Groundwater Application Review Summary Form

Application # G- 18837

GW Reviewer Karl Wozniak **Date Review Completed: 11/14/2019**

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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.

KCW

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.

SI 11/19/19

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 **November 14**, 2019

TO: **Application** G-**18837**

FROM: **GW:** **Karl Woz niak**
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☐ **YES**
☒ **NO** The source of appropriation is hydraulically connected to a State Scenic Waterway or its tributaries

☐ **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 _____ 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

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager

From: Joel Jeffery, Well Construction Program Coordinator

Subject: Review of Water Right Application G-18837

Date: November 26, 2019

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

Applicant's Well #1 (YAMH 2799): Based on a review of the Well Report, Applicant's Well #1 seems to protect the groundwater resource.

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

Applicant's Well #2 is a proposed well and has not yet been constructed. Therefore a review cannot be completed.

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

YAMH 2799

RECEIVED
JUN - 7 1993
WATER RESOURCES DEPT.
SALEM, OREGON

3S/3W/13
(START CARD) # 44148

(1) OWNER: Well Number 804
Name Rose Buckley
Address 22745 Hwy 240 N.E.
City Newberg State OR Zip 97132

(2) TYPE OF WORK:
[X] New Well [ ] Deepen [ ] Recondition [ ] Abandon

(3) DRILL METHOD:
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Other

(4) PROPOSED USE:
[X] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 120 ft.
Explosives used [ ] Yes [X] No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0'	36'	Cement	0'	35'	12 Sacks
6"	36'	120'				

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1½'	36½'	.25	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:	4"	-2'	120'	160#	[ ]	[X]	Glued	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 36½'

(7) PERFORATIONS/SCREENS:
[X] Perforations Method Grinding Wheel
[ ] Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
60'	90'	⅛x10"	27			[ ]	[X]
110'	120'	⅛x10"	9			[ ]	[X]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
75 GPM		100'	1 hr.
100 GPM		120'	

Temperature of Water 55° Depth Artesian Flow Found
Was a water analysis done? [ ] Yes By whom
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Yamhill Latitude Longitude
Township 3-S N or S. Range 3-W E or W. WM.
Section 13 ¼ ¼
Tax Lot 4700 Lot Block Subdivision
Street Address of Well (or nearest address) 22745 Hwy 240 N.E. Newberg, OR 97132

(10) STATIC WATER LEVEL:
25' ft. below land surface. Date 5/18/93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 60'

From	To	Estimated Flow Rate	SWL
60'			
80'			

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Top Soil	0	2	
Yellow Brown Clay	2	20	
Soft Gray Shale	20	25	
Hard Gray Shale	25	30	
Hard Gray Sandstone	30	80	
Hard Green Sandrock	80	100	
Hard Gray Sandrock	100	120	25'

RECEIVED
JUN 28 1993
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 5/17/93 Completed 5/18/93

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

WWC Number
Signed 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 well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 645
Signed Date 6/3/93

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date November 14, 2019

FROM: Groundwater Section Karl Wozniak
Reviewer's Name

SUBJECT: Application G- 18837 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: **Igor Lochert** County: **Yamhill**

A1. Applicant(s) seek(s) 0.189 cfs from _____ well(s) in the Willamette Basin, Chehalem Creek subbasin

A2. Proposed use Irrigation Seasonality: March 1 – October 31

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 2799	1	Low-yield bedrock	0.189	3S/3W-13 SE/NW	930' N, 520' W fr C1/4 cor S 13
2	Proposed	2	Low-yield bedrock	0.189	3S/3W-13 NE/NW	1180' N, 1137' W fr C1/4 cor S 13
3						
4						
5						

* 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	143	60	25	05/18/1993	120	0-35	+1-36.5	2-120	60-120	100	--	A
2	146											

Use data from application for proposed wells.

A4. **Comments:** The proposed total rate is evaluated as a maximum from either well.

