

Groundwater Application Review Summary Form

Application # G-LL-1799 (re-review)

GW Reviewer Ben Scardella, Jen Woody Date Review Completed: 2/14/20

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 Date 2/14/2020
 FROM: Groundwater Section Benjamin Scandella, Jen Woody
 Reviewer's Name
 SUBJECT: Application LL-1799 Supersedes review of 11/20/2019
 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: **CHRIS RAMSEY; DOMAINE SERENE VINEYARDS AND WINERY INC.**
 County: **POLK**

A1. Applicant(s) seek(s) 0.045 cfs (20 gpm) from 1 well(s) in the Willamette Basin,
Middle Willamette subbasin

A2. Proposed use Irrigation Seasonality: March 1st through October 31st

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	PROPOSED	2	CRB	0.045	6S/3W-18 NW-NW	810' S, 910' E fr NW cor S 18

* 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	N/A	N/A	N/A	N/A	320	0-220	+1-220	0-280	280-310	N/A	N/A	N/A

Use data from application for proposed wells.

A4. **Comments:** The application states 2 different total annual volumes: 11.15 AF on p. 1, and 22 AF on the Land Use Information Form. **For the purposes of this review, an annual volume of 11.15 AF is assumed.** This re-review considers a revised application, submitted 1/29/2020, which removed POLK 1036 from the application and replaced it with a proposed well, located approximately 20' SE of POLK 1036. Proposed well construction was submitted on 1/31/2020 and suggests that this proposed well will also access the CRB aquifer system.

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: **690-502-0240** classifies use from unconfined alluvial aquifers. This application proposes use from a confined aquifer in the CRBG, so this rule is not activated.

A6. **Well # 1** tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: **Eola Hills Ground Water Limited Area (690-502-0200)**

Comments: "Groundwater in the basalt aquifers in the Eola Hills Groundwater Limited Area is classified for exempt uses, irrigation and rural residential fire protection systems only. Permits may be issued, for a period not to exceed five years, for fire protection and for drip or equally efficient irrigation provided the Director finds the proposed use and amount do not pose a threat to the groundwater resource or existing permit holders" (OAR 690-502-0200).

This proposed limited license application appears to be consistent with the provisions of OAR 690-502-0200.

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) 7i (Willamette CRBG conditions); 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 _____ a single aquifer in the Columbia River Basalt Group 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 is located in the southeastern foothills of the Eola Hills, which are comprised of Columbia River Basalt Group (CRBG) flows overlying older marine sedimentary rocks. Groundwater data for the CRBG aquifers in this area is sparse, with wells completed in the CRBG showing low to moderate yields from ~5-50 gpm. The long-term datasets for wells accessing CRBG aquifers in the vicinity show relatively stable levels. However, even if the proposed well accesses the same aquifer as the applicant's existing well, POLK 1036, the elevation separation between the water levels in those wells vs. POLK 1036 makes it difficult to establish whether they access the same CRBG aquifer and conclude whether groundwater will be available within the capacity of the resource.

The nearest well to the subject well, POLK 994, is about ¼ mile away. However, the total depth of this well is almost 300 ft deeper than the water level recorded on the well log, so it is unlikely that this well would be injured by the proposed use.

There are multiple springs with associated rights (Certificate Numbers 30528 and 31628) located approximately ¼ mile from the subject well. Analytic modeling using the Theis (1941) drawdown model with relevant parameters (Conlon and others, 2005, OWRD Groundwater Database, 2019) suggests that pumping at the proposed rate for 125 days could plausibly cause up to 80 feet of drawdown at the spring on Certificate 31628 (see figure below). The large range of plausible outcomes makes it difficult to determine whether the proposed use is likely to interfere with the spring and cause a senior user not to receive their entitled water. However, given the strong potential for injury to the certificated springs under the proposed rate, and the unknown sensitivity of the spring to drawdown, the Limited License should be conditioned as follows:

Special Condition: Water use under this limited license shall be shut off if either Certificate 30528 or Certificate 31628 does not receive the water to which it is legally entitled. Water use shall remain shut off until the following spring, unless it is specifically re-authorized by The Director.

The conditions noted in B1(d) are required by the Willamette Basin rules for CRBG wells and will enable monitoring for use above the capacity of the resource.

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	Columbia River Basalt Group	<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"/>

Basis for aquifer confinement evaluation: Water-bearing zones within the CRBG typically display high degrees of confinement. The well log for the nearby existing well, POLK 1036, shows the water level 67' above the top of the water-bearing zone, indicating confined conditions. Given the similar proposed construction, the proposed well is also expected to access a confined CRBG aquifer.

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	King Creek	290-300	160-630	470	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Spring Valley Creek	290-300	133-136	4100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: SW elevation ranges encompass elevations within 1 mile of the well. King Creek incises through the CRBG in the vicinity of the well, and the coincidence of head values with SW elevations supports a finding of hydraulic connection.

Water Availability Basin the well(s) are located within: WID 182: WILLAMETTE R > COLUMBIA R - AB MOLALLA R

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"/>			<input type="checkbox"/>	3830	<input type="checkbox"/>	*	<input checked="" 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.

Well	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: C3a note: *There is no appropriate model to estimate streamflow depletion from pumping in CRBG interflow zones that are incised by streams or discharge to point sources such as springs. Therefore, the percentage of interference at 30 days was not calculated. King Creek within ¼ mile of the Well 1 and is hydraulically connected to it, so PSI was assumed.

C3b: not applicable.

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													
(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: N/A

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:** N/A

References Used:

Application LL-1799 file

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Oregon Water Resources Department Groundwater Database.

U.S. Geological Survey. National Hydrography Dataset. Reston, VA: U.S. Dept. of the Interior, U.S. Geological Survey, 2018.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

