

UMAT 1383

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

JAN 21 1964 WATER WELL REPORT

State Well No. 3N/31-31C

STATE ENGINEER, SALEM 10, OREGON STATE OF OREGON within 30 days from the date of well completion. (Please type or print)

State Permit No.

(1) OWNER:

Name Blaine Isom Address Pendleton, Oregon

(2) LOCATION OF WELL:

County Umatilla Driller's well number NE 1/4 N.W. 1/4 Section 31 T. 3N R. 31E W.M. Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ] abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic [X] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ]

(5) TYPE OF WELL:

Rotary [ ] Driven [ ] Cable [X] Jetted [ ] Dug [ ] Bored [ ]

(6) CASING INSTALLED:

Threaded [X] Welded [ ] 8" Diam. from 0 ft. to 333 ft. Gage

(7) PERFORATIONS:

Perforated? [ ] Yes [X] No Type of perforator used Size of perforations in. by in. perforations from ft. to ft.

(8) SCREENS:

Well screen installed? [ ] Yes [ ] No Manufacturer's Name Model No. diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Well seal—Material used in seal Cement Depth of seal 18 ft. Was a packer used? Diameter of well bore to bottom of seal 11 in. Were any loose strata cemented off? [ ] Yes [X] No Depth Was a drive shoe used? [X] Yes [ ] No Was well gravel packed? [ ] Yes [X] No Size of gravel: Gravel placed from ft. to ft. Did any strata contain unusable water? [ ] Yes [ ] No Type of water? Depth of strata Method of sealing strata off

(10) WATER LEVELS:

Static level 446ft. below land surface Date Artesian pressure lbs. per square inch Date

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level Was a pump test made? [ ] Yes [ ] No If yes, by whom?

Table with columns: Yield, gal./min. with, ft. drawdown after, hrs. Bailer test, gal./min. with, ft. drawdown after, hrs. Artesian flow, g.p.m. Date Temperature of water Was a chemical analysis made? [ ] Yes [ ] No

(12) WELL LOG:

Diameter of well below casing 8 Depth drilled ft. Depth of completed well 1218 ft. Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Table with columns: MATERIAL, FROM, TO. Rows include Soil, Clay brown, Rock brown, Gravel, Rock green, Rock brown soft, Rock red, Rock gray hard, Rock brown soft, Rock gray hard, Rock black soft, Rock gray hard, Rock gray hard, Clay soft, Rock gray hard, Clay brown boulders, Rock gray medium, Clay brown, Sand, Rock gray hard, Rock red soft, Rock gray medium, Rock black soft, Rock gray hard, Work started 19 Completed 19 Date well drilling machine moved off of well 19

(13) PUMP:

Manufacturer's Name Type: H.P.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME (Person, firm or corporation) (Type or print)

Address

Drilling Machine Operator's License No.

[Signed] (Water Well Contractor)

Contractor's License No. Date 19

NOTICE TO WATER WELL CONTRACTOR

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STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

RECEIVED  
JAN 21 1964

WATER WELL REPORT

STATE OF OREGON  
(Please type or print)

(cont).

State Well No. 3N/31-31C

State Permit No. \_\_\_\_\_

(1) OWNER:

Name \_\_\_\_\_  
Address \_\_\_\_\_

(2) LOCATION OF WELL:

County \_\_\_\_\_ Driller's well number \_\_\_\_\_  
1/4 Section T. R. W.M.  
Bearing and distance from section or subdivision corner \_\_\_\_\_

(3) TYPE OF WORK (check):

Flow Well  Deepening  Reconditioning  Abandon   
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

(5) TYPE OF WELL:

Rotary  Driven   
Cable  Jetted   
Dug  Bored

(6) CASING INSTALLED:

Threaded  Welded

" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_  
" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_  
" Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Gage \_\_\_\_\_

(7) PERFORATIONS:

Perforated?  Yes  No

Type of perforator used \_\_\_\_\_  
Size of perforations in. by in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

(8) SCREENS:

Well screen installed?  Yes  No

Manufacturer's Name \_\_\_\_\_ Model No. \_\_\_\_\_  
in. Slot size Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. Slot size Set from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

(9) CONSTRUCTION:

