

Approved: 

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager
From: Travis Kelly, Well Construction Program Coordinator
Subject: Review of Water Right Application G-19015
Date: December 7, 2020

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

Applicant's Well #1 (LANE 20028): There is no well report associated with this well that shows how it was originally constructed. The only information available is an informational report compiled by Water Resources Department staff. This does not confirm the construction of this well and is not adequate to verify compliance with well construction standards.

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

The repair of Applicant's Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (LANE 71047): Based on a review of the Well Report, Applicant's Well #2 seems to protect the groundwater resource.

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

STATE ENGINEER
Salem, Oregon

LANE OBSERVATION WELL
020028 Well Record

STATE WELL NO. 19/2W-7R(1)
COUNTY Lane
APPLICATION NO. GR-233

OWNER: J. L. & L. J. Getchell

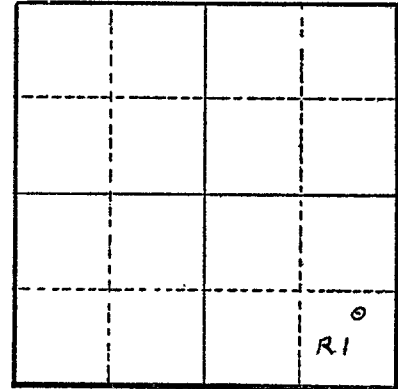
MAILING ADDRESS: Rt. 2, Box 283

LOCATION OF WELL: Owner's No. 1

CITY AND STATE: Creswell, Oregon

SE 1/4 SE 1/4 Sec. 7 T. 19 S., R. 2 W., W.M.

Bearing and distance from section or subdivision corner bears N. 32° 25' W. 778.6 ft. from SE cor. Benj. Despain Cl.



Section 7

Altitude at well 520 ft.

TYPE OF WELL: drilled Date Constructed 3/3/53

Depth drilled 148 ft. Depth cased 23 ft.

CASING RECORD: 10 inch

FINISH:

AQUIFERS:

WATER LEVEL: not known
4.34 (6-28-62)

PUMPING EQUIPMENT: Type Pacific jet H.P. 1.5
Capacity 20 G.P.M.

WELL TESTS:
Drawdown ft. after hours G.P.M.
Drawdown ft. after hours G.P.M.

USE OF WATER irrigation Temp. °F. 19

SOURCE OF INFORMATION
DRILLER or DIGGER Casey Jones Well Drilling Co.

ADDITIONAL DATA:
Log Water Level Measurements Chemical Analysis Aquifer Test

REMARKS:

STATE OF OREGON
WATER SUPPLY WELL REPORT

LANE 71047

WELL LABEL # L 103667
START CARD # 204725
ORIGINAL LOG #

(ORS 537.765 & OAR 690-205-0210)

Instructions for completing this report are on the last page of this form. lane 71047

(1) LANDOWNER Owner Well I.D. _____
First Name Kear Last Name Rager
Company _____
Address 83404 Rodgers Rd
City Creswell State OR Zip 97426

(2) TYPE OF WORK New Conversion Deepening
 Alteration (complete Sections 2a & 10) Abandonment (complete Section 5a)

(2a) PRE-ALTERATION: Well Depth _____ ft.
Seal Material _____
Casing Type: Steel Plastic Other _____
Casing Gauge _____ Casing Diameter _____

(3) DRILL METHOD Rotary Air Rotary Mud Auger
 Cable Cable Mud Reverse Rotary Other _____

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/Commercial Livestock Dewatering Injection
 Thermal Other _____

(5) BORE HOLE CONSTRUCTION
Depth of Completed Well 323 ft. Special Standard: Yes (attach copy)

BORE HOLE				SEAL			
Dia	From	To	Material	From	To	Amount	Scks/lbs
10"	0	43	Cement	30	3	12	sks
6"	43	323	Bentonite	3	0	3	sks

How was seal placed: Method A B C D E
 Other Bentonite Poured Dry
Backfill placed from _____ ft. to _____ ft. Material _____
Filter pack from 43 ft. to 30 ft. Material _____ Size Pea

(5a) ABANDONMENT USING UNHYDRATED BENTONITE:
Calculated Amount Proposed to be Used: _____ sacks/lbs
Actual Amount Used: _____ sacks/lbs

(6) CASING/LINER

Csng	Lnr	Dia	+	From	To	Gauge	Steel	Plastic	Welded	Thrd
X		6"	+1/2	43	250	250	X		X	
	X	4"	3	323	160	160		X	X	

Shoe Inside Outside Other Location of shoe(s) _____
Temporary casing Yes Diameter _____ From _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method SKILSAW/Perforator
Screens Type Hotte Material _____

Perf	Scrn	Csng	Lnr	Screen Dia	From	To	Screen/slot width	Slot length	# of slots	Tele/pipe size
X		X			31	48	6"	1 1/2"	270	6"
X			X		23	323	6"	6"	480	4"

