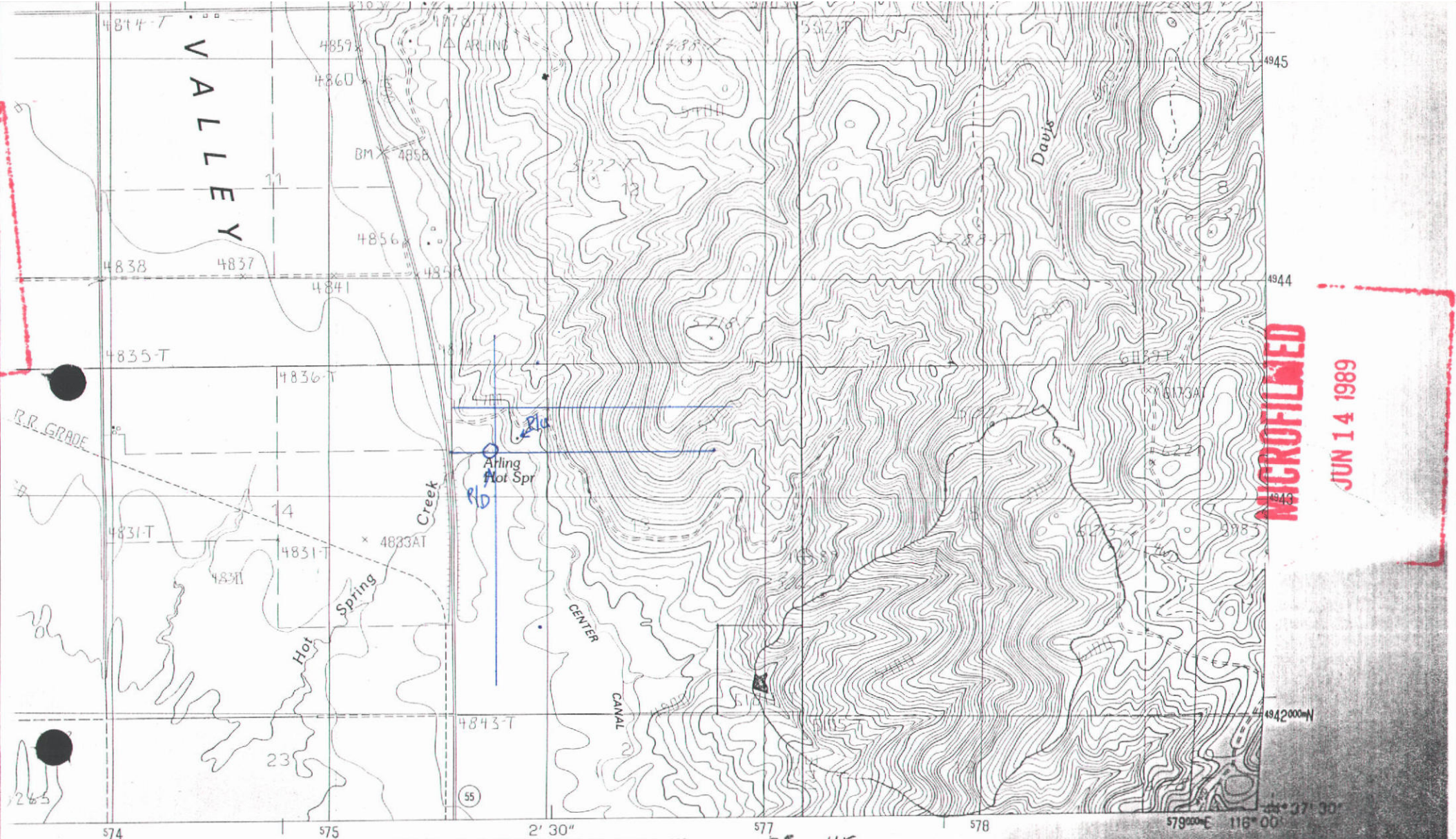
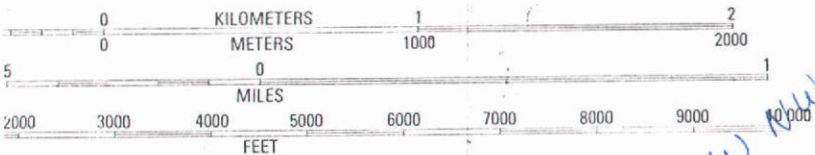




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JUN 14 1989

SCALE 1:24 000



CONTOUR INTERVAL 20 FEET
SUPPLEMENTAL CONTOUR INTERVAL 10 FEET
CONTOUR INTERVAL 10 FEET IN CASCADE RESERVOIR
To convert meters to feet multiply by 3.2808
To convert feet to meters multiply by .3048



3E 4E

ROAD LEGEND

Improved Road
Unimproved Road
Trail

Interstate Route U.S. Route

1	2	3	1 No Business Mountain
			2 Lake Fork
			3 Paddy Flat
4		5	4 Lone Tree
			5 Sloans Point
			6 Cold Spring Ridge
			7 Cascade
6	7	8	8 Eagle Nest

DONNELLY, IDAHO

PROVISIONAL EDITION 1985

Rd in SW NW NW

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

See attached topo map for
correct p/d location and name.
SL 11/23/88.

T15N

PLACE OF USE H&G
PT OF DIVERSION
PLACE OF USE IRRIGATION
14 13 18

MICROFILMED

JUN 14 1989

R3E

R4E

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.

Ronald Grayson
(Applicant)

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
MAR 8 1993

Department of Water Resources

A. GENERAL INFORMATION

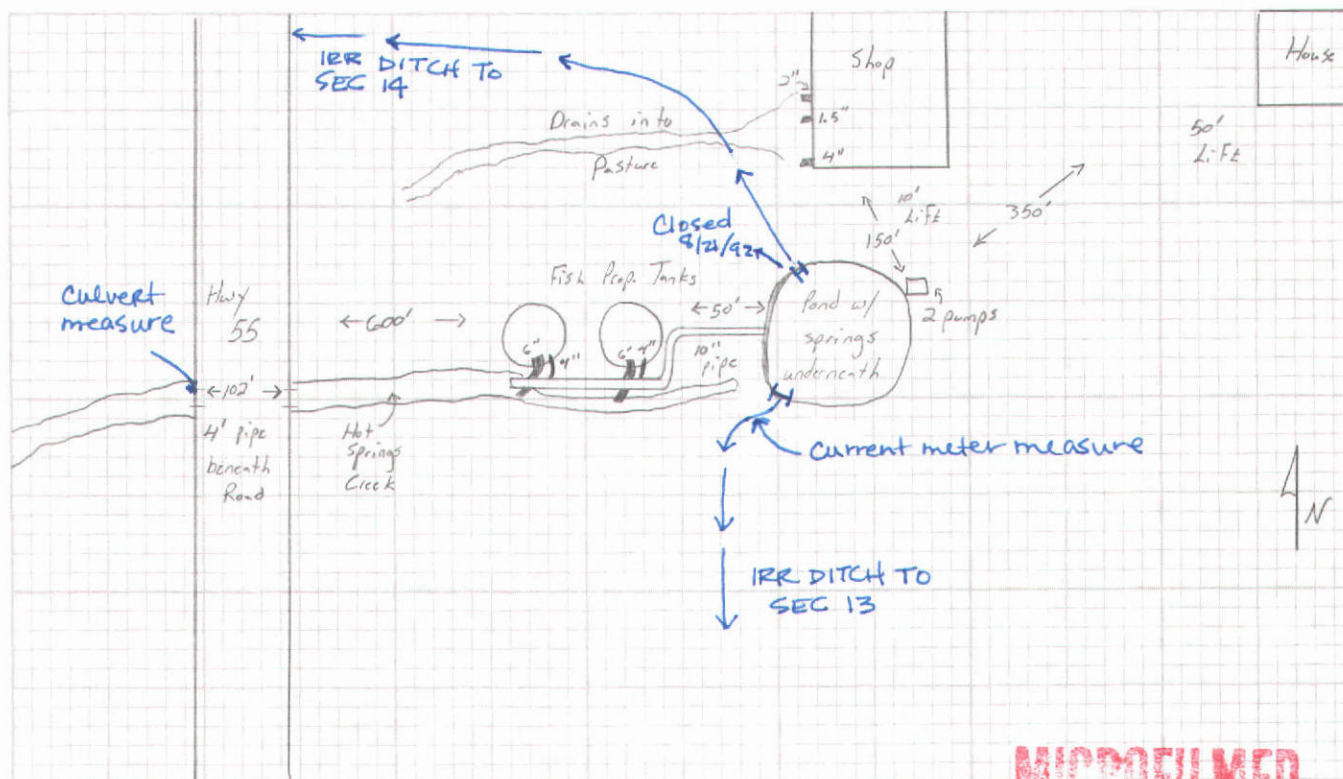
1. ✓ Owner: Ronald C. Yanks Permit No. 65-12927
Phone No. 342-8901
Current Address: P.O. Box 5405 Boise, ID 83705
2. Accompanied by: Bob Tilden EXAM. DATE: 5-27-92
Address: P.O. Box 293 Donnelly, ID 83615 Phone No. 382-3263
Relationship to Permit Holder: Ranch Operator
3. ✓ Source: Arking Hot Spring tributary to Hot Spring Creek

B. OVERLAP REVIEW

1. Other water rights with same place of use: None ☐ Copies Attached
2. Other water rights with same point of diversion: None ☐ 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



Scale: 1" = None

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).

APR 28 1993

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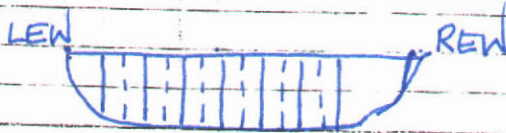
C. DIAGRAMS

1. Measurement Location

Scale: _____ = NONE

2. Cross-Section of Measurement

Scale _____ = _____



D. SUMMARY INFORMATION

1. Measurement rated _____ excellent ✓ good _____ fair _____ poor

2. Remarks: geothermal spring

3. Width: _____ Area: _____ Discharge in cubic feet per second: 1.46

DATE _____

C. Hodges
SIGNATURE OF PERSON CONDUCTING MEASUREMENT

APR 28 1993

CONVERSATION MEMORANDUM

DATE 4/6/89FILE 65-12927NAME OF PARTY Ronald Yonke & Keith Stokes, RS.EMPLOYEE Steve LosterRE: letter from K. Stokes of 3/24/89

$$t_i = 70^\circ F$$

$$S = 90^\circ F \text{ found } 88^\circ$$

$$A_{base} = 2016 \text{ ft}^2, 2 \text{ story}$$

$$R-19 \rightarrow OK$$

$$A_{shop} = 7200 \text{ ft}^2$$

$$R-19 \rightarrow OK$$

HOUSE2 storySHOP

$$E = (e \cdot \Delta T) \cdot 8 \times A$$

$$e = .44 \text{ (better than average)}$$

$$\text{where } e = .44$$

similar to Ashtabula

$$\Delta T = 78$$

$$\Delta T = t_i - t_o = 70 - (-8) = 78$$

$$A = 7200$$

$$A = 2016$$

$$E = (e \cdot \Delta T) A = 247,104 \text{ Btu/hr}$$

$$E = (.44 \cdot 78)(8 \times 2016)$$

$$E = 55,351.3 \text{ Btu/hr}$$

Btu/hr

$$\text{Flow} = W = \frac{E}{500 \cdot \Delta T}$$

$$\text{Flow} = W = \frac{247,104}{500 \cdot 78} = 41.18 \text{ gpm}$$

where

$$Q = E = 55,351.3$$

if assume e = .67 (average efficiency)

$$\Delta T = .6(S - t)$$

$$W = \frac{247,104}{500 \cdot 78} = 62.71 \text{ gpm}$$

$$\text{where } S = 90^\circ F$$

$$t = 70^\circ F$$

$$\Delta T = .6(90 - 70) = 12$$

TOTAL GPM

$$9.23 + 41.18 = 50.41$$

$$50.41 \cdot 1.1 \text{ cfs } \text{over}$$

$$W = \frac{55,351.3}{(500)(12)} = 9.23 \text{ gpm}$$

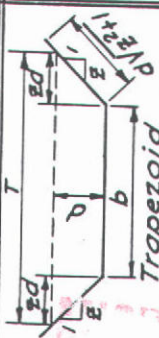
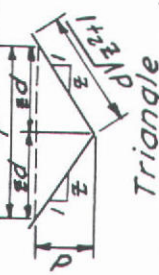
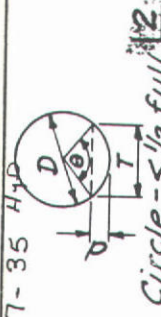
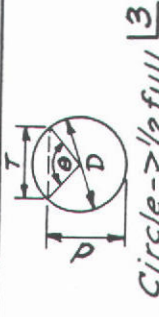
if assume e = .67 (average efficiency)

$$W = \frac{84,385}{500 \cdot 12} = 14.05 \text{ gpm}$$

APR 28 1993

* OKto use for heating required

HYDRAULICS: ELEMENTS OF CHANNEL SECTIONS

Section	Area a	Wetted Perimeter p	Hydraulic Radius $r = A/p$	Top Width T
 Trapezoid	$bd + zd^2$	$b + 2d\sqrt{z^2 + 1}$	$\frac{bd + zd^2}{b + 2d\sqrt{z^2 + 1}}$ 7-30 Hyd.	$b + 2zd$
 Rectangle	bd	$b + 2d$	$\frac{bd}{b + 2d}$	b
 Triangle	zd^2	$2d\sqrt{z^2 + 1}$	$\frac{zd^2}{2\sqrt{z^2 + 1}}$	$2zd$
 Parabola 7-35 Hyd.	$\frac{2}{3}dT$	$T + \frac{8d^2}{3T}$	$\frac{2dT^2}{3T^2 + 8d^2}$ $\perp$	$\frac{3a}{2d}$
 Circle - $< 1/2$ full $\perp$ 2 7-35 Hyd.	$\frac{D^2}{8} \left(\frac{\pi\theta}{180} - \sin\theta \right)$	$\frac{\pi D\theta}{360}$	$\frac{45D}{\pi\theta} \left(\frac{\pi\theta}{180} - \sin\theta \right)$ SEE 579 DAM BOOK	$D \sin \frac{\theta}{2}$ or $2\sqrt{d(D-d)}$
 Circle - $> 1/2$ full $\perp$ 3	$\frac{D^2}{8} \left(2\pi - \frac{\pi\theta}{180} + \sin\theta \right)$ SEE 579 DAM BOOK	$\frac{\pi D(360 - \theta)}{360}$	$\frac{45D}{\pi(360 - \theta)} \left(2\pi - \frac{\pi\theta}{180} + \sin\theta \right)$ SEE 579 DAM BOOK	$D \sin \frac{\theta}{2}$ or $2\sqrt{d(D-d)}$

$\perp$ Satisfactory approximation for the interval $0 < \frac{d}{T} \leq 0.25$
 When $d/T > 0.25$, use $p = \frac{1}{2}\sqrt{6d^2 + T^2} + \frac{T^2}{8d} \sinh^{-1} \frac{T}{4d}$
 $\perp$ $\theta = 4 \sin^{-1} \sqrt{d/D}$
 $\perp$ $\theta = 4 \cos^{-1} \sqrt{d/D}$ Insert θ in degrees in above equations

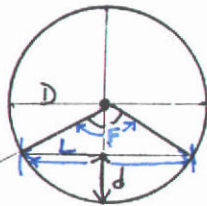
REFERENCE

APR 28 1993

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE
 H. H. Bennett, Chief
 ENGINEERING STANDARDS UNIT

STANDARD DWG. NO.
 ES-33
 SHEET 1 OF 1
 DATE 6-6-50

$$\frac{1}{.25} = \frac{.9}{X}$$



$$\left(\begin{array}{l} \text{SCALE} \\ 1' = .25'' \end{array} \right)$$

$$d = .9' = (.225'' = d)$$

$$\angle F = 119^\circ$$

field measures

$$\underline{D = 4} \quad R = 2$$

FROM PIPEFITTER'S HANDBOOK (Frankland)

8

BASIC TRADE MATHEMATICS

Length of Chord L:

(Where $\angle C = \frac{1}{2} \angle F$, OR 59.5°)

$$\sin C = \frac{L}{2} \div R, \text{ OR}$$

$$L = 2(\sin C)R$$

$$L = 2(.86)2$$

$$L = 3.44'$$

Chord length "L" equals "T" in
parabolic equation

THE CIRCLE

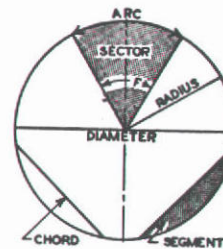


Fig. 2. Parts of a circle.

