

Approved:



MEMO

To: Kristopher Byrd, Well Construction Manager
From: Tommy Laird, Well Construction Program Coordinator
Subject: Review of Water Right Application G-18547
Date: February 2, 2024

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

Applicant's Well #2 (GRAN 50836): 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 or the Groundwater Application Review Special Conditions.

Applicant's Well #4 (GRAN 50838): Based on a review of the Well Report, Applicant's Well #4 seems to protect the groundwater resource.

The construction of Applicant's Well #4 may not satisfy hydraulic connection issues or the Groundwater Application Review Special Conditions.

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

WELL I.D. # L 73445 73947

START CARD # 177308

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

(1) LAND OWNER Well Number 2
Name City of Prairie City
Address Box 320
City Prairie City State Or Zip 97869

(2) TYPE OF WORK [X] New Well
[] Deepening [] Alteration (repair/recondition) [] Abandonment [] Conversion

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

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

(5) BORE HOLE CONSTRUCTION Special Construction: [] Yes [X] No
Depth of Completed Well 306 ft.
Explosives used: [] Yes [X] No Type Amount

Table with columns: BORE HOLE (Diameter, From, To, Material), SEAL (From, To, Sacks or Pounds). Includes handwritten entries for 12" diameter, 0 to 79 feet, Portland Cement, 0 to 79 feet, 40 sacks.

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

(6) CASING/LINER
Casing: Diameter 8" From 15' To 80' Gauge 250 [X] Steel [] Plastic [X] Welded [] Threaded
Liner: N/A

Drive Shoe used [] Inside [] Outside [X] None
Final location of shoe(s)

(7) PERFORATIONS/SCREENS
[] Perforations Method
[] Screens Type Material

Table with columns: From, To, Slot Size, Number, Diameter, Tele/pipe size, Casing, Liner. Includes handwritten 'N/A' for slot size.

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

Table with columns: Yield gal/min, Drawdown, Drill stem at, Time. Includes handwritten values: 780, -, 300, 7.

Temperature of water 58 Depth Artesian Flow Found
Was a water analysis done? [X] Yes By whom
Did any strata contain water not suitable for intended use? NO [] Top little
[] Salty [] Muddy [] Odor [] Colored [] Other
Depth of strata:

(9) LOCATION OF WELL (legal description)
County Grant
Tax Lot 4400 Lot
Township 12 North Range 33 East W WM
Section 34 NW 1/4 NW 1/4

Lat or (degrees or decimal)
Long or (degrees or decimal)

Street Address of Well (or nearest address) Dixie Creek Rd North of Prairie City

(10) STATIC WATER LEVEL
5' ft. below land surface. Date 9-6-06
Artesian pressure lb. per square inch Date

(11) WATER BEARING ZONES
Table with columns: From, To, Estimated Flow Rate, SWL. Includes handwritten data for zones at 61, 147, 158, 220 feet.

(12) WELL LOG Ground Elevation 3950

Table with columns: Material, From, To, SWL. Includes handwritten log entries: Brown clay hard, Gray Basalt hard, Brown Basalt hard, Gray Basalt hard, Gray Basalt fine W, Gray Basalt hard, Gray Basalt fine W, Gray Basalt hard.

Date Started 8-31-06 Completed 9-6-06

(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.

WWC 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.

WWC Number 1606 Date 10-31-06

Signed John Marshall

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NOV 03 2006

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

WELL I.D. # L 73949

START CARD # 177309

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

(1) LAND OWNER Well Number 4
Name City of Prairie City
Address Box 370
City Prairie City State OR Zip 97869

(2) TYPE OF WORK New Well
 Deepening Alteration (repair/recondition) Abandonment Conversion

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

(4) PROPOSED USE
 Domestic Community Industrial Irrigation
 Thermal Injection Livestock Other

(5) BORE HOLE CONSTRUCTION Special Construction: Yes No
Depth of Completed Well 306 ft.
Explosives used: Yes No Type _____ Amount _____

BORE HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or Pounds
12"	0	75	Portland Cement	0	75	38
8"	75	306				

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

(6) CASING/LINER

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 8"	0	76.6'	.250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: N/A				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Drive Shoe used Inside Outside None
Final location of shoe(s) _____

