

## Groundwater Application Review Summary Form

Application # G- 18350-RR

GW Reviewer M. Thoma

Date Review Completed: 10-23-17

### 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).*



# MEMO



**To:** Kristopher Byrd, Well Construction and Compliance Section Manager  
**From:** Joel Jeffery, Well Construction Program Coordinator  
**Subject:** Review of Water Right Application G-18350  
**Date:** September 12, 2018

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 Logs.

Applicant's Well #1 (JACK 2914): 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 casing and seal depth of Applicant's Well #1 is not adequate. In order to meet minimum well construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 40 feet below ground surface.

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

Applicant's Well #3 (JACK 2916): Based on a review of the Well Report, Applicant's Well #3 appears to protect the groundwater resource.

The construction of Applicants Well #3 may not satisfy hydraulic connection issues.

Applicant's Well #4 (JACK 2913): Based on a review of the Well Report, Applicant's Well #4 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The casing and seal depth of Applicant's Well #4 is not adequate. In order to meet minimum well construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 37 feet below ground surface.

Bringing Applicant's Well #4 into compliance with minimum well construction standards may not satisfy hydraulic connection issues.

Applicant's Well #5 (JACK 2909): Based on a review of the Well Report, Applicant's Well #5 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The casing and seal depth of Applicant's Well #5 is not adequate. In order to meet minimum well construction standards, the well must be recased and resealed with an approved

grout to a minimum depth of 66 feet below ground surface.

Bringing Applicant's Well #5 into compliance with minimum well construction standards may not satisfy hydraulic connection issues.

Applicant's Well #6 (JACK 2908): Based on a review of the Well Report, Applicant's Well #6 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The borehole diameter in the seal interval is not adequate, and the seal depth is also not adequate. In order to meet minimum well construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 33 feet below ground surface.

Bringing Applicant's Well #6 into compliance with minimum well construction standards may not satisfy hydraulic connection issues.

Applicant's Well #7 (JACK 30158): Based on a review of the Well Report, Applicant's Well #7 appears to protect the groundwater resource.

The construction of Applicants Well #7 may not satisfy hydraulic connection issues.

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date October 23, 2017

FROM: Groundwater Section Michael J Thoma  
Reviewer's Name

SUBJECT: Application G- 18350 Supersedes review of September 29, 2016  
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: XP Investments LLC County: Jackson

A1. Applicant(s) seek(s) 0.40\* cfs from 6 well(s) in the Rogue Basin,  
Little Butte Cr subbasin

A2. Proposed use Nursery (78.2 acres) Seasonality: year-round

**\*This re-review was prompted by a requested lower rate of appropriation – see attached email**

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 2914	1	Bedrock	0.40	35S/01W-27 NWSW	74'S & 1080'E of E ¼ cor S28
2	JACK 2916	3	Bedrock	0.40	35S/01W-28 NESE	944'S & 143'W of E ¼ cor S28
3	JACK 2913	4	Bedrock	0.40	35S/01W-28 NESE	1238'S & 898'W of E ¼ cor S28
4	JACK 2909	5	Bedrock	0.40	35S/01W-28 NESE	707'S & 420'W of E ¼ cor S28
5	JACK 2908	6	Bedrock	0.40	35S/01W-28 NESE	1158'S & 470'W of E ¼ cor S28
6	JACK 30158	7	Bedrock	0.40	35S/01W-27 NWSW	349'S & 911'E of E ¼ cor S28

\* 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	1425	41	12	*	100	0-20	+1-39			32	61	B
2	1425	-	13	*	107	0-22	0-48		22-47	45	10	B
3	1460	104	10	*	175	0-20	+1-33			140	64	B
4	1435	113	36	*	165	0-20	+1-62	0-113		70	123	Jet
5	1435	94	47	*	200	0-19	+1-19			30	126	Jet
6	1425	182	10	*	300	0-76	+2-76	0-300	180-300	200		A

Use data from application for proposed wells.

A4. **Comments:** \*SWLs are provided by the applicant but do not give a specific date, only a year (1998 for wells #1, #2, #4, #5 and 2016 for wells #3 and #6). SWLs reported on driller's logs range between approx. 10 and 50 ft for the wells listed on the application and between approx. 10 and 40 for most wells drilled in the area (see attached plots)

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); 7N (as modified below); 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:** Nearby well JACK 2932 has SWL data for the past five years but the data record is insufficient to provide a preponderance of evidence that groundwater in the area is or is not over-appropriated.

The original application was for 1.96 cfs (880 gpm) and was determined on an earlier review to not be within the capacity of the resource. The applicant has since requested a reduced rate of 0.40 cfs (180 gpm) which is still higher than the median well yield for the area but may be reasonably appropriated from a combination of the six proposed wells. Interference and injury are still a concern and so standard interference conditions are recommended.