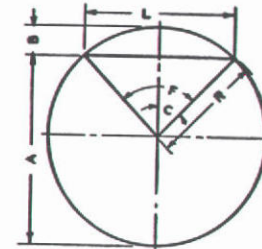


Fig. 3. Parts of a circle (cont'd).



Fig. 4. Parts of a circle (cont'd).

To find the circumference of a circle, multiply the diameter by 3.1416.

The radius of a circle is one-half of the diameter.

An arc is a part of the circumference. To find the length of an arc,

multiply the number of degrees in the arc by the radius times .01745.

$$\text{Sine of angle } C = \frac{L}{2} \div R \text{ (See Fig. 3.)}$$

$$\text{Angle } F = 2 \times \text{angle } C$$

T303
A325

A205
(518A)

A327

401 413

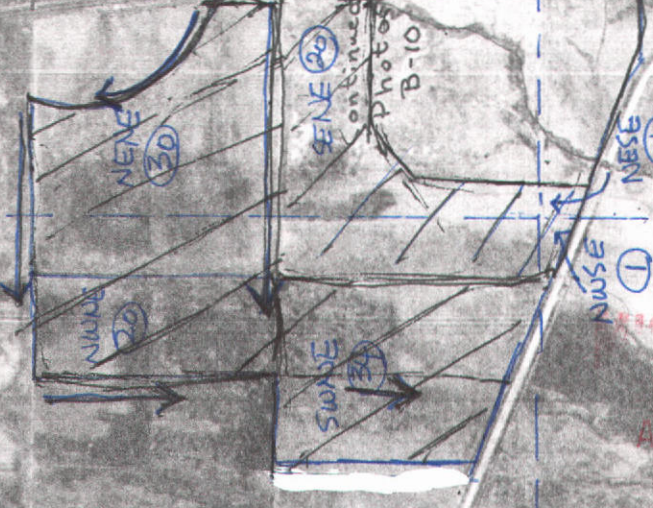
1112
413

23.5

35.8

APR 28 1993

MAP A
65-12927



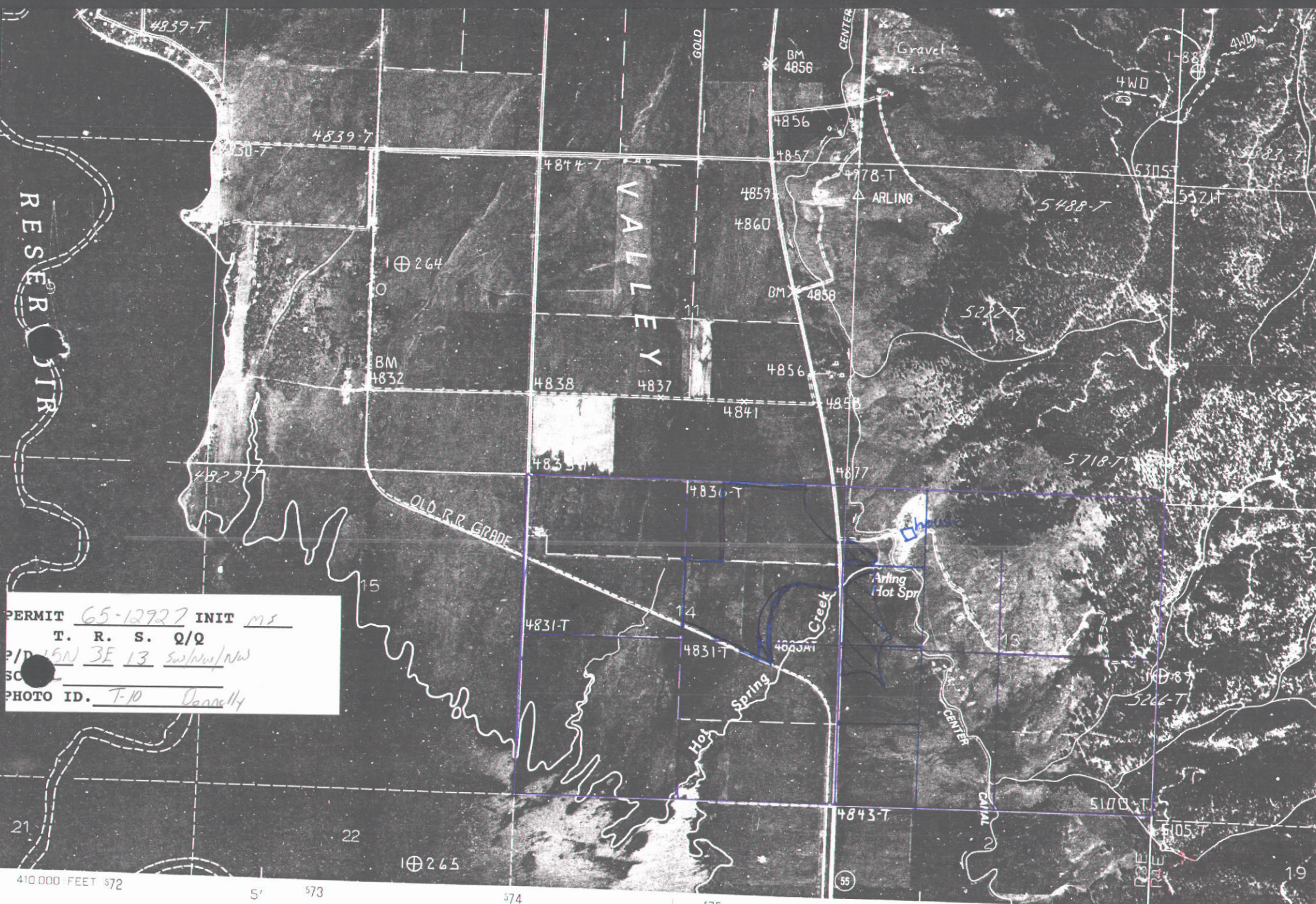
130 aa

2

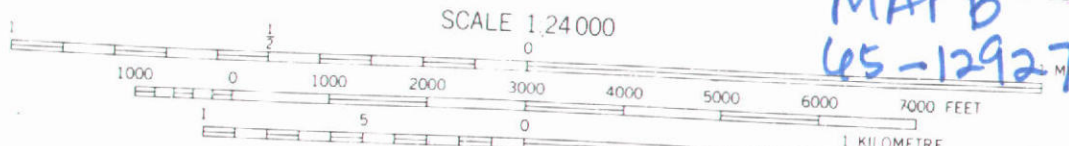
2

2

2



PERMIT 65-12927 INIT ms
T. R. S. Q/Q
p/p 15N 3E 13 sw/nw/nw
SC SW
PHOTO ID. T-10 Danally



MAP B
65-12927

R3E R4E

APR 28 1993

ordinate



PHOTO ONE-

The pond w/springs underneath.
Berm on far side with Hot Springs
Creek leading away. Facing west.



PHOTO TWO-

The pond with berm.
RECEIVED

APR 28 1993



PHOTO THREE-

Springs bubbling in the pond.
Two 2" lines from pop pumps into
pond on the left.



PHOTO FOUR-

The two pumps supplying
water to the house & shop for
heating & fish propagation.

APR 28 1993



PHOTO FIVE-

The house that is heated,
as seen from the pond.



PHOTO SIX-

The shop with Fish prop.
& heating inside, as seen from
the house.

APR 28 1993



Seven
PHOTO FIVE-

*Numerous lines leading
to tanks & troughs for
fish prop. inside shop.*



Eight
PHOTO SIX-

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PHOTO ^{Nine} FIVE-

The 1 1/2" & 2" lines providing discharge from the shop.

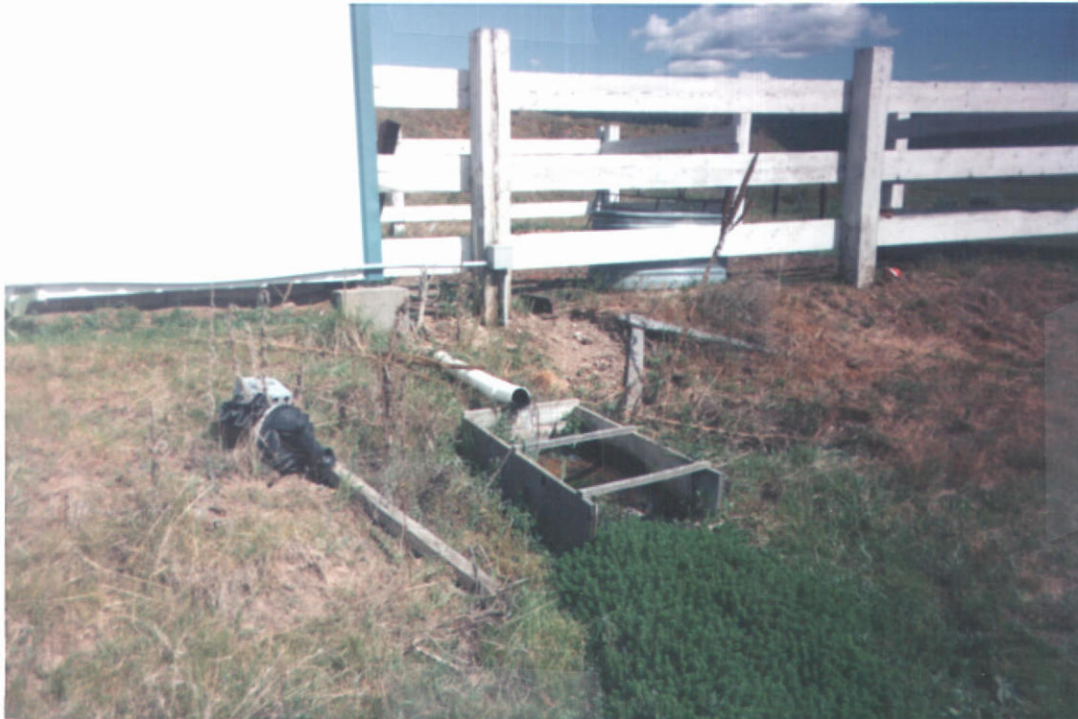


PHOTO ^{Ten} SIX-

The 4" line providing discharge

RECEIVED

APR 28 1993

PHOTO ^{Eleven} FIVE-

Two tanks to the west of the pond.
10" pipe to the left of the tanks
discharges into creek. 4" standpipe
discharges into each tank. 6" standpipes
to the left discharge into creek also.

PHOTO ^{Twelve} SIX-

Creek leading away
from the fish prop tanks.
Facing East From Hwy 55

APR 28 1993



PHOTO ~~FIVE~~ ^{Thirteen}

The culvert running
under Hwy 55

>

PHOTO ~~SIX~~ ^{Fourteen}

APR 28 1993

APR 28 1993

Page 8
65-12927
8/21/92



Place of
current
measurement,
~~near~~ South
ditch



P/U in Sec
13 west
of ditch

RECORDED

APR 28 1993

Pg 9

65-12927

8/21/92



Hiway crossing,
irrigation
ditch to
Sec 14.
Pond in
background.



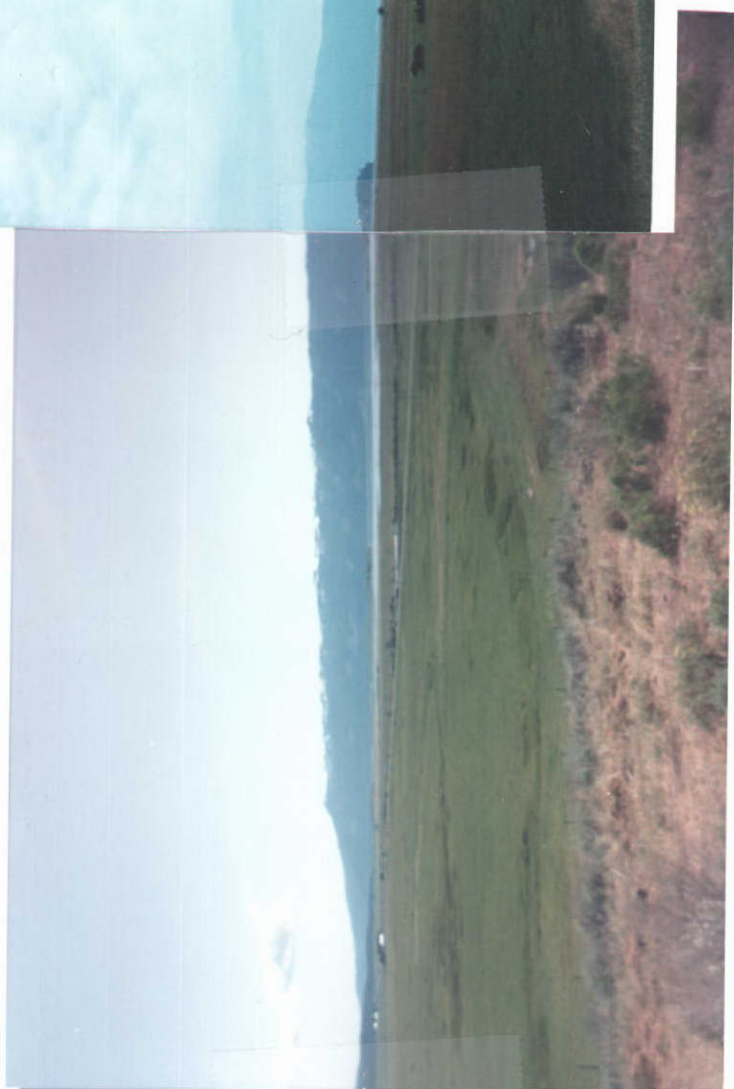
Head of
ditch in
Sec 14.
Water may
be sent
both ways.
See diagram
on map A.

UNRECORDED

APR 28 1993



Pg 10
65-12927
8/21/92



Place of use,
Sec 14 NE 1/4
Looking west.