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

From	To	Slot Size	Number	Diameter	Tele/pipe size	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

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

Yield gal/min	Drawdown	Drill stem at	Time
130	-	300	4.5

Temperature of water 58 Depth Artesian Flow Found _____
Was a water analysis done NO Yes By whom _____
Did any strata contain water not suitable for intended use? NO Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: _____

(9) LOCATION OF WELL (legal description)
County Grant
Tax Lot 4400 Lot _____
Township 12 N or S Range 33 E or W WM
Section 34 NW 1/4 NW 1/4

Lat _____ or _____ (degrees or decimal)
Long _____ or _____ (degrees or decimal)
Street Address of Well (or nearest address) Dixie Creek Rd North of Prairie City

(10) STATIC WATER LEVEL
15' 8" ft. below land surface. Date 9-25-06
_____ ft. below land surface. Date _____
Artesian pressure _____ lb. per square inch Date _____

(11) WATER BEARING ZONES

From	To	Estimated Flow Rate	SWL
79	95	50	15' 8"
115	119	60	15' 8"

(12) WELL LOG Ground Elevation 3930

Material	From	To	SWL
Brown Top Soil	0	5	
Brown decomposed granite	5	20	
gray Basalt Hard	20	30	
Purple Rock-Long	30	43	
gray Basalt Med H	43	50	
gray Basalt Hard	50	79	
gray Basalt FRAC W	79	95	16' 8"
gray Basalt Hard	95	115	
gray Basalt FRAC W	115	119	15' 8"
gray Basalt Hard	119	142	
Blk Basalt FRAC W	142	153	
Blk Basalt Hard	153	174	
Blk Basalt Med	174	306	
Soft w/ gravel			
Manual Seams			

Date Started 9-18-06 Completed 9-25-06

(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.

WWC 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.

WWC Number 1606 Date 10-31-06
Signed John Marshall

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Groundwater Application Review Summary Form

Application # G- 18547

GW Reviewer Darrick E. Boschmann Date Review Completed: 02/08/2023

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

02/08/2023

TO: **Application G- 18547**

FROM: **GW: Darrick E. Boschmann**
 (Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

YES The source of appropriation is hydraulically connected to a State Scenic
 NO 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 John Day 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
0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083	0.083

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 02/08/2023
 FROM: Groundwater Section Darrick E. Boschmann
 Reviewer's Name
 SUBJECT: Application G- 18547 Supersedes review of 8/28/2017
 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: J and M Coombs Ranch County: Grant

A1. Applicant(s) seek(s) 2.03 cfs from 2 well(s) in the John Day Basin,
Upper John Day subbasin

A2. Proposed use Irrigation (320.0 acres primary) Seasonality: 3/1 – 10/31

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	GRAN 50836	WELL #2	Bedrock	780*	12.00S-33.00E-34-NW NW	1290 FEET SOUTH AND 1230 FEET EAST FROM NW CORNER, SECTION 34
2	GRAN 50838	WELL #4	Bedrock	130*	12.00S-33.00E-34-SE NW	1450 FEET SOUTH AND 1700 FEET EAST FROM NW CORNER, SECTION 34

* 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	3921	61	5	9-6-06	306	0-79	0-80	NA	NA	780	NA	AIR
2	3942	79	15.67	9-25-06	306	0-75	0-76.5	NA	NA	130	NA	AIR

Use data from application for proposed wells.

A4. **Comments:** _____

This re-review addresses the finding in section B1a in accordance with the 02/06/2023 clarification memo on the current policy for determining over-appropriation for new groundwater applications.

The proposed wells are located in Grant County in the Upper John Day subbasin, about two miles northwest of Prairie City, along an unnamed tributary to the John Day River west of Dixie Creek. The area immediately underlying the wells is mapped as Tc (Clarno Formation) by Thayer, 1967. Thayer describes the Clarno FM within the Prairie City quadrangle north of the John Day River as "mostly hornblende andesite flows and breccias". Within less than a mile of the wells exposures of the underlying Paleozoic cherty shales and metavolcanic rocks, as well as the overlying Columbia River Basalt Group and Rattlesnake Formation are found (Thayer, 1967).

