

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 06/04/2015  
 FROM: Groundwater Section Phillip I. Marcy / Ivan K. Gall  
Reviewer's Name  
 SUBJECT: Application G- 17962 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: Daryl and Joan DeLong County: Malheur

- A1. Applicant(s) seek(s) 1.00 cfs from 1 well(s) in the Malheur Basin,  
Willow Creek subbasin
- A2. Proposed use Supplemental Irrigation (186.9 acres) Seasonality: March 1<sup>st</sup> to October 31<sup>st</sup> (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 2606	1	Alluvium	1.0	17S/43E-1 SE-SE	396'N, 1092'W fr SE cor S 1
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	2494	40	33	05/20/1991	200	0-40	+1-64	None	44-64	450	110	Pump

Use data from application for proposed wells.

- A4. **Comments:** The applicant's well (MALH 2606) is constructed to produce water from sands and gravels of the Glenss Ferry Formation . The stated yield on the well log matches the proposed rate on this application.
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- 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) **7T-measuring tube condition** \_\_\_\_\_;
  - 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 \_\_\_\_\_ 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): \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

B3. **Groundwater availability remarks:** The applicant’s well (MALH 2606) will produce from lacustrine and fluvial sediments assigned to the Glens Ferry Formation by Ferns et al. (1993) and part of the Lake Idaho Group. These sediments consist mainly of lacustrine silt and clay but contain numerous lenses of mixed coarse sand and gravel deposits – which make up the most productive parts of the aquifer.

Groundwater elevations in this area have remained stable in wells where long-term records have been maintained (Figure 2). To this point, groundwater development has been fairly limited in this area, and water is likely available without injury to nearby groundwater rights. With limited groundwater data in the area, however, it is difficult to predict the effects of increasing groundwater use. Therefore, the issuance of new groundwater rights should be approached with caution.

If approved, the permit shall contain the following special condition:

**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.

**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	Sand and Gravel lenses of the Glenns Ferry Formation	<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"/>

**Basis for aquifer confinement evaluation:** The complex assemblage of volcanoclastic and fluvial sediments in the area creates a groundwater flow system that is likely quite heterogeneous. Therefore, the degree of confinement may be highly localized as evidenced by common hydraulic head elevations occurring at different elevations of water-bearing zones. Although considerable silt / clay layers may exist, the sediments are generally unconfined to leaky-confined based on first-water vs. SWL and according to Gannett (1990).

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	Willow Creek	2462	2445	9800	<input checked="" type="checkbox"/>	<input 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"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** The perennial reach of Kern Creek begins immediately downslope of the Vale Oregon Main Canal, and is fed primarily by irrigation runoff (personal communication with Ron Jacobs, 05/19/2015) and so will not be evaluated for PSI. The common elevations of surface and groundwater below the canal may exhibit an artificial gradient imposed by canal leakage and infiltration of excess irrigation water. Gannett (1990) indicates the valleys in the Vale-Ontario area are groundwater discharge areas and there is an upward gradient from the Glenns Ferry Formation to the alluvium above which is hydraulically connected to the Malheur River and its tributaries, including Willow Creek.

**Water Availability Basin the well(s) are located within:** Kern Creek > Willow Creek – At Mouth (31011903)

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"/>

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"/>

**Comments:** There are no perennial streams within 1 mile of the proposed POA location.

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	1	%	%	0.0%	0.00%	0.00%	0.01%	0.06%	0.18%	0.38%	0.68%	1.07%	1.55%
Well Q as CFS				1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		
Interference CFS				0.000	0.000	0.000	0.000	0.001	0.002	0.004	0.007	0.011	0.015
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													
(A) = Total Interf.				0.00	0.000	0.000	0.000	0.001	0.002	0.004	0.007	0.011	0.015
(B) = 80 % Nat. Q				54.4	71.4	58.7	44.3	15.4	6.52	4.45	6.77	7.26	9.14
(C) = 1 % Nat. Q				0.544	0.714	0.587	0.443	0.154	0.065	0.045	0.068	0.073	0.091
(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:** The impacts to Willow Creek resulting from pumping at the proposed POA were evaluated using the model of Hunt (1999). Two pump tests within 1 mile of the proposed POA provided estimates of transmissivity of between 1,400 and 1,500 ft<sup>2</sup>/day. Calculated results at a distance of 9,800 feet show that interference to Willow Creek is expected to be less than 1 percent of 80 percent of natural stream flow for any month during the first year of pumping (Figure 3), and therefore will not trigger PSI.

