Groundwater Transfer Review Summary Form

Transfer/PA # T- 12595

GW Reviewer Gerald H. Grondin **Date Review Completed:** 12 December 2017

Summary of Enlargement (Same Source) Review:

[ ] The proposed transfer fails to keep the original place of use from receiving water from the same source.

Summary of Injury Review:

[ ] The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled.

Summary of Well Construction Assessment:

[ ] The proposed POA does not have a well log.

[ ] The proposed POA does not appear to meet current well construction standards. 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.

Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1271
(503) 986-0900
www.wrd.state.or.us

Ground Water Review Form:

- ☒ **Water Right Transfer**
- ☐ **Permit Amendment**
- ☐ **GR Modification**
- ☐ **Other**

Application: **T-** **12595**

Applicant Name: **The Wild Waters Revocable Living Trust**

Proposed Changes: ☒ POA ☐ APOA ☐ SW→GW ☐ RA ☐ USE ☒ POU ☐ OTHER

Reviewer(s): **Gerald H. Grondin** Date of Review: **12 December 2017**

The information provided in the application is insufficient to evaluate whether the proposed transfer may be approved because:

☐ The water well reports provided with the application do not correspond to the water rights affected by the transfer.

☐ The application does not include water well reports or a description of the well construction details sufficient to establish the ground water body developed or proposed to be developed.

☐ Other _____

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1. Basic description of the changes proposed in this transfer:

Transfer application T-12595 relates to certificate 91901 (file G-7704). The application explains the transfer purpose as follows: "The property for a long time was leased by the neighboring landowner and operated as one farm. The well that supplies the water right for this property is not located on this property. This transfer application adds a point of appropriation so the property owner has his own well for his share of the water right. The original configuration used a center pivot that irrigated a portion of both properties. The transfer in place of use moves the pivot to only irrigate land of this ownership." The application proposes the following:

Certificate 91901 currently authorizes irrigating 220.9 POU acres total (103.3 primary POU acres and 117.6 supplemental POU acres) using a single well (LAKE 2766 original, LAKE 2767 deepening) at a maximum allowable rate of 2.76 cfs (1.29 cfs for primary and 1.47 cfs for cfs for supplemental) and a maximum annual allowable volume of 662.7 ac-ft total (309.9 ac-ft for primary and 352.8 ac-ft for supplemental).

The application proposes to reconfigure the 103.3 primary POU acres within T40S/R19E-sec 06. No change is proposed for the 117.6 supplemental POU acres.

The application further proposes a new POA well (not drilled yet) to irrigate the reconfigured primary 103.3 POU acres (it appears the existing authorized POA well would continue to irrigate the remaining 117.6 supplemental POU acres unchanged).

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments:

Primarily yes. It appears the authorized POA well (POA 1, LAKE 2766 original, LAKE 2767 deepening) obtains groundwater primarily (likely 90% or more) from the higher permeability predominantly volcanic rock and sediment unit found beneath the lower permeability predominantly basin fill sediment unit. The proposed construction for the proposed POA well (POA 2) will likely limit groundwater production solely (100%) to the higher permeability predominantly volcanic rock and sediment unit beneath the lower permeability predominantly basin fill sediment unit. This is more protective of shallow exempt use wells and surface water.

The overall groundwater system is identified as generally unconfined with discontinuous low permeability layers causing local (discontinuous, limited) confinement. Generally, lower transmissivity (lower permeability) predominantly basin fill sediment unit of varying thickness overlies higher transmissivity (higher permeability) predominantly volcanic rock and sediment unit. Groundwater occurs in both the predominantly basin-fill sediment unit and the predominantly volcanic rock and sediment unit. Groundwater is vertically connected within each unit and between each unit.

3. a) Is there more than one source developed under the right (e.g., basalt and alluvium)?
☐ Yes ☒ No Comments:

Primarily no. See discussion in section 2 above.

b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.):

4. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another ground water right**?

☒ Yes ☐ No Comments:

The application seeks to change the authorized "from" POA well (LAKE 2766 original, LAKE 2767 deepening) for the 103.3 primary POU acres to the proposed "To" POA well (not drilled yet). The drawdown at the well closest to the "From" and "To" POA wells will increase if the transfer is approved. The calculated increase in seasonal drawdown at the closest well is less than 0.05 feet by the end of the irrigation season using continuous pumping at the maximum rate as a worse case scenario. The change at more distant wells will be less.

b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled?
☐ Yes ☒ No If yes, explain:

The increased seasonal drawdown should be less than 0.05 feet, which is within the capacity of the closest neighboring well.

