

Approved:



MEMO

To: Kristopher Byrd, Well Construction Manager
From: Tommy Laird, Well Construction Program Coordinator
Subject: Review of Water Right Application G-19089
Date: February 23, 2024

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

Applicant's Well #1 (LANE 6718/LANE 6701/LANE 58125): Based on a review of the Well Reports, Well #1 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Water Supply Well Reports, the well is not sealed to the proper depth. In order to meet minimum construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 26 feet bgs.

My recommendation is that the Department **not issue** a permit for 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 construction of Well #1 may not satisfy hydraulic connection issues.

Applicant's Well #2 (LANE 6716/LANE 58766): Based on a review of the Well Reports, Well #2 does not appear to comply with current minimum well construction standards (See OAR 690 Division 210). The problem is that according to the Water Supply Well Reports, the well is not sealed to the proper depth, an improper seal material was used, and an inadequate amount of seal material was used. In order to meet minimum construction standards, the well must be recased and resealed with an approved grout to a minimum depth of 83 feet bgs.

My recommendation is that the Department **not issue** a permit for Well #2 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 construction of Well #2 may not satisfy hydraulic connection issues.

NOTICE TO WATER WELL CONTRACTOR

The original and first copy of this report are to be filed with the

STATE ENGINEER, SALEM, OREGON 97310 within 30 days from the date of well completion.

LANE 6718

WATER WELL REPORT ENGINEER

STATE OF OREGON
(Please type or print)

RECEIVED
JUL 14 1966

State Well No. 15/5w-32H

State Permit No.

(1) OWNER:

Name BERNARD DAMBLE
Address CORY LANE

JUNCTION CITY ORE

(2) LOCATION OF WELL:

County LANE Driller's well number
SE 1/4 NE 1/4 Section 32 T. 15S R. 5W W.M.

Bearing and distance from section or subdivision corner

(3) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
Abandonment, describe material and procedure in Item 12.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) TYPE OF WELL:

Rotary ☐ Driven ☐
Cable ☒ Jetted ☐
Dug ☐ Bored ☐

(6) CASING INSTALLED:

Threaded ☒ Welded ☐
5" Diam. from 0 ft. to 30 ft. Gage 250
" Diam. from ft. to ft. Gage
" Diam. from ft. to ft. Gage

(7) PERFORATIONS:

Perforated? ☐ Yes ☒ No

Type of perforator used

Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(8) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name

Type Model No.

Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

(9) CONSTRUCTION:

Well seal—Material used in seal Bentonite

Depth of seal 22 ft. Was a packer used? no

Diameter of well bore to bottom of seal 9 in.

Were any loose strata cemented off? ☐ Yes ☒ No Depth

Was a drive shoe used? ☐ Yes ☒ No

Was well gravel packed? ☐ Yes ☒ No Size of gravel:

Gravel placed from ft. to ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? depth of strata

Method of sealing strata off

(10) WATER LEVELS:

Static level 23 ft. below land surface Date 7/5/66

Artesian pressure lbs. per square inch Date

(11) WELL TESTS:

Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

" " " "

" " " "

Bailer test 28 gal./min. with 7 ft. drawdown after 1 hrs.

Artesian flow g.p.m. Date

Temperature of water 55 Was a chemical analysis made? ☐ Yes ☒ No

(12) WELL LOG:

Diameter of well below casing 5"

Depth drilled 70 ft. Depth of completed well 70 ft.

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Top soil + yellow clay	0	21
Grey clay stone	21	27
Grey sand stone	27	43
Grey shale	43	44
Grey sand stone	44	64
Grey shale, water bearing	64	66
Grey clay stone sandy	66	70

Work started 7/1 1966 Completed 7/5 1966

Date well drilling machine moved off of well 7/5 1966

(13) PUMP:

Manufacturer's Name

Type: H.P.

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME O. B. NYE (Person, firm or corporation) (Type or print)

Address JUNCTION CITY ORE

Drilling Machine Operator's License No. 211.

[Signed] O. B. Nye (Water Well Contractor)

Contractor's License No. 151 Date 7/5 1966

STATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date
of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print)

RECEIVED

LANE
6716

State Well No.

155/5W-32

State Permit No.