**B1(d), 7N Modification:** The standard Static Water Level Condition shall be modified in the following way: Static water-level measurements shall be obtain from any two of the six wells proposed on this application with the same two wells being dedicated as measurement wells and measured each time. Water-level measurements shall be obtained, from a qualified individual, twice annually with measurements from each well made in March and August. Any change to which wells are measured, or the timing of measurements, shall be requested to the Department and subject to approval.

**Special Condition #1:** Before beneficial use of water begins, the permittee shall conduct a constant-rate aquifer test to estimate aquifer parameters and assess the potential for injury to existing nearby groundwater users. Pumping shall occur from any of the permitted POAs, the test shall be four (4) hours in duration, and the test shall include a minimum of two observation wells that shall be measured at the same frequency as the pumping well. The permittee shall provide notice to the Regional Watermaster's Office at least one week prior to the test and data and test results shall be submitted to the Department's Groundwater Section in a reasonable format. A formal aquifer test report is not required. Specific details not described herein shall conform to Pump-Testing Rules OAR 690-217.

**Special Condition #2:** The permittee shall allow Department staff access to all wells listed on the permit for the purpose of making SWL measurements and installing automatic water-level recording devices if the Department finds it to be necessary and on the condition that access and installation of equipment does not interfere with well use.

**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	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Bedrock of L. Butte Volcanics	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** SWLs reported on well logs provided for this application are several feet above first water indicating confined 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	Little Butte Cr	~1413	1280-1340	9450	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Little Butte Cr	~1412	1280-1340	9270	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	1	Little Butte Cr	~1450	1280-1340	9500	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	1	Little Butte Cr	~1400	1280-1340	9670	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	1	Little Butte Cr	~1388	1280-1340	9310	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	1	Little Butte Cr	~1415	1280-1340	9240	<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"/>

**Basis for aquifer hydraulic connection evaluation:** GW elevations are above SW elevations which suggests that groundwater is flowing toward and discharging to surface water.

**Water Availability Basin the well(s) are located within:** Little Butte Cr > Rogue R – At Mouth (ID# 263)

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"/>

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:** No surface water sources were evaluated within 1 mile of the proposed POAs

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
6 <sup>A</sup>	1	0.2 %	2.9 %	7.4 %	12 %	17 %	21 %	24 %	27 %	30 %	33 %	35 %	37 %
Well Q as CFS		0.54 <sup>B</sup>	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Interference CFS*		<0.01	0.02	0.04	0.07	0.09	0.11	0.13	0.15	0.16	0.18	0.19	0.20
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		<b>Pumping rate is not distributed</b>											
Interference CFS													
(A) = Total Interf.		0.01	0.03	0.07	0.10	0.12	0.15	0.17	0.19	0.20	0.21	0.23	0.24
(B) = 80 % Nat. Q		133	206	236	297	141	82.5	73.9	70.7	45.9	23.3	34.4	60.8
(C) = 1 % Nat. Q		1.33	2.06	2.36	2.97	1.41	0.83	0.74	0.71	0.46	0.23	0.34	0.61
(D) = (A) > (C)													
(E) = (A / B) x 100		<0.1 %	<0.1 %	<0.1 %	<0.1 %	<0.1 %	0.14 %	0.18 %	0.21 %	0.36 %	0.76 %	0.55 %	0.33 %

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

**Comments:** Interference with surface water was estimated using the Hunt (1999) stream-depletion model run through the USGS Michigan Water Science Center web-based version. The model was run using parameter values expected for this type of geology. The model input page is attached and the website can be found at: <http://mi.water.usgs.gov/software/groundwater/CalculateWell/index.html>

<sup>A</sup> Only Well #6 (JACK 30158) was evaluated for PSI because it is the closest to the impacted surface water. Interference is inversely-proportional to distance so all other wells will have less interference with surface water

<sup>B</sup> Monthly Well Q was based on the annual duty (5 AF/yr/acre x 78.2 acres) divided by the period of use (12 months)

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 wells 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 department is unable to find sufficient evidence that the proposed use will have the Potential for Substantial Interference per OAR 690-009

Well #1 is located barely within the Rogue River WAB. However, the topography of the area across the basin divide is very flat and there is large rise (Long Mountain) located directly west of Well #1 and between the wells and the Rogue River. So although Well #1 is within the Rogue River WAB, hydraulic connection to the Rogue River will be small in comparison to connection to Little Butte Cr due to the topography so only Little Butte Cr. was evaluated for PSI.