5. a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with **another surface water source**?

☒ Yes ☐ No Comments:

The closest surface water is Antelope Creek. The proposed "To" POA well (not drilled yet) is a closer distance to Antelope Creek than the "From" POA well. The groundwater interference with Antelope Creek will likely increase 0.001 cfs (0.45 gpm) if the transfer is approved (about 0.7% of the lowest natural creek flow).

b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any **surface water sources** resulting from the proposed change?

Stream: **Antelope Creek**	☒	Minimal	☐	Significant
Stream:	☐	Minimal	☐	Significant

Provide context for minimal/significant impact:

See part 5a above.

6. What conditions or other changes in the application are necessary to address any potential issues identified above:

If allowable under the transfer process, include the following conditions:

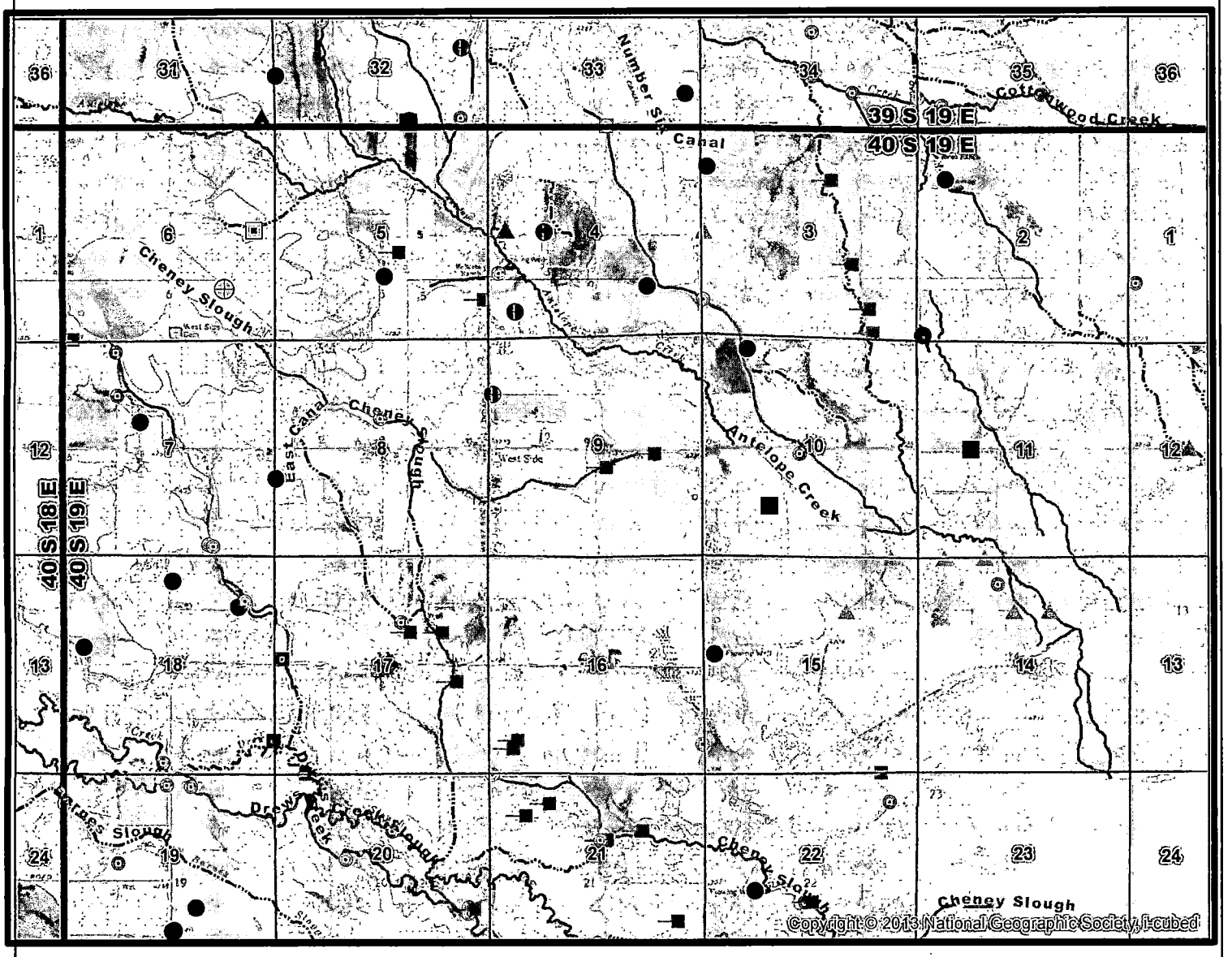
"Large" flow meter condition for both the "To" and "From" POA wells.

