Groundwater Application Review Summary Form

Application # G- 18833

GW Reviewer M. Thoma **Date Review Completed:** 08-22-19

Summary of GW Availability and Injury Review:

[X] 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.

JI 8/22/19

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations and for conditions that may be necessary for a permit (if one is issued).

WATER RESOURCES DEPARTMENT

MEMO 08-22 ,20 19

TO: **Application G-** 18833

FROM: **GW:** M. Thome
(Reviewer's Name)

SUBJECT: Scenic Waterway Interference Evaluation

☒ YES
The source of appropriation is within or above a Scenic Waterway
☐ 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.

See Klamath Scenic Waterway Memo

☐ Per ORS 390.835, the Groundwater Section is **unable** to calculate ground water interference with surface water that contributes to a scenic waterway; **therefore, the Department is unable to find that there is a preponderance of evidence that the proposed use will measurably reduce the surface water flows necessary to maintain the free-flowing character of a scenic waterway.**

DISTRIBUTION OF INTERFERENCE

Calculate the percentage of consumptive use by month and fill in the table below. If interference cannot be calculated, per criteria in 390.835, do not fill in the table but check the "unable" option above, thus informing Water Rights that the Department is unable to make a Preponderance of Evidence finding.

Exercise of this permit is calculated to reduce monthly flows in _____ Scenic Waterway by the following amounts expressed as a proportion of the consumptive use by which surface water flow is reduced.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

MEMO

To: Kristopher Byrd, Well Construction and Compliance Section Manager

From: Joel Jeffery, Well Construction Program Coordinator

Subject: Review of Water Right Application G-18833

Date: August 28, 2019

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

Applicant's Well #1 (KLAM 53755): Based on a review of the Well Report, Applicant's Well #1 appears to protect the groundwater resource.

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

KLAM 53755

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)
Instructions for completing this report are on the last page of this form.

WELL I.D. # L 29466
START CARD # 107281

(1) OWNER: Well Number #1
Name PINE GROVE IRRIGATION DISTRICT
Address 3939 S SIXTH ST BOX # 325
City KLAMATH FALLS State OREGON Zip 97603

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

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

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

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 376 ft.
Explosives used [ ] Yes [X] No Type ____ Amount ____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
22	0	174	CEMENT	0	50	65 SKS
			"	150	174	25 SKS
15	174	274				
12¼	274	376				

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

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	16	+1	174	.250	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 174 Ft.

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

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

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

Yield gal/min	Drawdown	Drill stem at	Time
3200	@ 53 Ft.		1 hr.

Temperature of water 74 °F 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 KLAMATH Latitude ____ Longitude ____
Township 39S N or S Range 10E E or W. WM.
Section 7 SE 1/4 NE 1/4
Tax Lot R3909 Lot EC Block 500 Subdivision R59255
Street Address of Well (or nearest address) 9390 HWY 140 E
KLAMATH FALLS ORE

(10) STATIC WATER LEVEL:
35 ft. below land surface. Date 3/25/03
Artesian pressure ____ lb. per square inch. Date ____

(11) WATER BEARING ZONES:
Depth at which water was first found 185 Ft.

From	To	Estimated Flow Rate	SWL
185	376	3200 GPM	

(12) WELL LOG:
Ground Elevation ____

Material	From	To	SWL
SEE ATTACHED SHEET			

RECEIVED
APR 15 2003
WATER RESOURCES DEPT.
SALEM, OREGON

Date started 3/4/03 Completed 3/25/03

(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 601
Signed [signature] Date 4/13/03

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

KLAM 53755

KLAM
53755

STOREY DRILLING SERVICES

P.O. Box 98 • MIDLAND, OREGON 97634
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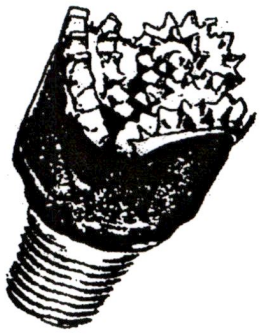
22560 ADOBE ROAD • RED BLUFF, CALIFORNIA 96080
CONTRACTOR'S LICENSES:
OR #601 • CA #583153 • NV #38199