APR 28 1993

State of Idaho
Department of Water Resources

WATER RIGHT LICENSE
WATER RIGHT NO. 65-12927

Priority: November 1, 1988

Maximum Diversion Rate:

2.10 CFS

Maximum Diversion Volume:

513.0 AF

This is to certify, that RONALD C YANKE

PO BOX 5405

BOISE ID 83705

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated November 1, 1988; and has submitted Proof of Beneficial Use on April 27, 1990. An examination indicates that the works have a diversion capacity of 3.730 cfs of water from:

ARLING HOT SPRING

tributary to HOT SPRING CREEK

source, and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/15 to 10/15	2.10 CFS	393.0 AF
FISH PROPAGATION	01/01 to 12/31	0.10 CFS	72.4 AF
HEATING	01/01 to 12/31	0.10 CFS	47.6 AF
	Totals	2.10 CFS	513.0 AF

LOCATION OF POINT(S) OF DIVERSION:

SWNWNW , Sec. 13, Township 15N, Range 03E
VALLEY County

PLACE OF USE: IRRIGATION

<u>TWN</u>	<u>RGE</u>	<u>SEC</u>	<u>ACRES</u>	<u>ACRES</u>	<u>ACRES</u>	<u>TOTAL</u>
15N	03E	13	NWNW 4	SWNW 15	NWSW 6	25
		14	NENE 30	NWNE 20	SWNE 34	
			SENE 20	NESE 1	NWSE 1	106

Total number of acres irrigated: 131

PLACE OF USE: FISH PROPAGATION

TWN RGE SEC

15N 03E 13 NWNW

PLACE OF USE: HEATING, same as FISH PROPAGATION use

CONDITIONS/REMARKS:

1. The maximum diversion volume is defined as the maximum allowable volume of water that may be diverted annually from the source under this right. The use of water confirmed by this

APR 28 1993

State of Idaho
Department of Water Resources**WATER RIGHT LICENSE**

WATER RIGHT NO. 65-12927

CONDITIONS/REMARKS:

- right limited to the amount that can actually be beneficially use used. The maximum diversion volume may be adjusted to more accurately describe the beneficial use or to implement accepted standards of diversion and use efficiency.
2. This water right is appurtenant to the described place of use.
 3. This right is subject to all prior water rights and may be forfeited by five years of non-use.
 4. Modifications to or variance from this license must be made within the limits of Section 42-222, Idaho Code, or the applicable Idaho law.
 5. Use of water under this water right will be regulated by the watermaster of State Water District No. 65.
 6. Measuring devices of a type approved by this Department shall be maintained at the point of diversion and point of effluent discharge.
 7. Return flow if discharged to a surface water system shall meet Idaho Water Quality Standards.
 8. Use of water under this right is subject to policies set forth in the State of Idaho Water Plan, including Policy No. 5G.
 9. This right when combined with all other rights shall provide no more than .02 cfs per acre nor more than 3.0 afa per acre for the lands above.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. Witness the seal and signature of the Director, affixed at Boise, this 9TH day of April, 1993.


R. Keith Higginson, Director

APR 28 1993

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPLICATION FOR PERMIT

To appropriate the public waters of the State of Idaho

APPROVED

1. Name of applicant Ronald C. Yanke Phone 342-8901
Post office address P.O. Box 5405 Boise, ID 83705
2. Source of water supply Arling Hot Spring * Hot Spring Creek
spring which is a tributary of N. Fork Payette River
3. Location of point of diversion is SW * 1/4 of NW 1/4 of NW 1/4, Govt. Lot -
Sec. 13 Township 15N Range 3E B.M. Valley County; additional
points of diversion if any: None
4. Water will be used for the following purposes:
Amount 0.1 for Heating purposes from Jan. 1 to Dec. 31 (both dates inclusive)
(cfs or acre-feet per annum)
Amount 0.1 for Fish propagation purposes from Jan. 1 to Dec. 31 (both dates inclusive)
(cfs or acre-feet per annum)
Amount 2.1 for Irrigation purposes from Apr. 15 to Oct. 15 (both dates inclusive)
(cfs or acre-feet per annum)
Amount for purposes from to (both dates inclusive)
(cfs or acre-feet per annum)
5. Total quantity to be appropriated is (a) 2.1 and/or (b) 440 * *
cubic feet per second acre feet per annum
6. Proposed diverting works:
a. Description of ditches, flumes, pumps, headgates, etc. Spring, pond, pump, piping, ditches,
headgates, etc.
b. Height of storage dam none feet, active reservoir capacity acre-feet; total
reservoir capacity acre-feet; period of year when water will be diverted to storage.
 to inclusive.
c. Proposed well diameter is none inches; proposed depth of well is feet.
d. Is ground water with a temperature of greater than 90°F being sought? yes N/A surface water source
see 11/22/88
7. Time required for the completion of the works and application of the water to the proposed beneficial use is
1 year years (minimum 1 year)

MICROFILMED

JUN 14 1989

* as per map on page 3 OK 11/22/88
and topo for source

* * as per telephone OK
conversation with
Keith Stokes 375-1130
(agent)

8. Description of proposed uses (if irrigation only, go to item 9):
- Hydropower, show total feet of head and proposed capacity in KW. _____
 - Stockwatering; list number and kind of livestock. 4000000
 - Municipal; show name of municipality. _____
 - Domestic; show number of households. _____
 - Other; describe fully. Heating ranch house and shop building. Cooled water is used to raise and maintain tropical fish.

9. Description of place of use:

- If water is for irrigation, indicate acreage in each subdivision in the tabulation below.
- If water is used for other purposes, place a symbol of the use (example *D* for Domestic) in the corresponding place of use below. See instructions for standard symbols

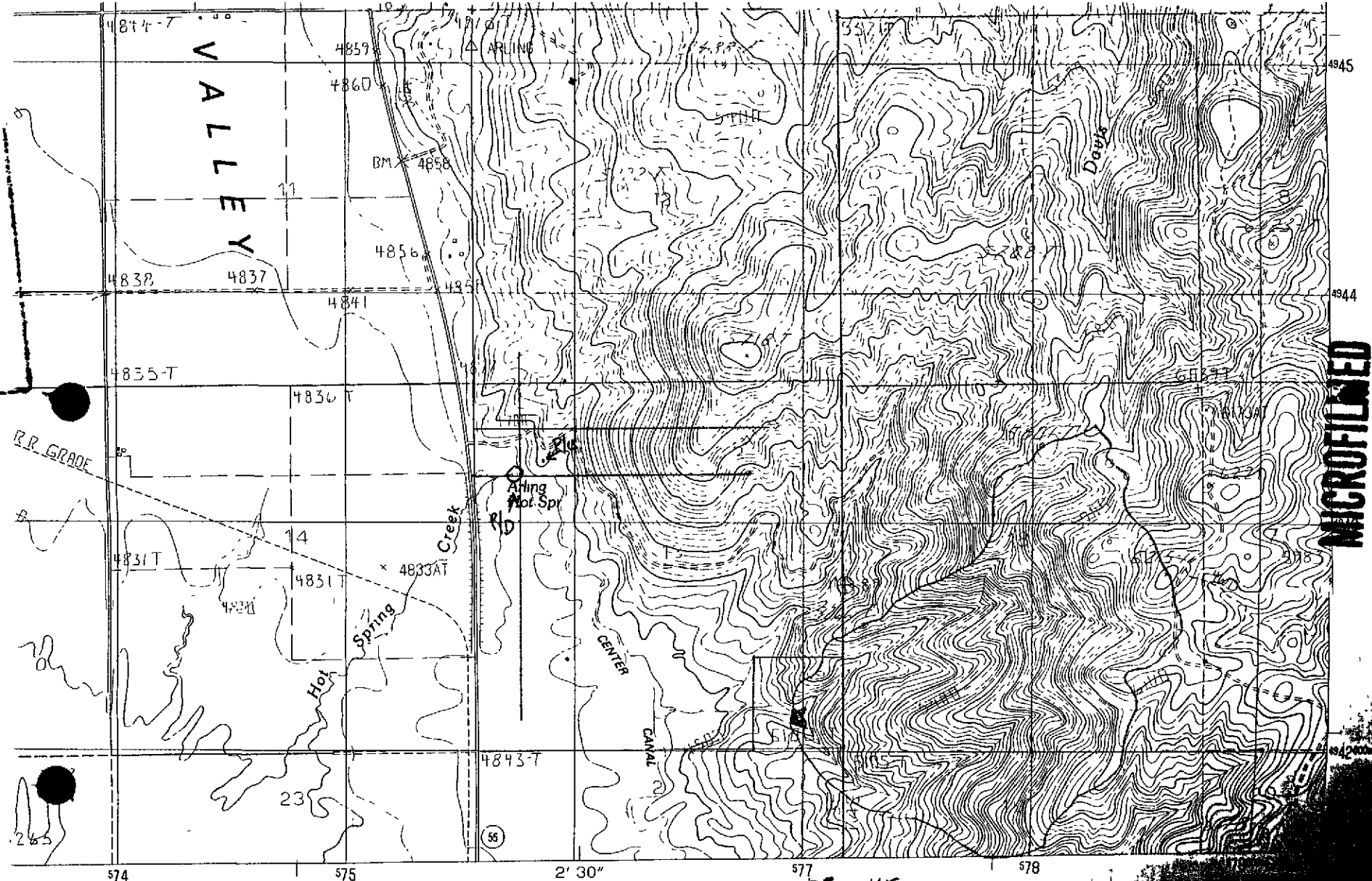
TWP	RANGE	SEC	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
15N	3E	13						G-H 10	40			10							60
15N	3E	14	20	20	40	40	5			15					15	5			160

Total number of acres to be irrigated 220

10. Describe any other water rights used for the same purposes as described above. none
11. a. Who owns the property at the point of diversion? Ronald C. & Linda L. Yanke
- b. Who owns the land to be irrigated or place of use? Same
- c. If the property is owned by a person other than the applicant, describe the arrangement enabling the applicant to make this filing. _____
12. Remarks: Water from this spring has been used for heating since March 15, 1980 and for fish propagation since August, 1987. Drainage from the spring has always crossed the irrigated lands before entering Cascade Lake.

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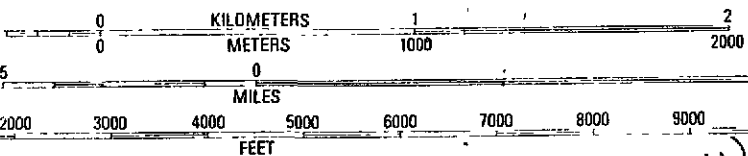
JUN 14 1989



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JUN 14 1989

SCALE 1:24 000



CONTOUR INTERVAL 20 FEET
 SUPPLEMENTAL CONTOUR INTERVAL 10 FEET
 CONTOUR INTERVAL 10 FEET IN CASCADE RESERVOIR
 To convert meters to feet multiply by 3 2808
 To convert feet to meters multiply by .3048



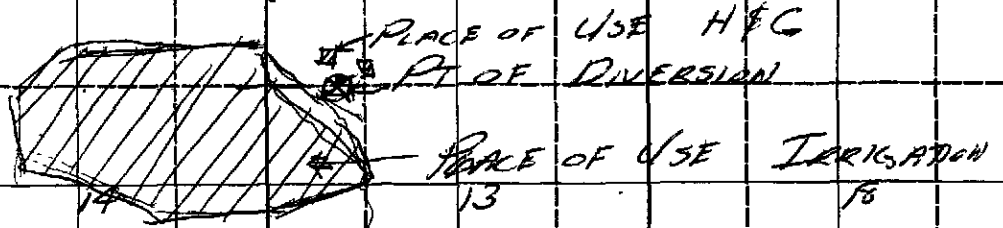
ROAD LEGEND
 Improved Road
 Unimproved Road
 Trail

1	2	3	1 No Business Mountain
4	5	6	2 Lake Fork
7	8	9	3 Paddy Flat
			4 Lone Tree
			5 Shans Point
			6 Cold Spring
			7 Cascade
			8 Eagle Nest

Rd in SW NW NW

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

See attached topo map for
connect p/d location and name.
82 11/23/88.



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JUN 14 1989

Scale 2 inches equal 1 mile

R3E

R4E

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.

Ronald J. [Signature]
(Applicant)

Proposed Priority 11/1/88

Received by nl Date 11-1-88 Time 11:00 AM Preliminary check by DK
Fee \$ 85⁰⁰ Receipted by DK # 11-21-88 Date W001481
Publication prepared by GG Date 11-30-88 Published in The Advocate
Publication approved SS Date 12-27-1988
12/7 & 12/14/88

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. 65-12927, 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 June 1, 19 90.

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. The water right acquired under this permit if for hydropower purposes shall be junior and subordinate to all rights to the use of water, other than hydropower, within the State of Idaho that are initiated later in time than the priority of this permit and shall not give rise to any right or claim against any future rights to the use of water, other than hydropower, within the State of Idaho initiated later in time than the priority of this permit.

e. Other: Use of water under this permit is subject to control by the watermaster of State Water District No. 65, Payette River.

Measuring devices of a type approved by the Department shall be permanently installed and maintained at the point of diversion and the point of effluent discharge.

Assignment or sale of this permit is subject to a determination by the Department that the permit holder has proceeded to develop the permit with due diligence and without speculation.

Water used under this permit if discharged into a natural channel shall meet Idaho Water Quality Standards.

The permit holder shall be required to provide the Department, upon request, information showing volume changes per hour necessary to maintain an adequate environment for the fish propagation facility. Volume changes per hour shall be based upon actual fish production.

Use of water under this right is subject to policies set forth in the State of Idaho Water Plan, including Policy No. 5G.

Witness my hand this 30th day of May, 1989.

J. Glen Saylor

Affidavit of publication

STATE OF IDAHO

COUNTY OF VALLEY

I, Fred K. O'Brien, being duly sworn deposes and says, I am the Publisher of *The Advocate*, a weekly newspaper published at Cascade, in Valley County, Idaho; and having a general circulation therein and of legal status in said county.

The Application for water right, a copy of which is attached hereto; was published in said newspaper once a week for 2 consecutive weeks in the regular and entire issue of every number thereof during the period and time of publication, and was published in the newspaper proper and not in a supplement; and that publication of such notice began:

12-7, 1988

and ended 12-14, 1988

Fred K. O'Brien
Subscribed and sworn before me, this the

15th day of Dec, 1988

On this 15th day of Dec, 1988

I, a Notary Public in and for the State of Idaho, state that said person, Fred O'Brien, did in fact present me with this document and I did witness his signature on the document.

