

ROBERTSON

see file #'s

A36-02406

A36-02407

A36-02423

for original claim

MICROFILMED
FEB 09 1993

Ady

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

TRANSFER OF WATER RIGHT

TRANSFER NO. 4312
WATER RIGHT NO(S). 36-04058A/36-07690A/36-07056
36-11124/36-15363

This is to certify that: **PAUL ROBERTSON**
RT 1 BOX 1589
PAUL ID 83347

has requested a change to the above captioned water right(s). This change in water right(s) is authorized pursuant to the provisions of Section 42-222, Idaho Code, provided the conditions listed below are met.

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Right No. 36-07056 :			
IRRIGATION	04/01 to 10/31	6.40 CFS	1740.0 AF
Priority: 05/07/1969			
Right No. 36-11124 :			
IRRIGATION	04/01 to 10/31	0.52 CFS	219.7 AF
Priority: 05/01/1972			
Right No. 36-15363 :			
IRRIGATION	04/01 to 10/31	10.17 CFS	2072.0 AF
Priority: 04/17/1960			
	SUBTOTAL:	* 16.57 CFS	* 3916.0 AF
Right No. 36-04058A :			
IRRIGATION	04/01 to 10/31	0.70 CFS	248.0 AF
Priority: 06/01/1962			
Right No. 36-07690A :			
IRRIGATION	04/01 to 10/31	** 1.83 CFS	448.0 AF
Priority: 04/06/1978			
	TOTAL:	*** 19.10 CFS	*** 4560.0 AF

SOURCE
GROUNDWATER

LOCATION OF POINT(S) OF DIVERSION:

SWNW , Sec. 29, Township 06S, Range 21E
SESW , Sec. 29, Township 06S, Range 21E
Lot 11(SWSW), Sec. 30, Township 06S, Range 21E
LINCOLN County

TRANSFER NO. 4312
WATER RIGHT NO(S). 36-04058A/36-07690A/36-07056
36-11124/36-15363

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>
06S	21E	19	SWSE 40	SESE 40		80
		29	NWNW 40	SWNW 40	NWSW 40	
			SWSW 40	SESW 40		200
		30	NENE 40	NWNE 40	SWNE 40	
			SENE 40	Lot 1(NENW) 40	Lot 5(SWNW) 35	
			Lot 6(SENW) 40	Lot 7(NESW) 40	Lot 8(NWSW) 40	
			Lot 9(NWSW) 12	Lot 10(SWSW) 16	Lot 11(SWSW) 34	
			Lot 12(SESW) 40	NWSE 40	SWSE 40	
			SESE 40			577
		31	NENE 40	NWNE 40	Lot 1(NENW) 40	
			Lot 2(NWNW) 40	Lot 3(NWNW) 16	Lot 4(SWNW) 16	
			Lot 5(SWNW) 40	Lot 6(SENW) 11		243
		32	NWNW 40			40
Total number of acres irrigated: ****						1140

CONDITIONS OF APPROVAL AND REMARKS

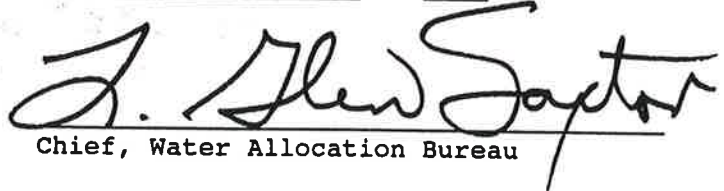
1. The right holder shall measure and annually report diversions of water and/or other pertinent hydrologic and system information as required by Section 42-701, Idaho Code.
2. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 4.0 afa per acre at the field headgate for irrigation of the lands above.
3. The right holder shall accomplish the change authorized by this transfer within one (1) year of the date of this approval.
4. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
5. Approval of this transfer does not preclude the opportunity for review of the validity of the water right(s) in the ongoing Snake River Basin Adjudication.
6. Prior to diversion of water under this approval, the right holder shall provide a means of measurement acceptable to the Department from all authorized points of diversion which will allow determination of the total rate of diversion.
7. The total instantaneous diversion of water from all points of diversion under Transfer 4312 shall not exceed 19.10 cfs, nor a total combined annual volume of 4560.0 af.
- **** 8. Right 36-04058A is limited to the irrigation of 62.0 acres in the place of use described above in a single irrigation season.
- **** 9. Right 36-07690A is limited to the irrigation of 112.0 acres in the place of use described above in a single irrigation season.
- **** 10. Right 36-07056 is limited to the irrigation of 435.0 acres in the place of use described above in a single irrigation season.

TRANSFER NO. 4312
WATER RIGHT NO(S). 36-04058A/36-07690A/36-07056
36-11124/36-15363

CONDITIONS OF APPROVAL AND REMARKS

- **** 11. Right 36-11124 is limited to the irrigation of 979.0 acres in the place of use described above in a single irrigation season.
- **** 12. Right 36-15363 is limited to the irrigation of 518.0 acres in the place of use described above in a single irrigation season.
- * 13. Rights 36-07056, 36-11124 and 36-15363 when combined shall not exceed a total diversion rate of 16.57 cfs, a total annual diversion volume of 3916.0 af at the field headgate and the irrigation of 979.0 acres.
- ****
- *** 14. Rights 36-04058A, 36-07056, 36-07690A, 36-11124 and 36-15363 when combined shall not exceed a total diversion rate of 19.10 cfs, a total annual diversion volume of 4560.0 af at the field headgate and the irrigation of 1140.0 acres.
- ****
- **** 15. The right holder shall cease irrigation of 13.0 acres previously authorized under these rights, and consolidate use of water on the remaining 1140.0 acres.
- ** 16. The portion of Right 36-07690A in the amount of 0.41 cfs shall be considered abandoned through approval of Transfer 4312.
- 17. Right 36-11124 is subordinate to all water rights with a priority date earlier than April 12, 1994, that are not decreed as enlargements pursuant to Section 42-1426, Idaho Code. As between water rights decreed as enlargements pursuant to Section 42-1426, Idaho Code, the earlier priority right is the superior right.
- 18. Right 36-11124 is based upon an enlargement of Rights 36-07056 and 36-15363 pursuant to Section 42-1426, Idaho Code.

Dated this 13th day of November, 1998.


Chief, Water Allocation Bureau

MEMORANDUM

TO: FILES 36-04058A, 36-07056, 36-07690A, 36-11124 &
36-15363 (Combined Rts. 36-02406/2407 & Part 2423)

FROM: PAM SKAGGS/STATE OFFICE

SUBJECT: TRANSFER 4312

DATE: January 29, 1998

Transfer 4312 adds points of diversion and combines/changes the place of use under Rights 36-04058A, 36-07056, 36-07690A, 36-11124 & 36-15363 (Combined Rts. 36-02406/2407 & Part 2423). The applicant is combining these rights into a single permissible place of use system using three existing points of diversion.

The transfer approval was processed on the rights as currently recommended by SRBA reformatted records, while the application identified the original water rights records and numbers, resulting in different right numbers appearing on the transfer approval.

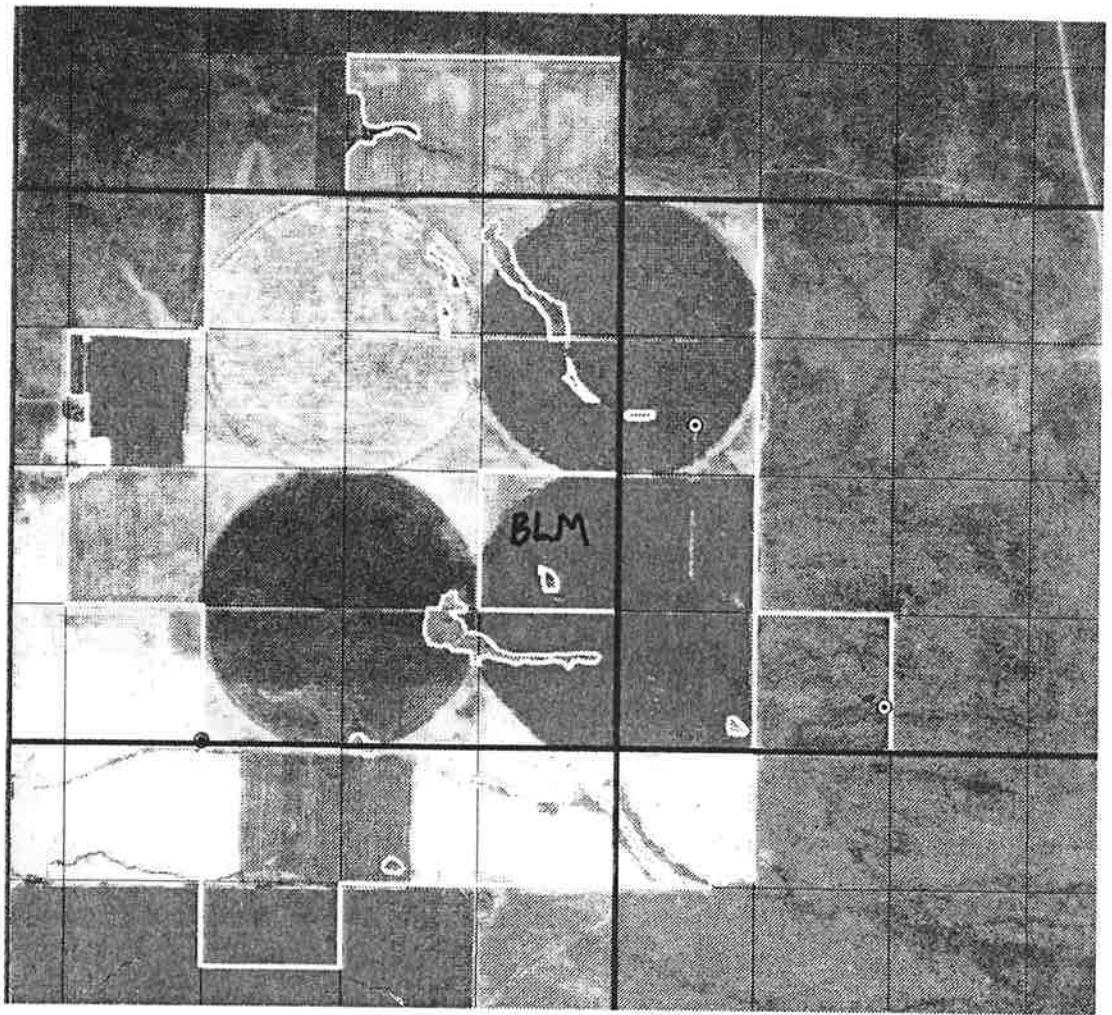
These five (5) rights include an unencumbered water right (36-04058A), three (3) combined rights (36-07056/11124/15363), and a right (36-07690A) with a point of diversion overlap with rights under a separate owner and system. In order to separate Right 36-7690A from the p/d overlap rights, a reduction of 0.41 cfs was made. The effect on the entire system is negligible with the rate per acre remaining at 0.016 cfs per acre within a piped sprinkler system.

36-07690A	Combined Rights	Percent	Capacity Limit	Transfer Portion
2.24 cfs	/ 11.99 cfs	= 0.18682	x 9.82 cfs	= 1.83 cfs

2.24 cfs - 1.83 cfs = 0.41 cfs abandoned thru transfer.

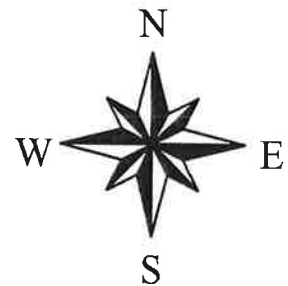
The p/d overlap condition on the non-transferred rights (36-07446/7690B/15379) should be modified to reflect the transfer, reducing the combined total to 7.99 cfs. (9.82 cfs - 1.83 cfs = 7.99 cfs)

Recommended conditions include measuring & annual reporting, irrigation overlap, multiple points of diversion/measuring devices, permissible place of use, combined limits, consolidate use on reduced acres, abandoned portion, expansion right conditions and standard transfer conditions.



