1. INTRODUCTIONS

Chairman Odom called the meeting to order at 9:07 a.m. Mr. Odom gave a brief overview of the purpose of the Technical Review and Advisory Panel (TRAP). The TRAP members and alternates introduced themselves. Eleven out of eleven groups were present, representing a quorum.

2. ELECTION OF CHAIR AND VICE-CHAIR

Motion by Roy Pence and seconded by Pam Tucker, to elect Ken Odom as Chairman of the TRAP. All were in favor, none opposed, and the motion passed unanimously.

Motion by Victor Godlewski and seconded by Scott Franz, to elect Roy Pence as Vice-Chairman of the TRAP. All were in favor, none opposed, and the motion passed unanimously.

3. REVIEW MINUTES OF LAST MEETING

The TRAP reviewed the minutes of the December 12, 2014 meeting.

Motion by Scott Johnson and seconded by Mary Howard, for the TRAP to approve the minutes from the December 12, 2014 teleconference meeting as submitted. All were in favor, none opposed, and the motion passed unanimously.

4. RESEARCH UPDATE

Damann Anderson provided an overview of the nitrogen study. The last time Mr. Anderson presented to the TRAP on this project was in 2009. He recognized the project team, which includes nationally recognized experts in the fields of onsite sewage and soil science.

Mr. Anderson discussed the impacts of nitrogen to water quality to public health and the environment. He said that nitrogen loading is variable between watersheds and there are multiple contributors. He presented examples of this from Wakulla Springs and from the Wekiva area of central Florida. Nitrogen reduction of wastewater is a two-step process, he explained, with first an aeration stage to nitrify the effluent and second an anoxic stage to denitrify. This converts the nitrogen from a liquid form to a gas. Next, Mr. Anderson went over current nitrogen reducing technologies. Most of the systems on the market are active with multiple mechanical and moving parts, and the field performance of these advanced systems is inconsistent. The Florida Legislature mandated the Florida Onsite Sewage Nitrogen Reduction Strategies (FOSNRS) project to further develop more passive and cost-effective nitrogen reduction strategies for onsite sewage treatment and disposal systems (OSTDS).

The FOSNRS project has four primary study areas:

A. **Review available nitrogen treatment options:** The project team constructed a pilot facility at the Gulf Coast Research and Education Center, a University of Florida facility in Wimauma, Florida. Mr. Anderson presented results from the small-scale pilot biofilters, which the team constructed to help determine the best performing options to use in full-scale systems. The results showed that they consistently received 95% reduction of nitrogen for both single pass and recirculating wastewater effluent. The team also constructed vertically stacked biofilters, which put the two-stage nitrogen treatment underneath the drainfield. These systems received a 94% reduction in total nitrogen, with a nitrogen concentration of 3.5 mg/L prior to drainfield dispersal. Some of the lessons learned from the pilot testing were that these passive technologies can receive greater than 95% nitrogen reduction, that sulfate is a byproduct produced in the systems that used sulfur, and that the best design option for full-scale systems is using a combination of lignocellulosic material (wood-chips) and elemental sulfur.

B. **Develop, install, and monitor full-scale systems:** Mr. Anderson said that they have installed seven full-scale systems throughout the state. He presented some of the design configurations and results from the systems. For the installed systems, the project team attempted to utilize as much of the existing system as possible. The definition of passive, as provided by the Department of Health (DOH or Department) allows for the use of one pump for lift dosing. The project team found that allowing a pump for lift dosing purposes provided a significant cost savings when working with existing drainfields. Mr. Anderson gave results for one of the seven systems, stating that after 535 days of operation, the average total nitrogen coming in was 54.7 mg/L, the reduction is 44% (30.7 mg/L) from the aeration/nitrification stage of the process, and 95% (2.5 mg/L) from the final anoxic/denitrification stage prior to dispersal to the drainfield. The average energy consumption came to about 0.31 kWh/day, which is equivalent to an operation cost of about $1 per month. No surficial biomat or clogging was present and the reactive media showed very little reduction in volume. Mr. Anderson also discussed system configuration and performance for some of the other installed systems.

C. **Evaluate Nitrogen reduction in Florida soils:** Mr. Anderson provided a summary of this task, which is to evaluate how nitrogen behaves in Florida soils. He provided results from one field site that they monitored for over a year and then had a passive nitrogen reducing system installed. He showed before and after images of measured and extrapolated nitrogen concentrations in the groundwater, which showed a marked improvement in groundwater quality.

D. **Develop a user tool/model to estimate nitrogen reduction:** Damann Anderson briefly discussed the tool/model that will evaluate different scenarios for nitrogen fate and transport. He showed one of the model simulations, which had variables for trench/bed, equal/unequal distribution, soil type, loading rate, depth to water table, and nitrogen concentration.

After this project summary, Damann Anderson answered some questions and received comments from the TRAP and the public. Russ Melling said that the results were impressive and wanted to know what the projections are for system longevity. Mr. Anderson said that the media does get consumed, but that there was very little decrease in volume for the system that had been in operation for two years. He will have a better estimate when they have completed the project, but preliminarily he estimates the system could last ten to twenty years or even more. The reduction in BOD (biological oxygen demand) should help extend the drainfield life. Ed Cordova asked what the long-term maintenance requirements might be, and Mr. Anderson said that it operates no different from a pressure-dosed system. He said that for the tank-based systems, it could be as easy as adding a bag of mulch and/or sulfur. The in-ground systems would be harder to replenish but the initial volume of media material is greater than the tank-based systems, to help compensate for this. Victor Godlewski asked what the anticipated costs would be, and Mr. Anderson said that they are still developing the cost estimates for the systems. He said that at this point the systems are expensive because some of the components (i.e. the tanks) have been custom designed, manufactured, and tested for each system. He also said that much of the system cost depends on the home site. He estimated the cost could be between $10,000-$20,000. Dominique Buhot, a septic contractor that helped install the three Seminole County nitrogen reduction systems, said that he estimates the cost to be more around $25,000.

5. RULE ISSUES

OLD BUSINESS

12-02 – HB 1263 changes

Pam Tucker asked to bring issue 12-02 up as old business. During the December 14, 2012 TRAP meeting a motion was made to have a provision in the rule that would require that the homeowner receive final documentation in a specific situation. *Gerald Briggs indicated that staff would review the tapes from the meeting for clarification of the request and bring this back to the TRAP before the issue is included in the rule.*

10-04 Sand Lined Trenches (for final TRAP vote)

There was clarification that the rule reduction does not include this issue. TRAP discussed the comments from the Variance Committee. Scott Franz said that he did not support this issue. He said that sand lined trenches could result in a significant difference between the water table below natural grade, and the water table below the drainfield. The reason for this, Mr. Franz said, was that the wastewater would encounter the different texture at the bottom and sides of the excavation and fill up the drainfield area until the head pressure pushes the wastewater down into the soil. Several TRAP members agreed that this was not a good idea. Ron Davenport said that North Carolina allows sand lined trenches and that these systems have high failure rates. Pam Tucker asked for clarification on whether there is any associated cost savings and Scott Franz said there is no documentation to support this.

Motion by Scott Franz and seconded by Mary Howard, not to support inclusion of this issue in Chapter 64E-6 of the Florida Administrative Code. All were in favor, none opposed, and the motion passed unanimously.