Groundwater Transfer Review Summary Form

Transfer/PA # T- <u>13246</u>	
GW Reviewer <u>Gerald H. Grondin</u>	Date Review Completed: _23 March 2021_
Summary of Same Source Review:	
☐ The proposed change in point of appropriation is 2110(2).	not within the same aquifer as per OAR 690-380-
Summary of Injury Review:	
☐ The proposed transfer will result in another, existing water to which it is legally entitled or result in signification 690-380-0100(3).	
Summary of GW-SW Transfer Similarity Review:	
☐ The proposed SW-GW transfer doesn't meet the d	definition of "similarly" as per OAR 690-380-2130.
☑ None of the Above	
This is only a summary. Documentation is attached an basis for determinations.	nd should be read thoroughly to understand the

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OREGON

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

V	VATER RESOURCES DEPARTMENT	Oregon Water Resou 725 Summer Street N Salem, Oregon 97301 (503) 986-0900 www.wrd.state.or.us	E, Suite A	Ground Water Review Form: ☑ Water Right Transfer ☐ Permit Amendment ☐ GR Modification ☐ Other						
App	lication: T- <u>13</u>	<u> 3246</u>		Applicant Name	Scott & Jose Tobiasson					
Prop	osed Change	s: 🛛 POA	□ APOA ⊠ POU	□ SW→GW □ OTHER	□ RA					
Rev	iewer(s): Ge	erald H. Grondi	<u>n</u>	Date of	Review: 23 March 2021					
			Date Reviewed	by GW Mgr. and R	eturned to WRSD: _JTI 3/24/21					
	sfer may be ap	oproved because	•		whether the proposed spond to the water rights					
				•	on of the well construction proposed to be developed.					
	Other									
1.	Basic descrip	tion of the chang	ges proposed in t	this transfer:ght certificates 8343						

Certificate 83439 authorizes irrigation of 2 776, and well 2 = LAKE 775) located in T278 follows: a maximum rate of 1.070 cfs from Well 1 to irrigate 85.20 acres and 1.765 cfs from Well 2 to irrigate 141.20 acres with a maximum duty of 3 ac-ft per acre per year for all acreage (679.20 ac-ft / yr).

Certificate 88683 authorizes irrigation of 9 acres from the same two POA wells (Well 1 = LAKE 776, and well 2 = LAKE 775) located in T27S/R15E-sec 3. The certificate allows use as follows: a maximum rate of 0.12 cfs to irrigate 9 acres with a maximum duty of 3 ac-ft per acre per year for all acreage (27.00 ac-ft / yr).

The transfer proposes the following changes. For certificate 83439, move 0.288 cfs to irrigate 23.04 POU acres from authorized POA well LAKE 775 (authorized POU & POA in T27S/R15Esec 3) to proposed POU acreage and proposed POA well LAKE 188 in T25S/R15E-sec 33. For certificate 88683, move 0.087 cfs to irrigate 6.96 POU acres from authorized POA well LAKE 775 (authorized POU & POA in T27S/R15E-sec) 3 to proposed POU acreage and proposed POA well LAKE 188 in T25S/R15E-sec 33.

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vations, seasonally fluctuate similarly, and show the same long-term trends (see attached drograph). Additionally, groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock
els at wells surrounding the currently authorized and proposed POA locations have similar vations, seasonally fluctuate similarly, and show the same long-term trends (see attached drograph). Additionally, groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock
vations, seasonally fluctuate similarly, and show the same long-term trends (see attached drograph). Additionally, groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock
drograph). Additionally, groundwater in the Fort Rock Valley-Christmas Valley area (Fort Rock
edominantly basin-fill sediment unit and a deeper predominantly volcanic rocks and liments unit below. The predominantly basin fill sediment unit and the predominantly leanic rocks and sediment unit both readily yield groundwater and the two units are draulically connected. The geologic unit yielding groundwater to the authorized POA (LAKE 5) is likely from the predominantly volcanic rocks and sediment unit based on nearby water ll reports. The proposed POA well (LAKE 188) appears to obtain groundwater from the edominantly volcanic rocks and sediment unit. Miller (1984 and 1986) describes the groundwater source as the main groundwater reservoir, at reservoir includes groundwater in different geologic units. The reservoir has three aracteristics. First, the "natural" groundwater level changes less than 1.5 feet annually, licating the system is highly modulated. Second, the 1980s potentiometric surface was proximately 4292 feet elevation amsl basin-wide with Silver Lake an exception. Third, the servoir consists of numerous water producing zones in several formations, all having an entially common potentiometric level, and all being very transmissive in general.
Is there more than one source developed under the right (e.g., basalt and alluvium)? Yes No
No. Single hydraulically connected groundwater system. Both the "To" and "From" wells
pear to obtain groundwater from the predominantly volcanic rocks and sediment unit. See cussion in part 2 above.
cussion in part 2 above.
If yes, estimate the portion of the right supplied by each of the sources and describe any nitations that will need to be placed on the proposed change (rate, duty, etc.):

