This Groundwater Technical Review and the included analysis help inform the Water Rights Section's review of whether the proposed groundwater use will ensure the preservation of the public welfare, safety and health as described in ORS 537.525 and ORS 537.621. The Water Rights Section also considers other information sources when making its public interest determination, including watermaster input, any comments received, input from other agencies, other Commission rules not evaluated as part of the Groundwater Review, and other information.

PUBLIC INTEREST TECNNICAL REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date: 8/21/2025

FROM: Groundwater Section Grayson Fish
Reviewer's Name

SUBJECT: Application _G_ - _ 19504 _ Supersedes review of _____

Date Reviewed by GW Lead and Returned to WRSD: Travis Brown, 9/1/2026

PUBLIC INTEREST PRESUMPTION: GROUNDWATER

OAR 690-310-0130 (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 if
(a) The proposed use is allowed in the applicable basin program established pursuant to ORS 536.300 and 536.340 or given a preference under ORS 536.310(12);
(b) Water is available;
(c) The proposed use will not injure other water rights; and
(d) The proposed use complies with the rules of the Commission.

Department staff review groundwater applications under OAR 690-310-0140 to determine whether the presumption is established and may modify or condition the proposed use 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:

A1. Application

Applicant's Name: Double J Farms, LLC County: Klamath

Applicant(s) seek(s) 1.11 cfs from 1 well(s) in the Klamath Basin, Lost River subbasin

Proposed use Irrigation Seasonality: March 1 – October 31

A2. Well and aquifer data:

A2 a: Well identifiers, aquifer, rate, and location

POA Well	Well Log ID	Applicant's Well #	Proposed Aquifer	Proposed Rate (cfs)	Location (T/R-S QQ-Q)	Latitude	Longitude
1	PROP 701	WELL 3	**Basalt**	1.11	40S/11E-11 SE-NE	42.1055992	-121.4867821

A2 b: Well construction information by depth below land surface. All units in feet.

POA Well	Seal		Casing		Filter Pack		Open / Perforation / Screen		Well Bottom
	Min	Max	Min	Max	Min	Max	Min	Max	
1	0	20	0	21	--	--	20	689	689

A2 c: Well construction information by elevation above mean sea level. All units in feet.

POA Well	Land Surface Elevation	Seal		Casing		Filter Pack		Open / Perforation / Screen		Well Bottom
		Min	Max	Min	Max	Min	Max	Min	Max	
1	4165.11	4165.11	4145.11	4165.11	4144.11	4165.11	N/A	4144.11	3476.11	3476.11

A2 d: Information relevant to water levels, including land surface elevation, depth of first water, recent annual high level, and reference levels for permit conditions

POA Well	Depth of First Water from Well Log (ft bls)	Shallowest Static Water Level (ft bls)	Most Recent Annual High WL		Reference Levels for:				Well Tests			
					RSGL	Permit Conditions			(max yield on well log)			
			Depth (ft bls)	WL Date	Depth (ft bls)	Depth (ft bls)	Date	Pro-visional?	Yield (gpm)	Draw-down (ft)	Test Type	Duration (hours)
1	--	--	--	--	--	--	--	--	--	--	--	--

Use data from application for proposed wells.
"SWL" = static water level (most recent or representative SWL). "amsl" = above mean sea level. "bls" = below land surface

Comments: Well #3 is proposed and not currently constructed, no water level measurements are available from the proposed POA. A permit condition reference level is unable to be set for this proposed POA at the time of this review. The applicant proses construction like KLAM 14735/KLAM14739. It is unlikely that the proposed seal depth of 20 feet would meet minimum construction standards for the proposed maximum well depth of 689 feet.

A3. Description of hydrogeologic setting / conceptual model: The proposed POA Well #3 is located in southern Poe Valley within the Eastern Lost River Sub-basin of the Klamath Basin and is just north of the Buck Butte fault as mapped in Jenks and Madin (2003). The location of Well #3 puts it within the Swan Lake Valley to Poe Valley sub-area defined in Groundwater in the Eastern Lost River Sub-basin, Langell, Yonna, Swan Lake, and Poe Valleys of Southeastern Klamath County, Oregon (Grondin, 2004). The groundwater gradient is to the northwest towards the Lost River and Olene Gap in this portion of Poe Valley. South of the Buck Butte fault, groundwater levels are measured at considerably lower elevations and with a southerly gradient. Groundwater discharges from the basalt in the sub-area to the Lost River via springs in Western Poe Valley (Grondin, 2004).

