

## Claudette Borgersen

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**Subject:** FW: VDOT Charlottesville Residency Office Water Service Request-

**From:** Kvech, Steve (VDH) [mailto:Steve.Kvech@vdh.virginia.gov]

**Sent:** Friday, April 21, 2017 5:06 PM

**To:** David Benish <DBENISH@albemarle.org>; Joel DeNunzio, P.E. <joel.denunzio@vdot.virginia.gov>

**Cc:** Perry, Mark (VDH) <Mark.Perry@vdh.virginia.gov>

**Subject:** RE: VDOT Charlottesville Residency Office Water Service Request-

Mr. Benish,

Thank you for providing the detail on the Albemarle County policies regarding water/sewer connection outside of the jurisdictional areas.

The VDOT Charlottesville facility is served by an onsite drilled well. It was a found facility that met the definition of a nontransient noncommunity waterworks based on employee count and we permitted them and began regulating it in 2016.

Thus far copper is the only regulated contaminant that has been detected continuously. There were two bacteriological samples collected in September 2016 that were positive for total coliform bacteria. Total coliform are not a health hazard in themselves, and all other bacteriological samples collected since regulation began have been absent of coliform bacteria. We believe the sheen on the water to be related to bacteria, but water testing for total coliform is not picking up this type of bacteria. Regulated harmful bacteria have not been detected in the water.

Copper (and Lead) are regulated differently than all of the other contaminants. There is no maximum contaminant level (MCL). There are Action Levels, which requires a waterworks take certain "actions" if either exceeds specific 90<sup>th</sup> percentile values. The sources of copper (and lead) are nearly always from plumbing systems. Copper pipe, lead solder and brass parts leach copper and lead into the water when the water has corrosive properties. In VDOT's case, the well water is naturally acidic and corrosive toward the metal plumbing system components. The source of the copper is not from the groundwater itself, but the copper plumbing throughout the facility. Lead levels haven't been high and have not exceeded an Action Level, although some lead has been detected in samples.

Because VDOT has exceeded the Copper Action Level, and continues to do so, they will be required to take action to install treatment for their well source and continue testing for lead & copper to show that the treatment is working. Other options could include finding an alternate source of water that is non corrosive, but treatment would be the most likely course if they cannot connect to ACSA.

Copper above the Action Level can be a health issue, although it is my understanding that these health effects are limited to people who suffer from Wilson's Disease a relatively rare condition. This is a genetic disorder where copper builds up in the body and can cause other harmful health effects. <https://www.niddk.nih.gov/health-information/liver-disease/wilson-disease>. Elevated copper though is not the same degree of health concern as elevated lead is, particularly for children. If you need more information on the potential health effects I can put you in touch with Dr. Denise Bonds at the Albemarle County Health Department.

We regulate several other waterworks on this stretch of Route 250 including Bright Eyes Community Childcare and the new Faith Christian Center International. Bright Eyes has had both copper and lead levels that exceeded the Action Levels in the past. They have a treatment system to reduce the acidity of their well water. Faith Christian Center International has all new plastic plumbing, but we required they install treatment to reduce the acidity of the water. There are numerous other businesses and residences on this stretch of Route 250, that likely face the same

issue, but we don't have regulatory oversight. The well water in this whole area seems to be acidic and corrosive to plumbing.

I hope this information is helpful in making a determination.

Steve

*Steven J. Kvech, PE*

District Engineer

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**From:** David Benish [<mailto:DBENISH@albemarle.org>]

**Sent:** Friday, April 21, 2017 4:18 PM

**To:** DeNunzio, Joel D., P.E. (VDOT); Kvech, Steve (VDH)

**Subject:** VDOT Charlottesville Residency Office Water Service Request-

Joel/Steve,

In reviewing a request for water or sewer service to properties located outside of the County's designated Development Areas, the primary evaluation criteria for Board of Supervisor action is whether the property is adjacent to an existing water or sewer line AND whether there is a health and safety issue. The policy in the Comp Plan reads as follows (I've highlighted most relevant sections):

Strategy 9a: Continue to provide public water and sewer in jurisdictional areas.