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⊠ Yes	□ No Comments:							
to other drawdo	proposed POA well change will move groundwater pumping under this certificate closer water right wells. The calculated maximum additional seasonal groundwater level will at the water right well (LAKE 187) closest to the proposed POA well (LAKE 188) is a 1.25 feet. The above is according to the proposed POA well (LAKE 188) is a 1.25 feet.							
	n 1.25 feet. The change in seasonal groundwater level drawdown will be less at well away. All these water right wells should be able to accommodate the seasonal drawdow							
<mark>change.</mark>								
continu	long-term impact on the groundwater system should be the same. That impact is to e contributing its ongoing share to the annual Fort Rock Classified Area groundwate cline (see the attached hydrographit shows an annual decline rate of about 0.25 feer).							
	s, would this proposed change, at its maximum allowed rate of use, likely result in groundwater right not receiving the water to which it is legally entitled? No If yes, explain:							
See	liscussion in part 4a above.							
a) Will	a) Will this proposed change, at its maximum allowed rate of use, likely result in an increas in interference with another surface water source ? ☐ Yes ☒ No Comments:							
	ference with another surface water source?							
☐ Yes	ference with another surface water source ? No Comments:							
☐ Yes No. Marsh :	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference							
☐ Yes No. Marsh :	ference with another surface water source?							
No. Marsh a should b) If ye	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference							
No. Marsh a should l	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Pauling and Silver Lake. The seasonal interference should be less, and the long-term interference be the same. s, at its maximum allowed rate of use, what is the expected change in degree of							
No. Marsh a should b) If ye interfer Stream:	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference be the same. s, at its maximum allowed rate of use, what is the expected change in degree of ence with any surface water sources resulting from the proposed change? Paulina Marsh Minimal Significant Minimal Significant							
No. Marsh a should b) If ye interfer Stream:	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference the same. s, at its maximum allowed rate of use, what is the expected change in degree of ence with any surface water sources resulting from the proposed change? Paulina Marsh Minimal Significant							
No. Marsh a should b) If ye interfer Stream: Stream: Provide	ference with another surface water source? No Comments: The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference be the same. s, at its maximum allowed rate of use, what is the expected change in degree of ence with any surface water sources resulting from the proposed change? Paulina Marsh Minimal Significant Minimal Significant							
No. No. Marsh: should: b) If ye interfer Stream: Stream: Provide See of For SW water so	The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference be the same. s, at its maximum allowed rate of use, what is the expected change in degree of ence with any surface water sources resulting from the proposed change? Paulina Marsh Minimal Significant Silver Lake Minimal Significant Context for minimal/significant impact: Comment in part 5a above. C-GW transfers, will the proposed change in point of diversion affect the surface purce similarly (as per OAR 690-380-2130) to the authorized point of diversion and in the water use subject to transfer?							
No. Marsh a should b) If ye interfer Stream: Stream: Provide See of For SW water se specifie Yes	The POA changes moves pumping further away from surface water particularly Paulin and Silver Lake. The seasonal interference should be less, and the long-term interference to the same. s, at its maximum allowed rate of use, what is the expected change in degree of ence with any surface water sources resulting from the proposed change? Paulina Marsh Minimal Significant Context for minimal/significant impact: Comment in part 5a above. Comment in part 5a above. Comment in part 5a above.							