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min 85 Drawdown 80' Drill stem/Pump depth 24RS Duration (hr) _____
Temperature 57 °F Lab analysis Yes By _____
Water quality concerns? Yes (describe below) TDS _____ ppm
From _____ To _____ Description _____ Amount _____ Units _____

(9) LOCATION OF WELL (legal description)
County Lane Twp 19 N or S 0 Range 2 E or W W.M.
Sec 7 SE 1/4 of the SE 1/4 Tax Lot 1201
Tax Map Number _____ Lot _____
Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL

Existing Well/Pre-Alteration	Date	SWL (psi)	+	SWL (ft)
Completed Well	<u>4/7/11</u>			<u>2</u>

Flowing Artesian? Yes Dry Hole? Yes

WATER BEARING ZONES Depth water was first found 34'

SWL Date	From	To	Est Flow	SWL (psi)	+	SWL (ft)
<u>4/7/11</u>	<u>34</u>	<u>41</u>	<u>85</u>			<u>2</u>

(11) WELL LOG Ground Elevation _____

Material	From	To
Topsoil	0	1
Gray Clay	1	3
Brown Clay/Boulders	3	6
Brown Clay	6	8
Brown Clay/Boulders	8	14
Tan Clay	14	23
Blue Clay	23	34
Gray Sand/Gravel	34	41
Blue-Gray Sandstone	41	157
Gray Claystone	157	160
Blue-Gray Sandstone	160	323

Date Started 3-31-11 Completed 4-7-11

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number _____ Date _____
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1562 Date 5-5-11
Signed Sean C. Ollman
Contact Info. (optional)

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MAY 06 2011
JUN 06 2011

STATE OF OREGON
WATER SUPPLY WELL REPORT
(ORS 537.765 & OAR 690-205-0210)

LANE 71047

WELL LABEL # L 103667
START CARD # 204725
ORIGINAL LOG # _____

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

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(2a) PRE-ALTERATION: Well Depth _____ ft.
Seal Material _____
Casing Type: Steel Plastic Other _____
Casing Gauge _____ Casing Diameter _____

(3) DRILL METHOD Rotary Air Rotary Mud Auger
 Cable Cable Mud Reverse Rotary Other _____

(4) PROPOSED USE Domestic Irrigation Community
 Industrial/Commercial Livestock Dewatering Injection
 Thermal Other _____

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Depth of Completed Well 323 ft. Special Standard: Yes (attach copy)

BORE HOLE			SEAL				
Dia	From	To	Material	From	To	Amount	Scks/lbs
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6"	43	323	Bentonite	3	0	3	sks

How was seal placed: Method A B C D E
 Other Bentonite Paired Dry
Backfill placed from _____ ft. to _____ ft. Material _____
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Calculated Amount Proposed to be Used: _____ sacks/lbs
Actual Amount Used: _____ sacks/lbs

(6) CASING/LINER

Csg	Lnr	Dia	+	From	To	Gauge	Steel	Plastic	Welded	Thrd
X		6"	+1 1/2	43 1/2	250		X		X	
	X	4"		3	323	4.160		X	X	

Shoe Inside Outside Other Location of shoe(s) _____
Temporary casing Yes Diameter _____ From _____ To _____

(7) PERFORATIONS/SCREENS
Perforations Method SKILSAW/Perforator
Screens Type Holte Material _____

Perf	Scrn	Csg	Lnr	Screen Dia	From	To	Screen/ slot width	Slot length	# of slots	Tele/ pipe size
X		X			31	43	1 1/8"	1 1/2"	270	6"
X			X		23	323	1 1/8"	6"	480	4"

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min 85 Drawdown _____ Drill stem/Pump depth 80' Duration (hr) 2 HRS.
Temperature 57 °F Lab analysis Yes By _____
Water quality concerns? Yes (describe below) TDS _____ ppm

From	To	Description	Amount	Units

(9) LOCATION OF WELL (legal description)
County Lane Twp 19 N on S Range 2 E on W.W.M.
Sec 7 SE 1/4 of the SE 1/4 Tax Lot 1201
Tax Map Number _____ Lot _____
Lat _____ " or _____ DMS or DD
Long _____ " or _____ DMS or DD
Street Address of Well (or nearest address) Same

(10) STATIC WATER LEVEL

	Date	SWL (psi)	+	SWL (ft)
Existing Well/Pre-Alteration				
Completed Well	<u>4/7/11</u>			<u>2</u>

Flowing Artesian? Yes Dry Hole? Yes

WATER BEARING ZONES Depth water was first found _____

SWL Date	From	To	Est Flow	SWL (psi)	+	SWL (ft)
<u>4/7/11</u>	<u>34</u>	<u>41</u>	<u>85</u>			<u>2</u>

(11) WELL LOG Ground Elevation _____

Material	From	To
Topsoil	0	1
Gray Clay	1	3
Brown Clay/Boulders	3	6
Brown Clay	6	8
Brown Clay/Boulders	8	14
Tan Clay	14	23
Blue Clay	23	34
Gray Sand Gravel	34	41
Blue-gray Sandstone	41	157
Gray Claystone	157	168
Blue-gray Sandstone	168	323