Pine Grove Irrigation District
3939 South Sixth Street Box # 325
Klamath Falls, Oregon 97603

START: March 4, 2003
FINISH: March 25,2003

WELL LOCATION: Bernie Symonson Property - south side of Hwy 140E - 1 mile east of Hwy 39 & 140 Junction
SE¼ NE¼ S7 T39S R10E

LOG

0 - 3	Sandy topsoil
3 - 24	Yellow shale
24 - 168	Green clay with hard gray shale
168 - 211	Black lava
211 - 257	Hard broken gray basalt
257 - 288	Hard broken black basalt
288 - 293	Hard gray basalt
293 - 331	Broken black basalt
331 - 335	Hard gray basalt
335 - 376	Hard broken gray basalt

175 feet of 16 inch O.D. x .250 wall steel casing set and cemented at 174 feet.
22 inch diameter hole from 0 feet to 174 feet; 15 inch diameter hole from 174 feet to 274 feet;
12 inch diameter hole from 274 feet to 376 feet.
Static water level at 35 feet. Temperature 74° Fahrenheit.
Test pumped 3200 GPM at 58 feet.

RECEIVED
APR 15 2003
WATER RESOURCES DEPT.
SALEM, OREGON

PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 08/22/2019
FROM: Groundwater Section M Thoma
Reviewer's Name
SUBJECT: Application G- 18833 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: **Pine Grove Irr. Distr.** County: **Klamath**

A1. Applicant(s) seek(s) 12.44 cfs from 1 well(s) in the Klamath Basin, Lost River subbasin

A2. Proposed use Suppl. Irr. (995.42 acres) Seasonality: Apr. 1 – Oct. 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	~~KLAM 29156~~ Klam 53755	1	Bedrock	12.44	39S/10E-08 NWSW	S 70°50'49" E, 930.65 ft from W ¼ corner of S8
2						

* 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	4170	185	35	3/22/03	376	0-50	+1-174	-	-	3200		P

Use data from application for proposed wells.

A4. **Comments:**

A5. ☐ **Provisions of the** Klamath (OAR 690-0025) 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: Klamath Basin Rules govern regulation of existing water rights no new allocation.

A6. ☐ **Well(s) #** _____, _____, _____, _____, _____, tap(s) an aquifer limited by an administrative restriction.
Name of administrative area:
Comments:

B. GROUNDWATER AVAILABILITY CONSIDERATIONS, OAR 690-310-130, 400-010, 410-0070

B1. **Based upon available data**, I have determined that groundwater* for the proposed use:

a. ☒ **is** over appropriated, ☐ **is not** over appropriated, *or* ☐ **cannot be determined to be** over appropriated during any period of the proposed use. * This finding is limited to the groundwater portion of the over-appropriation determination as prescribed in OAR 690-310-130;

b. ☒ **will not** *or* ☐ **will** likely be available in the amounts requested without injury to prior water rights. * This finding is limited to the groundwater portion of the injury determination as prescribed in OAR 690-310-130;

c. ☒ **will not** *or* ☐ **will** likely to be available within the capacity of the groundwater resource; or

d. ☐ **will, if properly conditioned**, avoid injury to existing groundwater rights or to the groundwater resource:
   i. ☐ The permit should contain condition #(s) _____;
   ii. ☐ The permit should be conditioned as indicated in item 2 below.
   iii. ☐ The permit should contain special condition(s) as indicated in item 3 below;

B2. a. ☐ **Condition** to allow groundwater production from no deeper than _____ ft. below land surface;

b. ☐ **Condition** to allow groundwater production from no shallower than _____ ft. below land surface;

c. ☐ **Condition** to allow groundwater production only from the _____ groundwater reservoir between approximately_____ ft. and_____ ft. below land surface;

d. ☐ **Well reconstruction** is necessary to accomplish one or more of the above conditions. The problems that are likely to occur with this use and without reconstructing are cited below. Without reconstruction, I recommend withholding issuance of the permit until evidence of well reconstruction is filed with the Department and approved by the Groundwater Section.