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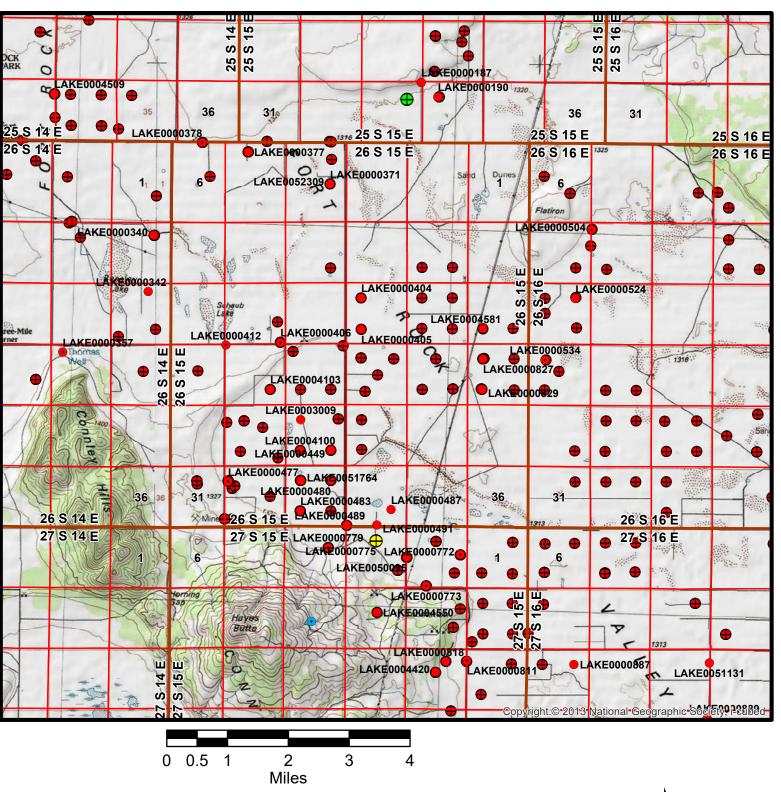
7.	What conditions or other changes in the application are necessary to address any potential issues identified above:
	Note: the proposed transfer is within the Fort Rock groundwater limited area.
	The following are technical groundwater review recommendations. It is recognized that one or more technically recommended conditions may or may not be allowed under the transfer process rules and statutes. This technical groundwater review relies on other appropriate and authorized Department staff to make that determination.
	"Large" flow meter condition for any proposed "To" POA well. Require the flow meter for any POA well to be properly installed and maintained. Each meter shall be either within 50 feet of the well head with a clearly visible monument adjacent to the meter or a surveyed location shall be provided and a clearly visible monument adjacent to the meter shall be installed for each meter more than 50 feet from the well head.
	Condition 7P (well tag condition) for all the "To" and "From" POA wells.
	Condition 7T (modified) for all "To" POA wells: "Prior to use, all POA wells shall be configured to allow a strictly clean water (no oil) static water level measurements with an electric-tape. That can include measurement access via an unobstructed vertical discharge pipe that allows the groundwater level to fluctuate freely within the discharge pipe (no valves, etc.). Otherwise, a dedicated measuring tube must be installed prior to use. The tube must be unobstructed, have a diameter of ¾ inch (0.75 inch) or greater, and pursuant to figure 200-5 in OAR 690-200."
8.	Any additional comments:
	No additional comments.

References:

Miller, D.W., 1986, Appraisal of ground-water conditions in the Fort Rock Basin, Lake County, Oregon: Oregon Water Resources Department, Ground Water Report No. 31, 196 p and plates.