(1) OWNER:

Name BERNARD L. SAMBLER
Address 26142 COPY RD. LUNCLION CITY ORE 97448

AUG 15 1978 LOCATION OF WELL:

County LANE Driller's well number
Section 32 T. 15S R. 5W W.M.

(2) TYPE OF WORK (check):

New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary ☐
Cable ☒
Dug ☐

Driven ☐
Jetted ☐
Bored ☐

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

CASING INSTALLED:

Threaded ☐ Welded ☒
" Diam. from 0 ft. to 85 ft. Gage 250
" Diam. from _____ ft. to _____ ft. Gage _____
" Diam. from _____ ft. to _____ ft. Gage _____

PERFORATIONS:

Perforated? ☐ Yes ☒ No

Type of perforator used

Size of perforations in. by in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

(7) SCREENS:

Well screen installed? ☐ Yes ☒ No

Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

(8) WELL TESTS:

Drawdown is amount water level is
lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

" " " " " "

Ball test 21 gal./min. with 60 ft. drawdown after 1 hrs.

Artesian flow g.p.m.

Temperature of water 54 Depth artesian flow encountered _____ ft.

(9) CONSTRUCTION:

Well seal—Material used Cement & Bentonite

Well sealed from land surface to 62 ft.

Diameter of well bore to bottom of seal 10 in.

Diameter of well bore below seal 6 in.

Number of sacks of cement used in well seal 7 sacks

Number of sacks of bentonite used in well seal 1 1/2 sacks

Brand name of bentonite International Gel

Number of pounds of bentonite per 100 gallons

of water _____ lbs./100 gals.

Was a drive shoe used? ☐ Yes ☒ No Plugs _____ Size: location _____ ft.

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ depth of strata

Method of sealing strata off

Was well gravel packed? ☐ Yes ☒ No Size of gravel: _____

Gravel placed from _____ ft. to _____ ft.

(11) WATER LEVEL: Completed well.

Depth at which water was first found 103 ft.

Static level 33 ft. below land surface. Date 8-3-78

Artesian pressure _____ lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 6

Depth drilled 120 ft. Depth of completed well 120 ft.

Formation: Describe color, texture, grain size and structure of materials;
and show thickness and nature of each stratum and aquifer penetrated,
with at least one entry for each change of formation. Report each change in
position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
Top soil	0	3	
yellow clay	3	26	
yellow & red clay	26	37	
yellow & grey clay	37	53	
grey clay	53	78	
grey clay stone	78	103	
grey sand stone	103	120	

Work started 7-28 19 78 Completed 8-3 19 78

Date well drilling machine moved off of well 8-3 19 78

Drilling Machine Operator's Certification:

This well was constructed under my direct supervision.
Materials used and information reported above are true to my
best knowledge and belief.

[Signed] O. B. Nye Date 8-3- 19 78
(Drilling Machine Operator)

Drilling Machine Operator's License No. 211

Water Well Contractor's Certification:

This well was drilled under my jurisdiction and this report is
true to the best of my knowledge and belief.

Name O. B. Nye
(Person, firm or corporation) (Type or print)

Address LUNCLION CITY ORE

[Signed] O. B. Nye
(Water Well Contractor)

Contractor's License No. 151 Date 8-3- 19 78

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

OCT 02 2000

WELL I.D. # L 42988
START CARD # 135554

Instructions for completing this report are found on the back of this form.

(1) OWNER:

Name Bernard Gimble
Address 26142 Cory Rd.
City Tunnicliffe City State OR Zip 97745

(2) TYPE OF WORK

☐ New Well ☒ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger
☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation
☐ Thermal ☐ Injection ☐ Livestock ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☐ Yes ☒ No Depth of Completed Well 170 ft.
Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE			SEAL			
Diameter	From	To	Material	From	To	Sacks or pounds
10"	Surface	Seal	Seal	1	2	undisturbed
6"	120'	170'				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
☐ Other None

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" Casing				☒	☐	☐	☐
	Undisturbed				☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:	None				☐	☐	☐	☐
					☐	☐	☐	☐

Final location of shoe(s) None.