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 wells produce 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: _____
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) **7c, 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:** The applicant proposes to use 2 wells, 1 existing and 1 proposed, to irrigate 10 acres of land. The existing and proposed well on this application are located adjacent to Chehalem Creek approximately 1 mile northwest of the city of Newberg. The wells are underlain by about 20 feet of silt and clay (Willamette Silt Unit of Conlon and others, 2005) which is underlain by a thick sequence of older beds of consolidated Tertiary marine sediments referred herein as the low-yield bedrock aquifer system (Basement Confining Unit of Conlon and others, 2005). The wells likely produce water from fractures in the low-yield unit as most of the primary porosity has been destroyed by secondary mineralization. The low-yield unit is characterized by low permeability, low porosity, low well yield, and excessive pumping drawdowns and is generally not capable of producing sustainable yields for irrigation of high water-use crops. The OWRD well log database indicates that the median well yield in section 13 (T 3S/3W) is 18.5 gpm. Actual yields are likely to be lower since most of the reported yields are based on air tests which tend to overestimate yields in completed wells. However, some wells have reported yields of 40-100 gpm. The well report for YAMH 2799 indicates a 1-hour air test yield of 100 gpm when the drill stem was at the bottom of the hole (120 feet). Actual yield is likely to significantly lower since a 4-inch perforated PVC liner was installed upon completion of the well. Irrigation well density is low in the area but there are several dozen tax lots within a half mile of which suggests a moderate density of domestic wells. Most tax lots east of the subject wells are covered by the POU of the City of Newberg's municipal water right under permit G-17583 (not shown on the included map). A few observation wells in the area (see hydrograph below) show mixed signals regarding the stability of water levels over time. Because of the nature of the aquifer system, potential water-supply problems from the proposed use are likely to be relatively local but it is difficult to predict potential impacts in a fracture porosity system. Also, tax lot maps suggest that a number of domestic wells occur within 1000 feet of the subject wells. These facts indicate that it would be prudent to require water-level and water-use monitoring conditions if a permit is issued by the Department.

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	**Low-yield bedrock aquifer system**	☒	☐
2	**Low-yield bedrock aquifer system**	☒	☐
		☐	☐
		☐	☐
		☐	☐

Basis for aquifer confinement evaluation: Well logs indicate static water levels above the producing zones in the low-yield aquifer system.

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? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Chehalem Cr**	**120-140**	**106-160**	**560**	☒	☐	☐	☐	☒
2	**1**	**Chehalem Cr**	**120-140**	**106-160**	**250**	☒	☐	☐	☐	☒
1	**2**	**Unnamed trib to Chehalem Cr**	**120-140**	**123-140**	**430**	☒	☐	☐	☐	☒
2	**2**	**Unnamed trib to Chehalem Cr**	**120-140**	**123-140**	**1100**	☒	☐	☐	☐	☒
1	**2**	**Bronson Cr**	**120-140**	**117-140**	**430**	☒	☐	☐	☐	☒
2	**2**	**Bronson Cr**	**120-140**	**117-140**	**430**	☒	☐	☐	☐	☒
						☐	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Published water table maps indicate that groundwater flows toward and discharges into Chahalem Creek and its nearby tributaries. Perennial reaches of Chahalem Creek and several tributaries are located within ¼ mile of the subject wells and several other perennial tributaries are within 1 mile. Only Chehalem Creek evaluated in table C3a since it is the limiting stream. A new review should be completed if the application is amended to use different wells or to move the location of the proposed well.

Water Availability Basin the well(s) are located within: Chehalem Cr (WAB ID 30200707)

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**	☒	☐			☐	**0.39**	☒		☒
2	**1**	☒	☐			☐	**0.39**	☒		☒
		☐	☐			☐		☐		☐
		☐	☐			☐		☐		☐

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?
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Interference @ 30 days was not calculated in Table C3a because of the lack of a suitable model and a lack of knowledge about likely anisotropy in the low-yield bedrock aquifer system.

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													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
		%	%	%	%	%	%	%	%	%	%	%	%
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: All impacts are expected to be with local streams within 1 mile.

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.