**References Used:**

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

Reeves, H.W., 2008, STRMDEPL08—*An Extended Version of STRMDEPL with Additional Analytical Solutions to Calculate Streamflow Depletion by Nearby Pumping Wells*: U.S. Geological Survey Open-File Report 2008-1166, 22 p.

Wiley, T. K. and J. G. Smith. 1993. *Preliminary Geologic Map of the Medford East, Medford West, Eagle Point, and Sams Valley Quadrangles, Jackson County, Oregon*. Oregon Dept. of Geology and Mineral Industries. OFR O-93-13

OWRD Well Log Database – accessed 09/29/2016

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

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

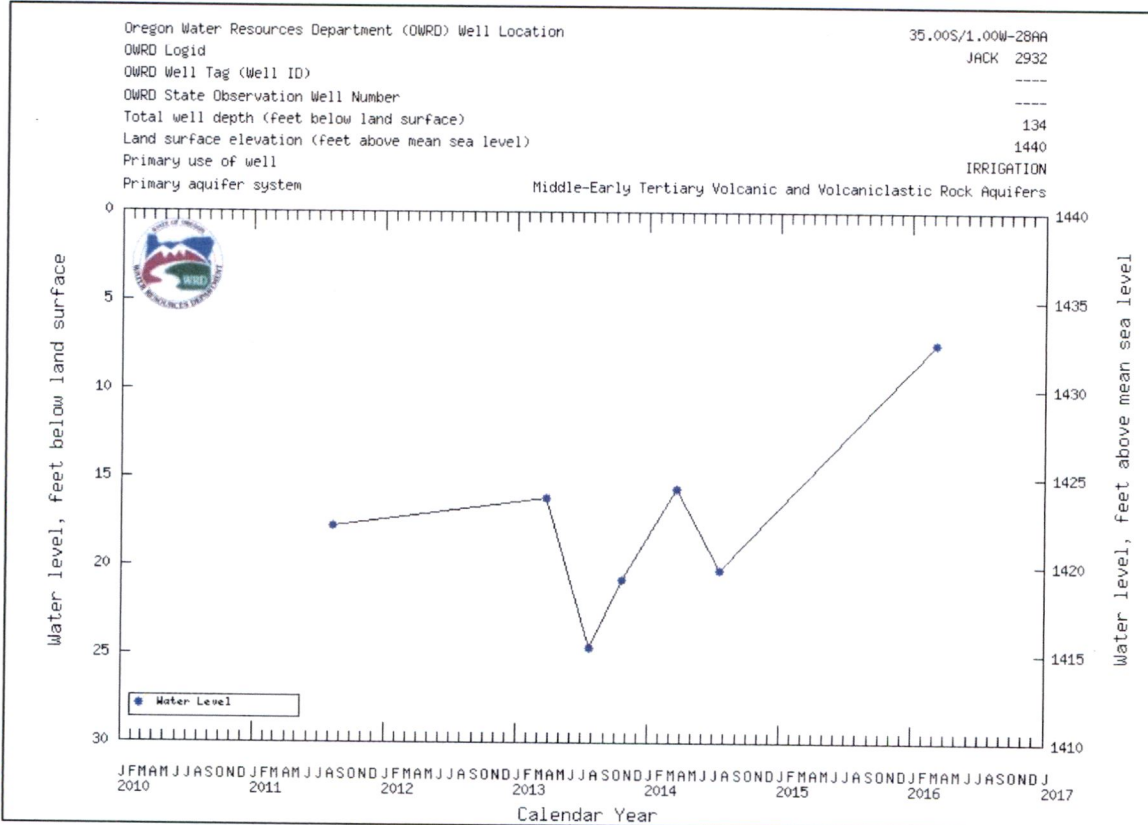
D4.  **Route to the Well Construction and Compliance Section for a review of existing well construction.**

