

MEMO

OK. K. Byrd

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Joel Jeffery, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18367
Date: December 12, 2016

The attached application was forwarded to the Well Construction and Compliance Section by Water Rights. Mike Thoma reviewed the application. Please see Mike's Groundwater Review and the Well Log.

Applicant's Well #1 (JACK 4441): Based on a review of the Well Report, Applicant's Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The water supply well report indicates that the top terminal height of the well casing is at ground level (0 Feet). In order to meet the minimum well construction standards the top terminal height of the well casing must extend a minimum of 12 inches above the finished ground surface or pump house floor and a minimum of 12 inches above the local surface run level.

My recommendation is that the Department **not issue** a permit for Applicant's Well #1 (JACK 4441) unless it is brought into compliance with current minimum well construction standards or information is provided showing that it is in compliance with current minimum well construction standards.

Bringing Applicant's Well #1 into compliance with minimum well construction standards may not satisfy hydraulic connection issues.

Well Log

NOTICE TO WATER WELL CONTRACTOR
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.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)
13933 E. Evans Creek

Jack
4141
State Well No. 35s/3w-5aa
State Permit No.

(1) OWNER:

Name Kevin Keithley
Address 8297 Portulaca Way
Buena Park, Ca. 90620

(2) TYPE OF WORK (check):

New Well [] Deepening [] Reconditioning [] Abandon []
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [] Driven []
Cable [] Jetted []
Dug [] Bored []

(4) PROPOSED USE (check):

Domestic [] Industrial [] Municipal []
Irrigation [] Test Well [] Other []

(5) CASING INSTALLED:

6" Diam. from 0 ft. to 20 ft. Gage 250
" Diam. from 0 ft. to 65 ft. Gage Sch. 40

(6) PERFORATIONS:

Perforated? [X] Yes [] No
Type of perforator used SAW
No. of perforations 3/8 in. by 5 in.
80 perforations from 50 ft. to 65 ft.

(7) SCREENS:

Well screen installed? [] Yes [X] 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? [X] Yes [] No If yes, by whom? Driller
Yield: 22 gal./min. with ft. drawdown after 1 hrs.
Pump test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 50 Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Seal-Material used Cement
Well sealed from land surface to 20 ft.
Diameter of well bore to bottom of seal 10 in.
Diameter of well bore below seal 6 in.
Number of sacks of cement used in well seal 7 1/2 sacks
How was cement grout placed? pumped
Was a drive shoe used? [X] Yes [] No Plug Size: location ft.
Did any strata contain unusable water? [] Yes [X] No
Type of water? Depth of strata
Method of sealing strata off
Was well gravel packed? [] Yes [X] No Size of gravel:
Gravel placed from ft. to ft.

(10) LOCATION OF WELL:

County Jackson Driller's well number
NE 1/4 NE 1/4 Section 5 T. 35 R. 3W W.M.
Bearing and distance from section or subdivision corner
Tax Lot 107
Permit #607-79W

(11) WATER LEVEL: Completed well.

Depth at which water was first found 43 ft.
Static level 26 ft. below land surface. Date 9-11-79
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6
Depth drilled 65 ft. Depth of completed well 65 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.

Table with columns: MATERIAL, From, To, SWL. Rows include CLAY, BROWN, BOULDERS LARGE (0-14), BASALT, BEDROCK (14-65), and AQUIFER (43-63) with 4 and 18 gpm.

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OCT 10 1979
WATER RESOURCES DEPT
SALEM, OREGON

Work started 9-11-79 19 Completed 9-11-79 19
Date well drilling machine moved off of well 9-11-79 19

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] R. E. Quinn Date 9-12-79, 19
(Drilling Machine Operator)
Drilling Machine Operator's License No. 810

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 PAQUIN DRILLING INC.
Address 1840 WILLOW LANE
[Signed] Robert E. Quinn
(Water Well Contractor)
Contractor's License No. 675 Date 9-14-79, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

SP-6288-118

Groundwater Review Summary Form

Application # G- 18367

GW Reviewer M. Thorne Date Review Completed: 11/22/16

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.

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).

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section
 FROM: Groundwater Section Michael J Thoma
 SUBJECT: Application G- 18367 Supersedes review of
 Date 11/22/16
 Reviewer's Name
 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: Randall & Gina Rice County: Jackson

A1. Applicant(s) seek(s) 0.16 cfs from 1 well(s) in the Rogue Basin,
Evans Creek subbasin

A2. Proposed use Nursery (10 ac) Seasonality: year-round

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	JACK 4441	1	Bedrock	0.16	35S/03W-05 NWNE	90'S, 1565'W of NE cor S 05
2						
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	1320	43	26	9/11/79	65	0-20	0-20*	0-65	50-65	22		A

Use data from application for proposed wells.

