

Groundwater Application Review Summary Form

Application # G- 18871

GW Reviewer Karl Wozniak Date Review Completed: November 21, 2019

Summary of GW Availability and Injury Review:

Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO

November 21, 2019

TO: Application G- 18871

FROM: GW: Karl Wozniak
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES
 NO The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

YES
 NO Use the Scenic Waterway Condition (Condition 7J)

Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in _____ Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 21, 2019
 FROM: Groundwater Section Karl Wozniak
 Reviewer's Name
 SUBJECT: Application G- 18871 Supersedes review of _____
 Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525.* Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. **This review is based upon available information and agency policies in place at the time of evaluation.**

A. GENERAL INFORMATION: Applicant's Name: Willamette Valley Land, LLC County: Yamhill

A1. Applicant(s) seek(s) 1.78 cfs from 4 well(s) in the Willamette Basin,
South Yamhill River subbasin

A2. Proposed use Irrigation Seasonality: March 1 – October 31

A3. Well and aquifer data (**attach and number logs for existing wells; mark proposed wells as such under logid**):

Well	Logid	Applicant's Well #	Proposed Aquifer*	Proposed Rate(cfs)	Location (T/R-S QQ-Q)	Location, metes and bounds, e.g. 2250' N, 1200' E fr NW cor S 36
1	Proposed	1	Alluvial aq system	1.78	4S/4W-31 SW/NE	2780' N, 3065' E fr SW cor S 31
2	Proposed	2	Alluvial aq system	1.78	4S/4W-31 SE/NW	2780' N, 2220' E fr SW cor S 31
3	Proposed	3	Alluvial aq system	1.78	4S/4W-31 SE/SW	1120' N, 1380' E fr SW cor S 31
4	Proposed	4	Alluvial aq system	1.78	4S/4W-31 SW/SE	1175' N, 3090' E fr SW cor S 31
5						

* Alluvium, CRB, Bedrock

Well	Well Elev ft msl	First Water ft bls	SWL ft bls	SWL Date	Well Depth (ft)	Seal Interval (ft)	Casing Intervals (ft)	Liner Intervals (ft)	Perforations Or Screens (ft)	Well Yield (gpm)	Draw Down (ft)	Test Type
1	152				125							
2	154				125							
3	152				125							
4	153				125							

Use data from application for proposed wells.

A4. **Comments:** The application requests 1.78 cfs (800 gpm) for primary irrigation of 244.9 acres from any combination of 4 proposed wells; therefore, each well was evaluated at the maximum requested rate. The locations in table A3 and on the enclosed map are as proposed on the application.

A5. **Provisions of the** Willamette Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water **are**, or **are not**, activated by this application. (Not all basin rules contain such provisions.)
 Comments: The wells produce from a confined aquifer so the pertinent basin rules (OAR 690-502-0240) do not apply.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: _____

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

- a. is over appropriated, is not over appropriated, or cannot be determined to be over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;
- b. will not or will likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;
- c. will not or will likely to be available within the capacity of the groundwater resource; or
- d. will, if properly conditioned, avoid injury to existing groundwater rights or to the groundwater resource:
 - i. The permit should contain condition #(s) 7N, large water-use reporting;
 - ii. The permit should be conditioned as indicated in item 2 below.
 - iii. The permit should contain special condition(s) as indicated in item 3 below;

- B2. a. Condition to allow groundwater production from no deeper than _____ ft. below land surface;
- b. Condition to allow groundwater production from no shallower than _____ ft. below land surface;
- c. Condition to allow groundwater production only from the alluvial aquifer system. groundwater reservoir between approximately _____ ft. and _____ ft. below land surface;
- d. Well reconstruction is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:**

The proposed wells lie on a terrace northwest of the South Yamhill River. The terrace is underlain by about 60 feet of Willamette Silt. Local streams are incised into, but do not completely penetrate the silt. The principal source of groundwater in the area is the alluvial aquifer system, which consists of a number of thin unconsolidated sand and gravel beds that occur at or near the base of the Willamette Silt. The combined thickness of the sands and gravels is generally less than 15 feet in the immediate area; it thickens to the east and south but thins to a zero edge about 1.75 miles to the west where older marine sedimentary rocks outcrop at the surface. The water table occurs near land surface in the silt unit and the silt acts as a leaky confining layer for the underlying alluvial aquifer. The alluvial aquifer is underlain by a thick sequence of Tertiary marine sedimentary beds which have a low groundwater production capacity (the low-yield bedrock aquifer system) and commonly contain saline water (see enclosed well report for nearby well YAMH 5922 which was abandoned because of salt water).

