

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date July 19, 2004

FROM: Ground Water/Hydrology Section Michael Zwart
Reviewer's Name

SUBJECT: Application G- 16211 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 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: Louis and Karen Hamilton County: Wasco

A1. Applicant(s) seek(s) 1.11 cfs from one well(s) in the Deschutes Basin,
White River subbasin Quad Map: Wamic

A2. Proposed use: Irrigation, 400.0 ac. (P & S) Seasonality: July 1 to 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	WASC 51185	1	Bedrock	1.11	4S/12E-26 NE-NW	2550' E, 240' S fr NW cor S 26
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	1775	334	240	8/29/03	400	0-296	0-296	None	None	300	121	Air

Use data from application for proposed wells.

A4. **Comments:** Drawdown estimated from air test. Well yield reported is less than the rate requested.

A5. **Provisions of the Deschutes** 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: _____

A6. Well(s) # _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: _____
 Comments: _____

App. NO. G116211

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	Very likely the Dalles Fm. (Td) of Waters, 1968.	<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: The static water level is above the level that water was first encountered in the well bore. The lithologic description is not detailed to be sure that the well penetrates the Dalles Formation, but this appears likely from review of the geologic map and other nearby well logs.

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 cr. to north	1535	1770	400	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Unnamed cr. to south	1535	1810	2100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	Rock Creek	1535	1540	4400	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	4	White River	1535	1320	6000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	5	Threemile Creek	1535	1630	9600	<input type="checkbox"/>	<input checked="" 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"/>

Basis for aquifer hydraulic connection evaluation: Only the White River is incised deeply enough to likely expose the water-bearing zone of the well within the bed and canyon of the river. The head relationship is such that it is reasonable to expect that the aquifer provides base flow to the White River.

Water Availability Basin the well(s) are located within: White River > Deschutes River at mouth (70088).

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?
		<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"/>
		<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: This section does not apply (hydraulic connection is not within one mile).

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
1	4	13.9%	11.5%	9.8%	8.5%	7.5%	6.6%	15.5%	24.7%	30.9%	35.5%	23.7%	17.5%
Well Q as CFS								1.11	1.11	1.11	1.11		
Interference CFS		0.154	0.127	0.108	0.094	0.083	0.074	0.172	0.275	0.343	0.394	0.263	0.194
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.		0.154	0.127	0.108	0.094	0.083	0.074	0.172	0.275	0.343	0.394	0.263	0.194
(B) = 80 % Nat. Q		250	366	376	452	477	290	192	159	148	149	151	211
(C) = 1 % Nat. Q		2.5	3.66	3.76	4.52	4.77	2.9	1.92	1.59	1.48	1.49	1.51	2.11
(D) = (A) > (C)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(E) = (A / B) x 100		0.06%	0.03%	0.03%	0.02%	0.02%	0.03%	0.09%	0.17%	0.23%	0.26%	0.17%	0.09%

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 1 Logid: WASC 51185

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 Resources Department

MEMO

July 19, 2004

TO: Application G-16211
FROM: GW: Michael Zwart
(Reviewer's Name)
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