Well seal—Material used in seal \_\_\_\_\_  
Depth of seal \_\_\_\_\_ ft. Was a packer used? \_\_\_\_\_  
Diameter of well bore to bottom of seal \_\_\_\_\_ in.  
Were any loose strata cemented off?  Yes  No Depth \_\_\_\_\_  
Was a drive shoe used?  Yes  No  
Was well gravel packed?  Yes  No Size of gravel: \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Did any strata contain unusable water?  Yes  No  
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(10) WATER LEVELS:

Static level \_\_\_\_\_ ft. below land surface Date \_\_\_\_\_  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made?  Yes  No If yes, by whom?  
Yield: gal./min. with ft. drawdown after hrs.  
" " " " "  
" " " " "  
Bailer test gal./min. with ft. drawdown after hrs.  
Artesian flow g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made?  Yes  No

(12) WELL LOG:

Diameter of well below casing \_\_\_\_\_

Depth drilled \_\_\_\_\_ ft. Depth of completed well \_\_\_\_\_ ft.  
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Current meter clicks/min.	MATERIAL	FROM	TO
0/3 min.	Rock brown soft	552	564
	Rock gray medium	564	581
	Rock red soft	581	588
0/3 min.	Rock gray medium	588	607
17/min	Rock red soft	607	611
25/min	Rock gray medium	611	622
25/min	Rock red soft	622	630
	Rock gray medium	630	656
30/min	Rock gray hard	656	684
28/min	Rock gray medium	684	784
24/min	Rock red soft	784	796
26/min	Rock gray	796	818
22/min	Rock red soft	818	832
28/min	Rock gray medium	832	870
22/min	Rock gray hard	870	890

Work started 12-13 1962 Completed 2-27 1963  
Date well drilling machine moved off of well 3-1 1963

(13) PUMP:

Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P. \_\_\_\_\_

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Ben Dreyer Drilling Contractor  
(Person, firm or corporation) (Type or print)

Address Rt. 1 Box 225 Hermiston, Oregon

Drilling Machine Operator's License No. 7

[Signed] Ben Dreyer  
(Water Well Contractor)

Contractor's License No. 12 Date 3-1 1963

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM 10, OREGON within 30 days from the date of well completion.

JAN 21 1964

WATER WELL REPORT

STATE OF OREGON (Please type or print)

State Well No. 3N/31-31C

State Permit No.

(Cont.)

(1) OWNER:

Name Blaine Isom Address Pendleton, Oregon

(2) LOCATION OF WELL:

County Umatilla Driller's well number 1/4 1/4 Section T. R. W.M. Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

Well Deepening Reconditioning Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic Industrial Municipal Irrigation Test Well Other

(5) TYPE OF WELL:

Rotary Cable Dug Driven Jetted Bored

(6) CASING INSTALLED:

Threaded Welded Diam. from ft. to ft. Gage

(7) PERFORATIONS:

Perforated? Yes No Type of perforator used Size of perforations in. by in. perforations from ft. to ft.

(8) SCREENS:

Well screen installed? Yes No Manufacturer's Name Model No. Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Well seal-Material used in seal Depth of seal ft. Was a packer used? Diameter of well bore to bottom of seal in. Were any loose strata cemented off? Yes No Depth Was a drive shoe used? Yes No Was well gravel packed? Yes No Size of gravel: Gravel placed from ft. to ft. Did any strata contain unusable water? Yes No Type of water? Depth of strata Method of sealing strata off

(10) WATER LEVELS:

Static level ft. below land surface Date Artesian pressure lbs. per square inch Date

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? Yes No If yes, by whom? Yield: gal./min. with ft. drawdown after hrs. Bailer test gal./min. with ft. drawdown after hrs. Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? Yes No

(12) WELL LOG:

Diameter of well below casing 8

Depth drilled ft. Depth of completed well 1218 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Table with columns: clicks/min, MATERIAL, FROM, TO. Rows include Rock gray medium, Rock black soft, Rock gray medium, Rock gray hard, Rock red medium, Rock black medium, Rock gray hard, Rock red soft, Rock black hard, Cuttings washed out hole.

Work started 11-13 19 63 Completed 12-18 1963 Date well drilling machine moved off of well 19

(13) PUMP:

Manufacturer's Name Type: H.P.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Ben Dreyer Drilling Contractor (Person, firm or corporation) (Type or print)

Address Rt. 1 Box 225 Hermiston, ORE.

