

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 04/01/2015
 FROM: Groundwater Section Michael J. Thoma
 Reviewer's Name
 SUBJECT: Application G- 17981 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: Arlene L. Dietz – Rice Farms LLC County: Lane

A1. Applicant(s) seek(s) 0.34 cfs from 1 well(s) in the McKenzie River Basin,
 _____ subbasin Quad Map: Eugene East

A2. Proposed use Irrigation (Primary, 27 ac.) Seasonality: March 1 – 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	LANE 11359	1	Alluvium	0.34	17S/03W-24 NW-SW	2250' N, 590' E of SW cor S24
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	445	18	10	June, 1968	96	0-18	0-96		18-96	350	8	

Use data from application for proposed wells.

A4. **Comments:** The applicant's proposed POU already exists under Certificate 23812 as Primary Irrigation with a surface water POA.

A5. **Provisions of the Willamette (OAR 690-502)** _____ 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: **OAR 690-502-0240 states that "Groundwater in unconfined alluvium within 1/4 mile of the banks of a stream of surface water source is presumed to be in hydraulic connection with the surface water source... This hydraulically connected groundwater shall be classified the same as the surface source." The applicant's well has been determined by the department to be producing from unconfined alluvium and is within 1/4 mi of the McKenzie River and is therefore presumed to be in hydraulic connection and should be treated as surface water source.**

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) 7E (Reference Level); "Large" water use reporting ;
 - 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 is completed into alluvial sediments within the McKenzie River Valley. These sediments generally consist of mixed sand and gravel deposits with some clay and were deposited by the McKenzie and Willamette Rivers and form the proximal portions of the Springfield Fan (Woodward et al., 1998). The total thickness of the alluvial sediments is > 300 ft in the vicinity of the well and likely underlain by less-permeable marine deposits of the Eugene Formation (Madin and Murray, 2006). Most other wells in the area are shallow (< 100 ft deep) and produce from the alluvial sediments with yields generally between 20 and 100 gpm but some wells (mostly deeper wells) produce several-hundred gpm.

There are only a few wells near the applicant's well that have recorded water levels (see Figure 1), and these wells show stable WLS over the past few decades (Figure 3) indicating that groundwater is not over-appropriated in the area.

The proposed POU is just north of the City of Springfield and there are only a few domestic wells in the vicinity (most houses would be serviced though a municipal water supply) so there is little concern of interference with nearby domestic wells. There are several mapped groundwater POAs to the west of the applicant's well (Cert. 45302, 45303, 45304) that are listed under Rainbow Water District for municipal use. These wells are between 80 and 235 ft deep, produce from the same alluvial aquifer as the applicant's well, and have a combined, permitted total rate of 7.09 cfs. Due to the proximity of these wells and the applicant's well to the McKenzie River, and the average flows in the McKenzie River, there is not likely to be interference between these wells and the applicant's since the impacts of pumping will not likely spread far as water will be captured from the river.

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	Alluvial river deposits	<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 well log for the applicant's well shows first water at 18 ft bls and SWL in that zone of 15 ft bls (i.e., similar depths) and there is no evidence of any confining units on the well log. Other wells in the area show similar SWL depths of 10-20 ft bls.

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	McKenzie River	435	~430	810	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: The applicant's well is within ¼ mile of the McKenzie River and producing from an unconfined aquifer so OAR 690-09-040 requires the department to assume hydraulic connection. Additionally, the SWL in the applicant's well is coincident with river stage, which supports the finding of hydraulic connection.

Water Availability Basin the well(s) are located within: McKenzie R > Willamette R – AB Mouth (ID# 528)

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?
1	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MF528A	1025	<input type="checkbox"/>	1730	<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"/>

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: _____

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													
(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 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 applicant's well is ~800 ft from the McKenzie River and producing from a shallow, unconfined aquifer composed of mixed coarse- and fine-grained alluvial deposits. The approximate land surface elevation of the proposed POU is only <10 feet above the McKenzie River channel and occupies a meander scar of the former river channel (based on interpretation of lidar data topographic maps – see Figure 2). "Division 9" rules (OAR 690-009-0040) along with basin rules of the Willamette River Basin (OAR 690-502-0240) require the department to presume hydraulic connection with the McKenzie River and PSI for the applicant's well and proposed use.

