PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date **06/11/2015**

FROM: Groundwater Section **Phillip I. Marcy / Ivan K. Gall**
Reviewer's Name

SUBJECT: Application G- **18002** 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 groundwater 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: **William L. and Cindy R. Romans** County: **Malheur**

A1. Applicant(s) seek(s) **3.11** cfs from **2** well(s) in the **Malheur** Basin, **Bully Creek** subbasin

A2. Proposed use **Supplemental Irrigation (448.5 acres)** Seasonality: **March 1st to October 31st (245 days)**

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	MALH 723	1	Basalt and ash	3.11	18S/41E-26 NW-SE	1740'N, 2360'W fr SE cor S 26
2	MALH 53231	2	Basalt	3.11	18S/41E-25 SW-SW	3340'N, 850'E fr SW cor S 25
3						

* 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	2903	220	180	04/30/1987	590	0-36	+1.5-250	None	130-240	1320	5	?
2	2889	220	168	10/20/2007	450	0-176	+2-176	None	None	1550	Na	Air

Use data from application for proposed wells.

A4. **Comments:** Both wells are located within ¼ mile of Bully Creek and are subject to Division 9 rules. Well 1 (MALH 723) has been cased to 250 feet into a thick sequence of volcanic ash, with perforations located within a basalt flow and upper volcanic ash deposit. Well 2 (MALH 53231) is continuously cased and sealed into the upper 10 feet of an unfractured basalt flow. The applicant wishes to have the option to produce water from either well, therefore the full requested rate will be used to evaluate both proposed POAs.

A5. ☒ **Provisions of the** Malheur (690-510) Basin rules relative to the development, classification and/or management of groundwater 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. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based 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. ☐ **will not** *or* ☐ **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) _____;
   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 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 **Fractured basalt** groundwater reservoir between approximately **220** ft. and **440** 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): MALH 723 is not properly sealed into a confining unit, and has the potential to comingle waters from the shallow alluvial aquifer and the deeper basalt aquifer system. The shallow alluvial aquifer system is likely in good hydraulic connection to nearby Bully Creek, and would trigger PSI according to Division 9 rules. Therefore, if a permit is issued, MALH 723 would require reconstruction in order to be used for production of groundwater. Required changes to the current construction include a seal depth at least 5 feet into unfractured basalt overlying the designated fractured basalt production zone, and replacing the existing length of 14" casing with unperforated casing having a thickness of at least 0.250 inches (currently 0.219).

B3. **Groundwater availability remarks:** Groundwater elevation data from nearby State Observation Well 573 (MALH 711) shows fluctuations of less than 7 feet through the past 40 years. This is a shallow well, reported at only 49 feet in depth, and may not represent the deeper aquifer system the applicant is proposing to produce groundwater from. Groundwater levels in the applicant's well 1 (MALH 723) are very near their original elevation upon completion of the well in 1987 (see attached).

Local geologic maps (Ferns and others, 1993) place the applicant's wells in Quaternary alluvium, with outcrops of two separate basalt units nearby. Well logs for the applicant's wells show a thick sequence of ash above water-bearing basalts in each well that is most likely Bully Creek Formation (Tsbc) and/or Tuff of Bully Creek (Ttbl). In this context, the fractured basalt at depth is probably the Hunter Creek Basalt (Tbhc) of Miocene age.

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	**Basalt**	☒	☐
2	**Basalt**	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Well logs for both wells show head elevations significantly higher than the elevations of their respective water-bearing zones. Groundwater elevations in both wells are vastly different than those at nearby MALH 711 (see attached), which likely reflect the shallow alluvial aquifer system in connection with local surface waters with similar head elevations. **The evaluation of aquifer confinement in well 1 (MALH 723) relies on well reconstruction as described in Section D. Without this reconstruction, this well shall not be used for production of groundwater.**

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	**Bully Creek**	**2727**	**2894**	**120**	☐	☒	☐	☐	☒
2	1	**Bully Creek**	**2708**	**2887**	**420**	☐	☒	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Head elevations in wells are much lower (>150 feet) than surface waters within 1 mile. If a hydraulic connection to Bully Creek from the proposed groundwater source exists, it is likely greater than 25,000 feet away, where the surface water elevation in the creek corresponds to the groundwater elevation in the applicant's well. No springs were located nearby. **Note that the evaluation of hydraulic connection for the applicant's well 1 (MALH 723) relies on well reconstruction described in Section D.**

Water Availability Basin the well(s) are located within: Bully Cr > Malheur R – AB Unn Stream

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?
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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: 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-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: This section does not apply.

