

December 5, 2012

Eric Powell
Breitenbush Hot Springs
PO Box 578
Detroit, OR 97342

RE: Breitenbush Hot Springs (PWS# 4193461) - Tracer Study Results

Dear Eric,

We received information submitted by HBH Consulting Engineers documenting the disinfection contact time tracer study conducted at Breitenbush Hot Springs on October 18, 2012.

Tracer study parameters and results:

Demand Flow from reservoir = 70 gpm
Maximum Reservoir Volume = 14,400 gallons (4.0')
Minimum Reservoir Volume = 6,300 gallons (1.8')
First user = Treatment plant building
Contact Time Achieved = 50 minutes

The submitted tracer study results are acceptable to this office. For you daily CT calculations please do one of the following:

- 1) Begin using the contact time of **50 minutes** in your daily CT calculations. This is the “worst-case” scenario contact time and will cover all flow rates up to 70 gpm and reservoir volumes down to 6,300 gallons, *or*
- 2) Calculate the contact time T daily in the reservoir using a baffling factor (which can be determined from the tracer study) taking into account reservoir volume and effluent flow rate. This is a more complicated process; however it may be necessary to use this option if #1 above does not give you enough contact time T to achieve the CTs required (this option will increase the contact time T and thereby increase CT achieved). Contact the circuit rider if you would like to use this option so they can help you develop a procedure for doing these daily calculations. Please also send the procedure to me to review and approve prior to implementing it.

Please be aware that the tracer study will need to be redone if the flow rate increases more than 10% of what it was at the time of the tracer study. Also, if the reservoir is ever operated at a level below what it was during the tracer study, the tracer study would need to be redone.

Reminder: on the monthly Surface Water Treatment monitoring form, report the peak hourly flow as measured by the flowmeter located between the reservoir and the first user (not the plant flow).

If you have any questions or concerns, or would like this in an alternate format, please contact me at **(971) 673-0410**. Your cooperation is appreciated.

Sincerely,

Gregg Baird, REHS
Registered Environmental Health Specialist
Drinking Water Program
www.healthoregon.org/dwp