GRAN 50836 penetrated a thin layer of hard clay underlain by gray and brown "basalt" to total depth as reported by the driller on the well log. This is consistent with the andesites of the Clarno FM, which are easily mistaken for basalt.

GRAN 50838 penetrated a thin layer of topsoil and weathered rock underlain by gray and black "basalt" with one minor interbed to total depth as reported by the driller on the well log. This is consistent with the andesites of the Clarno FM, which are easily mistaken for basalt.

Note: Both proposed wells are currently authorized for municipal use under permit G-15077. The authorized locations under G-15077 are not consistent with the locations provided on this application. For the purposes of this review the locations provided on this application are used

A5. **Provisions of the** John Day 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: _____

Currently no administrative area.

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) 7N, large water use reporting, 7J;
 - 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 proposed wells produce groundwater from the Clarno Formation (see above comments A4). Gannet (1984) compiles data for the Clarno FM that indicate a low groundwater potential, stating that obtaining adequate well yields for even domestic or stock use is extremely difficult in many areas. The proposed wells under this application have low to moderate well yields according to the drillers air tests.

There are no relevant water level data available for wells in this area. However, based on the level of development and hydraulic connection with surface water it is very unlikely that current conditions would meet the Division 8 definition of excessively declining or declined excessively (for the storage portion of the source of water to wells).

If a permit is issued, the following conditions are recommended:

7N: Annual Measurement and Decline Condition

Flow meter condition: Use the water rights “large” permit condition requiring a totalizing flow meter and reporting

7J: Scenic waterway condition

C. GROUNDWATER/SURFACE WATER CONSIDERATIONS, OAR 690-09-040

C1. **690-09-040 (1):** Evaluation of aquifer confinement:

Well	Aquifer or Proposed Aquifer	Confined	Unconfined
1	Bedrock (Clarno FM)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Bedrock (Clarno FM)	<input type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer confinement evaluation: _____

Although the reported water bearing zones and static water levels on the well logs for both proposed wells show that the water level in the wells rose ~60 feet above the elevation of the water bearing zones penetrated, the occurrence of numerous springs at elevations roughly coincident with the static water levels in the wells, as well as the position of the wells relative to the recharge areas and the John Day River suggests this is a groundwater discharge area, and the rising head is a result of the vertical components of gradient in the flow field.

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	Unnamed trib to JD River	3916	3883	612	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	2	Dixie Creek	3916	3660	5230	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	John Day River	3916	3475	12000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	1	Unnamed trib to JD River	3926	3883	675	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	2	Dixie Creek	3926	3660	4740	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	3	John Day River	3926	3475	12000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	1	Unnamed trib to JD River	3916	3883	612	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Basis for aquifer hydraulic connection evaluation: _____

See comments in C1. above.

Within the uncertainty of the groundwater elevation estimate, the groundwater elevation for wells 1 and 2 are roughly coincident with or above the elevation of the closest reach of the unnamed tributary to the John Day River, Dixie Creek, and the John Day River; suggesting that groundwater provides baseflow to these surface water bodies at this location.

Water Availability Basin the well(s) are located within: JOHN DAY R > COLUMBIA R - AB LITTLE PINE CR

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 checked="" type="checkbox"/>	<input type="checkbox"/>	MF213A	15	<input checked="" type="checkbox"/>	55.20	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	1.36	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
2	1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	MF213A	15	<input checked="" type="checkbox"/>	55.20	<input type="checkbox"/>	*	<input checked="" type="checkbox"/>
2	2	<input type="checkbox"/>	<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	1.36	<input checked="" 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?
	1		<input type="checkbox"/>	MF213A	15	<input checked="" type="checkbox"/>	55.20	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>
	2		<input type="checkbox"/>	NA	NA	<input type="checkbox"/>	1.36	<input checked="" type="checkbox"/>	*	<input checked="" type="checkbox"/>

Comments: _____

C3a. *Interference at 30 days not calculated here due to triggering of PSI under other criteria.

C3b. *Interference at 30 days not calculated here due to triggering of PSI under other criteria.