Willamette Basin Rules (OAR 690-502) further require that the proposed POA be classified as surface water source. Therefore surface water from the McKenzie River must be appropriated to mitigate the effects of pumping for this application to be approved. **Without appropriation of surface water, the proposed use should not be allowed as it will cause interference with the McKenzie River**

References Used:

Woodward, Dennis J., Gannett, Marshall W., and Vaccaro, John J., 1998, Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: U. S. Geological Survey Professional Paper 1424-B, 82p.

Madin, I. P. and R. B. Murray. 2006. Preliminary Geologic Map of the Eugene East and Eugene West 7.5' Quadrangles, Lane County, Oregon. DOGMI Open-File-Report O-06-17.

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 Table

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION						
MCKENZIE R > WILLAMETTE R - AB MOUTH						
Watershed ID #: 528		Basin: WILLAMETTE			Exceedance Level: 80	
Time: 4:03 PM		Date: 03/25/2015				
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	5,040.00	553.00	4,490.00	0.00	1,025.00	3,460.00
FEB	5,850.00	1,250.00	4,600.00	0.00	1,025.00	3,580.00
MAR	5,630.00	1,250.00	4,380.00	0.00	1,025.00	3,350.00
APR	5,020.00	1,300.00	3,720.00	0.00	1,025.00	2,690.00
MAY	4,000.00	808.00	3,190.00	0.00	1,025.00	2,170.00
JUN	2,990.00	408.00	2,580.00	0.00	1,025.00	1,560.00
JUL	2,160.00	389.00	1,770.00	0.00	1,025.00	746.00
AUG	1,790.00	377.00	1,410.00	0.00	1,025.00	388.00
SEP	1,730.00	358.00	1,370.00	0.00	1,025.00	347.00
OCT	1,830.00	328.00	1,500.00	0.00	1,025.00	477.00
NOV	2,850.00	327.00	2,520.00	0.00	1,025.00	1,500.00
DEC	4,450.00	327.00	4,120.00	0.00	1,025.00	3,100.00
ANN	3,560,000	461,000	3,100,000	0	743,000	2,350,000

Figure 1: Application overview maps showing proximity to wells with recorded water levels.



Figure 2: Application overview map showing Lidar elevation data and PODs by type.