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

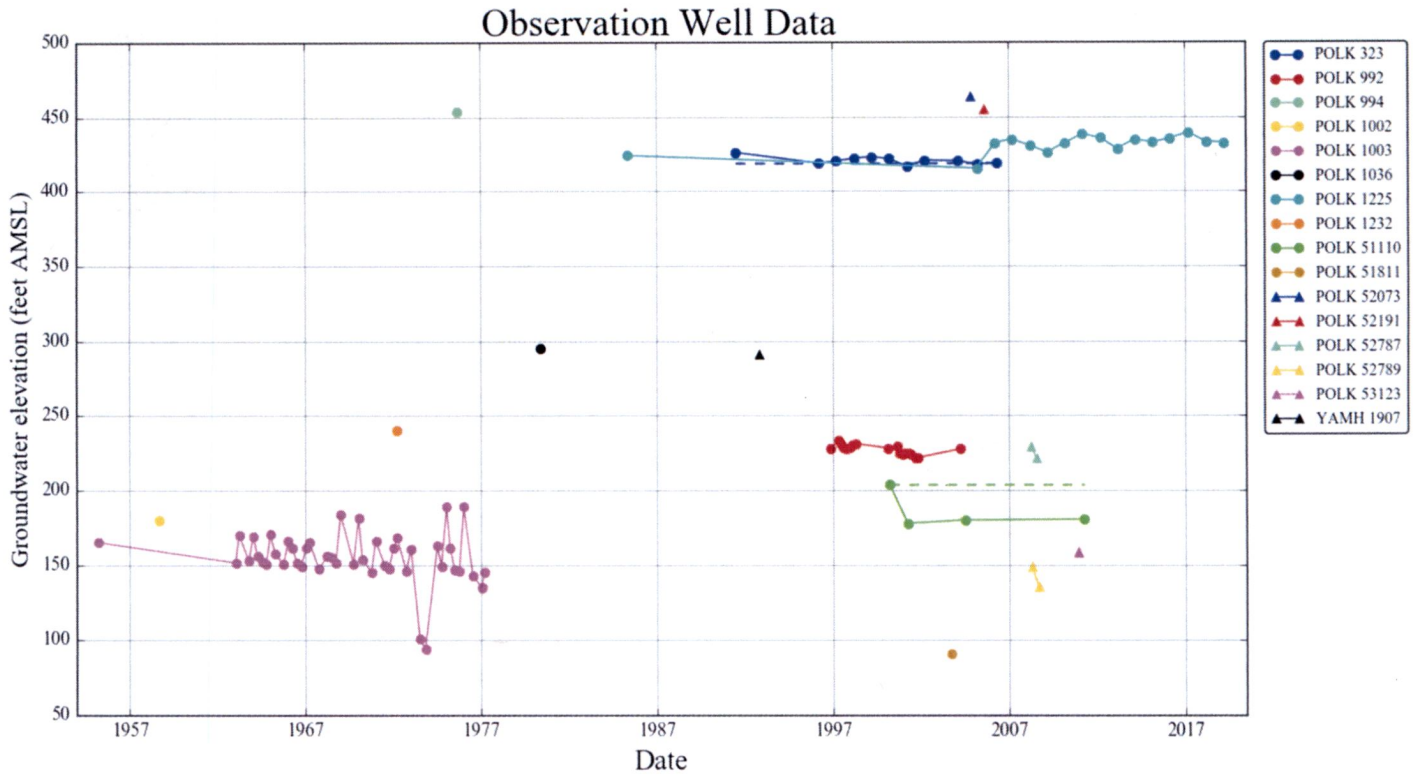
Watershed ID #: 182
Time: 11:51 AM

WILLAMETTE R > COLUMBIA R - AB MOLALLA R
Basin: WILLAMETTE

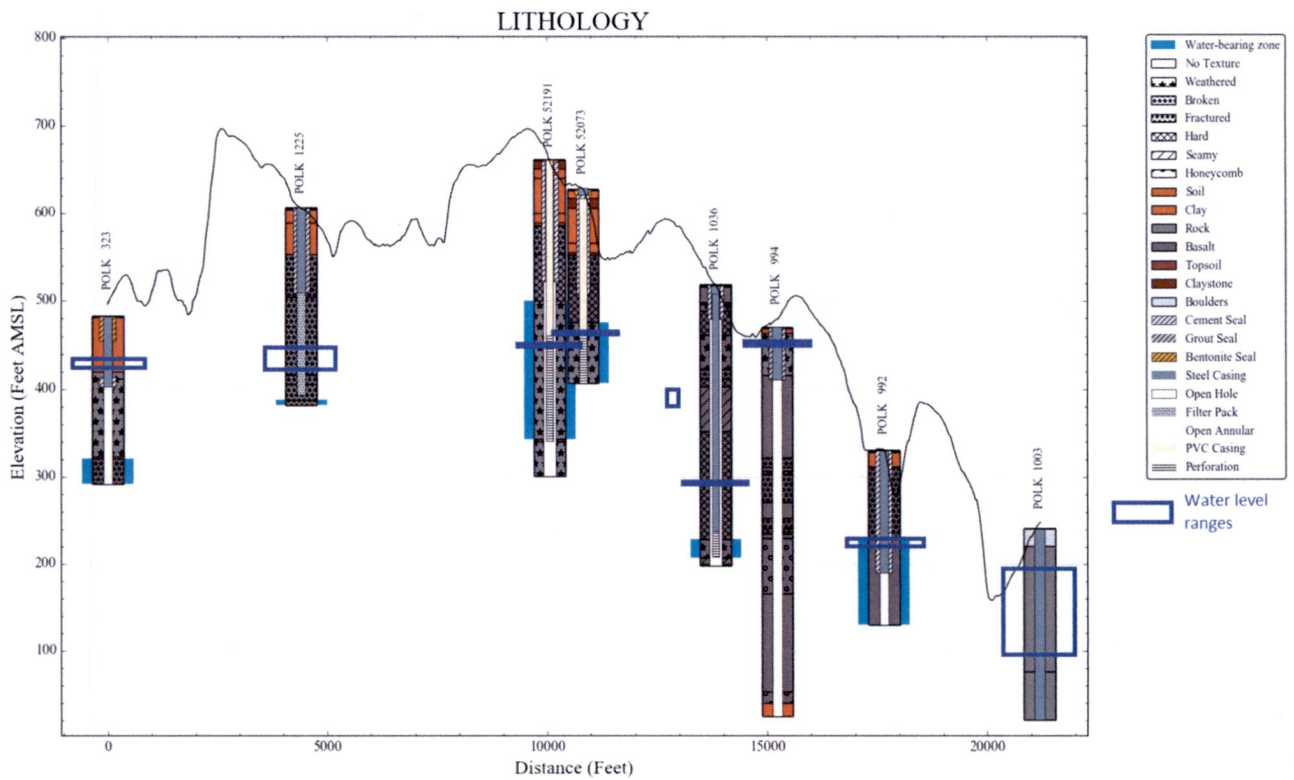
Exceedance Level: 80
Date: 04/12/2019

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	21,400.00	2,290.00	19,100.00	0.00	1,500.00	17,600.00
FEB	23,200.00	7,470.00	15,700.00	0.00	1,500.00	14,200.00
MAR	22,400.00	7,250.00	15,200.00	0.00	1,500.00	13,700.00
APR	19,900.00	6,900.00	13,000.00	0.00	1,500.00	11,500.00
MAY	16,600.00	4,240.00	12,400.00	0.00	1,500.00	10,900.00
JUN	8,740.00	1,980.00	6,760.00	0.00	1,500.00	5,260.00
JUL	4,980.00	1,810.00	3,170.00	0.00	1,500.00	1,670.00
AUG	3,830.00	1,650.00	2,180.00	0.00	1,500.00	681.00
SEP	3,890.00	1,390.00	2,500.00	0.00	1,500.00	996.00
OCT	4,850.00	747.00	4,100.00	0.00	1,500.00	2,600.00
NOV	10,200.00	879.00	9,320.00	0.00	1,500.00	7,820.00
DEC	19,300.00	961.00	18,300.00	0.00	1,500.00	16,800.00
ANN	15,200,000	2,250,000	13,000,000	0	1,090,000	11,900,000

Water Levels in Nearby Wells Accessing Columbia River Basalt Aquifers



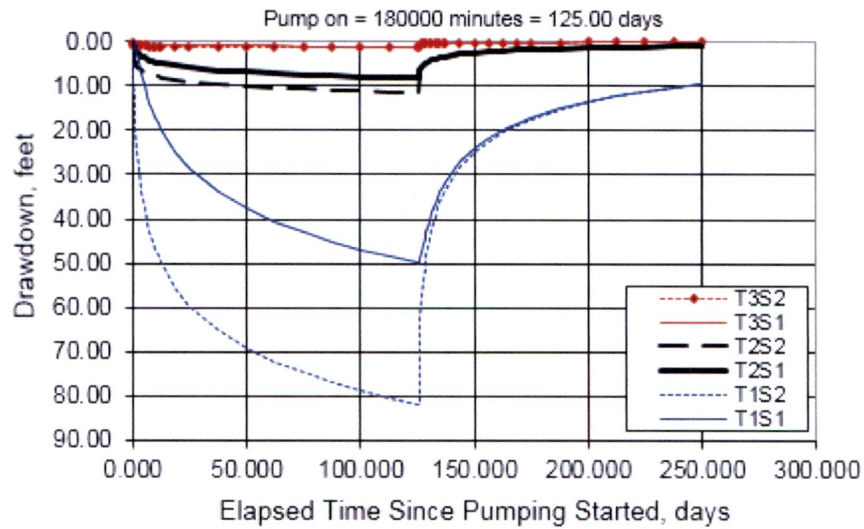
Cross-section of nearby well logs, with water-bearing zones and approximate ranges of measured water levels.



