## **Groundwater Application Review Summary Form**

Application # G- 18820 GW Reviewer J Woodly	Date Review Completed: 9-13.2019
Summary of GW Availability and Injury Review:	
[ ] Groundwater for the proposed use is either of amounts requested without injury to prior water capacity of the groundwater resource per Section	
Summary of Potential for Substantial Interferen	nce Review:
There is the potential for substantial interference	ence per Section C of the attached review form.
Summary of Well Construction Assessment:	
[ ] The well does not appear to meet current we review form. Route through Well Construction a aliented with the second s	ell construction standards per Section D of the attached 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** Application G- 18820 TO: GW: J. Woody (Reviewer's Name) FROM: **SUBJECT: Scenic Waterway Interference Evaluation** YES The source of appropriation is within or above a Scenic Waterway 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

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

Waterway by the following amounts expressed as a proportion of the consumptive use by

which surface water flow is reduced.



# **MEMO**

To:

Kristopher Byrd, Well Construction and Compliance Section Manager

From:

Joel Jeffery, Well Construction Program Coordinator

**Subject:** Review of Water Right Application G-18820

Date:

September 18, 2019

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

Applicant's Well #1 (YAMH 1087): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Well #1 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

WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310 within 30 days from the date of well completion.

# WATER WELL REPORT YAMH

## STATE OF OREGON

(Please type or print)
(Do not write above this line)

1087

State Well No. Zs 3w-27
State Permit No.

(1) OWNER:	(10) LOCATION OF WELL:
Name Richard Krueger	1/2:1/11
Address 16270.5, W. Hart	y derivities and individual and indi
Beaverton Oregon 97005	1/4 Section 27 T. 2SR. 3W W.M.
(2) TYPE OF WORK (check):	Bearing and distance from section or subdivision corner
New Well ☐ Deepening ☐ Reconditioning ☐ Abandon ☐	
If abandonment, describe material and procedure in Item 12.	
(3) TYPE OF WELL: (4) PROPOSED USE (check):	(11) WATER LEVEL: Completed well.
(1) 1101 ODED COL	Depth at which water was first found 210 ft.
Cable	Static level 200 ft. below land surface. Date 6-16
Dug	Artesian pressure lbs. per square inch. Date
CASING INSTALLED: Threaded Welded	(10)
6 " Diam from 6 ft. to 6 7 ft. Gage . 250	(12) WELL LOG: Diameter of well below casing
5 " Diam. from 60 ft. to 380 ft. Gage 10	Depth drilled 380 ft. Depth of completed well 380 ft.
" Diam. fromft. toft. Gage	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
PERFORATIONS: Perforated? Yes No.	position of Static Water Level and indicate principal water-bearing strata.
Type of perforator used Torch	MATERIAL From To SWL
Size of perforations 1/8 in. by 6 in.	Tongoil
$\frac{20}{20}$ perforations from $\frac{320}{340}$ ft. to $\frac{340}{100}$ ft.	Brown Clay 2 14
20 perforations from 360 ft. to 380 ft.	Broken rock 14 58
perforations from ft. to ft.	Medium brown rock 58 72
(7) SCDEENS.	Broken rock 72 275
(7) SCREENS: Well screen installed? ☐ Yes ☐ No	Medium brown rock 275 380
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	
Was a pump test made? ☐ Yes ☐ No If yes, by whom?	<u> </u>
Yield: gal./min. with ft. drawdown after hrs.	IIII 6 1070
" " " " " " " " " " " " " " " " " " " "	Jiil - 61979
a"iv " " " " "	WATER RESOURCES DEPT
Bailer test / gal./min. with /6 Oft. drawdown after / hrs.	SALEM, OREGON
Artesian flow g.p.m.	
perature of water Depth artesian flow encountered ft.	Work started 6-/0 1979 Completed 6-16 1979
(9) CONSTRUCTION:	Date well drilling machine moved off of well 6-16 1979
Well seal—Material used Cement  Well sealed from land surface to 65	Drilling Machine Operator's Certification:
Diameter of well bear to be to	This well was constructed under my direct supervision.  Materials used and information reported above are true to my
	best knowledge and belief.
Number of scales of sement used in many	[Signed] Date
How was cement grout placed?	Drilling Machine Operator's License No
	The state of the s
	Water Well Contractor's Certification:
30 30 20 20 20	This well was drilled under my jurisdiction and this report is
Was a drive shoe used? 🗌 Yes 🖺 No Plugs Size: location ft.	true to the best of my knowledge and belief.
Did any strata contain unusable water?   Yes To	Name /Urner /r///na O (Type or print)
Type of water? depth of strata	Address XI Dox 522 Por Land () vp.
Method of sealing strata off	011
Was well as a second sec	[Signed] Won I-caken 9/2
	- (Water Well Contractor) 7-11, 79
Gravel placed from ft. to ft.	Contractor's License No. 7/5 Date 7-4, 19/9

### PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: FROM:			Rights Sec water Sec	ction ction		Jen Woo	ody		Date .		9/13/201	19		
SUBJE	CT:	Applica	tion G- <u>18</u>	8820	177		ver's Name ersedes		iew of <u>n/a</u>		D	ate of Revie	ew(s)	
OAR 69 welfare, to deterr the presu	on-310-130 safety and mine whet umption co	0 (1) The d health her the priteria. T	e Departme as describe resumptio	ed in ORS 5. n is establish v is based u	sume that 37.525. De ned. OAR pon availa	a proposed epartment s 690-310-14 ble inforn	d ground staff revio 40 allow nation a	ew g s the nd a	er use will en groundwater e proposed us agency polici	applica se be m les in p	ntions und nodified of lace at t	der OAR or conditi	690-310- oned to n	-140 neet
A1.	Applican	t(s) seek	(s) <u>0.025</u>	cfs from	1	well(s)	) in the _	,	Willamette					Basin,
	Cl	<u>nehalem</u>			×.	subbas	sin							
A2.	Proposed	use	Irriga	ution		Seaso	nality: _	Yea	ar-round					
A3.	Well and	aquifer			ber logs fo			narl	k proposed v	vells as				
Well	Logid Applicant's Well # Proposed Aquifer*					Propo Rate(c	cfs)		Location (T/R-S QQ-Q		2250' N	n, metes a , 1200' E f	r NW cor	S 36
2	YAMH 1087 1 CRBG						5	T2S	S/R3W-27 SE 1/4	SE ¼	75'N, 3	335'W fr E	SE cor DLC	2 52
3 4														
5 * Alluviu	ım, CRB, B	Bedrock												
Well	Well Elev ft msl 870	First Water ft bls 210	SWL ft bls	SWL Date 6/16/2019	Well Depth (ft) 380	Seal Interval (ft) 0-65	Casin Interva (ft) 0-67, 6 380	als	Liner Intervals (ft) n/a	Or S	orations Screens (ft) 40, 360- 380	Well Yield (gpm)	Draw Down (ft) 160	Test Type air
Use data A4.														
A5. 🗌	(Not all b	oasin rule	es contain	such provisi	ons.)				es relative to are, or					nd/or ion.
A6. 🛛	Well(s) # Name of	t 1 adminis	trative area	,, a: <u>Chehaler</u>	, n Mounta	in Ground	, lwater L	tap( L <b>imi</b>	(s) an aquifer ted Area	limited	d by an a	dministra	tive restr	riction.
	for drip threat to further l	or equa the gro imited t	lly efficie undwater o one acr	nt irrigation resource o e-foot per a	n provided r existing acre per ye	d the Dire permit ho ear. Permi	ctor find olders. To ts may	ds the be e	not to exce he proposed amount of v extended for the extende	use avater u additi	nd amoussed for ional fiv	int do no irrigation e-year p	ot pose a n shall b eriods if	i be f the

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

BI.	Bas	sed upon available data, I have determined that groundwater* for the proposed use:
	a.	is over appropriated, is <b>not</b> over appropriated, or is <b>cannot</b> be <b>determined to be</b> 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.	$\square$ will not or $\square$ 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.
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 froma single aquifer in the Columbia River
		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):
В3.	zon	oundwater availability remarks: The applicant's proposed wells will produce from one or more water-bearing es in the Columbia River Basalt Group (CRBG), a series of lava flows with a composite thickness that ranges from 300 to
	zon sedi flov basa stac	feet in this area (Conlon et al., 2005). Each flow is characterized by a series of internal features, including a thin rubble e at the contact between flows and a thick, dense, low porosity and low permeability interior zone. In some cases, imentary layers were deposited during the time between basalt flow emplacements. A flow top, sedimentary interbed and v bottom are collectively referred to as an interflow zone. Unconfined groundwater occurs near the weathered top of the alts, but most water occurs in interflow zones at the contacts between lava flows. CRBG flow features result in a series of ked, thin aquifers that are confined by dense flow interiors. The low permeability of the basalt flow interiors usually alts in little connection between stacked aquifers, which generally results in tabular aquifers with unique water level heads
	<u>inte</u> of v 60 g	e proposed use of 14.3 acre-feet per year at a maximum rate of 11 gallons per minute (gpm) is unlikely to create drawdown reference with nearby wells that prevents access to water. Nearby water level data are not available. Wells access a variety vater-bearing zones within the CRBG aquifer system. Well logs in T2S/R3W- Section 27 report yields ranging from 1 to gpm, with a median yield of 13 gpm. Water use and water level monitoring conditions are recommended to protect string users.
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#### C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

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

1 Columbia River Basalt Group	Well	Aquifer or Proposed Aquifer	Confined	Unconfined
	1	Columbia River Basalt Group	$\boxtimes$	

Basis for aquifer confinement evaluation: Water-bearing zones within the CRBG typically display high degrees of
confinement. The well log for YAMH 1087 shows the water level 10' above the top of the water-bearing zone, indicating
confined conditions.