(7) PERFORATIONS/SCREENS:

☐ Perforations Method _____
☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Lines
None						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump	☐ Bailer	☒ Air	☐ Flowing ☐ Artesian
Yield gal/min	Drawdown	Drill stem at	Time
10 GPM		170'	1 hr.

Temperature of water 56° 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 Lane Latitude _____ Longitude _____
Township 15S N or S Range 05W E or W WM.
Section 32 SE 1/4 NE 1/4
Tax Lot 100 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) Same.

(10) STATIC WATER LEVEL:

60 ft. below land surface. Date 9-10-00
Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 147'

From	To	Estimated Flow Rate	SWL
147'	148'	10 GPM	60

(12) WELL LOG:

Ground Elevation _____

[illegible]

Date started 9-10-00 Completed 9-10-00

(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 the best of my 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 water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 751
Signed Donald L. Irvine Date 9-15-00

Groundwater Application Review Summary Form

Application # G- 19089

GW Reviewer Grayson Fish Date Review Completed: 3/24/2023

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

March 24, 2023

TO: Application G- 19089

FROM: GW: Grayson Fish
(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 3/24/2023
 FROM: Groundwater Section Grayson Fish
 Reviewer's Name
 SUBJECT: Application G- 19089 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: Hoi Wing Ma County: LANE

A1. Applicant(s) seek(s) 0.1 cfs from 2 well(s) in the Willamette Basin,
Long Tom River subbasin

A2. Proposed use NU (73 af) 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	LANE 6718/6701/58125	WELL #1	Bedrock	0.1	15.00S/5.00W-32 SE-NE	2060' S, 1370' E of N ¼ Cor Sec 32
2	LANE 6716/58766	WELL #2	Bedrock	0.1	15.00S/5.00W-32 SE-NE	1960' S, 2030' E of N ¼ Cor Sec 32

* 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	379	100	33	4/10/2000	145	0-22	0-30	N/A	N/A	12	Unknown	Air
2	370	147	60	9/10/2000	170	0-62	0-85	N/A	N/A	10	Unknown	Air

Use data from application for proposed wells.

A4. **Comments:** The proposed POA are ~5.5 miles east northeast of Junction City, OR. The applicant requests 0.1 cfs from 2 wells of year-round nursery use for a total of 73 af per year. Applicant proposes to withdraw water from bedrock (marine sedimentary rocks of the Spencer Formation).
Both LANE 6718 and LANE 6716 were deepened (LANE 6718 twice); the above construction details reflect the final construction of the wells.

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: Per OAR 690-503-0240, the relevant basin rules are not activated because the proposed POA are not within ¼ mile of a surface water source and withdraw water from a non-alluvium confined aquifer.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
 Name of administrative area: Not applicable
 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) 7N, 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 proposed POAs produce groundwater from a fracture-dominated aquifer system in Tertiary aged marine sedimentary rocks of the Spencer formation (McCloughry et al., 2010). Wells LANE 6720 and LANE 6719 associated with permit G-18389 located ~0.8 miles to east-southeast also draw water from the Spencer formation and show stable to rising static water levels between 2018 and 2022. Given the recent stable water levels observed in nearby wells and available groundwater data, groundwater in the area does not appear to be over appropriated.

Well logs of wells in nearby sections indicate a median well yield of 13 gpm. Bailer tests were conducted at the time of the original construction of LANE 6718 and 6716 (1966 and 1978, respectively). The well report of LANE 6718 indicated a well yield of 28 gpm with 7 feet of drawdown after 1 hour. The well report of LANE 6716 indicated a well yield of 21 gpm with 60 feet of drawdown after 1 hour. The air lift tests recorded on the most recent deepening logs of proposed POAs LANE 6718 and LANE 6716 completed in 2000, indicate groundwater production of 12 and 10 gpm, respectively. The applicant is requesting a maximum combined rate of 0.1 cfs (44.8 gpm), which is roughly twice the combined reported rate of the two proposed POAs. **Given the low yields and relatively high drawdown indicated on the well reports of the proposed POAs along with the general understanding of marine sedimentary aquifers (low yield, fracture-dominated flow), it is unlikely that the proposed use will be available within the capacity of the groundwater resource at the applicant's requested rate. The applicant could provide additional evidence (pumping tests) to demonstrate that the proposed POA wells could achieve the requested rate. Alternatively, the applicant could lower their requested rate to the demonstrated yield of the 2 POA wells (0.05 cfs) or could request additional POA wells to achieve the requested rate.**

The proposed use is likely to avoid injury to nearby wells and pre-existing water rights if properly conditioned. This conditioning should include the gathering of additional data that is necessary to provide additional site-specific data as fracture dominated flow is highly variable and discontinuous from location to location (Frank, 1973).

