Water Right Conditions Tracking Slip

Groundwater/Hydrology Section

FILE #: G-17117

ROUTED TO: Water Rights

TOWNSHIP/
RANGE-SECTION: 16S/43E-13

CONDITIONS ATTACHED? [X] yes [ ] no

REMARKS OR FURTHER INSTRUCTIONS:

Reviewer: Mike Zwart

PUBLIC INTEREST REVIEW FOR GROUND WATER APPLICATIONS

TO: Water Rights Section Date **January 5, 2009**

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

SUBJECT: Application G- **17117** 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: **Aaron/Joseph Arriola** County: **Malheur**

A1. Applicant(s) seek(s) **0.38** cfs from **three** well(s) in the **Malheur** Basin, **Willow Creek** subbasin Quad Map: **Jamieson**

A2. Proposed use: **Irrigation, 50 acres** Seasonality: **February 15 to September 1**

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	**Not on file**	**1**	**Alluvium**	**0.126**	**16S/43E-13 NW-SW**	**1740' N, 20' E fr SW cor S 13**
2	**Not on file**	**2**	**Alluvium**	**0.126**	**16S/43E-13 NW-SW**	**1950' N, 850' E fr SW cor S 13**
3	**MALH 2725**	**3**	**Alluvium**	**0.126**	**16S/43E-13 SW-SW**	**1140' N, 980' E fr SW cor S 13**
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	**2450**											
2	**2465**											
3	**2455**	**27**	**18**	**3/6/92**	**70**	**0-18**	**0-43**	**None**	**25-41**	**350**	**18**	**P**

Use data from application for proposed wells.

A4. **Comments: Only one well log was included in the file, but the applicant reported in a phone conversation on 01/02/2009 that the three wells are constructed similarly. These wells were previously reviewed as part of application G-13026 in 1993 and 1996.**

A5. ☒ **Provisions of the Malheur** 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: _____

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) **7C**;
   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: SOW # 569 (MALH 252) is relatively close and the water level may either be declining slightly or responding to recent or nearby pumping in recent years. Marshall Gannett questioned the suitability of this well based on a lack of information about the water-bearing zone (likely the Glenns Ferry formation) and lithology. Ground-water development is fairly limited in this area and I believe that water is available without causing excessive declines or substantial interference.**

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
All	**Sand and gravel, Quaternary alluvium (Qal)**	☐	☒
		☐	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: **Ground water report #34 describes the shallow gravel aquifer developed as poorly confined to unconfined. The brown clay commonly described in well logs overlying the sand and gravel aquifer has been microscopically examined by Gannett and determined to be silt which contains very little actual clay.**

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**	**Willow Creek**	**2437±**	**2439**	**2900**	☒	☐	☐	☐	☒
2	**1**	**Willow Creek**	**2437±**	**2439**	**3650**	☒	☐	☐	☐	☒
3	**1**	**Willow Creek**	**2437±**	**2438**	**3200**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: **The unconfined aquifer developed and the close head relationship suggest an efficient hydraulic connection wixth the creek.**

Water Availability Basin the well(s) are located within: **Willow Creek > Malheur River at mouth (31011901).**

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?
All	**1**	☐	☐			☐	**6.52**	☒	**<25%**	☒
		☐	☐			☐	**(Aug.)**	☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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?
	1		☐			☐	**6.52**	☒	**<25%**	☒
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: **The 80% flow for September is 4.45 cfs (the proposed season includes September 1).**

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													
		%	%	%	%	%	%	%	%	%	%	%	%
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: **Ground Water Report #34 by Marshall Gannett; local well logs; local reviews, especially G-13026 & G-16975.**

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** 1, 2 **Logid:** Not on file

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:** There is no information to judge whether the wells meet current standards.

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 January 5, 2009

TO: **Application G-** 17117

FROM: **GW:** Mike Zwart
(Reviewer's Name)

