



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

August 29, 2013

WAYNE M SPROUSE
2462 OLD PULLMAN RD
MOSCOW ID 83843

RE: License No. 87-10041

Issuance of License

Dear Water Right Holder(s):

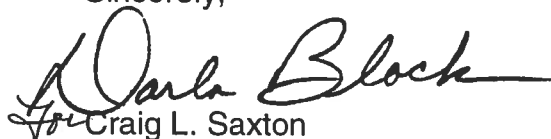
The Department of Water Resources has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review the conditions of approval and remarks listed on your license.

The license is a PRELIMINARY ORDER issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-287-4916.

Sincerely,



Craig L. Saxton

Water Rights Supervisor

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on August 30, 2013, I mailed a true and correct copy, postage prepaid, of the foregoing PRELIMINARY ORDER (Approved License) to the person(s) listed below:

RE: WATER RIGHT NO.

87-10041

**WAYNE M SPROUSE
2462 OLD PULLMAN RD
MOSCOW ID 83843**



**Darla Block
Technical Records Specialist**

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

State of Idaho
Department of Water Resources
Water Right License

WATER RIGHT NO. 87-10041

Priority: August 16, 2005

Maximum Diversion Rate: 0.05 CFS
Maximum Diversion Volume: 6.9 AF

It is hereby certified that WAYNE M SPROUSE
2462 OLD PULLMAN RD
MOSCOW ID 83843 has complied with the terms and
conditions of the permit, issued pursuant to Application for Permit dated August 16, 2005; and has
submitted Proof of Beneficial Use on August 23, 2010. An examination confirms water is diverted from:

SOURCE

GROUND WATER

and a water right has been established as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL DIVERSION VOLUME</u>
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
IRRIGATION	03/15 to 10/31	0.05 CFS	6.3 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE1/4SW1/4 Sec. 13, Twp 39N, Rge 06W, B.M. LATAH County

PLACE OF USE: DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
39N 06W 13									X								

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
39N 06W 13									2.1								2.1

Total Acres: 2.1

CONDITIONS OF APPROVAL

- Domestic use is for 1 home. Irrigation of lawn, garden and landscaping associated with the home is authorized under the irrigation component of this right.
- This right when combined with all other rights shall provide no more than 0.03 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the place of use.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed sealed this 28th day of August, 2013.

Shelly W. Keen
for GARY SPACKMAN
Director

State of Idaho
Department of Water Resources

Attachment To Water Right License

87-10041

This map depicts the DOMESTIC place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

06W



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 125 250 500 Feet



State of Idaho
Department of Water Resources

Attachment To Water Right License

87-10041

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

06W



-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 125 250 500 Feet



MEMORANDUM

TO: Craig Tesch – 87-10041

FROM: Daniel Nelson – Staff Hydrologist

DATE: August 20, 2013

SUBJECT: Licensing Review and Suggested Recommendations and Explanations

In reviewing this water right permit for licensing, I discovered a couple of corrections that were needed in the field exam and in the database. I made these corrections prior to submitting it for licensing without returning the file to reviewing agent. The things corrections are as follows:

The consumptive use volume 2.0 acre-feet per acre was used to calculate the annual volume in the field exam. I corrected this to the headgate requirement of 3.0 acre-feet per acre. Therefore the total volume for the irrigation portion for this water right is 2.1 acres X 3.0 acre feet per acre for a total of 6.3 acre feet for irrigation. The irrigation volume was not included in the database, so I added this amount into the database.

The domestic volume for this water right was not included in the database. The domestic use was calculated correctly in the field exam at 0.6 af for in-house use only. I added the domestic volume into the database.

The total volume was calculated incorrectly due to the difference between the headgate requirement and the consumptive use requirement on the irrigation component. The total should have been $6.3 \text{ af} + 0.6 \text{ af} = 6.9 \text{ af}$. The field exam report clearly shows that this well can supply 6.9 af of water for this well.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-10041

Exam Date: 8/12/2013

1. Current Owner: WAYNE M SPROUSE
2462 OLD PULLMAN RD
MOSCOW ID 83843
(208)882-0112

2. Accompanied by:

Phone No:

Address:

Relationship to Permit Holder:

3. SOURCE

TRIBUTARY

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
2. Other water rights with the same point of diversion:

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NE1/4SW1/4 Sec. 13, Twp 39N, Rge 06W, B.M. LATAH County

Method of Determination: Digitized

2.