Special Conditions:

1. A constant-rate pumping and recovery aquifer test shall be conducted for the points of appropriation (wells) to determine aquifer properties and to assess the potential impacts from use of the wells. The test shall be designed and conducted by a qualified individual as listed in OAR 690-217-0050 and the test design shall be subject to the approval of the Groundwater Section of the Department prior to the test. At a minimum, the test shall include discharge and water-level measurements for the pumping well and concurrent water-level measurements in all other wells authorized under this permit and shall meet the requirements listed in OAR 690-217. The results of each aquifer test shall be presented in a report to the Department using the Pump Test Form provided by the Department. The permit holder shall allow Department staff, at the discretion of the Groundwater Section, to install water-level monitoring equipment for the duration of the test.

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 (Spencer Formation)	☒	☐
2	Bedrock (Spencer Formation)	☒	☐

Basis for aquifer confinement evaluation: Well reports for proposed POAs indicate that static water levels are at a higher elevation than the depth at which water was first encountered in the borehole.

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
2	1	Unnamed creek 1	310	337	1800	☒	☐	☐	☐	☒
2	2	Unnamed creek 2	310	317	4000	☒	☐	☐	☐	☒
1	1	Unnamed creek 1	347	327	2300	☒	☐	☐	☐	☒
1	2	Unnamed creek 2	347	317	4300	☒	☐	☐	☐	☒

Basis for aquifer hydraulic connection evaluation: Groundwater elevation measured in Well 1 is higher than surface water elevations suggesting that groundwater flows to and discharges to surface water. The most recent (2000) groundwater elevation measured in Well 2 is slightly lower than the elevation of surface water, it is possible that seasonal trends in ground and surface water fluctuate enough to change the gaining/losing relationship of the hydraulic connection.

Water Availability Basin the well(s) are located within: WAB 114, Long Tom R > Willamette R – AB 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?	Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
1	1	☐	☐			☐	32.10	☐	<<25%	☐
1	2	☐	☐			☐	32.10	☐	<<25%	☐
2	1	☐	☐			☐	32.10	☐	<<25%	☐
2	2	☐	☐			☐	32.10	☐	<<25%	☐

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 #		Q _w > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Q _w > 1% ISWR?	80% Natural Flow (cfs)	Q _w > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
			☐			☐		☐		☐
			☐			☐		☐		☐

Comments: Unable to calculate interference @ 30 days due to lack of a readily available suitable model for fractured aquifer systems and limited data on hydraulic properties of the bedrock in the area. Impacts are expected to be much less than 25% as cones of depression in low-transmissivity aquifers are generally steep and narrow.

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: Impacts to surface water sources greater than 1 mile from the well (e.g. Ferguson Creek and Bear Creek) were not evaluated as the maximum proposed rate is lower than 1% of the 80% exceedance flows in all months of the year in the pertinent WAB.