SUBJECT: **Scenic Waterway Interference Evaluation**

____YES
_✓_NO The source of appropriation is within or above a Scenic Waterway

____YES
_✓_NO Use the Scenic Waterway condition (Condition 7J)

____Per ORS 390.835, the Ground Water Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below.

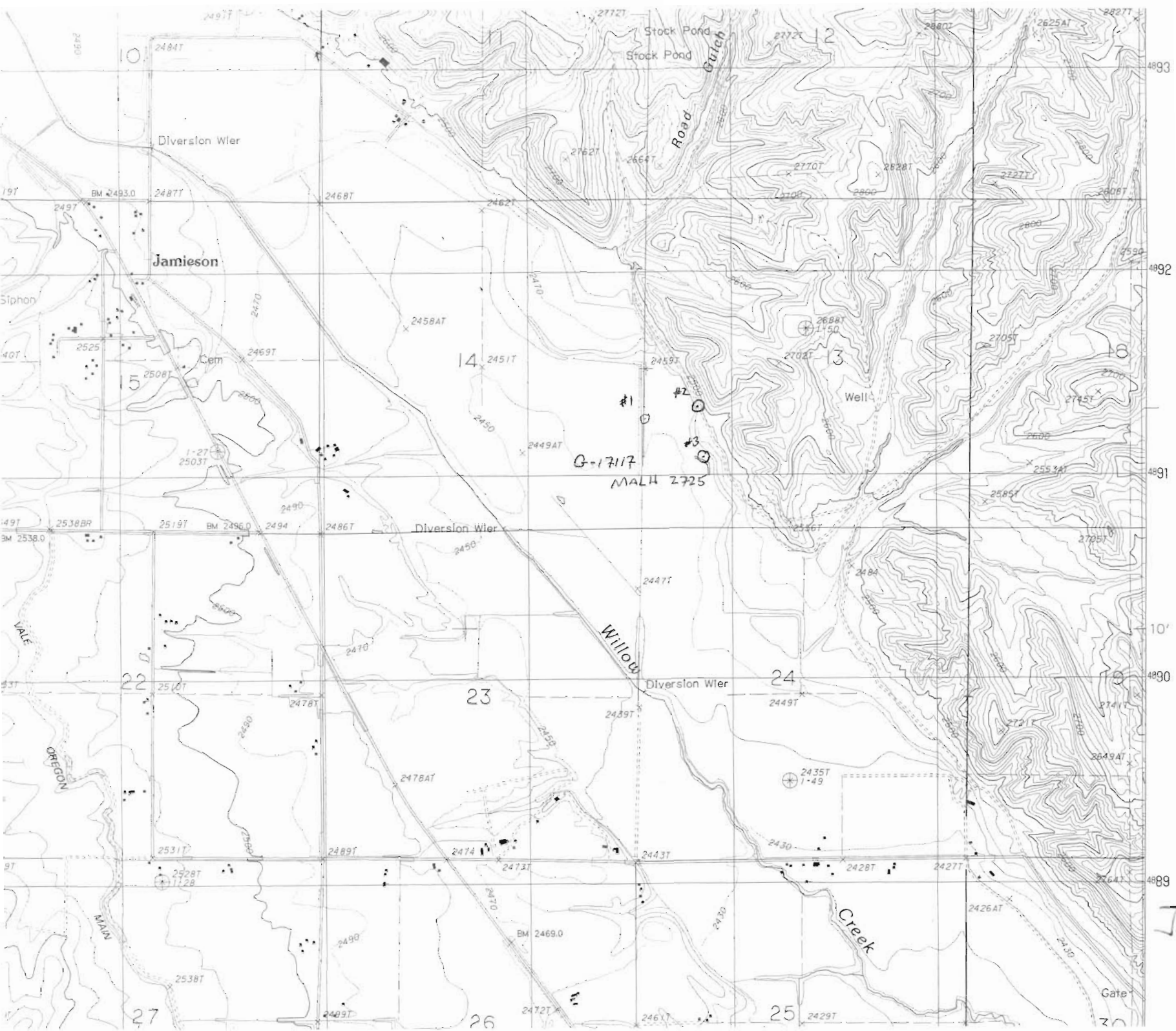
____Per ORS 390.835, the Ground Water Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface 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 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


Stock Pond
Stock Pond
Gulch
Road
Diversion Wier
Jamieson
Siphon
Cem
Well
#1
#2
#3
G-17117
MALH 2725
Diversion Wier
Willow
Diversion Wier
Creek
OREGON
MAIN
VALE
BM 2493.0
BM 2496.0
BM 2469.0
I-27
I-49
I-84
Gate
Jamieson

Ground Water

Oregon Water Resources Department
(503)378-8455 • 158 12th St. NE, Salem, OR 97310

Hydrograph for State Well MALH 252, State Observation Well # 569

Well Location	16.00S43.00E16DCX
Oregon Water Resources Department Well Log ID	MALH 252
Oregon Water Resources Department State Observation Well Number	569
Well depth, in feet below land surface	930
Land surface elevation, in feet above mean sea level	
Primary use of well	not determined