Well yields in section 31, T4S/4W and section 36, T4S/5W range from 3-80 gpm with a median yield of 15 gpm (see enclosed graphs). About half of the yields were determined by the air test method which tends to overestimate the final yield of a completed well; the remainder were determined by bailer or pump tests which showed moderate to excessive drawdowns relative to the total depth of the wells. All of the wells in the dataset (19) are domestic wells, most of which have 6-inch diameter casing. The application indicates that the proposed irrigation wells will have 10-inch diameter casings which should, all else being equal, allow somewhat higher yields. However, because of the limited thickness of the aquifer, it is highly unlikely that the total requested rate of 1.78 cfs (800 gpm) can be realized from the 4 proposed wells. These factors strongly indicate that the groundwater for the proposed use will not likely be available within the capacity of the resource at the requested rates. This finding can be mitigated by reducing the maximum proposed rate to 0.141 cfs (63 gpm) which is just

less than 1% of the adjacent instream water right of certificate 72977 (14.2 cfs) on the reaches of the South Yamhill River to the south of the proposed wells.

OWRD databases and tax lot maps indicate that domestic and irrigation well densities are quite low in the surrounding area. However, several rural domestic tax lots dependent upon domestic well water occur within ¼-mile to the west and northwest of Proposed Well 2 (highlighted in yellow on enclosed map). Similarly, proposed well 2 is within about 300 feet of a house on an adjacent tax lot to the north. The precise locations of the domestic wells that serve these properties is uncertain, but the potential for substantial interference from the proposed wells, especially wells 1 and 2 – if they prove capable of yields substantially higher than median yields in the area – is high because of the following factors: the close proximity of the domestic wells; the limited thickness of the aquifer; the confinement of the aquifer (pumping impacts will spread rapidly over substantial areas); the high proposed maximum pumping rate (800 gpm); the moderate to excessive drawdowns shown on the well logs of local wells (very little water column is available to mitigate hydraulic interference – see enclosed well log YAMH 5929 as an example); the unlikely presence of deeper water-bearing zones in the alluvial aquifer system (most of the domestic wells already fully penetrate the aquifer). These factors strongly indicate that the groundwater for the proposed use will not likely be available in the amounts requested without injury to prior groundwater rights. This finding can be mitigated by reducing the maximum proposed rate to 0.141 cfs (63 gpm) and by dropping wells 1 and 2 from the application.

Groundwater-level measurements are sparse in the area (see included plot) but current levels are expected to be stable because of the low density of irrigation and domestic wells. However, the limited capacity of the aquifer and the proposed rates indicate that it would be prudent to require water-level and water-use measurement conditions (item B1di above) if a permit is issued by the Department.

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1-4	Alluvial aquifer system	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Well logs indicate static water levels above the producing sand and gravel beds and the Willamette Silt Unit is generally considered to be a leaky confining unit for underlying water-bearing zones.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Cozine Creek	140	134-155	3560	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	South Yamhill River	140	100-112	4710	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	Unnamed trib to S Yamhill R	140	118-130	6990	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Cozine Creek	140	134-155	3770	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	South Yamhill River	140	100-112	5090	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	3	Unnamed trib to S Yamhill R	140	118-130	6510	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Cozine Creek	140	134-155	5500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	2	South Yamhill River	140	100-112	4290	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	3	Unnamed trib to S Yamhill R	140	118-130	4720	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Cozine Creek	140	134-155	5050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	2	South Yamhill River	140	100-112	3310	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	3	Unnamed trib to S Yamhill R	140	118-130	5850	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Porous media are continuous between the source wells and the listed streams. Published water table maps indicate that groundwater flows toward and discharges into the listed streams.