Rayola J. Jarvis
Rayola Jarvis, Notary Public residing at Cascade, Idaho

PUBLIC NOTICES

NOTICE OF APPLICATION FOR WATER RIGHT

The following application(s) have been filed to appropriate the public waters of the State of Idaho:

65-12927
YANKE, RONALD C.
P.O. BOX 5405
BOISE, ID 83705
Source: ARLING HOT SPRING
Tributary: HOT SPRING CREEK
Diversion Pt: SWNWNW Sec 13 T 15N R 03E
Use: IRRIGATION (.2100 CFS)
FISH PROPAGATION (.100 CFS)
HEATING (.100 CFS)
Date Filed: 11/01/1988
In: T15N R03E S13 NWNW SWNW
NWSW
S14 NENE NWNE
SWNE SENE
NENW SENW
NESE NWSE
220.0 ACRES TOTAL

65-12931
BROWN, ALLAN L.
BROWN, HELEN B.
695 EAST 3125 N.
NORTH OGDEN, UT 84414
Source: UNNAMED STREAM
Tributary: CASCADE RESERVOIR
Diversion Pt: SWSESW Sec 30 T 15N R 03E
Use: IRRIGATION (.030 CFS)
DOMESTIC (.020 CFS)
Date Filed: 11/07/1988
In: T15N R03E S30 SESW
1.0 ACRES TOTAL

65-12932
PETERSON, KERSTIN I. M.
610 W. HIGHLAND VIEW DR.
BOISE, ID 83702
Source: SPRING
Tributary: VALLEY CREEK
Diversion Pt: NESESE Sec 36 T 12N R 03E
Use: STOCKWATER (.160 CFS)
DOMESTIC (.040 CFS)
Date Filed: 11/22/1988
In: T12N R04E S31 Lot 3 (NWSW)
The permit(s) will be subject to all prior water rights. Protests must be filed with the Director, Dept. of Water Resources, Western Region, 2735 Airport Way,

PUBLIC NOTICES

Boise, Idaho 83705 on or before
DECEMBER 27, 1988.
R. KEITH HIGGINSON, Director
Published 12/07/1988 & 12/14/1988

MICROFILMED

JUN 14 1989

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DEC 19 1988

Department of Water Resources
Western Regional Office



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 12, 1993

RONALD C YANKE
PO BOX 5405
BOISE ID 83705

RE: WATER RIGHT NO. 65-12927

Dear Water Right Holder(s):

Enclosed herewith is a copy of the Water Right License issued on the above referenced permit.

Sincerely,

A handwritten signature in cursive script that reads 'Pamela Skaggs'.

PAMELA SKAGGS
Water Resource Agent

PS:cz

Enclosure

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APR 28 1993

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
MAR 8 1993

Department of Water Resources

A. GENERAL INFORMATION

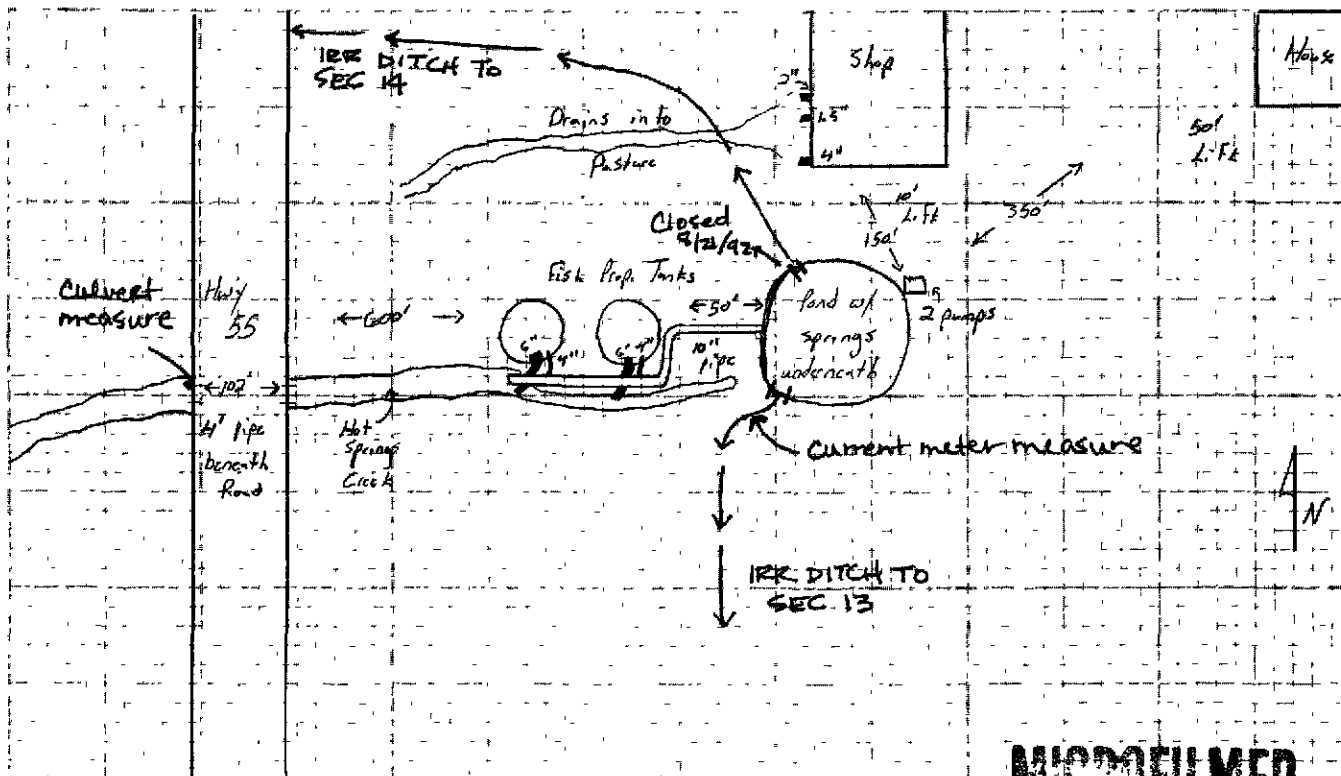
1. ✓ Owner: Ronald C. Yanke Permit No. 65-12927
Phone No. 342-8901
Current Address: P.O. Box 5405 Boise, ID 83705
2. Accompanied by: Bob Tilden EXAM. DATE: 5-27-92
Address: P.O. Box 293 Danville, ID 83615 Phone No. 382-3263
Relationship to Permit Holder: Ranch Operator
3. ✓ Source: Arking Hot Spring tributary to Hot Spring Creek

B. OVERLAP REVIEW

1. Other water rights with same place of use: None ☐ Copies Attached
2. Other water rights with same point of diversion: None ☐ 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



Scale: 1" = None

2. ☒ Copy of U.S.G.S. Quadrangle Attached Showing location(s) of point(s) of diversion and place(s) of use (required).
☐ Photo of Diversion and System Attached (required for all but single household domestic groundwater, and stockwater).
☒ Aerial Photo Attached (required for irrigation of 10 acres or more).
APR 28 1993

System Description (continued)

3. Narrative: Description (As operating at time of measurement. Indicate pressure, number of sprinklers, etc.)

The source of the water supply is known as Aching Hot Springs, which is a tributary to Hot Springs Creek. A berm of approx. 10' in height has been formed on the western edge of the springs to form a pond of approx. 100' x 100'. Two pumps are located on the north-eastern edge of the pond. A 1 h.p. pump is used to supply water for heating purposes to a 2000 sq ft house approx. 350' away from the pond. The second pump is a 2 h.p. pump which supplies water to a shop located approx. 150' to the north of the pond. The water circulates through the

☐ See Remarks on page 4 for continuation

4.

#1

#2

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Domestic Heating	G.E.	1 h.p.	L4D	Jacuzzi	1 1/2"
Shop Heating	Baldor	2 h.p.	5190		2"
Fish Prop.					

*Code to correspond with No. on map and aerial photo

5. Point(s) of Diversion:

Ident. No.	Gov't. Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
142		SW	NW	NW	13	15N	3E	Valley	USGS Photo Quad

6. Place(s) of Use:

Indicate Method of Determination

Twp.	Rge.	Sec.	NE 1/4				NW 1/4				SW 1/4				SE 1/4				Totals
			NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	NE 1/4	NW 1/4	SW 1/4	SE 1/4	
15N	3E	13						4	15			6							25
		14	30	20	34	20									1	1			106
		13						9 1/4											
																			131

Do not use this space

D. FLOW MEASUREMENTS

☐ Additional Data Sheets Attached

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements:

A bucket meas. was made on each of the three pipes leaving the shop, as well as the two 4" pipes flowing into the two large tanks. A flow meas. was also made on the stream where it flowed through a culvert under the highway. Current meter meas. taken in irrigation ditch 8/21/92
Capacity = 2×1.46 (Ditches) + $.53$ (Outside Tanks) + $.28$ (Pumps) = 3.73 cfs > 2.1 cfs permit Limit

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

1. Measured Method:

Three pipes From shop: $2" = 59.1/31s$, $1.5" = 59.1/34s$, $4" = 59.1/14s$
Two 4" pipes into tanks: $59.1/28s$ & $59.1/22s$

2. Alternate Method for Checking Purposes:

HP equation on 2 pumps. #1 $\frac{1 \times 8.8 \times 7}{50 + (2.31 \times 20)} = .06$ cfs #2 $\frac{2 \times 8.8 \times 7}{10 + (2.31 \times 20)} = .22$ cfs

4" culvert @ Hwy 55
water depth .9' @
downstream end.
see attached page

F. PUMP 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: $3.6 \times$ _____ 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 Amps x .001732 = _____ (6)

Panel Input HP: (6) x 1.34 = _____ (7) Efficiency: (5)/(7) x 100 = _____ %

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 131 \times 3 = 393$ AFA

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \frac{155 \times 184 \times 1.9835}{2.1} = 565.7$
766.4

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 393$ AFA (IRR)

2. Volume Calculations for Other Uses:

72.4 AFA (FISH)

47.6 AFA (HEATING)

see attached

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H. REMARKS AND OVERLAP REVIEW ANALYSIS

Shop for heating & it is used in several tanks & troughs for fish propagation inside the shop. Water exits the shop through three PVC pipes located on the western side & it dissipates into a pasture for flood irrigation. Water is also directed from the pond through a 10" pipe located under the berm. The 10" pipe runs approx 90' to the west before discharging into Hot Springs Creek. Two 15' dia. fish propagation tanks are located along the 10" line. A 4" pipe supplies water to each tank from the 10" line. A 6" line allows overflow from each tank to flow into Hot Springs Creek, so that water is constantly circulated through the tanks. The water from Hot Springs Creek then flows through the permit holder's pasture land and into Cascade Reservoir. Irrigation ditches w/ headgates exit pond on North & South end of berm. ^{North} ~~South~~-existing ditch ties into ditch system from irrigation canal above & crosses hwy 55 into Sec 14.

I. RECOMMENDATIONS

Remarks:

Conditions: R04/65, R29, R03, R08, R41

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
IRR	4/15	10/15	2.1	393
FISH PROPAGATION	1/1	12/31	.1	72.4
HEATING	1/1	12/31	.1	47.6
Totals:			2.1 cfs	513 AFA

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

C. HODGES (COMPLETED FOR M. SONIUS)

Signature

C. Hodges

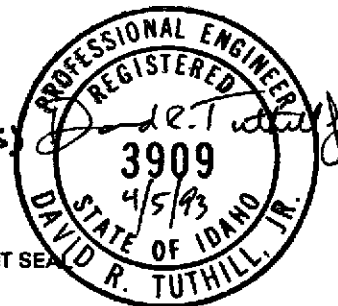
C88 03-23-93

Certification Date

Field Report Preparation Date

2/1/93

CONSULTANT SEAL



K. Licensing recommendation shall be prepared by an Idaho Department of Water Resources employee on a computer printout attached hereto.

RECEIVED

APR 28 1993

SYSTEM CAPACITY AND MEASURED FLOWS, 65-12927

1. Irrigation
Diversión ditch measured 8/21/92 by C Hodges 1.46 cfs
see attached discharge notes
Pipe outflow from fish house, used in upper pasture
measured 5/27/92 by M Sonius (see below) .09 cfs
Delivered by pump #2

TOTAL 1.55 cfs

May allow 2.1 as per permit since flow is available - see rates for fish propagation and total flow in creek -- .09 of flow is non-additive since it is diverted first as fish propagation flow.

2. Fish Propagation
Outflow from fish house measured 5/27/92 by M Sonius
2" pipe, 5 gal/31 sec = 9.7 gpm .02 cfs
1.5" pipe, 5 gal/34 sec = 8.8 gpm .02 cfs
4" pipe, 5 gal/14 sec = 21.4 gpm .05 cfs

SUBTOTAL .09 cfs
Delivered by pump #2

Gravity delivery from holding pond to outside tanks
measured by M Sonius 5/27/92
(2) 4" pipes, each avg 5 gal/2.5 sec = 120 gpm X 2 .53 cfs
(~~1~~ 20 gpm per pipe gives flow range of .44 to .62 cfs)

SUBTOTAL using lowest value .44 cfs

TOTAL .53 cfs

Permit limit to 0.1 cfs.

3. Heating
Estimated prior to exam using standard heating formula
House .02 cfs
Fish house/shop .09 cfs
Values confirmed by C Hodges 8/21/92; see attached worksheet
Deliverable flows supported by theoretical equations; see field report.

TOTAL .11 cfs

Permit limit to 0.1 cfs

4. Hot Springs Creek
A theoretical flow in Hot Springs Creek was calculated to see whether or not total flows generated by Arling Spring could support all measured or calculated uses. (see attached worksheets) The estimate is considered to be high; however, it is substantially higher than the combined total diversions for each use. Therefore, component flows may be additive, with the exception of 0.09 of the irrigation flow which is delivered as a by-product of the fish house discharge.

ESTIMATED FLOW ON 5/27/92 8.45 cfs

APR 18 1993

VOLUME ANALYSIS, OTHER USES

1. Fish propagation
Total tank volume:

2 outside tanks, filled to 6000 gal each 12,000 gal
or .04 acre-feet

10 inside tanks, 250 gal each 2500 gal
4 inside tanks, 300 gal each 1200 gal
3700 gal
or .01 acre-feet

TOTAL .05 acre-feet

Volume Calculations

For all tanks with continuous flowthrough:

$$V_{div} = 0.1 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 72.4 \text{ AFA}$$

- equivalent to approximately 4 complete turnovers per day in all tanks (72.4 AF per year / .05 AF per turnover = 1448 turnovers per year 1448 turnovers per year / 365 days per year = 4 turnovers per day). While this seems low, the operation uses supplemental aeration in all tanks.

2. Heating
Assume an average heating year equivalent to 240 days (8 months)

$$V_{div} = 0.1 \text{ cfs} \times 240 \text{ days} \times 1.9835 = 47.6 \text{ AFA}$$

APR 28 1993

65-12927

OPEN CHANNEL DISCHARGE MEASUREMENT NOTES (cjh 1/5/92)

1. Name of stream or ditch: Yanke Irrigation Ditch
2. Location: Hot Springs Ranch
3. Person conducting measure: Cindy Hodges *CJH*
4. Date and time of measure: 8/21/92 1100
5. Accompanied by:
6. Measuring device size and ID: Pygmy 090198
7. Spin test OK? Before: Yes After: Yes
8. Purpose of measure: Irrigation flow

DIST FROM LEW (feet)	WIDTH (feet)	DEPTH (feet)	OBS DEPTH	REVS	TIME (secs)	VELOCITY (ft/sec)	DISCHARGE (cfs)
0.0							
0.5	0.5	0.4	0.6	13	60	0.22	0.04
1.0	0.5	0.4	0.6	42	60	0.70	0.14
1.5	0.5	0.4	0.6	47	40	1.18	0.24
2.0	0.5	0.4	0.6	54	40	1.35	0.27
2.5	0.5	0.4	0.6	59	40	1.48	0.30
3.0	0.5	0.4	0.6	53	40	1.33	0.27
3.5	0.75	0.4	0.6	42	60	0.70	0.21
4.5							

TOTAL DISCHARGE: 1.46

APR 28 1993

Water Right No.
(if applicable)

A. GENERAL INFORMATION

- GENERAL INFORMATION**
1. Name of stream or ditch: Yankee Irrigation Ditch .92
2. Location: Hot Springs Ranch .94
3. Person conducting measurement: Cindy Hodges .96
4. Date and time of measurement: 8/21/92 1100 .97
5. Accompanied by: _____ .98
6. Measuring device size and ID no.: Pyeing 090198 .99
7. Spin test before measurement OK? _____ after measurement OK? _____
8. Purpose of measurement: Irrigation flow

B. MEASUREMENT DATA

[illegible]

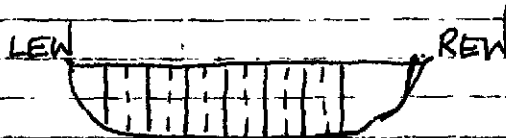
C. DIAGRAMS

1. Measurement Location

Scale: _____ = NONE

2. Cross-Section of Measurement

Scale _____ = _____



D. SUMMARY INFORMATION

1. Measurement rated _____ excellent ☒ good _____ fair _____ poor

2. Remarks: geothermal spring

3. Width: _____ Area: _____ Discharge in cubic feet per second: 1.46

DATE

SIGNATURE OF PERSON CONDUCTING MEASUREMENT

C. Hodges

APR 28 1993

CONYERSATION MEMORANDUM

DATE _____

4/6/89

FILE

65-12928

NAME OF PARTY

ROBERT J. KENNEDY, JR.