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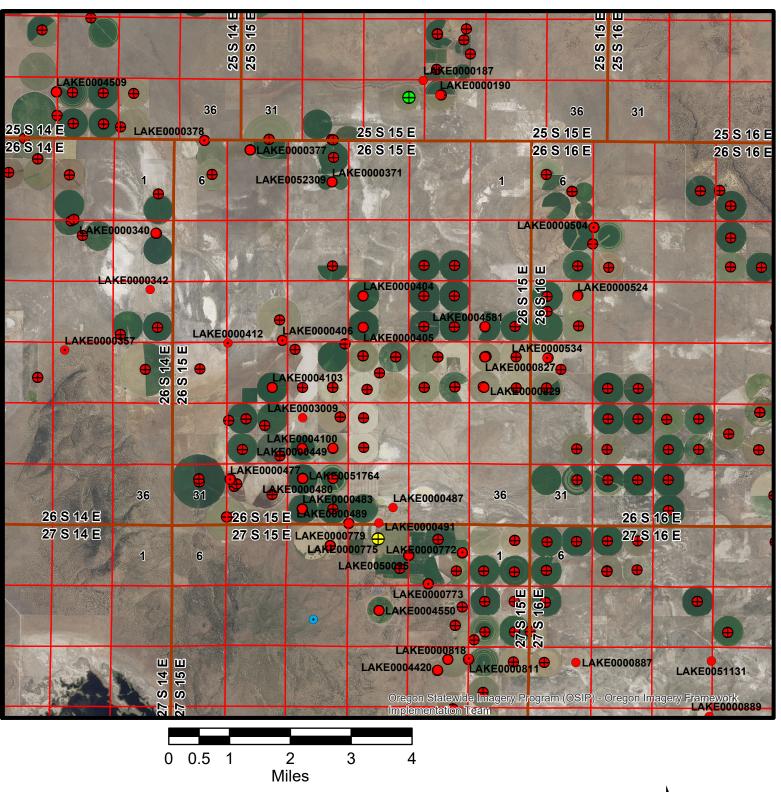
Groundwater Transfer Application T-13246 Scott & Jose Tobiasson



Yellow = Authorized Well (LAKE 775)
Green = Proposed Well (LAKE 188)
Red = Groundwater PODs or Other Wells
Blue = Surface Water PODs

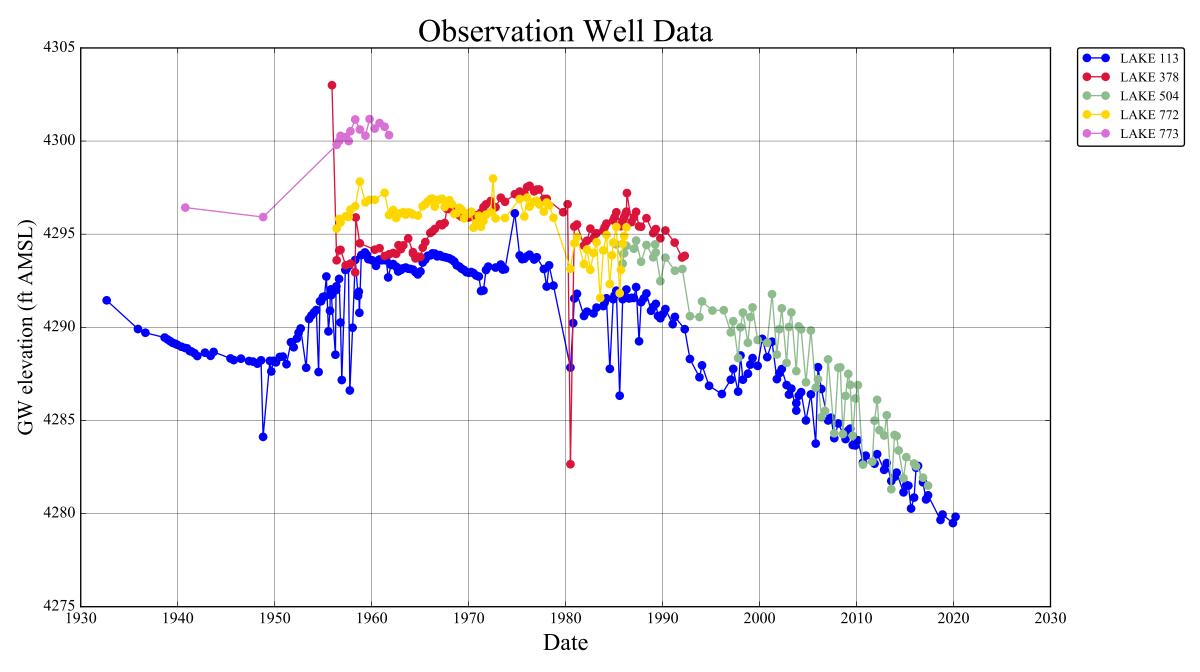


Groundwater Transfer Application T-13246 Scott & Jose Tobiasson



Yellow = Authorized Well (LAKE 775)
Green = Proposed Well (LAKE 188)
Red = Groundwater PODs or Other Wells
Blue = Surface Water PODs