Condition for groundwater production: "All POA wells under this water right shall comply with existing well construction standards. Groundwater production shall occur from the higher permeability predominantly volcanic rock and sediment unit found beneath the lower permeability predominantly basin fill sediment unit by continuous casing and continuous seal through the predominantly basin fill sediment unit and into the predominantly volcanic rock and sediment unit."

7. Any additional comments:

No other comments.

Groundwater Transfer Application T-12595
The Wild Waters Revokable Living Trust



0 0.5 1 2

Miles

Yellow = Application Noted Well(s)
Red = Other Existing or Proposed Wells

Blue and Other = surface water rights

N

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.

Lake 2766

WATER WELL REPORT

STATE OF OREGON (Please type or print) (Do not write above this line)

RECEIVED AUG 27 1976 WATER RESOURCES DEPT. SALEM, OREGON

State Well No. .....

State Permit No. 40s/19E-6dd

(1) OWNER:

Name JACK ALBERTSON

Address Rt. 6 Box 466 Lakeview Or.

(2) TYPE OF WORK (check):

New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary [ ] Driven [ ]
Cable [X] Jetted [ ]
Dug [ ] Bored [ ]

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [ ]
Irrigation [X] Test Well [ ] Other [ ]

CASING INSTALLED:

Threaded [ ] Welded [X]

12" Diam. from 0 ft. to 282 ft. Gage .250

10" Diam. from 247 ft. to 369 ft. Gage .250

" Diam. from ft. to ft. Gage

PERFORATIONS:

Perforated? [X] Yes [ ] No.

Type of perforator used Factory & Torch

Size of perforations 1/4 in. by 3 in.

perforations from 6 ft. to ft.

12" 1908 perforations from 123 ft. to 282 ft.

10" 1220 perforations from 247 ft. to 369 ft.

(7) SCREENS:

Well screen installed? [ ] Yes [X] 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? [X] Yes [ ] No If yes, by whom? Interstate

Yield: 625 gal./min. with 133 ft. drawdown after 2 hrs.

" " " "

" " " "

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m.

Temperature of water 50 Depth artesian flow encountered ft.

(9) CONSTRUCTION:

Well seal—Material used cement

Well sealed from land surface to 26 ft.

Diameter of well bore to bottom of seal 18 in.

Diameter of well bore below seal 12 in.

Number of sacks of cement used in well seal 3 cu.yds. sacks

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

Brand name of bentonite Aquagell

Number of pounds of bentonite per 100 gallons of water 50 lbs./100 gals.

Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.

Did any strata contain unusable water? [ ] Yes [X] No

Type of water? depth of strata

Method of sealing strata off

Was well gravel packed? [X] Yes [ ] No Size of gravel: 3/16 3/8

Gravel placed from 26 ft. to 369 ft.

(10) LOCATION OF WELL:

County LAKE Driller's well number

nw 1/4 se 1/4 Section 6 T. 40 R. 19 W.M.

Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.

Depth at which water was first found 18 ft.

Static level 12 ft. below land surface. Date 7-29-76

Artesian pressure lbs. per square inch. Date

(12) WELL LOG:

Diameter of well below casing 10

Depth drilled 369 ft. Depth of completed well 369 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 Brown	0	2	
Claystone Yellow	2	7	
Clay Sandy Yellow	7	18	
Sand Medium Yellow water	18	21	sealed
Clay Yellow	21	31	
Clay Blue	31	35	
Clay Sandy Blue	35	135	12 @60'
Rock Blue	135	139	
Clay Sandy Blue	139	145	
Sand Coarse	145	148	12
Clay Blue	148	214	
Clay Sandy Blue	214	219	
Clay Blue	219	235	
Clay Blue Sandy	235	258	12
Clay Blue	258	270	
Rock Blue	270	275	
Rock Grey/White/Black/seam	275	325	12
Rock Black	325	366	
Sand Coarse Black	366	369	12

Work started 1-18 1976 Completed 7-29 1976

Date well drilling machine moved off of well 7-30 1976

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] Carl Bevey (Drilling Machine Operator) Date 8-22, 1976.