Water Availability Basin the well(s) are located within: WAB #163 (S YAMHILL R > YAMHILL R - AT MOUTH) and WAB #162 (S YAMHILL R > YAMHILL R - AB COZINE CR). Because the aquifer is confined, cones of depression from the wells are expected to spread quickly over broad areas to impact multiple local streams. Adjacent reaches of Cozine Creek are in WAB #163 whereas adjacent reaches of the South Yamhill River and its unnamed tributary to the southwest of the wells are in WAB #162. Most pumping impacts will likely be to the South Yamhill River as it incised more deeply into the Willamette Silt and has a broader streambed compared to Cozine Creek and the unnamed tributary to the South Yamhill River. Only instream rights (referenced by certificate number) within 1 mile of the proposed wells are evaluated in Table C3a and shown on the included map.

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% natural flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	41.7	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	72977	14.2	<input checked="" type="checkbox"/>	40.3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	41.7	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	72977	14.2	<input checked="" type="checkbox"/>	40.3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
3	2	<input type="checkbox"/>	<input type="checkbox"/>	72977	14.2	<input checked="" type="checkbox"/>	40.3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
3	3	<input type="checkbox"/>	<input type="checkbox"/>			<input checked="" type="checkbox"/>	40.3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
4	1	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	41.7	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
4	2	<input type="checkbox"/>	<input type="checkbox"/>	72977	14.2	<input checked="" type="checkbox"/>	40.3	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

	SW #	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: Analytical modeling in similar circumstances indicates that interference @ 30 days is likely to be much less than 25% because of the buffering impacts of the Willamette Silt which is present between local streambeds and the alluvial aquifer system. However, long-term, steady-state impacts will be higher and all production from the wells will come at the expense of streamflow.

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		%	%	%	%	%	%	%	%	%	%	%	%

(A) = total interference as CFS; (B) = WAB calculated natural flow at 80% exceed. as CFS; (C) = 1% of calculated natural flow at 80% exceed. as CFS; (D) = highlight the checkmark for each month where (A) is greater than (C); (E) = total interference divided by 80% flow as percentage.

Basis for impact evaluation: _____

C4b. **690-09-040 (5) (b) The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.**

- C5. **If properly conditioned**, the surface water source(s) can be adequately protected from interference, and/or groundwater use under this permit can be regulated if it is found to substantially interfere with surface water:
- i. The permit should contain condition #(s) _____;
 - ii. The permit should contain special condition(s) as indicated in "Remarks" below;

C6. **SW / GW Remarks and Conditions:** _____

References Used:

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

O'Connor, J.E., Sarna-Wojcicki, A., Wozniak, K.C., Polette, D.J., and Fleck, R.J., 2001: U.S. Geological Survey Professional Paper 1620.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82p.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

D2. **THE WELL does not appear to meet current well construction standards based upon:**

- a. review of the well log;
- b. field inspection by _____;
- c. report of CWRE _____;
- d. other: (specify) _____

D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

Watershed ID #: 162
 Time: 2:19 PM
 S YAMHILL R > YAMHILL R - AB COZINE CR
 Basin: WILLAMETTE
 Exceedance Level: 80
 Date: 11/20/2019

