of the scope or breadth permitted by law.

7.12 In the event there is a default under this Agreement and it becomes necessary for Prudential to employ the services of an attorney in connection therewith, either with or without litigation, Borrower shall pay to Prudential a reasonable attorney's fee and, in addition, such costs and expenses as are incurred in enforcing or in terminating this Agreement.

IN WITNESS WHEREOF, Borrower has executed this Agreement on the date first set forth above.

VERNON F. RAVENSCROFT

HARRIETT B. RAVENSCROFT

BONNEVILLE PACIFIC CORPORATION,
a Utah corporation

By L. Wynn Johnson

Its L. Wynn Johnson - Vice President

PRUD1(08)
01/23/86

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF PERMIT NO. 37-7857 IN THE NAME OF PRUDENTIAL LEASING COMPANY	ORDER OF REINSTATEMENT

WHEREAS, the Department has issued the above-captioned permit with the condition that proof of construction of works and application of water to beneficial use be submitted on or before September 1, 1984; and,

WHEREAS, the Department has notified the permit holder by certified mail that proof was due and instructed the permit holder as to the steps to be taken to make said proof; and,

WHEREAS, the Department has notified the permit holder that the permit has lapsed for failure of the permit holder to submit proof of beneficial use; and,

WHEREAS, Section 42-218a of the Idaho Code provides that a permit may be reinstated upon a showing of reasonable cause within sixty days of the date of the notice of lapsing; and,

WHEREAS, the permit holder has provided a reasonable showing as to why said permit should be reinstated by submitting proof of beneficial use on September 7, 1984;

IT IS, THEREFORE, HEREBY ORDERED that Permit No. 37-7857 be REINSTATED and the priority advanced to September 25, 1980.

Dated this 23rd day of October, 1984.

L. Glen Saxton

L. GLEN SAXTON
Chief, Operations Bureau

MICROFILMED

State of Idaho

Department of Water Resources

RECEIVED
MAY 21 1984
Department of Water Resources

ASSIGNMENT OF PERMIT

I, Vernon F. Ravenscroft, Harriett B. Ravenscroft and Bonneville Pacific Corporation hereby assign to Prudential Leasing Company

of 155 East 3300 South, Salt Lake City, Utah $4115
Address

CHECK ONE

☒ All my right, title, and interest in and to Permit No. 37-7857, 37-7865, 37-7922 to appropriate the public waters of the State of Idaho.

☐ The following described portion of my right, title, and interest in and to Permit No. _____ to appropriate the public waters of the State of Idaho.

(Describe that portion of the permit being assigned by listing the acreage within each 40 acre subdivision, the point of diversion and the amount of water in cubic feet per second for direct diversion, or acre feet for storage)

_____

_____

_____

_____

Made this 1st day of May, 19 84.

Vernon F. Ravenscroft

Harriett B. Ravenscroft by Vernon F. Ravenscroft her Attorney in fact.

Harriet B. Ravenscroft

BONNEVILLE PACIFIC CORPORATION

By: L. Wynn Johnson

State of ~~Idaho~~ Utah)
County of Salt Lake) ss.

On this 1st day of May, 19 84, personally appeared before me the signer(s) of the above instrument, who duly acknowledged to me that ~~he~~ ~~she~~ (they) executed the same.

Jackie Peterson

seal

Notary Public residing at
Centerville, Utah

My commission expires:
September 22, 1987

UNOFFICIAL

Form 205/206
7/81

Ident. No. 37-7857

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
AFFIDAVIT FOR WATER RIGHTS TO BE USED
FOR POWER PURPOSES

A. Establishment of Residency: (Complete either 1, or 2).

1. Individual Applicant or Individual Members of a Partnership:

I, _____ of _____,
(name) (city)

county of _____, State of Idaho, being duly sworn, do hereby certify that I am a bona fide resident of the State of Idaho.

2. Corporation:

I, Larry R. Stevens of Salt Lake City,
(name) (city)

County of Salt Lake, State of ~~Idaho~~ Utah, being duly sworn, depose and say: That ~~I am~~ CT Corporation System is the designated registered agent of the Prudential Leasing Company: that ~~as such I am~~ it is in charge of the registered
(name of corporation)

office of the said corporation as required by Section 30-1-12, Idaho Code, at Boise Idaho, wherein are kept the corporate records required
(city)

by Section 30-1-52, Idaho Code: and that Prudential Leasing Company
(name of corporation)

is a corporation qualified to do business in the State of Idaho under the laws of the State of Idaho.

B. Ownership of Facilities: (To be completed for hydropower projects only)

The hydropower facility to be developed pursuant to the attached Application for Permit:

(check one)

☐ Will not utilize existing man-made irrigation facilities such as a dam or a canal.

☐ Will utilize existing man-made irrigation facilities such as a dam or a canal, and permission of the owner is documented in an affidavit attached hereto.

☐ Will utilize existing man-made irrigation facilities such as a dam or a canal and the owner of the facilities is the signee of this affidavit.

Prudential Leasing Company
By Larry R. Stevens
Applicant President

State of ~~Idaho~~ Utah)
County of Salt Lake) ss.

On this 5th day of June, 19 84, personally appeared before me the signer~~(s)~~ of the above instrument, who duly acknowledged to me that he ~~(she) (they)~~ executed the same.

Lynn Hutlis
Notary Public residing at
SLC, Utah

seal

My commission expires:
6/28/87

ASSIGNMENT OF WATER RIGHTS AND PERMITS

This Assignment, made and entered into this 30th day of November, 1982, by and between VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife, hereinafter referred to as "Assignors", and BONNEVILLE PACIFIC CORPORATION, a Utah corporation qualified to do business in the State of Idaho, and VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, as "Assignees,"

W I T N E S S E T H:

WHEREAS, Assignors have obtained approved Permits for the use of water resources in the State of Idaho, Permit Nos. 37-7857, 37-7865 and 37-7922, hereinafter referred to as "Permits," copies of which are attached hereto as Schedule I and by this reference made a part hereof; and

WHEREAS, in connection with that certain Joint Venture Agreement between Assignors and Assignees, of even date herewith and incorporated herein by this reference, Assignors desire hereby to assign to Assignees all of their right, title and interest in and to said Permits for the purpose of holding said Permits for and on behalf of said Joint Venture.

NOW, THEREFORE, for TEN DOLLARS ($10.00) and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereto agree as follows:

MICROFILMED

1. Assignors hereby assign to Assignees all of their right, title and interest in and to said Permits as contained in Schedule I attached hereto to hold for and on behalf of the said Joint Venture during the entire term of the Joint Venture.

2. Assignees hereby accept the assignment of said Permits as contained in Schedule I attached hereto in accordance with the terms hereof.

3. Assignees agree to allow the rights and interests referred to in said Permits to be used in connection with that certain Joint Venture Agreement, of even date herewith, between Assignors and Assignees.

4. That to induce the Assignees to accept this Assignment and the rights and obligations pursuant thereto, the Assignors hereby represent to the Assignees as follows:

(a) That the Assignors have duly performed all of the conditions presently required under said Permits;

(b) That said Permits are in full force and effect;

(c) That upon approval by the Department of Water Resources, State of Idaho, said Permits are assignable; and

(d) That Assignors agree to defend, indemnify and hold Assignees harmless from and against any loss, cost, expense, cause of action, claim or fee, including reasonable attorneys fees, which may be incurred by Assignees in connection with this Assignment provided any such loss or fee is not the result of and breach or negligence on the part of Assignees.

MICROFILMED

5. That in consideration of the Assignors' executing and delivering this Assignment, the Assignees covenant with the Assignors as follows:

(a) That the Assignees will duly keep, observe and perform all of the terms, conditions and provisions of said Permits that are to be kept, observed and performed by the Assignors;

(b) That Assignees will not further assign the rights or Permits conveyed hereunder without the prior written consent of Assignors and the prior written consent of the Director or Administrator of the Department of Water Resources, State of Idaho; and

(c) That at the end of the Joint Venture Term as defined in the Joint Venture Agreement, Assignees will assign the Permits to Assignors and this Agreement shall thereafter be null and void.

IN WITNESS WHEREOF, the parties hereunto set their hands the day and year first above written.

ASSIGNORS:

VERNON F. RAVENSCROFT

HARRIETT B. RAVENSCROFT

MICROFILMED

ASSIGNEES:

BONNEVILLE PACIFIC CORPORATION

By L. Wynn Johnson
Its Vice President

Vernon F. Ravenscroft
VERNON F. RAVENSCROFT

Harriett B. Ravenscroft
HARRIETT B. RAVENSCROFT

MICROFILMED

Form 211
2/80

Ident. No. 37-7857

APPROVED

STATE OF IDAHO

APPLICATION FOR AMENDMENT OF A PERMIT

To change the point of diversion and/or the place of use.

Comes now Vernon Ravenscroft Phone _____

of (address) P.O. Box 893 Boise, ID 83701 , and represents to the Director of the Idaho Department of Water Resources:

That he is the owner and holder of Permit to Appropriate the Public Waters of the State of Idaho No. 37-7857 , and requests that the permit and permit map be changed as follows:

1. Point of diversion: NW ¼ SW ¼, Section 28 , Township 6S , Range 14E , B.M., County of Gooding . Other points of diversion: _____

2. Period and nature of use: (irrigation, domestic, stockwatering, industrial, etc.)
NO CHANGE
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre feet per annum)
Amount _____ for _____ purposes from _____ to _____ (both dates inclusive)
(cfs or acre feet per annum)

3. Place of use or land to be irrigated:

TWP	RGE	SEC	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
6S	14E	29										X	X						

Total number of acres to be irrigated = _____

4. a. Who owns the property at the point of diversion? Dean Shaeffer

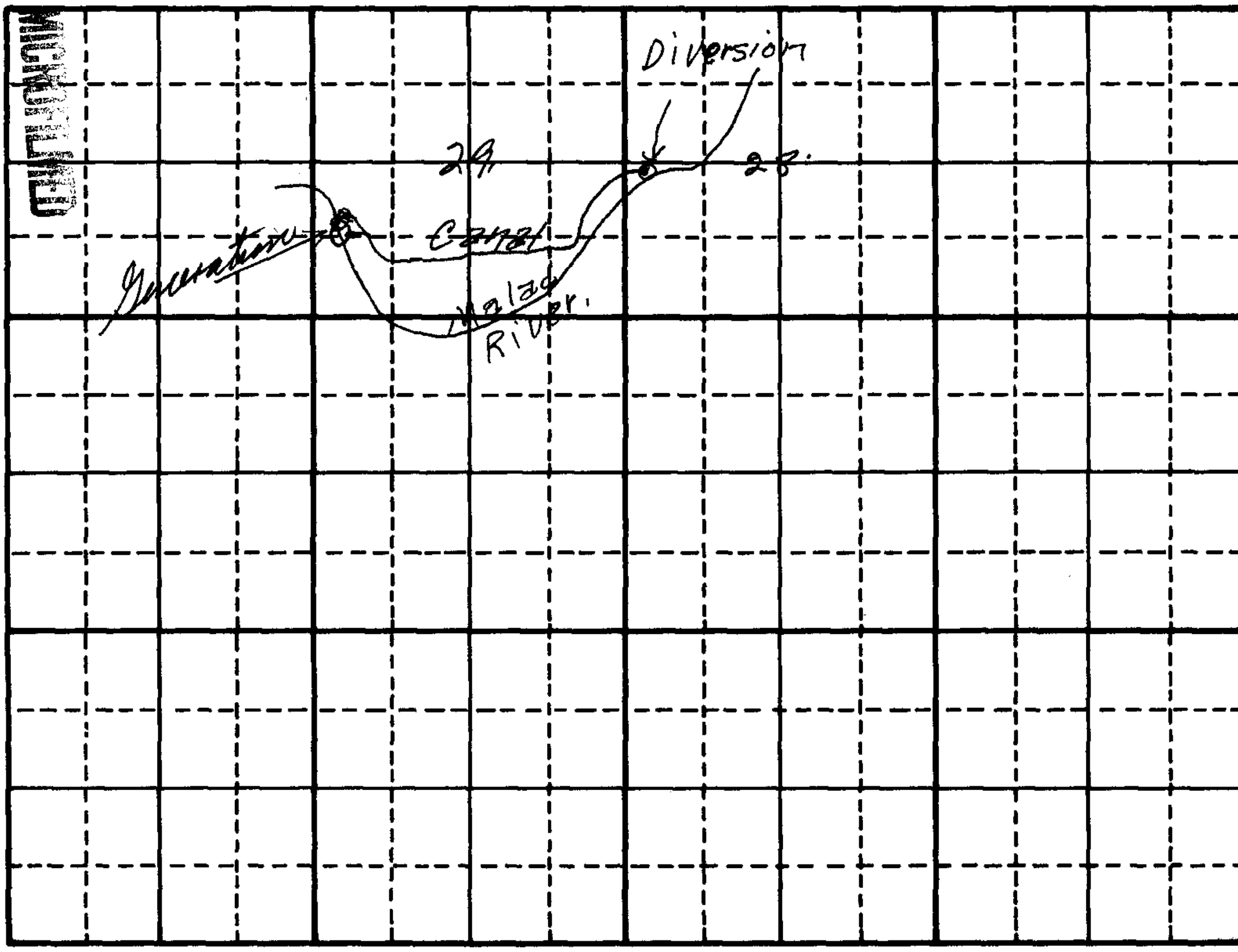
b. Who owns the land to be irrigated or the place of use? Ben Slater

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing: Applicant has leases on both P/D & P/U.

MICROFILMED

Complete the following map by showing land and point of diversion as proposed by this amendment.

Show 40-acre subdivisions, townships, ranges and ditches.



Scale: 2 inches equal 1 mile.

That no one will be injured by such change, and that such change will be made at permit holder's own risk.

Signed at Boise, Idaho, this 19 day of November 1982.

(Signature)

FOR DEPARTMENT USE ONLY

#25380

Preliminary check by DRT Fee = $20.00 Receipted by [illegible] Date 11-19-82

Publication prepared by ______ Date ______ Published in ______

Publication dates NOT REQ'D PER CONV W/ REG SUPV DER 11/19/82

ACTION OF THE DEPARTMENT OF WATER RESOURCES

I, L. Glen Saxton, of the Department of Water Resources hereby

APPROVE THE ABOVE APPLICATION FOR AMENDMENT FOR PERMIT NO. 37-7857.

Witness my hand this 22nd day of Nov., 1982.

L. Glen Saxton

Form 202
3/78

Ident. No. 37-7857

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

APPROVED
Water Resources
Southern Region Office

To appropriate the public waters of the State of Idaho

1. Name of applicant Vernon Ravenscroft Phone 345-2670

   Post office address P. O. Box 893, Boise, ID 83701

2. Source of water supply Malad River which is a tributary of Snake River

3. Location of point of diversion is SE ¼ of SE ¼ of Section 29 Township 6-S

   Range 14E B.M. Gooding County, additional points of diversion if any:

   None

4. Water will be used for the following purposes:

   Amount 20 cfs (cfs or acre-feet per annum) for Electrical Generation purposes from Jan. 1 to Dec. 31 (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

   Amount _____ (cfs or acre-feet per annum) for _____ purposes from _____ to _____ (both dates inclusive)

5. Total quantity to be appropriated:

   a. 20 cubic feet per second and/or b. _____ acre-feet per annum.

6. Proposed diverting works:

   a. Description of ditches, flumes, pumps, headgates, etc. Natural overflow dry bed needs to be cleaned and a control gate established to regulate flow.

   b. Height of storage dam none feet, active reservoir capacity _____ acre-feet; total reservoir capacity _____ acre-feet, materials used in storage dam: _____

   Period of year when water will be diverted to storage _____ (Month/Day) to _____ (Month/Day) inclusive.

   c. Proposed well diameter is none inches; proposed depth of well is _____ feet.

7. Time required for the completion of the works and application of the water to the proposed beneficial use is two years *(minimum 1 year – maximum 5 years).*

8. Description of proposed uses:
   a. If water is not for irrigation:
      (1) Give the place of use of water: SW ¼ of SW ¼ of Section 29 Township 6-S Range 14-E B.M.

      (2) Amount of power to be generated: 40 KW ~~horsepower~~ under 30 feet of head.

      (3) List number of each kind of livestock to be watered _____

      (4) Name of municipality to be served _____, or number of families to be supplied with domestic water _____.

      (5) If water is to be used for other purposes describe: _____

MICROFILMED

b. If water is for irrigation, indicate acreage in each subdivision in the tabulation below:

TWP	RANGE	SEC.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

Total number of acres to be irrigated _____

c. Describe any other water rights used for the same purposes as described above. None

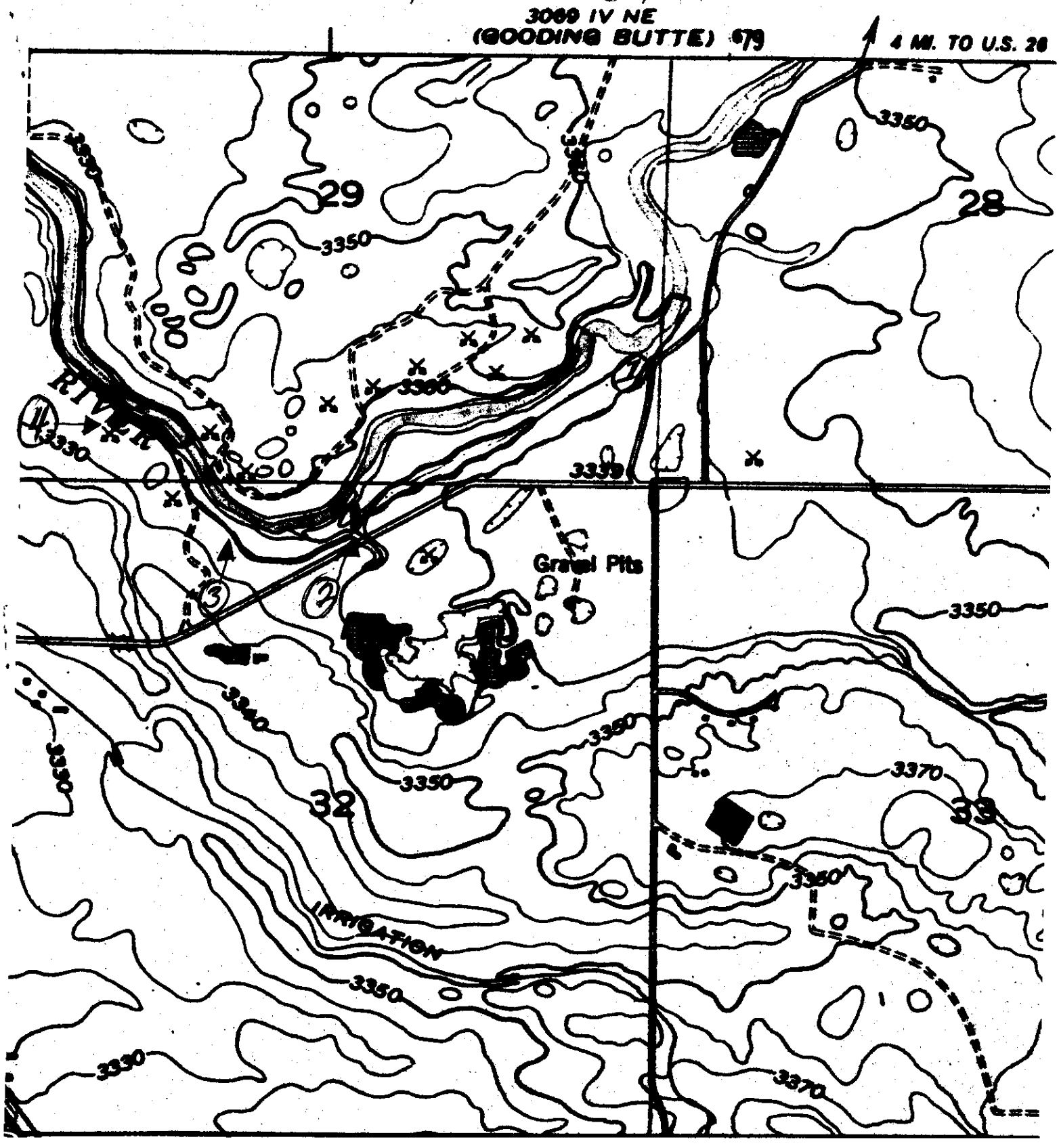
9. a. Who owns the property at the point of diversion Dean Shaeffer, Gooding, ID

b. Who owns the land to be irrigated or place of use Vernon Ravenscroft, applicant

c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing Applicant already has a right-of-way established for livestock water diverted at same point. Additional right-of-way will be negotiated for this project.

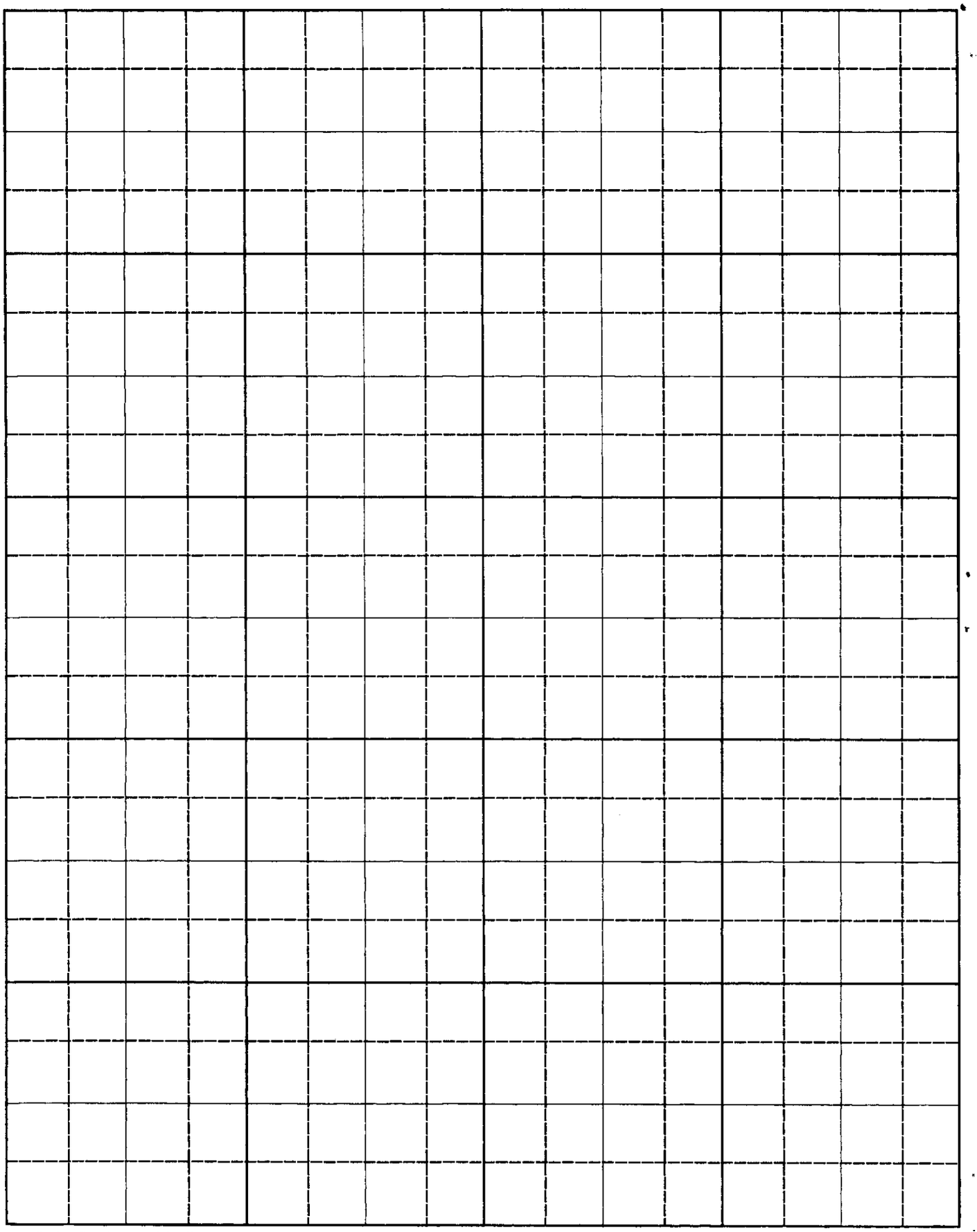
10. Remarks

T6S - R-14E. B.M.



1. Dry Bed Natural Diversion
2. Diversion Dam in Natural Dry Bed
3. Constructed Canal or Pipe Syphons
4. Power Plant Site

11. Map of proposed project: show clearly the proposed point of diversion, place of use, section number, township and range number.



Scale: 2 inches equal 1 mile.

BE IT KNOWN that the undersigned hereby makes application for permit to appropriate the public waters of the State of Idaho as herein set forth.

(Applicant)

MICROFILMED

Proposed Priority 9/19/1980 maryo 9-25-80

Received by LH Date 9-19-80 Time 4:PM

Preliminary check by _____ Fee $ 425.00 #16608

Receipted by maryo Date 9/29/80

Publication prepared by maryo Date 10/3/80

Published in Gooding County Leader

Publication dates 10/9 & 10/16/80

Publication approved maryo Date 10/8/80

Protests filed by: Hagerman Valley Citizens Alert – Withdrawn 4/30/81

Copies of protests forwarded by _____

Hearing held by BF & LH Date 4/23/81

Recommended for (approval) denial by LH

ACTION OF THE DIRECTOR, DEPARTMENT OF WATER RESOURCES

This is to certify that I have examined Application for Permit to appropriate the public waters of the State of Idaho No. 37-7857, and said application is hereby APPROVED.

1. Approval of said application is subject to the following limitations and conditions:

   a. SUBJECT TO ALL PRIOR WATER RIGHTS.

   b. Proof of construction of works and application of water to beneficial use shall be submitted on or before September 1, 1984.

   c. The rate of diversion, if water is to be used for irrigation under this permit, when combined with all other water rights for the same land shall not exceed 0.02 cubic feet per second for each acre of land.

   d. Other: A measuring device and lockable controlling works of a type acceptable to the Department shall be permanently installed and maintained as part of the diverting works.

Use of water under this permit is subject to control by the watermaster of State Water District No. 37, Big Wood River.

This permit is subject to the provisions of Sections 42-205 through 42-210, Idaho Code, restricting the sale, transfer, assignment, or mortgage of this permit. Failure to comply with these provisions is cause for immediate cancellation of this permit.

The issuance of this permit in no way grants any right-of-way or easement across the land of another.

This project shall be operated in a manner that will not conflict or interfere with the future diversion of water for irrigation or other beneficial consumption.

This permit does not constitute Idaho Public Utilities Commission or Federal Energy Regulatory Commission approval that may be required.

The proposed rock blasting in the stream should be conducted during low flow periods when the flow of the river does not exceed 50 cfs.

Witness my hand this 9th day of August, 1982.

L. Glen Saxton

Chief, Operations Bureau

Form 205/206
7/81

Ident. No. 37-7857 37-7865 37-7922

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
AFFIDAVIT FOR WATER RIGHTS TO BE USED
FOR POWER PURPOSES

JUL 24 1981

A. Establishment of Residency: (Complete either 1, or 2).

1. Individual Applicant or Individual Members of a Partnership:

I, Vernon F. Lawenschlt (name) of Twin Falls (city), Idaho,

county of Gooding, State of Idaho, being duly sworn, do hereby certify that I am a bona fide resident of the State of Idaho.

2. Corporation:

I, _____ (name) of _____ (city),

County of _____, State of Idaho, being duly sworn, depose and say: That I am the designated registered agent of the _____ (name of corporation): that as such I am in charge of the registered office of the said corporation as required by Section 30-1-12, Idaho Code, at _____ (city) Idaho, wherein are kept the corporate records required by Section 30-1-52, Idaho Code: and that _____ (name of corporation) is a corporation qualified to do business in the State of Idaho under the laws of the State of Idaho.

B. Ownership of Facilities: (To be completed for hydropower projects only)

The hydropower facility to be developed pursuant to the attached Application for Permit:

(check one)

- [x] Will not utilize existing man-made irrigation facilities such as a dam or a canal.
- [ ] Will utilize existing man-made irrigation facilities such as a dam or a canal, and permission of the owner is documented in an affidavit attached hereto.
- [ ] Will utilize existing man-made irrigation facilities such as a dam or a canal and the owner of the facilities is the signee of this affidavit.

Vernon F. Lawenschlt
Applicant

State of Idaho)
County of Ada) ss.

On this 22nd day of July, 19 81, personally appeared before me the signer(~~s~~) of the above instrument, who duly acknowledged to me that he (~~she~~) (~~they~~) executed the same.

Nancy L. Berndt
Notary Public residing at Eagle, Idaho

Seal

My commission expires:
Perpetual

Individual Owner

AFFIDAVIT TO ESTABLISH RESIDENCE

I, Vernon F. Ravenscroft of Tuttle (Bliss Star Rt) County of Gooding, State of Idaho, being duly sworn, do hereby certify that I am a bona fide resident of the State of Idaho.

/s/ Vernon Ravenscroft

Subscribed and sworn to before me this 24th day of November, 19 80

/s/ Nancy J. Conrad

Notary Public
Residence Eagle, Idaho
My Commission Expires Perpetual

****

Corporation or Association

Original is in 27-7805

AFFIDAVIT TO ESTABLISH RESIDENCE
OR QUALIFICATIONS TO DO BUSINESS UNDER THE LAWS OF
IDAHO...

I, _____ of _____, County of _____, State of Idaho, being first duly sworn, depose and say: That I am the designated statutory agent of the _____, that as such I am in charge of the registered office of the said _____ _____, as provided by Section 30-143, Idaho Code, at _____ _____, Idaho, wherein are kept the records provided by Section 30-144, Idaho Code, and that _____ is a legal _____ qualified to do business in the State of Idaho under the laws of the State of Idaho.

/s/ _____

Subscribed and sworn to before me this _____ day of _____, 19____

/s/ _____

Notary Public
Residence _____

My Commission Expires _____

STATE OF IDAHO

DEPARTMENT OF FISH AND GAME

Region 4
868 East Main - Box 428
JEROME, IDAHO 83338

April 15, 1981

RECEIVED
APR 17 1981

Vern Ravenscroft
P. O. Box 893
Boise, Idaho 83701

Re: License Exemption Application - Malad River Hydropower Project
Vern Ravenscroft - 37-7865 (130 cfs)
37-7857 (20 cfs)

Dear Vern:

This letter is to acknowledge your contact with the Department of Fish and Game regarding your proposed hydro projects in Gooding County using water from Malad River. The Department does not oppose the project due to the potential fish and wildlife benefits that would accrue from establishment of ponds on adjacent public land.

With proper plantings around the ponds, along with sealing of the ponds to provide integrity, we should be able to maintain some valuable fish and wildlife values in the area.

Sincerely,

William E. Webb
Region 4 Supervisor

WEW:ar

cc: Bureau of Program Coordination

MICROFILMED

VERNON F. RAVENSCROFT
P. O. BOX 893 345-2670
BOISE, IDAHO 83701

C 1

Dec 1 1980 92-38/1241

Pay to the order of Bureau of Land Mngt. Idaho $ 300 00

Three Hundred and no/100 Dollars

TWIN FALLS bank & trust
MAIN OFFICE, P. O. BOX 7, TWIN FALLS, IDAHO 83301

For Right of Way Application Vernon Ravenscroft

⑆124100381⑆ 80/24139 9⑈ 0101 ⑈00000300⑀⑀⑈

7, 1980

Right of Way Department
Idaho State Office
BUREAU OF LAND MANAGEMENT
Idaho Building
Boise, ID 83724

Gentlemen:

This letter is submitted as a right-of-way application for the development of electrical hydropower on my farm property near Tuttle, Idaho. A right-of-way is needed to authorize the expansion of existing waterways and to develop water impoundments on BLM lands, to wit: SE¼ - SW¼ and the SW¼ - SE¼ Section 29, the NW¼ - NE¼ and the S½ of the NE¼ Section 32, all in Township 6S - R14E. A map of the contemplated plan is attached.

I am also enclosing an alternative map which may constitute a second phase of the project--one which would expand the water storage area and one which would provide considerable fish and wildlife alternatives.

Mrs. Harriett Ravenscroft has pending a Desert Land application on two parcels of the property concerned in this right-of-way application. (SE¼ - SW¼ Section 29 and SW¼ of NE¼ Section 32.) There is no conflict as between this right-of-way and the prior D.L.E. filing.

Sincerely,

Vernon F. Ravenscroft

VFR:sh

Enc.

MICROFILMED

Twin Falls Construction Company
General Contractors

P. O. BOX 325
TWIN FALLS, IDAHO 83301

TELEPHONE
733-8370

"AN EQUAL OPPORTUNITY EMPLOYER"

January 13, 1981

Vernon Ravenscroft
Construction Associates
P.O. Box 893
Boise, Idaho 83701

Dear Sir:

As you requested, I visited the site of your proposed water diversion project on January 12, 1981.

Due to a lack of information; most notably a survey of the precise route and elevations and a soil profile of the area, it would at this time be impossible to arrive at exact quantities or type of materials and therefore exact costs. Bearing this in mind, the following is submitted for your information.

This estimate includes the construction necessary to build an inlet diversion structure and canal system, including structures for two county road crossings and dikes to protect the county road. This canal system will extend to point of generation but will not include any work at generator site. It is my opinion that excluding an unexpected amount of rock excavation this work could be accomplished for approximately $100,000.00

Very truly yours,

Duane S. Schrank
Vice President

MICROFILMED

BARBER ENGINEERING
a division of J-U-B ENGINEERS, Inc.

TELEPHONE (208) 376-8480, (208) 376-7330 · 250 SOUTH BEECHWOOD AVE. · SUITE 111 · BOISE, IDAHO 83709

PRELIMINARY COST ESTIMATE

Vern Ravenscroft
Tuttle Site

Head 30 foot Net Flow 150 c.f.s.

Item 1	**Primary head gate diversion from canal to penstock 3 each (30")*	*$40,000.00*
Item 2	*Penstock from head gate to turbine intake Three 30" approx. 30 feet long including fabrication*	*5,000.00*
Item 3	*#Turbine generators (3 each 50 c.f.s. units) @ $40,000*	*110,000.00*
Item 4	**Turbine generator foundation supports (8,000 lb turbines)*	*60,000.00*
Item 5	*Electrical control and switchgear weatherproof*	*13,388.00*
Item 6	*Step up transformer (500 KW)*	*6,470.00*
Item 7	*Utility tie and transmission line extension including special metering*	*5,000.00*
Item 8	*Engineering, contingencies and construction management (25%)*	*60,016.00*
Item 9	*F.E.R.C. exemption*	*2,600.00*
	TOTAL	*302,474.00*

Project t/g size calculation

Head x flow x .073 = KW
30 x 150 x .073 = 328.5 KW

Unit size 30 x 50 x .073 = 109 (150 HP)
Plant factor .92

Future additional of turbine generator units add $47,766.00 per unit

(Add for transformer capacity) on 5th & 6th units *Add 4,000.00*

**Cost estimate on Item 1 and 4 include provisions only for up to six 50 cfs turbine generator units. Future unit price includes necessary gates, switchgear and control for each additional unit.*

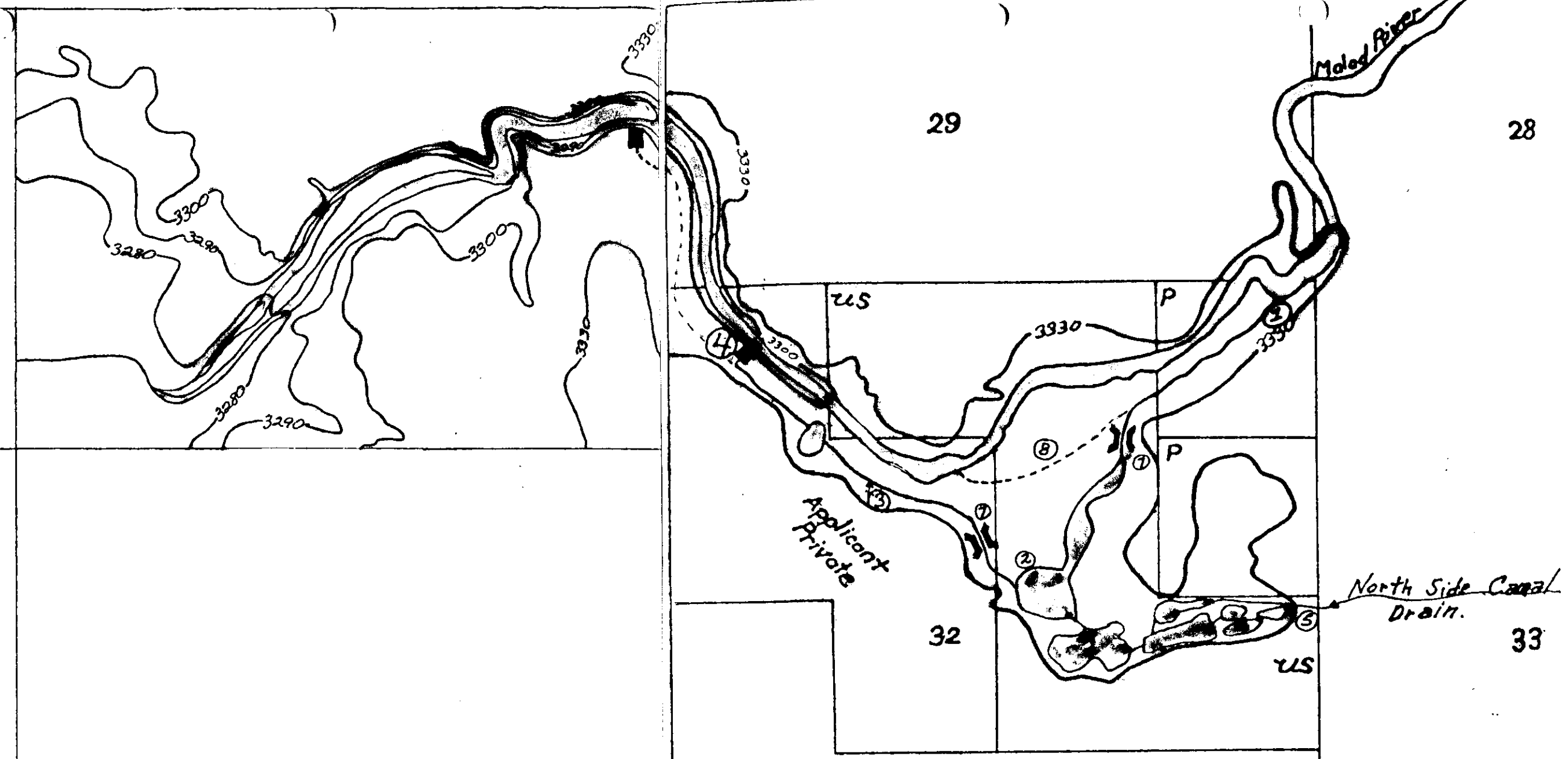
#Turbine generator cost estimates subject to revision down contingent upon new turbine technology now in progress which could reduce costs by 50%.

Signed: Robert E. Murphy
Robert E. Murphy
Dated: January 12, 1981

MICROFILMED

Range 14 E

T
6
S



Note: 3330 Contour has been altered because of gravel excavation

1. Point of diversion - approximately 3330'.
2. Settling pond, approximately 10 acres - 1 to 15 feet deep - enlarged by dykes to hold maximum elevation.
3. Canal to power site.
4. Power drop - turbine level approximately 3290' elevation.
5. North Side Canal drain through old gravel pits to be improved and sealed to gain flow and improve wildlife habitat.
6. Optional additional canal and power site- approximate turbine elevation 3285'.
7. Culverts under county road.
8. Natural drain to river.

MICRO

VERNON RAVENSCROF
Telephone 208 837-4802
TUTTLE ROUTE — BLISS, IDAHO
83314

PERSONAL FINANCIAL STATEMENT
Revised February 26, 1981

ASSETS

Notes & Accounts Receivable		
Penta Post Earnings (1979-80)	$ 534.00	
George V. Hjort Contract & Interest Due	6,800.00	
50% Consulting Associates Accounts Receivable, Feb. 20, 1981, Adjusted for February Salaries and Expenses	9,124.00	
TOTAL		$16,458.00
Description of Real Estate		
Ranch 1¼ miles NE of Tuttle	$200,000.00	
100 Acres improved with dual irrigation system including deep well hand line sprinklers, cement ditches, & gated pipe ($2,000 per acre)		
House (Cost 1974)	60,000.00	
Dry Land (43 Acres @ $100)	4,300.00	
Tree Plantings (16 Acres @ $1,000)		
Gravel (1 Acre @ $2,000)		
Power Site Right of Way (10 Acres @ $2,000)	38,000.00	
6½ Acres Commercial Siding, Tuttle	24,000.00	
15 Shares N. Side Canal Water	2,250.00	
TOTAL		$328,550.00
Machinery & Tools		
3 Tractors @ $500	$1,500.00	
2 Harrows @ $200	400.00	
1 Renovator @ $250	250.00	
Other Misc. Tools & Equipment	- 0 -	
1969 Buick	300.00	
TOTAL		$2,450.00

MICROFILMED

VERNON F. RANVESCROFT
Personal Financial Statement
February 26, 1981

ASSETS (Continued)

Miscellaneous Assets		
Stock - Penta Post	$19,700.00	
Federal Land Bank Stock	2,750.00	
Consulting Associates 50% Stock & Fixed Assets	5,600.00	
TOTAL		$28,050.00
Cash On Hand		
Salary and Income Tax Refund Due		$3,000.00
TOTAL ASSETS		$378,508.00

LIABILITIES

Notes Payable to Banks		
Idaho First Ranch Operation	$5,100.00	
Twin Falls B&T Personal	5,000.00	
TOTAL		$10,100.00
Miscellaneous Accounts (Including Credit Cards)		$2,700.00
Other Indebtedness		
Twin Falls B&T 50% Consulting Associates after 1980 payment	$5,000.00	
Campaign - First Security	1,800.00	
Campaign - Term to Individuals	10,000.00	
TOTAL		$16,800.00

MICROFILMED

VERNON F. RANVESCROFT
Personal Financial Statement
February 26, 1981

LIABILITIES (Continued)

Mortgages

Federal Land Bank Balance after 1980 payment	$47,161.00	
First National - Second Mortgage 1981 final payment	2,345.20	
TOTAL		$49,506.00

Co-signer for Others - Explanation

Balance of 50% on Consulting Associates Account	$5,833.00
TOTAL LIABILITIES	$84,939.00
NET WORTH	$293,569.00
TOTAL LIABILITIES & NET WORTH	$378,508.00

Life Insurance (Payable wife $5,000, Penta Post $10,000)	$15,000.00
Fire Insurance (House & Contents)	$60,800.00
Personal Liability (Also Health & Accident) Carried via Penta Post Group Coverage	

Vernon Ravenscroft

Vernon F. Ravenscroft

MICROFILMED



TIPPETT LAND & MORTGAGE COMPANY

RECEIVED
APR 17 1981

April 16, 1981

Mr. Vern Ravenscroft
Ravenscroft Family Corporation
P. O. Box 893
Boise, Idaho 83701

Dear Vern:

This letter is to follow up our recent conversation concerning your proposed hydro-power facility in the Tuttle area.

We have analyzed your loan request, and it is our opinion that your proposed loan is one which Connecticut General Life Insurance Company should look upon favorably. We will soon be in a position to submit your loan package to them for their consideration. As you are aware, the proposed Connecticut General loan would totally fund your long-term needs supported by the Idaho Power Company contract.

Tippett Land & Mortgage Company has been the loan correspondent for Connecticut General Life Insurance Company over the past 13 years making farm, ranch and agri-business loans throughout Idaho, Oregon and Washington.

If you have any questions regarding this matter, please advise.

Very truly yours,

Lonnie Leavell

LL:ls

1705 N. COLE ROAD • TELEPHONE 208 · 375-6731
BOISE, IDAHO 83704

Form 4-1028
(Oct. 1957)

Idaho 01506

The United States of America

To all to whom these presents shall come, Greeting:

WHEREAS, a Certificate of the Land Office at Boise, Idaho,

is now deposited in the Bureau of Land Management, whereby it appears that full payment has been made by the claimant Vernon F. Ravenscroft,

according to the provisions of the Act of Congress approved March 3, 1877 (19 Stat. 377), as amended by the Act of March 3, 1891 (26 Stat. 1096), for the following described land:

Boise Meridian, Idaho.
T. 6 S., R. 14 E.,
Sec. 29, SW¼SW¼;
Sec. 32, NW¼NW¼.

The area described contains 80.00 acres,

according to the Official Plat of the Survey of the said Land, on file in the Bureau of Land Management:

NOW KNOW YE, That the UNITED STATES OF AMERICA, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, HAS GIVEN AND GRANTED, and by these presents DOES GIVE AND GRANT unto the said claimant and to the heirs of the said claimant the tract above described: TO HAVE AND TO HOLD the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said claimant and to the heirs and assigns of the said claimant forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right-of-way thereon for ditches or canals constructed by the authority of the United States.

Excepting and reserving, also, to the United States all the oil and gas in the land so patented, and to it, or persons authorized by it the right to prospect for, mine, and remove such deposits from the same upon compliance with the conditions and subject to the provisions and limitations of the Act of July 17, 1914 (38 Stat. 509).

IN TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat. 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in the District of Columbia, the TWENTY-SIXTH day of MAY in the year of our Lord one thousand nine hundred and FIFTY-NINE and of the Independence of the United States the one hundred and EIGHTY-THIRD.

(SEAL)

For the Director, Bureau of Land Management.

By _____
Chief, Patents Section.

Patent Number 1195837

16—72085-2 U. S. GOVERNMENT PRINTING OFFICE

4—1028
(Sept. 1954)

Idaho 08359

The United States of America

To all to whom these presents shall come, Greeting:

WHEREAS, a Certificate of the Land Office at Boise, Idaho,

is now deposited in the Bureau of Land Management, whereby it appears that full payment has been made by the claimant Vernon F. Ravenscroft

according to the provisions of Chapter 7, Title 32 of the Revised Statutes of the United States and legislation supplemental thereto, for the following described land:

Boise Meridian, Idaho.

T. 6 S., R. 14 E.,

Sec. 32, E½NW¼.

The area described contains 80.00 acres,
according to the Official Plat of the Survey of the said Land, on file in the Bureau of Land Management:

NOW KNOW YE, That the UNITED STATES OF AMERICA, in consideration of the premises, and in conformity with the several Acts of Congress in such case made and provided, HAS GIVEN AND GRANTED, and by these presents DOES GIVE AND GRANT unto the said claimant and to the heirs of the said claimant the tract above described; TO HAVE AND TO HOLD the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said claimant and to the heirs and assigns of the said claimant forever; subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right-of-way thereon for ditches or canals constructed by the authority of the United States.

Excepting and reserving, also, to the United States all the oil and gas in the lands so patented and to it, or persons authorized by, the right to prospect for, mine, and remove such deposits from the same upon compliance with the conditions and subject to the provisions and limitations of the Act of July 17, 1914 (38 Stat. 509).

There is also reserved a right-of-way for a material site under the Act of November 9, 1921 (42 Stat. 212).

IN TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat., 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in the District of Columbia, the FIRST day of NOVEMBER in the year of our Lord one thousand nine hundred and SIXTY and of the Independence of the United States the one hundred and EIGHTY-FIFTH.

[SEAL]

MICROFILMED

For the Director, Bureau of Land Management.

By Ruth W. Talley
Chief, Patents Section

Patent Number 1214180

GPO 887866

Individual Owner

AFFIDAVIT TO ESTABLISH RESIDENCE

I, Vernon J. Townsend of Twin Falls and Boise County of Gooding & Blaine, State of Idaho, being duly sworn, do hereby certify that I am a bona fide resident of the State of Idaho.

/s/ Vernon J. Townsend

Subscribed and sworn to before me this 19 day of September, 1950

/s/ _____

Notary Public
Residence _____

My Commission Expires _____

****

Corporation or Association

AFFIDAVIT TO ESTABLISH RESIDENCE
OR QUALIFICATIONS TO DO BUSINESS UNDER THE LAWS OF
IDAHO...

I, _____ of _____, County of _____, State of Idaho, being first duly sworn, depose and say: That I am the designated statutory agent of the _____, that as such I am in charge of the registered office of the said _____, as provided by Section 30-143, Idaho Code, at _____, Idaho, wherein are kept the records provided by Section 30-144, Idaho Code, and that _____ is a legal _____ qualified to do business in the State of Idaho under the laws of the State of Idaho.

/s/ _____

Subscribed and sworn to before me this _____ day of _____, 19____

/s/ _____

Notary Public
Residence _____

My Commission Expires _____

AFFIDAVIT of PUBLICATION

State of Idaho, } SS.
County of Gooding }

Doug Grant, being first duly sworn, deposes and says that he is the printer (publisher) of the Gooding County Leader, a newspaper published every week in Gooding, County of Gooding, State of Idaho, that said newspaper has been continuously and uninterruptedly published for a period of seventy-eight consecutive weeks prior to the first publication of the annexed notice, and is a newspaper qualified to publish legal notices as provided by act of the 1919 session of the legislature of the State of Idaho, known as House Bill 145; that the annexed advertisement was published once each week for 2 consecutive issues in said newspaper proper and not in a supplement; that the date of the first publication of said advertisement was on the 8 day of October 1980, and the date of the last publication was on the 15 day of October, 1980

Doug Grant

Subscribed and sworn to before me this 15 day of October, 1980.
(SEAL)

Carmen Ummel
NOTARY PUBLIC

COPY OF NOTICE
(Paste Here)

37-7857
TITLE OF NOTICE

Ronnenkamp
PLAINTIFF ATTORNEY

DEFENDANT

PLAINTIFF

Dept of Water
BILL TO

ok mcg 10/20/80

RECEIVED
OCT 20 1980
Department of Water Resources
Southern District Office

GOODING COUNTY LEADER
Gooding, Idaho

COST OF PUBLICATION

Number of Lines in Notice		40
Number Insertions		2
Lines tabular at	38	
Lines straight at	40 29	11.60
Subsequent lines at	40 19	7.60
TOTAL COST		18.20

MICROFILMED

PUBLICATION RATES
(Idaho Code, Rev. Statutes 1971)

7 pt. per line, straight	21c
7 pt. per line, tabular	315c
7 pt. per line, successive insertions	15c

3 52883

No. 2586

ADVERTISING PRINTING OFFICE SUPPLIES

PHONE 934-4449 BOX 56

GOODING, IDAHO 83330

GOODING COUNTY LEADER

ONE MEDIUM • ONE COVERAGE • ONE COST

ACCOUNT NO.	DATE

M

CASH ☐
CHARGE ☒
ON ACCT. ☐
PAID OUT ☐
DISPLAY ☐
CLASS ☐
SUPPLIES ☐
MISC.

QUAN.	DESCRIPTION	AMOUNT	
32	2007 Budget	1	50

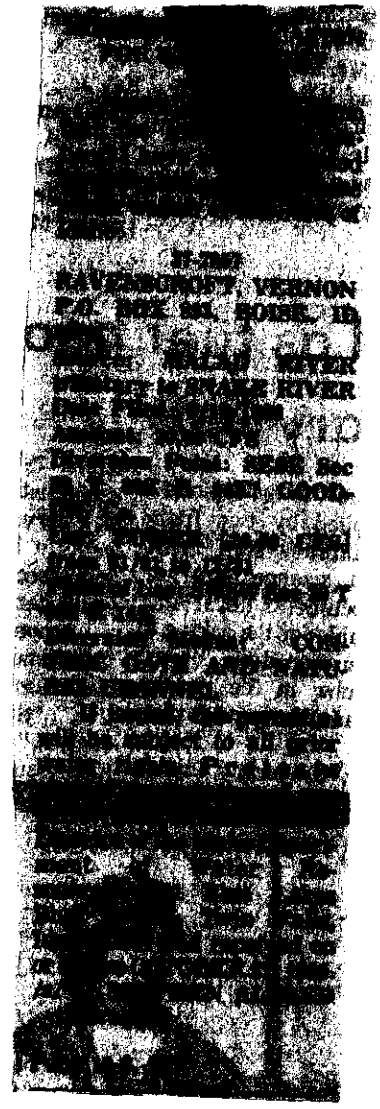
JE	SPECIAL RATE	START DATE	EXPIRE DATE

NEW ACCT	RENEWAL	PZ	STATE	BILL	CYCLE	LEGAL NO.
						0326

PSA	NO. PAP	RATE	SORT KEY	SACK	PRINTING NO.

35283 BY

PLEASE RETAIN THIS TICKET FOR YOUR RECORDS
MOORE DEALER - GOODING COUNTY LEADER



All correspondence after 5/92 can be found in File #2.

ERNON RAVENSCROFT

Telephone 208 837-4882 4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, ID 83706

May 27, 1992

RECEIVED
MAY 29 1992
Department of Water Resources

Mr. Robert Cordell
Bureau of Land Management
P.O. Box 2-B
Shoshone, Idaho 83352

RE: B-Pass Stipulations for Ravenscroft Hydro - FERC 4055

Dear Bob:

I have studied your letter of April 14, 1992 concerning the referenced stipulation in comparison to the response of Mr. Norman Young (Administrator, Water Management Division, Idaho State Water Resources Dept.). One quotation from each letter quickly brings into focus the problems which we have experienced at this project.

From your letter I quote: "We realize that flows are volatile, but we do not see noncompliance with the FERC-BLM stipulations as inevitable. These legal requirements are issues that were known at the time of issuance of the license."

From Administrator Young's letter: "Injury to downstream irrigators can occur when the project goes off line. An interruption of flow causes senior water rights not to be delivered. Inconvenience or injury can occur if irrigation pumps or siphon tubes lose their prime. . . . . However it is unacceptable for flow which is satisfying downstream irrigation requirements to be shut down in order to fill bypass flow requirements if the downstream irrigators are thereby injured."

It is my feeling that you and I should meet on the project in order to personally explore the various alternatives and to answer all questions. I would appreciate your suggestions as to a satisfactory date.

You correctly make the point that the volatility was known when the original stipulations were established. It is also true that the irrigators, the State Water Resources Dept. and the State Parks Dept., all of whom have downstream concerns were never party to or consulted concerning those stipulations. The current drought has intensified and complicated mistakes and misconceptions which are now evident concerning those original negotiations.

Apparently I did not adequately clarify the comparisons as between the three identifiable riparian zones. The resources we are dealing with are these:

1. Diversion ponds and canal ponds. In addition to the re-regulation benefit for which the ponds were constructed this area has created unexpected public benefits, including:

   a. A popular warm water fishery.

DEC 05 1994

b. Quantifiable water quality improvements.

c. New waterfowl habitat.

d. An emerging riparian zone of approximately four shoreline miles.

2. The by-pass reach with approximately three shoreline miles of riverine riparian zone.

3. The downstream reach with several interests.

   a. Senior water rights for approximately 16 c.f.s. at the point of diversion.

   b. Approximately three shoreline miles of riverine riparian zone.

   c. A scenic waterfall on State Parks property.

In each of the three instances there is a combination of both private and public property.

I look forward to a mutual field examination. I will try to accommodate any date you select. There is one technical point which has considerable bearing on our project's adjustability - namely, all turbines are fixed flow units, only one of which has a limited ability to accept a differential in water passage.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Norman Young, ID Dept. Water Resources
Lee Peterson, Water Master
Chas. Lobdell, U.S. Fish & Wildlife Service
Will Reid, ID Dept. Fish & Game
Secy., FERC, Washington, D.C.
Secy., FERC, Portland, OR

DEC 05 1994

RECEIVED
MAY 2 5 1993
Department of Energy Washington

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft) Project No. 4055-014

P: 37-7857/7865/7922

NOTICE REJECTING REQUEST FOR REHEARING

(May 20, 1993)

On March 17, 1993, the Director, Office of Hydropower Licensing, issued a letter order rejecting Vernon F. Ravenscroft's application to amend his exemption from licensing for the Ravenscroft Project No. 4055, located on the Malad River in Gooding County, Idaho. On April 21, 1993, Ravenscroft filed a request for rehearing of the March 17, 1993 order.

Section 313(a) of the Federal Power Act, 16 U.S.C. 825l (1992), requires an aggrieved party to file its request for rehearing within thirty days after the issuance of the Commission's order, in this case by April 16, 1993. Because the 30-day deadline for requesting rehearing is statutorily based, it cannot be extended and Ravenscroft's request for rehearing must be rejected as untimely.

This notice constitutes final agency action. Requests for rehearing by the Commission of this rejection notice may be filed within 30 days of the date of issuance of this notice, pursuant to 18 CFR 385.713.

Lois D. Cashell
Secretary

DEC 0 5 1994

Austigny GA

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

May 20, 1992

RECEIVED
MAY 2 1 1992
Department of Water Resources

Secretary
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capital Street, N.E.
Washington, D.C. 20426

Re: Project 4055-009-Idaho Compliance Project

Dear Secretary:

On April 1, 1992 I provided a compliance report which stated in part:

> "1. I certify that the instruments are in place at the agreed rated river section. Pictures of verification will be supplied to you just as soon as they are received from the field."

You will find an exhibit to this letter which shows the installation in the river and a close up of the instruments in a metal box embedded in the river bank. This original installation recorded the flow on a computer disc which then required either a field computer to read the card or an extra exercise to remove the card and take it to a compatible computer and obtain a print-out. This equipment was judged to be to sophisticated for our field conditions. Consequently, we replaced the equipment with a float operated unit which has been in operation since May 1, 1992.

From past correspondence we have established the extreme volatility of the flow at this project site. 1992 has developed into a major drought year. The only water in the river is that which is wasting from two seperate canal systems. The flow changes from day to day totally according to the water delivery decisions of those two companies.

In the interest of keeping all parties informed I submit the following report for the month of April 1992:

> April 1st opened all tubes in compliance with stipulations (80 C.F.S. or full flow of river whichever is least). At this date the river flow was essentially zero. We had no operation until the afternoon of April 6th.
>
> April 7th at 9:18 A.M. all units off, river dropped overnight.

DEC 05 1994

April 9th at 10:47 A.M. resumed generation.

April 15th at 10:15 A.M. operator found reduced flow in river, adjusted turbines to provide 95 CFS for by-pass flow (requirement 80 CFS).

April 16th at 9:10 A.M. river dropped overnight, all units off.

April 17th at 10:30 resumed generation 250 CFS in river - flow increased overnight.

April 29th at 9:34 A.M. all units off, operator found reduced flow in river, checked inflow at U.S.G.S. Gage, found that flow to be 160 CFS. After a waiting period restarted #2 turbine, this adjustment provided 95 CFS for by-pass flow.

Project log entries are available upon request.

Sincerely,

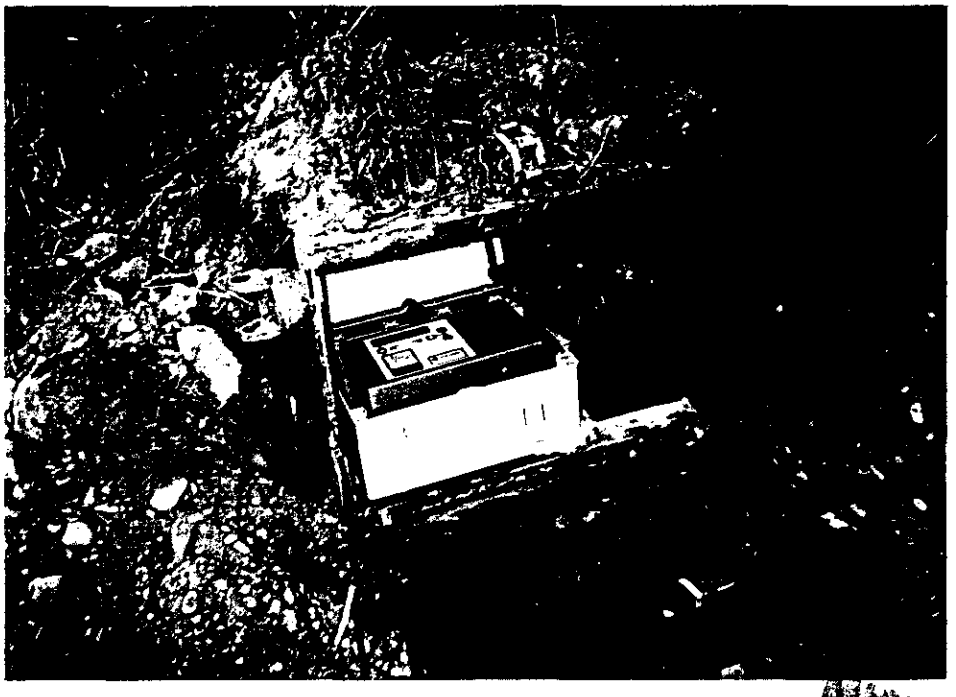
Vernon F. Ravenscroft

cc: Robert Cordell, BLM, Shoshone
Will Reid, IDFG, Boise
Norman Young, IDWR, Boise
Charles Lobdell, USF&WL, Boise
Lee Peterson, Watermaster, Shoshone

VR/cg

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DEC 05 1994





DEC 05 1994

cc Norm Young FERC

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

May 20, 1992

Mark Robinson, Director
Division of Compliance & Administration
FEDERAL ENERGY REGULATORY COMMISSION
810 UCP Rm 1148, HL-21
825 N. Capital Street, N.E.
Washington, D.C. 20426

Re: Ravenscroft Hydro Project 4055

Dear Mr. Robinson:

Mr. Robert Cordell of the B.L.M. Office in Shoshone recently noted that he would be pleased to know of any additional progress being made to address the volatile flow problems at our project. I can report four positive improvements:

1. Mr. Fred Partridge (Idaho Fish and Game Dept.) personally inspected the project in company with a project representative (Bryan Ravenscroft). He gave particular attention to the ongoing flow interruption by the heavy beaver population. He suggested and has since provided plastic tube extensions which will enable the smaller 15 inch tubes to be filled with water which enters those plastic tubes in deep water several feet in front of the metal tubes. Also numerous small holes have been drilled into the plastic tubes in order to provide water entry from numerous, not just one, orifice.

This experiment looks extremely promising as a means of avoiding the serious beaver interference without having to trap, transport or destroy the otherwise desirable animals.

Mr. Partridges' cooperation, personal attention and constructive ideas are most sincerely appreciated.

2. Last December I reported the recommendations of Engineer Carl Myers. Namely, raise the spillway one foot in order to maintain a more constant pressure on the exhaust tubes which are all situated in the dam. We have been able to partially follow Mr. Myers recommendations by:

a. Placing a staff gage on the upstream side of the headgate in order to directly read and record the pond level. This gives us far better knowledge of the trend of the level in the ponds. We are also coordinating this headgate gage with the midstream gage so as to establish a known relationship as between the pond level and the by

DEC 05 1994

b. We have lowered the control gate at the headgate so as to maintain a greater stability of the pond level. With the upstream staff gage in place this action can now be quantified.

c. We have established the relative difference as between the spillway vs. the dam elevation. There is approximately one foot difference. When construction funds become available we will raise the spillway as advised by engineer Myers. This in turn will maintain even greater stability for the ponds.

3. Watermaster Lee Peterson, Assistant Director Norm Young of the IDWR, Regional Director Loren Holmes of the IDWR and Mr. Ted Koch of the Boise office USF&WS have all participated in a field trip at the project.

a. Mr. Peterson asked that the gage at the powerplant be recalibrated and a table provided to all interested parties. This will be done.

b. Director Norm Young suggested one additional by-pass tube in the dam which would be equipped with a screw gate. In emergency periods this gate could be opened temporarily to release immediate additional flows to the by-pass. As construction funds become available and as low water permits this suggestion will be followed.

c. Mr. Koch is interested in the evident water quality, wildlife and fishery improvements which the project has achieved. There are opportunities to expand these enhancements. We look forward to an opportunity to work with all interested parties in such an enhancement program.

I have enclosed two pictures taken during the low water in early April ('92) which clearly show the amount of sediment (drifts) which these ponds are affording for water quality enhancement.

4. In a recent letter I made certain proposals as to standard procedures which would address and minimize the jurisdictional conflict between stipulations which require fixed by-pass volumes in the upstream reach as compared to the downstream

DEC 05 1994

senior irrigation water rights which require a stable minimum downstream flow (approximately 16 C.F.S.) at the irrigators point of diversion.

Both B.L.M. and IDWR have responded to my proposals. There are evident differences which must be addressed. I will submit a follow-up letter confined solely to this subject later this week.

Sincerely,

Vernon R. Ravenscroft

cc: Robert Cordell, B.L.M. Shoshone.
Will Reid, IDF&G, Boise.
Charles Lobdell, USF&WL, Boise.
Norm Young, IDWR, Boise.
Lee Peterson, Watermaster, Shoshone.

VFR/cg

DEC 05 1994





DEC 05 1994

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

RECEIVED
MAY 15 1992
Department of Water Resources

May 13, 1992

Norm Young
Idaho State Water Resources Dept.
Statehouse Mail
Boise, Idaho 83720

Dear Norm:

In response to our inquiry for study suggestions regarding the proposed Lincoln By-pass project you voiced questions as to a potential conflict between a hydro project using Big Wood flood water in comparison to potential depletion of such a flood water right in favor of upstream consumptive developments.

Item 3 (climatic cycle review) specifically speaks to such an eventuality.

I very much appreciate your personal cooperation and your judgement in relation to our pending project.

Sincerely,

Vernon

Vernon F. Ravenscroft

enclosures

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Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

April 13, 1992

Consulting Associates, Inc. presents herein a summary of the hydrology, the hydro production potential and the climatic cycles which will govern the feasibility, the sizing and technical questions concerning the development of a hydro electric project at the mouth of the Lincoln By-Pass Canal located in Lincoln County Idaho.

This summary is presented in three parts:

1. A 50 year - month by month analysis of available water to supply a 3.8 megawatt plant (400 CFS maximum flow) at the mouth of the By-Pass Canal. This analysis consists of four parts:

   a. Narrative giving assumptions and standards.

   b. Table giving indicated production for all 50 years.

   c. Highest year 1984, 21,024,833 KWH.

   d. Average year 1942, 10,964,492 KWH.

   e. Minimum year 1961, 2,059,095 KWH.

   This work data for each year is on file at Consulting Associates, Boise, Idaho.

2. The same 50 year sample adjusted to a 2.85 Megawatt plant (300 CFS maximum) at the same site. This data is presented only by a table giving the total 50 year analysis. Work papers are on file at Consulting Associates.

3. A climatic cycle review based upon 84 years of continuous inflow records for the Magic Reservoir - Blaine County Idaho. This reservoir is situated at the confluence of the Big Wood River and Camas Creek. It is the only major regulating reservoir on the Big Wood River drainage. It has senior water rights going back to the turn of this century. It first stored water in 1909.

A second generation site on the North Shoshone Canal downstream from the By-Pass is anticipated. That project will be governed by the final decisions made in regard to the sizing of the By-Pass project. Details of this secondary project will be developed at a later stage in the FERC licensing process.

Consulting Associates, Inc.

Vernon F. Ravenscroft
President

DEC 05 1994

ITEM # 1-a

LINCOLN BY-PASS PROJECT
Hydrology Study May - 1992
50 Years 1942 - 1991 Inclusive
by
Consulting Associates, Inc.
Boise, Idaho

Assumptions:

Head (gross)	136'
Water Volume	400 C.F.S. maximum
Combined total equipment efficiency	.07
Outage for repair, downtime, etc.	.04

Bed loss Magic Dam to By-Pass diversion (station #48)

Sept. - May inclusive	100 CFS
June - August inclusive	103 CFS

Bed loss #48 to Power site at mouth of diversion (station #49) 26 CFS

Misc. livestock runs, etc.
#49 equals 23% of gross release at Magic Reservoir (station #3)

Generation plant factor 50 year average vs theoretical maximum
10,862,381 KWH divided by 32,023,640 KWH = 33.92%

DEC 05 1994

ITEM # 1-b

50 YEAR 400 CFS MAXIMUM FLOW
1942 - 1991 - Inclusive

Year	KWH (adjusted)*	Year	KWH (adjusted)*
1942	10,964,492	1967	12,360,947
1943	16,135,304	1968	5,956,817
1944	8,555,425	1969	13,387,456
1945	7,404,553	1970	13,469,315
1946	14,022,887	1971	16,185,972
1947	10,354,072	1972	14,844,226
1948	5,500,446	1973	5,891,002
1949	8,138,052	1974	14,287,364
1950	11,081,712	1975	16,520,028
1951	13,199,443	1976	13,230,717
1952	17,678,363	1977	2,756,356
1953	13,265,242	1978	14,121,877
1954	9,489,749	1979	6,418,244
1955	5,020,431	1980	11,752,846
1956	12,980,627	1981	8,562,478
1957	12,437,539	1982	16,218,610
1958	13,505,639	1983	17,288,026
1959	5,897,277	1984	21,024,833
1960	5,230,238	1985	12,639,288
1961	2,059,095	1986	16,250,941
1962	9,869,829	1987	6,437,775
1963	9,933,826	1988	2,749,352
1964	9,033,865	1989	8,096,767
1965	19,556,878	1990	4,044,326
1966	14,505,887	1991	2,901,628
		Total	543,119,053
		Average	10,862,381

*Seasonal adjustment as per I.P. pay scale
W - 100% Spr - 73.5%
Smr - 1.20%

DEC 05 1994

ITEM # 1-C

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - BOISE 04/24/92

STATION NUMBER 13142500 BIG WOOD RIVER BL MAGIC DAM NR RICHFIELD ID STREAM SOURCE AGENCY USGS
LATITUDE 431453 LONGITUDE 1142120 DRAINAGE AREA 1600 DATUM 4661.60 STATE 16 COUNTY 013

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	571	13	15	858	269	11	14	2140	2810	1320	999	817
2	570	12	15	838	12	11	14	2140	3190	1370	952	817
3	569	13	16	841	12	11	15	2140	2990	1140	920	817
4	527	13	16	705	11	11	15	2140	2720	1150	906	817
5	497	13	17	398	11	11	14	2130	2550	965	893	773
6	492	13	17	399	11	11	14	2130	2400	892	874	716
7	267	13	327	397	12	11	14	2130	2340	925	842	760
8	11	13	337	396	11	11	52	2130	2230	1310	817	754
9	11	13	387	400	11	12	830	2120	2090	1310	811	754
10	11	13	510	400	11	12	3850	1440	1740	1010	805	754
11	11	11	597	396	11	12	4040	1120	1510	880	799	747
12	11	13	585	396	12	12	3570	1120	1160	886	793	747
13	11	11	583	396	12	12	3120	1130	1160	939	799	747
14	11	71	688	396	11	12	2960	1160	1160	992	830	741
15	11	387	817	392	11	13	3150	2300	1160	999	861	741
16	11	505	863	392	12	12	4620	3560	1410	1010	861	741
17	11	279	863	392	11	12	5280	4160	1980	1030	842	741
18	11	15	861	392	11	12	5290	3770	1970	1050	830	741
19	11	15	859	392	11	12	4730	3300	1970	1050	830	741
20	11	14	850	392	11	12	4180	3100	1970	1080	830	741
21	11	14	823	392	11	12	3820	3130	2160	1080	830	741
22	11	14	817	392	11	13	3510	3160	2380	1090	830	741
23	11	14	817	392	11	12	3430	3100	2460	1080	831	741
24	11	15	817	392	11	12	3310	3010	2340	1080	829	741
25	11	14	817	392	11	13	3280	2830	2270	1080	826	741
26	11	15	817	387	11	13	3080	2770	2230	1070	824	741
27	11	15	819	387	11	13	2780	2630	2220	1060	824	703
28	12	15	817	387	11	13	2530	2580	2200	1060	824	685
29	12	15	817	392	11	13	2340	2330	2180	1030	824	685
30	12	15	836	392	---	13	2180	2200	1950	1030	817	685
31	12	---	861	392	---	14	---	2410	---	1010	817	---
TOTAL	3761	1596	18331	13865	563	374	75832	75560	62700	33478	26170	22411
MEAN	121	53.2	591	447	20.1	12.1	2529	2437	2090	1050	844	747
MAX	571	505	863	858	269	14	5290	4160	3190	1820	999	817
MIN	11	11	15	387	11	11	14	1120	1160	550	793	685
AC-FT	7460	3170	36360	27500	1160	742	150400	149900	124400	66400	51910	44450

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1984, BY WATER YEAR (WY)

MEAN	69.7	67.0	38.5	40.3	53.1	194	615	1301	1325	939	690	460
MAX	1053	165	591	767	942	1969	3918	3806	3579	1680	1314	826
(WY)	1912	1914	1984	1965	1965	1933	1943	1952	1911	1923	1923	1916
MIN	1.31	2.72	1.73	1.78	2.21	3.00	23	325	386	95.2	44.2	4.32
(WY)	1978	1921	1930	1961	1978	1935	1935	1935	1931	1931	1931	1930

70 115 x K = 176,568

30 90 x K = 59,221

2,193,400

2,719,816

438,680

2,719,818

2,632,080

2,719,816

2,216,650

1,591,092

1,480,545

25 x 400 x K = 2,632,080

31 900 x K = 2,216,650

50 400 x K = 1,591,092

31 x 400 x K = 1,480,545

30 x 400 x K = 3820

31 x 326 x K = 1080

31 x 234 x K = 830

30 x 225 x K = 741

Winter 176,568
59,221
2,193,400
2,719,816
438,680
Spring
May adj. 5,932,708
Summer
2,632,080
2,216,650
1,591,092
1,480,595
X 1.2 = 9,504,446
adj. tot KWH 21,024,853

DEC 05 1994

PROVISIONAL

RECEIVED APR 1 ∠ 1990

DAILY DISCHARGE IN SECOND FEET (48) SINGLE GAGE

DAY	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER
1		63	260	256	185	174
2		63	258	249	280	272
3		91	260	243	282	272
4		114	256	243	285	270
5		114	256	240	287	275
6		114	256	248	278	204
7		114	258	250	282	264
8		114	255	262	140	261
9		132	252	262	156	260
10		153	244	260	252	261
11		158	238	238	255	258
12		156	237	252	256	255
13		155	236	272	256	255
14		156	236	274	264	252
15		172	246	267	280	252
16		182	252	264	283	250
17		191	254	274	250	249
18		189	254	282	242	261
19		184	254	282	244	261
20		183	254	282	244	260
21		182	258	282	246	252
22		180	260	282	248	252
23		183	261	283	248	252
24		182	261	283	246	249
25		182	260	274	248	248
26		182	260	274	250	244
27	64 - 14	182	260	280	250	243
28	64 - 14	238	260	280	249	219
29	64 - 14	248	260	282	250	210
30	63 - 13	248	258	283	254	208
31		254		285	262	--
24 HR CFS	195	5060	7614	8288	8055	7543
MEAN	64	163	254	267	260	251
ACRE FEET	390	1012	15228	16439	15977	14961

adj #49

267 36 231

No. of Days 157

YEARLY MEAN 234

YEARLY ACRE FEET 72,902.0

234 225

1984

DEC 05 1994

67

ITEM # 1-d

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - BOISE 04/24/92

STATION NUMBER 13142500 BIG WOOD RIVER BL MAGIC DAM NR RICHFIELD ID STREAM SOURCE AGENCY USGS
LATITUDE 431453 LONGITUDE 1142120 DRAINAGE AREA 1600 DATUM 4661.60 STATE 16 COUNTY 013

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1941 TO SEPTEMBER 1942
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13	13	12	13	14	15	16	1140	1470	733	760	470
2	13	13	12	12	14	15	16	1170	1230	733	766	460
3	13	13	12	12	14	15	16	1110	1080	728	760	450
4	13	13	12	12	14	15	16	1140	1060	728	744	450
5	14	13	12	12	14	14	16	1110	1140	728	733	450
6	14	13	12	13	14	15	16	1030	1280	733	728	450
7	14	14	12	13	14	14	15	992	1560	772	700	450
8	14	14	12	13	14	14	16	1010	2010	816	684	450
9	14	14	12	13	14	15	17	1020	2190	799	684	455
10	14	14	12	13	14	15	19	1060	2250	777	684	480
11	14	14	12	13	14	15	542	1030	2070	794	656	490
12	14	13	12	13	14	15	1530	1060	1800	777	645	495
13	14	13	12	13	14	15	2190	1080	1420	733	640	500
14	14	13	12	13	14	15	2430	1030	1110	706	612	430
15	13	13	12	13	14	15	2620	1060	1030	716	596	470
16	13	14	12	13	14	294	2490	1030	1020	728	601	470
17	13	13	12	13	14	645	2070	1030	1110	755	584	485
18	13	14	13	12	14	640	1500	1010	1140	799	579	490
19	13	14	13	12	14	640	1440	970	1010	816	579	490
20	13	97	13	13	14	640	1560	876	936	816	579	490
21	13	426	13	13	14	640	1650	722	909	788	563	490
22	13	435	13	13	14	640	1770	716	865	772	562	480
23	13	426	13	12	14	634	1800	1470	865	794	568	470
24	13	172	13	13	15	634	1770	1390	821	804	574	470
25	13	12	13	13	15	634	1590	2070	804	804	552	465
26	13	12	13	14	15	634	1360	2190	799	804	540	465
27	13	12	13	14	15	634	1250	2190	799	799	530	470
28	13	12	13	14	15	628	1220	2130	772	799	513	475
29	13	12	13	14	---	628	1140	1950	738	738	510	480
30	13	12	13	14	---	623	1110	1620	733	760	510	195
31	13	---	13	14	---	240	---	1560	---	744	485	---
TOTAL	413	1883	386	402	397	9650	33196	39516	36181	23843	19223	13855
MEAN	13.3	62.8	12.5	13.0	14.2	311	1107	1275	1206	769	620	463
MAX	14	435	13	14	15	645	2620	2190	2250	816	766	500
MIN	13	12	12	12	14	14	16	716	733	706	485	195
AC-FT	819	3730	766	797	787	19140	65840	78330	71760	47290	33130	27540

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1942, BY WATER YEAR (WY)

MEAN	100	75.3	49.3	35.1	35.4	70.9	235	1062	1203	909	633	342
MAX	1053	165	261	180	180	906	1491	2317	3579	1680	1314	826
(WY)	1912	1914	1914	1914	1914	1939	1938	1938	1911	1923	1923	1916
MIN	1.76	2.72	1.50	2.00	2.75	3.00	4.33	325	336	95.2	44.2	4.38
(WY)	932	1921	1932	1935	1935	1935	1[illegible]	1935	1931	1931	1931	1930

Totals
Wmt. 55,273
SP.
1,579,248
2,632,080
3,094,392
× .735 = 5,815,315
PROVISIONAL RECORDS
Total.
10,964,492

ITEM # 1-e

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - BOISE 04/24/92

STATION NUMBER 13142500 BIG WOOD RIVER BL MAGIC DAM NR RICHFIELD ID STREAM SOURCE AGENCY USGS
LATITUDE 431453 LONGITUDE 1142120 DRAINAGE AREA 1600 DATUM 4661.60 STATE 16 COUNTY 013

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.2	1.8	1.8	1.8	2.1	3.2	3.8	6.3	400	568	3.2	6.3
2	3.8	2.3	1.9	1.6	2.1	2.9	3.8	5.9	4.4	591	2.9	7.6
3	3.2	2.1	1.9	1.6	2.1	2.9	3.3	105	4.8	591	2.7	7.6
4	2.9	1.9	1.8	1.6	2.1	2.9	3.8	292	5.1	591	2.9	6.7
5	3.5	1.9	1.8	1.6	2.1	3.2	4.1	372	5.5	591	462	6.3
6	3.5	2.1	1.8	1.6	2.1	2.9	4.3	487	5.5	591	811	6.3
7	3.5	1.9	1.8	1.8	2.2	2.9	4.4	503	6.3	596	734	6.3
8	3.2	1.8	1.8	1.8	2.3	2.9	4.4	546	406	607	472	5.9
9	3.5	1.9	1.8	1.8	2.3	3.2	4.4	379	664	619	97	5.9
10	3.5	1.8	1.8	1.8	2.4	3.2	4.8	647	659	636	1.8	4.4
11	3.5	1.9	1.8	1.8	2.5	3.2	4.4	664	653	659	1.6	3.8
12	3.2	2.3	1.8	1.8	2.5	3.2	4.4	664	630	670	1.6	3.8
13	3.2	2.1	1.8	1.8	2.5	3.5	3.8	659	624	711	1.8	3.5
14	3.2	1.9	1.8	1.8	2.5	3.5	3.8	659	607	711	1.8	2.9
15	2.9	168	1.8	1.8	2.7	3.3	3.8	659	602	699	1.9	2.5
16	2.9	487	1.8	1.8	2.7	3.8	4.1	585	602	664	1.8	169
17	2.9	441	1.8	1.8	2.7	3.8	4.1	546	630	645	1.8	493
18	2.7	257	1.8	1.8	2.7	3.5	4.4	591	630	253	1.8	451
19	2.7	35	1.8	1.8	2.7	3.8	4.1	619	630	1.1	1.6	436
20	2.5	2.3	1.8	1.8	2.7	3.5	4.4	636	630	1.1	1.5	259
21	2.5	50	1.6	1.8	3.2	3.5	4.8	636	613	1.2	1.5	2.1
22	2.5	72	1.6	1.8	2.9	3.5	4.4	647	607	1.3	1.6	1.8
23	2.3	72	1.6	1.8	3.2	3.5	4.1	659	596	1.5	1.8	1.8
24	2.1	72	1.6	1.8	3.5	3.8	4.8	670	596	1.6	1.9	1.6
25	2.1	72	1.8	1.8	3.2	3.5	5.1	670	596	2.5	2.3	1.8
26	2.1	32	1.8	1.8	3.2	3.5	5.1	664	591	2.9	2.5	1.6
27	2.1	2.1	1.8	1.8	3.2	3.8	5.5	664	574	2.7	2.7	1.8
28	2.1	1.9	1.8	1.8	2.9	3.8	5.9	664	568	2.9	3.2	1.6
29	2.1	1.9	1.8	1.8	---	3.3	5.9	670	563	2.9	3.2	1.6
30	2.1	1.9	1.8	1.9	---	3.8	5.9	664	568	2.9	3.8	1.8
31	1.9	---	1.8	2.0	---	3.3	---	653	---	2.9	4.8	---
TOTAL	87.4	1795.8	54.9	55.1	73.3	106.1	134.9	17087.2	14270.6	11020.5	2536.0	1910.5
MEAN	2.82	59.9	1.77	1.78	2.62	3.42	4.50	551	476	355	85.0	63.7
MAX	3.8	487	1.9	2.0	3.5	3.8	5.9	670	664	711	811	498
MIN	1.9	1.8	1.6	1.6	2.1	2.9	3.8	3.9	4.4	1.1	1.5	1.6
AC-FT	173	3560	109	109	145	210	268	33890	28310	21860	5230	3790

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1911 - 1961, BY WATER YEAR (WY)

MEAN	67.6	72.3	34.0	25.3	51.7	167	495	1192	1162	879	642	397
MAX	1053	165	261	180	798	1402	3913	3306	3579	1680	1314	826
(WY)	1912	1914	1914	1914	1952	1943	19[illegible]	1952	1911	1923	1923	1916
MIN	.76	2.72	1.77	1.78	2.62	3.30	4[illegible]	325	326	95.2	44.2	4.38
(WY)	1932	1921	1961	1961	1961	1935	1935	1935	1931	1931	1931	1930

10 @ 68 x K = 68,439
693,991 = 565,019 + 112 x K
28 @ 113 x K = 446,137
23 @ 112 x K = 130,507
18 @ 113 x K = 92,122
50 @ 84 x K = 92,122
50 @ 119 x K = 130,507

Wnter 68,439
Spng. 693,991
x .735 = 510,083
Smr. 565,019
446,137
130,507
92,122
1,480,542
x 1.2
adj. tot = 2,059,095 KWH

DEC 05 1994

PROVISIONAL RECORDS

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1									116	110		
2									0	110		
3										110		
4								0		113		
5								75	0	116		
6								106	0	114		
7								103 6		110		
8								100	0	112		
9								114	56	114		
10								118	112	116		
11								138	112	116		50
12								131	118	112	50	8
13		4078						127	118	110	119	
14		ave.						127	114	108		
15								127	110	114		
16								127	112	113		
17								80	114	112		
18								95	112	116		
19								112	110	0		
20								106	116	0		
21								116	116	0		
22								116	118			
23								116	118			
24								116	118			
25								116	118			
26								121	1116			
27								118	116			
28								116 6	110			
29								114	110			
30								111	110			
31								108				
								3,054	2,570	2,026		
Mean								113	112	113		
Acre-Feet												

DEC 05 1934

U. S. GOVERNMENT PRINTING OFFICE 16—60056-1

YEAR OR PERIOD MEAN _____ ACRE-FEET _____

#49

ITEM # 2

50 YEAR 300 CFS MAXIMUM FLOW
1942 - 1991 Inclusive

Year	KWH (adjusted)*	Year	KWH (adjusted)*
1942	10,335,640	1967	10,739,256
1943	12,800,898	1968	5,956,817
1944	8,571,546	1969	11,641,071
1945	7,232,859	1970	12,432,276
1946	10,313,294	1971	13,939,405
1947	9,257,811	1972	12,615,293
1948	5,500,446	1973	5,891,002
1949	7,557,679	1974	11,777,676
1950	10,243,395	1975	11,745,699
1951	12,110,078	1976	11,747,540
1952	13,975,465	1977	2,757,356
1953	10,992,441	1978	11,222,858
1954	10,005,637	1979	6,418,244
1955	5,020,431	1980	11,318,751
1956	10,707,826	1981	8,562,478
1957	11,020,164	1982	13,543,277
1958	11,232,838	1983	14,778,338
1959	5,897,277	1984	18,123,140
1960	5,230,238	1985	9,339,566
1961	2,059,095	1986	14,351,018
1962	10,250,304	1987	6,437,775
1963	10,020,567	1988	2,749,352
1964	9,483,623	1989	8,096,767
1965	16,665,539	1990	4,044,326
1966	13,859,739	1991	2,901,628

*Seasonal adjustment as per Idaho Power Co. current pay scale.
W - 100% Sp. - 73.5%
Smr - 120%

Total 483,475,739
Average Annual Adjusted KWH 9,669,514

Plant factor
9,669,514 KWH divided by
24,017,730 KWH = 40.26%

Work papers on file
Consulting Associates
Boise, Idaho

DEC 05 1994

CLIMATIC REVIEW BASED UPON 84 YEARS OF CONTINUOUS RUNOFF INTO MAGIC RESERVOIR.

In response to the Lincoln By-Pass project study request the Idaho Department of Water Resources raised the question of potential conflict in project use of flood water which also has a potential for upstream storage and subsequent upstream consumptive use. This would be water which is in excess of existing senior rights for consumptive purposes or other established downstream non-depletable rights.

Fortunately, this question can be addressed with specificity in that there are 83 years of continuous records available for the inflow to Magic Reservoir and the current precipitation is so low that it is known that the reservoir will not fill in 1992. This provides 84 years of continuous records.

Based upon these records one can only conclude that the opportunity for upstream depletion is extremely limited. The flow pattern is so volatile as to seriously limit any new ongoing day to day, month to month or year to year consumptive use, without being in conflict with established senior downstream rights. The facts are:

1. In the 84 years of record the Magic Reservoir failed to fill 20 years or 24% of the time. The senior rights are not now being fully supplied.

2. For 10 years (1928-37, inclusive) the drainage was continuously below normal. During this period the total flow averaged only 91% of the reservoir rights. The reservoir failed to fill for three consecutive years 1929, 1930 and 1931 and for two other consecutive years 1934-35.

3. The ten year drought sequence listed next above has been substantially duplicated by the current 1985-92 drought which can potentially extend for one or more additional years. In this period the reservoir failed to fill in a three year sequence (1990-92) and for a two year period (1989-88). The intervening flow in 1989 only exceeded the reservoir capacity by a meager 10,030 acre feet.

Based upon these repeated and documented drought periods it is evident that any contemplated upstream storage (either in a reservoir or in the aquifer) for ongoing consumptive use would have to be so designed as to provide capacity sufficient to carry that use for up to ten years. It would need an absolute safety margin of at least three years in excess of its known annual consumption including losses in storage.

DEC 05 1994

On the other hand, the record also proves that there is a substantial flood flow for 62% of the time. The inflow exceeded 242,000 acre feet (Magic Reservoir capacity plus 50,000 acre feet) for 52 of the 84 years. The greatest flow of record was 1983 when the inflow totalled 877,000 acre feet or 450% of the Reservoir capacity.

At 400 CFS the project would use some degree of flood flows for an average of 77 days per year or 21.1% of the time. The irrigation system delivers water through the by-pass canal in an average range up to 250 CFS. Any final project configuration which uses water in the range of 300 to 400 CFS will not significantly depend on any flow subject to potential upstream depletion.

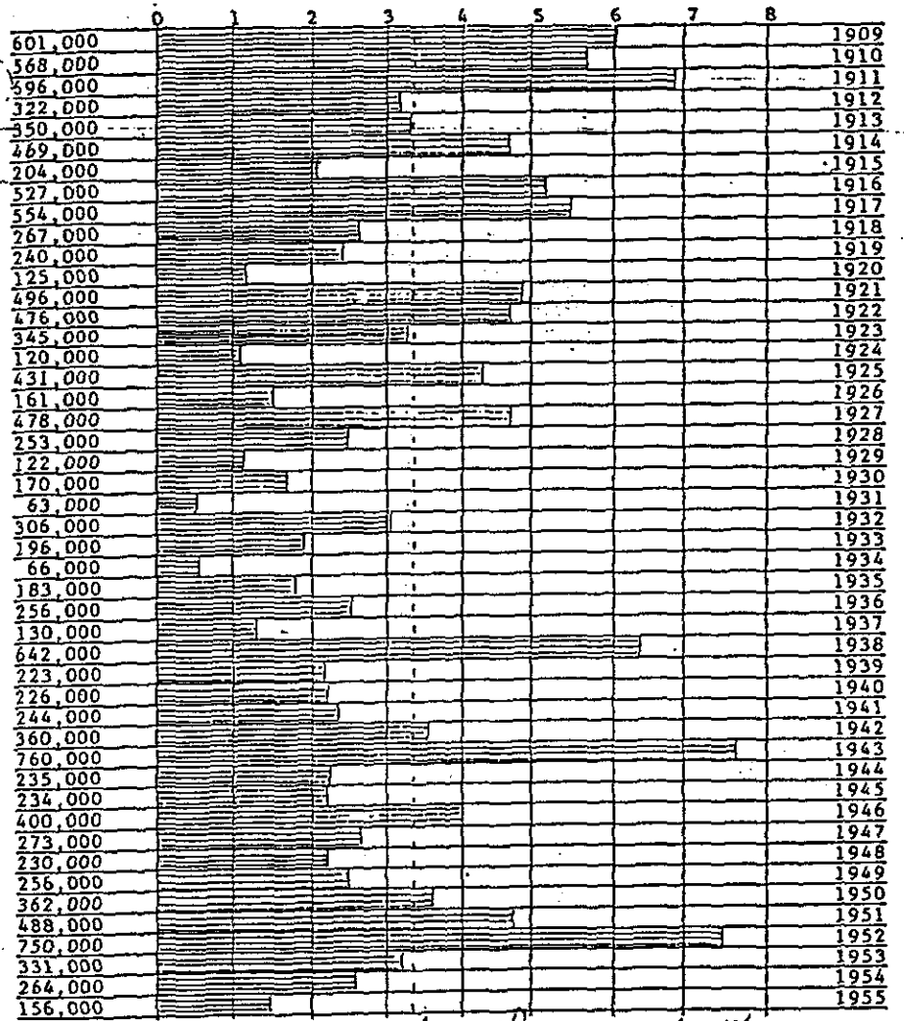
It must also be kept in mind that the irrigation rights failed to fill for 24% of the time. This problem may understandably prompt the Big Wood Canal Company to develop water supplement and/or saving measures. There are known serious bed losses in their system. For instance, this study used a loss of 126 CFS from Magic Reservoir to the end of the by-pass canal. Any reduction in bed losses and/or additional storage developed for the multiple use of irrigation, recreation and hydro generation would be an enhancement to this project in two ways:

1. Additional flow for hydro generation purposes.

2. Seasonalization of the hydro production. In this study most of the flood flow was calculated to occur in the spring season (value 73.5%). Any enhancement which favors downstream irrigation and/or recreation would primarily transfer that flow to the summer months when the seasonalized value is 1.20% - (an increase of 163%).

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DIAGRAM SHOWING ACRE FEET, TOTAL ANNUAL RUNOFF INTO MAGIC RESERVOIR

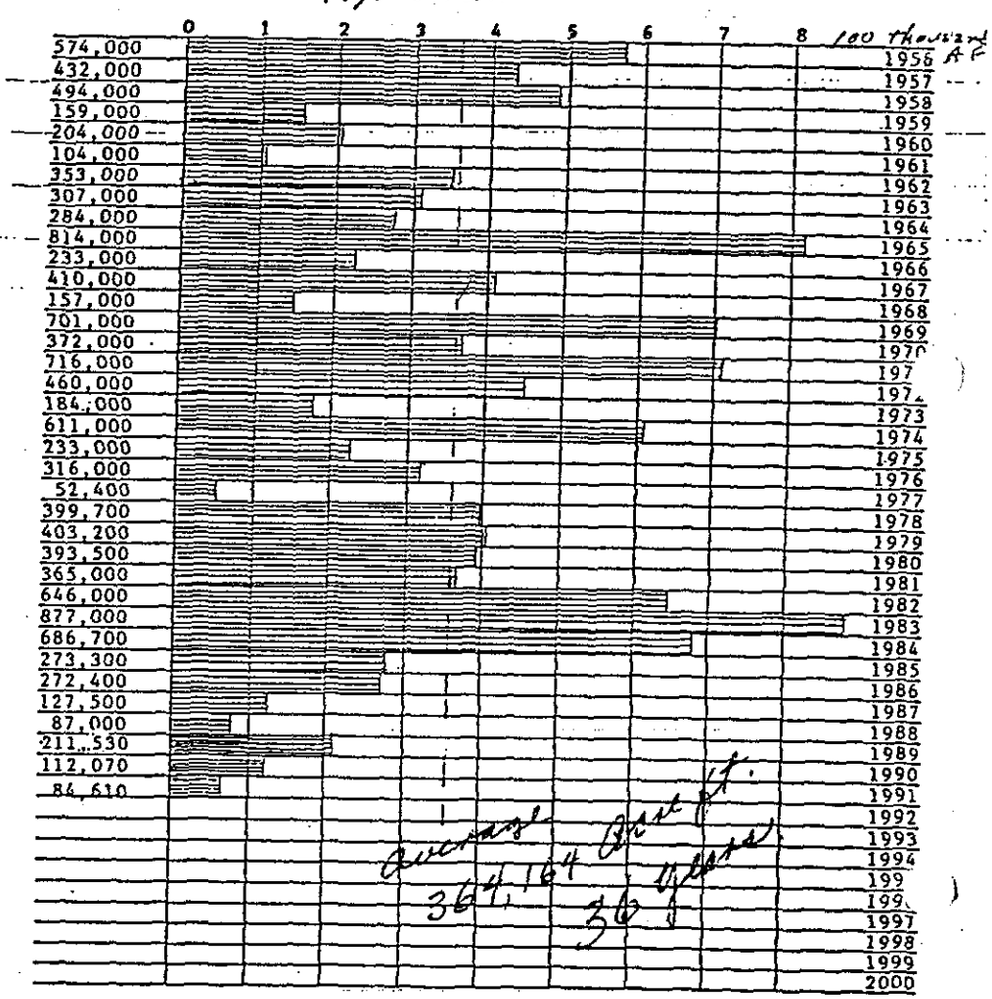


332,000
average. 47 Years

U.S. GEOLOGICAL SURVEY
DEC 05 1994

DIAGRAM SHOWING ACRE FEET, TOTAL ANNUAL RUNOFF INTO MAGIC RESERVOIR

191,500 Full



Average
364,164 Acre ft.
36 Years

13152500 MALAD RIVER NR GOODING
DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	0.1	8.2	1.5	7.5	52	45	188	136	192	93	129
2	243	---	8.1	3.5	9.3	51	33	165	117	169	93	131
3	258	---	8.0	1.5	19	52	33	187	125	98	111	132
4	259	1.4	9.0	1.7	38	62	32	180	102	22	117	140
5	323	3.0	10	2.0	51	72	17	177	96	7.3	86	134
6	377	4.2	9.1	2.5	51	59	17	149	120	7.5	107	108
7	434	2.9	8.2	3.5	49	51	20	141	207	30	107	100
8	458	6.6	7.0	5.0	55	53	24	149	223	56	99	126
9	437	12	7.2	4.3	63	57	24	167	256	42	87	173
10	189	15	8.6	3.7	59	62	19	164	259	34	91	271
11	390	8.7	10	6.0	73	60	18	177	184	24	101	407
12	195	1.3	9.1	7.3	62	55	16	189	128	18	106	438
13	73	1.9	7.5	8.4	63	58	18	197	111	29	114	390
14	6.5	1.1	6.2	9.4	67	54	16	225	127	37	117	429
15	3.3	1.3	5.0	7.8	71	50	355	236	134	39	132	410
16	125	2.5	4.3	6.8	72	51	232	209	164	28	147	391
17	80	3.0	4.0	7.4	76	50	277	157	160	30	140	390
18	71	7.0	3.2	8.3	76	49	324	151	133	28	135	329
19	76	4.7	2.6	10	72	47	464	195	135	26	141	317
20	81	4.4	1.5	8.0	66	47	408	206	138	46	93	301
21	87	5.9	0.2	6.4	62	46	369	166	123	83	78	287
22	90	5.5	---	6.8	69	37	427	122	105	106	89	296
23	83	7.8	---	7.0	62	48	354	100	140	117	81	304
24	68	7.9	---	7.3	63	46	251	78	144	116	92	317
25	68	7.6	---	6.3	62	48	179	107	137	107	98	261
26	71	7.6	---	5.8	59	49	135	76	115	117	120	233
27	67	7.5	---	6.4	48	48	199	96	148	124	138	250
28	40	8.2	---	7.7	46	49	227	112	165	124	139	224
29	2.5	8.0	1.8	5.9	---	48	265	127	192	129	122	202
30	1.3	8.5	0.3	4.7	---	46	237	150	211	128	133	202
31	0.9	---	1.0	5.8	---	40	---	142	---	103	125	---
TOTAL	4948	156	140	179	1571	1597	5035	4885	4535	2217	3432	7822
MEAN	160	5.6	5.8	5.8	56	52	168	158	151	72	111	261
MAX	458	15	10	10	76	72	464	236	259	192	147	438
MIN	0.9	0.1	0.2	1.5	7.5	37	16	76	96	7.3	78	100
AC-FT	9800	309	278	354	3100	3200	10000	9700	9000	4400	6800	15500

WATER YEAR 1991 TOTAL 36515 MEAN 100 AC-FT 72400

DEC 05 1994

0.7

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

April 30, 1992

Mr. Robert Cordell
BLM
P.O. Box 2B
Shoshone, ID 83352

Mr. Lee Peterson
Water Master
P.O. Box T
Shoshone, ID 83352

Mr. Vernon Ravenscroft
Consulting Associates
1843 Broadway
Suite 102
Boise, ID 83706

Gentlemen:

IDWR is concerned with the water rights, instream flow needs and successful operation of the existing Ravenscroft power project on the Malad river.

Our records show a total of 15.14 cfs downstream irrigation water rights diverting at the Justice Canal and the Thorpe Ditch.

Injury to downstream irrigators can occur when the project goes off line. An interruption of flow causes senior water rights not to be delivered. Inconvenience or injury can occur if irrigation pumps or siphon tubes lose their prime.

The project goes off line under two primary situations:

1. Problems which occur at the turbine area such as mechanical/computer or inadequate head problems.

2. Problems associated with being out of compliance with the federal minimum bypass flow requirements.

Currently the only means for water to bypass the turbines at the power house are via two manually operated hand valves. These require someone to be present when the project goes off line. The project operator Vernon Ravenscroft has suggested operational solutions to prevent injury to the downstream water users. He notes that the project can also serve to dampen flow fluctuations that occur from conditions unrelated to the power plant. IDWR is willing to work with the project operator, the downstream water users and the watermaster to determine if operational solutions can satisfactorily resolve the problem. If not physical changes to the project may be required, such as automatic bypass valves to prevent downstream surges.

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If the project is out of compliance with the minimum bypass flows, any action to return to compliance must not be injurious to the downstream irrigators. Greater control of flow at the diversion dam into the bypass reach certainly would improve the project's response to bypass flow requirements. However it is unacceptable for flow which is satisfying downstream irrigation requirements to be shut down in order to fill bypass flow requirements if the downstream irrigators are thereby injured.

Sincerely,

Norman Young
Administrator
Water Management Division

DEC 05 1984

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
400 WEST "F" STREET
P.O. BOX 28
SHOSHONE, IDAHO 83352

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
IDI-4055

April 14, 1992

Vernon Ravenscroft
Consulting Associates, Incorporated
1843 Broadway, Suite 102
Boise, ID 83706

Dear Vernon:

Thank you for the opportunity to review your thoughts for a standard format to govern the compliance problems of the Ravenscroft Hydro project. We realize that flows are volatile, but we do not see noncompliance with the FERC-BLM stipulations as inevitable. These legal requirements are issues that were known at the time of issuance of the license.

Although the downstream riparian area may be almost equal to the by-pass riparian area and creates a new wetland, it is not riverine riparian habitat. The fact that there has been a substantial loss of riverine riparian habitat in the whole Snake River system is the reason why the FERC-BLM stipulations are in exist. Modification of the stipulations would further compromise the riverine riparian system for which they were designed to protect.

I look forward to reviewing any new design proposals which will insure compliance to meet the original FERC - BLM stipulations that require 80 CFS by-pass during the months of April, May, and June and 5 CFS for the balance of the year.

If you have questions please contact Lyle Lewis or me at (208)886-2206.

Sincerely,

Robert D. Cordell
Area Manager
Bennett Hills Resource Area

cc: FERC - Washington D.C.
FERC - Portland, ORE
F&WS - Boise, ID
IDFG - Boise, ID

DEC 0 5 1994

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102

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APR 10 1992
Department of Water Resources

April 7, 1992

Mr. Norman Young
Water Resource Dept.
State House Mail
Boise, Idaho 83720

Mr. Lee Peterson
Big Wood Watermaster
P.O.Box T
Shoshone, Idaho 83352

Mr. Bob Cordell
BLM
P.O.Box 2B
Shoshone, Idaho
83352

Gentlemen:

I have a request from both BLM and Idaho Water Resources Dept. to rough draft my thoughts as to a standard format (both procedure and reporting) to govern the compliance problems which will be experienced from time to time at the Ravenscroft Hydro project. The flow at this site, particularly during the current drought period, is so volatile that compliance problems are inevitable. (Please see the graph attached to my previous letter).

Granted the inevitability of compliance problems, my proposals for procedure and reporting requirements are based upon two legal requirements, four biological facts and one aesthetic factor.

Legal

1. There are decreed senior irrigation rights downstream which require stable, sustained delivery of their established water rights. Those rights are for a combined total of approximately 40 CFS (18 decreed plus 22 claimed constitutional use rights, both figures approximate).

2. The FERC - BLM stipulations require 80 CFS by-pass during the months of April, May and June; 5 CFS the balance of the year or the full flow of the river whichever is least. After certain retrofit work is completed the 5 CFS is to increase up to 20 CFS.

Biological

1. The downstream riparian area is approximately equal to the by-pass riparian area.

2. The Canal and pond system is providing a demonstrated water quality improvement which is significant to the downstream water quality problems in the Malad Canyon and Snake River water reaches.

DEC 05 1994

3. The canal and pond system has created and is maintaining a popular warm water fishery. Week-end fisherman inventories have recorded up to 30 individuals including occasional overnight campers.

4. The canal and pond system is creating a new wetland habitat which can be expanded.

AESTHETIC

The State Park Dept. has applied for a 75 CFS minimum flow for the Devils Wash Bowl Falls at their interpretive center which is approximately one and one/half miles downstream from the Ravenscroft generation site. While this is a junior filing to both the irrigation and to most of the hydro filings it does (to the degree water is available) provide a tourist attraction worthy of consideration. Abrupt correction of flow at the Ravenscroft project in mid-morning can deny any flow at the falls during the day time when tourist travel is at the maximum.

I propose that all interests can be adequately protected if the stipualtions are modified to tolerate adjustments on a phased basis.

Specifically I propose the following fixed procedures when the project operator finds that the by-pass flow is out of compliance.

1. Phone watermaster to determine inflow. If this information is not available via phone then turn off all turbines and drive to the U.S.G.S. gage to determine the exact inflow. At all times during the irrigation season (April 1 - October 10 inclusive) that a total turn off is made then in that instance the operator shall immediately open two - six inch relief valves so as to release approximately 20 CFS from the project headwater pond.

2. If the inflow is found to be at or below 110 CFS (April - June inclusive) then the operator shall leave all turbines off and the two relief valves open until such time as the by-pass flow again exceeds 80 CFS.

3. If (April - June inclusive) the inflow is found to be in excess of 110 CFS then the operator may re-activate any appropriate turbine(s) which will support the required by-pass

DEC 05 1994

of 80 CFS plus 10 CFS for pond, canal and by-pass recovery plus the known consumption of the turbine(s) selected for operation. This would represent a critical flow of 122 CFS for the project to resume minimum operation.

4. During the period (July - March) inclusive these same exact procedures shall be followed except the critical inflow amount shall be corrected to 47 CFS. The combined minimum flow for continued operation shall agregate by-pass 5 CFS, system recovery 10 CFS and minimum operation 32 CFS (total 47 CFS). Starting in 1993 the critical inflow would be adjusted upward to 62 CFS.

I propose the following additional record keeping and reporting schedule:

1. Daily during the irrigation season (April - October 10) the project operator shall record the headgate (upstream) level so as to better determine the pond level and the trend of same. This data to be recorded on the project monitoring forms.

2. The staff gage at the project site shall be re-calibrated to determine its accuracy. A new flow table shall be prepared and provided to all germane parties. Readings at this gage will to be taken and recorded twice daily on the regular project monitoring forms.

3. At those instances when the powerhouse gage (as corrected) indicates a by-pass flow less than the stipulated amount for any given date then in that case the project operator shall fill out the compliance form (see attached) and any accumulation of said records shall be mailed at the end of each month to: 1. Watermaster, Shoshone; 2. BLM, Shoshone; 3. FERC, Washington, D.C.

This tolerance in the stipulation procedure and recording practice would provide four advantages:

1. Greater stability for the downstream irrigators.
2. Less stress on the downstream riparian zone.
3. Less labor expense to the project.
4. Consideration for the aesthetic flow at the State Park.

It is my personal judgement that BLM and FERC officials fear that our project operators have manipulated the river flow to obtain greater productions. That is not the case. We have tried to serve two masters' and in so doing have not totally pleased anyone. There is no monetary incentive for project manipulation. We have a fixed capacity contract with a variable rate for the energy produced. Our smallest turbine is the unit usually involved during the periods when compliance is a problem. That unit operating full time for one day produces a gross income of $56.86, which amount barely exceedes the cost to monitor (twice daily) plus upkeep, overhead, service and repair expense. The ongoing administrative problems, the potential for penalty and the potential for crop damage claims far exceed any gain from such marginal operation of the project.

Please consider this letter to be a rough draft subject to review and discussion.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

VR;js

cc: FERC - Washington D.C.
FERC - Portland, Oregon
U.S.F.W. - Boise, Idaho
I.F.& G. - Boise, Idaho

DEC 05

Exhibit

Time _____ Date _____

By-pass stipulation for this date is CFS _____

Flow recorded at powerhouse gage
was: Reading _____ CFS _____

Inflow was determined to be CFS _____

How determined (check one)

Watermaster phone report

Trip to U.S.G.S. gage.

Relief valves opened_____yes _____no

Action taken_____

_____

_____

After adjustments approximate flow downstream

Actual by-pass measured at Powerhouse CFS _____

Relief valve passage CFS _____

Turbine passage CFS _____

After adjustment approximate flow available for by-pass and pond adjustment.

By-pass stipulation CFS _____

Extra for pond adjustment CFS _____

Project release valves and/or turbine CFS _____

_____
Signed

Instructions: Complete record immediately upon completion of the action. Mail copies monthly to BLM (Bennett Hills, resource manager); FERC (Project compliance); Big Wood Watermaster; and upon request Idaho Water Resources Dept.

DEC 05 20

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE [illegible]
1843 BROADWAY, SUITE 402
BOISE, IDAHO 83706

RECEIVED
MAR 18 1992
Department of Water Resources

March 17, 1992

Joint Letter to:

Bob Cordell
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

Norman Young
Assistant State Director
Idaho Water Resources Dept.
Statehouse Mail
Boise, ID 83720

Lee Peterson
Watermaster, No. 37 & 37M
P.O. Box T
Shoshone, ID 83352

Gentlemen:

You will find enclosed two items:

1. U.S.G.S. data (water year 1991) for station 13152500 "Malad River near Gooding". This station is situated approximately one mile above the Ravenscroft hydro diversion and is very closely descriptive of the flow available to the project. There are no intervening diversions between the gage and the project diversion. There are minor inflows confined to irrigation waste water during the irrigation season.

2. A graph of this record (water year 1991) which pictorially shows the violent short range changes which this irrigation conduit and waste way experiences. This project is near the end of both the river drainage and two canal systems. The data demonstrates extreme flow changes frequently on a day by day (even hour by hour) basis.

With this proven volatility it is inevitable that our project will from time to time be out of compliance. We monitor that project twice daily. We have made sincere, good faith efforts to adjust our operation at each inspection to honor the stipulations attendant to our exemption.

The project is subject to dual regulation. Senior irrigation water rights down river demand the most reasonable steady delivery possible in order to supply siphon tube and sprinkler irrigation systems. The irrigators basic water

DEC 05 1994

rights call for approximately 19 CFS. They have pending claims which in combination total approximately 40 CFS. Our hydro exemption stipulates a by-pass of 80 CFS from April 15th through June 30th (BLM has extended this to April 1st) and 5 CFS for the balance of the year. This latter stipulation is scheduled to increase up to 20 CFS when certain project improvements are complete.

Unfortunately the watermaster and the Idaho Water Resources Department were not consulted when the original stipulations were established. Their input would have been valuable at that time. Their coordination is essential now.

In addition to the economic concerns of the irrigators four resource conflicts have also emerged:

1. Water quality improvements created by the project. Consultant Gene Ralston has conducted an analysis of the effect of the project on turbidity, temperature and dissolved oxygen. This past winter it was necessary to dewater the power canal. It was obvious at that time that the project is trapping significant volumes of sediment. Ralston determined that the project cooled the water and reduced sediment by some 34%. The oxygen content was reduced but was still super saturated in the project tailrace. Draw down of the ponds will now inject sediments and pollutants back into the river system.

2. A popular warm water fishery has been created in the backwater. As part of our project monitoring work we record the numbers of fishermen active on project waters. For one weekend (Friday evening, Saturday morning and evening and Sunday morning and evening) we recorded 30 different fisherman almost totally on the backwater ponds.

3. The downstream riparian habitat roughly equals the by-pass riparian area and is worthy of consideration.

4. There is a population of beaver who continually interfere with the water passage through the exhaust tubes. We have contacted Idaho Fish and Game, U.S. Forest Service and a commercial trapper in an effort to remove this problem.

I would appreciate suggestions from each of you. I visualize two avenues of action:

1. I can rough draft a proposed procedure and a specific report format for review and discussion, or in the alternative,

DEC 05 1994

2. A mutual joint meeting of concerned parties could be called for the purpose of exploring solutions and procedures.

Please give me your thoughts.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

cc: FERC, Project Compliance, Wash., D.C.
Fish & Game, Will Reid, Boise
U.S.F.W., Boise
Water Quality Division, Dept. of Health & Welfare, Twin Falls

DEC 05 1994

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - BOISE 01406/9c

STATION NUMBER 13152500 MALAD RIVER NR GOODING ID STREAM SOURCE AGENCY USGS
LATITUDE 425312 LONGITUDE 1144808 DRAINAGE AREA 2990 DATUM 3345 00 STATE 16 COUNTY 047
PROVISIONAL DATA SUBJECT TO REVISION

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1990 TO SEPTEMBER 1991
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	290	.06	48	e1.5	e7.5	52	45	188	136	192	93	129
2	243	.00	46	e3.5	9.3	51	33	165	117	169	93	131
3	258	.00	65	e1.5	19	52	33	187	125	98	111	132
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6	377	4.2	56	e2.5	51	e59	17	149	120	7.5	107	108
7	434	2.9	71	e3.5	49	e51	20	141	207	30	107	100
8	458	6.6	61	e5.0	55	e53	24	149	223	56	99	126
9	437	12	57	e4.3	63	e57	24	167	256	42	87	173
10	189	15	57	e3.7	59	62	19	164	259	34	91	271
11	390	8.7	56	e6.0	73	60	18	177	124	24	101	407
12	195	1.3	57	e7.3	62	55	16	189	128	18	106	438
13	73	1.9	69	e8.4	63	58	18	197	111	29	114	390
14	6.5	1.1	75	e9.4	67	54	16	225	127	37	117	429
15	3.3	1.3	61	e7.8	71	50	355	236	134	39	132	410
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17	80	3.0	37	e7.4	76	50	277	157	160	30	140	390
18	71	7.0	e41	e8.3	76	49	324	151	133	28	135	329
19	76	4.7	e46	e10	72	47	464	195	135	26	141	317
20	81	4.4	e1.5	e8.0	66	47	408	206	138	46	93	301
21	87	5.9	e.20	e6.4	62	46	369	166	123	83	78	287
22	90	5.5	e.00	e6.8	69	37	427	122	105	106	89	296
23	83	7.8	e.00	e7.0	62	48	354	100	140	117	81	304
24	68	7.9	e.00	e7.3	63	46	251	78	144	116	92	317
25	68	7.6	e.00	e6.3	62	48	179	107	137	107	98	261
26	71	8.2	e.00	e5.8	59	49	135	76	115	117	120	233
27	67	8.0	.00	e6.4	48	48	199	96	148	124	138	250
28	40	11	.00	e7.7	46	49	227	112	165	124	139	224
29	2.5	47	1.8	e5.9	---	48	265	127	192	129	122	202
30	1.3	54	e.30	e4.7	---	46	237	150	211	128	133	202
31	.93	---	e1.0	e5.8	---	40	---	142	---	103	125	---
TOTAL	4947.53	243.96	1058.80	178.7	1570.8	1597	5035	4885	4535	2216.8	3432	7822
MEAN	160	8.13	34.2	5.76	56.1	51.5	168	158	151	71.5	111	261
MAX	458	54	75	10	76	72	464	236	259	192	147	438
MIN	.93	.00	.00	1.5	7.5	37	16	76	96	7.3	78	100
AC-FT	9810	484	2100	354	3120	3170	9990	9690	9000	4400	6810	15510

CAL YR 1990 TOT [illegible] MEAN [illegible] MAX [illegible] MIN [illegible]

DEC 05 1991

Graph Station 13152500 Malad River near Gooding
Water year 1991 - Oct. 90 - Sept. 91 inclusive

DEC 05 1994

flow C. F. S.

450
400
350
300
250
200
150
100
50
0

Oct. - 90
Nov. - 90
Dec. - 90
Jan. 91
Feb. - 91

Station 13152500 - water year 1991.