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 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:** Little data is available pertaining to the capacity of the aquifer system developed by the applicant's wells. Due to the increased demand on this system imposed by recent drought conditions, additional caution should be taken when approving new rights. Therefore, if a permit is issued, the following condition should be applied:

Modified Condition 7N -- The water user shall discontinue the use of, or reduce the rate or volume of withdrawal from, the well(s) if any of the following events occur:

A. Annual water-level measurements reveal an average water-level decline of **two or more feet per year for three consecutive years**; or
B. Annual water-level measurements reveal a water level decline of **6 or more feet** in fewer than five consecutive years; or
C. Annual water-level measurements reveal a water-level decline of **10 or more feet**; or
D. Hydraulic interference leads to a decline of **10 or more feet** in any neighbouring well with senior priority.

References Used:

Ferns. M.L., H.C. Brooks, J.G. Evans, M.L. Cummings. 1993. Geologic map of the Vale 30x60 minute quadrangle, Malheur County, Oregon and Owyhee County, Idaho. Oregon Dept. of Geology and Mineral Industries Geological Map Series 77.

Gannett, M. W. 1990. Hydrogeology of the Ontario Area Malheur County, Oregon. Oregon Water Resources Dept. Ground Water Report No. 34. 39p.

Local well logs, Application file G-18002, Water level measuremems from applicant's wells.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** 85261 **Logid:** MALH 723

D2. **THE WELL does not appear to 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 or other comment is described as follows:** The seal depth is not adequate to prevent production from shallower zones within the well, and also has the potential to comingle groundwater from multiple aquifer systems. In order to correct this deficiency, the well shall be continuously cased and sealed to a depth at least 5 feet into the consolidated bedrock above the water-bearing zone within the well. In addition, the entire length of 14" casing shall be replaced with unperforated casing having a thickness of at least 0.250 inches, in accordance with current well construction standards.