Drilling Machine Operator's License No. 195

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 Bevey welldrilling (Person, firm or corporation) (Type or print)

Address 117 North K. Lkv., Or.

[Signed] Glen L Bevey (Water Well Contractor)

Contractor's License No. 617 Date 8-22, 1976

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

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.

Lake 27N 7E

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

RECEIVED
DEC 30 1976
WATER RESOURCES DEPT.
SALEM, OREGON

State Well No. 40S/19E-6 dd
State Permit No.

(1) OWNER:
Name Jack Albertson
Address Rt. 6 Box 466
Lakeview Or. 97630

(2) TYPE OF WORK (check):
New Well ☐ Deepening ☒ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary ☒ Driven ☐
Cable ☐ Jetted ☐
Dug ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☒ Test Well ☐ Other ☐

CASING INSTALLED:
Threaded ☐ Welded ☐
N.A." Diam. from ft. to ft. Gage
" 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? Valley Pump
Yield: 1600 gal./min. with 7 ft. drawdown after 2 hrs.
" " "
" " "
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Already Completed
Well sealed from land surface to ft.
Diameter of well bore to bottom of seal in.
Diameter of well bore below seal in.
Number of sacks of cement used in well seal sacks
Number of sacks of bentonite used in well seal sacks
Brand name of bentonite
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.

(10) LOCATION OF WELL:
County Lake Driller's well number
NW ¼ SE ¼ Section 6 T. 40S R. 19E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found Exist. SWL 12 ft.
Static level 12 ft. below land surface. Date 12-2-76
Artesian pressure lbs. per square inch. Date

(12) WELL LOG:
Diameter of well below casing 8"
Depth drilled 442 ft. Depth of completed well 442 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
Sand Black Coarse	368	369	12
Rock Black Hard	369	442	12

Work started 11-30 1976 Completed 12-2 1976
Date well drilling machine moved off of well 12-2 1976

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] Norm Sevey (Drilling Machine Operator) Date , 1976
Drilling Machine Operator's License No. 196

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 Sevey Welldrilling (Person, firm or corporation) (Type or print)
Address 117 N.K. Lakeview Or. 97630
[Signed] Glen L Sevey (Water Well Contractor)
Contractor's License No. 617 Date 12-28, 1976

(USE ADDITIONAL SHEETS IF NECESSARY)