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:** The aquifer developed in the Glens Ferry Formation is inefficiently hydraulically connected to local surface waters. Leakage from local canals, in addition to excess irrigation runoff, likely provides significant recharge to the local shallow aquifer system. During drought years, flow through the canals is reduced, and according to our conceptual model will contribute a lower proportion of recharge to the shallow aquifer system. There is not adequate data to assess the balance of recharge coming from anthropogenic sources versus natural occurring recharge from deeper within the Glens Ferry Formation (Gannett, 1990). Therefore, the special conditions discussed in section B3 above shall be applied if a permit is issued in order to maintain flows in Willow Creek if significant groundwater elevation declines are observed.

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**References Used:**

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

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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.

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Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102

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Local well logs, Application file G-17962.

**Well logs attached:** MALH 2606 (applicant's well)  
 MALH 52649 (nearby obs well with similar construction)

**D. WELL CONSTRUCTION, OAR 690-200**

D1. Well #: \_\_\_\_\_ Logid: \_\_\_\_\_

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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

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

WILLOW CR > MALHEUR R - AT MOUTH  
Basin: MALHEUR

Watershed ID #: 31011901  
Time: 8:50 AM

Exceedance Level: 80  
Date: 06/04/2015

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	13.70	22.00	-8.28	0.00	0.00	-8.28
FEB	32.50	82.70	-50.20	0.00	0.00	-50.20
MAR	54.40	141.00	-86.30	0.00	0.00	-86.30
APR	71.40	182.00	-110.00	0.00	0.00	-110.00
MAY	58.70	215.00	-157.00	0.00	0.00	-157.00
JUN	44.30	182.00	-138.00	0.00	0.00	-138.00
JUL	15.40	96.10	-80.70	0.00	0.00	-80.70
AUG	6.52	60.40	-53.80	0.00	0.00	-53.80
SEP	4.45	40.20	-35.70	0.00	0.00	-35.70
OCT	6.77	7.92	-1.15	0.00	0.00	-1.15
NOV	7.26	11.60	-4.37	0.00	0.00	-4.37
DEC	9.14	14.60	-5.42	0.00	0.00	-5.42
ANN	36,500	63,600	1,800	0	0	1,800