Groundwater occurs in both the deeper basalts and the overlying basin fill sedimentary rock and sediment units, with the two units having significantly different hydrologic properties. Wells that source water from basalt generally have greater transmissivities and yields than wells that source water solely from the predominant basin fill units. As such, most irrigation wells in the area are constructed to source water from basalts at depth. Groundwater in the basalts and overlying sedimentary basin fill units generally share an efficient hydraulicly connection within the Poe Valley as evidenced by similar groundwater elevations and similar responses to pumping stress. The efficiency of this hydraulic connection can be reduced in areas where the sedimentary basin fill units are thicker and results in a delayed or dampened response to pumping stress between the basalts and sedimentary basin fill units (Grondin, 2004).

The year 2001 saw an increase in groundwater pumping for irrigation within the Bureau of Reclamation Klamath Project due to the changes in surface-water management and drought which resulted in a less surface water available to Project irrigators (Gannett et. al., 2007). This shift to groundwater use resulted in declining groundwater levels at varying magnitudes throughout the project area. Hydrographs from observation wells located in Poe Valley show groundwater declines as large as 15 feet between spring of 2000 and 2002.

The proposed construction of Well #3 suggests that the well would source water from basalt at depth. KLAM 14731 is a State observation well located approximately 0.5 mile northwest of the proposed location of Well #3 with a depth of 992 into basalt and a period of record dating back to 1954. KLAM 14731 has seen a groundwater decline of 43.3 feet from the highest water level measured in the well.

B. BASIN PROGRAM:

OAR 690-310-0130 (1)(a)

B1. ☒ **Provisions of the** Klamath 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: No provisions pertaining to groundwater.

B2. ☐ **Well(s) #** _____ , ____ , _____ , _____ , _____ , are limited by an administrative restriction under the applicable basin program.
Comments: _____

C. WATER AVAILABILITY:

OAR 690-310-0130 (1)(b)

OAR 690-300-0010(57): "Water is Available" […] means: […]
(d) The proposed groundwater source exhibits Reasonably Stable Groundwater Levels, as defined in OAR 690-008-0001; and
(e) The total requested rate of groundwater allocation is obtainable by the expected yield of the well(s) proposed in the application given best available information; and
(f) The proposed groundwater use does not have the Potential for Substantial Interference (OAR 690-009-0020(5)) with a surface water source [that does not have water available]

C1. Reasonably Stable Groundwater Levels

OAR 690-008-0001 (9): "Reasonably Stable Groundwater Levels" means that Annual High Water Levels, based on observed trends over time, remain within a range consistent with sustaining the function and character of a groundwater reservoir indefinitely, and:
(a) The Annual High Water Levels as measured at one or more representative wells in a groundwater reservoir or part thereof:
(A) indicate no decline or an average rate of decline of less than 0.6 feet per year over any immediately preceding averaging period with duration between 5 and 20 years. Four Annual High Water Levels are required to calculate the rate of change; one must have been measured in the year to which the evaluation of reasonably stable applies, and at least one must have been measured between 5 and 20 years prior; and
(B) have not declined by more than 25 feet from a reference level to the level in the year to which the evaluation of reasonably stable applies. The reference level shall be the highest known water level unless Annual High Water Levels have been measurably increased by human activity, in which case the Department may set a different reference level using best available information.
(b) If water level data are insufficient to perform either test in (a) for a given year, then the Department will presume that groundwater levels are not reasonably stable unless:
(A) the most recent evaluation of reasonably stable applies to a year within 5 years of the given year, in which case the Department may presume that the recent evaluation still applies; or
(B) groundwater has not yet been extracted or authorized for extraction from the groundwater reservoir, in which case the Department may presume that groundwater levels are reasonably stable.
(c) The Department may evaluate Reasonably Stable Groundwater Levels for the year of the priority date of a groundwater right application or for a later year if more recent data are available.

C1a. If part (a) of 690-008-0001(9) has been superseded by a basin program rule as per 690-008-0001(9)(B)(d) proceed to C1c. List one or more representative wells in the proposed groundwater reservoir or part thereof that have sufficient data to evaluate part (a) of 690-008-0001(9). Both the Rate (OAR 690-008-0001(9)(a)(A)) and Magnitude (OAR 690-008-0001(9)(a)(B)) tests for a given well must be passed in order to find that the water levels are Reasonably Stable. It is not necessary to include all POAs proposed on this application into this table, as long as they all access the same part of the groundwater reservoir and have the same reasonable stability status indicated in C1b below. If some POAs are found to be reasonably stable while others are not, then all the POAs on the application should be included in the table below, with their POA number indicated in the second column. In that situation, the reviewer does not need to indicate in this table which wells are considered representative for determining reasonable stability status for different POAs, but they should describe those relationships in the comments below.