PLACE OF USE: DOMESTIC

Twp Rge Sec	NE				NW				SW				SE				Totals
39N 06W 13	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
									X								

PLACE OF USE: IRRIGATION

Twp Rge Sec	NE				NW				SW				SE				Totals
39N 06W 13	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
									2.1								2.1

Total Acres: 2.1

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

Well or Diversion
ID No.*

Motor Make
Grundfos

Hp
1.5

Motor Serial No.

Pump Make

Pump Serial No. or Discharge
Size

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

D. FLOW MEASUREMENTS

1.

Measurement
Equipment

Type

Make

Model No.

Serial No.

Size

Calib. Date

2. Measurements:

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Theoretical pump flow rate (using 1.5 HP, 70% efficiency, 125 feet of lift, and 30 psi):
 $Q = (8.8 \times 1.5 \times 0.7) / (125 + (30 \times 2.31)) = 0.05 \text{ cfs}$

The total maximum diversion rate to be licensed under this right will be limited to 0.05 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.1 \text{ acres} \times 2.0 \text{ AF/acre} = 4.2 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 230 \text{ days} \times 1.9835 = 22.8 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 4.2 \text{ AF}$$

2. Volume Calculations for Other Uses:

Standard in-house domestic use = 0.6 AF

Irrigation = 4.2 AF

Total = 4.8 AF

G. NARRATIVE/REMARKS/COMMENTS

This permit was in-office field examined on 08/12/13 by myself, Craig Tesch. This permit authorizes the diversion of ground water to be used for domestic and irrigation purposes. Ground water is supplied by a 138-foot deep well "drilled in 1900-1920s" and "deepened in the mid-70s" per the initial application review and a phone conversation with Wayne Sprouse.

To verify if the well depth reported is plausible, I reviewed well logs in the area and geologic literature for the Moscow-Pullman area. The Moscow area is underlain by three aquifer systems that people access for water:

1. Shallow sediments of Bovill - Wells completed in this formation will be up to 200 feet (ft) deep (generally much shallower) and the wells are used for domestic and stock.
2. Wanapum Basalt - Wells generally penetrate this at around 100 ft, and can go up to 300 ft deep. Usually used for domestic and stock, but the City of Moscow and University of Idaho obtain water from the Wanapum.
3. Grande Ronde - Wells are generally deeper than 300 ft. This is the most prolific aquifer in the area, and most municipal water comes from this aquifer.

A review of well logs and geologic literature shows production from all three aquifers in Section 13:

1. Shallow sediments of Bovill - Several University of Idaho monitoring wells with first water less than 20 ft below ground level (BGL).
2. Wanapum Basalt - Otto Hill (first water 125 ft BGL), Dr. Callahan (first water 106 ft BGL), Well #42 (141 foot total depth, from attached Idaho Geological survey map).
3. Wanapum or Grande Ronde - David Leach (first water 320 ft BGL), Otto Hill (first water 362 ft BGL), Mobile Home Park (first water 385 ft BGL).

The exact horizontal and vertical extent of each aquifer at this site is unknown. Geologic features are often laterally and vertically discontinuous and exhibit varying degrees of heterogeneity. Based on well logs and general geologic information, it is plausible that the Wayne Sprouse well is completed 138 ft deep in the sediments of Bovill or Wanapum Basalt. A value of 125 ft will be used to approximate lift.

Water is used for domestic purposes including standard indoor use for one household. The well is also used to irrigate the house lawn and a 2.1 acre tract. The well is 125 feet north of Old Pullman Road, Moscow, Idaho, 25 feet west of the main house in the front yard. Per a phone discussion with Wayne Sprouse on 08/14/2013, the well has a 1.5 HP Grundfos pump in it. Theoretical pump flow rate was calculated using 1.5 HP, 70% efficiency, 125 feet of lift, and 30 psi (average of standard domestic and irrigation) resulting in a discharge rate of 0.05 cfs. Pump discharge is less than the requested diversion rate of 0.10 cfs (0.04 cfs for domestic plus 0.06 cfs for irrigation). The diversion rate to be licensed under this right will be limited to 0.04 cfs for domestic and 0.05 cfs for irrigation, with a total maximum diversion rate of 0.05 cfs.

Standard in-house domestic use volume is 0.6 AF. Irrigation volume was calculated to be 4.2 AF (2.1 acres x 2.0 AF/acre). Combined volume is 4.8 AF.