660 0 660 Feet

TNS 6S, RNG 21E
SEC 19, 29, 30, 31, & 32



⊙ Recommended Point of Diversion

Recommended Place of use



Section lines



Quarter/Quarter Lines

GIS PLACE OF USE PRESENTATION
1987 and/or 1988 NAPP PHOTOGRAPHY
DATA ENTRY NOVEMBER 4, 1997
BY STEVE CLELLAND

CLAIM NUMBERS 36-07056
36-11124
36-15363

DATE 11/4/97
 AGENT sa

TRANSFER NUMBER _____

OBJECTION FILED _____

TOTAL ACRES FROM RECOMMENDATION 979

GEOGRAPHIC INFO SYSTEM 910

RIGHT NO				NE				NW				SW				SE				w/ BL
	TNS	RNG	SEC	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
RECOM	65	21E	19															40	40	80
GIS			19															37	40	77
RECOM			29					40	40			40	40	40						200
GIS			29					40	40			40	40	Ø						160
RECOM			30	40	40	40	40	40		35	40	40	40		40	Ø	40	40	40	515
GIS			30	36	39	40	39	40		39	40	40	39		40	39	39	36	38	539 ⁷
RECOM			31	40	40			40			24									144
GIS			31	36	39			40			24									139
Recom			32					40												40
GIS			32					34												39
			UPDATED																	

B36-DBPOU.DBF 3/13/98 su
 B36-DBPOD.DBF _____

POLYGON CREATED ON 604 () _____
 ATTRIBUTES OF B36-POU.SHP (→ See Below ←)

2 ATTRIBUTES OF B36-POD.SHP 657 (SWNW S.29)
658 (SESESW S.29)
[#659 (SWSESW S.30)]⁺

* Section total 539 includes 39 Acres in BLM tract
 $979 - 5\% = 930$ Acre > 5% difference, GIS acres are less.

Pou Shapes: #722 MAIN POU IRRIGATED
 #772 ~~#723~~ BLM (NESE S.30)
 #773 ~~#724~~ Ø IRRIG. (SESW S.29) (40 ac)

POD #659

+ AS Review states well in S.30 SWSESW
 is part of this system but was added in in 1988
 and Requires a transfer to be effective.

P/U CONFLICT yes (X) no ()

P/D CONFLICT yes (X) no ()

READY FOR DECREE yes () no ()

SENT FOR DECREE yes () no ()

RECEIVED

FEB 24 1995

Department of Water Resources
Southern Region

RECEIVED

FEB 15 1995

OFFICE OF THE
ATTORNEY GENERAL

RECEIVED

FEB 16 1995

Department of Water Resources
Adjudication Bureau

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re the General Adjudication of Rights
to the Use of Water From the Snake River
Basin Water System.

Case No. 39576

STANDARD FORM 3

The State of Idaho, ex rel. R. Keith
Higginson in his official capacity as
Director of the Idaho Department
of Water Resources,

STANDARD FORM FOR NOTICE
OF CHANGE IN ADDRESS

OR

Petitioner,

CONSENT TO SUBSTITUTION OF
PARTY

vs.

The United States; the State of Idaho; and
all Claimants to the Use of Water From
the Snake River Basin Water System,

*all records modified
2-22-95. -ss*

Respondents.

INSTRUCTIONS FOR USE

This form must be used to provide notice of change in address or to substitute a party whose water right recommendation is in a director's report which has been filed with the court. The filing of Standard Form 3 cannot result in a contested matter. A hearing will not be scheduled.

This form has been adopted by the court in *SRBA Administrative Order 1* (amended June 21, 1993), Section 4A, which may be consulted for further information.

Standard Form 3 shall not operate to excuse compliance with the statutory requirements of I.C. § 42-1409(7) where a water right recommendation is not before the court.

As used in this form, the term "prior claimant/seller" means any person who, pursuant to I.C. § 42-1409(2), (3) and (6), filed a notice of claim asserting the right to the use of water or on whose behalf the right to the use of water was asserted. "New claimant/purchaser" means any successor in interest of a "prior claimant/seller," whether the interest is acquired by purchase, gift, inheritance or other means.

A *Consent to Substitution of Party (Substitution)* must be signed by the prior claimant/seller and the new claimant/purchaser. The *Substitution* shall be filed by the new claimant/purchaser.

Check either the *Change in Address* or *Consent to Substitution of Party* box and fill in the requested information. A party may copy or reproduce the standard form. The text of the form must be on the front and back of each page, exactly as it appears here.

Follow the instructions on the form or the court will not accept it for filing. The Verification and the Certificate of Mailing must be completed.

The standard form may be obtained from the Idaho Department of Water Resources and the court. You must provide a copy of this form to each party, or to their legal counsel, in any subcase in which you are a party.

☐ CHANGE IN ADDRESS

My name is Paul Robert Tson

I am the claimant of 36-07690A 36-04058A 36-07054
(Insert each water right number) 36-11124 36-15363

I have filed an objection/response to the following water right(s) _____

(Insert each water right number)

My new mailing address is RT. 1 Box 1589
Paul Ed 83347

My phone number is: Work 678-0248-1344 Home 438-5959

CEB 12 1996

RECEIVED

☐ **CONSENT TO SUBSTITUTION OF PARTY**

My name is _____

My address is _____

My phone number is: Work _____ Home _____

The name and address of the party who I wish to be substituted for are:

I am the new claimant/purchaser of _____ and
(Insert each water right number)

I am submitting proof of acquisition of the interest of the prior claimant/seller, *which is required by the court* to support my *Substitution*. Proof must contain a legal description of the property, including the water right numbers conveyed. You must describe the documents you are submitting.

X _____
(Signature of prior claimant/seller)

(Signature of new claimant/purchaser)

☐ **ATTORNEY OF RECORD COMPLETING FORM**

My name is _____

I am the attorney of record for _____
(Identify party/claimant)

My address and phone number are _____

VERIFICATION

(Must be completed for either a *Notice of Change in Address* or for *Consent for Substitution of Party*)

State of Idaho

County of Twin Falls

Paul Robertson, being first duly sworn, upon oath, deposes and says:
(Insert name of party/claimant filing form)

That I am the person or entity filing this form, that I am a water right claimant or party or their successor in interest, defined by I.C. §§ 42-1401A(1), (7) or (10); and that I have read this form, know its contents and that the statements are true to the best of my knowledge and belief.

Paul Robertson
Signature of person filing form

By: _____
Attorney signing in representative capacity

Subscribed and sworn to before me on Feb 13, 1995
(Insert Date)

[Signature]
Notary Public for Idaho
Residing at: Twin Falls
My Commission expires: 6/24/98

INSTRUCTIONS FOR MAILING

You must mail the form, including all attachments, to the Clerk of the SRBA Court and to the parties identified in the Certificate of Mailing. FAX filings will not be accepted by the SRBA Clerk of the Court.

You must sign the Certificate of Mailing to show that you followed these steps.

CERTIFICATE OF MAILING

I certify that on 2/13, 1995, I mailed the original and copies of this form, including all attachments, to the following persons by mailing the original and/or copies, postage prepaid and addressed as follows:

1. Original to:

Clerk of the District Court
Snake River Basin Adjudication
253 Third Avenue North
P. O. Box 2707
Twin Falls, Idaho 83303-2707

2. A *Change of Address* must be served on each party, or their attorney, in each subcase in which you are a party at the following address(es):

3. A *Consent to Substitution of Party* must be served on the prior claimant/seller or their attorney at the following address:

4. A *Consent to Substitution of Party* must be served on each party, or their attorney, to each subcase in which the prior claimant/seller is a party at the following address(es):

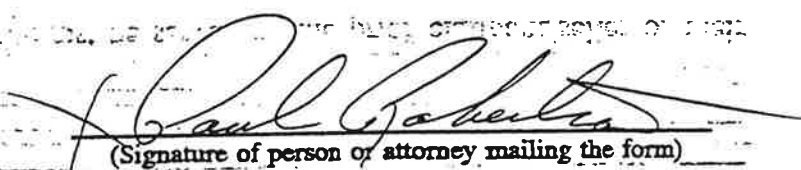
USDI - BLM

4. One copy to:

Chief, Natural Resources Division
Office of the Attorney General
State of Idaho
P. O. Box 44449
Boise, Idaho 83711-4449

5. One copy to:

United States Department of Justice
Environment and Natural Resource Division
550 West Fort Street, Box 33
Boise, Idaho 83734


(Signature of person or attorney mailing the form)



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, P.O. Box 83720, Boise, Idaho 83720-0098

Phone: (208) 327-7900 FAX: (208) 327-7866

PHILIP E. BATT
GOVERNOR

February 22, 1995

R. KEITH HIGGINSON
DIRECTOR

PAUL ROBERTSON
RT 1 BOX 1589
PAUL ID 83347

RE: Snake River Basin Adjudication (SRBA)
Notices of Claim No. 36-07690A, 36-04058A, 36-07056,
36-11124 & 36-15363
Change of Address Notification

Dear Claimant:

IDWR has received your notice of the change of address of the water rights claims referenced above. Our records have been changed accordingly.

Sincerely,

Idaho Department of Water Resources
Adjudication Bureau

SO:ss:region

NOTICE OF ERROR

RESPONSE

CORRECTED R PROOF

MICROFILMED
FEB 09 1993

NOTICE OF ERROR FORM

AUG-24-1992

Please type or print clearly, fill out completely, and return to:

**Idaho Department of Water Resources
Statehouse Mail
Boise, Idaho 83720-9000**

RECEIVED

SEP 14 1992

Department of Water Resources

The notice of error must be received at IDWR by the **deadline date** printed below with your proposed recommendation.

YOUR DEADLINE FOR FILING A NOTICE OF ERROR IS: SEP-24-1992

1. Water right number: 36-15363

2. Name: Paul Robertson

Address: Apt. 1 Box 1589

Paul Rd 83347

Weekday Telephone Number:

438-5959

MICROFILMED
FEB 09 1993

TEAR AT PERFORATIONS AND COMPLETE FORM ON OTHER SIDE

(Instead of filling in items 3 and 4 below you may include a copy of your proposed recommendation with the changes marked on the copy.)

3. Describe the portion of proposed recommendation with which you disagree:

All of it?

4. Describe the changes you wish to have made in the proposed recommendation:

5. Describe why you disagree with the proposed recommendation:

6. Date: Sept 10-92

SIGNATURE

Paul Roberto



State of Idaho

DEPARTMENT OF WATER RESOURCES

Southern Region, 222 Shoshone St. East, Twin Falls, Idaho 83301 (208) 736-3033

CECIL D. ANDRUS
Governor

R. KEITH HIGGINSON
Director

October 19, 1992

PAUL ROBERTSON
RT 1 BOX 1589
PAUL ID 83347

Re: Snake River Basin Adjudication (SRBA)
Notice of Error Response
Recommended Right Nos. 36-07690A, 36-07056, 36-15363,
36-11124 and 36-04058A

Dear Mr. Robertson,

You recently filed a Notice of Error with IDWR concerning the water rights referenced above. No change to our recommendation has been made at this time.

During the Notice of Error procedure, we hope to find and correct errors in our recommendations of your rights. Although you had indicated a desire to meet with our personnel, no appointment was made. We are now at the end of the Notice of Error procedure and without specific information about your concerns we can not make any changes.

Please contact this office if you have other questions or concerns.

