

Groundwater Application Review Summary Form

Application # G- 18826

GW Reviewer Karl Wozniak Date Review Completed: 11/14/2019

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.

sw 11/19/19

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 14, 2019

TO: Application G- G-18826

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



MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18826
Date: November 26, 2019

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Karl Wozniak reviewed the application. Please see Karl's Groundwater Review and the Well Logs.

Applicant's Well #1 (POLK 2809): Based on a review of the Well Report, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The annular seal in this well is not adequate. According to the Well Report, the annular space does not meet requirements and only one sack of concrete was used for the casing seal. In order to meet minimum well construction standards, the well must be resealed with an approved grout to a minimum depth of 18 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (POLK 2809) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards

The repair of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (POLK 2817): Based on a review of the Well Report, Applicant's Well #2 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). According to the Well Report, the casing and sealing depth are inadequate. In order to meet minimum well construction standards the well must be continuously cased and continuously sealed to a minimum depth of 45 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #2 (POLK 2817) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

The repair of Applicant's Well #2 may not satisfy hydraulic connection issues.

NOTICE TO WATER WELL CONTRACTOR

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

RECEIVED

WATER WELL REPORT

RECEIVED

85/4W-4
125/2W-10

STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

MAR 24 1975

STATE OF OREGON OCT 6 1973

State Well No.

STATE ENGINEER SALEM, OREGON

State Permit No.

Polk 2809

(1) OWNER:

Name Mr. Vernon A. Himes
Address Route 1, Box 272E, Independence, Oregon 97351

(2) TYPE OF WORK (check):

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

(3) TYPE OF WELL:

Rotary Driven
Cable Jetted
Dug Bored

(4) PROPOSED USE (check):

Domestic Industrial Municipal
Irrigation Test Well Other

CASING INSTALLED:

Threaded Welded
" Diam. from ... ft. to ... ft. Gage ..."
6" Diam. from 1 ft. above land surface to 33 ft. below surface.

PERFORATIONS:

Perforated? Yes No
Type of perforator used Cutting torch
Size of perforations 1/2 in. by 8 in.
30 perforations from 24 ft. to 31 ft.

(7) SCREENS:

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

(8) 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.
Ball test 11 gal./min. with 97 ft. drawdown after 2 hrs.
Artesian flow g.p.m.
Temperature of water 52° Depth artesian flow encountered ... ft.

(9) CONSTRUCTION:

Well seal—Material used Concrete
Well sealed from land surface to 18 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 1 sacks
Number of sacks of bentonite used in well seal
Brand name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? Yes No Plugs Size: location
Did any strata contain unusable water? Yes No
Type of water? depth of strata
Method of sealing strata off
Was well gravel packed? Yes No Size of gravel pea gravel
Gravel placed from 18 ft. to 33 ft.

(10) LOCATION OF WELL:

County Polk Driller's well number
1/4 1/4 Section 40 T. 8 R. 34 W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 20 ft.
Static level 13 ft. below land surface. Date 10/10/73
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6"
Depth drilled 120 ft. Depth of completed well 120 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.

MATERIAL	From	To	SWL
Top Soil	0	3	
Gray Clay	3'	16'	
Blue Clay	16'	20'	
Brown Gravel (water bearing)	20'	24'	13'
Blue Shale	24'	120'	

Work started October 18/73 Completed Oct. 19, 19 73
Date well drilling machine moved off of well Oct. 23, 19 73

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] Art Clinton Date 10/24, 19.73
(Drilling Machine Operator)
Drilling Machine Operator's License No. 34

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 ART CLINTON WELL DRILLING Co.
(Person, firm or corporation) (Type or print)
Address Route 1, Box 2, Independence, Oregon 97351
[Signed] Art Clinton
(Water Well Contractor)
Contractor's License No. 14 Date October 24, 19.73

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 15, 2019
 FROM: Groundwater Section Karl Wozniak
 Reviewer's Name
 SUBJECT: Application G- 18826 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: Brandan Wagner County: Polk