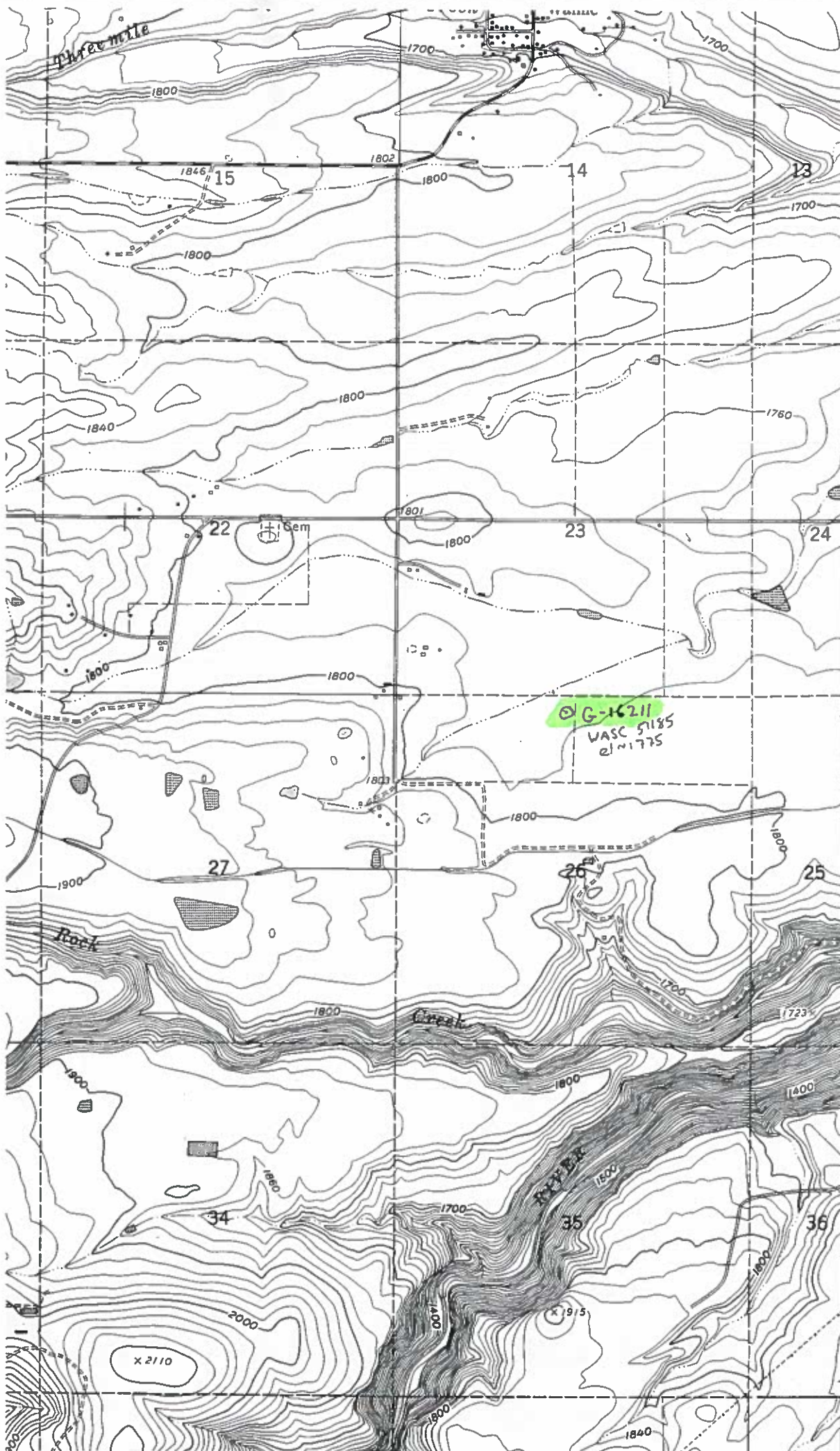
PREPONDERANCE OF EVIDENCE FINDING: (Check box only if statement is true)

At this time the Department is unable to find that there is a preponderance of evidence that the proposed use of ground water will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway in quantities necessary for recreation, fish and wildlife.

FLOW REDUCTION: (To be filled out only if Preponderance of Evidence box is not checked)

Exercise of this permit is calculated to reduce monthly flows in Deschutes 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
.139	.115	.098	.085	.075	.066	.155	.247	.309	.355	.237	.175



570 000
FEET

5009

5008

12'30"

5007

5006

(TYGH VALLEY)
1774 II NW

5004

T. 4 S.

T. 5 S.

WAMIC

G-16211
WASC 51185
el 11775

x 2110

x 1915

Status	SWW	Treaty	Cert.	Cert.	0.00	0.00	0.00	0.00	4500.00	4500.00
1	4500.00	3000.00	3000.00	4500.00	0.00	0.00	0.00	0.00	0.00	4500.00
2	4500.00	3000.00	3000.00	4500.00	0.00	0.00	0.00	0.00	0.00	4500.00
3	4500.00	3500.00	3500.00	4500.00	0.00	0.00	0.00	0.00	0.00	4500.00
4	4000.00	3500.00	3500.00	4000.00	0.00	0.00	0.00	0.00	0.00	4000.00
5	4000.00	3500.00	3500.00	4000.00	0.00	0.00	0.00	0.00	0.00	4000.00
6	4000.00	3500.00	3500.00	4000.00	0.00	0.00	0.00	0.00	0.00	4000.00
7	4000.00	3000.00	3000.00	4000.00	0.00	0.00	0.00	0.00	0.00	4000.00
8	3500.00	3000.00	3000.00	3500.00	0.00	0.00	0.00	0.00	0.00	3500.00
9	3800.00	3000.00	3000.00	3800.00	0.00	0.00	0.00	0.00	0.00	3800.00
10	3800.00	3000.00	3000.00	3800.00	0.00	0.00	0.00	0.00	0.00	3800.00
11	3800.00	3000.00	3000.00	3800.00	0.00	0.00	0.00	0.00	0.00	3800.00
12	4500.00	3000.00	3000.00	4500.00	0.00	0.00	0.00	0.00	0.00	4500.00