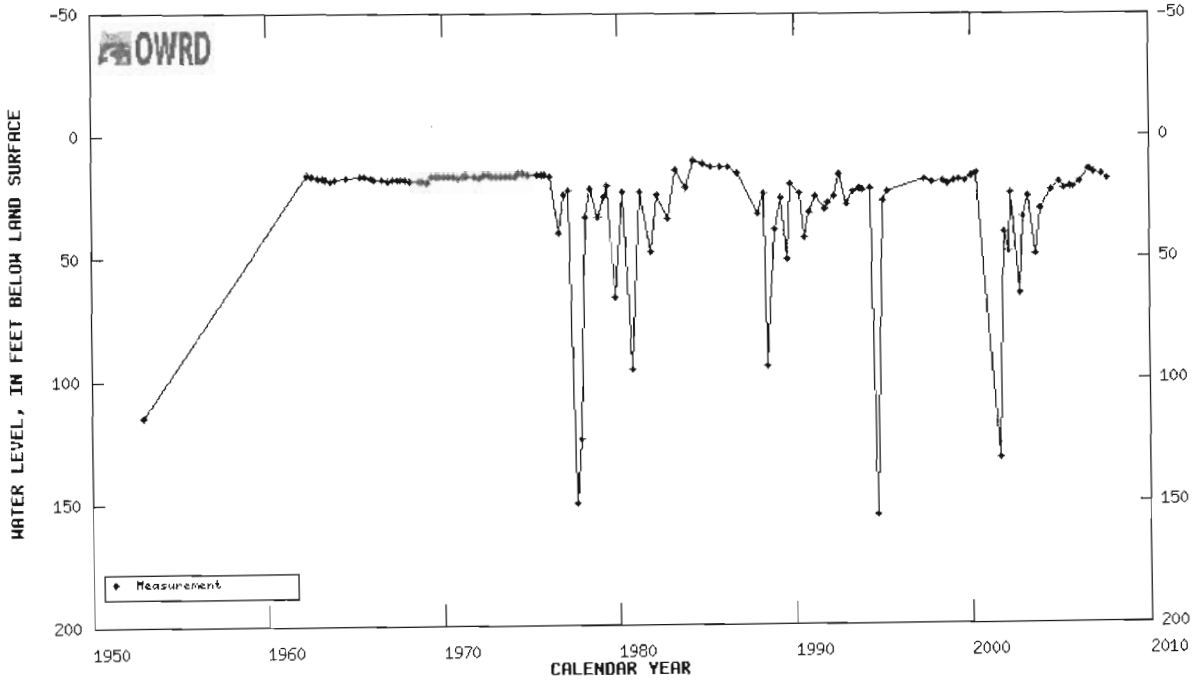


Table showing water-level data for State Well MALH 252, State Observation Well # 569

Water Availability Analysis

WILLOW CR> MALHEUR R- AT MOUTH
MALHEUR BASIN
Water Availability as of 1/2/2009

Watershed ID #: 31011901
Date: 1/2/2009

Exceedance Level: 80%
Time: 2:52 PM

Water Availability

Select any Watershed for Details

Nesting Order	Watershed ID #	Stream Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sto
1	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	No	No	No	No	No	No	No	No	No	No	No	No
2	**31011901**	**WILLOW CR> MALHEUR R- AT MOUTH**	No	No	No	No	No	No	No	No	No	No	No	No	No

Limiting Watersheds

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Limiting Watershed ID #	Stream Name	Water Available?	Net Water Available
Jan	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-291.00
Feb	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-416.00
Mar	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-656.00
Apr	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-630.00
May	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-495.00
Jun	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-570.00
Jul	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-551.00
Aug	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-448.00
Sep	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-299.00
Oct	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-112.00
Nov	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-99.80
Dec	31011701	MALHEUR R> SNAKE R- AT MOUTH	No	-180.00
Storage Acre-Feet at 50%	31011901	WILLOW CR> MALHEUR R- AT MOUTH	No	0.00

Detailed Reports for Watershed ID #31011701

MALHEUR R> SNAKE R- AT MOUTH
MALHEUR BASIN
Water Availability as of 1/2/2009

Watershed ID #: 31011701
Date: 1/2/2009

Exceedance Level: 80%
Time: 2:52 PM

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	154.00	427.00	-273.00	18.20	0.00	-291.00
Feb	267.00	626.00	-359.00	57.00	0.00	-416.00
Mar	467.00	911.00	-444.00	212.00	0.00	-656.00
Apr	780.00	1,060.00	-278.00	352.00	0.00	-630.00
May	524.00	957.00	-433.00	61.10	0.00	-495.00
Jun	324.00	857.00	-533.00	37.80	0.00	-570.00
Jul	150.00	687.00	-537.00	14.10	0.00	-551.00
Aug	99.90	540.00	-440.00	7.86	0.00	-448.00
Sep	83.80	375.00	-292.00	6.97	0.00	-299.00
Oct	106.00	209.00	-103.00	8.94	0.00	-112.00
Nov	135.00	223.00	-87.80	12.00	0.00	-99.80
Dec	132.00	298.00	-166.00	14.60	0.00	-180.00
Storage Acre-Feet at 50%	338,000.00	432,000.00	29,500.00	48,200.00	0.00	0.00