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.

O'Connor, J.E., Sarna-Wojcicki, A., Wozniak, K.C., Polette, D.J., and Fleck, R.J., 2001: U.S. Geological Survey Professional Paper 1620.

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, 82p.

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.**

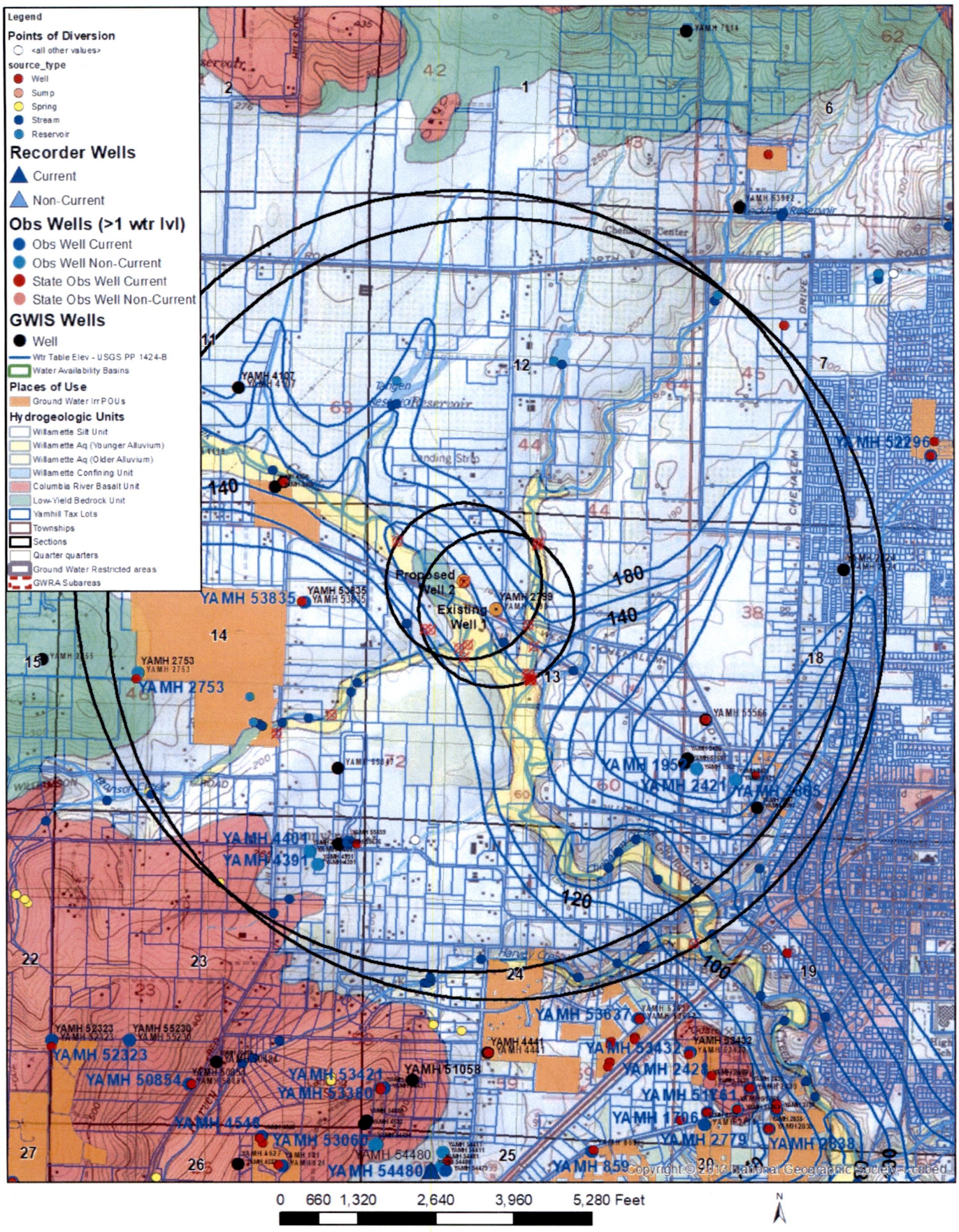
Water Availability Tables

DETAILED REPORT ON THE WATER AVAILABILITY CALCULATION
Water Availability as of 10/19/2004 for
CHEHALEM CR > WILLAMETTE R - AT MOUTH