EMPLOYEE

RE:

1st of 1st from K-105 / 101-2-1008-1-100 / 24/80

4:5 20-F

5-1980-F

April 2016

As. 7200

House

$$E = [e \cdot \Delta T] \cdot i \times A$$

where $e \approx .44$

$$\Delta T = t_i - t_o =$$

A= 2016

$E = (.44 \times .78)(.8 \times 20)$

$E = 55351.3$

150

[Illegible handwritten signature]

where

$$Q = E = 55,351.3$$
$$\Delta T_5 = .6(5-t)$$

where $S = 90^\circ F$

$$t = 70^\circ \text{F}$$
$$\Delta T_s = .6(90-70)$$

2011年12月11日

$$W = \frac{500}{12}$$

—

$\frac{14.05 \text{ gm}}{100 \text{ ml}} = 14.05 \text{ gm}$

100

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. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

if assume $c^2 = .67$ (average efficiency)

$$W = \frac{11000}{5000} = 62.71 \text{ gpr}$$

~~TOTAL GPM~~

$$9.23 + 41.18 = 50.41$$

03. // cfs - au

if 2.71
2.67 (average
approx.)

$$w = \frac{84285}{5912} = 14.05 \text{ g}$$

APR 19 1963

for

MANNINGS EQUATION APPLICATION OF OPEN CHANNEL FLOW
IN A UNIFORM PARABOLIC CHANNEL OR OPEN CULVERT (cjh 1/93)

WATER RIGHT OR DAM FILE NO.: 65-12927

1. Name of stream or ditch: Hot Spring Creek at Hwy 55
2. Location: Yanke Hot Springs Ranch
3. Person conducting measure: M Sonius
4. Date and time of measure: 5-27-92
5. Accompanied by: R Collingwood
6. Purpose of measure: B/U exam

FIELD DATA

| | | |
|------------------------|--------|---|
| TOP WIDTH (T), feet: | 3.44 | COMMON "n" VALUES FOR
LINED OR UNLINED CHANNELS: |
| WATER DEPTH (d), feet: | 0.9 | Metal, smooth: .011 |
| MANNINGS "n" VALUE: | 0.0228 | Metal, corrugated: .0228 |
| SLOPE (X 100): | 0.01 | Concrete: .012 |
| Assumed or Measured? | A | Grassed: .034 - .076 |
| | | Earth: .017 |

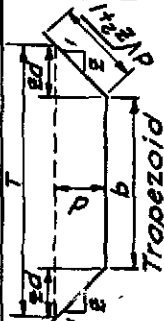
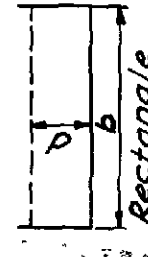
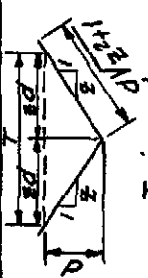
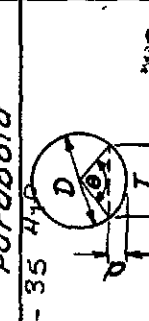
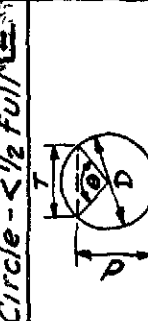
COMPUTED DATA:

| | |
|-----------------------|------|
| AREA, square feet: | 2.04 |
| WETTED PERIMETER, ft: | 4.07 |
| HYDRAULIC RADIUS, ft: | 0.50 |
| VELOCITY, feet/sec: | 4.14 |
| RATE OF FLOW, cfs: | 8.45 |

Note: Because of free-flow through culvert, open channel
conditions assumed. This figure for comparison only.

APR 28 1993

HYDRAULICS: ELEMENTS OF CHANNEL SECTIONS

| Section | Area
A | Wetted Perimeter
P | Hydraulic Radius
$r = A/P$ | Top Width
T |
|---|--|---------------------------------|--|--|
| 
Trapezoid | $bd + zd^2$ | $b + 2d\sqrt{2+1}$ | $\frac{bd + zd^2}{b + 2d\sqrt{2+1}}$
7-30 Hyd. | $b + 2zd$ |
| 
Rectangle | bd | $b + 2d$ | $\frac{bd}{b + 2d}$ | b |
| 
Triangle | zd^2 | $2d\sqrt{2+1}$ | $\frac{zd}{2\sqrt{2+1}}$ | $2zd$ |
| 
Parabola | $\frac{2}{3}dT$ | $T + \frac{8d^2}{3T}$ | $\frac{2dT^2}{3T^2 + 8d^2}$ | $\frac{3d}{2d}$ |
| 
Circle - $< 1/2$ full | $\frac{D^2}{8} \left(\frac{\pi\theta}{180} - \sin\theta \right)$ | $\frac{\pi D\theta}{360}$ | $\frac{45D \left(\frac{\pi\theta}{180} - \sin\theta \right)}{\pi\theta}$
SEE 579 DAM Book | $D \sin \frac{\theta}{2}$
or $2\sqrt{d(D-d)}$ |
| 
Circle - $> 1/2$ full | $\frac{D^2}{8} \left(2\pi - \frac{\pi\theta}{180} + \sin\theta \right)$ | $\frac{\pi D(360-\theta)}{360}$ | $\frac{45D \left(2\pi - \frac{\pi\theta}{180} + \sin\theta \right)}{\pi(360-\theta)}$
SEE 579 DAM Book | $D \sin \frac{\theta}{2}$
or $2\sqrt{d(D-d)}$ |
| Satisfactory approximation for the interval $0 < \frac{\theta}{2} \leq 0.25$
When $d/T > 0.25$, use $p = \frac{1}{2}\sqrt{6d^2 + T^2} + \frac{T^2}{8d} \sinh^{-1} \frac{4d}{T}$
$\theta = 4 \sin^{-1} \frac{d}{D}$
$\theta = 4 \cos^{-1} \frac{d}{D}$ | | | | |

REFERENCE

APR 28 1993

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
H. H. Bennett, Chief

ENGINEERING STANDARDS UNIT

STANDARD DWG. NO.

ES-33

SHEET 1 OF 1

DATE 6-6-50

$$\frac{1}{.25} = \frac{.9}{x}$$

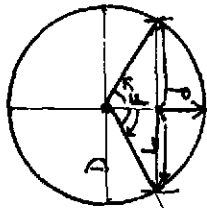
(SCALE)
(1' = .25")

$$d = .9' = (.225" = d)$$

field measures

$$\angle F = 119^\circ$$

$$D = 4 \quad R = 2$$



Length of Chord L:
(Where $\angle C = \frac{1}{2} \angle F$, OR 59.5°)

$$\sin C = \frac{L}{2} \div R, \text{ OR}$$

$$L = 2(\sin C)R$$

$$L = 2(.86)2$$

$$L = 3.44'$$

Chord length "L" equals "T" in
parabolic equation

FROM PIPEFITTER'S HANDBOOK (Frankland)

8

BASIC TRADE MATHEMATICS

THE CIRCLE

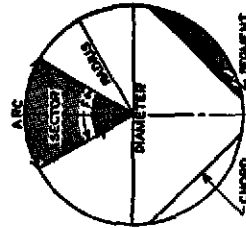


Fig. 2. Parts of a circle.

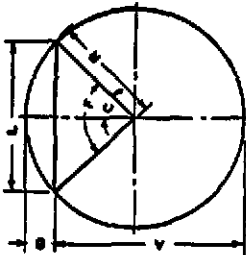


Fig. 3. Parts of a circle (cont'd).

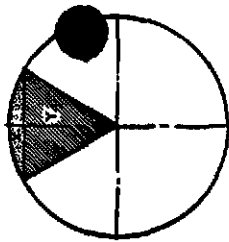


Fig. 4. Parts of a circle (cont'd).

To find the circumference of a circle, multiply the diameter by 3.1416.
The radius of a circle is one-half of the diameter.

An arc is a part of the circumference. To find the length of an arc,

multiply the number of degrees in the arc by the radius times .01745.

$$\text{Sine of angle } C = \frac{L}{2} \div R \text{ (See Fig. 3.)}$$

$$\text{Angle } F = 2 \times \text{angle } C$$



A321

413

18.7

23.5

13000

1993

358

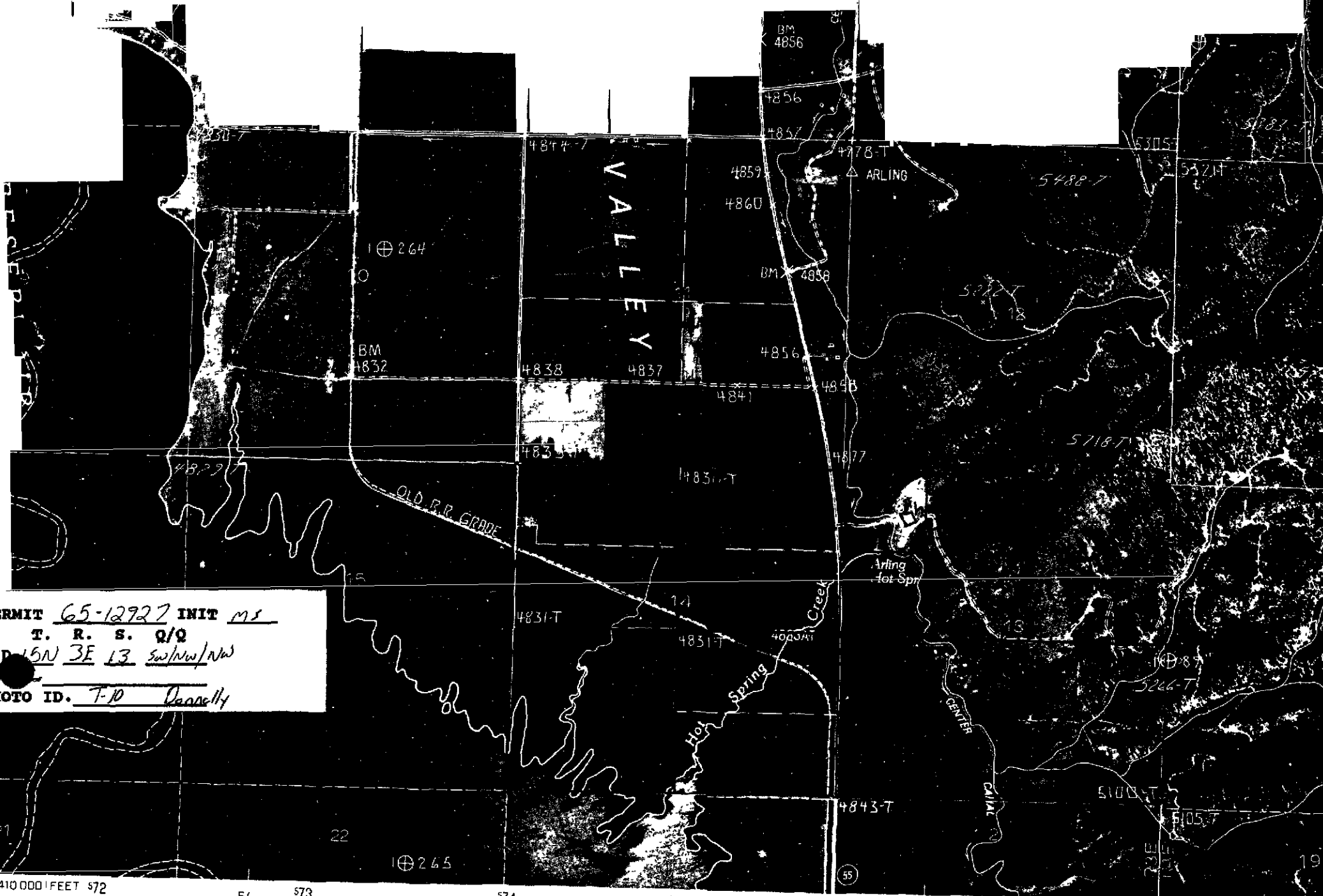
MEL

31.9

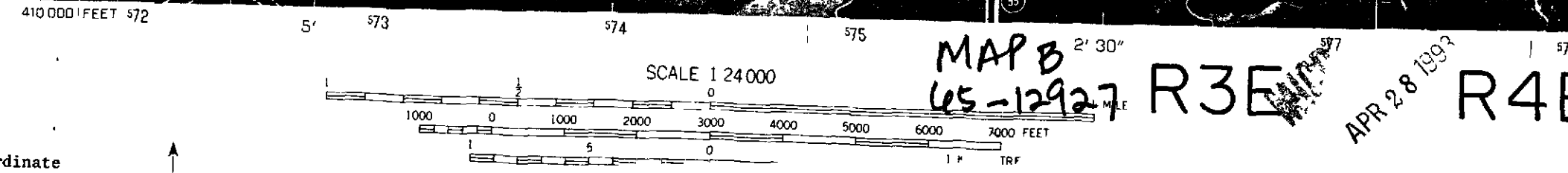
15.3

18.7

62.2



PERMIT 65-12927 INIT MS
 T. R. S. Q/Q
 1/4 15N 3E 13 SW/NW/NW
 PHOTO ID. T-10 Donnelly



8/21/92
DITCH MEAS.

SECTION
LINE

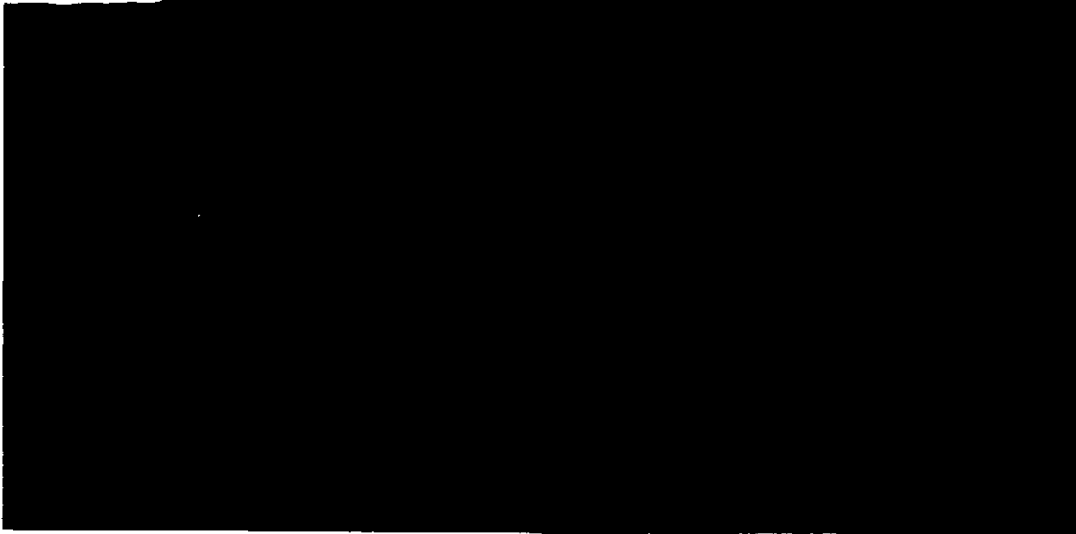


PHOTO ONE-

The pond w/springs underneath.
Berm on far side with Hot Springs
Creek leading away. Facing west.