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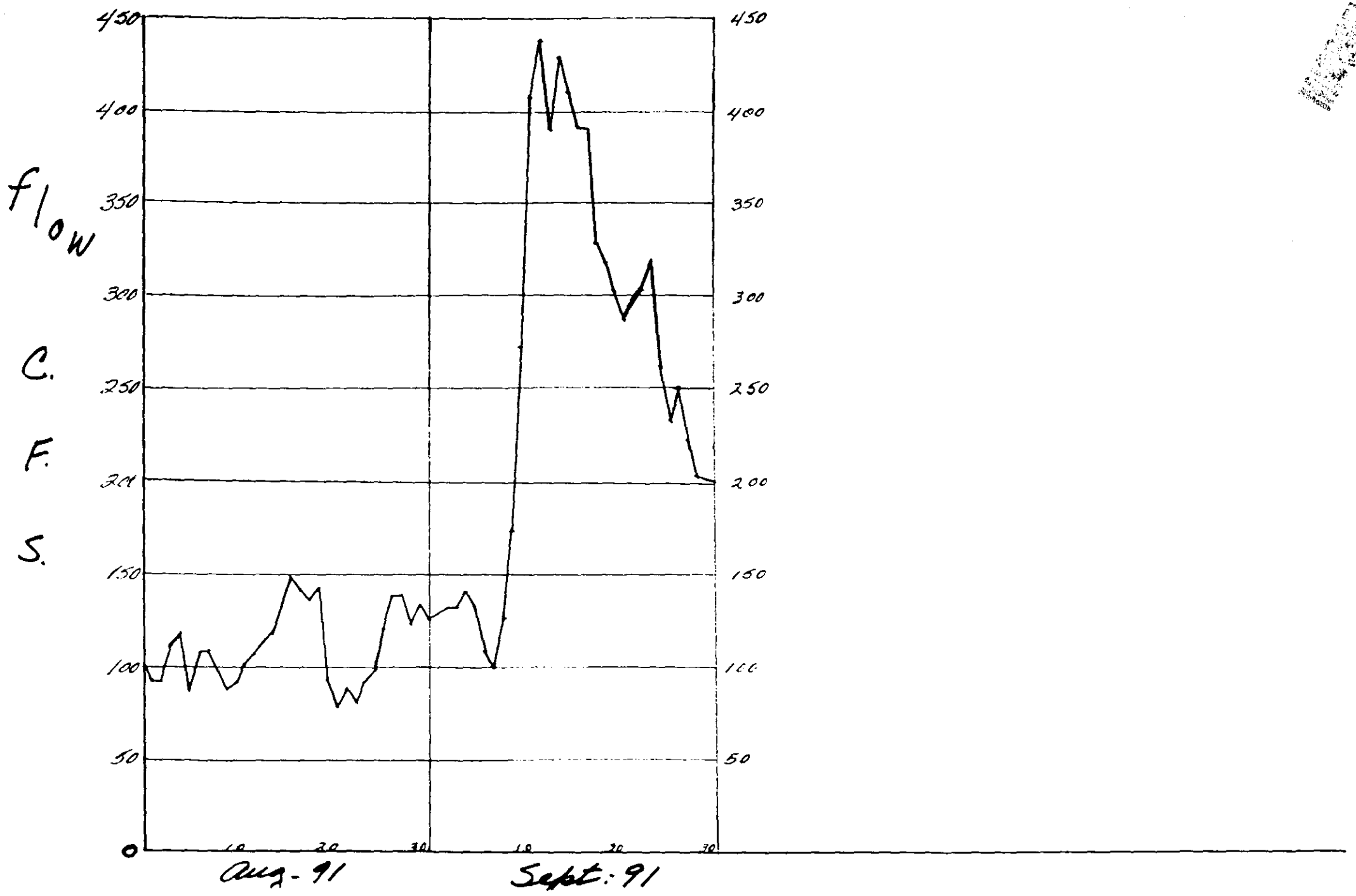
C.
F.
S.

450
400
350
300
250
200
150
100
50
0

Mar. - 91
April - 91
May - 91
June - 91
July - 91

Station 13152500 - Water year 1991

DEC 05 1994



Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) [illegible]
1843 BROAD[illegible] SUITE 102
BOISE, IDA[illegible]

RECEIVED
MAR 19 1992
Department of Water Resources

March 17, 1992

Norman Young
Assistant State Director
Idaho Water Resources Dept.
Statehouse Mail
Boise, ID 83720

Lee Peterson
Watermaster
Water District No. 37 & 37M
P.O. Box T
Shoshone, ID 83352

Dear Norm & Lee:

Yesterday I made a general mailing of a Ravenscroft Hydro project water administration report. That report was designed to better acquaint BLM and other germane agencies with the volatile nature of the flow at this point on the river-canal system. Also, to establish some of the secondary resource improvements which the project has created.

I know it is of concern to the Idaho State Water Administration as to whether or not the ponds and the contour canal are wasting or conserving water. This is not the major concern of the other agencies. For just your use, I have made an analysis of the inflow as recorded at the USGS Gage as compared to the project use in combination with the recorded by-pass flow.

When we were designing the project I was advised either by the former watermaster or by the Big Wood Canal manager that this section of the river had a heavy bed loss. It was policy to maintain 43 CFS at the gage in order to deliver the decreed rights (approximately 19 CFS) to the downstream irrigation diversions.

The two enclosed graphs indicate a very close correlation as between the recorded inflow and the combined usage. Considering the re-regulating influence of the ponds I find the correlation encouraging that there is now less loss in the hydro project than there was historically in the river flow.

This is understandable because the gravel pits in this community all have a heavy clay deposit below the gravel and there has been extreme deposits of sediment in all of the slack water river and canal reaches.

I would suggest three items of follow-up:

1. Have Charles Brockway re-calibrating the gage at the power plant and provide all parties with a corrected flow chart.

0 5 1994

2. Have Brockway measure the inflow at the bridge over the canal and at the project tail-race. This should further refine any question of current loss vs. historic loss.

3. Expedite the coordination as between all interested agencies. I have certain thought but will not push them forward if the agencies prefer a combined meeting without prior input.

I very much appreciate the constructive approach which Idaho Water Resources officers have provided.

Sincerely,

Vernon Ravenscroft

cc: Bryan Ravenscroft
Allan Ravenscroft

DEC 08

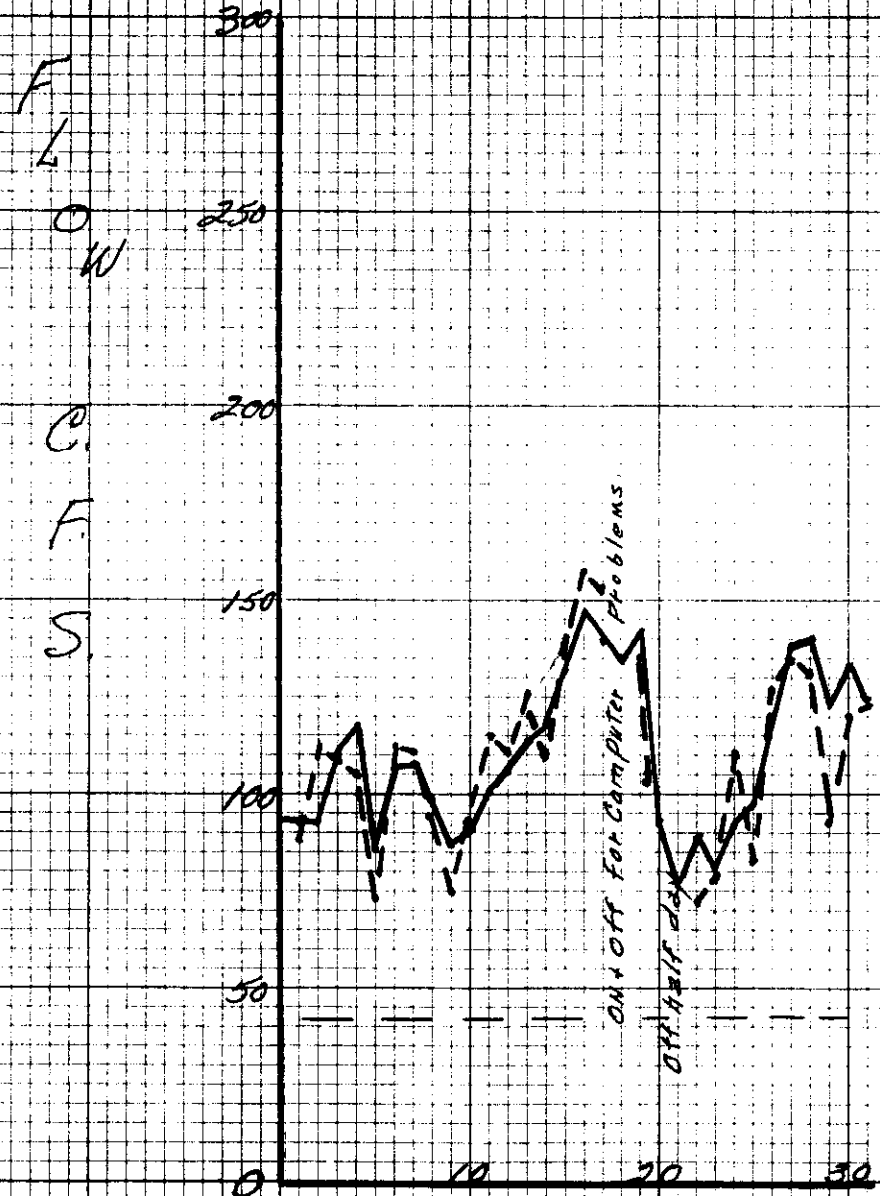
Ravencroft Hydro

Comparison Hydro ——

VS. Consumptive

plus by-pass - - - -

Same time noted.



Where is this measurement station?

Historic Minimum Flow at Gage to assure irrigation rights - - - 43 C.F.S.

Irrigation decreed right approximately 19 C.F.S.

Constitutional claim additional 20 C.F.S. Aug.

Aug. 1991.

DEC 05 1994

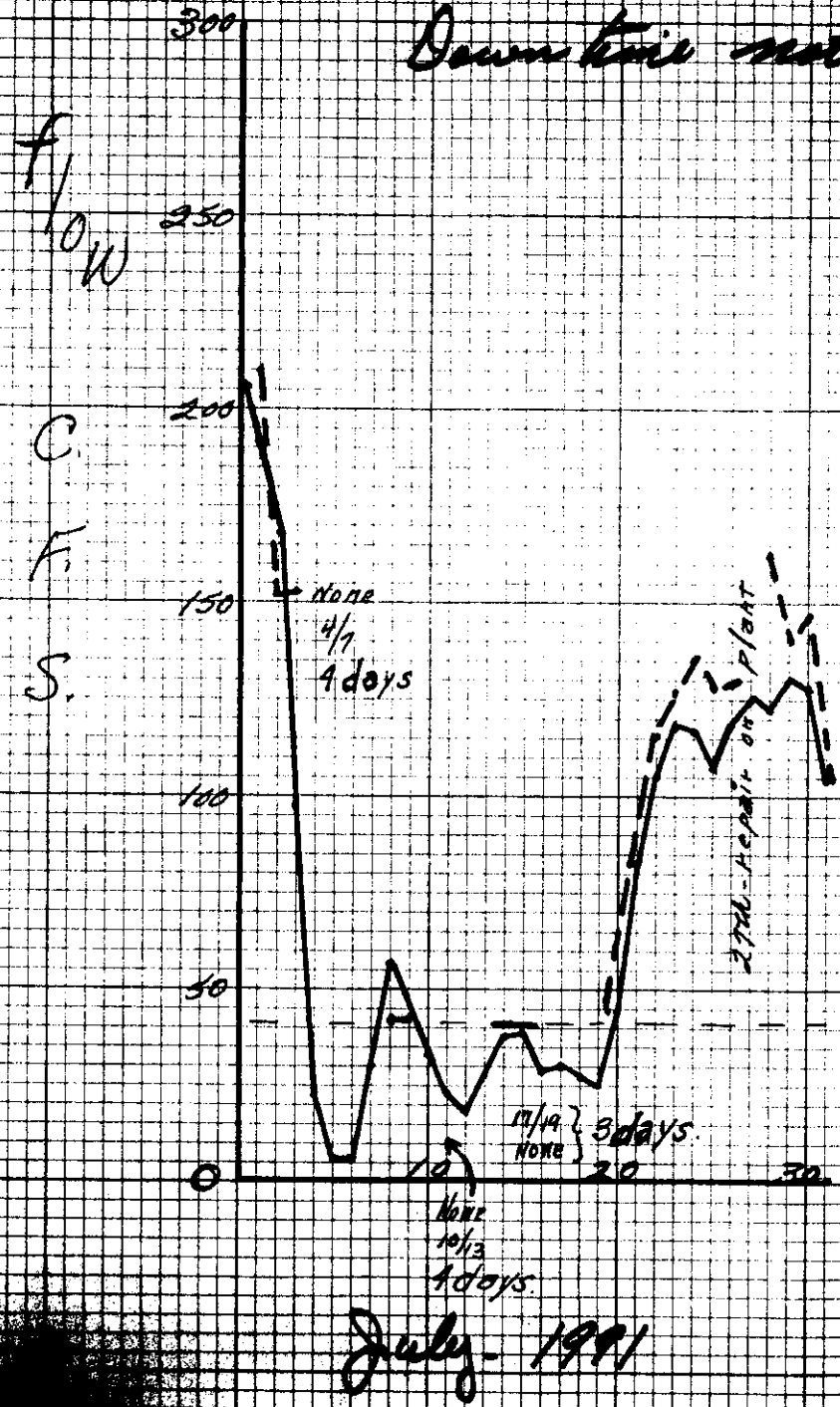
Kennecott Hydro

Companion - Asplund

vs. Bountiful plus

Weg. Pass -----

Downtime note.



Historic Minimum at Gage
To assure irrigation
Flow 93 C.F.S.

Irrigation Rights = (decreed)
approximately 19 C.F.S.

Constitutional Claim
additional 20 C.F.S.
Rex.

July - 1991

DEC 05 1994

MEMORANDUM

TO: FILE 37-7857, -7865, -7922, -8287

FROM: DOUGLAS JONES

DATE: 27-Feb-1992

RE: MULTI-AGENCY FIELD REVIEW OF PROJECT

ON 2-24-92 I VISITED THE "RIVER RANCH" POWER PROJECT INVOLVING THE ABOVE REFERENCED WATER RIGHT PERMITS AND PROTESTED APP 37-8287. ACCOMPANYING ME WERE BRIAN RAVENSCROFT; MIKE MCMASTERS, GREG MISBACH, TIM LITKE (DEQ); LEE PETERSON (WM-37); DICK ONEIDA (BWCC); BRIAN MILLER (SCS); AND COUNTY COMMISSIONER TUPPER. ABSENT WERE FISH & GAME AND BLM REPRESENTATIVES.

PARTICIPANTS MET AT TUPPER, A CROSSROADS EAST OF THE INTERSTATE, WHERE WE WERE BRIEFED ON RAVENSCROFT'S PLANS. IN SUMMARY, RAVENSCROFT WANTS TO INCREASE THE HEIGHT OF THE ENTIRE SYSTEM BY ABOUT 1 FOOT, PLUS ADD TWO OR THREE 5-10 ACRE BY 1-15 FOOT DEEP PONDS TO THE CANAL SYSTEM. REASONS FOR THE PLAN, AS STATED BY RAVENSCROFT, INCLUDE IMPROVED SEDIMENT SETTLING, IMPROVED WATER FLOW MANAGEMENT, AND IMPROVED WILDLIFE AND FISHERY OPPORTUNITIES. RAVENSCROFT HAS SAID THAT THERE IS A LARGE AMOUNT OF SILT THAT SETTLES OUT IN THE POND(S). A LARGE WATER FOWL POPULATION WAS OBSERVED TO BE USING THE SYSTEM AND A NEW WARM WATER FISHERY HAS DEVELOPED. WATER MANAGEMENT WILL BE IMPROVED BY ENLARGEMENT OF STORAGE BECAUSE FLOWS PRESENTLY FLUCTUATE SEASONALLY AND DAILY LEADING TO GENERATOR SHUTOFF.

NUMEROUS COMPLAINTS TO THE WATERMASTER AND CANAL COMPANY FROM DOWNSTREAM USERS ASSERT THAT OPERATION OF THE POWER PLANT CAUSES EXTREME FLOW FLUCTUATIONS. APPARENTLY, WHEN THE GENERATORS GO OFF-LINE THE MILE LONG POND/CANAL SYSTEM HAS TO BACKFILL BEFORE SPILLING. USERS ALSO COMPLAIN THAT SEEPAGE LOSSES IN THE CANAL SYSTEM ARE LARGE AND INJURE SENIOR RIGHTS.

RESEARCH OF THE WATER RIGHTS INDICATES THAT 37-7857, FILED ON 9-25-80, DID NOT MENTION PONDS. RIGHT 37-7865, FILED 11-4-80, DID NOT MENTION PONDING EITHER. RIGHT 37-7922, FILED 7-10-81, INDICATED A 10 ACRE BY 15' MAX DEPTH SETTLING POND, THE DIVERSION WAS NOT TO BE A DAM IN THE RIVER. ON 11-19-1982 AMENDMENTS WERE FILED TO MOVE THE CANAL AND POWER FACILITIES TO THE NORTH SIDE OF THE MALAD RIVER. THE AMENDMENT DID NOT INDICATE A RIVER DAM, PONDING OR STORAGE. TOTAL GENERATING CAPACITY WAS SAID IN 37-7922 TO BE 600 KW. PROOF OF BENEFICIAL USE WAS FILED TIMELY, BUT EXAMINATION FEE INFORMATION SHEETS WERE NOT. ULTIMATELY INFORMATION WAS FILED AND AN INDEPENDENT CERTIFIED EXAMINER, CECIL THOMAS, DID AN EXAM (6-86). PRIORITY DATES

DEC 05 1994

FOR THE FILINGS WERE ADVANCED ACCORDINGLY. APPLICATION 37-8287 PROPOSES A ROCK FILL DAM ACROSS THE MALAD AND A GENERATING CAPACITY OF 1060 KW. APPLICATION 37-8287 HAS BEEN PROTESTED AND INITIAL ATTEMPTS TO BRING IT TO HEARING HAVE FAILED.

DURING THE FIELD TOUR I OBSERVED SEVERAL IRREGULARITIES AND DEVIATIONS FROM THE CONDITIONED PERMITS. RAVENSCROFT HAS INSTALLED ALL BUT THE TURBINE AND GENERATOR ON A NEW FOURTH GENERATION SYSTEM - WHICH APPARENTLY IS NOT COVERED BY IDWR PERMIT, BUT POSSIBLY APP. 37-08287. RAVENSCROFT DID NOT SAY WHETHER HE INTENDED TO RUN ALL THE GENERATORS AT ONCE OR NOT. THERE WERE STATEMENTS MADE DURING THE TRIP THAT THEY HAVE A "LICENSE" TO DO IT - PRESUMABLY A F.E.R.C. LICENSE. AT THE HEADGATE THERE IS A VERY LARGE POND FORMED BY DAMMING THE MALAD RIVER WITH A ROCK OVERFLOW DAM. THIS POND MAY BE 20+ ACRES, BASED ON NAPP AIRPHOTO COVERAGE FROM 1988, AND INUNDATES A SAND AND GRAVEL DEPOSIT. THE "HEADGATE" IS A RADIAL GATE STRUCTURE, FULLY SUBMERGED, AND WITHOUT ADEQUATE MEASURING CAPABILITY. THIS IS IN VIOLATION OF A CONDITION OF APPROVAL ON THE PERMIT. BASED ON THE STATEMENTS OF PETERSON AND ONEIDA THERE APPEARS TO HAVE BEEN INTERFERENCE IN THE DELIVERY OF SENIOR RIGHTS DUE TO THE WAY THE SYSTEM WAS BUILT AND IS OPERATED. INTERFERENCE WAS NOT OBSERVED DURING THE REVIEW BECAUSE THERE WERE NO IRRIGATION DELIVERIES BEING MADE. INTERFERENCE WITH THE DELIVERY OF WATER TO IRRIGATION OR OTHER BENEFICIAL USES IS A VIOLATION OF PERMIT CONDITIONS.

AN OVERFLOW SPILLWAY AT THE FOREBAY WAS OBSERVED TO BE IN POOR CONDITION. THE CONCRETE WALL IS SERIOUSLY TIPPED AND CRACKED. A DAM APPURTENENCE IN THIS CONDITION WOULD NECESSITATE AN IMMEDIATE ORDER FROM THE DAM SAFETY SECTION TO REPAIR IT. THERE IS A HIGH PROBABILITY THAT THE SPILLWAY WALL WILL FAIL, AT LEAST PARTIALLY, AND THAT SEDIMENT AND OTHER DEBRIS WILL BE WASHED INTO THE MALAD RIVER. I TOLD BRIAN RAVENSCROFT THAT THE WALL NEEDS REPAIR AND HE SAID THEY WEREN'T PLANNING TO DO IT ANY TIME SOON. BRIAN SAID THAT THEY PLAN TO ALTER THE FOREBAY IN A FEW YEARS AND ENLARGE IT SIGNIFICANTLY, THEY WOULD DO SOMETHING WITH THE WALL THEN. IN MY OPINION THAT IS TOO LONG TO LEAVE THE WALL IN THAT CONDITION.

ON 2-27-92 I SPOKE WITH BRIAN RAVENSCROFT ABOUT THE WATER RIGHT RESEARCH AND INFORMED HIM THAT THE THREE PERMITS WERE APPROVED FOR UP TO 200 CFS, THAT EXAMINATIONS WERE DONE ON THEM AND THAT ADDITIONAL GENERATING CAPACITY IS NOT AUTHORIZED. BRIAN TOLD ME THAT THE SOUTH GENERATOR HAS A FIXED RATE CAPACITY (FRC) TURBINE OF 35 CFS, THE MIDDLE GENERATOR HAS A VARIABLE RATE CAPACITY (VRC) TURBINE OF 80-140 CFS, AND THE NORTH GENERATOR HAS A FRC TURBINE OF 63 CFS. AS STATED ABOVE, A NEW PENSTOCK AND GENERATOR HOUSING HAS BEEN INSTALLED AND IT IS INTENDED THAT THE VRC TURBINE BE INSTALLED THERE WITH A NEW GENERATOR. A NEW FRC 110 CFS TURBINE IS TO BE INSTALLED IN THE MIDDLE HOUSING WITH THE OLD GENERATOR AFFIXED.

DEC 05 1994

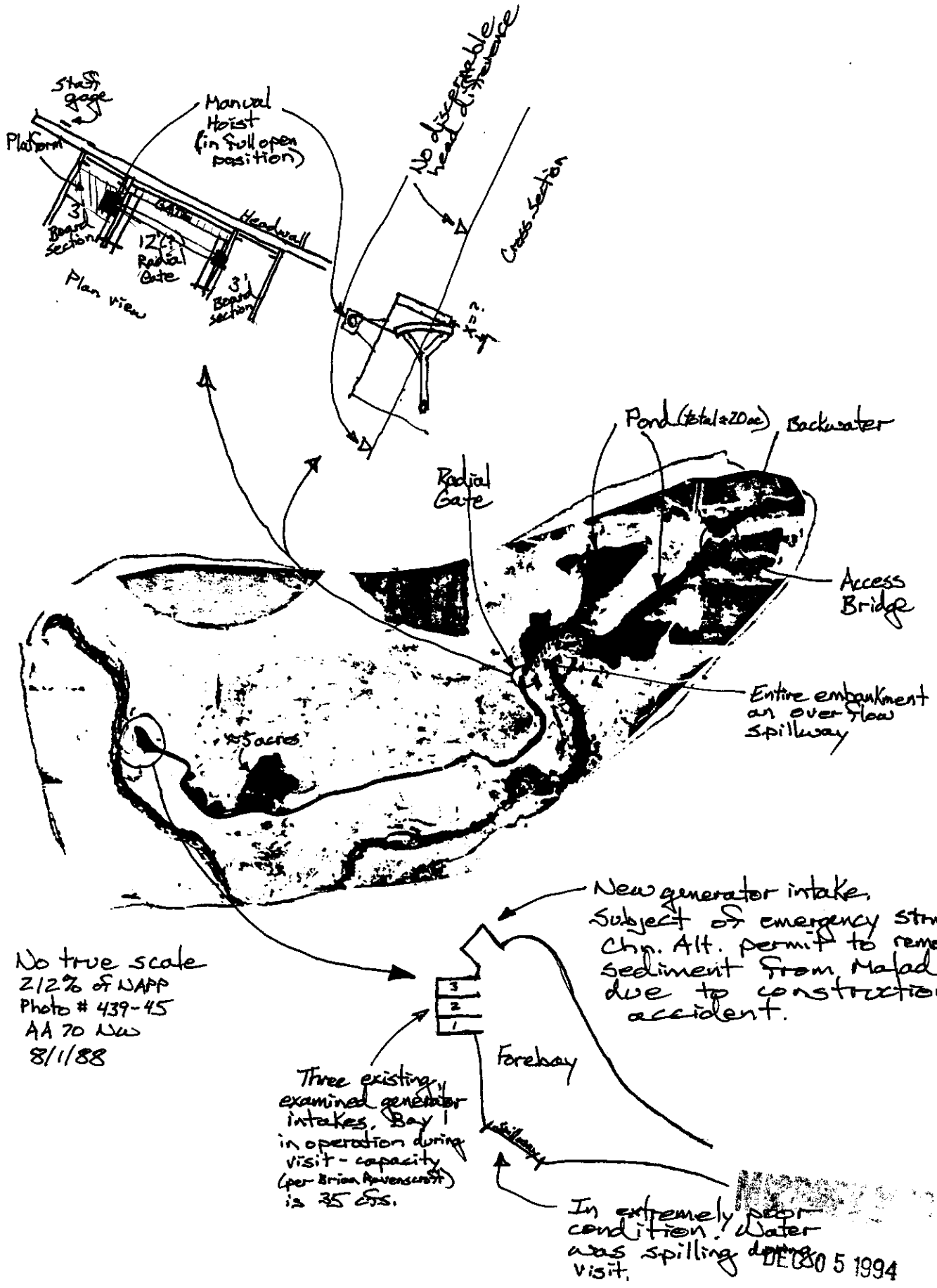
DURING THE FIELD VISIT RAVENSCROFT SAID THAT HE WANTS TO REGULATE THE DIVERSION RATES AT THE TURBINES WITH A MALAD RIVER MEASUREMENT JUST ABOVE THE TAILRACE TO ESTABLISH BYPASS COMPLIANCE. RAVENSCROFT'S PROPOSAL IS LUDICROUS BECAUSE SEEPAGE LOSSES THROUGH THE CANAL AND PONDS IS NOT MEASURED AND IS PROBABLY VERY SIGNIFICANT THROUGH GRAVEL AND SAND DEPOSITS, AS WELL AS THROUGH FRACTURED BASALT FLOWS AND BLOW-OUTS, AND IS LOST FROM THE RIVER.

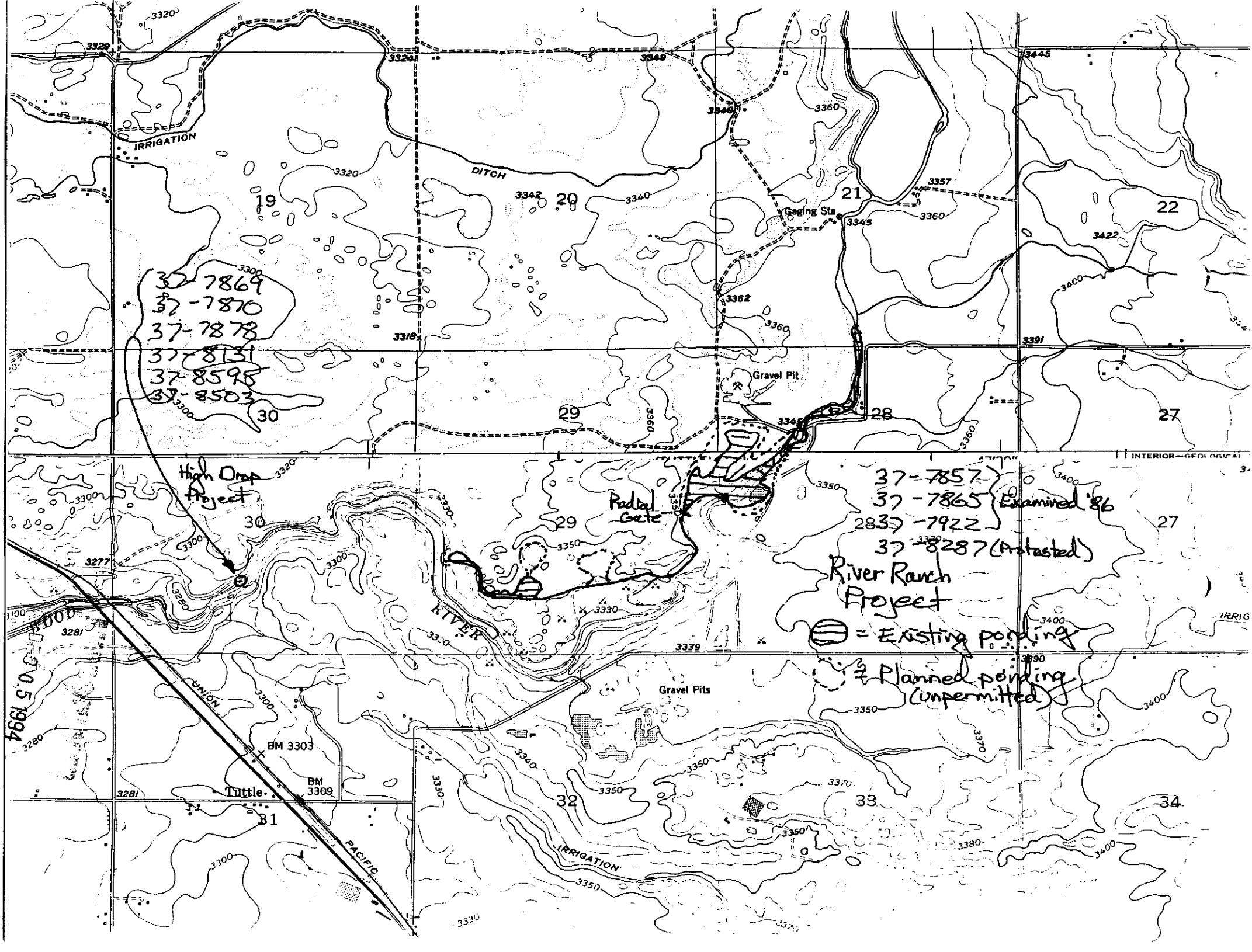
IN MY OPINION, IDWR SHOULD STRIVE TO ACHIEVE THE FOLLOWING GOALS:

1) CAUSE CHANGES AT THE UPSTREAM END TO DECREASE THE POND SIZE TO MINIMIZE SEEPAGE LOSS NOT ACCOUNTED AGAINST PERMITTED DIVERSION RATE.
2) CHANGE THE HEADGATE STRUCTURE OR TAKE OTHER STEPS TO DEVELOP A PROPER MEASURING DEVICE AT THE DIVERSION, E.G. A RATED CANAL SECTION WITH A GAGING STATION DOWNSTREAM OF THE RADIAL GATE.
3) NOT TO ALLOW INSTALLATION OF A FOURTH GENERATING UNIT WITHOUT WATER RIGHT RESOLUTION.
4) REPAIR THE EXISTING SPILLWAY AT THE FOREBAY.
5) PROVIDE CAPABILITY TO PREVENT FLOW FLUCTUATIONS IN THE EVENT OF GENERATOR SHUTDOWN, E.G. HAVE MIDDLE GENERATOR BAY OF ORIGINAL INTAKE PASS WATER AUTOMATICALLY WHEN INTERRUPTIONS OCCUR.
6) FORBID DEVELOPMENT OF ADDITIONAL POND(S) OR RAISING THE ROCK DAM ELEVATION.

A LETTER NEEDS TO BE WRITTEN TO VERN RAVENSCROFT AS SOON AS POSSIBLE TO PREVENT ADDITIONAL DEVELOPMENT AND CHANGES TO THE SYSTEM. LICENSING MUST NOT HAPPEN UNTIL THE CONDITIONS OF APPROVAL ON THE PERMITS ARE MET. THE WATERMASTER HAS REQUESTED, AT LEAST VERBALLY, DIRECTION ON HOW TO MANAGE THE DELIVERY OF THIS RIGHT IN LIGHT OF ABSENCE OF MEASURING DEVICES, ETC.

DEC 05 1994


Staff gage
Platform
Manual Hoist (in full open position)
3' Board section
12'(?) Radial Gate
Headwall
3' Board section
Plan view
No discernable head difference
Cross-section
Pond (total ≈ 20 ac)
Backwater
Radial Gate
Access Bridge
Entire embankment an overflow spillway
≈5 acres
New generator intake. Subject of emergency Stm. Chp. Alt. permit to remove sediment from Malad R. due to construction accident.
No true scale
2/2% of NAPP
Photo # 439-45
AA 70 NW
8/1/88
3
2
1
Forebay
Three existing, examined generator intakes. Bay 1 in operation during visit - capacity (per Brian Aavenson) is 35 cfs.
In extremely poor condition. Water was spilling during visit.
DEC 30 5 1994


37-7869
37-7870
37-7878
37-8131
37-8595
37-8503
High Drop Project
Radial Gate
37-7857
37-7865 Examined '86
37-7922
37-8287 (Protested)
River Ranch Project
= Existing ponding
= Planned ponding (unpermitted)
Gaging Sta
Gravel Pit
Gravel Pits
Tuttle
BM 3303
BM 3309
DITCH
IRRIGATION
RIVER
UNION PACIFIC
WOOD
19
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0 0.5 1994

Consulting Associates, Incorporated

BOISE OFFICE –
VERNON RAVENSCROFT
HELEN CHENOWETH

RECEIVED
FEB 18 1992
Department of Water Resources

DATE: February 14, 1992

MEMORANDUM TO: Idaho Fish & Game Dept., Will Reid
Idaho Water Resources Dept., Norman Young
Watermaster, Lee Peterson
U.S. Fish & Wildlife Service, Jim Esch
Bureau of Land Management, Bob Cordell
Ducks Unlimited, Dave Urban
Gooding County Commissioners: Bob Muffley
Don Morrow
Bob Tupper

ADVISORY COPIES: Water Quality Division: Mike McMasters
Tim Litke
Consultant, Gene Ralston
FERC: Project Compliance Division
Mark Robinson
Bryan Ravenscroft
Allan Ravenscroft

FROM: Vernon Ravenscroft
Hydro Project 4055

RE: Increasing the function of the Ravenscroft Hydro Project to serve as a water quality benefication facility.

The canal for the Ravenscroft Hydro project was recently dewatered. It is evident that our facility is serving to trap significant volumes of sediment. In June of 1990, Consultant Gene Ralston measured the water quality (dissolved oxygen, temperature and suspended sediment) at three points, the inflow above the project, the surface water at the headbox and the outflow below the tailrace. These measurements indicate no significant or lasting change in dissolved oxygen, a reduction up to 1.5 degrees celsius in temperature and a 30% reduction in suspended sediment. His report is attached.

The area is currently supporting nesting pairs of both ducks and geese (usually two pair of geese and dozens of ducks).

The backwater ponds are supporting a popular warm water fishery. On occasion we have recorded up to 30 different fishermen in a weekend, from Friday evening through Sunday evening.

DEC 05 1994

Mr. Litke and Mr. McMasters want to visit the project Monday February 24th at 10:00 A.M. All parties to whom this memo is addressed are invited to participate. The group will assemble at the Tuttle off ramp, Interstate 84 at the designated 10:00 A.M.

The purpose of the inspection trip will be to determine what changes in facilities, depth or area of water, and/or project management practice can be achieved to further enhance the water quality improvement features of this project. Such an improvement can be significant as a measure to improve the water quality in the Malad Canyon and in the Snake River, both downstream from this project.

Vernon F. Ravenscroft

enclosures

VFR/cg

DEC 0 5 1994

July 30, 1990

Mr. Blaine Graff
Malad Hydro Partners
333 North 13th Street
Boise, ID 83702

Re: Malad High Drop Hydroelectric Project, FERC No. 3924

Dear Mr. Graff:

At your request, I have conducted further review of the Malad High Drop Project (MHD) with regard to the project's impact on water temperature and other water quality concerns. I understand that the Idaho Parks and Recreation Board and the Idaho Department of Fish and Game have expressed concerns for the project's potential to impact water temperature and water quality.

The water delivery system proposed for the MHD Project is similar in concept to the existing Ravenscroft Ranch Hydro Project, located one to two miles upstream from the proposed MHD diversion structure. The existing Ravenscroft Project has about 50 acres of ponds along the power canal, which provide warm water fish habitat, as well as wildlife habitat. The ponds also provide substantial removal of suspended solids from the turbid Malad River water. Water samples collected above and below the project on June 13, 1990, indicated a 30% reduction in suspended solids.

The power canal system for the MHD Project will be about the same length, but somewhat larger in cross-section than the Ravenscroft Project. The combined area and capacity of the wildlife ponds will be substantially less than those on the Ravenscroft Project. The MHD Project's potential impact on temperature and dissolved oxygen should therefore be less that of the existing Ravenscroft Project.

On July 27, 1990, I conducted extensive measurements of water temperature and dissolved oxygen at eight locations on the Malad River and in the adjacent canal system serving the Ravenscroft Project. The measurements were begun at 1238 hours, starting at the proposed MHD diversion and proceeded upstream to the bridge just above the backwaters of the Ravenscroft Project. About one hour later, the measurements were repeated in downstream order. Dissolved oxygen was measured with a YSI Model 54 D.O. meter and temperature was measured with an ASTM precision thermometer

DEC 05 1990

thermometer calibrated to the National Bureau of Standards.

The ambient air temperature at the beginning of the measurements was 28.5°C and at the conclusion was 33.0°C; the weather was clear and winds were calm. The Malad River flow was 97 cfs at the USGS gage just upstream. The Ravenscroft Project was diverting 65 cfs and bypassing 9 cfs. The remaining Malad River flow was being retained in the pond system.

The dissolved oxygen and temperature values measured are presented in the enclosed table. Dissolved oxygen values ranged from 10.1 mg/l to 12.9 mg/l in the river system and from 8.2 mg/l to 9.2 mg/l in the canal system. The river D.O. concentrations represented percent saturations ranging from 130% to 165% while percent saturation in the canal system ranged from 103% to 118%.

The higher D.O. concentrations in the river system were created by the luxuriant growth of rooted, submergent aquatic vegetation. Aquatic plants observed were Ceratophyllum echinatum, Elodea canadensis, Potamogeton pectinatus, and P. nodosus. The canal system and ponds generally were devoid of submergent vegetation due to the greater depth of water.

Water temperatures in the river system ranged from 21.6°C to 23.6°C and in the canal system from 21.4°C to 22.4°C. The canal system temperatures were cooler than the river temperatures. This can be attributed to the difference in the ratio of depth to surface area and to turbulent flow in the river versus laminar flow in the canal system. The shallower depth of the river and its turbulent flow allows its water to absorb heat energy, during the daytime, more quickly than the canal system. Conversely, during the cooler nighttime periods, the river system would cool down more quickly than the canal system. Change in water temperature was more closely correlated with time of day than with location along the system.

Water temperatures in the river and canal system were somewhat excessive for cold water fish species but were well within requirements for warm water fish species. During the D.O. and temperature study, several schools of smallmouth bass fry were observed in the intake structure at the Ravenscroft Project. An eight to ten inch fish was occasionally seen foraging on the fry. Electrofishing studies conducted by the Idaho Department of Fish & Game in 1981 and two occasions in 1987, indicate a good population of bluegill, largemouth and smallmouth bass, as well as yellow perch, in the Ravenscroft Project ponds and river above the ponds.

The water quality in the ponds and the canal system proposed for the Malad High Drop Project should be better than that of the existing Ravenscroft Project. The Ravenscroft Project removes a substantial amount of the suspended solids and sediment related nutrients and pesticides which improves the quality of water coming into the MHD Project. The water retention time in the MHD Project will also be much shorter. The bypass of some of the turbid Malad River water out of the canyon will not only improve the river's

DEC 05 1994

clarity for park visitors but will also improve water quality for fish in the bypassed reach. During the hot summer months, diversion of the warmer Malad River water will allow cooler water temperatures in the bypassed reach, where significant amounts of cooler spring water flow into the canyon.

Since the water quality in the MHD Project ponds will be at least as good, if not better than the Ravenscroft Project, it should be more than adequate to support a warm water fishery. The additional habitat provided by the riparian mitigation and wetland area will also assist in establishing the warm water fishery.

In summary, I believe that the Malad High Drop Project will have a beneficial impact upon water quality, fish, and wildlife habitat in the bypassed reach and will provide an opportunity to establish and maintain a good warm water fishery in the water delivery system. These should be viewed as positive benefits to the Malad Gorge State Park.

Sincerely,

Gene L. Ralston

Enc.

DEC 05 1994

DISSOLVED OXYGEN AND TEMPERATURE MEASUREMENTS AT SELECTED LOCATIONS ALONG THE MALAD RIVER IN THE VICINITY OF TUTTLE, IDAHO ON JULY 27, 1990

LOCATION	(TIME) D.O. MG/L / TEMP. °C	(TIME) D.O. MG/L / TEMP. °C
River at bridge above Ravenscroft Hydro	(1437) 10.6 / 22.6	(1532) 10.8 / 23.3
Canal at Ravenscroft Hydro diversion structure	(1424) 8.7 / 21.6	(1542) 9.2 / 22.3
River below Ravenscroft diversion dam		(1549) 10.1 / 22.9
Canal at bridge 0.5 mile below Ravenscroft Hydro diversion structure	(1413) 8.3 / 21.4	(1555) 8.8 / 22.3
Canal at Ravenscroft intake structure	(1343) 8.2 / 21.4	(1605) 8.2 / 22.4
River immediately above Ravenscroft tailrace	(1352) 12.9 / 22.2	(1623) 12.4 / 22.4
River 0.75 mile below Ravenscroft tailrace	(1328) 11.7 / 21.9	(1639) 11.4 / 23.2
River at Justice diversion dam	(1235) 10.3 / 21.6	(1658) 11.6 / 23.6

DEC 05 1994

Weather clear; winds calm; air temperature @ 1235 hrs: 28.5°C, @ 1658 hrs: 33.0°C

SUSPENDED SEDIMENT ANALYSES

Sample previously collected by Vern: 39

Malad River at USGS gage, June 13, 1990: 10

Ravenscroft canal
at powerplant ~~intake structure~~ Tailrace area, June 13, 1990: 7

DEC 05 1994

Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2870
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

RECEIVED
FEB 19 1992
Department of Water Resources

DATE: February 18, 1992

MEMO TO: Idaho Fish & Game Dept., Will Reid
Idaho Water Resources Dept., Norman Young
Watermaster, Lee Peterson
U.S. Fish & Wildlife Service, Jim Esch
Bureau of Land Management, Bob Cordell
Ducks Unlimited, Dave Urban
Gooding County Commissioners: Bob Muffley
Don Morrow
Bob Tupper
Gooding Soil Conservation District

ADVISORY COPIES: Water Quality Division: Mike McMasters
Tim Litke
Consultant, Gene Ralston
FERC: Project Compliance Division
Attn: Mark Robinson
Bryan Ravenscroft
Allan Ravenscroft

FROM: Vernon Ravenscroft
Hydro Project 4055

SUBJECT: Meeting at Ravenscroft Hydro
Monday, February 24, 1992
10:00 A.M. Assemble at Tuttle Overpass
Highway Interstate 84

There are two reasons for this memorandum which is provided as a follow-up to the invitation for a field examination of the Ravenscroft Hydro project diversion area.

1. Expand the invitation list to include the Gooding Soil Conservation District. That group is known to have a major interest in agricultural run-off water problems. I apologize for not including them in the initial invitations.

2. To clarify in advance any possible misunderstanding as to our reason for sponsoring the field trip. We believe that there well may be a community of interest and benefit from the project if it can be altered to further enhance the already proven water quality, fishery and wildlife values, (ie. warm water fishery, waterfowl nesting, reduction in water temperature and significant deposit of sediment load). It is also acknowledged that our project will benefit from any

DEC 05 1994

additional re-regulation of the volatile flow pattern experienced on this particular river reach. That benefit however, is not a major feasibility consideration. If there is a common interest we are very willing to cooperate. If there is confusion, controversy or regulatory problems we will not pursue this particular project improvement at this time.

I have a conflict in schedule. Bryan Ravenscroft will serve as host for the field trip.

Regards,

Vernon Ravenscroft

Vernon F. Ravenscroft

VFR/cg

DEC 05 1994

George —

Your analysis appears accurate and your recommendations appropriate, but delay sending them in writing until you have met with Ravenscroft and reviewed the matter on site.

MEMORANDUM

TO: NORM YOUNG

GLEN SAXTON

FROM: GEORGE AUSTIGUY

DATE: JANUARY 27,1992

RE: RAVENSCROFT HYDROPROJECT # 4055

I have reviewed the Ravenscroft project with FERC, the BLM, IDFG, Mr. Ravenscroft, Lee Peterson and our water right files.

Mr. Ravenscroft project is located on the Malad River. The project consists of a rock and earth filled diversion dam across the Malad River, there is no gated outlet to the river. A fourteen foot tainter gate feeds the power canal from the pond created by the diversion dam. The power canal is approximately one mile long and contains a concrete and steel dam forming a forebay. Three penstocks divert water from the forebay to three turbines. Flows are returned to the river via a tailrace. Stream flow is maintained in the bypass reach by four ungated culvert pipes installed in the dam. Flow through these pipes is determined by the water level in the pond.

The project was granted exemption from FERC licensing. Article 2 in this exemption order requires compliance with any conditions that Federal or State Fish and Wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. Because the project occupies Federal land a BLM right of way was required. Among the conditions Mr. Ravenscroft agreed to are:

1. To maintain a minimum streamflow between the diversion inlet structure and the discharge point.

2. To provide devices to readily confirm that the minimum flows are being met.

Downstream are two irrigation canals, the Justice Canal and the Thorpe Ditch. These canals service water rights which are senior to the hydropower project water rights.

Evidently Mr. Ravenscroft project has not maintained a sufficient water level in the diversion pond for minimum bypass flows to be delivered. Raising the water level in the diversion pond requires shutting down the power diversion. During this time downstream flow requirements are not being met, injuring downstream users.

Repeated non-compliance with the minimum bypass flow requirements

DEC 05 1994

has led FERC to issue an order requiring a gaging system which will record the bypass flow on a continuous basis. FERC is prepared to levy a $10,000 per day against the project for non-compliance with the minimum bypass flow.

Mr. Ravenscroft is proposing to install a self recording device in order to comply with FERC'S order.

Mr. Ravenscroft has represented that upstream flows are erratic due to irrigation diversions. As a result the project cannot consistently maintain adequate water levels in the diversion pond for minimum bypass flows to be delivered and at the same time deliver flows through the project to the downstream users.

It is Mr. Ravenscroft opinion that his project cannot comply with both the state and federal regulations, therefor the regulations are in conflict.

Mr. Ravenscroft is requesting that IDWR become a participant in formulating a plan that will allow his project to operate when it is out of compliance with one of the state or federal regulations.

DISCUSSION

Maintaining minimum bypass flows while diverting water for power generation are goals which can be met by a properly designed project. The fact that Mr. Ravenscroft project cannot accommodate regulations which require the above goals to be met is indicative of a poorly designed project, not conflicting regulations.

The primary problem is that the diversion structure has a poor mechanism for maintaining flows in the bypass reach. A gated structure such as a tainter gate, in the diversion dam would allow flows to be released to the bypass reach while still allowing diversion for power.

The fluctuation of upstream flows can be problematic in maintaining required flows, however the watermaster has knowledge of the timing and quantity of upstream irrigation releases. Coordination with the watermaster would allow gated structures to be adjusted to accommodate fluctuations in upstream flow rates.

Lee Peterson the watermaster has related to me that he is receiving comments from water users questioning water losses to the downstream flows from the hydro project. Presently the hydro diversion is not being regulated by the watermaster.

I am currently looking into this and will be scheduling a trip to the project with Lee and Mr. Ravenscroft.

DEC 05 1994

RECOMMENDATIONS

Inform Mr. Ravenscroft that IDWR does not view the federal and state regulations as being in conflict.

Suggest that improvements in the diversion structure would allow the project to be in compliance with state and federal regulations.

Suggest coordination with the watermaster to obtain information on scheduled upstream irrigation releases to aid in determining appropriate adjustments to gated outlets and diversions.

If after the above recommendations have been implemented and the project is still out of compliance with regulations the situation be reevaluated.

DEC 05

George — Glen. MK

xxx 4936

RECEIVED
JAN 22 1992
Department of Water Resources

January 18, 1992

WCH

Lee R. Peterson, Watermaster
Water District No. 37 & 37M
P.O. Box T
Shoshone, Idaho 83352

Dear Lee:

Reference your letter of January 16th with copies to Loren Holmes and Norman Young.

As per our conversation over the phone yesterday, you and I will plan a field trip to the Ravenscroft Project within the next month in order that we can review first hand the water coordination concerns at the Ravenscroft Hydro project.

Regards,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Loren Holmes
Norman Young

DEC 05 1994

George Austgen — F&I

RECEIVED
JAN 16 1992
Department of Water Resources

January 8, 1992

Mr. Vernon Ravenscroft
Project Coordinator
1843 Broadway, Suite 102
Boise, Idaho 83706

RE: The most recent revision of the Malad High Drop Project, FERC #11134-000

Dear Mr. Ravenscroft:

Thank you for forwarding the latest version in your evolving project concept for the Malad high Drop Hydro Project, FERC #11134-000. There are a number of concerns I have regarding this recent version of the proposed project.

The map is unclear as to many of the primary project features, which are vaguely displayed but without enough specifics to allow evaluation. State Park and potential National Natural Landmark boundaries are not depicted, nor is the point of project effluent return indicated with sufficient clarity to be able to determine where return actually occurs (into the flume? the river? the alcove stream diversion area?).

While the three mitigation efforts the project sponsors have proposed are interesting, they cannot be considered in lieu of mitigating the real natural and human environmental impacts the project would likely induce. Though not clear from the map, the new impoundment may inundate existing riparian habitat and land in an area recognized for its historic and natural heritage values within a State Park that sees many tens of thousands of public appreciators annually. Prior to the proposed project these values were protected for the public, and plans for development of interpretive public use of the upper portion of the park have been considered for future implementation. It isn't clear to me that the old boilerplate language in the BLM land transfer document necessarily includes the kind of project proposed. Perhaps it does; certainly an opinion from the appropriate Federal judiciary would be useful in evaluating the extent to which private special interests can condemn public Park

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lands at this site. I request that such opinion be obtained, since the broader public interest is at stake in this matter.

In their portrayal on the latest map, the access and transmission routes ("yet to be designed") would visually degrade natural heritage features of the Malad Gorge. The visual experience significantly contributed to the site's qualification as a potential National Natural Landmark. These developments would also degrade the viewshed of the Malad Gorge State Park (particularly from the dramatic scenic viewing area at the tip of the lava tongue between the main gorge and the alcove canyon). Access means blasting and grading a road along the north wall of Malad Gorge, and transmission lines would be another visual detraction (though they could perhaps be buried or cradled along the top of the Idaho Power Company flume). The "bore hole" concept seems hairbrained, and would require additional blasting which would likely loosen and cause scaling (thus scarring) of the canyon walls, both within and without the Park. A third party benefit-cost relationship for this whole scheme should be conducted as it is hard to see how there could ever be adequate water to pay for the project within its license lifetime.

The powerhouse would be a conspicuous new element of development in the canyon, as it would be the endpoint of a penstock, road and transmission system (camouflage should be required, but it could hardly disguise this manmade feature). Since the park boundaries don't appear on the map, it's hard to see exactly where the return flow site is located - which appears to be upgradient from the powerhouse - or what "maximum use of open water" means. Usually public access to certain areas surrounding hydroelectric projects is denied; this could result in additional land condemnation within the old BLM land transfer area. However, the old boilerplate power use clause does not apply to the lands comprising the lower portion of the State Park - including those lands in the vicinity of the powerhouse and effluent return point. Thus, project condemnation of park lands would not be likely to succeed in the areas of the powerhouse or return point, since they lie outside the BLM land transfer site.

The alcove ecosystem is isolated from the pollution effects of Big Wood River agricultural runoff and is a sensitive microcosm. It is not acceptable for the return flow to use the diversion area of alcove water (where it is diverted into the flume) as a stilling basin or point of return. No project return flows should enter this

DEC 05 1994

system at all. This concern may be a red herring if the return point is into the flume itself (again, it is not possible to interpret this from the map). If the point of effluent return is into the Malad River below the flume, that presents yet another set of issues (which should be addressed in an Environmental Impact Statement, fully compliant with NEPA). This reach of Malad River is a blue ribbon fly fishing stretch and is ecologically sensitive. If a project such as this is ever installed, a more logical return point would be in the vicinity of Idaho Power's Upper Malad Plant (perhaps re-introducing the project effluent to the Upper Malad penstock just before it begins its descent to the Plant).

Not addressed in the November 26, 1991, memorandum are numerous issues ranging from minimum streamflow below the new dam (do new project works despoil the historic values of the old dam?), mitigation for the loss of riparian habitat inundated by the project, replacement (by purchase of replacement acreage to be added to the Park at a site determined by the Park) of lands inundated or occupied through eminent domain, and so forth. Removing water from a State Park which features a scenic waterfall (one of the dominant scenic features of the site) demands public trust consideration as well.

Clearly an Environmental Impact Statement in full compliance with the National Environmental Policy Act should be conducted for this project. I request that such a study be undertaken, including the presentation of a full range of alternatives. Projects such as this should clearly be denied Exemption, and must receive EIS (NEPA) treatment. An EIS process will allow the public to fully indentify issues and their impact on the natural and human environment.

I look forward to learning more about the evolution of this project in future correspondence. Please include these comments in the record. Thank you for your consideration in this matter. A notarized Certificate of Service is attached.

Respectfully submitted,

Peter A. Bowler

Peter A. Bowler, Ph.D.

DEC 05 1994

Permanent address:
560 St. Anns Drive
Laguna Beach, CA 92651

Summer address:
Star Route
Bliss, Idaho 83314

Professional address:
Dept. of Ecology and
Evolutionary Biology
University of California
Irvine, CA 92651
(714) 856-5183

DEC 05 1994

Certification of Mailing

I hereby certify that on the 8th day of January, 1992, I mailed a true and correct copy of the attached comments regarding the Malad High Drop Hydro Project, postage prepaid, to the following individuals:

Lois Cashell, Secretary
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA HL 21.1
825 N. Capitol St., N.E.
Washington, D.C. 20425

Director
Division of Project Review
Office of Hydropower Licensing
FEDERAL ENERGY REGULATORY COMMISSION
825 N. Capitol St., N.E.
Washington, D.C. 20425

Ida-West Energy, Inc.
P.O. Box 7867
Boise, ID 83707

Carl H. Nellis
Idaho Dept. of Fish & Game
P.O. Box 428
Jerome, ID 83338

Ned Swisher, President
Hagerman Valley Citizens Alert
P.O. Box 32
Hagerman, ID 83332

Will Reid
Idaho Dept. of Fish & Game
Statehouse Mail
Boise, ID 83720

Vernon Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, Idaho 83706

Mary Lucachek
Idaho Dept. Parks & Recreation
Statehouse Mail
Boise, ID 83720

USDI Heritage Conservation
and Recreation Service
915 2nd Ave., Room 990
Seattle, WA 98174

Tom Anderson
Rt. 1, Box 361
Hagerman, ID 83332

Lyons H. & Ferne G. Woody
Route # 1
Hagerman, ID 83332

Justice Ditch Company
Floyd H. Marsh, President
Rural Route # 1
Hagerman, ID 83332

American Falls Reservoir
District No. 2
Richard Oneida
P.O. Box C
Shoshone, ID 83352

Justice Ditch Company
c/o Rick Bendorf, Secretary
2389-BS 1100 E.
Hagerman, ID 83332

Lee Peterson
Watermaster
Box T
Shoshone, ID 83352

Committee for Idaho's High Desert
% Janet O'Crowley
P.O. Box 705
Picabo, ID 83348

DEC 05 1994

 Certificate of Mailing

Golden Eagle Audobon Society
% Scott Reed
Attorney at Law
P.O. Box A
Coeur d'Alene, ID 83814

Golden Eagle Audobon Society
% Harold G. Miles
316 15th Avenue South
Nampa, ID 83651

Idaho State Dept of Water Resources
% Norman Young
Statehouse Mail
Boise, ID 83720

John L. Runft
Attorney at Law
1020 Main St., Suite 440
Boise, ID 83702

U.S. Fish & Wildlife
% Ted Koch
4696 Overland Rd.
Room 576
Boise, Idaho 83705

Ray Rigby
Rigby & Thatcher
P.O. Box 250
Rexburg, ID 83440

Idaho State Dept. of Water Resources
% Gary Spackman
Statehouse Mail
Boise, ID 83720

Tom Green
Idaho State Historical Society
610 N. Julia Davis Drive
Boise, ID 83706

Charles S. Polityka
Regional Environmental Officier
U.S. Department of the Interior
500 N.E. Multnomah Street
Suite 600
Portland, OR 97232-2036

Peter A. Bowler

STATE OF CALIFORNIA

COUNTY OF ORANGE

Lois L. Glenn, Notary Public 01/08/92

OFFICIAL SEAL
LOIS L. GLENN
NOTARY PUBLIC - CALIFORNIA
PRINCIPAL OFFICE IN
ORANGE COUNTY
My Commission Exp. Dec. 25, 1993

DEC 05 1994

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
P.O. BOX 2B
SHOSHONE, ID 83352

RECEIVED
JAN 16 1992
Department of Water Resources

DECISION
:
:

RIGHT-OF-WAY GRANTED

Details of Grant

SERIAL NUMBER OF GRANT: I-17053

NAME OF HOLDER: VERNON RAVENSCROFT

Map showing the location and dimensions of the Grant:

Grant subject to final survey of project and facilities. Preliminary drawing in casefile identifies approximate location of canal, reservoir, and related facilities.

Permitted use by Holder:

Construct, maintain, and operate water reservoir, diversion point, canal system and related facilities in conjunction with a power generating plant on the Malad River.

Authority for Grant: P.L. 94-579 (Oct. 21, 1976) Title V, 90 Stat. 2743

Regulations applicable to Grant: Part 2800 - Rights-of-way, Principles and Procedures.

Code Reference: 43 CFR 2800

Date of Grant: March 5, 1982

Expiration of Grant: 25 years from date of issuance, with option to renew.

Rental: Amount: $250/year

(Note: This amount is considered an interim rental and may be altered upward or downward upon completion of an official appraisal and future evaluation.)

When payable: Yearly on date of issuance.

Terms and Conditions of Grant

Pursuant to the authority vested in the undersigned by Order No. 701 of the Associate Director, Bureau of Land Management, dated July 23, 1964 (29 F.R. 10526), as amended, a right-of-way, the details of which are shown above, is hereby granted subject to the following terms and conditions:

1. All valid existing rights existing on the date of grant.
2. All regulations specified above.
3. Filing of proof of construction within five years from the date of initiation of construction.
4. Further terms and conditions as follows:
   (a) The District Manager of the Shoshone District Office, Shoshone, Idaho, has the authority to conduct all business with the Holder with respect to use of lands and disposition of resources, and the Holder is requested to contact the above-designated official prior to the beginning of construction.
   (b) Subject to Exhibit A parts 1 and 2, which are made a part of this grant.

Terrance M. Cortelle
for Charles J. Haszier
District Manager

DEC 05 1994

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STIPULATIONS

1. A $5,000 Performance Bond shall be posted with the BLM prior to any on-the-ground activity. This bond shall be held until a proof of construction inspection is completed.

2. No construction on public land shall be allowed until a written Notice to Proceed is sent to the holder of this R/W by the Authorized Officer 2802.4(h).

3. Once construction commences it shall be completed within five years of that date.

4. The land shall remain open to the public.

5. No vehicles or motorized craft shall be allowed within the completed pond or reservoir enclosures. Fencing will meet BLM standards for wildlife enclosures. At least four entrance points for public access will be provided.

6. The United States shall assume no liability for damage caused by this proposal.

7. Every reasonable care should be taken to minimize water quality degradation during construction and to prevent long-term erosion.

8. Minimum streamflows to be maintained between diversion inlet structure and discharge point is shown below:

July through March	5 cfs
April through June	80 cfs

9. BLM and IDF&G may require flushing flows to maintain riparian vegetation. The flushing will not exceed four times per year, 50 cfs per time, and four hours per time.

Deleted
See emps
SIGNED 2 Dec 85

~~10. Applicant will maintain visible flow of water from April through September through the entire length of the small channel which parallels the river (see attached map).~~

11. Applicant will maintain maximum pond water levels during April, May and June when sufficient water is available from irrigation waste sources and the Malad River. Additional water acquired after the FERC permit exclusively for power generation will not be required to be used to maintain pond water levels. Final pond design will be subject to approval by BLM.

12. Revegetate all disturbed areas and pond margins to BLM and IDF&G specifications. Refer to vegetation list 1 for some of the required species for revegetation.

13. Vegetation control along the canal will be limited to suppression or elimination of vegetation which prohibits the use and passage of necessary maintenance equipment and/or the free flow of water. Other vegetation control on the R/W will be by concurrence of BLM.

14. If the project is abandoned, all public lands will be rehabilitated to BLM specifications.

15. Where the land crosses the material site R/W on the SW4SE4 of Section 29, vehicular access shall be guaranteed to the State Division of Highways by the holder of this water reservoir/canal system R/W. This may require a pipe or bridge crossing be provided.

I concur with and agree to abide by the terms and conditions as set forth above. I understand that the specific exclusion on the use of acquired water listed for stipulation number 11 would also apply to stipulation number 8 the minimum flow provision.

10-10-82
J.R.

Vernon Ravenscroft

Feb. 10, 1982,
Date

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VEGETATION LIST 1

Partial list of species which may be required for rehabilitating disturbed areas:

Dryland Areas

Russian Wildrye
Bluebunch wheatgrass
Fairway wheatgrass
Sodar streambank
Indian ricegrass (in sandy areas)
Tall wheatgrass
Bitterbrush
Four-winged saltbush
Dryland alfalfa

Wet Areas

Kentucky bluegrass
Smooth brome
Orchardgrass
Willow
Poplar
Russian Olive

The water reservoir and canal system, plus diversion dam, are on a portion of the lands listed below:

T. 6 S., R. 14 East, Boise Meridian
Section 29: SE¼NE¼SE¼
SW¼SE¼,
SE¼SW¼.

Section 32: E½NW¼NE¼,
NW¼SE¼NE¼,
SW¼NE¼

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EXHIBIT A-Part 1

MAR 11 1992

GENERAL STIPULATIONS
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY I-17053

1. The Holder shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e. insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The Holder shall obtain from the Authorized Officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; the pest, insect, fungus, etc. to be controlled; the method of application; the location for storage and disposal of containers; and other information that the Authorized Officer may require. The plan should be submitted no later than December 1 of any calendar year that covers the proposed activities for the next fiscal year. Emergency use of pesticides may occur. The use of substances on or near the right-of-way shall be in accordance with the approved plan. A pesticide shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations if the Secretary has imposed limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.

2. Holder shall survey and clearly mark the exterior limits of the right-of-way. All activites directly or indirectly associated with the construction or maintenance of water reservoir and canal system must be conducted within the limits of the right-of-way.

3. There is reserved to the Secretary of the Interior, or his lawful delegate, the right to grant additional rights-of-way or permits for compatible uses on, over, under, or adjacent to the land involved in this grant.

4. This right-of-way may be renewed. If renewed, the right-of-way will be subject to regulations existing at the time of renewal and such other terms and conditions deemed necessary to protect the public interest.

5. This right-of-way is subject to all applicable regulations in 43 CFR Part 2800 which are hereby incorporated in and made a part of this grant.

6. There is reserved to the United States a continuing right of access onto the public lands covered by the right-of-way grant, and upon reasonable notice to the Holder, access and entry to any facility constucted on the right-of-way or permit area.

7. The Holder, by accepting this right-of-way grant, agrees and consents to comply with and be bound by the following terms and conditions:

   (a) To the extent practicable, all State and Federal laws applicable to the authorized use and such additional Federal and State laws along with the implementing regulations, that may be enacted and issued during the term of the grant.

   (b) That in the construction, operation, maintenance and termination of the authorized use, there shall be no discrimination against any employee or applicant for employment because of race, creed, color, sex or national origin and all subcontracts shall include an identical provision.

   (c) To rebuild and repair roads, fences, and established trails that may be destroyed or damaged by construction, operation or maintenance of the project and to build and maintain suitable crossings for existing roads and significant trails that intersect the project.

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(d) To do everything reasonable within his or her power, both independently and upon request of the Authorized Officer, to prevent and suppress fires on or in the immediate vicinity of the right-of-way or permit area. This includes making available such construction and maintenance forces as may be reasonably obtained for the suppression of fires.

8. This grant is subject to periodic review at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.

I concur and agree to abide by these general stipulations.

March 8-1982
Date

Vernon E. Ravenscroft
Vernon E. Ravenscroft

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SUPPLEMENTAL STIPULATIONS

I-17053

1. A bridge or pipe crossing in the canal system conforming to H-20-44 specifications shall be constructed within the SW¼SE¼ Section 29, T. 6 S., R. 14 East, Boise Meridian.

   This structure is to provide access for the State Division of Highways and Bureau of Land Management to the material site rights-of-way associated with or crossed by R/W I-17053. The approach slopes to this crossing shall not exceed 10 percent.

2. The performance bonds shall total $20,000. A $5,000 performance bond for rehabilitation purposes has already been received, but to ensure construction of an access bridge or pipe across the canal on the SW¼SE¼ Section 29, meeting specifications H-20-44, another $15,000 performance bond is required.

   When final approval by BLM and State Division of Highways Engineers for the bridge or pipe crossing is completed, the $15,000 bond shall be released.

3. No material outside of the 200 ft. wide interim right-of-way shall be used by the holder unless a permit is issued by BLM for such material; with concurrence from the State Division of Highways, if the area of material removal is within a material site right-of-way.

   It is understood that any material permit issued for berm or fill borrow would be on a fee basis by the cubic yard.

4. The control headgate for the canal system shall be designed to restrict water flow to no more than the maximum canal capacity. Any damage caused by overflow or over capacity, whichever the case may be, shall be the responsibility of the right-of-way holder and no liability shall be assumed by the Bureau of Land Management.

5. Physical access to all portions of the material site rights-of-way must be assured. Of prime concern is the estimated 10,000 cubic yards of gravel located within the southeast corner of NE¼SE¼ Section 29, T. 6 S., R. 14 E. B.M. (Material site right-of-way I-0705). An access along the southern bank of the canal would be acceptable.

6. In reference to the stipulations for I-17053 signed and dated February 10, 1982 by holder, these stipulations to be amended and altered as follows:

   Stipulation 9. Add; Holder will be responsible to clean entrance b (see attached map) into the side river channel and take reasonable measures to ensure that water reaches the riparian zone during flushing

DEC 05 1994

flows and during April through June. Holder will also be responsible to provide devices to readily confirm that the minimum and flushing flows are being met.

Stipulation 10. Delete.

Stipulation 11. Add: Holder will construct one island in each of three ponds and will construct an earthen dike to deepen pond no. 2. The existing dam (a) will be improved to impound more water and flood additional upstream portions of the riparian zone to the extent practicable.

Stipulation 12. Change: Revegetate all disturbed areas (including islands) to BLM and IDF&G specifications. Refer to....

Stipulation 16. Add: Holder will dedicate his North Side Canal Company waste water filing to continue to provide wildlife habitat on the tract.

I concur with and agree to abide by the terms and conditions as set forth above.

Vernon Ravenscroft

Vernon Ravenscroft

Dec. 2, 1982.

Date

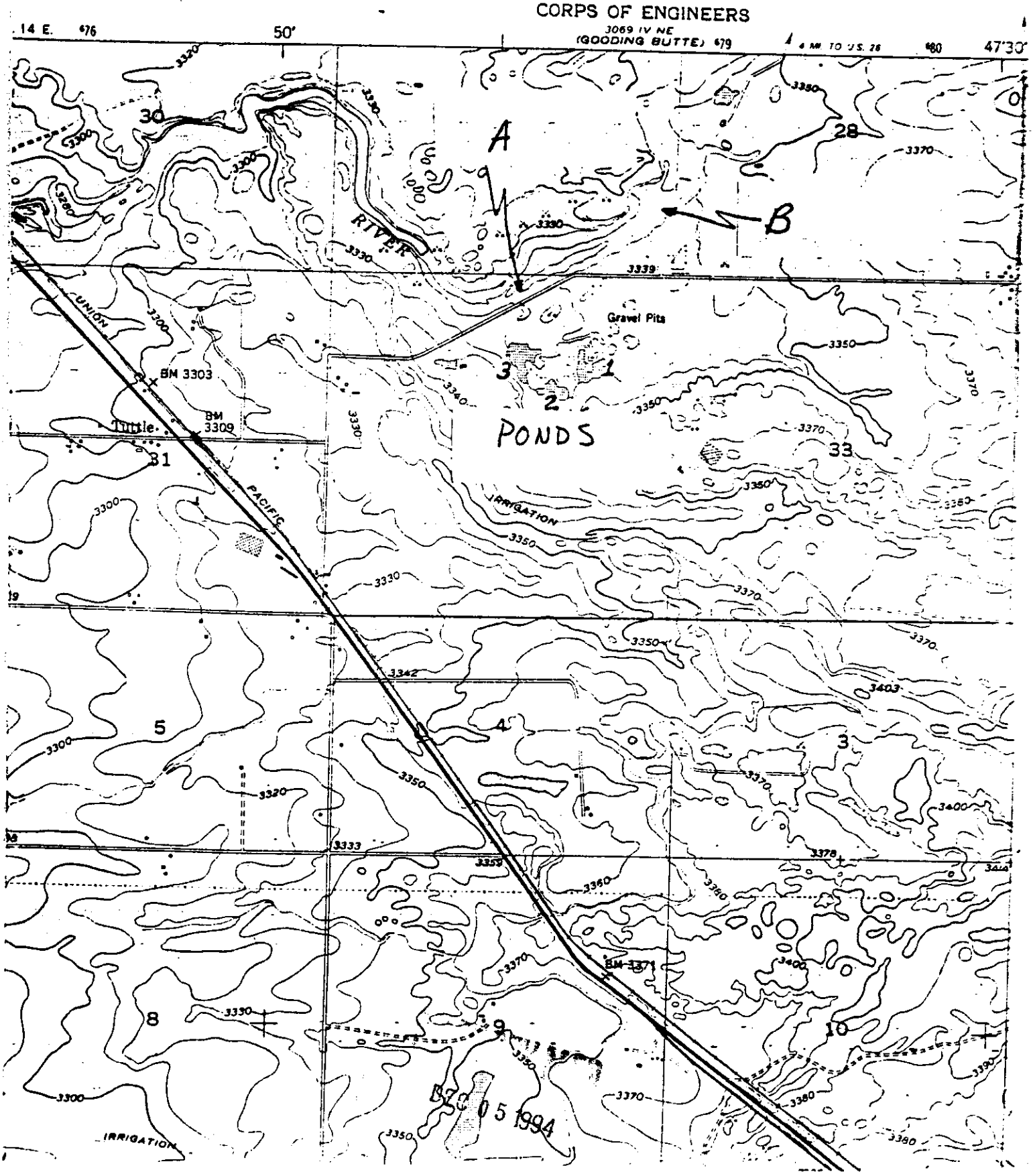
I understand that the performance bond will be processed immediately starting tomorrow morning Friday Dec. 3-82. I agree to have same in the possession of B.L.M. on or before Dec. 31-1982

Vernon J. Ravenscroft

Dec 2-1982

DEC 05 1984

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS



DEC 05 1994

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
P.O. BOX 2B
Shoshone, ID 83352

RIGHT-OF-WAY I-17053 AMENDED

Section A

1. Pursuant to Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), there is hereby granted a nonexclusive, nonpossessory amended right-of-way to:

VERNON AND HARRIETT B. RAVENSCROFT
1936 Priest Place
Boise, ID 83706

2. To use the following described public land, subject to terms and conditions set out below:

T. 6 S., R. 14 E., Boise Meridian
Section 29: SE¼NE¼, NE¼SE¼, W½SE¼, SE¼SW¼.

3. The description of the right-of-way facility is a linear water transport canal right-of-way as surveyed and depicted on the map dated February 8, 1984, attached hereto and made a part of file I-17053. The purpose of the right-of-way is to transport water from a river to an electrical power generation plant to generate commercial power for sale.

Terms and Conditions

Section B

1. All stipulations previously agreed to and contained within Exhibit "A", parts 1 and 2 and stipulations dated February 10, 1982 are made a part of this amended right-of-way.

2. Rental: the interim yearly rental fee is $250 and subject to adjustment (43 CFR 2803.1-2); holder agrees to pay the determined rental in a timely manner.

3. Expiration date of this grant is March 4, 2007.

Section C

The effective date of this right-of-way grant is the date of execution by the authorized officer.

The undersigned agree to the terms and conditions of this right-of-way grant:

Vernon Ravenscroft
Vernon Ravenscroft

Sept. 17-1984
Date

Harriett B. Ravenscroft
Harriett B. Ravenscroft

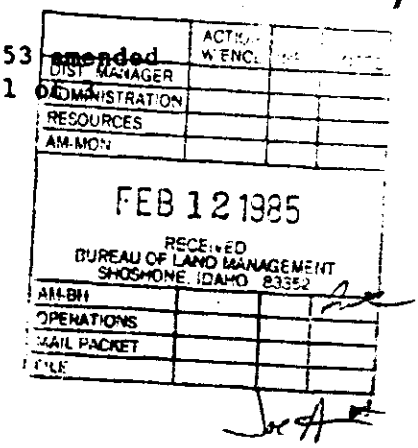
9/17/84
Date

The right-of-way is executed this 18th day of September 1984.

Robert D. Cordell
Robert D. Cordell
Bennett Hills Area Manager

DEC 05 1994

I-17053 amended
Page 1 of 3



UNITED STATES DEPARTMENT OF INTERIOR
Bureau of Land Management

Shoshone District Office
P.O. Box 2 B
Shoshone, ID 83352

Amended Right-of-Way
I-17053

Section A

1. There is hereby granted, pursuant to Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), a nonexclusive, nonpossessory amended right-of-way to:

Vernon & Harriett Ravenscroft
1936 Priest Place
Boise, Id 83706

2. To use, subject to terms and conditions set out below, a portion of the following described public land:

T. 6 S., R. 14 E. B.M.
Section 29: SE4SW4, SW4SE4; SE4NW4SE4, NE4SE4; SE4SE4NE4.

3. Description of amended right-of-way and purpose:

The amended right-of-way consists of a linear water transport canal as surveyed and depicted on the survey map dated February 8, 1984 attached hereto and made a part of file I-17053 including related control structures and a sediment reduction pond, which lies directly adjacent to and in conjunction with the canal system. The pond lies in the N2SE4SW4 and contains 5.0 acres, more or less. Total surface area involved in the amended right-of-way is approximately 35.2 acres, more or less.

The purpose of the canal portion of the right-of-way is to transport water from a river to an electrical power generation plant in order to generate commercial electrical power for sale. The purpose of the pond is to reduce river grit causing excessive water on the water lubricated bearings within the generation plant by providing an area of slow water to allow sediment load reduction.

Section B - Terms and Conditions

1. The Holder agrees to comply with all applicable regulations contained in 43 CFR 2800.

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2. If the Holder violates any of the terms and conditions to this amended grant, the authorized officer, after giving written notice, may declare the grant terminated.

3. This amended grant is subject to all valid rights existing on the effective date of this grant.

4. There is reserved to the authorized officer the right to grant additional rights-of-way or permits for compatible use on, over, under, or adjacent to the land involved in this amended grant.

5. The amended right-of-way grant shall be relinquished to the United States, if the authorized uses are no longer needed.

6. Rental: Interim rental of $250, subject to adjustment as per 43 CFR 2803.1-2.

7. This amended right-of-way grant expires March 4, 2007, unless it is relinquished, abandoned, terminated, renewed, or otherwise modified pursuant to the terms and conditions of any applicable Federal law or regulations.

8. The Holder shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e., insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The Holder shall obtain from the authorized officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; pest, insect, fungus, etc., to be controlled, method of application, location for storage and disposal of containers, and other information that the authorized officer may require. The plan must be submitted no later than December 1 of any calendar year that covers the proposed activities for the next year. Emergency use of pesticides may occur. The use of substances on or near the area shall be in accordance with the approved plan. A pesticide shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations, if the Secretary has prohibited its use. A pesticide shall be used only in accordance with its registered uses and limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.

9. The Holder, by accepting this amended right-of-way grant, agrees and consents to comply with and be bound by the following terms and conditions:

(a) To the extent practicable, all State and Federal laws applicable to the authorized use and such additional Federal and State laws along with the implementing regulations that may be enacted and issued during the term of this grant.

(b) That in the construction, operation, maintenance and termination of the authorized use, there shall be no discrimination against any employee

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or applicant for employment because of race, creed, color, sex, or national origin and all subcontracts shall include an identical provision.

(c) Any disturbed areas relating to the sediment reduction pond shall be smoothed and reseeded to crested wheatgrass at a rate of 10 lbs/acre.

10. This amended right-of-way is granted subject to all previous stipuliations agreed to and contained within I-17053, Exhibit "A", Parts 1 and 2, and stipulations dated February 10, 1982.

11. This grant is subject to periodic review at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.

12. The United States shall not be held liable for any damages caused by the issuance of this amended right-of-way.

Section C

The effective date of this amended right-of-way grant is the date of execution by the authorized officer.

The undersigned agrees to the terms and conditions of this amended right-of-way grant.

Vernon F. Ravenscroft

Vernon F. Ravenscroft

Harriett B. Ravenscroft

Harriett B. Ravenscroft

Feb. 8, 1985

Date

The amended right-of-way is executed this 12th day of February, 1985.

Bureau of Land Management

Robert D. Cordell

Robert D. Cordell
Bennett Hills Area Manager

DEC 05 1994

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT

Shoshone District Office
P.O. Box 2-B
Shoshone, Idaho 83352

Amended Right-of-Way
I-17053

DIST. MANAGER
ADMINISTRATION
RESOURCES
AM-MON
FEB 21 1986
RECEIVED
BUREAU OF LAND MANAGEMENT
SHOSHONE, IDAHO 83352
AM-EH
OPERATIONS
MAIL PACKET
FILE

Section A

1. There is hereby granted, pursuant to Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), a nonexclusive, nonpossessory right-of-way to:

Vernon & Harriett Ravenscroft
1936 Priest Place
Boise, Idaho 83706

HC 60, Box 1469
Bliss, ID 83314

2. To use, subject to terms and conditions set out below, a portion of the following described Public Land:

T. 6S., R. 14E., B.M.
Section 29: E2SW4, SW4SE4; SE4NW4SE4, NE4SE4; SE4SE4NE4

3. Description of the right-of-way facility and purpose:

The amended right-of-way consists of a linear water transport canal as surveyed and depicted on the survey map dated October 23, 1985, attached hereto and made a part of file I-17053 including related control structures and a sediment reduction pond, which lies directly adjacent to and in conjunction with the canal system. The pond lies in the N2SE4SW4 and S2S2NE4SW4 and contains 12.0 acres, more or less. Total surface area involved in the amended right-of-way is approximately 42.2 acres, more or less.

This amendment will supplement document number 119409 recorded at request of Security Title at the Gooding County Courthouse at 3:50 p.m. on January 29, 1986.

The purpose of the canal portion of the right-of-way is to transport water from a river to an electrical power generation plant in order to generate commercial electrical power for sale. The purpose of the pond is to reduce river grit causing excessive wear on the water lubricated bearings within the generation plant by providing an area of slow water to allow sediment load reduction.

DEC 05 1994

Section B - Terms and Conditions

1. The Holder agrees to comply with all the applicable regulations contained in 43 CFR 2800.

2. If the Holder violates any of the terms and conditions to this grant, the authorized officer, after giving written notice, may declare the grant terminated.

3. This amended grant is subject to all valid rights existing on the effective date of this grant.

4. There is reserved to the authorized officer the right to grant additional rights-of-way or permits for compatible use on, over, under, or adjacent to the land involved in this grant.

5. The amended right-of-way grant shall be relinquished to the United States, if the authorized uses are no longer needed.

6. Rental: Interim rental of $250, subject to adjustment as per 43 CFR 2803.1-2.

7. This amended right-of-way grant expires March 4, 2007, unless it is relinquished, abandoned, terminated, renewed, or otherwise modified pursuant to the terms and conditions of any applicable Federal law or regulations.

8. The Holder shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e., insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The Holder shall obtain from the authorized officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; pest, insect, fungus, etc., to be controlled, method of application, location for storage and disposal of containers, and other information that the authorized officer may require. The plan must be submitted no later than December 1 of any calendar year that covers the proposed activities for the next year. Emergency use of pesticides may occur. The use of substances on or near the area shall be used only in accordance with its registered uses and within other limitations, if the Secretary has prohibited its use. A pesticide shall be used only in accordance with its registered uses and limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.

9. The Holder, by accepting this amended right-of-way grant, agrees and consents to comply with and be bound by the following terms and conditions:

(a) To the extent practicable, all State and Federal laws applicable to the authorized use and such additional Federal and State laws along with the implementing regulations that may be enacted and issued during the term of this grant.

DEC 05 1994

(b) That in the construction, operation, maintenance and termination of the authorized use, there shall be no discrimination against any employee or applicant for employment because of race, creed, color, sex, or national origin and all subcontracts shall include an identical provision.

(c) Any disturbed areas relating to the sediment reduction pond shall be smoothed and reseeded to crested wheatgrass at a rate of 10 lbs/acre.

10. This amended right-of-way is granted subject to all previous stipulations agreed to and contained within I-17053.

11. This grant is subject to periodic review at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.

12. The United States shall not be held liable for any damages caused by the issuance of this amended right-of-way.

Section C

The effective date of this amended right-of-way grant is the date of execution by the authorized officer.

The undersigned agrees to the terms and conditions of this amended right-of-way grant.

Vernon F. Ravenscroft

Harriett B. Ravenscroft

Feb. 19, 1986
Date

The amended right-of-way is executed this 24th day of February, 1986.

Bureau of Land Management

Robert D. Cordell
Bennett Hills Area Manager

DEC 05 1984

. . Enclosed is
the information
you requested.



BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
P.O. BOX 2 B
SHOSHONE, IDAHO 83352

PHONE: (208) 886–2206

ENJOY YOUR PUBLIC LANDS

VERNON RAVENSCROFT
Telephone 208 345-2670
1843 Broadway, Suite 102
Boise, Idaho 83706

RECEIVED
JAN 10 1992
Department of Water Resources

January 8, 1992

Memorandum:

To: Enumerated Agencies, namely,
Bureau of Land Management, Shoshone
Idaho Dept. of Fish & Game, Boise
U.S. Geological Survey, Boise
U.S. Fish & Wildlife Service, Boise
Plus: Watermaster, Shoshone
Dept. of Water Resources, Boise

From: Vernon Ravenscroft - Project #4055

Subject: Federal Energy Compliance Order dated 12/12/91

The referenced order is self explanitory and reads, "The Commision orders: (A) The exemptee shall, within 60 days from the date of this order, file a gaging plan and schedule for installing a gaging system within 90 days from the date of this order that will record the bypass flow on a continuous basis. The gaging plan should contain measures for reporting daily flow summaries to the resource agencies upon request, to include inflow and bypassed reach flow. The filing must contain comments on the plan and schedule from the Bureau of Land Management, Idaho Department of Fish and Game, the U.S. Geological Survey, and the U.S. Fish and Wildlife Service. The exemptee must allow at least 30 days for the agencies to comment. The Commission reserves the right to amend the plan and schedule as necessary to ensure timely installation of a gaging system and appurtenant instrumentation that will provide the required flow data." To achieve these stipulations the project owner proposes:

1. For the measurement of the By-pass water it is proposed to install the self recording device as described by Engineer Carl Myers, see Exhibit A (consisting of four pages). Said device to be located at position b on the map which is Exhibit B.

DEC 05 1994

2. For the measurement of inflow it is proposed to used readings from the existing U.S.G.S. gage which is located at position a on the map.

3. For coordination of the conflicting regulations at this project site it is proposed to establish a standard procedure to govern project action on those occasions when the project is inevitably found by the operator to be out of compliance.

Explanation: this project site is located at a position on the river where the flow is erratic due to the management of irrigation flows by two seperate canal companies. From April 10th through October 15th of each year the flows are governed (upstream) primarily by the management decisions made by these two systems. Natural and predictable flow is not the governing factor.

In turn there are senior irrigation water rights down stream who require a stable sustaining flow to assure the reliable delivery of water to their sprinkler and siphon tube watering systems. Their prior rights and established requirements are from time to time in conflict with the instantaneous response which B.L.M. has enunciated.

It is proposed that one or more, three way meetings take place between the B.L.M., the Shoshone Watermaster and the project owners to determine a standard procedure which can hopefully avoid conflict as between the two levels of regulation. The project owner does not desire to continue in the awkward position caused by these conflicting jurisdictions.

It is understood that FERC and all agencies to whom this memorandum is addressed will receive a preliminary progress report on the suggested meetings and will have an opportunity to comment before any standard procedure is established.

DEC 0 5 1994

4. Future action. The Project owner must have this plan, plus agency comments delivered to FERC by February 12, 1992. It will be very much appreciated if I can receive your comments as soom as possible and Friday, February 7th is an essential deadline.

Your assistance will be sincerely appreciated.

Vernon Ravenscroft
Project Owner

VR;js

cc: FERC,
Carl Myers

DEC 0 5 1994

MYERS ENGINEERING COMPANY, P.A.
Consulting Engineers

RECEIVED JAN 0 8 1992

750 Warm Springs Avenue
Boise, Idaho 83712
Telephone: (208) 336-1425
Fax # 208-342-5245

EXHIBIT
A

January 7, 1992

Mr. Vern Ravenscroft
1843 Broadway Avenue
Boise, ID 83706

Re: FERC's Compliance Order
Project No. 4055

Dear Vern:

The above order, dated December 12, 1991, requires installation of a recording stream gage on the bypassed reach of the Malad River. I suggest using a Stevens 420 Level Logger (data sheets enclosed), which costs about $2,000 plus installation. It is a simple and reliable device, that would fit your requirements quite well. Stevens has it in stock.

This new gage probably should be located at the site of the existing staff gage. This river section is already rated, and the channel cross section should keep water level fluctuations within reasonable limits between low flow and high flow conditions.

It should be noted that strict compliance with bypass flow requirements for this project could impact downstream water users, who with the local water master should be a party to these proceedings.

Sincerely,

Carl L. Myers, P.E.

Enclosure

DEC 0 5 1994

STEVENS 420 Level Logger

Single Parameter Data Logger

Industry Standard 4-20 mA Input Circuit

Large Capacity Removable Memory

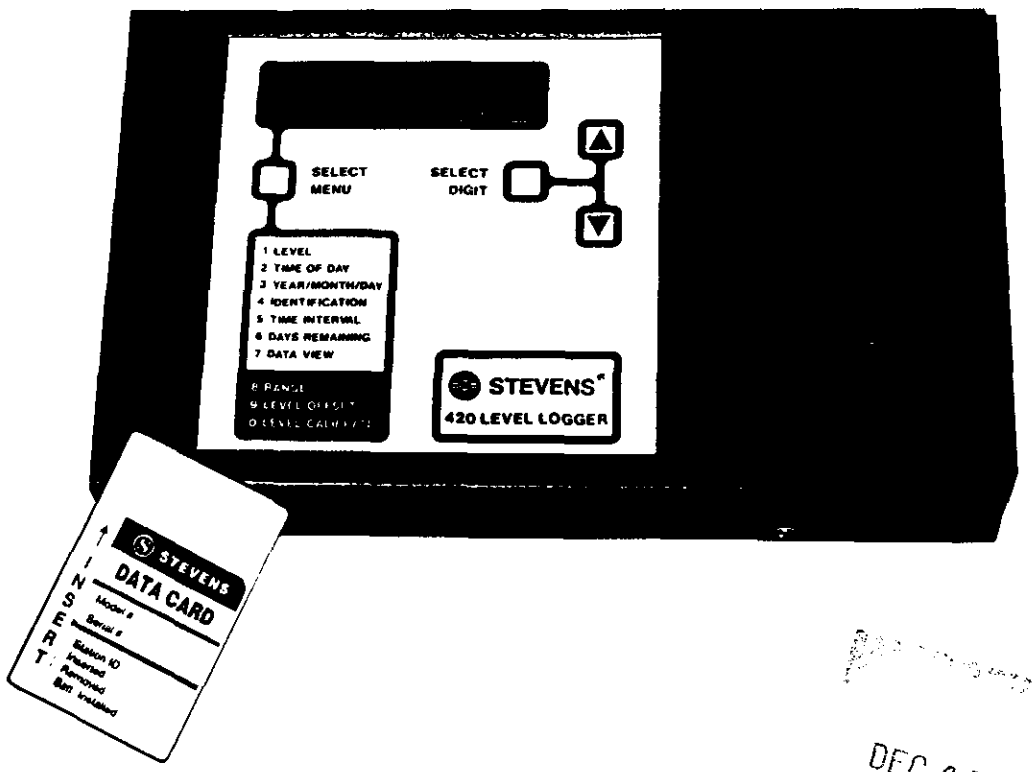
Integral Keyboard and Display

Input Devices Available for Water-level and Water-temperature Applications

The STEVENS 420 Level Logger is a microprocessor-based, low power data logger used for remote short- or long-term data logging applications. The unit is designed to provide single input electronic data logging for such parameters as water level, temperature, humidity, and other similar parameters.

The 420 Level Logger is a single-input recorder which features removable solid-state memory, permitting faster data reduction. The unit offers a large memory capacity in a removable Stevens Data Card module which can be brought in from the field and read into a computer.

The 420 Level Logger includes a 4-20 mA interface, and can accept a variety of input devices. The unit is designed specifically to work with the Stevens Submersible Depth Transmitter II (SDT-II) or Stevens Position Analog Transmitter.



Stevens 420 Level Logger

DEC 05 1994

The unit weighs less than three pounds and is compact and portable. The 420 Level Logger is easy to install, service, maintain, and relocate. It can operate in severe temperatures, and does not require a computer or terminal for setup in the field.

420 Level Logger System Features

The features of the 420 Level Logger include a removable Stevens Data Card module, built-in display and keyboard, and a real-time clock and calendar. The unit incorporates an industry standard 4-20 mA input circuit. An internal, software-controlled power supply provides 24 VDC power for the input device. Software within the 420 Level Logger allows for matching to specific input devices. Calibration is also under software control, and is accomplished through simple keystrokes on the Logger's built-in keyboard.

The system typically consists of an input device such as the SDT-II, a Logger in "Data Logger" mode, a Logger in "Data Port" mode, a removable Data Card module, and appropriate cabling. Selection between modes is made via selector switches accessible on the bottom of the Data Logger.

The primary function of the Data Logger in *"Data Logger" mode* is to accept the single 4-20 mA signal input, convert it to appropriate engineering units, and maintain a data history on the Data Card. In addition, the Logger software offers user interface via a four-key keypad, an eight-digit numeric display, and serial communications channel. The serial channel offers telemetry of current readings and stored data.

The primary function of the Data Logger in *"Data Port" mode* is to upload data from the removable Data Card to an IBM PC or compatible host via the serial channel. The "Data Port" mode supports erasure of the data cards prior to returning them to the field. The serial channel will also allow a formatted data dump to a printer. Before performing a data dump, an offset value can be entered to shift the reference level of the stored data.

Versatile Input Capability

The Stevens 420 Level Logger uses an industry standard 4-20 mA input interface. This gives the logger the capability of accepting input signals from a variety of two-wire, 4-20 mA transmitters. Possible parameters that can be logged from common industry transmitters include pH, dissolved oxygen, turbidity, temperature, and humidity. Stevens offers a transmitter and sensor for water temperature applications.

Standard Input Devices

Two standard input devices are available for water-level applications with the 420 Level Logger. The Stevens Submersible Depth Transmitter II (SDT-II) is a probe designed to sense water level with a pressure transducer in small diameter wells. It is totally sealed for direct insertion into the water. The Stevens Position Analog Transmitter (PAT) is a conventional float-operated unit designed for water level, gate position, and similar applications. Both devices are available in ranges from 0 to 2.5 foot (0 to 76 cm) full scale to 0 to 100 foot (0 to 30 m) full scale.

Stevens Data Card

The Stevens Data Card is a battery-backed memory storage device used with the 420 Level Logger; it provides all of the data storage of the Logger. The Data Card is slightly larger than a credit card in size. The unit can store over 30,000 readings (64,000 bytes); when recording at 15 minute intervals, the Data Card will store 9 months of data. The Data Card can store readings at intervals ranging from once a second to once every 4 hours.

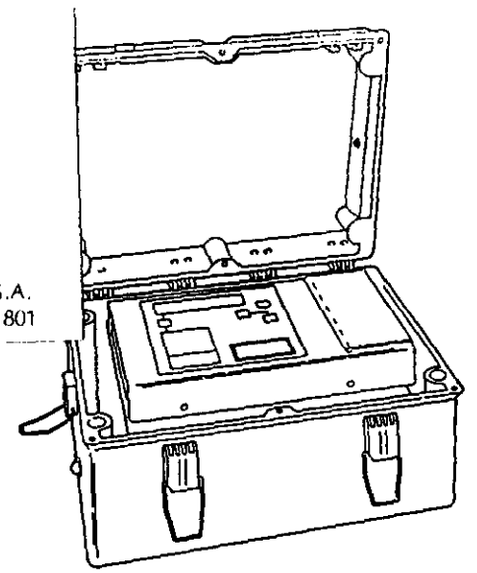
The 420 Level Logger current level reading is stored every time the unit's set time interval expires. The history data will not overwrite on the card when the Logger is used in the "Data Logger" mode; once the Data Card is full, the card will not store any additional data.

DEC 0 5 1994

STEVENS®
Water Resources Products

HAROLD G. LEE, P.E.
Products Manager

Leupold & Stevens, Inc.
P.O. Box 688, Beaverton, Oregon 97075-0688 U.S.A.
Phone: (503) 646-9171 • Telex: 15-1227 • Fax: (503) 646-1801



Stevens 420 Logger in Stevens Weatherproof Enclosure

Basic Instrument Specifications

Serial Channel:
- Serial ASCII through RS-232 interface at a minimum ± 5 volt levels. Supports both hardware and software (XON/XOFF) hand-shaking. Provides telemetry of current level, total memory readout of the Data Card, and Data Card erasure.

Format (fixed):
- 7 data bits, 1 stop bit, even parity.

Baud rate (selectable):
- 300, 1200, 2400, or 9600.

Power:
- 10-17 VDC.

Current:
- Less than 1 mA DC, during normal recording. Data Logger in "Data Logger" mode enters a low current "sleep" mode when no activity is required.

In-line fuse:
- External 1/4 A, fast-acting, 3AG or equivalent.

Real-time Clock:
- Accuracy ±3 minutes per month. Built-in leap-year correction. Battery backed.

Display:
- Eight-digit numeric LCD. Integral four-key touchpad.

Operating Temperature:
- Logger: Operation and storage from -40 to +70° C. Data Card: -20 to +50° C (-40 to +50° C optional)

Relative humidity:
- 0 - 95%, non-condensing.
- Optional NEMA 4 housing available for 100% humidity operating conditions.

Size:
- Logger - 11 x 6-1/2 x 2 inches.
- NEMA 4 Housing - 15 x 12 x 7-1/2 inches.

Recording Intervals
- 1 second.
- 1, 5, 6, 10, 15, and 30 minutes.
- 1, 2, and 4 hours.

Weight:
- Less than 3 pounds.

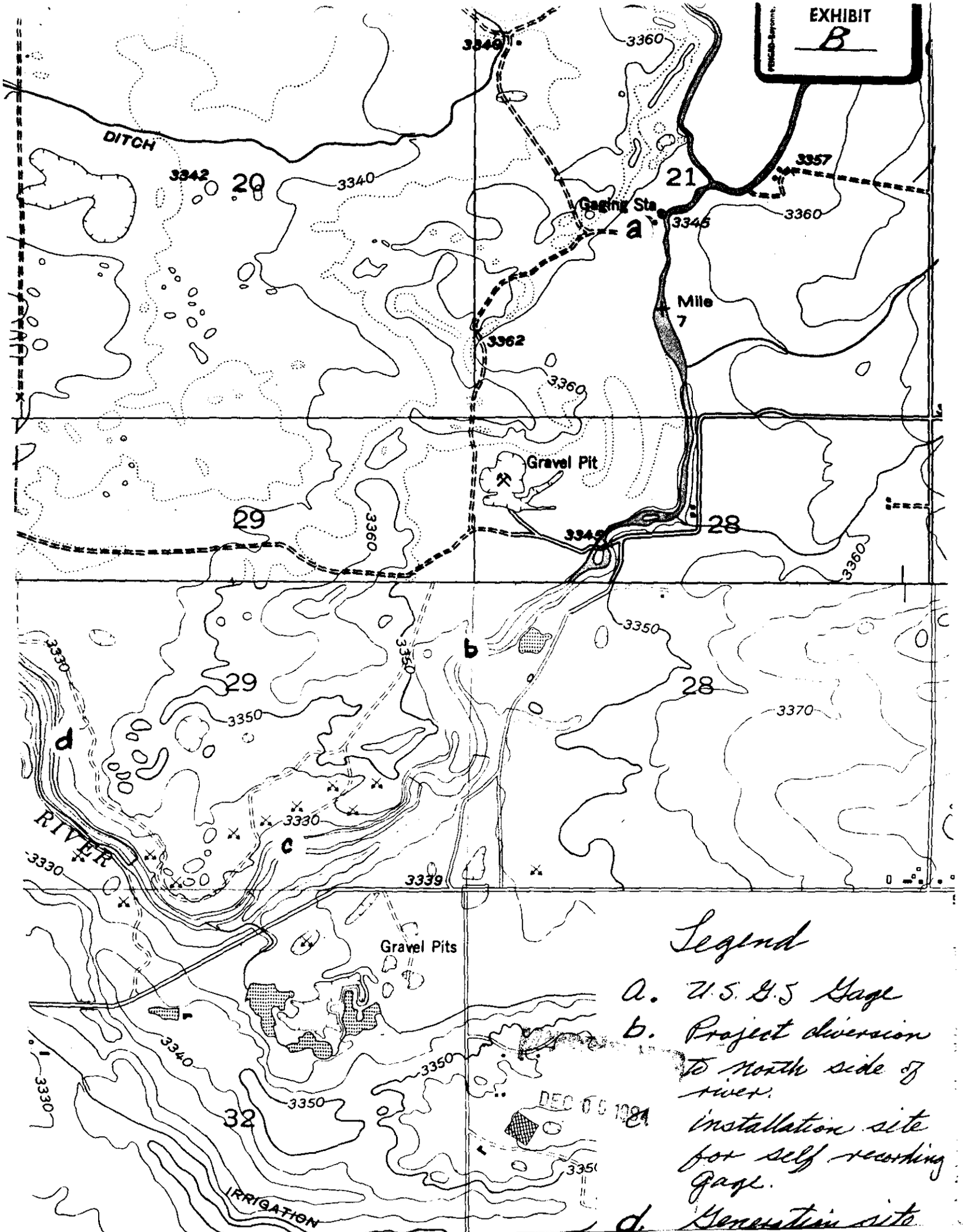
Input:
- Industry standard 4-20 mA input circuit, with internal 24 VDC, short-circuit protected loop supply under software control. Input circuit voltage drop less than 0.5 VDC. Accuracy: 0.25%, resolution 0.1%. User selectable scaling in two bands: 0 - 49.999, 0 - 499.99.

STEVENS® WATER RESOURCES PRODUCTS
Leupold & Stevens, Inc.
P.O. Box 688, Beaverton, OR 97075-0688 U.S.A.
Tel. 503 646-9171, Telex 15-1227, Cable LEUSTEV, FAX 503 526-1455

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STEVENS is a Registered Trademark of Leupold & Stevens, Inc.
Leupold & Stevens reserves the right to alter specifications and features of the product shown in this bulletin without prior notice.

Printed in U.S.A.
2M 10/90



Legend

a. U.S.G.S Gage

b. Project diversion to north side of river.

installation site for self recording gage.

d. Generation site

Form 3804-3
7/91

Jentification No. 37-S-649

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
EMERGENCY WAIVER
TO ALTER A STREAM CHANNEL

537-4437 Brian

1. Name of applicant Ravencroft Hydroelectric Telephone: 345-2670 Vern

   Address 1843 Broadway Ave.

2. Name of stream Malad River Tributary to Snake River

3. Location of stream to be altered (1/16 section of lot no.) of section 29 TWP 6 S ,Range 14 E ,
   SE¼ SE¼

   B.M. in Gooding County. Description and condition of stream reach to be altered Rock fill
   Material deposited in approx 100yds of channel blasted rock below hydro plant

4. Describe emergency, type and scope of work to be allowed. Need to remove deposition from river channel before flow commences.

Section 42-3808 of the *Idaho Code* allows the Director to waive the provisions of the Stream Channel Protection Act to protect life or property provided that the extent of the stream channel alteration shall be limited only to that amount of work deemed necessary by the Director to safeguard life or property during the period of emergency.

Granting an emergency waiver does **not** grant:

a. An easement or right-of-way to trespass across or work upon property belonging to others;
b. Other approval that may be required by Local, State or Federal Government, unless specifically stated below;
c. A waiver of responsibility for damage to property of others due to the work done;
d. The authority to work in any stream channel beyond the extent necessary to protect life and property during an emergency nor to do any work in the stream channel after the emergency is passed.

General Conditions:

1. Channel stabilization materials shall be of sufficient size to ensure erosion protection.
2. All temporary structures, excavated material, and debris generated as a result of the emergency activity shall be removed and disposed of out of the channel immediately after the emergency has abated.
3. If any structures or fill placed within the channel to abate the emergency are not removed, the applicant shall file a regular application for a permit.
4. The permit holder shall maintain a copy of this permit at the alteration site until the authorized emergency work has been completed.

Special Conditions: Remove as much sediment as possible from channels
Deposit on upstream bank.
Notify IDWR S.O. Water Master at Completion

The applicant hereby agrees to terms and conditions of this emergency waiver and will take reasonable precautions to minimize the impacts of any emergency actions on the stream channel(s).

Brian Ravencroft
Applicant's signature

Title

Issued this 23rd day of October, 19 91.

DEC 05 19

For the Director
R Keith Higginson

By: Alan G Dornbusch

White - IDWR Region files
Yellow - S.O.
Pink - Applicant

MEMORANDUM

DATE: 10/23/91

FROM: TERRY BLAU

TO: FILE 37-S-649

SUBJECT: RAVENSCROFT HYDRO WASHOUT

ON OCT 22 I RECEIVED A CALL FROM BRYAN RAVENSCROFT INFORMING ME THAT THERE HAD BEEN A FAILURE OF THE CONCRETE WALL SEPARATING THE THE POWER CANAL FROM THE CONSTRUCTION OF THE SECOND PENSTOCK. HE INDICATED THAT EARTH AND ROCK HAD WASHED DOWN INTO THE CHANNEL OF THE MALAD RIVER. HE ALSO SAID THERE WAS VERY LITTLE FLOW IN THE RIVER AT THE PRESENT TIME AND WANTED TO GET IN AND REMOVE THE MATERIAL PRIOR TO AN INCREASE IN FLOWS. WE SET UP A TIME TO MEET ON SITE THE FOLLOWING DAY.

ON OCT 23 WE MET ON SITE WITH MIKE MCMASTERS FROM DEQ. WE FOUND THAT MOST OF THE DISPLACED MATERIAL WAS CONTAINED WITHIN APPROXIMATELY 100 YDS. OF THE POWERHOUSE IN THE OUTLET CHANNEL EXCAVATED IN ROCK DURING THE ORIGINAL CONSTRUCTION. IT APPEARED THAT THE MATERIAL WASHED INTO THE CHANNEL COULD BE REMOVED WITH VERY LITTLE ADVERSE IMPACT, AS THERE IS AN EXISTING ACCESS ROAD DOWN TO THE CHANNEL, WHICH WAS CONSTRUCTED DURING THE ORIGINAL POWERHOUSE CONSTRUCTION.

IT WAS FELT BY ALL PRESENT THAT THE MATERIAL SHOULD BE REMOVED AS SOON AS POSSIBLE TO MINIMIZE THE POSSIBILITY OF THE MATERIAL WASHING DOWNSTREAM. IN ORDER TO ACCOMPLISH THIS, AN EMERGENCY WAIVER WAS ISSUED TO MR. RAVENSCROFT AT THAT TIME.

RECEIVED
DEC 05 1994

EXHIBIT II

RECEIVED SEP 17 1991

MYERS ENGINEERING COMPANY, P.A.
Consulting Engineers

750 Warm Springs Avenue
Boise, Idaho 83712
Telephone: (208) 336-1425
Fax # 208-342-5245

September 17, 1991

Mr. Vern Ravenscroft
1843 Broadway Avenue
Boise, ID 83706

Re: Tuttle Project - Bypass flows

Dear Vern:

After our visit to the Tuttle Project on August 30, 1991, and a review of the water control system, I have the following comments and recommendations.

At the present time the project is required to bypass 80 cfs into the Malad River during the months of April through June, and 5 cfs during July through March. This bypass will be increased to 20 cfs when the project enlargement now underway is completed. Diversion into the power canal is by means of a low rock and earth fill dam across the Malad River, so constructed that frequent overtapping by flood water does not seriously damage the structure. There is no gated outlet to the river. Minor seepage occurring in many places along the length of the dam serves to create and maintain significant areas of wetland habitat in contiguous overflow channels and riparian zones that otherwise would be dry at low river stages.

The power canal, an open, low gradient channel, is fed by a gated headworks from the pond created by the diversion dam. Water is bypassed through the dam, for prior downstream irrigation rights and stream maintenance between the diversion and the tailrace of the power plant by means of 4 ungated culvert pipes installed in the dam. There are 2-15" pipes, 1-24", and 1-30". Flow through these pipes is determined by the water level in the pond behind the dam. The invert elevation of these pipes is approximately equal to the operating elevation of the water in the forebay of the power plant at the downstream end of the canal.

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The suggestion has been made that bypassed water could be better controlled, especially at the 80 cfs level, by a new structure inserted into the existing dam, and equipped with automatic gates. Technically this might be possible. Practically, it would be a mistake, both economically and environmentally. This project, in operation for several years, has created and stabilized a very substantial enhancement of the desert environment that existed before the project was built. There are now many acres of open water, in ponds along the canal route and behind the diversion dam, including the canal itself, all bordered by well-established zones of riparian vegetation. The ponds provide aquatic and riparian habitat and recreational fishing that never before existed.

Installation of a new bypass structure now would require removal of part of the existing dam, draining the pond behind it, shutdown of the power plant during construction, with a consequent drawdown of the canal and all its dependent ponds. This would have a negative impact on fish, wildlife, recreation and other environmental values that on a new project would be vigorously challenged by all resource agencies. Further, automatic bypass control would be accompanied by a noticeable time lag before this intercepted water could reach the tailrace where it had been before interception, with consequent fluctuations of downstream irrigation supplies. This would be a ramping of flow that could be damaging to downstream irrigators and contrary to the provisions of Idaho Water law.

The use of ungated pipes to pass and control water flow through an embankment is neither unique nor new. Water flow is controlled by the height of water over the pipes and does not depend on mechanical/electrical devices which can fail at crucial times. This is a decided advantage. The pipes cannot however be used alone to maintain a predetermined flow regardless of the water depth over the pipes. This is apparently the condition that generated the suggestion for a new automatically controlled bypass structure. It is my opinion that this would create more problems then it solves, for the following reasons:

1) Ramping rates would be increased.

2) Failure of the controls could leave the gates fully closed and thus dry up the bypassed reach. Conversely, failure with the gates at full open could deprive the power plant of its legal water rights.

3) There would be severe negative environmental impacts during construction, and some permanent damage from disruption of the established enhancements.

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4) Cost of a new structure would seriously damage the economics of the project.

5) The ungated bypass pipes and the diversion pond provide automatic damping of fluctuating stream flows of low volume but high rates, a characteristic of the Malad River.

The objective of providing bypass facilities at any run-of-river hydroelectric project is to maintain adequate instream flows in the bypassed reach. Determining the proper volume of such flows is not an exact or simple procedure; fishery science, hydraulics, professional judgment, legalities, and negotiation are all involved. There are also many options to achieve the desired results. One of the simplest and most fail-safe, is use of ungated pipes through a diversion structure, that are not subject to mechanical failure or operating errors. Discharge through the pipes responds to stream flow and the consequent depth of water this flow creates over the pipes. Also, the depth of water over the pipes can be adjusted by controlling the hydraulic capacity of the turbines at the power plant. This in turn will regulate the flow and hydraulic gradient of the supply conduit - in this case an open canal. This is accomplished on this project by a skimming weir spillway which limits the water surface elevation of the forebay, which in turn determines the flow through the turbines. Due to the low gradient of the power canal, changes in the elevation of the weir would be reflected quickly at the diversion pond. It appears that an increase in the height of the existing weir blade of 0.83 feet (say 1.0 foot) would guarantee at least 80 cfs through the pipes now installed through the diversion dam. I recommend this be done and operated through at least one season before further consideration be given to constructing a new bypass structure.

Bypassed flows are now measured by a staff gage located about midway on the bypassed reach. The river section has been rated so that gage readings can be converted to cfs. Given the regulating affect of the ungated pipes through the diversion dam, and the damping affect of the ponding above the dam, staff gage readings should give a reasonably accurate indication of the bypassed flow provided they are re-rated at reasonable intervals. It is my understanding that this referenced section was re-rated in June of this year by a well known and qualified hydrologist, Dr. Charles Brockway from the University of Idaho experimental station in Kimberly, Idaho.

I do not see any merit in attempting to automate any of the current facilities or operating procedures on this project. Raising the height of the skimming weir as discussed above will help insure against drastic reductions in bypassed flows. It does not seem rational nor practical to risk damage to the established environmental benefits resulting from the project by attempting to impose instantaneous responses to water control.

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I therefore recommend to all parties:

1. That the staff gage on the diversion headgate be moved to the up river side of that structure. This would provide a new reference to determine pond level in relation to the discharge pipes. This action to be taken with the advent of low water in mid-October 1991.

2. That the project record the pond level at least once each day and correlate that level with the mid-section gage at least once each week until winter ice renders that action impractical.

3. That the project make the water records and the reconciliation with the mid-stream gage available upon request to both BLM and Idaho Fish & Game authorities.

4. That the project rebuild the skimmer weir and canal banks so as to have an additional one foot (1.0 foot) of head above the bypass tubes on or before April 15, 1992.

5. That all interested parties participate in an on-site meeting on or before June 15, 1992 to determine the success of the improvements and the need and/or time frame for automating the gage on the upstream face of the diversion headgate. Any self-recording gage at any other site would be difficult to maintain. Below the dam and at the power house flood flows would frequently wipe out such a structure.

Sincerely,

Carl L. Myers, P.E.