A4. **Comments:** *The well log for the applicant's proposed POA describes insufficient casing height above land surface – see Section D

A5. **Provisions of the** Rogue (OAR 690-515) 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) 7J (Scenic); 7C (7-yr SWL); Medium 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:** There are no OWRD Observation Well data in the immediate area so groundwater over-appropriation cannot be determined. Groundwater use in the Evans Creek Watershed is primarily limited to domestic use but there are three certificated groundwater rights within ¼ mile of the proposed POA and one new groundwater application, received by the Department within the last year, located just over ¼ mile from the proposed POA. The combined rate of appropriation of all these POAs is approx. 0.5 cfs. The potential impact to the groundwater resource as a result of these combined uses is likely (but cannot be determined) within the capacity given that two of the certificated rights are supplemental, and the maximum permitted rate will not be exercised continuously. Of slightly greater concern is the potential for well-to-well interference and injury, which is difficult to estimate in a fractured bedrock aquifer system. Regardless, standard interference and injury conditions should be applied to any permit resulting from this application.

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	Metamorphic Rocks of Applegate Group	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: The applicant's well log (JACK 4441) along with well logs for the surrounding area report SWLs above First Water indicating confined aquifer conditions.

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	May Creek	~1280	1260-1340	1325	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Evans Creek	~1280	1240-1280	1520	<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"/>

Basis for aquifer hydraulic connection evaluation: GW elevations are estimated to be above or coincident with SW elevations suggesting groundwater is flowing towards and discharging to surface water

Water Availability Basin the well(s) are located within: Evans Cr > Rogue R – At Mouth (ID# 70987)

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 type="checkbox"/>	<input type="checkbox"/>	NA	-	<input type="checkbox"/>	16.4	<input type="checkbox"/>	**	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	IS70987	20.7	<input type="checkbox"/>	16.4	<input type="checkbox"/>	**	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: **Interference @ 30 d could not be estimated because the terrain (high-relief slopes) and geology (fractured bedrock aquifer) do not meet model assumptions of the widely accepted techniques for determining stream depletion (e.g., Hunt 1999, 2003).

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"/>

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	No surface water sources beyond 1 mile were evaluated												
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
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 proposed well would be producing from an aquifer that has been found to be hydraulically connected to surface water at a distance of < 1 mile. However, the reviewer is unable to find a preponderance of evidence that the proposed use will have the Potential for Substantial Interference (PSI) with surface water.

References Used:

Hunt, B. 1999. *Unsteady Stream Depletion from Ground Water Pumping*. Journal of Hydrologic Engineering, Vol 8(1), pp 12-19

Hunt, B. 2003. *Unsteady Stream Depletion when Pumping from a Semiconfined Aquifer*. Journal of Hydrologic Engineering. Vol 8(1), pp 12-19

OWRD Well Log Database – Accessed 11/22/2016.

Wiley, T. J. 2006. *Preliminary Geologic Map of the Wimer and McConville Peak 7.5' Quadrangles, Jackson and Josephine Counties, Oregon*. Dept. of Geol. and Mineral Industries, Open-file Report O-06-05

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: 1 Logid: JACK 4441

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 well log lists a casing interval of 0 to 20 ft BLS. Rules require casing to extend at least 1 ft above land surface.

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

Water Availability Tables

Water Availability Analysis Detailed Reports

EVANS CR > ROGUE R - AT MOUTH
ROGUE BASIN

Water Availability as of 11/22/2016

Watershed ID #: 70987 [\(Map\)](#) Exceedance Level:

Date: 11/22/2016 Time: 8:49 AM

Water Availability Calculation
Consumptive Uses and Storages
Instream Flow Requirements
Reservations

Water Rights
Watershed Characteristics

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	137.00	1.44	136.00	0.00	170.00	-34.40
FEB	268.00	1.94	266.00	0.00	170.00	96.10
MAR	200.00	1.35	199.00	0.00	170.00	28.60
APR	153.00	2.69	150.00	0.00	170.00	-19.70
MAY	83.10	4.15	78.90	0.00	105.00	-26.10
JUN	42.00	5.76	36.20	0.00	62.10	-25.90
JUL	23.20	7.65	15.60	0.00	31.00	-15.40
AUG	17.60	6.34	11.30	0.00	20.70	-9.44
SEP	16.40	4.21	12.20	0.00	75.00	-62.80
OCT	20.90	1.50	19.40	0.00	150.00	-131.00
NOV	31.40	0.35	31.00	0.00	150.00	-119.00
DEC	88.80	0.79	88.00	0.00	170.00	-82.00
ANN	124,000.00	2,310.00	122,000.00	0.00	86,900.00	51,800.00

Well Location Map