One overlapping water right (87-7069), a large POU for the city of Moscow, exists on the place of use. Water rights 87-7058 and 87-7132 are in the same 40-acre tract, but are for different owners on different tax lots.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
IRRIGATION	03/15 to 10/31	0.05 CFS	4.2 AF
<u>Totals:</u>		0.05 CFS	4.8 AF

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

I. AUTHENTICATION

Field Examiner's Name Craig Tusch Date 8/19/2013
Reviewer Daniel A. Nolan Date 8-20-2013



2750 Old Pullman Road, Idaho, United States

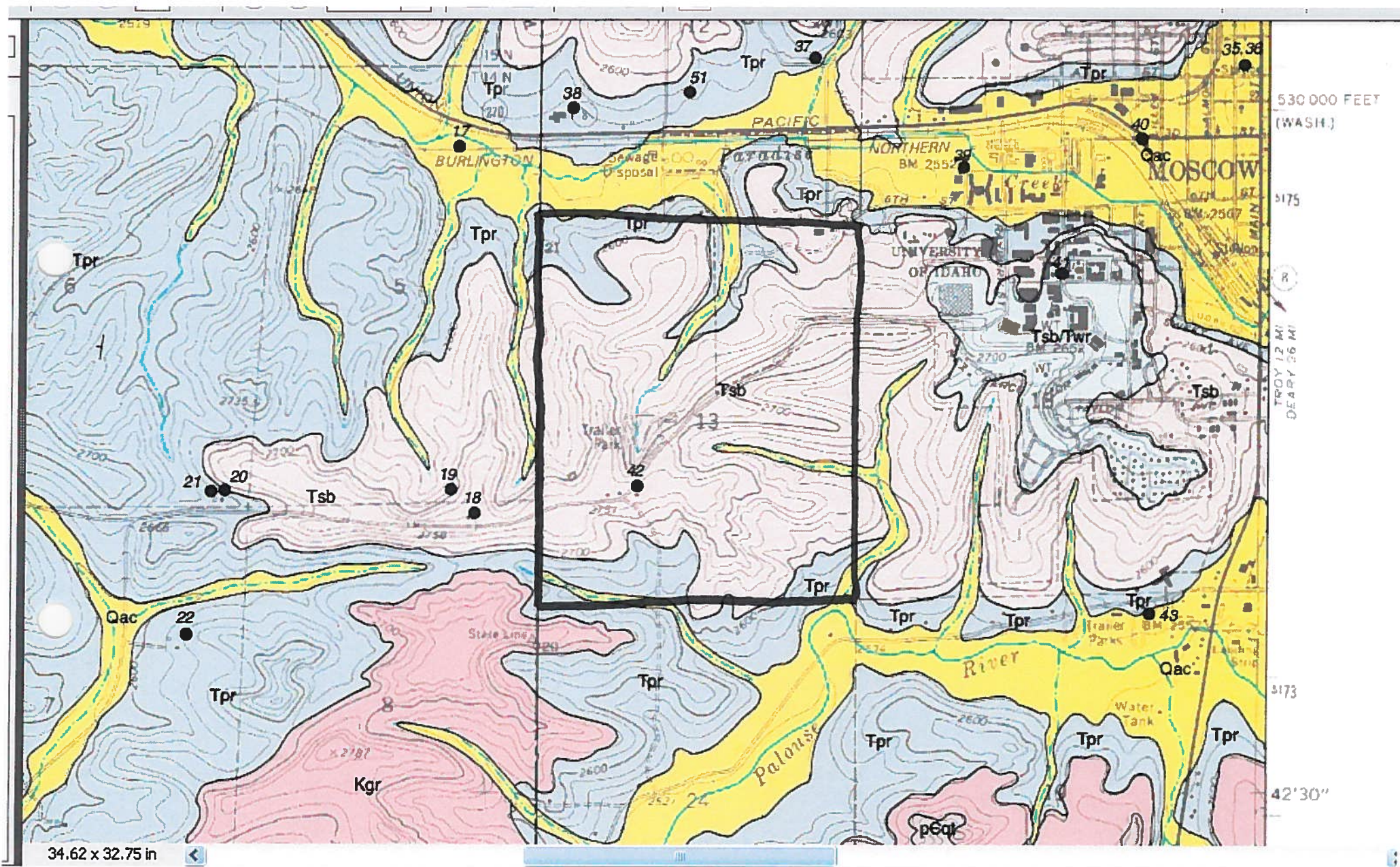
Address is approximate

well

Sprouse
house



Process	Basin Sequence	Draft	Owner	Source	POD/POU	NE NE	NW NE	SW NE	SE NE	NE NW	NW NW	SW NW	SE NW	NE SW	NW SW	SW SW	SE SW	NE SE	NW SE	SW SE	SE SE	Total Acres
Water Permit	87-10041	N	SPROUSE, WAYNE M	GROUND WATER	POU									3.0								3
Water Permit	87-10041	N	SPROUSE, WAYNE M	GROUND WATER	POU									X								0
Water Right	87-10041	Y	SPROUSE, WAYNE M	GROUND WATER	POU									2.1								2.1
Water Right	87-10041	Y	SPROUSE, WAYNE M	GROUND WATER	POU									X								0
Water Right	87-2018	N	UNIVERSITY OF IDAHO REGENTS	PARADISE CREEK	POU					12.5	8.0											20.5
Water Right	87-7026	N	UNIVERSITY OF IDAHO REGENTS	WASTE WATER	POU			3.0	21.0									14.0	2.0		8.0	48
Water Right	87-7058	N	CHIN, LEONARD	GROUND WATER	POU									X								0
Water Right	87-7069	N	CITY OF MOSCOW	GROUND WATER	POU	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0
Water Right	87-7132	N	JOHNSON, KARL	GROUND WATER	POU									2.0								2
Water Right	87-7141	N	UNIVERSITY OF IDAHO REGENTS	GROUND WATER	POU	40.0	40.0	40.0	40.0	40.0	9.1	9.1	40.0					1.5	0.5		0.7	260.9
Water Right	87-7141	N	UNIVERSITY OF IDAHO REGENTS	GROUND WATER	POU	X	X	X	X	X	X	X	X					X	X		X	0
Water Right	87-7162	N	UNIVERSITY OF IDAHO REGENTS	WASTE WATER	POU	40.0	40.0	40.0	40.0	40.0	9.1	9.1	40.0					1.5	0.5		0.7	260.9



530 000 FEET
(WASH.)