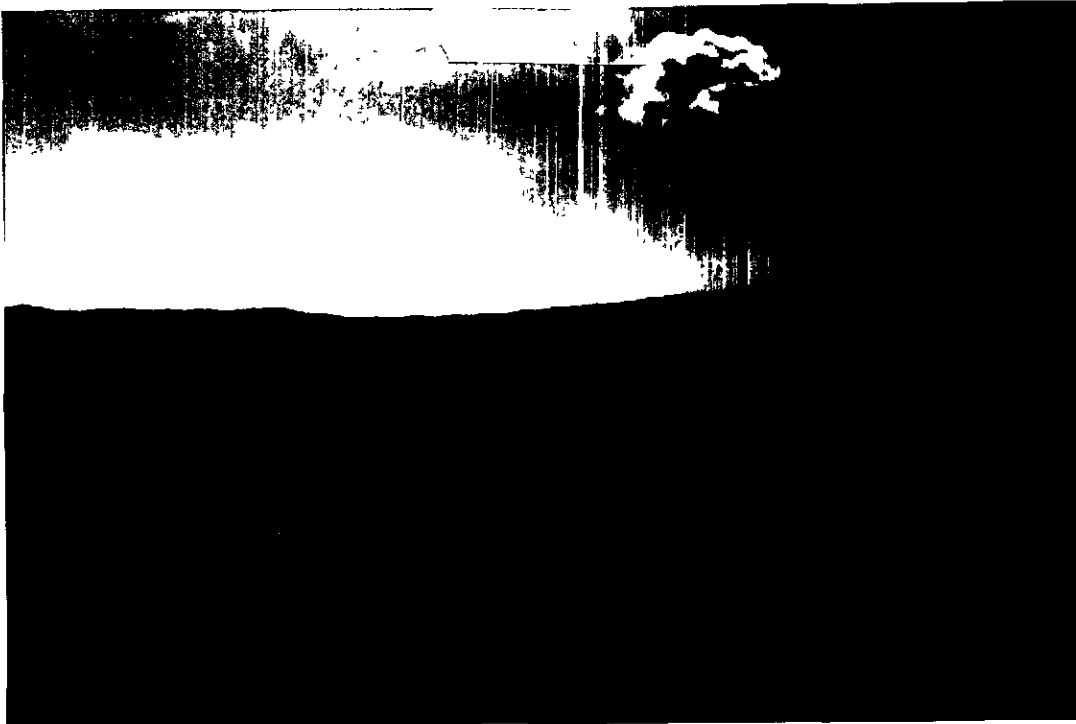


PHOTO TWO-

The pond with berm
[REDACTED]

APR 28 1993



PHOTO THREE-

*Springs bubbling in the pond.
Two 2" lines from air pumps into
pond on the left.*

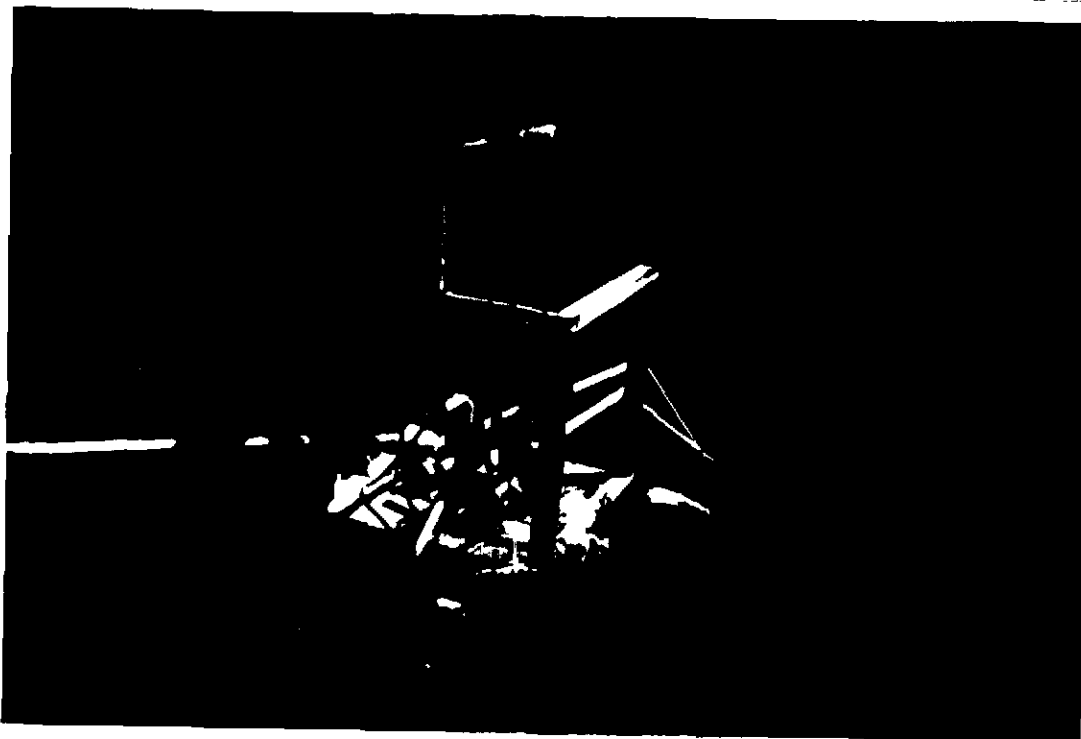


PHOTO FOUR-

*The two pumps supplying
water to the house & shops for
heating & fish propagation.*

APR 28 1993

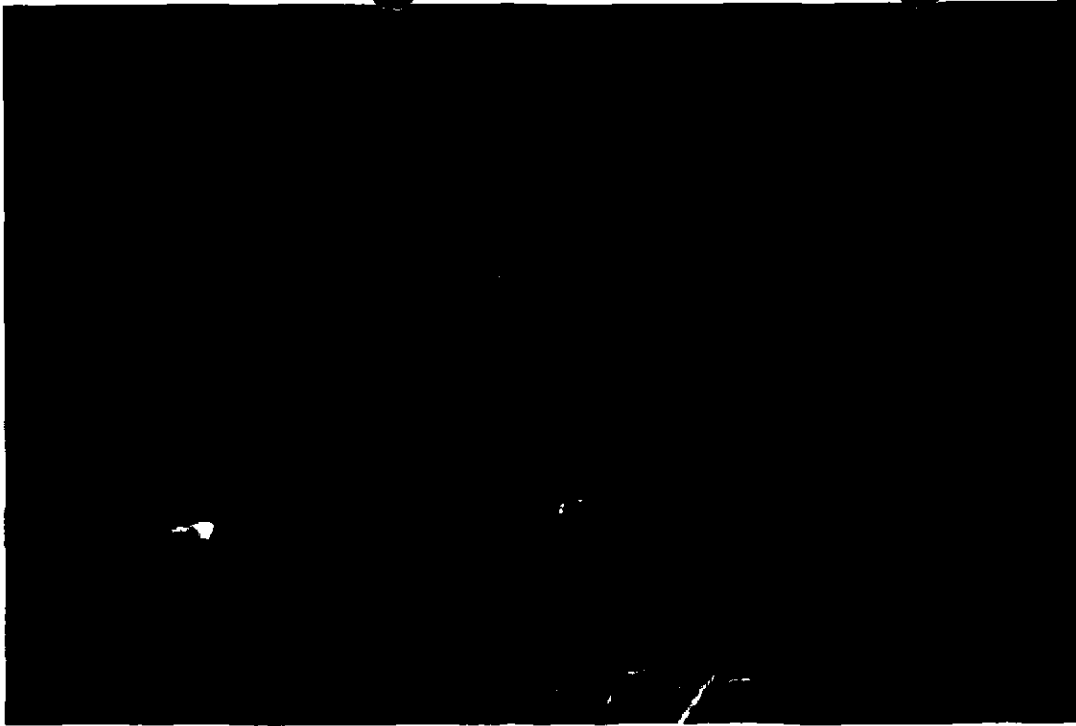


PHOTO FIVE-

*The house that is heated,
as seen from the pond.*

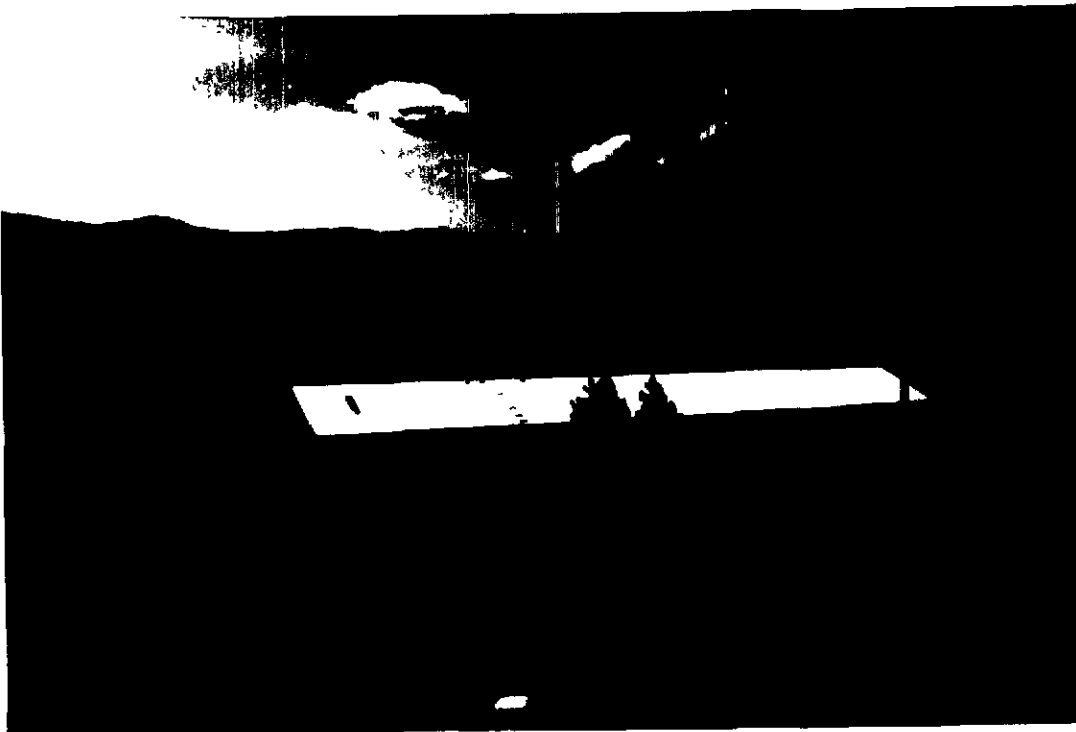
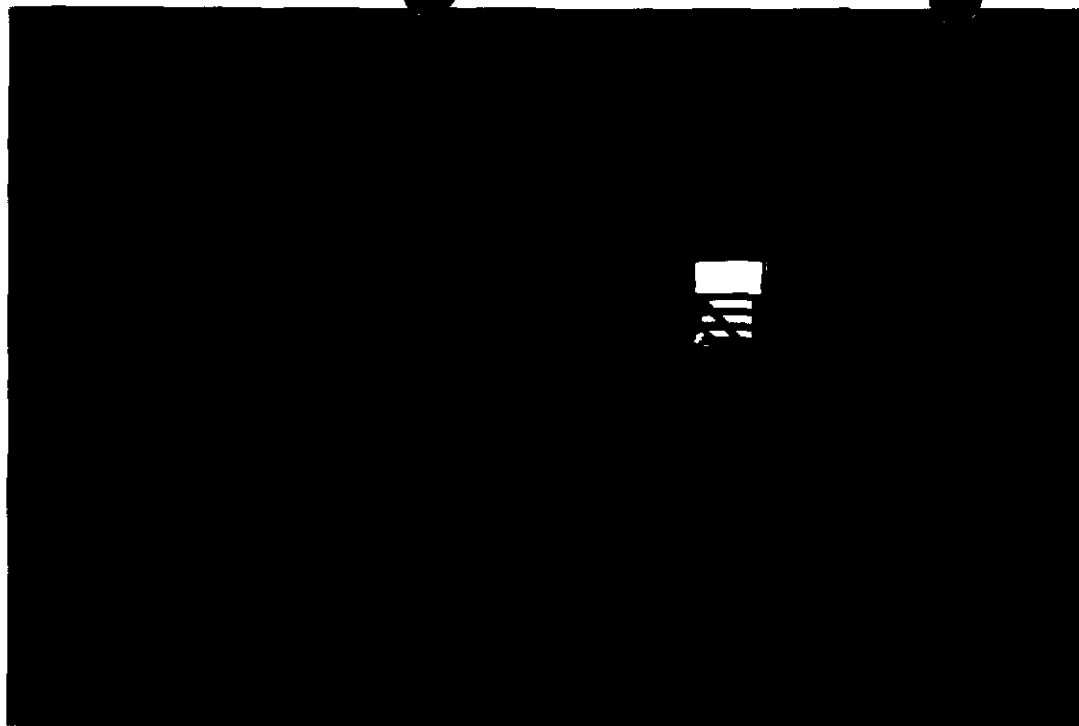


PHOTO SIX-

*The shop with fish prop.
& heating inside, as seen from
the house.*

APR 28 1993



Seven
PHOTO FIVE-

*Numerous lines leading
to tanks & troughs for
fish prop. inside shop.*



Eight
PHOTO SIX-

APR 28 1993

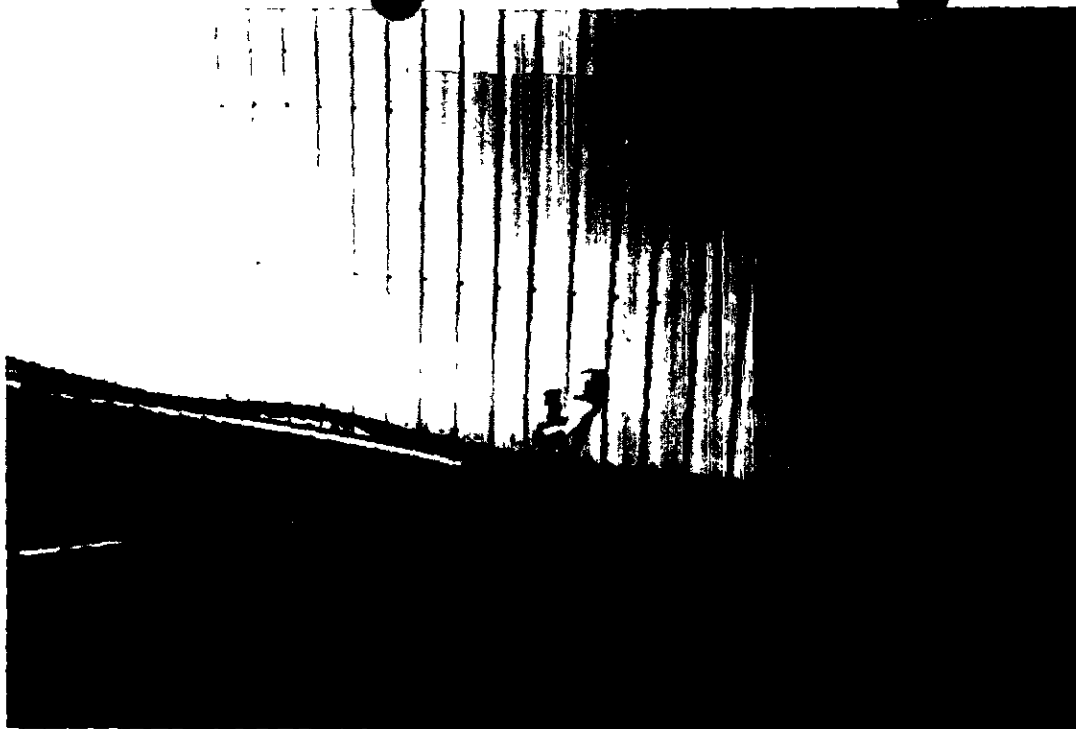


PHOTO ^{Nine} FIVE-

The 1 1/2" & 2" lines providing
discharge from the shop.