A1. Applicant(s) seek(s) 0.05 cfs from 2 well(s) in the Willamette Basin,
Rickreall Creek subbasin

A2. Proposed use Nursery Seasonality: Year round

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	POLK 2809	1	Alluvial Aq system	0.05	08S/04W-4 SW/SE	1900'W, 200'N FR SE cor S 4
2	POLK 2817	2	Alluvial Aq system	0.05	08S/04W-4 SW/SE	1860'W, 110'N FR SE cor S 4
3						
4						
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	176	20	13	10/10/1973	120	0-18	0-33		24-31	11	97	P
2	176	70	22	04/22/1964	82	0-18	0-76		71-80	10	48	B

Use data from application for proposed wells.

A4. **Comments:** Both wells are gravel-packed: POLK 2809 from 18-33 ft; POLK 2817 from 18-76 ft. The proposed total rate is evaluated as a maximum from either well. The applicant seeks 0.05 cfs (22 gpm) for nursery use on 4.75 acres of land.

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) 7c, medium 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 20 ft. and 85 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 wells on this application are located on a terrace approximately 2000 feet northwest of the Holocene floodplain of the Willamette River. The terrace in the vicinity of the wells is underlain by 20-40 feet of silt and clay (Willamette Silt Unit of Conlon and others, 2005) which is commonly underlain by a thin bed or two of unconsolidated sand or gravel at or near the base of the terrace. These younger sediments overly older beds of consolidated Tertiary marine sediments. Within the terrace, the water table generally resides in the Willamette Silt Unit which provides some degree of confinement for shallow groundwater beneath the terrace. Groundwater in the Holocene floodplain occurs in coarse-grained flood-plain sediments under unconfined conditions; wells in the floodplain are generally capable of substantially higher yields than wells completed in the alluvial aquifer beneath the terrace.

Although the two wells on the application are only about 140 feet apart and occur at the same elevation (176 feet above mean seal level), POLK 2809 describes the water-bearing zone as a gravel bed from 20-24 feet below land surface whereas POLK 2817 indicates no gravel beds and describes the water-bearing zone as a blue sandstone from 70-82 feet, which corresponds to the upper portion of the marine sediments. Although these water-bearing zones are in different geologic units, groundwater in the uppermost portion of the marine sediments is likely to be efficiently connected to water-bearing zones in the immediately overlying sediments. Therefore, for the purposes of this review, both water-bearing zones are considered to be part of the alluvial aquifer system.

Well yields from the alluvial aquifer under the terrace are commonly low (the median yield in section 4 is 14 gpm) and are generally not sustainable for irrigation of high water-use crops. Well logs for the subject wells indicate yields of 11 gpm (POLK 2809) and 10 gpm (POLK 2817) and both wells showed substantial drawdowns during short pump and bailer tests. It is unlikely that these wells will be able yield the requested annual volume of 34.25 acre feet or the annual standard nursery use limit of 23.75 acre feet (5.0 acre feet per acre per year times 4.75 acres) since the latter would require continuous, year-round pumping of about 15 gpm. A sustained pumping rate of 15 gpm is very unlikely given the age of the wells, the reported

pumping drawdowns on the well logs, the lack of thick water-bearing zones, the low median well yields in the area, and the mutual interference that is likely because of the close proximity of the two wells.

Irrigation and domestic well density is low in the surrounding area on the terrace. Three nearby permitted irrigation wells are located about 0.25-0.33 mile to the southeast. Several dozen developed tax lots, ranging from ¼ to 8 acres occur immediately to the east on the terrace and one occurs immediately to the west. Some of these tax lots are likely to depend upon domestic wells from the alluvial aquifer system but all are also within the footprint of the Rickreall Community Water Association domestic and quasi-municipal water rights under permits G-11977 and G-17497 (not shown on map). Low well yields, aquifer confinement, and a thin aquifer all speak to some concern about potential well interference from the proposed use but the overall likelihood of substantial interference is considered to be low because of the low proposed pumping rate. Nevertheless, the year-round use and high duty associated with a nursery right indicate that water-level monitoring and water-use monitoring would be prudent in the subject wells if the Department issues a permit. No active observation wells are located within the local area but nearby inactive observation wells (see attached hydrograph) suggest that water levels were stable between 1962 and 1991.