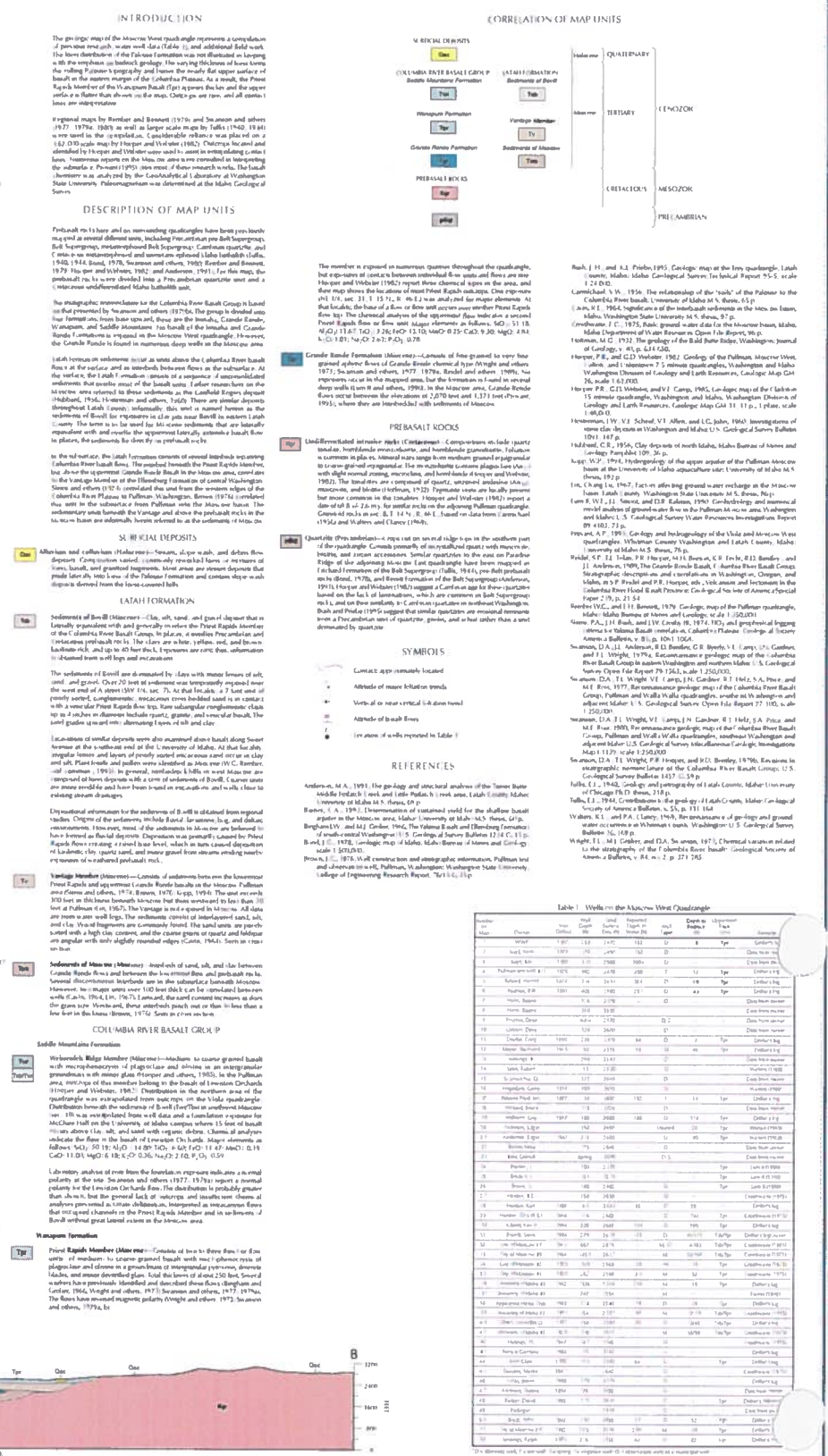
5175

TROY 12 MI
DEARY 56 MI

5173

42'30"

34.62 x 32.75 in

John H. Bush, Andrew P. Provant, and Steve W. Gill
1998

26	Brown, L.	--	180	2485	--	D	--	Tpr	Lum II (1990)
27	Harden, R.E.	--	150	2630	--	D	--	--	Crosthwaite (1975)
28	Harden, Kurt	1988	65	2620	35	D	59 ?	--	Driller's log
29	Harden, Dick (R.E.)	1966	376	2682	--	D	190	Tpr	Crosthwaite (1975)
30	Adams, Kevin	1994	208	2665	150	D	190	Tpr	Driller's log
31	Brandt, Steve	1994	279	2630	128	D	45/115	Tsb/Tpr	Driller's log/owner
32	City of Moscow #7	1962	667	2614	--	M, O	34/163	Tsb/Tpr	Crosthwaite (1975)
33	City of Moscow #8	1964	1458	2617	--	M	22/108	Tsb/Tpr	Crosthwaite (1975)
34	City of Moscow #2	1925	320	2568	20	M	36	Tpr	Crosthwaite (1975)
35	City of Moscow #3	1928	262	2569	20	M	32	Tpr	Crosthwaite (1975)
36	University of Idaho #3	1962	1336	2558	256	M	18	Tpr	Driller's log
37	University of Idaho #4	--	747	2554	--	M	--	--	Baines (1992)
38	Appaloosa Horse Club	1983	214	2540	70	D	29	Tpr	Driller's log