Water and sewer jurisdictional areas ensure the County's Growth Management Policy, Land Use Plan, and Develop Area Master Plans are implemented by guiding the direction of public utility placement. The areas also permit these services to be provided in a manner that can be supported by the utility's physical and financial capabilities. The jurisdictional areas are those portions of the County that can be served by water or sewer service, or both, and generally follow the Development Areas boundaries. Delineation and adoption of utility project jurisdictional areas by a local governing body is provided for in Virginia Code §15.2-5111. The boundaries of the Development Areas are to be followed in delineating jurisdictional areas. Change to these boundaries outside of the Development Areas should only be allowed when: (1) the area to be included is adjacent to existing lines; and (2) public health and/or safety is in danger. Access to the Crozet Sewer Interceptor between the boundary of the Crozet Development Area and the Urban Service Area boundary should continue to be prohibited as well as the installation of private central water and/or sewer systems in the Development Areas. In addition, the funding of public water and sewer capital improvements should be in accordance with the recommendations of the Comprehensive Plan. Strategy 9b: Continue

The VDOT site meets the first criteria for proximity to an existing water line, but I need some clarity on the health/safety criteria. We typically look for some type of documentation of the health and safety issue. Based on this e-mail and

attachment and other previous e-mails, my understanding of the situation on-site is that it does not constitute a health or safety issue and that there is an on-site remedy to the situation that does not require the provision of public water service. Here is what I think the situation is:

- I believe the source for the copper found in the water has been determined to be from infrastructure/pipes in the building and not from the well/water source.
- The sheen on the water is naturally occurring bacteria and is not a health hazard. It is not caused by pollution or contamination of the water source. The following is clipped from the attached document:

transforming minerals to different chemical forms. These bacteria are of no threat to human health and have been involved in the iron and manganese cycles for billions of years. Some bacteria are very useful because they remove harmful materials from water.

I want to be clear whether there is an aspect of health or safety related to the water condition at the site. Steve, would it be possible for you to confirm the situation out there to me in an e-mail or letter, or provide me some other documentation you may have already has regarding this site.

Also, Joel, have you discussed this request with Rick Randolph (I can't recall if you have already). If not, do you want to discuss it together with him? If so, Let me know.

Have a great weekend to both of you and thanks for your help on this.

David Benish

**From:** Kvech, Steve (VDH) [<mailto:Steve.Kvech@vdh.virginia.gov>]  
**Sent:** Monday, November 07, 2016 4:21 PM  
**To:** Joel DeNunzio, P.E. <[joel.denunzio@vdot.virginia.gov](mailto:joel.denunzio@vdot.virginia.gov)>  
**Cc:** McClung, Michael G. (VDOT) <[Michael.McClung@VDOT.Virginia.gov](mailto:Michael.McClung@VDOT.Virginia.gov)>  
**Subject:** RE: water samples

Joel,  
The attached document may be helpful in explaining the film on the water. It is from Michigan DEQ, but explains what I believe you have at the VDOT.

Steve

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**From:** DeNunzio, Joel D., P.E. (VDOT)  
**Sent:** Friday, November 04, 2016 10:38 AM  
**To:** Kvech, Steve (VDH)  
**Cc:** McClung, Michael G. (VDOT)  
**Subject:** water samples

Steve,

I heard from Albemarle County today and I am tentatively on the schedule for public hearing in December for consideration to tap the public water line. The county asked for a summary from you of why the office has been put into a status of a public water works and what health issues we may have from the well water. If I remember correctly,

we had performed some additional testing to try and find out why there was a sheen on the water and never figured it out. Is there any concern for that that we can point to or anything else. The more I can point to health concerns from the well water, the better chance I have at approval.

Thanks

Joel

Joel DeNunzio, P.E.

Resident Engineer

[VDOT Charlottesville Residency](#)

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