Groundwater Transfer Review Summary Form

Transfer/PA # T- 12969

GW Reviewer Travis Brown **Date Review Completed:** 5/29/2019

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 or result in significant interference with a surface water source.

Summary of Well Construction Assessment:

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

[X] The proposed POA does not appear to meet current well construction standards. Route through Well Construction and Compliance Section. POA does not meet definition of a "Sump" per OAR 690-200-0050(103).

This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.

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Ground Water Review Form:

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

Application: T-12969 Applicant Name: Blue Line Farms Inc. c/o Bob and Karl Dettwyler

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

Reviewer(s): Travis Brown Date of Review: 5/29/2019

Date Reviewed by GW Mgr. and Returned to WRSD: 6/4/19

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: Applicant proposes to transfer 8 certificated surface water irrigation rights with points of diversion (POD) on Abiqua Creek to a groundwater point of appropriation (POA) on the south side of an unlined ~11.6 acre pond, the nearest edge of which is ~200 ft from Abiqua Creek. The pond is a remnant of a former gravel quarry which mined the alluvial material adjacent to Abiqua Creek.

   The surface water rights to be transferred include:

   PODs downstream of proposed POA:

Certificate	Max Rate [cfs]	Irrigated Acreage	Priority Date
20574*	0.285	22.8	11/28/1939
64713*	0.713	106.0	11/12/1987
67686*	0.47	33.8	3/23/1981

   PODs upstream of proposed POA:

Certificate	Max Rate [cfs]	Irrigated Acreage	Priority Date
75598*	0.12	9.5	8/31/1939
75599*	0.08	6.3	5/6/1952
87460*	0.1	8.0	7/17/1961
87461*	0.11	9.1	8/31/1939
87462*	0.16	12.9	5/6/1952

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA?
☒ Yes ☐ No Comments: The source authorized by the subject Certificates is surface water from Abiqua Creek, which is tributary to the Pudding River. The source for the proposed POA is shallow groundwater within the Quaternary floodplain and channel alluvium deposited along Abiqua Creek (Tolan and Beeson, 1999). In the geologic report provided with the application, the native lithology between the pond and Abiqua Creek is described as rounded gravel (the focus of the former quarry) in a matrix consisting mainly of sand with lesser amounts of fines. The local water table elevation is mapped as being approximately coincident with the surface water elevation in Abiqua Creek, and may indicate a slight gaining trend along the reach adjacent to the proposed POA (Woodward et al, 1998). LIDAR elevation data and information filed in Groundwater Application G-7623 (to use groundwater dewatered from the pit for gravel washing) indicate that water level elevation in the pond is approximately the same as in nearby Abiqua Creek and in the surrounding aquifer. Therefore, **it would appear that there is a highly efficient hydraulic connection between the pond, the nearby alluvial aquifer, and Abiqua Creek.**

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

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: Apart from two existing groundwater rights associated with the same pond as the proposed POA (Certificate 50102* and Certificate 87452*, both presumed to be owned by the applicant), no other wells or groundwater rights are known to exist within 1,000 ft of the proposed POA. Because of the highly efficient hydraulic connection between the pond, the alluvial aquifer, and Abiqua Creek, and because of the pond's close proximity to Abiqua Creek, hydraulic stress (drawdown) in the alluvial aquifer due to pumping of the proposed POA is not anticipated to propagate beyond 1,000 ft – the maximum straight-line distance between the pond edge (on the southwest) and the nearest surface water recharge boundary, Abiqua Creek. As such, no detectable increase in interference with another known ground water right is anticipated.

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: N/A

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: OAR 690-380-2130(2) requires that any proposed change from a surface water POD to a groundwater POA "affect the surface water source similarly to the authorized point of diversion specified in the water use subject to transfer" – "similarly" being defined as groundwater withdrawal which would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping, per OAR 690-380-2130(11)(b). Due to the nature of the proposed POA – a pump on the edge of a large-perimeter, irregularly-shaped pond fed by groundwater – standard analytical models (e.g. Jenkins, 1968; Hunt, 1999) for assessing depletion of surface water due to groundwater pumping are not applicable to the proposed use. However, given that the northern edge of the pond is as little ~200 ft from the southern bank of Abiqua Creek, the intervening alluvial material is highly permeable, and any hydraulic stresses from pumping at the location of the

proposed POA (on the southwestern edge of the pond) will propagate almost instantaneously across the open water of the pond, **it is very likely that the proposed POA would meet the definition of similarity specified in OAR 690-380-2130(11)(b).**

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: Abiqua Creek ☐ Minimal ☒ Significant
Provide context for minimal/significant impact: See comments regarding *similarity* in 5(a), above.

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

7. Any additional comments: As described in the geologic report which accompanied the application, and in the application materials for Certificates 50102* and 87452*, **the pond associated with the proposed POA does not meet the definition of a "sump" per OAR 690-200-0050(103) [Water Supply Well Construction Standards]**, which defines a "sump" as "a hole dug to a **depth of ten feet or less** with a diameter greater than ten feet in which groundwater is sought or encountered." As indicated in the geologic report which accompanied the application, the pond has "**a maximum depth of about 30 feet, and average depth of around 25 feet.**" OAR 690-380-0100(6) defines a groundwater "point of appropriation" as "**a well or the pump location on a sump** at which ground water is withdrawn from the ground for use under a ground water right." Because the pond associated with the proposed POA is greater than 10 ft in depth, if the applicant wishes to use it as a POA for a (transferred) groundwater right, **the pond would necessarily be considered either an illegally-constructed sump or an illegally-constructed water supply well per OAR 690-200. The proposed POA would therefore require substantial modification or repair to comply with the requirements of OAR 690-200 and thereby operate as an authorized POA under the proposed transfer.**

References:

Application File: T-12969, G-7623 (Cert 50102*), G-10224 (Cert 87452*)

Conlon, T.D., Wozniak, K.C., Woodcock, D., Herrera, N.B., Fisher, B.J., Morgan, D.S., Lee, K.K., and Hinkle, S.R., 2005, Ground-water hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Gannett, M.W. and Caldwell, R., 1998, Geologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-A, 32 p.

Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, v. 37, no. 1, p. 98-102.

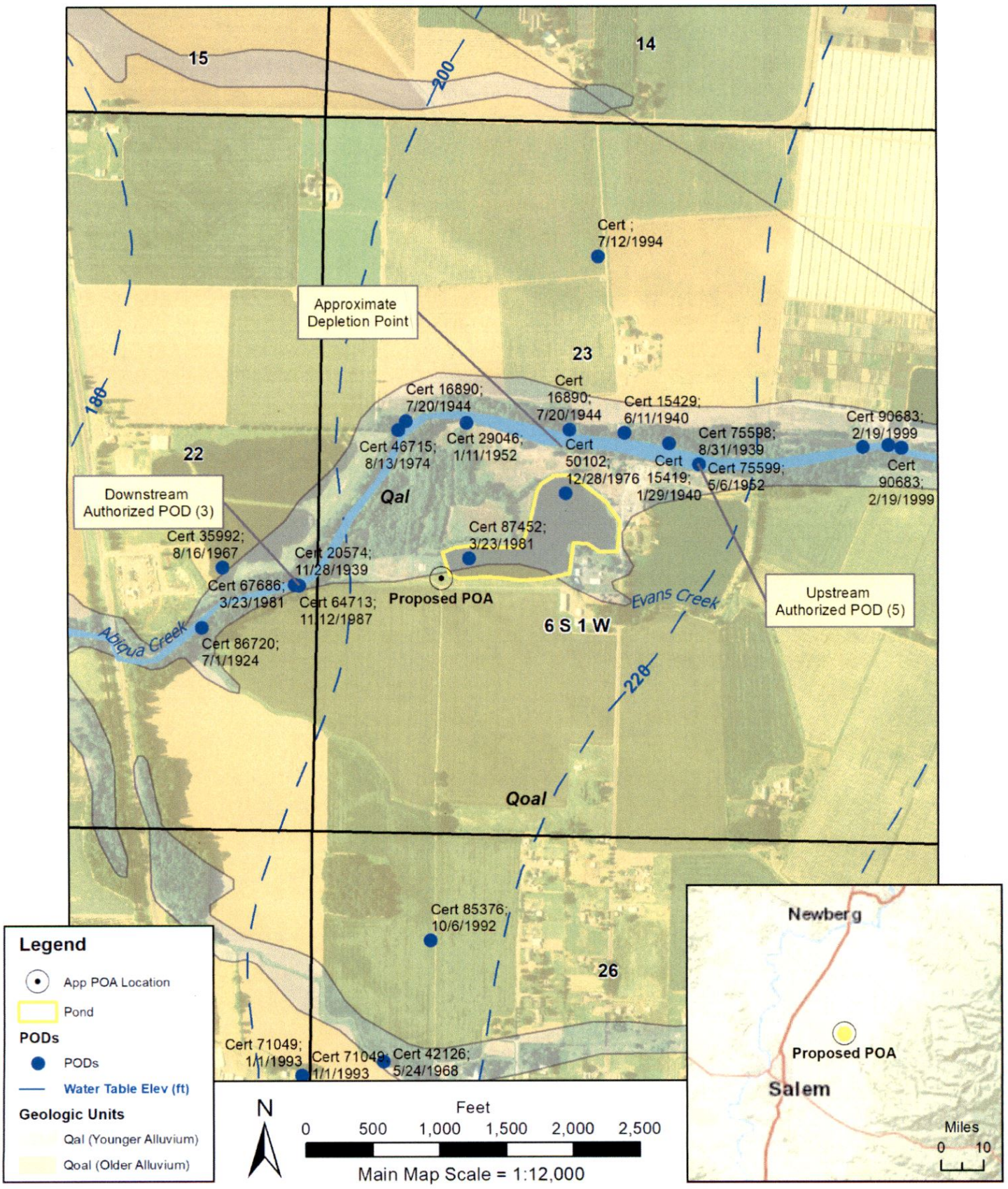
Jenkins, C.T., 1968, Techniques for computing rate and volume of stream depletion by wells: Ground Water, v. 6, no. 2, p. 37-46.

Tolan, Terry L. and Beeson, Marvin H., 1999, Geologic Map of the Stayton NE 7.5 Minute Quadrangles, Northwest Oregon: A Digital Database: USGS Open File Report 99-141.

Woodward, D.G., Gannett, M.W., and Vaccaro, J.J., 1998, Hydrogeologic framework of the Willamette Lowland aquifer system, Oregon and Washington: U.S. Geological Survey Professional Paper 1424-B, 82 p.

WSI, 2013, OLC Clackamol, Portland, OR, September 30.

T-12969 Blue Line Farms, Inc.



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