Well Log ID	POA Well #	Reference Level for Evaluation of Reasonable Stability (ft bls)	Rate Test	Magnitude Test	Water Levels Reasonably Stable
KLAM 14731	N/A	8.4	Pass	Fail	Declined or Declining

Comments: KLAM 14731 is a representative basalt well with a period of record dating back to 1954 located approximately 0.5 mile from the proposed location of Well #3. Annual high groundwater levels in KLAM 14731 have declined more than 25 feet (43.4 feet) from the highest know water level of 8.4 ft bls and indicates that water levels in the groundwater reservoir have declined and are not reasonably stable.

C1b. Summary finding for this application. Check only one primary finding. It is possible that different proposed POAs could access different parts of the GW reservoir, and for some of those parts to be Reasonably Stable while others are not. In that case, summary finding for the application should be "Not Reasonably Stable," and the reviewer should indicate which POAs access part(s) of the groundwater reservoir that are Reasonably Stable. OAR 690-008-0001(9)(a): *Annual High Water Levels as measured at one or more representative wells in a groundwater reservoir or part thereof*:

☐ **Are Reasonably Stable**
- ☐ Groundwater has not yet been extracted or authorized for extraction from the groundwater reservoir

☒ **Are Not Reasonably Stable**
- ☐ If some Proposed POAs are Reasonably Stable, list the Reasonably Stable POAs here: _____

☐ **Sufficient data are not available to evaluate reasonable stability**

List representative wells identified during review that could be measured in order to overcome a finding of Insufficient Data: _____

Comments: Annual high groundwater levels in KLAM 14731 have declined more than 25 feet from the highest know water level of 8.4 ft bls and indicate that water levels in the groundwater reservoir are not reasonably stable.

C1c. OAR 690-008-0001(d): Evaluation for reasonably stable water levels per superseding basin program rules OAR 690-_____ for the _____ administrative basin.

Comments: _____

C2. Well Yield

C2a. OAR 690-300-0010(57)(e): Is the total requested rate of groundwater allocation obtainable by the expected yield of the well(s) proposed in the application given best available information?

☒ **Yes** ☐ **No**

Comments: Well yields of basalt wells in the Klamath basin are typically high enough (>1.11 cfs) to sustain rates required for irrigation use.

C3. Groundwater Interference with Surface Water

OAR 690-300-0010(57): "Water is Available", when used in OAR 690-310-0080, 690-310-0010 and 690-310-0130, means […]:
(f) The proposed groundwater use does not have the Potential for Substantial Interference (OAR 690-009-0020(5)) with a surface water source [that is not available for further appropriation]

OAR 690-009-0040: (1) When evaluating a Proposed Groundwater Use, Hydraulic Connection and the Potential for Substantial Interference with a surface water source shall be determined by the Department according to these rules. These determinations shall be based upon the application of generally accepted hydrogeologic principles using best available information concerning the hydrologic system of interest and the well(s) under consideration.

(a) Appropriate information that is provided in the application or in the public comment period for the application shall be considered in the process of making these determinations.

(b) Best available information may include, but is not limited to, pertinent water well reports, aquifer test analyses, hydrologic and geologic studies and reports, groundwater and surface water elevation data, available numerical and analytical groundwater flow models, and any other information that is used in applying generally accepted hydrogeologic principals and methodologies.

(2) A determination of Hydraulic Connection is a prerequisite for a determination of the Potential for Substantial Interference.
(3) A determination of the Potential for Substantial Interference with a surface water source shall at a minimum include application of the generally accepted hydrogeological principles described in "Streamflow Depletion by Wells – Understanding and Managing the Effects of Groundwater Pumping on Streamflow" by P. M. Barlow and S. A. Leake, 2012.
(4) The Potential for Substantial Interference with a surface water source exists if the well(s) under consideration will, over the full term of the proposed or authorized groundwater use, obtain water from Streamflow Depletion.

OAR 690-009-0020(4): "Hydraulic Connection" means saturated conditions exist allowing water to move between two or more sources of water, either between groundwater and surface water or between groundwater sources.