39	University of Idaho #2	1951	354	2557	90	M	17/29	Tsb/Tpr	Crosthwaite (1975)
40	Olsen, Louis (BWC)	1972	238	2560	76	D	12/48	Tsb/Tpr	Driller's log
41	University of Idaho #1	1920	330	2601	--	M	36/98	Tsb/Tpr	Crosthwaite (1975)
42	Hattrup, H.	1947	141	2745	--	D	--	--	Crosthwaite (1975)
43	Terrace Gardens	1984	70	2562	--	U	--	--	Driller's log
44	Lyon, Glen	1992	155	2580	84	D	--	Tpr	Driller's log
45	Deesten, Martin	1945	--	2640	--	D	--	--	Crosthwaite (1975)
46	Lucas, James	1950	170	2770	--	D	--	--	Driller's log
47	Andrews, Duane	1994	176	2650	--	D	--	--	Data from owner
48	Barber, David	1985	175	2630	--	D	--	Tpr	Driller's log/owner
49	Redinger	--	--	2610	--	D	--	--	Data from owner
50	Bindl, John	1992	230	2830	27	D	52	Kgr	Driller's log
51	City of Moscow #9	1982	1253	2538	280	M	20	Tpr	Driller's log
52	Jennings, Ralph	1970	276	2538	40	D	82	Kgr	Driller's log

¹ D = domestic well; T = test well; S = spring; I = irrigation well; O = observation well; M = municipal well

Geographic Information System
ington: Washington State University,
t, 76/15-6, 35 p.

