

Memorandum

To: Sara Hubbard-Gray, Facilitator
Rob Lindsay, Spokane County

From: Llyn Doremus, Washington Dept. of Ecology
Guy J. Gregory, Washington Dept. of Ecology

Date: 12/17/2012

Re: Washington Dept. of Ecology comments: Spokane County Critical Aquifer Recharge Area regulations update : Technical Memos 2 and 3

With respect to the Tech Memos, our specific comments are:

Tech Memo 2

Page 7, “Point of Compliance” Section, last sentence: delete the last five words (“directly downgradient of the drainfield”) and replace them with: *at the groundwater surface interface where the drainfield effluent enters groundwater*. This will clearly distinguish what the rule says, from the assumed measurement point.

Page 7, “Applying Groundwater Quality Standards to the CARA Study” section: In this section, please outline the “alternative point of compliance” concept, including the criteria of WAC 173-200-060(2), Note that significant understanding and documentation of both the built and natural systems is required before approval, similar to the recent Large On-Site System analysis required in rules recently promulgated by WDOH (Ch. 246-272B WAC).

Tech Memo 3

Existing Nitrate Content in Groundwater

Ecology recommends, prior to rulemaking, a map of existing nitrate concentrations be constructed and used as one basis for identifying high, medium and low risk aquifer areas. (high risk > 5 mg/l; mod risk = 1 – 5 mg/l; low risk = < 1 mg/L). The construction of a map illustrating the existing nitrate concentrations will provide essential information for determining aquifer protection levels needed outside the UGA. Further, it would test the concept of a stepwise approach to protecting the functions and values of critical aquifer recharge areas: moving from “cookbook” to a more detailed site specific evaluation.

For example, The CARA rule could consider exceptions to the high, med and low designated risk status for a site, allowing consideration of a detailed site evaluation similar to that outlined in the LOSS rule. Such a report would include site specific data to justify design considerations that may vary from the default methodology, and also may allow an “alternative point of compliance”.

LOSS calculated risk assessment

The LOSS model should be used together with the existing nitrate concentration in groundwater to assess relative risk of groundwater contamination. If the LOSS model is used, reports submitted with the LOSS model calculations document the design parameters of a sufficiently protective wastewater treatment system.

If site specific measurements are not used in the LOSS calculations, the most conservative or protective values should be selected from the range of published or otherwise documented values available. Hydraulic conductivity and background values are particularly sensitive.

Scenarios

WDOH default values may not be relevant to Spokane County. Local gradient and acceptable mixing zone depth are key parameters that may be quite important to property owners near proposed systems.

All scenarios presented in the wastewater loading tables assume an alternative point of compliance at the property line. Alternative points of compliance are allowable under several circumstances, but they are not allowed to exceed the property line. Furthermore, in nearly all cases, the alternative point of compliance does not affect downgradient concentrations in a significant way. While this is an artifact of the gradient and mixing zone dilution terms in the predictive equation, it does suggest that the work necessary to achieve an alternative point of compliance determination may not be cost-effective.

Attachment C parameters: the citations are not complete, and values cited are almost all out of date. Some areas cited are not relevant to this study, for example the SVRP Aquifer area is within the Urban Growth Boundary; this rule will not apply. Significant work has been done outside these areas by Spokane County Water Resources and the Spokane County Conservation District. We encourage you to solicit their advice in incorporating more recent data.

Summary

With respect to these memoranda, Ecology encourages you to:

1. Expand the language on Alternative Point of Compliance to include criteria of acceptability
2. Discuss the sensitivity of the equation to Alternative Point of Compliance clearly
3. Review and update the hydrogeologic properties attachment

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4. Consider using county specific data to focus the LOSS equation approach for a stepwise permitting process
5. Consider area or site specific data in adopting the LOSS equation approach.

If you have any questions on these comments, please contact either of us.