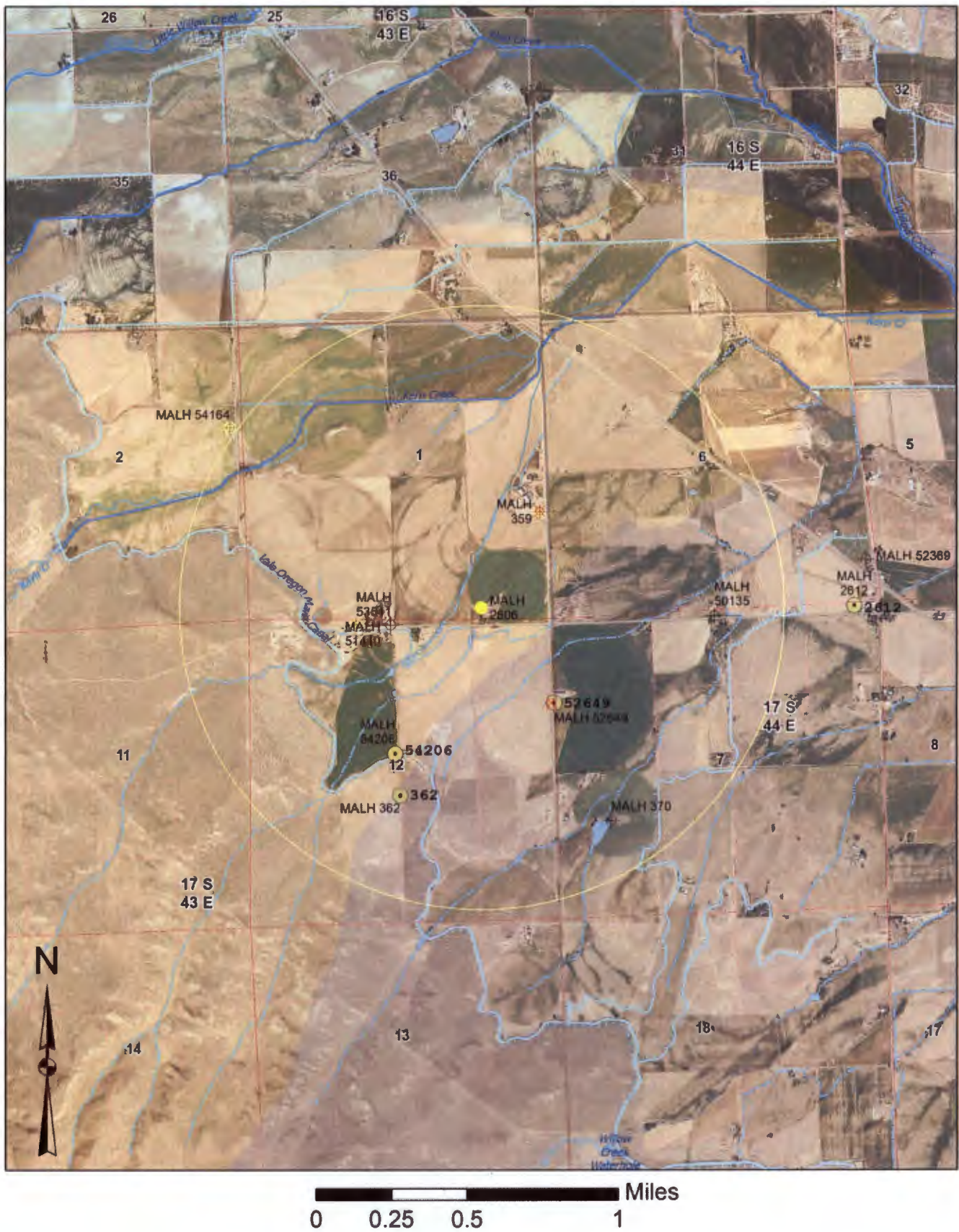


Figure 1: Map showing location of the proposed POA (MALH 2606), in relation to nearby Willow Creek (to the NW).

