

Drainfield to Surface Water Setback Distance Subcommittee
Teleconference Meeting Minutes
Friday, 05/14/2010, 9:00 am

Teleconference
Date: 2010-05-14
Start: 0900 hours

Attendance: Boise: AJ Maupin, PE; Bill Holder, PE; Allen Worst
Athol: George Miles, PE
Kimberley: Dr. Jim Ippolito, Ph.D. USDA
Hayden: Dick Martindale
Missing: John Corcoran (Realtor Association Representative); Brett Skidmore (Building Contractors Association Representative); Nathan Taylor; Joe Canning, PE
Meeting called to order at 9:00 am.

Past Meeting minutes:

April 21, 2010 Minutes: Prior meeting minutes presented. Motion made to approve the minutes as presented, the motion was seconded and the minutes passed.

Vadose Zone Modeling:

Additional modeling results were presented and discussed. Changing soil bulk density (1.27 → 1.89 g/cc) didn't significantly increase life of drainfield. Models were run for various depths to ground water. It was determined that changing the available metal ions is directly correlated to the resulting change in the life of the drainfield; i.e. increase the metal concentration 10% and the drainfield's life increases 10%.

Results were discussed and questions arose about available soil above the pressurized dispersal line, such as in drip dispersal systems. It was determined that this soil volume can be added to the model size unsaturated flow so close to the soil surface has high probability of moving upwards in the root zone. Another question arose about accounting for crop (grass) uptake. Dr. Ippolito indicated that plant uptake of phosphorus is not significant. Additionally, AJ indicated that Idaho's subsurface program currently does not have a permitting structure that can assure crops will be removed from the property. Consequently, accounting for plant uptake does not assure that the ground and surface water resources will be protected.

It was pointed out again that phosphorus sequestration is dependent upon the Aluminum (Al) and Iron (Fe) content of the soil. Soil sample collection shouldn't be difficult and the testing is not expensive. Inductively coupled plasma spectrometry (ICP) was mentioned as a thorough and easy test to perform.

Saturated Flow Modeling:

No additional saturated flow modeling was completed.

Discussion on General Topics:

A report on the initial Surface Water program's anti-degradation negotiated rule making was presented. An initial surface water phosphorus concentration of 2 µg/L (2 parts per billion, ppb) was proposed by DEQ. Some groups took exception to this value. The Idaho Conservation League (ICL) doesn't want any degradation. They are still negotiating. It was mentioned that due to these low limits the subcommittee may wish to propose conservative recommendations. This topic will be addressed in the subcommittee's recommendation to the TGC.

The form of any recommendation from this subcommittee was discussed; whether it will be a recommendation for a rule change or whether it would be more expedient to incorporate into the Technical Guidance Manual (TGM). The technological solution could easily fit into the TGM. Requiring Operation & Maintenance (O&M) was viewed as problematic based on the experience with Extended Treatment Package Systems (ETPS). It was mentioned that little confidence exists that technological solutions could remove phosphorus for very long without Periodic Maintenance (PM) provided by O&M service providers. Since the technologies all utilize expendable/consumable media, replacement of that media will be required when it is expended. How to get the homeowners to comply is a major concern.

It was mentioned that a set surface water setback distance should be defined to remove any interpretation for the drainfield siting requirements. A Matrix method was proposed that would account for soil type, depth to ground water and effluent phosphorus concentration, possibly represented graphically. It was recommended that lab soil testing for metals (Al & Fe) be required to support this. Use of the National Resource Conservation Service's

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(NRCS) soil surveys could possibly be used in lieu of the lab analyses. A rebuttal was voiced about the general nature of the NRCS soil surveys and the low cost of soil metals analysis.

This subcommittee should document their findings and recommendations in a White Paper that would be submitted to the TGC. We can assign tasks based on the group's initial assignments to investigate the constituents of concern: nitrogen, phosphorus, pathogens and pharmaceuticals and personal care products (PPCP) and endocrine disrupting chemicals (EDC).

Next Meeting Schedule:

The next meeting is scheduled for Tuesday, 8 June 2010, from 10:00 am MDT (9:00 am PDT) to 12:00 pm MDT (11:00 am PDT). This meeting date and time was subsequently changed to Friday, 11 May 2010, from 10:00 am MDT (9:00 PDT) to 12:00 am MDT (11:00 am PDT).

Meeting adjourned at 11:45 am.

Meeting Topic:

- Discuss the vadose zone modeling completed since last meeting.
- Discuss pressure distribution's impact on phosphorus sequestration in the vadose zone.
- Discuss whether effluent transit time in the vadose zone is sufficient for phosphorus reaction kinetics to provide total or significant phosphorus sequestration.
- Discuss permitting schemes for phosphorus removal technologies: enforce replacement of expendable media; enforce O&M requirements; what monitoring and reporting requirements are needed.
- Discuss documentation of Subcommittee's findings and recommendations for White Paper to submit to TGC.