Describe injury –as related to water availability– that is likely to occur without well reconstruction (interference w/ senior water rights, not within the capacity of the resource, etc): _____

B3. **Groundwater availability remarks:** The applicant's proposed POA is located within the "Project Area" of the Upper Klamath Basin. Wells throughout this area, including the proposed POA well, have been experiences long-term water level declines associated, primarily, with heavy use for supplemental irrigation during drought years when surface water is not available. This particular well has seen 15 ft of drawdown since 2004 marked mostly by episodic, single-year declines during heavy-pumping drought years (e.g., 2004, 2010). In the most-recent declared drought in 2018, the Department limited the areas where emergency drought permits would be issued and limited the amount of water that would be issued for drought permits (see attached memo dated 04/16/2018) due to concerns of Over-Appropriation and Injury to existing users. The applicant's proposed POA is in an area where a limited duty was issued for drought permits in 2018. Water levels in the area have not shown signs of recovering trends and so groundwater is determined to be Over-Appropriated. Any new use would also lead to further declines of the aquifer thereby limiting the existing groundwater users' access to their permitted water and causing injury.

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	**Older Basalt of Basin and Range**	☒	☐
		☐	☐

Basis for aquifer confinement evaluation: water levels in the applicant's proposed POA are reported to be above "First Water" indicating the aquifer units are under confinied conditions. Well logs for other wells in the area report similar conditions.

C2. **690-09-040 (2) (3):** Evaluation of distance to, and hydraulic connection with, surface water sources. All wells located a horizontal distance less than ¼ mile from a surface water source that produce water from an unconfined aquifer shall be assumed to be hydraulically connected to the surface water source. Include in this table any streams located beyond one mile that are evaluated for PSI.

Well	SW #	Surface Water Name	GW Elev ft msl	SW Elev ft msl	Distance (ft)	Hydraulically Connected? YES	NO	ASSUMED	Potential for Subst. Interfer. Assumed? YES	NO
1	**1**	**Lost River**	**4120**	**4090**	**13,220**	☒	☐	☐	☐	☐
						☐	☐	☐	☐	☐

Basis for aquifer hydraulic connection evaluation: Groundwater elevations are above surface water elevations implying that groundwater is flowing towards and discharging to surface water. Also, there are several large spring complexes that discharge into the Lost River that could be impacted by the proposed use.

Water Availability Basin the well(s) are located within: NONE

C3a. **690-09-040 (4):** Evaluation of stream impacts for each well that has been determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. Limit evaluation to instream rights and minimum stream flows that are pertinent to that surface water source, and not lower SW sources to which the stream under evaluation is tributary. Compare the requested rate against the 1% of 80% *natural* flow for the pertinent Water Availability Basin (WAB). If Q is not distributed by well, use full rate for each well. Any checked ☒ box indicates the well is assumed to have the potential to cause PSI.

Well	SW #	Well < ¼ mile?	Qw > 5 cfs?	Instream Water Right ID	Instream Water Right Q (cfs)	Qw > 1% ISWR?	80% Natural Flow (cfs)	Qw > 1% of 80% Natural Flow?	Interference @ 30 days (%)	Potential for Subst. Interfer. Assumed?
		☐	☐			☐		☐		☐

C3b. **690-09-040 (4):** Evaluation of stream impacts by total appropriation for all wells determined or assumed to be **hydraulically connected and less than 1 mile** from a surface water source. **Complete only if Q is distributed among wells**. Otherwise same evaluation and limitations apply as in C3a above.

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

Comments: no surface water sources were evaluated within 1 mile

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
1	**1**	%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS		**0**	**0**	**0**	**12.44**	**12.44**	**12.44**	**12.44**	**12.44**	**12.44**	**12.44**	**0**	**0**
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q		**There is no Water Availibilty for the Lost River so PSI cannot be assessed**											
(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: _____

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:** The applicant's proposed POA would be producing from an aquifer that has been found to be hydraulically connected to surface water in the Lost River Subbasin. However, there is no Water Availibilty for the subbasin so PSI cannot be assessed or assumed.