Model parameters and results

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		125		d	
Radial distance from pumped well:	r		1320.00		ft	Q conversions
Pumping rate	Q		20.0		gpm	20.00 gpm
Hydraulic conductivity	K	1	10	100	ft/day	0.04 cfs
Aquifer thickness	b		22		ft	2.67 cfm
Storativity	S 1		0.00010			3,850.27 cfd
	S 2		0.00001			0.09 af/d
Transmissivity Conversions	T f2pd	22	220	2,200	ft ² /day	
	T f2pm	0.0153	0.1528	1.5278	ft ² /min	
	T gpdpft	165	1,646	16,456	gpd/ft	

This Drawdown and Recovery at r = 1320 ft From Pumping Well



Memo to Groundwater

App.: LL-1799
To: Ben Scandella & Joel Jeffrey
From: Mary Bjork
Date: 02/03/2020
Subject: 2nd Technical Review Request

Please see the 1/31/2020 request from the applicant's agent Bill Flatz, for a second technical review of LL-1799.

Bill has provided the following information in regards to drilling a new well:

- Depth, 320'.
- Seal Intervals, 0-220'.
- Casing intervals, +1-220'.
- Liner intervals, 0-280'.
- Perforations or Screens, screens 280'-320'

BJORK Mary F * WRD

Bill Flatz <billflatz@stuntzner.com>
Friday, January 31, 2020 3:49 PM
BJORK Mary F * WRD
RE: LL-1799 Re-review Contacts

From:
Sent:
To:
Subject:

Maryo contact Joel in the field and the driller by email.
y this information will allow a quick determination.

I would like to ask for the new well to be 20 to 25 feet south west of the existing well. Just to allow them a little
ore distance from the existing well. The coordinates already submitted are close enough.

For the table you sent earlier:

- Depth, 320'.
- Seal Intervals, 0-220'.
- Casing intervals, +1-220'.
- Liner intervals, 0-280'.
- Perforations or Screens, screens 280'-320'.

Let me know if any additional information is needed.
Thank you for your help. Have a good super bowl weekend.

Sincerely,

Bill Flatz - PE, CWRE, CESCL



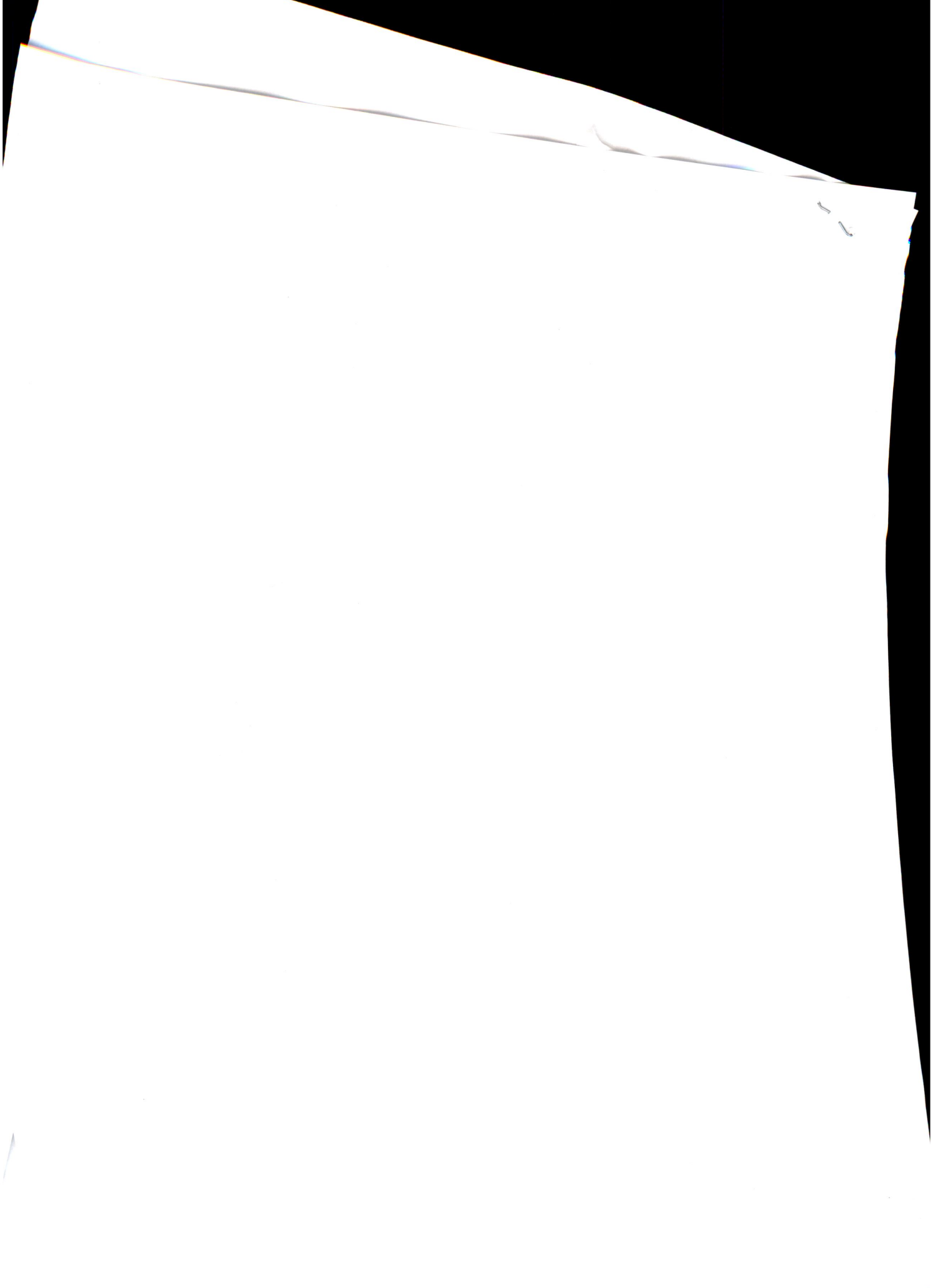
Office: 503-357-5717
Fax: 503-357-5698
Cell: 503-939-8381
2318-B Pacific Avenue
Forest Grove, Or. 97116

From: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Sent: Friday, January 31, 2020 9:42 AM
To: Bill Flatz <billflatz@stuntzner.com>
Cc: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: LL-1799 Re-review Contacts