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	Alluvial aquifer system	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	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	Oak Point Creek	155-165	148-180	1560	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Hayden Slough	155-165	134-141	3020	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	Willamette River	155-165	129	11,450	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Oak Point Creek	155-165	148-180	1530	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	2	Hayden Slough	155-165	134-141	2870	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	3	Willamette River	155-165	129	11,320	<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 Hayden Slough and the Willamette River (the regional discharge area). Oak Point Creek is shown as an intermittent stream on the USGS 7.5-minute map but is likely to be hydraulically connected to the underlying alluvial aquifer system during the high-rainfall months of November through May when the lower sections of the creek (below an elevation of 165 feet) are at elevations equivalent to water table elevations in the adjacent portions of the creek. Hayden Slough occurs within the Holocene floodplain and is expected to be the principal boundary from which the wells can capture water; therefore, cones of depression from the wells are not expected to extend beyond Hayden Slough which should preclude direct interference with the Willamette River. For this reason, stream impacts are only evaluated for Oak Point Creek and Hayden Slough in the following tables.

Water Availability Basin the well(s) are located within: RICKREALL CR > WILLAMETTE R - AT MOUTH

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"/>	5.80	<input type="checkbox"/>		<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	5.80	<input type="checkbox"/>		<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	5.80	<input type="checkbox"/>		<input type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>	5.80	<input type="checkbox"/>		<input 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: Interference @ 30 days was not estimated in table C3a because a model that could account for the complex geometry of the aquifer systems in the vicinity of the wells was not readily available.

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: Impacts to the Willamette River water-availability basin were not evaluated because, as discussed above, direct interference with the river is unlikely. Also, the proposed maximum rate (0.05 cfs) does not exceed 80% of the calculated natural flow in any month of the year.

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

**RICKREALL CR > WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN**

Water Availability as of 11/8/2019

Watershed ID #: 30200702 ([Map](#))

Exceedance Level: 80%

Date: 11/8/2019

Time: 2:04 PM

Water Availability Calculation	Consumptive Uses and Storages	Instream Flow Requirements	Reservations
Water Rights		Watershed Characteristics	

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	243.00	19.30	224.00	0.00	0.00	224.00
FEB	272.00	19.00	253.00	0.00	0.00	253.00
MAR	215.00	14.00	201.00	0.00	0.00	201.00
APR	134.00	4.41	130.00	0.00	0.00	130.00
MAY	68.70	7.22	61.50	0.00	0.00	61.50
JUN	28.70	12.10	16.60	0.00	0.00	16.60
JUL	11.70	17.90	-6.16	0.00	0.00	-6.16
AUG	6.91	14.50	-7.61	0.00	0.00	-7.61
SEP	5.80	8.46	-2.66	0.00	0.00	-2.66
OCT	6.67	1.40	5.27	0.00	0.00	5.27
NOV	31.50	5.37	26.10	0.00	0.00	26.10
DEC	205.00	18.20	187.00	0.00	0.00	187.00
ANN	142,000.00	8,560.00	134,000.00	0.00	0.00	134,000.00

**WILLAMETTE R > COLUMBIA R - AB MILL CR AT GAGE 14191000
WILLAMETTE BASIN**

Water Availability as of 11/8/2019

Watershed ID #: 183 ([Map](#))

