

Groundwater Application Review Summary Form

Application # G- 18756

GW Reviewer Philo Maray Date Review Completed: 11/26/2018

Summary of GW Availability and Injury Review:

[] Groundwater for the proposed use is either over appropriated, will not likely be available in the amounts requested without injury to prior water rights, OR will not likely be available within the capacity of the groundwater resource per Section B of the attached review form.

Summary of Potential for Substantial Interference Review:

[] There is the potential for substantial interference per Section C of the attached review form.

Summary of Well Construction Assessment:

[] The well does not appear to meet current well construction standards per Section D of the attached review form. Route through Well Construction and Compliance Section.

✓ 11/27/18

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

MEMO

11/26, 2018

FROM: GW: W. H. Murray
(Reviewer's Name)

☐ YES☒ NO☐ YES☒ NO

☐ Per ORS 390.835, the Groundwater 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.**

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.

[illegible]

MEMO

ok hhl

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18756
Date: November 28, 2018

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Phil Marcy reviewed the application. Please see Phil's Groundwater Review and the Well Logs.

Applicant's Well #1 (LINN 57821): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

The construction of Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (LINN 62464): Based on a review of the Well Report, Applicant's Well #2 seems to protect the groundwater resource.

The construction of Well #2 may not satisfy hydraulic connection issues.

AMENDED

LINN 62464

STATE OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765 & OAR 690-205-0210)

WELL I.D. LABEL# 128951

START CARD # 1040171

ORIGINAL LOG #

LINN 62464

(1) LAND OWNER

Owner Well I.D. 5924

First Name Rod Last Name Webster

Company

Address 40335 Rodgers Mtn. Loop

City Scio State OR Zip 97374

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Conversion☐ Alteration (complete 2a & 10) ☐ Abandonment (complete 5a)

(2a) PRE-ALTERATION

Dia + From To Gauge Stl Plstc Wld Thrd

Casing: Material From To Amt sacks/lbs

Seal: Material From To Amt sacks/lbs

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger ☐ Cable Mud☐ Reverse Rotary ☐ Other

(4) PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Community☐ Industrial/ Commercial ☐ Livestock ☐ Dewatering☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION

Special Standard ☐ (Attach copy)

Depth of Completed Well 140 ft.

BORE HOLE

SEAL sacks/

Dia	From	To	Material	From	To	Amt	lbs
10	0	19	Bentonite	0	19	12	S
6	19	140				Calculated	9
						Calculated	

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E☒ Other Poured dry

Backfill placed from ft. to ft. Material

Filter pack from ft. to ft. Material Size

Explosives used: ☐ Yes Type Amount

(5a) ABANDONMENT USING UNHYDRATED BENTONITE

Proposed Amount Pounds Actual Amount Pounds

(6) CASING/LINER

Casing	Liner	Dia	+	From	To	Gauge	Stl	Plstc	Wld	Thrd
☒	☐	6	☒	1	79	250	☒	☐	☒	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐
☐	☐		☐				☐	☐	☐	☐

Shoe ☐ Inside ☐ Outside ☐ Other Location of shoe(s)Temp casing ☒ Yes Dia 10 From 0 To 19

(7) PERFORATIONS/SCREENS

Perforations Method Holte air perforator

Screens Type Material

Perf/S	Casing/Screen	Dia	From	To	Screen slot width	Slot length	# of slots	Tele/pipe size
Perf	Casing	6	40	50	.125	1	200	
Perf	Casing	6	60	78	.25	1	360	

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min Drawdown Drill stem/Pump depth Duration (hr)

50		78	1

Temperature 53 °F Lab analysis ☐ Yes ByWater quality concerns? ☐ Yes (describe below) TDS amount 129

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)

County LINN Twp 10 S N/S Range 1 W E/W WM

Sec 15 SW 1/4 of the NW 1/4 Tax Lot 201

Tax Map Number Lot

Lat " or " DMS or DD

Long " or " DMS or DD

☒ Street address of well ☐ Nearest address

40335 Rodgers Mtn. Loop - Scio, OR 97374

(10) STATIC WATER LEVEL

Date SWL(psi) + SWL(ft)