OAR 690-009-0020 (7) "Streamflow Depletion" means a reduction in the flow of a surface water source due to pumping a hydraulically connected groundwater source. Streamflow Depletion encompasses:
(a) captured groundwater that would otherwise discharge to a surface water source; or
(b) induced infiltration from a surface water source to the hydraulically connected groundwater source.

C3a. OAR 690-009-0020(5): *Potential for Substantial Interference", or "PSI", means that a groundwater use will cause streamflow depletion based on the assessments described in OAR 690-009-0040, and therefore may cause or has caused substantial interference with or undue interference with a surface water source, based on the definitions in OAR 690-008-0001.*

Summary of surface water sources evaluated for hydraulic connection and Potential for Substantial Interference. For hydraulic connection and potential for substantial interference, a value of 1 means yes, and blank means no.

POA Well	WRD Streamcode	Streamcode Surface Water Name	Water Availability Basin (WAB)	WAB Watershed ID	Hydraulically Connected	Potential for Substantial Interference
1	**140010**	**Lost River**	**Lost River**	**31420413**	**1**	**1**

Comments**:** Upper Klamath Basin groundwater reports by Gannett and other (2007, 2012) indicate that groundwater in the basin is generally hydraulically connected to streams. The reports also indicate that groundwater discharge constitutes a major component of streamflow in the basin and that groundwater development by wells will generally result in diminished rates of groundwater discharge to streams. Grondin (2004) notes that the groundwater gradient in this portion of Poe Valley is to the Northwest toward the Lost River and Olene Gap and that groundwater discharges from basalt in the sub-area to the Lost River via springs in western Poe Valley. A preponderance of evidence exists to suggest that pumping from the proposed POA will capture groundwater that would have otherwise discharged to surface water and specifically the Lost River.

List all surface water sources identified to have PSI and their associated Water Availability Basin:

WRD Streamcode	Streamcode Surface Water Name	Water Availability Basin (WAB)	WAB Watershed ID
140010	**Lost River**	**Lost River**	**31420413**

Comments**:** Water availability for the Lost River is included in the Water Rights Section Memo *RE: Water Availability Determinations other than standard* dated June 21, 2005.

D. INJURY:

OAR 690-310-0130 (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 if…(c) The proposed use will not injure other water rights.

To make a finding of injury to an existing water right, the Department must make a finding of "Substantial Interference" as defined in OAR 690-008-0001(10). The finding of "Substantial Interference" with a surface water right is made by the Water Rights Services Division based on the evaluation in section C3. Sections D1 and D2, below, address the finding of "Substantial Interference" with a groundwater right.

OAR 690-008-0001(10): "Substantial or Undue interference", means the spreading of the cone of depression of a well to intersect a surface water source or another well, or the reduction of the groundwater levels as a result of pumping or otherwise extracting groundwater from an aquifer, which contributes to:

(b)The groundwater level being drawn down to the Economic Pumping Level of the senior appropriator(s); or

(c) One or more of the senior groundwater appropriators being unable to obtain either the permitted or customary quantity of groundwater, whichever is less, from a reasonably efficient well that fully penetrates the aquifer where the aquifer is relatively uniformly permeable. However, in aquifers where flow is predominantly through fractures, full penetration may not be required as a condition of substantial or undue interference.

D1a. OAR 690-008-0001(10): Will the proposed groundwater use result in substantial or undue interference with an existing groundwater user?

☐ **Yes** ☐ **No** ☒ **No, as long as the permit is conditioned as indicated in item F below.**

Comments: The closest authorized groundwater point of appropriation is KLAM 14731 associated with Certificate 34896 and is located approximately 0.5 mile from the proposed location of Well #3. The reported depth of KLAM 14731 is 992 feet with static water level of 51.64 feet below land surface as of 5/27/2025. The Theis time-distance drawdown equation (Theis, 1935) was used to estimate drawdown associated with proposed Well #3. A transmissivity value of 7,260 ft2/day and a storage coefficient of 0.00058 for South Poe Valley were used for aquifer parameters (Grondin, 2004). At the maximum proposed rate of 1.11 cfs for 244 days, the estimated drawdown 2,450 feet from the proposed Well #3 is ~7.5 feet. The expected interference that would result from proposed Well #3 is not expected to result in substantial or undue interference with an existing groundwater user if conditioned as indicated in item F below.