Hi Bill,

Thanks for taking my call. As discussed, the Department contacts for the technical review are:

Ben Scandella, Groundwater Section, 503-986-0842
Joel Jeffery, Well Construction and Compliance Section, 503-986-0852



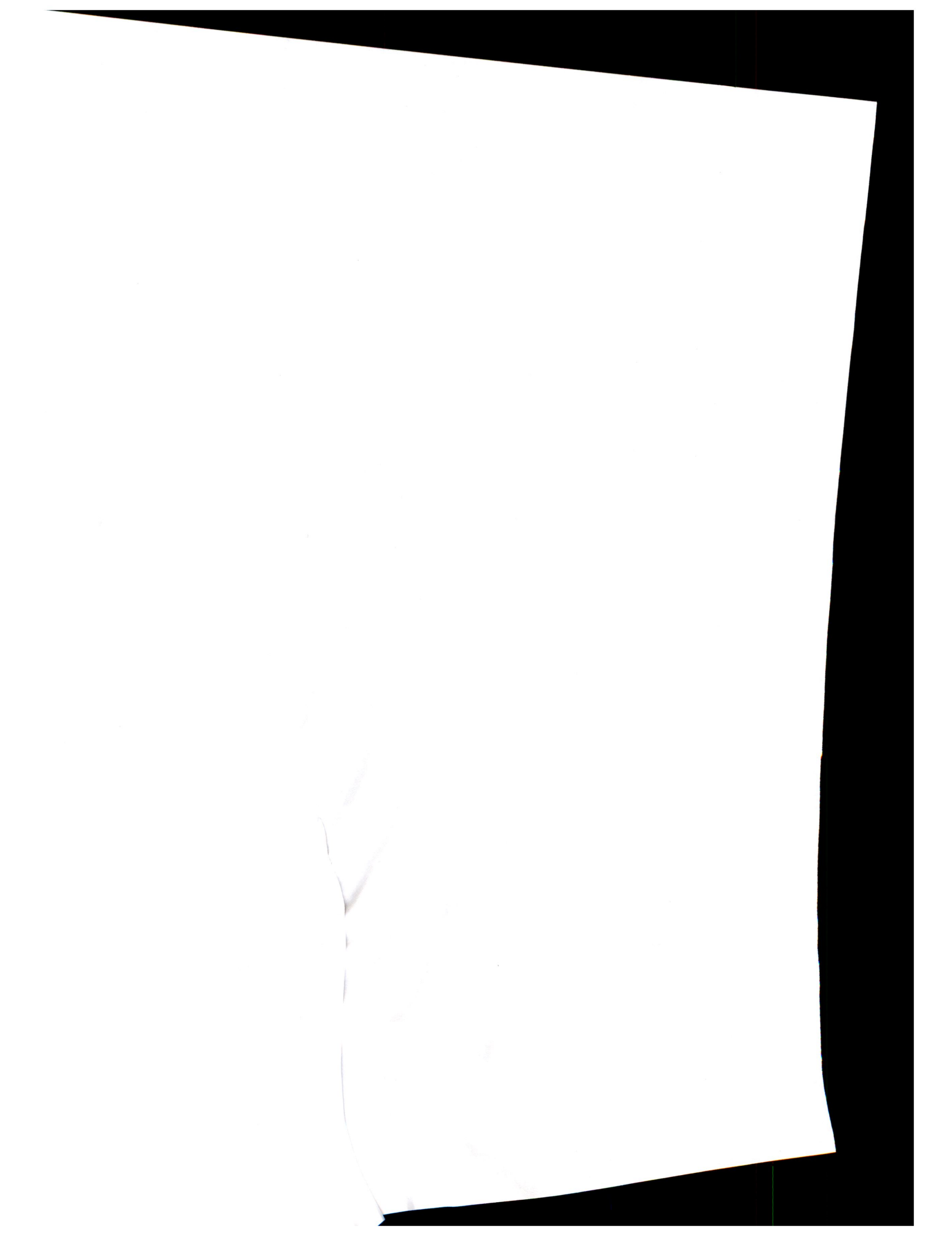
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Date: 1/29/2020
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Please see the 1/29/2020 request from the applicant's agent Bill Flatz, for a second technical review of LL-1799.

The applicant has determined that it is more practical to drill a new well than to bring the existing well up to current standards, see 12/12/2019 WCC Review.

Please review the proposed well and return to me. The applicant is ready to drill a new well now, and appreciates a timely determination from the Department.



LAND SURVEYING

PLANNING

ENGINEERING

WATER RIGHTS

FORESTRY

GPS-GIS

Stuntzner

**Engineering
& Forestry, LLC**



TELEPHONE (503) 357-5717
CELL (503) 939-8381
FAX (503) 357-5698
billflatz@stuntzner.com

2318-B Pacific Avenue
FOREST GROVE, OREGON 97116

COOS BAY - JUNCTION CITY - FOREST GROVE - DALLAS

TO: Mary Bjork
Oregon Water Resources Department

SUBJECT: Application Revision for Limited License application LL-1799.

1-29-20

Mary:

Domaine Serene has determined that it is more practical to drill a new well than to try and bring the existing well up to compliance with well construction standards and Eola Hills groundwater limited area special well construction standards. We propose to drill the new well as shown on the attached revised map for LL-1799.

We also included the distance and direction from the existing well to the proposed new well.

From our conversation last week, I believe this is all that you needed from Stuntzner in order to determine if the Department will approve the limited license. If you need anything else from Stuntzner please contact me.

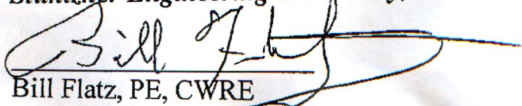
The owners are ready to drill the new well now. They want to drill as soon as possible so that they can complete the water system before the new grapes need water this spring. They will try to wait to drill the new well until the license is issued or a determination is made to issue the license.

We would appreciate it, if practical, to receive a determination from the Department as soon as possible.

Thank you for your help with this project.

Sincerely,

Stuntzner Engineering & Forestry, LLC


Bill Flatz, PE, CWRE

LL-1799



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GW Reviewer Ben Scardella, Jen Woody Date Review Completed: 2/14/20

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Middle Willamette subbasin

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A4. **Comments:** The application states 2 different total annual volumes: 11.15 AF on p. 1, and 22 AF on the Land Use Information Form. **For the purposes of this review, an annual volume of 11.15 AF is assumed.** This re-review considers a revised application, submitted 1/29/2020, which removed POLK 1036 from the application and replaced it with a proposed well, located approximately 20' SE of POLK 1036. Proposed well construction was submitted on 1/31/2020 and suggests that this proposed well will also access the CRB aquifer system.

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: **690-502-0240** classifies use from unconfined alluvial aquifers. This application proposes use from a confined aquifer in the CRBG, so this rule is not activated.

A6. **Well #** 1 tap(s) an aquifer limited by an administrative restriction.

Name of administrative area: **Eola Hills Ground Water Limited Area (690-502-0200)**

Comments: "Groundwater in the basalt aquifers in the Eola Hills Groundwater Limited Area is classified for exempt uses, irrigation and rural residential fire protection systems only. Permits may be issued, for a period not to exceed five years, for fire protection and for drip or equally efficient irrigation provided the Director finds the proposed use and amount do not pose a threat to the groundwater resource or existing permit holders" (OAR 690-502-0200).