Exceedance Level: 80%

Date: 11/8/2019

Time: 2:35 PM

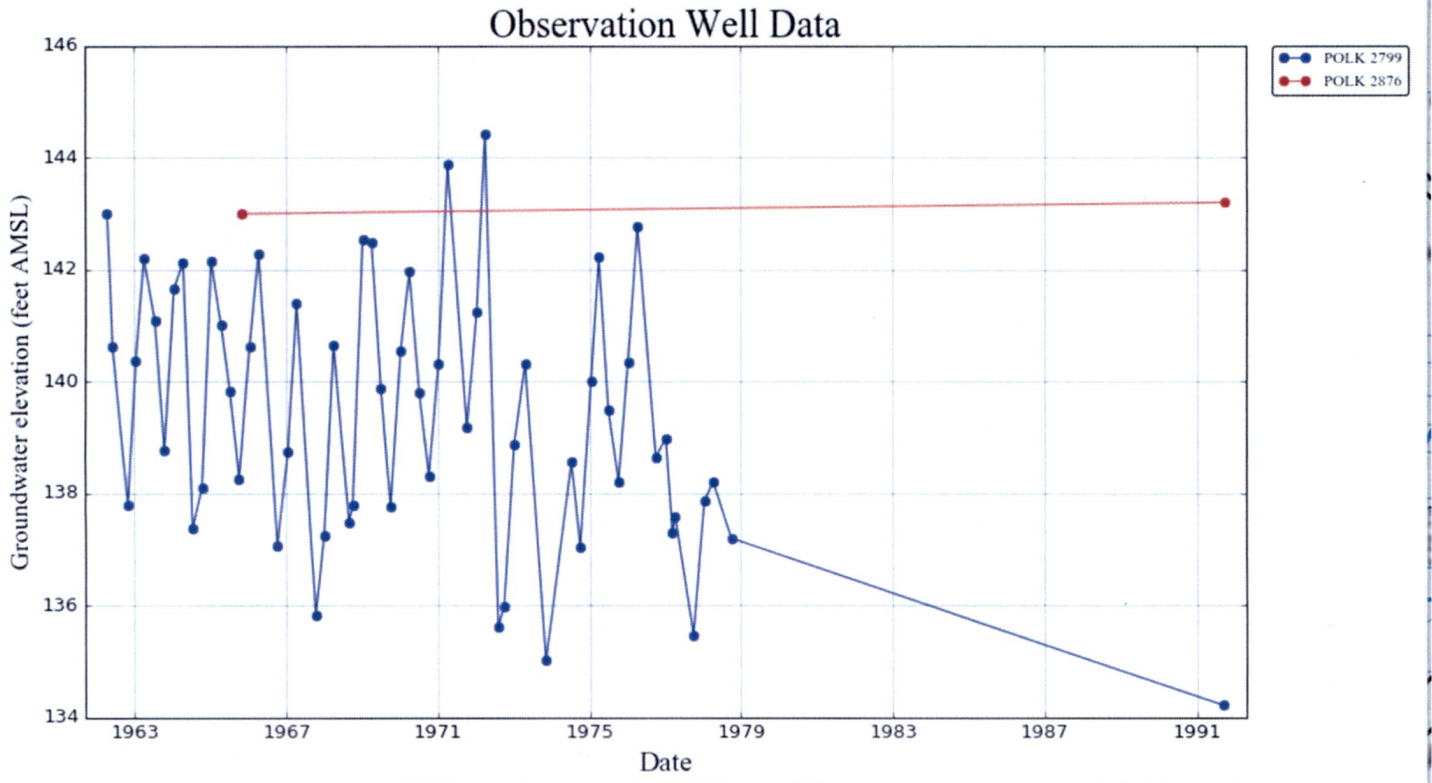
Water Availability Calculation	Consumptive Uses and Storages	Instream Flow Requirements	Reservations
Water Rights		Watershed Characteristics	