### Water-Level Trends in Nearby Wells

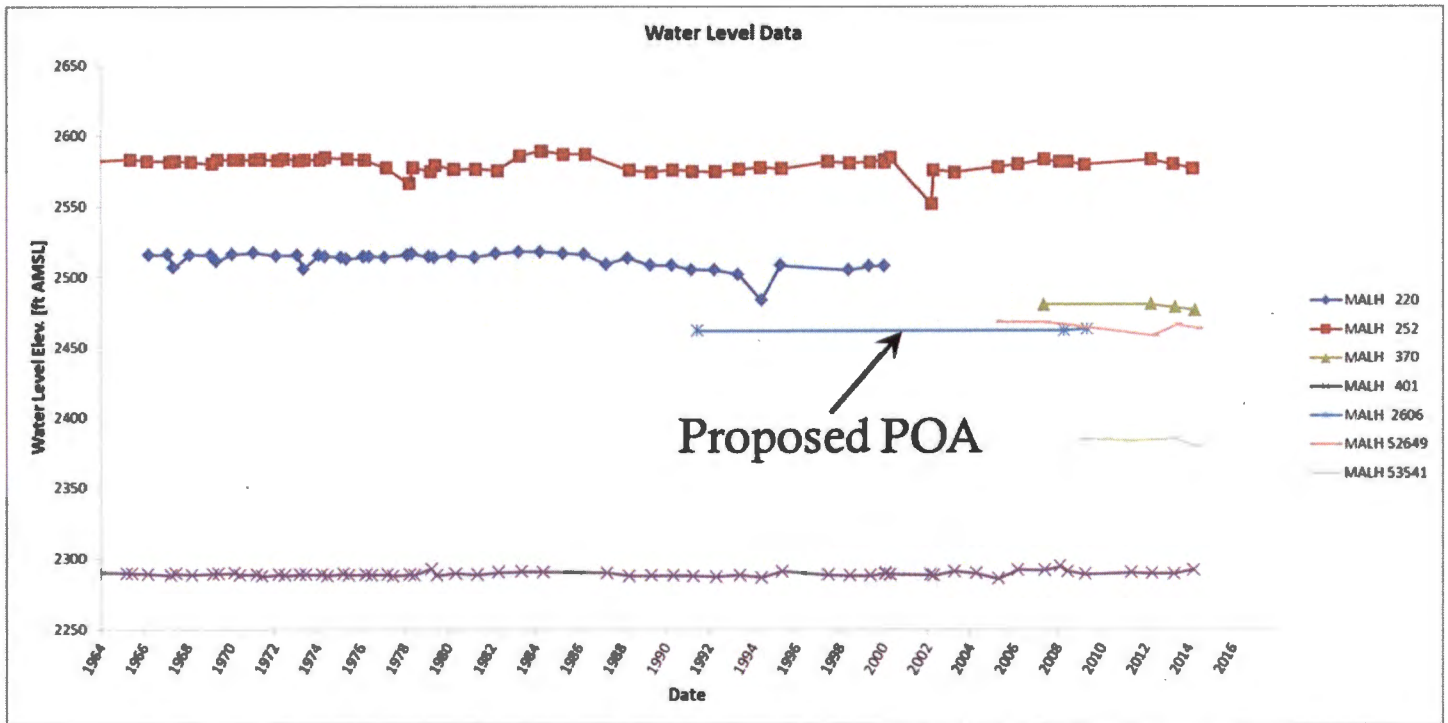
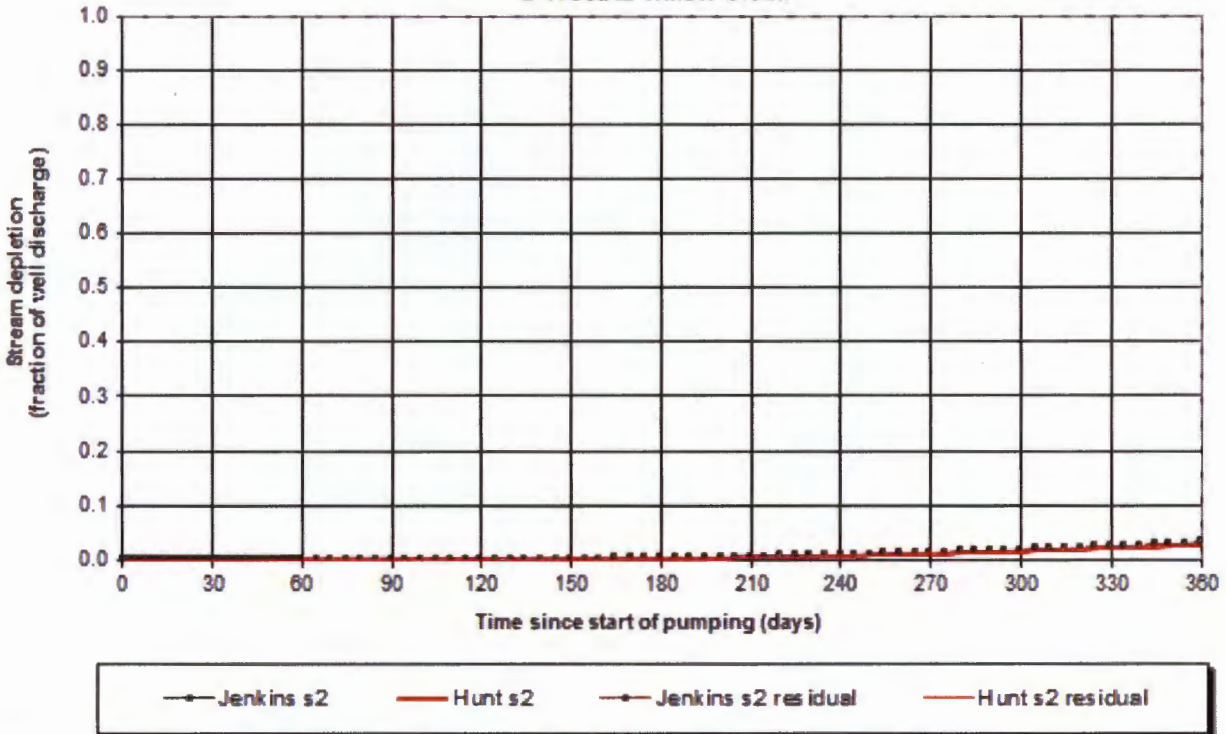


Figure 2: Groundwater elevations in nearby observation wells have remained stable for decades in this area.