Sincerely,

Roxanne McCarthy
Sr. Water Resource Agent
Adjudication Bureau

RM:rm

MICROFILMED
FEB 09 1993

R PROOF



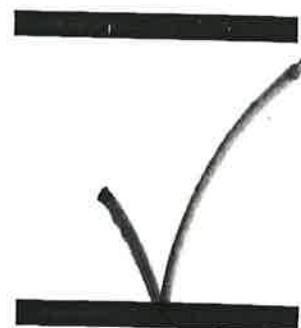
CVR



MAPS



PHOTOS



MISC

MICROFILMED
FEB 09 1993

IDAHO DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM PROFILE REPORT
(REGIONAL)

MICROFILMED
FEB 09 1993

OWNER CODE	NAME & ADDRESS	PRIORITY DATE	WATER USE	USE PERIOD FROM TO	DIVERSION RATE	DIVERSION VOLUME
C	PAUL ROBERTSON RT 2 BOX 2572 PAUL ID 83347 (208) 532-4172	04/17/1960	IRRIGATION	04-01 10-31	10.17 CFS	
					TOTAL DIVERSION:	10.17 CFS

Water Source: GROUNDWATER

Tributary to:

Stage: LICENSE

Point(s) of Diversion:

T06S R21E S29

SWNW

SESESW

LINCOLN County

Place of use Legal Description for: IRRIGATION

				NE				NW				SW				SE								SUM
T	R	S	:	NENE	NWNE	SWNE	SENE	:	NENW	NWNW	SWNW	SENW	:	NESW	NWSW	SWSW	SESW	:	NESE	NWSE	SWSE	SESE	:	
				Lt	Ac	Lt	Ac		Lt	Ac	Lt	Ac		Lt	Ac	Lt	Ac		Lt	Ac	Lt	Ac		
06S	21E	19	:					:					:					:					:	80.0
06S	21E	29	:					:		40	40		:		40	40	40	:					:	200.0
06S	21E	30	:	40	40	40	40	:	01-40		05-35	06-40	:	07-40	08-40		12-40	:	40	40	40		:	515.0
06S	21E	31	:	40	40			:	01-40			06-24	:					:					:	144.0
06S	21E	32	:					:		40			:					:					:	40.0
																								TOTAL ACRES
																								979.0

POU County: LINCOLN

Other Rights: NONE

Other Water Rights with Same Point(s) of Diversion and Source:

A36-02407 A36-04058A A36-07056 A36-07690A A36-11124 R36-07056 R36-11124

Other Water Rights Listing Overlapping Place(s) of use:

A36-02407 A36-02423 A36-07056 A36-11124 R36-07056 R36-11124

Conditions of Approval:

- C03 - RIGHT INCLUDES ACCOMPLISHED CHANGE IN POINT OF DIVERSION PURSUANT TO IDAHO CODE 42-1416A.
- C05 - RIGHT INCLUDES ACCOMPLISHED CHANGE IN PLACE OF USE PURSUANT TO IDAHO CODE 42-1416A.

Remarks:

ONE OF THE TWO POINTS OF DIVERSION IS ON THE LINE DIVIDING THE SESWNW AND THE SWSWNW OF S29, T6S, R21E.
RIGHT NOS. 36-07056 AND 36-11124 ARE ALSO DIVERTED THROUGH THROUGH THE POINTS OF DIVERSION DESCRIBED ABOVE.
THIS RIGHT IS LIMITED TO THE IRRIGATION OF 518 ACRES WITHIN THE PLACE OF USE DESCRIBED ABOVE IN A SINGLE IRRIGATION SEASON.
RIGHT NO. 36-11124 IS AN EXPANSION OF THIS RIGHT PURSUANT TO IDAHO CODE 42-1416(2).
USE OF THIS RIGHT WITH RIGHTS LISTED ABOVE IS LIMITED TO A TOTAL COMBINED DIVERSION RATE OF 16.57 CFS, A TOTAL COMBINED ANNUAL DIVERSION VOLUME OF 3916 AF, A TOTAL COMBINED ANNUAL CONSUMPTIVE USE VOLUME OF 2937 AF, AND TO THE IRRIGATION OF A

Verified by S.W. Kern
on 4-22-92

IDAHO DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM PROFILE REPORT
(REGIONAL)

DATE: 04/22/92
PAGE: 2

=====

Remarks: COMBINED TOTAL OF 979 ACRES IN A SINGLE IRRIGATION SEASON.
THIS RIGHT IS A COMBINATION OF OLD RIGHT NOS. 36-02406,
36-02407, AND A PORTION OF 36-02423.

Dates: Exam Made Date: 04/21/1992 Verified Date: 04/22/1992

Misc: Water District Number: Field Inspection Flag:
Presumption Flag: C

Comments: Date: 04/14/1992 User-ID: KEEN Subject: COPIED FROM REMARKS
THIS CLAIM IS BASED ON A COMBINATION OF THE FOLLOWING LICENSES:
36-02407 4/17/1960 3.58 CFS ON 179 ACRES.
36-02406 2/25/1960 6.30 CFS ON 315 ACRES.
36-02423 PART 2/12/1960 FOR 0.29 CFS ON 24 ACRES.
NOTE THAT THE LAND IN THE SESW OF SEC. 29 OWNED BY THE CLAIMANT
IS PLANTED WITH A WILDLIFE COVER WHICH IS NOT IRRIGATED. IN
EXCHANGE THE LAND IN NESE SEC. 30 WHICH IS OWNED BY THE
GOVERNMENT IS IRRIGATED WITH THE WATER NOT USED IN THE WILDLIFE
AREA.

Date: 04/21/1992 User-ID: KEEN Subject: CLAIM REVIEW
DESKTOP REVIEW, RECOMMENDATIONS, AND DATA ENTRY BY S.W. KEEN.
IDAHO POWER COMPANY IRRIGATION AUDIT REPORTS PREPARED IN 1990 FOR
THIS FARM WERE HELPFUL.

Audit: 04/22/92 KEEN

MICROFILMED
FEB 09 1993

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM VERIFICATION REPORT

09:02:55
02/27/92

PAGE: 14
QUICKLOOK INFORMATION

Recommended as R36-15363

CLAIM NUMBER: A36-02407

WR ELEMENT	FIELD EXAM Y/N	CORRESPONDENCE SENT/RECEIVED BY WHOM/DATE	FIELD EXAM BY WHOM/DATE	CHANGE CLAIM Y/N	VERIFIED BY CODE	COMPLETED REVIEW WHOM/DATE	COMPLETED DATA ENTRY WHOM/DATE	VERIFIED DATE WHOM/DATE
PRIORITY DATE			S.W. Keen 4-21-92	No	6	S.W. Keen 4-21-92	S.W. Keen 4-21-92	S.W. Keen 4-21-92
POINT OF DIV	Y			Yes	1, 6			
SOURCE				No	6			
PLACE OF USE	Y			Yes	4, 2			
DIV. AMOUNT CFS/VOLUME	Y			~~No~~	6			
CONSUMPTIVE USE	-			Yes	6			
PURPOSES				No	6			
PERIOD OF USE				Yes	6			
BASIS OF CLAIM	Y			No	6			
REMARKS	Y			Yes	6			

"VERIFIED BY" CODES

TOPO MAP/ORTHO-PQ = 1
ASCS MAP = 2
WATERMASTER RECORDS = 3
NAPP PHOTOS = 4
FIELD EXAM = 5
OTHER (SEE REMARKS) = 6

THESE CODES ARE USED TO INDICATE HOW THE FIELD EXAMINER VERIFIED THE INFORMATION
USED FOR THIS FIELD EXAMINATION. INDICATED ARE ALL CODES WHICH APPLY.

Flag = C

Cond. Code = C03, C05

Remarks = F05 - ~~36-11124~~ and 36-~~11124~~ 07056

F04 - SESWNW and SWSWNW, S29, 6S, 21E

E03 - 16.57 cfs; 3916 AF; 2937 AF; 979 acres

K06 - 518 acres

K01 - 36-11124

~~Special This right is used on the NESE, S30, 16S, R21E through a land exchange agreement with the United States of America.~~

FEB 09 1993

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM VERIFICATION REPORT

09:02:55
02/27/92

PAGE: 1
GENERAL INFORMATION

CLAIM NUMBER: A36-02407

LAST: ROBERTSON
ADDRESS: RT. 2 BOX 2572
CITY: PAUL
PHONE NUMBER: 208-532-4172

FIRST: PAUL
STATE: ID ZIP: 83347

OWNER CODE: C

FIELD EXAM REQUIRED?

VERIFICATION REQUIRED DUE TO REMARKS?

DATABASE
Y

FIELD
EXAMINER

CLAIM REMARKS: THIS CLAIM IS BASED ON A COMBINATION OF THE FOLLOWING LICENSES:
36-02407 4/17/1960 3.58 CFS ON 179 ACRES.
36-02406 2/25/1960 6.30 CFS ON 315 ACRES.
36-02423 PART 2/12/1960 FOR 0.29 CFS ON 24 ACRES.
NOTE THAT THE LAND IN THE SESW OF SEC. 29 OWNED BY THE CLAIMANT
IS PLANTED WITH A WILDLIFE COVER WHICH IS NOT IRRIGATED. IN
EXCHANGE THE LAND IN NESE SEC. 30 WHICH IS OWNED BY THE
GOVERNMENT IS IRRIGATED WITH THE WATER NOT USED IN THE WILDLIFE
AREA.

Copy to comments field in the R-record.

6 S 21 E S 30 NESE
for
03 21 E S 29 SESW

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CONTACT PERSON: _____

PHONE NUMBER: (____) ____-____

DATE OF FIELD EXAM: ____/____/____

APPOINTMENT MADE: Y(____) N(____)

TIME: ____:____ A(____) P(____)

ACCOMPANIED BY: _____

PHONE NUMBER: (____) ____-____

RELATIONSHIP TO CLAIMANT: _____

DIRECTIONS TO PROPERTY / REMARKS:

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A. AJ CLAIM: # A36-02407 PRIORITY DATE: 04-17-1960 STAGE: L
B. WR RECORD: # 36-02407 PRIORITY DATE: 04-17-1960 STAGE: L

C. FIELD EXAM REQUIRED?
DUE TO PRIORITY DATE DISCREPANCY? (Y/N) DATABASE N FIELD EXAMINER No

ARE THERE OBVIOUS REASONS TO QUESTION THE PRIORITY DATE CLAIMED? Y() N(☒)
IF YES EXPLAIN.

REMARKS: Claimed as licensed. Recommend as claimed.

(36-02406 priority is 2-25-1960. 36-02423 priority is 2-12-1960. ⇒ These will be recommended with 36-02407 as R36-15363 with a 4-17-1960 priority date.)

=====

RECOMMENDED PRIORITY DATE:
04-17-1960

REVIEWED BY S.W. Keen

DATE 4-14-92

=====

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A. AJ CLAIM POINT OF DIVERSION AND SOURCE:

RIGHT	TWP.	RGE.	SEC.	1/4	1/4	1/4	LOT
A36-02407	06S	21E	29	SW	SW	NW	
A36-02407	06S	21E	29	SE	SE	SW	
A36-02407	06S	21E	30	SE	SW	SW	11

CNTY

LINCOLN 36-07056
LINCOLN 36-02406 and 36-02407
LINCOLN Stat. Claim 36-04058

OTHER AJ CLAIMS WITH SAME AJ POD

A PREFIX R PREFIX

A36-04058A

NONE

A36-07056

A36-07690A

A36-11124

WR RECORDS IN SAME 40 ACRE TRACT

36-02406

36-04058

36-07056

SOURCE: GROUNDWATER

TRIB:

B. WR POINT OF DIVERSION AND SOURCE:

RIGHT	TWP.	RGE.	SEC.	1/4	1/4	1/4	LOT
36-02407	06S	21E	29		SE	SW	

CNTY

LINCOLN

OTHER WR RECORDS WITH SAME WR POD

AJ CLAIMS IN SAME 40 ACRE TRACT

A PREFIX

R PREFIX

36-02406

A36-04058A

NONE

A36-07056

A36-07690A

A36-11124

SOURCE: GROUNDWATER

TRIB:

C. FIELD EXAM REQUIRED?

DUE TO POD DISCREPANCY? (Y/N)

(Y/N)

DUE TO SOURCE DISCREPANCY? (Y/N)

(Y/N)

DATABASE

Y

N

FIELD

EXAMINER

NO

NO

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REMARKS:

According to the claimant and an irrigation audit report by Idaho Power Co (10-8-90) the three claimed wells are tied into one network. The two wells ~~was~~ in Section 29 were connected in 1980, according to the claimant. The well in Section 30 was not added until that land was purchased in 1988. Cannot recommend the well in S30 because it was added after commencement.