\_\_\_\_\_

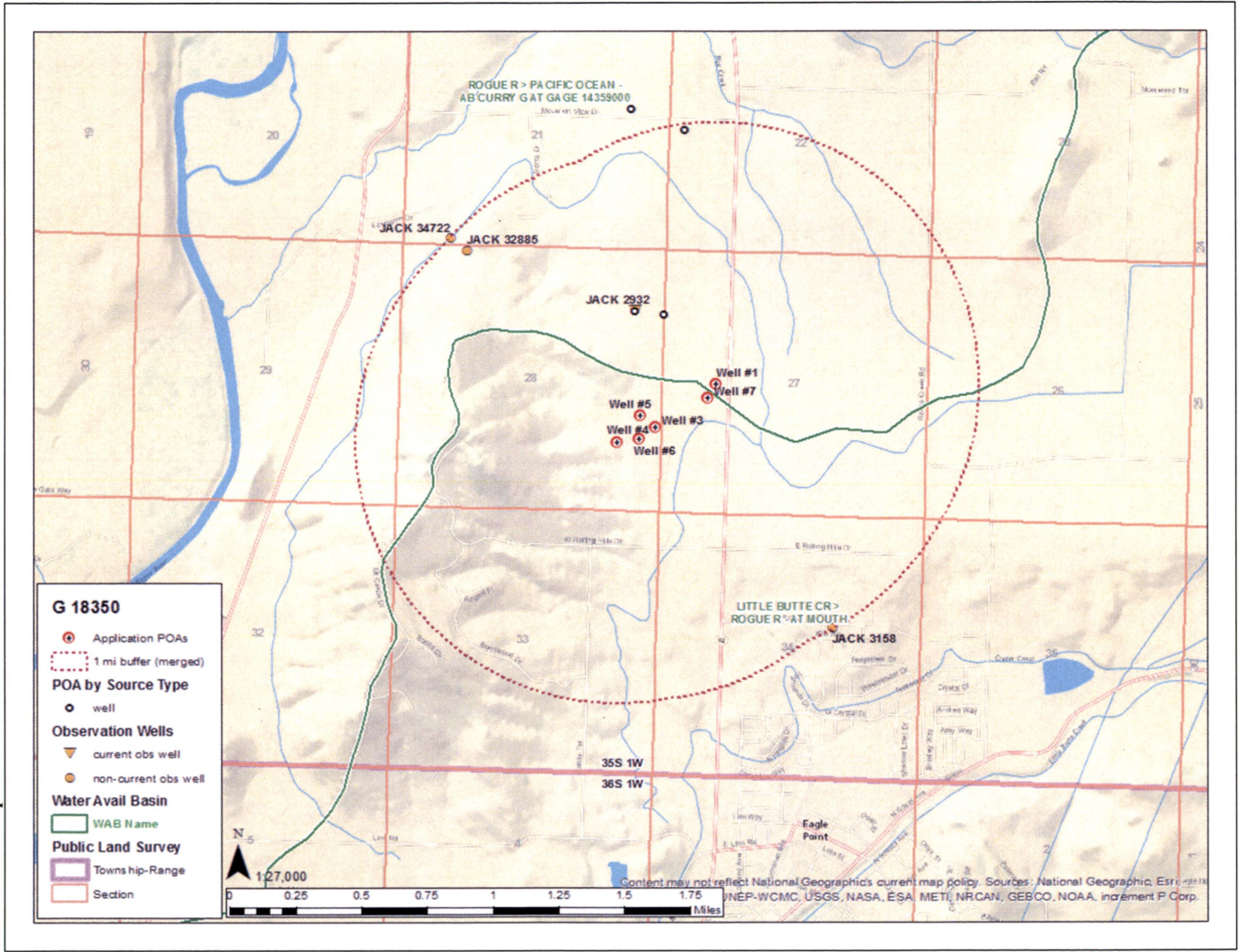
**Water Availability Tables**

LITTLE BUTTE CR > ROGUE R - AT MOUTH ROGUE BASIN							
Water Availability as of 9/29/2016							
Watershed ID #: 263 <a href="#">(Map)</a>				Exceedance Level: 80% -			
Date: 9/29/2016				Time: 11:48 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	133.00	44.20	88.80	0.00	100.00	-11.20	
FEB	206.00	55.30	151.00	0.00	100.00	50.70	
MAR	236.00	58.90	177.00	0.00	100.00	77.10	
APR	297.00	17.80	279.00	0.00	100.00	179.00	
MAY	141.00	30.90	110.00	0.00	60.00	50.10	
JUN	82.50	48.90	33.60	0.00	20.00	13.60	
JUL	73.90	69.80	4.05	0.00	20.00	-15.90	
AUG	70.70	56.70	14.00	0.00	20.00	-6.03	
SEP	45.90	35.40	10.50	0.00	120.00	-109.00	
OCT	23.30	12.00	11.30	0.00	120.00	-109.00	
NOV	34.40	22.10	12.30	0.00	100.00	-87.70	
DEC	60.80	37.90	22.90	0.00	100.00	-77.10	
ANN	153,000.00	29,600.00	123,000.00	0.00	57,800.00	82,800.00	

**Water Level Data**



Well Location Map



**Stream-depletion Model Input Page**

The Web-Based STRMDEPL08 evaluates four analytical solutions that simulate streamflow depletion by a nearby pumping well. It is based on STRMDEPL08 (Reeves, 2008) and the earlier STRMDEPL (Barlow, 2000). These two earlier programs are written in Fortran, require text input files, and produce tabular output. The web-based version was written to provide an easier interface to the analytical solutions with more convenient units and simplified output. ([View more...](#))