Water Availability Calculation

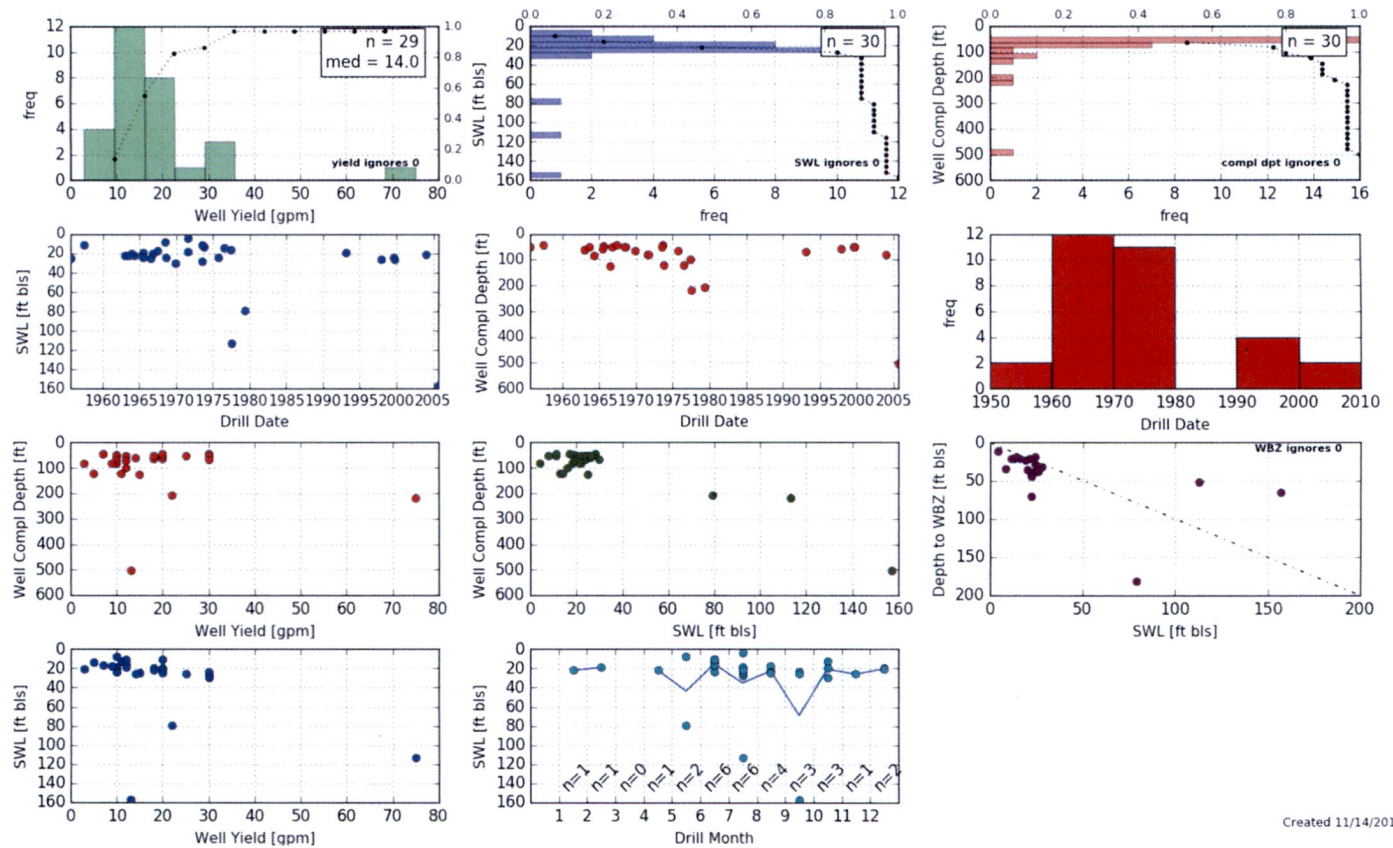
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	18,400.00	2,240.00	16,200.00	0.00	1,300.00	14,900.00
FEB	20,100.00	7,430.00	12,700.00	0.00	1,300.00	11,400.00
MAR	19,600.00	7,220.00	12,400.00	0.00	1,300.00	11,100.00
APR	18,000.00	6,870.00	11,100.00	0.00	1,300.00	9,830.00
MAY	15,500.00	4,180.00	11,300.00	0.00	1,300.00	10,000.00
JUN	8,310.00	1,690.00	6,620.00	0.00	1,300.00	5,320.00
JUL	4,710.00	1,450.00	3,260.00	0.00	1,300.00	1,960.00
AUG	3,620.00	1,330.00	2,290.00	0.00	1,300.00	991.00
SEP	3,680.00	1,150.00	2,530.00	0.00	1,300.00	1,230.00
OCT	4,650.00	748.00	3,900.00	0.00	1,300.00	2,600.00
NOV	9,400.00	857.00	8,540.00	0.00	1,300.00	7,240.00
DEC	16,700.00	917.00	15,800.00	0.00	1,300.00	14,500.00
ANN	13,500,000.00	2,160,000.00	11,300,000.00	0.00	942,000.00	10,400,000.00

