

Groundwater Application Review Summary Form

Application # G- 18920

GW Reviewer Jen Woody Date Review Completed: 3/31/2020

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

March 31, 2020

TO: Application G- 18920

FROM: GW: Jen Woody
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

NO

YES Use the Scenic Waterway Condition (Condition 7J)

NO

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 3/31/2020
 FROM: Groundwater Section Jen Woody
 Reviewer's Name
 SUBJECT: Application G- 18920 Supersedes review of n/a
 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: Luke & Lindsay Warford, BelliVadum Vineyard LLC
 County: Yamhill

A1. Applicant(s) seek(s) 0.044 cfs from 1 well(s) in the Willamette Basin,
Chehalem subbasin

A2. Proposed use Irrigation and agricultural use Seasonality: May-Sept and year round, respectively

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	Yamh 1172	1	Marine sedimentary rocks	0.044	2S/3W-33 NE ¼ SE ¼	373' S, 255' W fr SE cor DLC #53
2						
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	305		22	4/07/2008	100	0-20	0-50	n/a	n/a	40	15	bailer

Use data from application for proposed wells.

A4. **Comments:** _____

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 well produces from a confined aquifer, therefore the pertinent rules (OAR 690-502-240) to not apply.

A6. **Well(s) #** _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: Chehalem Mountain Groundwater Limited Area (OAR 690-502-0200)
 Comments: The well is located within this limited area, but the rules apply only to wells in Columbia River Basalt Group aquifers. The subject well is in the marine sedimentary rock aquifer, so the limited area rules are not applicable.

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 _____ 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 subject site is characterized by low-yielding fractured marine sedimentary rock aquifers. A survey of well logs in T2S/R3W-Section 33 produced 44 well logs, with reported yields ranging from 0 to 60 gpm. The median yield is 10 gpm and most logs report sandstone, claystone and/or shale. This is typical of the low-yield bedrock hydrogeologic unit identified at this location by Conlon et al. (2005). Water level data from upland marine sedimentary rock wells in Section 5 show a reasonably stable trend at the current level of use (see Figure 3). In the event this permit is issued, water use and water level monitoring conditions are recommended to address uncertainty about resource sustainability.

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	Marine Sedimentary Rock Aquifer	<input checked="" 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"/>

Basis for aquifer confinement evaluation: Most well logs in 2S/3W-33 access the marine sedimentary rocks, and report a static water level that rises about the first water-bearing zone. This indicates the aquifer is confined.

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	Unnamed tributary to Chehalem Cr	285	240	1000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>
						<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"/>

Basis for aquifer hydraulic connection evaluation: Water-table maps, where they exist, generally show flow paths that converge on local perennial streams. The open interval at the subject well is above perennial reaches of the nearby creek, and the unnamed tributary to Chehalem Creek has incised through several hundred feet of marine sediments. Groundwater from the uplands likely discharges to surface water down-gradient, providing baseflow or spring flow to sustain nearby perennial reaches of the creek.

Water Availability Basin the well(s) are located within: Chehalem water availability basin #30200702

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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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 checked="" type="checkbox"/>	<input type="checkbox"/>	n/a	n/a	<input type="checkbox"/>	0.39	<input checked="" type="checkbox"/>	*	<input checked="" 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"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<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 at 30 days is not calculated because there is no appropriate model to estimate stream depletion from a well pumping in fractured shale.

PSI is triggered because the pumping rate is greater than 1% of 0.39 cfs (natural streamflow) and the well is less than 1/4 mile from the creek.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(C) = 1 % Nat. Q													

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.