D4. ☒ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION

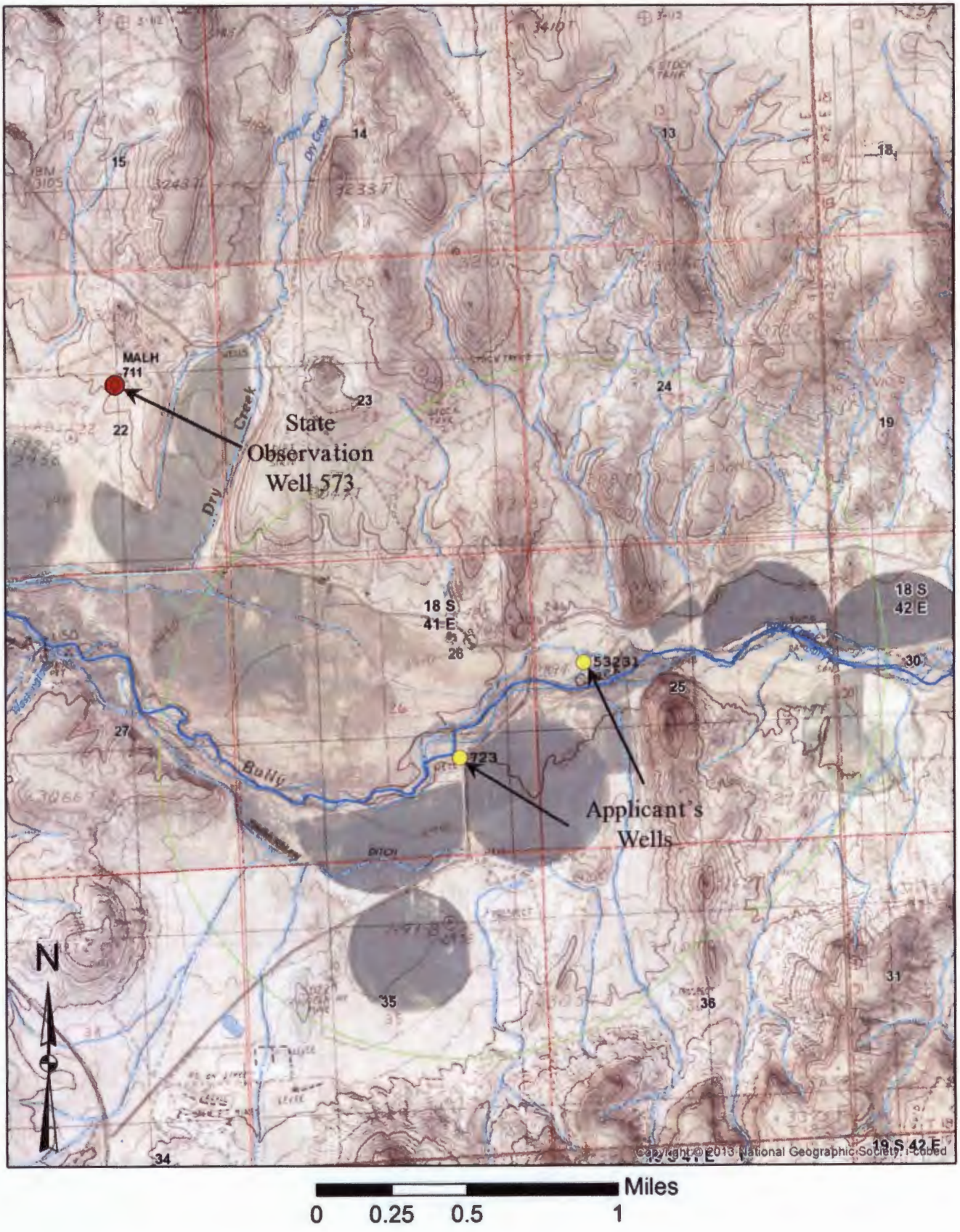
BULLY CR > MALHEUR R - AB UNN STR
Basin: MALHEUR