E. OTHER RULES OF THE COMMISSION:

OAR 690-310-0130 (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 if…(d) The proposed use complies with the rules of the Commission.

E1. OAR 690-200, 690-210 and 690-215: Well Construction

Identify any notable well construction deficiencies or hydrogeologic considerations to support review by Well Construction & Compliance.

E1a. Well #: 3 Logid: Proposed like KLAM 14735/KLAM14739

E1b. Well construction deficiency or other comment is described as follows: A 20-foot seal is unlikely to meet minimum well construction standards.

E2. OAR 690-310-0260: Water Rights Within or Above State Scenic Waterways

E2a. Are any of the proposed sources of appropriation hydraulically connected to a State Scenic Waterway or its tributaries?
☒ **Yes** ☐ **No**

Hydraulically connected State Scenic Waterway: Klamath River
Comments: See attached memo "Analysis of Groundwater Pumping Impacts on Scenic Waterway Flows" dated: February 19. 2013.

E2b. Per ORS 390.835, is the Groundwater Section able to calculate ground water interference with surface water that contributes to a Scenic Waterway?

☒ **Yes. The calculated interference is distributed below:**

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 "No" option below, 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 the Klamath 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
See attached memo "Analysis of Groundwater Pumping Impacts on Scenic Waterway Flows" dated: February 19. 2013.											

☐ **No. 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.**

Comments:

E3. Other Relevant Rules of the Commission:

Comments:

F. RECOMMENDED MODIFICATIONS OR CONDITIONS:

OAR 690-310-0140(2): If the Department determines that the presumption is not established, the Department shall determine whether the proposed use will impair or adversely affect the public welfare, safety and health under ORS 537.525 and may either:
(a) Propose denial of the application upon a finding that the use will impair or adversely affect the public welfare, safety and health; or
(b) Make specific findings to demonstrate that even though the presumption is not established, the proposed use will not impair or adversely affect the public welfare, safety and health and propose approval of the application with appropriate modifications or conditions.

Based on the findings in sections A-D above, the following conditions are recommended if the permit is approved:

7RLN, 7J, Large water use reporting.

REFERENCES:

Gannett, M.W., Lite, K.E. Jr., La Marche, J.L., Fisher, B.J., and Polette, D.J., 2007, *Ground-water hydrology of the upper Klamath Basin, Oregon and California*: U.S. Geological Survey Scientific Investigations Report 2007-5050, 84 p.

Gannett, M.W., Wagner, B.J., and Lite, K.E. Jr., 2012, *Ground-water simulation and management models for the upper Klamath Basin, Oregon and California*: U.S. Geological Survey Scientific Investigations Report 2012-5062, 92 p.

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*: Oregon Water Resources Department Ground Water Report No. 41, 689 p.

Jenks, M.D. and Madin, I.P., 2003, *Draft Geologic Map of the Merrill and Malin Quadrangles, Klamath County, Oregon:* Oregon Department of Geology and Mineral Industries Open File Report O-03-03.