Date Started 3-31-11 Completed 4-7-11

(unbonded) Water Well Constructor Certification
I certify that the work I performed on the construction, deepening, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

License Number _____ Date _____
Signed _____

(bonded) Water Well Constructor Certification
I accept responsibility for the construction, deepening, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

License Number 1562 Date 5-5-11
Signed Sean C. Ollman
Contact Info. (optional) _____

RECEIVED

MAY 06 2011

WATER RESOURCES DEPT
SALEM, OREGON

1100111 AN SUBMITTAL FORM

Use this sheet for your drawings.

OWNER ADDRESS:

APPLICANT NAME:
KEVIN & TONYA RAVEN

APPLICANT PHONE #:
541 - 895-2408

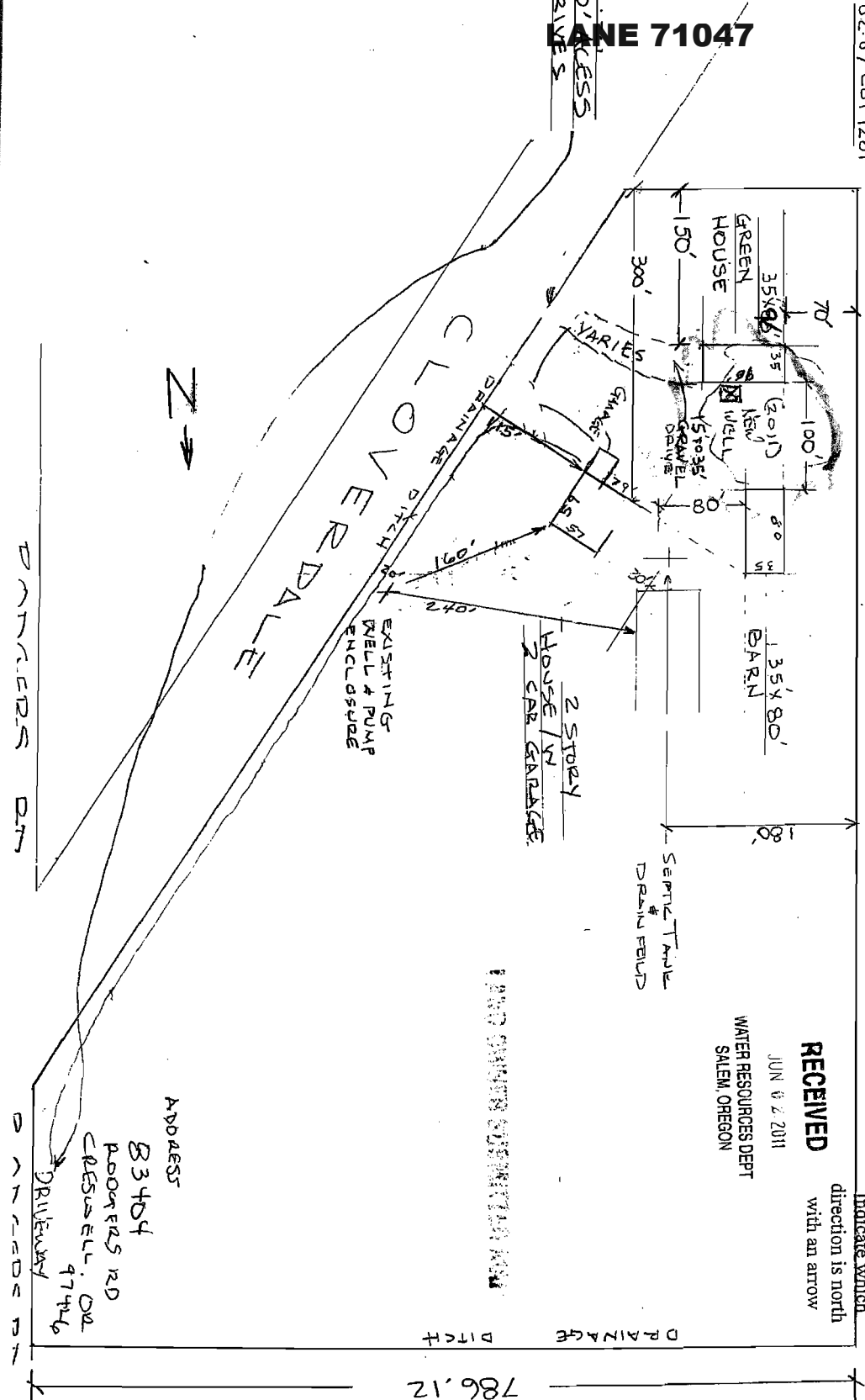
APPLICANT ADDRESS:

02-07 LOT #1201

1106.82

786.12

PLANE 71047



Address
83404
DANNERS RD
CLATSOP CO
97146
DRIVEWAY

1100111 AN SUBMITTAL FORM

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JUN 02 2011
WATER RESOURCES DEPT
SALEM, OREGON

Groundwater Application Review Summary Form

Application # G- 19015

GW Reviewer M. Thoma

Date Review Completed: 11/16/2020

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).

