

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-19188
Date: September 21, 2021

The attached application was forwarded to the Well Construction and Compliance Section by the Groundwater Section. Jen Woody reviewed the application. Please see Jen's Groundwater Review and the Well Report.

Applicant's Well #8 (YAMH 53274): Based on a review of the Well Report, Applicant's Well #8 seems to protect the groundwater resource.

The construction of Applicant's Well #8 may not satisfy hydraulic connection issues.

RECEIVED

FEB 28 2003

WATER RESOURCES DEPT.
SALEM, OREGON

(1) OWNER: Well No. 2187
Name STOLLER VINEYARDS
Address 15909 NE MCDUGALL RD
City DAYTON St OR Zip 97114

(2) TYPE OF WORK: NEW WELL

(3) DRILL METHOD: ROTARY AIR

(4) PROPOSED USE: FARM

(5) BORE HOLE CONSTRUCTION:
Special Construction Approval NO Depth of Compl. Well 264 ft
Explosives used NO Type Amount
HOLE SEAL
Dian. From To Material From To Amount
10 0 80 BENTONITE CHIP 0 39 26 SAX
8 80 260 CEMENT W/GEL 39 80 12 SAX
6 260 264

Seal placement method C AND POURED
Backfill: from ___ ft to ___ ft Material
Gravel: from ___ ft to ___ ft Size

(6) CASING/LINER:
Dian. From To Gauge Material Connection
Casing 6 +2 260 .25 STEEL WELDED
Liner

Final Location of shoe(s) 6X10 TRAP @ 80'

(7) PERFORATIONS/SCREENS:
 Perf. Method DH PERFORATOR
 Screens Type Material
Slot Tele/pipe
From To Size Number Dian. Size Casing/liner
240 255 .2X1" 198 CASING

(8) WELL TESTS: Minimum testing time is 1 hour
Test type AIR
Yield GPM Draw-down Drill stem at Time
60 255 1 hr.
60 235 1
Temperature of water 53F Depth Artesian Flow Found
Was water analysis done? YES By whom BND
Reason for water not suitable for use
Depth of strata

(9) LOCATION OF WELL by legal description:
County YAMHILL Lat. ' ' ' Long. ' ' '
Township 4 S Range 3 W WM.
Section 9 NW 1/4 SW 1/4
Tax Lot 100 Lot Block Subdivision
Street Address of Well (or nearest Address)
15909 NE MCDUGALL RD DAYTON, OR

(10) STATIC WATER LEVEL:
62 ft. below land surface. Date 02/05/03
Artesian pressure ___ lb per square in. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 169
From To Est Flow Rate SWL
169 259 60 62

(12) WELL LOG:
Material Ground elevation From To SWL
TOP SOIL 0 6
CLAY, RED 6 29
CLAY, BROWN 29 34
SANDSTONE BROWN, STEWED W/BASALT, DECAYED 34 71
BASALT, MEDIUM GRAY 71 169
BASALT, VESICULAR DECAY AND MEDIUM GRAY 169 259 62
CLAY, GRAY MARINE 259 264

DAVE PAYSINGER, BLUE WATER DRILLING CO.
(503) 868-7878

Date started 01/31/03 Completed 02/05/03

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

Signed _____ WWC Number _____
Date _____

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

Signed *David L. Paysinger* WWC Number 1438
Date 02/05/03

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Diam. From To Gauge Material Connection
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Liner _____
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Test type AIR
Yield GPM Draw-down Drill stem at Time
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60 _____ 235 1

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Signed *David P. Paysinger* WWC Number 1438
Date 02/05/03

Temperature of water 53F Depth Artesian Flow Found _____
Was water analysis done? YES By whom BWD
Reason for water not suitable for use _____
Depth of strata _____

Groundwater Application Review Summary Form

Application # G- 19188

GW Reviewer Jen Woody Date Review Completed: 9/17/2021

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

9/17/2021

TO: Application G- 19188

FROM: GW: Jen Woody
(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 Use the Scenic Waterway Condition (Condition 7J)

NO

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 9/17/2021
 FROM: Groundwater Section Jen Woody
 Reviewer's Name
 SUBJECT: Application G- 19188 Supersedes review of n/a
 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: Red Hills Farm LLC County: Yamhill

A1. Applicant(s) seek(s) 0.134 cfs from 1 well(s) in the Willamette Basin,
Yamhill subbasin

A2. Proposed use Industrial 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	YAMH 53274	8	CRBG	0.134	4S/3W-9 NW ¼ NW 1/4	540' S, 680' E fr NW cor S 9
2						
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	286	169	84.30	3/12/2020	264	0-80	0-260	n/a	240-255	60	unk	air

Use data from application for proposed wells.