**Calculate Streamflow Depletion by Nearby Pumping Well**

**Fully penetrating stream with no streambed resistance (Jenkins, 1968)**

Distance (ft): \_\_\_\_\_  
 Transmissivity (ft<sup>2</sup>/day): \_\_\_\_\_  
 Storage Coefficient: \_\_\_\_\_  
 Pumping Rate (gpm): \_\_\_\_\_  
 Days of Pumping: \_\_\_\_\_

**Fully penetrating stream with streambed resistance (Hantush, 1965)**

Distance (ft): \_\_\_\_\_  
 Transmissivity (ft<sup>2</sup>/day): \_\_\_\_\_  
 Storage Coefficient: \_\_\_\_\_  
 Streambed Leakage (ft): \_\_\_\_\_  
 Pumping Rate (gpm): \_\_\_\_\_  
 Days of Pumping: \_\_\_\_\_

**Partially penetrating stream with streambed resistance (Hunt, 1999)**

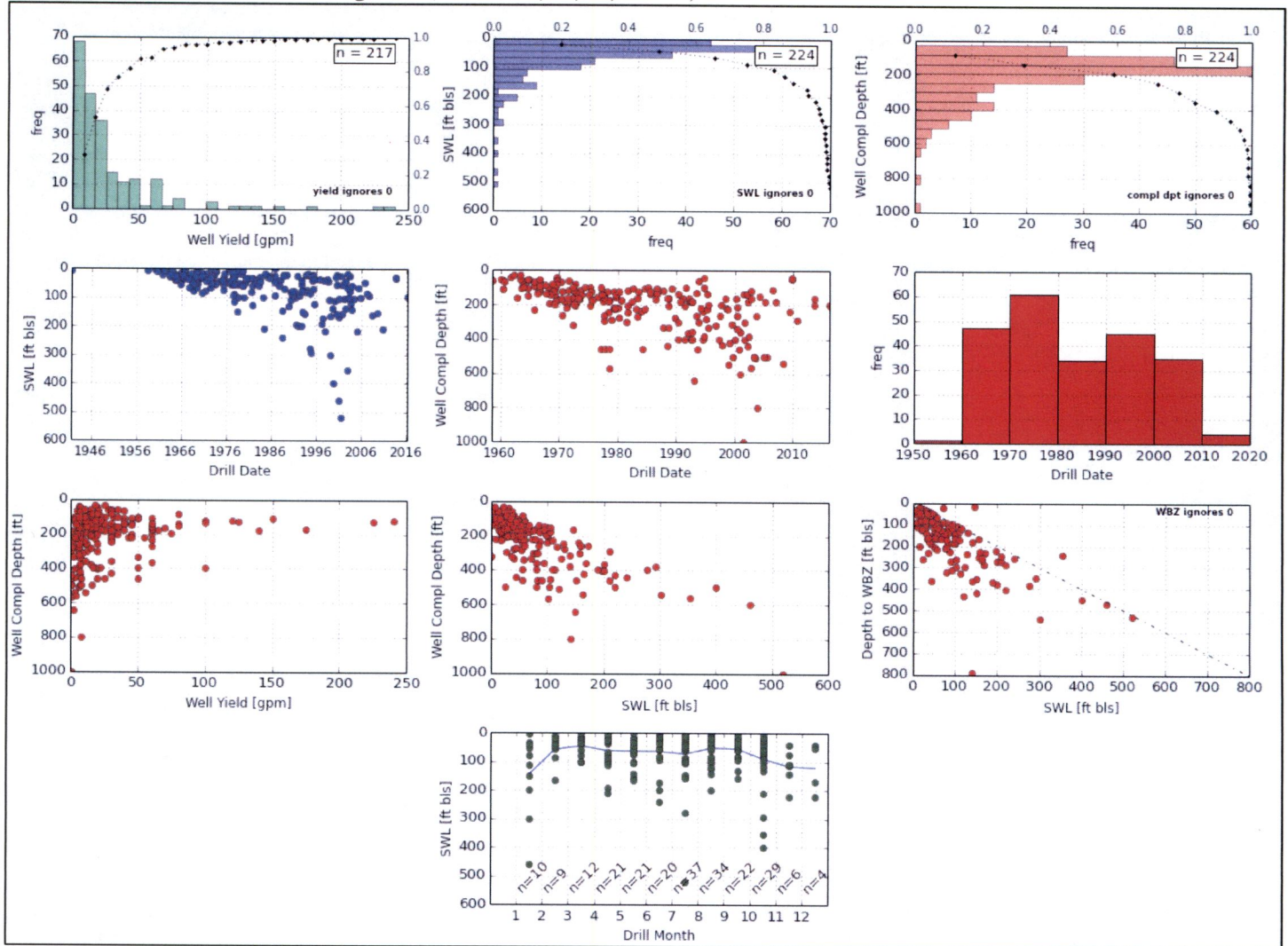
Distance (ft): 9240  
 Transmissivity (ft<sup>2</sup>/day): 15  
 Storage Coefficient: 0.0001  
 Streambed Conductance (ft/day): 1  
 Pumping Rate (gpm): 242  
 Days of Pumping: 365