Drilling Machine Operator's License No. 7

[Signed] Ben Dreyer (Water Well Contractor)

Contractor's License No. 12 Date 12-31 1963

January 22, 1964

Mr. Blaine Isom  
Echo,  
Oregon

Dear Mr. Isom:

Upon returning to Salem, I have had an opportunity to review your artesian well problem and the related current meter data. Enclosed is a copy of the flow rates measured during our current meter run in the well on Tuesday, January 14, 1964. It should be pointed out that the accuracy of the current meter used is in question regarding the actual amount of water flowing in the well. The meter is to be sent to the U. S. Bureau of Standards to be properly rated. At low flow rates the meter is not accurate enough to permit a close approximation of the amount of water moving in the well.

The change in the number of counts at various levels in the well suggests that the change in diameter of the well bore would best explain the variation in water velocity. In areas of large overbreak where the well bore is wider, the velocity would be reduced. Where the bore is cut in solid rock and is smaller in diameter, the water velocity should increase. It appears that the water leakage occurs at a depth of 592 to 600 feet below land surface. Water standing in the well above 592 feet has no apparent movement that can be measured and represents the head or artesian pressure surface on the confined water body.

The highest count of 30 clicks per minute indicates a velocity of .07 feet per second, or  $.07 \times 60 = 4.20$  feet per minute. One foot of an 8-inch diameter hole contains approximately 2.61 gallons per foot. A ten-inch hole contains 4.08 gallons per foot. Therefore,  $4.2 \times 2.61 = 11$  gallons per minute moving in an 8-inch well bore. In sections of larger diameter, the velocity drops off and probably averages in the neighborhood of 8 to 10 gallons per minute.

We can adjust for meter inaccuracy and error by doubling the observed readings and computing the maximum probable loss as follows. Sixty clicks per minute = .16 feet per second or 9.6 feet per minute;  $9.6 \times 2.61 = 25$  gallons per minute. This is probably a maximum figure for the amount of water lost by leakage from the well.

Mr. Blaine Isom

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January 22, 1964

Nothing regarding the artesian pressures involved can be determined from our test. The present water level stands near 446 feet as I recall from Mr. Dreyer's observations during drilling. This represents the position of the pressure surface on the artesian zone with a flow of between 11 and 25 gallons per minute. It is not expected that the control of this leakage will result in a substantial rise in the pressure surface. However, the leakage should certainly be controlled to prevent a constant waste of ground water and reductions of artesian pressures. Allowing the leakage in the well to continue is the same as if the well were being pumped day and night at the same rate. Such a loss could result in the steady decline of the water table in the area.

Casing the full length of the well will be an expensive operation. We suggest that a packer be set in the well at a depth of 620 feet below land surface. Concrete slurry can then be placed by a dump bailer on the packer and forced out into the porous rock area between 620 feet and 590 feet. After the concrete is placed a high column of water can be placed on the concrete to force it out into the wall rock. The cement plug can then be drilled out and the well completed. We will follow the progress of your well completion with interest; if we may be of further assistance, please contact this office.

Very truly yours,

CHRIS L. WHEELER  
State Engineer

By  
Wm. S. Bartholomew,  
Geologist

WSB:mg  
Enclosure  
CC: Ben Dreyer

# UMAT 1383

Blaine Isom's Well 3N/31-31C Umatilla County

Depth in feet below land surface

Counts per minute

Static Water Level	446 feet	0/5 minutes
	480 feet	0/3 minutes
	500 feet	0/3 minutes
	530 feet	0/3 minutes
	560 feet	0/3 minutes
	590 feet	0/3 minutes
	595 feet	0/2 minutes
	600 feet	17/ minute
	605 feet	18/ minute
	610 feet	17/ minute
	620 feet	25/ minute
	640 feet	25/ minute
	660 feet	30/ minute
	670 feet	25/ minute
	690 feet	30/ minute
	700 feet	29/ minute
	730 feet	28/ minute
	740 feet	27/ minute
	750 feet	28/ minute
	760 feet	26/ minute
	770 feet	27/ minute
	790 feet	26/ minute
	810 feet	26/ minute
	820 feet	24/ minute
	830 feet	23/ minute
	850 feet	22/ minute
	860 feet	24/ minute
	870 feet	28/ minute
	880 feet	20/ minute
	890 feet	22/ minute
	910 feet	22/ minute
	930 feet	23/ minute
	950 feet	22/ minute
	970 feet	22/ minute
	1000 feet	17/ minute