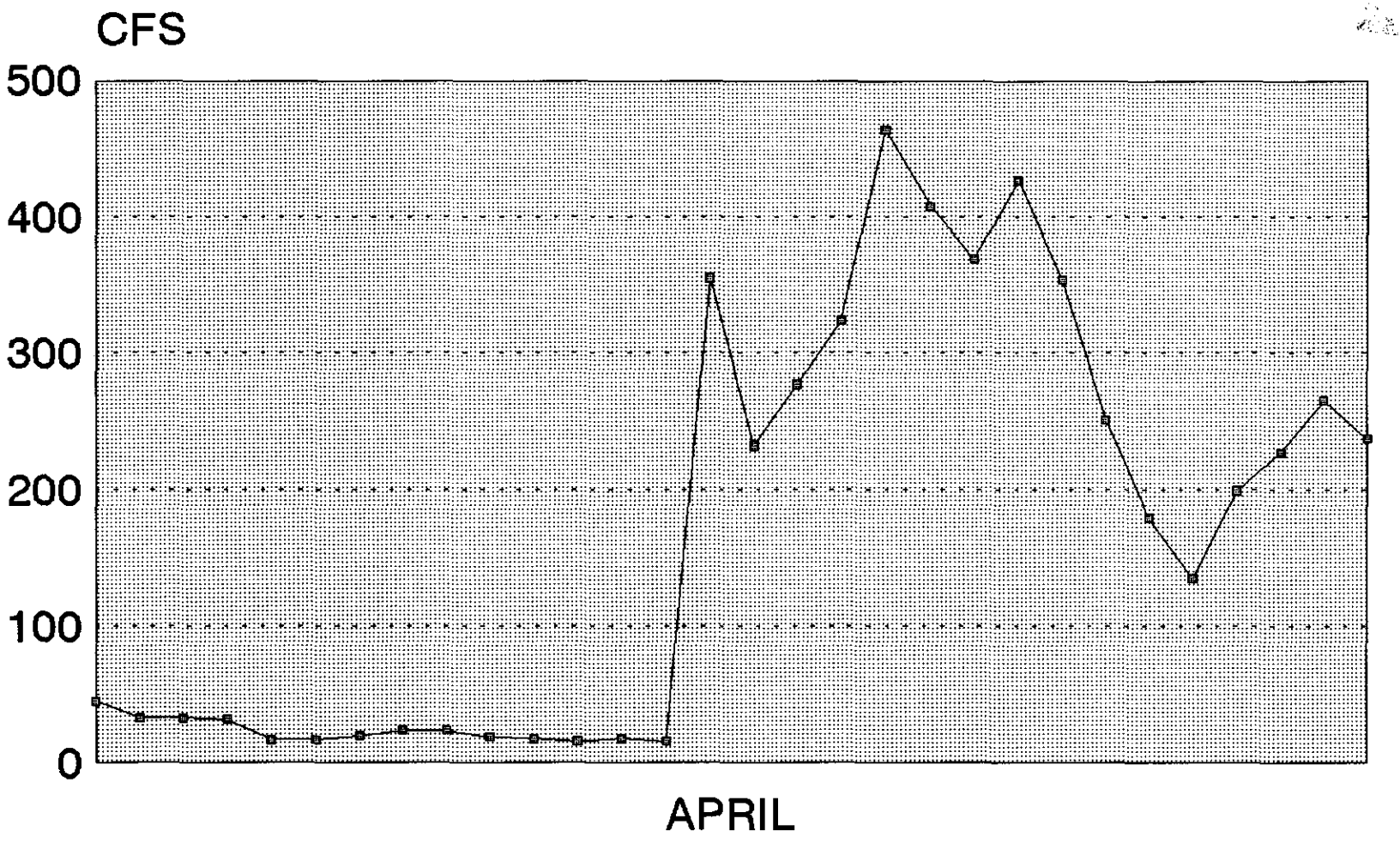
DEC 05 1994

MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

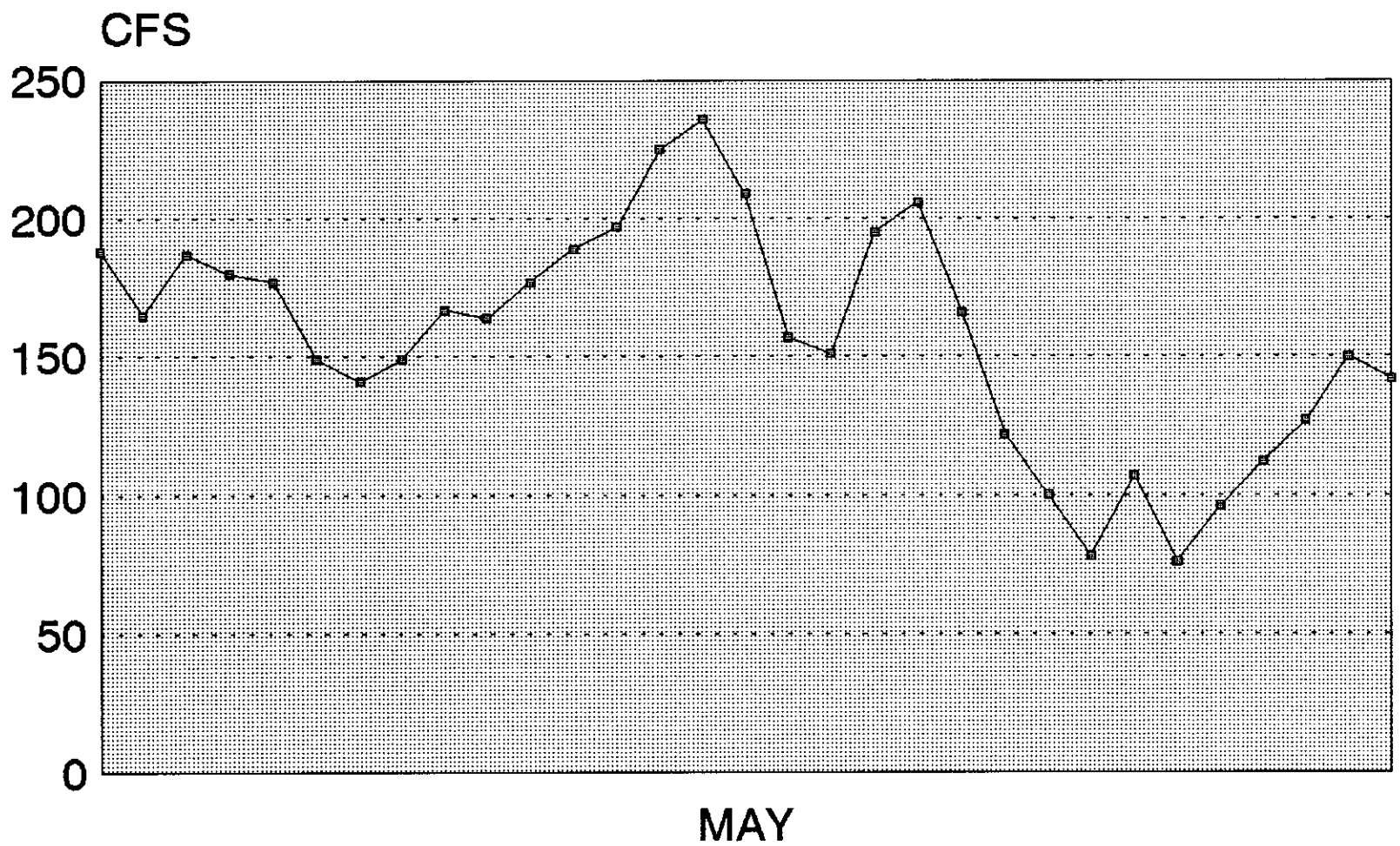


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

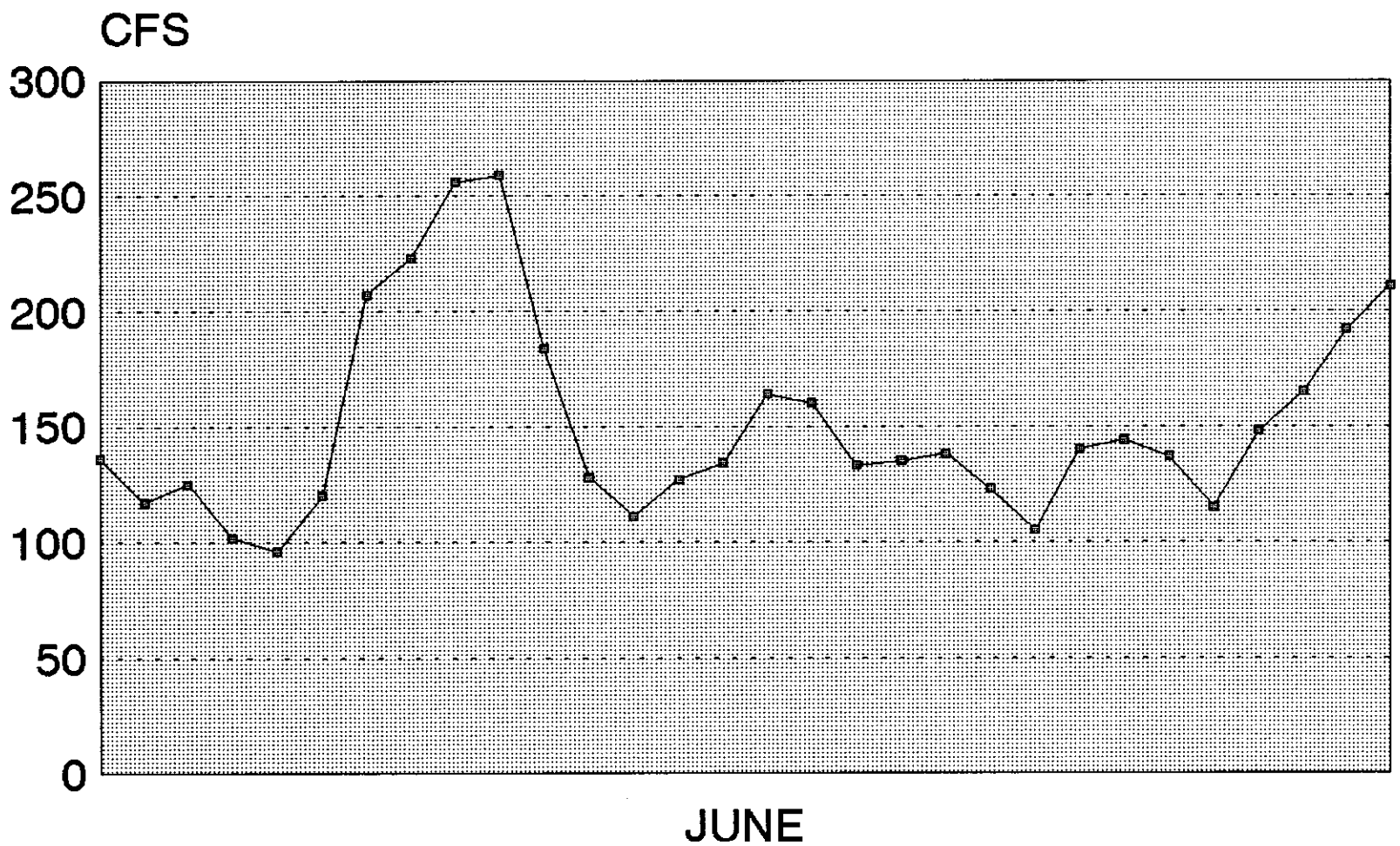


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

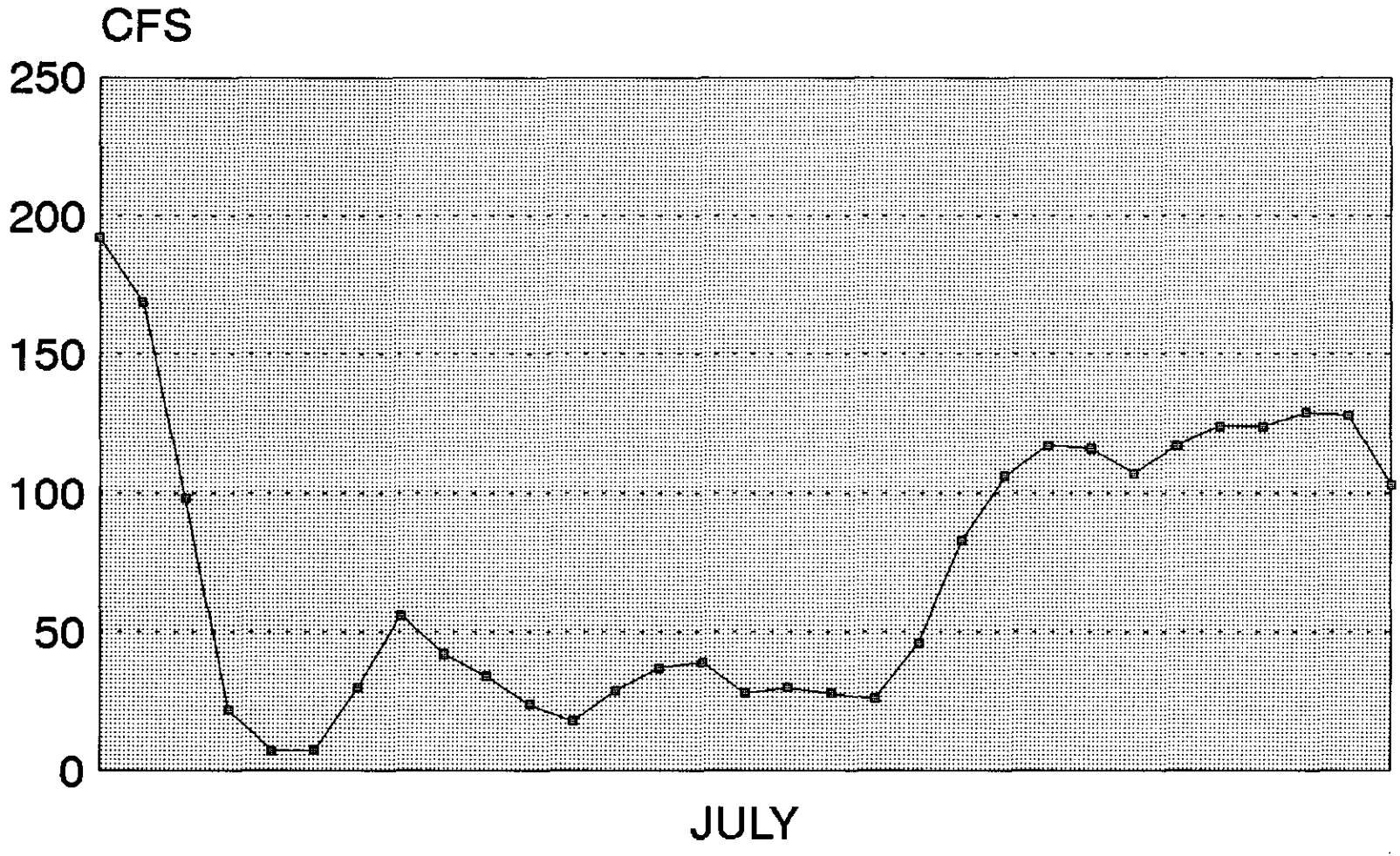


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

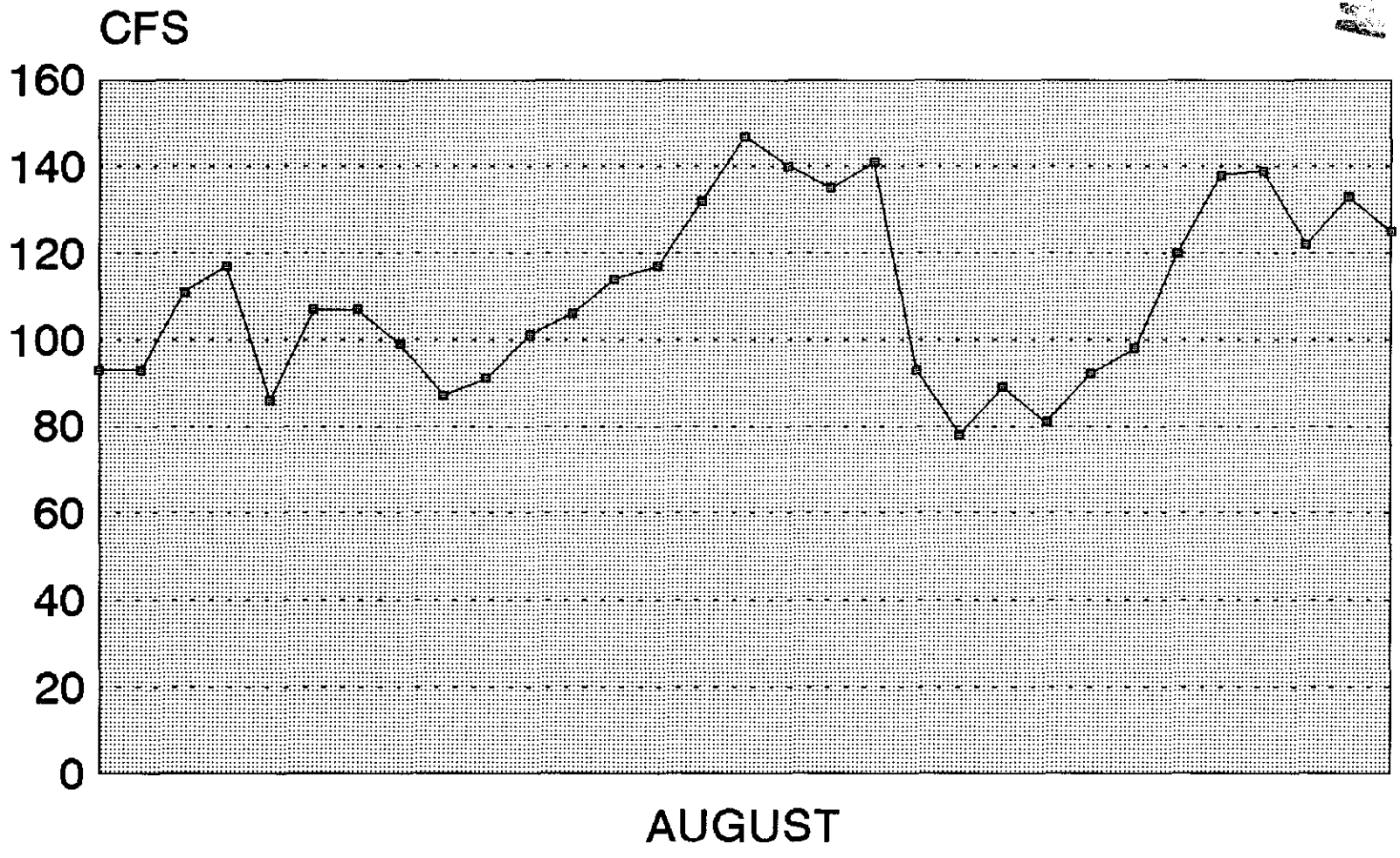


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

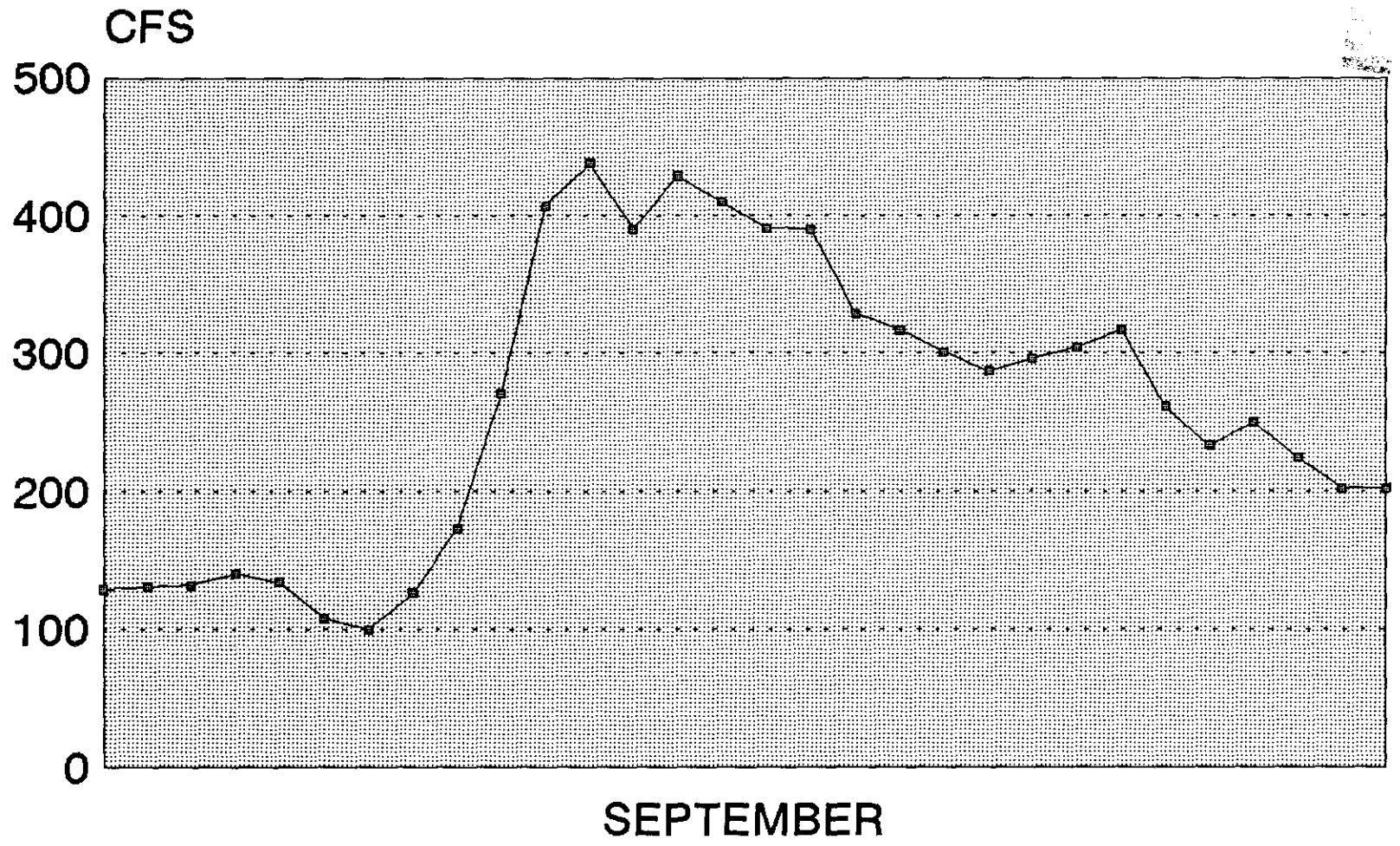


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

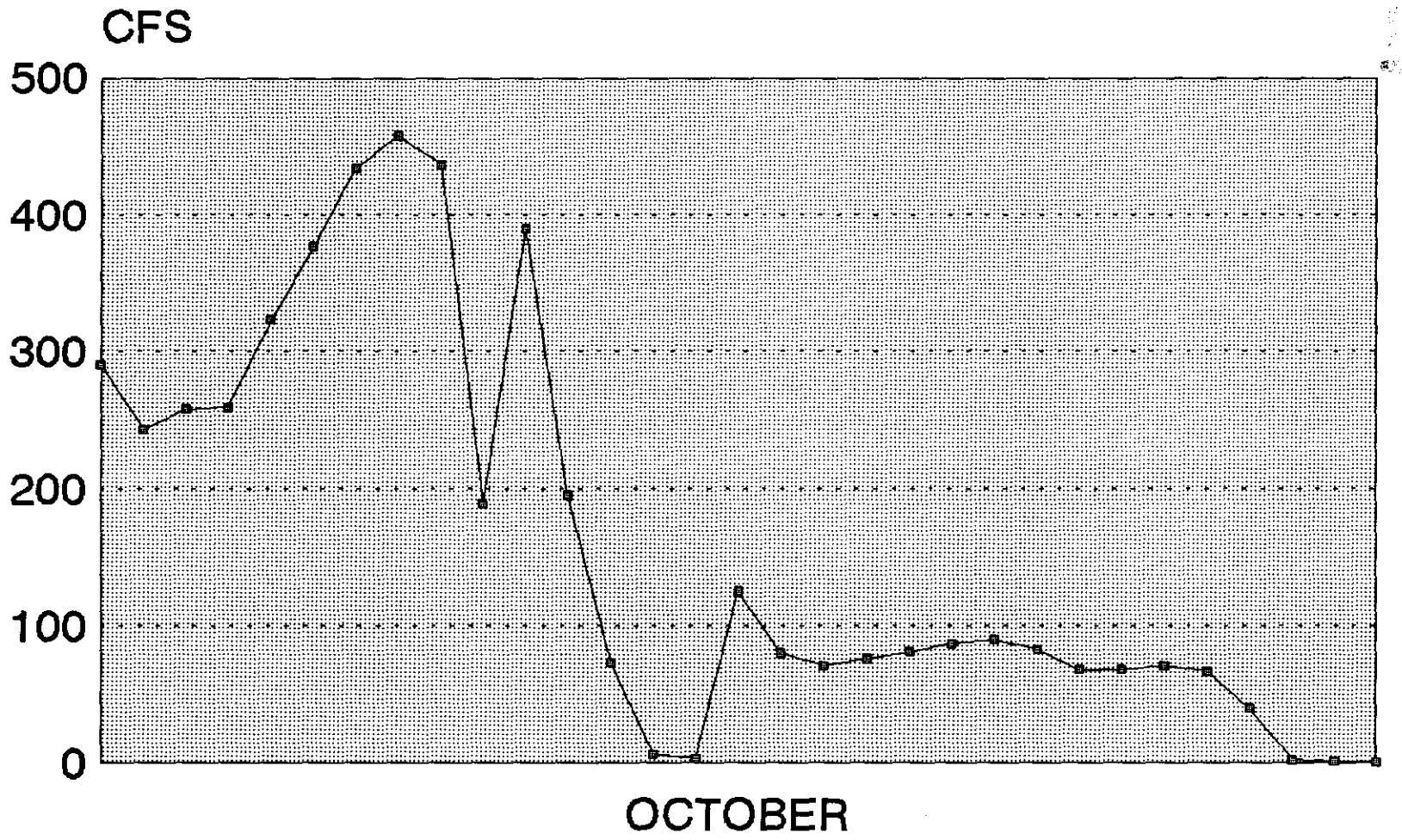


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994

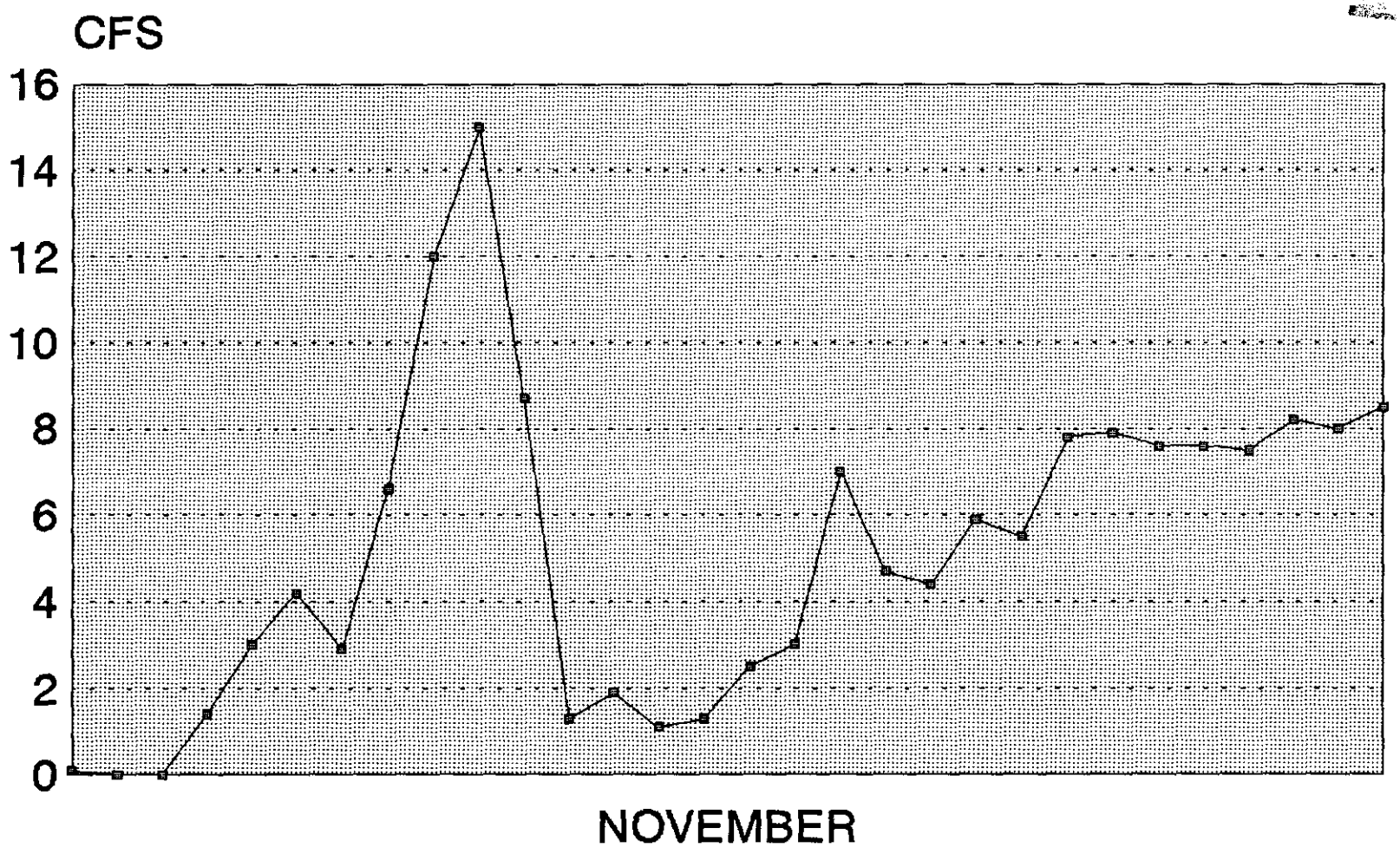


MALAD RIVER NEAR GOODING

USGS GAGE 13152500

1991 DAILY FLOW DATA

DEC 05 1994



Month April 64 / 91 Inclusive.

Day	80	81	82	83	84	85	86	87	88	89	90	91
1								31				
2								29	28			34
3								18	37			35
4												33
5												18
6									40			18
7									40			22
8									27			25
9												25
10												20
11												18
12												17
13												19
14												18
15												
16												
17												
18												
19											36	
20											11	
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Total	0	0	0	0	0	0	0	3	5	0	2	13
	198	81	82	83	84	85	1986	87	88	89	90	91

April Summary 1964 / 1991 Inclusive

at or below 43 CFS on 32 different days.

lowest 8.2 CFS. April 19, 1977

worst year 1991 13 days.

DEC 05 1994

Month April

Dy	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16			36 41											18 8.2 14		
17																
18																
19																
20																
21																
22																
23																
24																
25																
26																
27																
28																
29																
30				22										28 20 16		
31																
N	0	0	2	1	0	0	0	0	0	0	[illegible]	[illegible]	[illegible]	6	0	0
	1964	65	66	67	68	69	70	71	72	73	74	1975	76	77	78	79

DEC 05 1994

Month May 64/- Inclusive.

Day	80	81	82	83	84	85	86	87	88	89	90	91
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14									43			
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
Total	0	0	0	0	0	0	0	0	1	0	0	0
	1980	81	82	83	84	85	86	87	88	89	1990	1991

Summary
May 1964/1991
Inclusive

At or below
43 CFS on
22 seperate
days.

Low 12 CFS
on May 15
1977

Worst year
1977 - 10 days

DEC 05 1994

Wrote - May -

Qtr	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1														42		
2																
3																
4																
5																
1																
2														34		
														20		
														12		
3										25				13		
										26						28
										29						16
				35												
				18												
4																
				26												
				28												
														28		
														24		
														18		
					32									17		
					26									15		
	0	0	0	4	2	0	0	0	0	3	0	0	0	10	0	2.
	64	65	66	67	68	69	1970	1971	72	73	74	75	76	77	78	79

DEC 0 5 1994

Month — June 64/91 - Inclusive.

Day	80	81	82	83	84	85	86	87	88	89	90	91
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17									37			
18									11			
19									9.8	42		
20									9.1	26		
1									12	24		
2										32		
3									28			
4												
5									14			
6									13			
7									40			
8		12							35	39		
9		28						43	18	30		
10									25	37		
Total	0	2	0	0	0	0	0	1	12	7	0	0
	1980	81	82	83	84	85	86	87	88	89	90	91

DEC 05 1994

Summary

June 64/91

Inclusive

at or below

43 C.F.S on

48 days.

Lowest flow

5.7 CFS.

June 3rd

1977

Worst Year.

1977

17 days.

Watts June

64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
		38		37									12		
													11		
													5.7		
													8.2		
				38									2.7		
				39											
													11		38
													17		35
													36		
													18		
													36		
													15		
													30		
		40													
													35		
													22		
													41		
													26		
													14		
															23
															9.8
														42	16
0	0	2	0	3	0	0	0	0	0	0	0	0	17	1	5
1964	65	66	67	68	69	70	71	72	73	74	75	76	77	78	1979

DEC 05 1994

Month — July 64/91 Inclusive.

Day	80	81	82	83	84	85	86	87	88	89	90	91
1										31		
2										34		
3		40										
4		19							40			22
5		19							33			23
6		25							33	24		7.5
7		23							43	22	43	30
8		31								30	39	
9										34		42
10										34		34
11												24
12												18
13												29
14												37
15												39
16		42										28
17		43									30	30
18											25	28
19											39	26
20												
21										36		
22										27		
23										21		
24										36		
25												
26												
27												
28												
29												
30									31			
31									28			
									41			
Total	0	8	0	0	0	0	0	0	7	11	5	15
Yr	1980	81	82	83	84	85	86	87	88	89	90	91

DEC 05 1994

Summary

July 64/91

Inclusive

At or below 43 CFS on 166 days

Lowest 5.4 July 22nd 1977

Worst Year 1968 — 27 days.

Minutes — July — 64/91 Inclusive.

	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1															16	19
															12	28
															20	35
																25
																22
5					43											
					31											14
					24											20
					15											14
					7.2											16
			33		7.0											17
			31													
					14											18
			41		24									32		22
			39		27								38	26		
			40	39	20				29				36	17		38
	43		39	35	23				22					19	36	30
			42		23				27				39	17	25	26
			40		21			39					35	18	29	23
		26	38		24									15	25	16
	42		35		35									13	24	14
	29		41		35		29							11	28	15
	30		42		20		30							11	29	35
				36	28									5.4	35	
				42	21									7.2	43	
				33	23									10		
	41			22	24			23						22		
				22	21							41		35		
				26	17							28		28		
				35	17							21		26		
					23							21		28		
					18					43		38		19		
					16					41				22		
T	5	1	12	9	27	0	2	2	3	2	0	5	4	20	9	20
Yr	1964	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79

DEC 05 1994

Month Aug.

Day	80	81	82	83	84	85	86	87	88	89	90	91
1												
2												
3												
4												
5		32										
6		15										
7		9.7										
8		21										
9		17										
10		20							30			
11									25			
12									20			
13									33			
14												
15												
16												
17												
18		42							43			
19		40							30			
20									26			
1									36			
2												
3												
4												
5									40			
6									36			
7									26			
18									39			
19												
20												
Total	0	8	0	0	0	0	0	0	12	0	0	0
Yr.	1980	81	82	83	84	85	86	87	88	89	90	91

DEC 05 1994

Summary

Aug. 64/91 Inclusive

At or below 43 CFS on 59 days out of the 28 years

Lowest 6.4 CFS on Aug. 16th 1977.

Worst Year 1977 - 26 days at or under 43 C.F.S

	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1					32									26 38 37 28 25		
		23												26 20 32 30 20		
			38													
			38 38											15 14 12		
										43				10 8.8		
			28 30 30 28											6.4 17 18 17 19		
			32							43 41				14 15 16 19 24		
							DEC 05 1994							13		
TT	0	1	8	0	1	0	0	0	0	3	0	0	0	26	0	0
Yr	1964	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79

Months — Sept 64/91 — inclusive

Day	80	81	82	83	84	85	86	87	88	89	90	91
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												
.												
Total	0	0	0	0	0	0	0	0	0	0	0	0
Yr	1980	81	82	83	84	85	86	87	88	89	90	91

DEC 15 1994

Summary
Sept 64/91
Inclusive

at or below
43 CFS
38 days in
28 years.

Lowest
0 flow on
four seperate
days in
Sept of 1977

Worst year
1977 - 28
days at or
under 43 CFS.
4 days 0 flow.
7 days .01 to .9
10 days 1.0 to 10.0

Month — Sept. — 64/91 Inclusive.

	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
1														36		
														31		
														9.2		
														3.4		
			42											.78		
			36													
			29											.09		
			29											0		
			27											0		
			32											.01		
			37											.01		
			42											0		
			40											0		
			39											.01		
														1.3		
														1.1		
														4.1		
														2.1		
														.9		
														.66		
														3.1		
														17		
														15		
														31		
														2.3		
														2.5		
														1.5		

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T	0	0	10	0	0	0	0	0	0	0	0	0	0	28	0	0
Y	1964	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79

RECEIVED APR 0 5 1991

April 3, 1991

Ms. Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 29426

Re: Ravenscroft Ranch Hydroelectric Project
FERC No. 4055
Amended stipulations from exemption issued February 5, 1982

Dear Ms. Cashell:

Idaho Department of Fish and Game (Department) personnel have held consultation meetings with Mr. Vernon Ravenscroft for purposes of amending stipulations governing the Ravenscroft Ranch Hydroelectric Project, FERC No. 4055. As a result of those discussions, the Department agrees to:

1. Delete item 3c in its entirety.

2. Mr. Ravenscroft has proposed to ramp flows beginning on April 16 through June 15. The flushing flows stipulated for this project have been determined by the Bureau of Land Management and are needed to ensure the stream channel and its riparian vegetation remain viable. If fish stranding is a problem, we believe the project could ramp flows over a two-day period instead of two weeks.

Sincerely,

Cal Groen, Chief
Resource Planning and
Program Coordination

CG:WR:kdd

cc: USFWS (Lobdell)
Ravenscroft
Reg. 4
BLM (Shoshone)

DEC 05 1994

600 South Walnut • Box 25
Boise, Idaho 83707

F+Game
Ravenscroft project

February 1, 1988

Mr. Kenneth F. Plumb
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, DC 20426

Re: Ravenscroft Ranch Project, FERC No. 4055-002, Malad River, Idaho. Subject: Clarification and revision of stipulations governing a small hydroelectric power project under 5mW capacity, currently operating by authority of an exemption issued February 5, 1982, to Vernon F. Ravenscroft.

Dear Mr. Plumb:

This letter is a request to modify existing terms and conditions for the Ravenscroft Ranch Project. The Idaho Department of Fish and Game understands that Vernon Ravenscroft desires to retrofit and expand the referenced project and this request indicates our approval of such expansion provided that the stipulations are also adjusted as here indicated. These revised terms and conditions are for the purposes set forth in Section 403 of the Energy Security Act of 1980 and will supersede the stipulations filed by our agency on December 9, 1981. The revised stipulations shall be:

1. These revised stipulations shall become binding at the time proposed additions and corrections to and retrofit of said project 4055 are placed in operation by the owners of that project. The stipulations of December 9, 1981 shall continue and govern until the date of operation for the retrofitted project.

2. Every reasonable care to be taken to minimize water quality degradation during any construction and/or retrofitting and to prevent long-term erosion.

3. Instantaneous minimum streamflow is to be maintained between the diversion structure and powerhouse as shown below:

   a. July 1 through March 31 - 20 cfs or the full flow of the river, whichever is less.
   b. April 1 through June 30 - 80 cfs or the full flow of the river, whichever is less.

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c. As an interim procedure during 1988, at such times when the project is not in operation due to insufficient flows, the exemptee shall provide unobstructed flow through: 1) all four existing culverts during the period April 1-June 30, or 2) the two existing 15 inch diameter culverts during the period July 1-March 31. Check-board boxes shall be constructed at the outlet end of the culverts or an alternate system developed capable of maintaining a stable minimum pool elevation equal to or higher than the top of the 15 inch culverts. Operating procedures for the check-board boxes or alternate system will be developed that will pass, uninterrupted, the required minimum flow, or full stream flow, whichever is less. By the end of 1988, this system will be in place and a and b, above, will be the standard requirement.

deleted

d. All bypass flows to be recorded using a continuous automatic recorder of an acceptable and functional design. Records from the recorder will be provided to the Idaho Department of Fish and Game each year on a quarterly basis. Access to the device will be available upon request by Idaho Department of Fish and Game (IDFG), Bureau of Land Management (BLM), and U.S. Fish and Wildlife Service (USFWS) at any time.

4. The responsible wildlife management agencies shall have the authority to require, at their discretion, flushing flows to maintain riparian vegetation. These flows will not be required in excess of 4 times per year, shall not exceed 50 cfs per time, and shall not exceed 4 hours per time.

5. At all times when the plant is in operation, maintain a visible flow through entire length of channel parallel to the river, except during periods of ice cover over the referenced channel.

6. Mitigation in the form of ponds to be constructed to meet the following criteria:

   a. Total surface acreage approximately 20 acres,
   b. Approximately one-half of pond surface area to be less than 2 feet in depth.
   c. The other half of the pond surface area should be more than 2 feet in depth with at least 2 acres deeper than 7 to 8 feet.
   d. Construct one island of at least 400 square feet with slope and shape to be determined by BLM and IDFG.
   e. Construct at least four smaller islands of 50 square feet with slopes and shapes determined by BLM and IDFG.
   f. Maintain maximum water levels during April, May, and June when sufficient water is available from either irrigation waste sources or the river. Any additional water acquired exclusively for power generation at the project after the initial approval date of FERC's exemption will not be subject to use for maintaining maximum pond level.

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7. The lands to be used for water storage are partly in the public domain, administered by BLM. The applicant and BLM agree to plan, develop, operate, and maintain the area for the mutual objectives of water storage augmentation concurrent with wildlife habitat improvement. Principal wildlife species to be benefited are migratory waterfowl, with special emphasis on creating breeding habitat. A water and land management plan for the area will be developed mutually acceptable to the applicant and the wildlife resource agencies and adhered to in accordance with the other conditions set forth.

8. No measures to be undertaken to reduce riparian vegetation along the river, along ponds, or the north bank of the canal unless concurred with by responsible wildlife and land management agencies.

9. It is acknowledged that all project transmission lines have been properly equipped with raptor perches.

10. If, after construction, the applicant should at any time in the future abandon the site, the stream diversion points will be restored to pre-project condition, unless otherwise mutually agreed by resource agencies.

11. On-line power production will not be authorized until all terms and conditions are met. This will not prohibit testing, which will be limited to ten days on the newly installed generator.

Stipulations 4, 6, 7, and 8 are verbatim from the terms and conditions in the December 9, 1981, letter.

Sincerely,

Jerry M. Conley
Director

cc: USFWS (Wolflin)
Consulting Associates, Inc.
BLM (Shoshone)
FERC (Ptld)
Region 4

JMC:WDH:blm

DEC 05 1994

37-7857.

P-3924-020

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Notice of Application Filed with the Commission

(February 6, 1991)

Take notice that the following hydroelectric application has been filed with the Federal Energy Regulatory Commission and is available for public inspection.

RECEIVED
FEB 19 1991
Department of Water Resources

DEC 05 1994

DC-A-15

a. Type of Application: Surrender of license

b. Project No.: 3924-020

c. Date filed: December 18, 1990

d. Applicant: Malad Hydro Partners

e. Name of Project: Malad High Drop

f. Location: On the Malad River in Gooding County, Idaho

g. Filed Pursuant to: Federal Power Act,
16 U.S.C. §§791(a) - 825(r)

h. Applicant Contact: Kip W. Runyan
Malad Hydro Partners
333 N. 13th Street
Boise, ID 83702
(208) 336-4254

i. FERC Contact: Michael Spencer at (202) 219-2846

j. Comment Date: April 11, 1991

k. Description of Proposed Action: The proposed run-of-the-river project would have consisted of a diversion, a penstock, and a powerhouse. The Licensee seeks to surrender its license because it will be impossible to meet the deadline for start of construction.

The Licensee states that no construction has been done.

l. This notice also consists of the following standard paragraphs: B, C, and D2

Consulting Associates, Incorporated

BOISE OFFICE
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

July 16, 1987

RECEIVED
JUL 20 1987
Department of Water Resources

Mr. Jim Johnson
Water Rights Supervisor
Idaho Department of Water Resources
Statehouse
Boise, Idaho 83720

Re: Your letter requesting additional information on proof of beneficial use for permits 37-7857, 37-7865, 37-7922.

Dear Jim:

As per our conversation relative to the referenced permits I can report as follows:

✓Rule 3, 1 - Evidence of authority to represent. I have previously advised the Department by written letter and I hereby reaffirm that Cecil Thomas was retained to examine and submit the proof of beneficial use in regard to these projects. If this and previous notice is not sufficient I would be glad to submit a formal affidavit so stating.

✓Rule 3, 2 - Pay fee or hire certified examiner. Done as per notices and reports previously submitted.

✓Rule 4, 1 - Registration of Examiner. Mr. Cecil Thomas has been properly registered with your Department.

✓Rule 5, 1, 1 - Reports and field records taken by Mr. Thomas are herewith re-submitted. If there are specific additions or clarifications needed please let us know the specific items involved.

✓Rule 5, 1, 2 - Partial development, none. Undeveloped uses, none. Over-development has taken place. The current maximum capacity of the hydro project is using 229 cfs as compared to the total permits of 200 cfs. A subsequent water application has already been filed and is pending before the Water Department.

Rule 5, 1, 3 - The water diversion structure is situated in two adjoining forty acre parcels, the NW 1/4, SW 1/4 and the SW 1/4, NW 1/4 both in Section 28, T6S, R14E. The water is transported westerly through a canal which is approximately one mile in length. The point of use consisting of a headworks, spillway and powerhouse again touch into two forty acre parcels, namely the west 1/2 of the SW 1/4 of Section 29, T6S, R14E. The return flow to the Malad River is situated in the NW 1/4, SW 1/4 Section 29, T6S, R14E. Descriptions of the equipment currently in use were fully described in the Thomas report.

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Rule 5, 1, 4 - Interconnection with other systems or water rights, none.

Rule 5, 1, 5 - Return flow to the Malad River in the NW 1/4, SW 1/4 Section 29, T6S, R14E, nonconsumptive use for power generation.

Rule 5, 1, 6 - Compliance - measuring device described in the Thomas report.

Rule 5, 1, 7 - Not applicable to a power use.

Rule 5, 1, 8 - Not applicable to a power use.

Rule 5, 1, 9 - Not applicable to this single diversion, single use project.

Rule 5, 1, 10 - Not applicable - run of river project.

Rule 5, 1, 11 - Not applicable.

Rule 5, 1, 12 - The average production (based upon the actual monthly records from May 1984 through July 1986) has been 3,724,000 KWH per year.

Rule 5, 1, 13 - Year around use.

Rule 5, 1, 14 - One use only.

Rule 5, 1, 15 - Examination fee - private consultant,
Diversion capacity - approximately 350 cfs,
Beneficial use - 229 current use, subsequent application pending.

Rule 5, 1, 16 - Suggested amendments - no change in diversion, headworks or spillway. Applications for additional water and powerhouse expansions are pending.

Rule 5, 1, 17 - Not applicable.

Rule 5, 2, 4 - Measuring device and recorded readings from same are described in the Thomas report.

Rule 5, 3, 1 - Volume per acre limits not applicable to this project.

DEC 05 1994

I trust this information will fully satisfy your questions. If there are any further specific items which you require, please call me at 345-2670. We are enclosing the original Thomas reports for your further processing based upon this supplemental information.

Sincerely,

Vernon Ravenscroft

Vernon F. Ravenscroft

VFR:jb

Enclosure
c: Mr. Cecil Thomas

DEC 05 1994

Sharla

file 37-7857

Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

September 18, 1991

RECEIVED
SEP 20 1991
Department of Water Resources

J. Mark Robinson, Director
Division of Project Compliance & Administration
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capital Street, N.E.
Washington, D.C. 20426

Reference: Project 4055
Your letter received July 23, 1991 concerning By-pass and inflow gaging system. Design and administrative problems attendant thereto.

Dear Mr. Robinson:

This letter will provide additional material in compliance with the above referenced correspondence from your office.

I have previously provided to you and to the germane agencies a recalibration of the mid-reach gaging station. That corrected calibration indicated changes which clarified the flows in the range of 80 C.F.S. and greatly reduced the discrepancies which were known to exist in the original tables.

There is an official U.S.G.S. gaging station (#13152500) approximately one (1) mile upstream above the project 4055 diversion point. That station is situated on a very stable section of the river. The station is recalibrated on a routine schedule. The instant flow values can be determined by anyone who has possession of the conversion table. Spot readings are available daily from the local ditch rider and the mean average daily values are available monthly and published annually by the Idaho State U.S.G.S. office. There is no intervening diversion between this gage and the project 4055 diversion. There are three minor irrigation waste water inflows between the gage and the project 4055 diversion. These inflows (in combination) vary from zero to approximately 6 C.F.S. For project 4055 scheduling purposes, I have instructed the project operators to use the recorded inflow at the gage and to disregard any minor inflow from irrigation waste water sources. I respectfully petition that this gage, this policy, and this procedure be accepted by all germane agencies. The daily mean flow summary (April, May and June to the 19th) for the current year (1991) is attached as Exhibit I to this letter.

DEC 05 1994

Engineer Carl Myers made a special inspection of the project. His report (attached - Exhibit II) is self-explanatory. The facility improvements, the changes of procedure and the time schedules which he suggests are acceptable to the project and will be implemented.

In addition to the Fish and Wildlife agencies and the B.L.M., this report is also being routed to the Wood River Watermaster and to the Idaho Water Resources Department. These two entities are responsible for the administration of Idaho Water law. They need to be informed and provided an opportunity to intervene on any water administrative matters. Unfortunately, they were not involved in the decisions which established the original stipulations for project 4055. As a result the project, on occasion, finds itself between two authorities, one of which says yes and the other says no. Hopefully that awkward position can be minimized by involving the state officers at this time.

Sincerely,

Vernon Ravenscroft

enclosures

VR/cg

DEC 05 1994

CERTIFICATE OF MAILING

I hereby certify that on September 18th, 1991 I have mailed true and correct copies of the attached letter with two exhibits all pertaining to Project 4055 and addressed to J. Mark Robinson of the Federal Energy Regulatory Commission, to the following:

J. Mark Robinson, Director
Div. of Project Compliance
& Administration
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capital Street, N.E.
Washington, D.C. 20426 (Original + 7 copies)

Mr. Robert Grieve
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capital Street, N.E.
Washington, D.C. 20426

Will Reid
Idaho Dept. of Fish & Game
Statehouse Mail
Boise, Idaho 83720

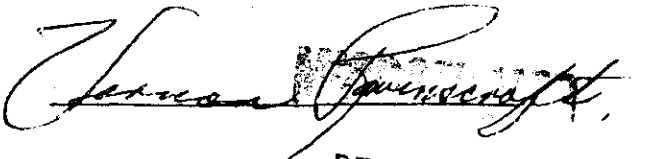
Region 4 Supervisor
Idaho Dept. of Fish & Game
P.O. Box 428
Jerome, Idaho 83338

Robert Cordell
Bureau of Land Management
P.O. Box 2B
Shoshone, Idaho 83352

Jim Esch
U.S. Fish & Wildlife Service
4696 Overland Rd., Room 576
Boise, Idaho 83705

Lee Peterson, Watermaster
WATER DISTRICT NO. 37 & 37M
P.O. Box T
Shoshone, Idaho 83352

Idaho Dept. of Water Resources
Statehouse Mail
Boise, Idaho 83720



DEC 05 1994

EXHIBIT 1

07/24/91

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - BOISE

STATION NUMBER 13152500 MALAD RIVER NR GOODING ID STREAM SOURCE AGENCY USGS
LATITUDE 425312 LONGITUDE 1144808 DRAINAGE AREA 2990 DATUM 3345.00 STATE 16 COUNTY 047
PROVISIONAL DATA SUBJECT TO REVISION

DISCHARGE, CUBIC FEET PER SECOND, CLIMATIC YEAR APRIL 1991 TO MARCH 1992
MEAN VALUES

DAY	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR
1	46	196	140	---	---	---	---	---	---	---	---	---
2	34	173	120	---	---	---	---	---	---	---	---	---
3	35	195	128	---	---	---	---	---	---	---	---	---
4	33	187	105	---	---	---	---	---	---	---	---	---
5	18	184	98	---	---	---	---	---	---	---	---	---
6	18	155	123	---	---	---	---	---	---	---	---	---
7	22	148	211	---	---	---	---	---	---	---	---	---
8	25	157	226	---	---	---	---	---	---	---	---	---
9	25	175	258	---	---	---	---	---	---	---	---	---
10	20	173	261	---	---	---	---	---	---	---	---	---
	18	185	186	---	---	---	---	---	---	---	---	---
12	17	196	129	---	---	---	---	---	---	---	---	---
13	19	205	112	---	---	---	---	---	---	---	---	---
14	18	234	129	---	---	---	---	---	---	---	---	---
15	362	245	135	---	---	---	---	---	---	---	---	---
16	238	217	164	---	---	---	---	---	---	---	---	---
17	283	163	160	---	---	---	---	---	---	---	---	---
18	331	158	134	---	---	---	---	---	---	---	---	---
19	473	201	135	---	---	---	---	---	---	---	---	---
20	418	213	---	---	---	---	---	---	---	---	---	---
21	378	173	---	---	---	---	---	---	---	---	---	---
22	434	127	---	---	---	---	---	---	---	---	---	---
23	361	104	---	---	---	---	---	---	---	---	---	---
24	257	81	---	---	---	---	---	---	---	---	---	---
25	185	113	---	---	---	---	---	---	---	---	---	---
26	141	79	---	---	---	---	---	---	---	---	---	---
27	206	100	---	---	---	---	---	---	---	---	---	---
28	234	116	---	---	---	---	---	---	---	---	---	---
29	273	130	---	---	---	---	---	---	---	---	---	---
	245	153	---	---	---	---	---	---	---	---	---	---
31	---	147	---	---	---	---	---	---	---	---	---	---
TOTAL	5167	5083	---	---	---	---	---	---	---	---	---	---
MEAN	172	164	---	---	---	---	---	---	---	---	---	---
MAX	473	245	---	---	---	---	---	---	---	---	---	---
MIN	17	79	---	---	---	---	---	---	---	---	---	---
AC-FT	10250	10080	---	---	---	---	---	---	---	---	---	---

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Department of Water Resources

Form 219
6/86

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 377857

1. Owner: Vern Ravenscraft (Prudential Federal S&L) Phone No. (208) 345-2670
   Current Address: 1843 Broadway Suite 102 Boise, Idaho 83706
2. Accompanied by: Cecil A Thomas PE+LS EXAM. DATE: Sept. 24, 1986
   Address: 3775 N Locust Grove, Meridian, Id. 83642 Phone No. (208) 888-3087
   Relationship to Permit Holder: Consulting Engineer
3. Source: Big Wood (Malad) R tributary to Snake River

B. OVERLAP REVIEW

1. Other water rights with same place of use: 377865, 377922
   ☑ Copies Attached
2. Other water rights with same point of diversion:
   377865, 377922 ☑ Copies Attached ☐ Copies of Field Exam's Attached

C. SYSTEM DESCRIPTION

1. **Diversion System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe i.d. as applicable. ☐ Alternative diagram attached

Beneficial Use Field Report (Kimberly Farms)

Scale: 1" = _____.

2. ☑ Copy of U.S.G.S. Quadrangle Attached
   Showing location(s) of point(s) of diversion and place(s) of use (required).
   ☐ Aerial Photo Attached
   (required for irrigation of 10 acres or more).
   ☑ Photo of Diversion and System Attached
   (required for all but single household domestic groundwater, and stockwater.

System Description (continued)

3. **Narrative:** Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)

The system consists of a canal 1.3 miles long in earth and rock on the right (north) bank of Big Wood River, a diversion structure of concrete and steel, a forebay formed by a steel and concrete dam from which 3 penstocks divert to 3 turbines which actuate 3 generators. Nameplate flow for #1 is 32 cfs and nameplate output is 112 kilowatts. Head from forebay to tailrace at normal output is 46 feet. See generator 1 and other features on figure 2A and 2B.

☐ See Remarks on page 4 for continuation

4.

~~Well or Diversion~~ Generator Identification No.*	~~Motor~~ Turbine Make	~~Hp~~ KW	Motor Serial No.	~~Pump~~ Generator Make	~~or~~ Discharge Size
①	Byron Jackson	112		Westinghouse	32 cfs
Note - 1 of 3 generators served by the same canal.					

*Code to correspond with No. on ~~map and aerial photo~~ figure 2 B

5. **Point(s) of Diversion:**

Ident. No.	Gov't. Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
		SW	SW	NW	28	6S	14E	Gooding	7½ minute USGS Tuttle Quad.

6. **Place(s) of Use:** Power Plant — Indicate Method of Determination 7½ minute U.S.G.S Tuttle Quad

Twp.	Rge.	Sec.	~~NE¼~~				NW¼				SW¼				SE¼				Totals
			~~NE¼~~	~~NW¼~~	~~SW¼~~	~~SE¼~~	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
			¼	¼	¼														
6S	R.14E	29	SW	NW	SW														

Do not use this space

Do not use this space

D. FLOW MEASUREMENTS

☑ Additional Data Sheets Attached

1. See Figure 3

Measurement by [redacted]	Type	Make	Model No.	Serial No.	Size	Calib. Date
Newby	Type AA	Price	on 8' rod			
E. Thomas	Type AA	Price	on 30C weight			manufacturer

Spin tests and maintenance adequate.

2. **Measurements:**

7 current meter measurements made from the measuring bridge at site shown on figure 3, with Type AA current meter suspended on an 8' rod or a 30C lead weight, measuring depths and velocities at 0.2 and 0.8 depths at near 25 sections, taking widths from a tape as recommended by U.S. Geological Survey. Flow is for all 3 water rights served by this diversion.

E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

1. Measured Method: Results of 7 measurements shown on figure 3 plot on a curve except for minor shifting. Measurement #7 shows effects of raising level of spillway at power plant. Continuing measurements will be needed to determine
2. Alternate Method for Checking Purposes: discharge from staff gage at diversion. See figure 3.

F. ~~PUMP~~ Turbine EFFICIENCY DATA (Optional)

Discharge Pressure: _____ psi x 2.31 = _____ ft (1); Dynamic pumping level: _____ ft (2)

Total Head: (1) + (2) = _____ (3) ; Flow rate: _____ cfs (4)

Water HP: (3) x (4) ÷ 8.8 = _____ (5)

Meter Input KW: 3.6 x _____ KH x _____ CTR or _____ MULT x _____ PTR x _____ N/ _____ T = _____ (6)

Meter Input HP: (6) x 1.34 = _____ (7)

Panel Input KW: _____ Ave PF x _____ Ave Volts x _____ Ave Ampsx .001732 = _____ (6)

Panel Input HP: (6) x 1.34 = _____ (7) Efficiency: (5)/(7) x 100 = _____ %

Composite efficiency 9/24/86

Discharge through turbines 287-52 spill = 235 cfs

Head = 467ft, Theoretical KW = 3.89 x 235 = 914 KW

Measured output at meter = 695 KW

Efficiency = 695/914 x 100 = 76 percent

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{I.R.}$ = (Acres Irrigated) x (Irrigation Requirement) = _____

$V_{D.R.}$ = [Diversion Rate (cfs)] x (Days in Irrigation Season) x 1.9835 = _____

V = Smaller of $V_{I.R.}$ and $V_{D.R.}$ = _____

2. Volume Calculations for Other Uses: Assuming 20 cfs is available for power use, volume would be 20 x 365 x 1.9835 = 14,480 acre feet per year

H. REMARKS AND OVERLAP REVIEW ANALYSIS

Discharge as measured at measuring bridge is the total of the flow for water rights 377865, 377922, and 37785?.

I. RECOMMENDATIONS

1. **Recommended Amounts**

Beneficial Use	Period of Use From	Period of Use To	Rate of Diversion Q (cfs)	Annual Volume V (afa)
20	Oct. 1	Sept. 30	20	14,480 acrefeet when available
			Totals:	

2. **Recommended Amendments**

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

J. AUTHENTICATION

Field Examiner's Name: Cecil A. Thomas

Signature: Cecil A Thomas

Certification Date: March 18, 1987

Field Report Preparation Date: Sept. 24, 1986

PROFESSIONAL ENGINEER ★ LAND SURVEYOR
REGISTERED
Cecil A. Thomas
645
3/18/87
STATE OF IDAHO
CECIL A. THOMAS

CONSULTANT SEAL

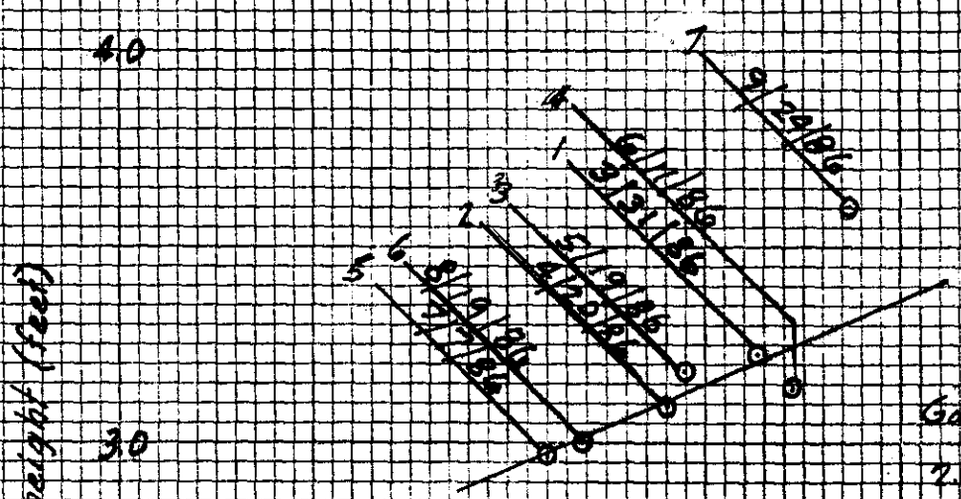
K. **Licensing recommendation shall be prepared by an Idaho Department of Water Resources employee on a computer printout attached hereto.**

Station Number _____

FIGURE 3

Ravenscroft Power Diversion Canal near Tuttle, Idaho
Stage-Discharge Relation

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Rating table

Gage ht	Discharge (cfs)	Diff per 0.1
2.9	193	23
3.0	216	23
3.1	239	23
3.2	262	23
3.3	285	23
3.4	308	23

DISCHARGE MEASUREMENTS

No.	Date	Gage height	Discharge (cfs)	% diff from curve	made by	
1	3/31/86	[redacted]	2.64	-2.9	R.J. Newby	
2	4/20/86	3.09	240	+2.8	"	
3	5/19/86	3.18	244	-5.1	"	shift +.26
4	6/11/86	3.13	272	+10.6	"	shift +.11
5	7/7/86	2.96	210	+1.5	"	
6	8/19/86	3.00	218	-1.4	"	
7	9/24/86	3.60	287	*shift +.29	C.A. Thomas	shift -.22

5 Spill of 52 cfs where penstocks

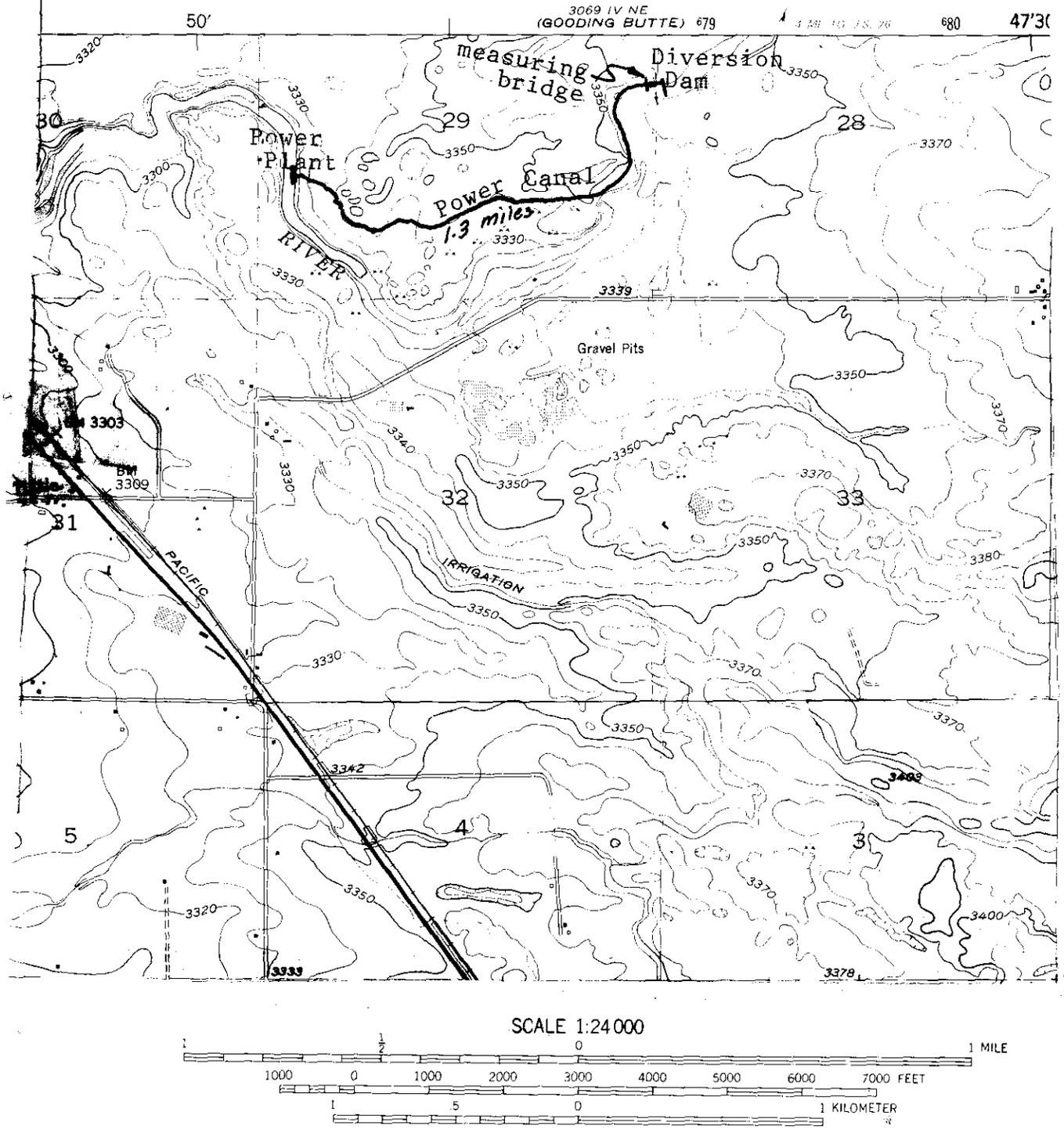
* Measurement made after forebay spillway was raised.

More measurements are needed for new relation.

Note: Small shifts evidently occur from channel shifts and moss.

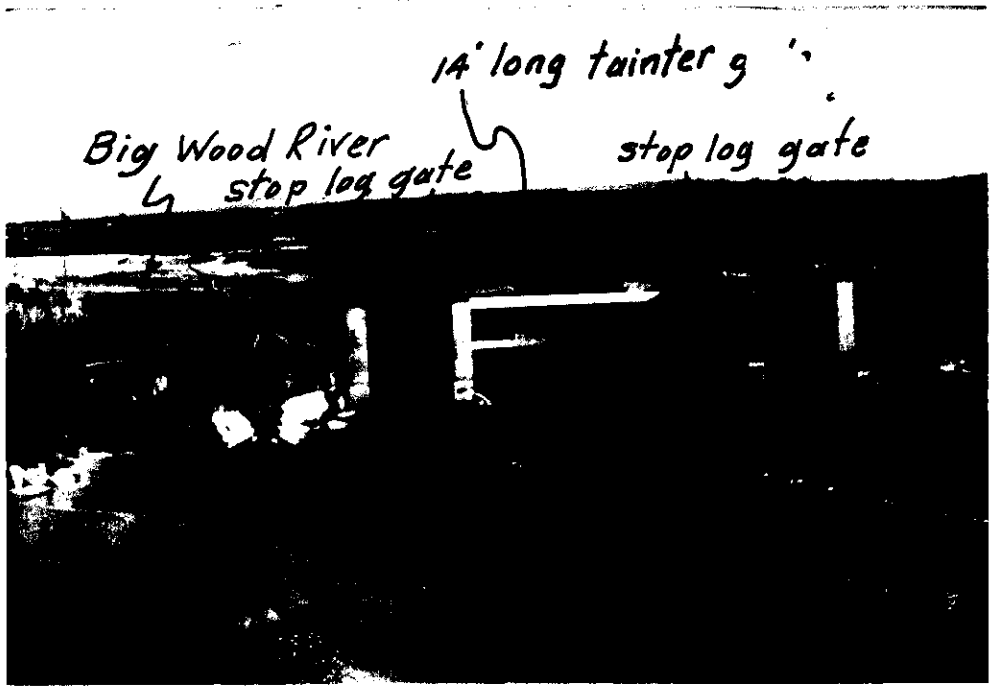
Sheet No. _____ of _____ sheets. Prepared by CAT Date 3/16/87 Checked by _____ Date _____

Map showing location of Ravenscroft Hydropower Project



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Department of Water Resources

FIGURE 1

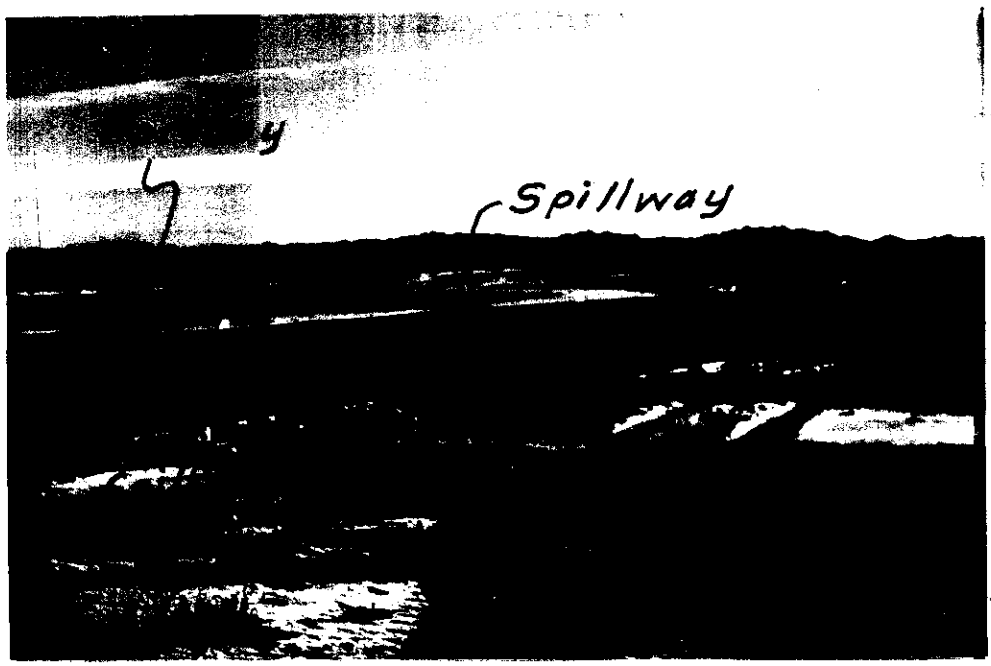


Diversion

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Department of Water Resources



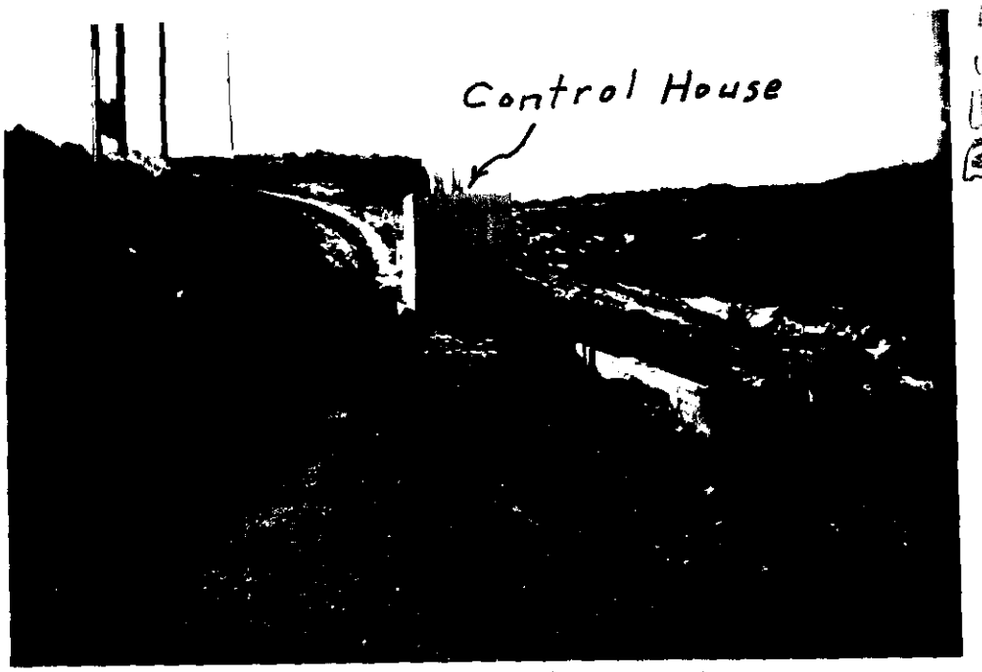
Canal above Penstocks

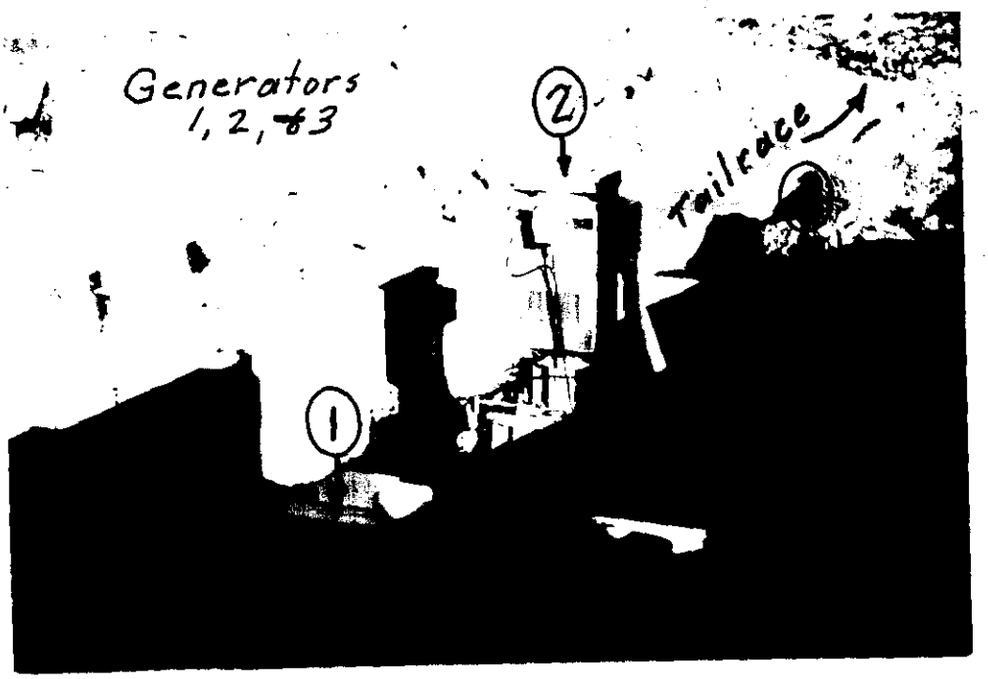


Forebay at Spillway

FIGURE 2 A







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FIGURE 2 B

Figure 4

9-275G
(Mar. 1972)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. 7
Comp. by CAT
Checked by CAT

DISCHARGE MEASUREMENT NOTES

Sta. No. .....
Ravenscroft Diversion Canal nr. Tuttle
Date Sept. 24, 1986 Party CA Thomas and Vern Ravenscroft
Width 45.5 Area 21.0 Vel. 1.37 G. H. ..... Disch. 28.7
Method 2-8 No. secs. 25 G. H. change ..... in ..... hrs. Susp. 30C
Method coef. ..... Hor. angle coef. ..... Susp. coef. ..... Meter No. CAT

GAGE READINGS				
Time		Recorder	Inside	Outside
4:10 pm				3.60
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter Type AA
Date rated ..... for rod, other.
Meter 0.5 ft. above bottom of weight.
Spin before meas. ..... after .....
Meas. plots .... % diff. from rating .....
Wading, cable, ice, boat, upstr., downstr., side bridge 100 feet, mile, above, below gage, and .....
Check-bar, found .....
changed to ..... at .....
Correct .....
Levels obtained .....

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section Smooth, bkt.
Flow Slow. Some vegetation on bkt. Weather Warm, clear, pleasant
Other ..... Air .....°F@.....
Gage on gate headgates, at head of canal Water .....°F@.....
..... Record removed ..... Intake flushed U .....
Observer Vern Ravenscroft

Control Canal section about 1/2 miles long. Fall 0.8'+ 3 Penstock pipes and dam overflow downstream
Remarks control gage reading. Mass in prog, and long crest of spillway causes some backup and low sensitivity. Stage at gage also could be adjusted by
G. H. of zero flow closure of some penstocks during low or flows.

Sheet 1 of 2

16—82985-1 GPO

River at—

Angle coef. factor	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or	Area	Discharge
-1.	1	0.5	0		0.		0			0	0
-10	2	1.5	1.8	.6	4	50	.194			2.7	-.52
0	4	2	4.4	.2	5	65	.190	.206		8.8	0.00
	~~6~~	~~2~~		.8	5	54	.227				
1.0	6	2	4.6	.2	5	43	.273	.278		9.2	2.56
				.8	10	60	.383				
	8	2	5.1		15	47	.716	.558		10.2	5.69
					10	58	.400				
	10	2	5.4		10	47	.484	.82		10.8	8.86
					25	48	1.16				
	12	2	5.7		20	44	1.01	1.40		11.4	16.0
					40	49	1.80				
	14	2	5.8		30	50	1.33	1.64		11.6	19.0
					40	45	1.96				
0	16	2	6		40	47	1.88	2.08		12	25.0
					50	48	2.29				
	18	2	5.7		40	44	2.00	1.96		11.4	22.3
					40	46	1.92				
	20	2	5.7		40	46	1.92	1.92		11.4	21.9
					40	46	1.92				
	22	2	5.7		40	46	1.92	1.88		11.4	21.4
					40	48	1.84				
	24	2	5.1		40	49	1.80	1.82		10.2	18.6
					40	48	1.84				
	26	2	5		40	44	2.00	1.86		10.0	18.6
					40	51	1.73				
	28	2	4.8		30	41	1.62	1.60		9.6	15.4
					30	42	1.58				
	30	2	4.8		30	41	1.62	1.58		9.6	15.2
					30	43	1.54				
							See next sheet			150.2	209.90

9-275G
(Mar. 1972)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

DISCHARGE MEASUREMENT NOTES

Meas. No. _____
Comp. by _____
Checked by _____

Sta. No. _____
Rawhide Diversion Canal nr. Tuttle
Date Sept. 27, 1986 Party CA Thomas & Vern Rawhide

Width _____ Area _____ Vel. _____ G. H. _____ Disch. _____
Method _____ No. secs. _____ G. H. change _____ in _____ hrs. Susp. _____
Method coef. _____ Hor. angle coef. _____ Susp. coef. _____ Meter No. _____

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter _____
Date rated _____ for rod, other.
Meter _____ ft. above bottom of weight.
Spin before meas. _____ after _____
Meas. plots ____ % diff. from rating _____
Wading, cable, ice, boat, upstr., downstr., side bridge _____ feet, mile, above, below gage, and _____
Check-bar, found _____ changed to _____ at _____
Correct _____
Levels obtained _____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section _____
Flow _____ Weather _____
Other _____ Air _____°F@ _____
Gage _____ Water _____°F@ _____
_____ Record removed _____ Intake flushed U _____
Observer _____
_____
Control _____
_____
Remarks _____
_____
_____
G. H. of zero flow _____ ft.

Sheet 2 of 2

16—82985-1 GPO

River at—

Angle coefficient	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or	Area	Discharge
	32	2	4.5	.6	30	49	1.51	1.57		9.6	14.8
				.8	32	42	1.58				
	34	2	4.8		20	49	1.57	1.49		9.6	14.3
					30	47	1.47				
	36	2	4.8		30	46	1.44	1.38		9.6	13.2
					25	42	1.32				
	38	2	4.8		30	41	1.41	1.28		9.6	12.3
					25	48	1.16				
	40	2	4.7		25	43	1.29	1.15		9.4	10.8
					20	49	1.01				
	42	2	3.3	.2	25	43	1.29	1.04		6.6	6.86
				.6	15	43	.78				
	44	1.75	2.2	.6	20	41	.95	.95		3.85	3.66
⊙	45½	1.25	1.1	.6	20	49	.93	.93		1.38	1.28
	46½	.5	0		F W	L.T	BLC	4 pr		0	0
										93	87.19
	Gage	3.0	@	d	10						

Figure 2

9-275G
(Mar. 1972)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Meas. No. ____
Comp. by ____
Checked by ____

DISCHARGE MEASUREMENT NOTES

Sta. No. Spill from forebay

Date Sept. 24, 1986 Party C.A. Thomas, Vern Ravenscroft

Width 22.8 Area 21.0 Vel. 2.41 G. H. ____ Disch. 51.9

Method 6 No. secs. 27 G. H. change ____ in ____ hrs. Susp. Rod

Method coef. ____ Hor. angle coef. ____ Susp. coef. ____ Meter No. CAT

GAGE READINGS				
Time		Recorder	Inside	Outside
Weighted M. G. H.				
G. H. correction				
Correct M. G. H.				

Type of meter AA

Date rated ____ for rod, other.

Meter ____ ft. above bottom of weight.

Spin before meas. ____ after ____

Meas. plots ____ % diff. from rating ____

Wading, cable, ice, boat, upstr., downstr., side bridge ____ feet, mile, above, below gage, and ____

Check-bar, found ____ changed to ____ at ____

Correct ____

Levels obtained ____

Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%), based on following conditions: Cross section Basalt boulders most of the flow in 6 sections

Flow Distribution, a bit gradual but Weather Clear & warm

Other ____ Air ____ °F@ ____

Gage ____ Water ____ °F@ ____

____ Record removed ____ Intake flushed U

Observer Ravenscroft with int.

Control ____

Remarks Added 0.4 est. leakage from forebay to 51.5 measured in spillover downstream dam.

G. H. of zero flow ____ ft.

16—82985-1 GPO

River at—

Angle coef. factor	Dist. from initial point	Width	Depth	Observation depth	Revolutions	Time in seconds	VELOCITY: At point	VELOCITY: Mean in vertical	Adjusted for hor. angle or ----------	Area	Discharge
-1.0	7.0	0.5	0.6		0			0 12	42	0	0
	8	1	1.1		Est ½ x	1.03 =	.52			1.1	-.57
0.0	9	1	1.1		24	43	1.03			1.1	0.0
1.0	10	1	1.0		50	42	2.61			1	2.61
	11	1	1.15		46	40	2.20			1.15	2.53
	12	1	1.2		36	43	1.54			1.2	1.85
	13	1	1.1		15	40	.84			1.1	.92
	14	1	0.8		40	46	1.92			0.8	1.54
	15	1	0.9		50	41	2.68			.9	2.41
	16	1	1.1		60	46	2.86			1.1	3.15
	17	1	1.55		1.1	46	2.86			1.55	4.43
	18	1	1.8		100	41	4.46			1.8	8.03
	19	1	1.7		100	45	4.85			1.7	8.25
	20	1	1.8		80	46	3.80			1.8	6.84
⊙	21	1	1.0		66	45	2.92			1.0	2.92
	22	1	1.2		46	40	2.20			1.2	2.64
	22.5	0.4	.4		40	48	2.00			0.24	.48
	23.4	0.35	0				0			0	0
	12 X	03	0		Stds	channel, RB				0	.0
	13	0.25	0.15		5	40	.393			.04	.01
	13.5	0.75	0.2		10	43	.527			.15	.08
	14.5	0.75	0.2		15	46	.731			.15	.11
	15	0.75	0.4		20	42	1.01			.30	.30
	16	1	.5		15	40	.84			.5	.42
	17	1	5.5		40	47	1.88			.55	1.03
	18	0.8	.75		40	49	1.80			.60	1.08
	18.6	0.5	.7		25	41	1.35			.35	.47
	19	0.7	0				0			0	
										21.4	51.5

MEMORANDUM

TO: File No. 37-7857

FROM: Gary Spackman Gary

DATE: August 19, 1987

RE: Advancement of Priority for Failure to Submit Exam Fee Information

On April 30, 1986, an examination fee notice letter was sent to Vernon Ravenscroft for Permit No. 37-7857. The fee notice letter was not responded to until January 30, 1987. On the examination form, Mr. Ravenscroft indicated that Mr. Cecil Thomas of Meridian, Idaho had been retained to conduct the examination. Mr. Thomas was a certified examiner at the time.

We normally require a statement from the certified examiner indicating that he has been retained to conduct the examination. In light of the fact, however, that we knew that Mr. Thomas had been retained previously by Mr. Ravenscroft for examination of the same site, the written statement from the certified examiner was not necessary.

The priority of Permit No. 37-7857 should be advanced 229 days, being the number of days between April 30th and January 16th when the exam fee information sheet was first received by the Department. According to my calculations, the new date of priority is May 12, 1981.

RECEIVED
DEC 05 1994

Consulting Associates, Incorporated

BOISE OFFICE
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

July 16, 1987

RECEIVED
JUL 20 1987
Department of Water Resources

Mr. Jim Johnson
Water Rights Supervisor
Idaho Department of Water Resources
Statehouse
Boise, Idaho 83720

Re: Your letter requesting additional information on proof of beneficial use for permits 37-7857, 37-7865, 37-7922.

Dear Jim:

As per our conversation relative to the referenced permits I can report as follows:

✓Rule 3, 1 - Evidence of authority to represent. I have previously advised the Department by written letter and I hereby reaffirm that Cecil Thomas was retained to examine and submit the proof of beneficial use in regard to these projects. If this and previous notice is not sufficient I would be glad to submit a formal affidavit so stating.

✓Rule 3, 2 - Pay fee or hire certified examiner. Done as per notices and reports previously submitted.

✓Rule 4, 1 - Registration of Examiner. Mr. Cecil Thomas has been properly registered with your Department.

✓Rule 5, 1, 1 - Reports and field records taken by Mr. Thomas are herewith re-submitted. If there are specific additions or clarifications needed please let us know the specific items involved.

✓Rule 5, 1, 2 - Partial development, none. Undeveloped uses, none. Over-development has taken place. The current maximum capacity of the hydro project is using 229 cfs as compared to the total permits of 200 cfs. A subsequent water application has already been filed and is pending before the Water Department.

Rule 5, 1, 3 - The water diversion structure is situated in two adjoining forty acre parcels, the NW 1/4, SW 1/4 and the SW 1/4, NW 1/4 both in Section 28, T6S, R14E. The water is transported westerly through a canal which is approximately one mile in length. The point of use consisting of a headworks, spillway and powerhouse again touch into two forty acre parcels, namely the west 1/2 of the SW 1/4 of Section 29, T6S, R14E. The return flow to the Malad River is situated in the NW 1/4, SW 1/4 Section 29, T6S, R14E. Descriptions of the equipment currently in use were fully described in the Thomas report.

DEC 05 1994

Rule 5, 1, 4 - Interconnection with other systems or water rights, none.

Rule 5, 1, 5 - Return flow to the Malad River in the NW 1/4, SW 1/4 Section 29, T6S, R14E, nonconsumptive use for power generation.

Rule 5, 1, 6 - Compliance - measuring device described in the Thomas report.

Rule 5, 1, 7 - Not applicable to a power use.

Rule 5, 1, 8 - Not applicable to a power use.

Rule 5, 1, 9 - Not applicable to this single diversion, single use project.

Rule 5, 1, 10 - Not applicable - run of river project.

Rule 5, 1, 11 - Not applicable.

Rule 5, 1, 12 - The average production (based upon the actual monthly records from May 1984 through July 1986) has been 3,724,000 KWH per year.

Rule 5, 1, 13 - Year around use.

Rule 5, 1, 14 - One use only.

Rule 5, 1, 15 - Examination fee - private consultant,
Diversion capacity - approximately 350 cfs,
Beneficial use - 229 current use, subsequent application pending.

Rule 5, 1, 16 - Suggested amendments - no change in diversion, headworks or spillway. Applications for additional water and powerhouse expansions are pending.

Rule 5, 1, 17 - Not applicable.

Rule 5, 2, 4 - Measuring device and recorded readings from same are described in the Thomas report.

Rule 5, 3, 1 - Volume per acre limits not applicable to this project.

DEC 05 1994

I trust this information will fully satisfy your questions. If there are any further specific items which you require, please call me at 345-2670. We are enclosing the original Thomas reports for your further processing based upon this supplemental information.

Sincerely,

Vernon Ravenscroft

Vernon F. Ravenscroft

VFR:jb

Enclosure
c: Mr. Cecil Thomas

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

June 15, 1987

RE: Permit Nos. 37-7857, 37-7865 & 37-7922

Vernon F. Ravenscroft
1843 Broadway, Suite 102
Boise, ID 83706

Dear Mr. Ravenscroft:

I have reviewed the Beneficial Use Field Reports submitted for the above referenced permits. In this review, I find that more information is needed to address the requirements of the Department's Beneficial Use Examination Rules and Regulations, particulary Rule 5.

Enclosed are the original beneficial use field reports. Please be sure to provide information for each of the items listed in Rule 5,1,2 through 5,1,16. Some rules may not apply to these rights and can be so noted.

Also, please be aware that Rule 5,2,3. requires that you supply the requested information within 30 days of this request.

Enclosed for your information is a copy of the Beneficial Use Examination Rules and Regulations. If you have any questions or if I can be of any assistance, please let me know.

Sincerely,

JIM JOHNSON
Water Rights Supervisor

JJ:sc

Enclosures

DEC 05 1994

CONVERSATION MEMORANDUM

DATE May 11, 1987

FILE 37-7857, 37-7865 and 37-7922.

NAME OF PARTY Vern Ravenscroft

EMPLOYEE Gary Spackman

RE: Today I spoke with Vern Ravenscroft about field exams for the above files which he represented were submitted toward the end of April. I told Vern that we received copies of the field exams on April 29, 1987, but that we required submittal of the original documents. He stated that he would request that Mr. Thomas submit the original documents. I told Vern that the exams needed to be filed prior to the lapsing of the permits on approximately June 29, 1987.

DEC 05 1994

NAME AND ADDRESS OF SENDER

DEPARTMENT OF WATER RESOURCES
STATEHOUSE
BOISE, IDAHO 83720

Indicate type of mail
☐ Registered
☐ Insured
☐ COD
☒ Certified ☐ Express Mail

Check appropriate block for Registered Mail:
☐ With Postal Insurance
☐ Without Postal Insurance

Affix stamp here if issued as certificate of mailing or for additional copies of this bill.

POSTMARK AND DATE OF RECEIPT

Line	Number of Article	Name of Addressee, Street, and Post-Office Address	Postage	Fee	Handling Charge	Act. Value (If Regis.)	Insured Value	Due Sender If C.O.D.	R. R. Fee	S. D. Fee	S. H. Fee	Rest. Del. Fee / Remarks
1	138506	Bonneville Pacific Corp. c/o David Hirschi 185 S. State St. P.O. Box 11898 Salt Lake City, UT 84147 37-7889 & 37-7916	22	7					70			
2												
3												
4	138507	Geobon II Assoc. Ltd. Partnership 1200 Quail St., Suite 260 Newport Beach, CA 92660 37-8096 & 37-8251										
5												
6												
7	138508	Bonneville Pacific Corp. c/o Vernon F. Ravenscroft P.O. Box 983 Boise, ID 83701 37-7857, 37-7865, 37-7922										
8												
9												
10	138509	Shorock Hydro, Inc. Box 1787 Twin Falls, ID 83303-1787 37-7911 & 37-7863										
11												
12												
13	138510	Bill and/or Karen Arkoosh Route 2 Box 50 Gooding, ID 83330 37-7943										
14												
15												

5-8-87

MAY 11 1987

1694

Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	POSTMASTER, PER *(Name of receiving employee)*
5	5	K E Fleming

The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for nonnegotiable documents under Express Mail document reconstruction insurance is $50,000 per piece subject to a limit of $500,000 per occurrence. The maximum indemnity payable on Express Mail merchandise insurance is $500. The maximum indemnity payable is $25,000 for Registered Mail, $400 for COD and $400 for Insured Mail. Special handling charges apply only to Third- and Fourth-Class parcels. Special delivery service also includes special handling service.

FORM MUST BE COMPLETED BY TYPEWRITER, INK OR BALL POINT PEN

☆ U.S. G.P.O. 1985-478-803

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

May 7, 1987

Bonneville Pacific Corp.
c/o Vernon F. Ravenscroft
P. O. Box 983
Boise, ID 83701

CERTIFIED

Dear Mr. Ravenscroft:

Re: Permit No. 37-7857, 37-7865 & 37-7922

Department records show that the above referenced permits were issued to you for the purpose of hydropower generation purposes. One of the conditions of approval of the permits was that the use of water be non-consumptive. The assumption that hydropower uses are non-consumptive in nature is the very reason the department could justify approving late in time appropriations on stream systems which essentially have been fully appropriated in most cases for many years.

The department has been advised by watermasters in several water districts that substantial loss is occurring in some of the conveyance systems, particularly those where water is delivered to the power generating facility through a non-enclosed conduit, and the only use being made of the water is power generation.

You are hereby required to determine the loss occurring within your hydropower project and to provide the information to the department within twenty (20) days of the date of this letter. The determination must be made by a professional engineer licensed to practice in Idaho or by a certified water right examiner using procedures acceptable to the department. In the interim, if the watermaster has measurements indicating that water is being lost within your project and that the water is needed by holders of prior rights, he has been instructed to regulate your diversion as needed to protect the prior rights, even though the herein required loss measurement has not been completed.

The runoff from surface water sources in 1987 is by far less than a normal year, so it is very likely any diversion for hydropower use experiencing a loss will be shut off by the duly authorized water master.

DEC 0 5 1994

Authority for regulation of diversions by the watermaster is provided in Section 42-607, Idaho Code.

Hydropower users subject to being shut off may want to augment the stream system through acquisition of stored water or non-tributary water from some external source of supply in exchange for the water being lost in their conveyance system. Such arrangements may require approval under Section 42-222, Idaho Code.

Prior notice of the watermaster's action to regulate diversions cannot always be provided. If your generating equipment is subject to damage by the reduction of water flows, it is your responsibility to contact the watermaster to arrange a procedure to provide for regulation of the diversion without damage to your facilities.

Please feel free to contact the department if you have questions.

Sincerely,

A. KENNETH DUNN,
Director

c: Regional office
Watermaster

DEC 05 1994

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

CECIL D. ANDRUS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

37-7857
FAVENSCHEFT, VERNON F.
FAVENSCHEFT, BARBETTE R.
P.O. BOX 893
BOISE, ID 83701

April 30, 1987

Dear Permit Holder:

LAPSE NOTICE
License Examination Fee

You are hereby notified that under the provisions of Section 42-217 and 42-218a, Idaho Code, the above referenced permit will lapse and be of no further force nor effect on June 30, 1987, for failure of the permit holder to submit either the license examination fee or an acceptable field examination report prepared by or under the supervision of a certified water right examiner.

Provisions of § 42-217, Idaho Code, and the Beneficial Use Examination Rules and Regulations provide that failure of the permit holder to submit either the fee or an acceptable field examination report within one (1) year and sixty (60) days after notification by the director that the submittal is due is cause for the director to reject the proof of beneficial use and lapse the permit. The Department notified you of the required submittal on April 30, 1986.

The lapsed permit can be reinstated upon a showing of reasonable cause for late submittal of proof of beneficial use, if you submit to the Department on or before August 28, 1987, either the license examination fee or an acceptable field examination report prepared by or under the supervision of a certified water right examiner.

Enclosed is a fee information sheet that must be completed and submitted to the Department to keep the permit in good standing. If you have questions, please contact any office of the Department.

Sincerely,

L. GLEN SAXTON, Chief
Operations Bureau

DEC 05 1994

Enclosure

RECEIVED
JAN 1 6 1987

RECEIVED
JAN 23 1987
Department of Water Resources
Southern Region Office

RECEIVED
Department of Water Resources
FEB 02 1987

4/86

For Office Use Only
Fee Received ____
Date N/A
Receipt # ____
Receipt by ____
Sent to S.O. 1/30/87

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

EXAMINATION FEE INFORMATION

Department of Water Resources

1. Permit No. 37-7857

ONE OF THE FOLLOWING BOXES SHOULD BE MARKED TO DESIGNATE YOUR CHOICE:

☐ I choose to have the department make the field examination of this permit; attached is the examination fee. (If this box is marked, complete items 1 thru 8.)

2. Permit Holder: Vernon J. Ravencroft (assigned to Bonneville Pacific Corp. + thence to Prudential Federal Savings + Loan)

3. Post Office Address: P.O. 893 - Boise, Idaho 83701

Telephone No. 208-345-2670

4. Source of Water: Malad River

5. Extent of Use:

Domestic _____(No. of households) Stockwater _____(No. and type of stock)

Irrigation _____(acres) Other/Remark Hydro Generation

6. Total rate &/or volume for which proof is submitted *' cfs _____acre-feet

7. Show the date water was first diverted and beneficially used under this permit:

8. Person to contact to accompany the department representative during the field examination:

DEC 05 1994

(Name)

(Address) (Telephone Number)

☑ I choose to have the field examination conducted by a certified water right examiner. Attached is a statement from the certified examiner I have selected verifying that he has been retained to conduct the examination. (If this box is marked, complete items 1 thru 7.) *2

1/13/86 Vernon J. Ravencroft

Date Signature of Permit Holder (and title, if appropriate)

*' This permit combined with two others (2) total 210 C.F.S. when certain improvements are completed. The plant will consume in excess of this amount. A follow up application will be made @ that time.

State of Idaho

Department of Water Resources

LICENSE EXAMINATION FEE SCHEDULE

(c.f.s. = cubic feet per second
AF = acre feet)

cfs	AF	Fee
0 - 0.04	0 - 4	$ 0
.05 - 0.20	5 - 20	50.00
.21 - 1.0	21 - 100	100.00
1.01 - 2.0	101 - 200	125.00
2.01 - 3.0	201 - 300	150.00
3.01 - 4.0	301 - 400	175.00
4.01 - 5.0	401 - 500	200.00
5.01 - 6.0	501 - 600	225.00
6.01 - 7.0	601 - 700	250.00
7.01 - 8.0	701 - 800	275.00
8.01 - 9.0	801 - 900	300.00
9.01 - 10.0	901 - 1000	325.00
10.01 - 11.0	1001 - 1100	350.00
11.01 - 12.0	1101 - 1200	375.00
12.01 - 13.0	1201 - 1300	400.00
13.01 - 14.0	1301 - 1400	425.00
14.01 - 15.0	1401 - 1500	450.00
15.01 - 16.0	1501 - 1600	475.00
16.01 - 17.0	1601 - 1700	500.00
17.01 - 18.0	1701 - 1800	525.00
18.01 - 19.0	1801 - 1900	550.00
19.01 - 20.0	1901 - 2000	575.00
20.01 & over	2001 & over	600.00

Due 6/29/6

Checks should be made payable to the
Department of Water Resources

No fee is required for single family
domestic use or stockwater use.

MEMORANDUM

TO: Files Nos. 37-[redacted]7, 37-7865, & 37-7922

FROM: Gary Spackman GS

DATE: January 27, 1987

RE: Affidavit of authorization to do business in the State of Idaho.

The affidavit for water rights to be used for power purposes for the above permits received on January 26, 1987, indicated that the project common to the above permits would utilize existing man-made irrigation facilities. My discussions with Vernon Ravenscroft regarding the marking of this particular option in sub section B reveals that the statement is not correct. I believe, however, that the marking was a misunderstanding on the part of the signer of the document. Furthermore, it is my opinion that we are not concerned about the ownership of the facilities at this point in the development, since the project has already been completed. As a result, I have not required that the affidavit be amended.

MICROFILMED
APR 13 1987

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

January 27, 1987

Victor A. Taylor, Attorney at Law
185 South State Street, Suite 1300
Salt Lake City, UT 84111

Re: Ravenscroft hydropower project; Water Permits Nos. 37-7857, 37-7865, & 37-7922.

Dear Mr. Taylor:

On January 26, 1987, Vernon Ravenscroft delivered to me an affidavit of qualification to do business in the State of Idaho submitted by Prudential Federal Savings and Loan Association and an assignment of the water right permits listed above executed by Prudential Leasing Company to Vernon F. Ravenscroft, Harriett B. Ravenscroft, and Bonneville Pacific Corporation. Based on our previous discussion, the Department recognizes the assignment from Prudential Leasing Company to the Ravenscrofts and Bonneville Pacific Corporation, which assignment also effectuates the previous assignment executed by the Ravenscrofts and Bonneville Pacific in favor of Prudential Federal Savings and Loan Association. Our records will show Prudential Federal Savings and Loan Association as the owner of the water right permits.

This letter also acknowledges the affidavit of qualification to do business in the State of Idaho. Please note that the affidavit is somewhat erroneous in sub part B, in that it states that the hydropower facility will "utilize existing man-made irrigation facilities" for delivery of the water. Vernon Ravenscroft has represented to me that the diversion works are not an existing man-made irrigation facility, and option number 1 which states that the facility will "not utilize existing man-made irrigation facilities" should have been marked. Our concern, however, is directed towards ownership of the diversion works at the time the project is being initially proposed. As a result, there is no necessity for a new affidavit, but I will place a memorandum in the file explaining the circumstances.

With the submittal of the above documents, it appears that the provisions of Idaho Code § 42-207 have been complied with, in that Prudential Federal is authorized to do business in the State

MICROFILMED
MAR 06 1987

of Idaho, and the permits are not being assigned for purposes of bad faith, speculation, or delay.

As I mentioned in a previous letter to Mr. Ravenscroft, this letter expressly excludes approval of certain contracts in developments alluded to in the amendment to loan documents:

1. This letter does not recognize the validity of the construction referred to in paragraph B of the recitals portion of the amendment to loan documents, nor does it authorize additional water over and above the diversion amount approved in the original permits.

2. This letter does not recognize the validity of the supplemental water agreement with the Big Wood Canal Company referred to in paragraph 3.1 in the agreement section of the amendment to loan documents.

Should you have further questions regarding this letter, please contact me at your earliest convenience.

Sincerely,

Gary Spackman

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

CC: Vernon Ravenscroft

State of Idaho)
County of Ada) ss.

On this 27th day of January, 1987, personally appeared before me the signer(s) of the above instrument, who duly acknowledged to me that he executed the same.

Lyle Glen Sayton

Notary Public residing at
Boise, Idaho

seal

My commission expires:
11-25-92

MICROFILMED
MAR 06 1987

Form 205/206
4/85

State of Idaho
Department of Water Resources

37-7865
37-7922
Water Right No.

JAN 26 1987

AFFIDAVIT FOR WATER RIGHTS TO BE USED FOR POWER PURPOSES

Department of Water Resources

A. Establishment of Residency: *(Complete either 1, or 2).*

1. Individual Applicant or Individual Members of a Partnership:

I, _____ of _____,
(name) *(city).*

County of _____, State of Idaho, being duly sworn, do hereby certify that I am a bona fide resident of the State of Idaho.

2. Corporation:

I, Kathy K. Hale of Salt Lake City.
(name) *(city).*

County of Salt Lake, State of ~~Idaho,~~ Utah being duly sworn, depose and say: That I am the designated registered agent of ~~XXX~~ Prudential Federal Savings and Loan Association, a federally chartered corporation ("Prudential"); ~~that as such I am in charge of the registered office~~
(name of corporation)

~~of the said corporation as required by Section 30-1-12, Idaho Code, at~~ _____
(city)

~~Idaho, wherein are kept the corporate records required by Section 30-1-52, Idaho Code.~~ and that _____

Prudential is a corporation qualified to do business in the State of Idaho under the laws
(name of corporation)

of the State of Idaho.

B. Ownership of Facilities: *(To be completed for hydropower projects only)*

The hydropower facility to be developed pursuant to the attached Application for Permit:

(check one)

☐ Will **not** utilize existing man-made irrigation facilities such as a dam or a canal.

☒ Will utilize existing man-made irrigation facilities such as a dam or a canal, and permission of the owner is documented in an affidavit attached hereto.

☐ Will utilize existing man-made irrigation facilities such as a dam or a canal, and the owner of the facilities is the signee of this affidavit.

PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION

By Kathy K. Hale
Applicant

Its Sr. Vice President

State of ~~Idaho~~ Utah)
County of Salt Lake) ss.

On this 23rd day of January, 19 87, personally appeared before me the signer(s) of the above instrument, who duly acknowledged to me that ~~he~~ (she) ~~(they)~~ executed the same.

Notary Public residing at
Slc ut

seal

My commission expires:
6/28/27

MICROFILMED

MAR 06 1987

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

January 21, 1987

Victor A. Taylor, Attorney at Law
185 South State Street, Suite 1300
Salt Lake City, UT 84111

Re: Ravenscroft hydropower project; Water Permit's Nos [redacted]
37-7865, & 37-7922.

Dear Mr. Taylor:

In response to our telephone conversation on January 20, 1987, enclosed you will find an assignment form and an affidavit of authority to conduct business in the State of Idaho. The affidavit should completed by an officer of Prudential Federal Savings & Loan.

I understand that Prudential Leasing Company will assign its interest in the water rights listed above to Vernon F. Ravenscroft, Harriett B. Ravenscroft, and Bonneville Pacific Corporation. After the assignment, the principle of after acquired title will apply, and the assignment previously executed in February, 1986, will take affect, and the assignment and security interest given by the Ravenscrofts and Bonneville Pacific to Prudential Federal Savings & Loan will become effective.

If you have further questions don't hesitate to call.

Sincerely,

Gary Spackman

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

Enclosures

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State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

January 16, 1987

Vernon F. Ravenscroft
P.O. Box 893
Boise, ID 83701

Re: Approval of Real Estate Mortgage and First Amendment to Loan Documents.

Dear Mr. Ravenscroft:

The Department has reviewed a real estate mortgage dated in January or February, 1986, an assignment and security agreement dated in January or February, 1986, and a proposed first amendment to loan documents which has not fully been executed. The Department finds that the documents partially satisfy the requirement of Section 42-207, Idaho Code, in that it appears that the proposed first amendment to loan documents which amends the previous real estate mortgage is in proper form, except for references to the Assignment and Security Agreement.

Ownership of Water Permits Nos. [redacted] 37-7865, and 37-7922 is vested in the name of Prudential Leasing Company, pursuant to an assignment of permit executed by Vernon F. Ravenscroft, Harriett B. Ravenscroft, and Bonneville Pacific Corporation on May 1, 1984. The Assignment and Security Agreement executed by Vernon F. Ravenscroft, Harriett B. Ravenscroft, and Bonneville Pacific Corporation in favor of Prudential Federal Savings and Loan Association cannot be recognized because of the previous assignment to Prudential Leasing Company. Although the Department suspects that Prudential Leasing Company and Prudential Federal Savings and Loan may have some common ties, the independent integrity of the organizations must be maintained in Department files.

As of the date of this letter I am unable to determine that Prudential Federal Savings and Loan Association is currently licensed to do business in the State of Idaho. The files of the Department contain an affidavit executed in 1984, stating that Prudential Leasing Company was licensed to do business in the State at that time. There is no reference in the file to Prudential Federal Savings and Loan. Prior to final approval of the mortgage documents mentioned above, proof of authority to do business in the State of Idaho must be submitted to the Department of Water Resources.

This letter expressly excludes approval of certain [illegible] and developments alluded to in the amendment to loan documents.

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1. This letter does not recognize the validity of construction referred to in paragraph B of the recitals portion of the amendment to loan documents, nor does it authorize additional water over and above the diversion amount approved in the original permits.

2. This letter does not recognize the validity of the supplemental water agreement with the Big Wood Canal Company referred to in paragraph 3.1 in the agreement section of the amendment to loan documents.

Should you have further questions regarding this letter, please contact me at your earliest convenience.

Sincerely,

Gary Spackman

GARY SPACKMAN, Supervisor
Water Allocation Section

GS:jf

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WHEN RECORDED, PLEASE RETURN TO:

Victor A. Taylor, Esq.
Kimball, Parr, Crockett & Waddoups
P. O. Box 11019
Salt Lake City, Utah 84147

FIRST AMENDMENT TO LOAN DOCUMENTS

THIS FIRST AMENDMENT TO LOAN DOCUMENTS (the "Amendment") is entered into as of the _____ day of January, 1987, between PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION, a corporation chartered under the laws of the United States of America ("Lender"), whose address is 127 East 3300 South, Salt Lake City, Utah 84115, and VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife (collectively, the "Ravenscrofts"), whose address is P. O. Box 893, Boise, Idaho 83701, and BONNEVILLE PACIFIC CORPORATION, a Delaware corporation ("Bonneville"), whose address is 257 East 200 South, Suite 800, Salt Lake City, Utah 84111. (The Ravenscrofts and Bonneville are hereinafter collectively referred to as "Borrower.")

RECITALS:

A. On or about February 1, 1986, Lender made a loan (the "Loan") to the Ravenscrofts in the original principal amount of One Million One Hundred Seventy Thousand and 00/100 Dollars ($1,170,000.00), which was evidenced and secured by the following documents, instruments and agreements (collectively, the "Loan Documents"):

(i) Promissory Note (the "Note"), in the principal amount of One Million One Hundred Seventy Thousand and 00/100 Dollars ($1,170,000.00), dated February 1, 1986, executed by the Ravenscrofts, collectively as maker, and payable to the order of Lender, as holder, evidencing the obligation of the Ravenscrofts to repay the Loan;

(ii) Real Estate Mortgage, dated February 1, 1986, recorded in the Official Records of Gooding County, State of Idaho on February 4, 1986 as microfilm instrument No. 119483, executed by Borrower, as mortgagor, in favor of Lender, as mortgagee, securing repayment of the Note and encumbering certain real property (the "Property") located in Gooding County, State of Idaho, more particularly described on the attached Exhibit A, incorporated herein by this reference; and

(iii) Assignment and Security Agreement, dated February 1, 1986, executed by Borrower, as assignor, in favor of Lender, as assignee, assigning to Lender for security purposes certain contracts, equipment and other personalty and fixtures related to the Property.

B. Borrower desires for Lender to increase the amount of the Loan by an additional Three Hundred Thirty Thousand and 00/100 Dollars ($330,000.00) (or to an aggregate amount of One Million Five Hundred Thousand and 00/100 Dollars ($1,500,000.00)), to provide financing which will be used to add a fourth production unit by rebuilding and reinstalling a presently owned turbine, acquiring the necessary related accessories and making certain improvements to the tailrace access and canal systems related to the hydroelectric power generation facility located on the Property, and to retire certain short-term debt. In connection therewith, Lender's lien position will improve and Borrower will grant to Lender a security interest in certain collateral which will provide additional security for repayment of the Loan.

C. Lender is willing to increase the Loan for such purposes if, but only if, Borrower, among other things, enters into this Amendment, which is intended to modify and amend the Loan Documents to reflect the increased amount of the Loan and the additional collateral to serve as security therefor.

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D. Borrower desires to enter into this Amendment in order to induce Lender to so increase the Loan.

AGREEMENT:

NOW, THEREFORE, for the above purposes and in consideration of Ten Dollars ($10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Lender and Borrower hereby agree as follows, and the Loan Documents are hereby amended to the extent necessary to reflect all of the matters set forth herein:

1. Outstanding Principal. As of the date hereof, the total outstanding principal balance due under the Loan Documents is One Million Four Hundred Seventy-Three Thousand Seven Hundred Eighty-Three and 65/100 Dollars ($1,473,783.65). All references to the principal amount of the Loan in the Loan Documents are hereby revised to read "One Million Four Hundred Seventy-Three Thousand Seven Hundred Eighty-Three and 65/100 Dollars ($1,473,783.65)."

2. Interest; Monthly Payments. The outstanding balance of the original principal amount of One Million One Hundred Seventy Thousand and 00/100 Dollars ($1,170,000.00) shall continue to bear interest at the rate of twelve and 36/100 percent (12.36%) per annum, both before and after judgment, and shall, with all accrued interest thereon and all other amounts due in connection therewith, be payable in full on February 1, 1991. The additional principal amount of Three Hundred Thirty Thousand and 00/100 Dollars ($330,000.00) being loaned by Lender to the Ravenscrofts in connection herewith shall bear interest at the rate of eleven and one-quarter percent (11.25%) per annum, both before and after judgment, and shall, with all accrued interest thereon and all other amounts due in connection therewith, be payable in full on February 1, 1991. Borrower shall make a monthly payment to Lender on February 1, 1987 of Fourteen Thousand Three Hundred Fourteen and 08/100 Dollars ($14,314.08). Thereafter, until repaid in full, principal of and interest on the Loan shall be paid in equal monthly installments of Eighteen Thousand Two Hundred Forty-Two and 45/100 Dollars ($18,242.45) on the first day of each month, commencing on March 1, 1987 and continuing until and including February 1, 1991, at which time the remaining principal balance of the Loan, all accrued interest thereon and all other amounts due in connection therewith shall be paid in full. All interest payable on the Loan shall accrue daily and shall be calculated on the basis of a three hundred sixty (360) day year and the actual number of days elapsed in any partial calendar month. The foregoing provisions with respect to payment of principal and interest due under the Loan shall be in substitution of and not in addition to similar provisions contained in the Note.

3. Additional Collateral.

3.1 Contracts. Exhibit A to the Assignment is hereby amended as follows:

(a) Paragraph (1) of said Exhibit A is hereby deleted in its entirety and is replaced with the following new Paragraph (1):

> (1) Power Sales Agreement, dated September 2, 1982, entered into between Vernon F. Ravenscroft and Harriett B. Ravenscroft, husband and wife (the "Ravenscrofts"), and Idaho Power Company, a Maine corporation ("Idaho Power"), relating to Idaho Power Company Facility No. 31515009, as amended by Amendment No. 1, dated March 7, 1984, entered into

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between the Ravenscrofts and Bonneville Pacific Corporation, a Delaware corporation ("Bonneville"), and Idaho Power, and as further amended by Amendment No. 2, dated July 10, 1986, entered into between the Ravenscrofts and Bonneville and Idaho Power.

(b) The following new Paragraph (8) is hereby added to said Exhibit A:

(8) Supplemental Water Agreement, Contract No. 1986-001(A), dated December 5, 1986, entered into between Big Wood Canal Company, an Idaho corporation, and American Falls Reservoir District No. 2, an Irrigation District created under Idaho law, and the Ravenscrofts.

3.2 Equipment. Exhibit C to the Assignment is hereby amended by adding to said Exhibit C the equipment listed below in items 1 through 3, inclusive, and by deleting from said Exhibit C the equipment listed below in item 4:

		Model Number	Serial Number
1.	U.S. 450 KW Generator	HV4 (Frame No. 5808P)	Pending
2.	450 KW Capacitor	Pending	Pending
3.	1500 KVA Transformer	Pending	Pending
4.	G. E. Transformer	750/840 KVA	AN N64885-3

4. Ratification. Except as expressly set forth in this Amendment, the Loan Documents and each provision thereof are hereby ratified and affirmed in their entirety. This Amendment modifies and amends, but does not in any manner cancel, repeal, extinguish, replace, satisfy or release, the obligations evidenced and secured by the Loan Documents. Except as specifically set forth herein, (a) the terms and conditions of this Amendment shall in no manner impair, limit, restrict or otherwise affect the liens, security interests, assignments or other rights, benefits, remedies or prerogatives created and evidenced by the Loan Documents; and (b) such liens, security interests, assignments and other rights, benefits, remedies and prerogatives are valid and subsisting and shall continue with their original priority until all of the obligations under the Loan Documents, as modified and amended hereby, are paid and performed in full. Borrower covenants, represents and warrants that the Loan Documents, as modified and amended hereby, are valid and binding obligations of Borrower, enforceable in accordance with their respective terms, and that there are no claims, defenses or offsets against any of the obligations of Borrower thereunder.

5. Miscellaneous. In the event that either Lender or Borrower brings suit to enforce or interpret this Amendment or for damages on account of the breach of a covenant, representation or warranty contained herein, the prevailing party shall be entitled to recover from the other party its reasonable attorneys' fees and costs incurred in any such action or in any appeal from such action, in addition to the other relief to which such prevailing party is entitled. If any provision of this Amendment is determined by a court to be void, voidable or unenforceable, such determination shall have no effect on the Loan Documents as heretofore executed, or on any other provision of this Amendment. This Amendment shall be binding upon and inure to the benefit of the parties hereto and their respective successors, assigns and legal representatives. This Amendment shall be governed by and construed in accordance with the laws of the State of Idaho. This Amendment may be executed in several

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counterparts, each of which shall be deemed to be an original but which together shall constitute one and the same instrument.

IN WITNESS WHEREOF, Lender and Borrower have entered into this Amendment as of the date first set forth above.

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VAT/PRUD16(03)
1/12/87

EXECUTED this _____ day of January, 1987, by PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION, a corporation chartered under the laws of the United States of America.

LENDER:

PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION, a corporation chartered under the laws of the United States of America

By_____

Its_____

STATE OF UTAH)
: ss.
COUNTY OF SALT LAKE)

On this _____ day of January, in the year 1987, before me, the undersigned, a Notary Public in and for said State, personally appeared _____, known or identified to me to be the _____ of Prudential Federal Savings and Loan Association, a corporation chartered under the laws of the United States of America, the corporation that executed the above instrument or the person who executed the instrument on behalf of said corporation, and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

_____
NOTARY PUBLIC
Residing at_____

My Commission Expires:

_____
[Seal]

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VAT/PRUD16(03)
1/12/87

EXECUTED this 15th day of January, 1987, by VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife.

THE RAVENSCROFTS:

Vernon F. Ravenscroft
VERNON F. RAVENSCROFT

Harriett B. Ravenscroft
HARRIETT B. RAVENSCROFT

STATE OF IDAHO)
: ss.
COUNTY OF _____)

On this ____ day of January, in the year 1987, before me, the undersigned, a Notary Public in and for said State, personally appeared Vernon F. Ravenscroft and Harriett B. Ravenscroft, husband and wife, known or identified to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

_____
NOTARY PUBLIC
Residing at _____

My Commission Expires:

_____
[Seal]

[redacted]
SIGNATURE

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VAT/PRUD16(03)
1/12/87

AFTER RECORDING, PLEASE RETURN TO:

PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION
c/o LARSEN, KIMBALL, PARR & CROCKETT
185 South State Street, Suite 1300
Salt Lake City, Utah 84111
Attention: Victor A. Taylor, Esq.

REAL ESTATE MORTGAGE

[Idaho]

THIS MORTGAGE is executed as of the 1st day of February, 1986, by VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife (the "Ravenscrofts"), whose address is P. O. Box 893, Boise, Idaho 83701, and BONNEVILLE PACIFIC CORPORATION, a Utah corporation ("Bonneville"), whose address is 200 East South Temple, Suite 300, Salt Lake City, Utah 84111 (the Ravenscrofts and Bonneville are sometimes hereinafter collectively referred to as "Mortgagor"), in favor of PRUDENTIAL FEDERAL SAVINGS AND LOAN ASSOCIATION, a corporation chartered under the laws of the United States of America, whose address is 127 East 3300 South, Salt Lake City, Utah 84115 (hereinafter referred to as "Mortgagee").

Recitals:

I. Mortgagor holds an interest in the real property situated in Gooding County, State of Idaho, which is described in Exhibit "A" attached hereto and by this reference made a part hereof. The interest of Mortgagor in said real property is more specifically described in Exhibit "A".

II. The Ravenscrofts have certain obligations to Mortgagee under a certain Promissory Note (hereinafter the "Note") of even date herewith in the principal sum of One Million One Hundred Seventy Thousand Dollars ($1,170,000.00), maturing on February 1, 1991, made by the Ravenscrofts and payable to Mortgagee at the times and in the manner set forth in the Note.

III. Bonneville will benefit economically from the loan made by Mortgagee to the Ravenscrofts, evidenced by the Note, and Mortgagee has, as a condition to making such loan, required the execution hereof by Bonneville.

NOW, THEREFORE, IN ORDER TO SECURE: (A) The payment and performance of each and every obligation of the Ravenscrofts

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evidenced by the Note; (B) any extensions, renewals or modifications of the Note or of the obligations evidenced thereby, regardless of the extent of or the subject matter of any such extension, renewal or modification; (C) the payment and performance of each and every agreement and obligation of Mortgagor under this Mortgage and under any other instrument given to evidence or further secure the payment and performance of any obligation secured hereby, including, but not limited to, an Assignment and Security Agreement of even date herewith executed by Mortgagor for the benefit of Mortgagee covering certain personal property and fixtures situated on the above-described real property (the "Security Agreement"); (D) the payment of all sums expended or advanced by Mortgagee pursuant to the terms of this Mortgage, the Note, the Security Agreement or any other instrument further evidencing or securing any obligation secured hereby, together with interest thereon as herein and therein provided; and (E) all awards and payments, including interest thereon and the right to receive the same, which may be made with respect to the Property as the result of (i) the exercise or threat of exercise of the right of eminent domain or condemnation, or (ii) any other injury to or decrease in the value of the Property (the foregoing items (A) through (E) and the matters referred to therein being hereinafter collectively referred to as the "Obligations");

Mortgagor hereby GRANTS, BARGAINS, SELLS, CONVEYS, WARRANTS and MORTGAGES unto Mortgagee, its successors and assigns, WITH POWER OF SALE, the Gooding County, Idaho tract of real property described in Paragraph I above, TOGETHER WITH all improvements located therein or thereon or appurtenant thereto, and all additions, replacements and improvements hereafter made thereto or placed therein or thereon; all fixtures and equipment now or hereafter attached to and used in connection therewith; all water and water rights belonging to or used upon or in connection with said real property, however represented, including all shares of stock representing any such water or water rights, and also including the water rights and permits described in Exhibit "B" attached hereto and by this reference made a part hereof; all condemnation and similar awards or payments made in lieu thereof; all rights of way, easements, rents, issues, profits, income, tenements, hereditaments, privileges and appurtenances thereunto belonging, however evidenced which are used or enjoyed with said real property or belonging to the same or which hereafter may be acquired and so used or enjoyed, all of which real property, together with the rights and interests in this Paragraph described (which said tract of real property, rights and interests, are hereinafter collectively referred to as the "Property"), shall be deemed to constitute a portion of the security hereby given for the payment of the indebtedness and the

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performance of the obligations evidenced and secured hereby.

IN CONNECTION WITH THIS MORTGAGE, THE PARTIES AGREE AS FOLLOWS:

1. Warranties of Title and Authority. Mortgagor hereby represents and warrants that it is lawfully seized of an interest in the Property as described in Exhibit "A" attached hereto, that it has the authority and right to execute and deliver this Mortgage, that the Property is free and clear of any and all liens, encumbrances and interest of third parties (except for those referred to or described in Exhibit "C") and that any and all obligations it may have incurred in connection with the Property are current and without default. Mortgagor hereby releases, waives and relinquishes all exemptions and homestead rights which may exist with respect to the Property, including all rights under or by virtue of the homestead exemption or similar laws of the State of Idaho.

2. Obligations Mandatory. Mortgagor shall promptly pay or cause to be paid to Mortgagee, or order, and shall promptly perform or cause to be performed each and every payment and obligation on the part of Mortgagor provided to be paid or performed in connection with any of the Obligations. All of such payments and obligations are mandatory, and Mortgagor's failure to accomplish any of the same shall constitute a default under this Mortgage.