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? YES NO ASSUMED	Potential for Subst. Interfer. Assumed? YES NO
1	1	Unnamed tributary	670	670	850		
		•					
		3			ū.		

Basis for aquifer hydraulic connection evaluation: Water	er-bearing zones are reported in the confined interflow zones
of the CRBG. These water-bearing zones, as well as the water leve	el reported on the well log, are coincident with or above
perennial reaches of the nearby creek. The creek has incised throu	gh several hundred feet of CRBG. Groundwater from the
uplands likely discharges to surface water, providing baseflow or	spring flow to sustain nearby perennial reaches of the creek.
	4
Water Availability Basin the well(s) are located within: Water	shed ID #30200707 Chehalem Creek.

C3a. **690-09-040** (4): Evaluation of stream impacts for <u>each well</u> 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 < <sup>1</sup> / <sub>4</sub> 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	$\boxtimes$					0.39	$\square$	*	$\boxtimes$
				*						

			ns apply a	Instr		nstream		80%	On	/ > 1%		Pa	otential
	SW		Qw			Water	Qw>	Natur	_	80%	Interferer	ice for	r Subst.
	#		5 cfs			Right Q	1%	Flow		atural	@ 30 da	VC	iterfer.
1	"			II		(cfs)	ISWR?	(cfs)		low?	(%)		sumed?
	1		$\top$			(111)	П	(610)					П
										$\sqcap$ $\dashv$			$\sqcap$
										$\sqcap$			$\overline{\Box}$
Commo	ntc· *	There is	no annroi	oriate mo	del to esti	mate stres	mflow de	nletion fro	m numni	ng in CR	BG interflo	ow zones	that are
											erence at 30		
calculate				Politica				, p					
The proj	posed ra	ate on th	is applica	tion (0.02	5 cfs) is s	reater tha	n 1% of th	ne minimu	m 80% na	atural flo	w in the Ch	nehalem V	WAB
			is assume										
											*		
690-09-0	040(5)	: Estim	ated impa	cts on hv	draulical	lv connec	ted surfac	ce water s	ources gi	reater th	an one mi	le as a	
											r after pum		ins.
											cluded on		
							are require		,,				
on-Distril													
Zell S	W#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Vell Q as C												/	
terference	CFS												
<u> </u>	XX7 11												
istributed		Lon	Eak	Man	Λ	Mari	T	T1	A	C	0-4	NI	D
Vell S	W#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
V-11 O C	TEC	%	%	%	%	%	%	%	%	%	%	%	97
Well Q as C											-		
terference	CFS												
		%	%	%	%	%	%	%	%	%	%	%	97
Vell Q as C	CFS												
terference	CFS												
		%	%	%	%	%	%	%	%	%	%	%	9
Vell Q as C	CFS												
terference	CFS											, J	
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as C	TES	,,,	,,,		70	70	,,,	,,	70	70	1	70	,
terference													
Terrefere	CIS	%	%	%	%	%	%	%	67	67	%	61	67
Well Q as C	TEC	%	%	%	%	%	9/6	%	%	%	%	%	%
terference											-		
terrerence	CL2				-						-		
	_		%	%	%	%	%	%	%	%	%	%	%
		%									1		
Well Q as C	CFS	%											
	CFS	%											
terference	CFS CFS	%											
terference (a) = Total In	CFS CFS	%											
terference	CFS CFS	%											
terference (a) = Total In	CFS CFS nterf.	%											
terference (a) = Total In (b) = 80 % Na (c) = 1 % Na	CFS CFS nterf. at. Q at. Q	%											
terference (a) = Total In (b) = 80 % Na	CFS CFS nterf. at. Q at. Q	% 	√		<i>√</i>	V	√ ·		√	√	<b>√</b>	√ ·	✓ ·

C3b. 690-09-040 (4): Evaluation of stream impacts by total appropriation for all wells determined or assumed to be hydraulically