RECOMMENDED POINT(S) OF DIVERSION AND SOURCE:

TWP.	RGE.	SEC.	1/4	1/4	1/4	LOT	COUNTY
6S	21E	29		SW	NW		Lincoln ← ON LINE BETWEEN SWSWNW + SESWNW
6S	21E	29	SE	SE	SW		Lincoln ← U.S.G.S. OQ shows this well here

SOURCE: GROUNDWATER

TRIB:

REVIEWED BY: S.W. Keen

DATE: 4-21-92

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A. ROOT WATER RIGHT NUMBERS: A36-02407
A36-02423

B. POU LISTING

TWP	RNG	SEC	1/4	1/4	LOT	NAME	AJ #/ACRES	WR #/ACRES	LANDSAT DATA	NAPP FIELD EXAM.	RECOMM. ACRES
06S	21E	29	NW	SW		ROBERTSON , PAUL	A36-02407 /37.0	- /	40.0	40	40.0
			NW	SW		ROBERTSON , PAUL	A36-11124 / 3.0	- /			
			NW	SW		STRASSER , FRANCES S.		36-02406 /37.0			
06S	21E	29	SW	SW		ROBERTSON , PAUL	A36-02407 /40.0	- /	39.0	40	40.0
			SW	SW		STRASSER , FRANCES S.		36-02406 /40.0			
06S	21E	29	SE	SW		ROBERTSON , PAUL	A36-02407 /38.0	- /	37.0	Ø	40.0
			SE	SW		ROBERTSON , PAUL	A36-11124 / 2.0	- /			
			SE	SW		STRASSER , FRANCES S.		36-02406 /38.0			
06S	21E	30	NE	SW	7	ROBERTSON , PAUL	A36-02407 /39.0	36-02407 /39.0	37.0	40	40.0
			NE	SW	7	ROBERTSON , PAUL	A36-11124 / 1.0	- /			
06S	21E	30	NW	SW	8	ROBERTSON , PAUL	A36-02407 /20.0	36-02407 /20.0	42.0	40	40.0
			NW	SW	9	ROBERTSON , PAUL	A36-04058A /12.0	- /			
			NW	SW	8	ROBERTSON , PAUL	A36-11124 /20.0	- /			
			NW	SW	9	BLINCOE FARMS INC.		36-04058 /12.0			
06S	21E	30	SE	SW	12	ROBERTSON , PAUL	A36-02407 /40.0	36-02407 /40.0	42.0	40	40.0
06S	21E	30	NW	SE		ROBERTSON , PAUL	A36-02407 /40.0	36-02407 /40.0	39.0	40	40.0
06S	21E	30	SW	SE		ROBERTSON , PAUL	A36-02407 /40.0	36-02407 /40.0	40.0	40	40.0
06S	21E	30	SE	SE		ROBERTSON , PAUL	A36-02407 /40.0	- /	39.0	40	40.0
			SE	SE		STRASSER , FRANCES S.		36-02406 /40.0			
06S	21E	31	NE	NE		ROBERTSON , PAUL	A36-02407 /40.0	- /	40.0	40	40.0
			NE	NE		STRASSER , FRANCES S.		36-02406 /40.0			
06S	21E	31	NW	NE		ROBERTSON , PAUL	A36-02407 /40.0	- /	37.0	40	40.0
			NW	NE		STRASSER , FRANCES S.		36-02406 /40.0			
06S	21E	31	NE	NW	1	ROBERTSON , PAUL	A36-02407 /40.0	- /	40.0	40	40.0
			NE	NW		STRASSER , FRANCES S.		36-02406 /40.0			
			NE	NW	2	WINDY ACRES INC.		36-07690 /40.0			
06S	21E	31	SE	NW	6	ROBERTSON , PAUL	A36-02407 /24.0	- /	40.0	40	24.0
			SE	NW	6	GILLETTE , LARRY R.	A36-02423 /16.0	36-02423 /40.0			
			SE	NW	5	WINDY ACRES INC.		36-07690 /40.0			

NAPP
FIELD
EXAM.
RECOMM.
ACRES
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1993

TWP	RNG	SEC	1/4	1/4	LOT	NAME	AJ #/ACRES	WR #/ACRES	LANDSAT DATA	FIELD EXAM.	RECOMM. ACRES
06S	21E	32	NW	NW		ROBERTSON, PAUL	A36-02407 /40.0	- /	41.0	40	40.0
			NW	NW		STRASSER, FRANCES S.		36-02406 /40.0			
TOTAL ACRES						A36-02407	518.00	179.00	553.00	520	

ARE IRRIGATED ACRES FOUND IN TRACTS OTHER THAN INDICATED ABOVE, Y(✓) N() ~~Also 6S 21E S30 NESE~~
IF YES SEE ATTACHED SHEET: See claim remarks and NAPP A77NW ~~40~~ 10.0

C. FIELD EXAM REQUIRED?

DUE TO POU DISCREPANCY? (Y/N)

DATABASE
Y

FIELD
EXAMINER
NO

POU COUNTY: LINCOLN

PRESUMPTION FLAG: C

REMARKS:

Manifold system - recommend permissible POU with R36-11124 and R36-15363.

The SESW S29 is planted in wildlife cover in exchange for irrigating the NESE S30, which belongs to the BLM. This agreement was reached in July, 1988 - after commencement. See the attached phone conversation memo dated 4-21-92.

RECOMMENDATIONS:

TOTAL ACRES: 518 of 979

REVIEWED BY: S.W. Keen

DATE: 4-21-92

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FEB 09 1993
544

A. AJ CLAIMED USES:

PURPOSES	MONTH/DAY	DIVERSION QUANTITY
A36-02407 IRRIGATION	FROM 03-15 TO 11-15	10.170 CFS
TOTAL DIVERSION RATE/VOLUME CLAIMED		10.170 CFS

B. WR RECORDED USES:

PURPOSES	MONTH/DAY	DIVERSION QUANTITY
36-02407 IRRIGATION	FROM 03-15 TO 11-15	3.580 CFS 716.00 AF/A
TOTAL DIVERSION RATE/VOLUME CLAIMED		3.580 CFS 716.00 AF/A

PRESUMPTION FLAG: C

C. FIELD EXAM REQUIRED?

	DATABASE	FIELD EXAMINER
DUE TO WATER-USE DISCREPANCY? (Y/N)	N	_____
DUE TO DIVERSION RATE DISCREPANCY? (Y/N)	Y	_____
DUE TO PERIOD FROM/TO DISCREPANCY? (Y/N)	N	_____

D. PERIOD OF USE:

RECOMMEND AS CLAIMED?

Y() N(✓)

RECOMMEND TO WR STANDARDS OR OTHER?

Y(✓) N() Explain in remarks, below.

REMARKS:

New standard season for this area is 4-1 to 10-31.

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A. DOES DIVERSION RATE CLAIMED AGREE WITH EXISTING RECORDS?

Y (☒) N (☐)

AJ TOTAL CLAIMED DIVERSION RATE: 10.170 CFS
WR ROOT RIGHT TOTAL DIVERSION RATE: 3.580 CFS

36-2406 = 6.3 cfs

36-2407 = 3.58 cfs

($\frac{24}{200}$) 36-2423 = 0.288 cfs

*** IF NO or IF STATUTORY CLAIM or BENEFICIAL USE then flow measurement required. ***

** If an amount smaller than the original diversion rate is **

** claimed and an exam is NOT required, explain in remarks. **

~~10.168~~
10.168 cfs

FLOW MEASUREMENT REQUIRED?

FIELD
DATABASE EXAMINER

DUE TO STAGE OR DIVERSION RATE DISCREPANCY? (Y/N) Y

NO

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B.

FLOW MEASUREMENT

MEASUREMENT METHOD _____, SEE ATTACHED CALCULATIONS.

C. ARE OTHER WATER RIGHTS USED? Y (☒) N (☐) IF YES COMPLETE OVERLAP REVIEW.

OTHER RIGHTS LISTED IN CLAIM: NONE

LIST ALL RIGHTS WITH A SAME POU AND IRRIGATION USAGE:

CLAIM NO.	SOURCE	NAME	DIV. RATE	DIV. RATE/ACRE	DIV. VOL.	DIV. VOL./ACRE
A36-02407	GROUNDWATER	ROBERTSON , PAUL	10.170	0.019		
A36-02423	GROUNDWATER	GILLETTE , LARRY R.	5.000	0.010		
A36-04058A	GROUNDWATER	ROBERTSON , PAUL	1.240	0.020		
A36-11124	GROUNDWATER	ROBERTSON , PAUL	0.720	0.020		

NO RIGHTS WITH SAME POU BUT NOT USED FOR IRRIGATION

D. RATE/VOLUME CALCULATIONS: (IRRIGATION)

1a. IRRIGATION RATE
ACRES _____ x 0.02 CFS/ACRE = _____ CFS
(Taken from p/u review)

1b. CALCULATIONS

DOES AMOUNT CLAIMED EXCEED 0.02 CFS/ACRE? Y() N()

*** IF YES ADDITIONAL WATER USE FORM FILED AND ATTACHED? Y() N() ***

2. IRRIGATION CONSUMPTIVE USE

CLAIMED CONSUMPTIVE USE = 1554.0 AF/A

ACRES _____ x CONSUMPTIVE VOL. AF/A FOR AREA _____ =
TOTAL CONSUMPTIVE USE _____ AF/A

3. IRRIGATION DIVERSION VOLUME

CLAIMED DIVERSION VOLUME = _____ AF/A

ACRES _____ x DIVERSION VOL. AF/A FOR AREA _____ =
TOTAL DIVERSION VOLUME _____ AF/A

4. CALCULATIONS FOR USES OTHER THAN IRRIGATION:

SEE ATTACHED SHEET? Y() N()

REMARKS: (Include limitations on CONSUMPTIVE USE for combined rights.)

Note: See enclosed Idaho Power Co. Irrigation Audit Reports

The well originally with 36-07056 was measured at 2270 gpm $\Rightarrow$ Audit # IP46-90
" " " " 36-02406 + 36-02407 " " " 2205 gpm $\Rightarrow$ Audit # IP47-90
4475 gpm = 9.97 cfs combined

$\frac{9.97 \text{ cfs}}{979 \text{ acres}} = 0.01 \text{ cfs/acre}$

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RECOMMENDATIONS:

REC. PURPOSES	REC. PERIOD FROM TO	REC. DIV RATE CFS	REC. DIV VOL. AF/A	REC. CONS. USE
IRRIGATION	~~03-15~~ ~~11-15~~	DATABASE 10.170 EXAMINER	DATABASE EXAMINER	DATABASE 1554.0 EXAMINER
TOTAL FOR THIS RIGHT	4-1 10-31	10.170		1554.0

REVIEWED BY: S.W. Keen DATE: 4-21-92

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FEB 09 1993

Combined Use Limitations

- Permissible Place of use same as R36-07056 + R36-11124
- Combined diversion rate $(6.4 \text{ cfs} + 10.17 \text{ cfs}) = 16.57 \text{ cfs}$ (0.017 cfs/acre)
Capacities are $(8.47 \text{ cfs} + 10.70 \text{ cfs}) = 19.17 \text{ cfs}$
- Combined diversion volume $= 979 \times 4.0 = 3916 \text{ AF}$
- Combined consumptive use volume $= 979 \text{ acres} \times 3.0 \text{ AF/acre} = 2937 \text{ AF}$

A. CHECK ONLY THE FOLLOWING THAT APPLY:

OWNERSHIP _____
FORFEIT/ABANDON _____
ADDITIONAL DIV. AMOUNT _____

ACCEPTED
AS CLAIMED

()
()
()

NEEDS
REVIEW

()
()
()

B. SPLIT WATER RIGHT REVIEW

ROOT WATER RIGHT NUMBER: 36-02407

TOTAL DIVERSION RATE OF WR SPLITS

DATABASE
13.100

EXAMINER

CFS

SPLITS:

OLD RIGHT NUMBERS	CURRENT CLAIM NUMBERS	DIVERSION RATE	CURRENT "R" CLAIM NUM.	"R" DIV. RATE	WR RIGHT NUMBERS	DIVERSION RATE
A36-02407	A36-02407	10.170	-		36-02407	3.580
A36-02406	A36-02407	10.170	-		36-02406	6.300
A36-02423	A36-02407	10.170	-		36-02423	2.400
A36-02423	A36-02423	5.000	-		36-02423	2.400
A36-02422	A36-02423	5.000	-		36-02422	2.000
TOTAL CFS		40.510				13.100

DIVERSION RATE REVIEW

DO THE SUM CFS RATE OF THE SPLITS EQUAL THE ROOT RIGHT CFS RATE? (Y/N)
IF NO, is the written review sheet attached? (Y/N)

DATABASE
N

FIELD
EXAMINER

REMARKS:

Right Capacity
License 36-02407 3.58 cfs 10.70 cfs } same p/p
License 36-02406 6.30 cfs 10.70 cfs }
License 36-02423 2.40 cfs 2.40 cfs $\Rightarrow \frac{24}{200} \times 2.4 \text{ cfs} = 0.29 \text{ cfs to R36-15363}$
 $\frac{176}{200} \times 2.4 \text{ cfs} = 2.11 \text{ cfs to L.R. Gillette (claimed under A36-02423)}$
2.40 cfs

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AUTHENTICATION:

SIGNATURE: Shelley Walter Keen

DATE: 4-21-92

NAME OF FIELD EXAMINER: Shelley Walter Keen

TITLE: Sr. W.R. Agent

=====

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FEB 09 1993

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
ADJUDICATION CLAIM VERIFICATION REPORT

09:04:35
02/27/92

PAGE: 15
PROFILE REPORT

CLAIM NUMBER: A36-02407

OWNER CODE	NAME & ADDRESS	PRIORITY DATE	WATER USE	USE PERIOD FROM TO	DIVERSION RATE	DIVERSION VOLUME
C	PAUL ROBERTSON RT. 2 BOX 2572 PAUL ID 83347 (208) 532-4172	04/17/1960	IRRIGATION	03-15 11-15	10.17 CFS	
					TOTAL DIVERSION:	10.17 CFS
					CONSUMPTIVE USE:	1554.0 AFA

Water Source: GROUNDWATER

Tributary to:

Stage: LICENSE

Point(s) of Diversion: T06S R21E S29 SWSWNW SESESW
S30 Lot11(SESWSW)

LINCOLN County
LINCOLN County

Place of use Legal Description for: IRRIGATION

				NE				NW				SW				SE					
T	R	S	:	Lt	Ac	Lt	Ac	Lt	Ac	Lt	Ac	Lt	Ac	Lt	Ac	Lt	Ac	Lt	Ac	:	SUM
06S	21E	29	:																	:	115.0
06S	21E	30	:																	:	219.0
06S	21E	31	:	40		40				01-40				06-24						:	144.0
06S	21E	32	:								40									:	40.0
																				TOTAL ACRES	518.0

POU County: LINCOLN

Other Rights: NONE

Remarks: THIS CLAIM IS BASED ON A COMBINATION OF THE FOLLOWING LICENSES:
36-02407 4/17/1960 3.58 CFS ON 179 ACRES.
36-02406 2/25/1960 6.30 CFS ON 315 ACRES.
36-02423 PART 2/12/1960 FOR 0.29 CFS ON 24 ACRES.
NOTE THAT THE LAND IN THE SESW OF SEC. 29 OWNED BY THE CLAIMANT
IS PLANTED WITH A WILDLIFE COVER WHICH IS NOT IRRIGATED. IN
EXCHANGE THE LAND IN NESE SEC. 30 WHICH IS OWNED BY THE
GOVERNMENT IS IRRIGATED WITH THE WATER NOT USED IN THE WILDLIFE
AREA.

Dates: Exam Made Date:

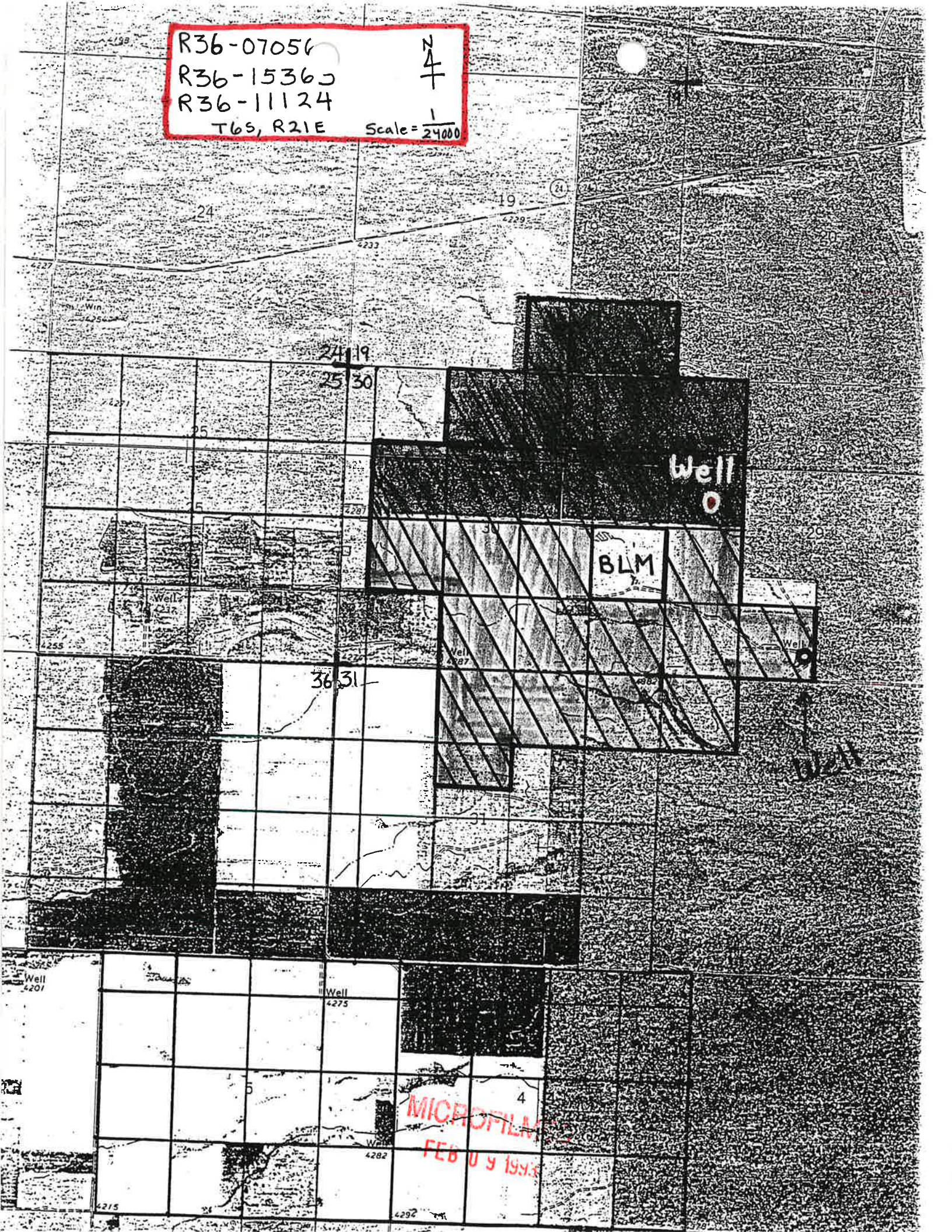
Verified Date:

Misc: Water District Number:

Field Inspection Flag:
Presumption Flag: C

R36-07056
R36-15365
R36-11124
T6S, R21E Scale = $\frac{1}{24000}$

N
4
+



1

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CLAIMANT'S NAME: Paul Robertson DATE: 4-21-92
COUNTY: Lincoln
EMPLOYEE: S.W. Keen

I spoke with Joe Russell of the Shoshone District BLM office (886-2206) regarding the Wildlife Cooperative Farm Agreement between the BLM and Paul Robertson.

According to Mr. Russel, this agreement was entered into in ~~the~~ July, 1988, which is after the SRBA commencement date. The agreement is up for re-negotiation in Dec., 1992.

Under the agreement Paul Robertson plants his 40 acres (SESW, S29, T6S, R21E) in wildlife cover and irrigates 40 acres (NESE, S30, T6S, R21E) owned by the BLM.

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CLAIMANT'S NAME: Paul RobertsonDATE: 4-14-92COUNTY: LincolnEMPLOYEE: S.W. Keen532-4172 = Home678-6248-1344 = mobile

I called Paul Robertson to discuss an opportunity to measure his well in SWSW Sec.30, T6S, R21E. He told me that a couple of years ago Rex Winn of Idaho Power measured all of his wells and did a system analysis. Mr. Robertson agreed to send me that information this week.

Mr. Robertson also indicated that he would call me back to discuss a permissible place of use recommendation.

4-20-92 I called Paul Robertson to thank him for sending the Idaho Power documents and to ask him about the interconnection of his three wells. Mr. Robertson informed me that the two in section 29 have been connected for 12 years (1980) and the third well was hooked ~~up~~ up in 1988 when the land was purchased from Mr. Blincoe. The third well purchased from Mr. Blincoe corresponds to 36-04058.

Mr. Robertson also indicated that permissible place of use recommendations are acceptable to him.

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IRRIGATION AUDIT REPORT

IDAHO POWER COMPANY

PREPARED BY:

FRED ZIARI



IRZ CONSULTING

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IRRIGATION SYSTEM ANALYSIS OBJECTIVES

THE OBJECTIVE OF THIS IRRIGATION SYSTEM ANALYSIS WAS TO DETERMINE AND EVALUATE THE POTENTIAL ENERGY SAVINGS OF THE EXISTING IRRIGATION SYSTEM AS WAS GUIDELINED BY THE IDAHO POWER STATEMENT OF WORK.

IRRIGATION SYSTEM COMPONENTS THAT WERE EVALUATED ARE AS FOLLOW:

- ⊙ MAINLINE SIZES AND FRICTION.
- ⊙ VALVE AND FITTING'S SIZES AND FRICTION.
- ⊙ SPRINKLER OPERATING PRESSURE.
- ⊙ PUMP AND MOTOR EFFICIENCIES.
- ⊙ PUMP FLOW RATE.

ONE OR ALL OF THE ABOVE MEASURES CAN BE CHANGED TO REDUCE THE TOTAL HORSEPOWER OF THE PUMP AND THUS THE ENERGY REQUIREMENT OF THE IRRIGATION SYSTEM.

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FEB 09 1993

IRZ CONSULTING

115 W. Hermiston Ave. Suite 210
Hermiston Oregon, 97838
(503)567-0252

IRRIGATION AUDIT REPORT

Paul Robertson
Rt 2, Box 2272
Paul, ID 83347

DATE :October 08, 1990
AUDIT# :IP46-90

Dear Mr. Robertson:

Enclosed please find the results of the Irrigation System Analysis which was conducted during the summer of 1990. The purpose of this audit is to determine the Potential energy savings of your irrigation system, as guidelined by the Idaho Power Company. I hope you will take the time to review this report, and that it will be helpful in reducing your irrigation costs.

RESULTS OF ENERGY SAVINGS

From our analysis of the 400 horsepower pump it was determined that 37,181 and 27,959 kilowatt-hours per year of energy could respectively be saved by converting your pivot to the low pressure nozzles operating at 20 psi, and by replacing the existing 1100 feet of 12 inch old steel pipe (starts from pump) with 14 inch PVC pipe. This savings represents a reduction of 8.0% of your present energy usage or a total annual savings of approximately \$2250.00, based on the past few years of electrical usage.

If these savings seem cost effective for your operation, you may then take the following actions, and need to consult your dealer.

PUMP EFFICIENCY TEST

The pump test was conducted using an accurate ultrasonic flow meter to measure the flow rate. Electrical readings consisting of voltage, amperage, power factor, and kilowatt (electrical horsepower) on all three legs were taken using an electrical measurement instrumentation.