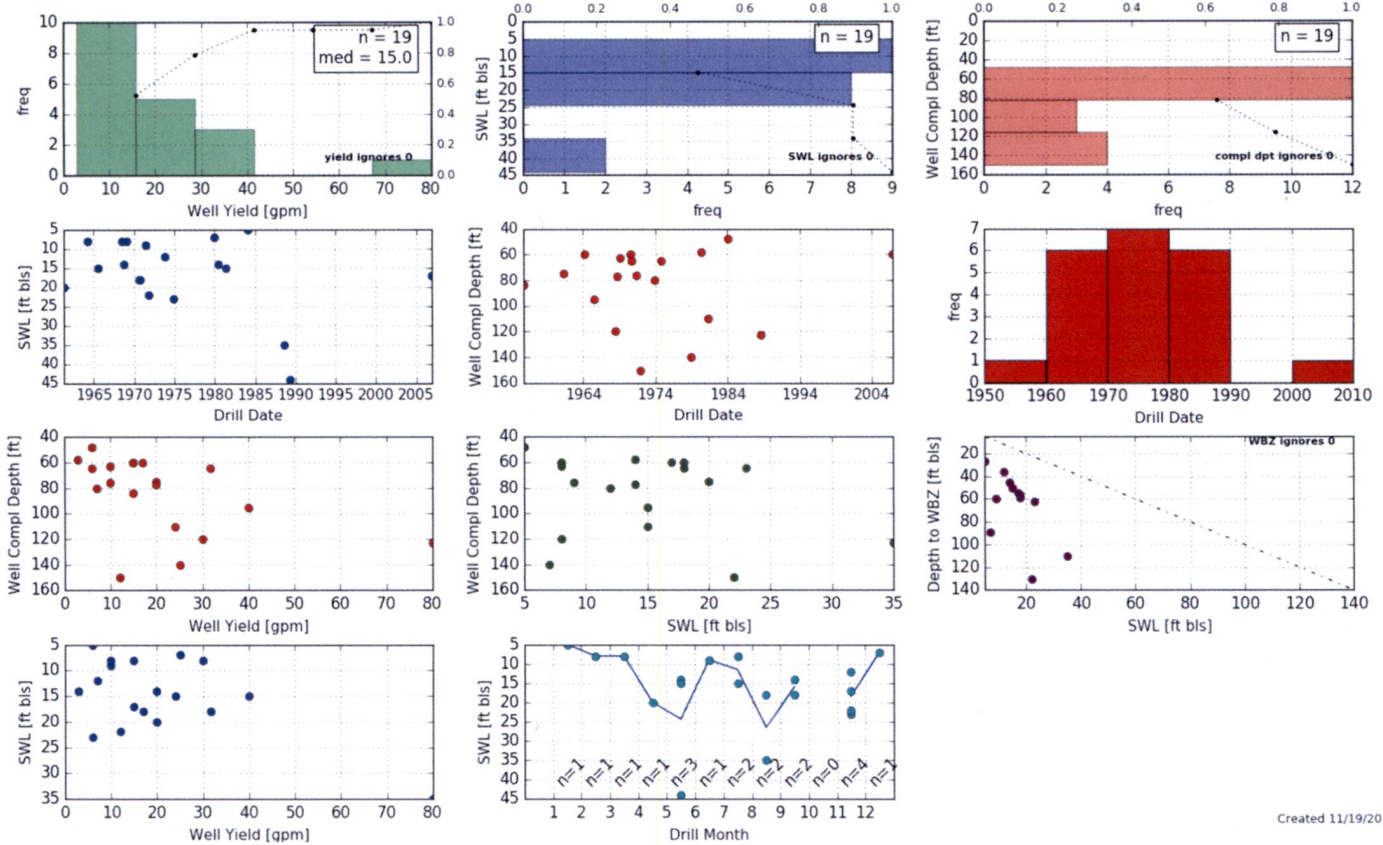
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	1,290.00	30.30	1,260.00	0.00	15.00	1,240.00
FEB	1,470.00	28.50	1,440.00	0.00	15.00	1,430.00
MAR	1,260.00	20.50	1,240.00	0.00	15.00	1,220.00
APR	764.00	15.30	749.00	0.00	15.00	734.00
MAY	378.00	24.90	353.00	0.00	15.00	338.00
JUN	171.00	44.40	127.00	0.00	15.00	112.00
JUL	79.00	66.90	12.10	0.00	15.00	-2.88
AUG	47.70	56.00	-8.27	0.00	15.00	-23.30
SEP	40.30	34.40	5.87	0.00	15.00	-9.13
OCT	53.80	9.60	44.20	0.00	15.00	29.20
NOV	363.00	15.40	348.00	0.00	15.00	333.00
DEC	1,220.00	28.50	1,190.00	0.00	15.00	1,180.00
ANN	847,000	22,700	825,000	0	10,900	814,000

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

Watershed ID #: 163
 Time: 2:18 PM
 S YAMHILL R > YAMHILL R - AT MOUTH
 Basin: WILLAMETTE
 Exceedance Level: 80
 Date: 11/20/2019

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.						
JAN	1,330.00	35.40	1,290.00	0.00	200.00	1,090.00
FEB	1,520.00	33.40	1,490.00	0.00	200.00	1,290.00
MAR	1,300.00	19.40	1,280.00	0.00	200.00	1,080.00
APR	783.00	18.40	765.00	0.00	200.00	565.00
MAY	386.00	27.20	359.00	0.00	200.00	159.00
JUN	174.00	48.80	125.00	0.00	150.00	-24.80
JUL	81.00	74.40	6.61	0.00	62.00	-55.40
AUG	49.50	62.00	-12.50	0.00	62.00	-74.50
SEP	41.70	37.40	4.31	0.00	62.00	-57.70
OCT	55.00	9.66	45.30	0.00	150.00	-105.00
NOV	365.00	18.60	346.00	0.00	200.00	146.00
DEC	1,250.00	33.30	1,220.00	0.00	200.00	1,020.00
ANN	872,000	25,300	847,000	0	114,000	743,000

