

## Residential, Commercial, Industrial, Municipal (RCIM) Work Group

### Charge from Groundwater Management Area Advisory Committee

#### Working Group Members

Dan DeGroot, Chair (Yakima Dairy Federation), Dave Cole (Yakima Health District), Elizabeth Sanchez (Yakama Nation), Jan Whitefoot (Concerned Citizens of Yakama Reservation), John Van Wingerden (Port of Sunnyside), Stuart Turner (Turner & Co.), Tom Ring (Yakama Nation), Kathleen Rogers (Citizen Rep), Sanjay Barik (Ecology)

#### Meetings/Calls Dates

Meeting: July 18, 2016, 2:00-4:00 PM  
Sunnyside School District Administration Building, 1110 S. 6<sup>th</sup> Street, Conference Room 20,  
Sunnyside, WA 98944  
Call in: 509-574-2353 (pin 2353#)

#### Participants

Present: Dan DeGroot (Chair), Jim Davenport, Vern Redifer, Steve George, Kathleen Rogers, Jim Dyjak, Ryan Ibach, Dave Cole and Bobbie Brady (Yakima County Support Staff)

#### Key Discussion Points

The meeting was called to order by Chair Dan DeGroot at 2:04 PM. He asked Ryan Ibach to introduce his replacement (Dave Cole) at the Yakima Health District and everyone else present introduced themselves to Dave.

Discussion on onsite sewage systems – Vern Redifer report: Vern explained he had taken an interest in learning the basics of onsite sewage system design and operation from his work on the RCIM piece of the nitrogen loading assessment. Vern printed out the source information from his research and passed it out to the group. Each source is discussed as follows:

1. EPA publication No. 832-B-02-005, portions of Chapters 3, 4, and EPA Onsite Wastewater Treatment Systems Technology Fact Sheet 9. Vern explained that a basic onsite sewage system begins with a settling basin to capture the solids. The liquids (called a plume) then travel by gravity to a drain field where they leach into the ground going down through the soil depth to groundwater. The plume (cloud-like in look) when leached settles approximately 300-400 feet away from the drain field. Where land may not perc (or percs too slowly) a mound system can be installed. The mound acts as a filter prior to reaching the ground. The mound system may have a pump associated with it which will cause the fluids to be released in a staggered manner. The mound system is not a treatment system for nitrates

Vern added that there is no onsite sewage system treatment of nitrogen. Depending on soil conditions at the time (saturated/unsaturated) the process only removes 10 to 30 percent of the nitrates (the lower number of 10 percent is generally the accepted percentage). The nitrate number stays high until it mixes. If the ground is already saturated there is no denitrification – all of the nitrates go into the groundwater. Based on Vern's research he felt that the group's consideration should be focused on the following areas: a) Where there is an issue in the geography, i.e., soil filtration rate based on soil type (how the soil percs); b) where there is rural housing density; and, c) what is downstream of the plume, i.e., a well, as the nitrogen may not have been diluted.

2. EPA Homeowner's Guide to Septic Systems. Vern believed this guide (dated December, 2002) could come in handy when trying to educate people how an onsite sewage system operates under the best conditions which is crucial as improper use can increase the amount of released nitrates. Vern noted the following examples: spreading out when laundry is done to reduce the amount of water pushed through on a given date, using low water toilets and showerheads, use of garbage disposals which increase the frequency of pumping, exceeding design capacity (more people using the system than it was designed for) and not driving over the drain field which can damage it.
3. DOH Report to the Puget Sound Action Team – Nitrogen Reducing Technologies for Onsite Wastewater Treatment Systems. This report contains different methods to remove more nitrates – the research is on-going and hasn't proven itself out. The estimated installation costs of an improved system is \$20,000 and yearly operational costs per system were about \$1,500. Vern felt this may be cost prohibitive to look at for each onsite sewage systems in the Lower Valley but may be viable where clusters of onsite sewage systems exist. Vern also mentioned recirculating sand filters but noted these may be cost prohibitive as well. He also read about adding carbon to the system as it assists greatly with denitrification but noted they are currently striving to get a ten year life out of the system and it would require replacing the drain field at the end of that time. Vern noted that if the group felt it was worth looking into this he would do more research. He estimated that retrofitting old systems would cost \$5-7,000 per system.
4. WAC 246-272A-0230 Design Requirements and WAC 246-272A-0015 Local Management and Regulation. Vern also looked at the WAC's to ascertain design requirements, management and regulation. He drew the group's attention to WAC 246-272A-0230, first page section (D) at the bottom of the page. It states: "*Nitrogen contributions. Where nitrogen has been identified as a contaminant of concern by the local management plan required in WAC 246-272A-0015, it shall be addressed through lot size and/or treatment.*" WAC 246-272A-0015 requires the twelve counties bordering Puget Sound to develop this plan. Vern pointed out that on page 2 of this WAC Section (5) states "*The local health officers for all other jurisdictions not required to develop a written plan under subsection (1) of this section shall develop a written plan that will provide guidance to local jurisdiction regarding development and management activities for all OSS within the jurisdiction.*" Ryan Ibach noted that Yakima County does not current have such a plan. Vern added that this section gives the group the opportunity to promulgate a plan for Yakima County if it's believed to be a good idea.