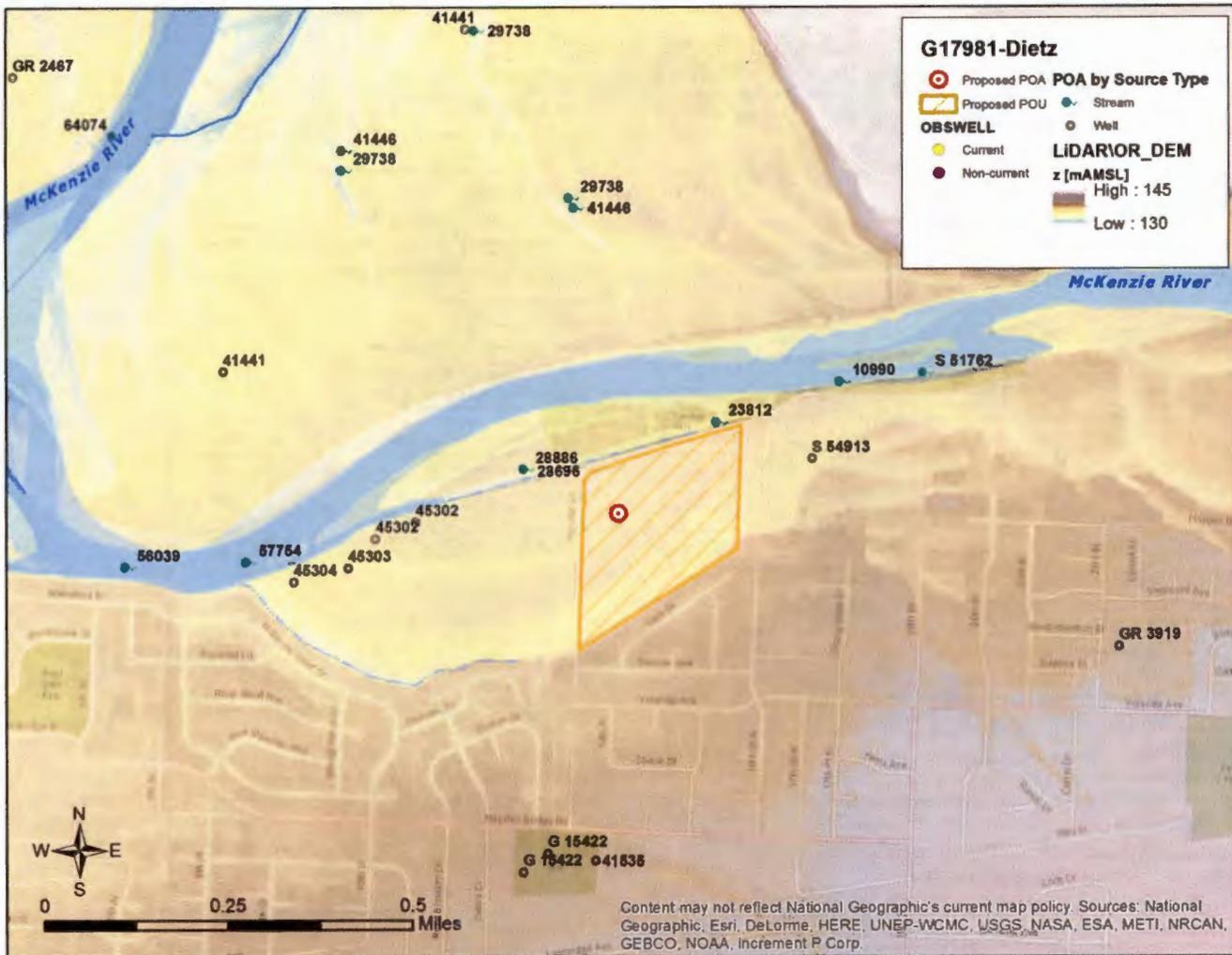
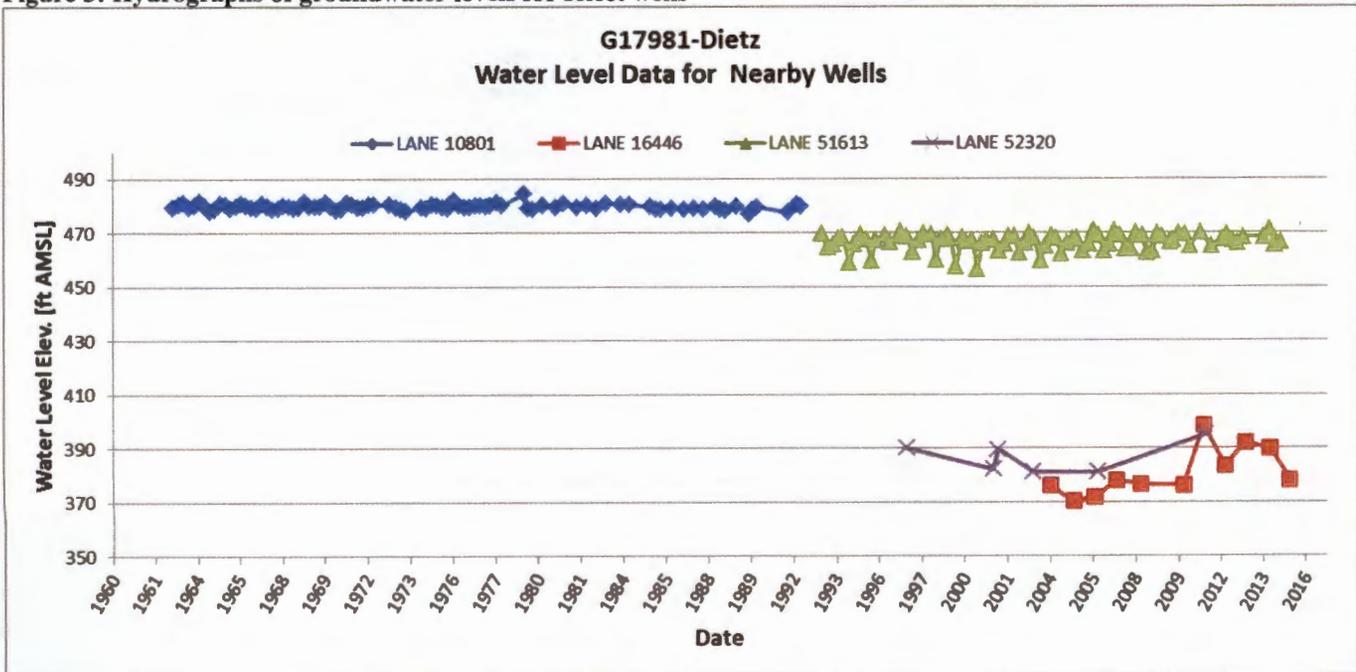