This proposed limited license application appears to be consistent with the provisions of OAR 690-502-0200.

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) 7i (Willamette CRBG conditions); 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 _____ a single aquifer in the Columbia River Basalt Group 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 is located in the southeastern foothills of the Eola Hills, which are comprised of Columbia River Basalt Group (CRBG) flows overlying older marine sedimentary rocks. Groundwater data for the CRBG aquifers in this area is sparse, with wells completed in the CRBG showing low to moderate yields from ~5-50 gpm. The long-term datasets for wells accessing CRBG aquifers in the vicinity show relatively stable levels. However, even if the proposed well accesses the same aquifer as the applicant's existing well, POLK 1036, the elevation separation between the water levels in those wells vs. POLK 1036 makes it difficult to establish whether they access the same CRBG aquifer and conclude whether groundwater will be available within the capacity of the resource.

The nearest well to the subject well, POLK 994, is about ¼ mile away. However, the total depth of this well is almost 300 ft deeper than the water level recorded on the well log, so it is unlikely that this well would be injured by the proposed use.

There are multiple springs with associated rights (Certificate Numbers 30528 and 31628) located approximately ¼ mile from the subject well. Analytic modeling using the Theis (1941) drawdown model with relevant parameters (Conlon and others, 2005, OWRD Groundwater Database, 2019) suggests that pumping at the proposed rate for 125 days could plausibly cause up to 80 feet of drawdown at the spring on Certificate 31628 (see figure below). The large range of plausible outcomes makes it difficult to determine whether the proposed use is likely to interfere with the spring and cause a senior user not to receive their entitled water. However, given the strong potential for injury to the certificated springs under the proposed rate, and the unknown sensitivity of the spring to drawdown, the Limited License should be conditioned as follows:

Special Condition: Water use under this limited license shall be shut off if either Certificate 30528 or Certificate 31628 does not receive the water to which it is legally entitled. Water use shall remain shut off until the following spring, unless it is specifically re-authorized by The Director.

The conditions noted in B1(d) are required by the Willamette Basin rules for CRBG wells and will enable monitoring for use above the capacity of the resource.

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	Columbia River Basalt Group	<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"/>

Basis for aquifer confinement evaluation: Water-bearing zones within the CRBG typically display high degrees of confinement. The well log for the nearby existing well, POLK 1036, shows the water level 67' above the top of the water-bearing zone, indicating confined conditions. Given the similar proposed construction, the proposed well is also expected to access a confined CRBG aquifer.

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	King Creek	290-300	160-630	470	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Spring Valley Creek	290-300	133-136	4100	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: SW elevation ranges encompass elevations within 1 mile of the well. King Creek incises through the CRBG in the vicinity of the well, and the coincidence of head values with SW elevations supports a finding of hydraulic connection.

Water Availability Basin the well(s) are located within: WID 182: WILLAMETTE R > COLUMBIA R - AB MOLALLA R

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"/>			<input type="checkbox"/>	3830	<input type="checkbox"/>	*	<input checked="" 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: C3a note: *There is no appropriate model to estimate streamflow depletion from pumping in CRBG interflow zones that are incised by streams or discharge to point sources such as springs. Therefore, the percentage of interference at 30 days was not calculated. King Creek within ¼ mile of the Well 1 and is hydraulically connected to it, so PSI was assumed.

C3b: not applicable.

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													
(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: N/A

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:** N/A

References Used:

Application LL-1799 file

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Oregon Water Resources Department Groundwater Database.

U.S. Geological Survey. National Hydrography Dataset. Reston, VA: U.S. Dept. of the Interior, U.S. Geological Survey, 2018.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

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 #: 182
 Time: 11:51 AM

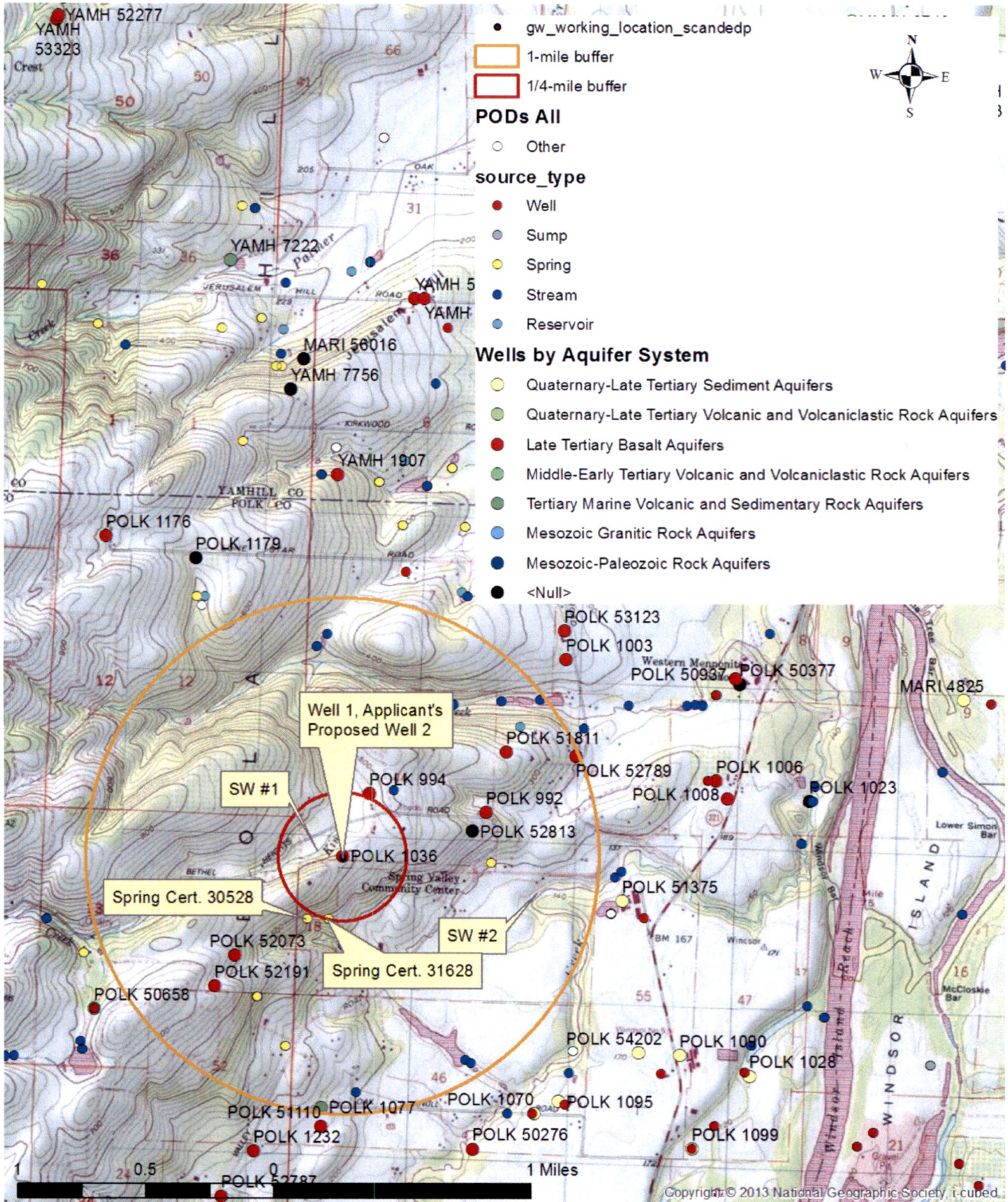
WILLAMETTE R > COLUMBIA R - AB MOLALLA R
 Basin: WILLAMETTE