Units used

**Partially penetrating stream in an aquitard overlying a pumped aquifer (Hunt, 2003)**

Distance (ft): \_\_\_\_\_  
 Transmissivity (ft<sup>2</sup>/day): \_\_\_\_\_  
 Storage Coefficient: \_\_\_\_\_  
 Specific Yield of Aquitard: \_\_\_\_\_  
 Hydraulic Conductivity of Aquitard (ft/day): \_\_\_\_\_  
 Stream Width (ft): \_\_\_\_\_  
 Thickness of Aquitard (ft): \_\_\_\_\_

### Well Log Statistics for Surrounding Area (Section 27, 28, 33, and 34)



**From:** Evan Malepsy <emalepsy@roguecivil.com>  
**Sent:** Monday, February 13, 2017 11:25 AM  
**To:** GRAHAM Elisabeth A \* WRD  
**Cc:** THOMA Michael J \* WRD  
**Subject:** RE: G-18350

Hi Lisa,

I've discussed the maximum rate of withdrawal with my client and Mike Thoma. We would like to change our request for maximum total withdrawal rate to 180 GPM. Please let me know if we need to make any revisions to the application. Also, could you let me know of any changes to the process that may occur due to making this change? Will the timing of the review and final order be affected?

Thanks,

**Evan Malepsy, PE CWRE**  
541-621-2868  
[emalepsy@roguecivil.com](mailto:emalepsy@roguecivil.com)

## ROGUE CIVIL LLC

Civil Engineering  
Water Rights

**From:** GRAHAM Elisabeth A \* WRD [<mailto:Elisabeth.A.Graham@oregon.gov>]  
**Sent:** Thursday, February 9, 2017 12:31 PM  
**To:** Evan Malepsy <[emalepsy@roguecivil.com](mailto:emalepsy@roguecivil.com)>  
**Cc:** 'Megan LaNier' <[megan@lanierlandconsulting.com](mailto:megan@lanierlandconsulting.com)>; 'Ross Hrcir' <[rossmh@yahoo.com](mailto:rossmh@yahoo.com)>; THOMA Michael J \* WRD <[Michael.J.Thoma@oregon.gov](mailto:Michael.J.Thoma@oregon.gov)>  
**Subject:** RE: G-18350

Hi Evan,

Thank you for getting the new Land Use Form, from what I have been able to determine, the new form is the best way to go.

The attached Land Use Form is acceptable.

Thank you,  
Lisa Graham

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**From:** Evan Malepsy [<mailto:emalepsy@roguecivil.com>]  
**Sent:** Thursday, February 09, 2017 12:23 PM  
**To:** GRAHAM Elisabeth A \* WRD  
**Cc:** 'Megan LaNier'; 'Ross Hrcir'  
**Subject:** FW: G-18350

Hi Lisa,

I didn't hear back regarding the email below so I went ahead and obtained a new Land Use Form from the County showing the approvals have been obtained, see attached. This should satisfy the requirement for additional information outlined in the Initial Review Determination letter. We will continue to work with Mike Thoma on determining an acceptable flow rate for the wells.

Could you please confirm that you received this, and that it meets the requirement? If you need the original I can put it in the mail. Let me know if there any questions, or needs for additional information at this time.

Thanks,

**Evan Malepsy, PE CWRE**  
541-621-2868  
[emalepsy@roguecivil.com](mailto:emalepsy@roguecivil.com)

## ROGUE CIVIL LLC

Civil Engineering  
Water Rights

**From:** Evan Malepsy  
**Sent:** Wednesday, February 8, 2017 10:54 AM  
**To:** GRAHAM Elisabeth A \* WRD <[Elisabeth.A.Graham@oregon.gov](mailto:Elisabeth.A.Graham@oregon.gov)>  
**Subject:** RE: G-18350

Hi Lisa,

Per the Initial Review Determination letter, dated January 27, 2017, my client is to provide a land use compatibility statement indicating that land use approvals have been obtained. I recently had a land use form completed for the property, but it was for a different water right application, see attached. Could this form satisfy the requirement for G-18350 also? If not, is it critical that we provide the land use form by February 10? I've been out sick and am behind schedule.