Water Levels in Nearby Wells

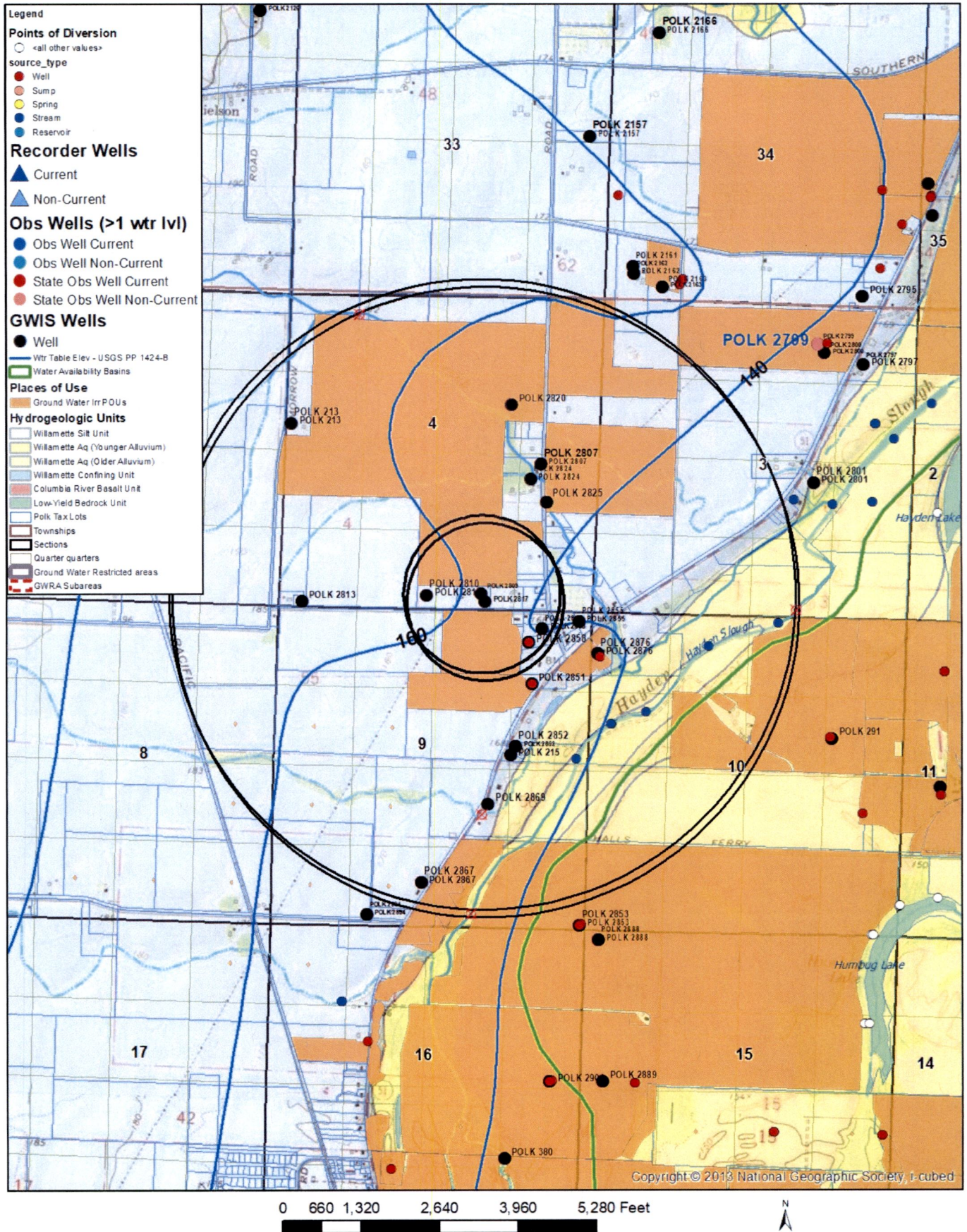


Water Well Statistics T8S/4W-4



Created 11/14/2019

Well Location Map



MEMO



To: File
From: Joel Jeffery, Well Construction Program Coordinator,
Subject: Re-Review of Water Right Application G-18826
Date: February 20, 2020