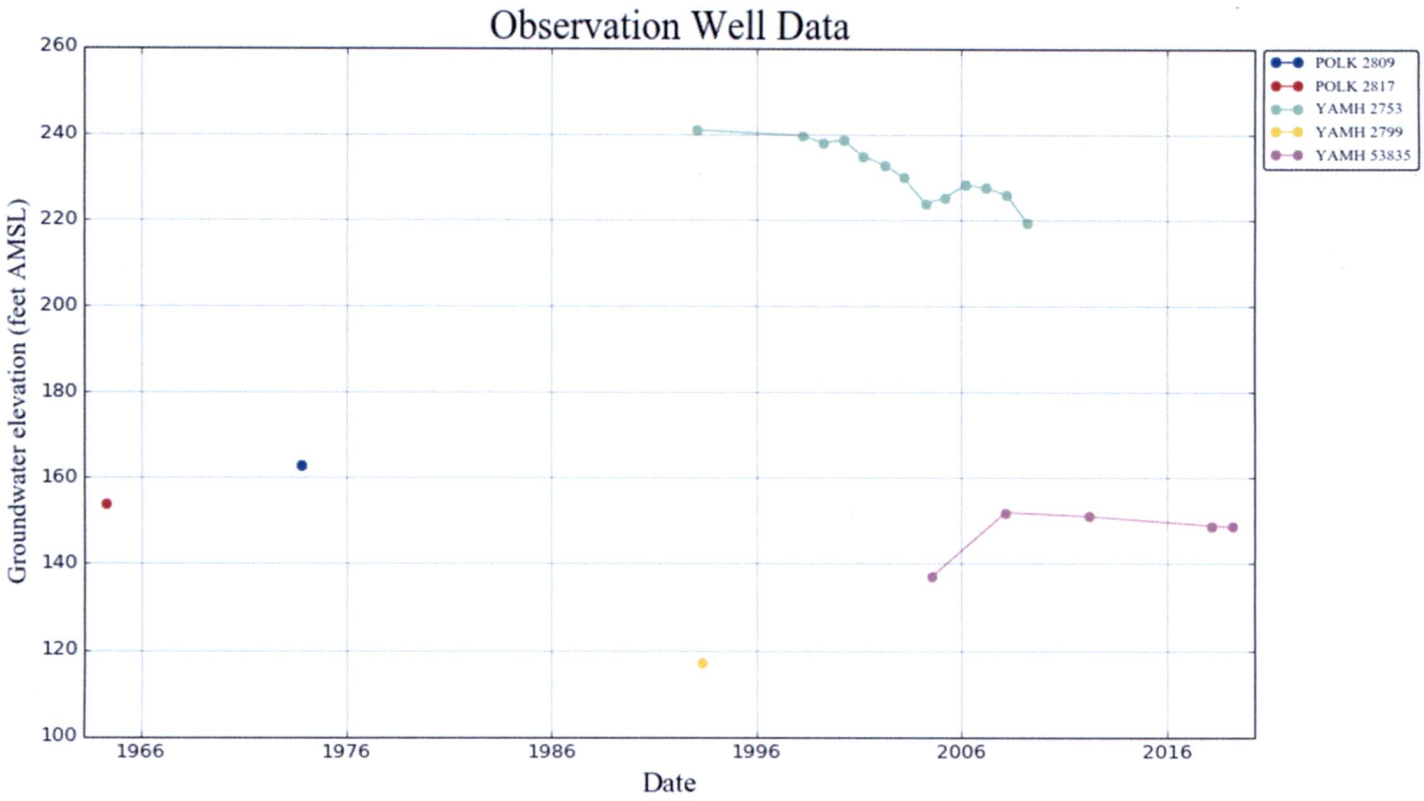
Watershed ID #: 30200707 Basin: WILLAMETTE Exceedance Level: 80
Time: 15:19 Date: 10/19/2004