Also, thanks for talking to Mike Thoma regarding this application, I am hopeful that we can come up with a proposal that will be acceptable.

Thanks,

**Evan Malepsy, PE CWRE**  
541-621-2868  
[emalepsy@roguecivil.com](mailto:emalepsy@roguecivil.com)

## ROGUE CIVIL LLC

Civil Engineering  
Water Rights

**From:** GRAHAM Elisabeth A \* WRD [<mailto:Elisabeth.A.Graham@oregon.gov>]  
**Sent:** Wednesday, February 1, 2017 9:34 AM  
**To:** Evan Malepsy <[emalepsy@roguecivil.com](mailto:emalepsy@roguecivil.com)>  
**Subject:** G-18350

Hello Evan,

It was nice to talk with you this morning.

I have emailed Mike Thoma in groundwater requesting rate information.

Please reach out with any additional questions.

Sincerely,

**Lisa Graham** | Water Right Application Caseworker  
**Water Resources Department** | 725 Summer St. NE, Suite A | Salem, Oregon 97301





NOTICE TO WATER WELL CONTRACTOR  
The original and first copy of this report are to be filed with the  
STATE ENGINEER, SALEM, OREGON 97310  
within 30 days from the date of well completion.

RECEIVED  
JUL 27 1968  
STATE ENGINEER  
SALEM, OREGON

WATER WELL REPORT

Jack  
2916

State Well No. 35/1w-27M  
State Permit No.

(1) OWNER:  
Name H. R. Miller  
Address Medford, Ore.

(2) LOCATION OF WELL:  
County Jackson Driller's well number  
N.W. 1/4 S.W. 1/4 Section 27 T. 35 S. R. 1 W W.M.  
Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):  
Well  Deepening  Reconditioning  Abandon   
Indonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check): (5) TYPE OF WELL:  
Domestic  Industrial  Municipal  Rotary  Driven   
Irrigation  Test Well  Other  Cable  Jetted   
Dug  Bored

(6) CASING INSTALLED:  
6" Diam. from 0 ft. to 48'3" ft. Gage 250  
" Diam. from ft. to ft. Gage  
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:  
Perforated?  Yes  No  
Type of perforator used Jacob  
Size of perforations 3/8 in. by 3 in.  
48" perforations from 22 ft. to 47 ft.  
perforations from ft. to ft.  
perforations from ft. to ft.  
perforations from ft. to ft.  
perforations from ft. to ft.

(8) SCREENS:  
Well screen installed?  Yes  No  
Manufacturer's Name  
Model No.  
Diam. Slot size Set from ft. to ft.  
Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:  
Well seal—Material used in seal Cement  
Depth of seal 22 ft. Was a packer used?  Yes  No  
Diameter of well bore to bottom of seal 6.0 in.  
Were any loose strata cemented off?  Yes  No Depth  
Was a drive shoe used?  Yes  No  
Was well gravel packed?  Yes  No Size of gravel: 3/4  
Gravel placed from 24 ft. to 47 ft.  
Did any strata contain unusable water?  Yes  No  
Type of water? good depth of strata  
Method of sealing strata off

(10) WATER LEVELS:  
Static level 12 ft. below land surface Date 7-26-66  
Artesian pressure lbs. per square inch Date

(11) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made?  Yes  No If yes, by whom?  
Yield: gal./min. with ft. drawdown after hrs  
" " " " "  
" " " " "  
" " " " "  
Bailer test 45 gal./min. with 10 ft. drawdown after 1 hrs.  
Artesian flow g.p.m. Date  
Temperature of water 58 Was a chemical analysis made?  Yes  No

(12) WELL LOG: Diameter of well below casing 6  
Depth drilled 107 ft. Depth of completed well 107 ft.  
Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Black Soil	0	4
Red clay	4	15
Iron R. (Red)	15	27
Basalt	27	36
Soft rock (Basalt)	36	39
Basalt	39	78
Red clay	78	84
Blue shale	84	99
Red clay	99	107

Work started 7-21 19 66 Completed 7-26 19 66  
Date well drilling machine moved off of well 7-26 19 66

(13) PUMP:  
Manufacturer's Name  
Type: H.P.

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 E. J. Studebaker  
(Person, firm or corporation) (Type or print)  
Address 55 W. N. V. A. ST. - ASHLAND  
Drilling Machine Operator's License No. 261  
[Signed] E. J. Studebaker  
(Water Well Contractor)  
Contractor's License No. 40 Date 7-26, 19 66





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.

RECEIVED WATER WELL REPORT

STATE OF OREGON JUL 11 1977 (Please type or print)

WATER RESOURCES DEPARTMENT (Do not write above this line)

Jack 290872

State Well No. 355/w-27

State Permit No.