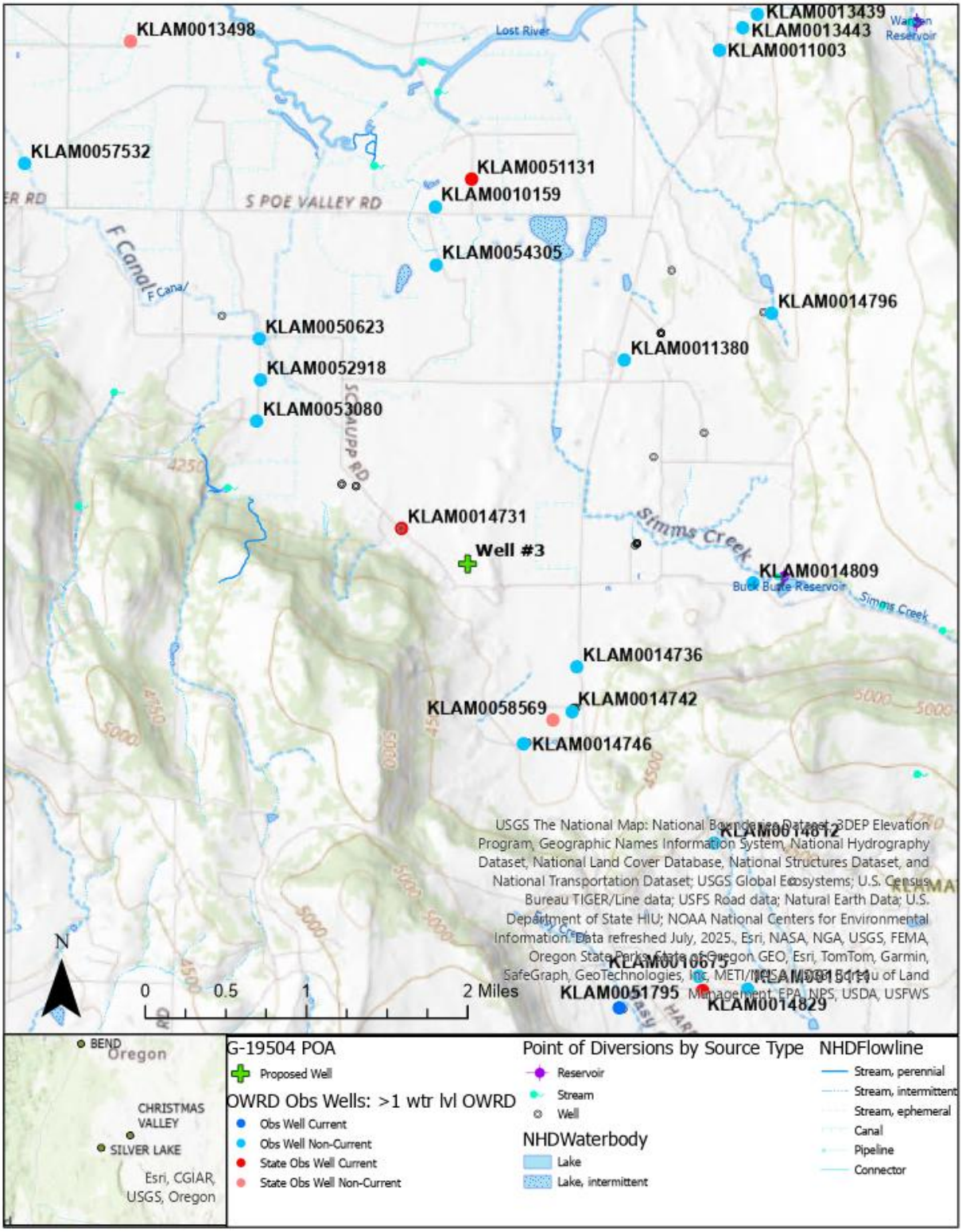
Oregon Water Resource Department: Water Rights Section. "Memo: RE: Water Availability Determinations other than standard." June 21, 2005.

Theis, C.V., 1935. *The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using groundwater storage*, Am. Geophys. Union Trans., vol. 16, pp. 519-524.

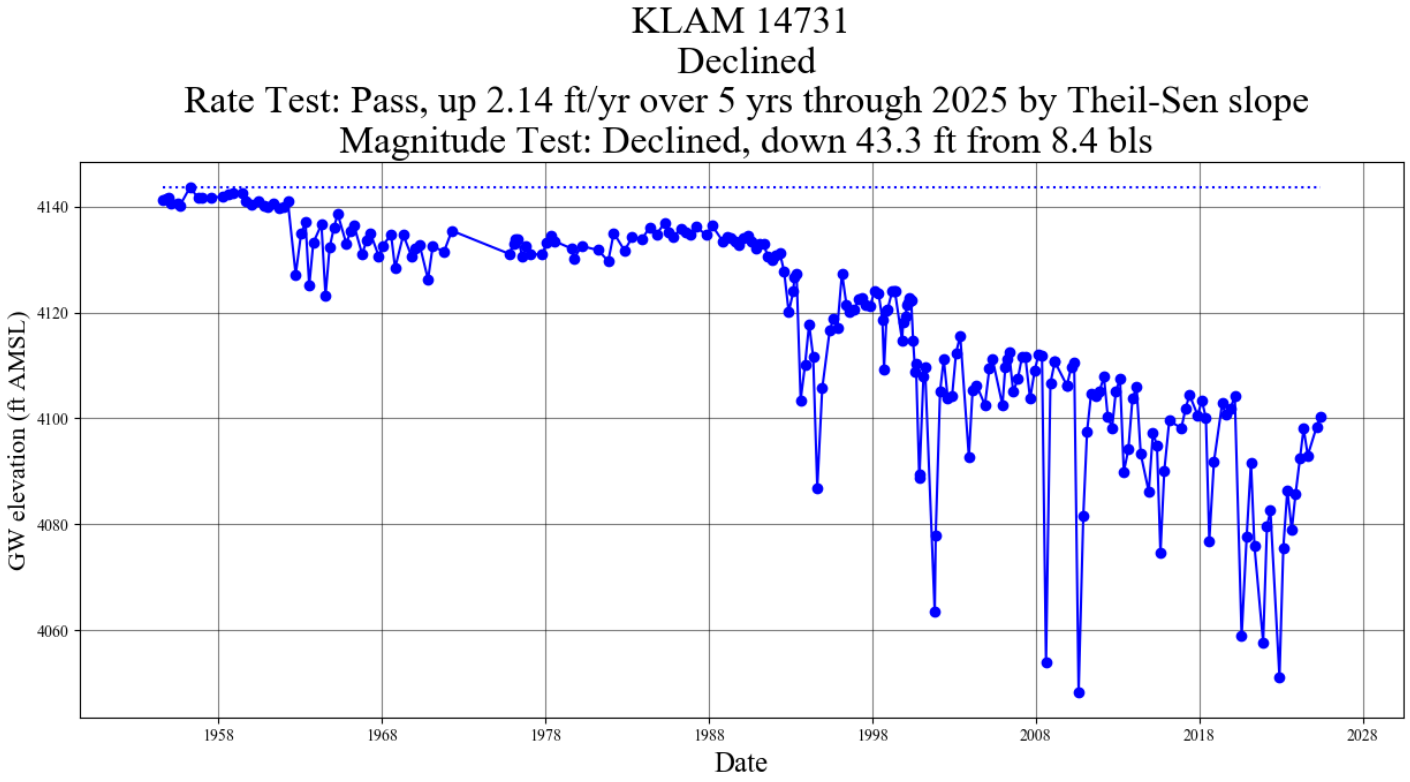
ATTACHMENTS:

Well Location Map

G-19504



Water-Level Measurements in Nearby Well



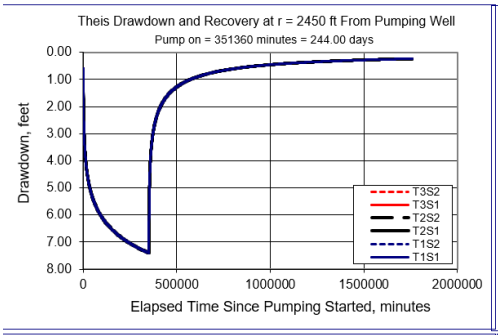
Theis Time-Drawdown

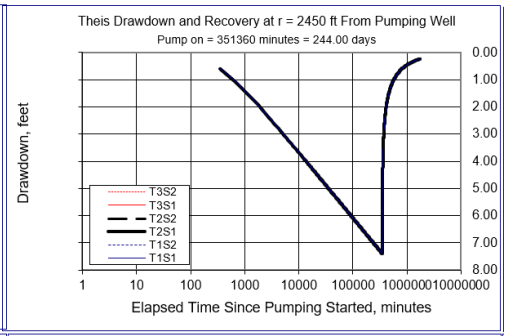
Theis Time-Drawdown Worksheet v.5.00

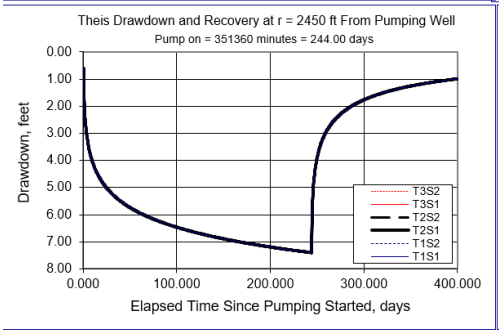
Calculates Theis nonequilibrium drawdown and recovery at any arbitrary radial distance, r, from a pumping well for 3 different T values and radial distance, r, from a pumping well for 3 different T values and 2 different S values.
Written by Karl C. Wozniak September 1992. Last modified December 17, 2019