WABS evaluated: JOHN DAY R > COLUMBIA R - AB LITTLE PINE CR; DIXIE CR > JOHN DAY R - AT MOUTH

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
2	3	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %
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)		NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
(E) = (A / B) x 100		0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %	0 %

(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: _____

Hunt (1999) was used to calculate the interference between wells 2 and 2 SW #3. The values used for the calculation are conservative and appropriate until better values become available. The calculations used a transmissivity of 20 ft²/day, which is the median transmissivity reported for the Clarno Formation in Gannett, 1984. Additionally, the calculation used a storage coefficient of 0.02, as reported in Gannett, 1984 for the Clarno Formation. The hydraulic conductivity assigned to the bed of the stream is 0.023 feet/day. The pumping rate used (1.98 cfs) represents the maximum allowable duty prorated over the irrigation season. See reports attached.

Interference is less than 1% of the 80% flow in all months evaluated.

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: _____

C1. 690-09-040 (1)

It is determined that all wells will produce water from an unconfined aquifer.

C2. 690-09-040 (2) (3)

It is determined that all wells are hydraulically connected with Unnamed Tributary to the John Day River, Dixie Creek, and the John Day River.

C3a./C3b. 690-09-040 (4)

PSI is assumed for all wells to all surface water bodies evaluated.

C4a. 690-09-040 (5)

Interference is less than 1% of the 80% flow in all months evaluated between well 2 and SW 3.

The applicant's proposed POAs would be producing from an aquifer that has been found to be hydraulically connected to tributaries of the John Day Scenic Waterway and will have a long-term impact on flows necessary for the scenic waterway. Given the distance between the POAs and the John Day State Scenic Waterway, the impact from the proposed use on the scenic waterway will likely be evenly distributed throughout the entire year (see Scenic Waterway Memo on page 2).

References Used: _____

Thayer, 1967

Gannet, M., 1984, Ground Water Assessment of the John Day Basin. Oregon Water Resources Department, Salem, Oregon.

Thayer, T.P., Brown, C.E., Hay, R.L., Preliminary geologic map of the Praire City Quadrangle, Grant County, Oregon. U.S. Geological Survey Open-File Report 67-214, scale 1:62,500.

OWRD water well reports, water level data, and/or hydrographs

Oregon Administrative Rules

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

JOHN DAY R - COLUMBIA R - AB LITTLE PINE CR
JOHN DAY BASIN

Water Availability as of 8/28/2017

Watershed ID #: 213 (Map) Exceedance Level: 80% -
 Date: 8/28/2017 Time: 9:30 AM

- Water Availability Calculation
- Water Rights
- Consumptive Uses and Storages
- Instream Flow Requirements
- Reservations
- 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	98.00	1.36	96.60	0.00	25.00	71.60
FEB	124.00	1.56	122.00	0.00	25.00	97.40
MAR	165.00	1.71	163.00	0.00	34.00	129.00
APR	229.00	17.80	211.00	0.00	34.00	177.00
MAY	242.00	38.10	204.00	0.00	34.00	170.00
JUN	180.00	50.40	119.00	0.00	25.00	84.60
JUL	101.00	72.40	28.60	0.00	15.00	13.60
AUG	64.50	56.20	8.29	0.00	34.00	-25.70
SEP	59.90	37.30	17.90	0.00	34.00	-16.10
OCT	87.10	14.70	72.40	0.00	25.00	47.40
NOV	94.60	1.18	93.40	0.00	25.00	68.40
DEC	100.00	1.32	98.70	0.00	25.00	73.70
ANN	133,000.00	17,900.00	116,000.00	0.00	20,200.00	95,900.00

Water Availability Analysis
Detailed Reports

DIXIE CR - JOHN DAY R - AT MOUTH
JOHN DAY BASIN

Water Availability as of 8/28/2017

Watershed ID #: 30620122 (Map) Exceedance Level: 80% -
 Date: 8/28/2017 Time: 9:23 AM