Watershed ID #: 71451
Time: 2:09 PM

Exceedance Level: 80
Date: 06/11/2015

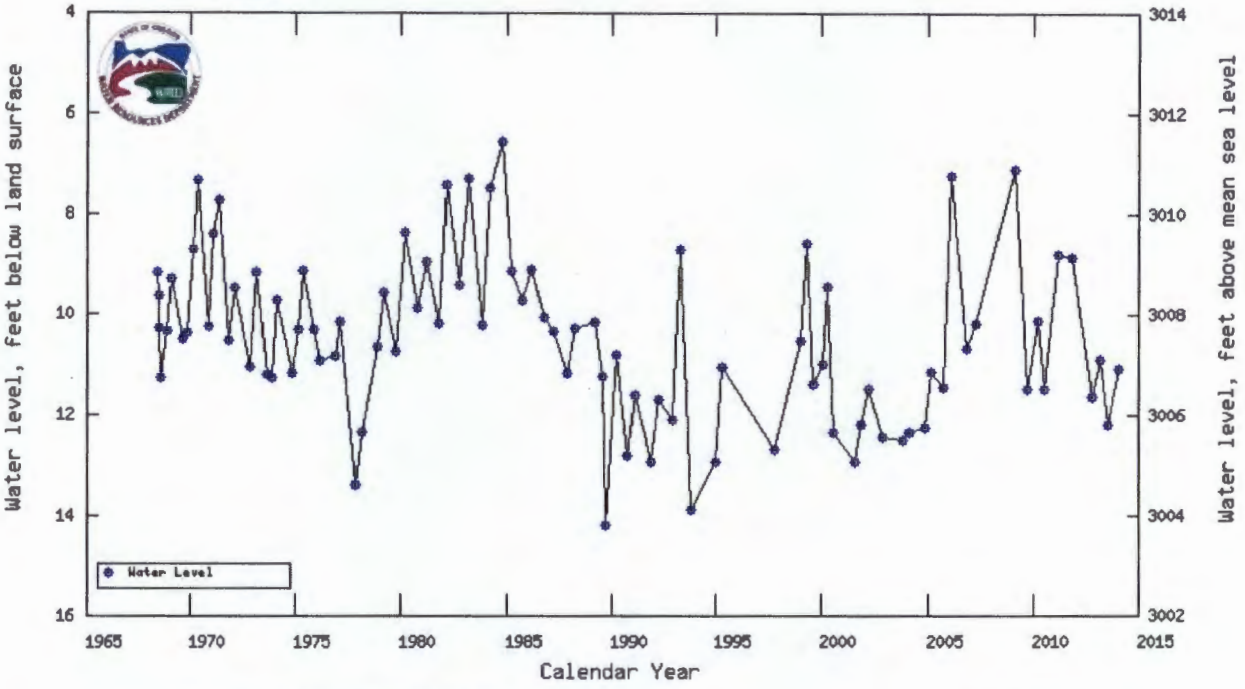
Month	Natural Stream Flow	Consumptive Use and Storage	Expected Stream Flow	Reserved Stream Flow	Instream Requirements	Net Water Available
	Monthly values are in cfs. Storage is the annual amount at 50% exceedance in ac-ft.					
JAN	9.41	1.31	8.10	0.00	10.00	-1.90
FEB	21.20	5.31	15.90	0.00	10.00	5.89
MAR	37.40	14.30	23.10	0.00	10.00	13.10
APR	51.70	38.30	13.40	0.00	12.00	1.38
MAY	35.60	80.30	-44.70	0.00	12.00	-56.70
JUN	26.70	64.60	-37.90	0.00	12.00	-49.90
JUL	9.60	21.70	-12.10	0.00	12.00	-24.10
AUG	4.10	8.74	-4.64	0.00	8.83	-13.50
SEP	2.90	4.65	-1.75	0.00	6.02	-7.77
OCT	3.90	2.55	1.35	0.00	6.32	-4.97
NOV	4.70	0.76	3.94	0.00	8.83	-4.89
DEC	6.20	0.91	5.29	0.00	10.00	-4.71
ANN	23,400	14,700	13,800	0	7,120	10,100