Figure 1. Water Availability Table

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION
 Water Availability as of 1/7/2020 for
 CHEHALEM CR > WILLAMETTE R - AT MOUTH

Watershed ID #: 30200707 Basin: WILLAMETTE Exceedance Level: 80
 Time: 12:00 Date: 01/07/2020

Month	Natural Stream Flow	CU + Stor Prior to 1/1/93	CU + Stor After 1/1/93	Expected Stream Flow	Reserved Stream Flow	Instream Water Rights	Net Water Available
1	101.00	3.77	0.00	97.23	0.00	0.00	97.23
2	115.00	3.55	0.00	111.45	0.00	0.00	111.45
3	80.60	2.72	0.00	77.88	0.00	0.00	77.88
4	33.00	1.78	0.00	31.22	0.00	0.00	31.22
5	14.90	2.50	0.00	12.40	0.00	0.00	12.40
6	8.48	3.88	0.00	4.60	0.00	0.00	4.60
7	2.13	5.20	0.00	-3.07	0.00	0.00	-3.07
8	0.59	4.28	0.00	-3.69	0.00	0.00	-3.69
9	0.39	2.47	0.00	-2.08	0.00	0.00	-2.08
10	3.05	0.65	0.00	2.40	0.00	0.00	2.40
11	11.50	1.31	0.00	10.19	0.00	0.00	10.19
12	66.20	3.15	0.00	63.06	0.00	0.00	63.06
Stor	48900	2130	0	46770	0	0	46770