References Used:

Gannett, M. W., B. J. Wagner, and K. E. Lite. 2012. *Groundwater Simulation and Management Models for the Upper Klamath Basin, Oregon and California*. USGS Scientific Investigations report 2012-5062.

Gannett, M. W., K. E. Lite, J. L. LaMarche, B. J. Fisher, and D. J. Polette. 2007. *Ground-water Hydrology of the Upper Klamath Basin, Oregon and California*. USGS Scientific Investigations Report 2007-5050

Grondin, G. H. 2004. *Ground Water in the Eastern Lost River Sub-Basin, Langell, Yonna, Swan Lake, and Poe Valleys of Southeastern Klamath County, Oregon*. OWRD Ground Water Report No 41. Oregon Water Resources Department,

Sherrod, D. R., and L. B. G. Pickthorn. 1992. *Geologic Map of the West Half of the Klamath Falls 1° by 2° Quadrangle, South-Central Oregon*. USGS Miscellaneous Investigations Series Map I-2182.

Thoma, M. J. 2019. *Annual Report Regarding OWRD Technical Assistance for the U. S. Bureau of Reclamation Pilot Water Bank in the Upper Klamath Basin*. Oregon Water Resources Department.

D. WELL CONSTRUCTION, OAR 690-200

D1. **Well #:** _____ **Logid:** _____

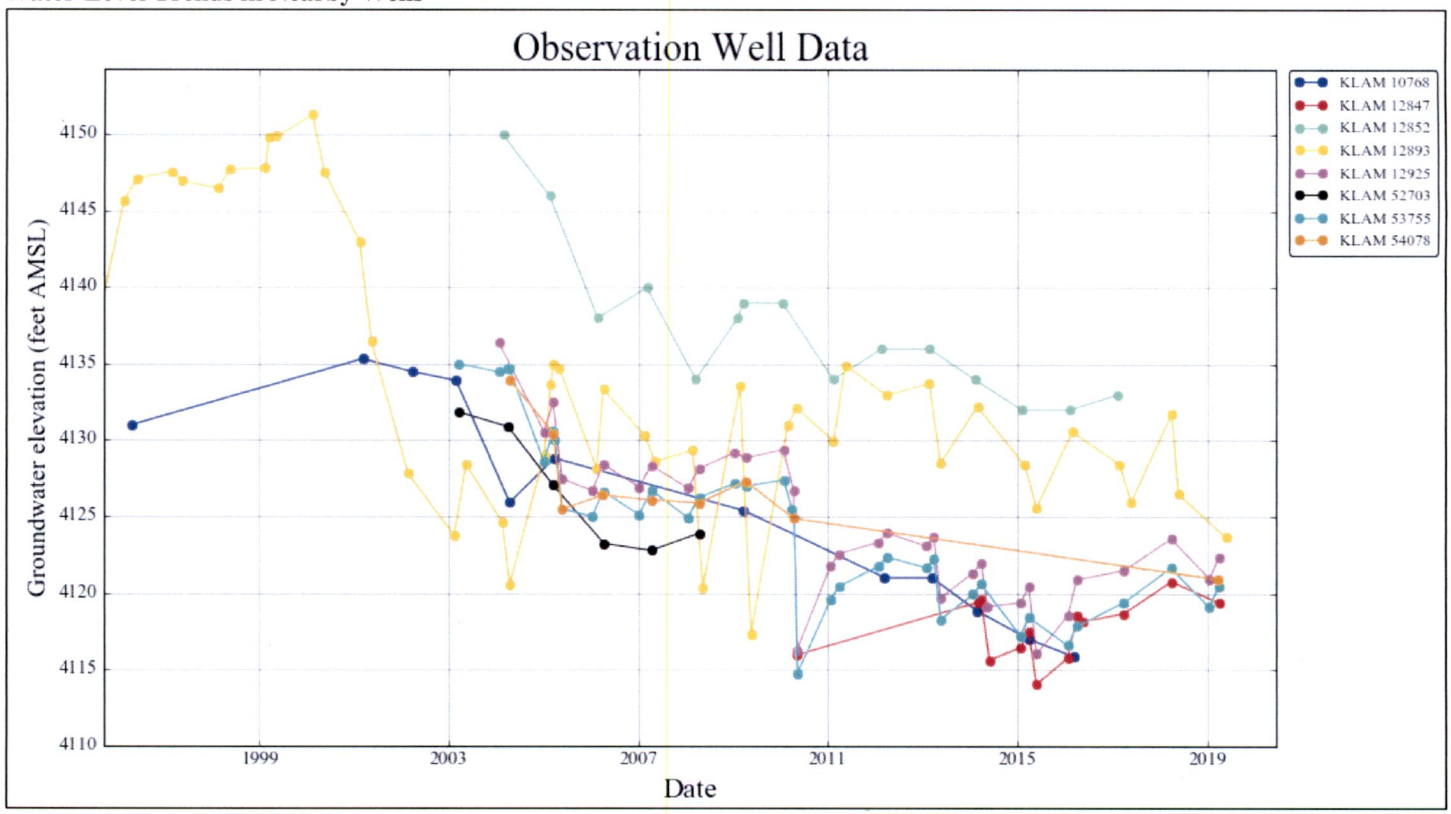
D2. **THE WELL does not appear to meet current well construction standards based upon:**