Exceedance Level: 80
 Date: 04/12/2019

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	21,400.00	2,290.00	19,100.00	0.00	1,500.00	17,600.00
FEB	23,200.00	7,470.00	15,700.00	0.00	1,500.00	14,200.00
MAR	22,400.00	7,250.00	15,200.00	0.00	1,500.00	13,700.00
APR	19,900.00	6,900.00	13,000.00	0.00	1,500.00	11,500.00
MAY	16,600.00	4,240.00	12,400.00	0.00	1,500.00	10,900.00
JUN	8,740.00	1,980.00	6,760.00	0.00	1,500.00	5,260.00
JUL	4,980.00	1,810.00	3,170.00	0.00	1,500.00	1,670.00
AUG	3,830.00	1,650.00	2,180.00	0.00	1,500.00	681.00
SEP	3,890.00	1,390.00	2,500.00	0.00	1,500.00	996.00
OCT	4,850.00	747.00	4,100.00	0.00	1,500.00	2,600.00
NOV	10,200.00	879.00	9,320.00	0.00	1,500.00	7,820.00
DEC	19,300.00	961.00	18,300.00	0.00	1,500.00	16,800.00
ANN	15,200,000	2,250,000	13,000,000	0	1,090,000	11,900,000

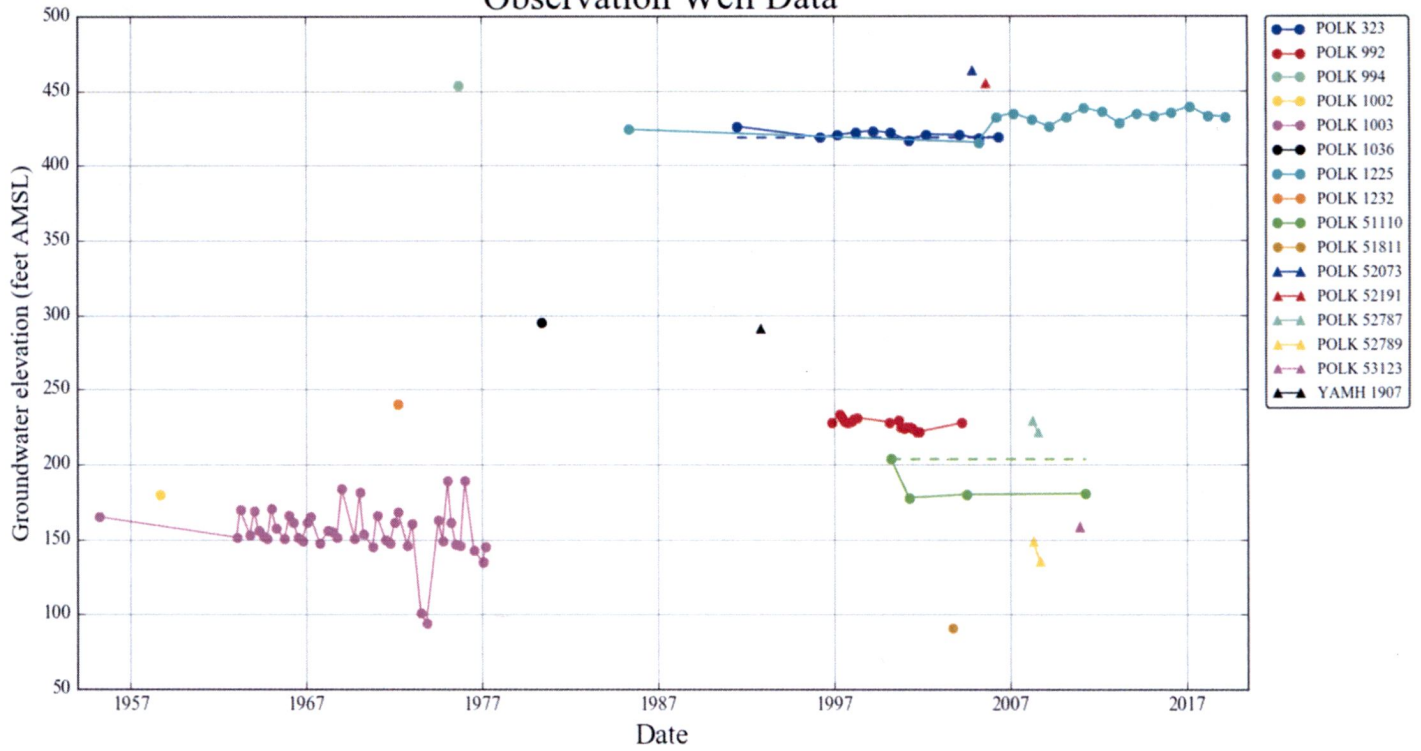
Well Location Map

LL-1799 (Domaine Serene Vineyards and Winery, Inc.): 6S/3W-18

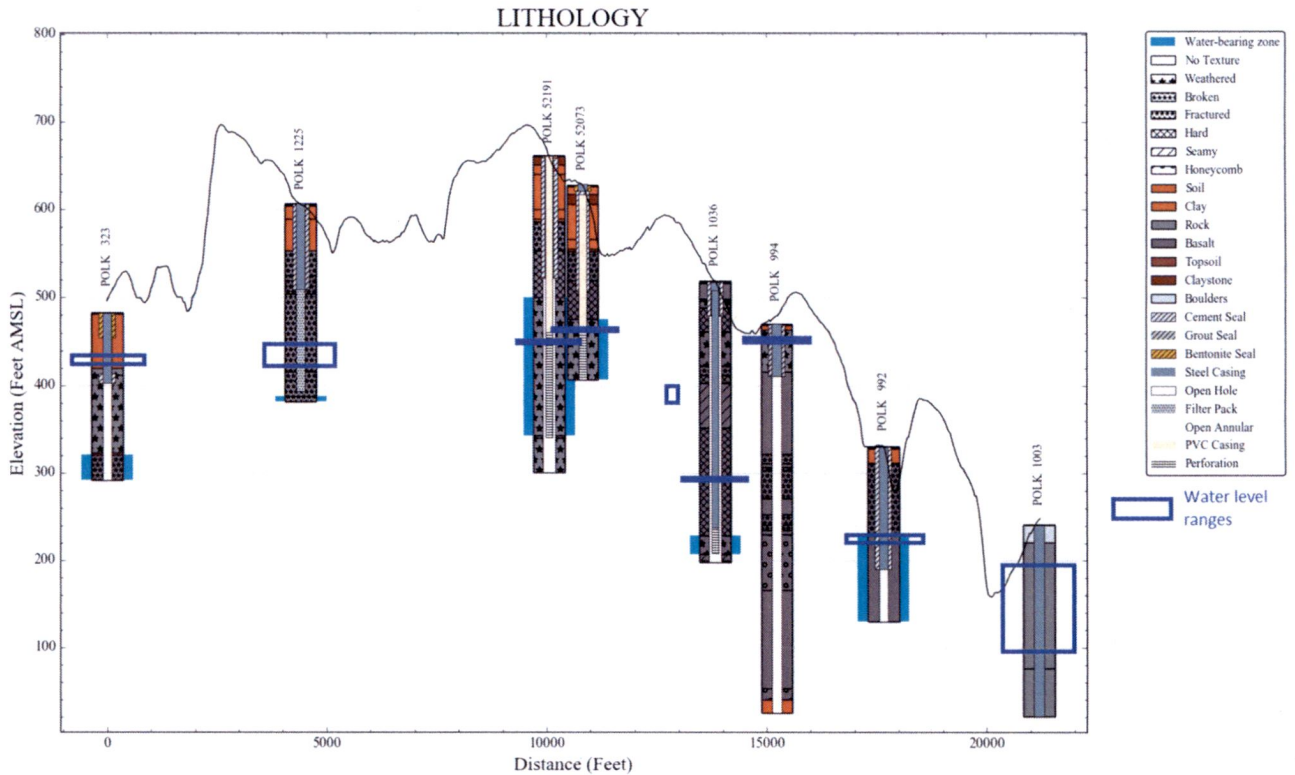


Water Levels in Nearby Wells Accessing Columbia River Basalt Aquifers

