PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO:	Water Rights Section						Date	e <u>14</u>	May 2	2008				
FROM	:	Grou	nd Water/l	Hydrology	Section	Geral	d H. Gron	din						
ar in in	CT.	۸ 1۰	.: C	1.005			ewer's Name							
SUBJE	C1:	Appli	cation G-	16895		Suj	persedes re	view of			Date of Re	view(s)		
	. ~ *> ***			CONTROL	an armin		_				2410 01 110	,10 ,, (5)		
OAR 69 welfare, to deter	90-310-1 safety a mine wh	30 (1) <i>nd heal</i> ether th	The Depar th as descr e presumpt	tment shall ibed in ORS ion is estab	5 537.525. D lished. OAF	<i>at a prop</i> Departmen R 690-310	osed ground t staff revie 1-140 allows	dwater use was ground was the proposed agency pol	ter appli d use be	cations modifi	under O	AR 690-aditioned	310-140 to meet	
A. <u>GE</u> I	NERAL	<u>INFO</u>	RMATIC	<u>)N</u> : A	pplicant's N	ame:	Stephen R	aoth		(County:	Deschu	tes	
A1.	Applica	ınt(s) se	ek(s) 14.5	55 (6,530 gr	om)* cfs fro	om	4	_ well(s) in t	the	Deschi	ıtes		_Basin,	
	Sout	h Fork	Crooked I	River (Ham	pton Valley	<u>)</u> subb	asin Qu	ad Map:		Hamp	ton			
A2.	Propose	ed use:	Irrioatio	n (nrimary	932 acres)	Seas	onality:	March 1 –	Octobe	r 31 <i>(2.</i>	45 davs)			
A3.								rk proposed						
			Applican	,		Ι_							_	
Wel 1	Logid		S	F10	oposed juifer*	Propose Rate(cf		Location /R-S QQ-Q)	L			s and bounds, e.g. E fr NW cor S 36		
1	Not dr	Well # Not drilled 10			asalt?				Α.			W fr SE cor S 9		
2	Not dr		10 11		asait?	2.79 22S/21E-sec 3.23 22S/21E- sec		1E-sec 9 DA 1E- sec 16 A				W fr NE cor S 16		
3	Not dr		12		asalt?	5.30		22S/21E-sec 10 DC0		510' N, 2156' W fr SE			· S 10	
4	Not dr	illed	13	Ba	asalt?	3.23	22S/2	22S/21E-sec 15 CBA		2468' N, 947' F		E fr SW cor S 15		
5 * Alluviu	ım, CRB,	Bedrock	ζ											
	Well	First	CMI	CXVI	Well	Seal	Casing	Liner	Perfora	ations	Well	Draw	T	
Well	Elev	Water	SWL ft bls	SWL Date	Depth	Interval	Intervals	Intervals	Or Sc		Yield	Down	Test Type	
1	ft msl 4430	ft bls 560	132	propose	(ft) 850	(ft) 0 - 40	(ft) +1 - 40	(ft)	(ft) none		(gpm) 1500	(ft)	JF	
2	4420	560	132	propose	850	0 - 40	+1 - 40		noi		1500			
3	4430	560	132	propose	850	0 - 40	+1 - 40		no	ne	2500			
4	4420	560	132	propose	850	0 - 40	+1 - 40		no	ne	1500			
Use data	from app	lication	for proposed	wells.										
A4.					ımping rate	e = 14.55	cfs (6,530 g	pm), maxim	um rate	allowe	d = 11.6	5 cfs (5,2	30 gpm)	
			=				=	_						
								sed will like the brothers						
	likely b	oe open	to both t	he sedimen	ntary and v	olcanic c	leposits and	d the under	lying ba	salt. (Fround v	water le	vels are	
					ms in the ar	rea. Gro	und water f	low directio	n is unc	ertain,	but may	be towa	ırds the	
	northw	est (Mi	llican Vall	ey).										
A5. 🗌	Provisi	ions of	the	. 1 1 1	. 11	. 1.	Basin r	ules relative are , or	to the de	evelopn	nent, clas	sification	n and/or	
				ater nydraul n such provi		ected to si	arface water	are, or	∟ are i	iot, acti	vated by	this app	lication.	
	•						The basin	n rule allows	the pro	posed	use			
A6. 🗌	Well(s)	#	,	,	,	,	, ta	p(s) an aquife	er limite	d by an	administ	rative res	triction.	
	Name o	of admin	istrative ar	ea:										
	Commo	ents:					Not app	licable						