	D) = highlight the checkmark for each month where (A) is gr Basis for impact evaluation: n/a	reater than (C); (E) = total interference divided by 80% flow as percentage.
		· · · · · · · · · · · · · · · · · · ·
э.	690-09-040 (5) (b) The potential to impair or det Rights Section.	rimentally affect the public interest is to be determined by the Wa
	If properly conditioned, the surface water source(s) under this permit can be regulated if it is found to sult i.   The permit should contain condition #(s)	
	ii. The permit should contain special condition w(s)	
W		well is within the Chehalem WAB and is likely hydraulically connected ate is greater than 1% of the minimum natural flow in the WAB, so PS
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R	eferences Used:	
	onlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N round-water hydrology of the Willamette Basin, Oregon	S.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, n: U.S. Geological Survey Scientific Investigations Report 2005-5168.
<u>C</u> <u>G</u>		
G	S Geological Survey Topographic Map, Dundee Quadr	angle.
<u>G</u>		
<u>U</u>	S Geological Survey Topographic Map, Dundee Quadr	
<u>U</u>		
<u>U</u>		

#### D. WELL CONSTRUCTION, OAR 690-200

D1.	Well #:	Logid:	
D2.	<ul><li>a.  review</li><li>b.  field in</li><li>c.  report</li></ul>	oes not appear to meet current well construction standards based up of the well log; aspection by	; ;
D3.		onstruction deficiency or other comment is described as follows:	
D4. [	Route to the W	Well Construction and Compliance Section for a review of existing w	ell construction.

Figure 1. Water Availability Tables

Watershed ID #: 30200707

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION
Water Availability as of 3/11/2005 for
CHEHALEM CR > WILLAMETTE R - AT MOUTH

Basin: WILLAMETTE

Exceedance Level: 80

T:	ime:	0	8:35					Date:	03/11/2005
-	Month	1	Stream	CU + Stor   Prior to    1/1/93	After	Stream	Stream	Water	Net    Water    Available
1	1		101.00	3.11	0.001	97.90	0.00	0.00	97.90
1	2	1	115.00	1 2.971	0.001	112.00	0.00	0.00	112.00
1	3	1	80.60	2.201	0.001	78.40	0.00	0.00	78.40
-	4	1	33.00	1.31	0.001	31.70	0.00	0.00	31.70
-	5	1	14.90	1.87	0.00	13.00	0.00	0.00	13.00
-	6	-	8.48	3.14	0.001	5.34	0.00	0.00	5.34
	7	1	2.13	4.691	0.001	-2.56	0.00	0.00	-2.56
	8	1	0.59	3.871	0.001	-3.28	0.00	0.00	-3.28
1	9	I	0.39	2.261	0.001	-1.87	0.00	0.00	-1.87
1	10	1	3.05	0.61	0.001	2.44	0.00	0.00	2.44
-	11	1	11.50	0.901	0.001	10.60	0.00	0.00	10.60
1	12	1	66.20	2.44	0.00	63.80	0.00	0.00	63.801
1	Stor	1	48900	17701	01	47300	0	0	47300
1.									

G-18820 Penner 2S/3W- Section 27 SE 1/4 SE 1/4

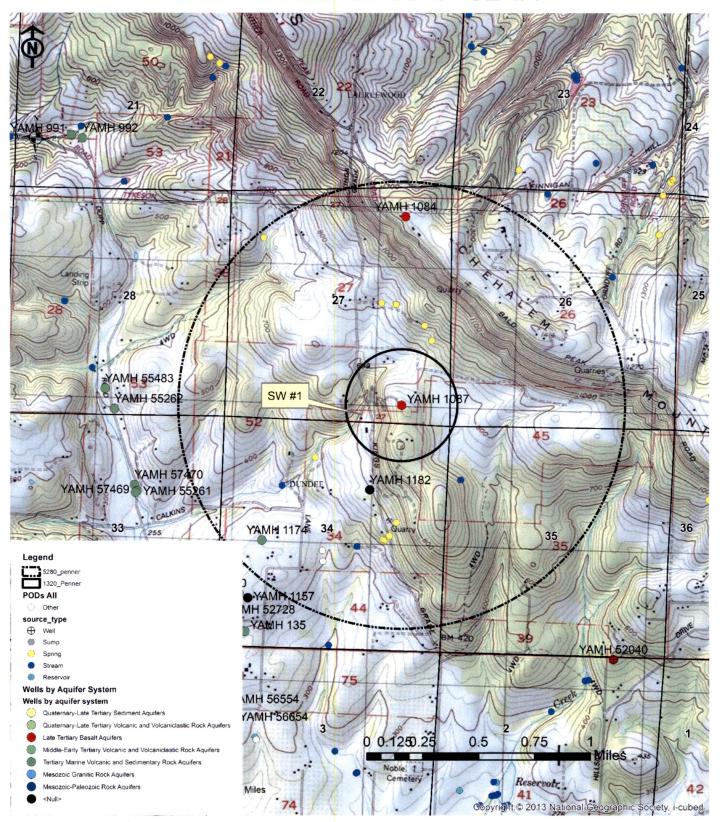


Figure 3. Water-Level Trends in Nearby Wells

