

# Groundwater Application Review Summary Form

Application # G- 18769

GW Reviewer DENNIS ORLOWSKI

Date Review Completed: 2/7/2019

## Summary of GW Availability and Injury Review:

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.

*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).*



PUBLIC INTEREST REVIEW FOR GROUNDWATER APPLICATIONS

TO: Water Rights Section Date 02/07/2019  
 FROM: Groundwater Section Dennis Orłowski  
 Reviewer's Name  
 SUBJECT: Application G- 18769 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: Townsend Farms Incorporated County: Multnomah

A1. Applicant(s) seek(s) 0.7798 cfs from one well(s) in the Willamette Basin,  
Columbia River subbasin

A2. Proposed use Commercial/industrial & irrigation (1.7 ac)<sup>(1)</sup> Seasonality: Comm/Ind: year-round; Irrig: Mar 1 through Oct 31<sup>(2)</sup>

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	Proposed	4	Alluvium	0.7798	T1N/R3E-27 SW-NE	1670 ft S, 325 ft E from N ¼ cnr, S 27

\* 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	68	TBD	TBD	TBD	400	0-350	0-350	n/a	TBD	TBD	TBD	TBD

Use data from application for proposed wells.

A4. **Comments:** Note (1): WRIS currently indicates proposed uses as "commercial" and "irrigation"; however, the application indicates "commercial or industrial", as well as "irrigation."

Note (2): WRIS currently indicates year-round use for both "commercial" and "irrigation" uses; however, the application correctly requests only a seasonal irrigation use from March 1 through October 31.

In July 2017 OWRD was notified by DEQ (pers. comm., Ken Thiessen/DEQ to Dennis Orłowski/OWRD) that groundwater near the proposed POA location is contaminated. This groundwater contamination is regional in extent, and the resulting degradation of water quality has led to curtailed pumping of nearby affected wells by some municipal water providers.

The proposed well construction, specifically the planned seal depth, is consistent with previous recommendations provided by OWRD to the applicant and their agent. These recommendations were made in consideration of the existence of local contamination as conveyed by DEQ. Specifically, the planned well construction will limit groundwater production to the Sand and Gravel Aquifer (SGA), the deepest alluvial aquifer system in the Portland Basin and thus the source least impacted by shallow contamination. ORS 537.525 (8-11) grants OWRD general regulatory authority to control groundwater use to protect water quality, with specific authority related to well construction requirements provided in OAR 690-200-0020 (2).

A5.  **Provisions of the** Willamette 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: The proposed well will produce groundwater from a confined aquifer, and therefore the pertinent rule (OAR 690-502-0240) does not apply.

A6.  **Well(s) #** \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, tap(s) an aquifer limited by an administrative restriction. Name of administrative area: Not applicable  
 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) Medium water-use reporting; 7c (7-yrs measurements);
  - 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 300 ft. below land surface;
- c.  **Condition** to allow groundwater production only from the Sand and Gravel Aquifer 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 Sand and Gravel Aquifer (SGA) is exploited primarily by municipal water providers, with some additional pumping for commercial and industrial uses in the area (McFarland and Morgan, 1996; Swanson and others, 1993). The SGA is a prolific groundwater source due to its generally-high transmissivity and connection with the Columbia River and other local surface water bodies. However, although current large-scale groundwater use in the immediate area is moderate, future demands on the SGA are anticipated to increase as municipalities expand their local groundwater sources. Furthermore, long-term groundwater level data from SGA wells is very sparse, with available data extending only to the early 1990s (see attached hydrograph). Consequently, the recommended permit conditions are proposed to help protect the groundwater resource and existing users.



**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	Sand and Gravel Aquifer	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Basis for aquifer confinement evaluation:** USGS Portland Basin reports indicate that the SGA is overlain by Confining Unit 2 (CU2) in the vicinity of the proposed POA location.

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?			Potential for Subst. Interfer. Assumed?	
						YES	NO	ASSUMED	YES	NO
1	1	Fairview Creek/Lake	5-15	15-175	1550	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	2	Arata Creek	5-15	15-130	3050	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	3	Columbia River	5-15	8-10	7000	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Basis for aquifer hydraulic connection evaluation:** Both SW1 and SW2 flow north from an upland escarpment to the Columbia River floodplain north of I-84. SW1 (Fairview Creek) discharges to Fairview Lake, whereas SW2 (Arata Creek) discharges to Salmon Creek, which in turn discharges at a nearby location to the Columbia River. Although Arata Creek is wholly channelized or piped once it reaches the floodplain area, south of I-84 it is still mostly in an unaltered state and thus was considered for this evaluation.

Estimated groundwater elevations are those reported by the USGS for nearby wells completed in the SGA (McFarland and Morgan, 1996; Swanson and others, 1993). The generally-coincident groundwater and surface water elevations indicate that the SGA is hydraulically connected to various degrees to the surface water sources in the lower-lying floodplain areas. However, at that location the SGA is principally connected to the Columbia River, and thus impacts to the smaller surface water sources would be largely mitigated.

**Water Availability Basin the well(s) are located within:** None (administratively located within the Columbia Sub-basin)

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?
1	1	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	<<25%	<input type="checkbox"/>
1	2	<input type="checkbox"/>	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>	<<25%	<input type="checkbox"/>

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?
	<input type="checkbox"/>			<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>

**Comments:** C3a: Interference at 30 days to SW1 and SW2 was assumed to be much less than 25% because of a significant confining layer(s) between the streams and the producing intervals in the proposed POA. Furthermore, the efficient hydraulic connection between the SGA and Columbia River, despite its relatively-greater distance compared to SW1 and SW2, are expected to further mitigate impacts to SW1 and SW2.