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

Base	ed 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 period of the proposed use. * This finding is limited to the ground water determination as prescribed in OAR 690-310-130;	to be over appropriated during an portion of the over-appropriation									
b.	■ will not <i>or</i> ■ 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 to i. The permit should contain condition #(s) 7B and 7N ii. The permit should be conditioned as indicated in item 2 below.	he ground water resource:									
	iii. The permit should contain special condition(s) as indicated in item 3 below.	ow;									
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 water reservoir between approximately ft. and ft. below	ground land surface;									
d.	Well reconstruction is necessary to accomplish one or more of the above conditions. The problems that are lik to occur with this use and without reconstructing are cited below. Without reconstruction, I recomme withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approve by the Ground Water Section.										
	Describe injury –as related to water availability– that is likely to occur without w senior water rights, not within the capacity of the resource, etc):										
Wat DES The well basa	ter levels have been reported for 2 nearby wells, since 2001 for DESC 1707 in T22 SC 56139 in T22S/R20E-sec 1. Both wells were completed in sedimentary and vote sediment and basalt are likely hydraulically connected based upon well DESC 58 sedescribed in the application will likely be open to both the sedimentary and volcalt. The ground water level trends are about 0.5 feet decline at DESC 1707 and 39. It is not certain if the trend is due to climate, new ground water use since 2000.	2S/R21E-sec 7 and since 2005 for obligation deposits overlying basal 8016. Additionally, the propose anic deposits and the underlying about 3.5 feet decline at DES									
_											

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C. GROUND WATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

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

Wel l	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Basalt and overlying sedimentary and volcanic units		\boxtimes
2	Basalt and overlying sedimentary and volcanic units		\boxtimes
3	Basalt and overlying sedimentary and volcanic units		\boxtimes
4	Basalt and overlying sedimentary and volcanic units		

Rasis	for	aquifer	confinement	evaluation
Dasis	IUI	aquiici	COMMENTE	evaluation.

The water-bearing units are generally unconfined. Locally, they may be semi-confined because of the heterogenity of the sedimentary deposits and spatial variability in permeability inherent to the lava flows. The proposed wells described in the application will likely be open to both the sedimentary and volcanic deposits and the underlying basalt. The sediment and basalt are likely hydraulically connected based upon well DESC 58016.

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 ½ 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	Lizard Creek	4280	4415	5680				
2	1	Lizard Creek	4280	4415	2370				
3	1	Lizard Creek	4280	4415	6610				
4	1	Lizard Creek	4280	4415	2920				
1	2	Mud Springs Creek	4280	4420	6300				
2	2	Mud Springs Creek	4280	4420	6650				
3	2	Mud Springs Creek	4280	4420	9950				
4	2	Mud Springs Creek	4280	4420	10140				
1	3	Unnamed Creek	4280	4420	3650				
2	3	Unnamed Creek	4280	4420	4350				
3	3	Unnamed Creek	4280	4420	150				
4	3	Unnamed Creek	4280	4420	1180				
1	4	Camp Creek	4280	4500	67000				
2	4	Camp Creek	4280	4500	70000				
3	4	Camp Creek	4280	4500	69000				
4	4	Camp Creek	4280	4500	72000				
1	5	South Fork Crooked River	4280	4130	50000				
2	5	South Fork Crooked River	4280	4130	53000				
3	5	South Fork Crooked River	4280	4130	49000				
4	5	South Fork Crooked River	4280	4130	52000				

Basis	tor	aquii	ter I	nya	lrau	lic	connection	eval	luation	:
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For Lizard Creek, Mud Springs Creek, and the unnamed creek: interference is unlikely given these creeks appear intermittent and the ground water elevation appears to be well below the elevation of the creek beds.

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For Camp Creek: interference is unlikely given the ground water elevation appears to be well below the elevation of springs and the creek bed at the nearest reach. Additionally, early to middle Tertiary geologic units that are typically characterized as boundaries to regional ground water flow occur between the proposed wells and the creek and springs.

For South Fork Crooked River: interference is unlikely given early to middle Tertiary geologic units that are typically characterized as boundaries to regional ground water flow occur between the proposed wells and the river.

Water Availability Basin the well(s) are located within: 70358; S FK CROOKED R > CROOKED R - AT MOUTH

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 \boxtimes 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?

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:			
No analysis: no hydraulic connection			
9			
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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.