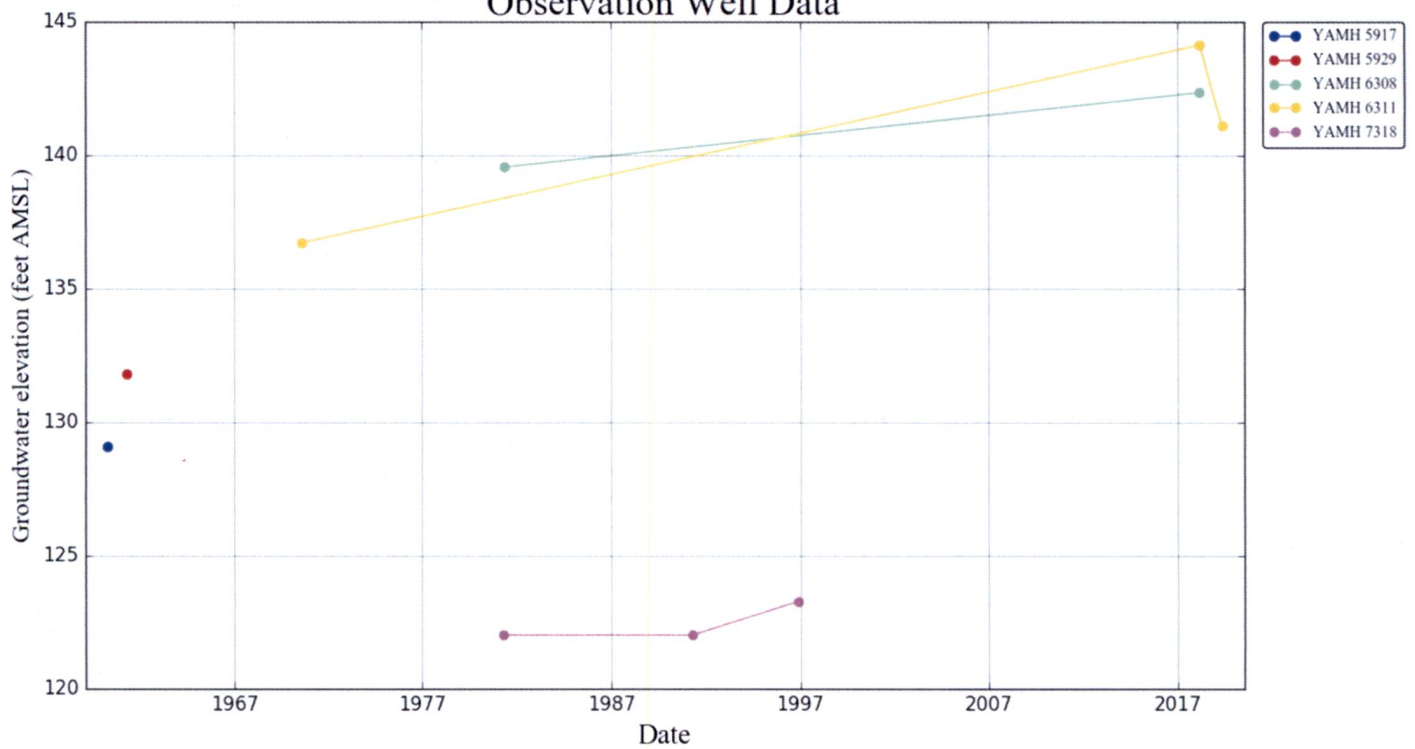
Well Statistics, Sections 31 (4S/4W) and 36 (4S/5W)