Existing Well / Pre-Alteration			
Completed Well	08-29-2018		15

Flowing Artesian? ☐ Dry Hole? ☐

WATER BEARING ZONES

Depth water was first found 40

SWL Date From To Est Flow SWL(psi) + SWL(ft)

08-28-2018	40	50	5		15
08-28-2018	60	78	7		15
08-28-2018	90	140	38		15

(11) WELL LOG

Ground Elevation

Material	From	To
Brown clay	0	7
Cemented sand & gravel	7	10
Sand & gravel	10	22
Gray clay	22	40
Sand & gravel	40	50
Brown clay	50	60
Sand & gravel	60	75
Cemented sand & gravel	75	80
Compressed sand	80	87
Boulders with clay	87	90
Cemented sand & gravel	90	140

JONES DRILLING CO., INC.

29400 SANTIAM HWY.

LEBANON, OR 97355

541-367-2560 541-451-2686

1-800-915-8388

RECEIVED

SEP 10 2018

OWRD

Date Started 08-28-2018

Completed 08-29-2018

(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.

License Number 1888

Date 09-06-2018

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.

License Number 1684

Date 09-06-2018

Signed

Contact Info (optional) jonesdrilling@hotmail.com

ORIGINAL - WATER RESOURCES DEPARTMENT

THIS REPORT MUST BE SUBMITTED TO THE WATER RESOURCES DEPARTMENT WITHIN 30 DAYS OF COMPLETION OF WORK Form Version: 0.95

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

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

(WELL I.D.)# L 87047

(START CARD) # 192192

(1) OWNER: Well Number **4824**
Name **Rod Webster**

Address **38665 Richardson Gap Rd.**

City **Scio** State **Oregon** Zip **97374**

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well **80** ft.
Explosives used ☐ Yes ☒ No Type Amount

HOLE			SEAL			Sacks or pounds
Diameter	From	To	Material	From	To	
10	0	19	Bentonite	0	19	10 sacks
6	19	80				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other **Poured dry**

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: 6	+1	79	250	☒	☐	☒	☐
				☐	☐	☐	☐
				☐	☐	☐	☐
				☐	☐	☐	☐
Liner:				☐	☐	☐	☐
				☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

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

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing
Yield gal/min Drawdown Drill stem at Time

40 **80** **1 hr.**

Temperature of water **54** 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:

(9) LOCATION OF WELL by legal description:

County **Linn** Latitude Longitude
Township **10** S Range **1** W WM.
Section **1** NW 1/4 NW 1/4
Tax Lot **200** Lot **#1** Block Subdivision
Street Address of Well (or nearest address) **38665 Richardson Gap Rd.**
Scio, OR 97374

(10) STATIC WATER LEVEL:

7 ft. below land surface. Date **6/15/2007**
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found **58**

From	To	Estimated Flow Rate	SWL
58	80	40+	7

(12) WELL LOG:

Ground Elevation

Material	From	To	SWL
Topsoll	0	2	
Cobbles & clay	2	12	
Cemented clay & gravel	12	32	
Blue clay	32	36	
Cemented clay & gravel	36	52	
Blue clay	52	58	
Cemented gravel	58	80	7

JONES DRILLING CO., INC.

29400 SANTIAM HWY.

LEBANON, OR 97355

541-367-2560 541-451-2686

1-800-915-8388

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JUN 27 2007

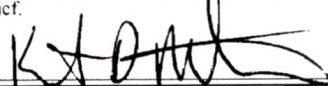
**WATER RESOURCES DEPT
SALEM, OREGON**

Date started **6/14/2007**

Completed **6/15/2007**

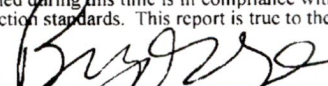
(unbonded) Water Well Constructor Certification:

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 **1411**
Date **6/26/2007**

(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  WWC Number **1684**
Date **6/26/2007**

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/26/2018
 FROM: Groundwater Section Phillip I. Marcy
 SUBJECT: Application G- 18756 Reviewer's Name
 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: Richard H. Webster County: Linn

A1. Applicant(s) seek(s) .20 cfs from 2 well(s) in the Willamette Basin,
Thomas Creek subbasin

A2. Proposed use Irrigation Seasonality: March 1st – 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	LINN 57821	1	Alluvium	0.09	10S/1W-15 SW-NW	428'N, 905'W fr C1/4 S 15
2	LINN 62464	2	Alluvium	0.11	10S/1W-15 SW-NW	356'N, 178'W fr C1/4 S 15
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	370	58	7	06/15/2007	80	0-19	0-79	NA	NA	40	NA	Air
2	375	40	15	08/29/2018	140	0-19	0-79	NA	40-50;60-78	50	NA	Air

Use data from application for proposed wells.