SP*45656-119

Drawdown Calculations Using Theis Equation

Theis Equation: $s = [Q/(4*T*pi)][W(u)]$

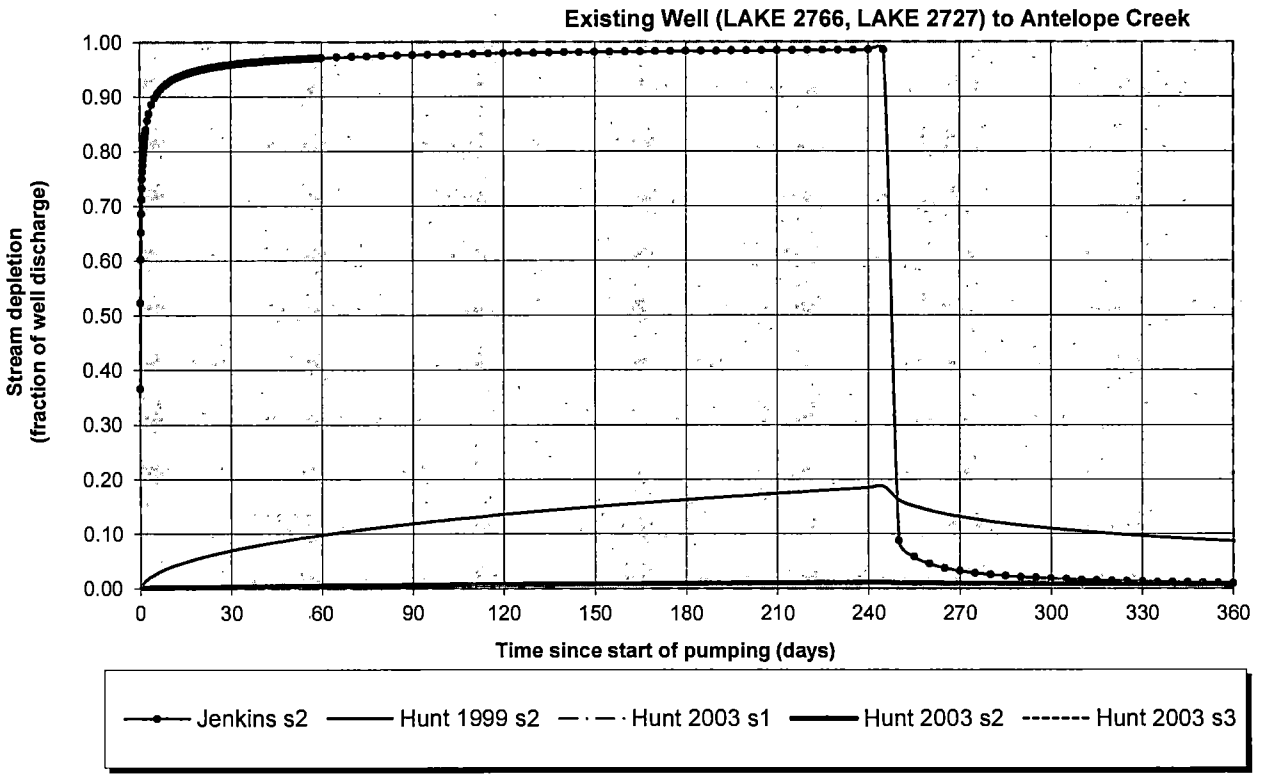
$u = (r*r*S)/(4*T*t)$

$W(u) = (-\ln u)-(0.5772157)+(u/1*1!)-(u*u/2*2!)+(u*u*u/3*3!)-(u*u*u*u/4*4!)+...$

s = drawdown (L)
T = transmissivity (L*L/T)
S = storage coefficient (dimensionless)
pi = 3.141592654
r = radial distance (L)
t = time (T)
u = dimensionless
W(u) = well function

Transmissivity T (gpd/ft)	Transmissivity T (ft2/day)	Storage Coefficient S	Pumping Rate Q (gal/min)	Pumping Rate Q (ft3/sec)	Time t (days)	Distance r (feet)	pi	u	W(u)	Drawdown s (feet)	Drawdown Difference (feet)	Comments
								Note : W(u) calculation valid when u < 7.1				
Note:	yellow grid areas are where values are calculated							7.0000	1.1545E-04			W(u) calculation test
Authorized POA Well (LAKE 2766, LAKE 2767) to closest well (Transmissivity from specific capacity data)												
439,741.69	58,784.91	0.00100	578.99	1.29	30.00	4,010.00	3.14	0.0023	5.5089	0.8312		Continuous Pumping at Full Rate
439,741.69	58,784.91	0.00100	578.99	1.29	245.00	4,010.00	3.14	0.0003	7.6069	1.1477		Continuous Pumping at Full Rate
439,741.69	58,784.91	0.00100	286.23	0.64	30.00	4,010.00	3.14	0.0023	5.5089	0.4109		Pro-Rated Pumping Rate
439,741.69	58,784.91	0.00100	286.23	0.64	245.00	4,010.00	3.14	0.0003	7.6069	0.5674		Pro-Rated Pumping Rate
Proposed POA Well (not drilled yet) to closest well (Transmissivity from specific capacity data)												
439,741.69	58,784.91	0.00100	578.99	1.29	30.00	3,430.00	3.14	0.0017	5.8207	0.8782	0.0471	Continuous Pumping at Full Rate
439,741.69	58,784.91	0.00100	578.99	1.29	245.00	3,430.00	3.14	0.0002	7.9193	1.1948	0.0471	Continuous Pumping at Full Rate
439,741.69	58,784.91	0.00100	286.23	0.64	30.00	3,430.00	3.14	0.0017	5.8207	0.4342	0.0233	Pro-Rated Pumping Rate
439,741.69	58,784.91	0.00100	286.23	0.64	245.00	3,430.00	3.14	0.0002	7.9193	0.5907	0.0233	Pro-Rated Pumping Rate

