

Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE # # G-17759

ROUTED TO: Water Rights

TOWNSHIP/

RANGE-SECTION: 35/3W-3

CONDITIONS ATTACHED?: ☒ yes ☐ no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Karl Wozniak

MEMO

June 19, ~~200~~ 2014

YES

☒ NO

YES

NO

[illegible]

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date 06/19/2014

FROM: Ground Water/Hydrology Section Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 17759 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 ground water 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: Armstrong Vine County: Yamhill

A1. Applicant(s) seek(s) 0.00389 cfs from 2 well(s) in the Yamhill Basin,
Chalem Creek subbasin Quad Map: Dundee

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	YAMH 54924	Well 1	Low-Yield Bedrock	0.00389	3S/3W-04 NE/SW	660' S, 750' W fr C1/4 cor S4
2	YAMH 54925	Well 2	Low-Yield Bedrock	0.00389	3S/3W-04 NE/SW	450' S, 250' W fr C1/4 cor S4
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	280	57	21	08/29/2007	240	0-50	0-55	40-221	181-221	2.4		Air
2	360	126	89	08/29/2007	460	0-58	0-58	39-460	420-460	2.6		Air

Use data from application for proposed wells.

A4. **Comments:** The application proposes 0.00389 cfs to establish a new vineyard. The wells are also listed as POAs on LL-1108 which expired on 10/31/2010.

A5. ☐ **Provisions of the Willamette** _____ Basin rules relative to the development, classification and/or management of ground water hydraulically connected to surface water ☐ are, or ☒ are not, activated by this application. (Not all basin rules contain such provisions.)
Comments: The wells are greater than ¼ mile from a surface water source so the pertinent rules (OAR 690-502-0240) do not apply. Well 1 encountered salt water from 237-240.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area: _____
Comments: Both wells are within the Chehalem Mountain Groundwater Limited Area but they produce from the low-yield bedrock aquifer so the pertinent rules do not apply.

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

B1. Based upon available data, I have determined that ground water* 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 ground water 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 ground water 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 ground water resource; or
- d. ☒ will, if properly conditioned, avoid injury to existing ground water rights or to the ground water resource:
 - i. ☒ The permit should contain condition #(s) 7e, Install and maintain a totalizing flow meter on each well (reporting not necessary);
 - 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 ground water production from no deeper than _____ ft. below land surface;
 - b. ☐ Condition to allow ground water production from no shallower than _____ ft. below land surface;
 - c. ☐ Condition to allow ground water production only from the _____ ground water 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 Ground Water 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. **Ground water availability remarks:** Both wells produce from the low-yield bedrock aquifer which in this area is composed of siltstones and claystones mapped as the Yaquina-Pittsburg Bluff Group. These materials have low permeability and low porosity which results in low well yields. The median yield in section 4 (T 3S R 4W), based on 44 logs of record in our online well log database, is 22 gpm. Sustainable yields are expected to be much less as the reported yields are from air tests which do not account for pumping drawdowns (likely to be substantial in this unit). The reported yields on well logs for Well 1 and Well 2 are 2.4 and 2.6 gpm respectively.

Reported water levels from both wells (per conditions on LL-1108) show rising water-level trends between 2009 and 2012. Long-term trends are expected to follow decadal precipitation trends. Although the capacity of the aquifer is limited, the requested rates of use should be available within the capacity of the resource and are not likely to injure existing users in the area.

C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040**C1. 690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Low-yield bedrock	☒	☐
2	Low-yield bedrock	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Confined conditions are indicated on the well logs by static water levels that are much higher than the depths at which first water was reported.

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 trib. to Chahalem Cr	230	180-240	2760	☒	☐	☐	☐	☒
2	1	Unnamed trib. to Chahalem Cr	275	180-240	4150	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
1	2	Chahalem Creek	230	175	2290	☒	☐	☐	☐	☒
1	2	Chahalem Creek	275	175	4580	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Water level elevations in the wells as well as published water table maps (OWRD GWR No 27) indicate that groundwater flows toward, and discharges into, Chehalem Creek and its tributaries.

Water Availability Basin the well(s) are located within: Chehalem Cr > Willamette R – At Mouth (Id 30200707)

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	☐	☐			☐	0.39	☐	<<25	☐
2	1	☐	☐			☐	0.39	☐	<<25	☐
		☐	☐			☐		☐		☐
1	2	☐	☐			☐	0.39	☐	<<25	☐
1	2	☐	☐			☐	0.39	☐	<<25	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Interference at 30 days was not calculated but modeling in similar settings indicates that impacts are likely to be much less than 25% at 30 days.