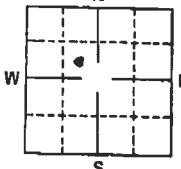
Table 1. Wells on the Moscow West Quadrangle

Number on Map	Owner	Year Drilled	Well Depth (ft)	Land Surface Elev. (ft)	Reported Depth to Water (ft)	Well Type ¹	Depth to Bedrock (ft)	Uppermost Rock Unit	Remarks
1	WWP	1957	259	2470	152	D	8	Tpr	Driller's log
2	Kopf, Keith	1979	270	2490	130	D	--	--	Data from owner
3	Kopf, Ray	1993	330	2560	300+	D	--	--	Data from owner
4	Pullman test well #11	1976	982	2470	200	T	12	Tpr	Driller's log
5	Felsted, Harold	1974	394	2630	354	D	69	Tpr	Driller's log
6	Paulson, Bill	1991	405	2590	257	D	49	Tpr	Driller's log
7	Helm, Boone	--	126	2570	--	D	--	--	Data from owner
8	Helm, Boone	--	350	2585	--	--	--	--	Data from owner
9	Pinzino, Dean	--	400+	2570	--	D, S	--	--	Data from owner
10	Ostrom, Dave	--	120	2600	--	D	--	--	Data from owner
11	Druffel, Craig	1990	208	2470	80	D	2	Tpr	Driller's log
12	Meyer, Raymond	1965	80	2515	50	D	45	Tpr	Driller's log
13	Jennings, R.	--	260	2540	--	D	--	--	Data from owner
14	Lyon, Robert	--	55	2520	--	D	--	--	Walters (1969)
15	Scarnecchia, D.	--	125	2660	--	D	--	--	Data from owner
16	Hagedorn, Gerry	1918	100	2610	--	D	--	--	Walters (1969)
17	Palouse Prod. Inc.	1977	338	2600	182	I	14	Tpr	Driller's log
18	Wickard, Bruce	--	155	2720	--	D	--	--	Data from owner
19	Williams, Guy	1987	380	2660	186	D	104	Tpr	Driller's log
20	Anderson, Edgar	--	350	2650	--	Unused	50	Tpr	Walters (1969)
21	Anderson, Edgar	1940	212	2650	--	D	90	Tpr	Walters (1969)
22	Boone, Mike	--	175	2645	--	D	--	--	Data from owner

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTUSE TYPEWRITER OR
BALL POINT PENState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Idaho Water Resources Res. Inst./Univ. of Idaho</u> Address <u>Moscow, ID 83844</u> Drilling Permit No. <u>87-94-N-24-001</u> Water Right Permit No. _____		7. WATER LEVEL Static water level <u>+1.2</u> feet <u>above</u> land surface. Flowing? ☒ <u>4 1/2</u> G.P.M. flow <u>1/4</u> to <u>1/2</u> Artesian closed-in pressure <u>0.5</u> est p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug ☒ casing extension Temperature _____ °F. Quality _____ Describe artesian or temperature zones below.																																																											
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Modification ☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)		8. WELL TEST DATA ☐ Pump ☐ Bailer ☐ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>		Discharge G.P.M.	Pumping Level	Hours Pumped																																																							
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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTUSE TYPEWRITER OR
BALLPOINT PENState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Dr. Callahan</u> Address <u>Moscow</u> Owner's Permit No. <u>87-86-N-5</u>		7. WATER LEVEL Static water level <u>192'</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ of. Quality _____ Describe artesian or temperature zones below.																																																																																									
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11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were compiled with at the time the rig was removed. Firm Name <u>Witt Well Drilling</u> Firm No. <u>58</u> Address <u>Lewiston, Ida.</u> Date <u>12/15/86</u> Signed by (Firm Official) <u>Earl E. Witt</u> and (Operator) <u>Roger Witt</u>		11. Work started _____ finished _____																																																																																									

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

RECEIVED

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCESUSE TYPEWRITER OR
BALLPOINT PEN