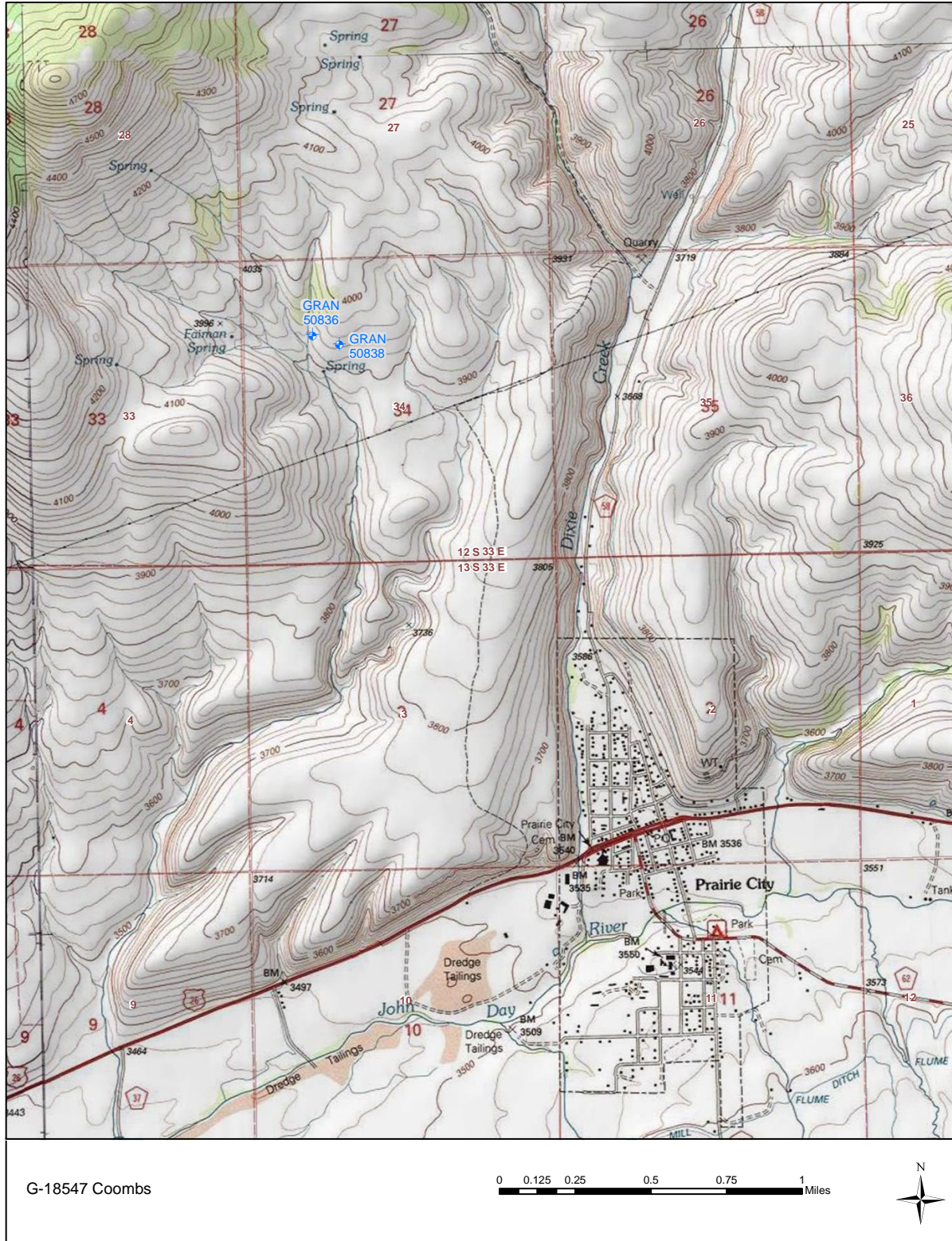
- Water Availability Calculation
- Water Rights
- Consumptive Uses and Storages
- Instream Flow Requirements
- Reservations
- Watershed Characteristics

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	3.15	1.13	2.02	0.00	0.00	2.02
FEB	5.42	1.14	4.28	0.00	0.00	4.28
MAR	8.05	1.14	6.91	0.00	0.00	6.91
APR	13.50	1.71	11.80	0.00	0.00	11.80
MAY	19.60	2.60	17.00	0.00	0.00	17.00
JUN	12.20	3.21	8.99	0.00	0.00	8.99
JUL	3.45	4.04	-0.59	0.00	0.00	-0.59
AUG	1.64	3.46	-1.82	0.00	0.00	-1.82
SEP	1.30	2.71	-1.35	0.00	0.00	-1.35
OCT	1.42	1.65	-0.23	0.00	0.00	-0.23
NOV	2.28	1.13	1.15	0.00	0.00	1.15
DEC	2.77	1.13	1.64	0.00	0.00	1.64
ANN	8,670.00	1,520.00	7,260.00	0.00	0.00	7,260.00