Drawdown Calculations Using Theis Equation

 $\begin{array}{ll} \textbf{Theis Equation:} & s = [Q/(4^*T^*pi)][W(u)] \\ & u = (r^*r^*S)/(4^*T^*t) \\ & W(u) = (-ln\ u)-(0.5772157)+(u/1^*1!)-(u^*u/2^*2!)+(u^*u^*u/3^*3!)-(u^*u^*u/4^*4!)+... \end{array}$

s = drawdown (L) r = radial distance (L)

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

Transmissivity	Transmissivity	Storage	Pumping Rate	Pumping Rate	Time	Distance	pi	u	W(u)	Drawdown	Drawdown	Pumping	Comments
Т	T	Coefficient	Q	Q	t	r	_			s	Change s	Well	
(gpd/ft)	(ft2/day)	S	(gal/min)	(ft3/sec)	(days)	(feet)				(feet)	(feet)		
								Note: W(u)	calculation	alid when u <	7.1		
Notes	yellow grid areas a	ara whara walu	a are coloulated					7.0000	1.1545E-04				W(u) calculation test
Note:	yellow grid areas	are where value	es are calculateu					7.0000	1.1545E-04				w(u) calculation test
"From" POA wells	to Water Right We	ell LAKE 187 clo	sest to Proposed	"To" Well (Transr	nissivity fro	m Morgan (19	88) and Mc	Farland and F	Rvals (1991)):	Used S = 0.0	01		
	g			(J g (
112,207.80	15,000.00	0.00100	168.31	0.38	30.00	39,925.00	3.14	0.8856	0.2668	0.0459		LAKE 775	Continuous Pumping at Full Rate
			168.31	0.38						0.05			· •
"To" POA wells to	Water Right Well I	LAKE 187 close	st to Proposed "T	o" Well (Transmis	sivity from I	Morgan (1988) and McFa	rland and Rya	als (1991)): U	sed S = 0.001			
112,207.80	15,000.00	0.00100	168.31	0.38	30.00	1,915.00	3.14	0.0020	5.6209	0.9662		LAKE 188	Cartinua Durania a at Full Data
112,207.00	15,000.00	0.00100	168.31	0.38	30.00	1,915.00	3.14	0.0020	5.6209	0.9662	0.9203	LANE 100	Continuous Pumping at Full Rate
			100.51	0.30						0.37	0.3203		
"From" POA wells	to Water Right We	II LAKE 187 clo	sest to Proposed	"To" Well (Transr	nissivity fro	m Morgan (19	88) and Mc	Farland and F	Rvals (1991)):	Used S = 0.0	01		
				,									
112,207.80	15,000.00	0.00100	83.13	0.19	30.00	39,925.00	3.14	0.8856	0.2668	0.0226		LAKE 775	Continuous Pro-Rated Pumping
			83.13	0.19						0.02			
"To" POA wells to	Water Right Well I	LAKE 187 close	st to Proposed "T	o" Well (Transmis	sivity from I	Morgan (1988) and McFa	rland and Rya	als (1991)): U	sed S = 0.001			
112,207.80	15,000.00	0.00100	83.13	0.19	30.00	1,915.00	3.14	0.0020	5.6209	0.4772		LAKE 188	Continuous Pro-Rated Pumping
112,207.80	15,000.00	0.00100	83.13	0.19	30.00	1,915.00	3.14	0.0020	5.6209	0.4772	0.4545	LANE 188	Continuous Pro-Rated Pumping
			05.13	0.13				1		0.40	0.4343		

Drawdown Calculations Using Theis Equation

 $\begin{array}{ll} \textbf{Theis Equation:} & s = [Q/(4^*T^*pi)][W(u)] \\ & u = (r^*r^*S)/(4^*T^*t) \\ & W(u) = (-ln\ u)-(0.5772157)+(u/1^*1!)-(u^*u/2^*2!)+(u^*u^*u/3^*3!)-(u^*u^*u/4^*4!)+... \end{array}$

s = drawdown (L) r = radial distance (L)