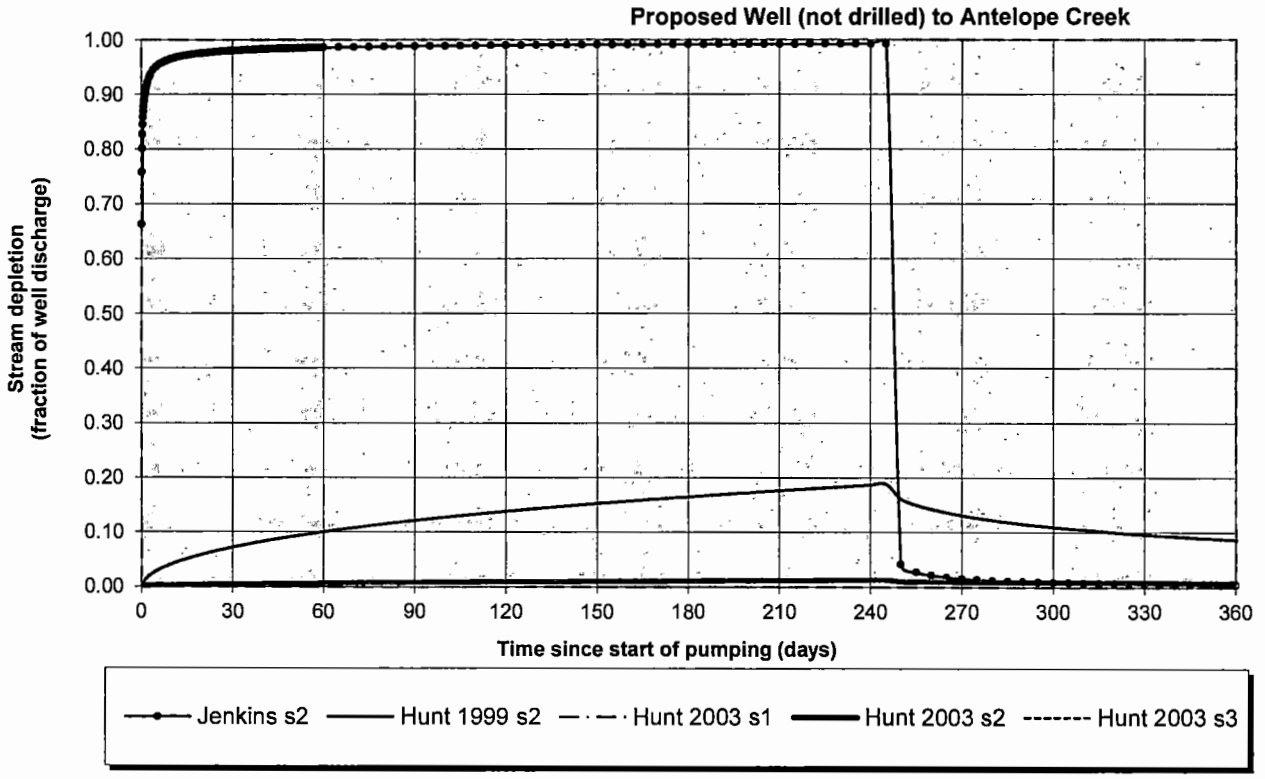
Transient Stream Depletion (Jenkins, 1970; Hunt, 1999, 2003)



Output for Stream Depletion, Scenerio 2 (s2):						Time pump on (pumping duration) = 245 days						
Days	30	60	90	120	150	180	210	240	270	300	330	360
J SD	95.8%	97.1%	97.6%	97.9%	98.1%	98.3%	98.4%	98.5%	3.2%	1.8%	1.2%	0.9%
H SD 1999	7.0%	9.8%	11.9%	13.6%	15.0%	16.3%	17.4%	18.5%	13.1%	11.0%	9.6%	8.7%
H SD 2003	0.3%	0.5%	0.6%	0.7%	0.8%	0.9%	1.0%	1.1%	0.9%	0.9%	0.8%	0.8%
Qw, cfs	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640
H SD 99, cfs	0.044	0.063	0.076	0.087	0.096	0.104	0.112	0.118	0.084	0.070	0.062	0.055
H SD 03, cfs	0.002	0.003	0.004	0.005	0.005	0.006	0.007	0.007	0.006	0.006	0.005	0.005