During our test the pump was discharging 2270 gallons per minute, lifting from a depth of 397

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FEB 6 1993

feet, with 70 psi of discharge pressure and it was drawing 422.5 horsepower. It achieved an overall efficiency (combined efficiency of pump and motor) of 76.5%, which is rated as "EXCELLENT" efficiency. There was a very slight sign of current imbalance. Please make sure all the connections are tightened.

For more detailed information, please refer to the enclosed pump efficiency field sheet. We have noticed evidences of mice in the panel, which might damage the motor insulation. Please make sure to cover all the holes in the electric panel.

PUMP MODIFICATION

Installation of a low pressure system or a mainline by itself will not result in any energy savings, unless pumps are modified to use less horsepower and therefore less energy. Normally pumps are modified to output less pressure at the discharge.

The method of pump modification is fairly simple and can be done by an experienced pump shop. After you have install the low pressure nozzles, and replaced the mainlines, we estimate you will have 42 feet of extra pressure available. I recommend that you pull the pump and have them by either trimming the impellers or by dropping bowls, reduce the total dynamic head-TDH, by about 42 feet. If everything stay the same, your pump should then draw approximately 30 less horsepower.

If for the past 5 years you have not done so, you should first megger the motor and if found to be low, you may then have the motor dipped and baked to restore it to the original efficiency.

I suggest that you consult your pump dealer on the details of the modification, before taking any action.

LOW PRESSURE NOZZLES

We recommend that you install low pressure nozzles on the drop tubes. There are two types of low pressure nozzles available in the market today. The first type, which is the most popular, is the "Spray Head", and is recommended for an operating pressure ranging from 10 to 20 psi. The spray heads can be installed either on the top of the pivot or preferably on a drop tube closer to the crop, so to minimize the effect of wind drift and evaporation losses. Also in the heavier soils, new spray nozzles such as Rotator or Wobbler can be used to reduce the runoff problem.

The second type is the "Diffuser" nozzle, which replaces the existing round nozzles on the impact sprinklers. It has an operating pressure ranging from 30 to 35 psi. Since the diameter of throw is wider than the spray head it is mainly recommended for use on heavier soils. Since only the nozzles need to be replaced this method might be less expensive, but you can not use the drop tubes to minimize evaporation losses.

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NOTE. The calculated savings in this report is based on the spray nozzles on drop tubes, operating at 20 psi.

PRESSURE REGULATORS

We strongly recommend the installation of the pressure regulators on all pivots with large field elevation differences or with multiple pivots operating with the same pump(s). Pressure variation causes poor water application uniformity and results in under or over irrigation of portions of your fields. The pressure regulators which are normally installed at the base of each spray head, will maintain a constant pressure throughout the length of the pivot, regardless of field slope or pump operating pressure.

END GUN

In most cases, when the pumps are modified to operate at a low pressure system, the end pressure will be too low for the end gun to operate properly. There are several solution to this problem:

- completely remove the end gun
- install a small booster pump (1 to 2 hp) at the end tower to boost the pressure for the end gun. This might be more expensive especially on the smaller pivots.
- install the new Diffuser type end gun, which will operate properly at much lower pressure.

I recommend that you consult your irrigation dealer for selection of a proper end gun. (see Appendix A)

COST SHARING PROGRAM

To receive financial incentives, you need to notify Idaho Power Company for approval, before proceeding with the recommendations in this report (i.e. low pressure nozzles ,pump efficiency improvement, etc.).

After all measures have been installed you should contact and bring all receipts to Mr. Rex Winn at Idaho Power. Idaho Power will pay up to 50% of the actual cost of modifications recommended in this report, not to exceed \$10,000 per system (see page 6 of the report). To establish the actual energy saving, we need to retest the pump after all the measures have been installed.

We encourage you to take advantage of this opportunity, and if you have further questions

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concerning this report please feel free to contact me or Rex.

Sincerely,

Fred Ziari

Fred Ziari
IRZ CONSULTING

Note: This is not a complete redesign of your systems.

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PUMPING PLANT EFFICIENCY

THE OVERALL PUMPING PLANT EFFICIENCY IS THE RATIO OF WATER HORSE-POWER (output) TO THE ELECTRICAL HORSEPOWER (input). IT IS THE COMBINED EFFICIENCY OF PUMP AND MOTOR.

EXAMPLE: A 100 HORSEPOWER MOTOR IS RATED AS 90% EFFICIENT AND THE PUMP IS RATED AS 80% EFFICIENT, SO THE OVERALL EFFICIENCY IS $90\% \times 80\% = 72\%$.

OVERALL EFFICIENCY RATING TABLE

MOTOR SIZE (HP)	LOW	FAIR	GOOD	EXCELLENT
7.5-10	44.9% OR LESS	45-52%	53-57.9%	58% OR ABOVE
15-30	47.9% OR LESS	48-55.9%	56-60.9%	61% OR ABOVE
40-60	52.9% OR LESS	53-59.9%	60-64.9%	65% OR ABOVE
75 TO 500	55.9% OR LESS	56-62.9%	63-68.9%	69% OR ABOVE

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PUMP EFFICIENCY TEST

=====

TEST NO. : IP46-90
DATE : 7/11/90

UTILITY : IDAHO POWER
METER NO. : 54384496W
PUMP NUMBER : 1

MOTOR DESCRIPTION

1. Make : G.E.
2. Rated HP : 400
3. Rated Volt: 460
4. Rated Amp : 462
5. RPM : 1775

PUMP DESCRIPTION

1. MAKE : PEERLESS
2. MODEL NO. : NA
3. SERIAL NO.: 19990

FIELD TEST FINDINGS

=====

Flow Rate (gpm)	Pressure (psi)	Pumping Level (feet)	Total Head (feet)
2270.0	70.0	397.0	563.7

<----- Voltage ----- <----- Current-----> <-----Power Factor--> Kilowatt							
(volt)			(amps)	(%)	(kw)		
460.0	462.0	462.0	446.0	460.0	470.0	86.0	315.2

Electrical Horsepower	Water Horsepower	Overall Efficiency	Rated Efficiency
422.5	323.1	76.5%	EXCELLENT

*** COVER HOLES IN THE PANEL.

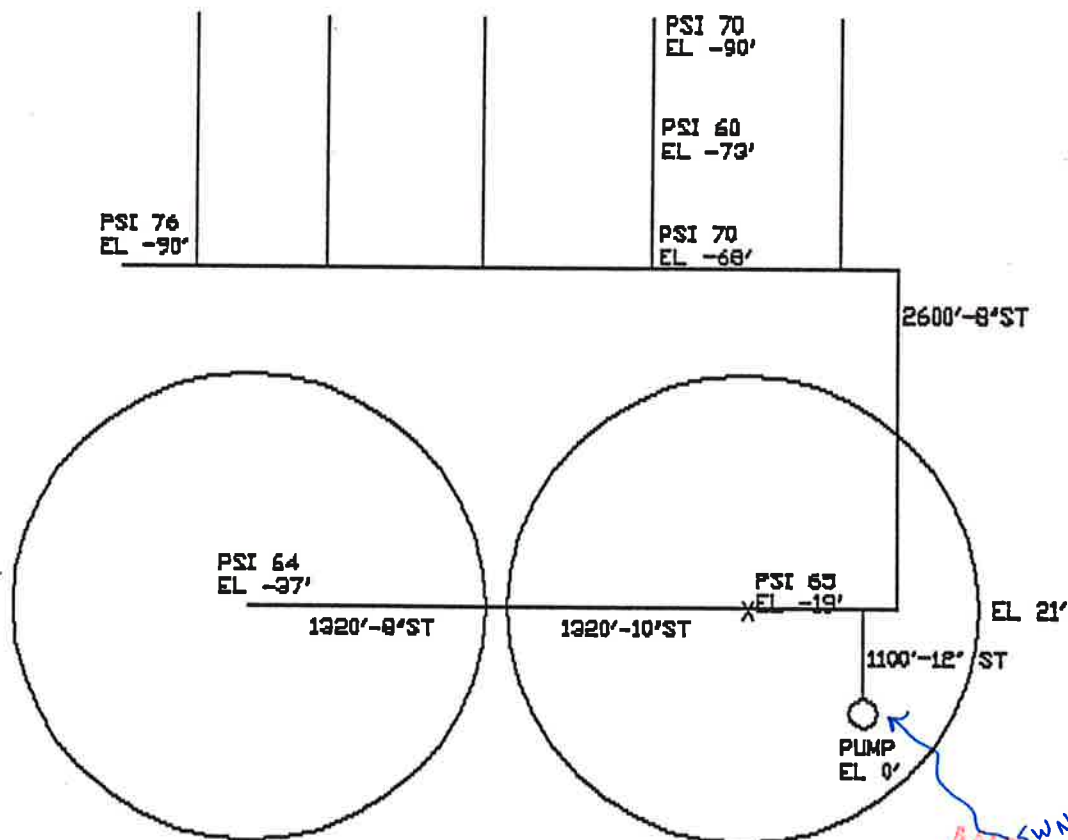
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Name.....:PAUL ROBERTSON
Address.....:RT 2 BOX 2572
City,State,ZIP.:PAUL, ID 83347
Irrig Acres...: 380
Major Crops.....:BEETS/POTATOES

Test Number:IP46-90
Test Date:7/11/90
Meter #.....:54384496W
Inspector(s)....:FRED ZIARI

IRRIGATION LAYOUT:

400 HP PUMP



5WNW, S30, T6S, R21E
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IDAHO RIVER IRRIGATION SYSTEM ANALYSIS
EXISTING PUMP TEST INFORMATION

Page 2
Test #: IP46-90

A. Number of Pump(s) : 1

Pump Setup : Main Pump
Pump Number: 1

B. MOTOR INFORMATION

1. Make.....: G.E.
3. Rated HP....: 400
4. Rated Volts: 460
5. Rated Amps.: 462
6. RPM.....: 1775
7. HP/Meter....: 400

D. ELECTRICAL INPUT

1. Disc Revolutions....
2. Meter Constant Kh...
3. CTR.....
4. PTR/Multiplier.....
5. Time..... sec
kW Metered= 0.0 kWe

	1-2	1-3	3-2	Average
6. Voltage.....	460.0	462.0	462.0	461.3
7. Amperage.....	446.0	460.0	470.0	458.7
8. Power Factor..(%)...	86.0	86.0	86.0	86.0

kW Measured= 315.2 kWe

E. FLOW AND PRESSURE INFORMATION

1. Measurement Device.: ULTRASONIC
2. Pipe ID.....: 10.000 in.
3. Pipe Material.....: STEEL
4. Flow Reading.....: 2270 gpm
5. Discharge Pressure.: 70.0 psi

F. PUMPING WATER LEVEL

1. Pumping Lift.....: 397.0 ft.
2. Suction Head.....: 0.0 ft.
3. Gauge in feet.....: 0.0 ft.
4. Water Level Fluct...: 0.0 ft.
5. Misc Frict Losses...: 5.0 ft.

G. CALCULATED OVERALL EFFICIENCY

1. Total Dynamic Head.: 564 ft.
2. Flow.....: 2270 gpm
3. Water Horsepower...: 323.1 WHP
4. Input Horsepower...: 422.5 EHP
5. Estimated Break HP.: 380.2 BHP
6. Pumping Plant Eff...: 76.5 %

C. PUMP INFORMATION

1. Manufacture: PEERLESS
a Centrifugal:
b Turbine/Sub: X
2. Model #....: NA
3. Serial #....: 19990
4. Rated Head.: ft.
5. Rated Flow.: gpm
6. Implr Dia...: in.
7. Intake Dia.: in.
8. Intake Len.: ft.
9. # of Stages: NA

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WHEEL/HAND LINE:X
CENTER PIVOT :X

H. FIELD ELEVATIONS

1. Highest Irrigated Field Elevation...: 21.0 ft.
2. Lowest Irrigated Field Elevation...: -90.0 ft.
3. Is Flow or Pressure Control Recommended? YES
4. Elevation of critical sprinkler as tested.....: -37.0 ft.
5. Potential critical sprinkler elevation.....: 21.0 ft.