a. ☐ review of the well log;
b. ☐ field inspection by _____;
c. ☐ report of CWRE _____;
d. ☐ other: (specify) _____

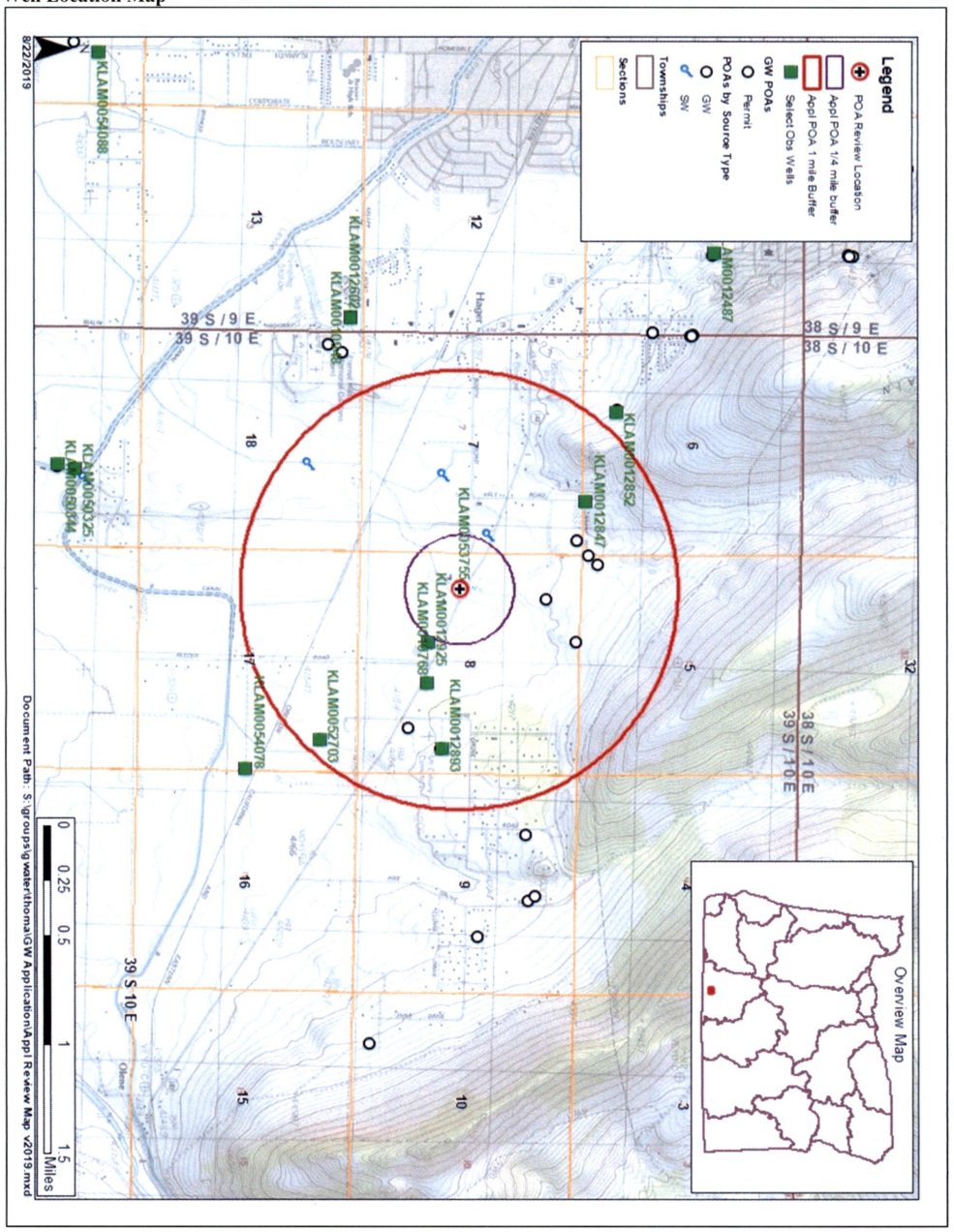
D3. **THE WELL construction deficiency or other comment is described as follows:** _____