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate of well	Qw	0.64	0.64	0.64	cfs
Time pump on (pumping duration)	tpon	245	245	245	days
Perpendicular from well to stream	a	3100	3100	3100	ft
Well depth	d	442	442	442	ft
Aquifer hydraulic conductivity	K	341.77	341.77	341.77	ft/day
Aquifer saturated thickness	b	172	172	172	ft
Aquifer transmissivity	T	58784.44	58784.44	58784.44	ft*ft/day
Aquifer storativity or specific yield	S	0.001	0.001	0.001	
Aquitard vertical hydraulic conductivity	Kva	2.112	2.112	2.112	ft/day
Aquitard saturated thickness	ba	270	270	270	ft
Aquitard thickness below stream	babs	270	270	270	ft
Aquitard porosity	n	0.2	0.2	0.2	
Stream width	ws	25	25	25	ft
Streambed conductance (lambda)	sbc	0.195556	0.195556	0.195556	ft/day
Stream depletion factor	sdf	0.163479	0.163479	0.163479	days
Streambed factor	sbf	0.010313	0.010313	0.010313	
input #1 for Hunt's Q_4 function	t'	6.117007	6.117007	6.117007	
input #2 for Hunt's Q_4 function	K'	1.278766	1.278766	1.278766	
input #3 for Hunt's Q_4 function	epsilon'	0.005000	0.005000	0.005000	
input #4 for Hunt's Q_4 function	lamda'	0.010313	0.010313	0.010313	

Transient Stream Depletion (Jenkins, 1970; Hunt, 1999, 2003)



Output for Stream Depletion, Scenerio 2 (s2):						Time pump on (pumping duration) = 245 days						
Days	30	60	90	120	150	180	210	240	270	300	330	360
J SD	98.0%	98.6%	98.8%	99.0%	99.1%	99.2%	99.2%	99.3%	1.5%	0.8%	0.6%	0.4%
H SD 1999	7.2%	10.0%	12.1%	13.8%	15.2%	16.5%	17.7%	18.7%	13.1%	10.9%	9.6%	8.6%
H SD 2003	0.5%	0.7%	0.8%	0.9%	1.1%	1.2%	1.3%	1.4%	1.0%	0.9%	0.8%	0.8%
Qw, cfs	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640	0.640
H SD 99, cfs	0.046	0.064	0.077	0.088	0.098	0.106	0.113	0.120	0.084	0.070	0.061	0.055
H SD 03, cfs	0.003	0.004	0.005	0.006	0.007	0.007	0.008	0.009	0.006	0.006	0.005	0.005

Parameters:		Scenario 1	Scenario 2	Scenario 3	Units
Net steady pumping rate of well	Qw	0.64	0.64	0.64	cfs
Time pump on (pumping duration)	tpon	245	245	245	days
Perpendicular from well to stream	a	1495	1495	1495	ft
Well depth	d	442	442	442	ft
Aquifer hydraulic conductivity	K	341.77	341.77	341.77	ft/day
Aquifer saturated thickness	b	172	172	172	ft
Aquifer transmissivity	T	58784.44	58784.44	58784.44	ft*ft/day
Aquifer storativity or specific yield	S	0.001	0.001	0.001	
Aquitard vertical hydraulic conductivity	Kva	2.112	2.112	2.112	ft/day
Aquitard saturated thickness	ba	270	270	270	ft
Aquitard thickness below stream	babs	270	270	270	ft
Aquitard porosity	n	0.2	0.2	0.2	
Stream width	ws	25	25	25	ft
Streambed conductance (lambda)	sbc	0.195556	0.195556	0.195556	ft/day
Stream depletion factor	sdf	0.038021	0.038021	0.038021	days
Streambed factor	sbf	0.004973	0.004973	0.004973	
input #1 for Hunt's Q_4 function	t'	26.301469	26.301469	26.301469	
input #2 for Hunt's Q_4 function	K'	0.297406	0.297406	0.297406	
input #3 for Hunt's Q_4 function	epsilon'	0.005000	0.005000	0.005000	
input #4 for Hunt's Q_4 function	lamda'	0.004973	0.004973	0.004973	

Theis_Equation_specific_capacity_to_transmissivity							
Basalt							
Well County	**Well Num**	**Transmissivity**	**Transmissivity**	**Open Interval**	**Conductivity**		
		ft2/day	**gpd/ft**	**feet**	**ft/day**		
LAKE	2766	58,784.91	439,741.69	172.00	341.77		
		58,784.91	**439,741.69**	**Average**		**341.77**	**ft/day**
Basin-Fill							
Well County	**Well Num**	**Transmissivity**	**Transmissivity**	**Open Interval**	**Conductivity**		
		ft2/day	**gpd/ft**	**feet**	**ft/day**		
LAKE	2765	1,984.92	14,848.23	94.00	21.12		
		1,984.92	**14,848.23**	**Average**		**21.12**	**ft/day**

