Groundwater Application Review Summary Form

Application # G- 18786	
GW Reviewer Phi Marcy Date Review Completed: 4/19/2019	1
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 attacher review form. Route through Well Construction and Compliance Section.	90
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-_18786 TO: FROM: SUBJECT: Scenic Waterway Interference Evaluation YES The source of appropriation is within or above a Scenic Waterway N NO YES Use the Scenic Waterway condition (Condition 7J) N 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.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		- 14 C - 11									

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

Exercise of this permit is calculated to reduce monthly flows in

which surface water flow is reduced.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO:	ROM: Groundwater Section Phillip I. Marcy												
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CLIDIE	CT.	A ==1:	antion C	10704									
SOBJE	CI:	Appn	cation G-	18/80		Su	persedes	review of			Date of Rev	view(s)	
											Dute of Re	view(3)	
					GROUN								
								lwater use will					
								ew groundwate					
								s the proposed nd agency pol					
the pres	umption	CITICITA.	inis icin	W IS BUSCO	upon uvun	ubic imoi	mution t	na agency por	icies in p	iuce ui	the time	or court	uuon.
A. <u>GE</u> I	NERAL	INFO	RMATIC	<u>)N</u> : A	pplicant's N	Name:	Kyle A. a	and Lindsey D	. Rucker	<u>t_</u> (County: _	Linn	
			1//					*****					ъ.
A1.	Applica	int(s) se	ek(s) = 0.49	ets tro	m <u>l</u>	well((s) in the	Willamette	,				_Basin,
					140	subb	asin						
	-							and the state of		st ca . =			
A2.	Propose	ed use _	Irrig	gation (39.0	acres)	Seas	sonality:	March 1 st – O	ctober 31	(245	days)		
A3.	Well an	d aquif	er data (att :	ach and nu	mber logs	for existin	g wells: 1	nark proposed	l wells as	such	under los	aid).	
		- I aquin											
Well	Logic	d	Applicant' Well #	S Propos	sed Aquifer*	Prop Rate		Location (T/R-S QQ			tion, mete o' N, 1200'		
1	Propos	ed	1	Α	lluvium	0.4		12S/3W-28 N			50'S, 50'W		
2													
3 4						+							
5													
* Alluviu	ım, CRB,	Bedrock	(•						
	Well	F:t			W-11	C1	Casina	T:	DC	4:	337-11	D	
Well	Elev	First Water	SWL	SWL	Well Depth	Seal Interval	Casing Interval		Perfora Or Scr		Well Yield	Draw Down	Test
	ft msl	ft bls	ft bls	Date	(ft)	(ft)	(ft)	(ft)	(ft		(gpm)	(ft)	Type
1	274	NA	NA	NA	150	TBD	TBD	TBD	TB	D	NA	NA	NA
					-								
					-				-		-		
Use data	from app	lication	for proposed	wells.								L	
A4.								nined, with the					
								e is necessary t ew volume of					
	permit	<u>U-1333.</u>	o, willen au	morizes 2	AF IOI UIE	period or	use. No n	ew volume of	water is re	equeste	ed on uns	аррисан	OII.
A5.	Provis	ions of	the Willan	nette			Basir	rules relative	to the dev	elopm	ent, class	ification	and/or
	manage	ement of	groundwa	ter hydrauli	ically conne	cted to sur	face wate	r 🗌 are, or 🛭	are not	, activ	ated by th	is applic	ation.
				n such prov									
	Comme	ents:											
A6. 🗌	Well(s)	#						tap(s) an aquif	er limited	l by an	administ	rative res	striction.
	Name o	of admir	istrative ar	ea:,		,		tap(s) an aqui		,			
	Comme	ents:											

Version: 05/07/2018

Application G-18786 Date: 04/18/2019 Page 2

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

Base	ed 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.	\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. 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;
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):
which latter The Near	undwater availability remarks: The area beneath the proposed wells is underlain by about 15 feet of Willamette Silt the is underlain by 80-140 feet of productive sands and gravels that are part of the Lebanon alluvial fan system. These redeposits are underlain by about 175 feet of clays and silts which are floored by low-yield Tertiary marine sediments, water table occurs at shallow depths within the Willamette Silt which confines the underlying sand and gravel aquifer. By observation wells LINN 54637 and LINN 53597 are constructed similarly to what is proposed for the POA well on application, and display stable water levels over their period of record since 2002.

Application G-18786 Date: 04/18/2019

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	Alluvium	\boxtimes	

Basis for aquifer confinement evaluation: Five to ten feet of saturated Willamette Silt overlies the productive sand and gravel beds.

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	Calapooia River	270-	240-	10400		
		_	280	260			

Basis for aquifer hydraulic connection evaluation: Published water-level maps indicate that groundwater flows toward and discharges into the Calapooia River. U.S. Geological Survey 7.5-minute topographic maps indicate that all streams within one mile of the proposed wells are ephemeral.

Water Availability Basin the well(s) are located within: Calapooia R > Willamette R - AB Mouth (#76)

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 < 1/4 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?