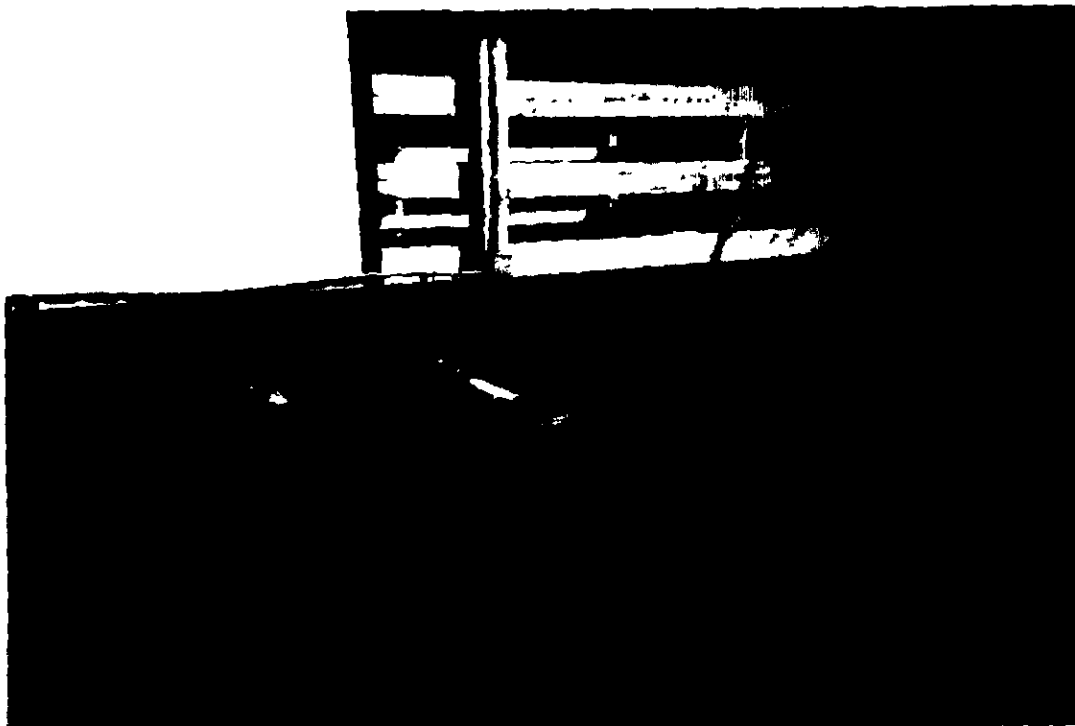


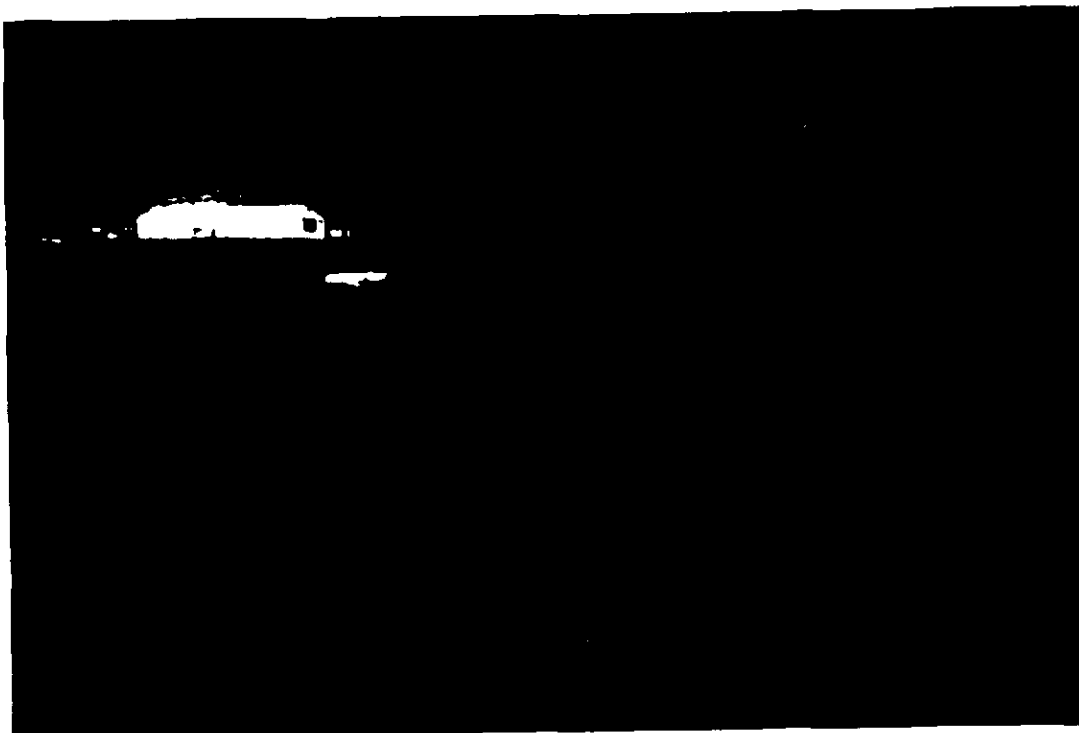
PHOTO ^{Ten} SIX-

The 4" line providing
discharge

APR 28 1993

PHOTO ^{Eleven} FIVE-

Two tanks to the west of the pond.
10" pipe to the left of the tanks
discharges into creek. 4" standpipe
discharges into each tank. 6" standpipes
to the left discharge into creek also.

PHOTO ^{Twelve} SIX-

Creek leading away
from the fish prop. tanks.
Facing East From Hwy 55

APR 28 1993



PHOTO ~~FIVE~~ ^{Thirteen}

The culvert running
under Hwy 55

>

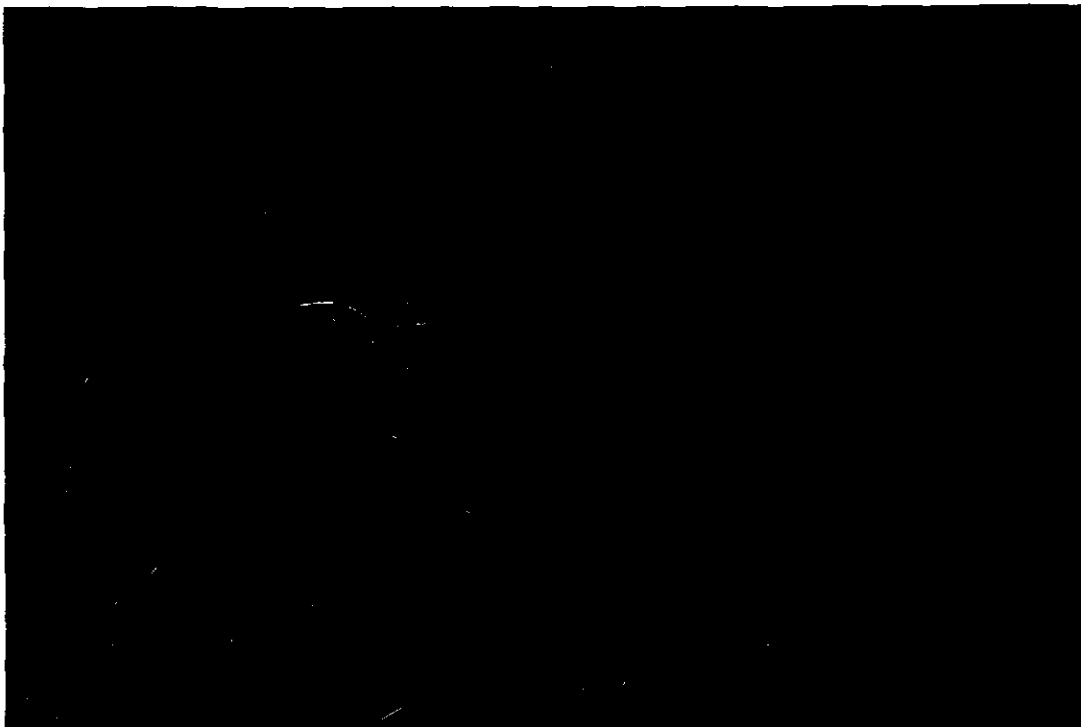
PHOTO ~~SIX~~ ^{Fourteen}

APR 28 1993

Pg 8

65-12927

8/21/92



Place of
current
measurement,
~~near~~ South
ditch



P/u in Sec
13 west
of ditch

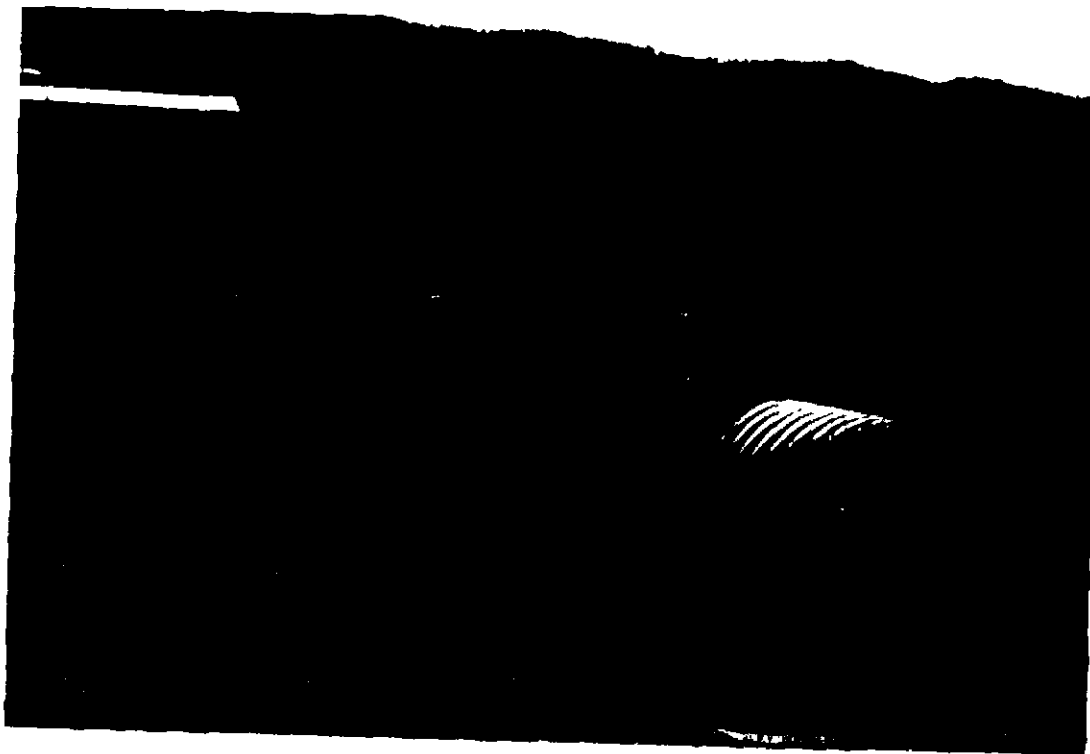
28 11 11

APR 28 1993

Pg 9

65-12927

8/21/92



Hiway crossing,
irrigation
ditch to
Sec 14.

Pond in
background.



Head of
ditch in
Sec 14.

Water may
be sent
both ways.

See diagram
on map A.

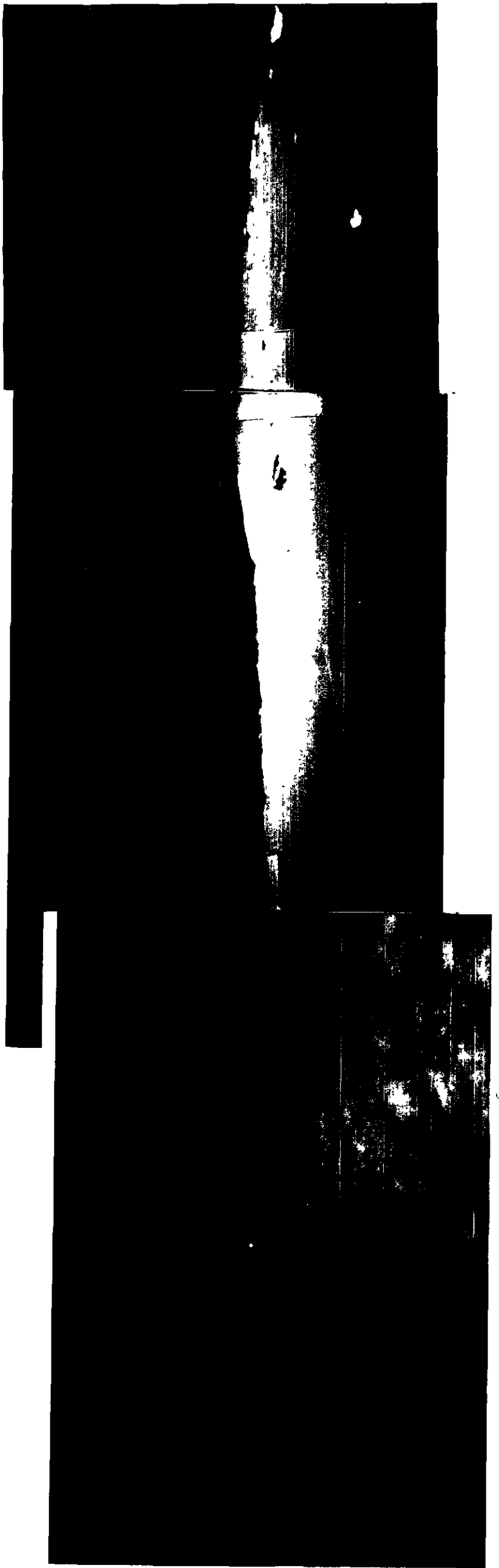
RECEIVED

APR 28 1993

APR 28 1992

Place of use,
Sec 14 NE 1/4
Looking west.