A4. **Comments:** Both proposed POA wells produce from alluvium, and their proposed rates match the yield documented on the well log report.

A5. ☒ **Provisions of the** Willamette 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) 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 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 proposed POA wells produce groundwater from gravels within the alluvial fill sequence, likely from the upper portions of the Mehama Formation, characterized by “cemented gravels” and “firm sandstone” McClaughry and others (2010). Well yields in these materials are generally moderate to poor (~20 GPM), with the two proposed POA wells reporting 40 GPM (POA 1) and 50 GPM (POA 2). Groundwater elevations are similar in this area, despite differences in overall depth (see attached hydrograph), suggesting that only one interconnected aquifer system exists between the Mehama Formation and overlying alluvium.

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	Cemented sand & gravel of Mehama Fmn.	☐	☒
2	Cemented sand & gravel of Mehama Fmn.	☐	☒
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Nearby well logs report variably thick deposits of clays, silts, sandstones, and gravels, rendering it unlikely that any laterally extensive, low-permeability unit exists to produce confinement. Water level data suggests that localized confinement may occur, as static levels in some wells occur at elevations above the water-bearing zone, but many other wells report static levels similar to where water was first encountered.

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	Thomas Creek	363	354-378	3215	☒	☐	☐	☐	☒
2	1	Thomas Creek	360	354-378	3160	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Coincident values of groundwater and nearby surface water within one mile exhibit a high likelihood of groundwater discharging to streams in this area, particularly from highlands to the north. Older volcaniclastic materials (> 5 Million years) are typically indurated, cemented, and tend to have low transmissivity. Therefore, groundwater movement is largely fracture controlled, resulting in springs and seeps that discharge at discrete locations to surface water.

Water Availability Basin the well(s) are located within: Thomas Cr > S Santiam R > At Mouth (ID# 171)

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	☐	☐	MF171A	25.0	☐	33.8	☐	<<25%	☐
2	1	☐	☐	MF171A	25.0	☐	33.8	☐	<<25%	☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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		☐	MF171A	25.0	☐	33.8	☐	<<25%	☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Expected impacts to Thomas Creek were calculated using the model of Hunt (1999) utilizing a range of aquifer parameters. Expected stream impacts were minimal, largely due to distance between the stream and expected POA wells and low proposed pumping rate. The interference after 30 days is expected to be a small fraction of the total pumping rate, also due to distance of greater than ½ mile, and relatively low-permeability materials underlying the stream.

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													
(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:** Communication between local surface water and production zones in the proposed POA wells is likely to be inefficient, owing to long, tortuous flow paths and the presence of fine-grained alluvium in the creek channel.

References Used:

McCloughry, J.D., Wiley, T.J., Ferns, M.L., and Madin, I.P., 2010, Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon: Oregon Department of Geology and Mineral Industries Open-File Report O-10-03

Gannett and Caldwell, 1998, Geologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington, USGS Professional Paper 1424-A

Conlon and Others, 2005, Ground-Water Hydrology of the Willamette Basin, Oregon, Scientific Report 2005-5168, USGS.

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

OWRD well log database, OWRD GSIS water level database, Application file G-18756.