WATER RESOURCES DEPARTMENT

MEMO

11/16/2020

TO: **Application G- 19015**

FROM: **GW: M. Thoma**
 (Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

NO

YES

NO Use the Scenic Waterway Condition (Condition 7J)

Per ORS 390.835, the Groundwater Section is **able** to calculate ground water interference with surface water that contributes to a Scenic Waterway. The calculated interference is distributed below

Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in [Enter] Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 11/16/2020
 FROM: Groundwater Section M. Thoma
Reviewer's Name
 SUBJECT: Application G- 19015 Supersedes review of _____
Date of Review(s)

PUBLIC INTEREST PRESUMPTION; GROUNDWATER

OAR 690-310-130 (1) *The Department shall presume that a proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525. Department staff review groundwater applications under OAR 690-310-140 to determine whether the presumption is established. OAR 690-310-140 allows the proposed use be modified or conditioned to meet the presumption criteria. This review is based upon available information and agency policies in place at the time of evaluation.*

A. GENERAL INFORMATION: Applicant's Name: Kean and Tonya Rager County: Lane

A1. Applicant(s) seek(s) 0.34 cfs from 2 well(s) in the Willamette Basin,
 _____ subbasin

A2. Proposed use Nursery (13.57 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	LANE0020028	1	Bedrock	0.34	19S-02W-07 SESE	930 ft N, 275 ft W of SE cor S 07
2	LANE0071047	2	Bedrock	0.34	19S-02W-07 SESE	750 ft N, 478 ft W of SE cor S 07
3						
4						

* 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	552	NA	4.34	6/28/1962	148	NA	23	-	-	20	-	P
2	553	34	2	4/7/2011	323	0-30	+1.5-43.5	3-323	31-43 23-323	85	-	A

Use data from application for proposed wells.

A4. **Comments:** _____

A5. **Provisions of the** Willamette (OAR 690-502) Basin rules relative to the development, classification and/or management of groundwater hydraulically connected to surface water **are, or** **are not**, activated by this application. (Not all basin rules contain such provisions.)
 Comments: _____

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) 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:** Groundwater levels in well LANE0020028 – Applicant’s POD #1 – show a stable long-term trend suggesting that groundwater for the proposed use would likely be within the Capacity of the Resource. However, a full calculation of water balance for the area has not been performed so Over-Appropriation, and thus Capacity of the Resource, cannot be definitively determined.

Injury was evaluated using a groundwater drawdown model and aquifer parameter values estimated from nearby pump tests, from references cited below, or representing a range of possible values given the geology of the area. Interference is difficult to predict in fractured aquifer systems but results suggest that drawdown in the nearest permitted groundwater POD (Cert. 37006; distance ≈ 850 ft) has the potential to be over 20 ft after a full year of pumping (this evaluation assumes an average pumping rate over the year of 0.1 cfs – estimated from a duty of 5 AF/acre). The aquifer system in the area of the application is fractured volcanic bedrock and the majority wells are 100-300 ft deep with reported yields of less than 50 gpm. This suggests a low-yield aquifer system where wells are subject to large drawdowns from their own use. Additional drawdown of > 20 ft (which is a conservative estimate), if manifested in nearby wells, could lead to existing water rights not receiving water that was previously available. However, given the uncertainty in the applicability of the model to predict drawdown in the aquifer system, and the hydrograph for LANE0020028, which shows seasonal water-level fluctuations of only 10 to 20 ft (suggesting minimal interference from existing wells and existing permitted use), injury cannot be reasonably concluded for this application and permit conditions listed in B1(d), along with standard interference conditions, are highly recommended.

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	Volcanic Bedrock of Western Cascades	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Volcanic Bedrock of Western Cascades	<input checked="" type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: Well logs for the surrounding area typically report SWL above First Water indicating some level of confinement of deeper water-bearing zones; additionally, fractured-bedrock aquifer systems are typically expressive of aquifer conditions more-related to confined aquifers than unconfined (e.g., low storativity)

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	Bear Creek	~550	535-550	1620	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	1	Bear Creek	~550	535-550	1360	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	Coast Fk Willamette	~550	510-525	5180	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	2	Coast Fk Willamette	~550	510-525	5070	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: GW elevations are similar to, or above, SW elevations implying that water can flow between the aquifer system and surface water

Water Availability Basin the well(s) are located within:

COAST FK WILLAMETTE R > WILLAMETTE R - AT MOUTH WILLAMETTE BASIN (ID# 532)

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 (SW) source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that SW source, 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	NA	<input type="checkbox"/>	65.6	<input type="checkbox"/>	< 10%	<input type="checkbox"/>
2	1	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	65.6	<input type="checkbox"/>	< 10%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	Cert. 59761	40.0	<input type="checkbox"/>	65.6	<input type="checkbox"/>	< 5%	<input type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	Cert. 59761	40.0	<input type="checkbox"/>	65.6	<input type="checkbox"/>	< 5%	<input type="checkbox"/>

Comments: Stream-depletion was estimated using the Hunt-1999 analytical model and a range of aquifer parameter values taken from the references below and representing a range of possible values for the given geology. Based on the results of this modeling, estimated stream-depletion at 30 days is likely to be less than 10% for both PODs and both surface water sources.