Page

Date: 04/18/2019

C3b. **690-09-040 (4):** Evaluation of stream impacts <u>by total appropriation</u> 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?
		1.						
Comments: Th	nis section does no	t annly						

Comments: 1	This section does not apply.	 	

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-Di	stributed	Wells											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												

Distrib	uted Wells	5											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfere	ence CFS												
(A) = To	tal Interf.			I									
(B) = 80	% Nat. Q												
	% Nat. Q												
(D) = (A) > (C)	✓	✓	V	1	√	✓	1	✓	√	1	V	1
$(\mathbf{E}) = (\mathbf{A})$	/ B) x 100	%	%	%	%	%	%	%	%	%	%	%	%

5 Date: 04/18/2019 Application G-18786 Page (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 Calapooia River were not modeled as modeling in similar circumstances indicates that impacts are likely to be well below 1% of the 80% natural stream flow for the first year of pumping. 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: Five to ten feet of saturated Willamette Silt lies between the bed of the Calapooia River and the underlying aquifer. This fine-grained material, which acts as a resistor between the aquifer and the stream, will attenuate pumping impacts from wells.

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.

Piper, A.M., 1942, Ground-water resources of the Willamette Valley, Oregon: U.S. Geological Survey Water-Supply Paper 890.

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.

Version: 05/07/2018

6

D. WELL CONSTRUCTION, OAR 690-200

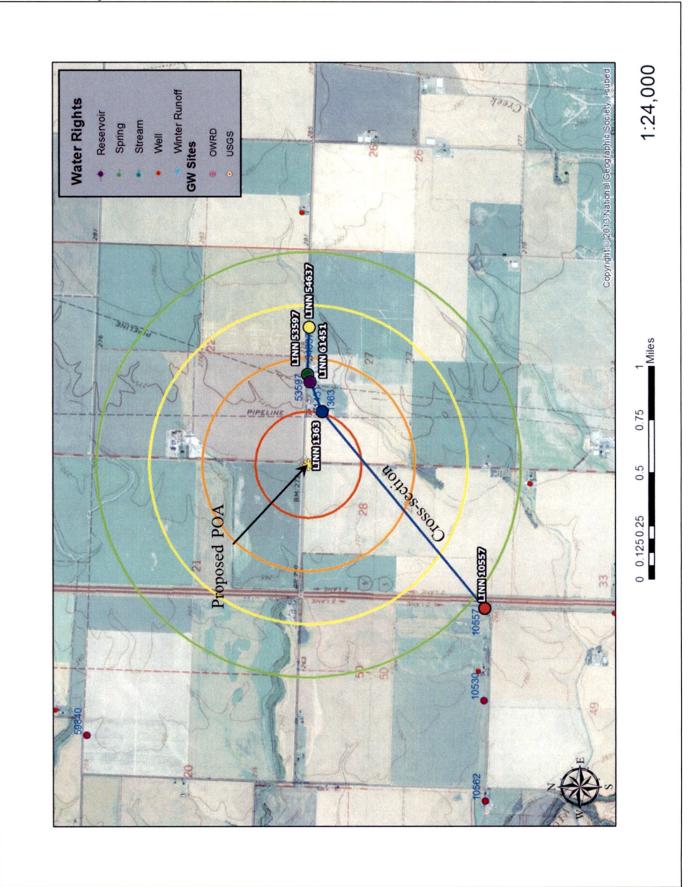
1.	Well #:	Logid:	
D2.	a. review b. field i c. report d. other:	does not appear to meet current well construction standards based upon: w of the well log; inspection by t of CWRE t (specify)	;
D3.	THE WELL c	construction deficiency or other comment is described as follows:	
D4.	Route to the V	Well Construction and Compliance Section for a review of existing well constru	

Water Availability Tables

		DETAILED REPORT	ON THE WATER AVAILA	BILITY CALCULATION	N	
	7.0	CALAPOO	A R > WILLAMETTE R			
Watershed ID #: Time: 10:58 AM	76	Basin: WILLAMETTE			Exceedance Level: 80 Date: 04/19/2019	
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
		Storage is 1	Monthly values a the annual amount at	re in cfs. 50% exceedance i	n ac-ft.	
JAN	592.00	3.37	589.00	0.00	20.00	569.00
FEB MAR	650.00 575.00	3.32 2.25	647.00 573.00	0.00	20.00	627.00 553.00
APR MAY	423.00 234.00	2.03 18.80	421.00 215.00	0.00	20.00	401.00 195.00
JUN	111.00	14.00 21.70	97.00 27.30	0.00	20.00	77.00
AUG	26.00	15.70	10.30	0.00	20.00	7.33 -9.75
SEP OCT	22.70 29.60	8.17 1.98	14.50 27.60	0.00	20.00	-5.47 7.62
NOV DEC	133.00 499.00	2.39 3.33	131.00 496.00	0.00	20.00 20.00	111.00 476.00
ANN	404,000	5,900	398,000	0	14,500	384,000

Date: 04/18/2019

Well Location Map



Application G-18786 Date: 04/18/2019 Page