Well Location Map

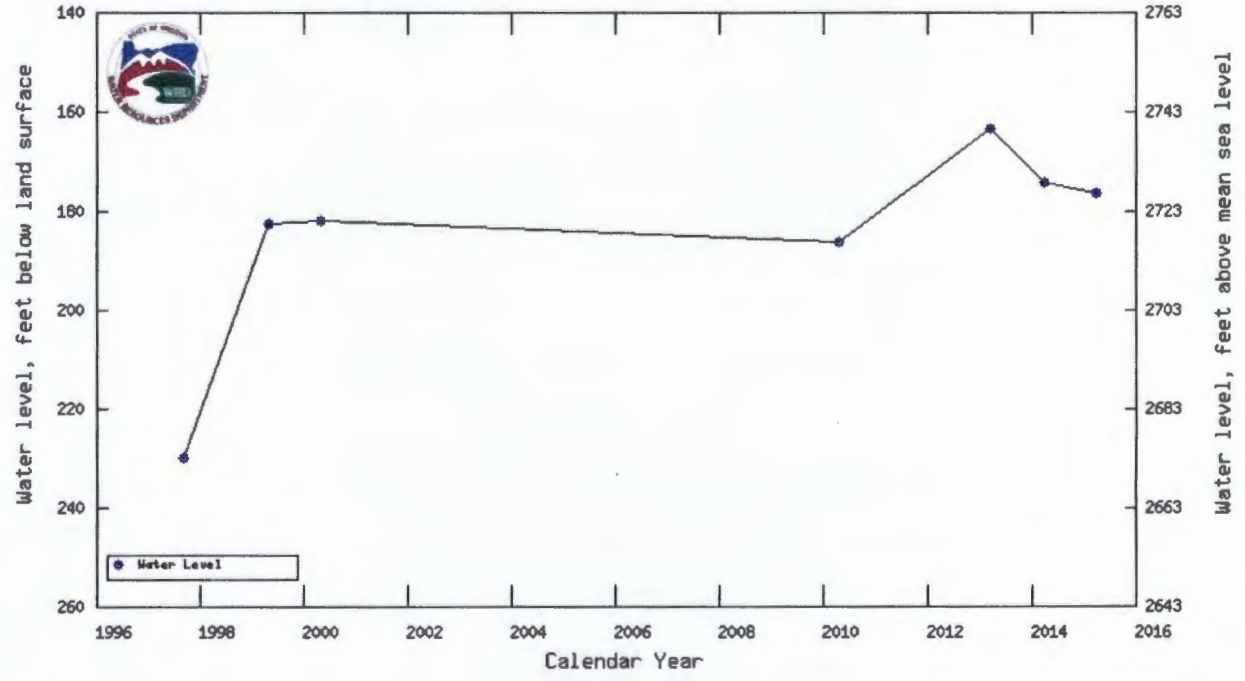


Water-Level Trends in Nearby Wells

Oregon Water Resources Department (OWRD) Well Location	18.00S/41.00E-22AC
OWRD Logid	MALH 711
OWRD Well Tag (Well ID)	----
OWRD State Observation Well Number	573
Total well depth (feet below land surface)	49
Land surface elevation (feet above mean sea level)	3018
Primary use of well	----
Primary aquifer system	----



Oregon Water Resources Department (OWRD) Well Location	18.00S/41.00E-26DB
OWRD Logid	MALH 723
OWRD Well Tag (Well ID)	----
OWRD State Observation Well Number	----
Total well depth (feet below land surface)	590
Land surface elevation (feet above mean sea level)	2903
Primary use of well	----
Primary aquifer system	----



WATER WELL REPORT RECEIVED
STATE OF OREGON

JUN 1 - 1987 PLEASE TYPE or PRINT IN INK

Malh 723 (Malh) 723 State Well No. 18S/41E-26db
State Permit No.
Township should be S.

1) OWNER: WATER RESOURCES DEPT. SALEM, OREGON
Name B.N.GLANVILLE
Address P.O.BOXXX 123
City WESTFALL, State OREGON

2) TYPE OF WORK (check):
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

3) TYPE OF WELL:
Rotary Air ☒ Driven ☐
Rotary Mud ☐ Dug ☐
☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐
Thermal: Withdrawal ☐ Reinjection ☐

CASING INSTALLED: Steel ☐ Threaded ☐ Plastic ☐ Welded ☒
16" Diam. from +18" ft. to 120 ft. Gauge .250
14" Diam. from 110 ft. to 250 ft. Gauge .219

LINER INSTALLED: none
" Diam. from ft. to ft. Gauge

(6) PERFORATIONS: Perforated? ☒ Yes ☐ No
Type of perforator used Factory
Size of perforations 3 in. by 1/8 in.
2926 perforations from 130 ft. to 240 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
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? owner
Yield: 1320 gal./min. with 5 ft. drawdown after 3 hrs.
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION: Special standards: Yes ☐ No ☒
Well seal—Material used bentonite
Well sealed from land surface to 30' ft.
Diameter of well bore to bottom of seal 24 in.
Diameter of well bore below seal 16 in.
Number of sacks of cement used in well seal 34 sacks
How was cement grout placed? dry & poured

Was pump installed? no Type HP Depth ft.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was well gravel packed? ☐ Yes ☒ No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:
County Malheur Driller's well number 1
NW ¼ SE ¼ Section 26 T. 18 N R. 41E W.M.
Tax Lot # Lot Blk Subdivision
Address at well location:

(11) WATER LEVEL: Completed well.
Depth at which water was first found 220 ft.
Static level 180 ft. below land surface. Date 4/30
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 16" & 12¼
Depth drilled ft. Depth of completed well ft.
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 position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
a sand & gravel	0	21	
sand & gravel	21	31	
brown clay	31	100	
volcanic ash	100	184	
volcanic ash	184	220	x180
basalt	220	230	180
light gray volcanic ash	230	240	180
light blue volcanic ash	240	250	180
light blue volcanic ash	250	255	180
light brown volcanic ash	255	270	180
black basalt	270	280	180
light blue volcanic ash	280	340	180
volcanic ash	340	420	180
fractured basalt	420	590	180
			180

Work started 4/27 19 87 Completed 5/27 1987
Date well drilling machine moved off of well 5/27 1987

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Date 19

Bonded Water Well Constructor Certification:
Bond RD7900512644 Issued by ALLIED INS. GROUP/NEAL GOFF
(number) Surety Company Name
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name BILL DOTY DRILLING CO., INC.
(Person, firm or corporation) (Type or print)
Address ROUTE #7 Box 311 Caldwell, Idaho 83605
[Signed] Roberta Doty for William E. Doty
Water Well Constructor
Date 5/28, 1987

NOTICE TO WATER WELL CONSTRUCTOR
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.

SP*45393-690

MALH 53231

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

WELL I.D. # L 91014
START CARD # 1000743

Instructions for completing this report are on the last page of this form.

(1) LAND OWNER Well Number
Name MAYNARD ALVES
Address 16301 NORTHWEST O'NEIL HWY
City REDMOND State OR Zip 97756

(2) TYPE OF WORK ☑ New Well
☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment ☐ Conversion

(3) DRILL METHOD
☑ Rotary Air ☑ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud
☐ Other

(4) PROPOSED USE
☐ Domestic ☐ Community ☐ Industrial ☑ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION Special Construction: ☐ Yes ☑ No
Depth of Completed Well 450 ft.
Explosives used: ☐ Yes ☑ No Type Amount

BORE HOLE Diameter	From	To	Material	SEAL From	To	Sacks or Pounds
20	0	176	CEMENT	0	176	15,000
14	176	350				
10	350	450				

How was seal placed: Method ☐ A ☐ B ☑ C ☐ D ☐ E
☐ Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	14	+2	176	44	☑	☐	☑	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Drive Shoe used ☐ Inside ☑ Outside ☐ None
Final location of shoe(s) 176

(7) PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Type Material

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour
☑ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
1550	0	260	6 HR

Temperature of water 62° Depth Artesian Flow Found
Was a water analysis done? ☐ Yes By whom
Did any strata contain water not suitable for ☐ Too little
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other
Depth of strata: 2-60

RECEIVED
NOV 05 2007
WATER RESOURCES DEPT
SALEM, OREGON

(9) LOCATION OF WELL (legal description)
County MALHEUR
Tax Lot 2600 Lot
Township 18S N or S Range 41E E or W WM
Section 25 SW 1/4 SW 1/4
Lat 43° 58' 39" or (degrees or decimal)
Long 117° 38' 39" or (degrees or decimal)
Street Address of Well (or nearest address) 500 YD EAST OF STAGE & DAHLE RD

(10) STATIC WATER LEVEL
168 ft. below land surface. Date 10-20-07
ft. below land surface. Date
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES
Depth at which water was first found 2

From	To	Estimated Flow Rate	SWL
2	60	300	2
220	440	3000+	168

(12) WELL LOG Ground Elevation

Material	From	To	SWL
Gravel	0	60	2
Clay DRK Brown	60	83	
Clay Green W/Coarse Shell Mix	83	152	
ASCOLIA	152	166	
BASALT	166	220	
FRACTURED BASALT	220	440	168
BASALT	440	450	

Date Started 3-20-07 Completed 10-20-07

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number Date
Signed

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 1867 Date 11-1-07
Signed Alan Winterton

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