Well	istributed SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
	ence CFS												
Distrib	outed Well	S											
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q	as CFS												
Interfer	ence CFS												
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q													
Interfer	ence CFS												
						1	1				1		
` '	otal Interf.												
(B) = 80	% Nat. Q												
(C) = 1	% Nat. Q												
$(\mathbf{D}) = (A$	A) > (C)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
$(\mathbf{E}) = (\mathbf{A}$	/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.

asis for impact evaluation:	
To analysis: no hydraulic connection	

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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) 7B and 7N ii. The permit should contain special condition(s) as indicated in "Remarks" below; C6. SW / GW Remarks and Conditions_ Remarks: Ground water flow direction is uncertain, but may be towards the northwest (Millican Valley). Interference with surface water is unlikely given: For Lizard Creek, Mud Springs Creek, and the unnamed creek: interference is unlikely given these creeks appear intermittent and the ground water elevation appears to be well below the elevation of the creek beds. For Camp Creek: interference is unlikely given the ground water elevation appears to be well below the elevation of springs and the creek bed at the nearest reach. Additionally, early to middle Tertiary geologic units that are typically characterized as boundaries to regional ground water flow occur between the proposed wells and the creek and springs. For South Fork Crooked River: interference is unlikely given early to middle Tertiary geologic units that are typically characterized as boundaries to regional ground water flow occur between the proposed wells and the river. Permit Conditions: If a permit is issued, it should include conditions 7B, 7N, and 7J

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Application: G-16895 (continued)

Version: 08/15/2003

Date: 14 May 2008

Application: G-16895 (continued)

7 Version: 08/15/2003

Date: 14 May 2008

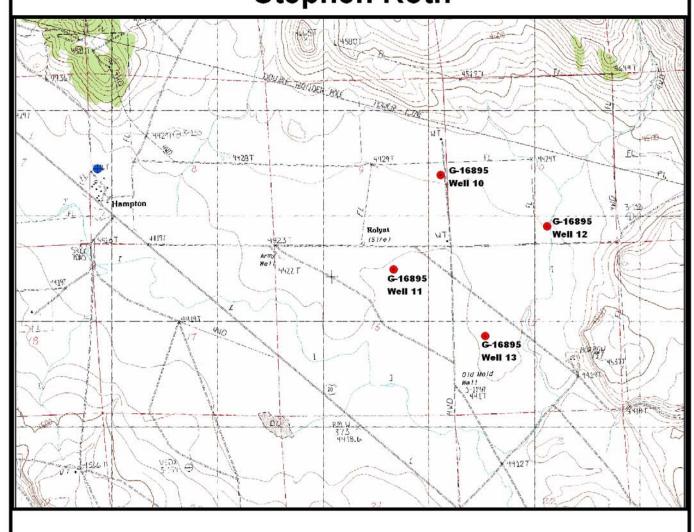
Application: G-16895 (continued)

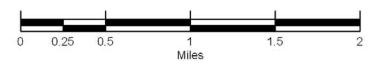
Date: 14 May 2008

D. WELL CONSTRUCTION, OAR 690-200

D2. THE WELL does not meet current well construction standards based upon: a. review of the well log; b. field inspection by report of CWRE other: (specify)	;
D3. THE WELL construction deficiency: a.	
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 original construction or most recent modification.	e of
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 v is filed with the Department and approved by the Enforcement Section and the Ground Water Section.	well reconstruction
THIS SECTION TO BE COMPLETED BY ENFORCEMENT PERSONNEL	
D7. Well construction deficiency has been corrected by the following actions:	
	, 200
(Enforcement Section Signature)	
D8.	

Ground Water Application G-16895 Stephen Roth



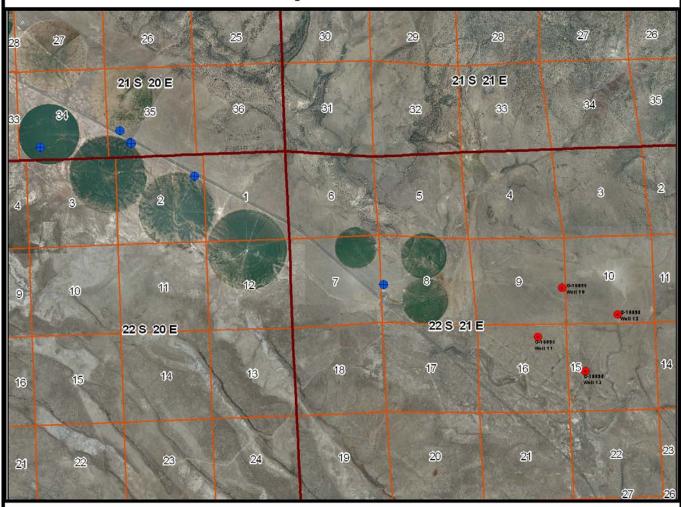


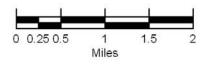
Proposed Wells = red dots Other Wells = blue dots



Date: 14 May 2008

Ground Water Application G-16895 Stephen Roth





Proposed Wells = red dots
Other Wells = blue dots