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) _____

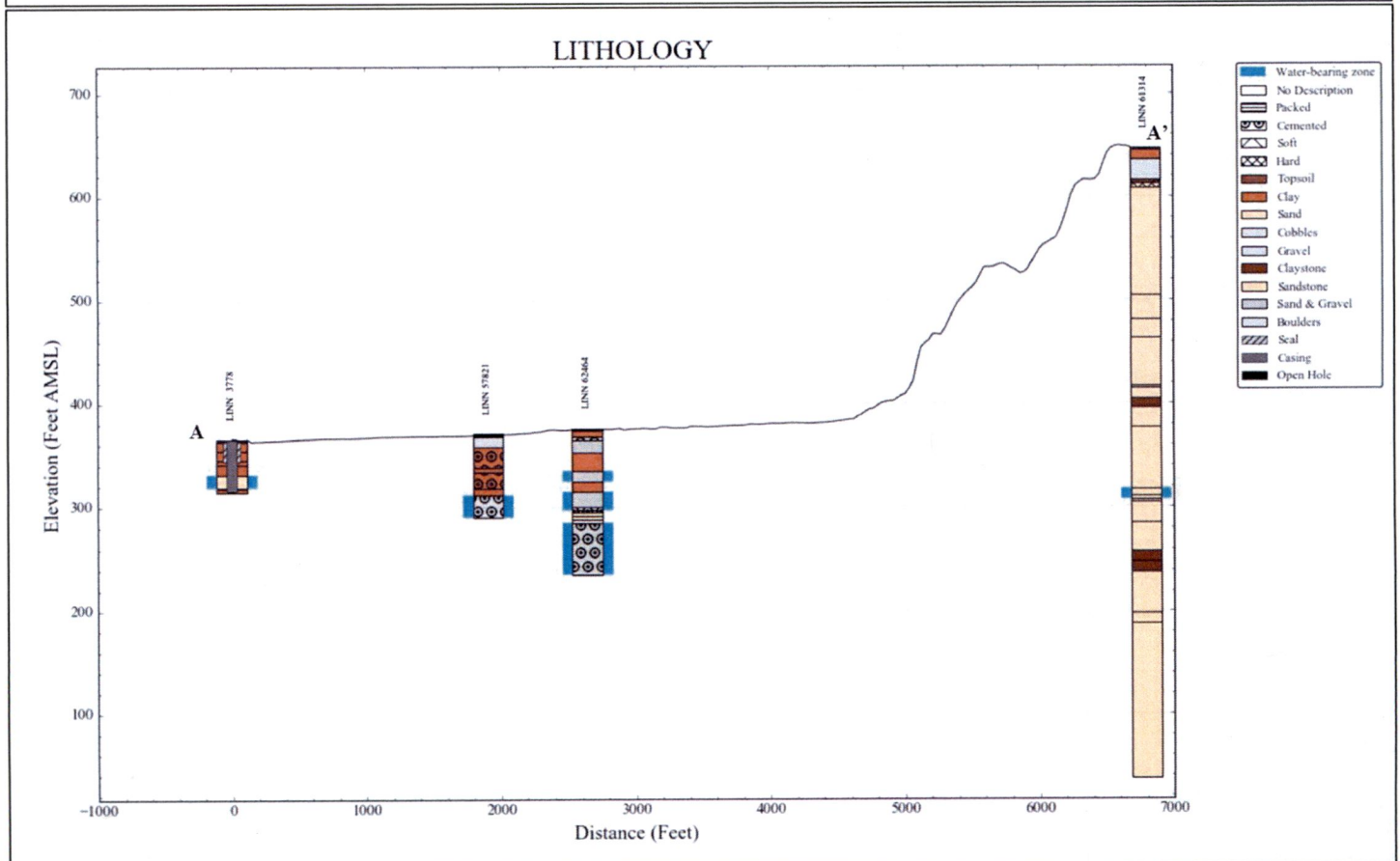
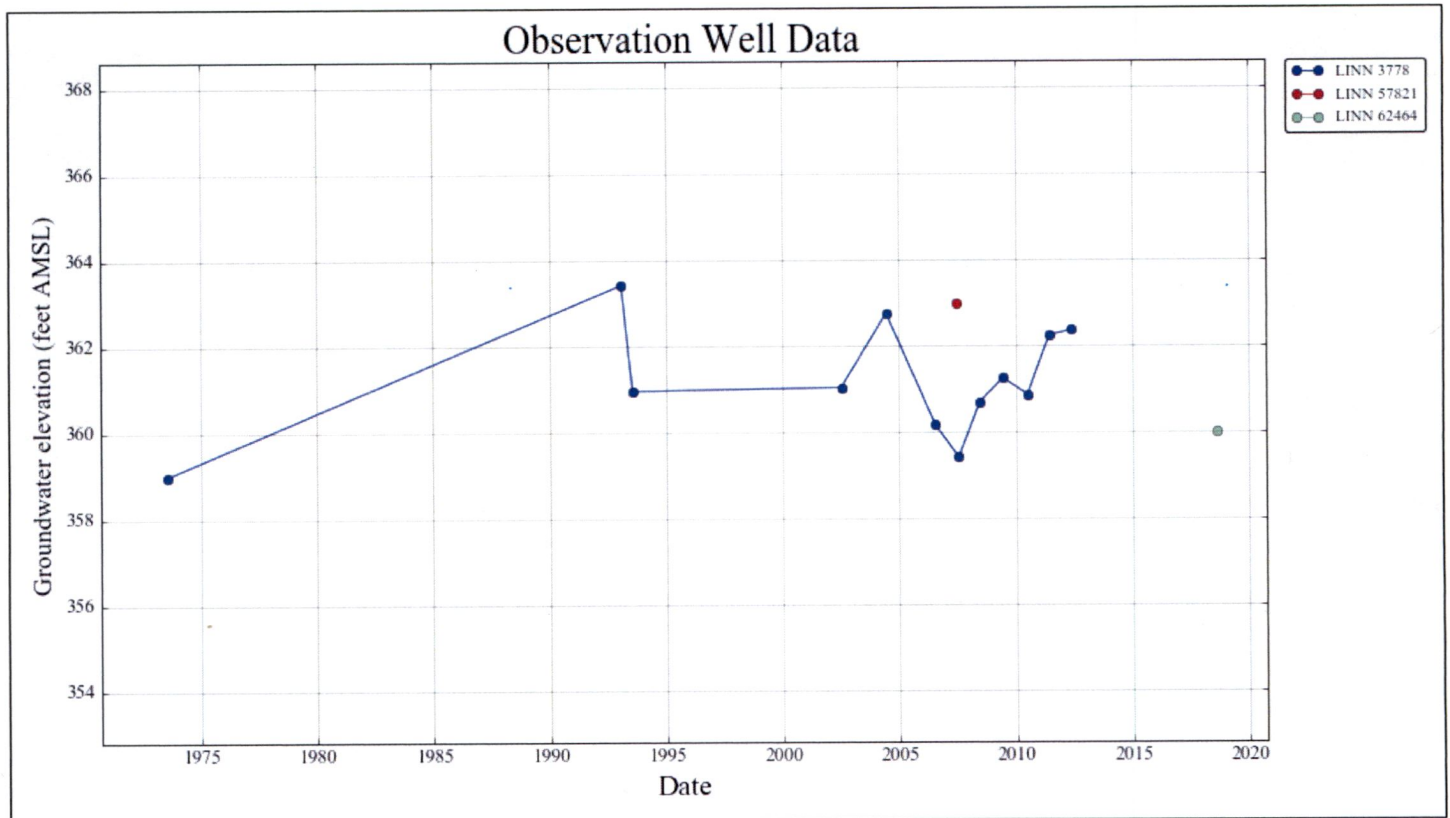
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