Figure 2. Well Location Map

G-18920 Warford 2S/3W- Section 33

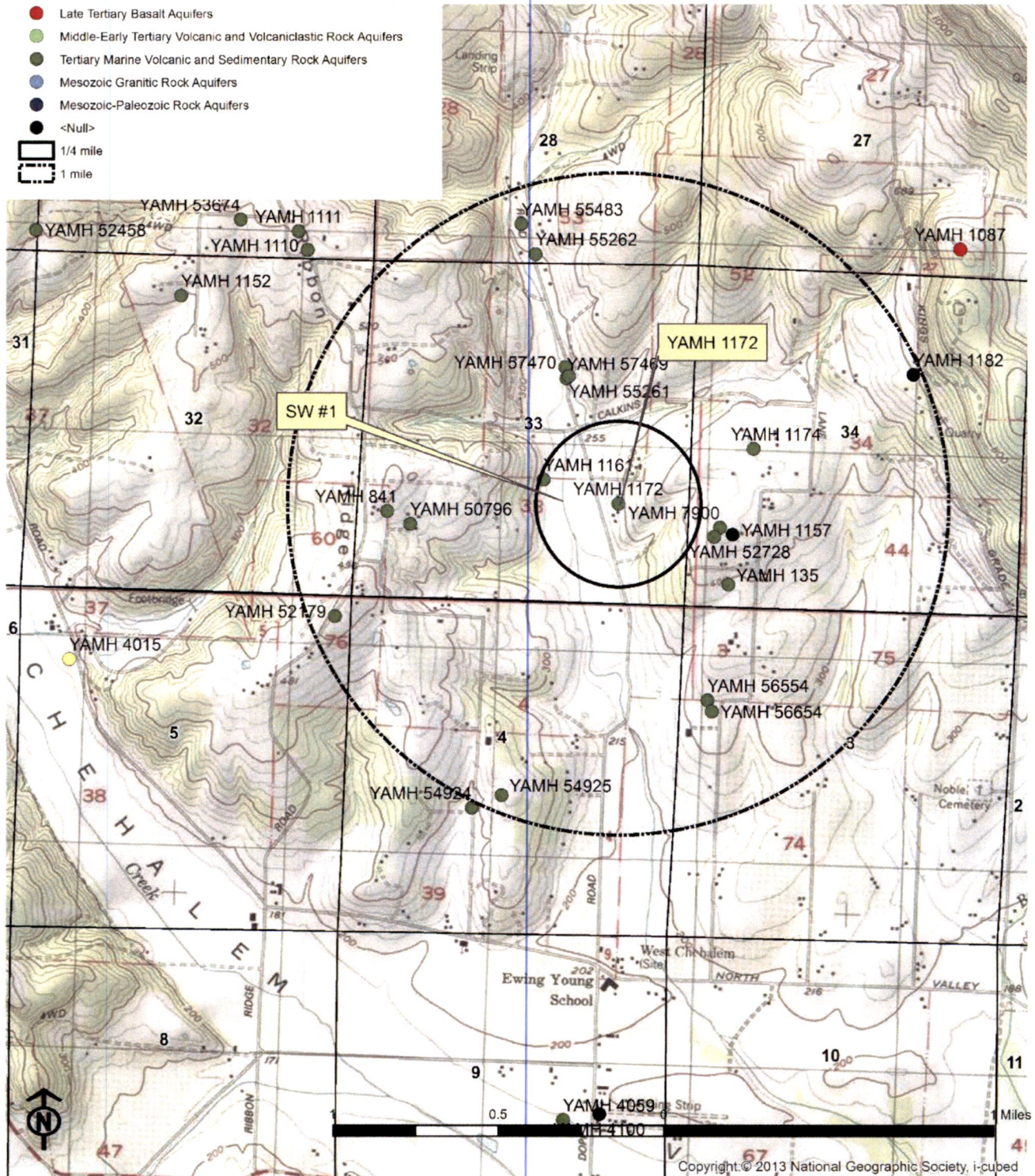
Legend

Wells by Aquifer System

Wells by aquifer system

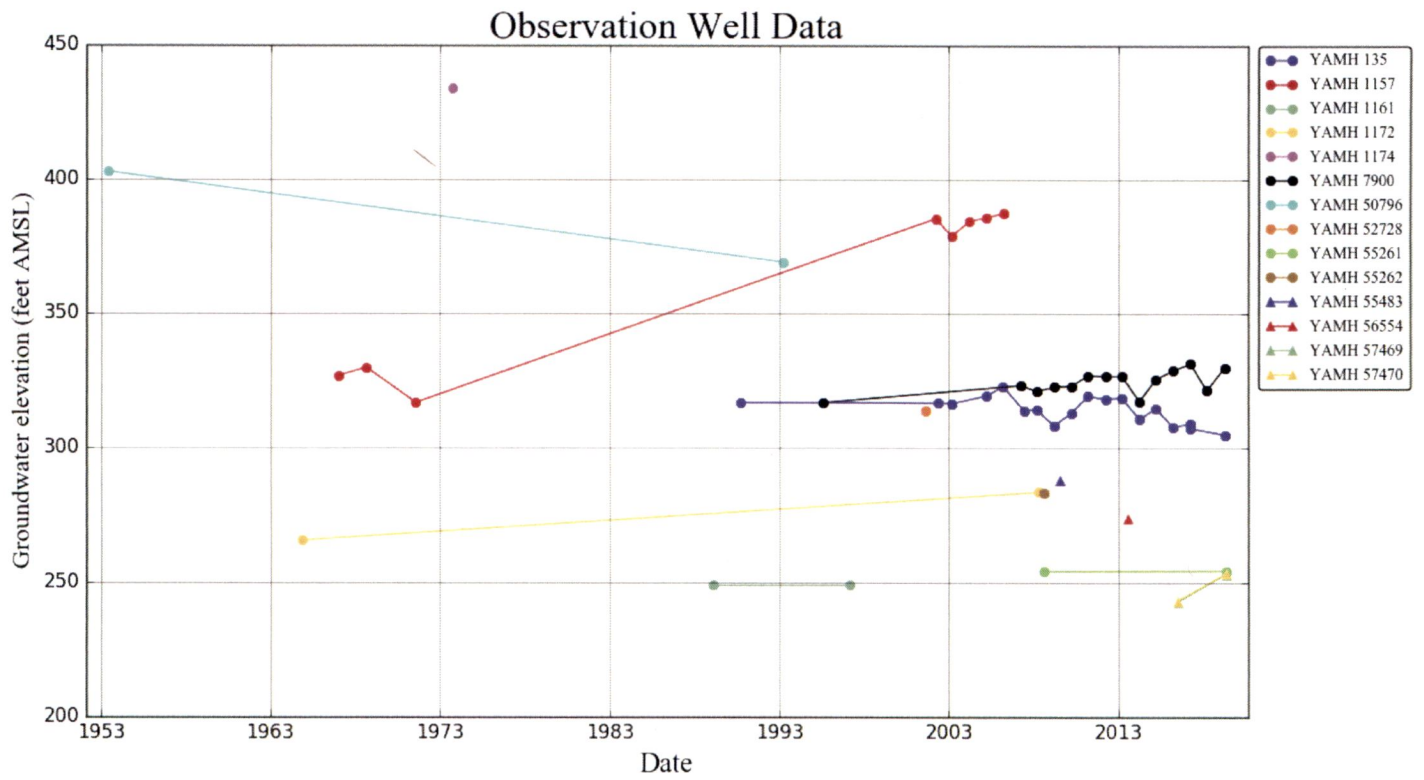
- Quaternary-Late Tertiary Sediment Aquifers
- Quaternary-Late Tertiary Volcanic and Volcaniclastic Rock Aquifers
- Late Tertiary Basalt Aquifers
- Middle-Early Tertiary Volcanic and Volcaniclastic Rock Aquifers
- Tertiary Marine Volcanic and Sedimentary Rock Aquifers
- Mesozoic Granitic Rock Aquifers
- Mesozoic-Paleozoic Rock Aquifers
- <Null>