3. Payments Protecting Against Liens. Mortgagor shall pay, at least ten (10) days before delinquent, all taxes, assessments and governmental, municipal or other charges or impositions levied against or affecting the Property, or which might become a lien thereon, and shall promptly deliver all receipts for such payments to Mortgagee upon request. Mortgagor shall also pay and keep current any and all sums constituting an encumbrance, charge or lien upon the Property, or any part thereof, which may be prior or superior to the interest of Mortgagee hereunder.

4. Maintenance and Use of Property. Mortgagor agrees to maintain the Property at all times in good condition and repair; to keep and maintain all improvements which may be or become part of the Property in good order and repair and to allow no nuisances to exist or be maintained; to keep and maintain abutting grounds, sidewalks, roads and parking areas in good order and repair; to comply with all federal, state, county, municipal and other governmental statutes, ordinances, laws and regulations affecting the Property or any condition or activity respecting the Property, including, but not limited to, any and

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all laws, rules, regulations, orders and agreements affecting the Property by, with or from the Federal Energy Regulatory Commission, the Bureau of Land Management of the Department of Interior, the State of Idaho Department of Water Resources and the State of Idaho Public Services or Utilities Commission; to comply with the terms, provisions and conditions of any and all leases, agreements and other instruments affecting the Property, including, but not limited to, the Lease dated November 3, 1982 executed by Ben Slatter and Fae Slatter, husband and wife, as lessor, and Vernon F. Ravenscroft, as lessee, the Lease dated November 8, 1982 executed by Dean Shaffer and Eileen Shaffer, husband and wife, as lessor, and Vernon F. Ravenscroft and Harriett B. Ravenscroft, as lessee, the Bureau of Land Management right of way No. I-17053 granted March 5, 1982 to Vernon F. Ravenscroft, and the instruments listed or described in Exhibit "C" attached hereto; not to commit or permit waste upon the Property; to commence any necessary construction on the Property promptly and to pursue the same to completion with reasonable diligence; to restore promptly and in a good and workmanlike manner any improvement which may for any reason be damaged or destroyed; to allow Mortgagee to inspect the Property at all reasonable times during the term hereof; and to comply with all provisions of law concerning maintenance, use or improvement of the Property.

5. Insurance Coverage. Except and to the extent specifically waived in writing by Mortgagee, Mortgagor shall secure and at all times maintain an insurance policy or policies reasonably satisfactory to Mortgagee providing: (a) hazard insurance with coverage in an aggregate amount reasonably acceptable to Mortgagee, upon the fixtures and improvements now existing or hereafter erected or placed upon the Property, insuring against the perils of fire, extended coverage, vandalism and malicious mischief, and such other perils as Mortgagee may reasonably require; and (b) coverage against business interruption and loss of income resulting from any casualty, or resulting from the inability of Mortgagor to generate and sell electricity from the Property for any reason whatsoever, including low water, with the amount of coverage afforded at least sufficient to cover the monthly payments required to be made to Mortgagee under the Note for a period of six months. Also, said policies shall include the standard loss payable mortgagee clause in favor of and in a form acceptable to Mortgagee. None of the insurance policies or coverage obtained by Mortgagor pursuant hereto shall be such as result in either Mortgagor or Mortgagee being a co-insurer in the event of any loss. Each policy shall include a waiver of subrogation clause. Mortgagee shall have the right to review the forms, coverages, amounts and duration of all such insurance policies from time to

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time and to require, upon thirty (30) days advance written notice thereof, that forms, coverages, amounts or duration of such policies be changed or modified so as reasonably to protect Mortgagee's interest in the Property. Such insurance shall be carried with companies approved by Mortgagee with loss payable clauses in favor of and in a form acceptable to Mortgagee. Mortgagor shall deliver to Mortgagee certificates duly executed by the insurers evidencing such insurance coverage.

In the event that the improvements on the Property are so damaged by fire or other casualty as to be unable to produce commercially marketable quantities of electricity for a term which Mortgagee reasonably estimates will be in excess of six months, then Mortgagee shall have the right to cause the obligations to become immediately due and payable upon sixty (60) days' written notice to Mortgagor. In such event, any and all proceeds of insurance shall be applied first to the payment of the Obligations and the remainder, if any, shall be available to Mortgagor.

6. Appearance in Proceedings Affecting Security. Mortgagor shall appear in and defend any action or proceeding purporting to or which might in any way affect the title to the Property or the security hereof. (The phrase "the security hereof" when used in this Mortgage shall mean the interest of Mortgagor and Mortgagee in the Property, the rights, powers, duties, covenants, representations, warranties and authority of Mortgagor and Mortgagee hereunder and under any instrument further evidencing or securing the Obligations, and the validity, enforceability and binding effect hereof and of any instrument further evidencing or securing the Obligations.) Should Mortgagee elect to appear in or defend any such action or proceeding, Mortgagor shall pay all costs and expenses incurred by Mortgagee in connection therewith, including costs of evidence of title, court costs and reasonable attorneys' fees.

7. Mortgagee's Performance in Mortgagor's Stead. Should Mortgagor fail to make any payment, to do any act or thing, or to perform any obligation herein provided to be paid, done or performed, at the time and in the manner so provided, Mortgagee may, but without any obligation to do so, and without notice to or demand upon Mortgagor, and without releasing Mortgagor from any obligation hereunder or thereunder, make, do, pay or perform the same in such manner and to such extent as Mortgagee may deem reasonably necessary or desirable to protect the security hereof or to protect any other legitimate interest of Mortgagee, Mortgagee for such purposes being authorized to enter upon the Property at all reasonable times and to commence, appear in, or defend any action or proceeding purporting to affect the security

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hereof.

8. Repayment of Advances. The Ravenscrofts shall immediately repay to Mortgagee all sums, with interest thereon as hereafter provided, which at any time may be paid or advanced by Mortgagee for the payment of insurance, taxes, assessments, governmental, municipal or other charges or impositions, title searches, title reports or abstracts, any delinquent obligation secured by a prior lien upon or prior interest in the Property, and any other advances made by Mortgagee which are or appear to be necessary or desirable, in Mortgagee's discretion, to maintain this Mortgage as a valid and subsisting lien upon the Property, to preserve and protect Mortgagee's or Mortgagor's interest therein or hereunder, or to preserve, repair or maintain the Property. All such advances shall be wholly optional on the part of Mortgagee, and the Ravenscrofts' obligation to repay the same, with interest, to Mortgagee shall be secured by the lien of this Mortgage. The amount of each such advance shall, for the period during which it remains unpaid and both before and after judgment, bear interest at the rate of eighteen percent (18%) per annum.

9. Assignment of Rents and Profits. As additional security for the Obligations, Mortgagor hereby assigns to Mortgagee, for the term of this Mortgage, all rents, issues, royalties, income and profits derived from the Property, and all right, title and interest of Mortgagor under any lease covering any part of the Property. Until Mortgagor defaults in the Obligations, and except as otherwise provided in any instrument or document which constitutes a part of or is included in the Obligations, Mortgagor shall have the right to collect and use all rents, issues, royalties, income and profits derived from the Property. Upon any such default, Mortgagor's right to collect or use any of such proceeds shall cease, and Mortgagee shall have the right, with or without taking possession of the Property, and either in person, by agent, or through a court-appointed receiver (Mortgagor hereby consenting to the appointment of Mortgagee as such receiver) to sue for or otherwise collect all such rents, issues, royalties, income and profits, including those past due and unpaid. Any sums so collected shall, after the deduction of all costs and expenses of operation and collection, including reasonable attorneys' fees, be applied toward payment of the Obligations.

10. No Waiver of Rights by Collection of Proceeds. The entering upon and taking possession of the Property or the collection of rents, issues, royalty, income, profits, proceeds or compensation or awards for any taking or damaging of the Property or the application or release thereof shall not cure or waive any default or notice of default hereunder, shall not

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invalidate any act done pursuant to such notice of default, and shall not operate to postpone or suspend any of the Obligations.

11. Application of Payments. If at any time during the term hereof Mortgagee receives or obtains a payment, installment or sum which is less than the entire amount then due in connection with the Obligations and in connection with all other instruments and transactions to which Mortgagor and Mortgagee are parties, Mortgagee shall, notwithstanding any instructions which may be given by Mortgagor, have the right to apply such payment, installment or sum or any part thereof, to such of the items or Obligations then due as Mortgagee may in its sole discretion determine.

12. Tax on Mortgage or Debt. Mortgagor shall pay to Mortgagee the amounts of all taxes, assessments or charges which may be levied by any governmental authority upon this Mortgage, upon the Obligations or upon Mortgagee, by reason of its interest under this Mortgage or in the Obligations; provided that no such payment shall be required with respect to any federal or state income tax paid by Mortgagee on any interest received under the Note.

13. Acceleration and Foreclosure. Time is of the essence hereof. In the event a payment or installment provided for herein or in the Note is not paid in full on or before its scheduled due date, or in the event Mortgagee discovers that any representation or warranty contained herein or in any other instrument evidencing or securing the Obligations is untrue in any material respect, or in the event of the occurrence of any other default hereunder or otherwise in connection with the Obligations, then, in such event, all of the Obligations shall, at the option of Mortgagee and without further notice or demand, immediately become due and payable and Mortgagee may proceed to foreclose this Mortgage in the manner provided by law for the foreclosure through judicial proceedings of mortgages covering real property. In connection with any such acceleration and foreclosure, Mortgagee shall have the right to appoint a receiver to take charge of the Property, collect the profits therefrom and otherwise use and utilize the Property. Mortgagor specifically agrees that the receiver may be appointed without any notice to Mortgagor whatsoever, and the court may appoint a receiver without any reference to the adequacy or inadequacy of security, or the solvency or insolvency of Mortgagor, and without reference to other matters normally taken into account by courts in the discretionary appointment of receivers, it being the intention of Mortgagor to hereby authorize the appointment of a receiver when Mortgagor is in default and Mortgagee has requested the appointment of a receiver. Mortgagor hereby agrees and consents

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MAR 06 1987

to the appointment of the particular person or firm designated by Mortgagee as the receiver and hereby waives its rights to suggest or nominate any person as receiver in opposition to that designated by Mortgagee.

14. Foreclosure Through Judicial Proceedings. In any judicial proceeding brought to foreclose this Mortgage, Mortgagee shall be entitled to recover all costs and expenses incident to the realization of its rights hereunder, including attorneys' fees actually and reasonably incurred. Mortgagee shall be entitled to possession of the Property during any period of redemption. In the event of sale on foreclosure of this Mortgage, should the Property sell for less than the sum required to satisfy the entire indebtedness and all costs, the deficiency shall stand as a judgment against the Ravenscrofts and be collectible in the manner provided by law, and the Ravenscrofts further agree that the amount for which the Property may sell at foreclosure sale upon lawful notice shall be conclusively deemed in any foreclosure suit to be the reasonable value of such Property. The Ravenscrofts shall pay the deficiency immediately after determination of the amount thereof. Such deficiency shall, both before and after judgment therefor is entered, bear interest at the rate of eighteen percent (18%) per annum.

15. Rights Cumulative and Not Waived. The rights and remedies accorded by this Mortgage shall be in addition to, and not in substitution of, any rights or remedies available under now existing or hereafter arising applicable law. All rights and remedies provided for in this Mortgage or afforded by law or equity are distinct and cumulative and may be exercised concurrently, independently or successively. The failure on the part of Mortgagee to promptly enforce any right hereunder shall not operate as a waiver of such right and the waiver of any default shall not constitute a waiver of any subsequent or other default.

16. Nonassumption Provisions. Mortgagor agrees that, without the prior written consent of Mortgagee, Mortgagor will not sell, contract to sell, assign or convey the Property or any interest therein. Mortgagee's consent to one or more of the transactions described in the foregoing sentence shall not be deemed to be a waiver of the right to require such consent with respect to any future or successive transaction.

17. Binding on Successors. This Mortgage shall be binding upon and shall inure to the benefit of the respective grantees, transferees, heirs, devisees, personal representatives, successors and assigns of the parties hereto. The term "Mortgagee" as used herein shall mean any owner and holder,

MICROFILMED

MAR 06 1987

including any pledgee, of the Obligations.

18. Interpretation. The captions which precede the Paragraphs of this Mortgage are for convenience only and shall in no way affect the manner in which any provision hereof is construed. Whenever the context so requires, the singular shall include the plural, the plural shall include the singular, the whole shall include any part thereof, and any gender shall include both other genders. The liability of each of the undersigned shall be joint and several. The invalidity or unenforceability of any portion or provision of this Mortgage shall in no way affect the validity or enforceability of the remainder hereof. This instrument shall be governed by and be construed in accordance with the laws of the State of Idaho.

DATED the day and year first above written.

"Mortgagor":

VERNON F. RAVENSCROFT

HARRIETT B. RAVENSCROFT

BONNEVILLE PACIFIC
CORPORATION,
a Utah corporation

By L. Wynn Johnson

Its L. Wynn Johnson Vice President

SECURITY TITLE CO.
OGDEN, UTAH

MICROFILMED

PRUD1(07)
01/23/86

STATE OF _____)
: ss.
COUNTY OF _____)

On this ___ day of _____, in the year 1986, before me, _____, personally appeared VERNON F. RAVENSCROFT and HARRIETT B. RAVENSCROFT, husband and wife, known or identified to me to be the persons whose names are subscribed to the within instrument, and acknowledged to me that they executed the same.

In witness whereof, I have hereunto set my hand and affixed my official seal the day and year in this certificate first above written.

NOTARY PUBLIC
Residing at _____

My Commission Expires:

_____

STATE OF Utah)
: ss.
COUNTY OF Salt Lake)

On this 31st day of January, 1986, personally appeared before me, L. Wynn Johnson, the signer of the foregoing instrument, who being by me duly sworn, did say that he is the Vice President of BONNEVILLE PACIFIC CORPORATION, a Utah corporation, and that the foregoing instrument was signed on behalf of said corporation by authority of its bylaws or a resolution of its board of directors, and said L. Wynn Johnson acknowledged to me that said corporation executed the same.

NOTARY PUBLIC
Residing at Centerville Utah

My Commission Expires:
8-20-87

MICROFILMED
MAR 06 1987

PRUD1(07)
01/23/86

State of Idaho

DEPARTMENT OF WATER RESOURCES

STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720

Bonneville Pacific Corp & Vernon F. Ravenscroft
200 S. Temple, Suite 300
Salt Lake City, UT 84111

37-7857

138447

CERTIFIED MAIL

May 21, 1986

EXAMINATION FEE NOTICE

Dear Permit Holder:

Department records show that proof of beneficial use has been submitted for the above-referenced permit, but that a field examination has not yet been conducted to determine the extent of beneficial use of the water for licensing purposes.

House Bill 671 (effective April 4, 1986) enacted by the 1986 Idaho Legislature requires the payment of a fee before this department can conduct the field examination needed to issue a license confirming use of water under the permit. This letter is notification that the license examination fee is due within sixty (60) days of the date of this letter. The examination fee information sheet (enclosed) must be returned with the fee.

As an alternative to submitting the fee, the department will accept a field examination report completed by a certified water right examiner from the private sector. If you choose to have the examination done by a certified water right examiner, you need not submit the license examination fee to the department, but you must within sixty (60) days of the date of this letter return to the department, the examination fee information sheet showing appropriate information together with a statement from the certified examiner to verify that you have retained a certified examiner to conduct the field examination. If you choose this alternative, a completed field examination report must be submitted within one year of the date of this letter. You cannot later change your decision to use this alternative and submit the fee needed for the department to conduct the field examination, but you may change to another certified examiner.

MICROFILMED
MAR 06 1987

Certified water right examiners are licensed engineers, geologists, or land surveyors certified by the department to conduct water right examinations. The procedure for certifying examiners results from the recently enacted HB 671 and is being developed at this time. A listing

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720

37-7857
BONNEVILLE PACIFIC CORP.
155 E. 3300 S.
SALT LAKE CITY, UT 84115

138741

April 30, 1986

CERTIFIED MAIL

EXAMINATION FEE NOTICE

Dear Permit Holder:

Department records show that proof of beneficial use has been submitted for the above-referenced permit, but that a field examination has not yet been conducted to determine the extent of beneficial use of the water for licensing purposes.

House Bill 671 (effective April 4, 1986) enacted by the 1986 Idaho Legislature requires the payment of a fee before this department can conduct the field examination needed to issue a license confirming use of water under the permit. This letter is notification that the license examination fee is due within sixty (60) days of the date of this letter. The examination fee information sheet (enclosed) must be returned with the fee.

As an alternative to submitting the fee, the department will accept a field examination report completed by a certified water right examiner from the private sector. If you choose to have the examination done by a certified water right examiner, you need not submit the license examination fee to the department, but you must within sixty (60) days of the date of this letter return to the department, the examination fee information sheet showing appropriate information together with a statement from the certified examiner to verify that you have retained a certified examiner to conduct the field examination. If you choose this alternative, a completed field examination report must be submitted within one year of the date of this letter. You cannot later change your decision to use this alternative and submit the fee needed for the department to conduct the field examination, but you may change to another certified examiner.

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MICROFILMED
MAR 06 1987

of certified water right examiners will be available from this department when examiners have been certified.

If your permitted use, in fact, has already been examined by the department and you have not asked to have the examination repeated, the fee requirement is not applicable to your permit. If you believe this is the case, please contact the department.

The license examination fee is to be based on the amount of water you indicate you have developed, as listed in item 6 on the examination fee information sheet. The amount of water on which the examination fee is based can be less than the permitted amount, if less water has been diverted and beneficially used. The licensed amount of water, however, will not exceed the amount you claim on the examination fee information sheet. The enclosed license examination fee schedule shows a listing of applicable fees.

FAILURE TO SUBMIT WITHIN THE SIXTY (60) DAY PERIOD, THE FEE OR THE STATEMENT THAT A CERTIFIED EXAMINER HAS BEEN RETAINED TO MAKE THE FIELD EXAMINATION, WILL BE CAUSE TO ADVANCE THE PRIORITY OF THE PERMIT ONE DAY FOR EACH DAY THAT THE FEE SUBMITTAL IS LATE.

FAILURE TO SUBMIT THE FEE OR THE COMPLETED FIELD EXAMINATION REPORT WITHIN A YEAR WILL BE CAUSE TO CONSIDER THE PROOF OF BENEFICIAL USE TO BE INCOMPLETE AND TO LAPSE THE PERMIT.

The attached examination fee information sheet and the fee may be submitted to the following department offices.

Northern Region
Idaho Dept. of Water Resources
4055 Government Way
Coeur d'Alene, ID 83814
Phone: 765-4639

Eastern Region
Idaho Dept. of Water Resources
150 Shoup Ave., Suite 15
Idaho Falls, ID 83401
Phone: 525-7161

Southern Region
Idaho Dept. of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, ID 83301
Phone: 734-3578

Western Region
Idaho Dept. of Water Resources
450 W. State St., (Third Floor)
Boise, ID 83720
Phone: 334-2190

Sincerely,

L. Glen Saxton

L. GLEN SAXTON
Chief, Operations Bureau

Enclosures

MICROFILMED
MAR 06 1991

November 20, 1985

Bonneville Pacific Corporation and
Vernon F. Ravenscroft
200 S. Temple, Suite 300
Salt Lake City, UT 84111

Gentlemen:

Re: Permit No. 37-7857, 37-7865 and 37-7922

Returned are three proof of beneficial use forms submitted on the above referenced permits.

Please be advised that proof has been submitted previously by Prudential Leasing Company in September of 1984. It is not necessary to submit proof again even though the permits have changed ownership.

If you have any questions concerning this matter, please feel free to contact me.

Sincerely,

RITA I. FLECK
Secretary/Records Manager

Enclosures

MICROFILMED
MAR 06 1987

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES
Southern Region

1041 Blue Lakes Blvd. N.
Twin Falls, Idaho 83301
(208) 734-3578

OCTOBER 30, 1984

PRUDENTIAL LEASING CO.
155 EAST 3300 SOUTH
SALT LAKE CITY UT 84115

RE: Permit No. 37-7857

Dear Permit Holder:

We acknowledge receipt of your statement submitted as proof of beneficial use for the above referenced permit.

Enclosed please find a copy of an order involving your permit.

Before a license can be issued, a field examination must be made by a representative of this department.

A field examiner will contact you to arrange to examine your system.

If you have any questions regarding the field examination, please contact this office by phone at 734-3578 or in person at our office at 1041 Blue Lakes Blvd. N. Twin Falls, Idaho.

Sincerely,
s/Mary A. Newby
Secretary

Enclosure

MICROFILMED
MAR 06 1987

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720

37-7857
BONNEVILLE PACIFIC CORP.
155 E. 3300 S.
SALT LAKE CITY, UT 84115

138741

April 30, 1986

CERTIFIED MAIL

EXAMINATION FEE NOTICE

Dear Permit Holder:

Department records show that proof of beneficial use has been submitted for the above-referenced permit, but that a field examination has not yet been conducted to determine the extent of beneficial use of the water for licensing purposes.

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As an alternative to submitting the fee, the department will accept a field examination report completed by a certified water right examiner from the private sector. If you choose to have the examination done by a certified water right examiner, you need not submit the license examination fee to the department, but you must within sixty (60) days of the date of this letter return to the department, the examination fee information sheet showing appropriate information together with a statement from the certified examiner to verify that you have retained a certified examiner to conduct the field examination. If you choose this alternative, a completed field examination report must be submitted within one year of the date of this letter. You cannot later change your decision to use this alternative and submit the fee needed for the department to conduct the field examination, but you may change to another certified examiner.

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RECEIVED
MAR 06 1987

of certified water right examiners will be available from this department when examiners have been certified.

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Idaho Dept. of Water Resources
4055 Government Way
Coeur d'Alene, ID 83814
Phone: 765-4639

Eastern Region
Idaho Dept. of Water Resources
150 Shoup Ave., Suite 15
Idaho Falls, ID 83401
Phone: 525-7161

Southern Region
Idaho Dept. of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, ID 83301
Phone: 734-3578

Western Region
Idaho Dept. of Water Resources
450 W. State St., (Third Floor)
Boise, ID 83720
Phone: 334-2190

Sincerely,

L. Glen Saxton

L. GLEN SAXTON
Chief, Operations Bureau

Enclosures

MAR 03 1987

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
Statehouse
Boise, Idaho 83720

re mailed to
on 5/21/86
WCN: 138447

Bonneville Pacific Corp
℅ Vernon F. Ravenscroft
200 S. Temple, Suite 300
Salt Lake City, UT
84111 not at this address

RETURNED TO SENDER
REASON CHECKED
Unclaimed Refused
Addressee unknown
Insufficient Address
No such street
Illegible
Vacant
Forwarding time has elapsed

155.00
Return to sender

210672
DATE MAY 5 198

RECEIVED
MAY 9 1986
Department of Water Resources

CERTIFIED MAIL
NO. 138741

BOISE APR 30 '86 IDAHO

MICROFILMED
MAR 06 1987

CALCULATION OF NEW PRIORITY DATE

FROM: RITA FLECK

TO: FILE # 37-7857

DATE: 10-16-84

Date proof received	250	Sept. 7, 1984
Proof due	-244	Sept. 1
Number of day proof late	6	
Priority date	+262	Sept. 19, 1980
New priority date	268	Sept. 25, 1980

Remarks:

MICROFILMED

DEPARTMENT OF WATER RESOURCES

The Idaho De(ment of Water Resources will consider this card a(tatement that the permit holder(s) has(pleted development to the extent shown below o(mit No. 37-7857.

Name(s) of Permit Holder: Prudential Leasing Co.

Post Office Address: 155 East 3300 South, Salt Lake City, UT 84115

contact V. Ravenscroft for inspection Tel. No. 208-395-2670

Source of Water: Malad River

Extent of Use:
- ☐ Domestic _____ (number of households)
- ☐ Stockwater _____ (number and type of stock)
- ☐ Irrigation _____ (acres)
- ☒ Other power generation

Measuring Device: Required? ☒ Yes ☐ No Installed? ☑ Yes ☐ No

Access Port: Required? ☐ Yes ☒ No Installed? ☐ Yes ☐ No

The above informati[illegible] statement of the extent to which the above numbered permit has been developed.

Sept 4, 1984
Date

Signature of Permit Holder

MICROFILMED

PLACE
13 CENT
STAMP
HERE

RECEIVED

SEP 7 1984

Department of Water Resources

IDAHO DEPARTMENT OF WATER RESOURCES
STATEHOUSE
BOISE, IDAHO 83720

MICROFILMED

Prudential Leasing Company

Larry R. Stevens
President

155 East 33rd South
Salt Lake City, Utah 84115
(801) 487-8951

an affiliate of

Prudential Financial Services Corporation

and affiliates
- Prudential Federal Savings
- Prudential Commercial Lending Company
- Prudential Mortgage Company
- Prudential Leasing Company
- Prudential Risk Management Company
- Prudential Development Company
- Prudential Securities Company
- Prudential Contract Administration Company
- Olympus Capital Corporation
- Wasatch Management Corporation

September 6, 1984

RECEIVED
SEP 7 1984
Department of Water Resources

Idaho Water Resources Department
450 West State
Boise, Idaho 83720

Gentlemen:

Enclosed please find 3 executed cards for water permit 37-7857, 37-7865, 37-7922 indicating that we have completed the development indicated.

If you have any questions concerning these, please contact the undersigned.

Very truly yours,

Larry R. Stevens

LRS/tb

Enclosures

CC: Consulting Associates, Inc.

July 19, 1984

Vernon F. Ravenscroft
P. O. Box 893
Boise, ID 83701

Dear Mr. Ravenscroft:

Re: Permtt Nos. 37-7858 and 37-7865

Pursuant to your request of Loren Holmes of the Department's Southern Regional Office, enclosed is an identical package of notice letter and forms sent to Prudential Leasing Co.

Note, however, that the assignment give the responsibility of filing one of the forms to Prodential Leasing Company.

If you have any questions concerning this matter, please feel free to contact this office or the regional office.

Sincerely,

RITA I. FLECK
Secretary/Records Manager

Enclosure

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

STATEHOUSE
BOISE, IDAHO 83720
(208) 334-4440
CERTIFIED MAIL

138915

BIS

Prudential Leasing Co.
155 East 3300 South
Salt Lake City, UT 84115

PROOF DUE NOTICE

JUNE 30, 1984

DEAR PERMIT HOLDER:

ONE OF THE CONDITIONS OF APPROVAL OF YOUR WATER PERMIT NO. 37-7857 WAS THAT PROOF OF THE EXTENT OF YOUR BENEFICIAL USE MUST BE SUBMITTED TO THIS OFFICE ON OR BEFORE SEPTEMBER 01, 1984. (SEE LAST PAGE OF YOUR APPROVED PERMIT OR YOUR LAST APPROVED EXTENSION REQUEST). ENCLOSED IS A POSTCARD WHICH MAY BE USED TO SUBMIT THE REQUIRED PROOF.

IF YOU HAVE NOT FULLY COMPLETED YOUR PROJECT, AND YOU OR A PREVIOUS OWNER OF THIS PERMIT HAVE NOT RECEIVED A PRIOR EXTENSION OF TIME, YOU MAY REQUEST AN EXTENSION OF TIME IF THE DELAY IS FOR REASONABLE CAUSE AS PROVIDED IN SECTION 42-204, IDAHO CODE. IF YOU HAVE BEEN PREVENTED FROM PROCEEDING BY A GOVERNMENTAL AGENCY OR BY LITIGATION, MORE THAN ONE EXTENSION OF TIME CAN BE GRANTED. AN EXTENSION OF TIME REQUEST FORM IS ENCLOSED FOR YOUR CONVENIENCE.

EITHER THE BENEFICIAL USE POSTCARD OR A REQUEST FOR AN EXTENSION OF TIME MUST BE RECEIVED BY THIS DEPARTMENT ON OR BEFORE THE ABOVE DESCRIBED PROOF DUE DATE. IF NEITHER IS RECEIVED, THE DEPARTMENT WILL SEND YOU A LAPSE NOTICE. WITHIN SIXTY (60) DAYS OF THE MAILING OF THE LAPSE NOTICE, THE PERMIT WILL NO LONGER BE OF ANY FORCE NOR EFFECT.

SINCERELY,

RITA FLECK
SECRETARY/RECORDS MANAGER

ENCLOSURES

June 15, 1984

RE: Permit Nos. 37-7857, 37-7865 & 37-7922

Prudential Leasing Co.
155 East 3300 South
Salt Lake City, UT 84115

Dear Permit Holder:

This office acknowledges receipt of the Assignment of the above referenced permits to you.

Enclosed for your records are copies of the permits. Be sure to note the special conditions of approval on the fourth pages that identify requirements necessary for developing the permits into licensed water rights.

If you have any questions on this matter, please feel free to contact us.

Sincerely,

KAY WALKER
Chief Clerk

KW:sc
Enclosures

MICROFILMED

Permit No. 37-7857

ASSIGNMENT REVIEW CHECK LIST

1. Signature of Permit Holder? ✓
2. Notary? ✓
3. (a.) Full Assign?
   b. Partial Assign?
4. "No assignment" condition on permit? yes - ok
5. Commencement of works received? yes
6. Affidavit of Residency required? yes - recd.

1. Type Permit Summary sheet ✓
2. Coding sheet ✓
3. Acknowledgement letter type lp
4. Copy to region ✓

Date: 6-13-84

Employee: Kay Walker

MICROFILMED

LAW OFFICES OF
ROOKER, LARSEN, KIMBALL & PARR
A PROFESSIONAL CORPORATION
SUITE 1300
185 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84111
TELEPHONE (801) 532-7840

C. KEITH ROOKER
KENT W. LARSEN
DALE A. KIMBALL
CLAYTON J. PARR
STEPHEN G. CROCKETT
DOUGLAS J. PARRY
DAVID E. GEE
CLARK WADDOUPS
ROBERT J. GROW
ROBERT A. JOHNSON
SCOTT W. LOVELESS
JAMES E. CANNON
PATRICIA W. CHRISTENSEN
DAVID K. REDD
ROBERT G. HOLT
JAMES C. SWINDLER
ROBERT B. LOCHHEAD
STEPHEN J. HULL
GARY A. DODGE
JAMES D. GORDON III
BRIAN C JOHNSON
ROBERT S. CLARK
THOMAS B. CREEN
RICHARD D. CLAYTON
PAUL D. ELLSWORTH
JONATHAN M. RUGA
MICHAEL M. LATER
CAROLYN B. McHUGH
VICTOR A. TAYLOR

OF COUNSEL
MAAK & MAAK
CHARLES L. MAAK
BRUCE A. MAAK

RECEIVED
JUN 8 1984
Department of Water Resources

June 5, 1984

Mr. Jim Johnson
Water Distribution Supervisor
State of Idaho
Department of Water Resources
State House
Boise, ID 83720

RE: Permit Nos. 37-7857, 37-7865 and 37-7922

Dear Mr. Johnson:

Pursuant to your letter of May 25, 1984 concerning the above mentioned Permits, I am enclosing the following:

1. The copy of the Assignment of Permits which you sent to us.

2. Three Affidavits for Water Rights which have been executed on behalf of Prudential Leasing Company.

3. A copy of a Certificate of Authority issued by the Idaho Secretary of State concerning the authority of Prudential Leasing Company to transact business in Idaho.

If you require any additional information or documents with respect to the Agreements or the Permits, I would appreciate your calling me.

Sincerely,

Kent W. Larsen

KWL:kh
Enclosures: 7

STATE OF UTAH

Executive Department

Office of the Lieutenant Governor

CERTIFICATE OF INCORPORATION

OF

PRUDENTIAL LEASING COMPANY

I, DAVID S. MONSON, LIEUTENANT GOVERNOR OF THE STATE OF UTAH, HEREBY CERTIFY THAT DUPLICATE ORIGINALS OF ARTICLES OF INCORPORATION FOR THE INCORPORATION OF

PRUDENTIAL LEASING COMPANY

DULY SIGNED AND VERIFIED PURSUANT TO THE PROVISION OF THE UTAH BUSINESS CORPORATION ACT, HAVE BEEN RECEIVED IN MY OFFICE AND ARE FOUND TO CONFORM TO LAW.

ACCORDINGLY, BY VIRTUE OF THE AUTHORITY VESTED IN ME BY LAW, I HEREBY ISSUE THIS CERTIFICATE OF INCORPORATION OF

PRUDENTIAL LEASING COMPANY

AND ATTACH HERETO A DUPLICATE ORIGINAL OF THE ARTICLES OF INCORPORATION.
103530.

MICROFILMED

THE GREAT SEAL OF THE STATE OF UTAH
INDUSTRY
1847
1896

IN TESTIMONY WEREOF, I have hereunto set my hand and affixed the Great Seal of the State of Utah, at Salt Lake City, this 25 *day of* APRIL, 19 83

David S. Monson

May 25, 1984

RE: Permit Nos. 37-7857, 37-7865 & 37-7922

Kent W. Larsen
185 S. State Street, Suite 1300
Salt Lake City, UT 84111

Dear Mr. Larsen:

We are in receipt of the Assignment of Permit form whereby Vernon S. Ravenscroft, Harriet B. Ravenscroft and Bonneville Pacific Corporassigned to Prudential Leasing Company their right, title and interest in the above referenced permits.

Please be advised, however, that this assignment has not fulfilled the requirements of Sections 42-207 through 42-200, Idaho Code. The provisions of Section 42-207, Idaho Code, requiresthat the Director of the Department of Water Resources receive the assignment together with a statement that the assignee is a bonafide resident of the State of Idaho or a statement that a corporation is qualified to do business in and under the laws of the State of Idaho.

This statement was not received with the assignment document and therefore, the Department cannot yet accept the assignment as a document changing the ownership of the above mentioned permits from Vernon Ravenscroft and Bonneville Pacific Corp to Prudential Leasing Company.

The said assignments are being returned for each of the permits and enclosed are three blank affidavit of residency forms which should be filled out by a representative of Prudential Leasing Company.

Once these forms have been completed, please return them with the assignment of permit forms and the Department will then be able to formally acknowledge that all requirements for changing ownership of said permits have been fulfilled.

If you have any questions on this matter, please let us know.

Sincerely,

JIM JOHNSON
Water Distribution Supervisor

JJ:sc

Enclosures

MICROFILMED

LAW OFFICES OF
ROOKER, LARSEN, KIMBALL & PARR
A PROFESSIONAL CORPORATION
SUITE 1300
185 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84111
TELEPHONE (801) 532-7840

C. KEITH ROOKER
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JONATHAN M. RUGA
MICHAEL M. LATER
CAROLYN B. McHUGH
VICTOR A. TAYLOR

OF COUNSEL
MAAK & MAAK
CHARLES L. MAAK
BRUCE A. MAAK

RECEIVED
MAY 21 1984
Department of Water Resources

May 17, 1984

State of Idaho
Department of Water Resources
State Office
450 West State Street
Bosie, Idaho 83720

re: Water Permit No.'s 37-7857, 37-7865, 37-7922

Gentlemen:

Enclosed is an original executed copy of an Assignment of Permit whereby Vernon S. Ravenscroft, Harriet B. Ravenscroft and Bonneville Pacific Corporation assigned to Prudential Leasing Company their interest in Permit No.'s 37-7857, 37-7865, 37-7922. This Assignment has been made solelyfor security purposes to secure payment of a loan made by Prudential Leasing Company to the assignors. Please note in your records the interest of Prudential Leasing Company in these Permits.

Sincerely yours,

Kent W. Larsen

MICROFILMED

cc: Craig B. Terry Esq.

KL/mbk

April 19, 1984

Consulting Associates, Inc.
P. O. Box 893
Boise, ID 83701

Dear Mr. Ravenscroft:

Re: Permit Nos. 37-7857, 37-7865 and 37-7922

This office acknowledges receipt of your letter dated April 18, 1984 in which you advise that construction of the diverting works under the above-referenced permits was started in compliance with provisions of Section 42-204, Idaho Code. A copy of your letter will be made a part of each of the above-referenced water right files.

Sincerely,

L. GLEN SAXTON
Chief, Operations Bureau

LGS:rf

cc: Bonneville Pacific Corp.

MICROFILMED

Consulting Associates, Incorporated

BOISE OFFICE
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
P.O. BOX 893
BOISE, IDAHO 83701

April 18, 1984

RECEIVED
APR 19 1984
Department of Water Resources

Mr. Glen Saxton
IDAHO DEPT. OF WATER RESOURCES
Statehouse Mail
Boise, ID 83720

RE: Water Permit No. 37-7857, 7865, 7922

Dear Mr. Saxton:

The purpose of this letter is to advise the State of Idaho Department of Water Resources that construction of the diverting works contemplated by Permit Nos. 37-7857, 37-7865, and 37-7922 was commenced on January 12, 1983, and was substantially completed on December 23, 1983. As you can see, the commencement of construction occurred prior to the deadline of August 9, 1983, contemplated by Section 42-204 of the Idaho Statutes.

I request that you send to me a letter acknowledging your receipt of this letter. Please indicate in such letter that Mr. & Mrs. Ravenscroft and Bonneville Pacific Corporation have now complied with the requirements of Permit No. 37-7857, 7865, and 7922.

Yours truly,

Vernon F. Ravenscroft

VFR:sh

cc: Bonneville Pacific

MICROFILMED

Bonneville Pacific Corporation
A Subsidiary of Bonneville Group, Inc.

RECEIVED
APR 19 1984
Department of Water Resources

April 17, 1984

Mr. Glen Saxton
State of Idaho
Department of Water Resources
Statehouse
Boise, Idaho 83720

RE: Water Permit No. 37-7857

Dear Mr. Saxton:

The purpose of this letter is to advise the State of Idaho Department of Water Resources that construction of the diverting works contemplated by Permit No. 37-7857 was commenced on January 12, 1983 and was substantially completed on December 23, 1983. As you can see, the commencement of construction occurred prior to the deadline of August 9, 1983 contemplated by Section 42-204 of the Idaho Statutes.

I request that you send to me a letter acknowledging your receipt of this letter. Please indicate in such letter that Mr. and Mrs. Ravenscroft and Bonneville Pacific Corporation have now complied with the requirements of Permit No. 37-7857.

Very truly yours,

BONNEVILLE PACIFIC CORPORATION

By: L. Wynn Johnson
Its: Vice President

/db

MICROFILMED

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

February 13, 1984

Prudential Leasing Co.
155 East 3300 South
Salt Lake City, UT 84115

Attention: Larry Stevens

RE: Assignment of Water Permit Nos. 37-7857, 37-7865 & 37-7922

Gentlemen:

The purpose of this letter is to clarify the first paragraph of the Department's February 7, 1984 letter in connection with the above referenced permits.

The first paragraph of the February 7, 1984 letter should read as follows:

> "The purpose of this letter is to confirm that the State of Idaho Department of Water Resources has previously approved the assignment of Water Permit Nos. 37-7857, 37-7865 and 37-7922 (hereafter referred to as the "permits") from Vernon Ravenscroft to Vernon F. Ravenscroft and Harriett B. Ravenscroft and Bonneville Pacific Corporation. Such assignment is valid and has been confirmed as reflected in the attached letter dated January 28, 1983."

Also, enclosed is a copy of my February 7, 1984 letter to Vernon F. Ravenscroft, Harriett B. Ravenscroft and Bonneville Pacific Corp. clarifying the season of use for permit 37-7865.

If this office can be of further assistance, please contact us.

Sincerely,

L. GLEN SAXTON
Chief, Operations Bureau

LGS:sc Enclosure cc: Craig B. Terry

MICROFILMED

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

February 7, 1984

Vernon F. Ravenscroft
Harriett B. Ravenscroft
Bonneville Pacific Corporation
200 East South Temple, Suite 310
Salt Lake City, UT 84111

Gentlemen:

Re: Water Permit No. 37-7865

The purpose of this letter is to confirm that Permit No. 37-7865, a copy of which is attached hereto, permits the use of water from January 1 to December 31 (both dates inclusive). A typographical error appears on the face of Permit No. 37-7865, which incorrectly indicates that the water may be used from January 1 to December 1 (both dates inclusive).

Sincerely,

L. Glen Saxton

L. GLEN SAXTON
Chief, Operations Bureau

LGS:rf

Enclosure

MICROFILMED

February 7, 1984

Prudential Leasing Company
155 East 3300 South
Salt Lake City, UT 84115

Attention: Larry Stevens

Gentlemen:

Re: Assignment of Water Permit Nos. 37-7857, 37-7865 and 37-7922

The purpose of this letter is to confirm that the State of Idaho Department of Water Resources has previously approved the assignment of Water Permit Nos. 37-7857, 37-7865 and 37-7922 (hereinafter referred to as the "permits") from Vernon Ravenscroft and Bonneville Pacific Corporation. Such assignment is valid and has been confirmed as reflected in the attached letter dated January 28, 1983.

This office has been advised that in connection with certain financing to be obtained by Vernon Ravenscroft, Harriet B. Ravenscroft and Bonneville Pacific Corporation, Mr. and Mrs. Ravenscroft and Bonneville Pacific Corporation intend to assign to Prudential Leasing Company as collateral security their rights under the permits. This letter shall confirm to Prudential Leasing Company that the collateral assignment by Mr. and Mrs. Ravenscroft and Bonneville Pacific Corporation to Prudential Leasing Company of their rights under the permits will not affect the validity of the permits for the continued use thereof by Mr. and Mrs. Ravenscroft and Bonneville Pacific Corporation assuming Prudential Leasing Company is qualified to do business under the laws of the State of Idaho. An original of the assignment together with evidence showing Prudential's qualifications to do business in Idaho should be filed with the Department of Water Resources before the Department will consider Prudential Leasing Company to be the owner of the permit.

I would like to point out that Permit No. 37-7857 is subject to the provisions of Section 42-204, amended in 1982, which requires the start of construction of the diverting works within one (1) year of permit issuance unless the permit holder is interrupted by circumstances over which he has no control. Since Permit No. 37-7857 was issued on August 9, 1982 and the file

MICROFILMED

does not show that construction work has started, a letter for the Department's file addressing this issue is appropriate. I have enclosed a copy of Section 42-204 for your information.

Please feel free to contact this office if you have questions.

Sincerely,

NORMAN C. YOUNG

Enclosures 2

cc: Craig B. Terry

DECLASSIFIED

LAW OFFICES OF

PARSONS, BEHLE & LATIMER

A PROFESSIONAL CORPORATION

185 SOUTH STATE STREET, SUITE 700
POST OFFICE BOX 11898
SALT LAKE CITY, UTAH 84147
TELEPHONE (801) 532-1234
TELECOPIER (801) 521-9868

1101 SIXTEENTH STREET, N.W.
WASHINGTON, D.C. 20036
TELEPHONE (202) 659-0862

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LAWRENCE E. STEVENS
DANIEL M. ALLRED
HOWARD J. MARSH
YAN M. ROSS
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KATHLENE W. LOWE
BARBARA K. POLICH
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KREGE B. CHRISTENSEN
JAMES M. ELEGANTE
DAVID P. HIRSCHI

C.C. PARSONS
1907-1968

CALVIN A. BEHLE
1947-

OF COUNSEL
GEORGE W. LATIMER
CONSTANCE K. LUNDBERG

VAL R. ANTCZAK
PATRICK J. GARVER
SPENCER E. AUSTIN
JOHN B. WILSON
ROBERT C. HYDE
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D. R. CHAMBERS
BYRON W. MILSTEAD
LOIS A. BAAR
JAMES E. MORTON
MICHAEL L. LARSEN
JONATHAN K. BUTLER
SUSAN R. POULTER

January 27, 1984

Mr. Norman C. Young,
Administrator
Resources Administration Division
State of Idaho
Department of Water Resources
Statehouse
Boise, Idaho 83720

Re: Water Permits Nos. 37-7857, 37-7865 and 37-7922

Dear Mr. Young:

Pursuant to our telephone conversation, I am enclosing a draft of a letter requested by Vernon F. Ravenscroft, Harriett B. Ravenscroft and Bonneville Pacific Corporation in connection with certain financing being obtained by said parties from Prudential Leasing Company. Please return to me at your earliest convenience a letter in the form attached hereto on State of Idaho, Department of Water Resources letterhead. If you have any problems with any of the statements contained in the attached letter, please telephone me so that we may discuss them.

Also enclosed is a draft of a letter regarding the typographical error that appears on Permit No. 37-7865. If you find this letter to be acceptable, please cause it to be prepared on State of Idaho, Department of Water Resources letterhead and return it to me.

Thank you very much for your cooperation in connection with this request.

Very truly yours,

Craig B. Terry

Craig B. Terry
of and for
PARSONS, BEHLE & LATIMER

CBT/mp
enc
4422M

MICROFILMED

DHL WORLDWIDE COURIER EXPRESS

34274365

CONSIGNEE

FORWARDER AIRBILL NO.

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923[illegible]110	0972.2	SLC

FROM (SHIPPER) SENT BY:
PARSONS BEHLE AND LATIMER
Craig B. Terry
[illegible] SO STATE
SALT LAKE CITY, UT
84115
PLEASE USE FULL ADDRESSES NO. P.O. BOX
TELEX/PHONE [illegible]

TO (CONSIGNEE) ATTN. OF:
Mr. Norman C. Young, Administrator
Resources Administration Division
Idaho State Dept. of Water Resources
Statehouse
Boise, Idaho
83720
TELEX/PHONE

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DESCRIPTION OF CONTENTS (IF INTERNATIONAL SMALL PARCEL SERVICE PLEASE ATTACH COMMERCIAL INVOICES ON YOUR COMPANY LETTERHEAD)
Legal Documents

FOR INTERNATIONAL SMALL PARCEL EXPRESS
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* NOT TO EXCEED $10,000 OR EQUIVALENT

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MICROFILMED

January 28, 1983

David P. Hirschi
Parsons, Behle & Latimer
185 S. State St.
Box 11898
Salt Lake City, UT 84147

Re: Assignment of Permits Nos. 37-7857, 37-7865 and 37-7922

Dear Mr. Hirschi:

The purpose of this letter is to confirm our telephone conversation of this date in which I indicated that we have indeed received all the documentation that we need to process the assignment of the above-referenced permits from Vernon Ravenscroft to Vernon Ravenscroft and Harriett B. Ravenscroft and Bonneville Pacific Corporation. Please consider the assignment to be valid and confirmed.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

cc: Vernon Ravenscroft

January 19, 1983

David P. Hirschi
Parsons, Behle & Latimer
185 S. State St.
Box 11898
Salt Lake City, UT 84147

Re: Assignment of Permits Nos. 37-7857, 38-7865 and 37-7922 in the name of Vernon Ravenscroft

Dear Mr. Hirschi:

This office has reviewed your letter datdd November 23, 1982, and the associated proposed Assignment of Water Rights, relating to the above-referenced permits.

At this time, the proposed assignment as drafted appears to be acceptable. Our file contains evidence that the Bonneville Pacific Corporation has registered with the office of the Secretary of State. Therefore, the corporation is qualified to do business in Idaho, and as such can complete and return the enclosed Form 205/206 when the assignment is submitted. If the Assignment has not yet been signed, you may want to consider modification of item 4(a) on page 2, which appears to prematurely state that all conditions of the permit have already been met.

If you wish to discuss the assignment procedure, please feel free to contact me.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

DRT:sc

Enclosure

cc: Vernon Ravenscroft

MICROFILMED

POOR QUALITY ORIGINAL

November 30, 1982

Ravenscroft Ranch Hydro Electric Project
c/o Vernon F. Ravenscroft
P. O. Box 893
Boise, ID 83701

Bonneville Pacific Corporation
200 East South Temple, Suite 310
Salt Lake City, UT 84111

Gentlemen:

The Department of Water Resources has reviewed the proposed Assignment of Water Rights and Permits pertaining to Permit Nos. 37-7827, 37-7905 and 37-7922, as amended, relating to the Ravenscroft Ranch Hydro Electric Project in Gooding County, Idaho.

You have filed the information required under Sections 42-206 and 42-207, Idaho Code, and the Director of the Department of Water Resources is satisfied that you have complied with the requirements of said sections.

Very truly yours,

NORMAN C. YOUNG
Administrator
Resources Administration Division

NCY:alw

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SCHEDULE I

DEPARTMENT OF WATER RESOURCES

MICROFILMED

INTER-DEPARTMENT MEMO — 1

FROM Polly Carlson

DATE 11/22/82

TO Files

SUBJECT 37-7922, 37-7857 & 37-7865

A representative from Vernon Tavenscroft's office picked up the approved copies of the Amendment For Permit. Therefore no cover letter was done.

SIGNATURE

MICROFILMED

[redacted]

October 29, 1982

RE: Water Permit Nos. 37-7857
37-7865
37-7922

Vernon F. Ravenscroft
P. O. Box 893
Boide, ID 83701

Dear Vern:

This letter is in response to your question of the need for a stream alteration permit to cover the removal of rock reefs and gravel down stream from the proposed project. A separate stream channel alteration permit is not required by the department. The water permits condition the blasting to low flow periods.

I would recommend that when you have determined the extent of work to be done that you contact the Twin Falls office for a field review.

Sincerely,

A. KENNETH DUNN
Director

AKD:alw

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

August 18, 1982

RE: Permit Nos. 37-7857, 37-7865 and 37-7922

Vernon Ravenscroft
P.O. Box 893
Boise, ID 83701

Dear Mr. Ravenscroft:

Enclosed are copies of your approved applications for permit. We direct your attention to the conditions of approval on the fourth pages.

Be sure to note the special condition requiring you to install a measuring device and lockable controlling works that will enable the watermaster to control your rate of diversion.

The 1982 Idaho Legislature added a requirement that as a permit holder you must commence the excavation or construction of diverting works within one year of the date the permit was issued, and must proceed diligently until the project is completed. The enclosed blue cards must be completed and returned to this office as soon as you commence construction, no later than one year from the date the permit was approved.

We have enclosed a form entitled "Making Proof of Beneficial Use". Please read the instructions carefully since you must take further action to develop these permits into licenses.

Sincerely,

DAVID R. TUTHILL, JR., P.E.
Supervisor, Water Allocation Section

T:kw
closures

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RECEIVED

JUL 21 1982

Department of Water Resources

INTER-DEPARTMENT MEMO — 1

FROM Loren Holmes

TO Glen Saxton

DATE 7/16/82

put copy of this memo in each file.

SUBJECT 37-7857, 7865, 7922 – Ravenscroft

I Called Peter Bowler in regard to his late Protest. I explained that a conference had already been held Prior to my response to his late Protest, & I asked if he had further Concerns with the Project.

He said he did not object to the Project, Provided That the FERC Approval had been granted & the stream was Protected from Complete dewatering.

SIGNATURE

INTER-DEPARTMENT MEMO — 1

DATE 7-9-82

FROM Glen S

TO Ravencroft's files

SUBJECT Note

Call Loren on Peter Bowler protest follow-up.

7-16-82 Again asked Loren to follow up on the Peter Bowler matter. gss

gss

SIGNATURE

INTER-DEPARTMENT MEMO — 1

FROM Glen S

DATE 3-24-82

TO Jim J

~~SUBJECT~~ - The protest of Peter A. Bower in file 37-7857 & 37-7865 has not yet been addressed. I called Loren & he will pursue it soon. In the meantime lets hold the three (3) appls here.

~~Receipts? relative to SCA changes~~

SIGNATURE

Form No. 202a
2/79

AA-70
37-7857

State of Idaho

Department of Water Resources

APPLICATION FOR PERMIT ANALYSIS SHEET

INITIAL REVIEW BY: Doug Sundenburg APPLICATION NUMBER: RAVENSCROFT, Vernon

CHECK:

- ☒ Source.
- ☒ Point of diversion.
- ☒ County.
- ☒ Description of diverting works.
- ☒ Time required for beneficial use of water.
- ☒ Place of use or acres irrigated.
- ☒ Map.
- ☒ Signature.
- ☒ Fee.
- ☒ Yes ☐ No Field check required.
- ☐ Yes ☒ No Critical groundwater area.
- ☐ Yes ☒ No Request dam safety information. Sent by: _____ Date: _____
- ☒ Yes ☐ No* In form to receipt.

Field check by: _____
Date: _____
Comments: _____

*REQUEST THE FOLLOWING ADDITIONAL INFORMATION FROM THE APPLICANT: _____

SEND COPIES TO:

- ☐ Idaho State Health Department. Copies sent by: _____ Date: _____
- ☐ Idaho Fish and Game Department.
- ☐ Idaho Department of Lands.
- ☐ U.S. Bureau of Land Management.
- ☐ U.S. Forest Service.
- ☐ Other _____

PROCESSING:

- ☐ Yes ☐ No Platted by: _____ Map No. AA-70
- ☐ Yes ☒ No Other rights on same place of use. _____
- ☒ Yes ☐ No* In form for advertising.
  Final date for protests: 10-27-80
- ☑ Yes ☐ No Protests received. If yes, record information on 4th page of application.

FINAL REGIONAL PROCESSING REVIEW:

- ☑ Affidavit of publication received. Date: 10-20-80
- ☒ Application published correctly. If not, record action taken: _____
- ☑ Fee amount, receipt date & number, recorded on application.
- ☑ Publication dates and paper, recorded on application.
- ☑ Protests, dates, withdrawal, etc., recorded on application.
- ☑ Recommendation & initial, recorded on application.
- ☑ Yes ☐ No Measuring device required.
- ☐ Yes ☑ No Access port required.
- ☑ Yes ☐ No Will water be delivered by watermaster? If yes, what district? 37
- 9/19/80 Date of priority recommended.
- Special conditions of approval or cover letter. 01E, 05, 08A

THIS PERMIT DOES NOT CONSTITUTE IDAHO PUBLIC UTILITIES COMMISSION OR FEDERAL ENERGY REGALATORY COMMISSION APPROVAL THAT MAY BE REQUIRED.

By: Karen O Hatuer Date: 5/11/81

STATE OFFICE REVIEW:

01E, 05 (37 Big Wood R), 08A 04
17 L08, ABOVE CONDITION

☐ See attached sheet for more information.

By: _____ Date: 10/2/81

Jmi 3/17/82

MICROFILMED

RECEIVED

JUL 8 1982

Department of Water Resources

INTER-DEPARTMENT MEMO — 1

FROM Loren Holmes

DATE 7/2/82

TO Glenn Saxton

SUBJECT Ravensloft 37-7857, 7865, 7922

Attached are Agency Comments.

Alex Schaefer indicated by phone that he had no Comments

LH.

SIGNATURE

STATE OF IDAHO

DEPARTMENT OF LANDS

STATEHOUSE, BOISE, IDAHO 83720

GORDON C. TROMBLEY
DIRECTOR

RECEIVED
APR 14 1982
Department of Water Resources
Southern District Office

STATE BOARD OF LAND COMMISSIONERS
JOHN V. EVANS
GOVERNOR AND PRESIDENT
PETE T. CENARRUSA
SECRETARY OF STATE
DAVID H. LEROY
ATTORNEY GENERAL
JOE R. WILLIAMS
STATE AUDITOR
JERRY L. EVANS
SUP'T OF PUBLIC INSTRUCTION

April 12, 1982

Department of Water Resources
Southern Region
1041 Blue Lakes Blvd. North
Twin Falls, ID 83301

RE: Ravenscroft, Vernon
37-7865, 37-7857,
37-7922

Gentlemen:

The work proposed in the above numbered applications will not affect state land or a navigable stream. A permit from this Department will not be required.

Thank you for sending the applications for our review.

Very truly yours,

William A. Scribner

WILLIAM A. SCRIBNER, Chief
Bureau of Navigable Waters

WAS:bv

MICROFILMED

IDAHO DEPARTMENT OF FISH AND GAME
REGION 4
868 East Main • Box 428
Jerome • Idaho • 83338

RECEIVED
JUL 2 1982
Department of Water Resources
Southern District Office

July 1, 1982

Mr. Loren O. Holmes
Southern Region Supervisor
Department of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301

Re: Application for Permit #'s 37-7865, 37-7857 and 37-7922
Big Wood River, Vernon Ravenscroft

Dear Loren:

The Department of Fish and Game has reviewed the above described project. We have no objection to the proposed work provided blasting in the stream is conducted during a low flow period. Our recommendation is work should be done at flows not exceeding 50 cfs.

Sincerely,

William E. Webb

William E. Webb
Regional Supervisor

cc: Bureau of Program Coordination

MICROFILMED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

April 6, 1982

Mr. Bill Scribner
Idaho Department of Lands
Statehouse
Boise, Idaho 83720

Re: Application for Permit 37-7865 - 37-7857 - 37-7922

Dear Mr. Scribner:

The attached material describes a stream alteration proposed for the Malad River in the SW¼, Sec. 29, T6S, R14E.

The alteration is proposed by Vernon F. Ravenscroft, P. O. Box 893, Boise, Idaho 83701, and is associated with water right applications 37-7857, 37-7865 and 37-7922, copies of which are attached.

The Department has determined that a permit to make the alteration is required under the Stream Channel Protection Act. (IDAHO CODE, Title 42, Chapter 38).

Following the required review under the Stream Channel Act, the Department proposes to incorporate any approval given into the conditions of approval on the associated water right permit.

Please review the proposed stream alteration and submit comments to this office within 30 days.

Very truly yours,

Loren O. Holmes
Southern Region Supervisor

LOH:marya

Enc

MICROFILMED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

April 6, 1982

Mr. Alex Schaefer
Idaho Department Health & Welfare
Division of Environment
P. O. Box 1626
Twin Falls, Idaho 83301

Re: Application for Permit 37-7865 - 37-7857 - 37-7922

Dear Mr. Schaefer:

The attached material describes a stream alteration proposed for the Malad River in the SW¼, Sec. 29, T6S, R14E.

The alteration is proposed by Vernon F. Ravenscroft, P. O. Box 893, Boise, Idaho 83701, and is associated with water right applications 37-7857, 37-7865 and 37-7922, copies of which are attached.

The Department has determined that a permit to make the alteration is required under the Stream Channel Protection Act. (IDAHO CODE, Title 42, Chapter 38).

Following the required review under the Stream Channel Act, the Department proposes to incorporate any approval given into the conditions of approval on the associated water right permit.

Please review the proposed stream alteration and submit comments to this office within 30 days.

Very truly yours,

Loren O. Holmes
Southern Region Supervisor

LOH:marya

Encl:

MICROFILMED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

April 6, 1982

Mr. Bob Bell,
Regional Fisheries Biologist
Idaho Department Fish & Game
Region 4
P.O. Box 428
Jerome, Idaho 83338

Re: Application for Permit 37-7865 - 37-7857 - 37-7922

Dear Mr. Bell:

The attached material describes a stream alteration proposed for the Malad River in the SW¼, Sec. 29, T6S, R14E.

The alteration is proposed by Vernon F. Ravenscroft, P. O. Box 823, Boise, Idaho 83701, and is associated with water right applications 37-7857, 37-7865 and 37-7922, copies of which are attached.

The Department has determined that a permit to make the alteration is required under the Stream Channel Protection Act. (IDAHO CODE, Title 42, Chapter 38).

Following the required review under the Stream Channel Act, the Department proposes to incorporate any approval given into the conditions of approval on the associated water right permit.

Please review the proposed stream alteration and submit comments to this office within 30 days.

Very truly yours,

Loren O. Holmes
Southern Region Supervisor

LOH:kaya

Encl:



From the desk of....

VERNON RAVENSCROFT

Glenn:

As per our telephone conversation. These are not major items but they can increase the effective head by 15 to 20%

Sent copy to Loren for comment on 3-26-82 V. R.

Consulting Associates, Incorporated
P.O. BOX 893
BOISE, IDAHO 83701

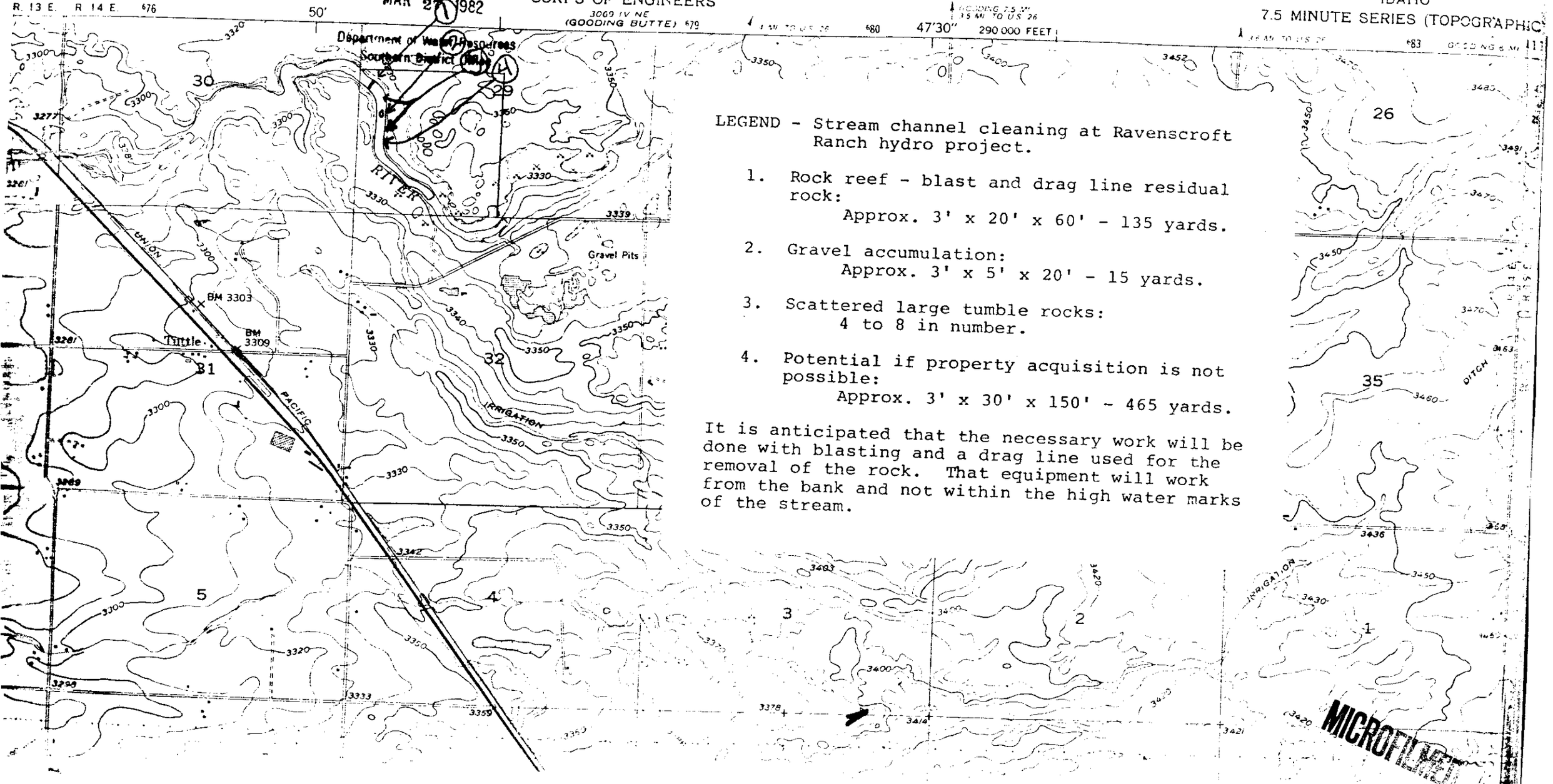
MICROFILMED

RECEIVED
MAR 27 1982
Department of Water Resources
Southern District (Rm)

Ravenscroft Channel Alteration
Water Rights 37-7857, 37-7865, 37-7922

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

TUTTLE QUADRANGLE
IDAHO
7.5 MINUTE SERIES (TOPOGRAPHIC)



LEGEND - Stream channel cleaning at Ravenscroft Ranch hydro project.

1. Rock reef - blast and drag line residual rock:
   Approx. 3' x 20' x 60' - 135 yards.

2. Gravel accumulation:
   Approx. 3' x 5' x 20' - 15 yards.

3. Scattered large tumble rocks:
   4 to 8 in number.

4. Potential if property acquisition is not possible:
   Approx. 3' x 30' x 150' - 465 yards.

It is anticipated that the necessary work will be done with blasting and a drag line used for the removal of the rock. That equipment will work from the bank and not within the high water marks of the stream.

MICROFILMED

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

MEMORANDUM

TO: 37-7857, 37-7865, 37-7922

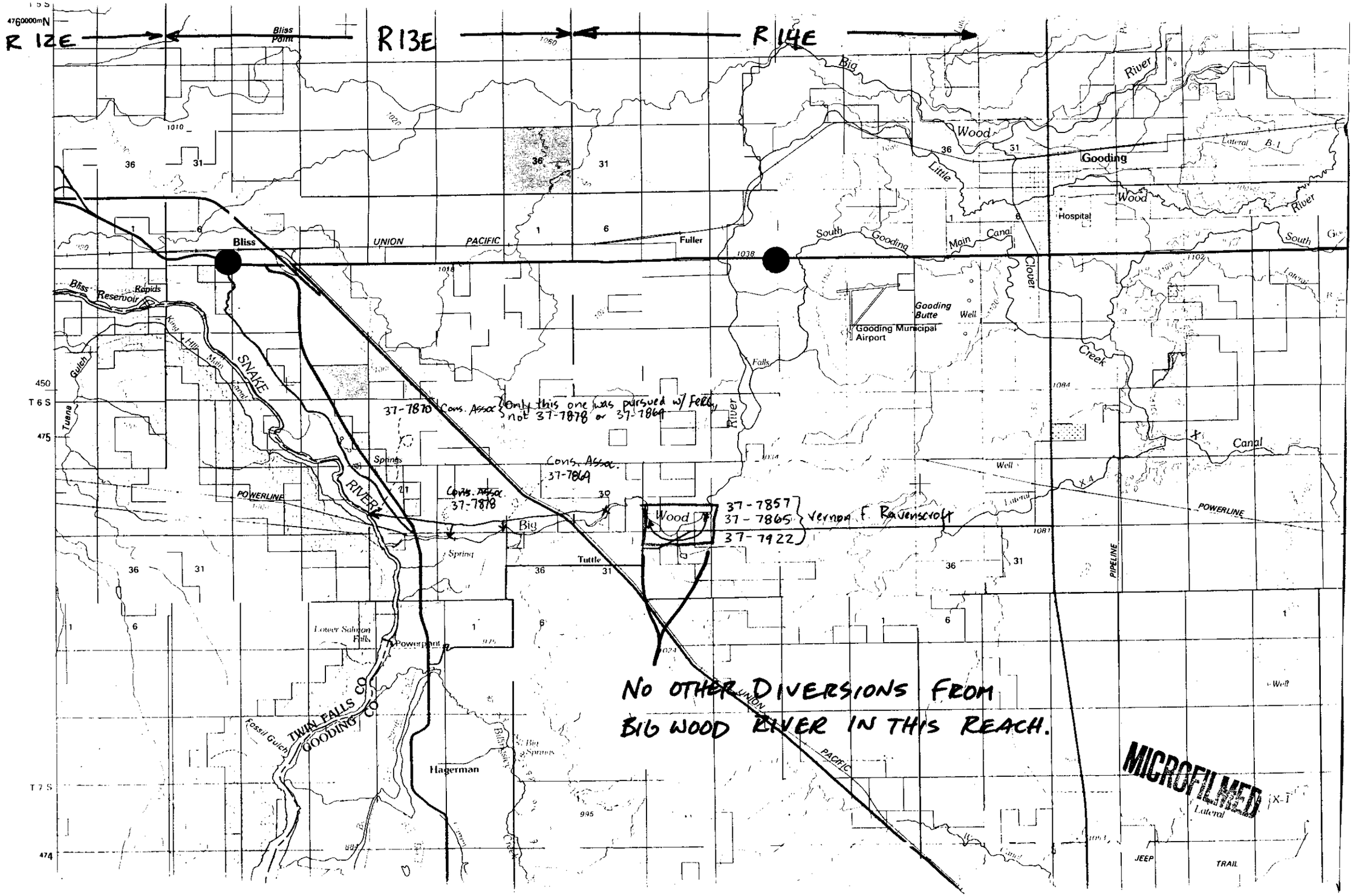
FROM: Dave Tuthill

DATE: March 2, 1982

RE: Impact on other Water Rights

The above referenced water right applications propose to divert from the Big Wood River in the SE¼SE¼ Sec. 29, T. 6 S., R. 14 E., and propose return the water to the river in the SW¼SW¼ Sec. 29, T. 6 S., R. 14 E. No other water rights divert in this reach so the proposed system would result in virtually no impact on other water rights.

MICROFILMED



NO OTHER DIVERSIONS FROM BIG WOOD RIVER IN THIS REACH.

MICROFILMED

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon P. Ravenscroft) Project No. 4055-002

NOTICE OF APPLICATION FOR EXEMPTION FOR SMALL HYDROELECTRIC POWER PROJECT UNDER 5 MW CAPACITY

(August 31, 1981)

Take notice that on July 24,1981, Vernon P. Ravenscroft (Applicant) filed an application under Section 408 of the Energy Security Act of 1980 (Act) (16 U.S.C. §§2705 and 2708 as amended), for exemption of a proposed hydroelectric project from licensing under Part I of the Federal Power Act. The proposed small hydroelectric project, Project No. 4055-002 would be located on the Malad River in Gooding County, Idaho. Correspondence with the Applicant should be directed to: Vernon P. Ravenscroft, Consulting Associates, Inc., P.O. Box 893, Boise, Idaho 83701.

Project Description - The proposed project would consist of: (1) a small diversion structure; (2) a 50-foot long and 30-inch diameter penstock; (3) a powerhouse containing four generating units, each rated at 175 kW; and (4) a transmission line. The Applicant estimates that the average annual energy output would be 3.0 million kWh.

Purpose of Project - The energy produced by the proposed project would be sold to a local utility.

Agency Comments - The U.S. Fish and Wildlife Service, The National Marine Fisheries Service, and the Idaho Dept. of Fish & Game are requested, for the purposes set forth in Section 408 of the Act, to submit within 60 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or to otherwise carry out the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other formal requests for comments will be made. Comments should be confined to substantive issues relevant to the granting of an exemption. If an agency does not file comments within 60 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

DC-4.-10

Competing Application - Any qualified license applicant desiring to file a competing application must submit to the Commission, on or before OCT 10 1981 either the competing license application that proposes to develop at least 7.5 megawatts in that project, or notice of intent to file such a license application. Submission of a timely notice of intent allows an interested person to file the competing license application no later than 120 days from the date that comments, protests, etc. are due. Applications for preliminary permit will not be accepted.

A notice of intent must conform with the requirements of 18 C.F.R. §4.33(b) and (c) (1980). A competing license application must conform with the requirements of 18 C.F.R. §4.33(a) and (d) (1980).

Comments, Protests, or Petitions to Intervene - Anyone may submit comments, a protest, or a petition to intervene in accordance with the requirements of its Rules of Practice and Procedure, 18 C.F.R. §1.8 or §1.10 (1980). In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a petition to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or petitions to intervene must be received on or before OCT 10 1981.

Filing and Service of Responsive Documents - Any filings, must bear in all capital letters the title "COMMENTS", "NOTICE OF INTENT TO FILE COMPETING APPLICATION", "COMPETING APPLICATION", "PROTEST", or "PETITION TO INTERVENE", as applicable, and the Project Number of this notice. Any of the above named documents must be filed by providing the original and those copies required by the Commission's regulations to: Kenneth F. Plumb, Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426. An additional copy must be sent to: Fred E. Springer, Chief, Applications Branch, Division of Hydropower Licensing, Federal Energy Regulatory Commission, Room 208 RB, 825 North Capitol Street, N.E., Washington, D.C. 20426. A copy of any notice of intent, competing application, or petition to intervene must also be served upon each representative of the Applicant specified in the first paragraph of this notice.

Kenneth F. Plumb
Secretary

MICROFILMED

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft) Project No. 4055-002

ORDER GRANTING EXEMPTION FROM LICENSING OF A SMALL HYDROELECTRIC PROJECT OF 5 MEGAWATTS OR LESS

(Issued February 5, 1982)

The Applicant 1/ filed an application for exemption from all or part of Part I of the Federal Power Act pursuant to 18 C.F.R. Part 4 SUBPART K (1980) implementing in part Section 408 of the Energy Security Act (Act) of 1980 for a project as described in the attached public notice. 2/ 3/

Notice of the application was published in accordance with Section 408 of the Act and the Commission's regulations and comments were requested from interested Federal and State agencies including the U. S. Fish and Wildlife Service and the State Fish and Wildlife Agency. All comments, protests and petitions to intervene that were filed have been considered. No agency has any objection relevant to issuance of this exemption.

Standard Article 2 included in this exemption requires compliance with any conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. The terms and conditions referred to in Article 2 are contained in any letters of comment by these agencies which have been forwarded to the Applicant in conjunction with this exemption.

Should the Applicant contest any terms or conditions that were proposed by Federal or State agencies in their letters of comment as being outside the scope of Article 2, the Commission shall determine whether the disputed terms or conditions are outside the scope of Article 2.

1/ Vernon F. Ravenscroft, Project No. 4055, filed on 7-24-81.

2/ Pub. Law 96-294, 94 Stat. 611. Section 408 of the ESA amends inter alia, Sections 405 and 408 of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. §§2705 and 2708).

3/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation under 18 C.F.R. §375.308 (1980), as amended by Fed. Reg. 14119 (1981).

It is ordered that:

(A) Ravenscroft Ranch Project No. 4055 as described and designated in Vernon F. Ravenscroft's application filed on July 24, 1981, is exempted from all of the requirements of Part I of the Federal Power Act, including licensing, subject to the standard articles in §4.106 of the Commission's regulations attached hereto as Form E-2, 18 C.F.R. §4.106 45 Fed. Reg. 76115 (November 18, 1980).

(B) This order is final unless a petition appealing it to the Commission is filed within 30 days from the date of its issuance, as provided in Section 1.7(d) of the Commission's regulations, 18 C.F.R. 1.7(d)(1981), as amended, 44 Fed. Reg. 46449 (1981). The filing of a petition appealing this order to the Commission or an application for rehearing as provided in Section 313(a) of the Act does not operate as a stay of the effective date of this order, except as specifically ordered by the Commission.

Robert E. Cackowski

Robert E. Cackowski
Deputy Director, Office of
Electric Power Regulation

INTER-DEPARTMENT MEMO — 1

FROM Glen S

DATE March 2

TO File
37-7857 & 37-7865

SUBJECT

— The Director advised that condit. of approval on the water at Farm could include conditions that normally would appear on an Stream alteration approval.

— : Asked Southern Region to determine agency comments

SIGNATURE

MICROFILMED

INTER-DEPARTMENT MEMO — 1

FROM Glen S

DATE March 8-2

TO File 37-7857 + 37-7865

SUBJECT – I called Ravencroft's office and advised that a separate Stream alteration permit would be required for work in the channel thru a distance of 1/4 mi below Tailrace.

– I referred him to W. Region.

GS

SIGNATURE

MICROFILMED

Consulting Associates, Incorporated

BOISE OFFICE
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-3979
P.O. BOX 1391
BOISE, IDAHO 83701

RECEIVED
FEB 24 1982
Department of Water Resources

February 23, 1982

Mr. Ken Dunn
IDAHO DEPARTMENT OF WATER RESOURCES
Statehouse Mail
Boise, ID 83720

Dear Ken,

As follow-up to our conversation of February 19th, I am attaching a copy of my F.E.R.C. exemption issued February 5, 1982. It is my understanding that this documentation will now enable the final processing of the pending water permits needed for my hydro project at Tuttle, Idaho.

I request that these permits be issued with the provision that we have the usual authority to make our diversion and an additional authority to clean the river bed below the point of return for a distance of not to exceed one-quarter mile (1,320 ft.). By removing two rock reefs and one small gravel deposit we can lower the tailrace (increase the head) by as much as four feet. This will increase the efficiency of the site.

Sincerest personal regards,

Vernon

Vernon F. Ravenscroft

VFR:sh

Enc.

37-7870
37-7878 } Proj Dir
37-7869

37-7867
37-7872

MICROFILMED

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft) Project No. 4055-002

ORDER GRANTING EXEMPTION FROM LICENSING OF A SMALL HYDROELECTRIC PROJECT OF 5 MEGAWATTS OR LESS

(Issued February 5, 1982)

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Robert E. Cackowski
Deputy Director, Office of
Electric Power Regulation

MICROFILMED

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon P. Ravenscroft) Project No. 4055-002

NOTICE OF APPLICATION FOR EXEMPTION FOR SMALL HYDROELECTRIC POWER PROJECT UNDER 5 MW CAPACITY

(August 31, 1981)

Take notice that on July 24,1981, Vernon P. Ravenscroft (Applicant) filed an application under Section 408 of the Energy Security Act of 1980 (Act) (16 U.S.C. §§2705 and 2708 as amended), for exemption of a proposed hydroelectric project from licensing under Part I of the Federal Power Act. The proposed small hydroelectric project, Project No. 4055-002 would be located on the Malad River in Gooding County, Idaho. Correspondence with the Applicant should be directed to: Vernon P. Ravenscroft, Consulting Associates, Inc., P.O. Box 893, Boise, Idaho 83701.

Project Description - The proposed project would consist of: (1) a small diversion structure; (2) a 50-foot long and 30-inch diameter penstock; (3) a powerhouse containing four generating units, each rated at 175 kW; and (4) a transmission line. The Applicant estimates that the average annual energy output would be 3.0 million kWh.

Purpose of Project - The energy produced by the proposed project would be sold to a local utility.

Agency Comments - The U.S. Fish and Wildlife Service, The National Marine Fisheries Service, and the Idaho Dept. of Fish & Game are requested, for the purposes set forth in Section 408 of the Act, to submit within 60 days from the date of issuance of this notice appropriate terms and conditions to protect any fish and wildlife resources or to otherwise carry out the provisions of the Fish and Wildlife Coordination Act. General comments concerning the project and its resources are requested; however, specific terms and conditions to be included as a condition of exemption must be clearly identified in the agency letter. If an agency does not file terms and conditions within this time period, that agency will be presumed to have none. Other Federal, State, and local agencies are requested to provide any comments they may have in accordance with their duties and responsibilities. No other formal requests for comments will be made. Comments should be confined to substantive issues relevant to the granting of an exemption. If an agency does not file comments within 60 days from the date of issuance of this notice, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

DC-8.-10

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Kenneth F. Plumb
Secretary

MICROFILMED

§ 4.106 Standard terms and conditions of exemption from licensing.

Any exemption from licensing granted under this subpart for a small hydroelectric power project is subject to the following standard terms and conditions:

(a) Article 1. The Commission reserves the right to conduct investigations under sections 4(g), 306, 307, and 311 of the Federal Power Act with respect to any acts, complaints, facts, conditions, practices, or other matters related to the construction, operation, or maintenance of the exempt project. If any term or condition of the exemption is violated, the Commission may revoke the exemption, issue a suitable order under section 4(g) of the Federal Power Act, or take appropriate action for enforcement, forfeiture, or penalties under Part III of the Federal Power Act.

(b) Article 2. The construction, operation, and maintenance of the exempt project must comply with any terms and conditions that any Federal or state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources or otherwise to carry out the purposes of the Fish and Wildlife Coordination Act, as specified in Exhibit E of the application for exemption from licensing or in the comments submitted in response to the notice of the exemption application.

(c) Article 3. The Commission may accept a license application by any qualified license applicant and revoke this exemption if actual construction or development of any proposed generating facilities has not begun within 18 months, or been completed within four years, from the date on which this exemption was granted. If an exemption is revoked, the Commission will not accept a subsequent application for exemption within two years of the revocation.

(d) Article 4. This exemption is subject to the navigation servitude of the United States if the project is located on navigable waters of the United States.

(e) Article 5. This exemption does not confer any right to use or occupy any Federal lands that may be necessary for the development or operation of the project. Any right to use or or occupy any Federal lands for those purposes must be obtained from the administering Federal land agencies. The Commission may accept a license application by any qualified license applicant and revoke this exemption, if any necessary right to use or occupy Federal lands for those purposes has not been obtained within one year from the date on which this exemption was granted.

MICROFILMED

SHP-11

December 9, 1981

Mr. Kenneth F. Plumb, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, DC 20426

Re: Ravenscroft Ranch Project. FERC No. 4055-002. Malad River, Idaho. Application for Exemption for Small Hydroelectric Power Project Under 5mW Capacity. Vernon F. Ravenscroft.

Dear Mr. Plumb:

These revised terms and conditions for the purpose set forth in Section 408 of the Energy Security Act of 1980 supersede those filed by our agency on October 29, 1981.

1. Every reasonable care to be taken to minimize water quality degradation during construction and to prevent long-term erosion.

2. Instantaneous minimum stream flows to be maintained between diversion inlet structure and return discharge to stream as shown below:

July through mid-April	5 cfs
Mid-April through June	80 cfs

3. The responsible wildlife management agencies shall have the authority to require, at their discretion, flushing flows to maintain riparian vegetation. These flows will not be required in excess of four times per year, shall not exceed 50 cfs per time, and shall not exceed four hours per time.

4. Maintain 0.5 cfs flow through entire length of channel parallel to the river - April through December.

5. Mitigation in the form of a pond to be constructed to meet the following criteria:

   a. Total surface acreage approximately 20 acres.

   b. Approximately one half of pond surface area to be less than two feet in depth.

c. The other half of the pond surface area should be more than two feet in depth with at least two acres deeper than 7-8 feet.

d. Construct one island of at least 400 square feet with slope and shape to be determined by Bureau of Land Management (BLM) and Idaho Department of Fish and Game (IDFG).

e. Construct at least four smaller islands of 50 square feet with slopes and shapes determined by BLM and IDFG.

f. Maintain maximum water levels during April, May and June when sufficient water is available from either irrigation waste sources or the river. Any additional water acquired exclusively for power generation at the project after the approval date of FERC's exemption will not be subject to use for maintaining maximum pond level.

6. The lands to be used for water storage are in the public domain, administered by BLM. The applicant and BLM agree to plan, develop, operate and maintain the area for the mutual objectives of water storage augmentation concurrent with wildlife habitat improvement. Principal wildlife species to be benefited are migratory waterfowl, with special emphasis on creating breeding habitat. A water and land management plan for the area will be developed mutually acceptable to the applicant and the wildlife resource agencies, and adhered to in accordance with the other conditions set forth.

7. No measures to be undertaken to reduce riparian vegetation along pond or canal edges unless concurred with by responsible wildlife and land management agencies.

8. Transmission lines, if above ground, to be designed and constructed to prevent mortalities to raptors. Design for preventing raptor mortalities to be subject to approval by IDFG. Transmission line design criteria are available to applicant from IDFG.

9. If, after construction, the applicant should at any time in the future abandon the site, the stream diversion points will be restored to pre-project condition.

Sincerely,

Kenneth F. Plumb

for Jerry M. Conley
Director

cc: USFWS (Buechler)
Vernon Ravenscroft
Region 4

JMC:MRR:jt

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

RECEIVED
OCT 15 1981
Department of Water Resources

October 5, 1981

RECEIVED
OCT 6 1981

RE: Applications for Permit Nos. 37-7857, 37-7865 and 37-7922

Vernon Ravenscroft
P.O. Box 893
Boise, ID 83701

Dear Mr. Ravenscroft:

We have completed a preliminary review of the above referenced application. This review has included advertising by the regional office and a verification that all required preliminary information has been provided.

For power projects that are under the jurisdiction of the Federal Energy Regulatory Commission (FERC), we withhold final action on the application pending FERC approval of (1) a preliminary permit, or (2) an exemption. If you have not yet contacted FERC, the address below is a good starting point:

Federal Energy Regulatory Commission
Regional Engineer's Office
Attn: Mr. Jerry Leach
6th Floor, 333 Market Street
San Francisco, CA 94105
(Tel. No. (415) 764-7150)

The continued validity of this application is contingent on your proceeding with due diligence toward obtaining an approval or an exemption from FERC. Please keep this office informed of progress in this regard.

Sincerely,

Glenn Saxton

L[illegible]N SAXTON
C[illegible], Operations Bureau

LGS:kw

Application for accepted for filing Aug. 20, 1981 by F.E.R.C.

MICROFILMED

Consulting Associates, Incorporated
P.O. BOX 893
BOISE, IDAHO 83701

PM
14 OCT
1981

Idaho Dept. of Water Resources
attn: Glen Sapton
Statehouse
Boise ID 83720

MICROFILMED

ıte of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

October 5, 1981

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Sincerely,

L[illegible]LEN SAXTON
C[illegible]f, Operations Bureau

[illegible]:kw

MICROFILMED

Copy

State of Idaho
DEPARTMENT OF WATER RESOURCES
STATE OFFICE, 450 W. State Street, Boise, Idaho

JOHN V. EVANS
Governor

A. KENNETH DUNN
Director

Mailing address:
Statehouse
Boise, Idaho 83720
(208) 334-4440

37-7857

July 24, 1981

RE: Application for Permit No.

Dear Applicant:

The 1981 Idaho Legislature made a change in Section 42-205, Idaho Code, that may affect the above referenced application. The change requires that if a proposed hydropower project will use existing irrigation facilities, the approval of the owner of the facilities must be obtained before an application for permit to develop a water right can be approved.

Please find enclosed an affidavit which we must receive before we can complete the review of your application. Please complete the affidavit, sign it before a notary, and return it to this office at your earliest convenience, no later than August 15, 1981.

Sincerely,

David R. Tuthill Jr.

DAVID R. TUTHILL JR., P. E.
Supervisor, Water Allocation Section

DRT:jg

Enclosure

MICROFILMED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

May 11, 1981

Peter A. Bowler
Star Route
Bliss, Idaho 83314

Re: Application for Permit No. 37-7857, 37-7865 - Vernon Ravenscroft
Application for Permit No. 37-7869, 37-7870, 37-7878 - Consulting Associates,Inc.

Dear Mr. Bowler:

Receipt of your letter of protest against the above referenced applications on April 20, 1981 did not give sufficient notice to allow you to intervene in a hearing in the matter of applications 37-7857, and 37-7865 which was held April 23, 1981.

The final date for filing protests on applications 37-7869, 3707870 and 37-7878 had also passed. However, since there are other protests in the matter, your protest has been accepted and a copy sent to the applicant with the understanding that the timliness of your protest may be an issue in the matter.

You will be notified when a date for conference and/or hearing is set. At such a conference and/or hearing the following are the principal items the Department can consider in approving or denying an application for permit, Section 42-203, IDAHO CODE:

1) Will the proposed use reduce the quantity of water under existing water rights?

2) Is the proposed water supply insufficient for the purposes intended?

3) Is the application made in good faith or for delay or speculative purposes?

4) Has the applicant sufficient financial resources with which to complete the project?

5) Will the proposed use conflict with the local public interest?

If this office can be of further assistance, please contact this office.

Very truly yours,

LOREN O. HOLMES
Southern Region Supervisor

LOH:marya

MICROFILMED

RECEIVED
APR 20 1981
Department of Water Resources
Southern District Office

April 15, 1981

Mr. Loren O. Holmes
Department of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301

RE: Application Ident. Nos. 37-7857, 37-7865, 37-7869, 37-7870, and 37-7878 from Mr. Vernon Ravenscroft or Consulting Associates, Inc. on the Malad River in Gooding County

Dear Mr. Holmes:

The dewatering of a navigable river is a public interest matter which requires data-based evaluation. The diversion and dewatering of the Malad River would impact the Malad Gorge State Park, the potential Malad Canyon National Natural Landmark, and a Unique Wildlife Ecosystems Program site (U.S. Fish and Wildlife Service). On these grounds and other considerations, this clearly constitutes a major action and requires compliance with the National Environmental Policy Act of 1969 and the preparation of an Environmental Impact Statement.

The Idaho Department of Fish and Game and the Idaho Department of Parks and Recreation have compiled instream flow research on the impacted segment of the Malad River, and in fact the Department of Parks and Recreation has filed a public interest minimum streamflow request. Should the river be entirely dewatered, as is proposed by the Applicant, the water filled holes along the river in the Malad Gorge State Park would become stagnant with smallmouth bass habitat being sacrificed. This would detract from the Malad Gorge State Park ~~and~~ and diminish the recreational attractiveness of the upper Park area. Only through the Environmental Impact Process can adequate analysis be accomplished to allow accurate determination of how much, if any, water can be removed from the streambed without deteriorating the public resources present.

Please include my name as a Protestant in the above filings. I would appreciate receiving a copy of the Environmental Impact Statement draft should the granting of one of these filings be considered further. The dewatering of sites like this river segment which is in a State Park and a site of national significance is clearly contrary to the true public interest.

Respectfully,

Peter A. Bowler
Star Route
Bliss, Idaho
83314

714-833-5181

MICROFILMED

Hagerman Valley Citizen's Alert
Heritage Conservation and Recreation Service
U.S. Fish and Wildlife Service
Idaho Department of Fish and Game
Idaho Department of Parks and Recreation

April 28, 1981

RECEIVED
APR 30 1981
Department of Water Resources
Southern District Office

Loren Holmes
Department of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, ID 83301

Re: Application No. 37-7857 and No. 37-7865
Vernon Ravenscroft

Dear Mr. Holmes:

As a result of the informal hearing held on April 23, 1981, regarding the above-referenced applications to divert the Malad River for hydroelectric development, Hagerman Valley Citizens' Alert, Inc. hereby formally withdraws its protest of both applications.

Thank you for your consideration.

Sincerely,

S.G. Carleton
President
Hagerman Valley Citizens' Alert, Inc.
P.O. Box 32
Hagerman, ID 83332

MICROFILMED

37-7857 - 37-7865 - VERNON RAVENSCROFT -

Meeting Room - Gooding City Hall - Gooding, Idaho

Thursday - April 23, 1981 - 10:00 a.m.

ROSTER OF ATTENDANCE

Hearing Officer _____

Assisted By _____

Name	Address	Representing
S. G. Carleton	Haggerman	Citizen Alert
Irene Cedarf	"	"
Mary E. Smith	"	"
Judy Clausen	"	"
Margaret McCulloch	"	"
W. F. McCulloch		
Bob Bell	Jerome	Idaho Fish & Game
Charlotte K. Hamilton	Hagerman	Citizen Alert
Thomas M Hamilton	Hagerman	" "
Aldrich Bowler	Blue	" "
Allen Call	Twin Falls	Idaho Power Co
Jen Buxton	Gooding	Idaho Power
Tom Anderson	Hagerman	
Don Higginson		Malad Gorge S.P.
Rick Bowen		Malad Gorge S.P.
Vernon Ravenscroft.	Twin Falls	Applicant.
Zeke Weaver	Buhl	Applicant

PS Form 3811, Jan. 1979

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

SENDER: Complete items 1, 2, and 3.
Add your address in the "RETURN TO" space on reverse.

1. The following service is requested (check one.)
- [X] Show to whom and date delivered..... ¢
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- [ ] RESTRICTED DELIVERY
  Show to whom and date delivered..... ¢
- [ ] RESTRICTED DELIVERY.
  Show to whom, date, and address of delivery.$

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:

Vernon F. Ravenscroft
P.O. Box 893
Boise, Idaho 83701

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	465	

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE [ ]Addressee [ ]Authorized agent

4-6-81 Jan Hallstrom

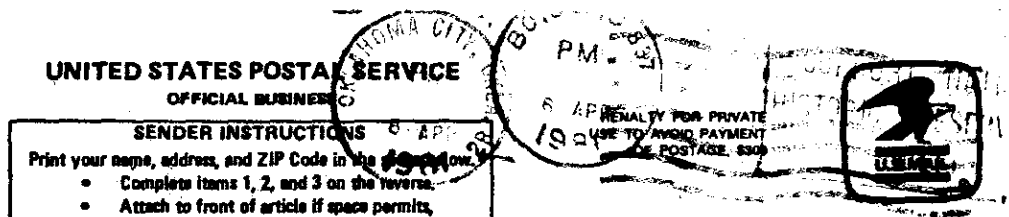
4. DATE OF DELIVERY 4-6-81 — POSTMARK 83

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE: — CLERK'S INITIALS

☆GPO : 1979-300-459

87 7215 37 7257



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RETURN TO

Department of Water Resources
Southern District Office

APR 13 1981

RECEIVED

IDAHO DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT OFFICE
1041 BLUE LAKES BLVD. NORTH
TWIN FALLS, IDAHO 83301

(Name of Sender)

(Street or P.O. Box)

(City, State, and ZIP Code)

PS Form 3811, Jan. 1979

RETURN RECEIPT, REGISTERED, INSURED AND CERTIFIED MAIL

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- ☐ RESTRICTED DELIVERY
  Show to whom and date delivered..... ¢
- ☐ RESTRICTED DELIVERY.
  Show to whom, date, and address of delivery.$ ____

(CONSULT POSTMASTER FOR FEES)

2. ARTICLE ADDRESSED TO:

S. G. Carleton, Pres.
Hagerman Valley Citizens' Alert Inc.
Box 32 - Hagerman, ID 83332

3. ARTICLE DESCRIPTION:

REGISTERED NO.	CERTIFIED NO.	INSURED NO.
	466	

(Always obtain signature of addressee or agent)

I have received the article described above.

SIGNATURE ☐Addressee ☐Authorized agent

6 E. Gaupp

4. DATE OF DELIVERY: 4-9-81

POSTMARK: BOISE IDAHO APR 9 1981

5. ADDRESS (Complete only if requested)

6. UNABLE TO DELIVER BECAUSE:

CLERK'S INITIALS

☆GPO : 1979-300-450

37-7865 -- 37-7857

UNITED STATES POSTAL SERVICE

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SENDER INSTRUCTIONS

Print your name, address, and ZIP Code in the space below.

- Complete items 1, 2, and 3 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

PENALTY FOR PRIVATE USE TO AVOID PAYMENT OF POSTAGE, $300



RETURN TO

IDAHO DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT OFFICE
1041 BLUE LAKES BLVD. NORTH
TWIN FALLS, IDAHO 83301

(Name of Sender)

(Street or P.O. Box)

(City, State, and ZIP Code)

RECEIVED
APR 13 1981
Department of Water Resources
Southern District Office

ACCEPTANCE OF REGISTERED, INSURED, C.O.D. AND CERTIFIED MAIL

PS Form 3877 - Aug. 1976

NAME AND ADDRESS OF SENDER [illegible]

Indicate type of mail
☐ REGISTERED ☐ COD
☐ INSURED ☐ CERTIFIED

I certify that we have
☐ Commercial Insurance
☐ A deductible clause of $

Affix stamp here if issued as certificate of mailing or for additional copies of this bill.
POSTMARK AND DATE OF RECEIPT

	NUMBER OF ARTICLE	NAME OF ADDRESSEE, STREET, AND POST-OFFICE ADDRESS	POSTAGE	FEE	Handling Charge	Actual Value (If Registered)	DUE SENDER IF C.O.D.	R. R. FEE	S. D. FEE	S. H. FEE	REST. DEL. FEE / REMARKS
1	465	[illegible]									
2	400	[illegible]									
3		Postmaster Citizen Asst.									
4											
5											
6											
7											
8											
9											
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11											
12											
13											
14											
15											

TOTAL NUMBER OF PIECES LISTED BY SENDER	TOTAL NUMBER OF PIECES RECEIVED AT POST OFFICE	*POSTMASTER, PER (Name of receiving employee)*

The full declaration of value is required on all domestic and international registered mail. Commercial Insurance—Payment of the full registry is required on articles valued up to $1,000 or the full amount of the deductible if the deductible exceeds $1,000. The maximum indemnity payable is $10,000 for registered mail, $300 for COD and $200 for insured mail. Special handling charges apply only to third- and fourth-class parcels. Special delivery service also includes special handling service.

FORM MUST BE COMPLETED BY TYPEWRITER, INK OR BALL POINT PEN

☆USGPO: 1977 — 227-168

BEFORE THE DIRECTOR OF THE DEPARTMENT OF WATER RESOURCES

OF THE

STATE OF IDAHO

IN THE MATTER OF PROTESTS AGAINST APPROVAL OF APPLICATIONS FOR PERMIT NO. 37-7857 and 37-7865 IN THE NAME OF VERNON RAVENSCROFT	NOTICE OF CONFERENCE AND/OR HEARING

On September 25, 1980, Vernon Ravenscroft filed with the Department of Water Resources an application to appropriate the public waters of the State of Idaho. On October 23, 1980, the Department received protest against approval of said application from S. G. Carleton, president,Hagerman Valley Citizens' Alert, Inc.

On October 30, 1980, Vernon Ravenscroft filed with the Department of Water Resources an application to appropriate the public waters of the State of Idaho. On December 10, 1980, the Department received protest against approval of said application from S. G. Carleton, president,Hagerman Valley Citizens' Alert, Inc.

The Department has set the matter of protests for conference and/or hearing for Thursday, April 23, 1981, at 10:00 a.m., in Gooding City Hall, 308 Fifth Avenue West, Gooding, Idaho. Any hearing will be held in accordance with provisions of Chapter 2, Title 42, and Chapter 52, Title 67, of the Idaho Code and adopted Rules of Practice and Procedure of the Department of Water Resources. Opportunity shall be afforded all parties to respond and present evidence and argument on all issues involved.

In accordance with Idaho Code, Section 42-203, the following issues are involved in the consideration of the application and protests:

1) Will the proposed use reduce the quantity of water under existing water right?
2) Is the proposed water supply insufficient for the purpose intended?
3) Is the application made in good faith or for delay or speculative purposes?
4) Has the applicant sufficient financial resources with which to complete the project?
5) Will the proposed use conflict with the local public interest?

Any party may request in writing five (5) days before any hearing that the proceedings thereof be taken in the form of stenographic notes at the expense

MICROFILMED

of the requesting party. Any party may have such stenographic notes of the oral proceedings, or part thereof, transcribed at his own expense. A taped record of the proceedings will be maintained for the appeal period.

If the hearing is conducted by a hearing officer appointed by the Director, rather than the Director himself, a proposed decision will be submitted to the parties and the parties will be afforded an opportunity to file exceptions to the proposed decision and present briefs and oral arguments to the Director prior to the issuance of a final decision by the Director. This procedure is required by Idaho Code Section 67-5211.

By written stipulation, the parties may waive compliance with Idaho Code, Section 67-5211. If the hearing is conducted by a hearing officer, the hearing officer will ask the parties at the close of the hearing whether they would like to make such a stipulation.

Failure to waive compliance with Idaho Code, Section 67-5211 will not prejudice the Director's review of a party's evidence and arguments. However, such a waiver will shorten the decision-making process and may expedite substantially the issuance of a final decision. Whether compliance with Section 67-5211 is waived will not effect a party's right to petition for a rehearing of the final decision pursuant to Rule 11 of the Department's Rules of Practice and Procedure or affect a party's right to appeal the final decision to the District Court.

Failure to appear at the time and place set for hearing by the applicant or protestants may allow the Department to dismiss without prejudice the protests or the application. Any and all cost incurred by reason of such non-appearance may be assessed against such non-appearing parties.

DATED This 1 day of April, 1981.

Loren O-Holmes

LOREN O. HOLMES
Southern Region Supervisor

MICROFILMED

37-7857

VERNON RAVENSCROFT
Telephone 208 837-4802
TUTTLE ROUTE — BLISS, IDAHO
83314

November 3, 1980

RECEIVED
NOV 4 1980
Department of Water Resources
Southern District Office

Loren O. Holmes
Southern Region Supervisor
Idaho Dept. of Water Resources
1041 Blue Lakes Blvd. N.
Twin Falls, ID 83301

Dear Loren,

Thanks for your letter of October 28, 1980. Considering the nature of the organization that has made the protest on this application, I hereby request a public hearing on same.

However, since a subsequent application for the same project was filed on October 30, 1980, it would seem advisable to hold the hearing at a date when both applications could be reviewed as one.

For the record, may I state that the Bureau of Land Management and the Idaho state Fish and Game Department will be approached and fully appraised of our proposed project.

Sincere regards,

Vernon

Vernon F. Ravenscroft

VFR:sh

cc: S. G. Carleton

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

October 28, 1980

Vernon Ravenscroft
P. O. Box 893
Boise, Idaho 83701

Re: Application for Permit No. 37-7857

Dear Mr. Ravenscroft:

Enclosed is a copy of a protest filed against the issuance of a permit pursuant to your Application No. 37-7857 . The Department suggests you contact the protestant directly in an effort to determine the nature of the protest and to attempt to resolve the protest.

If you do not advise us within twenty (20) days that the protest has been resolved, the matter will be scheduled for conference and/or hearing. At such a conference and/or hearing, the following are the principle items the Department can consider in either approving or denying an application for permit (Section 42-203, Idaho Code):

1. Will the proposed use reduce the quantity of water under existing water rights?

2. Is the proposed water supply insufficient for the purposes intended?

3. Is the application made in good faith or for delay or speculative purposes?

4. Has the applicant sufficient financial resources with which to complete the project?

5. Will the proposed use conflict with the local public interest?

If this office can be of further assistance, please contact us.

Very truly yours,

LOREN O. HOLMES
Southern Region Supervisor

LOH:marya

Encl:

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

October 28, 1980

S. G. Carleton - President
Hagerman Valley Citizens' Alert, Inc.
P. O. Box 32
Hagerman, Idaho 83332

Re: Application for Permit No. 37-7857

Dear Mr. Carleton:

Your protest against the approval of the above-referenced application has been received and a copy has been sent to the applicant. The Department suggests you contact the applicant directly in an effort to determine what is proposed by the application and to attempt to resolve the protest.

If you do not advise us within twenty (20) days that the protest has been resolved, the matter will be scheduled for conference and/or hearing. At such a conference and/or hearing, the following are the principle items the Department can consider in either approving or denying an application for permit (Section 42-203, Idaho Code):

1. Will the proposed use reduce the quantity of water under existing water rights?

2. Is the proposed water supply insufficient for the purpose intended?

3. Is the application made in good faith or for delay or speculative purposes?

4. Has the applicant sufficient financial resources with which to complete the project?

5. Will the proposed use conflict with the local public interest?

If this office can be of further assistance, please contact us.

Very truly yours,

LOREN O. HOLMES
Southern Region Supervisor

LOH:marya

MICROFILMED

October 15, 1980

Loren Holmes
Supervisor
Department of Water Resources
1041 Blue Lakes Blvd. North
Twin Falls, ID 83301

RECEIVED
OCT 20 1980
Department of Water Resources
Southern District Office

Re: Application No. 37-7837
Vernon Ravenscroft

Dear Mr. Holmes:

Hagerman Valley Citizens' Alert, Inc. objects to the above-referenced application for 20 cfs from the Malad River and requests that a public hearing be held to ensure that this project will neither interfere with existing water rights nor destroy spawning grounds for fish in the area through alterations in thermal or dissolved oxygen quality.

Thank you for your attention to this letter.

Sincerely,

S.G. Carleton
President
Hagerman Valley Citizens' Alert, Inc.
P.O. Box 32
Hagerman, ID 83332

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
SOUTHERN REGION

John V. Evans
Governor

C. Stephen Allred
Director

1041 Blue Lakes Blvd. North
Twin Falls, Idaho 83301
(208) 734-3578

October 3, 1980

Mr. Vernon Ravenscroft
P.O. Box 893
Boise, Idaho 83701

Re: Application for Permit No. 37-7857

Dear Mr. Ravenscroft:

Enclosed is your receipt No. 16608 for check No. (Wendell Branch) in the amount of $425.00 for the above referenced Application for Permit which was received in this office September 29, 1980.

If you have any questions concerning this matter, please feel free to contact this office.

Sincerely,

Mary A. Hill
Sr. Secretary

for

Loren O. Holmes
Southern Region Supervisor

Encl:

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NOTIC OF APPLICATION FOR WATER RIGHT

Notice is hereby given that the following application(s) have been submitted for permit to appropriate the public waters of the State of Idaho:

37-2852

RAVENSCROFT, VERNON

P.O.BOX 893, BOISE, ID 83701

Source: MALAD RIVER tributary to SNAKE RIVER

Date Filed: 09/19/1980

Amount: 20.00 CFS

Diversion Point: SESE Sec 29 T 06S R 14E, GOODING Co.

Use: POWER (20.00 CFS) from 01/01 to 12/31

Place of Use: SWSW Sec 29 T 06S R 14E

Diversion Means: CONTROL GATE AND NATURAL CHANNEL

If issued, the permit(s) will be subject to all prior water rights. Protests against the granting of any permit must be filed with the Director of the Idaho Department of Water Resources, 1041 Blue Lakes Blvd. North, Twin Falls, Idaho 83301 and received on or before OCTOBER 27, 1980.

C. STEPHEN ALLRED

Director

Published 10/9 & 10/16/80.

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STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES
Southern Region

1041 Blue Lakes Blvd N.
Twin Falls, Idaho 83301
(208) 734-3578

OCTOBER 3, 1980

Gooding County Leader
P.O. Box 56
Gooding, Idaho 83330

Gentlemen:

Enclosed you will find a legal notice which we wish to have published on the dates indicated (once a week for two consecutive weekly issues) in your newspaper. We have allowed ample time for you to submit a galley proof to this office for review before the first publication date. If you cannot publish the notice on the proposed dates, please contact us immediately.

An affidavit of publication must be submitted to the Department along with the publication bill. Your cooperation is appreciated.

Please send the affidavit of publication and publication billing to this office before OCTOBER 27, 1980.

Yours truly,

Mary A. Hill
Secretary

Encl.

MICROFILMED

3/79

IDENT. NO. 37-7857

IDAHO DEPARTMENT OF WATER RESOURCES

WATER RIGHT DATA ENTRY LOG

Initials	Date	Item
macya	10/3/80	Original form entered
macya	10/3/80 A	Edit Report Correct
		Date Protested
		Date of Hearing
		Date Approved/Denied (Proof due date, stage and/or status, conditions of approval, water district)
		Record Verified
		Amendment Approved
		Extension Approved
		Partial Proof
		Proof Complete
		Field Exam Received
		Field Exam Accepted and changes entered
		License Signed
		Transfer Approved
		Keypunched by State Office
RC	1-31-83	Assignment coded & entered

RECEIVED
JUN 2 8 1995
Department of Water Resources

FROM: Allen Merritt DATE: June 26, 1995

TO: Norm Young

SUBJECT: Field visit to Ravenscroft Hydro Project on Malad River

On June 19, 1995 Corey Skinner and I met with representatives from Ravenscroft's project, FERC, BWCC, BLM, F&G, USF&W, DEQ & watermaster for 37. The meeting was called by Mr. Ravenscroft/FERC to satisfy concerns about compliance with FERC licensing conditions and discuss proposed modifications of the facility.

From what I gathered at the meeting the project in the past has experienced some problems in meeting the bypass requirements and disrupting water right deliveries downstream from the project. The proposed modifications to the facility are intended to alleviate these problems as well as enhance wildlife and water quality at the project. The proposal is to construct a bypass orifice box in the existing rock rubble diversion dam to maintain bypass flows and stabilize fluctuations in the river. Additionally it is proposed to enhance the ponds for wildlife and water quality improvement (remove the silt) by enlarging ponds into adjacent dry gravel pits and low areas on private and BLM lands. The attached handouts were provided by Ravenscroft at the meeting.

At the meeting it appears the department's jurisdictional issues would be 1) water rights, 2) dam safety, and 3) stream channel alterations. At present the water rights of record for the project include:

permit 37-07857	20 cfs	power	
permit 37-07865	130 cfs	power	
permit 37-07922	50 cfs	power	
application 37-07865	138 cfs	power	(protested)

None of these records include storage; all are run of the river. During the meeting it was mentioned that 39 acres are ponded as part of the diversion works so it appears a water right may be necessary to allow for continued storage and any future additional storage. I pointed this out to Mr. Ravenscroft and he indicated that will be addressed. It was also mentioned that the rock rubble diversion dam is hydraulically 6' high so dam safety may not be an issue. Some portions of the diversion canal are hydraulically higher than 10'. The difficulty is where you distinguish the pond moves from canal to diversion dam. I would prefer that the structure be exempt.

I.D.W.R.

WATER RE-REGULATING PONDS

RAVENSCROFT HYDRO - F.E.R.C. PROJECT 4055

Incidental to the development of the Ravenscroft Hydro Project a water quality enhancement, a wildlife habitat area, and a popular warm-water fishery has been created.

I. WATER QUALITY

The existing re-regulating ponds were created by opening and flooding below-river-level, exhausted gravel pits. In 1992, and again in 1994, these ponds were substantially drained in order to provide water to supply irrigation supplement for the downstream irrigators. This action was taken at the request of the Watermaster and, to the degree that the flow was supplied through the bypass tubes, the ponds also supplied supplemental water for the bypass flow. This drainage took place when the project was not operating. Three pages of exhibits show pictures of the sediment drifts which this low water revealed.

Specific measurements have proven that these ponds are actually cooling the water during the high-temperature summer weeks. Each year the project has placed minimum and maximum thermometers in the inflow and outflow water. During high temperature periods the outflow is two to four degrees cooler as compared to the inflow. Biologist Gene Ralston made a study of the area and verified the temperature reduction. Hydrologist Charles Brockway arranged for the U. of I. - Snake River Study team to take measurements. This work was conducted in September with much cooler background weather and produced a somewhat neutral result. No one of these efforts have indicated summer water temperature increases.

The cooling is understandable when any analysis recognizes that the Malad River in the summertime has a limited and shallow flow over black lava rock. Such a combination produces a water temperature well up into the middle 70° range. The 12' to 15' deep ponds do provide stratification and a net cooling of the water.

II. FISHERY

The project operators take note of any observed fishing parties. For the month of May 1995 the project diary entries record:

Date	No. Parties	People Observed
3	1	1
4	1	1
5	2	4
7	1	2
10	1	3
14	1	1
17	1	3
19	1	2
20	1	3
21	6	14
22	1	2
23	1	2
24	2	3
25	1	4
27	1	2
28	1	4
29	2	7
31	1	3

Water Re-Regulating Ponds
II. Fishery

Total fishing parties observed during May 1995 - 26; total people involved - 61.

The drought of 1992 and 1994 obviously depleted the fish population.

III. WILDLIFE HABITAT

In the fall season the ponds and canal provide resting habitat for thousands of ducks, see exhibit page 4. One to two pairs of geese nest on the ponds each year, as do ten to twenty pair of ducks. The project operators also note special wildlife observations. For the month of May 1995.

Date	Items Noted
4	2 geese; 20 ducks
6	2 geese
10	4 blue heron; 1 bald eagle
11	1 heron; 16 ducks
22	4 blue heron
23	Approx. 15 geese - west & north banks

Ducks, heron, pheasants, quail, rabbits and deer are commonly observed.

IV. POSSIBLE EXPANSION AND/OR ENHANCEMENTS

Exhibit page 5 is a map of the area as it is now functioning. The backwater re-regulating ponds are approximately 39 acres in area. Another 14 acres are involved in the canal and the headwater ponds.

Exhibit page 6 identifies areas in which the existing ponds, canal and headwater ponds can be widened, deepened, and islands created primarily on private property owned or controlled by the Ravenscroft project or on a B.L.M. Right-of-Way (R.O.W.) already granted to the Ravenscroft project.

Exhibit page 7 identifies a B.L.M. area on which additional ponds and islands can be created on land that is at approximately the same level but upslope from the existing canal R.O.W.

Exhibit page 8 is the technical map of the existing B.L.M. right-of-way.

V. PROPOSED PROGRAM

It is proposed that the Big Wood Canal Company (to a minor degree - also the North Side Canal Company) be permitted to fulfill their water quality control programs by assisting the Ravenscroft project to expand, widen, deepen and create several islands within the Ravenscroft re-regulating pond system. Such a program would not only take care of the Canal Company tail water, but would also serve the water quality improvement needs for numerous private waste-water inflow systems. The Ravenscroft project is strategically located near the extreme bottom of the Wood River drainage system.

Water Re-Regulating Ponds
V. Proposed Program

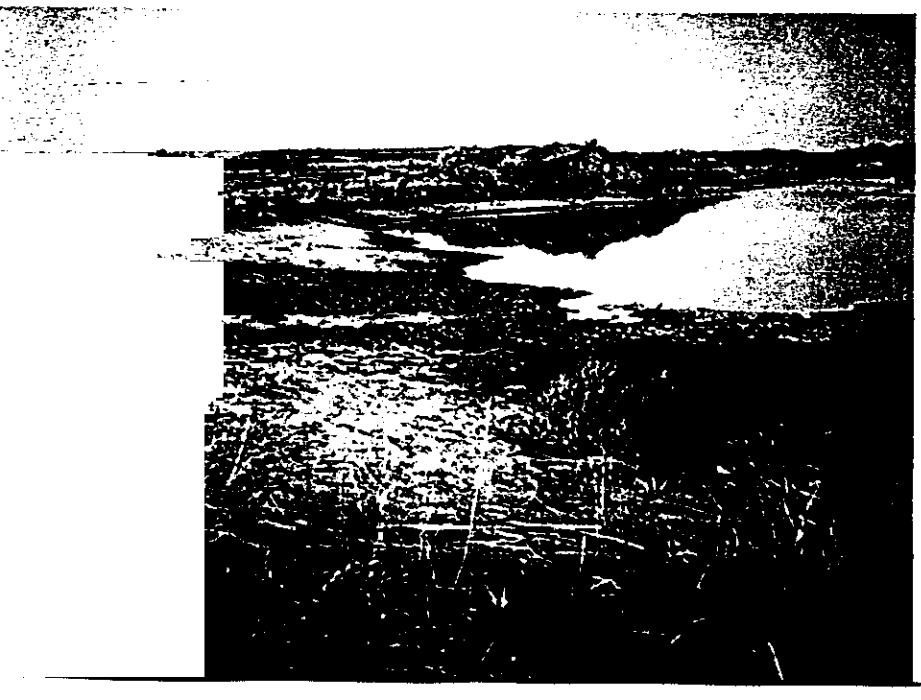
Such a cooperative program will necessitate approval and overview by the Idaho Department of Environmental Quality (D.E.Q). The design and planning should involve the Idaho Department of Fish and Game (I.D.F.G.). That department may also be able to contribute to some features of the construction program. B.L.M. will need be involved as a consulting agency and for maximum development their R.O.W. permits would need be amended and expanded. Necessary water permits would need be obtained from the Idaho Water Resource Department and coordination needs to take place with the downstream irrigators and the District 37-37A Watermaster's office in Shoshone.

This proposed development would increase the efficiency of the Ravenscroft project, but would not alter its capacity. (It is my understanding that such an improvement would not require any amendment to the project's exemption as granted by the Federal Energy Regulatory Commission (F.E.R.C.). It will be the project's responsibility to keep F.E.R.C. informed and obtain any clarifications required by that agency.

Vernon Ravenscroft
Project 4055 Owner-Manager



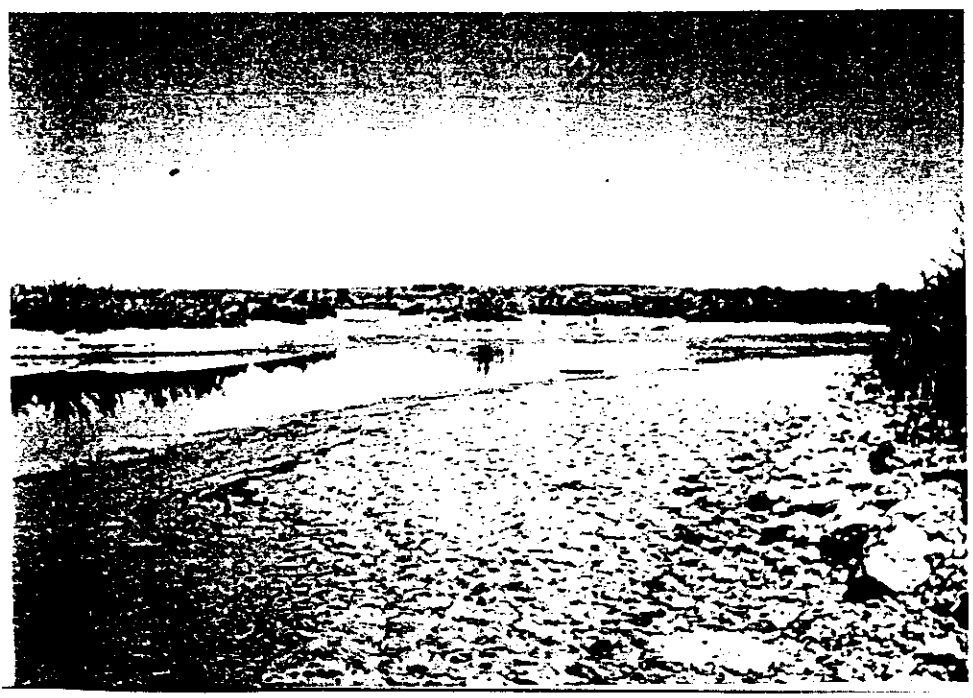




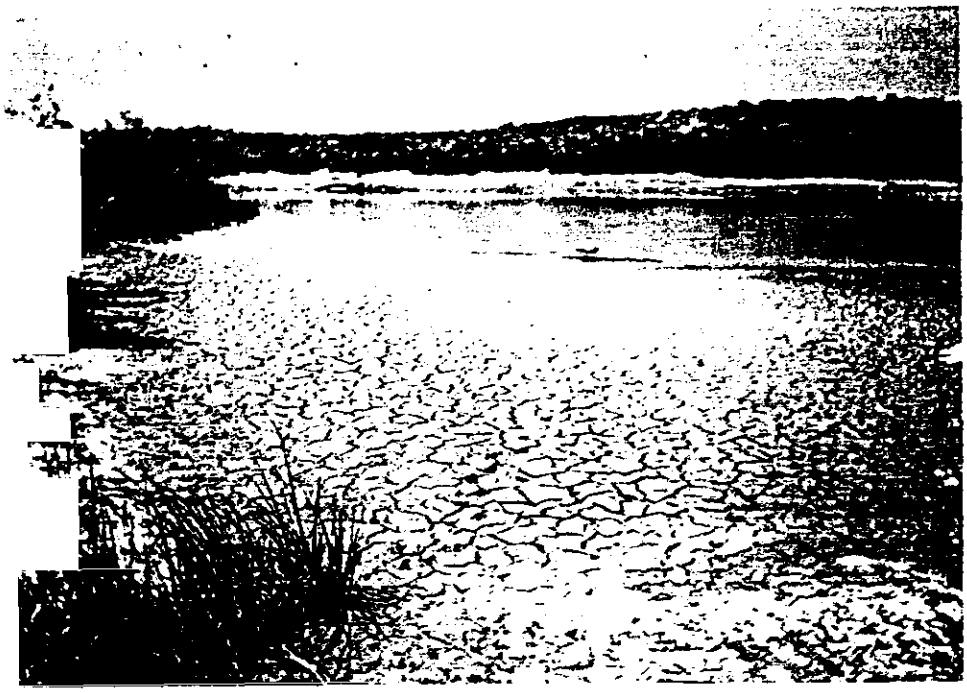
During low-water periods there is abundant evidence of heavy siltation in the re-regulating ponds.