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

Transmissivity	Transmissivity	Storage	Pumping Rate	Pumping Rate	Time	Distance	pi	u	W(u)	Drawdown	Drawdown	Pumping	Comments
T	T	Coefficient	Q	Q	t	r	_			s	Change s	Well	
(gpd/ft)	(ft2/day)	S	(gal/min)	(ft3/sec)	(days)	(feet)				(feet)	(feet)		
											_,		
								Note: W(u)	calculation	alid when u <	7.1		
Note:	yellow grid areas	are where value	es are calculated					7.0000	1.1545E-04				W(u) calculation test
													, ,
"From" POA wells	to Water Right We	II LAKE 187 clo	sest to Proposed	l "To" Well (Transr	nissivity fro	m Morgan (19	988) and Mc	Farland and F	Ryals (1991)):	Used S = 0.0	01		
112,207.80	15,000.00	0.00100	168.31	0.38	245.00	39,925.00	3.14	0.1084	1.7499	0.3008		LAKE 775	Continuous Pumping at Full Rate
			168.31	0.38						0.30			
"To" POA wells to	Water Right Well I	AKE 187 close	st to Proposed "T	o" Well (Transmis	sivity from I	Morgan (1988) and McFa	land and Rya	als (1991)): U	sed S = 0.001			
			•	,		,	,		' "				
112,207.80	15,000.00	0.00100	168.31	0.38	245.00	1,915.00	3.14	0.0002	7.7192	1.3268		LAKE 188	Continuous Pumping at Full Rate
			168.31	0.38						1.33	1.0260		
"From" DOA wolls	to Water Right We	III AKE 187 ck	seast to Proposed	"To" Wall (Transr	niccivity fro	m Morgan (10	188) and Mc	Farland and E	Pyale (1991))	Head S = 0.0	01		
TTOIL FOA WEIIS	to water Right we	II LAKE 107 CK	osest to Froposed	10 Well (Italisi	ilissivity iro	ili Worgan (13	oo, and wic	anana ana i	tyais (1991)).	USEU 5 - 0.0	01		
112,207.80	15,000.00	0.00100	83.13	0.19	245.00	39,925.00	3.14	0.1084	1.7499	0.1486		LAKE 775	Continuous Pro-Rated Pumping
•			83.13	0.19						0.15			
"To" POA wells to	Water Right Well I	AKE 187 close	st to Proposed "T	o" Well (Transmis	sivity from I	Morgan (1988) and McFa	land and Rya	als (1991)): U	sed S = 0.001			
112,207.80	15 000 00	0.00100	83.13	0.19	245.00	1.015.00	3.14	0.0000	7.7192	0.6553		LAKE 188	Continuous Dro Dated Diversian
112,207.80	15,000.00	0.00100	83.13	0.19	243.00	1,915.00	3.14	0.0002	7.7192	0.66	0.5067	LANE 188	Continuous Pro-Rated Pumping
			03.13	U. 13				1	1	0.00	0.0007		

NOTICE TO WATER WELL CONTRACTOR The original and first copy of this report are to be filed with the

WATER RESOURCES DEPARTMENT.
SALEM, OREGON 97310
within 30 days from the day
of well completion.

WATER WELL REPORT

STATE OF OREGON

(Please type or print)

(Do not write above this line)