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells.** Otherwise same evaluation and limitations apply as in C3a above.

SW #	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: _____

C4a. **690-09-040 (5):** Estimated impacts on **hydraulically connected surface water sources greater than one mile** as a percentage of the proposed pumping rate. Limit evaluation to the effects that will occur up to one year after pumping begins. This table encompasses the considerations required by 09-040 (5)(a), (b), (c) and (d), which are not included on this form. Use additional sheets if calculated flows from more than one WAB are required.

Non-Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(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 PODs have been found to be producing from an aquifer that is hydraulically-connected to surface water – specifically Bear Creek and the Coast Fork Willamette River – at distances less than one mile. The maximum pumping rate for the application is less than 1% of the 80%-exceedance flows and pertinent Instream Rights for the encompassing WAB and stream-depletion is estimated to be less than 25% after 30 days. Therefore, the Potential for Substantial Interference (PSI) is not assumed in this review.

References Used:

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

Herrera, N. B., Burns, E. R., and T. D. Conlon. 2014. *Simulation of Groundwater Flow and the Interaction of Groundwater and Surface Water in the Willamette Basin and Central Willamette Subbasin, Oregon*. USGS Scientific Investigations Report 2014-5136.

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

McClaghry, J. D., T. J. Wiley, M. L. Ferns, and I. P. Madin. 2010. *Digital Geologic Map of the Southern Willamette Valley, Benton, Lane, Linn, Marion, and Polk Counties, Oregon*. Oregon Dept. of Geology and Mineral Industries. Open File Report O-10-13.

O'Conner, J. E., A. Sarna-Wojcicki, K. C. Wozniak, D. J. Polette, and R. J. Fleck. *Origin, Extent, and Thickness of Quaternary Geologic Units in the Willamette Valley, Oregon*. USGS Professional Paper 1620

OWRD Well Log Database – Accessed 11/16/2020

Woodward, D. G., M. W. Gannett, and J. J. Vaccaro. 1998. *Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington*. USGS Professional Paper 1424-B.

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

Water Availability Analysis

Detailed Reports

COAST FK WILLAMETTE R > WILLAMETTE R - AT MOUTH
WILLAMETTE BASIN

Water Availability as of 11/16/2020

Watershed ID #: 532 ([Map](#)) Exceedance Level: 80% ▾
 Date: 11/16/2020 Time: 10:28 AM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