Figure 3: Hydrographs of groundwater levels for select wells



Attachment 1: Well Log for LANE 11359

LANE 11359 RECEIVED WATER WELL REPORT
RECEIVED STATE OF OREGON STATE ENGINEER SALEM, OREGON
 AUG 10 1968 (Please type name of State Engineer) SALEM, OREGON

NOTICE TO WATER WELL CONTRACTOR
 The original and first copy of this report are to be filed with the STATE ENGINEER, SALEM, OREGON within 30 days from the date of well completion.

State Well No. 17/3W-24
 State Permit No. LANE 11359

(1) OWNER:
 Name Homer Chase
 Address 2725 Harvest Lane
JARVIS, OR.

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

(3) TYPE OF WELL: **(4) PROPOSED USE (check):**
 Rotary Driven Domestic Industrial Municipal
 Cable Jetted Irrigation Test Well Other
 Dug Bored

(5) CASING INSTALLED: Threaded Welded
10" Diam. from 62 ft. to 96 ft. Gage 250
 " Diam. from " ft. to " ft. Gage
 " Diam. from " ft. to " ft. Gage

(6) PERFORATIONS: Perforated? Yes No
 Type of perforator used Mills Knife
 Size of perforations 1/4 in. by 2 in.
300 perforations from 14 ft. to 96 ft.
 " perforations from " ft. to " 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) WATER LEVEL: Completed well.
 Static level 10 ft. below land surface Date 4/19/68
 Artesian pressure _____ lbs. per square inch Date _____

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
 Was a pump test made? Yes No If yes, by whom? Driller
 Yield: 350 gal./min. with 8 ft. drawdown after 2 hrs.
400 " " " " " " " "
500 " " " " " " " "
 Bailor test _____ gal./min. with _____ ft. drawdown after _____ hrs.
 Artesian flow _____ g.p.m. Date _____
 Temperature of water _____ Was a chemical analysis made? Yes No

(10) CONSTRUCTION:
 Well seal—Material used Cement
 Depth of seal 18' ft.
 Diameter of well bore to bottom of seal 12 in.
 Were any loose strata cemented off? Yes No Depth _____
 Was a drive shoe used? Yes No
 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.

(11) LOCATION OF WELL:
 County Lanc Driller's well number _____
 " " Section 24 T. 17S R. 3W W.M.
 Bearing and distance from section or subdivision corner _____

(12) WELL LOG: Diameter of well below casing 10
 Depth drilled 100 ft. Depth of completed well 96 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 as drilling proceeds. Note drilling rates.

MATERIAL	From	To	SWL
Loam	0	4	
Sand & Gravel			
Clay	4	18	
Cemented streaks			
Sand & Gravel			
water	18	35	15
Sand & gravel	35	40	13
Yellow brown clay sand	40		
water streaks	40	85	10
Hard cement strip			
RT			
Sand gravel clay	85	95	
fine brown clay	95	100	
covered in water			
unpacked			

Work started 6/10 1968 Completed 6/18 1968
 Date well drilling machine moved off of well 1/19 1968

Drilling Machine Operator's Certification:
 This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
 [Signed] A. D. Johnson Date 6/19/68, 1968
 (Drilling Machine Operator)

Drilling Machine Operator's License No. 344

Water Well Contractor's Certification:
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
 NAME W.W. Drilling & Pump
 (Person, firm or corporation) (Type or print)
 Address 2320 MAIN - Spfld Ore
 [Signed] Walt Wilson
 (Water Well Contractor)
 Contractor's License No. 268 Date June 20, 1968

(USE ADDITIONAL SHEETS IF NECESSARY)