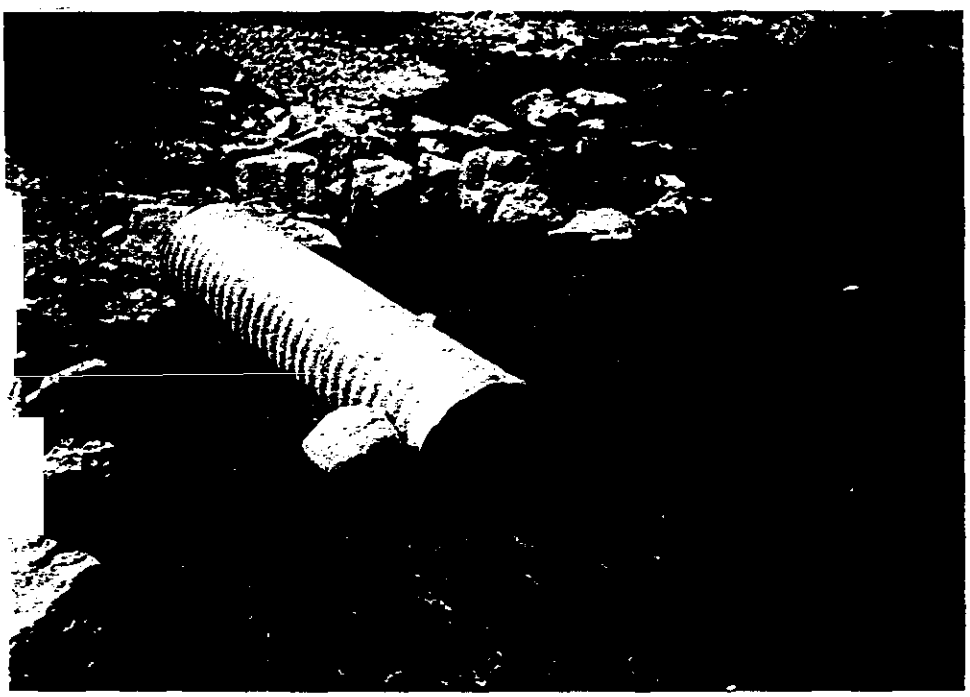


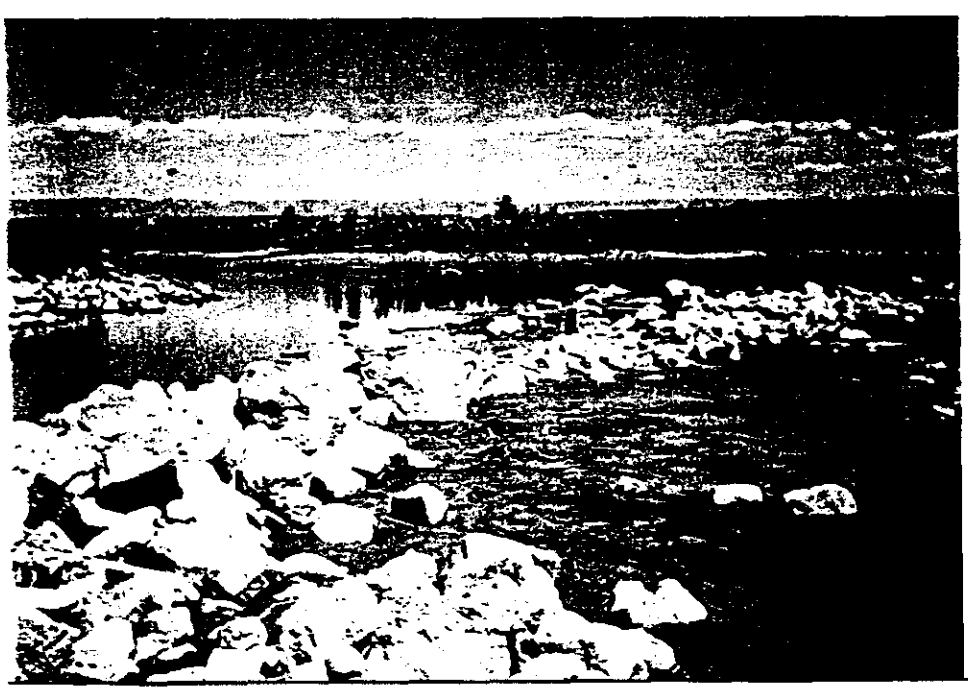




During low water periods there is abundant evidence of heavy siltation in the project backwater.







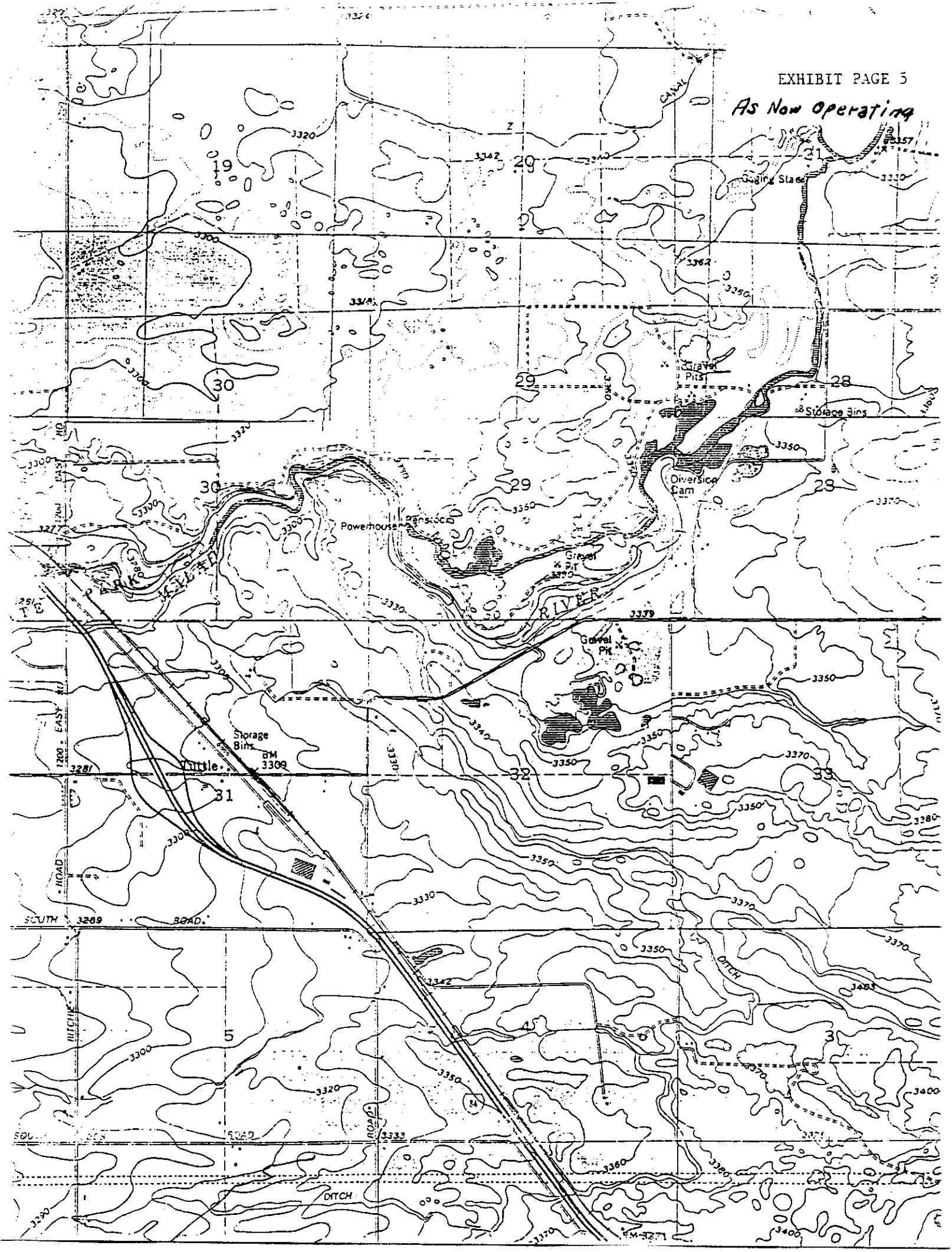
During low water periods there is abundant evidence of heavy siltation in the project backwater.







During the Fall season the re-regulating ponds provide resting habitat for thousands of ducks.


EXHIBIT PAGE 5
As Now Operating
Gaging Stage
Gravel Pits
Storage Bins
Diversion Dam
Powerhouse
Penstock
PARK CREEK
RIVER
Gravel Pit
Storage Bins
BM 3309
Tuttle
ROAD
SOUTH
ROAD
DITCH
CANAL
1200 EAST

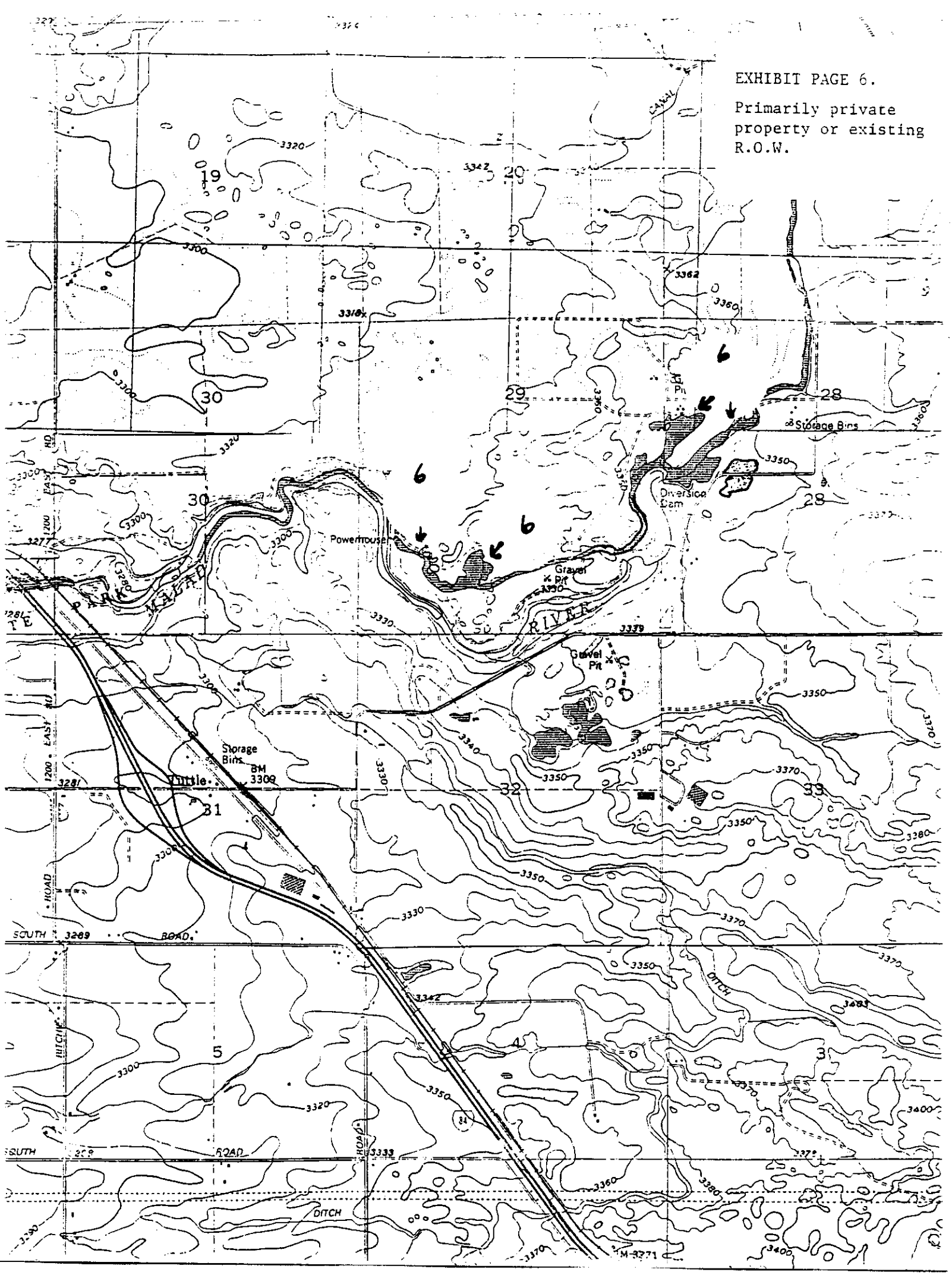
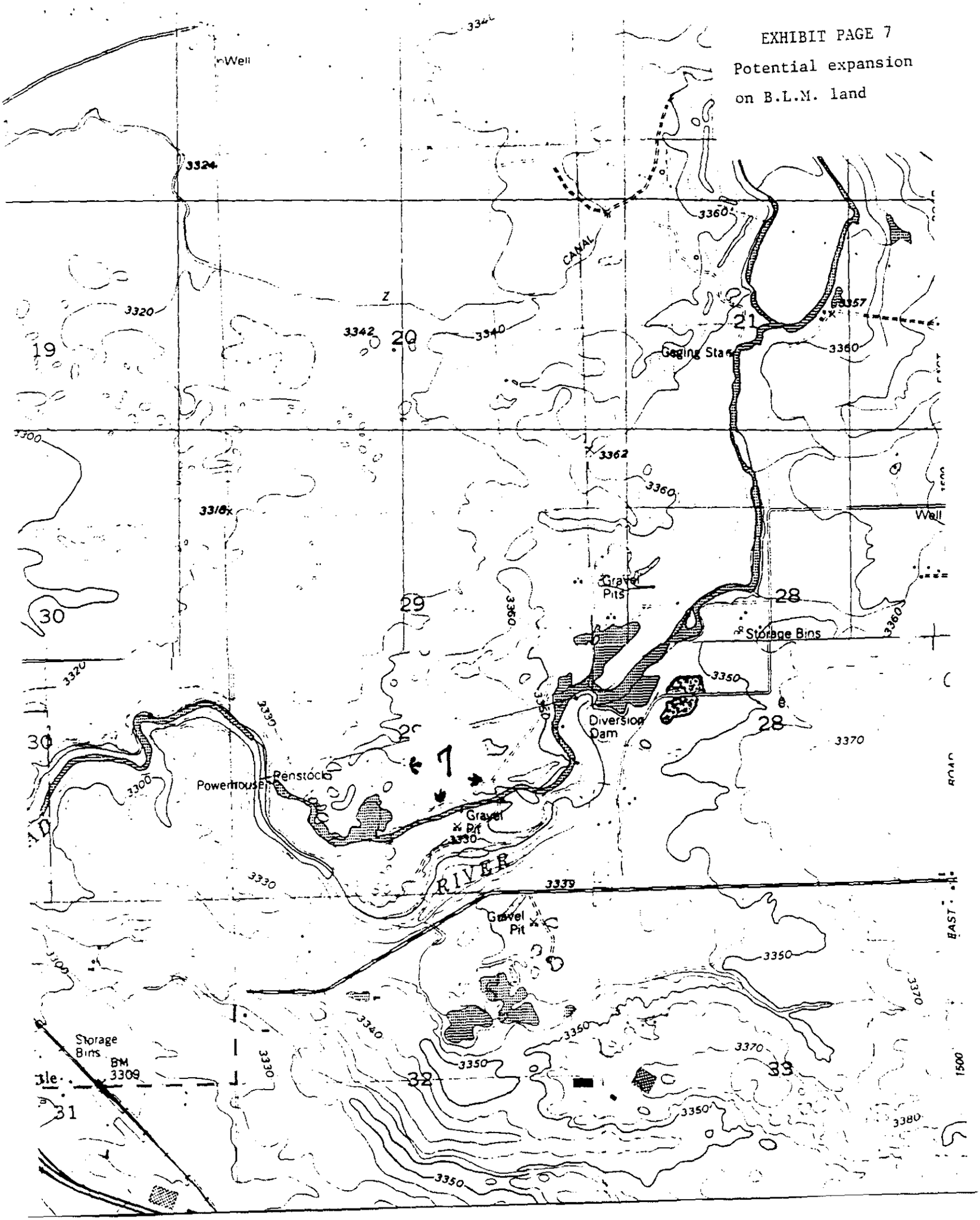
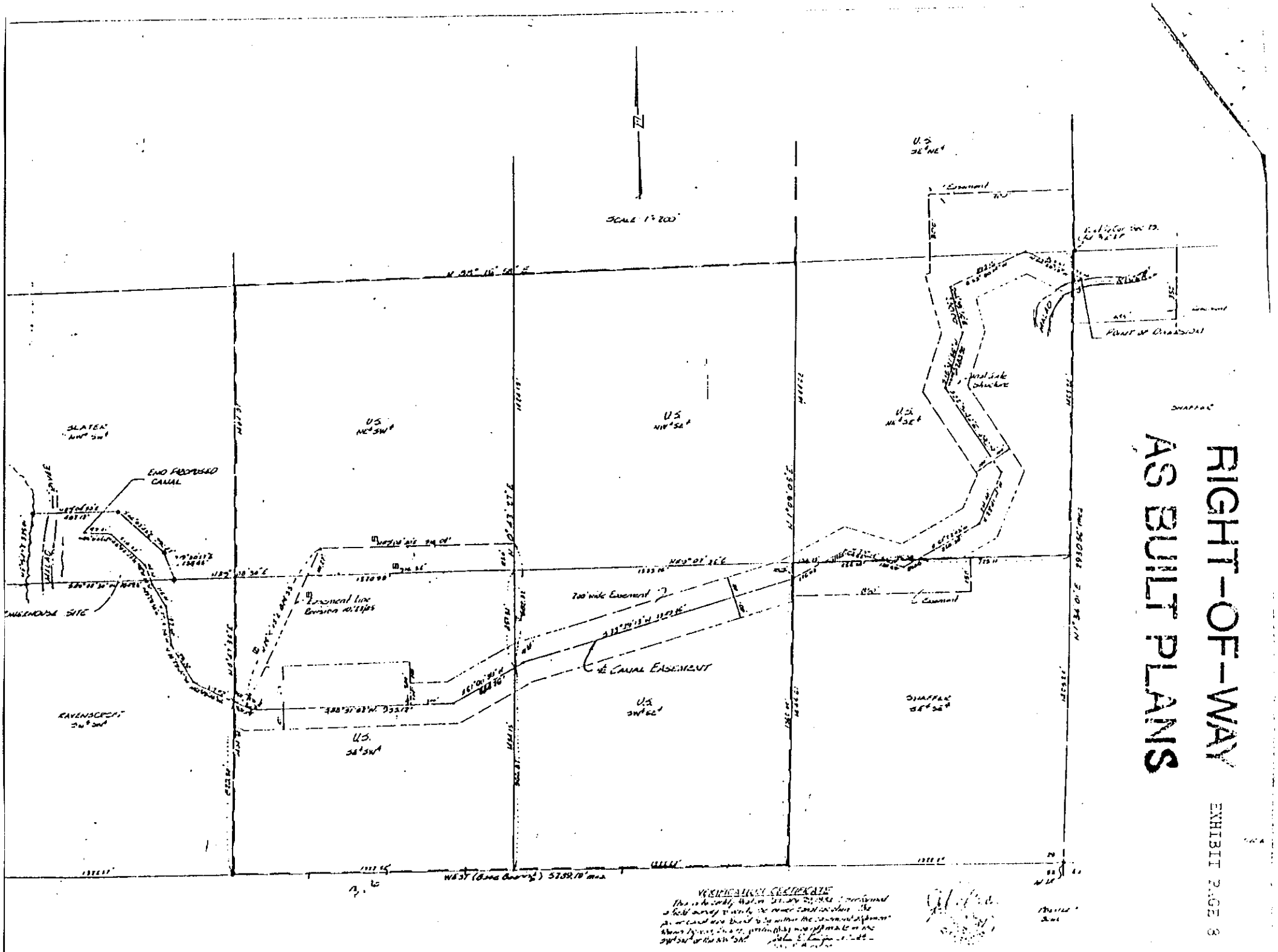

EXHIBIT PAGE 6.
Primarily private property or existing R.O.W.
CANAL
Diversion Dam
Storage Bins
Powerhouse
Gravel Pit
PARK MAINE
RIVER
Storage Bins
BM 3309
Tiffle
SOUTH 3289 ROAD
DITCH
19
20
29
28
30
31
32
33
5
4
3

EXHIBIT PAGE 7

Potential expansion on B.L.M. land





RIGHT-OF-WAY AS BUILT PLANS

EXHIBIT 2.02 B

COPY

April 6, 1994

Mr. Vernon Ravenscroft
Consulting Associates
1543 Broadway, Suite 102
Boise ID 83706

Dear Verne:

I am enclosing the preliminary water quality data which was obtained on the Malad River Hydropower project system in September 1993. Field water quality data and samples for laboratory analysis were obtained for a 24 hour period to evaluate the water quality changes through a pond-canal system as compared with the bypassed reach of the river.

Measurements were obtained at five stations as outlined on the data tables and charts. Significant diel fluctuations in dissolved oxygen and temperature are evident, as would be expected, in both the power canal-pond system and the bypass reach. Preliminary analysis indicates that the DO at the end of the power canal in the tailrace exhibits a smaller diel fluctuation than at the end of the bypass reach. Minimum values of DO were about 7.5 mg/l coming into the system from the river. The minimum DO in the power canal-pond system was 7.5 mg/l at MP2, which is the outlet of the large pond to the hydro canal. DO in the bypass reach was a minimum of 7.0 mg/l at about 4:40 a.m. The attached plots show the time relationships of DO through the power canal-pond system and the bypass reach.

Temperature showed similar diel fluctuations as shown on the plots. Water temperature at the inlet to the system, MP1, is generally cooler than the water leaving the power canal-pond system through the nighttime and is warmer during the morning and afternoon. Travel time through the system accounts for most of the difference. Similar responses are observed in the water temperature through the bypass reach.

Laboratory data shown on the table MPWQDAT1.XLS indicates only minor differences in BOC, suspended solids, nitrogen forms, and phosphate forms through the canal-pond system and through the bypass. Ammonia N was generally reported as 0.01 mg/l or less at all stations indicating that ammonia toxicity at these temperatures and pH is not a concern. Total suspended solids were generally less than 22 mg/l with the station MP5 at the end of the bypass indicating the lowest values, 6 mg/l. Nitrate+nitrite N was below 0.03 mg/l at all stations and total Kjeldahl nitrogen, TKN, was below 0.5 mg/l. Both Total Phosphorus and ortho phosphorus were low, generally below 0.12 and 0.06 mg/l, respectively. No

statistical analysis was performed on the data, but it is unlikely that any significant trends in nutrients or other laboratory parameters through the system exist.

All laboratory analysis was performed at the U.S. Bureau of Reclamation Water Quality lab in Boise. Again, this is preliminary data and has not been compared with QA/QC data collected as part of the Mid Snake Water Quality studies. I hope this is adequate for your needs at this time.

Thank you for letting us utilize the system for our studies.

Sincerely,

C.E. Brockway, P.E.

CEB:af

Malad River Hydro Pond Complex

Water Quality Data September 1993

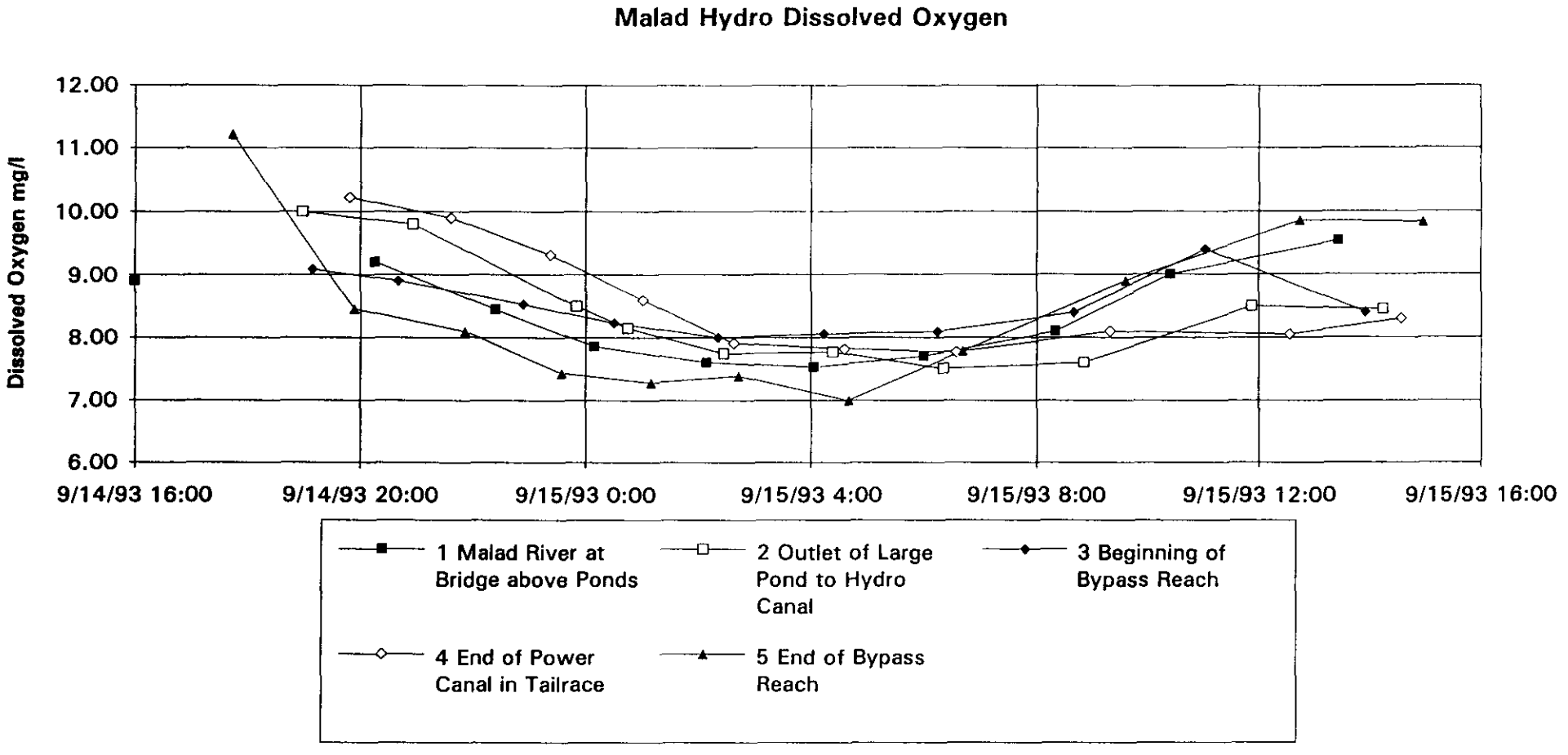
MPWADAT2.XLS Field Water Quality Data

Monitoring Sites

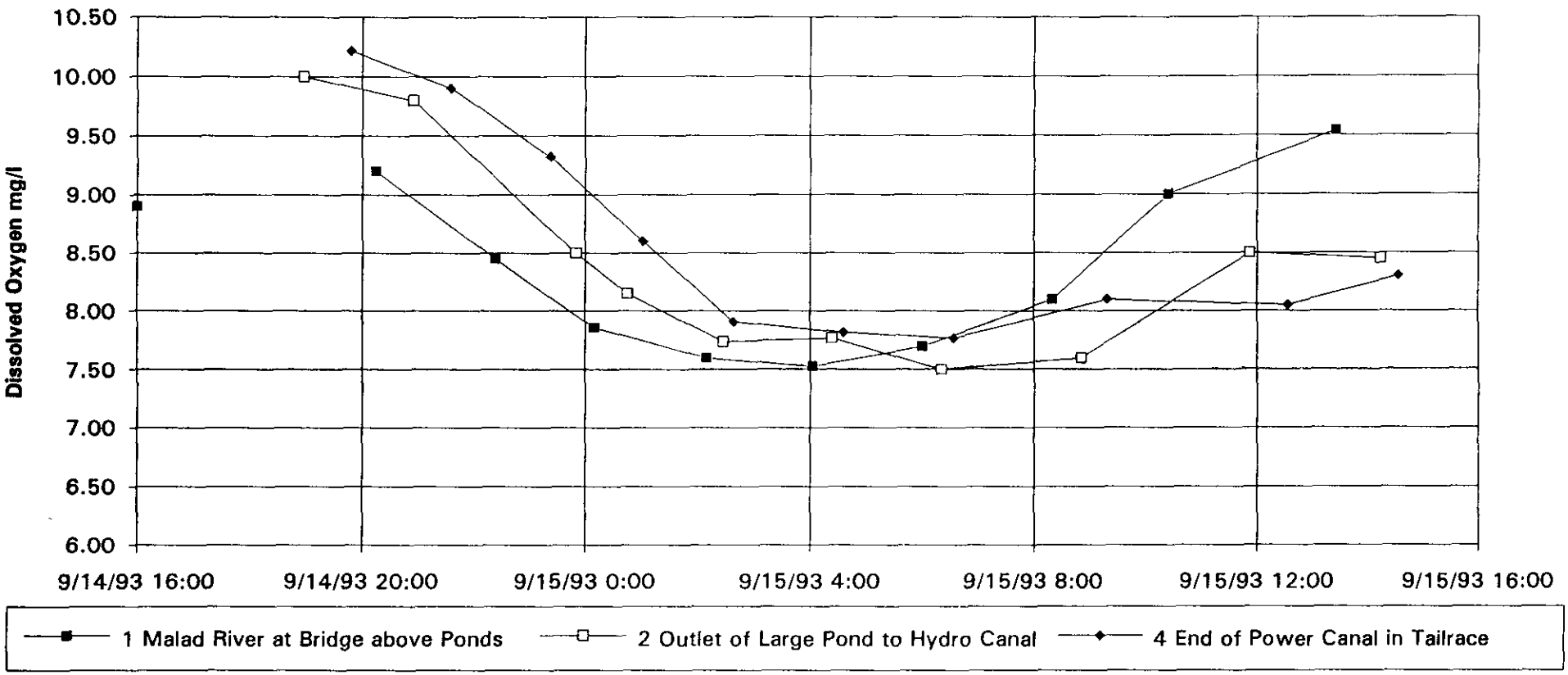
MP 1	1 Malad River at Bridge above Ponds
MP 2	2 Outlet of Large Pond to Hydro Canal
MP 3	3 Beginning of Bypass Reach
MP 4	4 End of Power Canal in Tailrace
MP 5	5 End of Bypass Reach

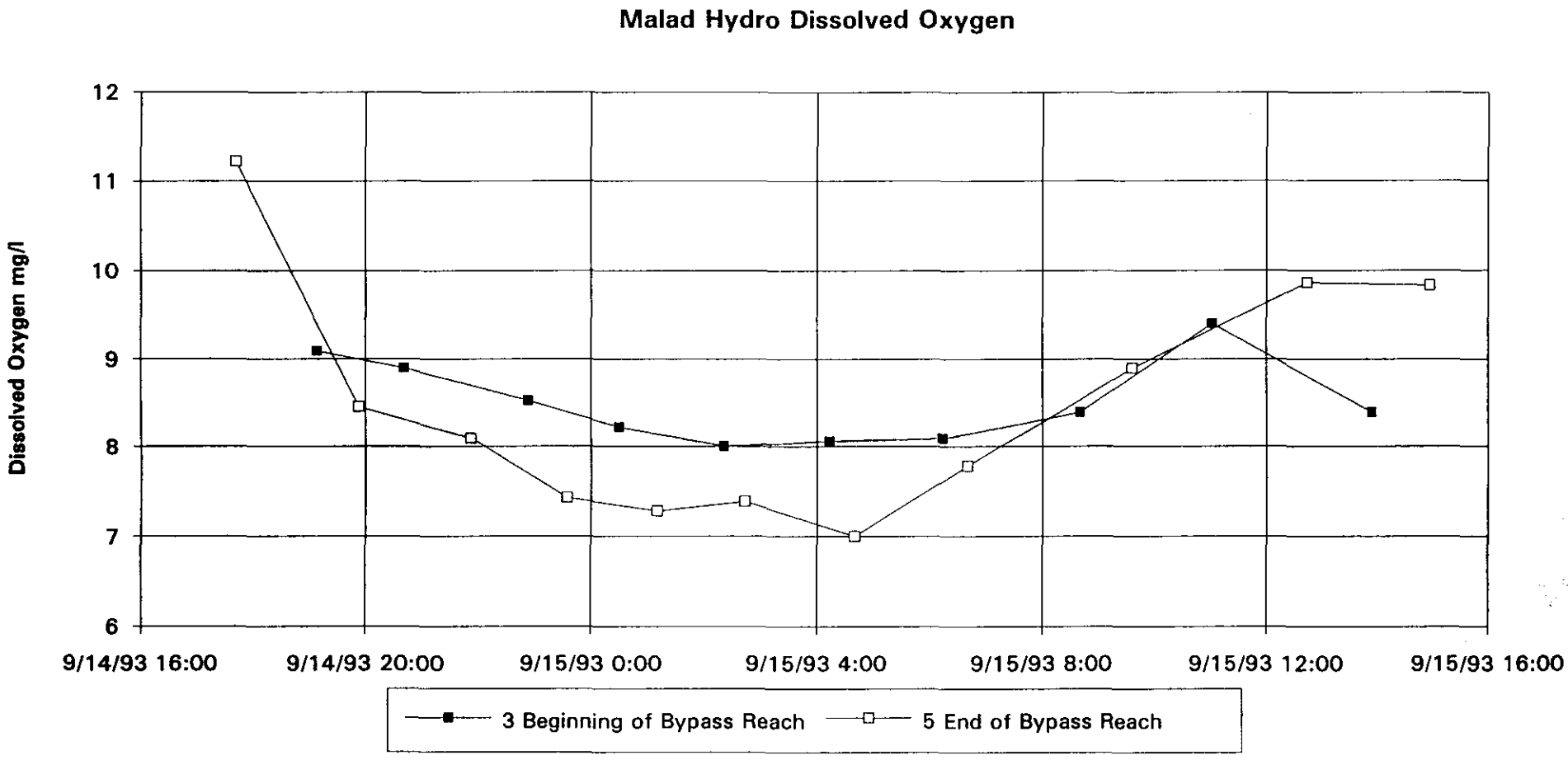
Date	Measuring Point 1					Date	Measuring Point 2					Date	Measuring Point 3				
Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC
	Air	Water	mg/l		mS		Air	Water	mg/l		mS		Air	Water	mg/l		mS
9/14/93 16:00	25.70	16.60	8.90	8.80	450	9/14/93 17:00	22.5	17.1		8.9	400	9/14/93 17:00	22.5	16.3		8.9	400
9/14/93 18:41		16.20		9.00	400	9/14/93 18:58		16.1	10	9.01	390	9/14/93 19:09		16.1	9.09	8.98	390
9/14/93 20:15	15.30	16.00	9.20	9.00	380	9/14/93 20:55	12	15.9	9.8	9	380	9/14/93 20:40	12.9	15.7	8.9	9	390
9/14/93 22:23	11.90	15.70	8.45	8.88	390	9/14/93 23:50	11.1	15.7	8.5	8.93	400	9/14/93 22:53	10.7	15.6	8.53	8.92	390
9/15/93 0:09	10.70	15.40	7.86	8.81	390	9/15/93 0:45	9	15.4	8.15	8.85	390	9/15/93 0:30	10.7	15.3	8.23	8.84	390
9/15/93 2:09	10.60	14.90	7.60	8.75	390	9/15/93 2:27	10.8	15	7.74	8.71	390	9/15/93 2:21	10.9	14.9	8	8.73	400
9/15/93 4:03	8.80	14.40	7.53	8.70	390	9/15/93 4:23	7.3	14.6	7.77	8.72	400	9/15/93 4:13	8.2	14.5	8.06	8.71	400
9/15/93 6:00	5.30	14.00	7.70	8.66	400	9/15/93 6:21	5.6	14.2	7.5	8.68	390	9/15/93 6:14	5.7	14.1	8.09	8.68	410
9/15/93 8:20	10.00	13.70	8.10	8.60	390	9/15/93 8:52	13.6	13.8	7.6	8.6	390	9/15/93 8:40	12.4	13.7	8.4	8.6	390
9/15/93 10:25	16.10	13.90	9.00	8.63	380	9/15/93 11:52	19.7	14.1	8.5	8.63	380	9/15/93 11:02	18.1	14.4	9.4	8.62	390
9/15/93 13:25	23.20	15.20	9.54	8.90	390	9/15/93 14:13	22.7	15.2	8.45	8.8	400	9/15/93 13:54	28	15.3	8.4	8.8	400

Date	Measuring Point 4					Date	Measuring Point 5				
Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC
	Air	Water	mg/l		mS		Air	Water	mg/l		mS
9/14/93 17:43	23.2	15.8		8.9	390	9/14/93 17:43	22.1	16.7	11.22	8.9	400
9/14/93 19:48		15.9	10.22	8.94	390	9/14/93 19:53		16.4	8.46	8.94	390
9/14/93 21:35	12	15.7	9.9	9	390	9/14/93 21:50	12.3	15.4	8.1	8.8	390
9/14/93 23:23	11.1	15.7	9.32	8.97	390	9/14/93 23:35	11.5	15.1	7.43	8.76	380
9/15/93 1:01	9.5	15.4	8.6	8.87	390	9/15/93 1:10	10	14.7	7.28	8.68	400
9/15/93 2:38	10.5	15.1	7.91	8.79	410	9/15/93 2:43	10.5	14.4	7.39	8.69	400
9/15/93 4:35	7.5	14.7	7.82	8.77	390	9/15/93 4:40	6.9	14	7	8.63	390
9/15/93 6:34	4.9	14.3	7.77	8.69	390	9/15/93 6:41	5.8	13.6	7.78	8.55	390
9/15/93 9:20	13.6	13.9	8.1	8.7	390	9/15/93 9:37	14	13.4	8.9	8.6	400
9/15/93 12:33	20	14.3	8.05	8.65	390	9/15/93 12:44	23.3	15	9.86	8.84	390
9/15/93 14:33	23.7	15.2	8.3	8.7	400	9/15/93 14:57	23.3	16.8	9.83	9	390

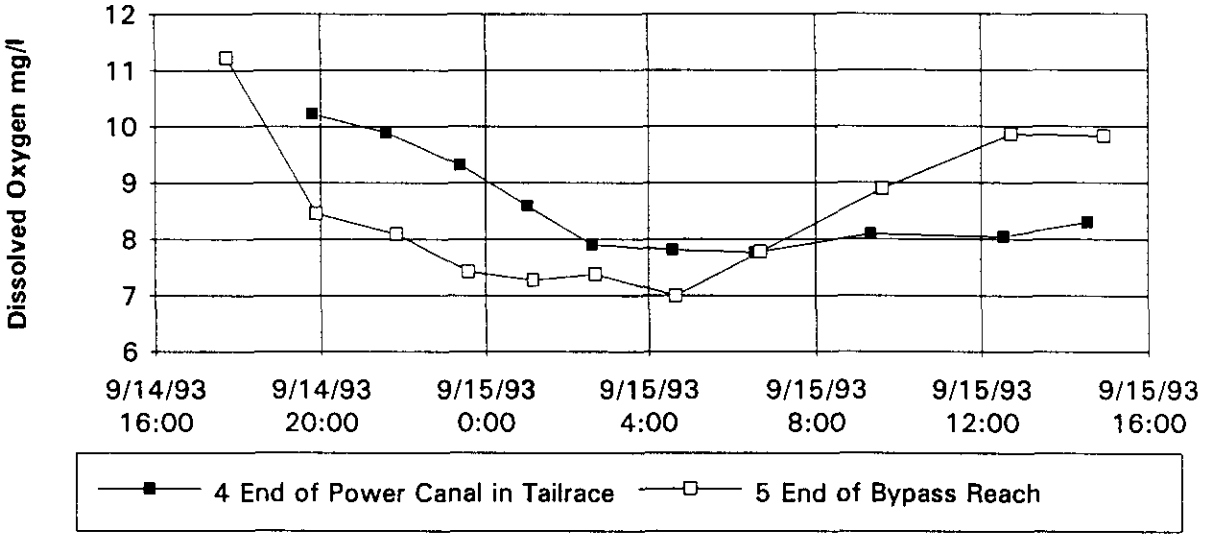

Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
12.00
11.00
10.00
9.00
8.00
7.00
6.00
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
1 Malad River at Bridge above Ponds
2 Outlet of Large Pond to Hydro Canal
3 Beginning of Bypass Reach
4 End of Power Canal in Tailrace
5 End of Bypass Reach

Malad Hydro Dissolved Oxygen




Malad Hydro Dissolved Oxygen
Dissolved Oxygen mg/l
12
11
10
9
8
7
6
9/14/93 16:00
9/14/93 20:00
9/15/93 0:00
9/15/93 4:00
9/15/93 8:00
9/15/93 12:00
9/15/93 16:00
3 Beginning of Bypass Reach
5 End of Bypass Reach

Malad Hydro Dissolved Oxygen



RALSTON
& ASSOCIATES

8701 S. Five Mile, Kuna, Idaho 83634 (208) 362-1303
FAX (208) 362-1333

July 30, 1990

Mr. Blaine Graff
Malad Hydro Partners
333 North 13th Street
Boise, ID 83702

Re: Malad High Drop Hydroelectric Project, FERC No. 3924

Dear Mr. Graff:

At your request, I have conducted further review of the Malad High Drop Project (MHD) with regard to the project's impact on water temperature and other water quality concerns. I understand that the Idaho Parks and Recreation Board and the Idaho Department of Fish and Game have expressed concerns for the project's potential to impact water temperature and water quality.

The water delivery system proposed for the MHD Project is similar in concept to the existing Ravenscroft Ranch Hydro Project, located one to two miles upstream from the proposed MHD diversion structure. The existing Ravenscroft Project has about 50 acres of ponds along the power canal, which provide warm water fish habitat, as well as wildlife habitat. The ponds also provide substantial removal of suspended solids from the turbid Malad River water. Water samples collected above and below the project on June 13, 1990, indicated a 30% reduction in suspended solids.

The power canal system for the MHD Project will be about the same length, but somewhat larger in cross-section than the Ravenscroft Project. The combined area and capacity of the wildlife ponds will be substantially less than those on the Ravenscroft Project. The MHD Project's potential impact on temperature and dissolved oxygen should therefore be less that of the existing Ravenscroft Project.

On July 27, 1990, I conducted extensive measurements of water temperature and dissolved oxygen at eight locations on the Malad River and in the adjacent canal system serving the Ravenscroft Project. The measurements were begun at 1238 hours, starting at the proposed MHD diversion and proceeded upstream to the bridge just above the backwaters of the Ravenscroft Project. About one hour later, the measurements were repeated in downstream order. Dissolved oxygen was measured with a YSI Model 54 D.O. meter and temperature was measured with an ASTM precision thermometer

thermometer calibrated to the National Bureau of Standards.

The ambient air temperature at the beginning of the measurements was 28.5°C and at the conclusion was 33.0°C; the weather was clear and winds were calm. The Malad River flow was 97 cfs at the USGS gage just upstream. The Ravenscroft Project was diverting 65 cfs and bypassing 9 cfs. The remaining Malad River flow was being retained in the pond system.

The dissolved oxygen and temperature values measured are presented in the enclosed table. Dissolved oxygen values ranged from 10.1 mg/l to 12.9 mg/l in the river system and from 8.2 mg/l to 9.2 mg/l in the canal system. The river D.O. concentrations represented percent saturations ranging from 130% to 165% while percent saturation in the canal system ranged from 103% to 118%.

The higher D.O. concentrations in the river system were created by the luxuriant growth of rooted, submergent aquatic vegetation. Aquatic plants observed were Ceratophyllum echinatum, Elodea canadensis, Potamogeton pectinatus, and P. nodosus. The canal system and ponds generally were devoid of submergent vegetation due to the greater depth of water.

6/9/95 Note by VR. River average 22.6°C Canal average 21.4°C ave canal 1.2°C Cooler

Water temperatures in the river system ranged from 21.6°C to 23.6°C and in the canal system from 21.4°C to 22.4°C. The canal system temperatures were cooler than the river temperatures. This can be attributed to the difference in the ratio of depth to surface area and to turbulent flow in the river versus laminar flow in the canal system. The shallower depth of the river and its turbulent flow allows its water to absorb heat energy, during the daytime, more quickly than the canal system. Conversely, during the cooler nighttime periods, the river system would cool down more quickly than the canal system. Change in water temperature was more closely correlated with time of day than with location along the system.

Water temperatures in the river and canal system were somewhat excessive for cold water fish species but were well within requirements for warm water fish species. During the D.O. and temperature study, several schools of smallmouth bass fry were observed in the intake structure at the Ravenscroft Project. An eight to ten inch fish was occasionally seen foraging on the fry. Electrofishing studies conducted by the Idaho Department of Fish & Game in 1981 and two occasions in 1987, indicate a good population of bluegill, largemouth and smallmouth bass, as well as yellow perch, in the Ravenscroft Project ponds and river above the ponds.

The water quality in the ponds and the canal system proposed for the Malad High Drop Project should be better than that of the existing Ravenscroft Project. The Ravenscroft Project removes a substantial amount of the suspended solids and sediment related nutrients and pesticides which improves the quality of water coming into the MHD Project. The water retention time in the MHD Project will also be much shorter. The bypass of some of the turbid Malad River water out of the canyon will not only improve the river's

clarity for park visitors but will also improve water quality for fish in the bypassed reach. During the hot summer months, diversion of the warmer Malad River water will allow cooler water temperatures in the bypassed reach, where significant amounts of cooler spring water flow into the canyon.

Since the water quality in the MHD Project ponds will be at least as good, if not better than the Ravenscroft Project, it should be more than adequate to support a warm water fishery. The additional habitat provided by the riparian mitigation and wetland area will also assist in establishing the warm water fishery.

In summary, I believe that the Malad High Drop Project will have a beneficial impact upon water quality, fish, and wildlife habitat in the bypassed reach and will provide an opportunity to establish and maintain a good warm water fishery in the water delivery system. These should be viewed as positive benefits to the Malad Gorge State Park.

Sincerely,

Gene L. Ralston

Enc.

DISSOLVED OXYGEN AND TEMPERATURE MEASUREMENTS AT SELECTED LOCATIONS ALONG THE MALAD RIVER IN THE VICINITY OF TUTTLE, IDAHO ON JULY 27, 1990

LOCATION	(TIME) D.O. MG/L / TEMP. °C	(TIME) D.O. MG/L / TEMP. °C
River at bridge above Ravenscroft Hydro	(1437) 10.6 / 22.6	(1532) 10.8 / 23.3
Canal at Ravenscroft Hydro diversion structure	(1424) 8.7 / 21.6	(1542) 9.2 / 22.3
River below Ravenscroft diversion dam		(1549) 10.1 / 22.9
Canal at bridge 0.5 mile below Ravenscroft Hydro diversion structure	(1413) 8.3 / 21.4	(1555) 8.8 / 22.3
Canal at Ravenscroft intake structure	(1343) 8.2 / 21.4	(1605) 8.2 / 22.4
River immediately above Ravenscroft tailrace	(1352) 12.9 / 22.2	(1623) 12.4 / 22.4
River 0.75 mile below Ravenscroft tailrace	(1328) 11.7 / 21.9	(1639) 11.4 / 23.2
River at Justice diversion dam	(1235) 10.3 / 21.6	(1658) 11.6 / 23.6

Weather clear; winds calm; air temperature @ 1235 hrs: 28.5°C, @ 1658 hrs: 33.0°C

SUSPENDED SEDIMENT ANALYSES

Sample previously collected by Vern:	39
Malad River at USGS gage, June 13, 1990:	10
Ravenscroft canal at powerplant intake structure, June 13, 1990:	7

37-7857/7865/7922

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

NOTICE OF AMENDMENT OF EXEMPTION

(January 30, 1998)

Take notice that the following hydroelectric application has been filed with the Commission and is available for public inspection:

a.	Type of Application:	Amendment of Exemption
b.	Project No.:	4055-024
c.	Date Filed:	October 7, 1996, March 3, 1997, and December 29, 1997
d.	Applicant:	Vernon F. Ravenscroft
e.	Name of Project:	Ravenscroft Ranch Project
f.	Location:	On the Malad River in Gooding County, Idaho.
g.	Filed Pursuant to:	Federal Power Act, 16 U.S.C. §791(a)-825(r)
h.	Applicant Contact:	Mr. Vernon Ravenscroft HC60, Box 1469 Bliss, ID 83314 (208) 837-4936
i.	FERC Contact:	Paul Shannon, (202) 219-2866
j.	Comment Date:	**MARCH 16, 1998**

k. Description of Filing: Vernon F. Ravenscroft filed an application for amendment of exemption to increase the height of the project's penstock intake structure by two feet to help prevent ice build-up near the intake. The exemptee also proposes to increase the height of the project's spillway by six inches to increase the operating water surface level in the project's canal and stabilize river bypass flows during low flows. The exemptee states the increased spillway height will not affect high water levels at the upstream diversion dam. The higher water levels in the canal will affect lands owned or leased by the exemptee and lands on a right-of-way obtained from the U.S. Bureau of Land Management.

l. This notice also consists of the following standard paragraphs: B, C1, and D2.

B. Comments, Protests, or Motions to Intervene -- Anyone may submit comments, a protest, or a motion to intervene in accordance with the requirements of Rules of Practice and Procedure, 18 CFR 385.210, .211, .214. In determining the appropriate action to take, the Commission will consider all protests or other comments filed, but only those who file a motion to intervene in accordance with the Commission's Rules may become a party to the proceeding. Any comments, protests, or motions to intervene must be received on or before the specified comment date for the particular application.

C1. Filing and Service of Responsive Documents -- Any filings must bear in all capital letters the title "COMMENTS", "RECOMMENDATIONS FOR TERMS AND CONDITIONS", "PROTEST", OR "MOTION TO INTERVENE", as applicable, and the Project Number of the particular application to which the filing refers. Any of the above-named documents must be filed by providing the original and the number of copies provided by the Commission's regulations to: The Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426. A copy of any motion to intervene must also be served upon each representative of the Applicant specified in the particular application.

D2. Agency Comments -- Federal, state, and local agencies are invited to file comments on the described application. A copy of the application may be obtained by agencies directly from the Applicant. If an agency does not file comments within the time specified for filing comments, it will be presumed to have no comments. One copy of an agency's comments must also be sent to the Applicant's representatives.

Linwood A. Watson, Jr.
Acting Secretary

RECEIVED
FEB 0 6 1998
Department of Water Resources

Tim Luke

VERNON RAVENSCROFT

Tuttle Address:
HC 60, Box 1469
Bliss, Idaho 83314

(208) 837-4936

December 5, 1995

RECEIVED
DEC 0 7 1995
Department of Water Resources

Felicia Probert, Area Manager
BUREAU OF LAND MANAGEMENT
P.O. Box 2-B
Shoshone, Idaho 83352-1552

Dear Ms. Probert:

My sincerest thanks for the copy of your letter to the U.S. Fish and Wildlife Service in Boise. That letter concerned the one reservation which you have relative to the proposed revisions for the stipulations that govern the Ravenscroft Hydro project (F.E.R.C. 4055). It is encouraging that after several years of analysis and the review of alternative measures we have arrived at a point where all parties are in substantial agreement.

Concerning the o n e reservation (Item 9) which you have raised, I am willing to accept either the proposed language as accepted by the Idaho State Fish and Game Department or your proposed revision. I am anxious that we finalize the stipulation language as soon as possible. Given winter construction limitations we have only a very short time in which to complete any necessary project alterations before the spring run-off starts this coming March.

The proposed language for Item 9 was prompted by public, not private, considerations. The areas contained in the present re-regulation ponds were originally exhausted gravel pits with essentially no environmental or economic value. As now functioning, the ponds support a popular warm water fishery (as many as 40 different fishermen on any summer weekend), a waterfowl and wildlife habitat, a proven water quality function (sediment settling and summer water temperature reduction), and a healthy wetland riparian zone (cattails, rushes, willows, ash, Russian olive, and box elder.) In the event of an unlikely project abandonment, the language proposed for Item 9 was drafted to protect and perpetuate these public interest values.

The language which you have proposed does have private property appeal. If the project were abandoned and the diversion removed, the current wetlands would dry up; the river sediment could be spread over adjoining lowlands or shallow soils and the area would have ongoing agricultural or residential value.

On this item I will accept either version, but again request a decision as quickly as possible.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Bob Ruesink, U.S. F& WS, Boise
Dave Parrish, IDF&G, Jerome
Norman Young, IDWR, Boise
Mark Jones, FERC, Portland
Herb Fox, WN. Mutual, Seattle

TJ2

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Upper Snake River Districts
Shoshone Field Office
P.O. Box 2-B
Shoshone, Idaho 83352-1552

RECEIVED
DEC 0 6 1995
Department of Water Resources

IN REPLY REFER TO:
IDI-17053 (050)

December 4, 1995

Bob Ruesink, Supervisor
U. S. Fish and Wildlife Service
Snake River Basin Office, Columbia Ecoregion
4696 Overland Road, Room 576
Boise, ID 83705

RE: Revised Terms and Conditions for Ravenscroft Project (FERC #4055)

Dear Mr. Ruesink:

We are in receipt of a October 3, 1995 letter Mr. Vernon Ravenscroft submitted to the Idaho Department of Fish and Game. The letter describes draft revised terms and conditions for the Ravenscroft Project (FERC #4055). We have reviewed the proposed terms and conditions for the subject hydroelectric project and concur with all but item 9. Item 9 is written as follows:

> If the applicant should at any time abandon the site, the stream diversion area will be modified and/or maintained in a form which will maximize the water quality, wildlife habitat, and fishery resources which the project has created.

It is the Bureau's recommendation that should the project be abandoned, all sediment which has accumulated in the impounded stream reach be removed during the first low water period following project abandonment. Following the removal of the sediment, the rock rubble dam should be removed to allow for pre-project flow conditions in the affected reach of the Big Wood River.

If you have any questions regarding this matter please contact Gary Wright at 886-7255.

Sincerely,

Felicia Probert
Area Manager

cc: BLM ID-930 (Evans)
IDFG Jerome (Parrish)
IDWR Boise (Young)
V. Ravenscroft

A & B ENGINEERING
CIVIL ENGINEERING, SURVEYING, PLANNING,
WATER RESOURCES, LAND DEVELOPMENT

2212 N. 20 th. St.
Boise, ID 83702
(208) 342-7751

7/21/95

Mr. Vernon F. Ravenscroft
1328-B Shoestring Rd.
Star Rt.
Bliss, ID 83314

Dear Mr. Ravenscroft:

At your request, I have reviewed the five items of concern you expressed to me when you were in my office last week, those items being the suitability of the existing compliance point for monitoring bypass flows and the four items of concern expressed by J. Mark Robinson of FERC in the first paragraph of the second page of his July 3, 1995 letter.

As you know, I looked over the compliance point and did some other work for you on site yesterday and we haven't talked since. Yours is the only compliance point that I know of that is not located at the point of diversion. I was surprised when I looked at the rated section at the gage that it would have ever been accepted by the agencies for use as a compliance monitoring point. The channel is around 85 feet wide with very shallow flow; it is significantly impacted by moss at present and, no doubt, will be for the rest of the mild weather portion of the year. During freezing weather the channel size and shape could be substantially altered by ice. The fact that the channel is subject to such seasonal changes makes its choice as a rated section a poor one. It is simply not stable enough to be used as a rated section. The section would be nominally acceptable at the 80 cfs flow requirement, however at the 5 cfs compliance flow the cross section is so wide and flat that a difference in gage reading equivalent to 1 cfs

Locating the gaging station at the point of spillway return greatly complicates the task of contolling the plant. It may be necessary to bypass significant amounts of excess flow as a safety margin. We may spend many hours trying to empirically determine the levels at which the plant should increment or decrement unit combinations. Environmental factors may change the canal gradient (wind, ice, moss, etc) thus requiring a change in required control levels. Many of these factors are outside the capability of the automatic control system to recognize. If we are just a little bit off in the determination of levels or they change for enviromental reasons, we may find that the plant is going on and off line repeatedly. This is not good for either the plant equipment or the downstream stream flow.

If physical loss of water in the bypass reach is a concern the loss should to characterized and added the minimum bypass flow. IDFG states the their records indicate that there may be a loss of water in the reach. I must assume that they feel that the loss is significant, possible due to exceptionally porous ground or evaporation. It is also possible that their points of measurement, upstream and downstream, were calibrated differently. In any case, it would be prudent to examine their data a try to determine what the loss is, if any. It is true that a level transducer located at the diversion cannot measure flow everywhere in the bypass reach. It can only accurately measure flow into the reach. The point is that the required bypass flow should be determined to satisfy all needs within the reach, irrigation, fishery, habitat, and any definable losses. This has been the case with over 35 other hydro projects that I have been associated with.

My letters of 11/15/94 and 1/15/95 explain why the point of plant control and should also be the point regulator compliance. This eliminates time delays associated with controlling the plant and insuring the that bypass flow in the reach does not go below minimums. Many of the arguments against the existing gaging station located at the midpoint of the bypass reach are also applicable to a gaging station immediately above the point of spillway return. (See my letter 11/15/95.) Because the time delays are longer for flow stability at this point, in some ways it is even less desirable. A gaging station located at the point of spillway return measures flow after the fact. Because the turbines combinations are put on line in fixed combinations of flow, very rarely will the plant be exactly matching the inflow to the system. Under decreasing flow, which is the case that will shut the plant down, the flow will have already gone below the minimum flow upstream before it would be recognized at the gaging station.

I concede that there may be definite cost advantages to a measuring station located close to the plant. It is possible to modify the control program such that when the bypass reach flow is measured below specified minimums the plant wo uld be automatically taken off line. This would certainly keep the plant in compliance. I anticipate that this would result in much greater fluctuation in stream flow above the required minimums and greater cycling of the plant equipment. Due the uncertainties in setting levels, it may be necessary to run a much higher than required bypass flow as a safety margin. If the agencies are adamant about establishing a measuring station above the point of spillway

return it would be reasonable for them to include provisions in their requirements that reflect system hydraulic delays.

Accuracy and Design of Measuring Boxes Located at the Diversion

FERC is concerned about potential clogging or vandalism of the measuring station. All of the project facilities are located on private land. The plant has had no history of vandalism on any of its facilities in over ten years of operation. Any measuring station has the potential of being vandalized, no matter what the design. The effect of clogging is also easily addressed. Trash bars inside the mearing box are preliminarilty sized at 2". The orifice is sized at about 11" in diameter. The measuring point is between the trash bars and the orifice. If the trash bars become clogged, the level in the orifice area will decrease. This in turn will cause the upstream level to increase and spill over the dam. Depending on how much of the screen is blocked, this may cause the plant to shut down. The plant will not be allowed to restart until the level inside the box is high, indicating a clean trash rack. In any case, the design of the orifice box is fail safe and downstream flow is guaranteed.

FERC is concerned that the orifice boxes would not account for flow over the rock and rubble dam. It must be stressed that the intent of the orifice box control structure is to verify minimum compliance and not to gage the river through all ranges of flow. You have stated that you are willing ignore leakage for the advantage of basing all regulator compliance on a single point of reference. This also brings up the possibility in the future of making improvements to the diversion structure without reopening the issue of compliance. Another point that the agencies must be aware of is that the orifice boxes would only be able to measure flow slightly in excess of the minimum bypass flow. This is explained in my 1/5/95 letter.

IDFG suggest using a cipeletti weir or rated staff gage to measure flow. My first recommendation (11/15/95) was to use a measuring weir just below the point of diversion. Mr. Don Watts was able to demonstrate that an orifice structure has much better accuracy in flow ranges that we wish to measure. The orifice structure also provides for far superior use of the reregulating capability of the ponds.

Sincerely,

Robert W. Ross

Robert W. Ross
ROSS ENGINEERING

VERNON RAVENSCROFT
HC 60, Box 1469
Bliss, Idaho 83314

RECEIVED
JUL 28 1995
Department of Water Resources

July 27, 1995

3-7534.

Secretary
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capitol St., N.E.
Washington, D.C. 20426

RE: Compliance Letter from Mark Robinson, dated 7/3/95.

Dear Secretary:

The above referenced letter "reviews discussions that took place during the inspection of your project on June 19, 1995 and the status of your proposed project modifications." Unfortunately, there is one area of misunderstanding which your letter identifies: "You and your consultant indicated that minimum flow release will be monitored from new equipment to be installed in the head-gate box, instead of from the existing gauge in the bypass reach. This change had not been previously clearly communicated to us."

Since receiving your letter I have taken the following action:

Friday, July 14, 1995 - met with my two engineers in Boise;
Tuesday, July 18, 1995 - met with the Jerome regional Fish and Game staff. I asked, and they approved an arrangement whereby their chief staff engineer will consult with my engineers to accomplish an alternative which your letter indicated: "The use of a new gage or gaging location will require that you file a suitable rating curve and approval from the I.D.F.G. before the gage is used."

The Idaho Fish & Game engineer will be on the project either August 1 or 2. B.L.M. in Shoshone will be notified and invited to participate in this field examination.

The mid-point gaging station is unacceptable to both of my engineers. Letters from them are enclosed to elaborate their concerns. It is their advice that use of the midpoint gauging station would not satisfactorily perform the automation functions which we contemplate and eventually would be highly undesirable for all parties concerned by perpetuating and aggravating the ongoing compliance problems.

I will further advise all parties immediately upon completion of the engineers' coordination efforts. I am anxious to complete the necessary work and will appreciate your prompt processing of the engineers' product once it is received.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

Enc.: Letter from A & B Engineers
Letter from Ross Engineering

cc: Portland FERC Office; Fish & Game, Jerome; BLM, Shoshone; IDWR, Boise; DEQ, Boise.

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

JUL 10 1995

Department of Water Resources

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

JUL 3 - 1995

Mr. Vernon F. Ravenscroft
HC 60
Box 1469
Bliss, ID 83314

Dear Mr. Ravenscroft:

This letter reviews discussions that took place during the inspection of your project on June 19, 1995, and the status of your proposed project modifications. During the inspection, conducted by the Commission's Portland Regional Office (PRO), you explained some of the features you planned to include in your modifications. You have already submitted plans for the modifications in a series of recent filings with the Commission.

Our June 15, 1995 letter to you indicated that we expected to complete our review of your modification plans, required by the Commission's September 2, 1994 Compliance Order, concurrent with the June 19 inspection. Our June 15 letter also reminded you that the modification plans required by the Compliance Order are separate from the authorization needed from the Commission's PRO. Please note that, as emphasized during the June 19 inspection, any changes in operating water levels will require additional authorizations from the PRO.

During discussions at the project, you indicated that you plan to direct flow through four pipes through the diversion to a steel and concrete headgate box, which will have orifices that control the release of the minimum flow to the bypass reach. Debris will be captured before entering the pipes by a wire mesh screen supported by steel posts and large rocks. Your descriptions of these features followed the plans you have filed to date.

During the inspection, you and your consultant indicated that minimum flow release will be monitored from new equipment to be installed in the headgate box, instead of from the existing gage in the bypass reach. This change had not been previously clearly communicated to us. We had understood that you would continue to use the existing bypass reach gage, or a new gage in the bypass. You explained that placing the new device (a pressure transducer in a protective pipe) in the headgate box would reliably monitor the flow release. You also explained that the screen at the entrances of the pipes, and a cover on the headgate box, would prevent the entry of debris. You said that sediment or other fine material that may settle in the box would be removed regularly.

Our difficulty with using a transducer mounted in the headgate box to monitor minimum flow is that it might not accurately measure the amount of water in the bypass reach. Any clogging or vandalism that reduced the flow from the release orifices could cause an increase in water level in the box, resulting in the recording of an apparent increase in flow release. Also, the use of a transducer in the box would not account for flow into the bypass reach over or through your rock-and-rubble diversion, or possible loss of water to the streambed immediately below the diversion. A letter from the Idaho Department of Fish and Game (IDFG), dated January 23, 1995, also informed you that any minimum flow gage should be placed in the bypass reach, not at the diversion site. Therefore, based on the above, the streamflow gage that is currently located in the bypass reach, or a new gage placed in the bypass reach, should be used to monitor bypass flow compliance.

Consequently, please file, within 30 days of the date of this letter, a revision to your modification plans that includes the use of your present streamflow gage to monitor minimum flow compliance, or the use of a new gage to be located in the bypass reach. The use of a new gage or gaging location will require that you file a suitable rating curve and approval from the IDFG before the gage is used. The other aspects of your plan, as submitted in your previous filings and as discussed at the project site, will be considered for approval upon receipt of the information requested above.

Seven copies of the requested information should be filed with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 North Capitol Street, N.E.
Washington, D.C. 20426

Thank you for your cooperation in these matters. If you have any questions, please contact Pete Yarrington at (202) 219-2939.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Mr. Jerry M. Conley
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

Mr. Wallace N. Cory
Idaho Division of Environmental Quality
1410 North Hilton
Boise, ID 83706-1255

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

JUN 15 1995

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
JUN 19 1995
Department of Water Resources

Mr. Vernon F. Ravenscroft
HC 60
Box 1469
Bliss, ID 83314

Dear Mr. Ravenscroft:

This letter acknowledges your May 3, May 10, and May 17, 1995 reports, as well as the May 9 letter from your attorney. We also received a May 11, 1995 letter from the Idaho Division of Environmental Quality (IDEQ) concerning your project.

This letter discusses the above correspondences and the status of your proposed project modifications and interim project operation.

Minimum Flow Issues

Background. Article 2 terms and conditions of the exemption for your project, as stipulated by the Idaho Department of Fish and Game (IDFG), require bypass flows of 5 cubic feet per second (cfs) for the period of July through mid-April, and 80 cfs for the period of mid-April through June.

Our October 13, 1994 letter to you instructed you to cease generation because you were unable to comply with a requirement in the Commission's September 2, 1994 Compliance Order. The Compliance Order required the filing of, and Commission approval for, changes in the project that would ensure the release of required minimum flows.

Approval to restart generation before the completion of project modifications required by the Compliance Order was provided in our February 16, 1995 letter. That approval was based on your plan to release a higher, interim minimum flow of 10 cfs that would ensure that the required 5 cfs minimum flow would be maintained. Because modifications could not be completed by mid-April, our letter of April 18, 1995 extended approval for generation into the period when an 80 cfs minimum flow is required. These approvals were based upon the stipulation that, if minimum flows were violated, you would cease generation until after modifications are completed.

Modifications to flow requirements. Your May 3, 1995 report and your attorney's May 9 letter requested reconsideration of our requirement that generation cease if a violation occurs before

modifications are completed. These correspondences expressed your concern that the extreme flow fluctuations that occur in the river this time of year make minimum flow deficiencies, and therefore violations and a project shutdown, more likely. You were concerned that such a shutdown would make it impossible to perform the required modification work.

We will change our requirement for project shutdown as stated in our April letter to you. You still must cease generation immediately if a minimum flow deficiency occurs prior to the modification work. However, we will now allow you to restart the project after a report on the deficiency is filed with the Commission and we approve the startup. In this manner, we will allow generation to be used as a means of controlling water levels during project modification work. Because your plans currently call for the modifications to be made during the period of the 5-cfs flow requirement in July, we assume that there will be little chance of a minimum flow deficiency occurring during the construction period. However, any minimum flow deficiencies during the modification work may be determined to be violations of article 2.

Your attorney's May 9 letter requested that flow deficiencies of four hours or less not be considered violations during the interim period before project modifications are completed. Because your operational requirements were established by the article 2 terms and conditions stipulated by the IDFG and the U.S. Department of Interior, you must first receive these agencies' approval, and file copies of the approvals with the Commission, before reducing your flow release. Regardless of any requests to alter your flow requirements, the project should not be operated during periods when minimum flow violations are likely to occur. Required minimum flows must be passed at all times the project is in operation, including the period in which modifications will be made.

Use of a dam breach to control water level during construction. You indicated that one way to guarantee the passage of minimum flow, and also lower the water level for the modification work, would be to breach the diversion. You stated, however, that a breach would not be acceptable to the resource agencies; your attorney's letter indicated that a breach would impact wildlife reproduction in the upstream ponds and water quality through downstream siltation. The May 11 letter from the IDEQ agreed with the assessment that a breach was unacceptable because of water quality impacts. We concur that breaching the diversion is not an acceptable alternative.

Status of Plans for Project Modification

Our April 18, 1995 letter to you requested a map identifying the exact locations of the structures to be added or altered

during project modification, and technical drawings of these structures. The material included in your May 10, 1995 report satisfies that request, and completes your submission of material required by the Commission's September 2, 1994 Compliance Order. We expect to complete our review of your filed material concurrent with the Commission's Portland Regional Office (PRO) site inspection planned for June 19, 1995. Please note that, in addition to the approval of your plans filed pursuant to the Compliance Order, you also need to receive work authorization from the PRO, as discussed in our May 10, 1995 letter to you.

Thank you for your cooperation in these matters. If you have any questions, please contact Pete Yarrington at (202) 219-2939.

Sincerely,

Joseph D. Morgan

for J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Mr. Jerry M. Conley
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

Mr. Wallace N. Cory
Idaho Division of Environmental Quality
1410 North Hilton
Boise, ID 83706-1255

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

Tim Luke
File

VERNON RAVENSCROFT

HC 60, Box 1469
Bliss, Idaho 83314

May 5, 1995

RECEIVED
MAY 0 8 1995
Department of Water Resources

J. Mark Robinson, Director
Division of Project Compliance & Administration
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capitol St., N.E.
Washington, D.C. 20426

RE: Registered letter 5/3/95 asking for reconsideration of Project 4055 flow regulations.

Dear Mr. Robinson:

The attached letter from Engineer Don Watts is self-explanatory. I submit same as a supporting supplement to my referenced letter.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Jerry Conley, Idaho Fish & Game Department
Norman Young, Idaho Water Resources Department
Robert Cordell, B.L.M.
Pete Yarrington, F.E.R.C., Wn., D.C.

A & B ENGINEERING
CIVIL ENGINEERING, SURVEYING, PLANNING,
WATER RESOURCES, LAND DEVELOPMENT

2212 N. 20 th. St.
Boise, ID 83702
(208) 342-7751

5/2/95

Mr. Vernon F. Ravenscroft
1328-B Shoestring Rd.
Star Rt.
Bliss, ID 83314

Dear Mr. Ravenscroft:

After reviewing the circumstances that you described to me regarding the conditions imposed by the FERC and the permanent shut down condition imposed if you should temporarily violate the 80 cfs minimum flow requirement now in effect. I know that you have no intention of violating the bypass flow condition and that you intend to routinely release more than 80 cfs to be safe, but the river fluctuations that normally happen due to varying upstream irrigation diversions and unforeseeable changes in spring runoff conditions will make precise regulation very difficult. I agree with your decision to release excess water to assure compliance, but even then there is an outside chance that you could fall into an out of compliance condition, in which case you would very likely be shut down until all required improvements are completed. I am particularly concerned about the impact a total mandatory shutdown would have on the construction of the improvements contemplated.

During the construction of the improvements two breaches will be required in the diversion dam to place the new outflow pipes in position and during this time we anticipate using the power plant diversion to lower the impounded water to a level that will allow the installation of the two new pipes in dry or near dry conditions. The construction would be done when the 5 cfs bypass requirement

is in place and after the high water period is over in early summer. With the abundant snow pack still in place there would be some major problems in handling the water should the power plant canal not be available as a diversion. The other bypass facilities are not capable of handling large quantities of water and if the overflow section of the diversion dam must be used to allow the flows to pass one of two alternatives would be forced upon you. One would be the construction of substantial cofferdams both upstream and downstream of the new construction area and the installation of large pumps to keep the work area dry; this would be prohibitively expensive and, in fact, may cost more than the real improvements. The other would require an indefinite delay in construction until the natural flow of water reaches a very low level; such an indefinite delay would also have a very significant financial impact.

Due to the possibility of the potentially serious adverse impact a total and permanent shut down would have on your project I would urge you to do two things.

1) Be very careful not to violate the FERC conditions. During periods of decreasing water inflow you should check the outflow more often to assure that the bypass remains in compliance. Also, as you know, it has been several years since very high flows have passed your project and when high flows do occur they can be expected to carry large amounts of driftwood and other debris. The presence of the debris during unusually high inflows could lead to clogging or obstruction of your bypass pipes so more frequent inspections should also be made during times of unusually high flows. I know you intend to be extremely cautious.

2) Petition the FERC, in advance, to use the power plant canal as a diversion during construction <u>even if an inadvertent violation should occur</u>. I would

expect them to allow such a condition as long as the normally required bypass requirement is met since it would serve no useful purpose to deny you the use of the canal and would only assure significant delay in your ability to comply with their ultimate goals.

If you have any questions, please don't hesitate to call on me.

Very truly yours,

Donald J. Watts, P.E., L.S.

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

MAY 10 1995

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED

MAY 15 1995

Department of Water Resources

Mr. Vernon F. Ravenscroft
HC 60
Box 1469
Bliss, ID 83314

Dear Mr. Ravenscroft:

Our December 20, 1994 letter to you requested that you coordinate your proposed construction for project modifications through our Portland Regional Office (PRO). Our April 18, 1995 letter to you requested specific items that we hope will enable us to complete our review of your proposed plans. At the time of the writing of that letter, we were unaware that you had not begun coordination with the PRO.

The PRO needs to review your plans and specifications and a quality control plan (including a soil erosion control plan) before any modification work can begin. Please ensure that the PRO has for its review, at least 30 days prior to the anticipated start of construction, two copies of final submissions of the materials listed above. The PRO should be contacted to obtain the appropriate format requirements for the submittals.

In a telephone conversation with Commission staff on April 4, 1995, you indicated that you now plan to install a single flow control box to release water to the bypass reach, using four bypass pipes through the project diversion. Three of the pipes have yet to be installed. You also explained that you will install a new rock "reef" and trash screen above the pipe inlets. As indicated in our December 1994 letter, you need approval from appropriate state and federal agencies before undertaking any construction. For example, the type of work that you discussed in the April telephone conversation will need to be coordinated with the U.S. Army Corps of Engineers before it is undertaken.

Again, please file the material requested in our April 18, 1995 letter with the Commission and the PRO, at least 30 days before the proposed start of construction. Construction cannot begin until your plans are approved by the Commission and written authorization is received from the PRO.

Thank you for your assistance in these matters. If you have any questions, please contact Pete Yarrington at (202) 219-2939.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Jerry M. Conley, Director
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

RECEIVED
MAY 0 4 1995
Department of Water Resources

VERNON RAVENSCROFT
HC 60, Box 1469
Bliss, Idaho 83314

May 3, 1995

Tim Luke Tim NCY

3L-1957

Copy

J. Mark Robinson, Director
Division of Project Compliance & Administration
FEDERAL ENERGY REGULATORY COMMISSION
Mail Code DPCA, HL-21.1
825 N. Capitol St., N.E.
Washington, D.C. 20426

RE: Compliance work at Ravenscroft hydro project 4055

Dear Director Robinson:

On Monday, April 24, 1995, I received your registered letter in which you requested a map which would identify the location of the proposed flow control structures needed to assure bypass flow compliance at project 4055. You also asked for a technical drawing of the control box, associated bypass tubes, etc. Our engineer has advised that he will have the technical drawing completed on Thursday or Friday (May 4th or 5th). I have already enlarged contour maps of the area. All material will be forwarded just as soon as we receive the drawings from Engineer Watts.

In the referenced letter you also discussed the bypass stipulation as follows: "During the period of required higher flows, we expect you to continue to maintain a reasonable buffer over the flow requirement. If the 80 c.f.s. minimum flow is violated during the interim period, the project must cease generation and not restart until approved project modifications are completed."

I respectfully petition your reconsideration of this requirement during the high flow period. Such a requirement is manageable and acceptable during the low flow period because the flows are much more stable and the volumes are manageable. In the spring period this reach of the Malad River is extremely volatile due to management decisions on the part of two major canal companies and several independent ditch systems which enjoy Senior Water Rights to divert directly from the river. I have attached U.S.G.S. records (April & May 1987 & 1990) for station 13152500 wahich is located less than a mile above the project 4055 diversion. There is no significant inflow or outflow between the station and the project diversion. You will note that on 4/13/87 the flow at 0945 hours was 377 c.f.s.; just twelve (12) hours later it was only 145 c.f.s. - a loss of 232 c.f.s. in only one half day. On 5/2/87 the flow was 369 c.f.s. at 0530 and by that evening (2300) it was down to only 3.7 c.f.s., a loss of 365 c.f.s. (99%) in 17½ hours. On 5/5/87 the experience was 409 c.f.s. at 0030 and only 180 at 1130 hours. On 4/16/90 the flow was 382 c.f.s. at 1126 hours and by 1900 hours on 4/19/90 it was a mere 7.5 c.f.s. These extreme fluctuations are not due to natural predictable weather influences; they are prompted by individual irrigator decisions involving system managers, ditch riders and individual irrigators, none of whom the Ravenscroft project can control.

We are and will continue to operate the 80 c.f.s. flow with a liberal "buffer." We are checking with the Watermaster to determine the inflow at station 13152500 and to obtain his anticipation of pending flow management decisions. Any time the 80 c.f.s. standard is approached we will turn "all off" to re-establish a "liberal buffer."

There is an alternative. The 1995 flood threat should be passed by mid-May. At that time we could breach the diversion at the shallow west end which is situated on a solid lava bedrock. We would then build a coffer dam immediately above the construction area and proceed to complete the improvement work on an expedited basis. Such an expedited schedule may not be acceptable to the Idaho Fish and Game Department. It would substantially lower the pond level at a time when ducks are nesting; jeopardize bass spawning waters; move trash and warm-water sports fish down river into quality trout water; and move sediment which the ponds have trapped back into the river system.

I respectfully and sincerely petition a modification of your order to provide tolerance for the extreme flow fluctuations which are a matter of record at this site. The attached U.S.G.S. exhibits are from a report which I prepared several years ago. I'll obtain any additional exhibits which you may desire.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft
Project 4055 Owner

cc: Jerry M. Conley, Director
Idaho Dept. of Fish & Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Dept. of Water Resources
Statehouse Mail
Boise, ID 83720-9000

Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

Pete Yarrington, F.E.R.C.

UNITED STATES DEPARTMENT O[illegible]NTERIOR [illegible]
PRIMARY C[illegible]PUTATIONS OF GAGE HEIG
DATE PROCESSED: 03-JUN-87

[illegible]00
[illegible] RIVER NR GOODING ID

STORE PARM 0006[illegible]

ROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF: 0.

	DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR	01 1[illegible]
OK A	4/ 8/87	2.97 264 <2400>	2.02 108 <0945>	2.14	2.15	125			
A	4/ 9/87	3.66 409 <2045>	(2).27 143 <0830>	3.37 ~~3.19~~	3.20	~~345~~ 340			
A	4/10/87	3.65 406 <0015>	(2).16 127 <1645>	3.28 ~~2.90~~	2.92	~~326~~ 25.4			
A	4/11/87	3.39 349 <2400>	(2).21 134 <1915>	3.03 ~~2.97~~	2.98	275 ~~265~~			
A	4/12/87	3.51 375 <0300>	(2).40 163 <0015>	3.46 ~~3.22~~	3.25	364 ~~319~~			
A	4/13/87	3.52 377 <0945>	(2).28 145 <2145>	3.44 ~~3.31~~	3.33	360 ~~336~~			
	4/14/87	3.15 299 <0245>	2.82 235 <2145>	2.94	2.94	258			
	4/15/87	3.01 271 <0215>	2.65 205 <2130>	2.83	2.83	238			
	4/16/87	3.07 283 <0815>	2.61 198 <2315>	2.84	2.85	241			
	4/17/87	2.78 228 <1445>	2.57 191 <2315>	2.62	2.62	200			
	4/18/87	2.57 191 <0015>	2.41 165 <2300>	2.50	2.50	179			
	4/19/87	2.80 232 <1815>	2.40 163 <0400>	2.53	2.53	184			
	4/20/87	3.12 293 <1700>	2.61 198 <1530>	2.74	2.74	221			
	4/21/87	2.70 214 <0015>	2.53 185 <2245>	2.61	2.61	a ~~198~~ 155	slight intake		
P	4/22/87	2.53 185 <0015>	2.47 175 <1145>	2.51	2.51	~~181~~			

59.

...0
...RIVER NR GOODING ID

D PROCESSED: 11-JUN-87

...ROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

STORE PARM 00060

TEST DIFF: 0.

	DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH		SHIFT ADJ	DATUM COR	01 13
	#593			2.29		154		sh-0		
P	4/22/87	2.58	2.23	2.49	2.49	a ~~178~~	161	sluggish intake		2
		193	137				✓			2
		<1830>	<1445>				ok			
	4/23/87	2.49	2.02	2.27	2.28	145				2
		178	103				✓			2
		<0015>	<1130>	2.34						
A	4/24/87	2.52	(0).91	~~2.31~~	2.33	154 ~~152~~	ok			2
		183	14				✓			2
		<1000>	<0500>							
	4/25/87	2.49	2.03	2.24	2.24	139	ok			2
		178	109				✓			2
		<0030>	<1945>							
				1.81						
AR	4/26/87	2.03	(0).24	~~1.55~~	----	81 --	ok			2
		----	----							1
		<0015>	<1615>	1.70						
A	4/27/87	1.95	(0).40	~~0.34~~	1.04	68 ~~43~~				1
		93	2.7				✓			
		<2215>	<0330>	1.90						
A	4/28/87	2.18	(0).52	~~1.74~~	1.61	92 ~~57~~	✓			
		130	4.6				✓			
		<1715>	<0200>							
	4/29/87	2.40	2.08	2.24	2.24	139	ok			2
		163	116				✓			2
		<2100>	<0400>							
	4/30/87	2.99	2.21	2.55	2.57	191				2
		267	134							2
		<2315>	<0445>							

ADR bridging funds

END MONTH

				3.16					
A	5/ 1/87	3.38	(2).34	~~3.11~~	3.11	301 ~~292~~			2
		347	154						3
		<2345>	<1[illegible]00>	2.92					
A	5/ 2/87	3.48	(0).72	~~2.69~~	2.81	254 ~~214~~			3
		369	[illegible].7						3
		<0530>	<2300>	2.85					
A	5/ 3/87	3.58	(0).[illegible]	~~2.65~~	2.75	241 ~~222~~			
		391	[illegible]						3
		<2200>	<001[illegible]>	3.53					
A	5/ 4/87	3.69	(2).42	~~3.23~~	3.31	380 ~~271~~			3
		416	[illegible]67						2
		<2045>	<03[illegible]5>	3.56					
A	5/ 5/87	3.66	(2).50	~~3.12~~	3.14	38[illegible] ~~297~~			3
		409	180						2
		<0030>	<[illegible]130>						3

13152500
MALAD RIVER . GOODING ID
OUTPUT PARAMETER 00060 STORE STATIST..(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
04/14/90	3.12 294 <1051>	2.80 231 <0035>	2.98	265	
04/15/90	3.21 312 <2325>	2.53 183 <1109>	2.77	228	
04/16/90	3.53 382 <1126>	3.12 293 <2400>	3.36	344	
04/17/90	3.10 289 <0012>	2.02 106 <2029>	2.49	179	
04/18/90	2.19 130 <0059>	1.61 79 <2345>	1.98	101	0.00
04/19/90	1.81 79 <0015>	0.75 7.5 <1900>	1.28	36	0.00
04/20/90	1.15 21 <2400>	0.64 6.9 <1615>	0.91	//	0.00
04/21/90	2.30 146 <2315>	1.07 17 <1000>	1.61	66	0.00
04/22/90	2.71 215 <2115>	2.13 121 <0545>	2.38	161	0.00
04/23/90	3.15 302 <1745>	2.69 211 <0015>	2.92	257	0.01
04/24/90	3.18 308 <1330>	2.87 246 <1230>	3.02	274	0.01
04/25/90	3.11 294 <1030>	2.97 265 <0130>	3.04	280	0.01
04/26/90	3.15 302 <2345>	3.04 279 <0530>	3.09	288	0.01
04/27/90	3.43 362 <2330>	3.13 298 <0715>	3.21	314	0.01
04/28/90	4.11 526 <2030>	3.42 360 <0015>	3.70	424	0.01

APR 18 1995

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
APR 21 1995
Department of Water Resources

Mr. Vernon F. Ravenscroft
HC 60
Box 1469
Bliss, ID 83314

Dear Mr. Ravenscroft:

This letter discusses the status of your proposed modifications and interim project operation at the Ravenscroft Ranch Project, as described in your reports dated January 17 and March 4, 1995. Project modifications are required by the Commission's Compliance Order issued September 2, 1994, to ensure minimum flow compliance in future operation of the project. Your March 4, 1995 report was filed in response to a February 16, 1995 letter from us requesting further information on your project modification plans.

Project Modification Timetables and Operation Status

You indicated in an April 4, 1995 telephone conversation with Commission staff that you now plan to wait until July of this year, when your minimum flow requirement returns to 5 cfs (cubic feet per second), to start work on project modifications. Article 2 of the project exemption requires, as stipulated by the Idaho Department of Fish and Game (IDFG), that you release bypass flows of 5 cubic feet per second for the period of July through mid-April, and 80 cfs for the period of mid-April through June.

Restarting of the Ravenscroft Ranch Project before project modifications were completed was approved in our February 16, 1995 letter to you. Our February 16 letter indicated you could restart and operate the project if you provided an interim minimum flow release of 10 cfs to ensure that flows do not drop below the required 5 cfs. Our letter further stipulated that you may operate the project before approved modifications are complete provided that generation would cease if a bypass flow of below 10 cfs is recorded; it also stated that if the 5 cfs minimum flow is violated during the interim period, the project must cease generation and not restart until approved project modifications are completed. You indicated in the April 4 telephone conversation that the project has been operating since mid-March.

You indicated in the April 4 telephone conversation that, because your article 2 minimum flow requirement returns to 80 cfs

on April 15, you will need to wait until July to work on project modifications in the bypass reach. During the period of required higher flows, we expect you to continue to maintain a reasonable buffer over the flow requirement. If the 80 cfs minimum flow is violated during the interim period, the project must cease generation and not restart until approved project modifications are completed.

Similarly, we also expect you, during any project operation after July 1 but before completion of the modifications, to protect the minimum flow using the same plan described for operation prior to April 15.

Details of Project Structures to be Added or Modified

In our April 4 telephone conversation, you indicated that, contrary to your January 17 and March 4 report, you now plan to install a single flow control box to release water to the bypass reach, using four bypass pipes to deliver water to the box through the diversion. Three of the necessary bypass pipes have yet to be installed. You explained that the three other, smaller pipes already present in the diversion will be used in any emergencies that may require additional water to be released. The flow control box will utilize changeable orifice plates, allowing you to change the flow release to the bypass reach.

You also explained in the April 4 telephone conversation that you will install a new rock "reef" and trash screen above the pipe inlets to keep debris from entering the the flow pipes and flow control box.

Operating Scenario and Shutoff/restart Plan Revisions

Our February 16 letter requested a revised operating scenario outlining how the project will operate while ensuring the release of the minimum flows required by article 2. We also requested a revised plan for project shutoff and restart when the stipulated minimum flow rates are approached.

In your March 4 report, you included a March 2 letter (from your consultant) which described the necessary revisions to your operating scenario and shutoff/restart plans. The letter indicated that only three changes to the operating scenario described in your January 17, 1995 report would be necessary: 1) twice-yearly changing of the minimum flow orifice plates to adjust for the requirement to release 80 cfs from mid-April through June; 2) a slightly increased storage depth above the diversion during periods in which the lower minimum flows were being released (creating an additional buffer that would protect minimum flows against fluctuations in inflow); and 3) the changing of the controller program each time orifice plates are

changed. The March 2 letter further indicated that no revisions in the shutoff/restart plan presented in the January 17 report will be needed except for the twice-yearly controller program changes mentioned above.

Compatability with Exemption Requirements

Our February 16 letter also requested evidence that project modifications would not violate the terms and conditions of article 2. Your consultant's March 2 letter indicated that compliance with article 2 would not be affected by the modifications. More specifically, the upstream water levels, for example, would actually be more stable, further ensuring the release of required minimum flows. Please note that no increase in the water surface elevation of the project reservoir is permitted under the Commission's regulations.

Conclusions and Requested Actions

The information you provided in your January 17 and March 4, 1995 reports, and the telephone conversation with Commission staff on April 4, 1995, indicate that the implementation of your plans for project modification should allow you to operate in compliance with the article 2 terms and conditions of the project exemption. However, you need to file further information with the Commission regarding the plan changes you indicated via telephone on April 4, 1995. Please file the information indicated below so that we can review your final plans for approval well in advance of the time you propose to begin project modifications in July.

1. A map identifying the proposed locations, in relation to your project diversion, of the proposed flow control box, its four associated bypass pipes, the rock "reef" and trash screen, and any other structures propose to be added or altered during the anticipated project modification.

2. A technical drawing showing the dimensions of the flow control box, associated bypass pipes, and their orientation in relation to the bypass reach.

Seven copies of the requested information should be filed with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 N. Capitol Street, N.E.
Washington, D.C. 20426

Thank you for your assistance in these matters. If you have any questions, please contact Pete Yarrington at (202) 219-2939.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Jerry M. Conley, Director
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

FEB 16 1995

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
FEB 21 1995
Department of Water Resources

Mr. Vernon F. Ravenscroft
c/o John Runft
1936 Priest Place
Boise, ID 83706

Dear Mr. Ravenscroft:

We received your reports, dated January 4 and January 17, 1995. Your report of January 17 included reports from your consultants. We also recieved your January 26, 1995 supplement.

Your two reports revised your November 15, 1994 proposal for making modifications to the project in order to correct the project's minimum flow compliance problems. The January 4 report included your proposal for restarting generation during the period of planning and construction of project modifications.

Your two reports were apparently filed before the Idaho Department of Fish and Game (IDFG) responded to your request to amend your article 2 minimum flow from seasonal requirements of 5 cfs and 80 cfs to a year-round 15 cfs. Many of the technical aspects of the information you have filed were formulated using the assumption of a 15-cfs requirement. The IDFG, in a letter to you dated January 23, 1995, did not accept your amendment request. As specified in this letter, several revisions to the information you have filed with the Commission now need to be made in order for us to approve your planned modifications.

Request to Restart Operation

The project is currently not generating because the Commission's letter of October 13, 1994 required you, pursuant to the September 2, 1994 Compliance Order, to cease project operation by October 19, 1994. Our letter of December 20, 1994 informed you that you may receive Commission approval to resume generation before the changes identified in an approved plan are completed if you identify interim flow releases that include large enough margins to protect the required minimum flows. Our letter stated that the interim flows, or inflows to the project, would need to be released until the changes approved in the plan are complete and documented with the Commission.

Your January 4, 1995 report included a plan to restart generation while protecting the required minimum flows. You proposed, for the period ending April 15, a minimum flow of 10 cfs at the present gage at the mid-point of the bypass reach.

You proposed to check the reading 3 times daily and record the flows in the project diary.

You presented monthly average flow data for the past 50 years from the U.S. Geological Survey (USGS) for your reach of the Malad River, and used it to illustrate that the flows in the bypass reach were unlikely to decrease to the required minimums, given the combinations of turbines you planned to operate. You also indicated that, because during the period of February and March the river flow is governed only by natural inflow, rapid inflow changes are unlikely to cause problems.

Your plan for interim minimum flow release during project modification is acceptable, and you may now restart generation. However, you must determine the appropriate combinations of turbines to operate based on present conditions, not historical flows. If a flow of below 10 cfs is recorded, generation must cease immediately, and the project must not be restarted until there is sufficient inflow to support generation and the required minimum flow. If, however, the 5 cfs minimum flow required by the project's article 2 terms and conditions is violated at any time, the project must cease generation and not restart until after the work is completed. You must notify the Commission within 5 days if, at any time during generation, the flow in the bypass reach drops below 10 cfs.

Streamflow Gaging

Our December 20, 1995 letter stated that the weir and gage you were proposing will need to record the flow in the bypass reach and the status of generation at the powerhouse. According to your January 17 filing, generation status and bypass flows will be electronically recorded by the computer every 15 minutes, and copies of the records will be available to all relevant parties.

Plan Clarification and Operating Scenarios

Your report of January 26 outlined your recommended changes to the project modification plans to ensure compliance with the 5 cfs and 80 cfs requirements of article 2. These changes included the revision of the orifice system so that orifice plates can be changed to match flow requirements, the installation of an additional 30-inch pipe through the embankment with a gate at the upstream end, and the addition of two flow control structures (four total). In order for us to evaluate these modifications, we need a map and a detailed description of the proposed location for all structures to be added or altered during the modification.

Your report of January 5 provided the operating scenario we requested in our December 20, 1994 letter. However, the scenario

in the report was apparently written using the 15 cfs requirement that was not approved. An operating scenario needs to be provided that uses the 5 cfs and 80 cfs minimum flow flow values.

Shutoff/restart

The reports from your consultants included in your January 17 report addressed shutoff and restarting of the project. However, these discussions were both written assuming that the minimum flow would be 15 cfs, and were included in scenarios using that value. Shutoff/restart specifications need to be readdressed using the 5 cfs and 80 cfs minimum flow values.

Maintenance of Gaging, Recording, and Flow Maintenance Equipment

In a January 5 report that you included in your January 17 filing, you suggested a schedule for maintenance, including weekly verification of the accuracy of new instrumentation. You provided a proposed schedule that would be used. You indicated that, in addition, the flow control boxes and trashracks would be cleaned after any automatic project shutdown.

Compatability with other Terms and Conditions, Agreements

You stated in your January 17 filing that, once completed, the new system will operate at a higher water level, maximizing the fish, wildlife and water quality values of the reregulating ponds. The information contained in your report of January 17 stated that the water level upstream will fluctuate up to 2.5 feet during project operation. It is not clear whether these level changes are still expected to occur with the continuance of the IDFG requirement for seasonal minimum flows of 5 and 80 cfs. We need evidence that any expected water level fluctuations, or other planned alterations, will not endanger compliance with the terms and conditions of article 2.

Conclusions and Requested Actions

Your plan for interim minimum flow release during project modification is acceptable, and you may now restart generation. As stated above, if a flow of below 10 cfs is recorded, generation must cease immediately, and the project must not be restarted until there is sufficient inflow to support generation and the required minimum flow. If, however, the 5 cfs minimum flow required by the project's article 2 terms and conditions is violated at any time, the project must cease generation and not restart until after the work is completed. You must notify the Commission within 5 days if, at any time during generation, the flow in the bypass reach drops below 10 cfs.

We cannot complete our review of your plan for project modification until you have filed the following information.

1. A map identifying the locations of all structures to be added or altered during the modification, and detailed specifications of added or altered structures.

2. A revised operating scenario that outlines how the project will operate while ensuring the release of the minimum flows required by article 2.

3. A revised plan for project shutoff and restart when the stipulated minimum flows are approached.

4. Evidence that proposed project alterations, such as fluctuations in upstream river level and in the reregulating ponds, will not endanger compliance with the terms and conditions of article 2.

Seven copies of the requested information should be filed with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 N. Capitol Street, N.E.
Washington, D.C. 20426

If you have any questions, contact Pete Yarrington at (202) 219-2939.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Jerry M. Conley, Director
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

February 15, 1995

Vernon Ravenscroft
Tuttle Route
Bliss, ID 83314

Re: Tuttle Hydro Plant
Water Rights 37-07857, 37-7865, 37-7922

Dear Mr. Ravenscroft:

I have reviewed your January 17, 1995 correspondence and related documents concerning FERC requirements and engineering design for bypass flows at your Tuttle hydro plant.

It is my understanding that the proposed plant operation and bypass flow design will provide a year round continuous bypass flow of at least 20 cfs. The proposed operation and design appears to minimize river flow fluctuations. This is desirable since river flow fluctuations caused by plant operation has been a source of complaints in the past.

The 20 cfs minimum by-pass should be sufficient during the irrigation season as long as downstream rights are satisfied. As no data was presented concerning natural channel losses between the hydro plant diversion and the downstream water right diversions, one can not assume that a 20 cfs bypass will be sufficient at all times. You are reminded that the watermaster shall continue to have authority to regulate this diversion if the downstream rights can not be satisfied.

The other item of concern in your letter is the reference to re-regulating ponds. I believe that there has been some questions raised in the past about the number and size of these ponds, and their impact on river flow conditions. Some questions have been raised as to whether these ponds have been authorized by your permits. I wish to advise you that development of additional ponds is prohibited unless you obtain additional water rights or demonstrate that any new ponds are already authorized under existing permits.

Thank you for the opportunity to review and comment on the proposed plant operation and bypass flow design.

Sincerely,

Norman C. Young
Administrator, Water Management Division

WATER RIGHT NUMBER	CURRENT OWNER NAME	PRIORITY DATE	STG	POINT OF DIVERSION	POD FLAG	TOTAL DIVERSION	TOTAL ACRES	WATER USES
A37-07857	RAVENSCROFT, VERNON F	09/25/1980	P	06S 14E 28 NWSW		20.000 CFS		28
A37-07865	RAVENSCROFT, VERNON F.	11/05/1980	P	06S 14E 28 NWSW		130.000 CFS		28
A37-07922	RAVENSCROFT, VERNON F.	07/10/1981	P	06S 14E 28 NWSW		50.000 CFS		28
A37-00447D	MARVEL, JONATHAN H.	07/01/1889	D	06S 14E 30 SESW		0.800 CFS	60.0	01
A37-11131	DALTON, RICHARD H.	07/01/1889	D	06S 14E 30 NESESW		5.600 CFS	301.0	01,04
A37-07944	DALTON, RICHARD H.	12/30/1981	P	06S 14E 30 NESESW		0.740 CFS	37.0	01
A37-01160	JUSTICE DITCH CO.	05/31/1900	D	06S 14E 30 NENESE		4.000 CFS	351.2	01,43,04
A37-01175	JUSTICE DITCH CO.	04/01/1906	D	06S 14E 30 NENESE		3.340 CFS	351.2	01,43,04
A37-01175A	SIMMS, CLIFFORD J.	04/01/1906	D	06S 14E 30 NENESE		3.340 CFS	175.0	01
WATER SOURCE: TWO SPRINGS								
A37-04403	QUARTER CIRCLE LAZY H INC	05/01/1889	S	01S 11E 31 NESENE		4.000 CFS	205.0	01

WATER RIGHT NUMBER	CURRENT OWNER NAME	PRIORITY DATE	STG	POINT OF DIVERSION	POD FLAG	TOTAL DIVERSION	TOTAL ACRES	WATER USES
WATER SOURCE: BIG WOOD RIVER								
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	02S 18E 30 SESENE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	02S 18E 30 NESE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	03S 18E 9 NENESE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	04S 18E 15 NWSE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	04S 19E 25 SWSE	I	3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 15E 12 SESW		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 15E 15 NWNE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 19E 5 NWSE	R	3000.000 CFS	27006.0	01
WATER SOURCE: COVE CREEK								
A37-02471	IDAHO POWER CO	05/14/1946	L	06S 13E 25 SWSW		900.000 CFS		28
A37-02128	IDAHO POWER CO	11/25/1908	L	06S 13E 35 NENW		700.000 CFS		28
A37-02471	IDAHO POWER CO	05/14/1946	L	06S 13E 36 NWNW		900.000 CFS		28
WATER SOURCE: DYER CREEK								
A37-04403	QUARTER CIRCLE LAZY H INC	05/01/1889	S	01S 11E 31 NESENE		4.000 CFS	205.0	01
WATER SOURCE: MALAD RIVER								
A37-04403	QUARTER CIRCLE LAZY H INC	05/01/1889	S	01S 11E 31 NESENE		4.000 CFS	205.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	02S 18E 30 SESENE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	02S 18E 30 NESE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	03S 18E 9 NENESE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	04S 18E 15 NWSE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	04S 19E 25 SWSE	I	3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 15E 12 SESW		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 15E 15 NWNE		3000.000 CFS	27006.0	01
A37-00867Z0	BIG WOOD CANAL CO	11/16/1905	D	05S 19E 5 NWSE	R	3000.000 CFS	27006.0	01
A37-02471	IDAHO POWER CO	05/14/1946	L	06S 13E 25 SWSW		900.000 CFS		28
A37-00447C	ZELLER, FRED	07/01/1889	D	06S 13E 30 NESESW		4.000 CFS	233.0	01,04
A37-07920	STATE OF IDAHO	06/19/1981	P	06S 13E 34 NENW		39.000 CFS		34
A37-07920	STATE OF IDAHO	06/19/1981	P	06S 13E 35 NWNE		39.000 CFS		34
A37-02128	IDAHO POWER CO	11/25/1908	L	06S 13E 35 NENW		700.000 CFS		28
A37-02472	IDAHO POWER CO	05/14/1946	L	06S 13E 35 NENW		650.000 CFS		28
A37-04112	KING HILL IRRIGATION DISTRICT	03/26/1902	S	06S 13E 35 NWNW		370.000 CFS	11275.7	01,43,04
A37-02471	IDAHO POWER CO	05/14/1946	L	06S 13E 36 NWNW		900.000 CFS		28
A37-12743	FLORES, THOMAS RICHARD	12/31/1919	J	06S 14E 9 NESW		0.070 CFS		04
A37-00238A	SAVAGE, JOE S	04/15/1883	D	06S 14E 16 NWNWSE		2.000 CFS	127.5	01
A37-00239A	SAVAGE, JOE S	08/29/1884	D	06S 14E 16 NWNWSE		1.720 CFS	127.5	01
A37-00240A	SAVAGE, JOE S	06/01/1895	D	06S 14E 16 NWNWSE		2.280 CFS	127.5	01
A37-00239D	MC CABE, ROBERT	08/29/1884	D	06S 14E 21 SENW		0.680 CFS	393.0	01
A37-00607D	MC CABE, LINDA JOY	08/15/1886	D	06S 14E 21 SENW		1.290 CFS	85.0	01
A37-00608D	MC CABE, ROBERT	04/15/1887	D	06S 14E 21 SENW		0.422 CFS	85.0	01
A37-00240D	MC CABE, ROBERT	08/29/1895	D	06S 14E 21 SENW		0.920 CFS	393.0	01

VERNON RAVENSCROFT
Telephone 208 837-4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 344-1487
1936 Priest Pl.
Boise, Idaho 83706

January 17, 1995

RECEIVED
JAN 18 1995
Department of Water Resources

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 N. Capitol Street, N.E.
Washington, D.C. 20426

Dear Secretary:

By letter, December 20, 1994, Mr. Mark Robinson, Director, Division of Project Compliance and Administration asked for clarification of our operation plan for the automation of the bypass flow controls at the headworks for project 4055-020 Idaho. Since submitting the original concepts and supporting engineering report to you, I have submitted blueprints and proposed operational standards to the Shoshone Bureau of Land Management and to the Jerome office of the Idaho Department of Fish and Game (1/3/95). On January 17, 1995 these materials were submitted to the Idaho Water Resources Department and are herewith being mailed to your Portland Regional Office.

Exhibits enclosed with this report are:

1. Blueprints of the anticipated facilities and the position of same.
2. Engineering statements from Engineers Bob Ross (instrumentation and computer controls) and Don Watts (structure and water control design). It should be noted that the facilities designed by Engineer Watts will require that the water be released in a controlled volume through fixed orifice openings in a headgate box located on the downstream side of the major outflow tubes already placed in the diversion structure. While more expensive than a broad crested weir, these control structures will have several advantages:
   a. Will minimize and better control the beaver problem.
   b. In regard to the pressure gauge, the design will provide a wide elevation range of at least 2 feet in which to adjust or terminate the flow patterns as compared to only inches for a weir structure. See engineers' flow table. The increment and decrement pattern will take place between 20 c.f.s. (2.5' of head) and 27 c.f.s. (4.5' of head).
   c. Will better control ice and trash impact on the flow measurements.
   d. Can be constructed on the rock ledge immediately above the river without entry into the river channel. This avoids the additional regulatory involvement by the Army Corps of Engineers.
3. Copy of letter to the Idaho Department of Fish and Game requesting an amendment to the current bypass stipulations. These proposed amendments have been coordinated with both B.L.M. and Idaho Department of Water Resources. These amendments will provide a standard minimum year-round release of 15.14 c.f.s. By design and operational agreement the project

will release an additional 5 to 10 c.f.s. to offset bed loss, evaporation, and side channel diversions. Since the downstream consumptive water rights total 15.14 c.f.s., no emergency bypass valve will be needed at the power house. Since generation flow adjustments will be achieved in a range from 25% to 75% above the stipulated minimum bypass flow, there should seldom, if ever, be a question of stipulation compliance.

4. Copy of letter to B.L.M. formalizing agreements from 1/13/95 meeting with that agency.

In answer to the six specific questions asked in the 12/20/94 letter, please be advised:

1. Recording discipline. The project will adjust generation flows at levels equal to or above 20 c.f.s. bypass flow. These adjustments will be in the range of 125% up to 175% of the stipulated bypass flow. Please see Engineer Ross's report for details on this flow discipline. These values, plus a record of the generation status will be electronically recorded at an agreed interval by the computer, and those records will be available to all germane parties.

2. Bypass tube obstruction. The pressure gauge stilling well will be situated immediately adjacent to the bypass orifices. As such, any obstruction or ice on the trash racks ahead of the orifices, or obstruction at the entry to the tubes (28 feet ahead of the orifices) will cause the plant to shut down and prompt immediate remedial pressure on the bypass orifices. Since the critical turnoff level will be at or above the top of the 30" tube and well above the top of the 24" tubes (also, the water to be exhausted is less than 25% of the capacity of the tubes) there will never be a heavy draw to collect trash or floating ice. With 75% unused flow capacity in the tubes, the solid ice levels are unlikely to reach an obstruction level.

   As for the beaver problem, I am advised by Idaho Fish and Game Department that beaver respond to the sound of running water. In this instance, the sound will be 28 feet from the point at which the water enters the exhaust tubes. If that much insulation is insufficient, it will be an easy installation to extend each pipe another 20 feet out into deeper water and thereby further protect from the beaver problem; or, in the alternative, to provide control fencing well ahead of the water entry into the tubes.

   With the automated controls the entire system will operate at a higher water level. This, in turn, should minimize the beaver problem and maximize the fish, wildlife and water quality values of the re-regulating ponds.

3. The engineers have both addressed the question of manual restarting. It is desirable that the automated project controls have a full ability to decrement or increment the flows in the bypass range of 20 to 27 c.f.s.

A complete and positive shut-down at 17 c.f.s. has been suggested by Engineer Ross. This amount represents approximately 113% of the stipulated flow. A positive and total shut-down at that flow level is hereby accepted.

4. Operation scenario. Please see the report from Engineer Ross for operation scenarios. Since the critical turn-off point and the top of the exhaust tubes are below the current spillway elevation and the bypass orifices are also situated in the bottom 19" of the control boxes (equals the bottom half of each exhaust tube) any decrement of the power flow will immediately put pressure on the bypass orifices.

5. Other provisions.

   a. Side channel riparian habitat. Maintaining live water in the side channel will be much easier at a 15 c.f.s. minimum (20 to 27 c.f.s. actual flow) as compared to the previous 5 c.f.s. stipulation during the months of July - April 15th.

   b. River riparian habitat. It need be recorded that two non-native species, Box Elder (Acer negundo) and Russian Olive (Eleagnus angustifolia) are invading the riparian zone along the Malad River banks within the project 4055 community. These two species are both aggressive trees which were brought to the neighboring farms for farmstead shade (Box Elder) and windbreak uses (Russian Olive). Both have demonstrated drought resistance and, on farmstead plantings, grow very well with semi-monthly irrigation. These two species will eventually dominate the river riparian zone at this project site. Their presence is one additional reason why the new wildlife, fishery, and water quality features that have been created by project 4055 provide a positive environmental impact for the community.

   c. The bypass flow control structures will be situated on a bedrock ledge where no riparian growth naturally occurred.

   d. Water storage. The re-regulating ponds were created by opening water passage into adjacent (and exhausted) gravel pits. These ponds serve to the benefit of downstream irrigators as well as their benefit to project 4055. The new bypass flow stipulations will provide the entire downstream water delivery via the bypass river delivery.

6. Inspection Schedule. The flow versus project operation record will be automatically recorded by the computer at an agreed interval. The computer and diversion communication equipment will be checked by competent technicians on the schedule determined by Engineer Ross. The control boxes will be opened and the trash racks cleaned after any automatic turn-off and monthly during all low flow periods.

   The orifice openings themselves will be approximately 11" circular-exit openings made in a plate of stainless steel. The water will first pass through a 3" (on center) trash rack; it will have a free fall of at least 8" to the rock ledge and then a 3' to 4' free fall into the river.

It is unlikely that any trash will lodge in the orifice openings. The openings will also be inspected regularly each time the trash racks are checked for any reason.

A separate appeal to restart operation at project 4055 has previously been submitted to the Commission. Based upon the details of this report and the pending cooperative agreements with the germane regulatory agencies I petition favorable approval of that separate appeal and the acceptance of the flow management plan elaborated by this communication.

If there are questions, please call 208-344-1487. We are changing location and my new address is 1936 Priest Place, Boise, 83706.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

ROSS ENGINEERING
Control Systems Design
Industrial Computer Programs

3470 S. Cole Rd. Boise, ID 83709 (208) 362-2025

January 5, 1995

RECEIVED JAN 0 9

Mr. Vern Ravenscroft
Consulting Associates
1843 Broadway Ave
Boise, ID 83706

Reference: Tuttle Hydro Plant

Subject: Response to FERC Letter - Dec 20, 1994

Dear Vern:

This letter clarifies the details of plant operation using bypass flow to control plant operation once the proposed modifications at the diversion structure are in place. The orifice box structure proposed by Don Watts, A&B Engineering should provide excellent resolution for measuring bypass flow. It should be noted that the orifice box is designed to measure bypass river flow up to a maximum of about 28 CFS. When bypass flows exceed this amount the structure will overtop and all resolution will be lost. It is my opinion that the proposed orifice structure is sufficient for use in verifying project compliance based on a year around 15 CFS minimum stream flow. It is not design to gage the river through all possible ranges of flow.

The following is a description of the proposed control logic for the plant. The specific unit combination incrementation flows and the associated timings stated in this letter are subject to field modification based on the actual response rates of the canal / reregulating pond system. The proposed control logic will be "tuned" to best optimize the operation of the plant and bypass flow at the time of system installation.

The control logic is based on putting the combination of turbines on line which best matches available river flow and by using the storage capability of the upstream pond. The upstream pond level will be allowed to fluctuate as much as 2 1/2 feet during operation. The control logic will allow the upstream level to build up and then excess stored water will be used by turning on the next higher flow combination. Up to 74 acre feet of water are available for stored use by the plant. (See attached table - A&B Engineering - Ravenscroft Bypass - Orifice Flow and Storage Times.) At any instant, the bypass flow plus the plant flow will probably be different than the inflow to the pond

system due to the regulating effect of the upstream ponds. In the following description, the inflow is the upstream inflow of the Malad River to the pond system. The bypass flow is the flow just below the diversion structure and the plant flow is the total flow down the canal through the project.

The three fixed geometry turbines are sized as follows:

Unit #1 - 34 CFS
Unit #2 - 66 CFS
Unit #3 - 124 CFS

Plant Operation

Under normal operation, all units available for operation, there are eight possible flow combinations.

Combination Number	Units On Line	Plant Flow (CFS)
**********	*******	**********
0	None	0
1	#1	34
2	#2	66
3	#1,#2	100
4	#3	124
5	#1,#3	158
6	#2,#3	190
7	#1,#2,#3	224

The control logic works by measuring bypass flow and incrementing the unit combination number each time the bypass flow goes above 25 CFS and decrementing the unit combination number each time the bypass flow goes below 20 CFS. An emergency low flow shutoff will be provided at 17 CFS. Appropriate time delays will be provided to allow the unit combination change to take effect between combination incrementation or decrementation. The plant will be allowed to increment or decrement unit combination automatically. It the plant goes into an emergency low bypass flow shutdown it will have to be manually restarted. The low flow shutoff will override both automatic and manual modes of operation and will cause an alarm in the plant. This alarm will initiate a telephone call out via the plant alarm system autodialer.

The following describes how this logic will work, starting under a condition where all units are enabled, all units are off line and the inflow is at or below 20 CFS. Referencing the Orifice Flow and Storage Times Chart, 20 CFS corresponds to 2.5 ft in the pond. At some point in time, the inflow will increase to at or above 25 cfs (3.9 ft pond level). At this

time, the unit combination number will be incremented by the control system which corresponds to unit #1 on line. When #1 comes on line, the canal flow will be 34 CFS and the bypass flow will be 25 CFS. This will put the reregulating pond system into a deficit of 34 CFS. Given no increase in inflow, there is enough pondage to run the unit in excess of seven hours before the pond level drops to the point that the bypass flow drops back to 20 CFS. If the inflow continues to increase, the time that the unit stays on increases. If the inflow increases just in excess of 54 CFS, the unit will stay on line and the bypass flow will decrease over a 48 hour period to 20 CFS. If the inflow increases to 59 CFS the bypass flow will increase to 25 CFS and the unit combination will again increment. Unit combination number two corresponds to only unit #2 on line, plant flow of 66 CFS. In this case unit #1 will go off line and #2 will come on line. The time interval between combination changes will be about 4 hours.

Again the inflow may increase, decrease, or stay the same. If the inflow increases a little, the unit may stay on line. If it decreases or stays the same, the combination number will decrement and unit #2 will go off line and #1 will come back on line. If the inflow increase a lot, the combination number will again increment and #1 will be put on line in addition to unit #2. The same logic is followed until all units are on line.

The unit combination number is incremented each time the bypass flow increases past 25 CFS or remains there for more than one hour. The unit combination number is decremented when the flow drops below 20 CFS or remains there for over 15 minutes. In this way the plant flow will track river flow but will respond more rapidly under decreasing flow than under increasing flow. Under normal pond level control, the maximum change in plant flow for any unit combination change is 34 CFS. A safety margin in the upstream pond of one foot of elevation is observed between normal minimum operating level (20 CFS) and the minimum stream flow. A safety margin of .4 ft is observed between the emergency shutdown point and the minimum stream flow. Under normal operation, the time interval between changing unit combinations will be in excess of 6 hours. Upstream pond level during this time will fluctuate a maximum of 1.5 feet.

Plant Operation - One or More Units Unavailable for Operation

It is anticipated that plant will be allowed to operate in automatic under conditions where one or more units are disable. The worst case scenario is if both units #1 and #2 are disabled. In this case the incrementation level would automatically be changed to 28 CFS bypass flow, rather than 25 CFS. This change provides for an addition 38 acre feet of pondage. When unit #3 is the only unit that can cycle on and off, a ~~130~~ 134 CFS step change in canal flow will occur. Referencing the Orifice Flow and Storage Times table, this would result in a on - off cycle time of about four hours under worst case conditions. The next worst case condition is if unit #1 is disabled. Under this scenario, the step changes in canal flow is not uniform and cycle times may vary depending on which unit

combination is put on line. In this case, the cycle times will vary between four to eight hours.

Response - FERC Requested Actions

1. The Sevens multilogger will record the date, time, bypass level, and plant KW output at predetermined time intervals. This data will stored on a battery backed RAM memory card. This data can be downloaded directly from the Stevens logger via an RS-232 port or the RAM card may be removed and the data read out on a standard IBM compatible personal computer. The reports generated by the Stevens logger data can be submitted to appropriate agencies. As described in my 11/15/94 letter, the plant will shut down on loss of signal from the logger or on low bypass level. The shutdown functions of the plant are controlled by the General Electric Series 6 programmable controller at the plant.

The proposed shutdown levels will protect both minimum stream flow and downstream water rights. The plant discharges directly into the Malad River. When the plant shuts down, the Malad River backs up into the plant tailrace. Stranding of tailrace habitat when the plant shuts down is not an issue since the tailrace and the Malad River are coincident. No bypass valve at the powerhouse is required to insure compliance.