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

Water Availability as of 7/16/2004 for

WHITE R > DESCHUTES R - AT MOUTH

Basin: DESCHUTES

Watershed ID #: 70088

Exceedance Level: 80

Time: 13:41

Date: 07/16/2004

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	250.00	10.70	8.37	231.00	0.00	60.00	171.00
2	366.00	14.30	17.00	335.00	0.00	100.00	235.00
3	376.00	22.10	13.50	340.00	0.00	145.00	195.00
4	452.00	42.00	18.50	391.00	0.00	145.00	246.00
5	477.00	105.00	15.90	356.00	0.00	145.00	211.00
6	290.00	112.00	0.00	178.00	0.00	100.00	78.00
7	192.00	77.50	0.00	114.00	0.00	60.00	54.50
8	159.00	62.70	0.00	96.30	0.00	60.00	36.30
9	148.00	55.20	0.00	92.80	0.00	60.00	32.80
10	149.00	44.80	0.00	104.00	0.00	60.00	44.20
11	151.00	5.07	0.00	146.00	0.00	60.00	85.90
12	211.00	7.93	0.00	203.00	0.00	60.00	143.00
Stor	276000	33900	4380	238000	0	63600	174000

DETAILED REPORT OF CONSUMPTIVE USES AND STORAGES

Water Availability as of 7/16/2004 for

WHITE R > DESCHUTES R - AT MOUTH

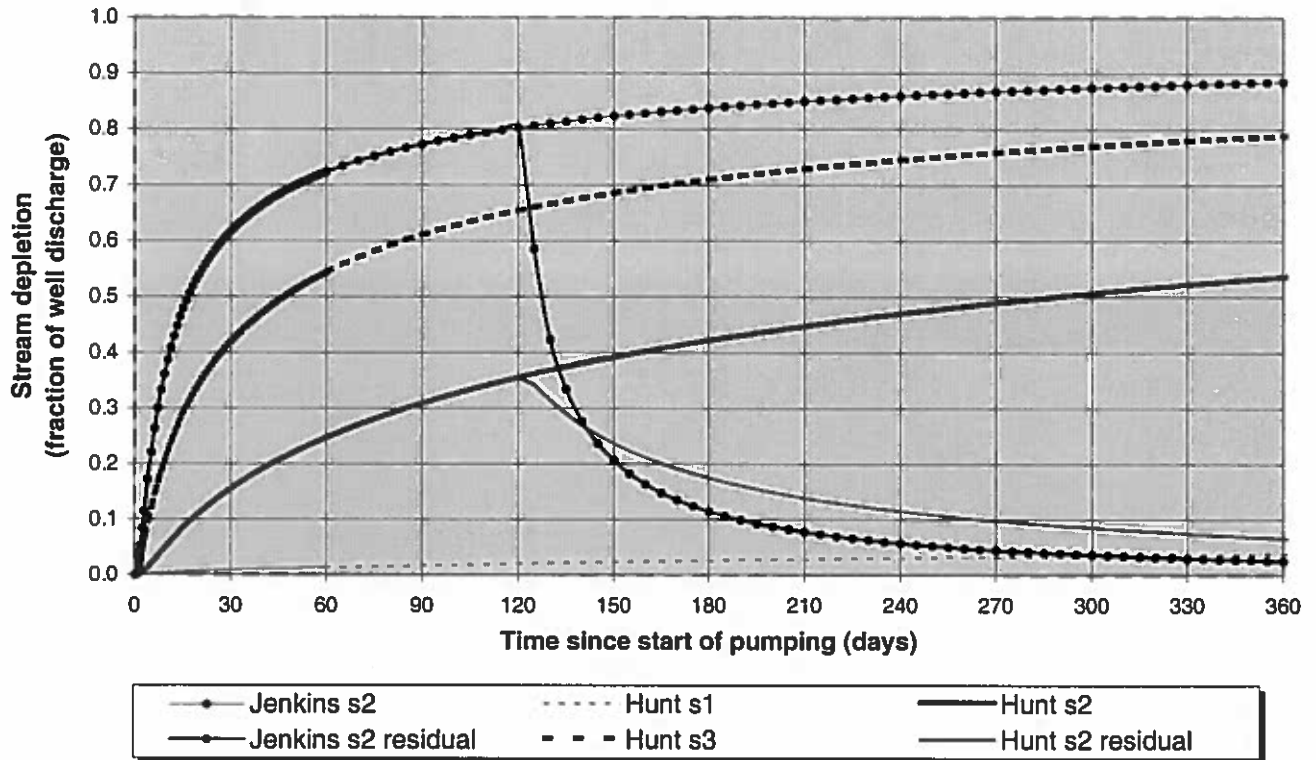
DETAILED REPORT OF INSTREAM REQUIREMENTS
 Water Availability as of 7/16/2004 for
 WHITE R > DESCHUTES R - AT MOUTH