- 1/4 mile
- 1 mile



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Figure 3. Water-Level Trends in Nearby Wells



Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Travis Kelly, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18920
Date: April 8, 2020

The attached application was forwarded to the Well Construction and Compliance Section by the Ground Water Section. Jen Woody reviewed the application. Please see Jen's Groundwater Review and the Well Log.

Applicant's Well #1 (YAMH 1172): 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 problem is that the seal is not to the appropriate depth. The well report indicates that the well is cased to a depth of 50 feet and sealed to a depth of 20 feet below land surface. In order to meet minimum well construction standards, the well must be continuously cased and sealed to a minimum depth of 30 feet below land surface.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (YAMH 1172), unless it is brought into compliance with current minimum well construction standards, or information is provided to show that it is in compliance with current minimum well construction standards.

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

NOTICE TO WATER WELL CONTRACTOR

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

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

WATER WELL REPORT

STATE OF OREGON (Please type or print)

DEC 14 1964

YAMH

1172

State Well No. 2/3W-33J

State Permit No.

(1) OWNER:

Name Ray Whitman Address Rt 3 Box 153 Newberg Ore

(2) LOCATION OF WELL:

County Yamhill Driller's well number 1/4 Section T. R. W.M. Bearing and distance from section or subdivision corner Sec 33 T2S R32

(3) TYPE OF WORK (check):

Well [X] Deepening [] Reconditioning [] Abandon []

(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:

6 1/8" Diam. from 71 ft. to 50 ft. Gage 1/4

(7) PERFORATIONS:

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

(8) SCREENS:

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

(9) CONSTRUCTION:

Well seal—Material used in seal Cement Depth of seal 20 ft. Was a packer used? No Diameter of well bore to bottom of seal 10 in. Were any loose strata cemented off? [] Yes [X] No Depth Was a drive shoe used? [] Yes [X] No Was well gravel packed? [] Yes [X] No Size of gravel: Gravel placed from ft. to ft. Did any strata contain unusable water? [] Yes [X] No Type of water? depth of strata Method of sealing strata off

(10) WATER LEVELS:

Static level 90 ft. below land surface Date 11/12/64 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 [X] No If yes, by whom? Yield: gal./min. with ft. drawdown after hrs. Bailer test No gal./min. with 15 ft. drawdown after 1 hrs. Artesian flow g.p.m. Date Temperature of water 55 Was a chemical analysis made? [] Yes [X] No

(12) WELL LOG:

Diameter of well below casing 6 Depth drilled 100 ft. Depth of completed well 100 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: Top Soil (0-2), Brown clay (2-5), Cambly shale (5-25), Blue shale (25-100)

Work started 11/2 1964 Completed 11/02/ 1964 Date well drilling machine moved off of well 11/12/ 1964

(13) PUMP:

Manufacturer's Name Universal Type: 1 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 Arrow Drilling Supplies (Person, firm or corporation) (Type or print) Address 729 N Main Newberg Drilling Machine Operator's License No. 92 [Signed] (Water Well Contractor) Contractor's License No. 117 Date 11/12/ 1964