Month	Natural Stream Flow	CU + Stor Prior to 1/1/93	CU + Stor After 1/1/93	Expected Stream Flow	Reserved Stream Flow	Instream Water Rights	Net Water Available
1	101.00	3.11	0.00	97.90	0.00	0.00	97.90
2	115.00	2.97	0.00	112.00	0.00	0.00	112.00
3	80.60	2.20	0.00	78.40	0.00	0.00	78.40
4	33.00	1.31	0.00	31.70	0.00	0.00	31.70
5	14.90	1.87	0.00	13.00	0.00	0.00	13.00
6	8.48	3.14	0.00	5.34	0.00	0.00	5.34
7	2.13	4.69	0.00	-2.56	0.00	0.00	-2.56
8	0.59	3.87	0.00	-3.28	0.00	0.00	-3.28
9	0.39	2.26	0.00	-1.87	0.00	0.00	-1.87
10	3.05	0.61	0.00	2.44	0.00	0.00	2.44
11	11.50	0.90	0.00	10.60	0.00	0.00	10.60
12	66.20	2.44	0.00	63.80	0.00	0.00	63.80
Stor	48900	1770	0	47300	0	0	47300

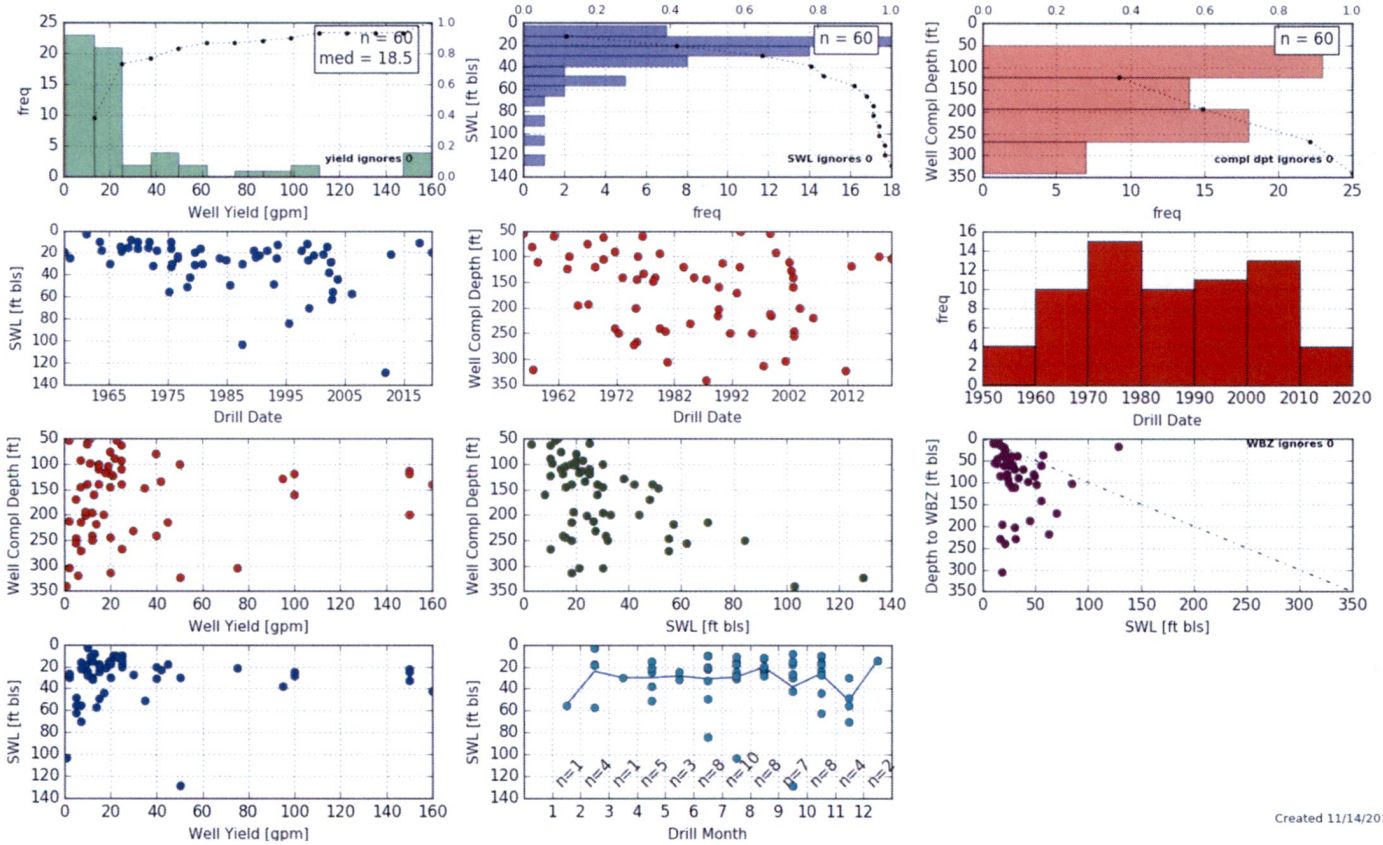
Well Location Map



Water-Level Trends in Nearby Wells



Well Statistics 3S/3W-13



STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

YAMH 2799

RECEIVED
JUN - 7 1993
WATER RESOURCES DEPT.
SALEM, OREGON

3S/3W/13
(START CARD) # 441418

(1) OWNER: Well Number 804
Name Rose Buckley
Address 22745 Hwy 240 N.E.
City Newberg State OR Zip 97132

(2) TYPE OF WORK:
[X] New Well [ ] Deepen [ ] Recondition [ ] Abandon

(3) DRILL METHOD:
[X] Rotary Air [ ] Rotary Mud [ ] Cable
[ ] Other

(4) PROPOSED USE:
[X] Domestic [ ] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 120 ft.
Explosives used [ ] Yes [X] No Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10"	0'	36'	Cement	0'	35'	12 Sacks
6"	36'	120'				

How was seal placed: Method [ ] A [ ] B [X] C [ ] D [ ] E
[ ] Other
Backfill placed from ft. to ft. Material
Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6"	+1½'	36½'	.25	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:	4"	-2'	120'	160#	[ ]	[X]	Glued	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 36½'

