PUBLIC HEALTH DIVISION
Drinking Water Services
Kate Brown, Governor

Oregon Health Authority

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June 27, 2016

Gary Chamberlin
City of Richland, PWS #4100703
P.O. Box 266
Richland, OR 97870

Re: Groundwater Under the Direct Influence of Surface Water Determination
City of Richland - PWS #4100537

Dear Gary,

Drinking Water Services has received the results from the three Microscopic Particulate Analyses (MPA) samples collected from Infiltration Gallery (SRC-AA). The purpose of the MPAs was to determine the potential risk of the City of Richland's drinking water being classified as Groundwater Under the Direct Influence of Surface Water (GWUDI).

The MPA samples, summarized below, were collected from three separate high water flow events. The risk scores for the three samples, summarized below, are based on the relative abundance of surface water indicators (see attached Table 1 for a list of surface water indicators, scoring method and final risk score based on indicator abundance).

Well ID	Sample Date	Risk Score
Infiltration Gallery (SRC-AA)	4/25/16	18
Infiltration Gallery (SRC-AA)	5/17/16	13
Infiltration Gallery (SRC-AA)	6/8/16	16

Based on the scores listed above and in the enclosed Table 1, Infiltration Gallery (SRC-AA) **will be classified as GWUDI** since the May 17, 2016 and June 8, 2016 samples scored greater than 14. According to Oregon Administrative Rule 333-061-0032 (8)(i)(C)(ii)), if any MPA risk score is greater than 19, or two or more are greater than 14, the water system source is classified as being under the direct influence of surface water (i.e., GWUDI).

As a result of the GWUDI classification, the City of Richland's drinking water source Infiltration Gallery (SRC-AA) is subject to the provisions of the Surface Water Treatment Rule (SWTR). In addition to this determination, the City of Richland is no longer required to collect additional MPA samples from Infiltration Gallery (SRC-AA).

The City of Richland will have 18 months from the date of this letter to meet the requirements stated in OAR 333-061-0032(1) to (5). If these requirements are not met after 18 months The City of Richland water system may be subject to formal enforcement.

In order for Infiltration Gallery (SRC-AA) to comply with the SWTR, the following options are available:

1. Provide filtration and disinfection treatment as required by OAR 333-61-0032.
2. Develop a new source outside the distance-hydrogeologic setting criteria, as outlined in OAR 333-61-0032 (8)(a)(A)(i-v). Wells located outside the distance criteria are typically classified as groundwater.
3. Demonstrate that the water produced from Infiltration Gallery (SRC-AA) can meet the criteria for exemption from filtration as outlined in OAR 333-61-032 (2) and (3). Meeting the filtration exemption criteria involves continually meeting the source water standards for total and fecal coliform, turbidity, 3-log inactivation of giardia and 4-log inactivation of viruses, 2-log removal of cryptosporidium, and a watershed control program or a certified drinking water protection plan (see OAR 340-040-0160 to 340-040-00180) that addresses both the groundwater and surface water (see OAR 333-61-032 (2)(c)(B)).
4. Suspend the use of Infiltration Gallery (SRC-AA) and purchase water from a nearby approved system.

Once the City of Richland has selected one of the options listed above in order to achieve compliance, the necessary water system modifications must be operational by **December 26, 2017.**

Prior to implementation of one of the options, plans will need to be submitted to the Authority for review (see http://public.health.oregon.gov/HealthyEnvironments/DrinkingWater/PlanReview/Pages/index.aspx for plan review information). The plans submitted to DWS must also be prepared by a registered Professional Engineer.

Interim Operation Plan:

Water system sources that have been determined to be under GWUDI and have 18 months to meet the requirements of the SWTR must also meet the following Interim Standards (see OAR 333-061-0032 (1)(c)):

- The turbidity of water entering the distribution system must never exceed 5 NTU. Turbidity measurements must be taken a minimum of once per day. If continuous turbidimeters are in place, measurements should be recorded every four hours.
- Disinfection must be sufficient to reliably achieve at least 1.0 log inactivation of Giardia lamblia cysts prior to the first user. Daily disinfection "CT" values must be calculated and recorded daily, including pH and temperature measurements, and disinfection residuals at the first customer.
- Reports must be submitted to the Department monthly as prescribed in OAR 333-061-0040.
- If these interim standards are not met, the owner or operator of the water system must notify customers of the failure as required in OAR 333-061-0042(2)(b)(A).

If you have any questions regarding the GWUDI determination, please contact Russ Kazmierczak at (541) 726-2587 ext. 26. For questions regarding compliance with the SWTR or compliance with the interim operational measures, please contact me at (541) 276-8006.

Sincerely,

William Goss, P.E.
Regional Engineer

enclosure: MPA scoring table

cc: Brad Daniels, OHA-DWS Portland
Russ Kazmierczak, OHA-DWS Springfield
Dave Wildman, P.E., Anderson-Perry & Associates
OHA-DWS Portland file

Table 1
MPA Scoring Method, Surface Water Indicators, and Risk Scores

Diatoms		Other Algae		Insects/Larve		Giardia		Coccidia		Rotifiers		Plant Debris	
Abundance	Risk Score	Abundance	Risk Score	Abundance	Risk Score	Abundance	Risk Score	Abundance	Risk Score	Abundance	Risk Score	Abundance	Risk Score
1-10	6	1-20	4	1-15	3	1-5	20	1-5	20	1-20	1	1-25	0
11-16	7	21-32	5	16-22	4	6-15	25	6-15	25	21-60	2	26-70	1
17-22	8	33-48	6	23-30	5	16-30	30	16-30	30	61-149	3	71-200	2
23-28	9	49-64	7	31-65	6	>30	40	>30	35	>150	4	>200	3
29-34	10	65-80	8	66-99	7								
35-40	11	81-95	9	100-130	8								
41-100	12	96-160	10	>130	9								
101-149	13	161-220	11										
150-200	14	221-299	12										
201-250	15	300-360	13										
>250	16	>360	14										

Risk Score is ≤10 for 2 MPAs = Classified as Groundwater
Risk Score for 1 MPA 10-19 or both 10-15 = 2 more MPAs
Risk Score for 1 out of 4 MPAs >14 = 2 more MPAs
Risk Score for 4 MPAs <15 = Classified as Groundwater (GW)
Risk Score for two or more MPAs >14 or one >19 = Groundwater Under the Influence Of Surface Water (GU)
Risk Score for 2 or more MPAs >14 or 1 >19

	Richland, City of, PWS #4100703					
	Infiltration Gallery (SRC-AA)					
	4/25/2016		5/17/2016		6/8/2016	
Primary Indicators	Count	Risk Score	Count	Risk Score	Count	Risk Score
Diatoms	2	6	6	6	1	6
Other Algae	220	11	44	6	126	10
Insects/Larve	ND	0	ND	0	ND	0
Giardia	ND	0	ND	0	ND	0
Coccidia	ND	0	ND	0	ND	0
Rotifers	2	1	1	1	0	<1
Plant Debris	ND	0	ND	0	ND	0
Total		18		13		16