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

G-17962 to Willow Creek



**Output for Hunt Stream Depletion, Scenario 2 (s2 Time pump on = 245 days)**

Days	30	60	90	120	150	180	210	240	270	300	330	360
Qw, cfs	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Jenk SD s2 %	0.00	0.00	0.00	0.02	0.08	0.22	0.46	0.81	1.25	1.78	2.38	3.04
Jen SD s2 cfs	0.000	0.000	0.000	0.000	0.001	0.002	0.005	0.008	0.012	0.018	0.024	0.030
Hunt SD s2 %	0.00	0.00	0.00	0.01	0.06	0.18	0.38	0.68	1.07	1.55	2.09	2.69
Hunt SD s2 cfs	0.000	0.000	0.000	0.000	0.001	0.002	0.004	0.007	0.011	0.015	0.021	0.027

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	1	1	1	cfs
Distance to stream	a	9800	9800	9800	ft
Aquifer hydraulic conductivity	K	10	10	10	ft/day
Aquifer thickness	b	57	57	57	ft
Aquifer transmissivity	T	570	570	570	ft <sup>2</sup> /day
Aquifer storage coefficient	S	0.02	0.02	0.02	
Stream width	ws	15	15	15	ft
Streambed hydraulic conductivity	Ks	1	1	1	ft/day
Streambed thickness	bs	3	3	3	ft
Streambed conductance	sbc	5	5	5	ft/day
Stream depletion factor (Jenkins)	sdf	3369.824561	3369.824561	3369.824561	days
Streambed factor (Hunt)	sbf	85.96491228	85.96491228	85.96491228	

Figure 3: Hunt (1999) model parameters and outputs.

STATE OF OREGON  
WATER WELL REPORT  
(as required by ORS 537.785)

MALH 2606 MALH 2606

(START CARD) 1-29804

17S/43E/1 dd

(1) OWNER: Name Daryl DeLong Well Number: 29804  
Address: 2420 9th Ave West  
City: Dele State: OR Zip: 97719

(9) LOCATION OF WELL by legal description:  
County: Malden Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
Township: 17 N or S, Range: 43 E, W. WM.  
Section: 1 SE W, SE W  
Tax Lot: 1100 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
Street Address of Well (or nearest address): 2420 9th Ave W.

(2) TYPE OF WORK:  
 New Well  Deepen  Recondition  Abandon

(3) DRILL METHOD  
 Rotary Air  Rotary Mud  Cable  
 Other \_\_\_\_\_

(4) PROPOSED USE:  
 Domestic  Community  Industrial  Irrigation  
 Thermal  Injection  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION:  
Special Construction approval Yes  No  Depth of Completed Well: 200 ft.  
Explosives used Yes  No  Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE SEAL

Diameter	From	To	Material	From	To	Amount
76	0	0	Cement			
16	0	60	grout	0	404	36
12	0	200				

How was seal placed: Method  A  B  C  D  E  
 Other \_\_\_\_\_

Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_  
Gravel placed from 63 ft. to 40 ft. Size of gravel: 3/4

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 12	1	64	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner:				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Final location of sheets: 64 ft

(7) PERFORATIONS/SCREENS:  
 Perforations Method: torch  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tel./pipe size	Casing	Liner
64	44	6"	316	1/4	12	<input checked="" type="checkbox"/>	<input type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour  
 Pump  Bailor  Air  Flowing Artesian  
Yield gal/min: 450 Drawdown: 110 ft Drill stem at: 143 Time: 4 hrs

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

(10) STATIC WATER LEVEL:  
33 ft. below land surface. Date: 5-20-91  
Artesian pressure \_\_\_\_\_ lb. per square inch. Date \_\_\_\_\_

(11) WATER BEARING ZONES:  
Depth at which water was first found: 40 ft

From	To	Estimated Flow Rate	SWL
40-	85	50 gpm	33
168	180	400 gpm	33

(12) WELL LOG: Ground elevation \_\_\_\_\_

Material	From	To	SWL
topsoil	0	3	
hardpan	3	6	
Dry gravel	6	13	
Blowin clay	13	23	
small gravel & dry	23	35	
Brown clay	35	40	
Sandy clay & per gravel	40	85	33
Sandy blowin clay	85	130	
	85	157	
Sandy blue clay	157	168	
Sandy clay - per gravel	168	180	33
Sandy blue clay	180	200	33