Watershed ID #: 70088 Basin: DESCHUTES Exceedance Level: 80
 Date: 07/16/2004

APP #	201A			202A			70088A			ISWRs			MAXIMUM
	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.	Cert.		
1	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
2	95.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00	
3	95.00	145.00	145.00	145.00	145.00	145.00	0.00	0.00	0.00	0.00	0.00	145.00	
4	95.00	145.00	145.00	145.00	145.00	145.00	0.00	0.00	0.00	0.00	0.00	145.00	
5	95.00	145.00	145.00	145.00	145.00	145.00	0.00	0.00	0.00	0.00	0.00	145.00	
6	95.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00	0.00	0.00	100.00	
7	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
8	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
9	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
10	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
11	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	
12	60.00	60.00	60.00	60.00	60.00	60.00	0.00	0.00	0.00	0.00	0.00	60.00	

Transient Stream Depletion (Jenkins, 1970; Hunt, 1999)

G-16211



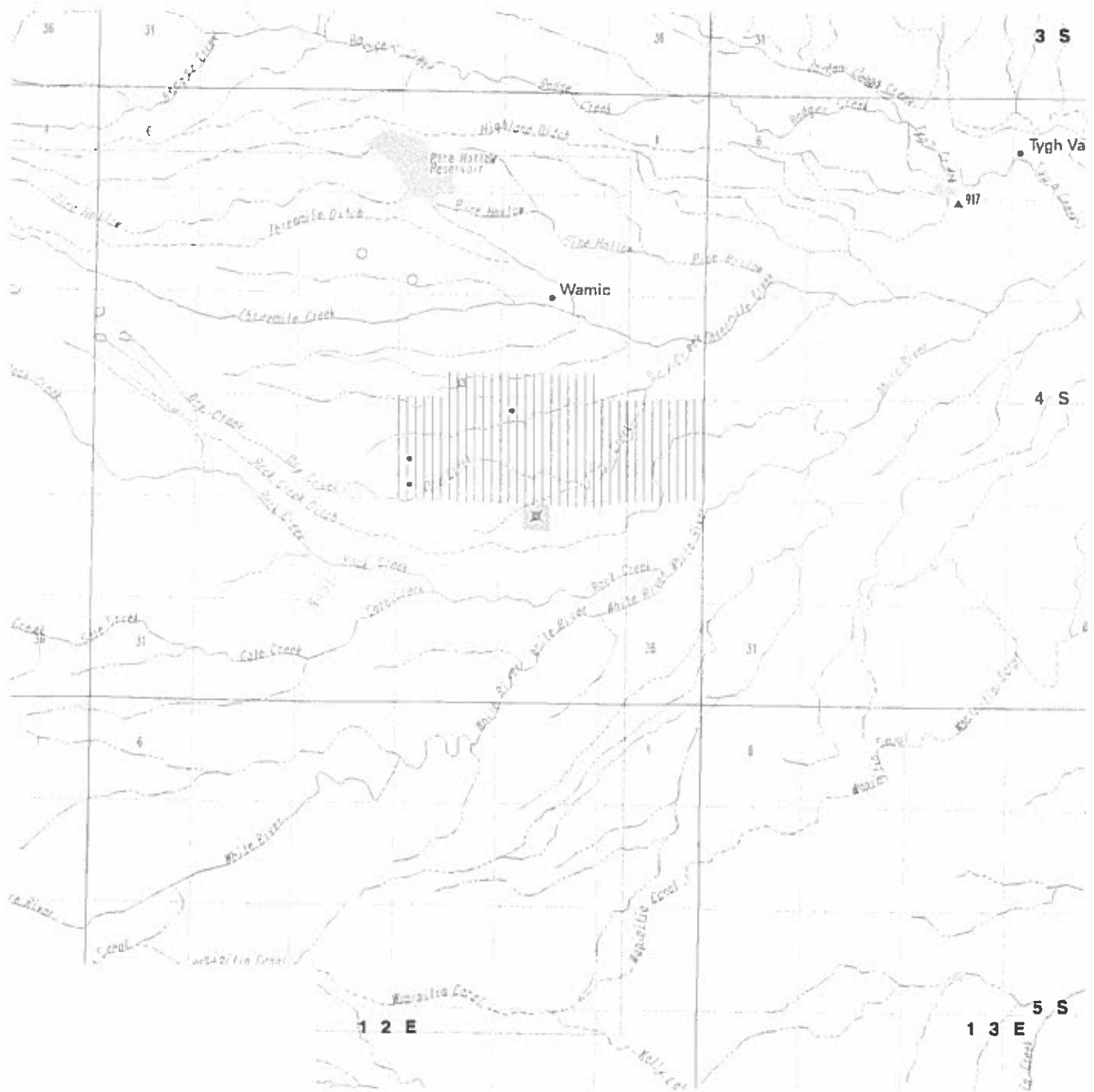
Output for Hunt Stream Depletion, Scenerio 2 (s2): Time pump on = 120 days