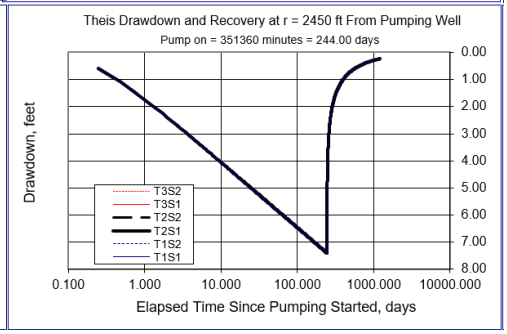
Input Data:	Var Name	Scenario 1	Scenario 2	Scenario 3	Units	
Total pumping time	t		244		d	
Radial distance from pumped well:	r		2450		ft	Q conversions
Pumping rate	Q		1.11		cfs	498.17 gpm
Hydraulic conductivity	K	72.6	72.6	72.6	ft/day	1.11 cfs
Aquifer thickness	b		100		ft	66.60 cfm
Storativity	S_1		0.00058			95,904.00 cfd
	S_2		0.00058			2.20 af/d
Transmissivity Conversions	T_f2pd	7260	7260	7260	ft2/day	
	T_ft2pm	5.0416667	5.0416667	5.0416667	ft2/min	Recalculate
	T_gpdpft	54304.8	54304.8	54304.8	gpd/ft	

Use the Recalculate button if recalculation is set to manual









State of Oregon
Water Resources Department

Memorandum

To: Barry Norris – Administrator, Technical Services Division
Dwight French – Administrator, Waterights Division
Tom Paul – Deputy Director
Doug Woodcock – Administrator, Field Services Division

From: Ivan Gall – Manager, Groundwater Section

Date: February 19, 2013

Subject: Analysis of Groundwater Pumping Impacts on Klamath Scenic Waterway Flows

In 1971 the Oregon Legislature created the Scenic Waterway Act, codified by Oregon Revised Statutes 390.805 to 390.925, to preserve for the benefit of the public Waldo Lake and selected parts of the state's free-flowing rivers. The Klamath Scenic Waterway was part of the Act and includes the Klamath River from the John Boyle Dam powerhouse downstream to the Oregon-California border. Under the Act, the Water Resources Commission is allowed to allocate small amounts of surface water for human consumption and livestock watering, as long as issuing the water right does not significantly impair the free-flowing character of these waters in quantities necessary for recreation, fish and wildlife, and the amount allocated may not exceed a cumulative total of one percent of the average daily flow or one cubic foot per second (cfs), whichever is less.

In 1995 the Scenic Waterway Act was modified to address the impact of groundwater uses that, based upon a preponderance of evidence, would measurably reduce the surface water flows within a scenic waterway. "Measurably reduce" means that the use authorized will individually or cumulatively reduce surface water flows within the scenic waterway in excess of a combined cumulative total of one percent of the average daily flow or one cfs, whichever is less.

In 2012 the United States Geological Survey (USGS), in cooperation with OWRD and the US Bureau of Reclamation, completed groundwater flow and management models for the Upper Klamath Basin. The 2012 groundwater flow model uses generally accepted hydrogeologic methods and the relevant field data to model the cumulative effects of groundwater pumping within the Klamath Scenic Waterway, and provides a comprehensive methodology for analyzing the relevant field data necessary to determine whether the cumulative use of groundwater in the Klamath Basin will measurably reduce the surface water flow necessary to maintain the free-flowing character of the Klamath Scenic Waterway.

In September 2012 the OWRD Groundwater Section conducted two model simulations. The two simulations used the 2012 USGS flow model, incorporating groundwater permits issued (61.96 cfs) since adoption of the 1995 Scenic Waterway Act amendment up through 2004. Each simulation was run to steady-state, where inflows and outflows for that model run balanced. An evaluation of the water budgets showed that groundwater discharge to the Klamath Scenic Waterway decreased by 5.88 cfs as a result of the 61.96 cfs of groundwater uses issued between 1995 and 2004. These results indicate to the OWRD that a preponderance of evidence exists to establish that groundwater development occurring in the Upper Klamath Basin in Oregon since 1995 has "measurably reduced" surface water flows within the Klamath Scenic Waterway.

In January 2013 the OWRD Groundwater Section conducted flow model simulations to evaluate impacts to streams from pumping groundwater within the Lost River subbasin. Groundwater pumping was simulated by placing wells in the model that correspond to the center of 39 townships in the southeast part of the Klamath Basin in Oregon. Each of the simulations was run to steady-state, where inflows and outflows for that model run balanced. These results indicate that the scenic waterway is impacted by pumping groundwater in all of the townships evaluated in Oregon in the Lost River subbasin. In summary, a preponderance of evidence exists to establish that groundwater development occurring in Oregon since 1995 in the Upper Klamath Basin and Lost River subbasin has "measurably reduced" surface water flows within the Klamath Scenic Waterway.

References:

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