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Karl Wozniak reviewed the application. Please see Karl's Groundwater review and the Repair Well Logs.

Applicant's Well #1 (POLK 2809 and POLK 54366, the Repair of POLK 2809): Based on a review of the Repair Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (POLK 2817 and POLK 54365, the Repair of POLK 2817): Based on a review of the Repair Well Report, Applicant's Well #2 seems to protect the groundwater resource.

The construction of Applicant's Well #2 may not satisfy hydraulic connection issues.

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18826
Date: November 26, 2019

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Karl Wozniak reviewed the application. Please see Karl's Groundwater Review and the Well Logs.

Applicant's Well #1 (POLK 2809): Based on a review of the Well Report, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The annular seal in this well is not adequate. According to the Well Report, the annular space does not meet requirements and only one sack of concrete was used for the casing seal. In order to meet minimum well construction standards, the well must be resealed with an approved grout to a minimum depth of 18 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (POLK 2809) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards

The repair of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (POLK 2817): Based on a review of the Well Report, Applicant's Well #2 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). According to the Well Report, the casing and sealing depth are inadequate. In order to meet minimum well construction standards the well must be continuously cased and continuously sealed to a minimum depth of 45 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #2 (POLK 2817) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

The repair of Applicant's Well #2 may not satisfy hydraulic connection issues.

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

POLK 54366
2/11/2020

WELL I.D. LABEL# L 135886
START CARD # 1046188
ORIGINAL LOG # POLK 2809

(1) LAND OWNER
Owner Well I.D. WELL #1
First Name BRANDON Last Name WAGNER
Company _____
Address 7385 CLOW CORNER RD
City INDEPENDENCE State OR Zip 97351

(2) TYPE OF WORK
 New Well Deepening Conversion
 Alteration (complete 2a & 10) Abandonment (complete 5a)

(2a) PRE-ALTERATION
Dia + From To Gauge Stl Plstc Wld Thrd
Casing: _____
Material From To Amt sacks/lbs
Seal: _____

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other

(4) PROPOSED USE
 Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy)
Depth of Completed Well 20.00 ft.
BORE HOLE SEAL
Dia From To Material From To Amt sacks/lbs
10 0 20 Bentonite Chips 0 20 15 S
Calculated
Calculated

How was seal placed: Method A B C D E
 Other FILLED W/ BENTONIT
Backfill placed from _____ ft. to _____ ft. Material _____
Filter pack from _____ ft. to _____ ft. Material _____ Size _____
Explosives used: Yes Type _____ Amount _____

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount _____ Actual Amount _____

(6) CASING/LINER
Casing Liner Dia + From To Gauge Stl Plstc Wld Thrd
Shoe Inside Outside Other Location of shoe(s) _____
Temp casing Yes Dia _____ From + _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method _____
Screens Type _____ Material _____
Perf/ Casing/ Screen Screen Liner Dia From To Scrn/slot width length Slot # of slots Tel/ pipe size
Table with 10 columns: Perf/ Screen Liner, Dia, From, To, Scrn/slot width, length, Slot # of slots, Tel/ pipe size

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)
Temperature 57 °F Lab analysis Yes By _____
Water quality concerns? Yes (describe below) TDS amount 386 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description)
County POLK Twp 8.00 S N/S Range 4.00 W E/W WM
Sec 4 SW 1/4 of the SE 1/4 Tax Lot 1900
Tax Map Number _____ Lot _____
Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD
 Street address of well Nearest address
7385 CLOW CORNER RD, INDEPENDENCE, OR 97351