I. REQUIRED PRESSURE AT CRITICAL POINT

1. Low Pressure Sprinkler Recommendation.....: 20.0 psi
2. Flow or Pressure control loss (5psi).....: 5.0 psi
3. REQUIRED OPERATING PRESSURE.....: 25.0 psi 57.8 ft.

J. LATERAL DATA --If Applicable

	N / A			
	# 1	# 2	# 3	# 4
1. Nozzle Diameter(s)...(in)...				
2. Average Pressure....(psi)...	59.4			
3. Flow per Sprinkler..(gpm)...	0.00	0.00	0.00	0.00
4. # of Sprinklers.....				
5. Lateral Flow.....(gpm)...	0	0	0	0
		Total Flow =		0

K. CRITICAL SPRINKLER PRESSURES

1. First Sprinkler Pressure.....: 59.0 psi
2. Last Sprinkler Pressure.....: 60.6 psi
3. LOWEST PRESSURE.....: 60.6 psi
4. Mainline Pressure Adjustment.....: 0.0 psi
5. Elevation Adjustment.....: -25.1 psi
6. ADJUSTED CRITICAL PRESSURE.....: 35.5 psi 82.1 ft.

L. POTENTIAL TOTAL HEAD SAVINGS

	PSI	FEET
1. ADJUSTED CRITICAL PRESSURE.....:	35.5	82.1
2. REQUIRED OPERATING PRESSURE.....:	25.0	57.8
3. POTENTIAL TOTAL HEAD SAVINGS.....:	10.5	24.3

NOTES:

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*: Mainlines in a network will not be considered here.

M. MAINLINE FRICTION LOSS CALCULATION:

1. Calculate velocity and friction at critical mainlines.
2. Resize or use parallel pipeline on all mainline with velocity greater than 6.5 fps (or C-factor < 100) to around 5 fps.
3. Use the proposed flow when resizing the mainline.

Mainline Number	Pipe Length (ft)	Inside Dia (in)	C* Value	Flow (gpm)	Velocity (fps)	Hf/100 (ft)	Total Frictn (ft)	Head Saved (ft)
1. Existing	1100	11.79	100	2270	6.67	2.09	23.01	
Proposed	1100	14.00	150	2270	4.73	0.43	4.71	18.3
2. Existing	1320	9.79	100	800	3.41	0.75	9.89	
Proposed								0.0
3. Existing	1320	7.79	100	800	5.38	2.28	30.05	
Proposed								0.0
4. Existing	2600	7.79	100	640	4.31	1.51	39.16	
Proposed								0.0
5. Existing								0.0
Proposed								
6. Existing								0.0
Proposed								
7. Existing								0.0
Proposed								
8. Existing								0.0
Proposed								
9. Existing								0.0
Proposed								
10. Existing								0.0
Proposed								
POTENTIAL TOTAL HEAD SAVINGS (Add 1 thru 10)								18.3

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N. SAVINGS PER MEASURE:		HEAD SAVINGS
1. Install low pressure sprinklers or nozzles	=	24.3 ft.
2. Mainline/Valve/Fitting Savings :		
a. Mainline Friction Loss Savings	=	18.3 ft.
b. Fittings Loss Saving (if applicable)	=	0.0 ft.
c. Partially Closed Valve Savings	=	0.0 ft.
3. SYSTEM TOTAL HEAD SAVINGS	=	42.6 ft.

O. PUMPING PLANTS INFORMATION

1. Existing Condition:

Pump #	TDH	GPM	WHP	EHP	BHP	EFF
1	563.7	2270.0	323.1	422.5	380.2	76.5
2	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL	563.7	2270.0	323.1	422.5	380.2	
-------	-------	--------	-------	-------	-------	--

2. Proposed Condition:

Pump #	TDH	GPM	WHP	EHP	BHP	EFF
1	521.1	2270.0	298.7	390.5	351.5	76.5
2	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL	521.1	2270.0	298.7	390.5	351.5	
-------	-------	--------	-------	-------	-------	--

P. SYSTEM INFORMATION

1. Total Plant Efficiency (existing)	=	76.5 %
2. Total Plant Efficiency (proposed)	=	76.5 %
3. Estimated Operating Hours per Year	=	2732 Hrs/Yr
4. Estimated Water application- Acre Inch per Year	=	36.06 Acre inch

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IDAHO POWER IRRIGATION SYSTEM ANALYSIS
ENERGY SAVINGS ANALYSIS

Page 6
Test#:IP46-90

Q. HISTORICAL KWH INFORMATION

NA =	N	Year	kWh
a.		1989	697560
b.		1988	964440
c.		1987	921240
d.	N	1986	
e.	N	1985	
f.		Average	861080 kWh/Yr

R. PUMPING PLANT INFORMATION:	EXISTING =====	PROPOSED =====
1. Total Head-TDH	564 FT	521 FT
2. Flow Rate	2270 GPM	2270 GPM
3. Pumping Plant Efficiency	76.5 %	76.5 %
4. Input Kilowatts	315.2 kW	291.3 kW
5. Input Horsepower	422.5 HP	390.5 HP
6. ESTIMATED BRAKE HORSEPOWER	380.2 BHP	351.5 BHP

S. ENERGY SAVINGS AND COST SHARING

1. Estimated annual kwh saving and estimated cost sharing:

	ESTIMATED Kwh Savings per measure -----	Eligibility -----	MAXIMUM COST SHARE -----
a. Low Pressure Savings	37181	X	\$7,436
b. Mainline Savings	27959	X	\$5,592
c. Fittings Savings	0		\$0
d. Flow Savings	0		\$0
e. Efficiency Savings	0		\$0
f. TOTAL POTENTIAL KWH SAVED AND MAX COST SHARING	65139 -----		\$10,000 -----

Flow Control Savings : 0

THIS SYSTEM IS ELIGIBLE FOR ONLY THE MEASURES MARKED ABOVE WITH AN 'X'.

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IRRIGATION AUDIT REPORT

IDAHO POWER COMPANY

PREPARED BY:

FRED ZIARI



IRZ CONSULTING

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IRRIGATION SYSTEM ANALYSIS OBJECTIVES

THE OBJECTIVE OF THIS IRRIGATION SYSTEM ANALYSIS WAS TO DETERMINE AND EVALUATE THE POTENTIAL ENERGY SAVINGS OF THE EXISTING IRRIGATION SYSTEM AS WAS GUIDELINED BY THE IDAHO POWER STATEMENT OF WORK.

IRRIGATION SYSTEM COMPONENTS THAT WERE EVALUATED ARE AS FOLLOW:

- ⊙ MAINLINE SIZES AND FRICTION.
- ⊙ VALVE AND FITTING'S SIZES AND FRICTION.
- ⊙ SPRINKLER OPERATING PRESSURE.
- ⊙ PUMP AND MOTOR EFFICIENCIES.
- ⊙ PUMP FLOW RATE.

ONE OR ALL OF THE ABOVE MEASURES CAN BE CHANGED TO REDUCE THE TOTAL HORSEPOWER OF THE PUMP AND THUS THE ENERGY REQUIREMENT OF THE IRRIGATION SYSTEM.

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IRZ CONSULTING

115 W. Hermiston, Ave. Suite 210
Hermiston, Oregon 97838
(503)567-0252

IRRIGATION AUDIT REPORT

Paul Robertson
Rt. 2 Box 2572
Paul, ID 83347

DATE :October 08, 1990
AUDIT# :IP47-90

Dear Mr. Robertson:

Enclosed please find the results of the Irrigation System Analysis which was conducted during the summer of 1990. The purpose of this audit is to determine the Potential energy savings of your irrigation system, as guided by the Idaho Power Company. I hope you will take the time to review this report, and that it will be helpful in reducing your irrigation costs.

RESULTS OF ENERGY SAVINGS

From our detail analysis of the 500 horsepower pump it was determined that due to the existing proper sprinkler pressure, the right size mainlines and high pump and motor efficiency no further energy could economically be saved at this time.

The sprinkler pressure were measured at different locations in the fields, and are generally over 40 psi. This is an acceptable sprinkler pressure, and are doing a fairly good job of irrigating.

We have also checked all the mainlines and the fittings around the pump and found them to be properly designed. Since this system is tied to other irrigation systems, there are not much can be done to improve it any further.

PUMP EFFICIENCY TEST

The pump test was conducted using an accurate ultrasonic flow meter to measure the flow rate of the pump. Electrical readings consisting of voltage, amperage, power factor, and kilowatt (electrical horsepower) on all three legs were made using electrical measurement instrumentation.

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During our test the pump was discharging 2205 gallons per minute from a depth of 485 feet, with 52 psi of pressure and it was drawing 515.8 horsepower. It achieved an overall efficiency (combined efficiency of pump and motor) of 66.4%, which is rated as "GOOD" efficiency. All electrical readings were found to be very balanced. We believe that this pump will achieve an even better efficiency, when more is pumping a little more gallonage.

For more detailed information, please refer to the enclosed pump efficiency field sheet. For protection and prolonging the life of the motor, we recommend that you provide a simple shade. The shade should not be elaborate, and as a matter of fact, the simpler it is the more effective it will be. Also please make sure to cover all the holes in the electric panel.

COST SHARING PROGRAM

This Irrigation System Analysis, is sponsored by Idaho Power Company, and will normally pay up to 50% of the cost of the irrigation energy conservation program (i.e. pump efficiency, etc). Since this report indicates that no cost effective energy savings could be achieved for this irrigation system, no cost sharing program will be available at this time.

If you have further questions concerning this report please feel free to contact Mr. Rex Winn of Idaho Power, or myself.

Sincerely,



Fred Ziari
IRZ CONSULTING

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PUMPING PLANT EFFICIENCY

THE OVERALL PUMPING PLANT EFFICIENCY IS THE RATIO OF WATER HORSE-POWER (output) TO THE ELECTRICAL HORSEPOWER (input). IT IS THE COMBINED EFFICIENCY OF PUMP AND MOTOR.

EXAMPLE: A 100 HORSEPOWER MOTOR IS RATED AS 90% EFFICIENT AND THE PUMP IS RATED AS 80% EFFICIENT, SO THE OVERALL EFFICIENCY IS $90\% \times 80\% = 72\%$.

OVERALL EFFICIENCY RATING TABLE

MOTOR SIZE (HP)	LOW	FAIR	GOOD	EXCELLENT
7.5-10	44.9% OR LESS	45-52%	53-57.9%	58% OR ABOVE
15-30	47.9% OR LESS	48-55.9%	56-60.9%	61% OR ABOVE
40-60	52.9% OR LESS	53-59.9%	60-64.9%	65% OR ABOVE
75 TO 500	55.9% OR LESS	56-62.9%	63-68.9%	69% OR ABOVE

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PUMP EFFICIENCY TEST

=====

TEST NO. : IP47-90
DATE : 7/11/90

UTILITY : IDAHO POWER
METER NO. : 40091254G
PUMP NUMBER : 1

MOTOR DESCRIPTION

1. Make : U.S.
2. Rated HP : 500
3. Rated Volt: 440
4. Rated Amp : 574
5. RPM : 1800

PUMP DESCRIPTION

1. MAKE : LAYNE&BOWLER
2. MODEL NO. : NA
3. SERIAL NO.: 44296

FIELD TEST FINDINGS

=====

Flow Rate (gpm)	Pressure (psi)	Pumping Level (feet)	Total Head (feet)
2205.0	52.0	485.0	615.1

<----- Voltage -----			<----- Current----->		<-Power Factor->		Kilowatt
(volt)			(amps)		(%)		(kw)
475.0	474.0	474.0	522.0	529.0	519.0	89.5	384.8

Electrical Horsepower	Water Horsepower	Overall Efficiency	Rated Efficiency
515.8	342.5	66.4%	G O O D