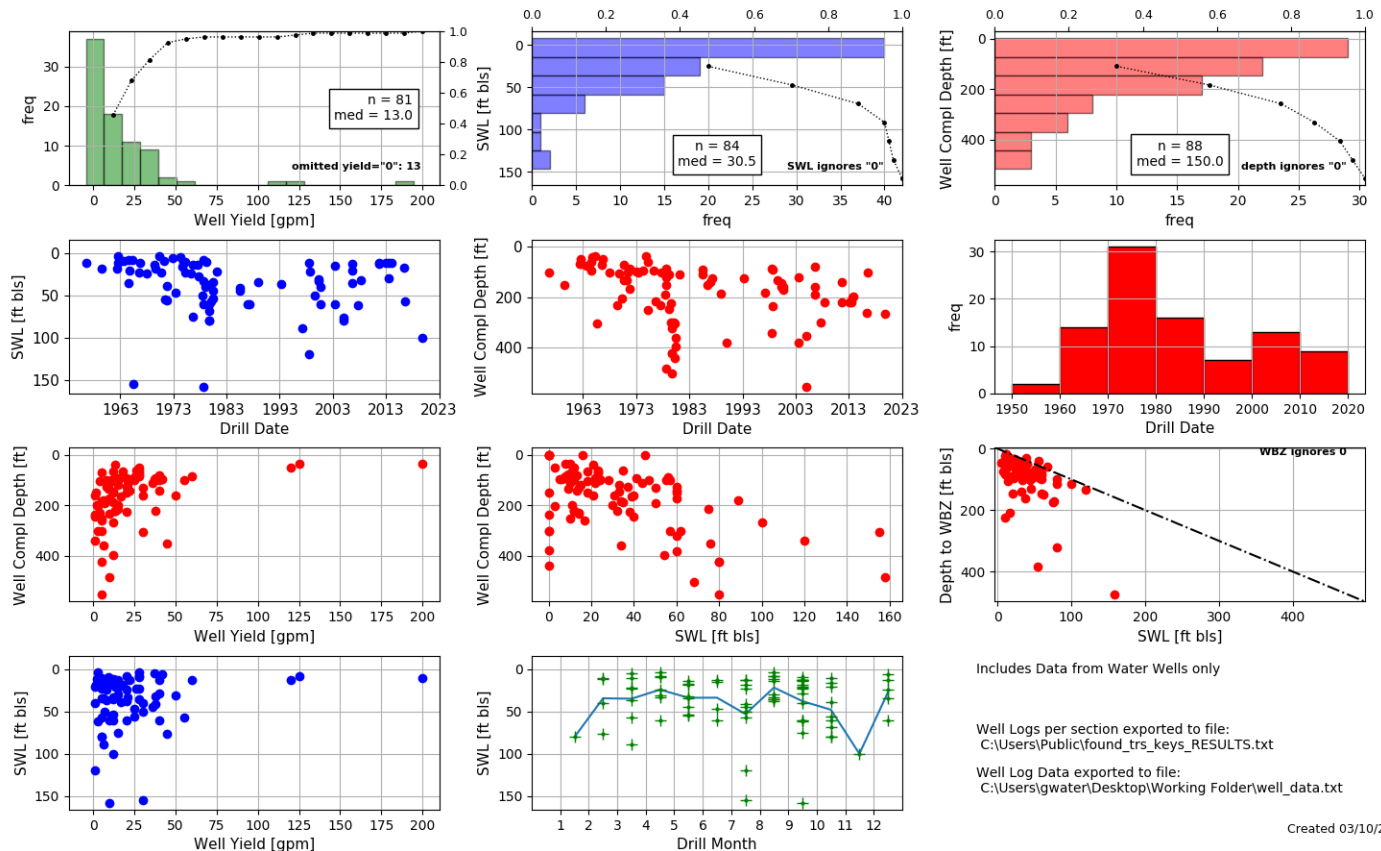
C4b. **690-09-040 (5) (b)** The potential to impair or detrimentally affect the public interest is to be determined by the Water Rights Section.

- 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:
- ☐ The permit should contain condition #(s) _____;
 - ☐ The permit should contain special condition(s) as indicated in "Remarks" below;

[illegible]

D. WELL CONSTRUCTION, OAR 690-200

- D1. Well #: _____ Logid: _____
- D2. **THE WELL does not appear to meet current well construction standards based upon:**
- ☐ review of the well log;
 - ☐ field inspection by _____;
 - ☐ report of CWRE _____;
 - ☐ 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.

Well Statistics (15S 5W Sections 31 and 32, 16 S 5W Sections 5 and 6)

Water Availability Tables

Water Availability Analysis

Detailed Reports

LONG TOM R > WILLAMETTE R - AB MOUTH
WILLAMETTE BASIN

Water Availability as of 3/1/2023

Watershed ID #: 114 ([Map](#))

Date: 3/1/2023

Exceedance Level:

Time: 2:04 PM

Water Availability Calculation

Consumptive Uses and Storages

Instream Flow Requirements

Reservations

Water Rights

Watershed Characteristics

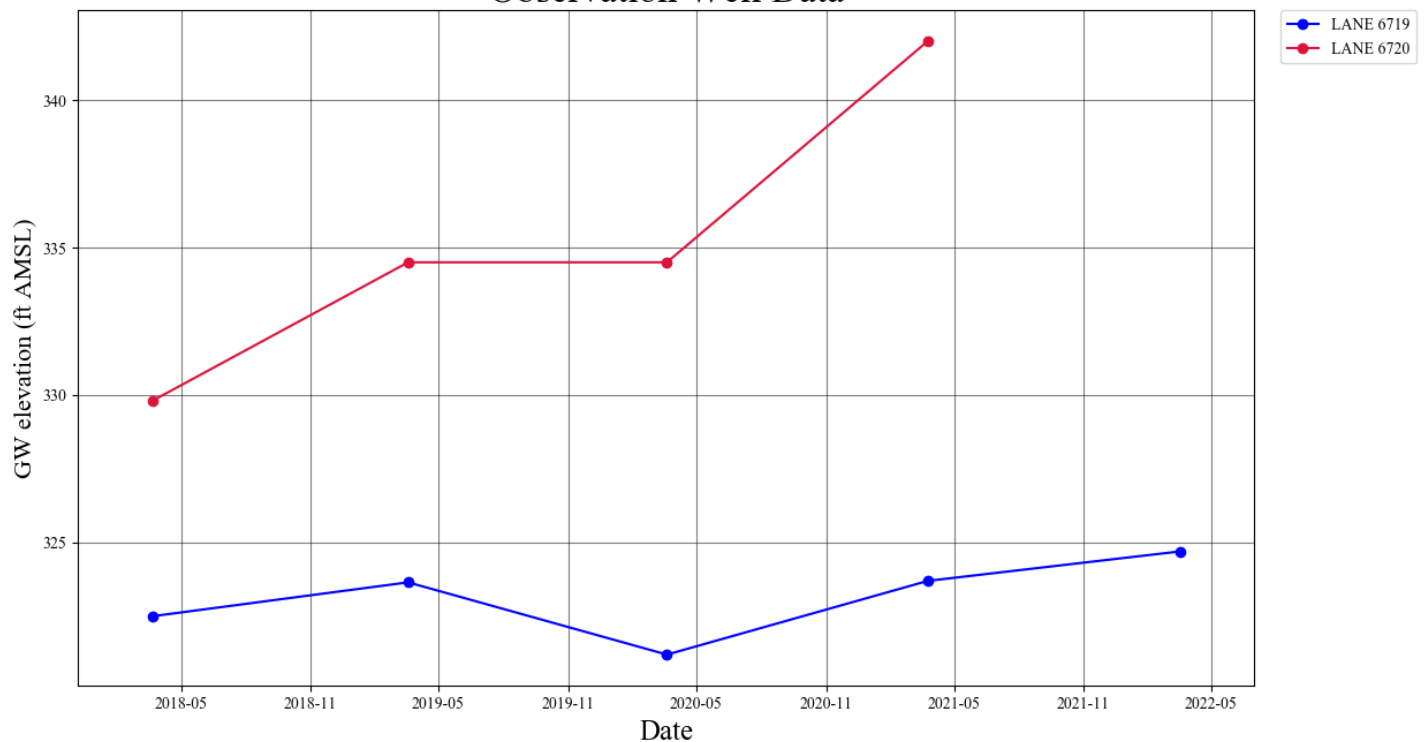
Water Availability Calculation

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	568.00	149.00	419.00	0.00	0.00	419.00
FEB	697.00	389.00	308.00	0.00	0.00	308.00
MAR	596.00	555.00	40.60	0.00	0.00	40.60
APR	373.00	250.00	123.00	0.00	0.00	123.00
MAY	215.00	64.20	151.00	0.00	0.00	151.00
JUN	105.00	29.90	75.10	0.00	0.00	75.10
JUL	50.60	48.30	2.30	0.00	0.00	2.30
AUG	35.40	39.20	-3.82	0.00	0.00	-3.82
SEP	32.10	21.70	10.40	0.00	0.00	10.40
OCT	35.30	5.93	29.40	0.00	0.00	29.40
NOV	82.50	5.73	76.80	0.00	0.00	76.80
DEC	364.00	106.00	258.00	0.00	0.00	258.00
ANN	362,000.00	99,600.00	262,000.00	0.00	0.00	262,000.00