2. The bypass flow will mainly be controlled by which combination of turbines are put on line. The design of the orifice box is such that pond level will have to drop over on foot below normal operating level for violation to occur. If the pipes through the dam become blocked by ice or debris, the flow into the orifice box will decrease and a low bypass flow condition will be detected. This will cause either a decrementation in unit combination or a total shutdown of the unit, depending on how bad the blockage is. It is unlikely that the orifice plate itself will become blocked because the orifice box incorporates a trashrack upstream of the orifice. The level control is between the trashrack and the orifice. It is much more likely that debris will hang up on either the upstream valve or trashrack. Checks of the intake structure and facilities should already be performed as part of the routine maintenance checks of the plant.

3. See description of plant operation - above.

4. See description of plant operation - above.

5. You indicated that you have coordinated with all appropriate state agencies and operation of the plant under this scenario does not otherwise affect previous agreements regarding water storage, bypass flow or maintenance of riparian vegetation.

6. I recommend periodic verification that the level in the orifice box corresponds to the level readout on the PLC display. This verification can be added as an additional item on the plant operators weekly maintenance log. If the level observed by the plant operator and measured level disagree more that .05 feet the level probe should be removed and recalibrated or repaired. It may not be possible to perform this check during periods of high bypass flow where the orifice box over tops. I also recommend an annual full span recalibration and verification level recording system performance.

Sincerely,
ROSS ENGINEERING

Robert W. Ross

Robert W. Ross

RAVENSCROFT BYPASS
ORIFICE FLOWS AND
STORAGE USE TIMES

ORIFICE DIAMETER (IN) 11
NUMBER OF ORIFICES 4

ASSUMED STORAGE
TOP FOOT (AF) 38
SECOND FOOT (AF) 26
LAST HALF FOOT (AF 10

GENERAL INFORMATION	HEAD (FT)	Q (CFS)	Q (AF/MIN)	Q (AF/HR)
	1.5	15.538	0.0214	1.2841
	1.6	16.048	0.0221	1.3262
	1.7	16.542	0.0228	1.3670
	1.8	17.021	0.0234	1.4066
	1.9	17.488	0.0241	1.4452
	2	17.942	0.0247	1.4827
	2.1	18.385	0.0253	1.5193
	2.2	18.818	0.0259	1.5551
	2.3	19.241	0.0265	1.5901
	2.4	19.655	0.0271	1.6243
MINIMUM BYPASS	2.5	20.060	0.0276	1.6577
	2.6	20.457	0.0282	1.6906
	2.7	20.847	0.0287	1.7228
	2.8	21.229	0.0292	1.7544
	2.9	21.605	0.0298	1.7854
	3	21.974	0.0303	1.8160
	3.1	22.338	0.0308	1.8460
	3.2	22.695	0.0313	1.8755
	3.3	23.047	0.0317	1.9046
	3.4	23.394	0.0322	1.9332
	3.5	23.735	0.0327	1.9615
	3.6	24.072	0.0331	1.9893
	3.7	24.404	0.0336	2.0167
	3.8	24.731	0.0341	2.0438
	3.9	25.055	0.0345	2.0705
	4	25.374	0.0349	2.0969
	4.1	25.689	0.0354	2.1230
	4.2	26.001	0.0358	2.1487
	4.3	26.308	0.0362	2.1741
	4.4	26.612	0.0366	2.1992
	4.5	26.913	0.0371	2.2241
	4.6	27.210	0.0375	2.2487
	4.7	27.505	0.0379	2.2730
	4.8	27.796	0.0383	2.2970
	4.9	28.084	0.0387	2.3208
APPROX. TOP	5	28.369	0.0391	2.3444
	5.1	28.651	0.0395	2.3677
	5.2	28.931	0.0398	2.3908
	5.3	29.208	0.0402	2.4137
	5.4	29.482	0.0406	2.4364
	5.5	29.754	0.0410	2.4588
	5.6	30.023	0.0413	2.4811
	5.7	30.290	0.0417	2.5031
	5.8	30.554	0.0421	2.5250
	5.9	30.817	0.0424	2.5467

	AVERAGE OUTFLOW (CFS)			TIME TO DROP	
TURBINE FLOW (CFS)	TOP FOOT	SECOND FOOT	LAST 6"	LAST 6" @0 CFS INFLOW (MIN)	
34	60.90	57.71	55.03	132.0	
66	93.19	90.05	87.41	83.1	
100	127.19	124.05	121.41	59.8	
134	161.49	158.38	155.78	46.6	
166	193.78	190.71	188.15	38.6	
200	228.07	225.03	222.51	32.6	

A & B ENGINEERING
CIVIL ENGINEERING, SURVEYING, PLANNING,
WATER RESOURCES, LAND DEVELOPMENT

2212 N. 20 th. St.
Boise, ID 83702
(208) 342-7751

1/6/95

Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway Ave., Ste. 102
Boise, ID 83706

Dear Mr. Ravenscroft:

I am writing to provide you with some information for your responses to the six items under the heading Requested Actions in the letter from the Federal Energy Regulatory Commission which appears to be dated 12/20/94. I feel very strongly that the system proposed will meet the requirement of an assured minimum bypass and will, in fact actually improve the condition of downstream riparian areas during short term periods of very low flow by the buffering effect of the ponding. My comments are presented in the same order and numbered as they were listed in the FERC letter.

1. The generalized flow control system anticipated and described in the November 15 report has been refined in favor of an orifice type bypass control system. The orifice system will allow more precise control of bypass flows and will also allow better utilization of available generation flows. The outflow through the orifice system is much less sensitive to small fluctuations in water surface elevations and will allow the control automation of the power generation flows to be spread over a range of about 2.5 feet instead of the range of tenths or hundredths of a foot required by a weir system while assuring that adequate bypass flows will be provided and maintained at a more uniform level. The powerhouse turbines will be controlled directly from the instrumentation at the bypass control structures thus guaranteeing that bypass requirements will be controlling the system. The system will include automation for the turn on and turn off of all three units at the power house and will include an emergency shutdown to guarantee that the head on the orifices will be sufficient to provide the required bypass flows.

2. The automated bypass requirement is addressed, in part, in conjunction with item 1. To assure that icing or clogging of the existing bypass pipes doesn't interfere with the required bypass flows, the sensing devices that regulate generating flows will base control solely on real time bypass flow as sensed in the flow control structure. If inflow pipes and /or the trash racks in the bypass structures become sufficiently clogged the result will be a lower flow being sensed and a unit will shut down to avoid further water level drop in the control structure. If flow decreases further additional units will shut down until emergency shutdown occurs at a flow rate that still meets minimum requirements. At emergency shut down the operator will respond and clear the problem before bypass flow becomes minimal.

Fluctuating inflow will pose no problem because of the substantial pond storage above the control structures. The pond storage will serve as a very substantial buffer and will limit the rate of water surface level changes to less than 2 inches per hour under most flow conditions.

3. This provision requirement, as written, seems unduly burdensome; in the normal plant operation it is possible that all units may shut down solely to provide stipulated bypass flows. In this instance operation could resume only after a programmed time delay and at such time as the inflows have increased pond level to the point required to maintain the stipulated minimum bypass flows and provide water for generation . We feel that the requirement of manual restart would be reasonable if applied to emergency shut down and if that is the intent of this provision we have no problem with it.

4. Fluctuating inflows are buffered as mentioned in item 2 by the pond storage. The buffering effect does much to minimize the criticality of bypass control. In fact a total loss of inflow is not sensed by the control system and normal bypass is maintained as long as water is available in the impoundments above the critical level. When the pond level drops below the critical level all units have already shut down and all available pond storage is used to provide downstream

flow even though no flow is coming in. When inflow increases pond level will increase and will eventually return to a level adequate to meet stipulated bypass flow plus generation flow.

It is possible for a scenario to develop where there is flow coming into the pond areas in excess of minimum flows while outflows from the ponds will lag somewhat and outflow would be less than the required minimum bypass until the critical pond level is reached. The conditions required to develop this scenario are rare and we feel that the providing of downstream flows at or above the minimum bypass requirement much of the time that inflows are deficient will provide a much better and more consistent riparian environment than if the bypass flow became zero as soon as inflow reached zero. In such an instance the pond storage might provide flows that went from 20 cfs to 10 cfs and back to 20 cfs over a 24 hour period while the inflow might go from 20 cfs to 0 cfs to 30 cfs over the same time. In either case all the water available would be released but by utilizing the pond storage the downstream channel would not be subjected to drying up completely at the zero rate of inflow and would not immediately receive the full increase in inflow. The inflow would increase pond level until such time as bypass flow exceeds the minimum requirement plus a margin of safety; at that time generation could begin.

5. I am not familiar with the other terms, conditions or agreements that may be applicable in this section and I understand that you and Bob Ross of Ross Engineering will provide the bulk of the information required to respond to this item. I can add the following statements:

No modifications of downstream side channels or riparian areas is proposed. The installation of the metering orifice flow control system will have no adverse impact on downstream side channel flow patterns or riparian areas. The more uniform bypass flow rate is likely to provide some benefit to the riparian habitat.

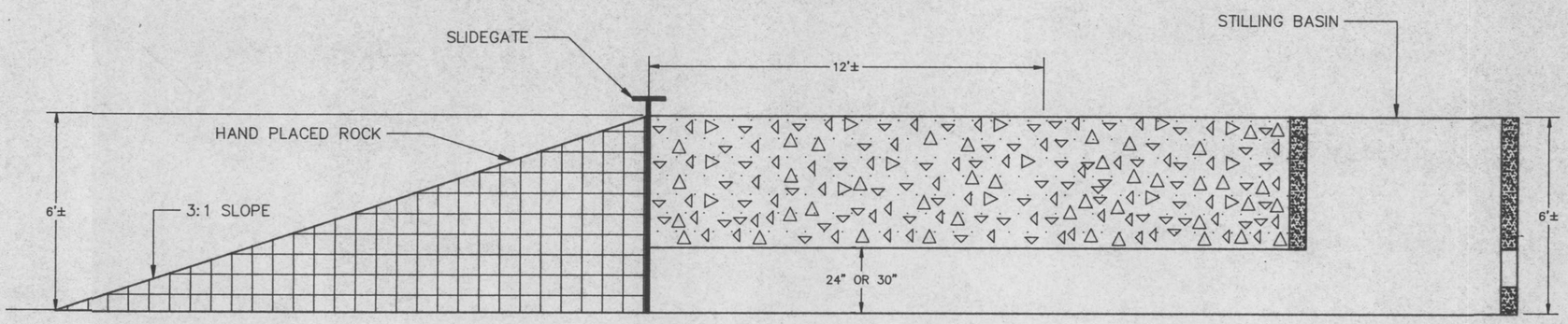
6. I am not familiar enough with the overall operation of your project to contribute a great deal here. I would say that the flow control structures should not require any increase in the

frequency of inspecting outflow conditions and, with their reduced inflow velocity and incorporated trash racks, maintenance time and frequency may actually be somewhat reduced.

I hope you will find these explanations and comments helpful in your response. If you wish you may have the FERC people contact me directly with any questions they might have.

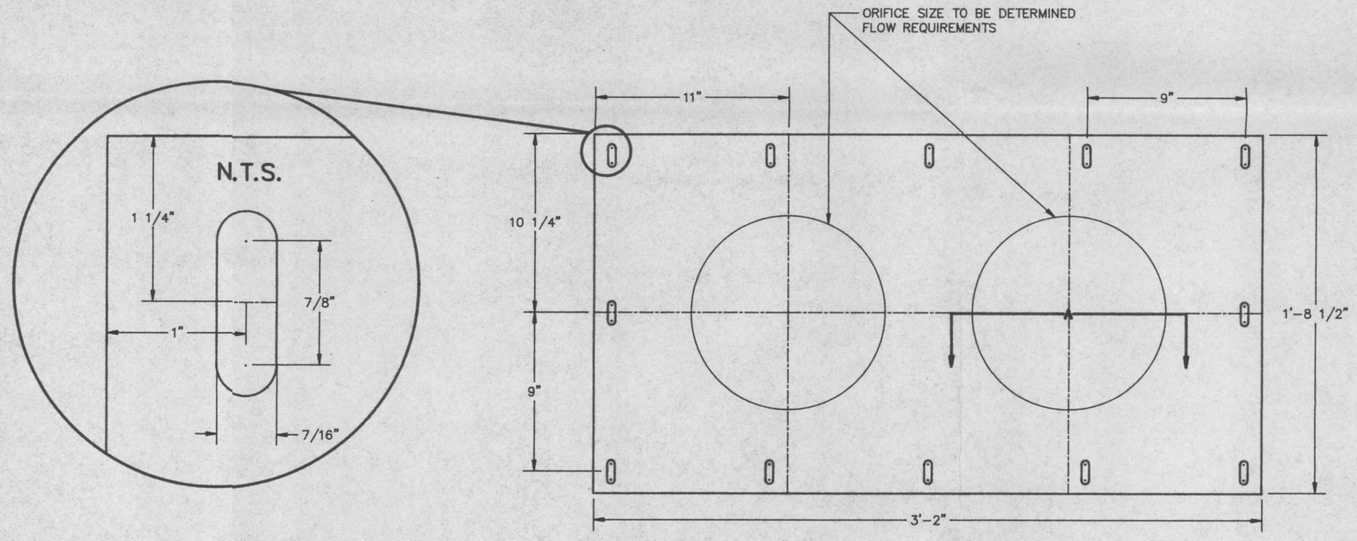
Very truly yours,

Donald J. Watts, P.E., L.S.



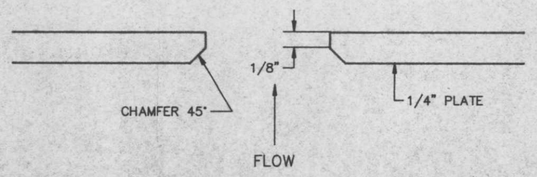
CROSS SECTION THROUGH FLOW CONTROL SYSTEM

APPROX SCALE: 1"=3'



ORIFICE PLATE

SCALE: 2"=1'



SEC A

N.T.S.

RAVENSCROFT BYPASS

SECTION & DETAILS

JOB #: 94-124	SCALE:
DESIGNED: DJW	DATE: 12/28/94
CHECKED: DJW	PAGE 2 OF 2
PLOTTED: DEW	DRAWING NAME: RVNSFNL2

A & B ENGINEERING

BOISE, IDAHO

RAVENSCROFT BYPASS

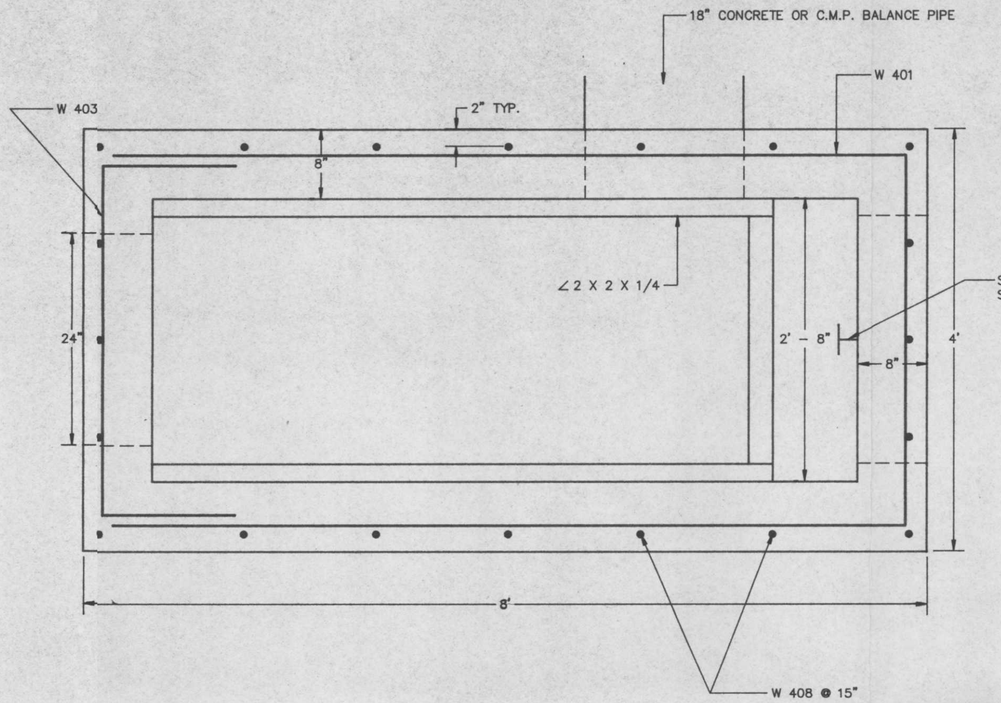
FLOW CONTROL STRUCTURES

JOB #:94-124	SCALE: 1"=1'
DESIGNED: DJW	DATE: 12/28/94
CHECKED: DJW	PAGE 1 OF 2
PLOTTED: DEW	DRAWING NAME: RVNSFNL

A & B ENGINEERING
BOISE, IDAHO

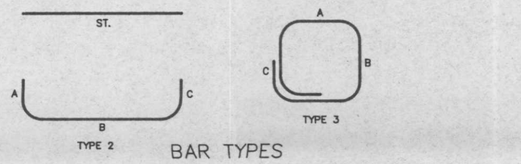
NOTES:

1. All reinforcing steel to be grade 60.
2. Walls to be placed on clean, sound rock.
3. Orifice plate and structural steel to be A36.
4. Concrete cover over reinforcement steel – 2" unless shown otherwise.
5. Two structures required.
6. Provide 1" plywood cover with adequate anchor bolts.

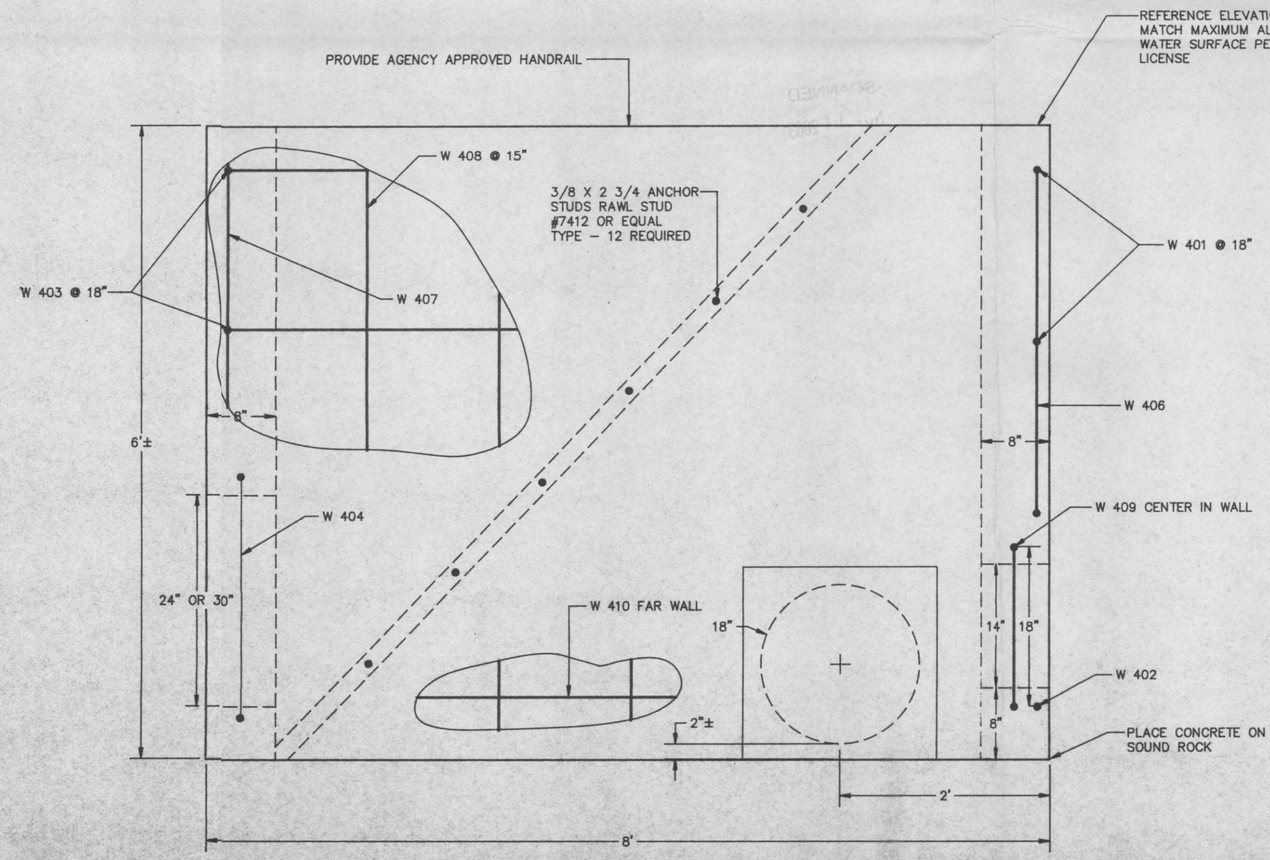


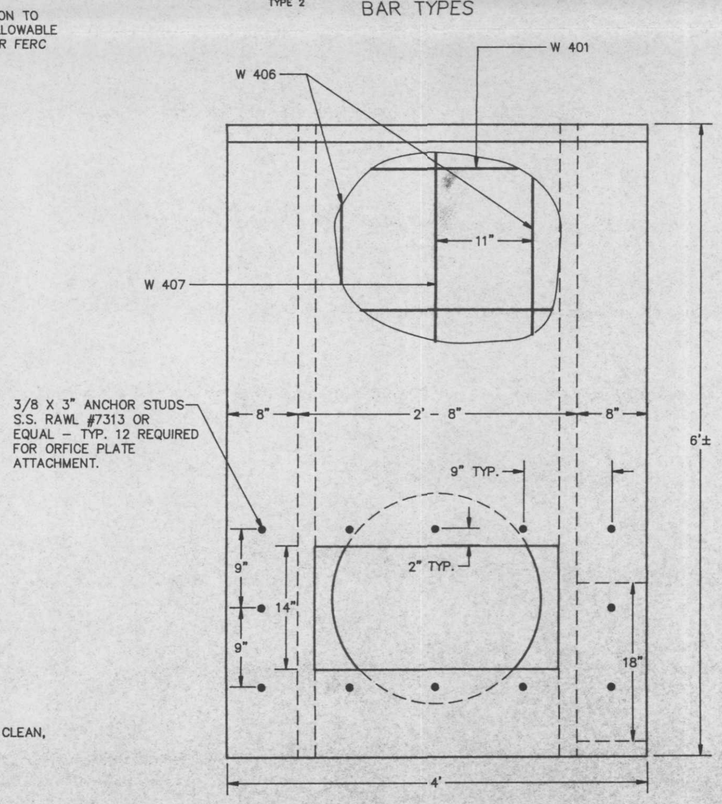
STEEL SCHEDULE

LOCATION	SIZE	MARK	TYPE	LENGTH	QUAN.	A	B	C	TOTAL LENGTH
WALL	4	W 401	2		3	7'-8"	3'-8"	7'-8"	
"	4	W 402	2		1	7'-8"	3'-8"	1'-0"	
"	4	W 403	2		2	1'-3"	3'-8"	1'-3"	
"	4	W 404	3		1	3'-0"	3'-0"	0'-10"	
"	4	W 405	3		1	2'-0"	2'-0"	0'-10"	
"	4	W 406	ST		2	3'-6"			
"	4	W 407	ST		5	3'-0"			
"	4	W 408	ST		14	5'-6"			
"	4	W 409	3		1	3'-0"	1'-10"	0'-10"	
"	4	W 410	ST		1	4'-10"			



BAR TYPES





ROSS ENGINEERING
Control Systems Design
Industrial Computer Programs

3470 S. Cole Rd. Boise, ID 83709 (208) 362-2025

July 19, 1994

Mr. Vern Ravenscroft
HC 60
Box 1469
Bliss, ID 83314

Reference: Tuttle Hydro

Subject: IDFG and FERC Letters - Amendments to Terms and Conditions

Dear Vern:

The purpose of this letter is to respond to letters from Idaho Department of Fish and Game (1/23/95) and FERC (7/3/95).

Location and Placement of Electronic Recording and Control

The FERC letter states "Our difficulty with using a transducer mounted in the headgate box to monitor minimum flow is that it might not accurately measure the amount of water in the bypass reach." This statement is based on IDFG letter Item 3 which states that there may be physical loss of water in the bypass reach. This is the basis for both agency's recommendation to locate a weir immediately above the point of spillway return. (IDFG Item 4)

On the surface this idea may appear to have merit, however I am very concerned about the effect of the time lag between when the plant makes a change in the canal flow and when it is recognized at the gaging station. Moving the point of compliance downstream would force the point of plant control back to the intake structure of the power plant. It may take many hours, particularly at low flow for a change in at the powerhouse to be fully reflected in the flow at the gaging station. There is about one mile of canal from the powerhouse up to the point of diversion and another 1.25 miles of river back down to the proposed point of compliance. A gaging station located on the river next to the canal forces you to maintain a minimum stream flow 2.25 miles away from your point of water control. The water between these two points has no fixed hydraulic gradient and no ratable surface profile.

is very small and indicated compliance or non compliance could be affected by even a gust of wind that might blow across the water surface at just the wrong time since the current compliance conditions are based on instantaneous readings. I realize that the existing recording system is very unlikely to reflect such an anomaly, but it is possible. During periods when the channel is choked with vegetation the gage might indicate compliance when, in fact, you may have only half the required flow actually passing the point. Ice conditions are not so predictable as vegetative obstruction and you could be passing more or less water than necessary depending on how the ice forms. You have indicated to me that the stilling well has frozen at times and a frozen stilling well could falsely indicate compliance or non compliance for weeks. It is unlikely the stilling well could be modified in its present location to successfully overcome the very real problems with freezing. If the float arrangement were to be replaced with a transducer driven system for more responsive monitoring, the chances are great that the transducer would be regularly ruined by cold weather and the monitoring system would be off line every time that happened. Replacement of transducers and cost of recalibration would be quite high. From a technical standpoint the current compliance point is, very bluntly, a terrible location to work with either for power production control or compliance assurance. I believe Mr. Jones of FERC recognizes this problem based on my conversations with him on site and I hope to make the difficulties clear to IDFG.

After reviewing the copy of the letter from J. Mark Robinson of FERC dated 7/3/95, I believe that the FERC reservations set forth in the first paragraph of the second page of the letter can be addressed as follows:

1. The concern that the measurement of flow at the diversion does not guarantee minimum flow compliance downstream is an obvious one and, of course, valid. I believe that it probably escaped their attention, and perhaps we

didn't get the message across to them adequately, that you are also working with IDFG to have the point of compliance changed and bypass requirements adjusted so that the flow rate and confirmation of the rate can be more easily established and maintained. Such a change would make it easier for you and IDFG to monitor and, as Mr. Jones of FERC pointed out during our meeting at the project site, since FERC only enforces compliance and doesn't make conditions on exempt projects such as yours, it should make no difference to them. The enforcement role of all the agencies would actually be simpler. The current monitoring point could be used as a temporary reference to establish suitable release amounts at the diversion. I believe the fact that the Jerome office of IDFG has agreed that it will better meet the needs of all concerned if we work with their Chief Engineer, Phil Jeppson, at the State Headquarters Office in Boise will help in reaching a final agreement for guaranteeing minimum flow and a flow compliance scenario that will be both easier to monitor and, hopefully, beneficial to everyone involved. Mr. Jeppson is out of town and will not return until next week. I will be in contact with him and look forward to getting something worked out with him as soon as possible.

As we have discussed, from a monitoring and control standpoint having the compliance point at the diversion would be the easiest. Having the compliance point a short distance upstream of the power house spillway would also be preferable to the present location and may well be preferred by IDFG. There are opportunities and challenges in using either location. I will make it my object in working with Mr. Jeppson to reach the conclusion most workable to you while meeting the goals of IDFG.

2. The concerns about vandalism can be addressed quite easily. The facility is in a remote location with controlled access over private land. The orifice structure would be covered and locked. The structure and appurtenances

are substantial and not easily damaged by vandalism. There is no history of vandalism on the project.

3. I believe that the obvious failure of the proposed location for the new measuring point to account for leakage through the diversion dam is moot. The leakage flow would be additional to the amount measured through the orifices and would only enhance downstream flows in the bypass reach. Very simply, it would not negatively influence compliance in any way. Remember, you don't need and are not required to measure all flows as a condition of your license; you are only required to meet or exceed the minimum flow requirement.

4. The concern over clogging of the orifices and the result of such an occurrence has some validity. I do believe that, with the size of orifices and screening to be installed, clogging is quite unlikely. The possibility of orifice clogging could be almost completely eliminated by the use of small mesh secondary screens inside the orifice structure. The use of secondary screens would require some additional maintenance. As a fail safe device an additional transducer could be installed to monitor head loss, from the upstream diversion to the orifice chamber. Excessive head loss would indicate screen clogging and trigger an alarm to call for maintenance if a preset maximum head loss condition should occur.

Very truly yours,

Donald J. Watts, P.E., L.S.

69 FERC ¶ 61,444 RECEIVED

NOV 28 1994

Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Elizabeth Anne Moler, Chair; Vicky A. Bailey, James J. Hoecker, William L. Massey, and Donald F. Santa, Jr.

Vernon F. Ravenscroft) Project Nos. 4055-015 and 4055-018

37-7857
7562
7922

ORDER APPROVING STIPULATION AND CONSENT AGREEMENT

(Issued November 18, 1994)

The Commission approves the attached Stipulation and Consent Agreement (Agreement) between Vernon F. Ravenscroft (Ravenscroft) and the Enforcement section, Office of General Counsel. Ravenscroft violated standard article 2 of his exemption, 18 C.F.R. § 4.106(b) (1994), and a December 1991 Compliance Order. The Ravenscroft Ranch project, No. P-4055, is located on the Malad River in Gooding County, Idaho.

Article 2 of the exemption requires the exemptee to comply with the terms and conditions that Federal or state fish and wildlife agencies have determined are appropriate to prevent loss of, or damage to, fish or wildlife resources. In a December 9, 1981 letter, the Idaho Department of Fish and Game (IDFG) required that Ravenscroft maintain a minimum bypass streamflow of 5 cubic feet per second (cfs) from July through mid-April, and 80 cfs for the remainder of the year. Ravenscroft violated article 2 on 60 occasions between January 1988 and May 1992.

On December 12, 1991, the DPCA Director issued a Compliance Order that directed Ravenscroft to file, within 60 days, a plan and schedule for a gaging system that would continuously record the bypass flows and to install the system within 90 days. 57 FERC ¶ 62,205. Ravenscroft filed a plan for installing a continuously recording gaging system together with resource agency comments on February 14, 1992, four days late. Ravenscroft did not activate the approved gaging equipment until April 6, 1992, 26 days after the deadline set by the Compliance Order.

On May 1, 1992, Ravenscroft replaced the approved gage without notifying the Commission or consulting with the appropriate resource agencies. The replacement gaging system, as installed, was inadequate to continuously measure flows as required by the Compliance Order. On December 11, 1992, 225 days after installation, Ravenscroft excavated and repositioned the gage in the river so that it would adequately measure minimum flows.

In a September 2, 1994 Compliance Order, the DPCA Director ordered Ravenscroft immediately to implement additional modifications to ensure compliance with minimum flow requirements or cease project generation. 68 FERC ¶ 62,210. On October 13, 1994, the DPCA Director found that the modifications Ravenscroft had made and proposed were insufficient to ensure compliance with minimum flow requirements and ordered that the project stop operating. Operations may not resume until the Commission determines that Ravenscroft has submitted sufficient evidence to show that the project will meet all minimum flow requirements. On October 27, 1994, a staff inspection confirmed that the project was not operating.

The Agreement

In the Agreement, Ravenscroft admits that he violated article 2 of the exemption and the December 1991 Compliance Order. The Agreement provides for a $55,725 civil penalty, $44,579 of which is remitted conditionally. Ravenscroft will make two payments of $5573 each. The first payment is due on or before July 1, 1995 and the second payment is due on or before July 1, 1996.

The remission is based upon the exemptee's inability to pay the full civil penalty. Ravenscroft, who is 74 years old, produced objective and reliable financial information regarding the project and his personal finances that adequately demonstrated his inability to pay the full amount. This data showed that Ravenscroft does not control the project's revenues. Rather, revenues are deposited into an escrow account administered by the mortgage lender for the project. Ravenscroft provided monthly escrow account statements showing all deposits and disbursements since January 1992. Ravenscroft also provided tax returns for the past four years, a statement of assets and liabilities, loan documents, appraisal reports and bank statements for his personal accounts for the years 1992 through 1994.

The Agreement also provides that Ravenscroft must make additional payments not to exceed the $44,579 remittance if, before July 1, 1996, the escrow agent disburses funds to Ravenscroft or his monthly income exceeds $5,000.

The Commission finds:

The Agreement provides an equitable resolution of this matter and is in the public interest.

37-7852 -78287
-7865

DEC 20 1994

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

RECEIVED
DEC 27 1994
Department of Water Resources

Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, ID 83706

Dear Mr. Ravenscroft:

We received your report, dated November 15, 1994, and your supplement to that report, dated November 22, 1994. Your November 15 report provided your proposal for making modifications to the project in order to correct the project's minimum flow and operational compliance problems. The report requested approval of the proposed actions and also requested that you be allowed to start generation. The November 22 supplement transmitted your consultant's recommendations to you on the needed changes at the project.

Request to Restart Operation

The project is currently not generating because the Commission's letter of October 13, 1994 required you, pursuant to the September 2, 1994 Compliance Order, to cease project operation by October 19, 1994. The order indicated that you are not to resume project operation until you provide the Commission with evidence that changes have been implemented at the project that ensure that it can be operated in compliance with article 2, and the evidence has been approved by the Commission.

We currently cannot approve project operation because the information you have filed does not indicate that the project can, at this time, be operated in compliance with article 2.

Status of Exemptee's Efforts

Your November 15 report indicated that you plan to install a weir immediately below the diversion, with instrumentation that will allow the powerhouse to generate only while minimum flows are being passed. Your consultant's recommendations expanded on the plan you described in your November 15 report. He described the use of a comfortable safety margin in the bypass flow that would control the powerhouse. He also indicated a failure of the bypass level recording system would cause the powerhouse to shut down, as an additional measure of protection for bypass flows.

However, your consultant noted that the water level at the powerhouse does not effectively control the bypass flow. Similarly, we noted in our letter of October 13, 1994 that you should consider automation of the diversion structure in order to prevent the diversion of water to the powerhouse when there is not sufficient inflow to satisfy both the minimum flow requirement and generation demand.

The measures included in your report dated November 15, 1994 may not protect flows in the bypass reach when decreases in inflow approach the required flow. Water may continue to flow into the power canal after the powerhouse is turned off. In addition, it is unclear whether, at certain times, the powerhouse bypass valve will affect minimum flow maintenance in the bypass reach.

Requested Actions

After reviewing your November 15 report and your consultant's November 22 supplement, we conclude that you need to file a more detailed operation plan which includes the following elements.

1. The weir and gage you described in your November 15 report will need to record the flow in the bypass reach and the status of generation at the powerhouse. The powerhouse must be controlled by the gage's reading so that the powerhouse is shut off if the flow decreases to a predetermined level greater than that corresponding to the minimum flow. The powerhouse bypass valve must operate in a manner that precludes endangerment of downstream water rights.

2. The installation of an automated bypass control system that ensures minimum flow, or inflow, release to the bypass reach under foreseeable conditions. Foreseeable conditions include, for example, fluctuation of inflow and clogging of the existing bypass tubes with debris or icing.

3. A provision whereby, after the project has automatically shut off due to low flows, it can only be manually restarted from the project site.

4. Provisions describing operating scenarios illustrating how the project will respond to fluctuating inflows while maintaining minimum flows, and how the installed equipment will release all inflow to the bypass reach should inflow drop below the minimum flows that you are required to release.

5. A provision indicating that the planned alterations will not endanger compliance with the other terms and conditions of article 2. For example, agreements regarding water storage, side

channel flow, and maintenance of riparian vegetation must be observed.

6. A plan and schedule for regular inspection and maintenance for flow gaging, flow recording, and flow maintenance equipment.

Any of these elements may be waived by the Commission if sufficient evidence is offered in the plan that indicates that the element is unnecessary.

It may be possible to receive Commission approval to resume generation before the changes identified in an approved operation plan are completed. Given the current facility arrangement, the only operational modification that would ensure that the minimum bypass flows are maintained would be to increase the flow released to the bypass reach. This margin must be large enough to ensure the continuous release of the required minimum flows. These interim flows, or inflow to the project, will need to be released until the changes approved in the operation plan are complete and documented with the Commission. If you chose this interim option, you must file a proposal that clearly identifies the quantity of additional flows you propose, as well as calculations sufficient to indicate that the proposed flow would, given varying inflow and operational constraints, ensure that the minimum is continously maintained.

We request that you file monthly status reports with the Commission so that we may follow your progress in designing and implementing changes that will ensure project compliance. The first report is due February 1, 1995, and subsequent reports will be due on the first day of the months that follow.

Please note that, in addition to approval of the revised operation plan, you may also need approval from the appropriate state and federal agencies before undertaking any construction. Any construction should also be coordinated through the Commission's Portland Regional Office.

Additional filings made with the Commission should include one original and eight copies, and should be filed with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 N. Capitol Street, N.E.
Washington, D.C. 20426

If you have any questions, contact Pete Yarrington at (202) 219-2939. If you request, we will schedule a meeting in Washington, D.C. with you or your representative.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Jerry M. Conley, Director
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

RNON RAVENSCROFT

Telephone 208 837-4824936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, Idaho 83706

Tim —
F42

November 15, 1994

RECEIVED
NOV 17 1994
Department of Water Resources

Secretary
FEDERAL ENERGY REGULATION COMMISSION
Mail Code-DPCA, HL-21.1
825 N. Capitol St., N.E.
Washington, D.C. 20426

RE: September 2, 1994 Compliance Order and Subsequent Generation Cessation Order Dated October 13, 1994

ATTN: J. Mark Robinson, Director, Division of Project Compliance and Administration

Dear Secretary,

Since receipt of the referenced 10/13/94 order, Project 4055 has discontinued all generation and the following actions have been taken:

1. Work concerning project design has continued in consultation with Myers Engineering, Boise, Idaho.

2. Consulting Engineer Mr. Robert Ross has been retained in reference to project operation changes, project automation and mechanical flow disciplines necessary to assure that the project operation will automatically cease at any time the bypass flow approaches the stipulated minimum values. Mr. Ross is a consultant with national experience. He has worked to correct similar problems on several projects throughout the nation.

   Mr. Ross visited the project site and has suggested positive changes to correct the situation at Project 4055. An advisory letter and resume from Mr. Ross will be provided as a supplement to this application as soon as they are received from Mr. Ross.

   Mr. Ross's conclusions can be summerized as follows:

   a. The present midpoint gauging site is not satisfactory or fair to any party insofar as a point to govern flow stipulations are concerned. This referenced site is a broad, 85-foot bedrock location at which (particularly at lower flows) any outside influence - be it wind, ice, trash, beaver, side-stream diversions, or lag time due to turbine adjustments - can cause recorded stipulation violations, many of which are not the fault of the project.

DEC 05 1994

b. It is difficult to determine accuracy over such a broad measuring section.

c. Since this site has no direct control or influence over the bypass inflow at the diversion (approximately one-half mile upstream) or the powerhouse consumption located one-half mile downstream, it is extremely difficult, if not impossible, to coordinate, interpret and fairly record any instantaneous flow discipline.

d. The project can fully meet its bypass requirements by installing a broad-based weir with proper control instruments immediately below the exhaust tubes at the diversion. This control structure will require direct communication with the powerhouse computer in the form of either radio or solid wire connection which will instantly turn off all generation whenever the critical flow level is reached at the bypass inflow weir.

3. Engineer Don Watts has been consulted in order to calculate weir design and critical flow levels for the presently installed exhaust tubes. Mr. Watts advises that the existing tubes have substantially greater capacity as compared to the current bypass flow requirements. Resume attached.

4. Idaho State Department of Fish and Game (Jerome Office) and the Bureau of Land Management (Shoshone Office) have been fully appraised of the ongoing engineering studies and of the proposed remedial actions. Letters which state their approval are attached.

Commitment ByPass Flow

Ravenscroft will accept and implement the Ross proposal to install a governing weir structure at the point of diversion. This facility will be electronically connected to the control computer and programmed so that at any time the weir does not record the required bypass flow, the computer will automatically turn off all generation at the power site. The electronic controls at the weir will record the weir readings at specified ongoing intervals. The record will also indicate the position (open or closed) of the breakers at the generation site. These records will be made available to F.E.R.C. (as per instructions from F.E.R.C.), the Idaho Department of Fish and Game and the B.L.M. as per request. See attached sample computer print-out from comparable control records. It is mutually understood that the present mid-point gauging section will be abandoned and the weir will become the official point for compliance determination. Weather permitting, this weir and instrumentation will be installed within 45 days from receipt of approval from F.E.R.C.

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Downstream Irrigators

Ravenscroft is working with the Idaho Department of Fish and Game and the Bureau of Land Management regarding a change in flow stipulations which will increase the 5 c.f.s. minimum flow and decrease the 80 c.f.s. spring flood flow. Such a shift appears to be both biologically and mechanically desirable. Those studies are not complete and the Idaho Department of Water Resources has not yet been consulted. Subject to revised stipulations that would provide a bypass sufficient to meet the downstream irrigation demands and thereby render a release valve unnecessary, Ravenscroft does commit to the installation of an automatic release valve (at the powerhouse) of a sufficient capacity to meet the minimum senior downstream irrigation rights of 15.15 c.f.s.

Petition for Expedited Review and Approval

Insofar as the weir control structure is concerned, construction time is seriously limited. Freezing weather is to be expected at any time and high water could result from the series of storms that have been experienced during the last several days. The Idaho Department of Fish and Game and the B.L.M. have been requested to join in the petition. Please see letters of endorsement.

I respectfully petition that the Ross proposal for a properly electronically instrumented control weir be approved and that the cease operation order of October 13, 1994 be immediately lifted. De-watering of the river will be necessary for a period of time sufficient to install the weir and the instrumentation at that weir. Diversion through the power canal is the obvious de-watering procedure.

Sincerely,

Vernon Ravenscroft

Vernon F. Ravenscroft

VR/rt
Attachments

cc: F.E.R.C., Portland
Jerry Conley, Director, Idaho Department of Fish and Game
Norm Young, Idaho Department of Water Resources
B.L.M., Shoshone

DEC 05 1994

RESUME OF DONALD J. WATTS, P.E., L.S.

PRESENT OCCUPATION:

Owner of A&B Engineering

PERSONAL HISTORY:

Born December 6, 1940, in Gooding, Idaho
Married 1964, two children
Health - good
Height - 5' 10"
Weight - 160 lb.
Residence - Hill City, Idaho -- 1940 to 1946; Gooding, Idaho -- 1946 to 1951; Wendell, Idaho -- 1951 to 1964; Boise, Idaho -- 1964 to present.

EDUCATION:

Wendell High School - Wendell, Idaho - Graduated 1959
Idaho State College - Pocatello, Idaho - 1950 to 1961
University of Idaho - Bachelor of Science, Civil Engineering - 1963

HONORS - AWARDS

Bausch & Lomb National Science Award - 1958
National Honor Society 1954 to 1959
Dean's List - Idaho State College, 1959 to 1961
Dean's List - University of Idaho, 1961 to 1963
Honors Colloquium - Idaho State College, 1960 to 1961
Outstanding Young Men of America, 1975

PROFESSIONAL:

Idaho Registered Professional Engineer (Civil and Structural)
Idaho Licensed Land Surveyor
Idaho Advanced Vocational - Technical Teacher Certificate
Oregon Registered Professional Engineer (Civil)

PROFESSIONAL POSITIONS HELD:

North Side Canal Co. Ltd., Jerome, Idaho
Held position of Engineer-Hydrographer

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Responsible for monitoring and calibration of water measurement and distribution system serving approximately 200,000 acres of irrigated lands. The job also required scheduling and supervision of off-season maintenance work, system design improvements, field surveying and staking of road and canal construction projects, construction supervision and negotiating canal crossing requirements for I-84 with the Idaho State Department of Transportation.

Morrison-Knudsen Company, Inc., Boise, Idaho
Held position of Engineer
Responsible for engineering quantity determinations and bid preparation with others in special bidding and special projects group within the Engineering Department. Bid projects were normally referred to this group only if they were high cost, $50 million average. Projects included dams, navigation canals and locks, major highways, and large bridges.

Idaho Department of Water Resources, Boise, Idaho
Held positions of Engineer and Division Head
Responsibilities in these positions included overseeing and participating in field inspections leading to the establishment of licensed water rights, directing the dam safety inspection program and examining the condition of existing dams as well as those under construction, review and approval of plans for proposed dams and gathering of ground water data for monitoring critical ground water basins.

A&B Engineering, Boise, Idaho
Owner
This business was established as a consulting engineering and land surveying firm in 1968. The services to be provided were to be in the areas of construction supervision, street and road design, construction surveys, boundary and subdivision surveys, pollution control, dam design, water resource development, hydrology, water resource evaluation, and irrigation system design. Since that time the firm has completed projects within the scope of all the originallly targeted areas along with some solar energy, mechanical design and legal support projects that were not anticipated. Completed projects include the design of many miles of roads,

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numerous land boundary surveys, subdivision surveys, several large irrigation systems, a major solar energy project, many construction surveys, and the review and partial design of an all hydraulic pump for the injection of drilling mud into oil wells that has become very successful. Project and/or construction supervision has been provided in all these areas.

Fish and wildlife mitigation plans have also been provided on several occasions. The mitigations included riparian area improvement, anadromous fish passage facilities, and big game migration route assurance.

EDUCATIONAL CONTRIBUTIONS

Taught: Civil Drafting, Mathematics, Surveying, Statics, Strength of Materials, Physics, Engineering Graphics, Computer Aided Drafting (CAD), and Technical Report Writing at various times from 1969 to 1993 for Boise State University

LEGAL AND TESTIMONIAL EXPERIENCE

I have participated in several court proceedings as an expert witness and have testified at numerous administrative and public hearings. Several of the court proceedings involved formal suits and seven have been resolved by trial. A list of some of the formal litigation involvements follows with the bracketed () names being my clients.

Unknown vs. (Hartford Insurance)
(Evans) vs. Pancheri et. al.
(Williams) vs. State of Idaho
Hiatt vs. (Eblen et. al.)
(Walters) vs. Ada County
Unknown vs. (Prudential Insurance)
Seidenfeld vs. (Boise Project Board of Control, New York Irrigation District et. al.)
Harris vs. (Pioneer Irrigation District et. al.)
(Davis) vs. Idaho Power

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OUTSIDE INTERESTS

Hunting, fishing, boating, camping, and mechanics.

CLIENTS SERVED (Partial)

U.S. Bureau of Land Management
U.S. Forest Service
Idaho Department of Fish and Game
Idaho Department of Administration
Idaho Department of Water Resources
City of Nampa
City of Wendell
City of Reubens
James Hait - McCall
Tom J. Davis - Cascade
Harry Bettis - Emmett
Arthur Fairchild - Midvale
BECO - Idaho Falls
H3, Inc. - Boise
Lost Valley Reservoir Company
Shoshone-Paiute Tribes

REFERENCES

Sherl Chapman - Executive Director, Idaho Water Users Association, Boise, ID 344-6690

H. Paul Haynes - H3, Inc., Boise, ID 342-2248

Arthur Fairchild - Rancher - Sawmill Owner - Contractor, Midvale, ID 355-2248

Phil Davis - Rancher - Cascade, ID (208)382-4892

Joe Jordan - Member of Idaho Water Resources Board - Fruitvale, ID (208)253-1103

Additional references available on request.

DEC 0 5 1994

Montgomery Creek Hydro Flow Dat

Date	Time	Stream Level	Flow CFS	Plant KW	Breaker Position
06-13-1993	23:00	1.79	23.4	2356	Breaker Closed
06-13-1993	22:00	1.79	23.4	2352	Breaker Closed
06-13-1993	21:00	1.79	23.4	2344	Breaker Closed
06-13-1993	20:00	1.79	23.4	2365	Breaker Closed
06-13-1993	19:00	1.79	23.4	2377	Breaker Closed
06-13-1993	18:00	1.79	23.4	2398	Breaker Closed
06-13-1993	17:00	1.79	23.4	2419	Breaker Closed
06-13-1993	16:00	1.79	23.4	2457	Breaker Closed
06-13-1993	15:00	1.79	23.4	2461	Breaker Closed
06-13-1993	14:00	1.79	23.4	2486	Breaker Closed
06-13-1993	13:00	1.79	23.4	2482	Breaker Closed
06-13-1993	12:00	1.79	23.4	2491	Breaker Closed
06-13-1993	11:00	1.79	23.4	2499	Breaker Closed
06-13-1993	10:00	1.80	24.2	2491	Breaker Closed
06-13-1993	09:00	1.79	23.4	2478	Breaker Closed
06-13-1993	08:00	1.79	23.4	2465	Breaker Closed
06-13-1993	07:00	1.79	23.4	2470	Breaker Closed
06-13-1993	06:00	1.79	23.4	2470	Breaker Closed
06-13-1993	05:00	1.79	23.4	2474	Breaker Closed
06-13-1993	04:00	1.79	23.4	2478	Breaker Closed
06-13-1993	03:00	1.79	23.4	2474	Breaker Closed
06-13-1993	02:00	1.79	23.4	2474	Breaker Closed
06-13-1993	01:00	1.79	23.4	2474	Breaker Closed
06-13-1993	00:00	1.79	23.4	2474	Breaker Closed
06-12-1993	23:00	1.78	22.7	2478	Breaker Closed
06-12-1993	22:00	1.78	22.7	2478	Breaker Closed
06-12-1993	21:00	1.78	22.7	2474	Breaker Closed
06-12-1993	20:00	1.78	22.7	2465	Breaker Closed
06-12-1993	19:00	1.78	22.7	2474	Breaker Closed
06-12-1993	18:00	1.78	22.7	2495	Breaker Closed
06-12-1993	17:00	1.78	22.7	2503	Breaker Closed
06-12-1993	16:00	1.78	22.7	2516	Breaker Closed
06-12-1993	15:00	1.78	22.7	2516	Breaker Closed
06-12-1993	14:00	1.78	22.7	2482	Breaker Closed
06-12-1993	13:00	1.76	21.3	2507	Breaker Closed
06-12-1993	12:00	1.78	22.7	2541	Breaker Closed
06-12-1993	11:00	1.80	24.2	2545	Breaker Closed
06-12-1993	10:00	1.77	22.0	2545	Breaker Closed
06-12-1993	09:00	1.76	21.3	2541	Breaker Closed
06-12-1993	08:00	1.75	20.7	2545	Breaker Closed
06-12-1993	07:00	1.75	20.7	2545	Breaker Closed
06-12-1993	06:00	1.75	20.7	2545	Breaker Closed
06-12-1993	05:00	1.76	21.3	2549	Breaker Closed
06-12-1993	04:00	1.76	21.3	2545	Breaker Closed
06-12-1993	03:00	1.77	22.0	2554	Breaker Closed
06-12-1993	02:00	1.78	22.7	2549	Breaker Closed
06-12-1993	01:00	1.77	22.0	2554	Breaker Closed
06-12-1993	00:00	1.78	22.7	2549	Breaker Closed

DEC 05 1994

IDAHO FISH & GAME
Magic Valley Region
868 East Main • P.O. Box 428
Jerome, Idaho 83338
(208) 324-4350
Fax (208) 324-1160

November 15, 1994

Cecil D. Andrus / Gover
Jerry M. Conley / Dire

Vern Ravenscroft
1328-B Shoestring Rd.
Bliss, ID 83314

Dear Vern:

This letter is in response to your phone call on 11/14/94.

I understand your current proposal is to electronically connect the shut off at the hydro plant to a fixed broad-base weir at the diversion to solve the problem of minimum flow non-compliance. I believe this will correct that problem.

We would be willing to continue to work with you on other aspects we discussed during our field tour earlier.

I have no concerns regarding your proposal that FERC expedite your proposed solution to bypass non-compliance.

Sincerely,

Carl H. Nellis
Supervisor, Magic Valley Region

CHN:ar

cc: NRPB

DEC 05 1994

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
400 WEST "F" STREET
P.O. BOX 28
SHOSHONE, IDAHO 83352

IN REPLY REFER TO:
IDI-17053

November 15, 1995

Vernon Ravenscroft
1843 Broadway, Suite #102
Boise, ID 83706

Dear Vern:

This letter is to confirm that you have contacted this office regarding a proposed change to the engineering concept at the Malad Hydro Project (F.E.R.C No. 4055) to permanently comply with minimum stream bypass flows stipulated in BLM Right-of-Way I-17053.

It is my understanding that the present concept is to establish a fixed weir in, or attached to, the present dam structure. Water levels through the weir will control the on/off of the project generator(s). The concept is that the present proposal insures that generation of power is NOT occurring when required minimum bypass flows are not being achieved at the midpoint measuring station.

The concept as discussed with me this morning does sound simpler and more reliable than your previous engineering solutions and appears to have merit. I look forward to having the opportunity to review your proposal in writing with appropriate engineering blueprints. If you are planning to come on-line for the 1995 water year, I would encourage you to submit your proposal as soon as possible to allow for this office's review and to allow you to take advantage of the current Malad river waterflow levels.

Sincerely,

Doug Barnum

for Robert D. Cordell
Area Manager
Bennett Hills Resource Area

cc: Idaho Department Fish & Game

DEC 05 1994

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft	)	Docket Nos. P-4055-015
	)	P-4055-018

ORDER OF CHIEF JUDGE TERMINATING
SETTLEMENT JUDGE PROCEDURES

(Issued October 12, 1994)

By order issued August 31, 1994, the Chief Judge appointed Settlement Judge Stephen L. Grossman as the Settlement Judge in this proceeding with instructions to convene an informal settlement conference and to conduct settlement negotiations. On October 7, 1994, Vernon F. Ravenscroft and the Enforcement Staff filed a Stipulation and Consent Agreement resolving the issues arising in this case. Under these circumstances, the Settlement Judge procedures instituted herein on August 31, 1994, are terminated.

Curtis L. Wagner, Jr.
Chief Administrative Law Judge

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7865
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UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft)

Docket No. P-4055-015
P-4055-018

CERTIFICATION OF STIPULATION AND CONSENT AGREEMENT

(October 11, 1994)

TO THE COMMISSION:

On October 7, 1994, Ravenscroft and the Enforcement Section of this Commission's Office of General Counsel filed a Stipulation and Consent Agreement resolving the issues arising in the above captioned docket. Both parties to the consent agreement requested certification of the agreement to the Commission pursuant to Rule 602(g). By definition, the consent agreement is uncontested.

In accordance with 18 C.F.R. § 385.602(g) (1994), the following documents are hereby certified to the Commission:

1. Enforcement Section's letter of transmittal dated October 7, 1994;

2. Stipulation and Consent Agreement filed by the parties;

3. Transcript of Prehearing Conferences, April 14 and June 21, 1994 (pp. 1-15 and 16-24); and

4. All orders entered and pleadings filed in Docket Nos. P-4055-015 and P-4055-018.

Delbert R. Terrill, Jr.
Administrative Law Judge

DRT-blk Washington, D.C.

DEC 05 1994

OCT 13 1994

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

Project No. 4055-020--Idaho
Ravenscroft Ranch Project
Vernon F. Ravenscroft

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

31-7857

RECEIVED

OCT 17 1994

Department of Water Resources

Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, ID 83706

Dear Mr. Ravenscroft:

We received your report, dated September 15, 1994, filed in response to the Compliance Order issued September 2, 1994.

Ordering paragraph (A) of the Compliance Order required immediate action to ensure compliance with the minimum flow requirements of article 2, or the cessation of project generation and the passing of all inflow. The order required that you file, for Commission approval, a description of changes implemented to preclude minimum flow violations. The changes were to ensure that minimum flow requirements are satisfied before power is generated, and that generation will cease before bypass flows fall below those required by article 2. The order stated that if your filing is not acceptable to the Commission, project operation shall cease upon notification from the Commission.

Licensee's Response to Compliance Order

Immediate actions. According to your September 15 filing, you have taken several actions to minimize the recurrence of mininmum flow violations. Immediate actions included the killing of four to six beavers who at times have caused the clogging of water release structures and gaging structures; conferring with an engineering firm regarding project modifications and the obtaining of pertinent equipment costs. You also arranged with the Idaho Department of Water Resources to obtain inflow data via telephone on weekdays during the period of April through September.

Intermediate actions. You also proposed actions for the period of October 1994 through January 1995. These included the installation of a beaver-proof bypass tube near the river bed. You stated that the location, size, and elevation of the tube would be coordinated with the Idaho Department of fish and Game. You also proposed the installation of a staff gage in the ponds associated with the project to determine trends in water retention.

DEC 05 1994

Long-term actions. You proposed to install, during the period of February through April 15, 1995, an automatic generation shut-off that would protect the minimum flow. This was one of the options suggested by the engineering firm you contacted. You stated in the plan that a powerhouse bypass (relief) valve, also suggested by the engineering firm, may be installed at a later date.

Discussion

Your short-term and intermediate measures will not prevent violations of the minimum flow requirement. While these measures may reduce the possibility of deficiencies, they provide no assurance that violations will be precluded as required by the Compliance Order. None of these measures provide the assurance that the required minimum flow will be met before flows are diverted for power generation.

Your proposed long-term actions approached a workable solution, but the time frames you proposed are unacceptable, and the actions would not preclude bypass flow deficiencies. Technical problems include the lag time that would occur with use of an automatic generation shut-off system at the powerhouse. When generation ceased because of an impending minimum flow violation, water would need to back up the power canal before any contribution was made to the flow in the bypass reach. Therefore the plan does not preclude minimum flow violations, as required by the Compliance Order.

To prevent possible interruptions of downstream flow, you could instead consider automation of the operation of the diversion dam. Automation at that location could prevent diversion of water to the powerhouse when there was not sufficient inflow to satisfy both the minimum flow requirement and generation demand.

As you noted, there exist a possibility that implementation of an automated system has the potential to interrupt flows to downstream water users. You are reminded that your project was authorized as a run-of-river facility and that project induced fluctuations in downstream flows would constitute noncompliance with this mode of operation. Thus you must, as recommended by your engineer, ensure that any subsequent plan include provisions to install a powerhouse bypass valve.

Conclusions

The measures you have taken to date do not preclude further minimum flow deficiencies, as required by the September 2, 1994 Compliance Order. Similarly, the long-term actions you proposed are not satisfactory for the reasons discussed above, and regardless, would not be installed until as late as April 15, 1995. Therefore, within 5 days from receipt of this letter,

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project operation shall cease and all inflow shall be released to the bypass reach.

As stated in the September 2, 1994 Compliance Order, project operation can only resume after evidence that the project can be operated in compliance with article 2 has been approved by the Commission.

Seven copies of any material should be filed with:

The Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 N. Capitol Street, N.E.
Washington, D.C. 20426

This letter constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of issuance of this letter, pursuant to 18 C.F.R. § 385.713. If you have any questions, contact Pete Yarrington at (202) 219-2939 or George Taylor at (202) 219-2692.

Sincerely,

J. Mark Robinson

J. Mark Robinson
Director, Division of Project
Compliance and Administration

cc: Jerry M. Conley, Director
Idaho Department of Fish and Game
600 S. Walnut
Boise, ID 83707-0025

Mr. Norman C. Young
Idaho Department of Water Resources
1301 N. Orchard Street
Statehouse Mail
Boise, ID 83720-9000

U.S. Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, ID 83352

Mr. Luther C. Kjelstrom
U.S. Geological Survey
Water Resources Division
230 Collins Road
Boise, ID 83702

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SEP 19 1994
Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft)

Docket No. P-4055-015
P-4055-018

ORDER

(September 15, 1994)

On September 14, 1994, Ravenscroft moved to suspend the procedural schedule for the above docket citing the fact that it and the Enforcement Staff had reached an "agreement in principle for settlement" of the case. Ravenscroft represented that Enforcement Staff concurred with the motion and that the settlement judge also concurred. Ravenscroft filed no concurrent motion to shorten the time for responses to its motion.

The time period to respond to the motion to suspend the procedural schedule herein is hereby shortened to September 21, 1994.

SO ORDERED.

Delbert R. Terrill, Jr.
Administrative Law Judge

DRT-03 Washington, D.C.

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SEP 19 1994
Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft)

Docket No. P-4055-015
P-4055-018

ORDER

(September 15, 1994)

On September 14, 1994, Ravenscroft moved to suspend the procedural schedule for the above docket citing the fact that it and the Enforcement Staff had reached an "agreement in principle for settlement" of the case. Ravenscroft represented that Enforcement Staff concurred with the motion and that the settlement judge also concurred. Ravenscroft filed no concurrent motion to shorten the time for responses to its motion.

The time period to respond to the motion to suspend the procedural schedule herein is hereby shortened to September 21, 1994.

SO ORDERED.

Delbert R. Terrill, Jr.
Administrative Law Judge

DRT-03 Washington, D.C.

DEC 05 1994

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SEP 6 1994
Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft	)	Docket Nos. P-4055-015
	)	P-4055-018

ORDER OF CHIEF JUDGE APPOINTING SETTLEMENT JUDGE AND SCHEDULING SETTLEMENT CONFERENCE

(Issued August 31, 1994)

On August 23, 1994, Vernon F. Ravenscroft moved for the appointment of a Settlement Judge in this proceeding. On August 26, 1994, the Enforcement Staff indicated it did not oppose the appointment of a Settlement Judge so long as such appointment did not alter the existing procedural schedule. Presiding Judge Terrill concurs in the appointment of a Settlement Judge with the understanding that such appointment not affect the current trial date.

The Chief Judge finds that an informal settlement conference in this case and the appointment of a Settlement Judge to preside over the conference is in the public interest and may result in a more expeditious final determination of this case. Such a conference will enable the parties to discuss openly their positions and concerns on the contested issues to determine if their differences can be reconciled. Accordingly, Presiding Administrative Law Judge *Stephen L. Grossman* is hereby appointed as a Settlement Judge in this proceeding to convene an informal settlement conference on September 9, 1994, to explore the possibility of settlement, to discuss the differences between the parties, and in general to conduct the settlement negotiations. All parties to this proceeding are directed to have principals present at the settlement negotiations with authority to negotiate and accept or approve settlement terms. The Settlement Judge is further directed to report the progress of the negotiations to the Chief Judge, together with his views on the prospects for settlement and his recommendations for further settlement procedures.

An informal settlement conference is hereby scheduled to begin at 10 AM on September 9, 1994, in a hearing room of the Federal Energy Regulatory Commission, 810 First Street, NE, Washington, DC.

Curtis L. Wagner, Jr.
Chief Administrative Law Judge

DEC 05 1994

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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AUG 3 1 1994
Department of Water Resources

Vernon F. Ravenscroft)

Docket No. P-4055-015
P-4055-018

ORDER

(Issued August 24, 1994)

On August 23, 1994, Vernon F. Ravenscroft moved for the appointment of a settlement judge in the above proceeding. Movant requests that the undersigned forward the motion with concurrence to the FERC Chief Judge. The time period to respond to the motion is hereby shortened to August 30, 1994.

SO ORDERED.

Delbert R. Terrill, Jr.
Administrative Law Judge

DRT-blk Washington, D.C.

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Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft	)	Docket Nos. P-4055-015
	)	P-4055-018

ORDER OF CHIEF JUDGE APPOINTING SETTLEMENT JUDGE AND SCHEDULING SETTLEMENT CONFERENCE

(Issued August 31, 1994)

On August 23, 1994, Vernon F. Ravenscroft moved for the appointment of a Settlement Judge in this proceeding. On August 26, 1994, the Enforcement Staff indicated it did not oppose the appointment of a Settlement Judge so long as such appointment did not alter the existing procedural schedule. Presiding Judge Terrill concurs in the appointment of a Settlement Judge with the understanding that such appointment not affect the current trial date.

The Chief Judge finds that an informal settlement conference in this case and the appointment of a Settlement Judge to preside over the conference is in the public interest and may result in a more expeditious final determination of this case. Such a conference will enable the parties to discuss openly their positions and concerns on the contested issues to determine if their differences can be reconciled. Accordingly, Presiding Administrative Law Judge *Stephen L. Grossman* is hereby appointed as a Settlement Judge in this proceeding to convene an informal settlement conference on September 9, 1994, to explore the possibility of settlement, to discuss the differences between the parties, and in general to conduct the settlement negotiations. All parties to this proceeding are directed to have principals present at the settlement negotiations with authority to negotiate and accept or approve settlement terms. The Settlement Judge is further directed to report the progress of the negotiations to the Chief Judge, together with his views on the prospects for settlement and his recommendations for further settlement procedures.

An informal settlement conference is hereby scheduled to begin at 10 AM on September 9, 1994, in a hearing room of the Federal Energy Regulatory Commission, 810 First Street, NE, Washington, DC.

Curtis L. Wagner, Jr.
Chief Administrative Law Judge

DEC 05 1994

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SEP 30 1994
Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft)

Docket No. P-4055-015
P-4055-018

ORDER

(September 23, 1994)

On September 14, 1994, Ravenscroft moved to suspend the procedural schedule for the above docket citing the fact that it and the Enforcement Staff had reached an "agreement in principle for settlement" of the case. Ravenscroft represented that Enforcement Staff concurred with the motion and that the settlement judge also concurred. The time period to respond to the motion to suspend the procedural schedule was shortened to September 21, 1994. No response to the motion was filed.

For good cause shown the motion to suspend the procedural schedule is hereby granted. The parties shall file a settlement agreement no later than October 7, 1994. A settlement progress report will be filed no later than September 30, 1994.

SO ORDERED.

Delbert R. Terrill, Jr.
Administrative Law Judge

DRT-03 Washington, D.C.

DEC 05 1994

Vault file 37-7857
NCY

BRUDER, GENTILE & MARCOUX
1350 NEW YORK AVENUE, N. W.
SUITE 600
WASHINGTON, D. C. 20005-4702

(202) 783-1350
TELECOPIERS (202) 737-9117
(202) 347-2644

GEORGE F. BRUDER
CARMEN L. GENTILE
ALBERT R. SIMONDS, JR.
J. MICHEL MARCOUX
DAVID E. GOROFF

GARY E. GUY
JAMES H. McGREW
THOMAS L. BLACKBURN
ARLENE PIANKO GRONER

September 19, 1994

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SEP 22 1994
Department of Water Resources

Honorable Lois D. Cashell
Secretary
Federal Energy Regulatory Commission
Mail Code: DPCA, HL-21.1
825 North Capitol Street, N.E.
Washington, D.C. 20426

Regarding: Vernon F. Ravenscroft
Project No. 4055-020

Dear Ms. Cashell:

Mr. Vernon F. Ravenscroft is the exemptee of the project described above. As directed by the Compliance Order issued September 2, 1994, Mr. Ravenscroft hereby files an original and seven copies of his response to that order. The attached proof of service identifies the entities that have been served with a copy of this filing.

Very truly yours,

James H. McGrew

James H. McGrew

Attachment

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DEC 05 1994

VERNON RAVENSCROFT
Telephone 208 837-4XXX4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, Idaho 83706

September 15, 1994

Plan of action to remedy minimum by-pass flow problems at Ravenscroft Hydro Project (FERC 4055) as per compliance order issued September 2, 1994.

Immediate Action

Ravenscrofts have cooperated with the concerned irrigators and have obtained beaver kill permits from the Idaho Department of Fish and Game. At least four and probably six animals have already been killed.

Ravenscrofts have obtained a project review from a professional engineering company (Myers Engineering - Boise) in regard to the mechanical controls that can theoretically solve or minimize the flow problems. Report attached.

Ravenscrofts have contacted the Idaho Department of Water Resources to determine legal obligations as to the protection of senior downstream water rights (irrigation). Advisory attached.

Ravenscrofts have contacted the watermaster and have arranged to obtain upstream flow data as needed based upon a phone call to the watermaster's office. This information will be made available on any work day morning (after 8:00 a.m.). The availability is also confined to the months of April - September inclusive.

Ravenscrofts have contacted the Idaho State Department of Fish and Game and have been on the project with four members of the Department's Regional office. No decisions have been finalized. The field trip examined three subjects:

1. Ramifications of mechanical control as limited by the downstream water rights.

2. Opportunities for mitigation.

3. Environmental consequences of project abandonment.

DEC 05 1994

Vernon Ravenscroft has an appointment with Mr. Robert Cordell, Shoshone Bureau of Land management for 1:00 p.m. next Tuesday September 20th.

Ravenscrofts have contacted Engineer Robert Ross of Boise (Mr. Ross designed the original project control equipment) and the Contech Construction Products Company of Twin Falls to determine approximate equipment and instrument costs.

Intermediate action: October 1994 thru January 1995.

1994 is a serious drought year comparable to 1992. In "92" the project operated for only a few days in September and did not resume operation until late January of 1993. The ponds provided bypass water for several days but eventually water was drained from all but the bottom of the old gravel pits. This will again be the condition in 1994. The dry period will provide the opportunity to install one additional bypass tube at or near the bottom of the river bed. This tube will be beaver proofed and will be in a command position so as to assure an ongoing minimum flow in excess of the 5 CFS requirement for the period July 1 through April 15 of each operating year. The exact location size and elevation of the tube will be coordinated with Idaho Fish and Game. A large tube in such a command position would have the potential for serious environmental damage.

In this same time period Ravenscrofts will install one more staff gauge in the pond area and revise the project monitoring records so as to record the water level in the ponds at each monitoring visit. This will provide a basis of judgement as to the water reserve in the ponds and an indication of trend as to whether the level is increasing, is static or is declining. This is a tool to aid the decision process and is not a control in-and-of itself.

Long Term Action: February and beyond.

Mechanical - (February thru April 15, 1995) Install an automatic turn off at the generation site (Myers alternative #1 minus the relief valve) which will turn off all generation at the designated seasonal minimum flow. This system must be coordinated with the downstream irrigators and the Idaho Department of Water Resources and must provide a safety margin to protect the downstream irrigators. A relief valve may be necessary at a later date.

Review: (October or November 1995)

Coordinate with all germane agencies and the downstream irrigators to assess the one year of operation and to determine corrections, modification or adjustments that appear desirable or necessary.

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Mitigation: (ongoing)

There are obvious opportunities for meaningful mitigation that would increase the wetlands, riparian, fishery, wildlife and water storage values which the project has created. These opportunities will be explored with all germane agencies. This potential alternative may offer an opportunity to achieve environmental enhancement as well as improve project feasibility. This potential is included in this report only as a matter of record. It is not intended to be a modifying or qualifying alternative to the items listed above.

Respectfully submitted - Project 4055

Vernon Ravenscroft

By Vernon Ravenscroft - Owner
Date: 9/16/1994

Enclosures:
Letter from Myers Engineering.
Letter from Idaho Dept. of Water Resources
Letter from Idaho Fish & Game Dept.

DEC 05 1994

MYERS ENGINEERING COMPANY, P.A.
Consulting Engineers

750 Warm Springs Avenue
Boise, Idaho 83712
Telephone: (208) 336-1425
Fax # 208-342-5245

September 12, 1994

Mr. Vern Ravenscroft
1843 Broadway Avenue
Boise, ID 83706

Re: Tuttle Hydroelectric Project

Dear Vern:

We have reviewed the various orders and notices from FERC relating to the above project. The issue seems to be control and measurement of the required bypass flows. The project's exemption requires a bypass of 5 cfs from ---"July through mid-April, and 80 cfs for the remainder of the year." Neither of these mandated minimum flows appear to be coordinated with downstream irrigation requirements with prior water rights.

There are several options under which the bypass problems might be solved or minimized, as follows:

1) Automation at power plant would turn turbine off and open valve to protect downstream flow. It would be slow to respond to provide flow to bypass unless there was a margin safety built-in.

2) Diversion from the Malad River could be controlled by automating the canal gate, possibly at the existing gate structure, by use of a head level sensor or flow sensor. Some study would be required to allow for uncontrolled seepage through or under the existing diversion dam which would contribute to the desired bypass flow. Under this scheme the power plant could only operate on river flows above the bypass flow. Coordination with downstream irrigation demands would be complicated by the travel time between diversion and tailrace.

3) It would be possible but not necessarily feasible to convert the existing power canal into a zero grade lake, with the same water level as the river diversion. This would require

DEC 05 1994

automating the penstock gates or equipping the turbines with wicket gates. Response time could be a problem when the river flow was fluctuating. The Malad River is subject to considerable flow variation due to upstream controls.

4) Modification of the existing ungated bypass pipes to reduce beaver problems would reduce bypass fluctuations, but would not provide the precise control FERC and the agencies seem to expect. It should be noted that measurement of water in open channels is not a precise science. Any targeted flow must recognize that a plus or minus tolerance is necessary.

5) The ultimate and mostly costly solution to this perceived problem of course is to abandon the project. This would mean loss of significant fish and wildlife benefits, created solely by the project, plus release of a quantity of sediment into the downstream reaches of the river.

Selecting the best solution to this problem requires both engineering and environmental review, including an analysis of downstream water requirements. The probable time required to reach a viable compromise is likely to take 90 to 120 days.

Sincerely,

Carl L. Myers, P.E.

DEC 05 1994

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

September 13, 1994

Vern Ravenscroft
Consulting Associates
P.O. Box 893
Boise, Idaho 83701

RE: Ravenscroft Ranch Hydropower Project
IDWR Permits 37-7857/7865/7922
FERC # 4055

Dear Mr. Ravenscroft:

This letter is a followup to your telephonic request for a listing of concerns that the Department of Water Resources has regarding modification of the project facilities or method of operation to guarantee compliance with project operating requirements. State water laws requires that the operation comply with conditions of approval of the above referenced water appropriation permits. The conditions of approval include a requirement that diversion and use of water is subject to all prior water rights. Several older priority, decreed water rights are located downstream from your project.

It is imperative that operation of the hydropower facility not interfere with use of water by these prior rights. Among other considerations, this means that during times that inflow to the project is low, operation of the project must not reduce the rate of flow that would have been available to these older rights on a real time basis. The project must not be operated to cause unnatural fluctuations in the flow that interferes with the downstream prior rights' diversion and use of water.

Physical alterations to the hydropower facilities not directly related to the diversion of water will require approval under Idaho's Stream Channel Protection Act.

Should a decision be made that the project will no longer be operated, the facilities must be left so as to insure that further diversion of water cannot occur. This may require physical removal of the diversion facilities or other modification to prevent unauthorized diversion of water.

DEC 05 1994

This is only a general review of the issue. When you have specific suggestions for revising the project, please provide them to me so that a more comprehensive review can be given.

Sincerely,

NORMAN C. YOUNG
Administrator,
Water Management Division

DEC 05 1994

IDAHO FISH & GAME
600 South Walnut / Box 25
Boise, Idaho 83707-0025

Cecil D. Andrus / Governor
Jerry M. Conley / Director

September 16, 1994

Vernon Ravenscroft
Consulting Associates
1843 Broadway Ste 102
Boise, ID 83706

Re: Cooperative Work at Ravenscroft Hydro Project 4055
Gooding County, Idaho

Dear Vernon:

You may use this letter as my verification that you have discussed the compliance problems of Project 4055 with me. This will also serve to verify that members of my field staff have recently been on the project to better acquaint themselves with the water flow problems, legal water rights complications, and mitigation opportunities found on your project.

My staff is studying the engineer's report and the Idaho Department of Water Resources' advisory which you provided. We assume and, by this letter, I request that all parties have some additional time in which to study the alternatives and then arrive at a constructive solution. We understand that the Federal Energy Regulation Commission desires prompt action.

My staff will expect to hear from you for follow-up work at your first convenience.

Sincerely,

Jerry M. Conley
Director

JMC:jr

pc: Will Reid

DEC 05 1994

CERTIFICATE OF SERVICE

I hereby certify that I have served a copy of the above response by Vernon F. Ravenscroft to the Compliance Order issued September 2, 1994 by placing one copy each in the United States mail with postage prepaid to the following:

Mr. Norman C. Young
Idaho Department of Water Resources
1301 North Orchard Street
Statehouse Mail
Boise, Idaho 83720-9000

Mr. Jerry M. Conley
Idaho Department of Fish & Game
600 South Walnut/Box 25
Boise, Idaho 83707-0025

Federal Energy Regulatory Commission
Portland Regional Office
1120 Southwest 5th Avenue
Suite 1340
Portland, Oregon 97204

United States Department of Interior
Bureau of Land Management
P.O. Box 2B
Shoshone, Idaho 83352

Dated this 19th day of September, 1994 at Washington, D.C.

James H. McGrew

Bruder, Gentile & Marcoux
1350 New York Avenue, N.W.
Suite 600
Washington, D.C. 20005-4702

DEC 05 1994

ERNON RAVENSCROFT

Telephone 208 837-4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, Idaho 83706

April 21, 1994

Vandf ✓
F.1.c ✓ US

37-7857

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APR 2 5 1994
Department of Water Resources

JOINT LETTER TO:

Norman Young, Idaho Water Resources Department, Boise
Robert Cordell, Bureau of Land Management, Shoshone
Will Reid, Idaho Fish & Game Department, Boise
Jerome Regional Office, Idaho Fish & Game Department
Lee Peterson, Watermaster, Shoshone
Department of Environmental Quality, Twin Falls
Charles Lobdell, U.S. Fish & Wildlife Service, Boise
Jonathan First, Federal Energy Regulatory Commission, Washington, D.C.
McNeil Watkins, Washington, D.C.

Gentlemen:

This correspondence is supplied as a progress report in regard to the water bypass complications at the Ravenscroft Hydro Project, F.E.R.C. 4055 in Gooding County, Idaho. Certain improvements and additional studies have been completed.

1. The project's prime lender, is now allowing some funds for project improvement. We have installed a new 24"-diameter exhaust tube in the diversion structure. This tube is equipped with a screw gate. This gate makes possible a much quicker response in those instances when the inflow dramatically changes from one project inspection to the next. We have also installed a staff gauge immediately downstream from the exhaust tubes. This gauge makes possible a quick and accurate quantification of the remedial actions needed to restore any bypass requirement.

   The beaver colony is still a problem, but the screw gate decreases the labor necessary to clean and remove the materials which the beaver place as a plug at the pipe entrance. From this standpoint we will also retrofit the other 24" pipe with a screw gate in order to provide a greater control and a quicker response to the flow interruptions caused by the beaver.

2. We have engaged the ongoing consultant services of Dr. Charles Brockway, a recognized hydrologist with national credentials. Dr. Brockway has developed a more accurate rating table for the midpoint (self-recording) gauge section. (A copy of that table is enclosed.) This corrected table reduces the alleged and/or disputed compliance incidents.

   Our plant operators are now using this table and we request that the germane agencies use it in any future inspections which they may make on our project.

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3. The Idaho Water Resource Department has restated their concern for a steady delivery of downstream irrigation water during the months of April through October. A copy of that letter is attached.

4. Water quality studies have been expanded. You have previously received:

   a. The Department of Environmental Quality water studies on the project reach of the river. Those studies predate project 4055.

   b. The Gene Ralston studies of the project reach of the river.

   c. Pictures of the sediment deposits taken during the no flow periods of the 1992 drought.

   On the suggestion of Mr. Ted Kock (U.S. Fish and Wildlife Service) we purchased minimum-maximum thermometers and placed these units in the inflow stream and in the tailrace flow for two separate extended periods in the summer of 1992. The median outflow was found to be from 1° to 3° Fahrenheit cooler in the tailrace as compared to the inflow. If any other germane agency would care to supervise similar tests during the summer of 1994, we would welcome such cooperation.

   In September of 1993 (in general this period had relatively mild temperatures and September is one of the better water quality periods) the University of Idaho Middle Snake River water quality study team completed a more detailed water quality analysis of the Project 4055 river reach. Their letter and one summary page are attached. Additional detail is available upon request. It is of interest that the average temperature (station 1) was 15.09° C. and the average outflow temperature (Station 4) was also 15.09° C. The Dissolved Oxygen (D.O.) comparisons: inflow 8.388 mg/L and the outflow 8.599 Mg/L.

   There have been assumptions and allegations that project 4055 has warmed the water and decreased the D.O. content. One critic went so far as to claim that the project has changed this river reach from a cold water biota to a warm water biota. There is absolutely no basis in fact for such assumptions.

   a. Three separate studies indicate that the temperature change is either neutral or has a cooling effect.

   b. One study indicates a D.O. increase.

   c. Visual evidence proves substantial sediment reduction.

   d. Visual evidence proves an increase of riparian habitat and resultant waterfowl habitat.

   e. Actual ongoing fisherman counts prove the creation of a significant and popular fishery.

   f. The writer of this report letter has been a resident of the project community since 1932. I can testify, and other pioneers will verify, that the volatile irrigation control destroyed the cold water fishery in this project 4055 reach of the Malad River some 80 years

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ago. The D.E.Q. water quality studies document that this reach was not suited to cold water biota well before any influence from project 4055.

As a result of my last group correspondence, the Idaho Department of Water Resource and the Bureau of Land Management agreed (on a trial basis) to certain stipulation alterations. Those two agencies had been party to one or more field trips and to numerous negotiation meetings. Idaho Fish and Game and the U.S. Fish & Wildlife Service rejected those changes. They had not been participants in the preliminary meetings.

Project 4055 is licensed as a special feature of the river exemption. As such, the germane local agencies, particularly Idaho Fish and Game, plus Bureau of Land Management who have right-of-way administration responsibilities, and Idaho Water Resources Dept. who control and coordinate state water rights are the governing entities in regard to the project stipulations. By this letter I am asking for individual meetings with Fish and Game, U.S. Fish and Wildlife Service and the Department of Environmental Quality. The purpose of such meetings will be to supply each agency with the background information which I.D.W.R. and B.L.M. already possess. Then I ask for a joint meeting with all germane agencies.

Project 4055 has created water quality, wildlife habitat, a fishery, and water reregulation values not present before its construction. The present stipulations were negotiated without input from or notification to the local irrigators, the Watermaster, or the Idaho Department of Water Resources.

The present stipulations are not operable, particularly during drought periods such as 1992.

I will contact all local parties by telephone in regard to follow-up meetings.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

Enclosures

DEC 05 1994

University of Idaho
Kimberly Research & Extension Center
3793 North 3600 East
Kimberly, Idaho 83341-5076 U.S.A.
Phone: (208) 423-4691
FAX: (208) 423-6555
Bitnet: KIMBERLY@IDUI1
Internet: KIMBERLY@IDUI1.CSRV.UIDAHO.EDU

April 6, 1994

Mr. Vernon Ravenscroft
Consulting Associates
1543 Broadway, Suite 102
Boise ID 83706

Dear Verne:

I am enclosing the preliminary water quality data which was obtained on the Malad River Hydropower project system in September 1993. Field water quality data and samples for laboratory analysis were obtained for a 24 hour period to evaluate the water quality changes through a pond-canal system as compared with the bypassed reach of the river.

Measurements were obtained at five stations as outlined on the data tables and charts. Significant diel fluctuations in dissolved oxygen and temperature are evident, as would be expected, in both the power canal-pond system and the bypass reach. Preliminary analysis indicates that the DO at the end of the power canal in the tailrace exhibits a smaller diel fluctuation than at the end of the bypass reach. Minimum values of DO were about 7.5 mg/l coming into the system from the river. The minimum DO in the power canal-pond system was 7.5 mg/l at MP2, which is the outlet of the large pond to the hydro canal. DO in the bypass reach was a minimum of 7.0 mg/l at about 4:40 a.m. The attached plots show the time relationships of DO through the power canal-pond system and the bypass reach.

Temperature showed similar diel fluctuations as shown on the plots. Water temperature at the inlet to the system, MP1, is generally cooler than the water leaving the power canal-pond system through the nighttime and is warmer during the morning and afternoon. Travel time through the system accounts for most of the difference. Similar responses are observed in the water temperature through the bypass reach.

Laboratory data shown on the table MPWQDAT1.XLS indicates only minor differences in BOC, suspended solids, nitrogen forms, and phosphate forms through the canal-pond system and through the bypass. Ammonia-N was generally reported as 0.01 mg/l or less at all stations indicating that ammonia toxicity at these temperatures and pH is not a concern. Total suspended solids were generally less than 22 mg/l with the station MP5 at the end of the bypass indicating the lowest values, 6 mg/l. Nitrate+nitrite N was below 0.03 mg/l at all stations and total Kjeldahl nitrogen, TKN, was below 0.5 mg/l. Both Total Phosphorus and ortho phosphorus were low, generally below 0.12 and 0.06 mg/l, respectively. No

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The University of Idaho is an equal opportunity/affirmative action employer and educational institution.

statistical analysis was performed on the data, but it is unlikely that any significant trends in nutrients or other laboratory parameters through the system exist.

All laboratory analysis was performed at the U.S. Bureau of Reclamation Water Quality lab in Boise. Again, this is preliminary data and has not been compared with QA/QC data collected as part of the Mid Snake Water Quality studies. I hope this is adequate for your needs at this time.

Thank you for letting us utilize the system for our studies.

Sincerely,

C E Brockway

C.E. Brockway, P.E.

CEB:af

DEC 05 1994

Malad River Hydro Pond Complex

ater Quality Data September 1993

MPWADAT2.XLS

Field Water Quality Data

Monitoring Sites

MP 1	1 Malad River at Bridge above Ponds
MP 2	2 Outlet of Large Pond to Hydro Canal
MP 3	3 Beginning of Bypass Reach
MP 4	4 End of Power Canal in Tailrace
MP 5	5 End of Bypass Reach

Date	Measuring Point 1					Date	Measuring Point 2					Date	Measuring Point 3				
Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC
	Air	Water	mg/l		mS		Air	Water	mg/l		mS		Air	Water	mg/l		mS
9/14/93 16:00	25.70	16.60	8.90	8.80	450	9/14/93 17:00	22.5	17.1		8.9	400	9/14/93 17:00	22.5	16.3		8.9	400
9/14/93 18:41		16.20		9.00	400	9/14/93 18:58		16.1	10	9.01	390	9/14/93 19:09		16.1	9.09	8.98	390
9/14/93 20:15	15.30	16.00	9.20	9.00	380	9/14/93 20:55	12	15.9	9.8	9	380	9/14/93 20:40	12.9	15.7	8.9	9	390
9/14/93 22:23	11.90	15.70	8.45	8.88	390	9/14/93 23:50	11.1	15.7	8.5	8.93	400	9/14/93 22:53	10.7	15.6	8.53	8.92	390
9/15/93 0:09	10.70	15.40	7.86	8.81	390	9/15/93 0:45	9	15.4	8.15	8.85	390	9/15/93 0:30	10.7	15.3	8.23	8.84	390
9/15/93 2:09	10.60	14.90	7.60	8.75	390	9/15/93 2:27	10.8	15	7.74	8.71	390	9/15/93 2:21	10.9	14.9	8	8.73	400
9/15/93 4:03	8.80	14.40	7.53	8.70	390	9/15/93 4:23	7.3	14.6	7.77	8.72	400	9/15/93 4:13	8.2	14.5	8.06	8.71	400
9/15/93 6:00	5.30	14.00	7.70	8.66	400	9/15/93 6:21	5.6	14.2	7.5	8.68	390	9/15/93 6:14	5.7	14.1	8.09	8.68	410
9/15/93 8:20	10.00	13.70	8.10	8.60	390	9/15/93 8:52	13.6	13.8	7.6	8.6	390	9/15/93 8:40	12.4	13.7	8.4	8.6	390
9/15/93 10:25	16.10	13.90	9.00	8.63	380	9/15/93 11:52	19.7	14.1	8.5	8.63	380	9/15/93 11:02	18.1	14.4	9.4	8.62	390
9/15/93 13:25	23.20	15.20	9.54	8.90	390	9/15/93 14:13	22.7	15.2	8.45	8.8	400	9/15/93 13:54	28	15.3	8.4	8.8	400
	ave	15.09	8.38														

Date	Measuring Point 4					Date	Measuring Point 5				
Time	Temp oC		DO	pH	EC	Time	Temp oC		DO	pH	EC
	Air	Water	mg/l		mS		Air	Water	mg/l		mS
9/14/93 17:43	24.2	15.8		8.9	390	9/14/93 17:43	22.1	16.7	11.22	8.9	400
9/14/93 19:48		15.9	10.22	8.94	390	9/14/93 19:53		16.4	8.46	8.94	390
9/14/93 21:35	12	15.7	9.9	9	390	9/14/93 21:50	12.3	15.4	8.1	8.8	390
9/14/93 23:23	11.1	15.7	9.32	8.97	390	9/14/93 23:35	11.5	15.1	7.43	8.76	380
9/15/93 1:01	9.5	15.4	8.6	8.87	390	9/15/93 1:10	10	14.7	7.28	8.68	400
9/15/93 2:38	10.5	15.1	7.91	8.79	410	9/15/93 2:43	10.5	14.4	7.39	8.69	400
9/15/93 4:35	7.5	14.7	7.82	8.77	390	9/15/93 4:40	6.9	14	7	8.63	390
9/15/93 6:34	4.9	14.3	7.77	8.69	390	9/15/93 6:41	5.8	13.6	7.78	8.55	390
9/15/93 9:20	13.6	13.9	8.1	8.7	390	9/15/93 9:37	14	13.4	8.9	8.6	400
9/15/93 12:33	20	14.3	8.05	8.65	390	9/15/93 12:44	23.3	15	9.86	8.84	390
9/15/93 14:33	23.7	15.2	8.3	8.7	400	9/15/93 14:57	23.3	16.8	9.83	9	390
	ave	15.09	8.599								

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

March 28, 1994

Vernon Ravenscroft
Consulting Associates
1843 Broadway Avenue, #102
Boise, Idaho 83706

RE: Ravenscroft Ranch Hydropower Project

Dear Mr. Ravenscroft:

Your efforts to keep this department informed about the operation of the hydropower project is appreciated. The addition of the additional gated outlet from the diversion pool should allow improved control of water diversions and of flows left in the bypassed channel. The increased capability to make incremental adjustments of these flows as the Malad River fluctuates should assist you in meeting the operational requirements of the project, including the requirement to not interfere with delivery of available natural flow to the prior rights for irrigation located downstream from the hydropower project.

Protection of prior rights has always been a requirement under state law. The water appropriation permits issued for your hydropower project require the recognition of prior rights. Several recent court decisions affirm the requirement that prior rights be protected. The U.S. Supreme Court in California v. U.S. (Rock Creek case) reaffirmed that the FERC must recognize vested rights established under state law when authorizing hydropower projects. The Idaho Supreme Court in Musser v. Higginson emphasized the duty of IDWR to distribute water in accordance with priority of appropriation. Your continued efforts to provide stable delivery to meet the valid calls of all downstream right holders is essential.

I am enclosing a copy of a letter dated July 21, 1992, which discusses these requirements.

Sincerely,

NORMAN C. YOUNG
Administrator
Water Management Division

NCY:dc
Enclosure

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BOISE, ID 837

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NOV 22 1993
Department of Water Resources

65 FERC ¶ 61,226

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft) Docket No. 4055-018
Idaho P-37-7857

NOTICE OF PROPOSED PENALTY

(November 15, 1993)

Take notice that the following penalty assessment is proposed, under section 31 of the Federal Power Act (FPA), 16 U.S.C. §823 (1988), and Part 385, subpart O of the Commission's regulations. See Procedures for the Assessment of Civil Penalties under section 31 of the Federal Power Act, 53 Fed. Reg. 32,035 (1988), II FERC Statutes & Regulations ¶ 29,021, 18 C.F.R. §385.1501-.1511.

a. Project No. : 4055

b. Exemptee : Vernon F. Ravenscroft

c. Location : Malad River in Gooding County, Idaho

d. Name of Project : Ravenscroft Ranch Project

e. Exemptee Contact : Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, ID 83706
(208) 345-2670

f. FERC Contact : Donna-Marie Peres
Division of Project Compliance
and Administration
Phone: (202) 219-2798

g. The Violations: Vernon F. Ravenscroft, the owner-operator of the exempt Ravenscroft Ranch Project (Ravenscroft), violated a December 1991 Compliance Order by replacing an approved minimum flow gage with another gage that, as installed, failed to accurately measure minimum flows. 1/ Mr. Ravenscroft removed the approved gage on May 1, 1992, and did not come into compliance until December 11, 1992, a period of 225 days. Pursuant to section 31(c) of the Federal Power Act (FPA), 16 U.S.C. § 823b(c) (1988), the Commission is issuing a Notice of Proposed Penalty for $40,000.

1/ Compliance Order, 57 FERC ¶ 62,205 (1991).

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h. Material Facts on Which the Violation is Based: Ravenscroft is located on the Malad River in Gooding County, Idaho. On February 5, 1982, the Commission granted Ravenscroft an exemption from licensing. 2/ The Idaho Department of Fish and Game (IDFG), on December 9, 1981, requested that Ravenscroft maintain a minimum bypass streamflow of 5 cubic feet per second (cfs) from July through mid-April, and 80 cfs for the remainder of the year. Standard article 2 of the exemption requires Ravenscroft to comply with the terms and conditions set by IDFG. 3/

On December 12, 1991, the Director of the Commission's Division of Project Compliance and Administration (DPCA) issued a Compliance Order that directed Ravenscroft to file within 60 days a plan and schedule for a gaging system that would continuously record the bypass flow. 4/ The Compliance Order directed Ravenscroft to include in the plan and schedule comments from the Bureau of Land Management, IDFG, the U.S. Geological Survey and the U.S. Fish and Wildlife Service (resource agencies). The Compliance Order also required that the gaging system include measures for reporting daily flow summaries to resource agencies upon request. The Commission reserved the right to amend the plan and schedule.

The Compliance Order required that Ravenscroft install the gaging system within 90 days from the date of the order. Finally, the Compliance Order stated that Ravenscroft's failure to comply could subject the project to the enforcement and penalty provisions of section 31 of the FPA.

Mr. Ravenscroft reported that he installed the approved gaging equipment on March 23, 1992, but due to a faulty battery, did not activate the equipment until April 6, 1992, 26 days after the deadline set by the Compliance Order. 5/ The Commission does not know whether Ravenscroft brought itself into compliance on April 6, 1992. After Ravenscroft installed the original gage,

2/ 18 FERC ¶ 62,161 (1982).

3/ Standard article 2 requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. 18 C.F.R. § 4.106(b) (1993).

4/ 57 FERC ¶ 62,205 (1991).

5/ These failures to meet the Compliance Order deadlines were discussed in the Notice of Proposed Penalty, 61 FERC ¶ 61,062 at 61,262 (1992).

it did not produce data showing that the gage could adequately measure minimum flows. 6/

On May 1, 1992, Mr. Ravenscroft replaced the gaging equipment without notifying the Commission or consulting with the resource agencies as required by the Compliance Order. This newer gaging equipment was installed on the bank of the bypassed reach. Ravenscroft constructed a well and an intake pipe that brings water from the bypassed reach to the well. The gaging equipment measures the water level in the well, which when operating properly, is level with the stream channel. However, due to improper installation, the equipment failed to take water into the well when stream flows fell below 7.1 cfs. 7/

By letter of May 20, 1992, Mr. Ravenscroft informed the Commission that he had removed the approved gage and installed a float-operated unit. In a July 8, 1992 letter, he explained that the original gaging equipment could not function during freezing weather. He also claimed that the original gage was difficult to calibrate and recorded the flow on a computer disc that could not be read easily.

On September 8, 1992, staff of the Portland Regional Office (PRO) inspected the project. Ravenscroft provided staff with minimum flow records for the months of May through August, 1992. These records indicated that the replacement gage, as installed, could not record flow releases of less than 7.1 cfs. Therefore, Ravenscroft could not verify compliance with the 5 cfs minimum flow requirement for the project between July and August 1992. In a follow-up letter dated September 11, 1992, the PRO informed Ravenscroft that the float-type gaging system, as installed, was inadequate and requested that Ravenscroft submit a plan and schedule for modifying it.

In an October 6, 1992 letter, Ravenscroft responded that he would modify the gaging system between October 15 and 25, 1992. The letter stated that the proposed modification "will be more than enough correction to record even minimal flows." Ravenscroft, however, failed to make the modification.

In a December 4, 1992 letter, DPCA informed Ravenscroft that it was not in compliance with the December 1991 Compliance Order

6/ Ravenscroft was unable to provide the Commission with minimum flow data for April 1992 because he improperly loaded a data card into the electronic gaging equipment.

7/ The Commission does not know when Ravenscroft constructed the well and intake pipe. It is possible that the original gage, as installed, also failed to measure flows below 7.1 cfs.

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until it replaced or adjusted its gaging system to record flows below 5 cfs. In a December 18, 1992 letter to DPCA, Ravenscroft stated that it had excavated and repositioned the gage in the river on December 11, 1992. Based on this information, DPCA concluded that Ravenscroft brought the project into compliance on December 11, 1992.

i. Proposed Penalty: The Commission may assess civil penalties against exemptees under section 31(c) of the FPA, 16 U.S.C. § 823b(c) (1988), and Rule 1502(b) of the Commission's regulations, 18 C.F.R. § 385.1502(b) (1993). Section 31(c) of the FPA requires that the Commission consider two criteria for the assessment of civil penalties: (1) the nature and seriousness of the violations; and (2) the violator's efforts to remedy its violations in a timely manner. In Rule 1505, 18 C.F.R. § 385.1505 (1993), the Commission identified factors it will consider to aid its analysis of these two criteria and determine the reasonableness of the proposed penalty amount. Applying these factors, and based upon the size of the project (693 kW capacity) and the revenues produced, 8/ a civil penalty of $40,000 is proposed as explained below:

(1) Whether the person had actual knowledge or constructive knowledge of the violation - The exemptee had actual knowledge of the violation. The December 1991 Compliance Order required Ravenscroft to install a gaging system for continuous recording of bypass flows "to ensure compliance with the minimum flow requirements of the exemption." 9/ The Compliance Order required that Ravenscroft solicit comments from the Bureau of Land Management, IDFG, the U.S. Geological Survey, and the U.S. Fish and Wildlife Service and allow the Commission an opportunity to amend the plan and schedule. The Compliance Order also stated that Ravenscroft's failure to comply could subject the project to the enforcement and penalty provisions of section 31 of the FPA.

On May 1, 1992, Ravenscroft replaced the approved gaging equipment without consulting resource agencies or contacting the Commission. While it is unknown whether Ravenscroft properly installed the original gage, the newer gage, as installed, did not adequately measure minimum flows. In a September 1992 letter, the PRO stated that the gaging system was inadequate to determine compliance with the 5 cfs flow requirement. On

8/ Ravenscroft's annual generation in 1989, 1990 and 1991 was 2,636,533 kWh, 2,633,526 kWh, and 1,602,796 kWh, respectively. The project had gross revenues in 1989, 1990, and 1991, of $216,312, $216,243, and $192,536, respectively. Ravenscroft claims that since 1987 the project has operated at a net loss.

9/ 57 FERC ¶ 62,205 at 63,440.

October 6, 1992, Ravenscroft acknowledged the need to modify the gaging station, although he failed to take the promised corrective action.

(2) Whether the person has a history of previous violations - The Commission has not previously assessed any civil penalties against Ravenscroft. The first Notice identifies alleged violations that have not yet been adjudicated. 10/

(3) Whether the violation caused loss of life or injury to persons - There are no reports that the violation caused loss of life or injury to persons.

(4) Whether economic benefits were derived because of the violation - It is not known whether Ravenscroft derived economic benefits from its failure to comply with the Compliance Order.

(5) Whether the violation caused damage to property or the environment - There are no reports that the violations caused damage to property or the environment. We do not have any evidence that Ravenscroft violated the minimum flow requirements from June 1, 1992 to December 11, 1992. Ravenscroft's violations of the minimum flow requirements in May 1992 were included in the first Notice.

(6) Whether the violation endangered persons, property, or the environment - Ravenscroft did not endanger persons or property. However, Ravenscroft's failure to maintain a gaging system capable of recording minimum flows endangered the environment. Without properly installed gaging equipment, neither Ravenscroft nor the Commission could accurately monitor the streamflow in the bypassed reach, and Ravenscroft did not have adequate data to guide operations. This failure created at least the potential for damage to the environment whether or not any damage actually occurred.

(7) Whether there were timely, untimely, or no remedial efforts - There were untimely remedial efforts. It is not known whether Ravenscroft brought itself into compliance on April 6, 1992. After Ravenscroft installed the original gage, it did not produce data that showed that the gage could adequately measure minimum flows. However, beginning May 1, 1992, Ravenscroft was out of compliance when he removed the original gaging equipment and replaced it with a float-type gage that, as installed, did not accurately measure minimum flows.

The PRO sent a September 11, 1992 letter informing Ravenscroft that the gaging system, as installed, was inadequate. Although Ravenscroft stated in an October 6, 1992 letter that he

10/ 61 FERC ¶ 61,062 (1992).

DEC 05 1994

would modify the gaging system, he failed to take any action. Only after DPCA sent a December 4, 1992 letter directing Mr. Ravenscroft to take corrective action within 5 days did he return the project to compliance on December 11, 1992.

(8) Whether there are any other pertinent considerations - There are no other pertinent considerations.

The proposed penalty is based on analysis of the factors discussed above. The final penalty, if any, will be based on reanalysis of the relevant factors in light of the entire record, including information provided by the respondent. In no event will a final penalty resulting from this notice be greater than the proposed penalty.

Under section 31 of the FPA and section 385.1506(b)(3)(ii) of the Commission's regulations, Ravenscroft may not elect to have the procedures of section 385.1509 (in lieu of section 385.1508) apply with respect to the assessment of penalties. 11/ Ravenscroft may file, within 30 days of receipt of this notice, an answer setting forth factual or legal reasons why the proposed assessment order should not be issued, should be reduced in amount, or should otherwise be modified.

Ravenscroft may pay the proposed penalty by submitting a cashier's check made to the order of the Federal Energy Regulatory Commission and mailed to the following address:

Federal Energy Regulatory Commission
Lockbox 93938
Chicago, IL 60673

Project No. 4055 should be indicated on the check. Payment of the proposed penalty will terminate this proceeding.

By direction of the Commission.

(S E A L)

Linwood A. Watson, Jr.,
Acting Secretary.

11/ 18 C.F.R. §§ 385.1508 and 385.1509 (1992).

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
400 WEST "F" STREET
P.O. BOX 28
SHOSHONE, IDAHO 83352

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
2800
IDI-17053

June 25, 1993

RECEIVED
JUN 2 8 1993
Department of Water Resources

Vernon Ravenscroft
1843 Broadway, Suite 102
Boise, ID 83706

Dear Vern:

I have received your proposed Memorandum of Understanding regarding a "trial" period to establish new operating procedures for FERC Project #4055 to permanently meet a 90% compliance figure of the current minimum stream flow stipulations established by BLM Right-of-way I-17053.

As discussed during our meeting on Wednesday, May 12, 1993, the BLM Shoshone District Office recognizes the following facts of record:

1. Right-Of-Way Grant I-17053, stipulation No. 8, states " a minimum streamflow of 5 c.f.s between July and March and 80 c.f.s between April and June is required to be maintained between the diversion structure and project discharge point".

2. The Malad River, throughout your project area, is subject to rapid and unpredictable waterflows to which your project is subject. During low water years, this office also recognizes that the river-flows at the diversion may not be sufficient to satisfy the stipulated R/W minimum streamflows. This office has never, to my knowledge, posted a stipulation non-compliance where streamflows were less than required minimum flow(s) at the diversion or, when Project #4055 was not generating power.

3. There are downstream senior irrigation water right holders and that you have the responsibility to operate FERC Project #4055 in a manner as to not interfere with the senior water right holders.

During the May 12th meeting, and on other occasions, this office has stated that the primary cause for past minimum stream flow non-compliance problems is a basic design problem at the project diversion and inlet structure; further, that the best long term solution to resolving the minimum streamflow problem lies with a major design change at the diversion/inlet structure.

Until such time that FERC requires, or you elect to make a design change at the project diversion/inlet structure, I have expressed this office's willingness to coordinate an alternative compliance strategy that 1) recognizes the projects diversion/intake design problem, 2) recognizes the river dynamics and, 3) can minimally satisfy the stipulation intent to maintain a healthy riverine riparian plant community.

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This office is agreeable to a "trial" period for the months of May through August 1993 to allow you a time period in which to demonstrate through project records, graphs, charts, etc. that Project #4055 has the capability of reaching or exceeding a 90% minimum streamflow compliance. During this period, this office will continue to conduct routine project compliance inspections. This "trial" period agreement is not to be considered as this office's preference or approval for resolving the minimum streamflow noncompliance issue, but an effort to work with the present project design, operating procedures, and river dynamics to determine whether or not Project #4055 can be operated in compliance with the exception of the time frame required to fill the flume and sediment catchment pond.

Sincerely,

Robert D. Cordell

Area Manager
Bennett Hills Resource Area

cc:
FERC
IDF&G-Boise Reg.IV
USF&W,Boise
IDWR

DEC 05 1994

Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

RECEIVED
MAY 0 7 1993
Department of Water Resources

May 4, 1993

Mr. Robert Cordell
Shoshone District Office
Bureau of Land Management
Hand Delivered - May 5, 1993
Shoshone, Idaho 83352

RE: Project 4055
By-Pass Flow Procedure

Dear Bob:

I believe the attached draft copy of stipulation procedural amendments for Project 4055 reflect our telephone conversations and will accomplish the agreements which we have discussed. I'll be back in touch via phone.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Jonathan First, FERC, Wn, D.C.
Norman Young, Idaho Dept. of Water Resources
Will Reid, Idaho Dept. of Fish and Game
Ted Kock, USD&WS - Boise

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DRAFT
May 3, 1993

AMENDMENT TO PROJECT 4055 STIPULATIONS (ITEM # 3)

SAID STIPULATIONS WERE ESTABLISHED BY IDAHO FISH & GAME DEPT. LETTERS TO THE FEDERAL ENERGY REGULATORY COMMISSION DATED 4/3/91; 2/1/88; AND 12/9/81.

Amendment #1 Item number 3 delete the word "instantaneous".

Amendment #2 In item number 3 add the following language, "The flow stipulations listed above shall be deemed by all parties to be in compliance provided:

1. The project shall install one additional exhaust tube in the diversion structure. Said tube shall be 24" in diameter and shall be gated in order to provide manual flow adjustment at any time a monitoring inspection finds a flow at or below the stipulated volume. One new rated staff gauge shall be installed below the new tube in order to accurately determine flow adjustments. A second new rated staff gauge shall be installed in the river inflow reach in order to conveniently determine inflow volume and;
2. During the period April 1 through June 30 of each year (provided the project is operating) the bypass flow shall be monitored twice daily and at any monitoring instance in which a flow adjustment is indicated, that adjustment shall be made and recorded in a diary kept on site and housed in a weather-proof container for examination by

DEC 05 1994

germane agencies at their discression. During all other times of the year the same discipline shall be followed except the required bypass monitoring incidence shall be once in the morning of each day and;

3. At any instance in which the bypass flow has moved out of compliance from one monitoring visit to the next then in that instance the project operator shall determine and record the inflow. The operator shall in such an instance re-adjust the project turbines to reflect a maximum project water consumption of not to exceed the inflow minus the bypass and also minus an additional 12 C.F.S. re-regulating flow to replenish the pond level.

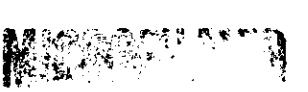
4. At any time during the months of April through October a compliance and/or management decision prompts Project 4055 to cease generation then in that instance the project operator may elect, or the Watermaster may order, the opening of exhaust valves at the generation site in order to assure a downstream water delivery in excess of 16 C.F.S. at the diversion points for the Justice and Thorpe Ditch Company canals and;

5. It is agreed by all parties that this amendment shall be reviewed one year after its adoption. As a goal it is desired that the stipulated bypass flows (as recorded by the self-recording gauge) be achieved at least 90% of all time in which the project is in actual operation. It is acknowledged by all parties that these amendments are necessary and/or desirable because of the documented

DEC 05 1994

extreme flow variations found at the Project 4055 river reach, because of the senior irrigation water rights which require a stable minimum water delivery downstream from the Project 4055 generation site, for downstream riparian values and for the consideration of aesthetic values at the Devils Washbowl Falls situated in the Malad Gorge State Park and;

6. This amendment shall govern Project 4055 operations upon counter signature by the project owner, the germane agencies, and a proper notification by Idaho Fish and Game Department to the Federal Energy Regulatory Commission. It is understood that B.L.M. will not countersign this amendment until they have verified the installation of the new 24" exhaust tube."



DEC 0 5 1994

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

April 30, 1993

Vern Ravenscroft
Consulting Associates
1843 Broadway Avenue, #102
Boise, Idaho 83706

RE: Ravenscroft Ranch Hydropower Project

Dear Vern:

Thank you for providing IDWR with a copy of your April 14, 1993, letter to Robert Cordell which included an analysis of the variability of the water supply for the project. I appreciate the effort you have been making to consider the impact of project operation on downstream prior rights.

It appears from your analysis of the data that an opportunity exists to improve operational procedures to provide more reliable flows for the by-passed reach while still insuring water will be delivered in accordance with the appropriation doctrine to downstream prior rights.

Your letter also describes some physical changes that you will be making to implement the proposed operation. If the work involves alteration of the natural channel, a stream protection permit may be required. By copy of this letter, I am asking Mr. Terry Blau of IDWR's Twin Falls office to contact you to discuss whether a permit is needed.

Sincerely,

NORMAN C. YOUNG
Administrator
Water Management Division

NCY:dc
c. Terry Blau

DEC 05 1994

RECEIVED
APR 15 1993
Department of Water Resources

ERNON RAVENSCROFT
Telephone 208 837-4824936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 208-345-2670
1843 Broadway, #102
Boise, Idaho 83706

April 14, 1993

Copy for Norman Young

Mr. Robert Cordell
Bennett Hills Resource Area
USDI BUREAU OF LAND MANAGEMENT
P.O. Box 2B
Shoshone, Idaho 83352

Dear Bob:

The attached material should be self-explanatory. If there are questions, please call. The graphs are based upon the daily minimum, maximum and mean flow records as provided by U.S.G.S. That basic data is also enclosed. This material has some element of a random sample in that I indicated to you the more volatile flow months and you picked the years, 1987 and 1990, which you wanted the analysis to study.

In this sample there are several flow deviations in the 1000% range. For instance, 380 cfs mid-day April 16, 1990 and less than 4 cfs just three days later. The graphs speak for themselves, so I'll not belabor the point. The conclusion is obvious. The present stipulation as worded is not workable and, I believe, reasonable amendment is desirable from the standpoint of all parties.

The study is strictly a mathematical analysis based upon the following assumptions:

1. 364 monitoring visits (two each day) marked "X" on the graph and taken at approximately 9:00 A.M. and 7:00 P.M. each day.
2. Project adjustments when the flow is rising up to, but not above, inflow.
3. Project adjustment on declining flow in an amount of 12 cfs lower than the inflow.

On this basis an overdraft would develop from one monitoring visit to the next on 79 occasions or 21.7% of the time. The re-regulating ponds would obviously adjust the flow in a minimum of 54 occasions or 68.4% of the overdraft instances. Pond decline was calculated for the remaining 25 instances which represents 6.7% of the total 364 monitoring visits. Of these declines, five were in the 0" to 2" range; 11 in the 2.1" to 4" range; and nine in the 4.1" to 7.1" range. In three cases the declines were accumulative, totalling 6.0", 5.4", and 13.6" each. In no instance were the declines accumulative beyond two monitoring visits.

In the entire study there were four instances in which the downstream irrigation rights could have required a release of water via the exhause valves at the generation site.

DEC 05 1994

While we do not have enough experience to determine at just what point the pond decline starts to take water away from the bypass tubes, it is my judgment that revised facilities and an adjusted discipline can result in at least a 90% compliance performance. Those alterations are:

1. A knowledge and ongoing record of the inflow at each monitoring visit. This will require a rated section with a staff gauge at a convenient and accessible location.
2. A fifth exhaust tube to afford immediate response at each time a compliance problem is discovered.
3. Project adjustments (with ongoing records) to reflect no more than inflow when that inflow is increasing and at least 12 cfs less than inflow when that inflow is declining.

Will you please review the graphs and the supporting data, and then call me. I will then make another attempt to supply language that will reflect these indicated changes in the project's operation. I am going forward with the immediate installation of the inflow gauge and the additional fifth bypass tube (both on private property).

It is also obvious from the analysis that any increase in the re-regulating pond system can further reduce the flow problems which prevail at this site. Such increases would benefit the bypass flow, the project's operation, and the delivery of a stable downstream flow for the senior irrigation water rights.

These re-regulation ponds are also providing a local warm water fishery, waterfowl habitat and water quality enhancements.

Your examination of the attached material and early response will be appreciated.

Sincerely,

Vernon Ravenscroft

Vernon Ravenscroft

Attachments

cc: Jonathan First, F.E.R.C., Washington, D.C.
Norman Young, Idaho Water Resource Dept.
Will Reid, Idaho Fish & Game Dept.
Ted Kock, U.S. Fish & Wildlife Service

DEC 05 1994

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0 RIVER NR GOODIN(D

DATE PROCESSED: 05 JUN 8(

STORE PARM 0006(

ROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF: 0.

	DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR	01
A	3/25/87	1.60 86 <0145>	0.52 4.6 <1600>	1.57 0.90	1.12	53 21			1
A	3/26/87	1.56 52 <0045>	0.49 4.1 <2315>	1.53 0.96	1.17	48 23			1
A	3/27/87	1.48 44 <0030>	0.41 2.8 <1915>	1.45 1.39	1.41	41 38			1
A	3/28/87	1.44 40 <0515>	0.43 3.1 <0415>	1.44 1.39	1.41	40 38			1
A	3/29/87	1.48 44 <2100>	0.44 3.3 <0045>	1.45 1.15	.30	41 38			1
A	3/30/87	1.49 41 <1245>	0.45 3.4 <2145>	1.47 1.20	1.14	43 33			1
AR	3/31/87	1.45 ---- <0400>	0.21 ---- <2330>	1.38 1.03	----	36 ----			

ADE supplies funches

END MONTH

AR	4/ 1/87	1.38 ---- <2315>	0.19 ---- <0015>	1.31 0.56	----	31 ----			
AR	4/ 2/87	1.31 ---- <0715>	0.19 ---- <2045>	1.28 0.49	----	29 ----			
	4/ 3/87	1.13 21 <0015>	0.99 16 <1000>	1.03	1.04	18			1
AR	4/ 4/87	1.79 ---- <2000>	0.22 ---- <0345>	1.52 0.76	----	48 ----			1
A	4/ 5/87	2.53 185 <1230>	0.90 13 <0630>	2.23 1.80	1.99	137 104			2
	4/ 6/87	2.41 165 <0015>	2.20 133 <0845>	2.32	2.32	151			2
	4/ 7/87	2.31 149 <0015>	2.11 120 <1645>	2.18	2.18	130			2

April 1987. Basic U.S.G.S data.

DEC 05 1994

INITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL S
PRIMARY COMPUTATIONS OF GAGE HEIGH
DATE PROCESSED: 03-JUN-87

00
RIVER NR GOODING ID

STORE PARM 00060

ROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF: 0.

	DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR	01
OK A	4/ 8/87	2.97 264 <2400>	2.02 108 <0945>	2.14	2.15	125			
A	4/ 9/87	3.66 409 <2045>	2.27 143 <0830>	3.37 ~~3.19~~	3.20	345 ~~340~~		May Consumption & Bypass Spring 295	
A	4/10/87	3.65 406 <0015>	2.16 127 <1645>	3.28 ~~2.90~~	2.92	326 ~~255~~			
A	4/11/87	3.39 349 <2400>	2.21 134 <1915>	3.03 ~~2.97~~	2.98	275 ~~265~~			
A	4/12/87	3.51 375 <0300>	2.40 163 <0015>	3.46 ~~3.22~~	3.25	364 ~~319~~			
A	4/13/87	3.52 377 <0945>	2.28 145 <2145>	3.44 ~~3.31~~	3.33	360 ~~336~~	59.	April 87.	
	4/14/87	3.15 299 <0245>	2.82 235 <2145>	2.94	2.94	258			
	4/15/87	3.01 271 <0215>	2.65 205 <2130>	2.83	2.83	238			
	4/16/87	3.07 283 <0815>	2.61 198 <2315>	2.84	2.85	241			
	4/17/87	2.78 228 <1445>	2.57 191 <2315>	2.62	2.62	200			
	4/18/87	2.57 191 <0015>	2.41 165 <2300>	2.50	2.50	179			
	4/19/87	2.80 232 <1815>	2.40 163 <0400>	2.53	2.53	184			
	4/20/87	3.12 293 <1700>	2.61 198 <1530>	2.74	2.74	221			
	4/21/87	2.70 214 <0015>	2.53 185 <2245>	2.61	2.61	a ~~198~~	155	5/14/87	
P	4/22/87	2.53 185 <0015>	2.47 175 <1145>	2.51	2.51	~~184~~			

bad punch's

DEC 05 1994

PRIMARY COMPUTATIONS OF GAGE HEIGHT
DATE PROCESSED: 11-JUN-87

RIVER NR GOODING ID

STORE PARM 00060

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF: 0.

