

## Research Review and Advisory Committee for the Bureau of Onsite Sewage Programs

Approved Minutes of the Meeting held at the East Central Florida Regional Planning Council,  
Maitland, FL

November 30, 2006

Approved by RRAC on February 6, 2007

### In attendance:

- **Committee Membership and Alternates:** David C. Carter (member, Home Building Industry); John Glenn (member, Environmental Interest Group); John Heber (member, Citizen); Stan Keely (alternate, Professional Engineer); Adam Parmer (member, Restaurant Industry) (partial attendance via speakerphone) Jim Rashley (alternate, DOH-Environmental Health); John Schert (member, State University System); and Clay Tappan (member, Professional Engineer)

**Not represented:** Real Estate Profession; Septic Industry

**Visitors:** Rick Baird (Orange County Environmental Protection); George Bartuska (Ayres Associates); Quentin (Bob) Beitel (President Markham Woods Association, Inc.); Dominic Buhot (Greens Environmental Services); John Byrd (Aide to Orange County Commissioner Brummer); Ni-Bin Chang (University of Central Florida); Doug Everson (Plastic Tubing Inc.); John Higgins (Markham Woods Association); Justin Hubbard (Infiltrator Systems Inc.); Tony Matthews (Seminole County); Russ Melling (DOH-Lake County Environmental Health Department); Patti Sanzone (Florida Department of Environmental Protection); Daniel Smith (Applied Environmental Technology Inc.); Gary Smith (DOH-Orange County Environmental Health Department); Carl Thompson (Infiltrator Systems Inc.); Pam Tucker (ORRA-FAR); Marty Wanielista (University of Central Florida); Jennifer Wilson (Office of Representative Alan Hays)

**Department of Health (DOH), Bureau of Onsite Sewage Programs:** Paul Booher; Bart Harriss; Eberhard Roeder; Elke Ursin

1. **Introductions:** Seven out of nine groups were present, representing a quorum. Chairman David Carter calls the meeting to order at 9:56 am.
2. **Review Minutes of Meeting 10/24/2006:**
  - a. **Motion was made by John Schert and seconded by Clay Tappan for the RRAC to approve the 10/24/2006 meeting minutes. There was a discussion regarding a clarification on the minutes from John Byrd. The minutes are to be adjusted to read: "John Byrd states that the legislature will be the one to define significant and that needs to be determined before Task 4 can take place. [Clarification of previous statement made at RRAC meeting on November 30, 2006: the report shall determine whether the nitrogen contribution from onsite systems is significant]." All are in favor with none opposed as amended, and the motion passed.**

### 3. Florida Passive Nitrogen Removal Study

- a. Conflict of Interest forms were completed by all RRAC members/alternates present. Prior to the meeting each participant submitted an Evaluation Team Acknowledgement Form which became part of the project file. Only those that completed this form were allowed to participate in the scoring and ranking of the proposals.
- b. During each presentation, the other candidate leaves the room.
- c. Evaluation of oral presentations

- i. **Summary of Applied Environmental Technology, Inc. Oral Presentation:**

- Daniel Smith gives the presentation and if selected he will be the project manager. The project team will consist of himself (Applied Environmental Technology, Inc.), Richard Otis (Otis Environmental Consultants, LLC), and Mark Flint (Watermark Engineering Group, Inc.) He gives an overview of some of the goals and questions they will address and answer if selected. He stresses that none of the people on the team have any connections with any of the vendors and are neutral and objective. A proposed project timeline and task assignment list is shown. He gives a description of how the literature review will be performed, and what sources they will use to gather the information. Examples of nitrification and denitrification media were given. He addresses the long-term fate of the nitrogen and how some is converted to a gas that is released into the atmosphere and the remaining nitrogen left in some media types will begin to biodegrade. This will be one of the items they will look into during the project. Some of the assessment tools are discussed such as the influent flow and concentration, aerobic effluent flow and concentration, denitrification of the effluent flow and concentration, the mass removal rates, the mass balances, and the effectiveness. Eberhard Roeder suggests defining passive as no more than one pump, but also including some comparison on pretreatment options. Paul Booher suggests not restricting to one pump and there is a discussion on this. The goal is to find something that is inexpensive and works. Clay Tappan asks what they will bring to this project to streamline the process to stay within the budget. Daniel Smith states that the three people working on the project have prior knowledge of septic systems and have nitrogen removal experience with previous projects. He also has existing columns that can be adapted for testing. There is a discussion regarding where he will start (septic tank effluent, after ATU), and how complicated of a system could the end system be. Daniel Smith proposes to do

the literature review first and then make a recommendation for the laboratory experiments.