C3b: not applicable.

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
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
Distributed Wells													
Well	SW#	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
		%	%	%	%	%	%	%	%	%	%	%	%
Well Q as CFS													
Interference CFS													
(A) = Total Interf.													
(B) = 80 % Nat. Q													
(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:** Not applicable.

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: None



**References Used:** Application G-18769 file.

McFarland, W.D., and Morgan, D.S., 1996, A description of the ground-water flow system in the Portland Basin, Oregon and Washington: U.S. Geological Survey Water-Supply Paper 2470-A, 58 p.

Morgan, D.S., and McFarland, W.D., 1996, Simulation analysis of the ground-water flow system in the Portland Basin, Oregon and Washington: U.S. Geological Survey Water-Supply Paper 2470-B, 83 p.

Swanson, R.D., McFarland, W.D., Gonthier, J.B., and Wilkinson, J.M., 1993, A description of hydrogeologic units in the Portland basin, Oregon and Washington: U.S. Geological Survey Water-Resources Investigations Report 90-4196, 56p.

**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) \_\_\_\_\_

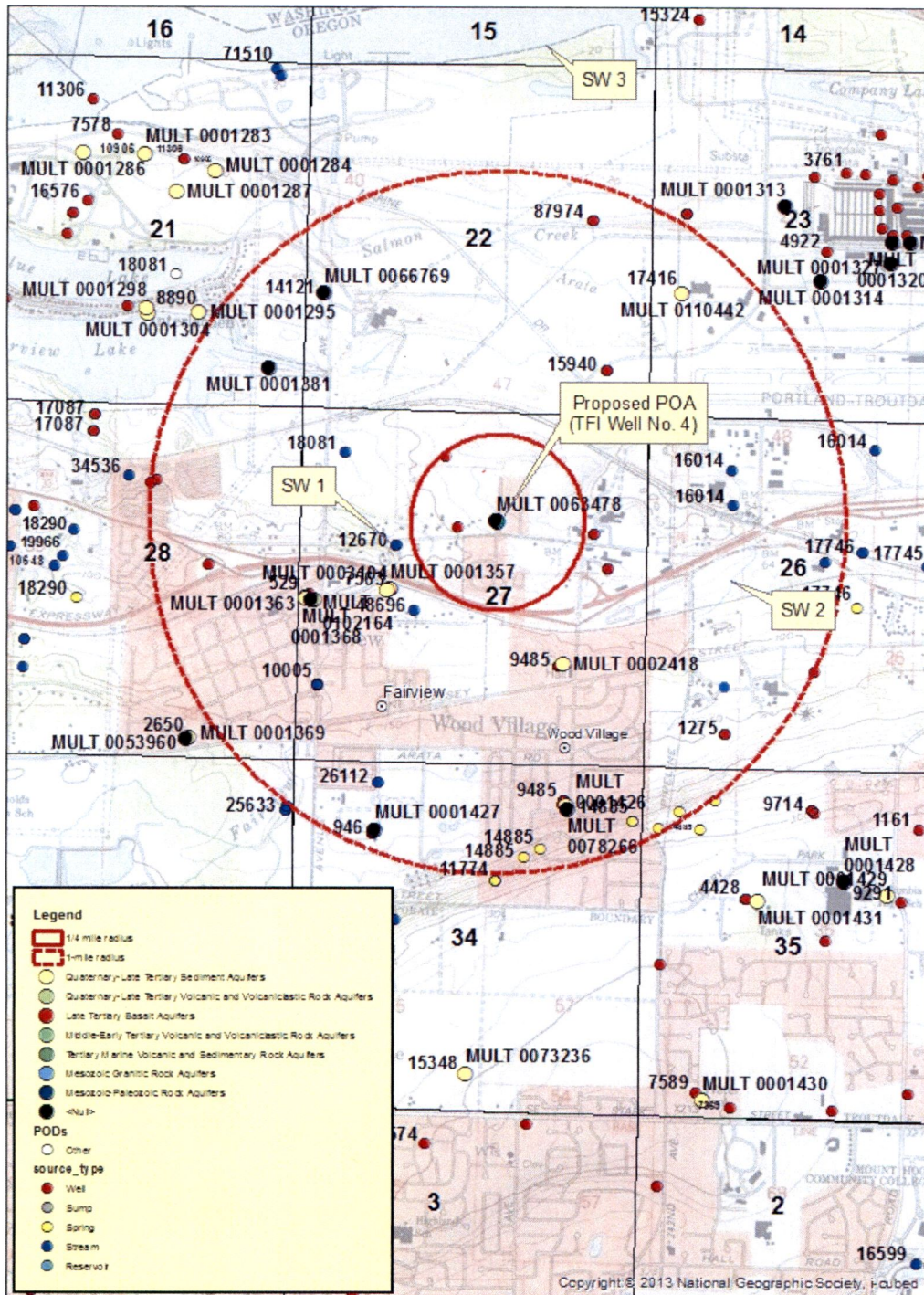
D3. **THE WELL construction deficiency or other comment is described as follows:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

\_\_\_\_\_

# Application G-18769 Townsend Farms Inc.



### Water-Level Trends in Nearby Wells