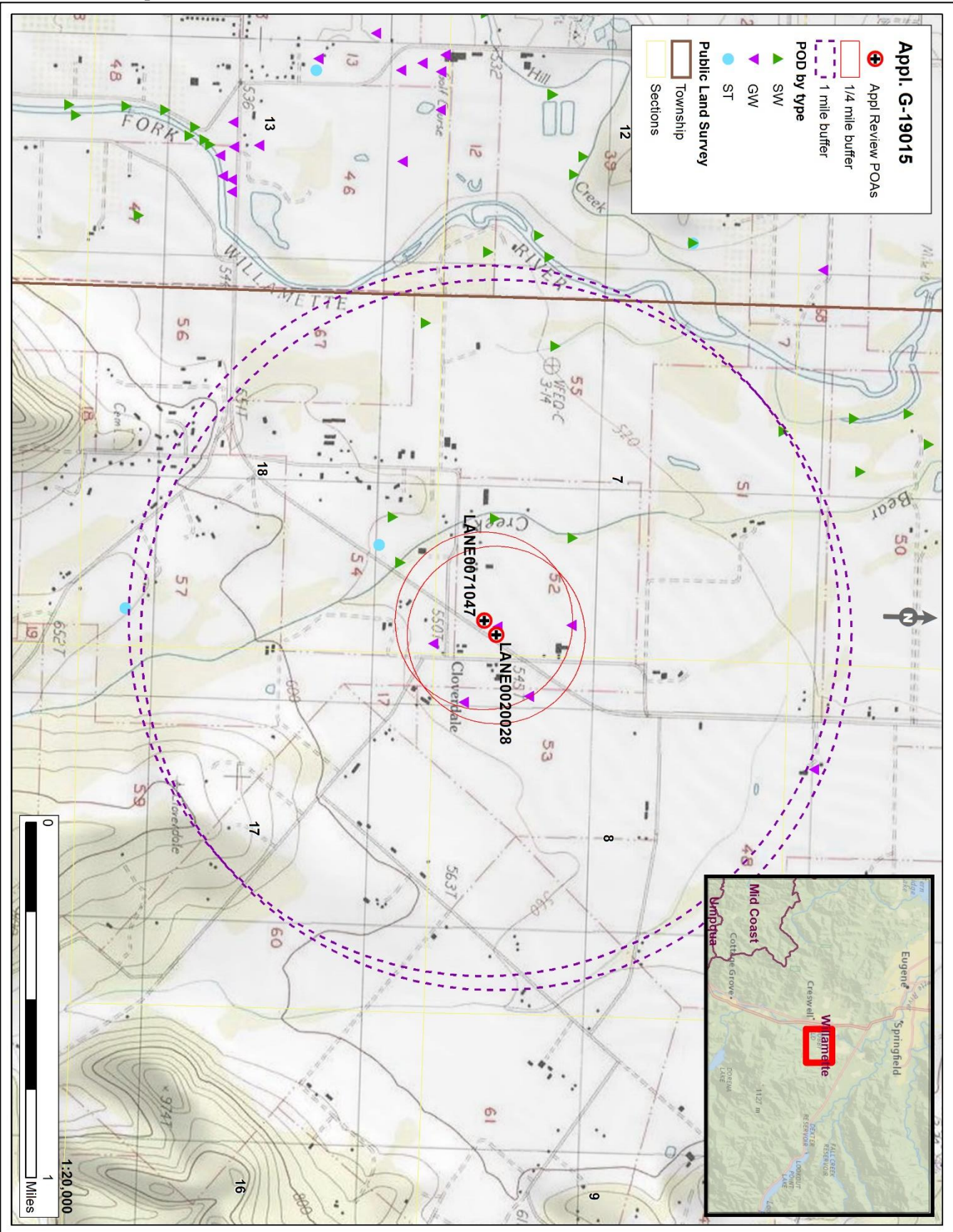
Watershed Characteristics

Water Availability Calculation

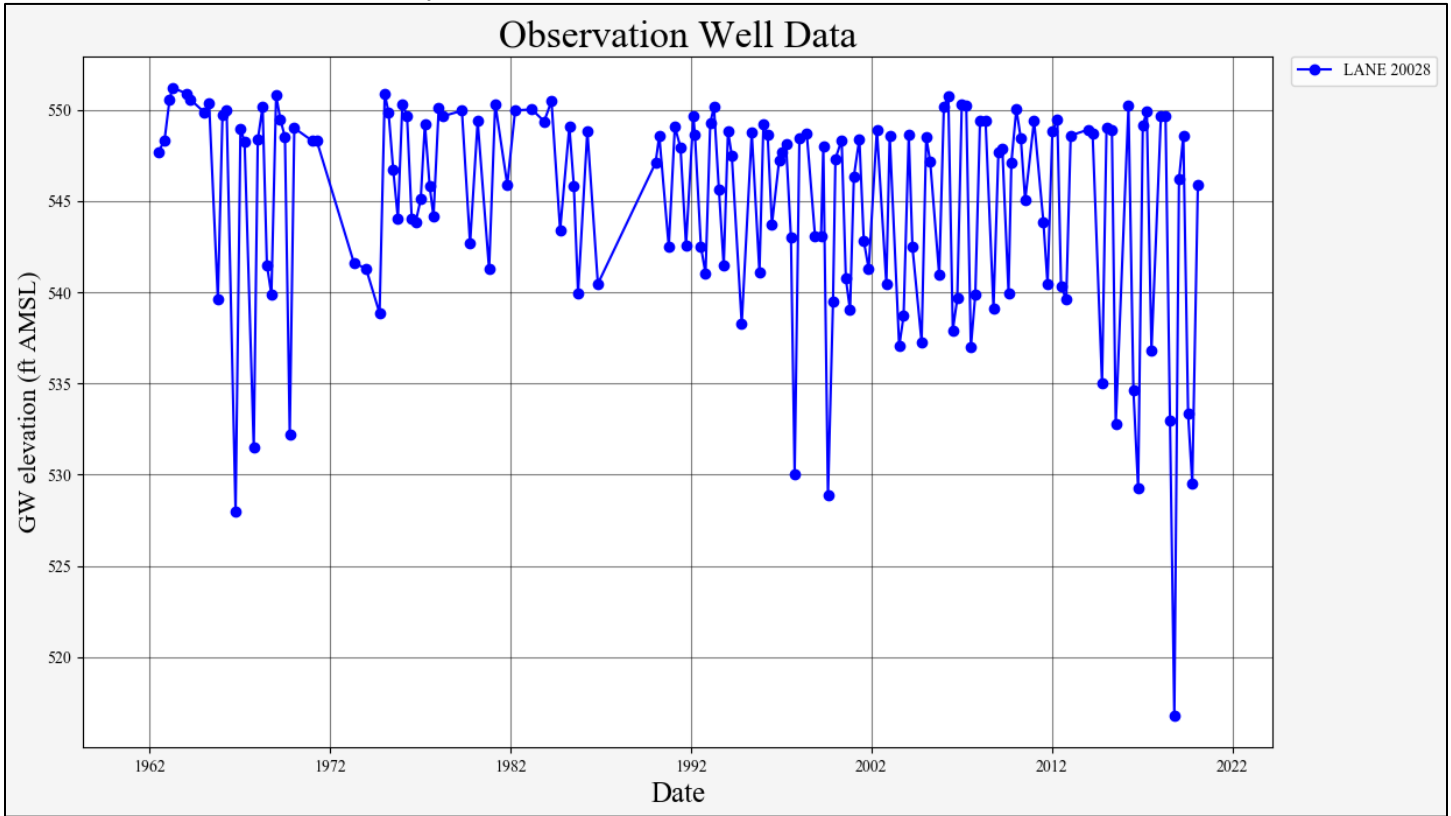
Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	955.00	123.00	832.00	0.00	200.00	632.00
FEB	1,080.00	297.00	783.00	0.00	200.00	583.00
MAR	1,080.00	467.00	613.00	0.00	200.00	413.00
APR	928.00	369.00	559.00	0.00	40.00	519.00
MAY	531.00	236.00	295.00	0.00	40.00	255.00
JUN	216.00	28.60	187.00	0.00	40.00	147.00
JUL	108.00	37.30	70.70	0.00	40.00	30.70
AUG	70.50	33.10	37.40	0.00	40.00	-2.59
SEP	65.60	24.80	40.80	0.00	40.00	0.84
OCT	86.40	8.15	78.20	0.00	40.00	38.20
NOV	268.00	93.70	174.00	0.00	200.00	-25.70
DEC	761.00	9.05	752.00	0.00	200.00	552.00
ANN	754,000.00	104,000.00	651,000.00	0.00	77,000.00	574,000.00