RECEIVED  
MAY 30 1991  
WATER RESOURCES DEPT.  
Date started: 5-11-91 Completed: 5-20-91

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

Signed \_\_\_\_\_ WWC Number \_\_\_\_\_  
Date \_\_\_\_\_

(bonded) Water Well Constructor Certification:  
I accept responsibility for the construction, 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 well construction standards. This report is true to the best of my knowledge and belief.

Signed Jon M Fife WWC Number 1485  
Date 5-27-91

MALH 52649

STATE OF OREGON  
WATER SUPPLY WELL REPORT  
(as required by ORS 537.705)

WELL I.D. # L 72885  
START CARD # 166997

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

(1) LAND OWNER: Name J.R. Wiggins Well Number 72885  
Address 4634 SPALH  
City Vale State OR Zip 97918

(9) LOCATION OF WELL by legal description:  
County Mallam Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
Township 17S N or S Range 44E E or W. WM  
Section 7 SW 1/4 NW 1/4  
Tax Lot 2400 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
Street Address of Well (or nearest address) 4634 Spal H Vale, OR

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

(10) STATIC WATER LEVEL:  
33 1/2 ft. below land surface. Date 2-28-05  
Artesian pressure \_\_\_\_\_ lb. per square inch Date \_\_\_\_\_

(3) DRILL METHOD:  
 Rotary Air  Rotary Mud  Cable  Auger  
 Other \_\_\_\_\_

(11) WATER BEARING ZONES:  
Depth at which water was first found 152

(4) PROPOSED USE:  
 Domestic  Community  Industrial  Irrigation  
 Thermal  Injection  Livestock  Other \_\_\_\_\_

(5) BORE HOLE CONSTRUCTION:  
Special Construction approval  Yes  No Depth of Completed Well 275  
Explosives used  Yes  No Type \_\_\_\_\_ Amount \_\_\_\_\_

From	To	Estimated Flow Rate	SWL
<u>152</u>	<u>242</u>	<u>900gpm</u>	<u>33 1/2</u>

HOLE		SEAL	
Diameter	To	Material	To
<u>16</u>	<u>0</u>	<u>Portland</u>	<u>0</u>
<u>12</u>	<u>50</u>	<u>275</u>	<u>127</u>

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

(12) WELL LOG:  
Ground Elevation \_\_\_\_\_

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Whitoid	Threaded
Casing: <u>12</u>	<u>+2</u>	<u>50</u>	<u>250</u>	<input checked="" 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"/>	<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"/>

Drive Shoe used  Inside  Outside  None  
Final location of shoe(s) 50 ft

Material	From	To	SWL
<u>top soil</u>	<u>0</u>	<u>2</u>	
<u>Hard pan</u>	<u>2</u>	<u>4</u>	
<u>bn sandy clay</u>	<u>4</u>	<u>12</u>	
<u>Dry gravel + sand</u>	<u>12</u>	<u>26</u>	
<u>bn sandy clay</u>	<u>26</u>	<u>152</u>	
<u>Blue sandy clay</u>	<u>152</u>	<u>242</u>	<u>33 1/2</u>
<u>Harder sandy clay</u>	<u>242</u>	<u>275</u>	

(7) PERFORATIONS/SCREENS:  
 Perforations Method \_\_\_\_\_  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tube/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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WATER RESOURCES DEPT  
SALEM, OREGON

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

Yield gal/min	Drawdown	Drill stem at	Time
<u>700gpm</u>	<u>76 GA</u>		<u>8ma</u>

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

Date started 1-26-05 Completed 3-01-05  
(unbonded) Water Well Constructor Certification:  
I certify that the work I performed on the construction, 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.  
Signed \_\_\_\_\_ WWC Number \_\_\_\_\_ Date \_\_\_\_\_

(bonded) Water Well Constructor Certification:  
I accept responsibility for the construction, 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.  
Signed Jon M Fjo WWC Number 1485 Date 3/28/05

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