D4. ☐ **Route to the Well Construction and Compliance Section for a review of existing well construction.**

Water-Level Trends in Nearby Wells



Well Location Map



OREGON WATER RESOURCES DEPARTMENT

Klamath Basin 2018 Drought Permits

Procedure title:

General availability of groundwater under 2018 Governor's declared drought for the Klamath Basin

Approved by: (Name, Title)
Dwight French, Administrator, Water Rights Services Division
Ivan Gall, Administrator, Field Services Division
Justin Iverson, Manager, Groundwater Section of the Technical Services Division
Effective date:

March 13, 2018 through December 31, 2018 (effective period of Governor's declared drought, 2018)

Background

On March 13, 2018, Oregon Governor Kate Brown signed a Determination of a State Drought Emergency in Klamath County (Executive Order No. 18-02). Temporary emergency use groundwater permits may be issued in designated drought areas under the Department's Division 19 rules for drought mitigation.

The Department has monitored the long-term effects of past declared droughts and issuance of emergency groundwater use permits since the early 2000s. Data collected under this monitoring program is available from the Department's Groundwater Site Information System, and analyses of these data have been provided in annual reports to the Bureau of Reclamation (most recent report available at http://www.oregon.gov/owrd/Pages/wr/drought.aspx). Water level response to groundwater use under past drought permits indicates that pumping has resulted in a decrease in groundwater storage across the Klamath Project area, with the largest declines in the vicinity of Merrill and Malin (see included map).

The Klamath Tribes submitted a call for enforcement of Tribal determined instream claims on March 8, 2018. The US Bureau of Indian Affairs provided concurrence of the call on March 9, 2018. Hydrogeologists in the Groundwater Section are completing an analysis of wells under the Department's Division 9 rules to identify wells that are subject to regulation to provide relief to a validated senior surface water call on streams tributary to Upper Klamath Lake.

Policy

The Department will not issue groundwater drought permits in areas tributary to Upper Klamath Lake in order to limit additional impacts to surface water sources that are subject to or tributary to Tribal determined instream claims.

The Department will not issue groundwater drought permits in the lower basin, in and around the Project Area, in areas with a documented long-term water level decline (from the early 2000s to Spring 2017) of more than 20 feet, as documented on the included map. A more detailed copy of the map is available at the watermaster's office and online at:
http://www.oregon.gov/owrd/Pages/wr/drought.aspx

Groundwater drought permits issued outside these areas will be conditionally limited to a duty of 1 acft/ac. Drought permits will also be conditioned to require metering, record keeping, and reporting of groundwater use over the season to the Department by February 1, 2019.