Observation Well Data



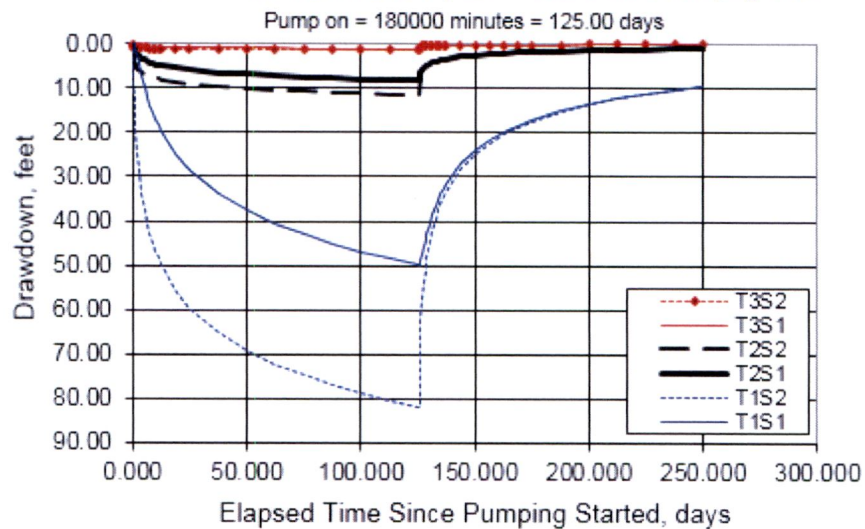
Cross-section of nearby well logs, with water-bearing zones and approximate ranges of measured water levels.



Model parameters and results

Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		125		d	
Radial distance from pumped well:	r		1320.00		ft	Q conversions
Pumping rate	Q		20.0		gpm	20.00 gpm
Hydraulic conductivity	K	1	10	100	ft/day	0.04 cfs
Aquifer thickness	b		22		ft	2.67 cfm
Storativity	S 1		0.00010			3,850.27 cfd
	S 2		0.00001			0.09 af/d
Transmissivity Conversions	T f2pd	22	220	2,200	ft ² /day	
	T f2pm	0.0153	0.1528	1.5278	ft ² /min	
	T gpdpft	165	1,646	16,456	gpd/ft	

This Drawdown and Recovery at r = 1320 ft From Pumping Well



Memo to Groundwater

App.: LL-1799
To: Ben Scandella & Joel Jeffrey
From: Mary Bjork
Date: 02/03/2020
Subject: 2nd Technical Review Request

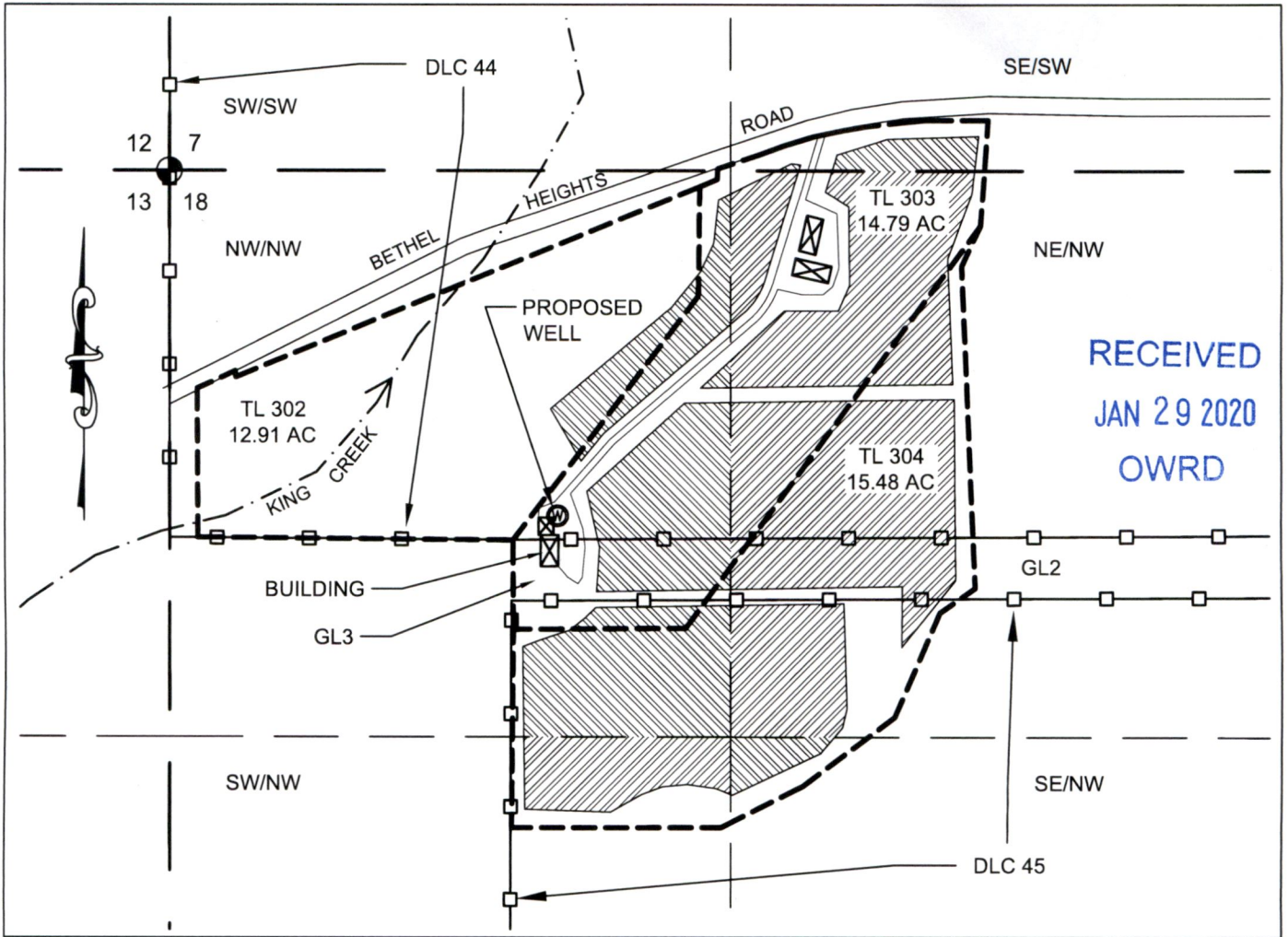
Please see the 1/31/2020 request from the applicant's agent Bill Flatz, for a second technical review of LL-1799.