Detailed Report of Consumptive Uses and Storages

Consumptive Uses and Storages in Cubic Feet per Second

Month	Storage	Irrigation	Municipal	Industrial	Commercial	Domestic	Agricultural	Other	Total
Jan	404.00	0.00	1.58	0.03	0.00	20.30	0.81	0.00	427.00
Feb	603.00	0.00	1.58	0.03	0.00	20.30	0.81	0.00	626.00
Mar	840.00	48.40	1.58	0.03	0.00	20.30	0.81	0.00	911.00
Apr	682.00	353.00	1.58	0.13	0.00	20.30	0.81	0.00	1,060.00
May	137.00	797.00	1.58	0.03	0.00	20.30	0.81	0.00	957.00
Jun	82.00	750.00	3.15	0.03	0.00	20.30	0.81	0.00	857.00
Jul	31.70	631.00	3.15	0.03	0.00	20.30	0.81	0.00	687.00
Aug	19.40	496.00	3.15	0.03	0.00	20.30	0.81	0.00	540.00
Sep	17.80	333.00	3.15	0.03	0.00	20.30	0.81	0.00	375.00
Oct	58.20	128.00	1.58	0.03	0.00	20.30	0.81	0.00	209.00
Nov	200.00	0.00	1.58	0.03	0.00	20.30	0.81	0.00	223.00
Dec	275.00	0.00	1.58	0.03	0.00	20.30	0.81	0.00	298.00

Detailed Report of Reservations for Consumptive Use

Reserved Streamflow in Cubic Feet per Second

Application #	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RN81001A	11.50	28.20	161.00	276.00	38.70	23.10	8.91	5.48	5.03	6.53	8.22	9.23
RN81002A	6.66	28.80	50.80	75.80	22.40	14.70	5.23	2.38	1.94	2.41	3.80	5.36
Total	18.16	57.00	211.80	351.80	61.10	37.80	14.14	7.86	6.97	8.94	12.02	14.59

Detailed Report of Instream Requirements

Instream Requirements in Cubic Feet per Second

There are no Instream Requirements for this Watershed

Detailed Reports for Watershed ID #31011901

WILLOW CR> MALHEUR R- AT MOUTH
MALHEUR BASIN
Water Availability as of 1/2/2009

Watershed ID #: 31011901
Date: 1/2/2009

Exceedance Level: 80%
Time: 2:52 PM

Water Availability Calculation

Monthly Streamflows in Cubic Feet per Second
Storage at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirement	Net Water Available
Jan	13.70	22.00	-8.30	0.00	0.00	-8.30
Feb	32.50	82.70	-50.20	0.00	0.00	-50.20
Mar	54.40	141.00	-86.20	0.00	0.00	-86.20
Apr	71.40	182.00	-110.00	0.00	0.00	-110.00
May	58.70	216.00	-158.00	0.00	0.00	-158.00
Jun	44.30	182.00	-138.00	0.00	0.00	-138.00
Jul	15.40	96.60	-81.20	0.00	0.00	-81.20
Aug	6.52	60.80	-54.30	0.00	0.00	-54.30
Sep	4.45	40.50	-36.10	0.00	0.00	-36.10
Oct	6.77	8.11	-1.34	0.00	0.00	-1.34
Nov	7.26	11.60	-4.32	0.00	0.00	-4.32
Dec	9.14	14.60	-5.44	0.00	0.00	-5.44
Storage Acre-Feet at 50%	36,500.00	63,800.00	1,790.00	0.00	0.00	1,790.00

Detailed Report of Consumptive Uses and Storages

Consumptive Uses and Storages in Cubic Feet per Second

Month	Storage	Irrigation	Municipal	Industrial	Commercial	Domestic	Agricultural	Other	Total
Jan	21.90	0.00	0.00	0.00	0.00	0.08	0.07	0.00	22.00
Feb	82.60	0.00	0.00	0.00	0.00	0.08	0.07	0.00	82.70
Mar	129.00	11.10	0.00	0.00	0.00	0.08	0.07	0.00	141.00
Apr	117.00	64.30	0.00	0.00	0.00	0.08	0.07	0.00	182.00
May	60.70	155.00	0.00	0.00	0.00	0.08	0.07	0.00	216.00
Jun	47.50	134.00	0.00	0.00	0.00	0.08	0.07	0.00	182.00
Jul	18.20	78.20	0.00	0.00	0.00	0.08	0.07	0.00	96.60
Aug	7.98	52.70	0.00	0.00	0.00	0.08	0.07	0.00	60.80
Sep	6.34	34.00	0.00	0.00	0.00	0.08	0.07	0.00	40.50
Oct	7.77	0.19	0.00	0.00	0.00	0.08	0.07	0.00	8.11
Nov	11.40	0.00	0.00	0.00	0.00	0.08	0.07	0.00	11.60
Dec	14.40	0.00	0.00	0.00	0.00	0.08	0.07	0.00	14.60

Detailed Report of Reservations for Consumptive Use