A4. **Comments:** _____

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: The well produces from a confined aquifer so the pertinent basin rules (OAR 690-502-0240) do not apply.

A6. **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: n/a
 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) 7i, 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 applicant’s proposed wells will produce from one or more water-bearing zones in the Columbia River Basalt Group (CRBG), a series of lava flows with a composite thickness that ranges from 300 to 400 feet in this area (Conlon et al., 2005). Each flow is characterized by a series of internal features, including a thin rubble zone at the contact between flows and a thick, dense, low porosity and low permeability interior zone. In some cases, sedimentary layers were deposited during the time between basalt flow emplacements. A flow top, sedimentary interbed and flow bottom are collectively referred to as an interflow zone. Unconfined groundwater occurs near the weathered top of the basalts, but most water occurs in interflow zones at the contacts between lava flows. CRBG flow features result in a series of stacked, thin aquifers that are confined by dense flow interiors. The low permeability of the basalt flow interiors usually results in little connection between stacked aquifers, which generally results in tabular aquifers with unique water level heads.

While there are not enough data available to determine over-appropriation, nearby wells associated with the subject property show relatively stable groundwater levels under the current level of use (See Figure 3). The closest wells are owned by the applicant, and will be the most affected by drawdown interference resulting from this application’s proposed use. At a distance of 600 feet from the pumping well drawdown is expected to range from 2 to 7 feet after 365 days of pumping at the maximum proposed rate. This is not expected to prevent nearby reasonably efficient and fully penetrating wells from accessing water. Water level monitoring and reporting is already conducted at the subject well for Permit G-18557, but this permit, if it is issued, should contain monitoring and reporting conditions specific to the new proposed industrial 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	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"/>

Basis for aquifer confinement evaluation: General knowledge indicates that groundwater is generally confined in the basalt aquifer system. Water levels in nearby basalt wells show static water levels that are substantially higher than the top of the reported water bearing zone.

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	Miller Creek	201	200	2100	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: Water-bearing zones are reported in the confined interflow zones of the CRBG. The open interval of the subject well is coincident with or above perennial reaches of the nearby creek. The creek has incised through several hundred feet of CRBG. Groundwater from the uplands likely discharges to surface water, providing baseflow or spring flow to sustain nearby perennial reaches of the creek.

Water Availability Basin the well(s) are located within: Watershed ID # 30200801:Yamhill R > Willamette R –at mouth

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"/>	n/a	n/a	<input type="checkbox"/>	56.5	<input type="checkbox"/>	*	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
		<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"/>
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

Comments: * 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 is not calculated.

PSI, as defined in 690-09-040, is not triggered by the proposed use.

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:** _____

References Used: 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.

US Geological Survey Topographic Map, Dundee and Dayton Quadrangles.

OWRD water level, well log, and pump test databases includes reported water levels.

D. WELL CONSTRUCTION, OAR 690-200

D1. Well #: _____ Logid: **n/a** _____

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.**

Figure 1. Water Availability Tables

Water Availability Analysis Detailed Reports

YAMHILL R > WILLAMETTE R - AT MOUTH WILLAMETTE BASIN

Water Availability as of 9/16/2021

Watershed ID #: 30200801 ([Map](#))

Exceedance Level:80%

Date: 9/16/2021

Time: 2:30 PM

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	1,840.00	67.80	1,770.00	0.00	31.70	1,740.00
FEB	2,070.00	65.50	2,000.00	0.00	31.70	1,970.00
MAR	1,760.00	41.20	1,720.00	0.00	31.70	1,690.00
APR	1,060.00	49.40	1,010.00	0.00	31.70	979.00
MAY	523.00	67.40	456.00	0.00	31.70	424.00
JUN	232.00	88.50	143.00	0.00	31.70	112.00
JUL	108.00	112.00	-4.00	0.00	31.70	-35.70
AUG	66.90	99.20	-32.30	0.00	31.70	-64.00
SEP	56.50	63.20	-6.69	0.00	31.70	-38.40
OCT	72.50	16.50	56.00	0.00	31.70	24.30
NOV	462.00	38.00	424.00	0.00	31.70	392.00
DEC	1,670.00	64.40	1,610.00	0.00	31.70	1,570.00
ANN	1,180,000.00	46,700.00	1,130,000.00	0.00	23,000.00	1,110,000.00