*** INSTALL SHADES ON THE MOTORS

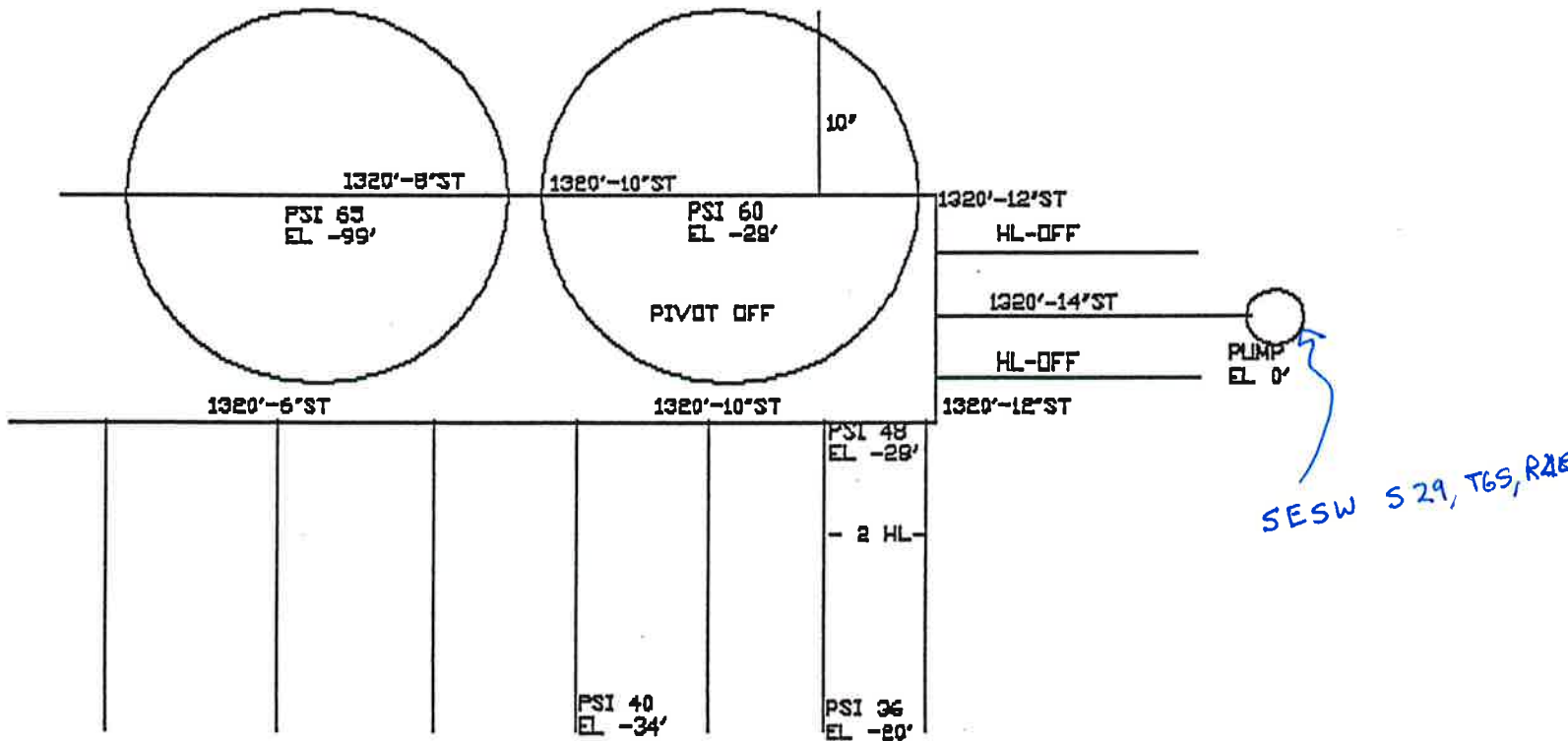
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Name.....:PAUL ROBERTSON
 Address.....:RT 2 BOX 2572
 City,State,ZIP.:PAUL, ID 83347
 # Irrig Acres...: 405
 Major Crops.....:POTATO/BEET/WHEAT

Test Number ...:IP47-90
 Test Date:7/11/90
 Meter #.....:40091254G
 Inspector(s)....:FRED ZIARI

IRRIGATION LAYOUT:

500 HP PUMP



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A. Number of Pump(s) : 1

Pump Setup :Main Pump
Pump Number: 1

B. MOTOR INFORMATION

1. Make.....:U.S.
3. Rated HP....: 500
4. Rated Volts: 440
5. Rated Amps.: 574
6. RPM.....: 1800
7. HP/Meter....: 500

D. ELECTRICAL INPUT

1. Disc Revolutions....:
2. Meter Constant Kh...:
3. CTR.....:
4. PTR/Multiplier.....:
5. Time.....: sec
kW Metered= 0.0 kWe

C. PUMP INFORMATION

1. Manufacture:LAYNE&BOWLER
a Centrifugal:
b Turbine/Sub:X
2. Model #....:NA
3. Serial #....:44296
4. Rated Head.:NA ft.
5. Rated Flow.:NA gpm
6. Implr Dia...: in.
7. Intake Dia.: in.
8. Intake Len.: ft.
9. # of Stages:NA

	1-2	1-3	3-2	Average
6. Voltage.....:	475.0	474.0	474.0	474.3
7. Amperage.....:	522.0	529.0	519.0	523.3
8. Power Factor..(%):	89.5	89.5	89.5	89.5

kW Measured= 384.8 kWe

E. FLOW AND PRESSURE INFORMATION

1. Measurement Device.:ULTRASONIC
2. Pipe ID.....: 12.000 in.
3. Pipe Material.....: STEEL
4. Flow Reading.....: 2205 gpm
5. Discharge Pressure.: 52.0 psi

F. PUMPING WATER LEVEL

1. Pumping Lift.....: 485.0 ft.
2. Suction Head.....: 0.0 ft.
3. Gauge in feet.....: 0.0 ft.
4. Water Level Fluct...: 0.0 ft.
5. Misc Frict Losses...: 10.0 ft.

G. CALCULATED OVERALL EFFICIENCY

1. Total Dynamic Head.: 615 ft.
2. Flow.....: 2205 gpm
3. Water Horsepower...: 342.5 WHP
4. Input Horsepower...: 515.8 EHP
5. Estimated Break HP.: 464.2 BHP
6. Pumping Plant Eff...: 66.4 %

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WHEEL/HAND LINE:X
CENTER PIVOT :X

H. FIELD ELEVATIONS

1. Highest Irrigated Field Elevation...: 0.0 ft.
2. Lowest Irrigated Field Elevation...: -99.0 ft.
3. Is Flow or Pressure Control Recommended? YES
4. Elevation of critical sprinkler as tested.....: 0.0 ft.
5. Potential critical sprinkler elevation.....: 0.0 ft.

I. REQUIRED PRESSURE AT CRITICAL POINT

1. Low Pressure Sprinkler Recommendation.....: 35.0 psi
2. Flow or Pressure control loss (5psi).....: 5.0 psi
3. REQUIRED OPERATING PRESSURE.....: 40.0 psi 92.4 ft.

J. LATERAL DATA --If Applicable

	N / A			
	# 1	# 2	# 3	# 4
1. Nozzle Diameter(s)...(in)...				
2. Average Pressure....(psi)...	46.0			
3. Flow per Sprinkler..(gpm)...	0.00	0.00	0.00	0.00
4. # of Sprinklers.....				
5. Lateral Flow.....(gpm)...	0	0	0	0
		Total Flow =		0

K. CRITICAL SPRINKLER PRESSURES

1. First Sprinkler Pressure.....: 48.0 psi
2. Last Sprinkler Pressure.....: 40.0 psi
3. LOWEST PRESSURE.....: 40.0 psi
4. Mainline Pressure Adjustment.....: 0.0 psi
5. Elevation Adjustment.....: 0.0 psi
6. ADJUSTED CRITICAL PRESSURE.....: 40.0 psi 92.4 ft.

L. POTENTIAL TOTAL HEAD SAVINGS

	PSI	FEET
1. ADJUSTED CRITICAL PRESSURE.....	40.0	92.4
2. REQUIRED OPERATING PRESSURE.....	40.0	92.4
3. POTENTIAL TOTAL HEAD SAVINGS.....	0.0	0.0

NOTES:

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*: Mainlines in a network will not be considered here.

M. MAINLINE FRICTION LOSS CALCULATION:

1. Calculate velocity and friction at critical mainlines.
2. Resize or use parallel pipeline on all mainline with velocity greater than 6.5 fps (or C-factor < 100) to around 5 fps.
3. Use the proposed flow when resizing the mainline.

Mainline Number	Pipe Length (ft)	Inside Dia (in)	C* Value	Flow (gpm)	Velocity (fps)	Hf/100 (ft)	Total Frictn (ft)	Head Saved (ft)
1. Existing Proposed	1320	14.00	100	2205	4.60	0.86	11.35	0.0
2. Existing Proposed	1320	12.00	100	1800	5.11	1.25	16.50	0.0
3. Existing Proposed	1320	10.00	100	900	3.68	0.84	11.10	0.0
4. Existing Proposed	1320	8.00	100	900	5.74	2.49	32.86	0.0
5. Existing Proposed	1320	12.00	100	826	2.34	0.30	3.90	0.0
6. Existing Proposed	1320	10.00	100	826	3.37	0.72	9.46	0.0
7. Existing Proposed	1320	6.00	100	275	3.12	1.12	14.84	0.0
8. Existing Proposed								0.0
9. Existing Proposed								0.0
10. Existing Proposed								0.0
POTENTIAL TOTAL HEAD SAVINGS (Add 1 thru 10)								0.0

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N. SAVINGS PER MEASURE:		HEAD SAVINGS
1. Install low pressure sprinklers or nozzles	=	0.0 ft.
2. Mainline/Valve/Fitting Savings :		
a. Mainline Friction Loss Savings	=	0.0 ft.
b. Fittings Loss Saving (if applicable)	=	0.0 ft.
c. Partially Closed Valve Savings	=	0.0 ft.
3. SYSTEM TOTAL HEAD SAVINGS	=	0.0 ft.

O. PUMPING PLANTS INFORMATION

1. Existing Condition:

Pump #	TDH	GPM	WHP	EHP	BHP	EFF
1	615.1	2205.0	342.5	515.8	464.2	66.4
2	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL	615.1	2205.0	342.5	515.8	464.2
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2. Proposed Condition:

Pump #	TDH	GPM	WHP	EHP	BHP	EFF
1	615.1	2205.0	342.5	515.8	464.2	66.4 *
2	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0

TOTAL	615.1	2205.0	342.5	515.8	464.2
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475.7 428.1 7.2%

P. SYSTEM INFORMATION

1. Total Plant Efficiency (existing)	=	66.4 %
2. Total Plant Efficiency (proposed)	=	66.4 %
3. Estimated Operating Hours per Year	=	1836 Hrs/Yr
4. Estimated Water application- Acre Inch per Year	=	22.09 Acre inch

* NOTE : NOT AT NORMALL RUNING CONDITION, MORE EFFICIENT WITH 2 PIVOTS

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Q. HISTORICAL KWH INFORMATION

NA =	N	Year	kWh
a.		1989	709680
b.		1988	625320
c.		1987	784560
d.	N	1986	
e.	N	1985	
f.		Average	706520 kWh/Yr

R. PUMPING PLANT INFORMATION:	EXISTING =====	PROPOSED =====
1. Total Head-TDH	615 FT	615 FT
2. Flow Rate	2205 GPM	2205 GPM
3. Pumping Plant Efficiency	66.4 %	66.4 %
4. Input Kilowatts	384.8 kW	384.8 kW
5. Input Horsepower	515.8 HP	515.8 HP
6. ESTIMATED BRAKE HORSEPOWER	464.2 BHP	464.2 BHP

72.7%
355.0
475.7

S. ENERGY SAVINGS AND COST SHARING

1. Estimated annual kwh saving and estimated cost sharing:

	ESTIMATED Kwh Savings per measure	Eligibility	MAXIMUM COST SHARE
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a. Low Pressure Savings	0		\$0
b. Mainline Savings	0		\$0
c. Fittings Savings	0		\$0
d. Flow Savings	0		\$0
e. Efficiency Savings	<i>54,715 kWh</i>		\$0
f. TOTAL POTENTIAL KWH SAVED AND MAX COST SHARING	0		\$0

\$1,860⁰² Per year

Flow Control Savings : 0

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