Bill has provided the following information in regards to drilling a new well:

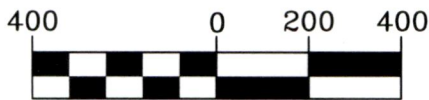
- Depth, 320'.
- Seal Intervals, 0-220'.
- Casing intervals, +1-220'.
- Liner intervals, 0-280'.
- Perforations or Screens, screens 280'-320'

DOMAINE SERENE DEEP ROCK VINEYARD LIMITED LICENSE APPLICATION MAP

LOCATED: T.6S., R.3W., SEC 7+18, TAX LOTS 302, 303, 304, POLK COUNTY OR W.M.
STREET ADDRESS 3700 BETHEL HEIGHTS ROAD NW, SALEM, OR



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1 inch = 400 ft.

NOTE: THIS MAP IS REVISED TO SHOW LOCATION OF A PROPOSED NEW WELL. THIS APPLICATION FOR A LIMITED LICENSE IS BEING REVISED TO USE A NEW WELL AS THE WATER SOURCE. THE NEW WELL WILL BE LOCATED 20 FEET SOUTH AND EAST OF THE EXISTING WELL POLK 1036.

PROPOSED IRRIGATION BY QUARTER-QUARTER						
T	R	Sec	Q-Q	G lot	DLC	AC
6S	3W	7	SE/ SW		44	0.55
6S	3W	18	NE/NW		44	8.57
6S	3W	18	NE/NW	2		1.48
6S	3W	18	NE/NW		45	2.02
6S	3W	18	NW/NW		44	3.56
6S	3W	18	NW/NW	3		0.86
6S	3W	18	NW/NW		45	3.16
6S	3W	18	SE/NW		45	0.44
6S	3W	18	SW/NW		45	1.63
TOTAL ACRES =						22.28



EXPIRES 12/31/21

STUNTZNER ENGINEERING
2318-B PACIFIC AVENUE
FOREST GROVE, OR 97116
503-357-5717

POD, PROPOSED WELL #2 IS LOCATED 910' EAST AND 810' SOUTH OF THE NW CORNER OF SECTION 18.

NOTE: THIS MAP IS PRODUCED TO INDICATE THE LOCATION OF A WATER RIGHT. IT IS NOT INTENDED TO PROVIDE INFORMATION RELATIVE TO THE LOCATION OF PROPERTY LINES.

JOB #: 319-003, REVISED 1-29-20
DRAWING NAME:
D.S. DEEP ROCK VINEYARD LIMITED
LICENSE APPLICATION MAP



BJORK Mary F * WRD

From: Bill Flatz <billflatz@stuntzner.com>
Sent: Wednesday, January 29, 2020 11:26 AM
To: BJORK Mary F * WRD
Cc: Christopher Ramsey
Subject: Domaine Serene LL-1799 Revised Application.
Attachments: Submittal ltr to OWRD LL Application Revision 1-29-20.pdf; D.S.Deep Rock LL-1799 Revised Map 1-29-20.pdf

Mary:

Please find attached a revised Limited License application map and a submittal letter to the department.

Hope this will lead to a quick resolution.

Thank you for your help.

Sincerely,

Bill Flatz - PE, CWRE, CESCL



Office: 503-357-5717
Fax: 503-357-5698
Cell: 503-939-8381
2318-B Pacific Avenue
Forest Grove, Or. 97116

BJORK Mary F * WRD

From: Bill Flatz <billflatz@stuntzner.com>
Sent: Friday, January 31, 2020 3:49 PM
To: BJORK Mary F * WRD
Subject: RE: LL-1799 Re-review Contacts

Mary:

I was able to contact Joel in the field and the driller by email.
Hopefully this information will allow a quick determination.

First I would like to ask for the new well to be 20 to 25 feet south west of the existing well. Just to allow them a little more distance from the existing well. The coordinates already submitted are close enough.

For the table you sent earlier:

- Depth, 320'.
- Seal Intervals, 0-220'.
- Casing intervals, +1-220'.
- Liner intervals, 0-280'.
- Perforations or Screens, screens 280'-320'.

Let me know if any additional information is needed.
Thank you for your help. Have a good super bowl weekend.

Sincerely,

Bill Flatz - PE, CWRE, CESCL



Office: 503-357-5717
Fax: 503-357-5698
Cell: 503-939-8381
2318-B Pacific Avenue
Forest Grove, Or. 97116

From: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Sent: Friday, January 31, 2020 9:42 AM
To: Bill Flatz <billflatz@stuntzner.com>
Cc: BJORK Mary F * WRD <Mary.F.Bjork@oregon.gov>
Subject: LL-1799 Re-review Contacts

Hi Bill,

Thanks for taking my call. As discussed, the Department contacts for the technical review are:

Ben Scandella, Groundwater Section, 503-986-0842
Joel Jeffery, Well Construction and Compliance Section, 503-986-0852

I've also included a scan to this email of Ben and Joel's first reviews.

Have a great weekend!

Mary F. Bjork

Water Rights Program Analyst

725 Summer St NE Suite A | Salem OR 97301 | Phone 503-986-0817



Integrity | Service | Technical Excellence | Teamwork | Forward-Looking

Memo to Groundwater

App.: LL-1799
To: Ben Scandella & Joel Jeffrey
From: Mary Bjork
Date: 1/29/2020
Subject: 2nd Technical Review Request

Please see the 1/29/2020 request from the applicant's agent Bill Flatz, for a second technical review of LL-1799.

The applicant has determined that it is more practical to drill a new well than to bring the existing well up to current standards, see 12/12/2019 WCC Review.

Please review the proposed well and return to me. The applicant is ready to drill a new well now, and appreciates a timely determination from the Department.



TELEPHONE (503) 357-5717
CELL (503) 939-8381
FAX (503) 357-5698
billflatz@stuntzner.com

2318-B Pacific Avenue
FOREST GROVE, OREGON 97116

COOS BAY - JUNCTION CITY - FOREST GROVE - DALLAS

TO: Mary Bjork
Oregon Water Resources Department

SUBJECT: Application Revision for Limited License application LL-1799.

1-29-20

Mary:

Domaine Serene has determined that it is more practical to drill a new well than to try and bring the existing well up to compliance with well construction standards and Eola Hills groundwater limited area special well construction standards. We propose to drill the new well as shown on the attached revised map for LL-1799.

We also included the distance and direction from the existing well to the proposed new well.

From our conversation last week, I believe this is all that you needed from Stuntzner in order to determine if the Department will approve the limited license. If you need anything else from Stuntzner please contact me.

The owners are ready to drill the new well now. They want to drill as soon as possible so that they can complete the water system before the new grapes need water this spring. They will try to wait to drill the new well until the license is issued or a determination is made to issue the license.

We would appreciate it, if practical, to receive a determination from the Department as soon as possible.

Thank you for your help with this project.

Sincerely,

Stuntzner Engineering & Forestry, LLC



Bill Flatz, PE, CWRE

RECEIVED

JAN 29 2020

OWRD

LL-1799