 _____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						
Watershed ID #: 171		THOMAS CR > S SANTIAM R - AT MOUTH			Exceedance Level: 80	
Time: 1:46 PM		Basin: WILLAMETTE			Date: 11/26/2018	
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	467.00	3.43	464.00	0.00	100.00	364.00
FEB	465.00	3.42	462.00	0.00	100.00	362.00
MAR	447.00	2.97	444.00	0.00	100.00	344.00
APR	380.00	3.71	376.00	0.00	100.00	276.00
MAY	221.00	9.44	212.00	0.00	100.00	112.00
JUN	120.00	16.70	103.00	0.00	50.00	53.30
JUL	51.50	26.80	24.70	0.00	35.00	-10.30
AUG	33.80	21.90	11.90	0.00	25.00	-13.10
SEP	35.70	12.40	23.30	0.00	100.00	-76.70
OCT	56.30	3.42	52.90	0.00	100.00	-47.10
NOV	208.00	3.17	205.00	0.00	100.00	105.00
DEC	424.00	3.44	421.00	0.00	100.00	321.00
ANN	307,000	6,730	300,000	0	60,900	244,000

Water-Level Trends in Nearby Wells



Regardless of depth, wells in the area typically produce groundwater from WBZ with similar elevation, and similar resulting static WL elevation. Wells report successions of firm sands and cemented gravels, characteristic of the Mehama Fmn.

Well Location Map

