On-Site Wastewater
Technical Advisory Group

September 21, 2-15
Kittitas County Courthouse
County Commissioners Chambers
Ellensburg, WA

Meeting Summary

MEETING ATTENDEES

Core Group Members Present

David Jensen, P.E., Jensen Engineering
John Wolpers, Whatcom Co. Health Department
Bob Monetta, Windermere Real Estate – Methow Valley
Nancy Darling, CPSS, DOH

Core Group Members Not Present

Peter Lombardi, L.D., Orenco
Cindy Waite, Mason Co. Health
Eastside EHD – TBD
Eastside field staff – TBD
Eric Knopf – Indigo Design

Guests

Fiske Firebaugh, Kittitas Co Health Dept.
Geoff Hill, Toilettechsolutions.com

DOH Staff

John Eliasson
Leslie Turner

INTRODUCTION:

The meeting began at 9:40 AM on September 23, 2015. There was a brief discussion on filling the Eastside EHD position and a new Eastside field staff position. A suggestion was made to post the EHD position at a meeting of the EHDs. The field staff position query will be posed to the LHJ coordinators.

Jeremy Simmons, Wastewater Section Manager was introduced and he reinforced the value of the TAG.

The question was posed as to whether the current procedure for the TAG meetings is acceptable. It is.

SUMMARY OF TECHNICAL RGF DISCUSSIONS

Urine diversion:

This is a process that redirects urine and creates a dry toilet known as UDDT (urine diversion dry toilet) technology. The separated solids can eventually be mixed with other compost. Urine diversion is currently being used in some rest areas and schools located in California.

The waste strength of the diverted urine is high in nitrogen, but very low in O&G and fecals. The goal is to provide treatment and reuse water for irrigation, etc. For a household, storage for 1 month prior to use is recommended. For a larger system or if food is served to people other than those in the household, storage for 6 months is recommended. The urine can be directly applied or diluted with water (1:3 to 1:5).

Advantages:

- Low cost
- Low risk of pathogen transmission
- Reduced dependence on costly synthetic fertilizers
- Income generation
- Easy to understand techniques

Disadvantages:

- Urine is a relatively heavy medium (low value/weight) and difficult to transport
- Smell may be offensive
- Application of urine is labor intensive
- Requires space for agricultural activity
- Requires acceptance by the users

(Tilley et al. 2008)

Composting Toilets and UDDT:
UDDT can improve the efficiency of compost and reduce the risk of pathogens. Although there are some nutrients available, there are not many present. Nitrogen removal is approximately 80% in the urine diversion process.

The composting toilet process is; 50-60% moisture, C: N ranges from 25:1 to 35: and pH ranges from 6.5 to 8.0. When urine is separated, the solids compost better.

Dr. Geoff Hill (PhD in urine diversion) was present at the meeting. He completed a study for his thesis reviewing composting toilets. He found that no composting toilets are meeting the standard and do not reach the temperatures for optimal results. Composting toilets are generally chosen where; a location has no water, commercial situations, expensive to haul waste, or outside of a public utility boundary.

There are several types of UDDTs; vertical and horizontal. Geoff displayed a horizontal model.

Fertigation: Greywater irrigation combined with nutrient fertilization of plants. A combination of all season greywater systems. Urine is diverted to mulch basins and other subsurface irrigation system. This may be more appropriate for a LOSS than a residential setting.

The general consensus was that urine diversion should not be added to the Water Conserving RS&G at this time.

UV project update:

The plan for this project is under development. DOH is partnering with Tacoma Pierce County Health Department (TPCHD). TPCHD has approximately 2200 onsite systems with UV add-on. Systems using UVs will be selected at random for testing. The objectives of the project are:

1. Was the installation done correctly?
2. Is the unit working correctly?
3. What treatment level is being achieved?

Funding for this project comes from the National Estuaries Program; pathogens.

An advisory group for this project is being formed.

Mound RS&G Items:

The general consensus was to include the use of chambers in the Mound RS&G. The general consensus was that guidance for conducting a residual pressure test for existing systems should be placed in the Pressure Distribution RS&G. They will be reviewing the draft of this document and the Wisconsin “Inspecting and Troubleshooting” document for inclusion in the Mound RS&G and email their thoughts. The group asked for information on flow equalization to be considered in the Pressure Distribution RS&G.

At-Grade RS&G revisited:

At-Grade systems are similar to a mound; however treatment must occur before the at-grade system. The at-grade system is for dispersal of effluent. The advantages are that less soil is required to meet vertical separation and it is a smaller landscape feature than a mound. The identified issues are the linear loading rates and slopes. The general consensus was to look into this further and create some models.

WRAP UP:

The next meeting will be in the spring.