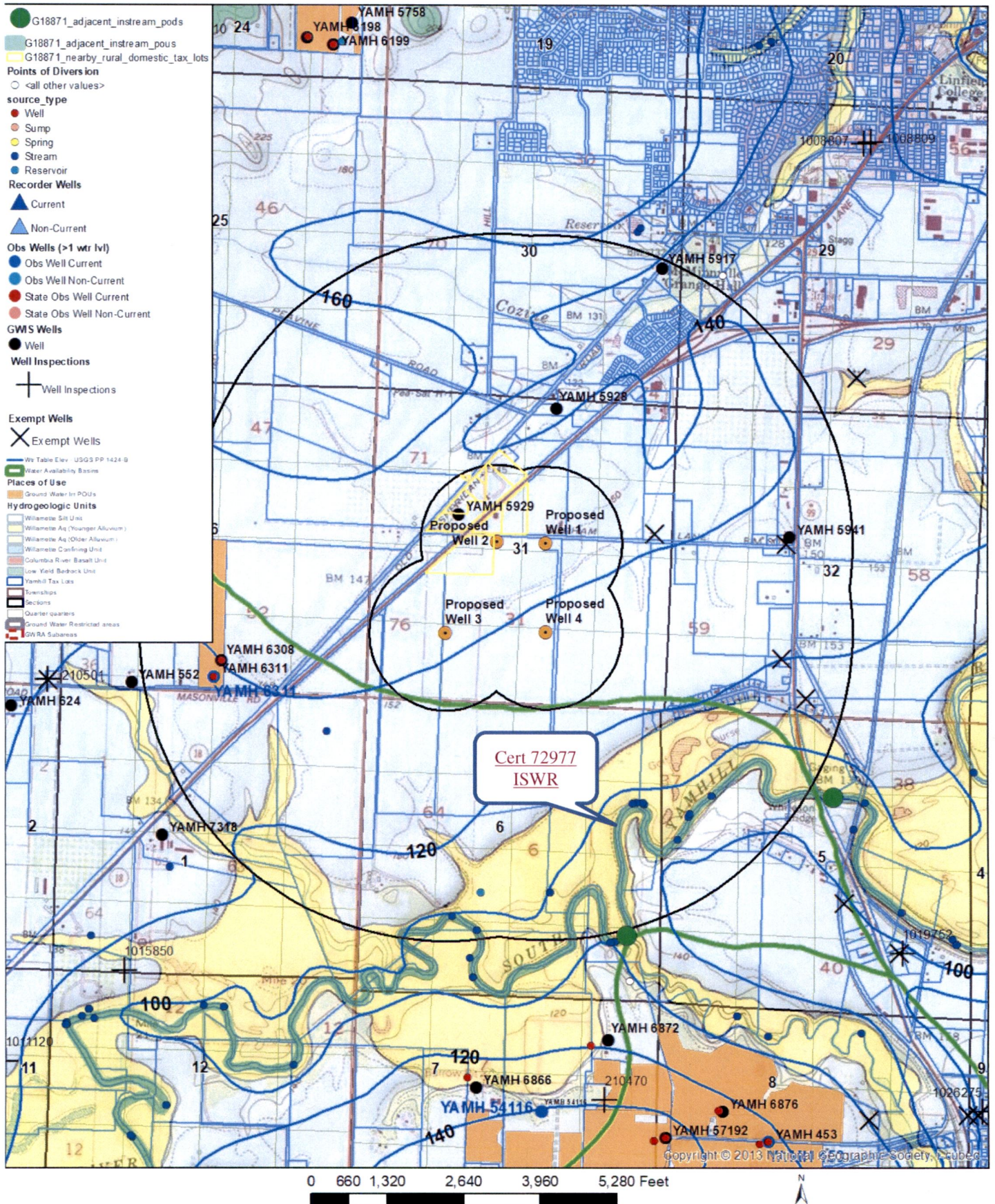
Created 11/19/2019

Water-Level Trends in Nearby Wells

Observation Well Data



Well Location Map



Referenced Well Logs (YAMH 5922 and YAMH 5929)

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

YAMH 5922
State Well No. 42/4w 3/bc
State Permit No.

(1) OWNER:

Name Don Whitlow
Address Rt. 1 Bx 284
McMinnville

(2) TYPE OF WORK (check):

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

(3) TYPE OF WELL:

Rotary [X] Driven []
Jetted [] Bored []

(4) PROPOSED USE (check):

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

(5) CASING INSTALLED:

Threaded [] Welded []
Diam. from ft. to ft. Gage
Diam. from ft. to ft. Gage
Diam. from ft. to ft. Gage

(6) 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.