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR	01 13
#593			2.29		154	SA-0		
P 4/22/87	2.58 193 <1830>	2.23 137 <1445>	2.49	2.49	a ~~175~~ 160	sluggish intake		2 2
4/23/87	2.49 178 <0015>	2.02 103 <1130>	2.27	2.28	145			2 2
A 4/24/87	2.52 183 <1000>	(0).91 14 <0500>	~~2.34~~ 2.31	2.33	154 ~~152~~			2 2
4/25/87	2.49 178 <0030>	2.03 109 <1845>	2.24	2.24	139			2 2
AR 4/26/87	2.03 ----	(0).24 ----	~~1.81~~ 1.53	----	81--			2 1
A 4/27/87	<0015> 1.95 98	<1615> (0).40 2.7	1.70 ~~0.86~~	1.04	68 ~~10~~			1
A 4/28/87	<2215> 2.18 130	<0330> (0).52 4.6	1.90 ~~1.34~~	1.61	92 ~~57~~			
4/29/87	<1715> 2.40 163	<0200> 2.08 116	2.24	2.24	139			2 2
4/30/87	<2100> 2.99 267 <2315>	<0400> 2.21 134 <0445>	2.55	2.57	191			2 2

ADR dropping pencils

END MONTH

A 5/ 1/87	3.38 347 <2245>	(2).34 154 <1100>	~~3.11~~ 3.16	3.11	301 ~~292~~		2 3
A 5/ 2/87	3.48 369 <0530>	(0).72 8.7 <2300>	2.92 ~~2.69~~	2.81	254 ~~234~~		3 3
A 5/ 3/87	3.58 391 <2200>	(0).[illegible] [illegible] <0015>	2.85 ~~2.65~~	2.75	241 ~~226~~		3
A 5/ 4/87	3.69 416 <2045>	(2).42 167 <0315>	3.53 ~~3.28~~	3.31	380 ~~334~~		3 3
A 5/ 5/87	3.66 409 <0030>	(2).50 180 <1130>	3.56 ~~3.12~~	3.14	386 ~~297~~		3 3

DEC 05 1994

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D RIVER NR GOODIN ID

DATE PROCESSED: 11-JUN-8

STORE PARM 0006

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF: 0

	DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR	C
A	5/21/87	3.40 351 <0015>	3.26 142 <1400>	~~3.27~~ 3.11	3.13	~~324~~ ~~295~~			
	5/22/87	3.19 307 <1930>	3.14 297 <0430>	3.16	3.16	301			
	5/23/87	3.15 299 <1900>	2.93 266 <1415>	3.08	3.08	285			
	5/24/87	3.13 295 <0015>	3.00 269 <2330>	3.06	3.06	281			
	5/25/87	3.25 319 <2400>	2.97 264 <0145>	3.09	3.09	287			
A	5/26/87	3.68 413 <2100>	3.27 143 <0330>	~~3.44~~ ~~3.15~~	3.13	~~360~~ ~~306~~			
A	5/27/87	3.85 460 <2045>	2.56 190 <0300>	~~3.68~~ ~~3.40~~	3.44	~~413~~ ~~359~~			
A	5/28/87	3.81 444 <0500>	3.26 142 <2230>	~~3.57~~ ~~3.32~~	3.36	~~388~~ ~~343~~			
A	5/29/87	3.33 336 <1630>	3.21 134 <0700>	~~3.26~~ ~~3.01~~	3.03	~~322~~ ~~276~~			
	5/30/87	3.26 322 <0015>	3.01 271 <2400>	3.10	3.10	289			
	5/31/87	3.06 281 <1645>	3.01 271 <0245>	3.05	3.03	276			
END MONTH									
	6/ 1/87	3.03 275 <0015>	2.94 258 <1600>	2.98	2.98	266			
P	6/ 2/87	2.94 258 <0015>	2.86 243 <0800>	2.90	2.90	251			
PERIOD		3.88 460	~~3~~.24 2.7	2.56		~~112~~			

ASK Griffin's Punkies

From w/l indicators 6/2/87:
MAX - 3.88
min - 1.24

June 87

DEC 05 1994

PRIMARY COMPUTATIONS OF DISCHARGE
DATE PROCESSED: 10-AUG

52500
SNAKE RIVER NR GOODING ID

STORE PARM 00

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF:

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR
#594			2.85		234	SA-0	
P 6/ 2/87	2.94 258 <0015>	2.61 198 <2200>	2.82	2.82	236 ✓		
6/ 3/87	2.94 258 <1345>	2.77 226 <0015>	2.87	2.88	246 ✓		
visit 6/ 4/87	2.90 250 <0015>	2.77 226 <2330>	2.85	2.85	241 ✓		
6/ 5/87	2.89 248 <2330>	2.47 175 <1545>	2.64	2.64	203 ✓		
6/ 6/87	2.82 235 <0015>	2.49 178 <1145>	2.62	2.62	200 ✓		
6/ 7/87	3.47 366 <2030>	2.45 171 <0600>	2.79	2.80	232 ✓		
6/ 8/87	3.64 404 <1230>	3.26 322 <0045>	3.51	3.51	375 ✓		
6/ 9/87	3.64 404 <2230>	3.48 369 <0015>	3.57	3.57	388 ✓		
6/10/87	3.72 423 <2345>	3.30 330 <1745>	3.59	3.59	392 ✓		
6/11/87	3.62 400 <0015>	3.37 345 <2115>	3.54	3.54	382 ✓		
6/12/87	3.65 406 <0115>	2.64 203 <2345>	3.17	3.18	305 ✓		
6/13/87	2.84 239 <0100>	2.46 173 <2245>	2.59	2.60	a ~~196~~ 180 ✓	sluggish increase	
6/14/87	2.46 173 <0015>	2.34 154 <1245>	2.38	2.38	a ~~160~~ 155 ✓		
6/15/87	2.37 159 <2300>	2.34 154 <0015>	2.34	2.35	a ~~155~~ 145 ✓		
6/16/87	2.38 160 <0230>	2.13 123 <2330>	2.32	2.32	a ~~141~~ 138 ✓		

June 87.

DEC 05 1994

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL
PRIMAR COMPUTATIONS OF GAGE HEI
DATE PROCESSED: 30-JUL-

52500
ALAD RIVER NR GOODING ID

STORE PARM 000

PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

TEST DIFF:

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	EQUIV GH	MEAN DISCH	SHIFT ADJ	DATUM COR
6/17/87	2.19 131 <0030>	1.68 65 <2300>	1.84	1.84	a ~~85~~ 65		
6/18/87	2.01 106 <2400>	1.65 62 <0345>	1.73	1.73	a ~~71~~ 95		
6/19/87	2.17 129 <2145>	2.02 108 <0030>	2.07	2.07	114		
6/20/87	2.55 188 <1445>	1.85 86 <0130>	2.04	2.05	111		
6/21/87	2.19 131 <0700>	2.05 112 <0015>	2.09	2.10	118		
6/22/87	2.29 146 <1430>	2.08 116 <1815>	2.14	2.14	a ~~124~~ 130		
6/23/87	2.43 168 <1900>	2.15 126 <0015>	2.25	2.25	141		
6/24/87	2.34 154 <0015>	1.88 89 <1745>	2.08	2.09	a ~~117~~ 95		
6/25/87	2.00 105 <0345>	1.89 91 <2015>	1.96	1.96	a ~~100~~ 75		
6/26/87	1.99 104 <0315>	1.81 81 <2215>	1.94	1.95	a ~~98~~ 110		
6/27/87	1.95 98 <1030>	1.82 82 <2200>	1.88	1.88	a ~~89~~ 65		
6/28/87	1.83 83 <0015>	1.40 37 <1815>	1.56	1.57	53		
6/29/87	1.65 62 <2330>	1.40 37 <0015>	1.46	1.47	43		
6/30/87	1.71 69 <0630>	1.65 62 <0015>	1.70	1.69	67		

END MONTH

DEC 05 1994

UNITED STATES

PRIMARY COMPUTATIONS OF GAGE HEIGHT
DATE PRO SSED: 10-22-1987 @ 18:23
INPUT DD:

00
RIVER NR GOODING ID
PUT PARAMETER 00060 STORE STATISTIC(S) 00003
ROVISIONAL DATA FOR WATER YEAR ENDING SEP. 30, 1987

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ	DATUM CORR	010 130
07/29/87	2.28 142 <0001>	2.27 140 <1201>	2.27	~~141~~ 125	-0.02	0.00	22 22
07/30/87	2.27 140 <0001>	2.24 136 <2346>	2.26	139	-0.02	0.00	22 22
07/31/87	2.24 136 <0001>	2.22 131 <1801>	2.23	~~134~~ 125	-0.02	0.00	22 22
08/01/87	2.22 131 <0001>	2.21 130 <1616>	2.22 ✓	~~131~~ 110	-0.03	0.00	22 22
08/02/87	2.21 130 <0001>	2.20 129 <1916>	2.21 ✓	~~130~~ 96	-0.03	0.00	22 22
08/03/87	2.20 129 <0001>	2.20 129 <0001>	2.20 ✓?	~~129~~ 110	-0.03	0.00	22 22
08/04/87	2.20 129 <0002>	2.19 127 <0147>	2.19 ✓	~~127~~ 100	-0.03	0.00	22 21
08/05/87	2.19 127 <0002>	2.17 124 <2132>	2.18 ✓	~~126~~ 86	-0.03	0.00	21 21
08/06/87	2.17 124 <0002>	2.11 116 <1947>	2.14 ✓	~~119~~ 98	-0.03	0.00	21 21
08/07/87	2.11 116 <0002>	2.09 112 <2002>	2.10 ✓	~~114~~ 98	-0.04	0.00	21 21
08/08/87	2.09 112 <0002>	2.09 112 <0002>	2.09	112 ~~95~~	-0.04	0.00	20 20
08/09/87	2.09 112 <0002>	2.08 110 <1102>	2.08 ✓	~~111~~ 92	-0.04	0.00	20 20
08/10/87	2.08 110 <0002>	2.08 110 <0002>	2.08	~~110~~ 100	-0.04	0.00	20 20
08/11/87	2.08 110 <0002>	2.07 109 <1702>	2.08 ✓	~~110~~ 119	-0.04	0.00	20 20
08/12/87	2.07 109 <0002>	2.07 109 <0002>	2.07 ✓	109 ~~95~~	-0.04	0.00	20 20

DEC 05 1994

Aug 87.

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL
PRIMA[illegible] COMPUTATIONS OF GAGE HEIG
[illegible]2500 DATE [illegible]OCESSED: 10-22-1987 @ 18:
[illegible]LAD RIVER NR GOODING ID INPUT DD:
[illegible]OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
[illegible] PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH		MEAN DISCH	SHIFT ADJ	DATUM CORR	C 1
					Sluggish intake			
08/13/87	2.07 109 <0002>	2.06 108 <1747>	2.07		~~109~~ 84	-0.04	0.00	
08/14/87	2.07 109 <0002>	2.06 106 <0602>	2.06	✓	~~107~~ 88	-0.05	0.00	
08/15/87	2.06 106 <0002>	1.77 70 <1017>	1.88	✓	~~83~~ 94	-0.05	0.00	
08/16/87	1.89 84 <1602>	1.81 75 <1032>	1.86	✓	~~81~~ 90	-0.05	0.00	
08/17/87	1.85 80 <0002>	1.65 56 <0747>	1.74		~~67~~ 78	-0.05	0.00	
08/18/87	1.91 87 <2318>	1.76 69 <0018>	1.85	✓	80 ok	-0.05	0.00	
08/19/87	1.96 93 <0533>	1.86 81 <2318>	1.93	✓	~~89~~ 82	-0.05	0.00	
08/20/87	1.86 81 <0003>	1.68 59 <1833>	1.74	✓	66 66	-0.05	0.00	
08/21/87	1.71 62 <0703>	1.68 59 <0003>	1.70	✓	61 use	-0.06	0.00	
08/22/87	1.69 59 <0003>	1.68 58 <1418>	1.69	✓	~~59~~ 52	-0.06	0.00	
08/23/87	1.68 58 <0003>	1.68 58 <0003>	1.68	✓	~~58~~ 68	-0.06	0.00	
08/24/87	1.92 87 <2330>	~~1.50~~ ~~40~~ 11 <1115>	1.72	✓	~~63~~ 82	-0.06	0.00	
PERIOD	3.69 413	~~1.50~~ invalid ~~40~~						TIME C

NOTE. SYMBOLS USED ABOVE HAVE THE FOLLOWING MEANINGS --
P - DAILY SUMMARY IS FOR AN INCOMPLETE DAY

Aug 87

DEC 05 1994

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL
PRIMAR COMPUTATIONS OF GAGE HEI
DATE OCESSED: 10-26-1987 @ 14
INPUT DD:

12500
LEAD RIVER NR GOODING ID
OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1987

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ	DATUM CORR
08/24/87	1.92 87 <2330>	~~1.50~~ invalid ~~40~~ 77 <1115>	1.72	63 92	-0.06	0.00
08/25/87	1.99 96 <2400>	1.83 76 <1730>	1.91	86	-0.06	0.00
08/26/87	2.17 120 <2400>	2.01 98 <0015>	2.10	110	-0.06	0.00
08/27/87	2.19 123 <0100>	2.12 113 <1800>	2.16	~~119~~ 114	-0.06	0.00
08/28/87	2.18 121 <0915>	2.04 102 <2245>	2.13	~~114~~ 124	-0.06	0.00
08/29/87	2.08 108 <2330>	2.02 100 <0545>	2.04	~~102~~ 105	-0.06	0.00
08/30/87	2.20 124 <1730>	2.08 108 <0015>	2.15 224	~~117~~ 130	-0.06	0.00
08/31/87	2.24 130 <0915>	2.18 121 <2345>	2.21	126	-0.06	0.00
09/01/87	2.18 121 <0015>	1.98 94 <1815>	2.10	110	-0.06	0.00
09/02/87	2.13 114 <0315>	1.65 55 <2345>	1.93	89	-0.06	0.00
09/03/87	1.66 56 <1215>	1.60 50 <2100>	1.64	53	-0.06	0.00
09/04/87	1.77 69 <2315>	1.61 51 <0015>	1.69	59	-0.06	0.00
09/05/87	2.10 110 <2400>	1.77 69 <0015>	1.94	88	-0.06	0.00
09/06/87	2.26 133 <2315>	2.10 110 <0015>	2.17	120	-0.06	0.00
09/07/87	2.34 145 <0930>	2.26 133 <0015>	2.31	140	-0.06	0.00

DEC 05 1994

Aug. 87

13152500
MALAD RIVER NR GOODING ID
OUTPUT PARAMETER 00060 STORE STATIS TIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
03/30/90	1.77 74 <1148>	1.76 73 <0002>	1.76	73	
03/31/90	1.77 74 <0049>	1.73 73 <1536>	1.75	72	
04/01/90	1.73 70 <0006>	1.54 49 <1623>	1.70	66	
04/02/90	1.72 69 <0909>	1.54 49 <0339>	1.68	64	
04/03/90	1.37 86 <1127>	1.39 36 <0241>	1.62	59	
04/04/90	1.73 70 <1359>	1.39 36 <0413>	1.53	49	
04/05/90	2.27 142 <1947>	1.31 31 <0216>	1.90	95	
04/06/90	2.57 190 <1204>	2.11 118 <1949>	2.35	155	
04/07/90	2.65 204 <1121>	2.23 136 <0320>	2.42	166	
04/08/90	2.92 254 <1924>	2.42 165 <0152>	2.70	215	
04/09/90	3.19 308 <2211>	2.82 235 <1240>	2.95	260	
04/10/90	3.17 304 <0011>	2.65 204 <2400>	2.97	263	
04/11/90	3.25 321 <1100>	2.64 202 <0014>	2.99	268	
04/12/90	3.29 329 <0316>	2.77 226 <2103>	3.15	301	
04/13/90	3.36 344 <1049>	2.83 236 <2400>	3.15	300	

April 1990

Done & Checked

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DEC 05 1994

13152500
MALAD RIVER . GOODING ID
OUTPUT PARAMETER 00060 STORE STATIST (S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
04/14/90	3.12 294 <1051>	2.80 231 <0035>	2.98	265	
04/15/90	3.21 312 <2325>	2.53 183 <1109>	2.77	228	
04/16/90	3.53 382 <1126>	3.12 293 <2400>	3.36	344	
04/17/90	3.10 289 <0012>	2.02 106 <2029>	2.49	179	
04/18/90	2.19 130 <0059>	1.81 79 <2345>	1.98	101	0.00
04/19/90	1.81 79 <0015>	0.75 7.5 <1900>	1.28	36	0.00
04/20/90	1.15 21 <2400>	0.64 6.9 <1615>	0.91	11	0.00
04/21/90	2.30 146 <2315>	1.07 17 <1000>	1.61	66	0.00
04/22/90	2.71 215 <2115>	2.13 121 <0545>	2.38	161	0.00
04/23/90	3.15 302 <1745>	2.69 211 <0015>	2.92	257	0.01
04/24/90	3.18 308 <1330>	2.87 246 <1230>	3.02	274	0.01
04/25/90	3.11 294 <1030>	2.97 265 <0130>	3.04	280	0.01
04/26/90	3.15 302 <2345>	3.04 279 <0530>	3.09	288	0.01
04/27/90	3.43 362 <2330>	3.13 298 <0715>	3.21	314	0.01
04/28/90	4.11 526 <2030>	3.42 360 <0015>	3.70	424	0.01

April 1990

above max

DEC 05 1994

DATE PROCESSED: 12-1

13152500
MALAD RIVER . . GOODING ID
OUTPUT PARAMETER 00060 STORE STATIST.C(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

April 90

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
04/29/90	3.99 495 <2200>	3.61 403 <0400>	3.85	461	0.01
04/30/90	4.03 505 <1400>	3.94 482 <0345>	3.99	495	0.01
05/01/90	3.99 496 <0015>	3.90 472 <2300>	3.96	487	0.01
05/02/90	3.89 472 <1345>	3.79 448 <2330>	3.86	464	0.02
05/03/90	3.80 450 <1300>	3.65 414 <2345>	3.75	439	0.02
05/04/90	3.65 414 <0015>	3.50 380 <1845>	3.54	389	0.02
05/05/90	3.54 389 <0745>	2.94 262 <2145>	3.44	367	0.02
05/06/90	3.71 429 <0430>	3.18 310 <0915>	3.32	340	0.02
05/07/90	3.38 353 <2200>	3.17 308 <0200>	3.26	328	0.02
05/08/90	3.82 455 <1815>	3.37 351 <0500>	3.58	400	0.02
05/09/90	4.03 508 <0215>	3.68 421 <0600>	3.85	462	0.02
05/10/90	4.02 503 <1100>	3.73 433 <2400>	3.89	478	0.02
05/11/90	3.76 441 <1145>	3.44 368 <2345>	3.67	419	0.02
05/12/90	3.43 366 <0015>	3.15 306 <2330>	3.31	341	0.03
05/13/90	3.36 351 <0030>	3.06 287 <2400>	3.14	303	0.03

about may use Rb.

DEC 05 1994

13152500
MALAD RIVER GOODING ID
OUTPUT PARAMETER 00060 STORE STATIST. (S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
05/29/90	3.28 333 <1700>	3.[illegible] 304 <0130>	3.22	321	0.03
05/30/90	3.29 336 <0030>	3.01 27[illegible] <[illegible]400>	3.18	312	0.03
05/31/90	3.79 450 <2315>	2.77 231 <0400>	3.25	330	0.03
06/01/90	4.06 518 <1845>	3.78 448 <0030>	3.91	479	0.03
06/02/90	4.14 539 <0415>	3.66 419 <1500>	3.86	468	0.03
06/03/90	3.75 441 <1115>	3.65 417 <2400>	3.72	433	0.03
06/04/90	3.66 419 <0015>	3.44 368 <2315>	3.57 ✓	398	0.03
(?) 06/05/90	3.62 410 <1030>	2.91 258 <0915>	3.30	338	0.03
06/06/90	3.45 371 <2200>	3.23 323 <0530>	3.32	342	0.03
06/07/90	3.61 407 <1915>	3.32 342 <0515>	3.48	378	0.03
06/08/90	3.55 393 <0015>	3.37 353 <2300>	3.48	377	0.03
06/09/90	3.52 387 <0015>	3.23 323 <2330>	3.38	355	0.03
06/10/90	3.22 321 <0015>	2.97 269 <1600>	3.08	291	0.03
06/11/90	3.43 366 <1830>	3.15 306 <0015>	3.28	334	0.03
06/12/90	3.39 357 <2145>	3.22 321 <0900>	3.28	334	0.03

OK. checked above 300 max!

6/90

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DEC 05 1994

13152500 DATE PROCESSED
MALAD RIVER ..R GOODING ID
OUTPUT PARAMETER 00060 STORE STATIS..(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
06/13/90	3.38 355 <0015>	3.22 321 <1415>	3.30	338	0.03
06/14/90	3.52 387 <2330>	3.16 308 <0600>	3.29	337	0.03
06/15/90	3.69 426 <2100>	3.53 389 <0015>	3.61	408	0.03
06/16/90	3.68 424 <0015>	3.24 323 <2400>	3.43	367	0.03
06/17/90	3.55 391 <1830>	2.81 237 <1715>	3.18	310	0.02
06/18/90	3.22 318 <0445>	3.10 294 <2400>	3.19	311	0.02
06/19/90	3.13 300 <0100>	2.56 192 <1645>	2.84	243	0.02
06/20/90	2.76 227 <0200>	2.02 108 <2300>	2.32	154	0.02
06/21/90	2.35 157 <0045>	2.09 118 <0215>	2.21	135	0.02
06/22/90	2.23 139 <2345>	1.87 89 <0145>	2.10	120	0.02
06/23/90	2.24 140 <0045>	1.73 72 <2400>	2.00	107	0.02
06/24/90	2.03 110 <1500>	1.63 61 <0700>	1.84	86	0.02
06/25/90	1.84 85 <0015>	1.61 59 <2100>	1.74	74	0.02
06/26/90	1.75 74 <2230>	1.26 29 <0530>	1.53	51	0.02
06/27/90	1.93 96 <2215>	1.75 74 <0015>	1.84	85	0.02

DEC 05 1994

PRIMARY COMPUTER SYSTEM
DATE PROCESSED: 12-1

13152500
MALAD RIVER NR GOODING ID
OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

6/90

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
06/28/90	1.92 95 <0015>	1.63 61 <2345>	1.77	77	0.02
06/29/90	1.70 69 <0445>	1.45 43 <1945>	1.63	61	0.02
06/30/90	1.75 74 <0115>	1.27 29 <1515>	1.55	53	0.02
07/01/90	1.66 64 <2230>	1.42 40 <1515>	1.55	52	0.02
07/02/90	1.64 62 <0015>	1.48 45 <2400>	1.53	56	0.02
07/03/90	1.69 67 <1315>	1.45 43 <0300>	1.56	54	0.02
07/04/90	1.68 66 <0400>	1.58 55 <1730>	1.64	62	0.02
07/05/90	1.66 64 <0100>	1.38 37 <1845>	1.57	54	0.02
07/06/90	1.59 57 <0015>	1.45 43 <1715>	1.53	48	0.02
07/07/90	1.51 48 <2400>	1.24 27 <1600>	1.44	43	0.02
07/08/90	1.52 49 <0015>	1.23 27 <1415>	1.40	39	0.02
07/09/90	1.65 63 <1245>	1.47 45 <0015>	1.55	53	0.02
07/10/90	1.86 88 <1545>	1.51 48 <0045>	1.65	63	0.02
07/11/90	1.76 75 <0300>	1.54 51 <1400>	1.70	69	0.02
07/12/90	1.72 71 <0015>	1.57 54 <1745>	1.64	62	0.02

DEC 05 1994

13152500 DATE PROCESSED: 12
MALAD RIVER NR GOODING ID
OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
07/28/90	2.20 134 <2315>	1.96 106 <0015>	2.14	125	0.02
07/29/90	2.26 143 <0630>	2.21 136 <0015>	2.24	141	0.02
07/30/90	2.32 152 <1145>	2.16 128 <1515>	2.23	138	0.02
07/31/90	2.23 139 <1045>	2.03 110 <2330>	2.15	127	0.02
08/01/90	2.14 125 <0300>	1.98 103 <1915>	2.03	111	0.02
08/02/90	2.02 108 <0030>	1.70 69 <2045>	1.96	101	0.02
08/03/90	2.14 125 <1830>	1.94 98 <0015>	2.06	114	0.02
08/04/90	2.05 113 <0015>	1.69 67 <1000>	1.90	93	0.02
08/05/90	1.93 96 <0045>	1.83 84 <1500>	1.87	89	0.02
08/06/90	1.92 95 <2345>	1.80 80 <1545>	1.84	85	0.02
08/07/90	2.12 122 <0515>	1.93 96 <0015>	2.02	108	0.02
08/08/90	2.03 110 <1245>	1.80 80 <1930>	1.96	101	0.02
08/09/90	1.95 99 <1215>	1.84 85 <0445>	1.88	91	0.02
08/10/90	1.89 91 <2215>	1.82 83 <0545>	1.85	86	0.02
08/11/90	2.02 108 <2015>	1.89 91 <0015>	1.95	99	0.02

8/90

DEC 05 1994

UNITED STATES DEPARTMENT OF ...
PRIMARY COMPUTATIONS O...

13152500
MALAD RIVER NR GOODING ID
DATE PROCESSED: 12-1...
OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH	MEAN DISCH	SHIFT ADJ
08/12/90	2.15 127 <2330>	1.97 102 <0030>	2.06	114	0.02
08/13/90	2.20 134 <2300>	2.12 122 <0715>	2.14	126	0.02
08/14/90	2.20 134 <0015>	2.07 115 <2130>	2.15	127	0.02
08/15/90	2.32 152 <1045>	2.15 127 <0015>	2.27	144	0.02
08/16/90	2.38 162 <2330>	2.24 140 <0115>	2.28	147	0.02
08/17/90	2.41 167 <0315>	2.25 142 <1600>	2.32	153	0.02
08/18/90	2.31 151 <0145>	2.20 134 <2400>	2.26	144	0.02
08/19/90	2.48 178 <2330>	2.20 134 <0015>	2.31	152	0.02
08/20/90	2.64 206 <2400>	2.41 167 <1345>	2.50	181	0.02
03/21/90	3.10 294 <1515>	2.65 203 <0015>	2.88	251 -63.	0.02
08/22/90	2.86 246 <0015>	2.19 133 <1315>	2.43	180	0.02
08/23/90	2.60 199 <1115>	2.41 167 <2400>	2.49	180	0.02
08/24/90	2.43 170 <0945>	2.38 162 <0145>	2.41	166	0.02
08/25/90	2.67 211 <2345>	2.24 140 <0930>	2.49	180	0.02
08/26/90	3.02 277 <1200>	2.37 160 <0215>	2.69	215	0.02

8/90

DEC 05 1994

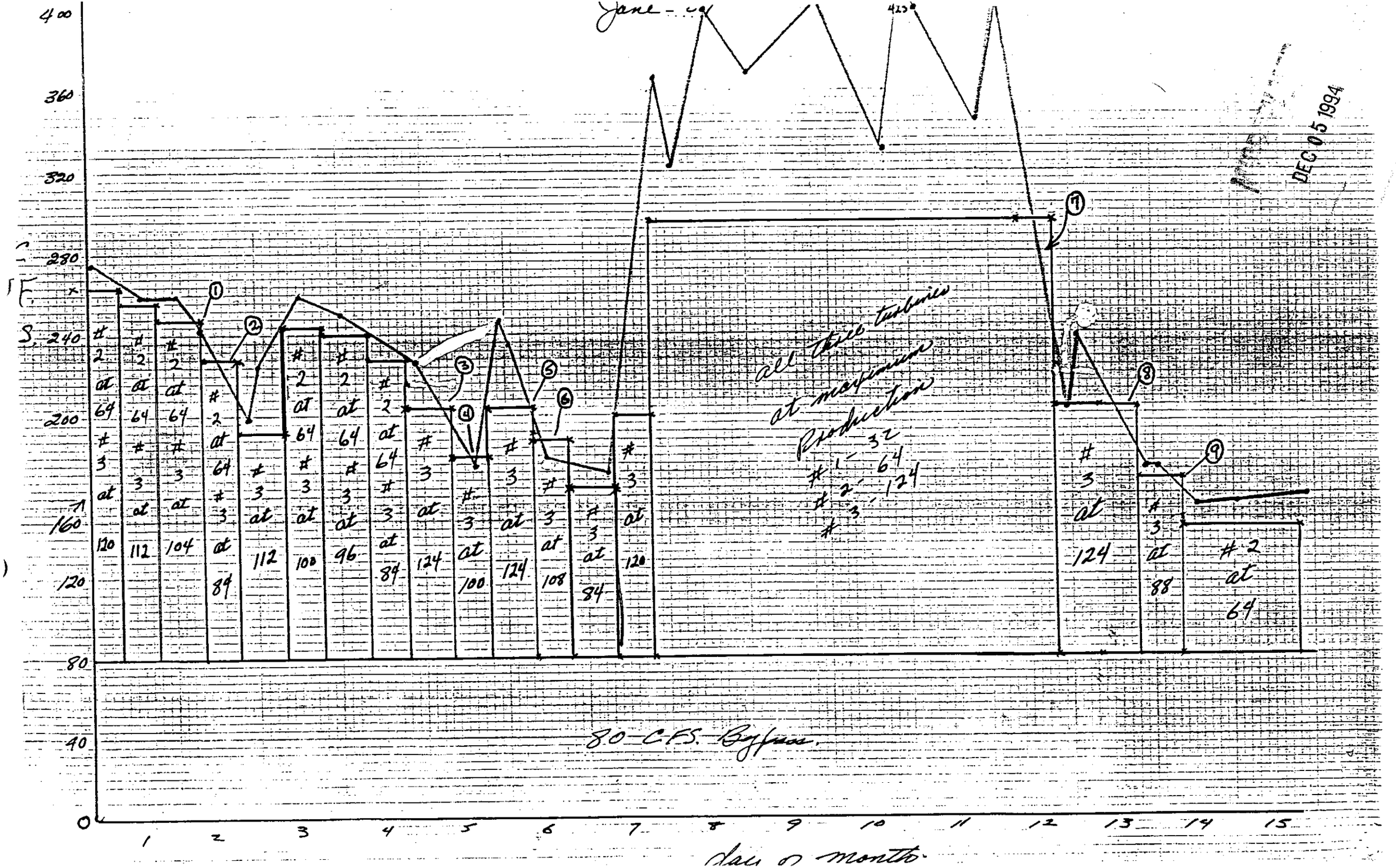
UNITED STATES DEPARTMENT OF INTERIOR -
PRIMARY COMPUTATIONS O
DATE PROCESSED: 12-1

13152500
MALAD RIVER NR GOODING ID
OUTPUT PARAMETER 00060 STORE STATISTIC(S) 00003
PROVISIONAL DATA FOR WATER YEAR ENDING SEPT. 30, 1990

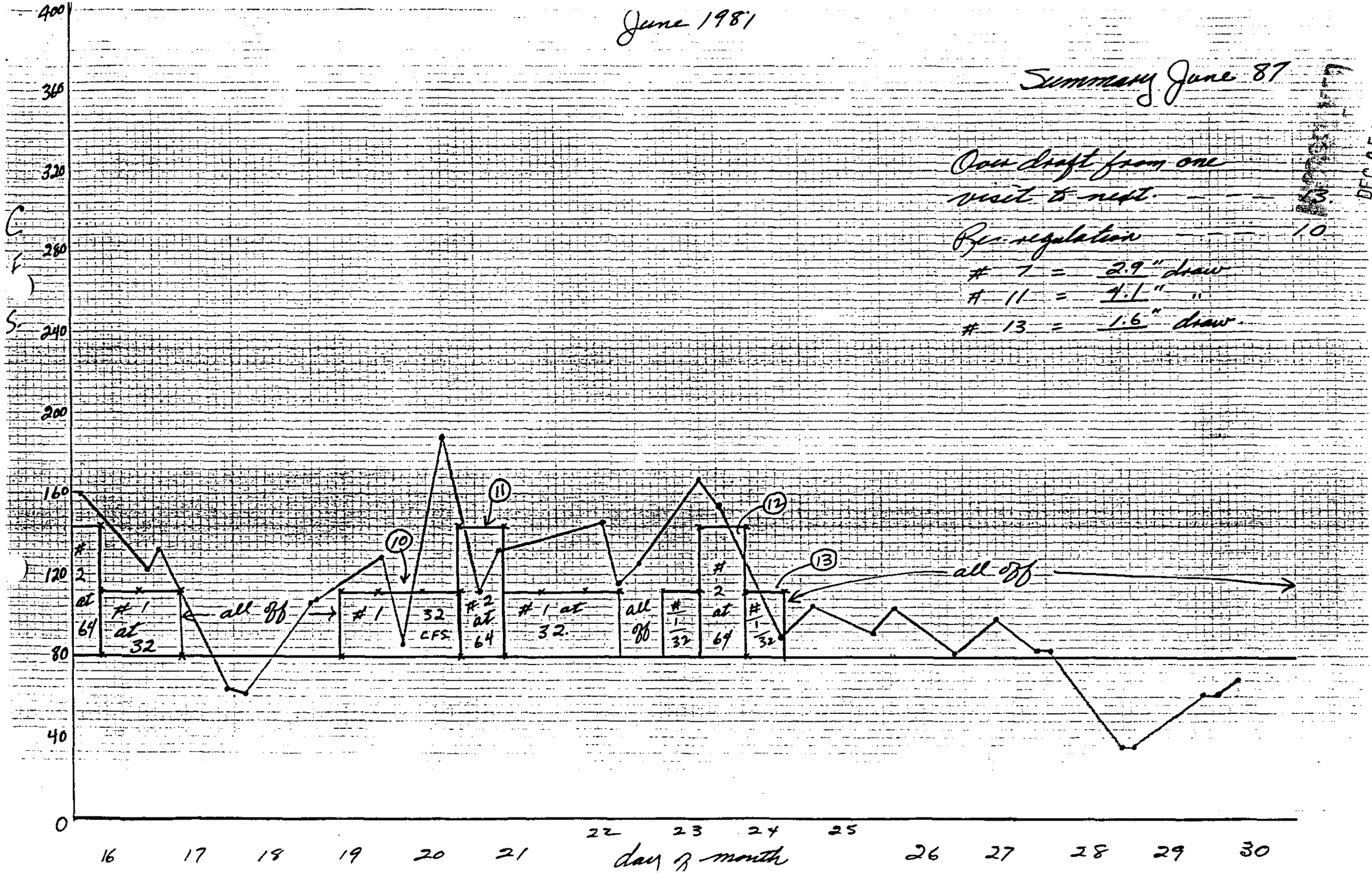
8/90

DATE	MAX GH /DISCH <TIME>	MIN GH /DISCH <TIME>	MEAN GH		MEAN DISCH	SHIFT ADJ
08/27/90	2.80 235 <2045>	2.40 165 <1930>	2.68	✓ ✓	213	0.02
08/28/90	2.72 220 <0230>	2.56 192 <1930>	2.64	✓	207	0.02
08/29/90	2.61 201 <0645>	2.26 143 <1945>	2.51	✓	184	0.02
08/30/90	2.55 188 <0100>	1.91 93 <1500>	2.32	✓	152	0.01
08/31/90	2.25 140 <2330>	2.07 114 <0800>	2.14	✓	125	0.01
09/01/90	2.26 142 <0115>	2.20 133 <2400>	2.24		139	0.01
09/02/90	2.39 162 <0730>	2.17 128 <0145>	2.25		140	0.01
09/03/90	2.27 143 <1230>	2.11 120 <1315>	2.18		130	0.01
09/04/90	2.44 170 <1630>	2.18 130 <0045>	2.30		148	0.01
09/05/90	2.38 160 <0415>	2.13 122 <1245>	2.29		141	0.01
09/06/90	2.36 157 <0730>	2.13 122 <2330>	2.26		142	0.01
09/07/90	2.19 131 <2300>	1.87 88 <0315>	2.05		112	0.01
09/08/90	2.17 128 <0015>	1.95 98 <1230>	2.04		110	0.01
09/09/90	2.27 143 <2330>	2.10 118 <0015>	2.17		128	0.01
09/10/90	2.30 148 <1915>	2.25 140 <1430>	2.28		144	0.01

DEC 05 1994


400
360
320
280
240
200
160
120
80
40
0
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15
DEC 05 1994
all three turbines at maximum production
#1 - 64
#2 - 124
#3 -
80 CFS. Bypass.
day of month.
2 at 64 # 3 at 120
2 at 64 # 3 at 112
2 at 64 # 3 at 104
2 at 64 # 3 at 84
2 at 64 # 3 at 112
2 at 64 # 3 at 100
2 at 64 # 3 at 96
2 at 64 # 3 at 84
3 at 124
3 at 100
3 at 124
3 at 108
3 at 84
3 at 120
3 at 124
3 at 88
2 at 64

June 1981



Summary June 87

Over draft from one visit to next. ——— 3.

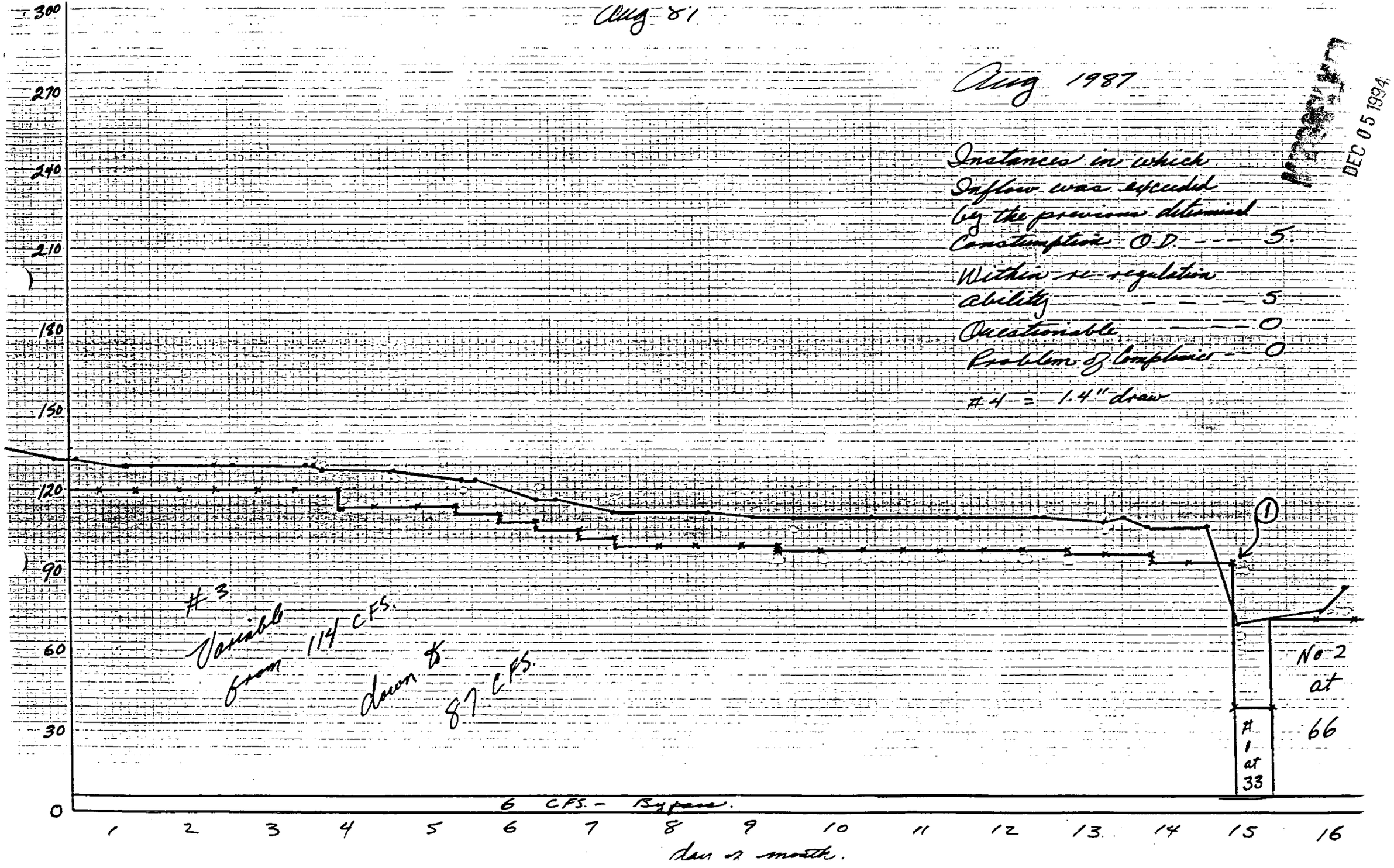
Re-regulation ——— 10

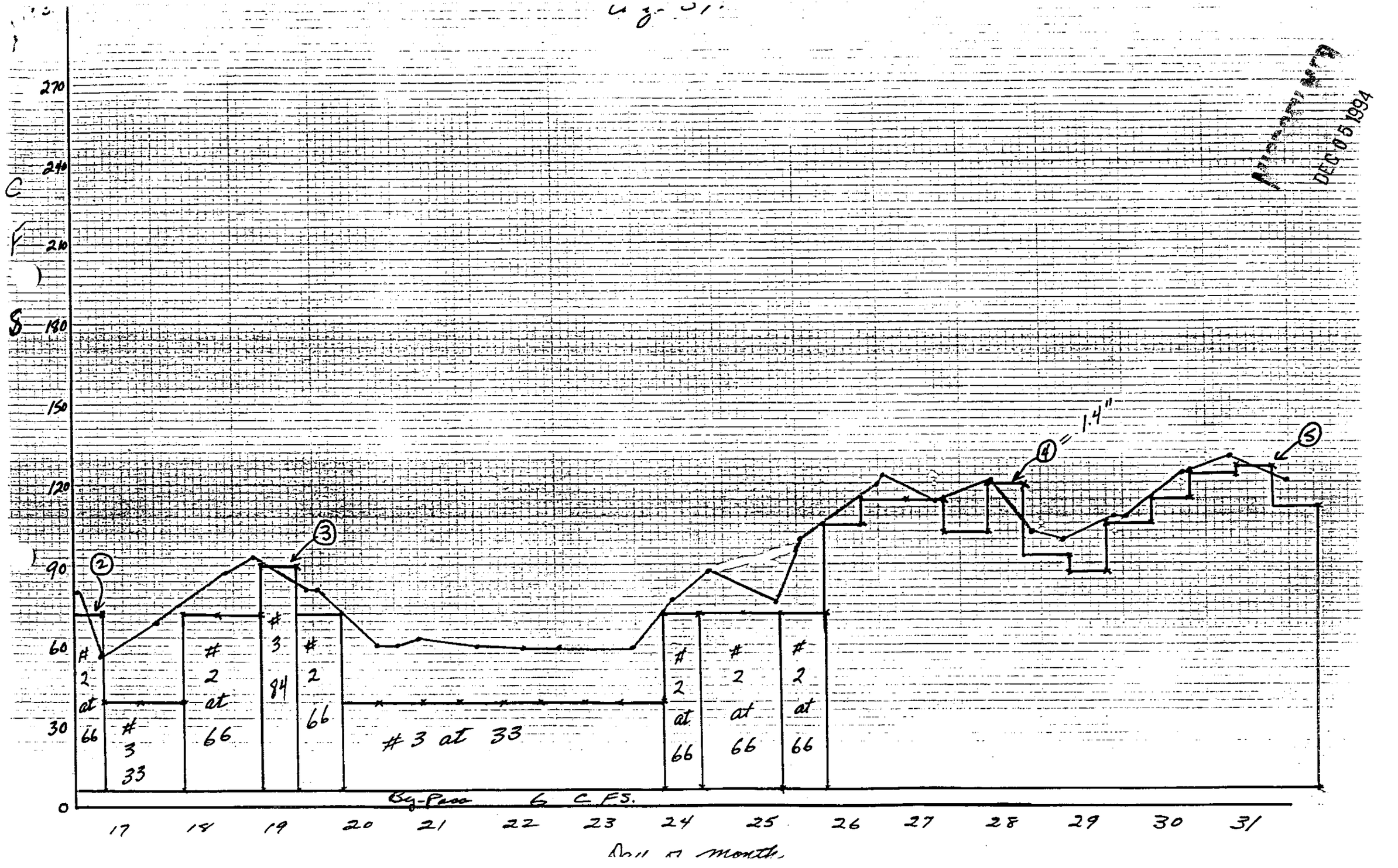
7 = 2.9" draw

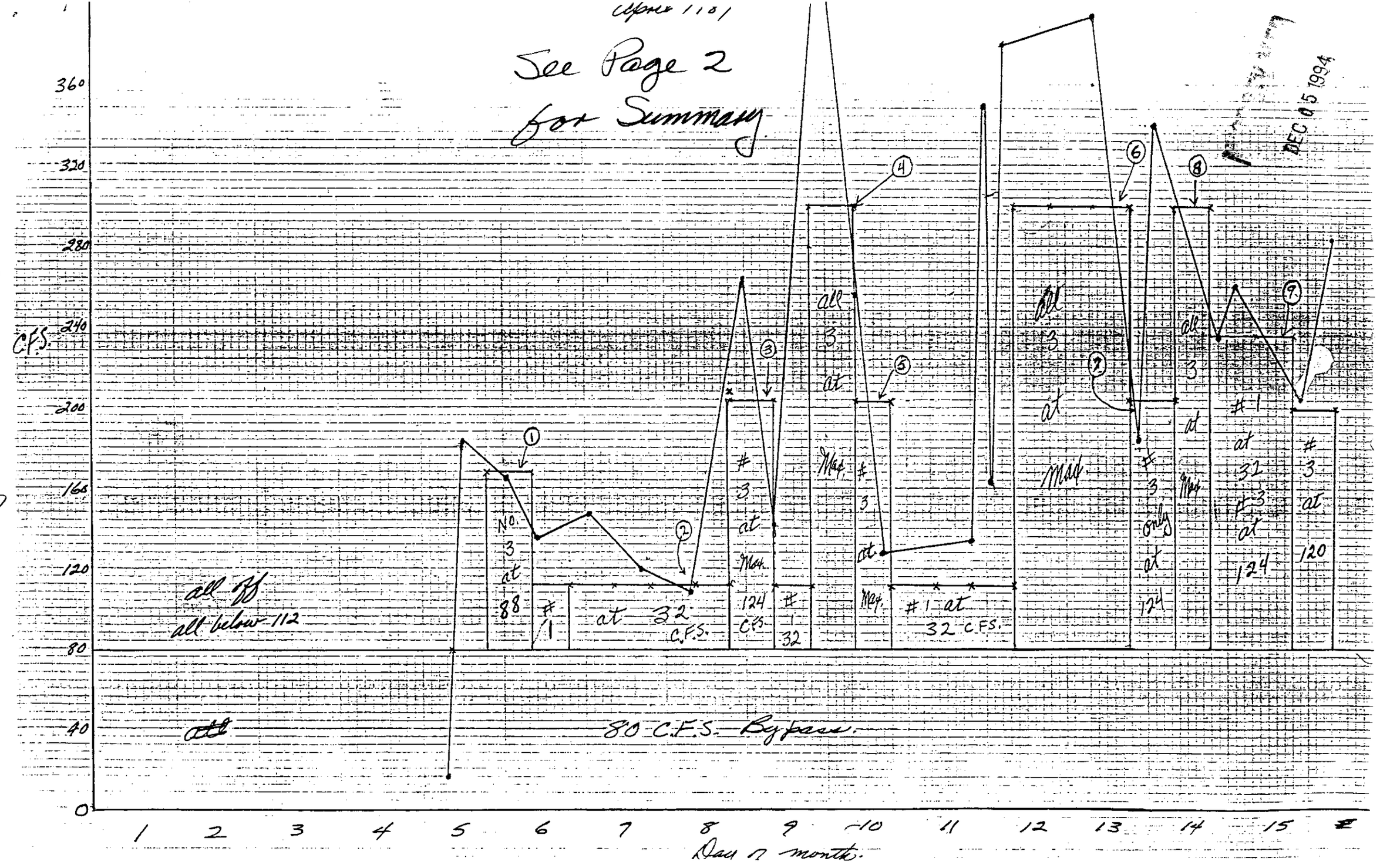
11 = 4.1" "

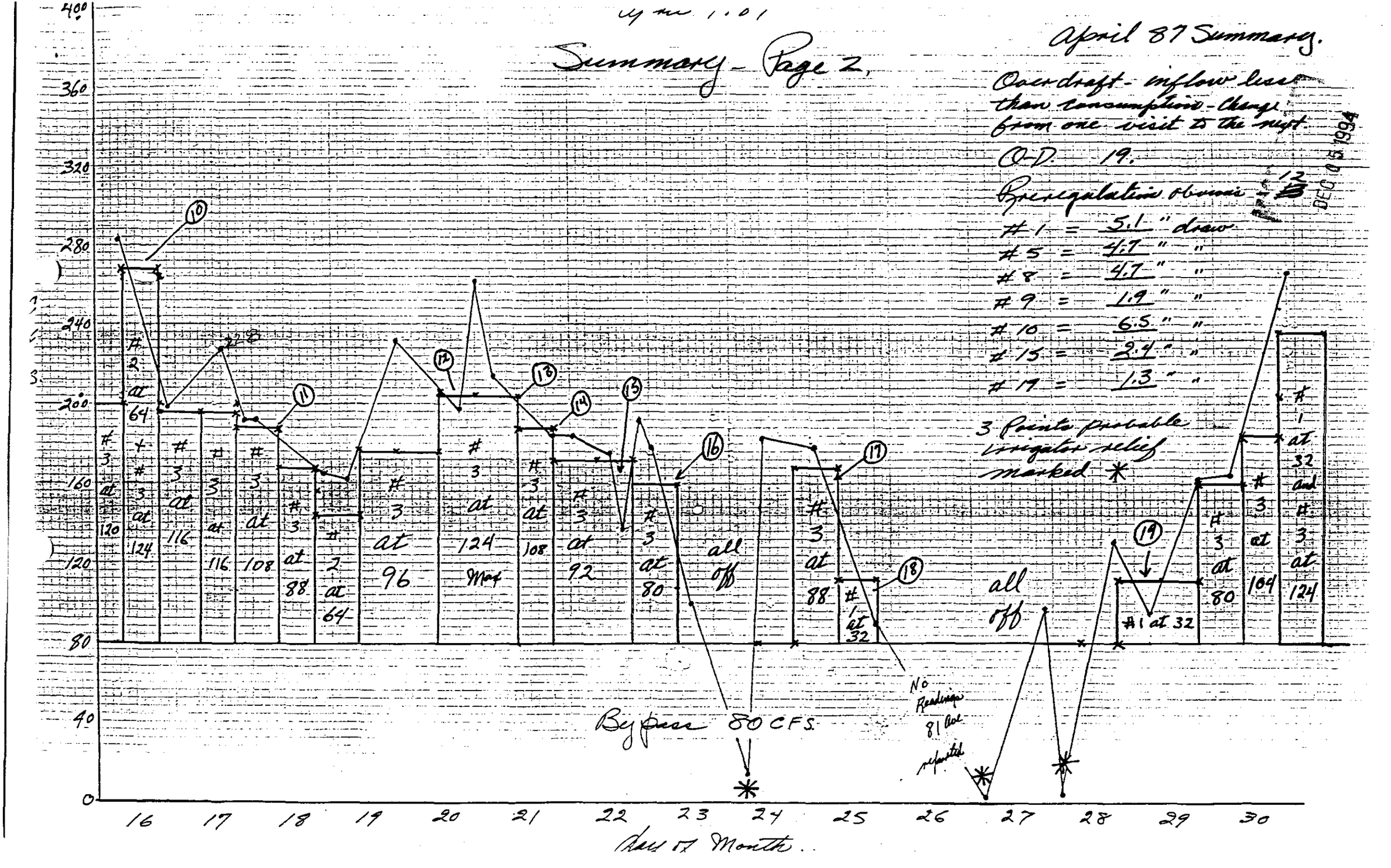
13 = 1.6" draw.

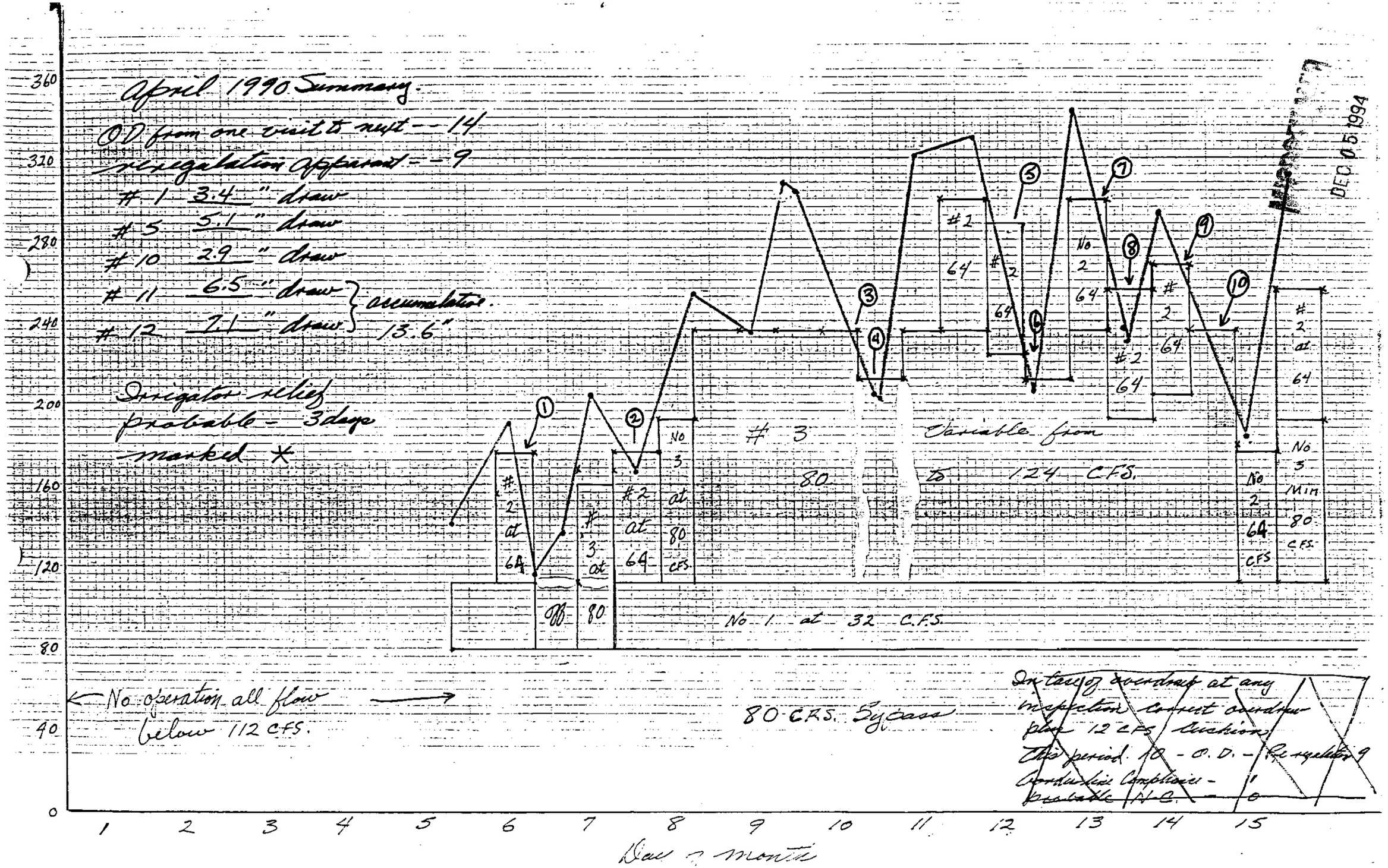
DEC 05 1994


Aug 81
Aug 1987
Instances in which
Inflow was exceeded
by the previous determined
Consumptive O.D. --- 5.
Within re-regulation
ability ---------- 5
Questionable ------ 0
Problem & Complaint -- 0
#4 = 1.4" draw
DEC 05 1994
300
270
240
210
180
150
120
90
60
30
0
#3
Variable
from 114 CFS.
down to
87 CFS.
1
No 2
at
66
#
1
at
33
6 CFS. - Bypass.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
days of month.


DEC 05 1994
270
240
210
180
150
120
90
60
30
0
CFS
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
Day of month
1.4"
#2 at 66
#3 33
#2 at 66
#3 84
#2 66
#3 at 33
#2 at 66
#2 at 66
#2 at 66
By-Pass 6 CFS.


See Page 2 for Summary
DEC 05 1994
C.F.S.
360
320
280
240
200
160
120
80
40
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Day of month.
all B/
all below 112
No. 3 at 88
#1 at 32 C.F.S.
#3 at Max. 124 C.F.S.
#1 at 32
all 3 at Max.
#3 at Max.
#1 at 32 C.F.S.
all 3 at Max.
#3 only at 124
all 3 at Max.
#1 at 32
#3 at 124
#3 at 120
80 C.F.S. Bypass.
1
2
3
4
5
6
7
8
9


April 87 Summary.
Summary - Page 2.
Overdraft - inflow less than consumption - Change from one visit to the next.
O-D. 19.
Irregularities observed = 12
#1 = 5.1" draw
#5 = 4.7" "
#8 = 4.7" "
#9 = 1.9" "
#10 = 6.5" "
#15 = 2.4" "
#17 = 1.3" "
3 Points possible irrigator relief marked *
DEC 05 1994
400
360
320
280
240
200
160
120
80
40
0
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
Days of Month.
#2 at 64
#3 at 120
#3 at 124
#3 at 116
#3 at 116
#3 at 108
#3 at 88
#2 at 64
#3 at 96
#3 at 124 Max
#3 at 108
#3 at 92
#3 at 80
all off
#3 at 88
#1 at 32
all off
#1 at 32
#3 at 80
#3 at 104
#1 at 32 and #3 at 124
10
11
12
13
14
15
16
17
18
19
Bypass 80 CFS.
No Readings 81 Not reported


April 1990 Summary.
OD from one visit to next -- 14
Regulation Appeared -- 9
#1 3.4" draw
#5 5.1" draw
#10 2.9" draw
#11 6.5" draw
#12 7.1" draw
accumulation 13.6"
Irrigator relief probable = 3 days marked *
360
320
280
240
200
160
120
80
40
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
Day of month
#2 at 64
#3 at 80
No 3 at 80 CFS.
No 1 at 32 C.F.S.
#3 Variable from 80 to 124 C.F.S.
#2 64
No 2 64
No 2 64 CFS
No 3 Min 80 CFS.
DEC 05 1994
← No operation all flow below 112 CFS. →
80 C.F.S. Bypass
On taper overdraw at any inspection count overdraw plus 12 CFS tolerance
This period 10 - O.D. - Regulation 9
Conclusive Compliance - Probable N.C. - 1 0

360
320
280
240
200
160
120
80
40
0

11
12
13
14

all three at Maximum

#2 64

#3 32 + 24 + 64 = 220 CFS

#1 32

all off

80 CFS bypass

#3 Variable from 88 to 124

#1 at 32 CFS.

#2 at 64

526 CFS. 403 495 482 505

DEC 05 1994

80 CFS Bypass

Summary.
OD — 3
Regulation — 2
Possible — 1
Probable — 0

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
day of month.

Aug. 1990 Detailed Overdraft and drawdown analysis

Date	OD #	Approx total time	Approx acre ft.	Approx Drawdown	Recovery
8/1/90	1	minor	minor	minor	Yes.
~	2	"	"	"	"
4	3	6 hrs	7.5	1.7"	Yes
5	4	minor	minor	minor	Yes.
6.	5	"	"	"	"
10	6	"	"	"	"
14	7	"	"	"	"
17	8	"	"	"	"
22	9	6 hrs	12	2.7"	No
~ 22	10	8.4 hrs	14.7	3.3"	Yes.
			accumulative	6.0"	*
24.	11	minor	minor	minor	Yes.
25	12	"	"	"	Yes.
26	13	"	"	"	Yes.
27	14	8.4	16.8	3.8"	No
27	15	4.8	7.2	1.6"	
			accumulative	5.4"	*
28	16	minor	minor	minor	Yes
28	17	minor	minor	minor	Yes.
29	18	7.2 hrs	10 acft.	2.3"	Yes.
30	19	[redacted]	[redacted]	[redacted]	[redacted]
		8.4 hrs	16.5	3.7"	Yes.

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Summary.
OD - F
Regulation F
Possible 9
Probable 4.

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Summary Aug 1990
See attached detailed review.

270
240
210
180
150
120
90
60
30
0

#3 Variable 90 to 110 CFS.
#2 at 66 CFS
#1 at 33
#3 at 102
#1 at 33
#2 at 66 CFS
#3 at 80 CFS min
#2 at 66
#3 Variable 105 Start 96 at step.
#2 only at 66 CFS.
#3 at 80 CFS minimum
#2 at 66
#3 Variable from 80 to 124 C.F.S.

6 CFS bypass
6 CFS bypass

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
day of month.

Summary.
Total OD -
Recapitulation
Possible
Probable

DEC 05 1924

270
240
Max
210
180
150
120
90
60
30
0

#1 + #3 90

8 — #3 at 114 C.F.S.
9 — #3 at 124 C.F.S.
10 — #3 at 90 C.F.S.
11 — #3 at 96 C.F.S.
12 — #3 at 87 C.F.S.
13 — #3 at 109 C.F.S.
14 — #3 at 124 C.F.S.
15 — #3 at 108 C.F.S.
16 — #3 at 93 C.F.S.
17 — Max #3 at 124 C.F.S.
18 — No #3 at 105 C.F.S.
19 — #3 at 93 C.F.S.

#3 at 114 C.F.S.
#3 at 93 C.F.S.
#3 at 80 C.F.S.
#3 at 114 C.F.S.
#3 at 124 C.F.S.
#3 at 114 C.F.S.
#3 at 108 C.F.S.
#3 at 96 C.F.S.
#3 at 87 C.F.S.
#3 at 109 C.F.S.
#3 at 124 C.F.S.
#3 at 108 C.F.S.
#3 at 93 C.F.S.
Max #3 at 124 C.F.S.
No #3 at 105 C.F.S.
#3 at 93 C.F.S.
Max #2 only at 87 C.F.S.

#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 100 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
No #2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
#2 at 66 C.F.S.
Max #2 at 66 C.F.S.

#1 at 33 C.F.S.
#1 at 33 C.F.S.
#1 at 66 C.F.S.
#1 at 33 C.F.S.
#1 at 66 C.F.S.
#1 at 66 C.F.S.
#1 at 66 C.F.S.
No #1 at 33 C.F.S.
#1 at 66 C.F.S.
#1 at 33 C.F.S.
#1 at 66 C.F.S.
#1 at 33 C.F.S.
#1 at 66 C.F.S.
Max #1 at 33 C.F.S.

6 C.F.S. Bypass
6 C.F.S. Bypass

17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
Days of the month

all readings

June 1-4 above

300 CFS.

all readings

above

300

Summary

O.D. — 2

re-regulation 2

Possible 0

Probable 0

DEC 05 199

Summary June 1990

O.D. total 9 — 9

re-regulation apparent — 6

4 = 2.4" draw

6 = 4.5" draw

7 = 3.5" draw

No Irrigation relief indicated.

No 1 at 32

2 at 64

3 Variable from 96 CFS-D maximum of 124 CFS

360

320

280

240

200

160

120

80

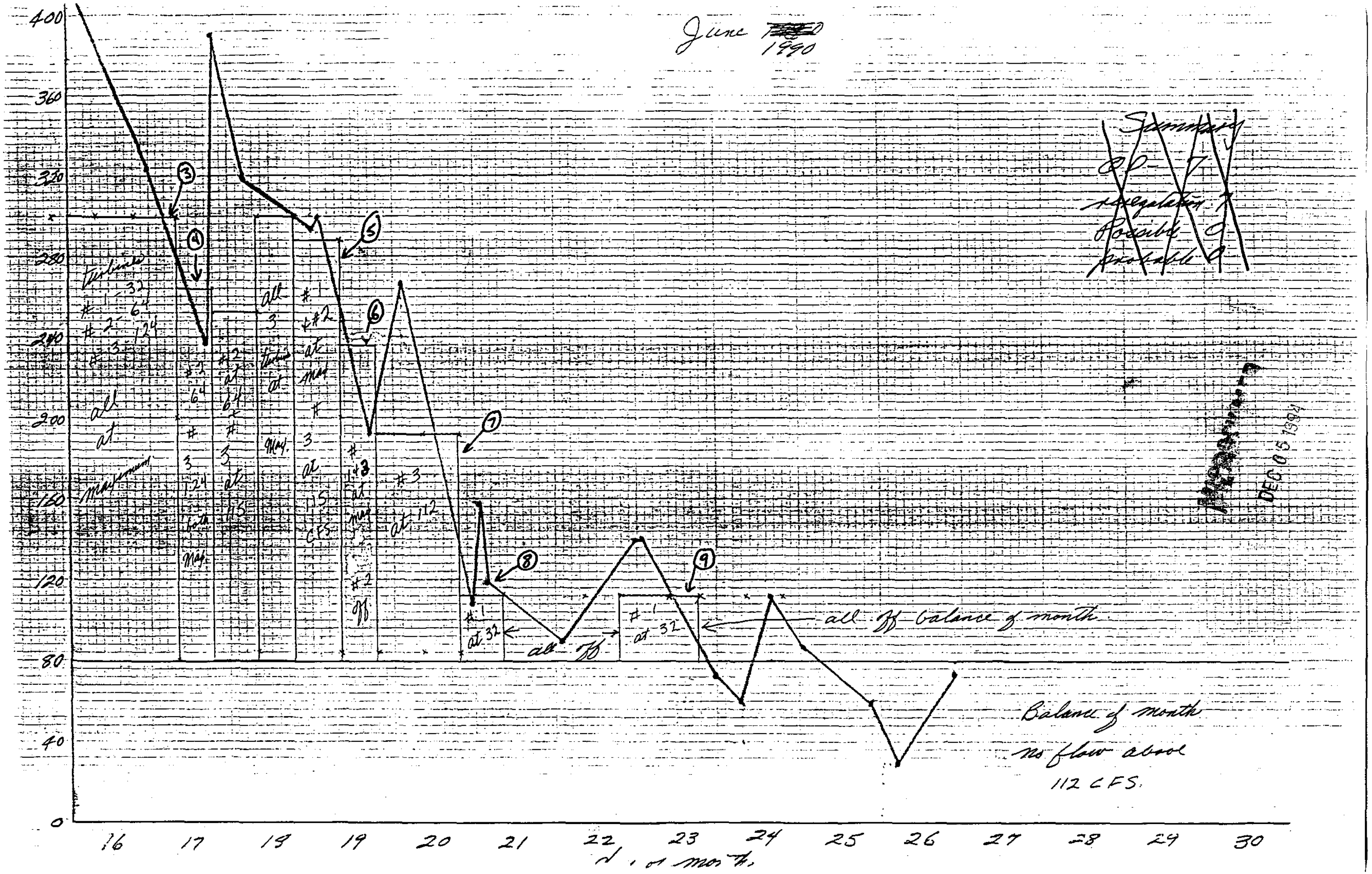
40

0

C.F.S.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

day of month.


June 1990
~~Summary~~
~~OP - 7~~
~~regulation 7~~
~~Possible 9~~
~~probable 9~~
400
360
320
280
240
200
160
120
80
40
0
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
d. of month.
③
④
⑤
⑥
⑦
⑧
⑨
turbines
#1 - 32
#2 - 64
#3 - 124
all at maximum
#1 64
#3 124
both max.
#2 at 64
#3 at 115
all 3 turbines at max.
#1 + #2 at max
#3 at 115 CFS
#1 + 3 at max
#2 off
#3 at 112
#1 at 32
all off
#1 at 32
all off balance of month
Balance of month no flow above 112 CFS.

DEC 05 1991

George a Cy
file
(209)

Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
FAX (208) 345-2676
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

March 26, 1993

Norm Young
Idaho Dept. of Water Resources
1301 N. Orchard
Boise, ID 83706-2237

Dear Norm:

The attached copy of a letter recently received from B.L.M. (Shoshone) is provided as a progress report in relation to amendments in the water management stipulations for project 4055.

Sincerely,

Vernon Ravenscroft

VR/cg

DEC 05 1994

RECEIVED MAR 2 ^ 1993

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
400 WEST "F" STREET
P.O. BOX 28
SHOSHONE, IDAHO 83352

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:

2801

March 25, 1993

Mr. Vernon Ravenscroft
Consulting Associates, Incorporated
1843 Broadway, Suite 102
Boise, ID 83706

Dear Vern:

As discussed by telephone with you on March 24, 1993 we are in agreement with the need to install an additional water bypass tube in your diversion for the Malad Small Hydro Project 4055. We concur with the installation of a 24 inch diameter water bypass tube and the placement of a stream flow stadia device in an appropriate control reach immediately downstream of the diversion structure.

We also understand you are in the process of developing a predictive model to arrive at a stream bypass monitoring regime which will satisfactorily meet the Bureau's requirement for minimum stream bypass flow, recognizing the volatility of the Malad River. The existing stream bypass flow monitoring requirements will remain in effect until such time that the Bureau, and the other affected agencies, have formally modified the minimum stream bypass flow monitoring regimen.

Sincerely,

Robert D. Cordell

Robert D. Cordell
Area Manager
Bennett Hills Resource Area

DEC 05 1994

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR
R. KEITH HIGGINSON
DIRECTOR

March 3, 1993

Vernon Ravenscroft
Tuttle Route
Bliss, Idaho 83314

Dear Vern:

Thank you for keeping IDWR informed on the negotiations involving FERC Project 4055. We have reviewed your letter and the attachments dated January 30, 1993.

As you know any solution to the problems facing Project 4055 needs to contain consideration of downstream senior water rights. The proposed stipulation amendment (Attachment 5) should reflect an intent to deliver water without fluctuation, as needed to supply downstream senior water rights when natural flow is available and a valid call is made under the rights. Manually operated relief valves may accomplish this when the project is down. If manual operation is not satisfactory other options may need to be considered.

With regard to control of bypass flows, IDWR would prefer to see improvements in the diversion dam such as additional control gates. Raising the spillway elevation would require the response to travel through the entire system when adjustments are made. This response could not be as timely as that possible by simply adjusting control gates at the diversion dam.

Rating curves on rivers need to be adjusted periodically to accommodate changes in the stream channel. Whomever is responsible for the integrity of the bypass flow measuring station should contract or carry out gage shifts on a regular basis. The USGS has a standard of six weeks.

Please feel free to contact us if IDWR can be of any assistance with Project 4055.

Sincerely

Norman C. Young
Administrator

DEC 05 1994

George —
Please draft a short letter to Ravenscroft commenting on the letter + attachments on the letter dated 1/30/93. He needs by 3/5/93 NY

MEMORANDUM

TO: NORM YOUNG

FROM: GEORGE AUSTIGUY GGA

DATE: FEBRUARY 11, 1993

RE: RAVENSCROFT HYDRO PROJECT 4055

I have reviewed the material attached with Vern's letter of 1/30/93. My comments for the attachments follow.

Attachment No.1: The focus of attachment No.1 is control of the river flow relative to the bypass compliance and project operation. Under the system in place, flow into the bypass reach can be increased by raising the water level in the diversion pond or by increasing the discharge area. Control over the water level in the diversion pond exists at two locations, the diversion canal headgate and the forebay spillway/turbines. Placing control at the tail end of the system (the turbines) as Mr. Myer's suggests introduces an additional time lag into the bypass reach response when the project is out of compliance. Therefore if the goal is to raise the diversion pond water level during a noncompliance situation adjusting the diversion canal headgate would result in a faster return to the compliance flow level. The alternative to raising the water level is to increase the discharge area (i.e. more flow tubes) in the diversion dam. Thus for the same level of water in the diversion pond, increased flow into the bypass reach would result. Gated flow tubes would allow adjustment of the discharge area. Some practical considerations come to mind as well: 1.) The forebay spillway has partially failed and was then repaired. I question the wisdom of adding a foot in elevation to an already compromised structure.
2.) The existing flow tubes have been obstructed by beavers in the past. Therefore raising the water level would have a limited effect when flow tubes are clogged. Additional flow tubes with gates provides the option of opening additional flow conduits should the opened ones be blocked or inadequate.
3.) Calibrating a staff gage in the diversion pond with the bypass flow measurement site is a good idea in theory. However discharge area changes due to obstructions and/or gate adjustments would change the stage- discharge relationship and the calibration would not apply.

Attachments No.2 - No.4: I only briefly reviewed these data and summaries as I felt no need to confirm Vern's compliance status. As a general comment, the presentation of the data makes it difficult to confirm the projects compliance record and thus assess Vern's summaries.

Attachment No.5: The proposed stipulation amendment looks okay to me . I agree with your comment that more defining language needs

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to be included relative to natural flow delivery.

Attachment No.6: My interpretation of Mr. Brockway's letter is that the Thomas rating table is applicable if "timely gage shifts" are implemented. Additionally, while recommending the 0.05 ft shift be used, he states that the shift can be updated in the future. My feeling is that whoever is responsible for the integrity of the measurement site should contract or carry out gage shifts on a regular basis. I believe the USGS has a standard of six weeks.

DEC 05 1994

VERNON RAVENSCROFT
Telephone 208 837-4802 4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, Idaho 83706

January 30, 1993

RECEIVED
FEB 2 1993
Department of Water Resources

Mr. Norman C. Young, Administrator
Idaho Dept. of Water Resources
Statehouse Mail
Boise, Idaho 83720-9000

Dear Norm:

The enclosures will report the outcome of my last negotiating session with B.L.M. I would make special reference to Attachment Number 5, which is an attempt to develop a workable amendment to the existing bypass stipulation, which will also acknowledge and honor the senior downstream irrigation rights.

I will appreciate any thoughts, and I thank you for your support in this effort.

Regards,

Vernon Ravenscroft

Vernon Ravenscroft

cc: Lee Peterson, Watermaster, Shoshone

DEC 0 5 1994

ERNON RAVENSCROF

Telephone 208 837-4802 4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 345-2670
1843 Broadway, #102
Boise, Idaho 83706

January 27, 1993

Mr. Robert Cordell
Bennett Hills Resource Area
USDI Bureau of Land Management
P.O. Box 2B
Shoshone, Idaho 83352

Dear Bob:

This letter will provide the items requested at our meeting in your office January 12, 1993:

1. A copy of the engineering analysis completed by Myers Engineering in 1991 (Attachment #1). Of the five recommendations made in Myers summary, No. 1 is done; No. 2 is being correlated both with the midpoint (automatic recording gauge) and with the staff gauge at the generating site. No. 3 is agreed. No. 4 - the one-foot raise is pending FERC approval and available construction funds. No. 5 is pending completion of No. 4.

2. Flow analysis (April, May and June) for representative years. The project is projected to produce an average annual generation of 3,209,000 KWH. The highest year to date has been 1986 (4,585,440 KWH); the lowest has been 1992 (621,325 KWH); and the closest to the projected average was 1985 (3,038,720 KWH). You will find attached a theoretical analysis for the average year (1985, Attachment #2), maximum year (1986, Attachment No. 3), and the specific analysis for May through December of 1992. For the average year I emphasize "theoretical" because the analysis is based upon a number of assumptions, each of which is a known average or an informed approximation. After the fact, it is not possible to analyze the full weight of each variable. With the automatic recorder and the twice daily monitoring records the pattern for 1992 is provided with specific accuracy. You will note that for each year the percentage of recovery time is quite modest (0.41% in 1985; 0% in 1986; and 1.1% in 1992). Likewise, the percentage of decline (loss of compliance from one monitoring visit to the next) is also well within reason (1985 - 0.62%; 1986, 0%; and 1992, 0.38%). This analysis for 1985 represents what would have happened under the stipulation amendment proposed at the referenced meeting. 1992 represents what actually did happen as we follow this same standard.

3. We also agreed that I would submit a revision of the proposed stipulation amendment. A few weeks ago I had an opportunity to discuss our bypass requirements with Mr. Mark Jones from the regional FERC office in Portland, Oregon. I respect Mark as being a practical and fair-minded field engineer. Mark advised that for many other projects that had volatile flow patterns the most satisfactory solution has been to allow a recovery period. When you find a deficiency, you then have a given

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number of hours to remedy that deficiency. If the remedy has not been achieved within the period of tolerance, then the project stops operation until the flow is restored. Such a grace period would be highly desirable in the instance of project 4055 from two standpoints:

a. The demonstrated extreme volatility of the irrigation waste water flow.

b. The complication of senior downstream irrigation water rights.

I have prepared a more simple amendment to the project 4055 stipulations based upon the recommendation which Mr. Jones made. That proposed amendment is attached. I specifically request that we adopt this amendment on an interim basis for a period of one year. That we also request FERC, Idaho Fish and Game Department, and U.S. Fish and Wildlife to concur in this one-year interim trial period; that I send the monthly flow (self recorder) graphs to FERC and BLM for each month during this trial period, plus the twice daily monitoring records for just those days in which a decline and/or a corresponding recovery cycle are involved. Any other germane agency shall be provided these same records upon request. A review meeting should be scheduled at your office in early January 1994.

Such a schedule should significantly simplify your inspection procedure. The automatic gauge record will either confirm or correct your inspection data. Our field records taken twice daily will confirm the action or lack thereof which we took to get the project back into compliance with due regard for the downstream irrigation rights.

I have also attached a copy of Brockway's correction to the flow chart. Everyone needs to understand that Brockway made two corrections to the Thomas flow charts:

1. A slight correction to give credit for the flow diverted down the old drybed channel.
2. A shift of +.05 to be added to the readings from the Thomas tables. I believe it is correct to state that much of the monitoring problem is due to error in the Thomas tables (at mid range) and to misinterpretations of the Brockway corrections.

Early in the history of the project BLM had their hydrologist measure the midpoint and generation plant gauging sections. That hydrologist made a reference mark for the 80 cfs flow at each site. It is of interest that the Brockway corrections now very closely correspond to the BLM markers.

Again I urge that we adopt the enclosed proposal on an interim one-year basis. Please advise me of your thoughts. I'll in turn contact the other germane agencies.

Sincerely,

Vernon Ravenscroft

cc: FERC, Washington, D.C.
FERC, Portland, Ore.
Norman Young, IDWR
Lee Peterson, Watermaster

DEC 05 1994

EXHIBIT

RECEIVED SEP 17 1991

Attachment #1

MYERS ENGINEERING COMPANY, P.A.
Consulting Engineers

750 Warm Springs Avenue
Boise, Idaho 83712
Telephone: (208) 336-1425
Fax # 208-342-5245

September 17, 1991

Mr. Vern Ravenscroft
1843 Broadway Avenue
Boise, ID 83706

Re: Tuttle Project - Bypass flows

Dear Vern:

After our visit to the Tuttle Project on August 30, 1991, and a review of the water control system, I have the following comments and recommendations.

At the present time the project is required to bypass 80 cfs into the Malad River during the months of April through June, and 5 cfs during July through March. This bypass will be increased to 20 cfs when the project enlargement now underway is completed. Diversion into the power canal is by means of a low rock and earth fill dam across the Malad River, so constructed that frequent overtapping by flood water does not seriously damage the structure. There is no gated outlet to the river. Minor seepage occurring in many places along the length of the dam serves to create and maintain significant areas of wetland habitat in contiguous overflow channels and riparian zones that otherwise would be dry at low river stages.

The power canal, an open, low gradient channel, is fed by a gated headworks from the pond created by the diversion dam. Water is bypassed through the dam, for prior downstream irrigation rights and stream maintenance between the diversion and the tailrace of the power plant by means of 4 ungated culvert pipes installed in the dam. There are 2-15" pipes, 1-24", and 1-30". Flow through these pipes is determined by the water level in the pond behind the dam. The invert elevation of these pipes is approximately equal to the operating elevation of the water in the forebay of the power plant at the downstream end of the canal.

DEC 05 1994

The suggestion has been made that bypassed water could be better controlled, especially at the 80 cfs level, by a new structure inserted into the existing dam, and equipped with automatic gates. Technically this might be possible. Practically, it would be a mistake, both economically and environmentally. This project, in operation for several years, has created and stabilized a very substantial enhancement of the desert environment that existed before the project was built. There are now many acres of open water, in ponds along the canal route and behind the diversion dam, including the canal itself, all bordered by well-established zones of riparian vegetation. The ponds provide aquatic and riparian habitat and recreational fishing that never before existed.

Installation of a new bypass structure now would require removal of part of the existing dam, draining the pond behind it, shutdown of the power plant during construction, with a consequent drawdown of the canal and all its dependent ponds. This would have a negative impact on fish, wildlife, recreation and other environmental values that on a new project would be vigorously challenged by all resource agencies. Further, automatic bypass control would be accompanied by a noticeable time lag before this intercepted water could reach the tailrace where it had been before interception, with consequent fluctuations of downstream irrigation supplies. This would be a ramping of flow that could be damaging to downstream irrigators and contrary to the provisions of Idaho Water law.

The use of ungated pipes to pass and control water flow through an embankment is neither unique nor new. Water flow is controlled by the height of water over the pipes and does not depend on mechanical/electrical devices which can fail at crucial times. This is a decided advantage. The pipes cannot however be used alone to maintain a predetermined flow regardless of the water depth over the pipes. This is apparently the condition that generated the suggestion for a new automatically controlled bypass structure. It is my opinion that this would create more problems then it solves, for the following reasons:

1) Ramping rates would be increased.

2) Failure of the controls could leave the gates fully closed and thus dry up the bypassed reach. Conversely, failure with the gates at full open could deprive the power plant of its legal water rights.

3) There would be severe negative environmental impacts during construction, and some permanent damage from disruption of the established enhancements.

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4) Cost of a new structure would seriously damage the economics of the project.

5) The ungated bypass pipes and the diversion pond provide automatic damping of fluctuating stream flows of low volume but high rates, a characteristic of the Malad River.

The objective of providing bypass facilities at any run-of-river hydroelectric project is to maintain adequate instream flows in the bypassed reach. Determining the proper volume of such flows is not an exact or simple procedure; fishery science, hydraulics, professional judgment, legalities, and negotiation are all involved. There are also many options to achieve the desired results. One of the simplest and most fail-safe, is use of ungated pipes through a diversion structure, that are not subject to mechanical failure or operating errors. Discharge through the pipes responds to stream flow and the consequent depth of water this flow creates over the pipes. Also, the depth of water over the pipes can be adjusted by controlling the hydraulic capacity of the turbines at the power plant. This in turn will regulate the flow and hydraulic gradient of the supply conduit - in this case an open canal. This is accomplished on this project by a skimming weir spillway which limits the water surface elevation of the forebay, which in turn determines the flow through the turbines. Due to the low gradient of the power canal, changes in the elevation of the weir would be reflected quickly at the diversion pond. It appears that an increase in the height of the existing weir blade of 0.83 feet (say 1.0 foot) would guarantee at least 80 cfs through the pipes now installed through the diversion dam. I recommend this be done and operated through at least one season before further consideration be given to constructing a new bypass structure.

Bypassed flows are now measured by a staff gage located about midway on the bypassed reach. The river section has been rated so that gage readings can be converted to cfs. Given the regulating affect of the ungated pipes through the diversion dam, and the damping affect of the ponding above the dam, staff gage readings should give a reasonably accurate indication of the bypassed flow provided they are re-rated at reasonable intervals. It is my understanding that this referenced section was re-rated in June of this year by a well known and qualified hydrologist, Dr. Charles Brockway from the University of Idaho experimental station in Kimberly, Idaho.

I do not see any merit in attempting to automate any of the current facilities or operating procedures on this project. Raising the height of the skimming weir as discussed above will help insure against drastic reductions in bypassed flows. It does not seem rational nor practical to risk damage to the established environmental benefits resulting from the project by attempting to impose instantaneous responses to water control.

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I therefore recommend to all parties:

1. That the staff gage on the diversion headgate be moved to the up river side of that structure. This would provide a new reference to determine pond level in relation to the discharge pipes. This action to be taken with the advent of low water in mid-October 1991.

2. That the project record the pond level at least once each day and correlate that level with the mid-section gage at least once each week until winter ice renders that action impractical.

3. That the project make the water records and the reconciliation with the mid-stream gage available upon request to both BLM and Idaho Fish & Game authorities.

4. That the project rebuild the skimmer weir and canal banks so as to have an additional one foot (1.0 foot) of head above the bypass tubes on or before April 15, 1992.

5. That all interested parties participate in an on-site meeting on or before June 15, 1992 to determine the success of the improvements and the need and/or time frame for automating the gage on the upstream face of the diversion headgate. Any self-recording gage at any other site would be difficult to maintain. Below the dam and at the power house flood flows would frequently wipe out such a structure.

Sincerely,

Carl L. Myers, P.E.

DEC 05 1994

2. Attachment 1985 average flow data

MALAD RIVER BASIN

13152500 MALAD RIVER NEAR GOODING, ID (Median)

LOCATION.--Lat 42°53'12", long 114°48'08", in NE1/4 NE1/4 SW1/4 sec.21, T.6 S., R.14 E., Gooding County, Hydrologic Unit 17040219, on right bank at Hudson Ranch, 3.1 mi downstream from bridge on Bliss-Gooding highway, 4.2 mi downstream from Little Wood River, 6 mi southwest of Gooding, and at mile 7.2.

DRAINAGE AREA.--2,990 mi^2, approximately.

PERIOD OF RECORD.--March 1915 to current year (fragmentary October 1923 to September 1926; no winter records for water years 1923, 1936-37, 1942; irrigation seasons only for water years 1927-35). October 1959 to September 1984, published as Big Wood River near Gooding.

REVISED RECORDS.--WSP 1347: 1934.

GAGE.--Water-stage recorder. Elevation of gage is 3,345 ft, from topographic map. Prior to Apr. 13, 1921, nonrecording gage at present site and datum.

REMARKS.--Estimated daily discharges: Dec. 4-10, Dec. 12 to Mar. 17. Records fair except for estimated periods, which are poor. Flow regulated by Magic Reservoir (see sta 13142000) and by several smaller reservoirs on tributaries and affected by deliveries from canals diverting from Snake River at Milner. Diversions above station for irrigation of about 144,000 acres of which about 4,000 acres are by withdrawals from ground water (1966 determination).

AVERAGE DISCHARGE.--53 years (1917-22, 1938-41, 1943-84), 302 ft^3/s, 218,800 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,880 ft^3/s Dec. 22, 1964, gage height, 12.15 ft, from floodmarks; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 2,330 ft^3/s April 18, minimum discharge, 19.0 ft^3/s, gage height 1.09 ft, July 8 and 9.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	725	305	172	92	100	115	1140	586	358	219	267	102
2	778	349	131	88	100	125	1150	509	397	175	245	148
3	779	361	128	86	95	130	1460	365	410	159	200	184
4	724	357	125	86	95	140	1480	301	384	133	164	220
5	659	364	120	86	95	140	1330	814	348	118	138	218
6	635	375	115	88	95	140	1580	1090	325	96	125	277
7	578	374	110	92	100	140	1570	902	332	91	91	340
8	486	385	105	92	100	150	1470	586	335	106	65	448
9	450	403	100	92	100	150	1440	413	354	87	66	649
10	481	420	95	92	100	150	1300	380	373	68	82	780
11	436	449	95	94	105	160	1170	468	404	69	98	831
12	334	450	95	94	105	160	1130	543	415	56	106	791
13	231	435	95	94	105	190	1230	548	411	59	114	778
14	269	408	92	94	110	190	1980	500	389	60	95	688
15	295	476	92	94	110	220	2320	369	377	78	69	657
16	190	473	92	90	110	230	2280	371	388	84	56	657
17	230	368	92	90	110	240	2310	407	383	84	57	678
18	207	267	90	90	110	239	2330	395	348	93	73	685
19	208	230	90	95	105	371	1870	353	300	100	76	612
20	217	226	90	95	105	330	1890	319	238	117	80	628
21	220	208	90	105	105	777	1960	342	203	136	71	643
22	218	215	92	110	110	502	1770	300	201	169	65	652
23	227	215	95	110	110	527	2120	261	197	213	65	600
24	240	220	95	110	110	845	1880	220	207	249	82	619
25	238	230	100	105	110	1050	1730	172	206	230	106	604
26	278	213	100	105	110	485	1520	240	260	243	105	522
27	318	199	100	105	105	382	1400	304	292	225	106	567
28	311	235	98	105	105	362	1260	369	282	210	83	582
29	311	219	98	105	---	330	1180	549	266	195	54	570
30	325	201	98	105	---	345	978	453	244	190	58	676
31	306	---	98	100	---	455	---	460	---	24[illegible]	71	---
TOTAL	11904	9630	3188	2989	2920	10120	48228	13889	9627	4358	3133	16436
MEAN	384	321	103	96.4	104	326	1608	448	321	141	101	547
MAX	779	476	172	110	110	1050	2330	1090	415	249	267	831
MIN	190	199	90	86	95	115	978	172	197	56	54	102
AC-FT	23610	19100	6320	5930	5790	20070	95660	27550	19100	8640	6210	32540

CAL YR 1984 TOTAL 274408 MEAN 750 MAX 4950 MIN 90 AC-FT 544300
WTR YR 1985 TOTAL 136392 MEAN 374 MAX 2330 MIN 54 AC-FT 270500

DEC 5 1984

FLOW ANALYSIS APRIL - JUNE 1985 (AVERAGE YEAR)

Projected Average Annual Production - 3,209,000 KWH

1985 Actual Production - 3,038,720 KWH

This 1985 flow analysis is based upon the following assumptions:

1. Present bypass tubes and dam level in place.
2. The present turbine configuration is in use. Originally, all three turbines were fixed geometry machines; we now have one adjustable turbine (80 cfs to 134 cfs).
3. The maximum consumption and bypass is at the current level of 280 cfs. (It was lower before the adjustable turbine was installed).
4. The efficiency of all turbines is the same. There is some variation from turbine to turbine.
5. The irrigation wastewater inflow below the U.S.G.S. gauge, but above the project diversion is a constant 5 cfs. (It varies from 0 to approximately 12 cfs.).
6. The surface area of the canal and pond system is a constant 53 acres.
7. All monitoring visits are 12 hours apart.
8. The pond freeboard before the bypass is at least 9 inches.
9. The cushion flow during the adjustment periods is 20 cfs.
10. No minor adjustments are made at any time on the adjustable turbine.
11. The average (median) flow reported by U.S.G.S. correctly reflects the weighted inflow.

Date & Time		Consumption + Bypass	Available Flow	+ Or -	12-hr. Pond Adjustment In Inches
April 1 through May 22 - All excess flow; ponds full.					
5/23/85	AM	280	266	-14	-3.17
	PM	280	266	-14	-3.17
5/24	AM	280	225	-55	-12.45
					(18.79
	Adjustment:	80 bypass; 20 cushion; 125 usable		+20	4.53
	PM	All off; 12 hrs. 145 cfs =			32.83 gain
5/25	AM	97 Usable	177	-0-	Ponds Full
	PM	97 Usable	177	-0-	Ponds Full
5/26	AM	240	240		Ponds Full
	PM	240	240		" "
5/27 through June 19 - Excess flow					
6/20	AM	280	243	-37	-8.38
	PM	280	243	-37	-8.38
	Adjustment required:	80 Bypass; 20 cushion; 143 Usable		+20	+4.53

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June 1985 Continued:

Date & Time		Consumption + Bypass	Available Flow	+ Or -	12-hr. Pond Adjustment In Inches
6/21	AM	223	208	-4	-0.90
	AM	All Off			(13.13)
	PM	Gain 12 hrs. @ 128 cfs = Gain of 28.98"			Ponds full
	PM	128 Usable; 80 Bypass	208	-0-	" "
6/22	AM	208	206	-2	-0.45
	PM	208	206	-2	-0.45
6/23	AM	208	202	-6	-1.36
	PM	208	202	-6	-1.36
6/24	AM	208	212	+4	+0.90
	PM	208	212	+4	+0.90
6/25	AM	208	211	+3	+0.68
	PM	208	211	+3	+0.68
6/26	AM	208	265	+57	+12.91 (Full)
	PM	265	265	0	Full
6/27-28		All excess flow.			
6/29	AM	280	271	-9	-2.04
	PM	280	271	-9	-2.04
6/30	AM	280	249	-31	-7.02
	Adjust:			+20	(11.1)
	PM	229		+20	+4.53

SUMMARY, 1985:

Full Compliance	98.56%
Declining Flow	0.62%
Recovery Flow	0.41%
Down Time	0.41%

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13153500 MALAD RIVER NEAR BLISS, ID

LOCATION.--Lat 42°51'48", long 115°54'04", in SE¼NE¼NW¼ sec.34, T.6 S., R.13 E., Gooding County, Hydrologic Unit 17040212, on right bank 700 ft upstream from mouth, and 8 mi southeast of Bliss.

DRAINAGE AREA.--3,000 mi^2, approximately.

PERIOD OF RECORD.--April to September 1899; December 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 2,750 ft above National Geodetic Vertical Datum of 1929, from topographic map. April to September 1899, nonrecording gage at same site and different datum.

REMARKS.--Estimated daily discharges: Aug. 29-31, Sept. 8, 9, 18-20. Records fair. Diversions from Big Wood, Little Wood, and Malad Rivers for irrigation above station and power generation for the Malad powerplants. Numerous springs enter the Malad River canyon within 2 mi upstream.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 4,150 ft^3/s Feb. 18, 1986; minimum daily, 66.0 ft^3/s Jan. 9, 10, 14, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 4,150 ft^3/s Feb. 18; minimum daily, 66.0 ft^3/s Jan. 3, 10, 14.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 20 to July 25)

1.4	63	3.0	453
1.6	90	3.5	655
1.9	144	4.5	1280
2.2	215	5.5	2350
2.5	297	6.5	3780
		6.8	4260

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
	69	643	687	2330	888	2780	337	288	302
	69	352	586	2390	804	2730	352	293	324
	69	299	494	2320	833	2760	353	269	338
	68	210	534	2260	757	2690	299	251	336
	69	150	482	2080	825	2780	407	240	352
	69	110	429	1950	919	2730	445	228	357
	67	91	944	1880	1020	2630	416	200	349
	67	85	1430	1810	1020	2470	365	201	355
	66	90	1650	1940	1060	2290	328	223	391
	66	89	1380	1990	1070	1920	322	252	420
	67	70	1720	2080	1070	1660	352	257	419
	68	76	2070	2130	1050	1220	372	245	445
	73	100	2230	2190	984	1060	369	236	466
	66	101	2230	2260	920	1260	884	236	413
	68	327	2130	2200	903	1250	1160	267	419
	68	1880	1960	2100	949	1270	1160	268	459
	68	2830	1860	2040	939	1250	1150	269	517
	118	4150	1740	2000	852	1110	983	283	432
	132	2860	1680	1900	779	1030	263	261	435
	289	2380	1480	1830	582	1030	255	268	453
	191	1250	1410	1810	410	910	232	257	475
	142	845	1450	1660	459	678	211	266	452
	93	1220	1670	1410	505	545	233	281	457
	87	1230	1800	1380	559	498	259	302	447
	77	1090	1820	1360	1030	425	261	303	458
	75	1000	1870	1080	930	375	290	276	480
	77	849	1920	975	1140	306	293	274	480
	74	743	1920	1080	999	303	305	267	522
	--	--	78	78	---	1940	1060	1130	303	295	264	531
	30	87	74	73	266	---	2090	1030	1930	368	288	264	546
	31	93	---	68	659	---	2180	---	2630	---	280	270	---
TOTAL	8416	3341	2603	3515	25120	47786	54525	30106	42631	13520	8059	12830
MEAN	271	111	84.0	113	897	1541	1818	971	1421	436	260	428
MAX	595	193	185	659	4150	2230	2390	2630	2780	1160	303	546
MIN	78	67	68	66	70	429	975	410	303	211	206	302
AC-FT	16690	6630	5160	6970	49830	94780	108200	59720	84560	26820	15990	25450

CAL YR 1985 TOTAL 117988 MEAN 323 MAX 1360 MIN 67 AC-FT 234000
WTR YR 1986 TOTAL 252452 MEAN 692 MAX 4150 MIN 66 AC-FT 500700

1986
April, May & June
all flows in excess of
280 C.F.S.
Operation full
Compliance 100%
Decline 0%
Restore 0%
no operation. 0%

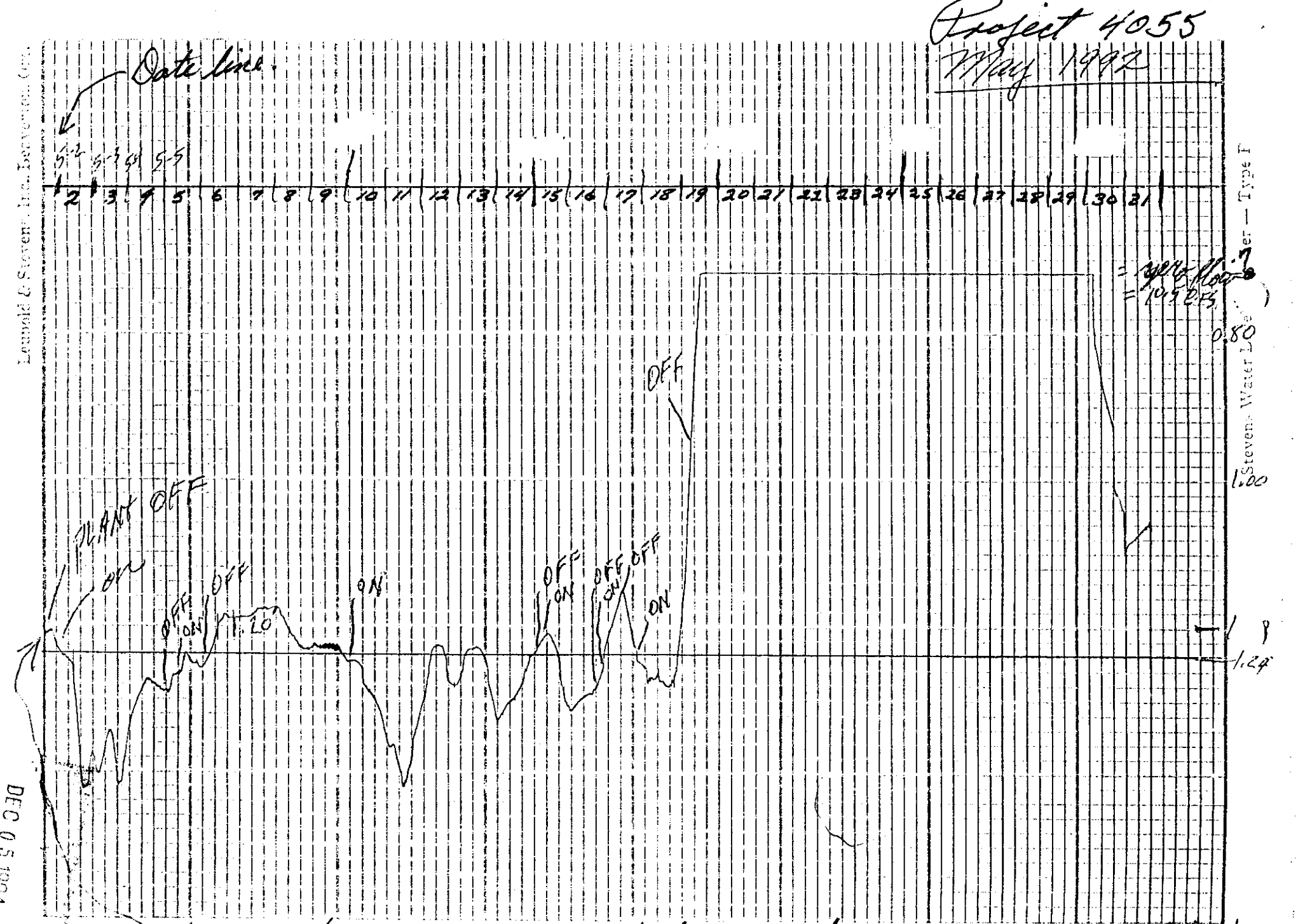
OCT 1994

PROJECT 4055 - 1992 SUMMARY IN HOURS AND PERCENTAGES

Month	No Operation	Full Compliance	Decline*	Recovery	Total
May	411.75	269.75	47.0	15.5	744
June	658.75	46.50	7.75	7.0	720
July	412.00	332.00	0	0	744
August	431.50	312.50	0	0	744
September	576.00	144.00	0	0	720
October	567.00	167.00	10.0	0	744
November	720.00	0	0	0	720
December	744.00	0	0	0	744
	4,521.00	1,271.75	64.75	21.5	5,880
Percentages	76.89%	21.63%	1.10%	0.38%	

* Usually overnight, but does include one instance in which the flow decreased dramatically from AM to PM inspection.

DEC 05 1994



May 1st 1992 14:00 start. 1.20' start - See attached Diary Summary

PROJECT 4055 - MAY 1992

5/1/92	Time 9:46	All off weir 70.7 cfs. **
	15:30	Resume production U.S.G.S. indicated 116 in system. ***
5/2,3,4,5		Operated with excess flow.
5/6	9:58	All off; weir 70.7. **
5/7-9		No production.
5/10	10:45	Resumed production with excess flow.
5/11,12,13,14		Operated with only two borderline exposures; both corrected with turbine adjustments.
5/15	9:01	All off. **
	9:40	U.S.G.S. indicated 168 in system. *** (80 Bypass. 66 #2 + 22 cushion; graph indicates 7 hrs. recovery time.)
5/16		Graph shows operation in compliance; the "off and on" sequence due to mechanical problems.
5/17	8:39	All off. **
	15:30	U.S.G.S. indicated 134 cfs in system; resumed operation. (80 Bypass - 34 #1 + 20 cusion; graph corresponded).
5/18	8:23	Weir 80 cfs.
	9:22	Weir 80 cfs.
5/19	9:47	Weir 13.5; all off. **
		No operation balance of month.

Operation full compliance - 269.75 hrs.; 36.26%.

** Operation transition overnight drop - 47 hrs. = 6.32%

*** Operation transition recovery time based upon U.S.G.S. gauge inflow records - 15.5 hrs.; 2.08%.

No operation - 411.75 hrs. = 55.34%

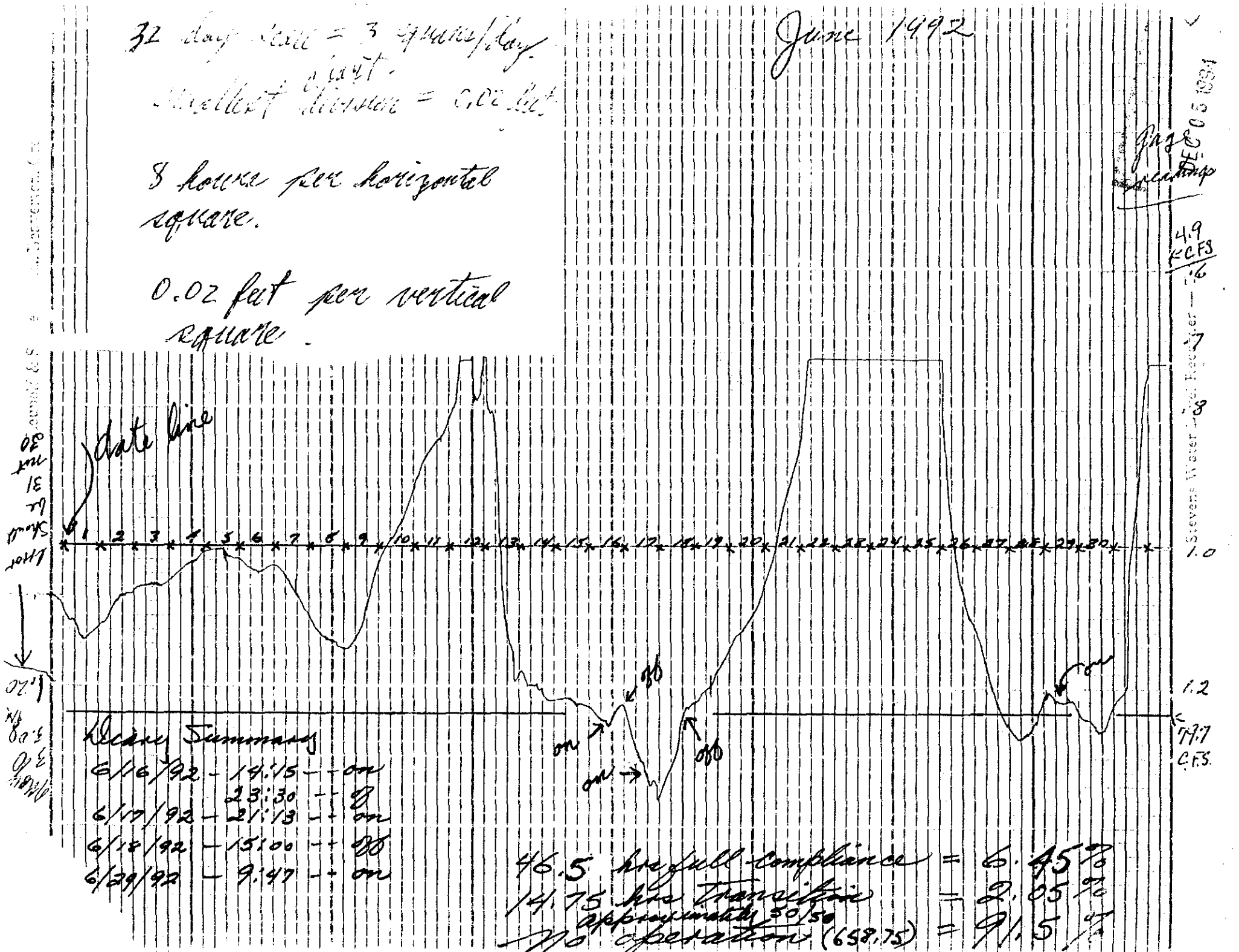
DEC 05 1994

32 day scale = 3 grams/day.
Smallest division = 0.01 ft.

8 hours per horizontal square.

0.02 feet per vertical square.

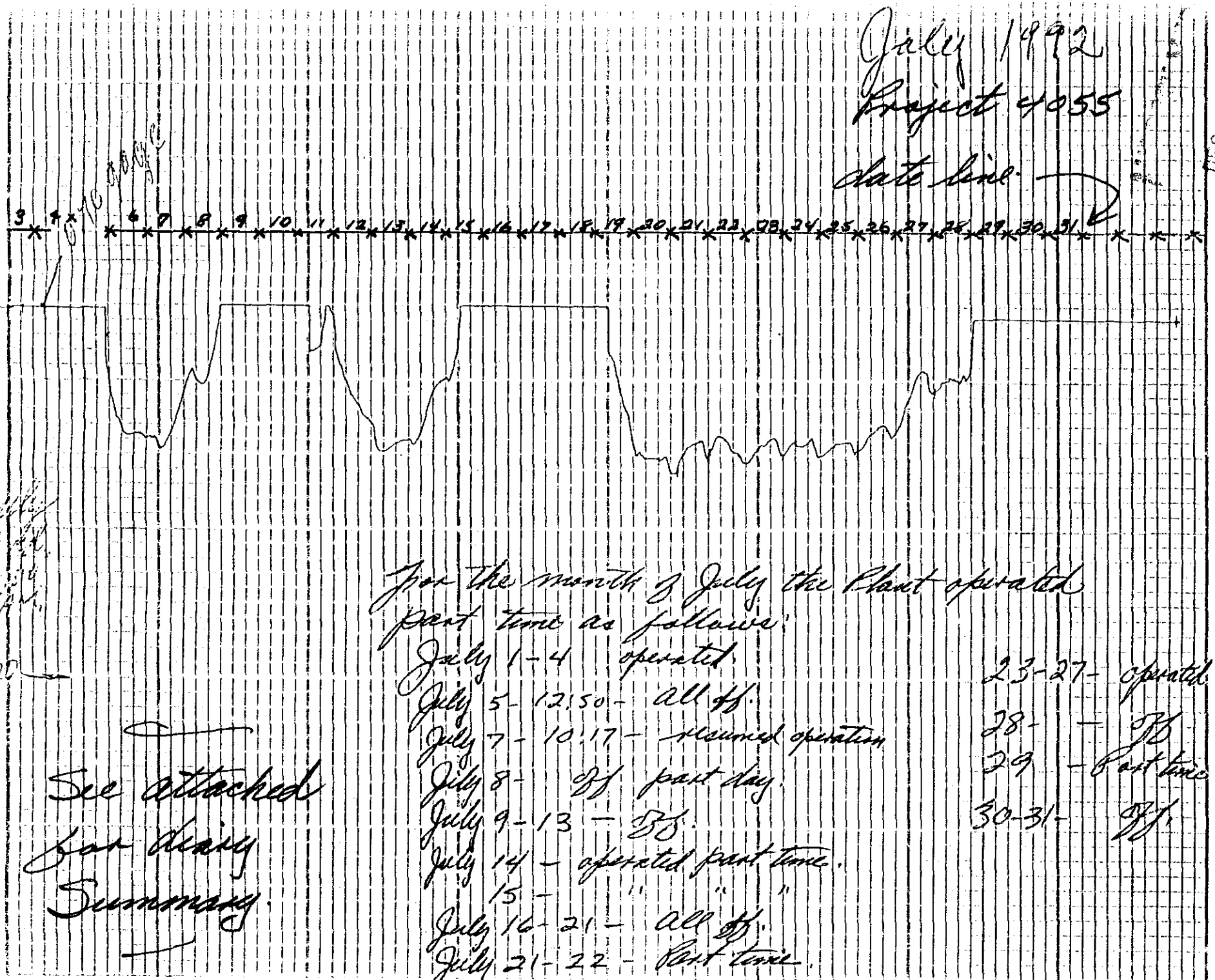
June 1992



Recap Summary

6/16/92	14:15	on
	23:30	off
6/17/92	21:13	on
6/18/92	15:06	off
6/29/92	9:47	on

46.5 hrs Recall-Compliance = 6.45%
14.75 hrs Transition = 2.05%
Approximately 50.50
No observation (658.75) = 91.5%


July 1992
Project 4055
date line
Leupold & Stevens, Inc. Beaverton, Ore.
Stevens Water Level Recorder — Type F
DEC 05 1991
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
7.6
7.4
7.2
7.0
1.2
For the month of July the Plant operated part time as follows:
July 1-4 operated.
July 5 - 12.50 - all day.
July 7 - 10.17 - resumed operation
July 8 - 8½ part day.
July 9-13 - 5½.
July 14 - operated part time.
15 - " " "
July 16-21 - all day.
July 21-22 - part time.
23-27 - operated
28 - " - 8½
29 - part time
30-31 - 9½.
See attached
Sun diary
Summary.

PROJECT 4055

DIARY SUMMARY FOR JULY, 1992

Date	Time	Gauge	C.F.S. Volume	Operating
7/1	10:40	Plant	75	Yes.
7/2	12:30	Plant	5	Yes.
7/3	9:50	Midpoint	9.4	Yes.
	20:24	Weir "	10.5	"
7/4	10:48	"	9.4	Yes.
	16:38	"	9.4	"
7/5	12:50	"	5.3	All off.
7/6				Off.
7/7	16:00	Weir	22.2	Resumed operation.
	20:26	"	20.3	Yes.
7/8	8:46	"	14.9	All off.
	18:03	"	14.3	Resumed operation.
7/9	8:26	"	8.9	All off.
7/10,11,12,13				All off.
7/14/92	8:12	Plant	13.5	Resumed operation.
	16:46	Weir	22.5	All off.
7/15	9:18	Weir	14.3	Resumed operation.
	17:38	"	11.6	All off.
7/16 through 21	at 20:18			All off.
7/21	20:18	Weir	15.6	Resumed operation
7/22	8:34	"	21.3	Yes.
	18:32	"	20.3	All off.
7/23	8:44	"	21.3	Resumed operation.
	17:26	"	22.2	Yes.
7/24	7:43	"	19.6	Yes.
	17:35	"	22.2	"
7/25	8:55	"	21.3	Yes.
	20:11	"	21.3	"
7/26	9:46	"	21.3	Yes.
	18:03	"	21.3	"

DEC 05 1994

July Continued:

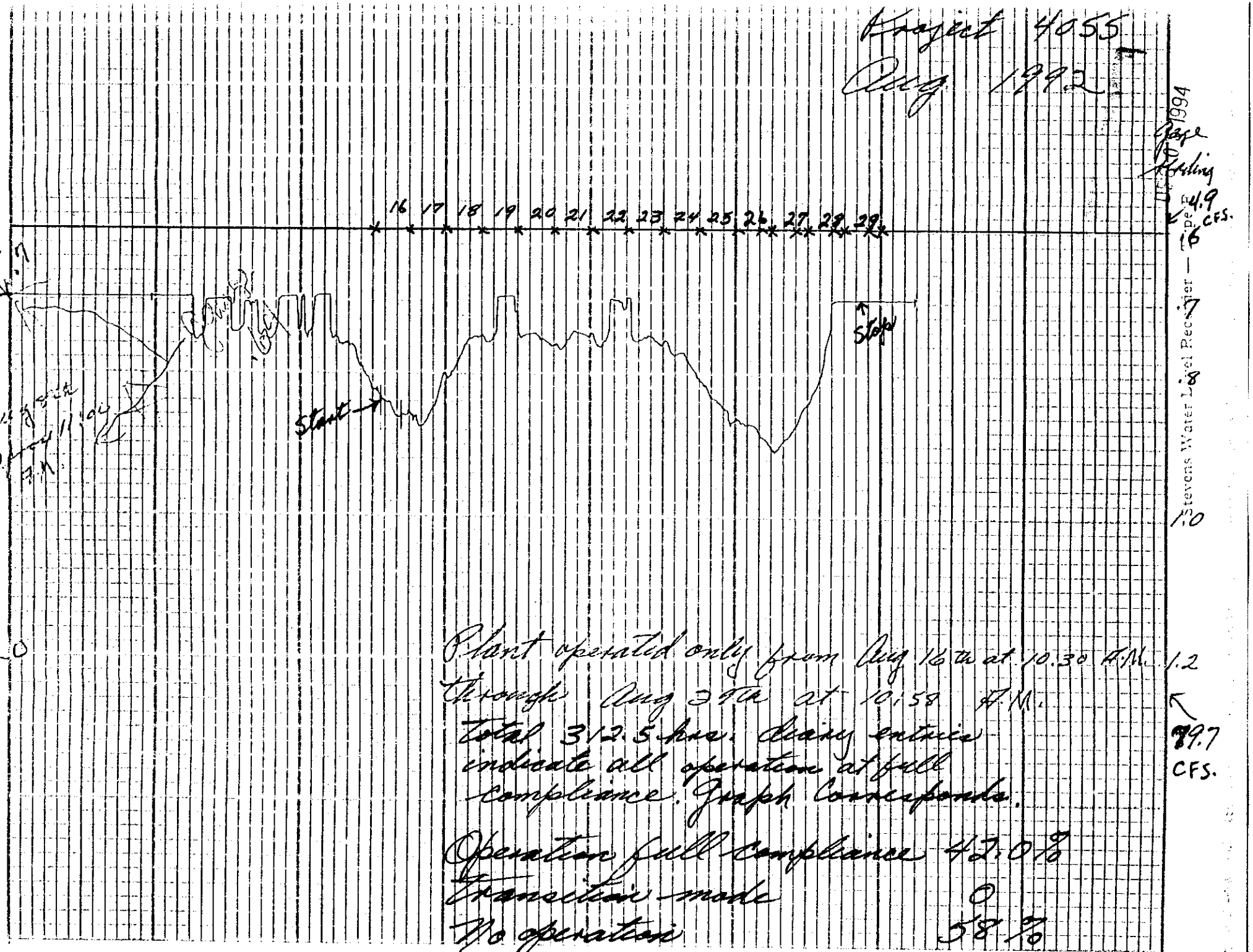
Date	Time	Gauge	C.F.S. Volume	Operating
7/27	10:46	Weir	18.8	Yes.
	17:18	"	19.6	"
7/28	9:26	"	14.3	All off.
	19:08	"	20.3	Resumed operation.
7/29	8:24	"	14.3	Yes.
	18:04	"	14.3	All off
7/30,31				All off.