(1) OWNER:

Name Miller Egg Ranch Address 13004 PATER LAKE HWY EAGLE LAKE OREGON

(2) TYPE OF WORK (check):

New Well [x] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

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

(4) PROPOSED USE (check):

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

CASING INSTALLED:

6" Diam. from 1 ft. to 19 ft. Gage 1250

PERFORATIONS:

Type of perforator used Size of perforations in. by in. perforations from ft. to ft.

(7) SCREENS:

Well screen installed? [ ] Yes [x] No Manufacturer's Name Type Model No. Diam. Slot size Set from ft. to ft.

(8) WELL TESTS:

Drawdown is amount water level is lowered below static level Was a pump test made? [ ] Yes [x] No Yield: gal./min. with ft. drawdown after hrs.

(9) CONSTRUCTION:

Well seal—Material used CEMENT Well sealed from land surface to 19 ft. Diameter of well bore to bottom of seal 9 in. Diameter of well bore below seal 6 in. Number of sacks of cement used in well seal 52 sacks How was cement grout placed? PRESSURE GROUT from bottom of

(10) LOCATION OF WELL:

County Jackson Driller's well number 1/4 1/4 Section 27 T. 35 R. 1W W.M. Bearing and distance from section or subdivision corner 1700' W, 1800' S. of the N.E. Property corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 99 ft. Static level 20 ft. below land surface. Date 6-27-77 Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6 Depth drilled 200 ft. Depth of completed well 200 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 SOIL, CLAY, BASALT, CLAYSTONE, etc.

Work started 6-27 1977 Completed 6-27 1977 Date well drilling machine moved off of well 6-27 1977

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] ERAY Date 7-1, 1977 Drilling Machine Operator's License No. 819

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 Crater Well Drilling Inc. Address 1923 Delta Waters Rd. Med. [Signed] Date 7-5, 1977 Contractor's License No. 545 Date 7-5, 1977

JUN 19 1990

35S/2W/27  
1949

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

WATER RESOURCES DEPT  
SALEM, OREGON

90158  
JACK

(START CARD) #

(1) OWNER:

Well Number: \_\_\_\_\_  
Name Willamette Egg Farm  
Address 13003 Highway 62  
City Eagle Point State OR Zip 97524

(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 300 ft.  
Explosives used   Type \_\_\_\_\_ Amount \_\_\_\_\_

HOLE		SEAL		Amount	
Diameter	From To	Material	From To	sacks or pounds	
12	0 76	cement	0 76	45 sacks	
8	76 301				

How was seal placed: Method  A  B  C  D  E

Other \_\_\_\_\_  
Backfill placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Material \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft. Size of gravel \_\_\_\_\_

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 8"	+2	76'	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: 6"	0	300	250	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Final location of shoe(s) \_\_\_\_\_

(7) PERFORATIONS/SCREENS:

Perforations Method skill saw  
 Screens Type \_\_\_\_\_ Material \_\_\_\_\_

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
180	300	6"	500	1/8"		<input type="checkbox"/>	<input checked="" type="checkbox"/>

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

Pump  Bailer  Air  Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
<u>200-250</u>		<u>299'</u>	1 hr.

Temperature of water \_\_\_\_\_ 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 Jackson Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
Township 35S N or S, Range 2W E or W, WM.  
Section 27 1/4 \_\_\_\_\_ 1/4 \_\_\_\_\_  
Tax Lot 400 Lot \_\_\_\_\_ Block \_\_\_\_\_ Subdivision \_\_\_\_\_  
Street Address of Well (or nearest address) 13003 Highway 62  
Eagle Point, Oregon 97524

(10) STATIC WATER LEVEL:

21 ft. below land surface. Date 6-11-90  
Artesian pressure \_\_\_\_\_ lb. per square inch. Date \_\_\_\_\_

(11) WATER BEARING ZONES:

Depth at which water was first found 182

From	To	Estimated Flow Rate	SWL
182	183	15	
236	238	15	
243	280	175-225	21

(12) WELL LOG:

Ground elevation \_\_\_\_\_

Material	From	To	SWL
shale, fill	0	4	
clay, sticky, brown	4	25	
" , w/gravel, small breaks	25	60	
claystone, light blue	60	114	
sandstone, light blue, tight	114	121	
rock, fractured, drk green/red	121	155	<u>160</u>
claystone, light blue, med	155	301	21

**STUDEBAKER DRILLING, INC.**  
1400 Arnold Lane  
Medford, Oregon 97501

Date started 6-9-90 Completed 6-11-90

(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 Shank in Canada WWC Number 1432  
Date 6-12-90

(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 John Studebaker WWC Number \_\_\_\_\_  
Date 6-12-90