State Well No. 256/15E-33
State Permit No. G-8572 #2

	- · ·							
(1) OWNER:	(10) LOCATION OF WELL:							
Name Alfred Roberts	County Lake Driller's well number							
Address Fort Rock, Or. 97638	14 14 Section 33 T. 255 R. 15 E. W.M.							
(a) MVDE OF MODI/ (-LL).	Bearing and distance from section or subdivision corner							
(2) TYPE OF WORK (check):								
New Well [Deepening ☐ Reconditioning ☐ Abandon ☐ If abandonment, describe material and procedure in Item 12.								
	(11) WATER LEVEL: Completed well.							
(3) TYPE OF WELL: (4) PROPOSED USE (check):	Depth at which water was first found 162 ft.							
Rotary W Driven Domestic Industrial W Municipal Domestic Diffusion	Static level 38 ft. below land surface. Date 8-20-7							
Dug	Artesian pressure lbs. per square inch. Date							
CASING INSTALLED: Sybwide Threaded Welded Welded Threaded Gage 250. "Diam from ft. to ft. Gage ft. Ga	(12) WELL LOG: Diameter of well below casing							
PERFORATIONS: Perforated? Yes No.	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.							
Type of perforator used	MATERIAL From To SWL							
Size of perforations in. by in.	Brown Clay 0 43							
perforations from ft. to ft.	Green Stone 43 125							
perforations from ft. to ft.	Brown Lava Kack 125 /32							
perforations from ft. to ft.	Blue Lasa Rock 132 280							
(7) SCREENS: Well screen installed? Yes I No	WHEN GONING							
Manufacturer's Name								
Type Model No	DEALMEN							
Diam. Slot size Set from ft. to ft.	WEOFILE							
Diam. Slot size Set from ft. to ft.	AUG 2 8 1979## **							
(8) WELL TESTS: Drawdown is amount water level is lowered below static level	WATER RESOURCES DEPT							
Was a pump test made? Yes No If yes, by whom?	SALEM, OREGON							
	-							
100 Ho. 1771								
" gad William " " " " " " " " " " " " " " " " " " "								
Bailer test 900 gal./min. with ft. drawdown after hrs.	- The state of the							
Artesian flow g.p.m. Depth artesian flow encountered	1 2 2 270 8 30 20							
perature of water Depth artesian flow encountered	Work started 1 - 2 3 19 7 9 Completed 8 - 70 19 79							
(9) CONSTRUCTION:	Date well drilling machine moved off of well 8-20 19/19							
Well seal-Material used Cement	Drilling Machine Operator's Certification:							
Well sealed from land surface toft_	This well was constructed under my direct supervision. Materials used and information reported above are true to my							
Diameter of well bore to bottom of sealin.	best knowledge and belief.							
Diameter of well bore below seal	[Signed] Date Date 19.7							
Number of sacks of cement used in well seal sacks	Drilling Machine Operator's License No. 699							
How was cement grout placed? Central to was Mexed up. Pipe run								
down love side of the easing	Water Well Contractor's Certification:							
presher growted in	This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.							
Was a drive shoe used? Yes No Plugs Size: location ft.	1 m M S S 1 1 1 1 1 1 0 2 1 1 1 2							
Did any strata contain unusable water? Yes No	(Person, firm or corporation) (Type or print)							
Type of water? depth of strata	Address P.O. Box 432, Lebanon, Or.							
Method of sealing strata off	[Signed] Melly Sench							
Was well gravel packed? Yes No Size of gravel:	(Water Well Contractor)							
Gravel placed from ft. to ft.	Contractor's License No. 567. Date 8-26, 19.74							

STATE ENGINEER Salem, Oregon	Jokes)	Well 1	Record	COUNT	WELL NO. 2 YYCATION NO.	<i>Lake</i>
Clayton Ma	nn		MAILING			
OWNER: Clayton Ma			CITY AND			
LOCATION OF WELL:			STATE:	Fort Rock	, Oregon	
NW 1/4 NE 1/4 Sec. 3	у. т. 27 S. R.	E. 15 W	W.M.	,		
Bearing and distance from					७ छ।	
corner						

Altitude at well						
TYPE OF WELL: dril		_		Soction	3	
Depth drilled				Section	l	
FINISH:						
AQUIFERS:						
WATER LEVEL: 23 ft	. below land su	ırface				
PUMPING EQUIPMEN Capacity1200	T: Typet	urbine			н.г)
WELL TESTS:	er er		house		^^	CDM
DrawdownDrawdown						
Drawdown	16. after		. 11UUIS			G.I .IVI.
USE OF WATERI SOURCE OF INFORMADRILLER or DIGGER	ATION					•••••
ADDITIONAL DATA: LogX Water 1	Level Measuremen	ts	Chemical Aı	nalysis	Aquifer T	Test

REMARKS: Permit U-710