Figure 2. Well Location Map

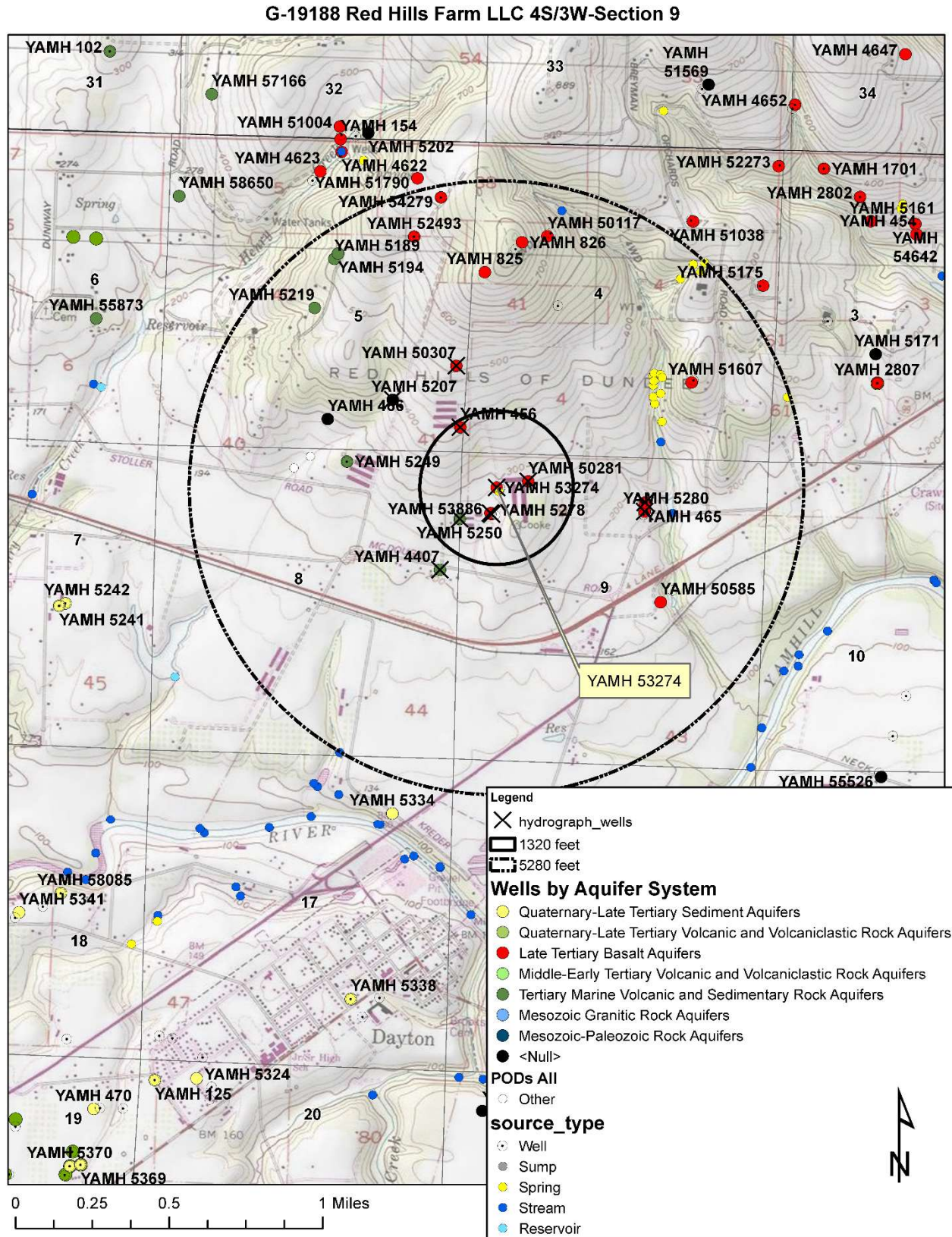


Figure 3. Water-Level Measurements in Nearby Wells

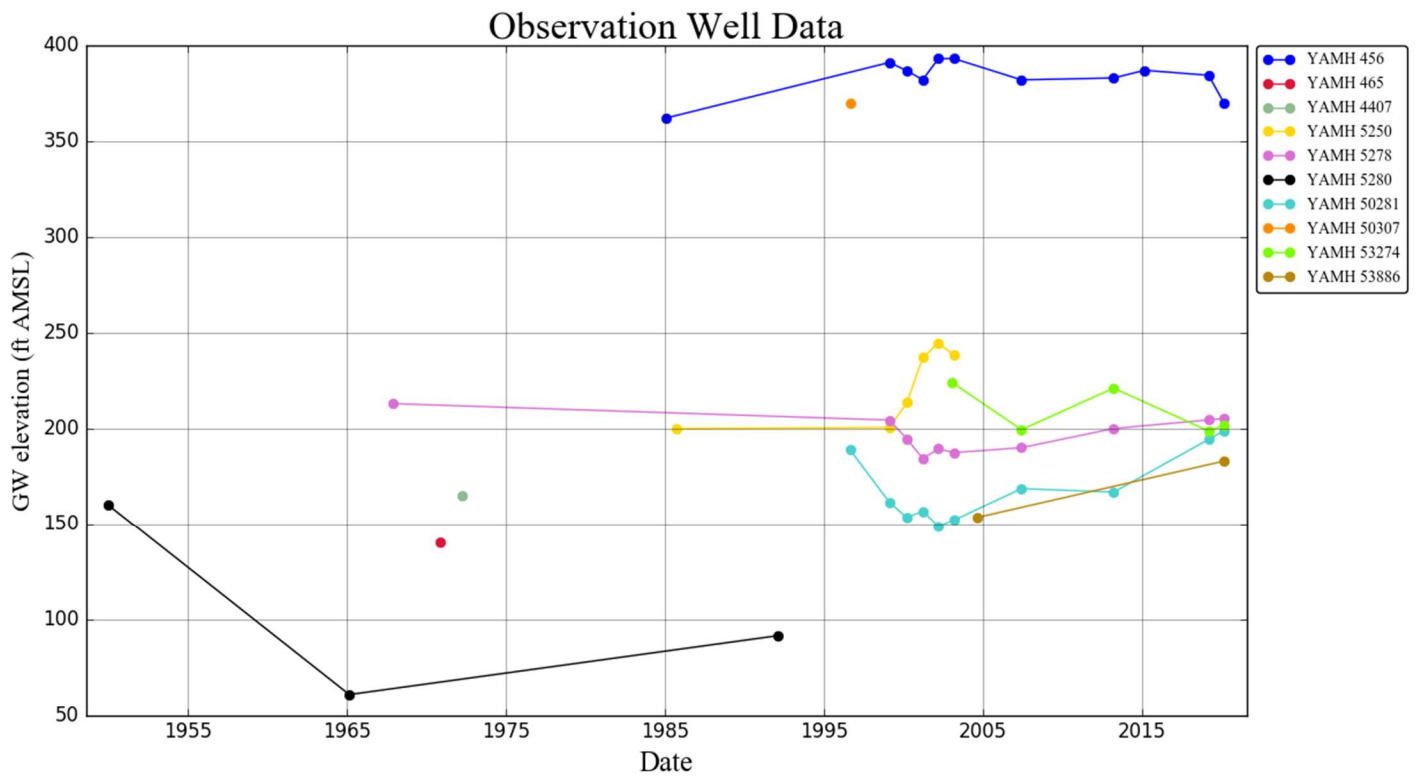
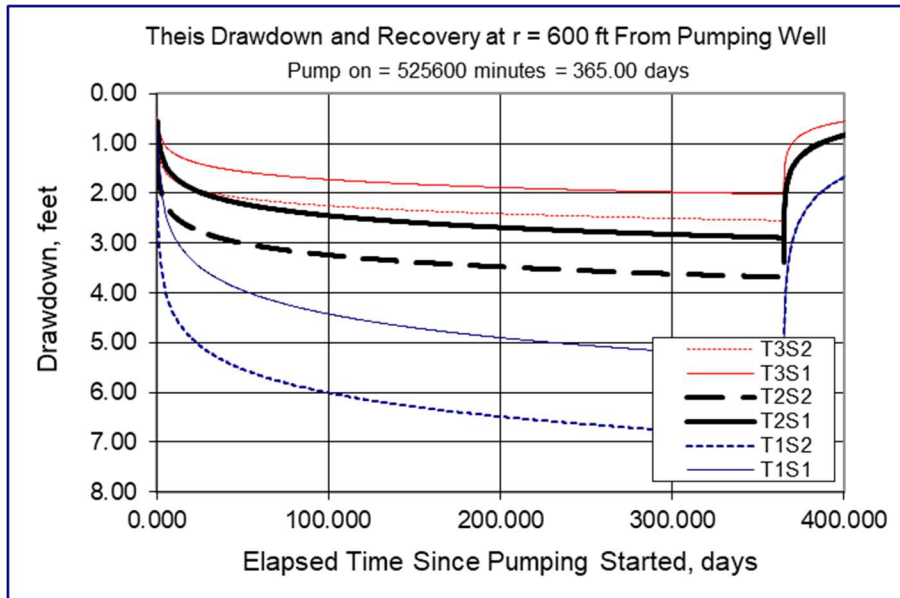


Figure 4. Time drawdown estimates from the proposed pumping



Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units
Total pumping time	t		365		d
Radial distance from pumped well:	r		600		ft
Pumping rate	Q		0.1		cfs
Hydraulic conductivity	K	10	20	30	ft/day
Aquifer thickness	b		100		ft
Storativity	S_1		0.001		
	S_2		0.0001		
Transmissivity Conversions	T f2pd	1000	2000	3000	ft ² /day
	T ft2pm	0.6944444	1.3888889	2.0833333	ft ² /min
	T gpdpft	7480	14960	22440	gpd/ft