JAN 11 1984

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.
Department of Water Resources

1. WELL OWNER Name <u>Otto Hill</u> Address <u>Moscow</u> Owner's Permit No. <u>87-83-N-12</u>		7. WATER LEVEL Static water level <u>125</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow <u>30</u> Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____																																																																	
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☐ Pump ☐ Baller ☒ Air ☐ Other _____																																																																	
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State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name STADIUM DRIVE MOBILE HOME PARK

Address MOSCOW 717 EAST B

Drilling Permit No. 82-93-N-2700

Water Right Permit No. 97-07058

2. NATURE OF WORK

☒ New well
☐ Deepened
☐ Replacement

☐ Well diameter increase
☐ Modification

☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE

☒ Domestic
☐ Irrigation
☐ Monitor

☐ Industrial
☐ Stock
☐ Waste Disposal or Injection

☒ Other TRAILER PARK (specify type)

4. METHOD DRILLED

☒ Rotary
☐ Air
☐ Auger
☐ Reverse rotary

☐ Cable
☐ Mud
☐ Other _____ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☒ Other PLASTIC

Thickness 250 inches

Diameter 8 inches

From 1 foot

To 116 feet

Thickness 250 inches

Diameter 6 inches

From 85 feet

To 405 feet

Thickness _____ inches

Diameter _____ inches

From _____ feet

To _____ feet

Was casing drive shoe used? ☐ Yes ☒ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No SAW

How perforated? ☐ Factory ☐ Knife ☐ Torch DOWN

Size of perforation? 1 1/4 inches by 12 inches

Number 40

From 375 feet

To 405 feet

_____ perforations _____ feet _____ feet

_____ perforations _____ feet _____ feet

_____ perforations _____ feet _____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer _____ Type _____

Top Packer or Headpipe _____

Bottom of Tailpipe _____

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth 116 Material used in seal: ☐ Cement grout

☒ Bentonite ☐ Puddling clay ☐ _____

Sealing procedure used: ☐ Slurry pit

☐ Temp. surface casing ☒ Overbore to seal depth

Method of joining casing: ☒ Threaded ☐ Welded

☐ Solvent Weld ☐ Cemented between strata

Describe access port _____

6. LOCATION OF WELL - 5041 Old Pullman Rd

Sketch map location must agree with written location.

Subdivision Name _____

Lot No. _____ Block No. _____

County LATAH

Address of Well Site LATAH

(give at least name of road)

SE 1/4 SW 1/4 Sec. 13

T. 39 N ☒ or S ☐

R. 6 E ☐ or W ☒

7. WATER LEVEL

Static water level 181 feet below land surface.

Flowing? ☐ Yes ☒ No G.P.M. flow _____

Artesian closed-in pressure _____ p.s.i.

Controlled by: ☐ Valve ☐ Cap ☐ Plug

Temperature _____ °F. Quality _____

Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump
☐ Baller
☒ Air
☐ Other _____

Discharge G.P.M. 100

Pumping Level 300

Hours Pumped 1

9. LITHOLOGIC LOG

89792

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
12	0	2	SOIL		
	2	108	CLAY		
	108	116	BASALT - Grey - BAKEN		
	116	148	" "		
	148	161	" "		
	161	306	CLAY - BLACK - WEATHERED		
	306	315	" "		
	315	320	" "		
	320	332	" "		
	332	342	" "		
	342	375	" "		
	375	405	SAND - WHITE		

10.

Work started 8-10-93 finished 8-13-93

11. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

McPHERSON & WRIGHT DRILLING Firm No. 376

2246 Burrell

Address Twinsburg, Idaho 83501 Date 9-10-93

(208) 743-7295

Signed by Drilling Supervisor Ray McPherson

and

(Operator) Earl McPherson

(If different than the Drilling Supervisor)

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 00 46124
DRILLING PERMIT NO. 842757
Water Right or Injection Well No. _____

2. OWNER:

Name David Leach
Address 2421 Old Pullman Rd
City MOSCOW State ID Zip 83843

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 39 North ☒ or South ☐
Rge. 6 East ☐ or West ☒
Sec. 13 1/4 NE 1/4 SW 1/4
Gov't Lot _____
County LATAH 10 acres 40 acres 160 acres
Lat: : : Long: : :
Address of Well Site 2421 Old Pullman Hwy.
City MOSCOW

(One at least name of road - Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>Bentonite</u>	<u>0</u>	<u>20</u>	<u>400#</u>	<u>Top four</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 182'