(7) SCREENS:

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

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level
a pump test made? [] Yes [] No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " " "
" " " " "
Flow test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used Cement Grout
Well sealed from land surface to 60 ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal 30 sacks
How was cement grout placed? Pumped to bottom of well bore
Was a drive shoe used? [] Yes [] No Plugs Size: location ft.
Did any strata contain unusable water? [X] Yes [] No
Type of water? Salt depth of strata
Method of sealing strata off Grouted
Was well gravel packed? [] Yes [] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Yamhill Owners Driller's well number # 1
SW 1/4 NW 1/4 Section 31 T. 4S R. 4W W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 44 ft.
Static level ft. below land surface. Date
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6
Depth drilled 60 ft. Depth of completed well ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

Table with columns: MATERIAL, From, To, SWL. Rows include Top Soil, Brown Clay, Blue Clay, Sand & Gravel, Blue Shale.

Well abandoned due to salt water
RECEIVED
JUN 13 1980
WATER RESOURCES DEPT
SALEM OREGON

Work started 5-19 1980 Completed 5-21 1980
Date well drilling machine moved off of well 5-21 1980

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Ruth M. Parker Date 6-1 1980
(Drilling Machine Operator)
Drilling Machine Operator's License No. 1330

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 AQUA-TECH Well Construction Inc.
(Person, firm or corporation) (Type or print)
Address 868 Delta Dr. N.E. Salem
[Signed] David Beach
(Water Well Contractor)
Contractor's License No. 696 Date June 10 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-4035-118

RECEIVED
MAY 19 1961

YAMH
5929

File Original and First Copy with the STATE ENGINEER, SALEM, OREGON

STATE ENGINEER
SALEM, OREGON

WATER WELL REPORT
STATE OF OREGON

State Well No. 7/44-31F(1)

State Permit No.

(1) OWNER:

Name Amos Eash
Address 506 E 15th St
McMinnville, Oregon

(2) LOCATION OF WELL:

County Yamhill Owner's number, if any—
¼ Section T. R. W.M.
Bearing and distance from section or subdivision corner On old Sheridan road to Samuel Davis land claim in Section 31, Township 4 South, Range 4 west of Willamette Meridian, 80 feet east of north-west corner of purchased property thence 75 feet.

(3) TYPE OF WORK (check):

New Well Deepening Reconditioning Abandon
If abandonment, describe material and procedure in Item 11.

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 8 ft. to 53 ft. Gage 13#
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

(7) PERFORATIONS:

Perforated? Yes No
Type of perforator used Torch
SIZE of perforations 1/4 in. by 12 in. 6
_____ perforations from 42 ft. to 53 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 _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Slot size _____ Set from _____ ft. to _____ ft.

(9) CONSTRUCTION:

Was well gravel packed? Yes No Size of gravel: 3/4 P
Gravel placed from 20 ft. to 53 ft.
Was a surface seal provided? Yes No To what depth? 20 ft.
Material used in seal Cement Grout & Puddled Clay
Did any strata contain unusable water? Yes No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(10) WATER LEVELS:

Static level 20 ft. below land surface Date 4/12/61
Artesian pressure _____ lbs. per square inch Date _____

Log Accepted by: _____

[Signed] Amos Eash Date April 24, 1961
(Owner)

(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.
Compressor _____ " " " "
Ballier test 20 gal./min. with 30 ft. drawdown after 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes No

(12) WELL LOG:

Diameter of well 10 inches.
Depth drilled 75 ft. Depth of completed well 75 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.

MATERIAL	FROM	TO
Top Soil	0	2
Brown Clay	2	18
Silty Blue Clay	18	30
Tuff Blue Clay	30	46
Brown Cemented Gravel	46	52
Hard Blue Shale	52	66
Gray Basalt	66	75

Work started Apr. 3, 1961. Completed Apr 7, 1961

(13) PUMP:

Manufacturer's Name Jacuzzi Sub. 514
Type: Submersable H.P. 3

Well Driller's Statement:

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

NAME WILCOX DRILLING CO.

(Person, firm, or corporation) (Type or print)
Address P.O. Box 569 McMinnville, Ore.

Driller's well number _____

[Signed] James H. Wilcox (Well Driller)

License No. 53 Date Apr 27, 1961