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration 10/10/1973 13
Completed Well 2/5/2020 20
Flowing Artesian? Dry Hole?
WATER BEARING ZONES Depth water was first found _____
SWL Date From To Est Flow SWL(psi) + SWL(ft)

(11) WELL LOG
Ground Elevation _____
Material From To
Cement (Original Seal) 0 3
Gray Clay 3 16
Blue Clay 16 20

Date Started 2/5/2020 Completed 2/5/2020

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number _____ Date _____
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1980 Date 2/11/2020
Signed KEVIN CHAMBERS (E-filed)
Contact Info (optional) PLI Systems Inc

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765 & OAR 690-205-0210)

POLK 54365

WELL I.D. LABEL# L 135887
START CARD # 1046189
ORIGINAL LOG # POLK 2817

2/10/2020

(1) LAND OWNER
Owner Well I.D. WELL 2
First Name BRANDON Last Name WAGNER
Company _____
Address 7385 CLOW CORNER RD
City INDEPENDENCE State OR Zip 97351

(2) TYPE OF WORK
 New Well Deepening Conversion
 Alteration (complete 2a & 10) Abandonment (complete 5a)

(2a) PRE-ALTERATION
Dia + From To Gauge Stl Plstc Wld Thr
Casing:
Material From To Amt sacks/lbs
Seal: _____

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable Auger Cable Mud
 Reverse Rotary Other _____

(4) PROPOSED USE
 Domestic Irrigation Community
 Industrial/ Commercial Livestock Dewatering
 Thermal Injection Other _____

(5) BORE HOLE CONSTRUCTION Special Standard (Attach copy)
Depth of Completed Well 45.00 ft.
BORE HOLE SEAL sacks/
Dia From To Material From To Amt lbs
10 0 45 Bentonite Chips 0 45 39 S
Calculated
Calculated

How was seal placed: Method A B C D E
 Other FILLED W/ BENTONITE
Backfill placed from _____ ft to _____ ft Material _____
Filter pack from _____ ft to _____ ft Material _____ Size _____
Explosives used: Yes Type _____ Amount _____

(5a) ABANDONMENT USING UNHYDRATED BENTONITE
Proposed Amount _____ Actual Amount _____

(6) CASING/LINER
Casing Liner Dia + From To Gauge Stl Plstc Wld Thr

Shoe Inside Outside Other Location of shoe(s) _____
Temp casing Yes Dia _____ From + _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method _____
Screens Type _____ Material _____
Perf/ Casing/ Screen Dia From To Scrn/slot width length # of slots Tele/ pipe size
Screen Liner Dia From To width length slots pipe size

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)
Temperature 57 °F Lab analysis Yes By _____
Water quality concerns? Yes (describe below) TDS amount 172 ppm
From To Description Amount Units

(9) LOCATION OF WELL (legal description)
County POLK Twp 8.00 S N/S Range 4.00 W E/W WM
Sec 4 SW 1/4 of the SE 1/4 Tax Lot 1900
Tax Map Number _____ Lot _____
Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD
 Street address of well Nearest address
7385 CLOW CORNER RD, INDEPENDENCE, OR 97351

(10) STATIC WATER LEVEL
Date SWL(psi) + SWL(ft)
Existing Well / Pre-Alteration _____
Completed Well _____
Flowing Artesian? Dry Hole?
WATER BEARING ZONES Depth water was first found _____
SWL Date From To Est Flow SWL(psi) + SWL(ft)

(11) WELL LOG
Ground Elevation _____
Material From To
Cement (Original Seal) 0 2
Pea Gravel 3 45

Date Started 1/31/2020 Completed 2/4/2020

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
License Number _____ Date _____
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
License Number 1980 Date 2/10/2020
Signed KEVIN CHAMBERS (E-filed)
Contact Info (optional) PLI Systems Inc

WATER SUPPLY WELL REPORT - Map with location identified must be attached and shall include an approximate scale and north arrow

POLK 54365

2/10/2020

Map of Hole