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) = (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 ground water 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:

Frاند, F.J., and Collins, C.A., 1978, Groundwater in the Newberg Area, Northern Willamette Valley, Oregon: Oregon Water Resources Dept. Ground Water Report No. 27, 77p.

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.

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, 82 p.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: _____

D2. **THE WELL does not 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:**

- a. ☐ constitutes a health threat under Division 200 rules;
b. ☐ commingles water from more than one ground water reservoir;
c. ☐ permits the loss of artesian head;
d. ☐ permits the de-watering of one or more ground water reservoirs;
e. ☐ other: (specify) _____

D4. **THE WELL construction deficiency is described as follows:** _____

_____D5. **THE WELL** a. ☐ **was, or** ☐ **was not** constructed according to the standards in effect at the time of original construction or most recent modification.b. ☐ I don't know if it met standards at the time of construction.D6. ☐ **Route to the Enforcement Section.** I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Enforcement Section and the Ground Water Section.**THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL**D7. ☐ Well construction deficiency has been corrected by the following actions: _____

__________, 200_____
(Enforcement Section Signature)D8. ☐ **Route to Water Rights Section (attach well reconstruction logs to this page).**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

Water Availability as of 10/19/2004 for

CHEHALEM CR > WILLAMETTE R - AT MOUTH

Watershed ID #: 30200707

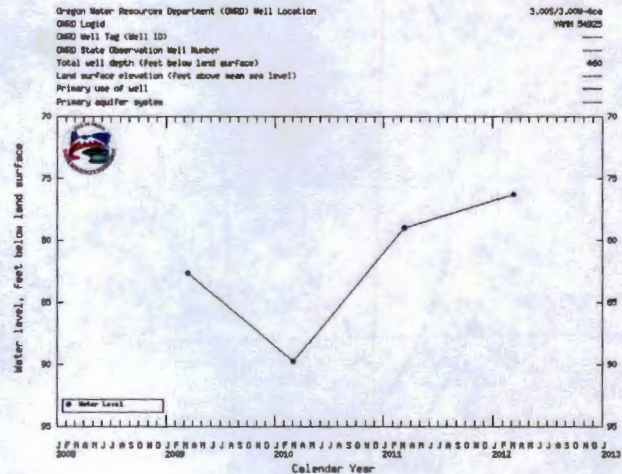
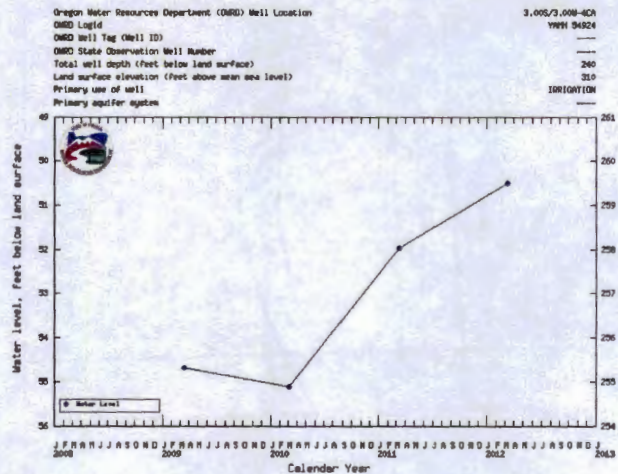
Basin: WILLAMETTE

Exceedance Level: 80

Time: 15:19

Date: 10/19/2004

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	3.11	0.00	97.90	0.00	0.00	97.90
2	115.00	2.97	0.00	112.00	0.00	0.00	112.00
3	80.60	2.20	0.00	78.40	0.00	0.00	78.40
4	33.00	1.31	0.00	31.70	0.00	0.00	31.70
5	14.90	1.87	0.00	13.00	0.00	0.00	13.00
6	8.48	3.14	0.00	5.34	0.00	0.00	5.34
7	2.13	4.69	0.00	-2.56	0.00	0.00	-2.56
8	0.59	3.87	0.00	-3.28	0.00	0.00	-3.28
9	0.39	2.26	0.00	-1.87	0.00	0.00	-1.87
10	3.05	0.61	0.00	2.44	0.00	0.00	2.44
11	11.50	0.90	0.00	10.60	0.00	0.00	10.60
12	66.20	2.44	0.00	63.80	0.00	0.00	63.80
Stor	48900	1770	0	47300	0	0	47300



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