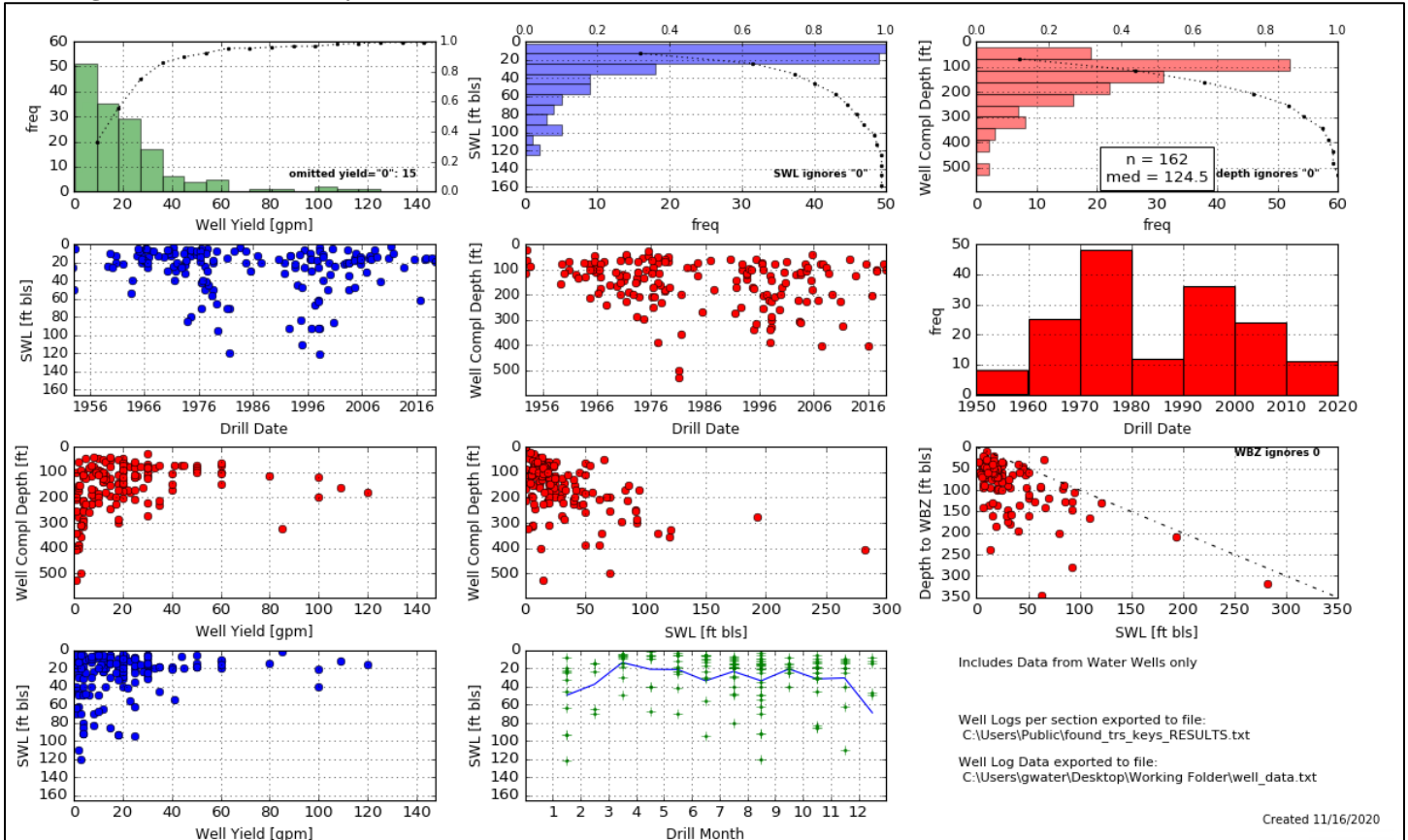
Well Location Map



Water-Level Measurements in Nearby Wells



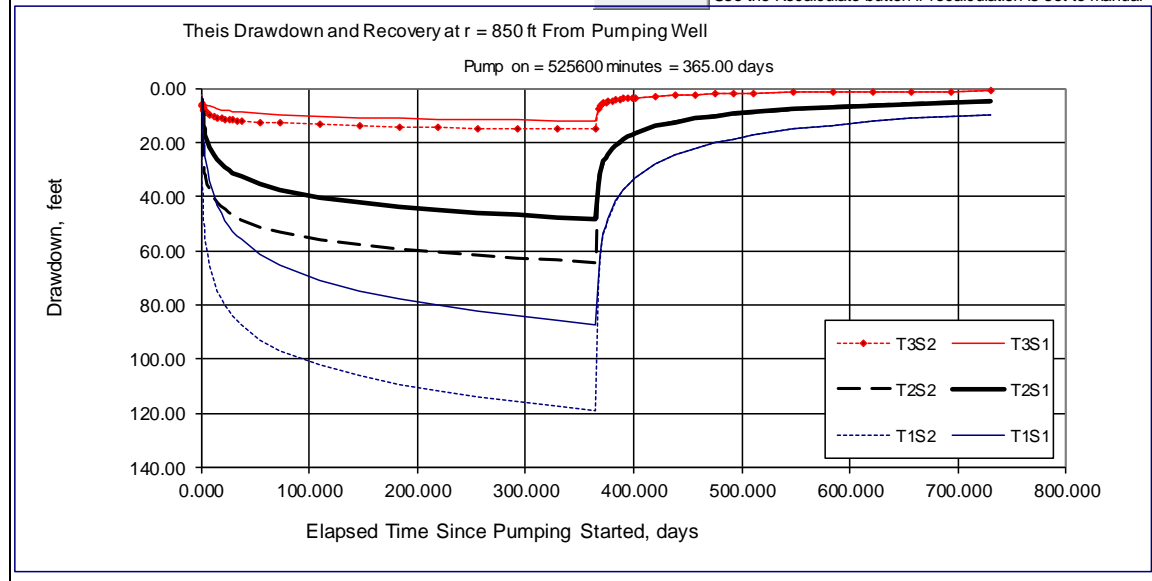
Well Log Statistics from Nearby Wells



Estimated Drawdown to Nearest Existing POD

This Time-Drawdown Worksheet v.3.00					
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.					
Written by Karl C. Wozniak September 1992. Last modified December 30, 2014					
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units
Total pumping time	t		365		d
Radial distance from pumped well:	r		850.00		ft
Pumping rate	Q		0.100		cfs
Hydraulic conductivity	K	0.500	1.000	5.000	ft/day
Aquifer thickness	b		100		ft
Storativity	S_1		0.00010		8,640.00 cfd
	S_2		0.00001		0.20 af/d
Transmissivity Conversions	T_f2pd	50	100	500	ft ² /day
	T_ft2pm	0.0347	0.0694	0.3472	ft ² /min
	T_gpdpft	374	748	3,740	gpd/ft

Recalculate Use the Recalculate button if recalculation is set to manual



Stream-Depletion Model Results

PyHunt stream depletion analysis tool

Application type:	G
Application number:	19015
Well number:	2
Stream Number:	1
Pumping rate (cfs):	0.34
Pumping duration (days):	365
Pumping start month number (3=March)	1

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	1360	1360	1360	ft
Aquifer transmissivity	T	200	100	50	ft ² /day
Aquifer storativity	S	1e-3	1e-4	1e-5	-
Aquitard vertical hydraulic conductivity	Kva	1e-4	5e-4	1e-3	ft/day
Not used		1	1	1	
Aquitard thickness below stream	babs	5	5	5	ft
Not used		1	1	1	
Stream width	ws	20	20	20	ft

Stream depletion for Scenario 2:

Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	2	5	7	9	10	11	12	13	14	15	16	17	17
Depletion (cfs)	0.01	0.02	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.05	0.05	0.06	0.06

Hunt (1999) transient stream depletion model