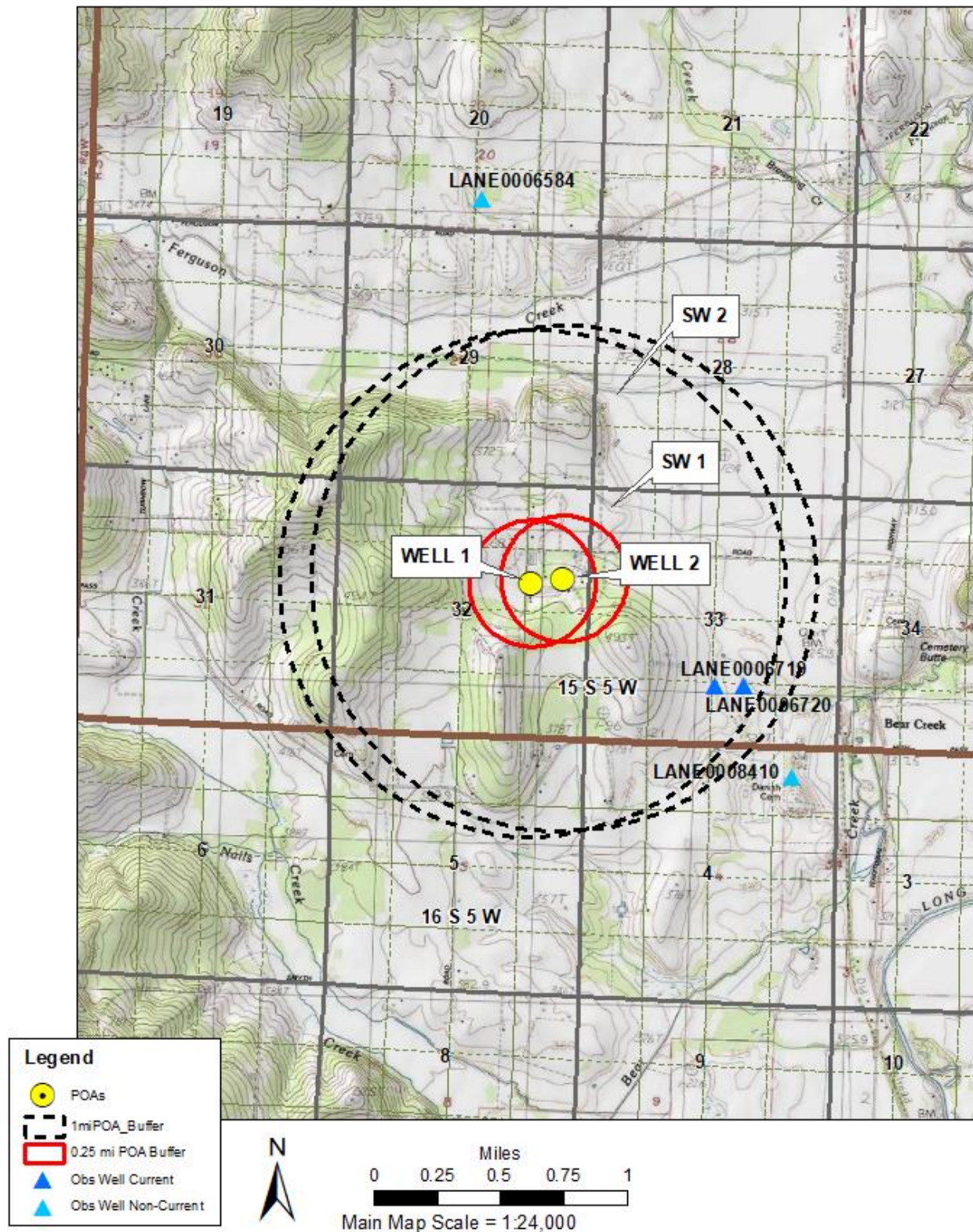
Water-Level Measurements in Nearby Wells

Observation Well Data



Well Location Map

G-19089



Service Layer Credits: Copyright© 2013 National Geographic Society, i-cubed