8/21/92
65-12927
Pg 10



June 4, 1990

RONALD C. YANKE
P.O. BOX 5405
BOISE, ID 83705

PROOF ACKNOWLEDGMENT LETTER

RE: PERMIT NO. 65-12927

Dear Permit Holder:

The department acknowledges receipt of the proof of beneficial use form submitted for the above referenced permit. The next step in the process of developing a water right is for the department to conduct a field examination to determine and confirm the use being made of the water.

If you have questions concerning this matter, please feel free to contact the WESTERN Regional Office in Boise at (208)334-2190.

Sincerely,

Rita Fleck
Secretary/Records Manager

c: IDWR - Region

MICROFILMED

JUN 06 1990

1/88

PROOF OF BENEFICIAL USE

ANALYSIS SHEET

Permit No. 65-12927

Date: 5-24-90

General Considerations:

Y Name same as permit
Y Signature the same as permit holder
N Address change _____ If yes, prepare a data entry
Y Proof received timely _____
_____ Reinstated

Source of Water:

Y Surface water
_____ Groundwater
_____ 1. well log in file
N/A 2. drilling permit
_____ A. amount of drilling fee paid for proposed uses

Extent of Use and Rate of Diversion:

Y Rate of diversion appropriate for uses
Y Is rate or volume and fee appropriate?
Y Has permit holder indicated when water was first put to a beneficial use?

Measuring Device:

Y Is a measuring device or access port required?
N Has one been installed?
_____ Waiver or modification of measuring device requested

Remarks: *Read meas. devices*
Proof acceptable

N/A Priority Calculation:
Date proof received _____
Date proof due _____ -
No. of days late _____ =
Priority date _____ +
NEW PRIORITY DATE _____ =

SEND FILES TO DATA ENTRY AND THEN TO MICROFILM

RECEIVED

STATE OF IDAHO

RECEIVED

APR 27 1990

DEPARTMENT OF WATER RESOURCES

PROOF OF BENEFICIAL USE

Department of Water Resources
Western Regional Office

Department of Water Resources

The Idaho Department of Water Resources will consider this form as a statement that the permit holder(s) have completed all development that will occur under this permit and that water has been applied according to the provisions of the permit for the beneficial use(s) described below. This form must be accompanied by a license examination fee or a completed field examination report prepared by a certified water right examiner who has been appointed by the department.

Permit No. 65-12927

Telephone No. 342-8901

Name(s) of Permit Holder(s): RONALD C. YANKE

Post Office Address: PO Box 5405 Boise ID 83705

Source of Water: Arling Hot Spring

If ground water, well driller's name: _____ Date drilled: _____

Extent of Use:

Domestic 1 (No. of households)

Irrigation 220AC (No. of acres)

Stockwater _____ (No. and type of stock)

Other Fish Propagation

Heating House & Shop

Total rate and/or volume for which proof is submitted 2.1 cfs XX acre/feet

Show date water was first diverted and beneficially used under this permit: MAY 15, 1980 - Heating House
Aug 1987 - Fish Prop

One of the following may be a condition of approval of your permit

Measuring device: Required? ☒ Yes ☐ No Installed? ☐ Yes ☐ No

OR

Flow Measurement Port: Required? ☐ Yes ☐ No Installed? ☐ Yes ☐ No

Fee Enclosed: \$ 150⁰⁰ (See License Examination Fee Schedule)

Department of Water Resources

Person to contact to accompany the Department representative during the field examination:

Bob Tilden - Hot Springs Fish Farm (208) 382-3263
Name Telephone No.

P.O. Box 293 Donnelly ID 83615
Address

RECEIVED

The above information is my true statement of the extent to which the above numbered permit has been developed and I relinquish any undeveloped portion of the permit to the state of Idaho

JUN 06 1990

Apr 20, 1990
Date

Signature (and title if on behalf of a company or organization)

RONALD C. YANKE

138549
March 31, 1990

RONALD C. YANKE
P.O. BOX 5405
BOISE, ID 83705

PROOF DUE NOTICE

RE: PERMIT NO. 65-12927

Dear Permit Holder:

One of the conditions of approval of the above referenced water permit was that proof of the extent of your beneficial use must be submitted to this office on or before June 1, 1990. (See last page of your approved permit or your last approved extension request.) Enclosed is a form which when accompanied by the license examination fee or a complete field examination report prepared by a certified water right examiner 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 which might bring title to the water in question, more than one extension of time can be granted. An extension of time request form is enclosed for your convenience.

Either an acceptable proof of beneficial use submittal or an acceptable 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

MICHAEL

JUN 02 1990

S T A T E O F I D A H O
D E P A R T M E N T O F W A T E R R E S O U R C E S

Statehouse
Boise, Idaho 83720
(208) 334-7900
June 2, 1989

RONALD C. YANKE
P.O. BOX 5405
BOISE, ID 83705

P E R M I T A P P R O V A L N O T I C E

RE: PERMIT NO. 65-12927

Dear Permit Holder:

Enclosed is a copy of your approved application for permit. We direct your attention to the conditions of approval on the final page.

Please be advised that your plans for fish propagation may be subject to regulations of the Idaho Department of Fish and Game. We suggest that you check with them before starting construction.

We have enclosed a form entitled "Instructions for Proof of Beneficial Use". Please read the instructions carefully since you must take further action to develop this permit. Also enclosed for your convenience is a form entitled "Proof of Beneficial Use" that must be submitted to the Department when your project is completed. If development is complete, you may submit proof of beneficial use immediately.

Sincerely,

GARY SPACKMAN, Supervisor
Water Right Permits Section

GS: SC
Enclosures

MICROFILMED
JUN 14 1989

P/D 15N 3E S. 13 SW NW NW
P/D T15R 3E S 13 + 14 22 #9

Form No. 202a.

4/87

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
APPROPRIATION APPLICATION ANALYSIS SHEET

INITIAL REVIEW BY: DK DATE: 11-22-88 APPLICATION: 65-12927

REQUIRED INFORMATION

- ☒ Name: (If applicant is a corporation or partnership, names and addresses for the director, officers, and other partners must be included.)
☒ Address:
☒ Source: (See USGS Quad for names of water sources)
☒ Point of Diversion: (10 acres for spring, lot & block descriptions for Subdivisions, local name)
☒ County:
☒ Quantity: (flow and/or volume)
☒ Period of use: Gov't. Lots: NO P/D
☒ Nature of proposed use: (Include description of use) NO P/U
☒ Description of diverting works:
☒ Time required for beneficial use of water:
☒ Place of use or acres irrigated:
☒ Map:
☒ Signature: (If applicant is corp., partnership, or municipality title of signator is required)
☒ Fee:
☒ yes ___ No* In form to receipt:

ADDITIONAL INFORMATION

YES NO

- ☒ Overlapping place of use: (Describe source & relationship to present application on the back.)
☒ Overlapping point of diversion:
☒ Field check required: Field check by: _____
☒ Field report attached:
☒ Critical groundwater area:
☒ Groundwater management area:
☒ Send dam safety information:
☒ Send power requirement letter:
☒ Send fish farm requirement letter:
☒ Power residency affidavit:
☒ Power efficiency form:
☒ Within trust water boundry: (If yes, attach Trust Water Supplementary Analysis Sheet.)
☒ Diversion greater than 5 cfs or 500 af: (If yes, attach large supplementary analysis sheet.)
☒ *REQUEST ADDITIONAL INFORMATION FROM THE APPLICANT

RECEIVED

Details to evaluate besting flow rate, per letter. Nov 19 1989

DATE REQUESTED: 3/2/89, not rec'd 3/27/89

☒ Additional information on reverse side:

Department of Water Resources

PROCESSING

YES NO

☒ ☐ In form for advertising:

☒ ☐ Statewide advertising:

☒ ☐ Fee amount, receipt number and date recorded on application:

SEND COPIES TO

YES NO

☒ ☐ I.D. Health and Welfare

☒ ☐ I.D. Fish and Game

☒ ☐ I.D. Lands

☒ ☐ Adjudication Bureau

YES NO

☒ ☐ U.S. BLM

☒ ☐ U.S. Forest Svc.

☒ ☐ Water District # _____

☒ ☐ Other _____

FINAL REGIONAL PROCESSING REVIEW

YES NO

☒ ☐ Affidavit of publication received:

☒ ☐ Application published correctly: If not, record action taken.

☒ ☐ Publication dates and paper recorded on application:

☒ ☐ Protests received, Final date for protest December 27, 1988

☒ ☐ Protests, dates, resolution of protest recorded on application:

☒ ☐ Recommendations attached: Approve, DM

☒ ☐ Measuring device required:

☒ ☐ Measuring port required:

☒ ☐ Water delivered by water master? District # 65

☒ ☐ Special conditions of approval or cover letter: (see additional info. below)

☒ ☐ See Below For Additional Information

Recommended Date of Priority 11/1/1988 ☒

Recommended by: DM Date 4/13/89

STATE OFFICE REVIEW

P06, P10

05(65 Payette River) 02 07A

See below for additional information. By 090 42 44

Date 5/24/89

ADDITIONAL INFORMATION

010

CONVERSATION MEMORANDUM

DATE 4/6/89FILE 65-12927NAME OF PARTY Ronald Jonke c/o Keith Stokes, R.G.EMPLOYEE Steve LasterRE: Letter from K. Stokes of 3/24/89

$$t_i = 70^\circ \text{F}$$

$$S = 90^\circ \text{F}$$

$$A_{\text{house}} = 2016 \text{ ft}^2, 2 \text{ story}, R-19$$

$$A_{\text{shop}} = 7200 \text{ ft}^2, R-19$$

HOUSE

2 story

$$E = (e \cdot \Delta T) \cdot 8 \times A$$

$$\text{where } e = .44$$

$$\Delta T = t_i - t_o = 70 - (-8) = 78$$

$$A = 2016$$

$$E = (.44 \times 78)(8)(2016)$$

$$E = 55,351.3 \text{ BTU/hr.}$$

better than average

similar to
PocahontasSHOP

$$e = .44 \text{ (better than average)}$$

$$\Delta T = 78$$

$$A = 7200$$

$$E = (e \cdot \Delta T) A = 247,104 \text{ BTU/hr.}$$

$$\text{Flow} = W = \frac{Q}{(500)(\Delta T_s)}$$

where

$$Q = E = 55,351.3$$

$$\Delta T_s = .6(S - t)$$

$$\text{where } S = 90^\circ \text{F}$$

$$t = 70^\circ \text{F}$$

$$\Delta T_s = .6(90 - 70) = 12$$

$$W = \frac{55,351.3}{(500)(12)} = 9.23 \text{ gpm}$$

$$\text{Flow} = W = \frac{247,104}{500 \times 12} = 41.18 \text{ gpm}$$

$$\text{if assume } e = .67 \text{ (average efficiency)}$$

$$W = \frac{376,272}{500 \times 12} = 62.71 \text{ gpm}$$

TOTAL GPM

$$9.23 + 41.18 = 50.41$$

MICROFILMED

JUN 14 1989

if assume
 $e = .67$ (average
efficiency)
→

$$W = \frac{84,285}{500 \times 12} = 14.05 \text{ gpm}$$

KEITH STOKES, P.E.
CONSULTANT

3709 Kootenai Street

Boise, Idaho 83705

Phone 343-5877 or 375-1130

March 24, 1989

RECEIVED
MAR 27 1989

Idaho Department of Water Resources
Western Region
2735 Airport Way
Boise, ID 83705

Department of Water Resources
Western Regional Office

ATTN: Steve Lester, Resource Agent

RE: Application for Permit #65-12927

In response to your letter of March 31, 1989 concerning the application, we submit the following:

1. The internal temperature of the house and shop is maintained at 70 - 72 F. The spring water averages 90 F at the pump.
2. The house is a 2 story log construction, 2,016 sq. ft. in size. All windows have storm windows and are caulked. There are no storm doors. The upper walls of the house are insulated with a R-19 rating.
3. The shop building is 7,200 sq. ft., metal construction with R-19 insulated walls and 16 inches of blown insulation in the attic. There are no windows and sliding doors at each end. Heating is accomplished by pipes poured in the concrete floor, as well as some heat from the open fish tanks, which are maintained at a temperature of 80 +F. About one-half of the building is used for storage.

Please direct any further questions to me at 375-1130.

Very truly yours,



Keith E. Stokes, P.E.

KES:cjw

MICROFILMED

JUN 14 1989



State of Idaho
DEPARTMENT OF WATER RESOURCES

Western Region, 2735 Airport Way, Boise, Idaho 83705 - (208) 334-2190

CECIL D. ANDRUS

GOVERNOR

R. KEITH HIGGINSON

DIRECTOR

March 21, 1989

Ronald C. Yanke
P.O. Box 5405
Boise, ID. 83705

Re: Application for Permit 65-12927

Dear Sir:

Before we can approve your application for the use of Arling Hot Spring for various purposes, additional information is needed. To properly evaluate the heating flow rate for the ranch house and shop, please provide the following information.

- 1) The temperatures of the hot spring and the desired internal temperatures in the house and shop. 70 degrees F. is assumed for internal temperatures unless otherwise specified.
- 2) The livable square footage of the home and the heatable square footage of the shop.
- 3) Information concerning the energy efficiency of both structures. Helpful details include R factors for walls and ceilings, use of storm doors and windows and single or double pane glass, use of weather stripping and/or caulking, and any other factors that improve energy efficiency.

The application shows a heating rate of 0.10 cfs. Answers to the above items will allow us to determine if the desired rate is appropriate for the situation. Please respond within 30 days to avoid complications in the application process. This office will provide additional help if needed.

Sincerely,

Steve Lester
Sr. Water Resource Agent

MITTIFIED
JUN 14 1989



State of Idaho
DEPARTMENT OF WATER RESOURCES
WESTERN REGION, 2735 Airport Way, Boise, Idaho 83705 • (208) 334-2190

CECIL D. ANDRUS
Governor

R. KEITH HIGGINSON
Director

December 5, 1988

Stacy Gebhards
Regional Supervisor
Idaho Department of Fish & Game
Region 3/Statehouse
Boise, ID 83720

Re: Application for Permit No. 65-12927, in the Name of Ronald C. Yanke

Dear Mr. Gebhards:

Enclosed is a copy(s) of the above-referenced application(s) for permit which may be of interest to your agency. Please review the application(s) and submit any comments you may have.

This office normally completes the processing of an application within a six-week period and is required to take final action shortly thereafter, however, if your agency desires to file a formal protest against the approval of this application(s), your written protest must be received in this office by DECEMBER 27, 1988.

If you have any questions regarding the application, please contact this office.

Sincerely,

DAVID R. TUTHILL, JR., P. E.
Manager, Western Regional Office

DRT:jp

Enclosure(s):

MICROFILMED

JUN 14 1989

65-12927

YANKE, RONALD C.
P.O. BOX 5405
BOISE, ID 83705

Source: ARLING HOT SPRING

Tributary: HOT SPRING CREEK

Diversion Pt: SWNWNW Sec 13 T 15N R 03E

| | |
|------------------|--------------|
| Use: IRRIGATION | (2.100 CFS) |
| FISH PROPAGATION | (.100 CFS) |
| HEATING | (.100 CFS) |

Date Filed: 11/01/1988

In: T15N R03E S13
S14

NWNW
NENE
NENW

SWNW
NWNE
SENW

NWSW
SWNE
NESE

SENE
NWSE

220.0 ACRES TOTAL

MICROFILMED

JUN 14 1989