Oregon Water Resources Department
Water Availability Analysis

Main Help
Return Contact Us

Water Availability Analysis

ANTELOPE CR > GOOSE L - AT MOUTH
GOOSE & SUMMER LAKE BASIN
Water Availability as of 12/12/2017

Watershed ID #: 31300113 (Map)
Date: 12/12/2017

Exceedance Level: 80%
Time: 1:46 PM

Download Data

Water Availability

Select any Watershed for Details

Nesting Order	Watershed ID #	Stream Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Sto
1	31300113	ANTELOPE CR> GOOSE L- AT MOUTH	No	Yes	Yes	No	No	No	No	No	No	No	No	No	Yes

Limiting Watersheds

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

Month	Limiting Watershed ID #	Stream Name	Water Available?	Net Water Available
JAN	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.11
FEB	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	Yes	0.27
MAR	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	Yes	0.28
APR	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.05
MAY	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-5.41
JUN	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-4.92
JUL	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-1.47
AUG	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.76
SEP	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.61
OCT	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.35
NOV	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.03
DEC	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	No	-0.15
ANN	31300113	ANTELOPE CR > GOOSE L - AT MOUTH	Yes	771.00

Detailed Reports for Watershed ID #31300113

ANTELOPE CR > GOOSE L - AT MOUTH
GOOSE & SUMMER LAKE BASIN
Water Availability as of 12/12/2017

Watershed ID #: 31300113 (Map)
Date: 12/12/2017

Exceedance Level: 80%
Time: 1:46 PM

Water Availability Calculation

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

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	0.27	0.38	-0.11	0.00	0.00	-0.11
FEB	0.53	0.27	0.27	0.00	0.00	0.27
MAR	1.51	1.24	0.28	0.00	0.00	0.28
APR	3.71	3.76	-0.05	0.00	0.00	-0.05
MAY	2.17	7.58	-5.41	0.00	0.00	-5.41
JUN	0.95	5.87	-4.92	0.00	0.00	-4.92
JUL	0.25	1.72	-1.47	0.00	0.00	-1.47
AUG	0.14	0.90	-0.76	0.00	0.00	-0.76
SEP	0.22	0.83	-0.61	0.00	0.00	-0.61
OCT	0.17	0.52	-0.35	0.00	0.00	-0.35
NOV	0.16	0.19	-0.03	0.00	0.00	-0.03
DEC	0.23	0.38	-0.15	0.00	0.00	-0.15
ANN	1,710.00	1,430.00	771.00	0.00	0.00	771.00

Detailed Report of Consumptive Uses and Storage

Consumptive Uses and Storages in Cubic Feet per Second

Month	Storage	Irrigation	Municipal	Industrial	Commercial	Domestic	Agricultural	Other	Total
JAN	0.33	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.38
FEB	0.22	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.27
MAR	0.70	0.49	0.00	0.00	0.00	0.00	0.05	0.00	1.24
APR	1.40	2.31	0.00	0.00	0.00	0.00	0.05	0.00	3.76
MAY	0.80	6.73	0.00	0.00	0.00	0.00	0.05	0.00	7.58
JUN	0.25	5.57	0.00	0.00	0.00	0.00	0.05	0.00	5.87
JUL	0.06	1.61	0.00	0.00	0.00	0.00	0.05	0.00	1.72
AUG	0.02	0.83	0.00	0.00	0.00	0.00	0.05	0.00	0.90
SEP	0.03	0.75	0.00	0.00	0.00	0.00	0.05	0.00	0.83
OCT	0.03	0.44	0.00	0.00	0.00	0.00	0.05	0.00	0.52
NOV	0.14	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.19
DEC	0.33	0.00	0.00	0.00	0.00	0.00	0.05	0.00	0.38

Detailed Report of Reservations for Storage and Consumptive Uses

Reserved Streamflow in Cubic Feet per Second

No reservations were found for this watershed.

Detailed Report of Instream Flow Requirements

Instream Flow Requirements in Cubic Feet per Second

No instream flow requirements were found for this watershed.