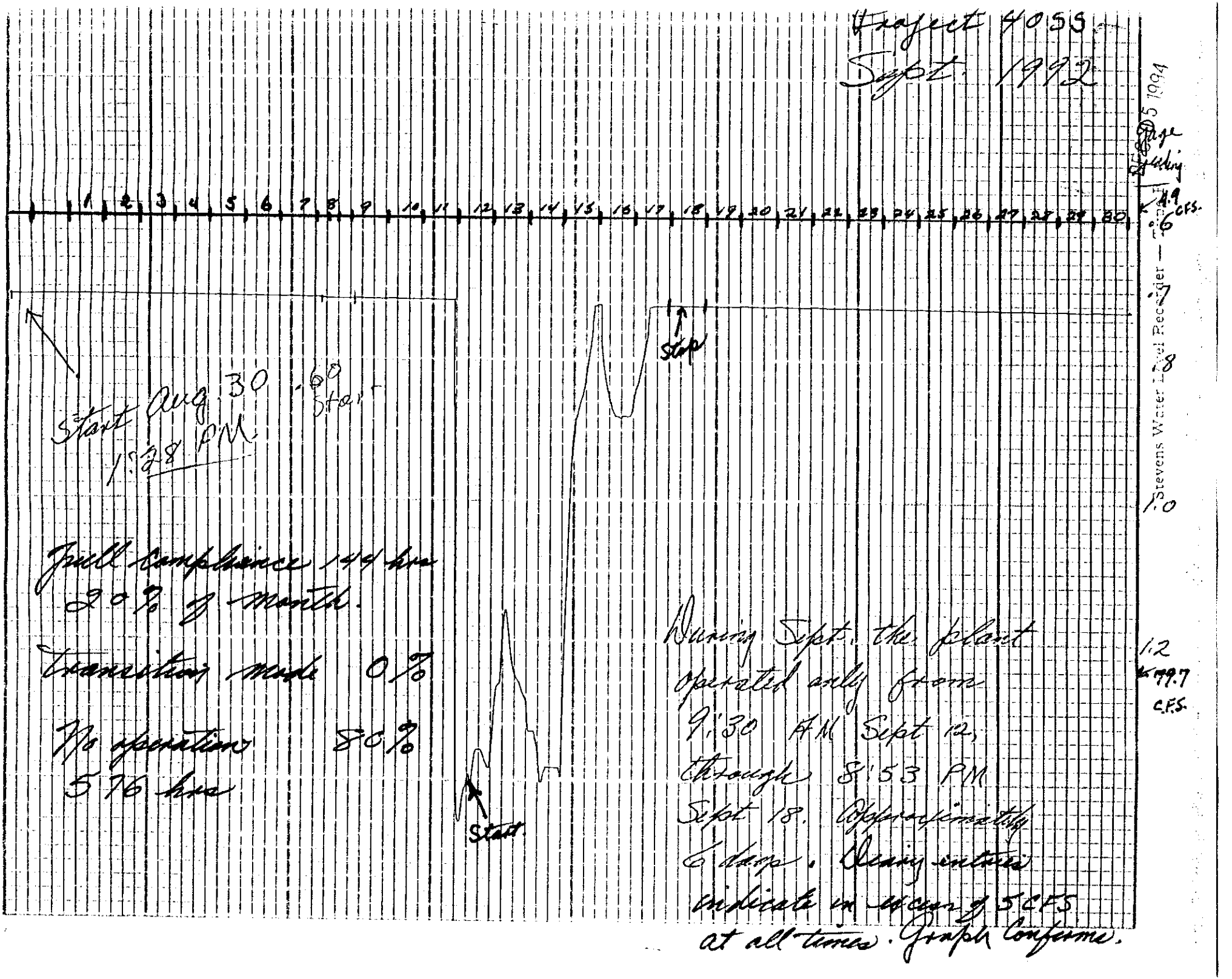
Operated full compliance 332 hrs. = 44.62%

Transition mode - 0.

No operation 412 hrs. = 55.38%

DEC 05 1994


Project 4055
Aug 1994
Gage Reading
Leupold & Stevens Inc., Beaverton, Ore.
Stevens Water Level Recorder — Type F
16 17 18 19 20 21 22 23 24 25 26 27 28 29
4.9 CFS.
1.7
1.8
1.0
1.2
Start
Stop
20
Plant operated only from Aug 16 at 10.30 A.M.
through Aug 30 at 10.58 A.M.
Total 312.5 hrs. during entire
period all operation at full
compliance. Graph Corrupted.
Operation full compliance 42.0%
Transition mode 0
No operation 58.0%
99.7
CFS.


Leupold & Stevens, Inc., Beaverton, Ore.
Project 4055
Sept 1992
Stevens Water Level Recorder — Type F
Gage reading
4.9 cfs.
Start Aug 30 - 60 Start
1:28 PM
Stop
Start
Full capacity 144 hrs
200 % Mark.
Operating Mark 0 %
No operation 80 %
576 hrs
Morning Sept. the 12th
Operated only from
9:30 PM Sept 12,
through 8:53 PM
Sept 18. Operated satisfactorily
& dam. Morning entries
indicate on Aug 9 54.45
at all times. Graph conforms.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
5 6 7 8 9 10 11 12
79.7 C.F.S.

Leupold & Stevens, Inc., Beaverton, Ore.

Stevens Water Level Recorder — Type F — 1934

Oct 1992

Project 40055

Gage Reading 4.9 cfs.

Start
5 Oct 92
17:25

Start
Reading = 10.5 CFS. (Buckaroo)

Gage Datum - 7.2 or 10.5 CFS.

Project operated only from 9:02 Oct 5th through 18:00 Oct 12th.
Doug Semmens.

10/5/92 -	9:02	Weir depth	9.4	CFS
	18:30	Plant "	36.4	"
10/6/92 -	9:36	Weir depth	11.6	"
	16:54	" "	9.4	"
10/7/92 -	9:33	" "	10.5	"
	16:50	" "	9.4	"
10/8/92	8:29	" "	9.4	"
	17:20	" "	9.4	"
10/9/92	9:45	" "	5.5 *	"
	18:08	" "	6.6	"
10/10/92	11:04	" "	9.4	"
	20:17	" "	8.4	"
10/11/92	8:04	" "	6.5	"
	18:40	" "	8.4	"
10/12/92	8:37	" "	9.4	"
	18:00	— acc. obs. —		

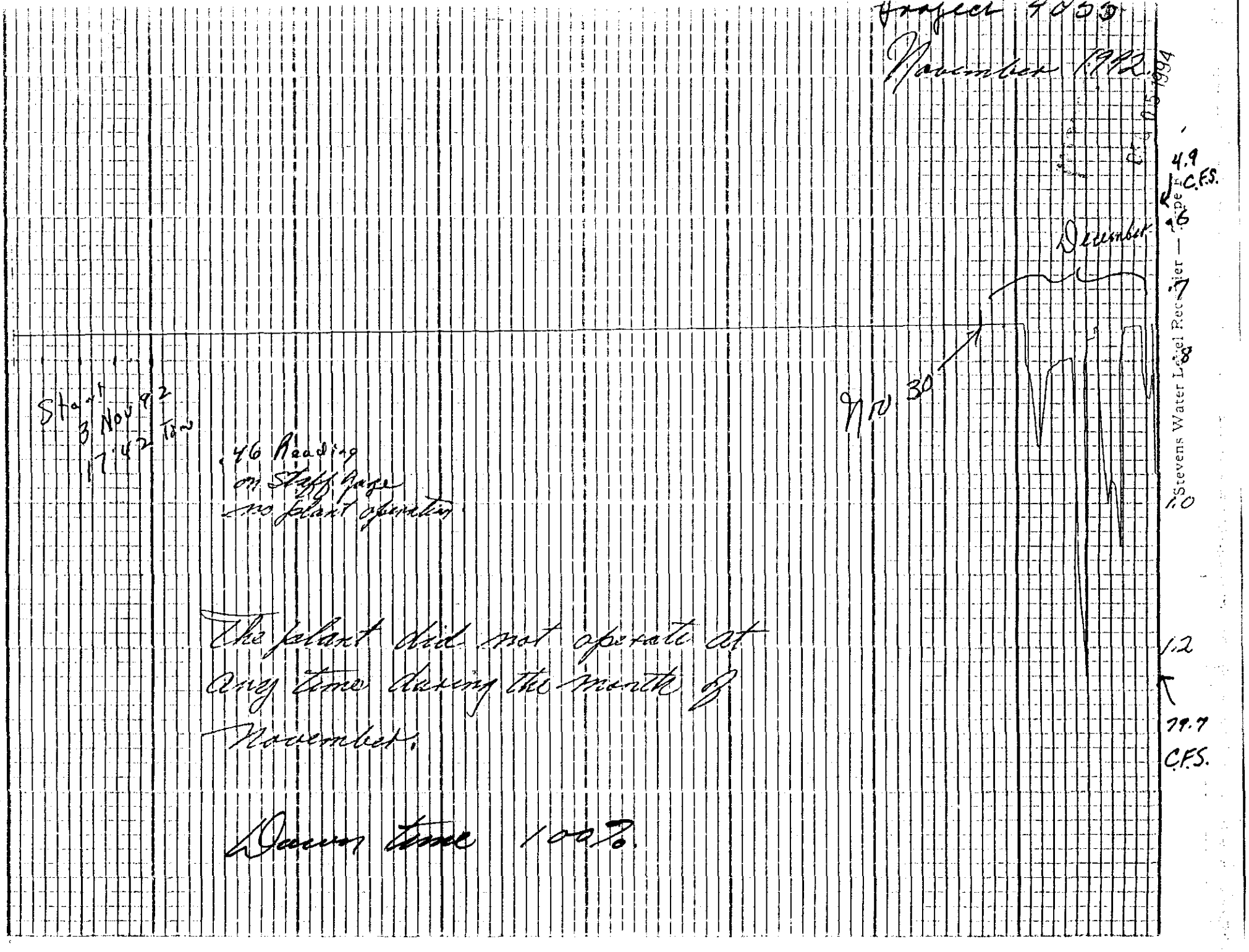
Operation full Compliance 167 hrs or 23.45% of 99.7 CFS.

Operation transition mode 10 hrs 1.5%

* Weir right only.

No operation 567 hrs = 76.21%

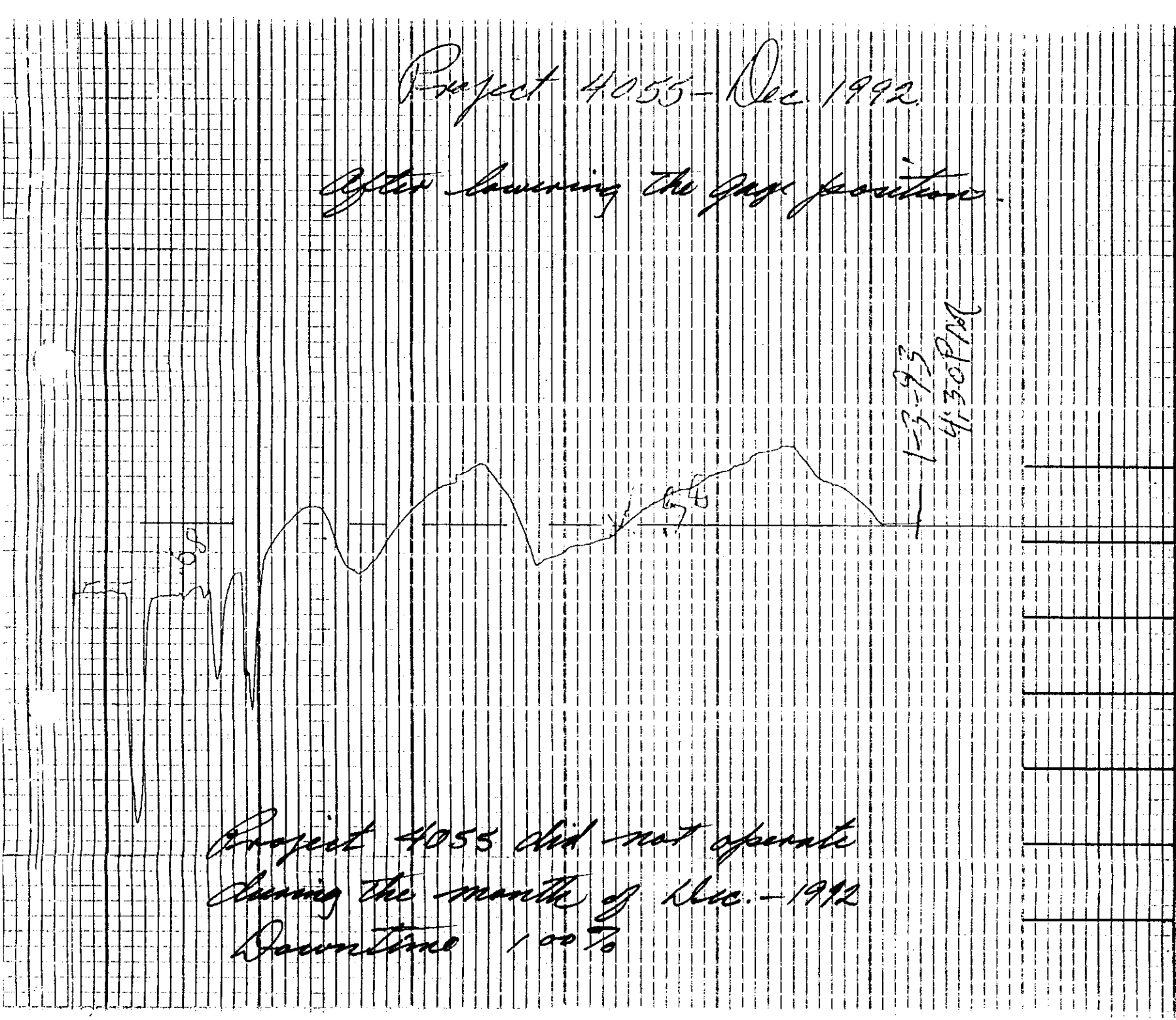
Stems 1 & 2 removed and installed for fault finding.



Leupold & Stevens, Inc., Beaverton, Ore.

Project 4055 - Dec 1992

Glen Canning the Pay Station.



Project 4055 did not operate
during the month of Dec. - 1992
due to 100%

PROPOSED STIPULATION AMENDMENT

FOR PROJECT 4055

At any time the project is not operating, the project operator may elect, or the Watermaster may require, that one or both of the relief valves situated at the generation site be opened so as to assure a steady minimum downstream flow at 20 c.f.s. or such lesser amount as may be available.

When the project is operating the bypass requirement measured at the mid-project gauge shall be:

a. April 1 through June 30 - 80 c.f.s.

b. July 1 through March 31 - 5 c.f.s.

Because of the extreme volatility of the flow in this river reach and the presence of a large beaver population, good faith compliance will be deemed to have been achieved, provided:

a. The plant is monitored at least twice daily, and

b. Proper adjustments based upon known and recorded inflow and bypass flows are made at each such inspection.

c. At any time the designated bypass flow is not present in the bypass reach then that flow must be fully restored within twelve (12) hours or in the alternative the plant shall cease operation until such time as the bypass flow plus the minimum plant operating volume is present in the river at the midpoint gauge.

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NO. 6 ATTACHMENT

RECEIVED AUG 2 8 1991

CHARLES BROCKWAY ENGINEERING

August 25, 1991

Mr. Vernon Ravenscroft
Consulting Associates Inc.
1543 Broadway Suite 102
Boise, ID 83706

Subject: Discharge Rating -Malad River Hydropower Facility-Revised

Dear Vern:

I have reviewed the discharge measurements performed on the Malad River Hydro facility by C. A. Thomas and others to evaluate the current applicability of the discharge rating curve. The rating curve prepared by C. A. Thomas was estimated using three current meter measurements and a zero flow gage estimate. Mr. Thomas used a linear log fit to the four points which is an acceptable technique. This curve shows a reasonably good fit and is currently applicable for the site using timely 'gage shifts' determined from current meter measurements. A plot of the curve taken from Mr. Thomas's table is shown on the enclosed graph.

On June 29, 1991, I measured the discharge at the site at 83.37 cfs at a gage height of 1.265 ft. The measurement was rated as 'good' and flow conditions were stable. This measurement shows a 'gage shift' of +0.5 ft. on the discharge rating curve prepared by Mr. Thomas. The accepted procedure, based on the most current discharge measurement, is to add the gage shift to the observed gage height and use the existing curve until a new 'gage shift' is obtained from a new current meter measurement. For example, if the observed gage height is 1.30 ft., the 'shifted' gage height is obtained by adding 0.05 ft. for a value of 1.35ft. This 'shifted gage height' is used with the existing rating table to determine a discharge of 92.8 cfs

The flow in the bypass ditch which diverts below the power diversion should be considered in the total flow at the diversion site. The discharge in the bypass ditch was measured by current meter on June 29, 1991 at 1.78 cfs. To my knowledge, this is the only measurement which has been performed on the bypass ditch. It appears from observation of the flow conditions that flow depth in the bypass ditch does not vary over a wide range.

The enclosed rating table shows the discharge versus gage height based on the C.A. Thomas curve and the combined discharge of the river plus the bypass ditch. This table assumes that the bypass ditch discharge is linear and varies from zero at a gage

CHARLES E. BROCKWAY, PHD., P.E.

706 SUNRISE BOULEVARD NORTH

TWIN FALLS, IDAHO 83301

208•733•0938

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height of 0.18 ft. to the measured value of 1.78 cfs at a gage height of 1.265 ft. Again the table should be entered with the shifted gage height.

I believe the existing rating curve with a +0.05 gage shift should be used as the best estimate of discharge in the river below the power diversion. The shift can be updated in the future based on additional discharge measurements.

Sincerely,

C. E. Brockway P.E.

Enclosures

2
1.8
1.6
1.4
1.2
1
GAGE READING FEET

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RAVENSCROFT MALAD RIVER HYDRO								
DISCHARGE RATING TABLE WITH BYPASS CHANNEL			BYPASS Q=1.641(H-.18)					
SHIFT DETERMINED	6/29/91		BY C.E. BROCKWAY =		0.05	FT		
	FITTED BY	FITTED+		FITTED BY	FITTED+		FITTED BY	FITTED+
	THOMAS	BYPASS		THOMAS	BYPASS		THOMAS	BYPASS
GAGE	Q	Q	GAGE	Q	Q	GAGE	Q	Q
FT	CFS	CFS	FT	CFS	CFS	FT	CFS	CFS
0.18	0.0	0.0	1.08	38.8	40.3	1.49	135.0	137.1
0.68	5.5	6.3	1.09	40.2	41.7	1.5	139.0	141.2
0.69	5.8	6.6	1.1	41.6	43.1	1.51	142.0	144.2
0.7	6.2	7.1	1.11	43.2	44.7	1.52	146.0	148.2
0.71	6.6	7.5	1.12	44.8	46.3	1.53	150.0	152.2
0.72	7.1	8.0	1.13	46.4	48.0	1.54	153.0	155.2
0.73	7.5	8.4	1.14	48.0	49.6	1.55	157.0	159.2
0.74	8.0	8.9	1.15	49.8	51.4	1.56	161.0	163.3
0.75	8.5	9.4	1.16	51.6	53.2	1.57	165.0	167.3
0.76	9.0	10.0	1.17	53.4	55.0	1.58	169.0	171.3
0.77	9.5	10.5	1.18	55.1	56.7	1.59	173.0	175.3
0.78	10.0	11.0	1.19	56.9	58.6	1.6	177.0	179.3
0.79	10.6	11.6	1.2	58.7	60.4	1.61	181.0	183.3
0.8	11.2	12.2	1.21	60.7	62.4	1.62	185.0	187.4
0.81	11.8	12.8	1.22	62.8	64.6	1.63	190.0	192.4
0.82	12.5	13.5	1.23	64.6	66.3	1.64	194.0	196.4
0.83	13.2	14.3	1.24	66.9	68.6	1.65	198.0	200.4
0.84	13.8	14.9	1.25	68.9	70.7	1.66	203.0	205.4
0.85	14.5	15.6	1.26	71.2	73.0	1.67	208.0	210.4
0.86	15.2	16.3	1.27	73.5	75.3	1.68	212.0	214.5
0.87	16.0	17.1	1.28	75.7	77.5	1.69	217.0	219.5
0.88	16.8	17.9	1.29	77.9	79.7	1.7	222.0	224.5
0.89	17.6	18.8	1.3	80.2	82.0	1.71	227.0	229.5
0.9	18.4	19.6	1.31	82.7	84.6	1.72	232.0	234.5
0.91	19.0	20.2	1.32	85.2	87.1	1.73	237.0	239.5
0.92	20.1	21.3	1.33	87.7	89.6	1.74	242.0	244.6
0.93	21.0	22.2	1.34	90.3	92.2	1.75	247.0	249.6
0.94	22.0	23.2	1.35	92.8	94.7	1.76	252.0	254.6
0.95	23.0	24.3	1.36	95.6	97.5	1.77	258.0	260.6
0.96	24.0	25.3	1.37	98.3	100.3	1.78	263.0	265.6
0.97	25.1	26.4	1.38	101.0	103.0	1.79	269.0	271.6
0.98	26.2	27.5	1.39	104.0	106.0	1.8	274.0	276.7
0.99	27.3	28.6	1.4	107.0	109.0	1.81	280.0	282.7
1	28.4	29.7	1.41	110.0	112.0	1.82	286.0	288.7
1.01	29.6	31.0	1.42	113.0	115.0	1.83	291.0	293.7
1.02	30.8	32.2	1.43	116.0	118.1	1.84	297.0	299.7
1.03	32.1	33.5	1.44	119.0	121.1	1.85	303.0	305.7
1.04	33.3	34.7	1.45	122.0	124.1	1.86	309.0	311.8
1.05	34.6	36.0	1.46	125.0	127.1	1.87	316.0	318.8
1.06	36.0	37.4	1.47	129.0	131.1	1.88	322.0	324.8
1.07	37.4	38.9	1.48	132.0	134.1	1.89	329.0	331.8

1.24
+ .05
1.29 = DEC 79.7 CFS
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RAVENSCROFT MALAD RIVER HYDRO					
EVALUATION OF DISCHARGE RATING CURVE					
MALAD RIVER BELOW POWER DIVERSION				C.E. BROCKWAY 8/6/91	
DATE	GAGE	Q	Q	by	
	FT	CFS	CFS		
?	1.53	155		B.L.M.	
4/29/87	1.37	98.3		C.A. Thomas and V. Ravenscroft	
10/10/87	0.78	9.87		C.A. Thomas and V. Ravenscroft	
10/10/87	0.18	0		Est. by C.A. Thomas	
6/29/91	1.265		83.37	C.E. Brockway	
6/29/91	NA		1.78	Bypass Channel by C.E. Brockway	

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IDAHO FISH & GAME
600 South Walnut
P.O. Box 25
Boise, ID 83707-0025

December 23, 1992

Ms. Lois D. Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street, N.E.
Washington, D.C. 20426

Re: Ravenscroft Ranch Project
FERC No. 4055
Malad River, Idaho

Dear Ms. Cashell:

On February 1, 1988, the Idaho Department of Fish and Game (IDFG) submitted to the FERC revised terms and conditions for the Ravenscroft Ranch Hydro Project on the Malad River, Idaho, FERC No. 4055. The IDFG had submitted the revised terms and conditions based on the request by Mr. Vernon Ravenscroft to upgrade the project with a larger capacity turbine. Mr. Ravenscroft has informed IDFG personnel that he has not obtained needed financing for the project upgrade and, therefore, will not pursue the upgrade at this time. Therefore, the IDFG requests that the terms and conditions established for FERC No. 4055 on December 9, 1981 remain in effect until Mr. Ravenscroft can pursue the upgrade.

If you or your staff should have questions or concerns regarding the above comments, please contact Mr. Will Reid at 600 South Walnut, P.O. Box 25, Boise, Idaho 83707 or telephone (208) 334-2598.

Sincerely,

Cal Groen

Cal Groen, Chief
Natural Resources Policy Bureau

CG:WR:tlv

cc: Region 4
USFWS (Lobdell)
Idaho Parks and Recreation (Lucachick)
U.S. Bureau of Land Management (Shoshone)
Idaho Department of Water Resources

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Cecil D. Andrus / Governor
Jerry M. Conley / Director

Equal Opportunity Employer

Working for wildlife - since 1938

TO: RAVENSCROFT HYDROPOWER FILE

FROM: NORM YOUNG NCY

RE: REVIEW OF RAVENSCROFT RESPONSE TO FERC

DATE: DECEMBER 3, 1992

After reviewing the part of Ravenscroft's response attached to his November 20, 1992 letter, I advised him in a phone conversation on December 2, 1992 that I did not have a problem with the discussion of state water law requirements. I further advised him that IDWR would not be taking an active role in this matter unless a specific ruling by the FERC failed to adequately recognize the prior downstream irrigation rights and IDWR's role in supervising distribution of water to them.

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Consulting Associates, Incorporated

BOISE OFFICE —
VERNON RAVENSCROFT
HELEN CHENOWETH

PHONE (208) 345-2670
1843 BROADWAY, SUITE 102
BOISE, IDAHO 83706

November 20, 1992

RECEIVED
NOV 2 3 1992
Department of Water Resources

Norm Young
Idaho Dept. of Water Resources
Statehouse Mail
Boise, Idaho 83720

Dear Norm:

As follow-up to our phone conversation of 11/18/92 I am enclosing those items from my response to FERC (Complaint against Ravenscroft hydro project 4055) which made reference to water law, water management or the current negotiations as between your department, BLM and the project. I did not enclose the negotiation exhibits because you already have copies of those documents in your file.

Will you please review the enclosed response material. I would appreciate any thoughts as to corrections or changes that might be desirable in an addendum to the initial response which we mailed on November 18th.

Sincerest Thanks,

Vernon Ravenscroft

Vernon Ravenscroft

Enclosures: Pages 7-9, 11-13 & 20-22
Exhibits D,E, and F.

cc: Clive Strong, Attorney Generals Office, Boise.

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PETITION: RAVENSCROFT RESPECTFULLY PETITIONS THAT THE COMMISSION DISMISS THE PROPOSED PENALTY AGAINST PROJECT 4055 FOR ANY ONE OR COMBINATION OF THE FOLLOWING REASONS:

I

THE PROPOSED PENALTY, WITHOUT REGARD FOR STATE LAW, CAN ONLY AGGRAVATE AND RENDER MORE ACUTE THE CONFLICT OF JURISDICTION AS BETWEEN FERC-BLM AND THE LOCAL WATERMASTER, WHO IN TURN REPRESENTS THE IDAHO STATE WATER RESOURCES DEPARTMENT. State water law requires protection as to the stability and quantity of water for delivery to senior downstream waterusers. Neither the State water authorities or the holders of the senior downstream irrigation rights were consulted when the BLM-FERC bypass stipulations governing project 4055 were being formulated.

When the plant is generating, the downstream users have no problem. The tailwater more than provides their decreed deliveries. When the plant abruptly stops there can be a lag time of up to several hours before the full volume of the return flows finally reach the downstream irrigators. This circumstance was first called to the attention of FERC by letter from Ravenscroft dated 3/27/87. (Exhibit C)

Two affidavits (Exhibits D and E) supplied by the immediate past watermaster and the present watermaster are self-explanatory. Since its first operation, the project has prompted complaints from

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the downstream water users. These complaints have been called to the attention of the project owner and operators. On one or more occasions the project has been warned that a stable minimum downstream flow must be maintained or the project could face closure.

The code references and the legal interpretations of the state law are included in an advisory legal opinion attached as Exhibit F.

II

Without procedural changes, the present stipulation governing the bypass flow at project 4055 is unworkable because of flow volatility. This volatility of the flow is demonstrated by Exhibit G, which is a daily ~~combination~~ summary of the minimum, maximum and median flows, provided by the U.S.G.S. (Station 13152500 is situated approximately three-quarters of a mile upstream above the project 4055 diversion).* For example, on 10/3/91 the minimum flow was 160 c.f.s. at 18:30. The maximum flow at 20:30 was 260 c.f.s. or a shift of 163% in two hours. On the previous day (10/2) the total shift was 121% and the next day 140%. On 5/18/92 the maximum flow was 140 c.f.s. (08:00) and on the same day the minimum flow was 41 c.f.s. (23:00), a decrease of 341% in 15 hours. On 4/17/92 the minimum flow was 168 c.f.s. (05:21); the next day (11:53) the maximum flow was up to 467 c.f.s., an increase of 278% in

*Exhibit G gives the maximum, minimum and mean flow for water year 1992 as provided by the Boise office of USGS. Project 4055 has on file the record for water years 1986 through 1992.

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approximately 30 hours. In almost any year the flow will, on occasion, be at or near zero (0) and on 12/22/64 the highest flow of record was 8,860 c.f.s. The majority of this volatility is man caused and unpredictable.

The impact of these extremes was never considered in the negotiations which established the bypass stipulations for Project 4055.

Professional Engineer Carl Myers of Boise, Idaho is immediately familiar with Project 4055. He has provided a professional opinion (Exhibit H) which makes two conclusions:

a. "Monitoring the bypass flows and manually adjusting the bifurcation of available water seems to me to be the most workable and logical operating plan."

b. "Increasing the pondage now available at the headworks would help stabilize bypass flows."

As mentioned in the general introductory portion of this response the project is monitored twice each day. This extra monitoring each day is dictated by the volatile flow pattern. Mechanically the project could be safety operated with one such visit each day. The plant is operated under both computer controls and a telephone reporting system which calls the operator at any emergency shut down.

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IV

The alleged violations are based upon arbitrary conclusions as well as misinterpretation of data. The project has never intentionally been out-of-compliance. In those instances where corrective action was indicated, that action has been promptly taken.

The complaint arbitrarily accepts the reports of field inspectors without any disclosure as to the identity, experience or qualifications of those inspectors. In 1992 the automatic self-recording gage proves conclusively that serious error repeatedly occurred on the part of the field inspectors.

The complaint also ignores the twice daily plant operation diary records which record specific measurements that indicate compliance or in the alternative indicate that prompt remedial action was

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taken when river flow suddenly vacillated. Those written diary entries were faithfully made on the spot at the time of occurrence.

The alleged violations for 1988 and 1989 are described in the complaint as follows:

> "On November 9, 1989, Ravenscroft provided the Commission with a "Daily Production vs. Bypass Summary" for 1988 and 1989. This report summarizes on a daily basis the total flow of the Malad River based on a United States Geological Survey gage located approximately three-quarters of a mile upstream from the project. In addition, Mr. Ravenscroft handwrote on these reports the daily flow diverted for project operation and the flow maintained in the bypassed reach of the Malad River. Based on Mr. Ravenscroft's admission, the project failed to maintain the minimum flow on 33 days from February 1988 to September 1989."

The complaint errs in terming Ravenscrofts notes (written on the margin of the diary entries) which compared consumption vs. inflow to be admissions of noncompliance. Those notes were provided as secondary evidence to substantiate the conclusion made in the letter of transmittal to FERC (Dec. 5, 1989) that the re-regulating capacity of the ponds was more than adequate to supply the indicated consumption plus the stipulated bypass volume. The complaint has arbitrarily ignored the demonstrated re-regulating capacity of the ponds. The complaint has erroneously compiled a list of alleged violations without regard for that known re-regulating capacity. As stated previously, the water delivery system contains over 53 surface acres. With a two foot operating range, this delivery system contains 106 acre feet

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Reduced to simplistic terms the calculations made on the margins of the diary copies were a matter of balancing the daily water bank account. On 2/13/88 (the first allegation) the bank account started at 106 acre ft., the deposit was 8 acre ft. (1 CFS = approximately 2 acre ft.) and the draw was 10 acre feet. There was still a deposit of 104 acre ft. in the account and not an overdraft as the complaint alleges.

The following table displays the inadequacy of a theoretical calculation which fails to take into consideration the re-regulating ability of the impounded water. For example, one (1) cfs overdraft for one day will decrease the pond level by less than 1/2 inch. An examination of the table will prove that eleven (11) or one third (1/3) of the allegations (1988 & 89) would involve a pond adjustment of less that one (1) inch. Twenty-three (23) allegations or 70% would involve a drop of less than three (3) inches. All allegations are well within the capacity of the water reserve held in the ponds.

1988 Alleged Violations

Date	Min. Flow	Calculated Flow	Difference	Equivalent Pond Drawdown
2/13*	5	4	1	.45 Inch
2/23	5	3	2	.90 "
2/28	5	3	2	.90 "
3/3	5	1	4	1.80 "
4/23*	80	73	7	3.17 "

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The wetland values of the project are capable of expansion. Any penalty assessed against the project can only delay or negate the ability of the project to achieve these improvements. Ravenscroft has already proposed sale of the wetlands area to Ducks Unlimited and it is anticipated that a similar offering will be made to the North Side Canal Company. That irrigation company has just announced a program to improve the quality of waste water before it leaves the confines of the irrigation system.

This wetland value was partially described in the report to FERC (12/5/89). That report gave considerable detail as to the fishery (pages 5 and 6). The report made a passing reference to water quality. Since that report, two specific measurements have proven that the median summer water temperature is cooled by the ponds. One analysis indicated a 30% reduction in turbidity and the low water in 1992 exposed significant sediment deposits throughout the entire ponding area.

VI

Encouraging progress has been made in regard to standardized remedial procedures which would govern the administration of stipulations for project 4055. In June of this year (1992) the ongoing pressures of the jurisdictional conflict combined with the drought driven water management problems prompted Ravenscroft to organize a joint project inspection by the BLM and the Idaho State

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Water Resources Department. That meeting was attended by Assistant State IDWR Director Norman Young and by Mr. Robert Cordell, Bennett Hill Resource area manager from the BLM.

Once representatives of both governing agencies were on the project, at the same time, there has been a far better understanding of each agencies concern. Cooperation with the project has been provided by both agencies. The limitations and conflicts of the present stipulations have been acknowledged. Steady and constructive progress has been made toward the development of procedural amendments to those stipulations. The chronology concerning this work follows:

a. Field meeting 6/19/92.
b. Report sent to IDWR-BLM 6/30/92. (Exhibit K)
c. Response IDWR 7/21/92. (Exhibit L)
d. Draft amendments submitted 7/27/92. (Exhibit M)
e. Response IDWR 8/31/92. (Exhibit N)
f. Meeting with Robert Cordell and staff, Shoshone 9/17/92.
g. Second Draft amendments 9/23/92. (Exhibit O)
h. BLM response 10/26/92. (Exhibit P)
i. Project response to BLM 10/29/92. (Exhibit Q)

The exhibits speak for themselves. We are near a constructive workable agreement which will govern the administration of the project stipulations. That agreement should satisfy the concerns

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of the IDWR, the downstream irrigators, and the BLM. As indicated in Exhibit Q, the proposed procedures will be coordinated with Idaho Fish and Game and U.S. Fish and Wildlife Service before they are formally presented to FERC.

As owner and manager of Project # 4055 I respectfully repeat the petition stated above. There are several sound reasons why the proposed penalty should be dismissed. A penalty at this time can only be counter productive to the ongoing marginal operation of the drought plagued project; to the improvement of and additions to the significant new wetlands which would benefit both the project and several public interests (fishery, migratory waterfowl, water quality and bypass stability). Such a penalty would provide no solution to the conflict of jurisdiction nor to the unworkable conditions caused by the extreme flow volatility. Solutions can result from the advanced negotiations as between the IDWR, the BLM and the project. The alleged violations are inaccurate and do not stand the scrutiny of factual examination.

RESPONSIVE CORRECTIONS TO AND/OR SUPPLEMENTATION TO THE COMPLAINT

Page 1, item g, paragraph 1 - For reasons stated in the petition above item g, paragraph 1 is categorically denied.

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EXHIBIT D

STATE OF IDAHO)
) ss
County of Lincoln)

AFFIDAVIT OF
REID J. NEWBY

REID J. NEWBY, being first duly sworn upon oath does hereby say as follows:

1. Affiant states his name is Reid J. Newby. He served as the Big Wood Watermaster (District 37 and 37M) from the time the Ravenscroft Hydro Project was first activated in May of 1984 until February of 1991.

2. As watermaster it was his duty to supervise all water diversions taken from the Wood River system including the Malad River.

3. During the seven years in which he supervised the Ravenscroft hydro diversion there were re-occurring complaints from the downstream senior irrigation water right holders alleging that the Ravenscroft project was causing fluctuations and/or water loss to their irrigation flow. Ravenscroft was made aware of these complaints and on one or more occasions Ravenscroft was warned that state law provides authority for closure of the project if the interruptions of water delivery to the Senior downstream water rights were not remedied.

4. Further affiant saith not.

DATED this 10 day of November, 1992.

Reid J. Newby
Watermaster (Retired) District 37-37M

DEC 05 1994

SUBSCRIBED AND SWORN to before me on this 10 day of November, 1992.

SEAL

Brenda L Davidson
Notary Public
Residing in Shoshone, ID
My Commission expires:
6-27-95

DEC 05 1994

EXHIBIT E

RECEIVED NOV 0 4 1992

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

WATER DISTRICT NO. 37 & 37 M
P.O. Box T
Shoshone, Idaho 83352
(208) 886-2451

LEE R. PETERSON
Watermaster

November 2, 1992

To Whom It May Concern:

RE: Ravenscroft Malad River Power Plant, Southwest of Gooding.

During the two years that I have been Watermaster for Districts 37-37M I have heard complaints regarding the water fluctuations on the river below the power plant, causing problems for decreed water right users. I have had numerous visitations with Mr. Vern Ravenscroft, regarding these complaints and possible means to resolve this fluctuation problem.

The Ravenscroft Power Plant has two discharge pipes, with gate valves, which will provide (during high water) approximately 20 CFS of water to flow below his plant when water is not being discharged through a generating unit. During these past two years Mr. Ravenscroft has been very cooperative to open these valves whenever the river system was low or whenever I called him needing water for the waterusers below his power plant.

If I can be of further service please feel free to call.

Sincerely,

Lee R Peterson
Watermaster

Dated this 2nd day of November, 1992.

Notary

DEC 0 5 1994

EXHIBIT F

JOHN L. RUNFT
ATTORNEY AT LAW
1020 MAIN STREET, SUITE 440
BOISE, IDAHO 83702

Phone:
(208) 336-9813

Fax:
(208) 336-0317

November 18, 1992

Mr. Vernon Ravenscroft – 345-2670
1843 Broadway, Suite 102
Boise, ID 83706

RE: Request for legal summary opinion concerning priority of water appropriations and implications of same.

Dear Mr. Ravenscroft:

In regard to the question of water rights seniority, Idaho law is very specific. Section 42-106 states: "Priority - as between appropriators the first in time is the first in right."

As I understand the circumstance at the Ravenscroft project, you find yourself in a jurisdictional conflict between the irrigation water delivery requirements under Idaho law on one hand and the bypass requirements of the FERC-BLM on the other. Both the FERC and BLM requirements mandate an instantaneous interruption and/or cessation of your operation at any time the bypass flow is out of compliance. Idaho state law administered by the Idaho Department of Water Resources requires that your junior use of water not injure those downstream senior water rights. It is a physical fact that interruption or cessation of your operation causes material diminishment or instability in the delivery of water to the downstream irrigators and could cause injury in tangible and measurable ways. It is also my understanding that the downstream irrigation rights are clearly senior by nearly 100 years as to the date of priority.

DEC 05 1994

Section 42-106 has been interpreted by the courts on numerous occasions. Those interpretations have consistently affirmed the doctrine of "first in time is first in right." There are four cases which speak directly to the circumstance in which you are situated.

Diversion by Subsequent Appropriator.
The first appropriator of water has the first right thereto, and clear and convincing proof must be given to show that such prior appropriator will not be injured or affected by the diversion made by a subsequent appropriator. Silkey v. Tiegs, 54 Idaho 126, 28 P.2d 1037 (1934).

Protection of Right.
Where prior appropriation and right to use of water was established, appropriator was entitled to have sufficient unappropriated waters flow down to his point of diversion to supply his right, and injunction against interference therewith was proper protective relief. Moe v. Harger, 10 Idaho 302, 77 P. 645 (1904).

Recovery of Damages.
Plaintiff, who had prior decreed rights to water was entitled to recover damages from the defendants for loss or damage to plaintiff's crops proximately caused by acts of defendants, which deprived plaintiff of the water decreed to his land, and to the use of which he was entitled. Follett v. Taylor Bros., 77 Idaho 416, 294 P.2d 1088 (1956).

Damages for Wrongful Interference.
Where the water right of the upstream appropriator with a valid permit was junior to that of the downstream appropriator with constitutional water rights, and the former's impoundment of water interfered with the latter's senior entitlement, the upstream appropriator was liable for any damages caused by the wrongful interference. R.T. Nahas co. v. Hulet, 114 Idaho 23, 752 P.2d 625 (Ct. App. 1988).

DEC 05 1994

I am advised that the Ravenscroft project operates by authority of a license exemption granted by the Federal Energy Regulatory Commission (FERC) February 5, 1982. An exemption requires that all property rights be in the ownership of or control of the project owner. One of such acknowledged property rights is the state water appropriation. If FERC requires a state water right as a prerequisite for the issuance of an exemption, then it would seem to follow that FERC must also recognize the requirements of law which govern that right. Although I have not researched this conclusion it seems reasonable under the circumstances. We can certainly research this matter further at your request.

I must also advise you that it would be difficult under Idaho law for your junior hydro power generation right to use state authority of eminent domain to extinguish a senior irrigation appropriation. Our State Constitution establishes a priority of use, which provides that irrigation (in an agricultural area) has a priority second only to domestic consumption. It is also legally significant that the Idaho Constitution provides that the state may "regulate and limit" the use of water for power purposes. Article 15, Paragraph 3 of the Idaho Constitution reads in part:

> **Sec. 3. Water of natural stream -- Right to appropriate -- State's regulatory power -- Priorities.** -- The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses, shall never be denied, except that the state may regulate and limit the use thereof for power purposes. Priority of appropriations shall give the better right as between those using the water; but when the waters of any natural stream are not sufficient for the service of all those desiring the use of the same, those using the

DEC 05 1994

> water for domestic purposes shall (subject to such limitations as may be prescribed by law) have the preference over those claiming for any other purpose; and those using the water for agricultural purposes shall have preference over those using the same for manufacturing purposes.

I trust these clarifications are of assistance. I understand you are currently working with the BLM and Idaho Department of Water Resources on draft modifications of the bypass requirement which will alleviate the above conflict. This course of action is clearly the most sensible under the circumstance and should be pursued to a speedy conclusion.

Sincerely

John L. Runft

John L. Runft

DEC 05 1994

George Austin 0 NW PM
F.I.o

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
400 WEST "F" STREET
P.O. BOX 28
SHOSHONE, IDAHO 83352

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
IDI-17053

October 26, 1992

RECEIVED
OCT 27 1992
Department of Water Resources

Vernon Ravenscroft
1843 Broadway, Suite #102
Boise, ID 83706

Dear Vern:

We are in receipt of your letter dated September 29, 1992. Your letter proposes some general stream flow criteria under which the Malad Small Hydroelectric Generation Project (F.E.R.C No. 4055) would be in compliance.

As you know, we are interested in assuring that the seasonal minimum stream bypass flows stipulated in your Bureau of Land Management Right-of-Way I-17053 are satisfied when adequate stream flows permit. We also recognize that, at times, stream flow volumes are inadequate to meet both bypass flows plus flows for minimum turbine generation. Under this last set of circumstances, your project would not be producing power but may be releasing stored water through relief valves to satisfy senior water right needs.

An amendment to the right-of-way stipulations which pertain to seasonal bypass flows is unnecessary. The existing seasonal bypass flows appear to be achieving the intended objective of maintaining a mature riverine riparian plant community and associated aquatic habitat values. The existing bypass flow stipulations are clear, concise and easily measured. What is needed is a reliable method to determine project compliance with seasonal stream bypass flow stipulations.

The proposed conditions under which your project would be in compliance with the stipulated stream bypass flows are partially acceptable. We do not feel that inspection of the stream flow gages with associated turbine adjustments twice a day, while the project is in operation, is frequent enough to assure compliance with bypass flow stipulations. While the project is producing power, facility inspection and stream bypass flow monitoring needs to be frequent enough to assure the objective of the stipulated bypass flows.

Our recommendation is to base the frequency of project inspections on stream flow records for the last ten years from the U.S. Geological Survey stream gage just upstream from your diversion. Using past recorded daily stream flow measurements to determine monitoring frequency appears to us to be the only way to develop a reliable and defendable monitoring regimen for the project. With the use of this technique, stream flows can be calculated and used to develop a mutually agreed upon confidence level for bypass flow compliance. This method uses historical stream flow records to arrive at a reliable monitoring frequency which is geared to the subject reach of the Malad River.

DEC 05 1994

We would also recommend the installation of an electronic recording device to monitor daily power production periods and production rates. Records from this recording device could be used in conjunction with stream flow monitoring records to help confirm stream bypass flow compliance. I believe we both recognize that the principal cause for non-compliance with stream bypass flow stipulations can be found in project design. Should a simple, reliable and effective stream bypass flow monitoring regimen fail to be developed, we recommend that the project be redesigned to alleviate the existing deficiencies.

We look forward to your comments and suggestions concerning our stream bypass flow conformance recommendations. Should you wish to discuss any of our recommendations please do not hesitate to contact us.

Sincerely,

Robert D. Cordell

Robert D. Cordell
Area Manager
Bennett Hills Resource Area

cc:
IDWR, Boise
FERC, Portland
FERC, Washington, D.C.

DEC 05 1994

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION 37-7857/7865/7922

Vernon F. Ravenscroft) Project No. 4055
Idaho

NOTICE OF PROPOSED PENALTY

(October 13, 1992)

Take notice that the following penalty assessment is proposed, under section 31 of the Federal Power Act (FPA), 16 U.S.C. §823 (1988), and Part 385, subpart O of the Commission's regulations. See Procedures for the Assessment of Civil Penalties under section 31 of the Federal Power Act, 3 Fed. Reg. 32,035 (1988), II FERC Statutes & Regulations ¶ 29,021, 18 C.F.R. §385.1501-.1511.

a. Project No. : 4055

b. Exemptee : Vernon F. Ravenscroft

c. Location : Malad River in Gooding County, Idaho

d. Name of Project : Ravenscroft Ranch Project

e. Exemptee Contact : Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, ID 83706
(208) 345-2670

f. FERC Contact : Ms. Regina Saizan
Division of Project Compliance and Administration
Phone: (202) 219-2673

g. The Violations: Vernon F. Ravenscroft, exemptee for the Ravenscroft Ranch Project (Ravenscroft), No. 4055, violated standard article 2 of its exemption, 18 C.F.R. § 4.106(b) (1991), by failing to maintain the minimum streamflow. From February 1988 to September 1989, Ravenscroft violated the exemption's minimum flow requirements on at least 33 occasions. Three more days of known violation occurred during 1991 and twenty-four days of known violation occurred in 1992. 1/

1/ Appendix A is a chart that lists each day that Ravenscroft failed to meet the minimum flow requirement.

Ravenscroft also violated a Compliance Order issued December 12, 1991. Specifically, Ravenscroft failed to meet deadlines for: (1) filing a plan and schedule to install a minimum flow gaging system in the project's bypassed reach; and, (2) installing the system. Pursuant to section 31 of the Federal Power Act (FPA), 16 U.S.C. § 823b (1988), the Commission is issuing a Notice of Proposed Penalty for $18,000.

h. Material Facts on Which the Violation is Based: Ravenscroft is located on the Malad River in Gooding County, Idaho. On February 5, 1982, the Commission granted Ravenscroft an exemption from licensing. 2/ Among the terms and conditions of the exemption, the Idaho Department of Fish and Game (IDFG), on December 9, 1981, requested that Ravenscroft maintain a minimum bypass streamflow of 5 cubic feet per second (cfs) from July through mid-April, and 80 cfs for the remainder of the year. Standard article 2 of the exemption requires Ravenscroft to comply with the terms and conditions set by IDFG. 3/ In 1991, the project generated 1,602,796 kWh with gross revenues of $192,536. The project reservoir's surface area is approximately 30 acres with a storage volume of approximately 60 acre-feet.

On November 9, 1989, Ravenscroft provided the Commission with a "Daily Production vs Bypass Summary" for 1988 and 1989. This report summarizes on a daily basis the total flow of the Malad River based on a United States Geological Survey gage located approximately three-quarters of a mile upstream from the project. In addition, Mr. Ravenscroft handwrote on these reports the daily flow diverted for project operation and the flow maintained in the bypassed reach of the Malad River. Based on Mr. Ravenscroft's admission, the project failed to maintain the minimum flow on 33 days from February 1988 to September 1989.

By letters dated May 23, and June 20, 1991, the Bureau of Land Management (BLM) notified the Commission that during field compliance checks on May 22, June 10 and 19, 1991, that staff gage readings showed flows of 38.8 cfs, 62.8 cfs and 66.9 cfs, respectively, which were all below the required minimum stream flow of 80 cfs during project operation. 4/ The BLM further

2/ 18 FERC ¶ 62,161 (1982).

3/ Standard article 2 requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. 18 C.F.R. § 4.106(b) (1991).

4/ A staff gage is a graduated scale that measures stream elevation.

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OCT 19 1992
Department of Water Resources

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Vernon F. Ravenscroft) Project No. 4055
Idaho

NOTICE OF PROPOSED PENALTY

(October 13, 1992)

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a. Project No. : 4055

b. Exemptee : Vernon F. Ravenscroft

c. Location : Malad River in Gooding County, Idaho

d. Name of Project : Ravenscroft Ranch Project

e. Exemptee Contact : Mr. Vernon F. Ravenscroft
Consulting Associates, Inc.
1843 Broadway, Suite 102
Boise, ID 83706
(208) 345-2670

f. FERC Contact : Ms. Regina Saizan
Division of Project Compliance and Administration
Phone: (202) 219-2673

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2/ 18 FERC ¶ 62,161 (1982).

3/ Standard article 2 requires compliance with any terms and conditions that Federal or State fish and wildlife agencies have determined appropriate to prevent loss of, or damage to, fish and wildlife resources. 18 C.F.R. § 4.106(b) (1991).

4/ A staff gage is a graduated scale that measures stream elevation.

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Department of Water Resources

Ravenscroft, however, failed to notify the Commission of its decision to replace the gage described in its plan and schedule.

According to USGS flow data for the month of May 1992, Ravenscroft violated the minimum flow requirement of his exemption an additional 23 days; May 1, 2, 4-6, 10, 12-20, and 22-29.

i. Proposed Penalty: The Commission may assess civil penalties against exemptees under section 31(c) of the FPA, 16 U.S.C. § 823b(c) (1988), and Rule 1502(b) of the Commission's regulations, 18 C.F.R. § 385.1502(b) (1991). Section 31(c) of the FPA requires that the Commission consider two criteria for the assessment of civil penalties: (1) the nature and seriousness of the violations; and (2) the violator's efforts to remedy its violations in a timely manner. In Rule 1505, 18 C.F.R. § 385.1505 (1991), the Commission identified factors it will consider to aid its analysis of these two criteria. Applying these factors, and taking into consideration the size of the project (693 kW capacity) and the revenues produced, 10/ the Commission proposes a civil penalty of $18,000 for the violation as explained below:

(1) Whether the person had actual knowledge or constructive knowledge of the violation - The exemptee had actual knowledge of the violations. Ravenscroft's exemption established minimum flows and the operator was aware of the continuing responsibility to maintain the required minimum flows in the bypassed reach of the Malad River. In an August 6, 1985 letter, the IDFG warned Ravenscroft of minimum flow violations observed during inspections of June 12, and July 17, 1985. In a March 27, 1987 letter, the IDFG again warned Ravenscroft that it must comply with the minimum flow requirements of its exemption. During an April 21, 1988 telephone conversation, the PRO also discussed the exemption's minimum flow requirement with Ravenscroft.

DPCA reminded Ravenscroft of the minimum flow requirements in a letter dated July 17, 1991 and in a Compliance Order. Ravenscroft had actual knowledge that failure to meet deadlines in the Compliance Order violated it.

(2) Whether the person has a history of previous violations - The Commission has not previously assessed any civil penalties against Ravenscroft.

10/ Ravenscroft's annual generation in 1989, 1990 and 1991 was 2,636,533 kWh, 2,633,526 kWh, and 1,602,796 kWh, respectively. The project had gross revenues in 1989, 1990, and 1991, of $216,312, $216,243, and $192,536, respectively.

(3) Whether the violation caused loss of life or injury to persons - There are no reports that the violation caused loss of life or injury to persons.

(4) Whether economic benefits were derived because of the violation - It is not known whether Ravenscroft derived economic benefits from its failure to comply with the exemption's minimum flow requirement. It is possible that Ravenscroft slightly increased generation from stored flows.

Staff cannot estimate the economic benefit from Ravenscroft's delay in installing the gaging equipment.

(5) Whether the violation caused damage to property or the environment - There are no reports that the violations caused damage to property or the environment.

(6) Whether the violation endangered persons, property, or the environment - Ravenscroft did not endanger persons or property. However, Ravenscroft's failure to adequately maintain the required minimum flows endangers the riparian habitat in the bypassed reach of the Malad River. The spring flows of the Malad River support various plant species including cottonseed, willow, sedges, and rushes in this otherwise desert habitat. Other wildlife species depend on this vegetation for forage. Without acceptable gaging equipment, neither Ravenscroft nor the Commission could monitor the streamflow in the bypassed reach and Ravenscroft did not have adequate data to guide operations.

(7) Whether there were timely, untimely, or no remedial efforts - There were untimely remedial efforts. The minimum flow violations occurred over a 5 year period. Ravenscroft, however, made no effort to install gaging equipment until DPCA issued the Compliance Order.

Ravenscroft filed the plan and schedule for installing a gaging system on February 27, 1992, 17 days after the deadline set forth in the Compliance Order. Ravenscroft installed a functional gaging system on April 6, 1992, 26 days after the deadline set forth in the Compliance Order.

(8) Whether there are any other pertinent considerations - There are no other pertinent considerations.

Under section 31 of the FPA and section 385.1506(b)(3)(ii) of the Commission's regulations, a proceeding will commence pursuant to section 385.1508 with respect to the assessment of penalties. Ravenscroft may file, within 30 days of receipt of this notice, an answer setting forth factual or legal reasons why the proposed assessment order should not be issued, should be reduced in amount, or should otherwise be modified.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

P-3?-7857/7865/7922

Vernon F. Ravenscroft

Project No. 4055-011
Idaho

ORDER GRANTING EXTENSION OF TIME

(Issued October 7, 1992)

On February 5, 1982, the Commission issued an exemption from licensing to Vernon F. Ravenscroft (exemptee) for the Ravenscroft Ranch Project, FERC No. 4055, located on the Malad River in Gooding County, Idaho. 1/

On August 15, 1988, the Commission issued an order amending the exemption. The amendment allows for the installation of a fourth turbine/generator unit to increase the project's installed capacity from 693 to 1,063 kW. 2/ The amendment requires the exemptee to complete modifications to the project by August 14, 1992.

On August 13, 1992, the exemptee requested an 18-month extension of time to complete reconstruction of the project. The exemptee contends that circumstances beyond his control make him unable to complete modifications to the project by August 14, 1992. The exemptee claims that the six year drought in Southern Idaho has limited its supplemental construction budget and that Bonneville Pacific Corporation (Bonneville), who has a minor equity in the project, is involved in Chapter 11 Bankruptcy and any equity support from Bonneville requires clarification and approval from the Bankruptcy Court.

Further, the exemptee's request lists ten modifications to the project and the percent that each is complete. We believe five of these modifications aren't relative to the August 13, 1992, amendment. 3/ Moreover, the exemptee lists the raising of the spillway as a pending modification. The exemptee is advised that the spillway should not be raised without authorization from the Commission. If the exemptee wishes to raise the spillway he must file with the Commission an

1/ 18 FERC ¶ 62,161.

2/ 44 FERC ¶ 62,140.

3/ The five modifications listed in the extension request that we believe aren't relative to the August 13, 1992, amendment are dam repair, canal cleaning, raising the spillway, the rebuilding of the water lubricated turbines, and the partially paid for new generator which is on site.

DC-A-4

DEC 0 5 1994

application requesting an amendment of the exemption order.

Of the five modifications that are related, only three need to be completed. The powerhouse and the installation of the electrical controls are both 65 percent complete and the turbine/generator has to be installed.

In accordance with Rule 2008 of the Commission's regulations, the Commission may for good cause shown, extend the time by which any person is required to act under any statue, rule, or order. To properly evaluate an assertion of good cause, it's necessary for the Commission to review carefully the facts surrounding each formal request for extension.

We believe that the above circumstances do not have a direct bearing on the exemptee's ability to complete reconstruction of the project and do not justify granting an 18-month extension of time. We've reviewed the information submitted by the exemptee and we've determined that an 18-month extension of time to complete reconstruction of the project is excessive and unwarranted. However, we believe that since the exemptee is near completion, a 6-month extension of time is a reasonable amount of time for the exemptee to complete the modifications to the project.

The exemptee is reminded that he must implement the revised terms and conditions set forth in Idaho Department of Fish and Game's February 1, 1988, letter when the new turbine/generator is placed in operation.

The Director orders:

(A) The deadline for completing modifications to the Ravenscroft Ranch Project is extended to February 14, 1993.

(B) The exemptee shall, within 30 days from completing the project, notify the Commission in writing of the date that the modifications to the project were completed.

(C) The exemptee shall submit to the Commission documentation that he has implemented the revised terms and conditions set by Idaho Department of Fish and Game. The documentation shall be submitted within 30 days after implementing the revised terms and conditions.

RECEIVED
OCT 15 1992
Department of Water Resources

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

October 6, 1992

Vernon Ravenscroft
Tuttle Route
Bliss, ID 83314

Dear Mr. Ravenscroft:

IDWR has reviewed your draft proposal for amending the BLM minimum bypass flow stipulation. We are pleased to have consideration of state water rights included in the draft stipulation. The draft outlines very specific operating procedures for compliance with the bypass flow requirements. While the procedure addresses appropriate concerns, we question the inclusion of a detailed procedure in the stipulation.

IDWR feels that the language in the stipulation should be more general. The stipulation could be amended to recognize an operational procedure. The details of the procedure can be outlined in a different document. This would allow modification to the operating procedure should it become necessary without having to amend the right-of-way agreement.

The procedure itself appears sound and could be a starting point toward resolving regulation compliance problems at the project.

Sincerely,

NORMAN C. YOUNG
Administrator

NCY:GA

c: Bob Cordell

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DEC 05 1994

VERNON RAVENSCROFT

Telephone 208 837-4802 x 4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 208-345-2670
1843 Broadway, #102
Boise, Idaho 83706

RECEIVED
SEP 2 9 1992
Department of Water Resources

September 23, 1992

JOINT LETTER TO: Robert Cordell, Bureau of Land Management, Shoshone
Norman Young, Idaho Dept. of Water Resources, Boise

Dear Norm and Bob:

Since my joint letter of July 27, 1992 I have received a written response from Mr. Young, and on Thursday, September 17, I met personally with Mr. Cordell and staff at the B.L.M. offices in Shoshone.

It is my judgment that we are nearing a solution for standard administrative procedures which will retain the spirit and biological integrity of the current stipulations and/or any amendments thereto, but will still enable the project to honor the senior downstream irrigation rights and respond in a good faith manner to the flow extremes experienced at this agricultural waste water site.

On a rough draft basis I suggest that the stipulation governing bypass flow be amended to read:

"At any time the project is not generating, the project operator may elect, or the Watermaster may require, that one or both of the relief valves be opened so as to assure a steady minimum downstream flow of 20 c.f.s. or such lesser amount as may be available.

When the project is operating the bypass requirement measured at the mid-project gauge shall be:

a. April 1 through June 30 - 80 c.f.s.

b. July 1 through March 31 - 5 c.f.s. After a contemplated fourth turbine is fully operational this figure shall increase to 20 c.f.s.

Considering the extreme volatility of the flow in this river reach, good faith compliance will be deemed to have been achieved, provided:

a. The plant is monitored at least twice daily (morning and afternoon or evening), and

b. Proper adjustments based upon known and recorded inflow and bypass flows are made at each such inspection.

Proper adjustments shall be defined as:

a. At such times as the plant production is being adjusted upwards, the recorded reading at the designated gauge shall more than equal the required bypass flow plus the increased capacity of any turbine or combination of turbines which the operator chooses to activate. Example: when the project is first considering minimum operation after a shut-down period and the bypass stipulation is 5 c.f.s., then, in that instance, the plant shall not be returned to service until the bypass flow exceeds 40 c.f.s. (35 consumption - 5 minimum bypass).

DEC 05

b. When for any reason the project has gone out of compliance from one monitoring visit to the next, the operator shall turn the project totally off; open valves as necessary to honor senior downstream water rights, and then go to the U.S.G.S. Station 131525000 and determine the actual inflow at that point. After such an inspection, the operator may then reactivate any turbine combination that will satisfy the following equation:

Inflow = (or exceeds) required bypass + 15 c.f.s. safety margin + project consumption.

Example: (current stipulation and minimum turbine) Inflow 55 c.f.s. = Bypass 5 c.f.s. + 15 c.f.s. safety margin + 35 c.f.s. minimum turbine.

A diary recording each monitoring visit: water flows and all good faith adjustments to that flow shall be maintained in an accessible receptacle at the generation site and shall be openly available to the FERC, the BLM, the IDWR and/or their official representatives.

A table listing each intermediate step for items a and b immediately above is attached as an exhibit and by this reference is made a part of this stipulation requirement."

After the fourth turbine is installed, tested, and operational a new exhibit of required flows will be submitted to all parties.

Sincerely,

Vernon Ravenscroft

Attachment

cc: Lee Peterson, Watermaster
F.E.R.C., Portland
F.E.R.C., Washington, D.C.

DEC 0 8

TABLE OF MINIMUM FLOW VALUES TO MEET A GOOD FAITH ADJUSTMENT

FOR BYPASS FLOW REQUIREMENTS

1. Bypass meets or exceeds stipulated amount at designated gauge:

Turbine Combination	Consumption	Gauge & Total 4/1 - 6/30	Gauge & Total 7/1 - 3/31
#1	35	80/115	5/40
#2	65	80/145	5/70
#1 & #2	100	80/180	5/105
#3 Low	80	80/160	5/85
#3 Med.	105	80/185	5/110
#3 High	130	80/210	5/135
#1 & #3 Low	115	80/195	5/120
#1 & #3 Med.	140	80/220	5/145
#1 & #3 High	165	80/245	5/170
#2 & #3 Low	145	80/225	5/150
#2 & #3 Med.	170	80/250	5/175
#2 & #3 High	195	80/275	5/195
All three; full production	230	80/310	5/235

2. Project in recovery mode when determined to be below bypass stipulation.

Turbine Combination	Consumption	Inflow 4/1-6/30	Inflow 7/1-3/31
#1	35	130	55
#2	65	160	85
#1 & #2	100	195	120
#3 Low	80	175	100
#3 Med.	105	200	125
#3 High	130	225	150
#1 & #3 Low	115	210	135
#1 & #3 Med.	140	235	160
#1 & #3 High	165	260	185
#2 & #3 Low	145	240	165
#2 & #3 Med.	170	265	190
#2 & #3 High	195	290	210
All three	230	325	250

Explanation: The pond and canal system does provide a re-regulating cushion. This works to the benefit of the bypass flow as well as to the benefit of the project's generation ability. This influence need be recognized at any given inspection.

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
Phone: (208) 327-7900 FAX: (208) 327-7866

CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

August 31, 1992

Vernon Ravenscroft
Tuttle Route
Bliss, ID 83314

Dear Mr. Ravenscroft:

IDWR has reviewed your assessment and proposals outlined in the letter dated July 27, 1992.

Your summary assessment of the combined positions appears accurate. Proposal number one requires some comment. In the event that manual adjustments of the bypass flow valves are insufficient it may be necessary to automate both valves for a total capacity which will satisfy the water rights of the downstream irrigators.

These proposals will help minimize downstream surges and maintain in stream flows. However, adequate control of the water is necessary for the proposals to be effective. Therefore control improvements in the diversion structure (such as an additional flow tube) are a necessary component of a workable solution.

The steps you have outlined appear to be moving toward a constructive solution to the flow compliance problems facing Hydro project 4055.

Sincerely

NORMAN A. YOUNG
Administrator.

DEC 05 1994

VERNON RAVENSCROFT
Telephone 208 837-4802 4936
TUTTLE ROUTE — BLISS, IDAHO
83314

Boise Ph: 208-345-2670
1843 Broadway, #102
Boise, Idaho 83706

RECEIVED
JUL 2 9 1992
Department of Water Resources

July 27, 1992

JOINT LETTER TO: Norman Young, Idaho Dept. Water Resources, Boise
Robert Cordell, Bureau of Land Management, Shoshone

Dear Norm and Bob:

This joint letter is provided by way of a progress report of my correspondence and personal conferences with each of you. I believe the following basic tenets summarize our combined positions as of this date:

1. It is mutually acknowledged that the Ravenscroft project is situated near the mouth of the Wood River Drainage. At this point on the river system a major source of water, particularly in a drought year, is irrigators' waste water. The flow conditions are extreme and eratic and do not follow normal natural flow patterns.
2. There are senior (100-year) downstream consumptive water rights which require approximately 16 c.f.s. of water delivery to their point of diversion. That delivery needs to be stable and uninterrupted to the maximum degree possible.
3. It is the acknowledged responsibility of the Idaho Department of Water Resources to manage all water rights granted within the State of Idaho and to particularly protect the rights of senior appropriators.
4. The Ravenscroft water rights are junior to and must not interfere with the proper delivery of water to the senior appropriators.
5. B.L.M. has a valid interest and a responsibility to maintain the natural riparian habitat along the river banks to the by-pass reach of the river.
6. In order to conduct meaningful compliance checks B.L.M. needs to have an ability to make on-the-spot determinations, not after-the-fact audits.

I propose that the following work plan would satisfy these basic tenets and would provide a more satisfactory procedure for all parties:

1. At any time during the period from April 10th through October 10th that the project is turned off and there is not at least 20 c.f.s. in the by-pass reach of the river then in that instance the project operator shall open one or two by-pass valves at the power house in order to assure a steady downstream delivery of 20 c.f.s. or more water to the downstream senior consumptive water rights. If, after a reasonable trial period, manual adjustment is not found to be satisfactory, then automation will be required for the opening of at least one (10 c.f.s.) valve.
2. At any time in which the generation of the project has been turned off and the project is resuming operation, then in that instance the

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by-pass flow shall have been fully restored and the inflow and/or the pond levels shall have reached a volume of water sufficient to supply both the by-pass and the minimum turbine requirement at the project, the project shall supply both the Watermaster and the B.L.M. a certification as the minimum flow requirement for each turbine installed at the project.

3. At any time in which the flow in the river is found to be declining but the recorded inflow is determined to be more than enough water to provide both the proper B.L.M. by-pass and a lesser project consumption then in this instance the project operator may adjust the project consumption downward to a level which equals:
   a. The required by-pass flow plus
   b. A 15 c.f.s. safety margin, plus
   c. The total flow requirement of any activated turbine or turbines.
4. In order to determine that good faith compliance adjustments are timely made, it will be necessary to:
   a. Obtain for all parties a flow table for U.S.G.S. gauge 13152500.
   b. Obtain access privileges for B.L.M. to gauge 13152500.
   c. Keep a twice daily flow monitoring record on the project in a receptacle accessible at all times to the B.L.M. and to the Watermaster.
   d. Recalibrate the powerhouse gauge currently in place above the tailrace and make a flow table for said gauge available to the B.L.M. and to the Watermaster.

~ needs measurment of inflow & Power Canal -C.A.

I believe our deliberations have progressed to the point that I should now report to the Idaho Department of Fish and Game and to the U.S. Fish and Wildlife Service. Those two agencies were involved in the determination of the original stipulations. We need coordinate with them before any stipulations and/or work plans are submitted to F.E.R.C. I will plan on contacting each agency within the week.

I have not addressed the emergency arrangements whereby pond water was released (at the Watermaster's request) to benefit the downstream irrigators during the prolonged periods of no river flow which were experienced in June of this year. It was a crop-saving action for the benefit of the irrigators. It was a neighborly action which the project was glad to do. It appeals to me that it may be best to care for this type of an emergency on a case by case mutual agreement basis. When the Watermaster determines than an emergency exists he shall be encouraged to coordinate with B.L.M. and then request a release to the benefit of the irrigation rights.

DEC 05 1994

Sincerely,

Vernon Ravenscroft

cc: F.E.R.C. Portland
F.E.R.C., Washington, D.C.

State of Idaho
DEPARTMENT OF WATER RESOURCES
1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720-9000
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CECIL D. ANDRUS
GOVERNOR

R. KEITH HIGGINSON
DIRECTOR

July 21, 1992

Vernon Ravenscroft
Tuttle Route
Bliss, ID 83314

Dear Mr. Ravenscroft:

Thank you for arranging the informative field review of your hydro-power project. The on site discussion with you and Mr. Cordell were most helpful to my understanding of the project. You are accurate in your assessment that IDWR has a responsibility to supervise the distribution of water from the state's streams and rivers to insure that prior water rights are protected. These are real property rights that must be respected under both state and federal laws. Also because of IDWR's responsibility to protect the public interest, we also feel strongly that the instream values must be maintained as your project is operated.

I agree that stringent adherence to operating procedures requiring a complete shutoff of water at the powerhouse whenever bypass flows are not being satisfied can cause injury to downstream water rights. Modification # 1 described in your June 30, 1992 letter will minimize downstream flow fluctuations to reduce or eliminate injury to downstream irrigators. Thus the opening of bypass valves at the turbine house thereby reducing downstream flow surges is an operational procedure we can support. The drawback to this action is that it requires manual operation. If no personnel are on site when the operation goes off line, there is a potential for injury to downstream irrigators to occur. If the manual operation of the bypass valves are ineffective it may prove necessary to install automatic bypass valves.

Modification # 2 suggests an operation procedure that can be useful to the watermaster and downstream irrigators to modulate fluctuations in river flow. However, no water right has been developed to recognize storage or use of stored water for any purpose. Operational procedures must not be allowed to injure any other water right or adversely effect the public's interest in the river flow and stream values.

Modification # 3 which would provide for adjusting production downward must occur prior to the project being out of compliance. This will reduce downstream surges which have the potential to injure downstream irrigators. However, this action cannot be

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viewed as a replacement for adequate control of the water at the diversion pond. If integrated with control improvements in the diversion structure (such as another culvert) this action has the potential to be part of a workable solution.

I hope these comments are of value to you. IDWR will be happy to provide further information on any of these matters if needed.

Sincerely,

NORMAN A. YOUNG
Administrator

NCY:jly

DEC 05 1994

****
*** ACTIVITY REPORT ***
****

TRANSMISSION OK

TX/RX NO.	0829
CONNECTION TEL	6p93452676
CONNECTION ID	
START TIME	07/21 10:06
USAGE TIME	01'18
PAGES	1
RESULT	OK

DEC 05 1994

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RECEIVED
JUL 2 1992
Department of Water Resources

June 30, 1992

For Review by Robert Cordell and Norman Young:

This draft report and proposed operating plan is prepared as follow-up to the field trip conducted on Friday, June 19, 1992. Those participating were Robert Cordell, Bureau of Land Management, Shoshone, Norman Young, Idaho Dept of Water Resources, Boise, and project owner, Vernon Ravenscroft. Watermaster Lee Peterson, Shoshone, made exactly the same field review one day earlier (Thursday, June 18). This was a coordination meeting long overdue because the Watermaster and Idaho Dept. of Water Resources were never involved or consulted in the original studies and negotiations which established the project stipulations in the first instance. The stipulations are both a requirement of the F.E.R.C. exemption and also of the B.L.M. right-of-way permit.

The water flow management at the Ravenscroft project (F.E.R.C.-4055) is difficult. The present stipulations, if rigidly interpreted, are on many occasions not capable of satisfying both the by-pass requirement and the downstream senior water rights (approximately 16 c.f.s. at the irrigators' point of diversion one-half mile downstream from the project tailrace).

Specific examples will demonstrate the problem:

1. July 1-5, 1991. During this period the mean flow deteriorated progressively from 192 c.f.s. on July 1 down to 7.3 c.f.s. on July 5.

2. Oct. 11-15, 1990. Mean flow Oct. 11 - 390 c.f.s.; Oct. 15 - 3.3 c.f.s.

3. May 17-21, 1992. Mean flow 17th - 127 c.f.s.; 18th - 14 c.f.s.; and 21st - 0 c.f.s.

Under these flow conditions project 4055 which has only one (the largest) variable turbine can be in total compliance at an evening monitoring visit on one day and be out of compliance at the morning visit on the following day. It is understood and accepted that when the project is out of compliance, that the project discontinues operation. However, when the project abruptly turns off, the downstream irrigators (100-year senior water rights) lose their flow. Their pumps and siphon tubes lose their prime. This circumstance is not acceptable to I.D.W.R.

The jurisdictional conflict can be substantially eliminated and/or mitigated by three simple operational modifications:

1. Any time the plant is turned off and there is not a sustaining by-pass flow, then one or two drain valves (10 to 20 c.f.s.) shall be opened to maintain a minimum downstream flow to the irrigators.

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2. During emergency periods such as May 21st of this year, when the flow was essentially zero and subject solely to order by the Watermaster, one or two discharge valves (10 to 20 c.f.s.) shall be opened to exhaust water from the storage ponds to the benefit of the irrigators.

3. At such times as the inflow (April to June inclusive) is determined to be at or above 130 c.f.s., but there is also a compliance question, then in that instance the project shall be permitted to adjust production downward, but within a limit which will provide a safety margin of at least 15 c.f.s. over and above the 80 c.f.s. by-pass stipulation. During the period July to March inclusive this standard would be adjusted to a minimum flow of 70 c.f.s. which would again provide a 15 c.f.s. safety margin over and above a 20 c.f.s. by-pass requirement.

These modifications represent compensating accommodations. When the flow is declining, the by-pass flow is enriched by drawing stored water from the ponds. When the flow is rising the full by-pass is slowed by the accumulation in the ponds.

Procedure

The Ravenscroft project is an exemption for which the wildlife management agencies have considerable control over environmental stipulations. If the Idaho Dept. of Fish and Game, the U.S. Fish and Wildlife Service, the Bureau of Land Management, the Idaho Department of Water Resources and the project owner can mutually agree to stipulation amendments and jointly petition for same, F.E.R.C. has in the past routinely accepted such amendments.

Future Study

My biological training prompts me to question the environmental priorities now evident at the project. A popular warm water fishery, duck and goose nesting habitat, significant water quality benefication, and an emerging riparian zone have all evolved around the 50 (approximate) acres of ponds and canals. These values are all expandable.

In this instance I propose additional studies to more fully establish the facts of these new values and the extent of conflict, if any; for instance, a minimum pond level versus a continuous by-pass flow. I have committed to the U.S. Fish and Wildlife Service to obtain minimum and maximum water temperatures. Additional nutrient and sediment tests should also be obtained.

I will contact all parties within a week from the date of this report.

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M E M O R A N D U M

DATE: JUNE 22, 1992

TO: RAVENSCROFT HYDRO FILE

FROM: NORM NC4

RE: LOW FLOW DELIVERY CONCERNS

Bob Cordell (BLM) called today expressing concern that Lee Peterson had asked Ravenscroft to divert the Big Wood flow thru the hydro canal and drying up the bypass reach of the river. I indicated that the bypass should be maintained, and that a transfer would have to be approved to allow the irrigation rights below the hydroproject to divert thru the project.

Lee Peterson and Ravenscroft clarified that the river was not being bypassed thru the project. Rather the river is essentially dry at the gauging station above the project. Peterson had asked Ravenscroft to draft storage in his ponds to aid the irrigators. Peterson was working to reestablish flow in the river. He indicated that Ravenscroft's culverts were open and as much water was being bypassed to the river as was flowing in the river upstream. The clarification satisfied Cordell.

I emphasized to everyone that the pond storage was not allocated for irrigation or bypass flow. Care must be taken not to dry up the ponds and refill must not injure the bypass flow or other rights.

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M E M O R A N D U M

DATE: JUNE 19, 1992

TO: RAVENSCROFT FILE NCY

FROM: NORM YOUNG

RE: FIELD INSPECTION

Vern Ravenscroft, Bob Cordell (BLM) and I met today to tour the hydropower project and discuss Ravenscroft's request to develop an operating plan to meet FERC and BLM bypass flow requirements while allowing downstream water users to be protected.

Ravenscroft explained the need to and problem of providing the flow for prior downstream water rights. These rights require about 16 cfs (decreed) and perhaps 40 cfs (claimed). Ravenscroft's problem occurs when river flows are low and declining or fluctuating. If he finds that the bypass flow (5 cfs after July 1) is not being met while the plant is in operation, he shuts down the turbine(s). Unless he immediately opens a valve (these are manual) at the turbine to keep water flowing in the river below the hydropower plant, the flow to the irrigators will be interrupted. However, opening the valve at the hydroplant means that the restoration of the required bypass flow through the river channel is delayed. Ravenscroft would like some flexibility in the river bypass requirement to allow him to open the valve at the turbine and protect irrigator's rights during these conditions.

I expressed the need for an automatic valve to allow river flows to remain unchanged when the turbine trips off with no one present. Ravenscroft did not disagree with the need for the automatic valve, but indicated finances would not allow it at this time. The reduced generation during the drought years has affected financial return, preventing completion of a fourth generating unit and needed upgrades.

We discussed the need for an additional outlet from the ponds upstream from the diversion to the hydroplant (this one with a screw gate control) to allow additional releases to immediately adjust flows in the river bypass reach. Again Ravenscroft agreed with the need but wanted to wait for improved finances.

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Cordell and Ravenscroft discussed the need to amend the FERC exemption conditions and the BLM easement conditions to effectuate the operating plan. Ravenscroft will initiate this action by drafting a letter to BLM and IDWR with copies to other interested agencies. If agency agreement on an operating plan can be achieved, requests will be made to FERC and BLM to amend the documents.

DEC 05 1994

VERNON RAVENSCROFT

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83314

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Boise, Idaho 83706

RECEIVED
SEP 2 9 1992
Department of Water Resources

September 23, 1992

JOINT LETTER TO: Robert Cordell, Bureau of Land Management, Shoshone
Norman Young, Idaho Dept. of Water Resources, Boise

Dear Norm and Bob:

Since my joint letter of July 27, 1992 I have received a written response from Mr. Young, and on Thursday, September 17, I met personally with Mr. Cordell and staff at the B.L.M. offices in Shoshone.

It is my judgment that we are nearing a solution for standard administrative procedures which will retain the spirit and biological integrity of the current stipulations and/or any amendments thereto, but will still enable the project to honor the senior downstream irrigation rights and respond in a good faith manner to the flow extremes experienced at this agricultural waste water site.

On a rough draft basis I suggest that the stipulation governing bypass flow be amended to read:

"At any time the project is not generating, the project operator may elect, or the Watermaster may require, that one or both of the relief valves be opened so as to assure a steady minimum downstream flow of 20 c.f.s. or such lesser amount as may be available.

When the project is operating the bypass requirement measured at the mid-project gauge shall be:

a. April 1 through June 30 - 80 c.f.s.

b. July 1 through March 31 - 5 c.f.s. After a contemplated fourth turbine is fully operational this figure shall increase to 20 c.f.s.

Considering the extreme volatility of the flow in this river reach, good faith compliance will be deemed to have been achieved, provided:

a. The plant is monitored at least twice daily (morning and afternoon or evening), and

b. Proper adjustments based upon known and recorded inflow and bypass flows are made at each such inspection.

Proper adjustments shall be defined as:

a. At such times as the plant production is being adjusted upwards, the recorded reading at the designated gauge shall more than equal the required bypass flow plus the increased capacity of any turbine or combination of turbines which the operator chooses to activate. Example: when the project is first considering minimum operation after a shut-down period and the bypass stipulation is 5 c.f.s., then, in that instance, the plant shall not be returned to service until the bypass flow exceeds 40 c.f.s. (35 consumption - 5 minimum bypass).

b. When for any reason the project has gone out of compliance from one monitoring visit to the next, the operator shall turn the project totally off; open valves as necessary to honor senior downstream water rights, and then go to the U.S.G.S. Station 131525000 and determine the actual inflow at that point. After such an inspection, the operator may then reactivate any turbine combination that will satisfy the following equation:

Inflow = (or exceeds) required bypass + 15 c.f.s. safety margin + project consumption.

Example: (current stipulation and minimum turbine) Inflow 55 c.f.s. = Bypass 5 c.f.s. + 15 c.f.s. safety margin + 35 c.f.s. minimum turbine.

A diary recording each monitoring visit: water flows and all good faith adjustments to that flow shall be maintained in an accessible receptacle at the generation site and shall be openly available to the FERC, the BLM, the IDWR and/or their official representatives.

A table listing each intermediate step for items a and b immediately above is attached as an exhibit and by this reference is made a part of this stipulation requirement."

After the fourth turbine is installed, tested, and operational a new exhibit of required flows will be submitted to all parties.

Sincerely,

Vernon Ravenscroft

Attachment

cc: Lee Peterson, Watermaster
F.E.R.C., Portland
F.E.R.C., Washington, D.C.

DEC 05 1994

TABLE OF MINIMUM FLOW VALUES TO MEET A GOOD FAITH ADJUSTMENT

FOR BYPASS FLOW REQUIRFMENTS

1. Bypass meets or exceeds stipulated amount at designated gauge:

Turbine Combination	Consumption	Gauge & Total 4/1 - 6/30	Gauge & Total 7/1 - 3/31
#1	35	80/115	5/40
#2	65	80/145	5/70
#1 & #2	100	80/180	5/105
#3 Low	80	80/160	5/85
#3 Med.	105	80/185	5/110
#3 High	130	80/210	5/135
#1 & #3 Low	115	80/195	5/120
#1 & #3 Med.	140	80/220	5/145
#1 & #3 High	165	80/245	5/170
#2 & #3 Low	145	80/225	5/150
#2 & #3 Med.	170	80/250	5/175
#2 & #3 High	195	80/275	5/195
All three; full production	230	80/310	5/235

2. Project in recovery mode when determined to be below bypass stipulation.

Turbine Combination	Consumption	Inflow 4/1-6/30	Inflow 7/1-3/31
#1	35	130	55
#2	65	160	85
#1 & #2	100	195	120
#3 Low	80	175	100
#3 Med.	105	200	125
#3 High	130	225	150
#1 & #3 Low	115	210	135
#1 & #3 Med.	140	235	160
#1 & #3 High	165	260	185
#2 & #3 Low	145	240	165
#2 & #3 Med.	170	265	190
#2 & #3 High	195	290	210
All three	230	325	250

Explanation: The pond and canal system does provide a re-regulating cushion. This works to the benefit of the bypass flow as well as to the benefit of the project's generation ability. This influence need be recognized at any given inspection.

DEC 05 1984

UNITED STATES DEPARTMENT OF INTERIOR
BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
P.O. BOX 2B
Shoshone, ID 83352

RIGHT-OF-WAY I-17053 AMENDED

Section A

1. Pursuant to Title V of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761), there is hereby granted a nonexclusive, nonpossessory amended right-of-way to:

VERNON AND HARRIETT B. RAVENSCROFT
1936 Priest Place
Boise, ID 83706

2. To use the following described public land, subject to terms and conditions set out below:

T. 6 S., R. 14 E., Boise Meridian
Section 29: SE¼NE¼, NE¼SE¼, W½SE¼, SE¼SW¼.

3. The description of the right-of-way facility is a linear water transport canal right-of-way as surveyed and depicted on the map dated February 8, 1984, attached hereto and made a part of file I-17053. The purpose of the right-of-way is to transport water from a river to an electrical power generation plant to generate commercial power for sale.

Terms and Conditions

Section B

1. All stipulations previously agreed to and contained within Exhibit "A", parts 1 and 2 and stipulations dated February 10, 1982 are made a part of this amended right-of-way.

2. Rental: the interim yearly rental fee is $250 and subject to adjustment (43 CFR 2803.1-2); holder agrees to pay the determined rental in a timely manner.

3. Expiration date of this grant is March 4, 2007.

Section C

The effective date of this right-of-way grant is the date of execution by the authorized officer.

The undersigned agree to the terms and conditions of this right-of-way grant:

Vernon Ravenscroft
Vernon Ravenscroft

Sept. 17- 1984
Date

Harriett B. Ravenscroft
Harriett B. Ravenscroft

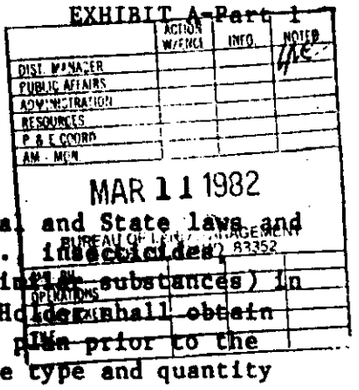
9/17/84
Date

The right-of-way is executed this 18th day of September 1984.

Robert D. Cordell
Robert D. Cordell
Bennett Hills Area Manager

DEC 05 1984

EXHIBIT A-Part 1



GENERAL STIPULATIONS
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY I-17053

1. The Holder shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e. herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The Holder shall obtain from the Authorized Officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; the pest, insect, fungus, etc. to be controlled; the method of application; the location for storage and disposal of containers; and other information that the Authorized Officer may require. The plan should be submitted no later than December 1 of any calendar year that covers the proposed activities for the next fiscal year. Emergency use of pesticides may occur. The use of substances on or near the right-of-way shall be in accordance with the approved plan. A pesticide shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations if the Secretary has imposed limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.

2. Holder shall survey and clearly mark the exterior limits of the right-of-way. All activites directly or indirectly associated with the construction or maintenance of water reservoir and canal system must be conducted within the limits of the right-of-way.

3. There is reserved to the Secretary of the Interior, or his lawful delegate, the right to grant additional rights-of-way or permits for compatible uses on, over, under, or adjacent to the land involved in this grant.

4. This right-of-way may be renewed. If renewed, the right-of-way will be subject to regulations existing at the time of renewal and such other terms and conditions deemed necessary to protect the public interest.

5. This right-of-way is subject to all applicable regulations in 43 CFR Part 2800 which are hereby incorporated in and made a part of this grant.

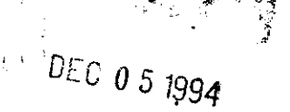
6. There is reserved to the United States a continuing right of access onto the public lands covered by the right-of-way grant, and upon reasonable notice to the Holder, access and entry to any facility constucted on the right-of-way or permit area.

7. The Holder, by accepting this right-of-way grant, agrees and consents to comply with and be bound by the following terms and conditions:

   (a) To the extent practicable, all State and Federal laws applicable to the authorized use and such additional Federal and State laws along with the implementing regulations, that may be enacted and issued during the term of the grant.

   (b) That in the construction, operation, maintenance and termination of the authorized use, there shall be no discrimination against any employee or applicant for employment because of race, creed, color, sex or national origin and all subcontracts shall include an identical provision.

   (c) To rebuild and repair roads, fences, and established trails that may be destroyed or damaged by construction, operation or maintenance of the project and to build and maintain suitable crossings for existing roads and significant trails that intersect the project.



(d) To do everything reasonable within his or her power, both independently and upon request of the Authorized Officer, to prevent and suppress fires on or in the immediate vicinity of the right-of-way or permit area. This includes making available such construction and maintenance forces as may be reasonably obtained for the suppression of fires.

8. This grant is subject to periodic review at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.

I concur and agree to abide by these general stipulations.

March 8-1982
Date

Vernon E. Ravenscroft
Vernon E. Ravenscroft

DEC 05 1994

STIPULATIONS

1. A $5,000 Performance Bond shall be posted with the BLM prior to any on-the-ground activity. This bond shall be held until a proof of construction inspection is completed.

2. No construction on public land shall be allowed until a written Notice to Proceed is sent to the holder of this R/W by the Authorized Officer 2802.4(h).

3. Once construction commences it shall be completed within five years of that date.

4. The land shall remain open to the public.

5. No vehicles or motorized craft shall be allowed within the completed pond or reservoir enclosures. Fencing will meet BLM standards for wildlife enclosures. At least four entrance points for public access will be provided.

6. The United States shall assume no liability for damage caused by this proposal.

7. Every reasonable care should be taken to minimize water quality degradation during construction and to prevent long-term erosion.

8. Minimum streamflows to be maintained between diversion inlet structure and discharge point is shown below:

July through March	5 cfs
April through June	80 cfs

9. BLM and IDF&G may require flushing flows to maintain riparian vegetation. The flushing will not exceed four times per year, 50 cfs per time, and four hours per time.

10. Applicant will maintain visible flow of water from April through September through the entire length of the small channel which parallels the river (see attached map).

11. Applicant will maintain maximum pond water levels during April, May and June when sufficient water is available from irrigation waste sources and the Malad River. Additional water acquired after the FERC permit exclusively for power generation will not be rquired to be used to maintain pond water levels. Final pond design will be subject to approval by BLM.

12. Revegetate all disturbed areas and pond margins to BLM and IDF&G specifications. Refer to vegetation list 1 for some of the required species for revegetation.

13. Vegetation control along the canal will be limited to suppression or elimination of vegetation which prohibits the use and passage of necessary maintenance equipment and/or the free flow of water. Other vegetation control on the R/W will be by concurrence of BLM.

14. If the project is abandoned, all public lands will be rehabilitated to BLM specifications.

15. Where the land crosses the material site R/W on the SW4SE4 of Section 29, vehicular access shall be guaranteed to the State Division of Highways by the holder of this water reservoir/canal system R/W. This may require a pipe or bridge crossing be provided.

I concur with and agree to abide by the terms and conditions as set forth above. I understand that the specific exclusion on the use of acquired water listed for stipulation number 11 would also apply to stipulation number 8 the minimum flow provision.

Feb. 10-82
11. J.R.

Vernon Ravenscroft

Feb. 10, 1982,
Date

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VEGETATION LIST 1

Partial list of species which may be required for rehabilitating disturbed areas:

Dryland Areas

Russian Wildrye
Bluebunch wheatgrass
Fairway wheatgrass
Sodar streambank
Indian ricegrass (in sandy areas)
Tall wheatgrass
Bitterbrush
Four-winged saltbush
Dryland alfalfa

Wet Areas

Kentucky bluegrass
Smooth brome
Orchardgrass
Willow
Poplar
Russian Olive

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SUPPLEMENTAL STIPULATIONS

I-17053

1. A bridge or pipe crossing in the canal system conforming to H-20-44 specifications shall be constructed within the SW¼SE¼ Section 29, T. 6 S., R. 14 East, Boise Meridian.

   This structure is to provide access for the State Division of Highways and Bureau of Land Management to the material site rights-of-way associated with or crossed by R/W I-17053. The approach slopes to this crossing shall not exceed 10 percent.

2. The performance bonds shall total $20,000. A $5,000 performance bond for rehabilitation purposes has already been received, but to ensure construction of an access bridge or pipe across the canal on the SW¼SE¼ Section 29, meeting specifications H-20-44, another $15,000 performance bond is required.

   When final approval by BLM and State Division of Highways Engineers for the bridge or pipe crossing is completed, the $15,000 bond shall be released.

3. No material outside of the 200 ft. wide interim right-of-way shall be used by the holder unless a permit is issued by BLM for such material; with concurrence from the State Division of Highways, if the area of material removal is within a material site right-of-way.

   It is understood that any material permit issued for berm or fill borrow would be on a fee basis by the cubic yard.

4. The control headgate for the canal system shall be designed to restrict water flow to no more than the maximum canal capacity. Any damage caused by overflow or over capacity, whichever the case may be, shall be the responsibility of the right-of-way holder and no liability shall be assumed by the Bureau of Land Management.

5. Physical access to all portions of the material site rights-of-way must be assured. Of prime concern is the estimated 10,000 cubic yards of gravel located within the southeast corner of NE¼SE¼ Section 29, T. 6 S., R. 14 E. B.M. (Material site right-of-way I-0705). An access along the southern bank of the canal would be acceptable.

6. In reference to the stipulations for I-17053 signed and dated February 10, 1982 by holder, these stipulations to be amended and altered as follows:

   Stipulation 9. Add; Holder will be responsible to clean entrance b (see attached map) into the side river channel and take reasonable measures to ensure that water reaches the riparian zone during flushing

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flows and during April through June. Holder will also be responsible to provide devices to readily confirm that the minimum and flushing flows are being met.

Stipulation 10. Delete.

Stipulation 11. Add: Holder will construct one island in each of three ponds and will construct an earthen dike to deepen pond no. 2. The existing dam (a) will be improved to impound more water and flood additional upstream portions of the riparian zone to the extent practicable.

Stipulation 12. Change: Revegetate all disturbed areas (including islands) to BLM and IDF&G specifications. Refer to....

Stipulation 16. Add: Holder will dedicate his North Side Canal Company waste water filing to continue to provide wildlife habitat on the tract.

I concur with and agree to abide by the terms and conditions as set forth above.

Vernon Ravenscroft

Vernon Ravenscroft

Dec. 2, 1982

Date

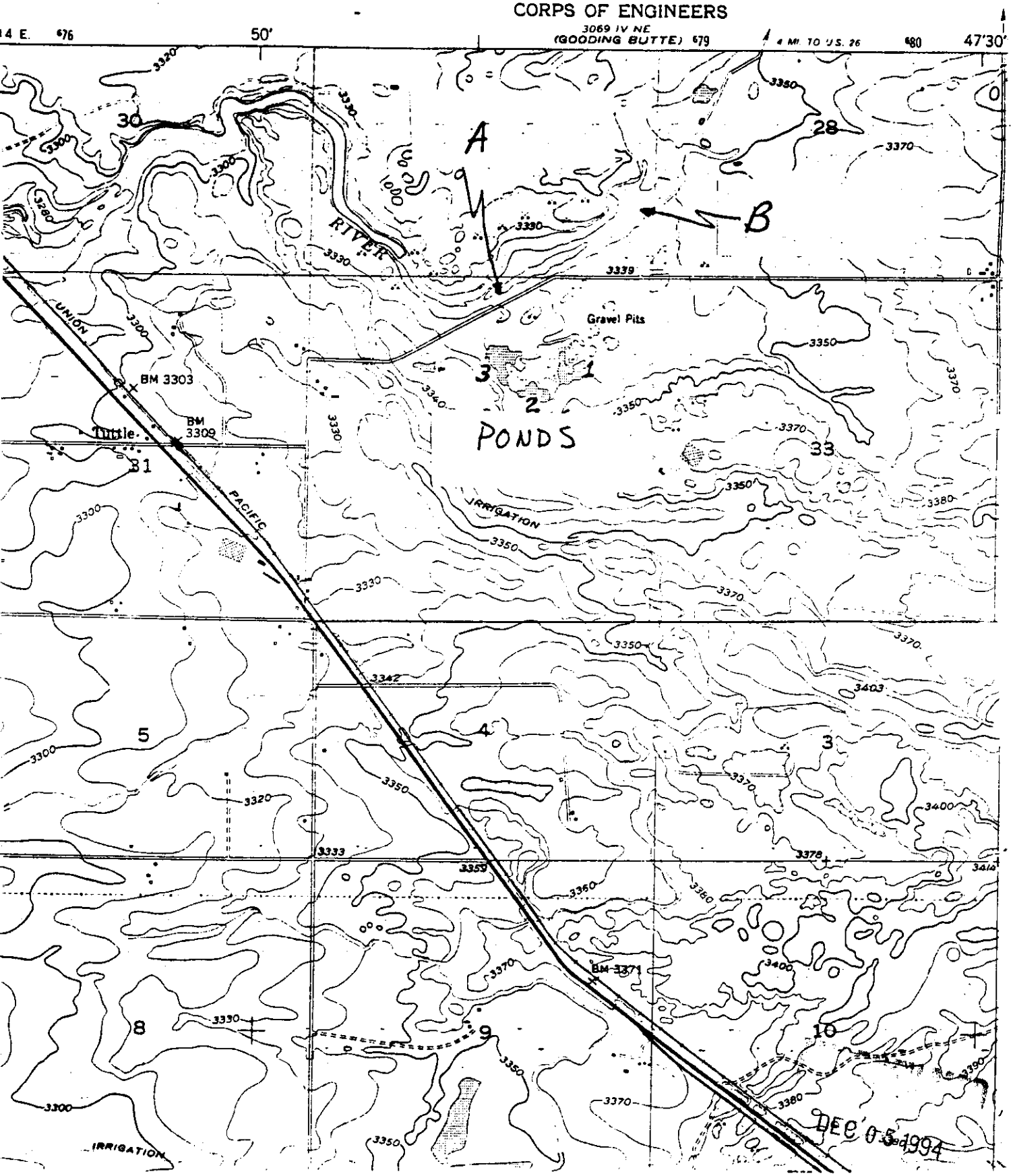
I understand that the performance bond will be processed immediately starting tomorrow morning Friday Dec. 3-82. I agree to have same in the possession of B.L.M. on or before Dec. 31-1982

Vernon J. Ravenscroft

Dec 2-1982

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UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS



UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
SHOSHONE DISTRICT OFFICE
P.O. BOX 2B
SHOSHONE, ID 83352

DECISION
:
:

RIGHT-OF-WAY GRANTED

Details of Grant

SERIAL NUMBER OF GRANT: I-17053

NAME OF HOLDER: VERNON RAVENSCROFT

Map showing the location and dimensions of the Grant:

Grant subject to final survey of project and facilities. Preliminary drawing in casefile identifies approximate location of canal, reservoir, and related facilities.

Permitted use by Holder:

Construct, maintain, and operate water reservoir, diversion point, canal system and related facilities in conjunction with a power generating plant on the Malad River.

Authority for Grant: P.L. 94-579 (Oct. 21, 1976) Title V, 90 Stat. 2743

Regulations applicable to Grant: Part 2800 - Rights-of-way, Principles and Procedures.

Code Reference: 43 CFR 2800

Date of Grant: March 5, 1982

Expiration of Grant: 25 years from date of issuance, with option to renew.

Rental: Amount: $250/year

(Note: This amount is considered an interim rental and may be altered upward or downward upon completion of an official appraisal and future evaluation.)

When payable: Yearly on date of issuance.

Terms and Conditions of Grant

Pursuant to the authority vested in the undersigned by Order No. 701 of the Associate Director, Bureau of Land Management, dated July 23, 1964 (29 F.R. 10526), as amended, a right-of-way, the details of which are shown above, is hereby granted subject to the following terms and conditions:

1. All valid existing rights existing on the date of grant.
2. All regulations specified above.
3. Filing of proof of construction within five years from the date of initiation of construction.
4. Further terms and conditions as follows:
   (a) The District Manager of the Shoshone District Office, Shoshone, Idaho, has the authority to conduct all business with the Holder with respect to use of lands and disposition of resources, and the Holder is requested to contact the above-designated official prior to the beginning of construction.
   (b) Subject to Exhibit A parts 1 and 2, which are made a part of this grant.

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Terrance M. Costello
By Charles J. Haszier
District Manager

EXHIBIT A-Part 1

GENERAL STIPULATIONS
BUREAU OF LAND MANAGEMENT
RIGHT-OF-WAY I-17053

1. The Holder shall comply with the applicable Federal and State laws and regulations concerning the use of pesticides (i.e. insecticides, herbicides, fungicides, rodenticides, and other similar substances) in all activities/operations under this grant. The Holder shall obtain from the Authorized Officer approval of a written plan prior to the use of such substances. The plan must provide the type and quantity of material to be used; the pest, insect, fungus, etc. to be controlled; the method of application; the location for storage and disposal of containers; and other information that the Authorized Officer may require. The plan should be submitted no later than December 1 of any calendar year that covers the proposed activities for the next fiscal year. Emergency use of pesticides may occur. The use of substances on or near the right-of-way shall be in accordance with the approved plan. A pesticide shall not be used if the Secretary of the Interior has prohibited its use. A pesticide shall be used only in accordance with its registered uses and within other limitations if the Secretary has imposed limitations. Pesticides shall not be permanently stored on public lands authorized for use under this grant.

2. Holder shall survey and clearly mark the exterior limits of the right-of-way. All activites directly or indirectly associated with the construction or maintenance of water reservoir and canal system must be conducted within the limits of the right-of-way.

3. There is reserved to the Secretary of the Interior, or his lawful delegate, the right to grant additional rights-of-way or permits for compatible uses on, over, under, or adjacent to the land involved in this grant.

4. This right-of-way may be renewed. If renewed, the right-of-way will be subject to regulations existing at the time of renewal and such other terms and conditions deemed necessary to protect the public interest.

5. This right-of-way is subject to all applicable regulations in 43 CFR Part 2800 which are hereby incorporated in and made a part of this grant.

6. There is reserved to the United States a continuing right of access onto the public lands covered by the right-of-way grant, and upon reasonable notice to the Holder, access and entry to any facility constucted on the right-of-way or permit area.

7. The Holder, by accepting this right-of-way grant, agrees and consents to comply with and be bound by the following terms and conditions:

   (a) To the extent practicable, all State and Federal laws applicable to the authorized use and such additional Federal and State laws along with the implementing regulations, that may be enacted and issued during the term of the grant.

   (b) That in the construction, operation, maintenance and termination of the authorized use, there shall be no discrimination against any employee or applicant for employment because of race, creed, color, sex or national origin and all subcontracts shall include an identical provision.

   (c) To rebuild and repair roads, fences, and established trails that may be destroyed or damaged by construction, operation or maintenance of the project and to build and maintain suitable crossings for existing roads and significant trails that intersect the project.

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(d) To do everything reasonable within his or her power, both independently and upon request of the Authorized Officer, to prevent and suppress fires on or in the immediate vicinity of the right-of-way or permit area. This includes making available such construction and maintenance forces as may be reasonably obtained for the suppression of fires.

8. This grant is subject to periodic review at the end of the 20th year and at regular intervals thereafter not to exceed 10 years.

I concur and agree to abide by these general stipulations.

March 8-1982
Date

Vernon E. Ravenscroft
Vernon E. Ravenscroft

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STIPULATIONS

1. A $5,000 Performance Bond shall be posted with the BLM prior to any on-the-ground activity. This bond shall be held until a proof of construction inspection is completed.

2. No construction on public land shall be allowed until a written Notice to Proceed is sent to the holder of this R/W by the Authorized Officer 2802.4(h).

3. Once construction commences it shall be completed within five years of that date.

4. The land shall remain open to the public.

5. No vehicles or motorized craft shall be allowed within the completed pond or reservoir enclosures. Fencing will meet BLM standards for wildlife enclosures. At least four entrance points for public access will be provided.

6. The United States shall assume no liability for damage caused by this proposal.

7. Every reasonable care should be taken to minimize water quality degradation during construction and to prevent long-term erosion.

8. Minimum streamflows to be maintained between diversion inlet structure and discharge point is shown below:

July through March	5 cfs
April through June	80 cfs

9. BLM and IDF&G may require flushing flows to maintain riparian vegetation. The flushing will not exceed four times per year, 50 cfs per time, and four hours per time.

10. Applicant will maintain visible flow of water from April through September through the entire length of the small channel which parallels the river (see attached map).

11. Applicant will maintain maximum pond water levels during April, May and June when sufficient water is available from irrigation waste sources and the Malad River. Additional water acquired after the FERC permit exclusively for power generation will not be rquired to be used to maintain pond water levels. Final pond design will be subject to approval by BLM.

12. Revegetate all disturbed areas and pond margins to BLM and IDF&G specifications. Refer to vegetation list 1 for some of the required species for revegetation.

13. Vegetation control along the canal will be limited to suppression or elimination of vegetation which prohibits the use and passage of necessary maintenance equipment and/or the free flow of water. Other vegetation control on the R/W will be by concurrence of BLM.

14. If the project is abandoned, all public lands will be rehabilitated to BLM specifications.

15. Where the land crosses the material site R/W on the SW4SE4 of Section 29, vehicular access shall be guaranteed to the State Division of Highways by the holder of this water reservoir/canal system R/W. This may require a pipe or bridge crossing be provided.

I concur with and agree to abide by the terms and conditions as set forth above. I understand that the specific exclusion on the use of acquired water listed for stipulation number 11 would also apply to stipulation number 8 the minimum flow provision.

Feb. 10-82
V.F.K.

Vernon Ravenscroft

Feb. 10, 1982,
Date

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VEGETATION LIST 1

Partial list of species which may be required for rehabilitating disturbed areas:

Dryland Areas

Russian Wildrye
Bluebunch wheatgrass
Fairway wheatgrass
Sodar streambank
Indian ricegrass (in sandy areas)
Tall wheatgrass
Bitterbrush
Four-winged saltbush
Dryland alfalfa

Wet Areas

Kentucky bluegrass
Smooth brome
Orchardgrass
Willow
Poplar
Russian Olive

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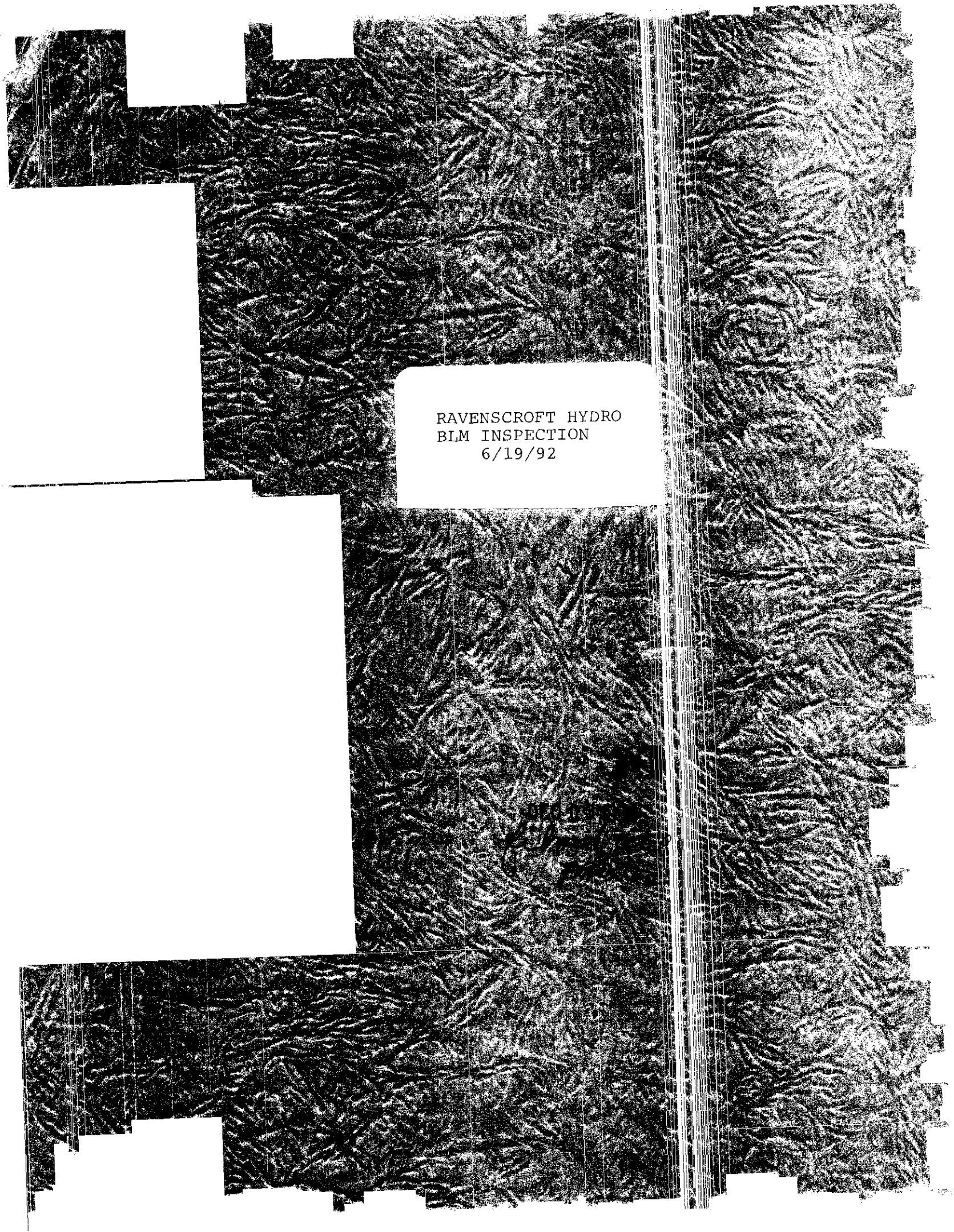
ATTACHMENT

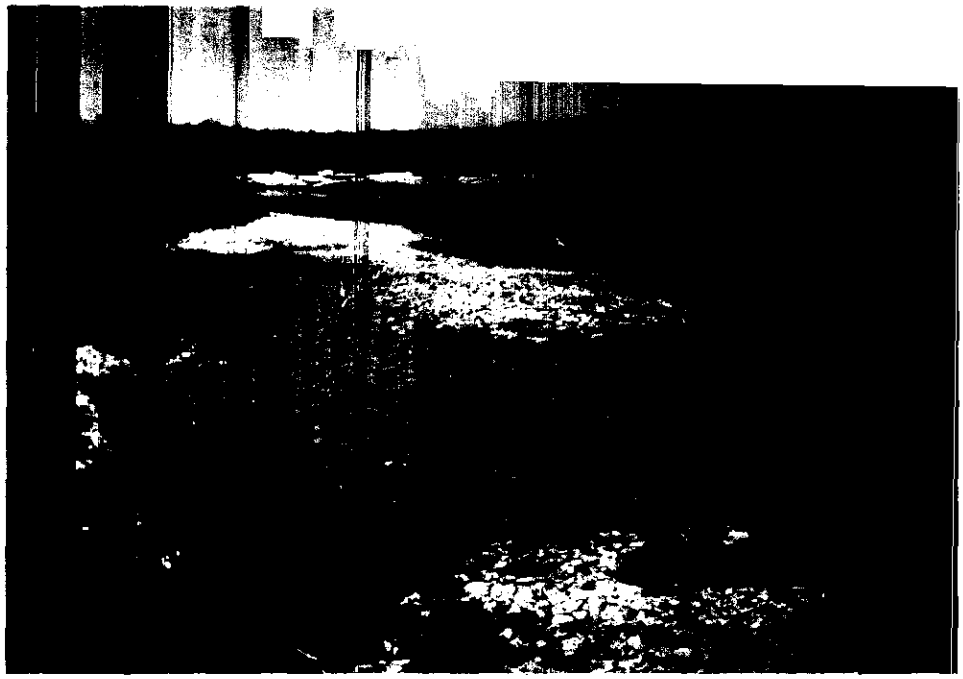
The water reservoir and canal system, plus diversion dam, are on a portion of the lands listed below:

T. 6 S., R. 14 East, Boise Meridian
Section 29: SE¼NE¼SE¼
SW¼SE¼,
SE¼SW¼.

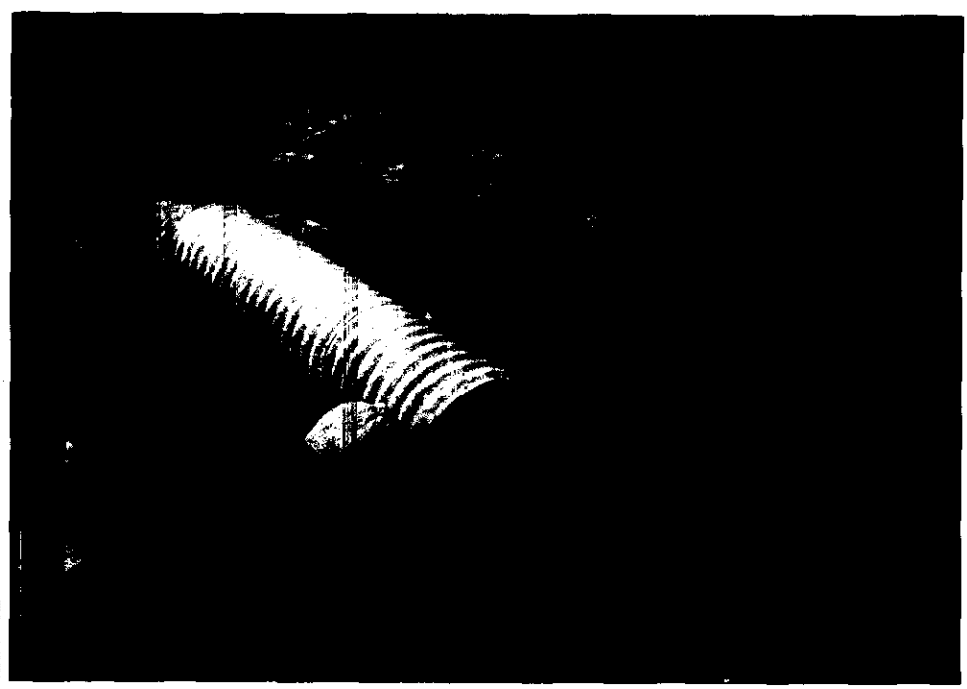
Section 32: E½NW¼NE¼,
NW¼SE¼NE¼,
SW¼NE¼

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RAVENSCROFT HYDRO
BLM INSPECTION
6/19/92



PREPARED FOR BLM
PROJECT INSPECTION
6/19/92

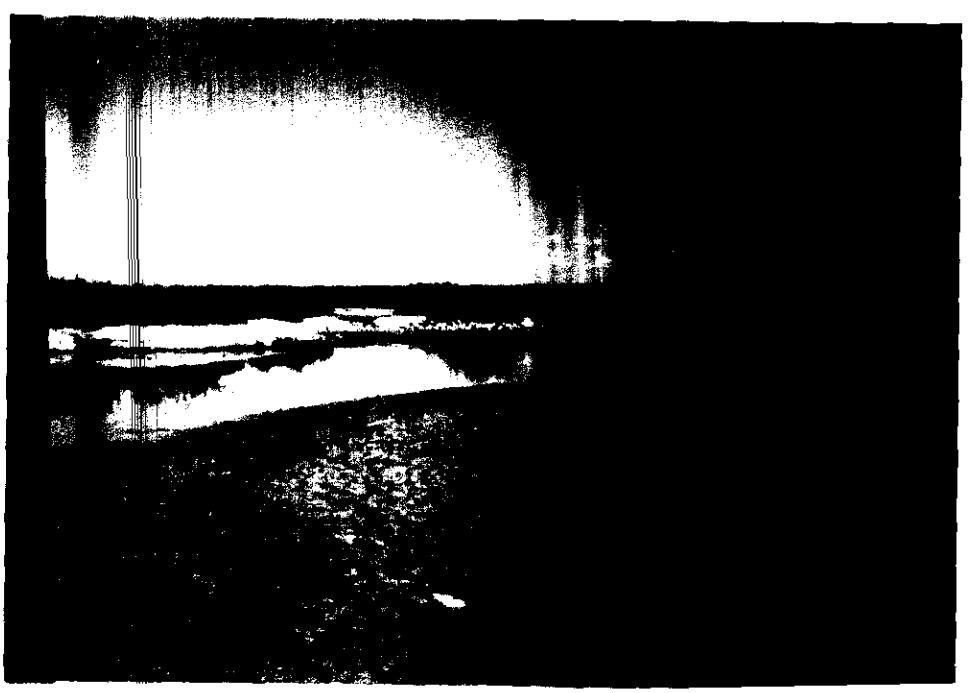


During low water periods there is abundant evidence of heavy siltation in the project backwater.



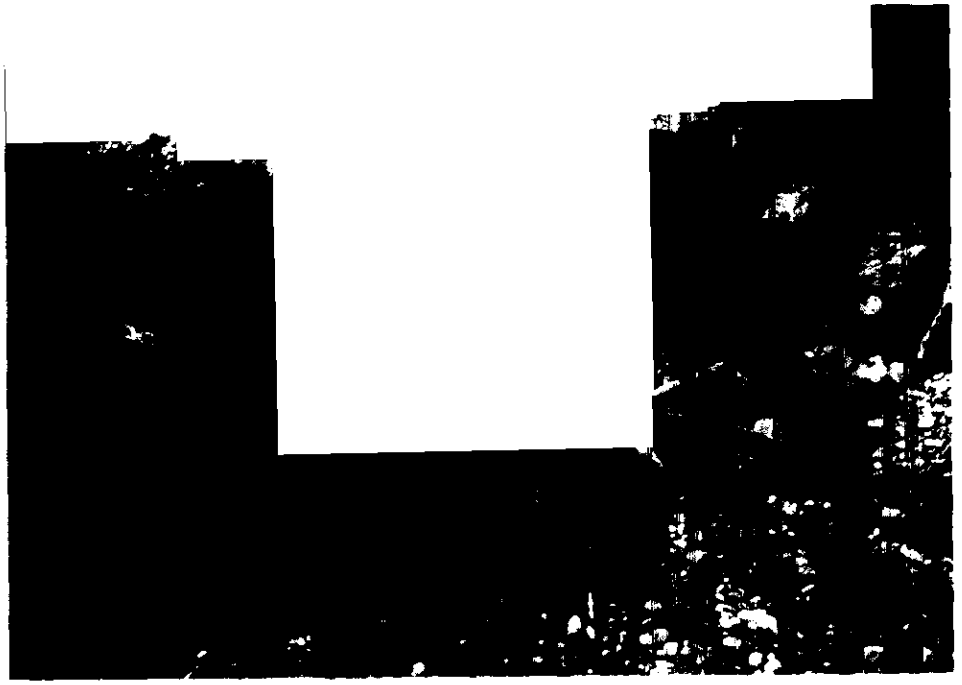






PREPARED FOR BLM
PROJECT INSPECTION
6/19/92

During low water periods there is abundant evidence of heavy siltation in the project backwater.







PREPARED FOR BLM
PROJECT INSPECTION
JUNE 19, 1992

The beaver have b e e n a p e r s i s t e n t problem which have made it difficult to m a i n t a i n uninterrupted by-pass flow.

PREPARED FOR BLM
PROJECT FIELD
INSPECTION
JUNE 19, 1992



The Idaho State Fish and Game Department are cooperating in an experiment to eliminate and/or minimize the beaver problem.