Days	30	60	90	120	150	180	210	240	270	300	330	360
Hunt SD s2	0.155	0.247	0.309	0.355	0.237	0.175	0.139	0.115	0.098	0.085	0.075	0.066
Qw, cfs	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110
H SD s2, cfs	0.172	0.275	0.343	0.394	0.263	0.194	0.154	0.127	0.108	0.094	0.083	0.074

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	1.11	1.11	1.11	cfs
Distance to stream	a	6000	6000	6000	ft
Aquifer hydraulic conductivity	K	50	20	50	ft/day
Aquifer thickness	b	600	600	600	ft
Aquifer transmissivity	T	30000	12000	30000	ft*ft/day
Aquifer storage coefficient	S	0.005	0.005	0.005	
Stream width	ws	25	25	25	ft
Streambed hydraulic conductivity	Ks	0.01	0.2	1	ft/day
Streambed thickness	bs	5	5	5	ft
Streambed conductance	sbc	0.05	1	5	ft/day
Stream depletion factor (Jenkins)	sdf	6	15	6	days
Streambed factor (Hunt)	sbf	0.01	0.5	1	

Wells in the vicinity of application G 16211

- Application well(s) in this 1/4-1/4 section
- Well(s) identified in this section from OWRD's well log database within 1 mi. radius of application well(s)
- Well(s) identified in this 1/4-1/4 section from OWRD's well log database within 1 mi. radius of application well(s)
- Well(s) identified in this 1/4-1/4 section from OWRD's well log database within 1 mi. radius of application well(s)
- Well(s) identified in this section from OWRD's well log database within 1 mi. radius of application well(s)
- Permitted well(s) in this 1/4-1/4 section within 1 mi. radius of application well(s)
- Conditioned, permitted well(s) in this 1/4-1/4 section within 5 mi. radius of application well(s)
- OWRD Observation well and well-id within 5 mi. radius of application well(s)
- Critical GW Area
- Regulated GW Area



WELL LOGS WITHIN 1 MILE OF APPLICATION G 16211

ABANDON: 0
 RECONDITIONED: 0
 REPAIRED: 0
 CONVERSION: 0
 DEEPENINGS: 2
 NEW CONSTRUCT: 4

COMMUNITY USE: 0
 DOMESTIC USE: 6
 INDUSTRIAL USE: 0
 INJECTION USE: 0
 IRRIGATION USE: 0
 THERMAL USE: 0
 LIVESTOCK USE: 0

PERMITTED WELLS WITHIN 1 MILE OF APPLICATION G 16211

\$RECNO	APPLICATION	PERMIT	CLAIM	LOC-QQ	USE_CODE
1	G	9518	G 8932	0 4.00S12.00E15SWSE	IR
2	G	16211	0	0 4.00S12.00E26NENW	IR
2	G	16211	0	0 4.00S12.00E26NENW	IS

CONDITIONED WELLS WITHIN 5 MILES OF APPLICATION G 16211

\$RECNO	APPLICATION	PERMIT	LOC-QQ	CONDITION-CODE
1	G	12798	G 12172 4.00S12.00E 9NWSE	7BG
1	G	12798	G 12172 4.00S12.00E 9NWSE	7BR
1	G	12798	G 12172 4.00S12.00E 9NWSE	7BG
1	G	12798	G 12172 4.00S12.00E 9NWSE	7BR
2	G	12798	G 12172 4.00S12.00E10SWSW	7BG
2	G	12798	G 12172 4.00S12.00E10SWSW	7BR
2	G	12798	G 12172 4.00S12.00E10SWSW	7BG
2	G	12798	G 12172 4.00S12.00E10SWSW	7BR

APPLICATION G 16211 FALLS WITHIN THESE QUAD(S)

WAMIC