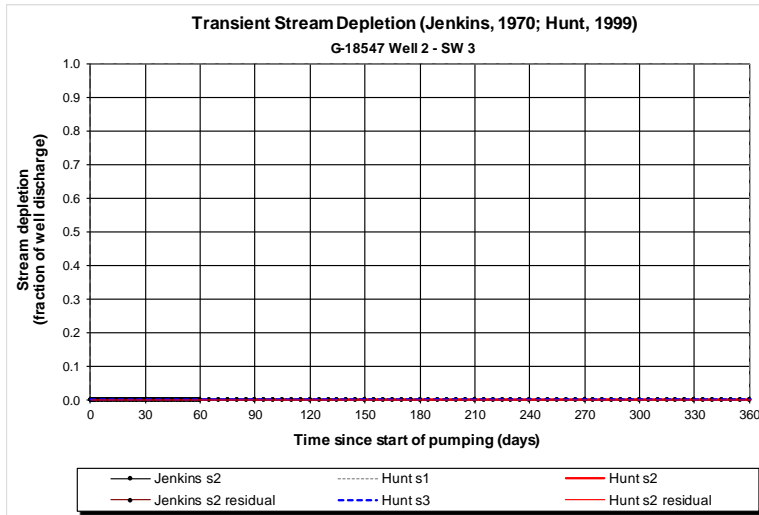
Well Location Map



G-18547 Coombs

0 0.125 0.25 0.5 0.75 1 Miles





Output for Hunt Stream Depletion, Scenario 2 (s2): Time pump on = 245 days

Days	30	60	90	120	150	180	210	240	270	300	330	360
Qw, cfs	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980	1.980
Jenk SD s2 %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Jen SD s2 cfs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hunt SD s2 %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hunt SD s2 cfs	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Parameters:

		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate	Qw	1.98	1.98	1.98	cfs
Distance to stream	a	12000	12000	12000	ft
Aquifer hydraulic conductivity	K	0.5	0.5	0.5	ft/day
Aquifer thickness	b	40	40	40	ft
Aquifer transmissivity	T	20	20	20	ft ² /day
Aquifer storage coefficient	S	0.02	0.02	0.02	
Stream width	ws	25	25	25	ft
Streambed hydraulic conductivity	Ks	0.023	0.023	0.023	ft/day
Streambed thickness	bs	3	3	3	ft
Streambed conductance	sbc	0.19166667	0.19166667	0.19166667	ft/day
Stream depletion factor (Jenkins)	sdf	144000	144000	144000	days
Streambed factor (Hunt)	sbf	115	115	115	

Input data:

yellow = required blue = recommended

Name	Scenario 1	Scenario 2	Scenario 3	Unit	Description
Well	G-18547 Well 2 - SW 3				Well owner or well number
Qw		1.98		cfs	Net steady pumping rate of well
a	12000			ft	Perpendicular distance from well to stream
b	40			ft	Aquifer thickness
d	300			ft	Well depth
K	0.5	0.5	0.5	ft/day	Aquifer hydraulic conductivity
S		0.02			Aquifer storativity or specific yield
Ks	0.023	0.023	0.023	ft/day	Streambed hydraulic conductivity
ws		25		ft	Stream width
bs	3		3	ft	Streambed thickness
tpon		245		days	Time pump on

Recalculate

Time pump on = 245 days

	Scenario 1	Scenario 2	Scenario 3	Units
Qw	1.98	1.98	1.98	cfs
a	12000	12000	12000	ft
K	0.5	0.5	0.5	ft/day
b	40	40	40	ft
T	20	20	20	ft ² /day
S	0.02	0.02	0.02	
ws	25	25	25	ft
Ks	0.023	0.023	0.023	ft/day
bs	3	3	3	ft
sbc	0.19166667	0.19166667	0.19166667	ft/day
sdf	144000	144000	144000	days
sbf	115	115	115	