Was drive shoe seal tested? ☒ Y ☐ N How? AIR Pressure

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6"</u>	<u>+2</u>	<u>-174</u>	<u>280</u>	<u>STEEL</u>	☒	☐	☒	☐
<u>4.5"</u>	<u>-32</u>	<u>-366</u>	<u>160</u>	<u>PVC</u>	☐	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method Saw

Screen Type & Method of Installation _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>-326</u>	<u>-366</u>	<u>3/4"</u>	<u>48</u>	<u>4.5"</u>	<u>PVC</u>	☐	☒

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

260 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

39N 6W 13

ENTERED

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
<u>24</u>			<u>1.5</u>

Water Temp. 56° Bottom hole temp. _____

Water Quality test or comments: Good

Depth first Water Encounter 320'

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
<u>10</u>	<u>0</u>	<u>20</u>	<u>C124</u>			
<u>8</u>	<u>20</u>	<u>186</u>	<u>"</u>			
<u>6</u>	<u>186</u>	<u>320</u>	<u>BLK BSLT</u>			
<u>6</u>	<u>320</u>	<u>357</u>	<u>SOFT BLK BSLT</u>	<u>24</u>		
<u>6</u>	<u>357</u>	<u>366</u>	<u>Blue Silt</u>			

RECEIVED
JAN 30 2007
IDWR/North

RECEIVED
OCT 31 2006
IDWR/North

Completed Depth 366' (Measurable)

Date: Started 10-10-06 Completed 10-11-06

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name WILKINSON DRILLING Firm No. 125

Principal Driller [Signature] Date 10-17-06

Driller or Operator II _____ Date _____

Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.USE TYPEWRITER OR
BALLPOINT PEN

1. WELL OWNER Name <u>Otto Hill</u> Address <u>Moscow</u> Owner's Permit No. <u>87-79-N-10</u>	7. WATER LEVEL Static water level <u>286</u> feet below land surface. Flowing? ☐ Yes ☐ No G.P.M. flow <u>approx 2</u> Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____																																														
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____	8. WELL TEST DATA ☐ Pump ☐ Bailer ☒ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>	Discharge G.P.M.	Pumping Level	Hours Pumped																																											
Discharge G.P.M.	Pumping Level	Hours Pumped																																													
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>10</td><td>C</td><td>124</td><td>overburden, clay</td><td> </td><td> </td></tr><tr><td>8</td><td>124</td><td>127</td><td>gravel</td><td> </td><td> </td></tr><tr><td>8</td><td>127</td><td>327</td><td>lava</td><td> </td><td> </td></tr><tr><td>8</td><td>327</td><td>362</td><td>gravel</td><td> </td><td> </td></tr><tr><td>8</td><td>362</td><td>366</td><td>black shale</td><td> </td><td> </td></tr><tr><td>8</td><td>366</td><td> </td><td>clay</td><td> </td><td> </td></tr></tbody></table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No	10	C	124	overburden, clay			8	124	127	gravel			8	127	327	lava			8	327	362	gravel			8	362	366	black shale			8	366		clay		
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4. METHOD DRILLED ☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary ☐ Cable ☐ Dug ☐ Other _____	RECEIVED RECEIVED FEB 13 1980 Department of Water Resources Northern District Office FEB 13 1980 Department of Water Resources																																														
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>250 inches</td><td>8 inches</td><td>1</td><td>124 feet</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table> Was casing drive shoe used? ☐ Yes ☒ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table> Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>124</u> Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port _____		Thickness	Diameter	From	To	250 inches	8 inches	1	124 feet													Number	From	To																							
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6. LOCATION OF WELL Sketch map location must agree with written location. <table border="1"><tr><td>N</td><td> </td><td> </td></tr><tr><td>W</td><td> </td><td>E</td></tr><tr><td> </td><td> </td><td> </td></tr></table> Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Latah</u> S 1/4 S 1/4 Sec. <u>13</u> , T. <u>39</u> , N 1/4 R. <u>16</u> E.W.	N			W		E				10. Work started <u>9/10/79</u> finished <u>9/14/79</u>																																					
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11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Edwin Hill Drilling</u> Address <u>219 Powers Lane</u> Date <u>12/29/79</u> Signed by (Firm Official) <u>Edwin Hill</u> and (Operator) <u>Reginald Hill</u> MICROFILMED																																															