(7) PERFORATIONS/SCREENS:
[X] Perforations Method Grinding Wheel
[ ] Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
60'	90'	¼x10"	27			[ ]	[X]
110'	120'	¼x10"	9			[ ]	[X]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
[ ] Pump [ ] Bailer [X] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
75 GPM		100'	1 hr.
100 GPM		120'	

Temperature of Water 55° Depth Artesian Flow Found
Was a water analysis done? [ ] Yes By whom
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other
Depth of strata:

(9) LOCATION OF WELL by legal description:
County Yamhill Latitude Longitude
Township 3-S N or S. Range 3-W E or W. WM.
Section 13 ¼ ¼
Tax Lot 4700 Lot Block Subdivision
Street Address of Well (or nearest address) 22745 Hwy 240 N.E. Newberg, OR 97132

(10) STATIC WATER LEVEL:
25' ft. below land surface. Date 5/18/93
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:
Depth at which water was first found 60'

From	To	Estimated Flow Rate	SWL
60'			
80'			

(12) WELL LOG:
Ground elevation

Material	From	To	SWL
Top Soil	0	2	
Yellow Brown Clay	2	20	
Soft Gray Shale	20	25	
Hard Gray Shale	25	30	
Hard Gray Sandstone	30	80	
Hard Green Sandrock	80	100	
Hard Gray Sandrock	100	120	25'

RECEIVED
JUN 28 1993
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 5/17/93 Completed 5/18/93

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

WWC Number
Signed 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 well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 645
Signed Date 6/3/93

ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91