A discussion ensued. Vern noted that he had learned there are 6,044 residential onsite sewage systems in the GWMA. He had been thinking that there could be language that said if your drain

field fails or if you need to build a new one, here are the standards. The group discussed the prohibitive costs of this endeavor and the possibility of a low cost loan program at great length. A member voiced that perhaps grants could be procured in denser areas, but did not believe this would be viable to help households on a case-by-case basis. A member wondered if pumping onsite sewage systems more frequently resulted in a reduction of the nitrogen output to groundwater. It was agreed that there would be some improvement but not a huge difference. Dan DeGroot mentioned that he heard King County proposed a property tax fee for homeowners with onsite sewage systems. Homeowners would be exempt from this fee if they sent in a certificate indicating that their onsite sewage system had been inspected and pumped. Jim Davenport noted that this was the aquifer protection area that he had previously suggested. It would require a vote of the people, but would raise funds to allow for individual case counseling and education. Dan also mentioned that he had read an article by the DOH coming up with a way to use the nitrogen dispensed from the drain field on the lawn rather than commercial fertilizers.

Dan asked Vern to look through his information from GIS to determine what areas in the GWMA would have enough onsite sewage system density to become a communityized cluster. This should include residential systems and businesses with four to five bathrooms which could also be converted to a communityized system.

The group discussed the need for more literature or hiring an expert to help determine possible solutions. Vern reminded the group that a groundwater symposium had been held in San Francisco in June. Rand Elliott, Ginny Prest and Ginny Stern all attended and said that 20 countries in addition to the United States were represented at the Symposium making it clear the Lower Valley GWMA was not alone in trying to figure out how to deal with the issue of nitrates in the groundwater. It was suggested that Jim Davenport put this on the agenda for the next GWAC meeting. Jim suggested instead that a report regarding the symposium be made by Ginny Stern of the DOH at the next RCIM meeting. The group agreed.

N loading from the Commercial, Industrial and Municipal portion from the Ecology filed reports – Jim Davenport report: Jim followed up with David Bowen at the Department of Ecology. Sanjay Barik, also from DOE, was out of the office at the time so Jim had nothing to report. He did clarify what information specifically the group was looking for. The group desired to confirm that the DOE was in fact monitoring the commercial, industrial and municipal part of the RCIM equation, i.e., port authorities, city waste systems, large onsite sewage systems, spray fields, and so forth. Jim indicated that he would follow up and report back to the group.

Discussion of potential solutions to high nitrates from RCIM sources: The list of possible solutions (for the residential component only) was: 1) Public education – the group agreed education should be a precursor to action for both onsite sewage systems and abandoned and poorly constructed wells. Jim Davenport noted that he had prepared a list of educational topics for the various working groups and passed it on to Lisa Freund chair of the EPO committee so that they could begin to conceptualize what could be done. 2) Investigate the possibility of an aquifer protection area. 3) Look at the possibility of community septic and community well systems. The group hoped to get more ideas after Ginny Stern shared on the groundwater

symposium at the next meeting. The group would also continue to consider hiring an expert after Ginny Stern reported.

Review work plan to monitor progress: Dan felt that the group was on schedule for the residential portion of the work plan and the group would wait to hear more from the Department of Ecology on the Commercial, Industrial and Municipal portion of the work plan.

Discuss having Natural Selection Farms make a presentation to the group at a future meeting: The group agreed to invite Natural Selection Farms to the next meeting and made the following list of things they desired to learn from the presentation: 1) The group asked that Natural Selection bring maps (in hand-out format) of all applications made by Natural Selection Farms to fields in the GWMA since the inception of Natural Selection Farms. 2) The group wanted to know what their permitting process entailed. 3) The group wanted a detailed description of the origin of the product, how long it takes before the product is applied to a field, the length of storage prior to application and the accuracy of the application. 4. The group wanted to know the soil testing requirements and obtain copies of those test results.

Other business: The group decided to cancel the August RCIM meeting due to scheduling conflicts. The group will meet again on Monday, September 12, 2:00-4:00 PM (it's regularly schedule September meeting). The meeting was adjourned at 3:52 PM.

## **Resources Requested**

### **Recommendations for GWAC**

### **Deliverables/Products Status**

### **Proposed Next Steps**

---

Dan asked Vern to look through his information from GIS to determine what areas in the GWMA would have enough onsite sewage system density to become a communitized cluster. This should include residential systems and businesses with four to five bathrooms which could also be converted to a communitized system.

The group agreed to invite the following people to the September RCIM meeting: 1) Ginny Stern (DOH) to report on the groundwater symposium as outlined above. 2) A representative of Natural Selection Farms to make a report also as outlined above.

Jim Davenport will follow-up with the Department of Ecology on the N loading from the Commercial, Industrial and Municipal portion from the Ecology filed reports and report back to the group.