ii. **Summary of University of Central Florida Oral Presentation:**

- Marty Wanielista with the University of Central Florida presents. Both Marty Wanielista and Ni-Bin Chang will be the project managers with several students that would assist with the project. They are working in the Water Research Center which has several research projects relating to stormwater and onsite systems. Several passive nitrogen removal means are discussed such as tire crumb, oyster beds, air induction, and low dosing. He gives a description of how the literature review will be performed, and what sources they will use to gather the information. He discusses the lab experiment portion of the project, the goals, the possible media types, and the column test configuration. He also discusses the long-term fate and will look at the disposal options for various media types. They will be able to do 5 different column setups, but is working with EPA for a similar type project that may allow for expansion of the lab study. The effluent will come from onsite septic systems and shipped to the test site by truck. He gives an overview for how the cost assessment will be done, and the recommendations and management planning that will come when the study is completed. Paul Booher asks a question regarding the tire crumb process and whether the nitrogen reduction comes from the rubber or the steel. Marty Wanielista explains that the tires contain carbon and the steel is removed. There is further discussion on tire chip vs. tire crumb. Marty Wanielista describes a project they worked on to design a pervious concrete shoulder off of I-4 and that they were able to design the thickness and/or quantity of the tire crumb to last 20-years. They have not done this for a biological or bacteriological situation, only under a chemical sorption situation. Elke Ursin clarifies that the written proposal states the wastewater source would be the Iron Bridge Wastewater Treatment Plant but that this has been revised to use septic tank effluent. The wastewater will consist of the entire contents of the septic tank (including the fats/oils/greases from the top and the solids from the bottom), but the effluent used in their columns will be at a concentration similar to that reported in the literature. They will measure the concentrations that will come into and out of the columns.

- iii. Prior to the meeting a list of identical questions were sent to each candidate. Both candidates have answered these questions during their presentations. Eberhard Roeder asks to both candidates regarding the lab work and whether there will be intellectual property issues. Both candidates state that there will be none.

- iv. RRAC members/alternates filled out the evaluation forms for the oral presentation, giving the proposal a final ranking and score. The lowest ranking (the proposal that has a ranking closest to 1) was selected to move forward with negotiations.

<b>Proposal</b>	<b>Points</b>	<b>Ranking</b>
Applied Environmental Technology Inc.	17.8	1.4
University of Central Florida	17.6	1.6

- d. **Motion by Clay Tappan and seconded by John Heber to move forward with Applied Environmental Technology Inc. There was no discussion, all were in favor, none opposed, and the motion passed.** In summary the RRAC determined that the proposal made by Applied Environmental Technology Inc. will move forward to the negotiation stage, which will be conducted by Department staff. Department staff will develop negotiation points based on discussions held during the RRAC meeting.

**4. Wekiva Onsite Nitrogen Contribution Study:**

- a. Discussion on latest developments, summary of progress as of the last RRAC meeting and decisions made during the current meeting:
  - i. **Task 1** (Field Work, \$200,000): At the last RRAC meeting Ellis & Associates was awarded the project. Staff has routed the DMS agreement through and is waiting on one signature from DMS prior to the agreement being approved. The scope (Attachment I), to be used in the proposal from Ellis & Associates to DMS, was written by staff and forwarded to DMS and Ellis & Associates for review. Once DMS has signed off, and the proposal from Ellis & Associates has been approved by all parties, then work can commence. There was a face-to-face meeting at DOH with DMS and Mark Mechling with Ellis & Associates to discuss the scope and details of the contract.
  - ii. **Task 2** (Categorization and quantification of nitrogen loading, \$25,000): Otis Environmental Consultants was selected as the provider for this task at the last RRAC meeting. The PO has been routed and approved; staff has had a phone conference with Richard Otis to discuss process forward. The deadline for the draft loading rates was approved by RRAC to be extended to 1/22/07.
  - iii. **Task 3** (Assessment of the contribution of OWTS relative to other sources, \$25,000): Linda J. Young, Department of Statistics, University of Florida was selected as the provider at the last RRAC meeting. The PO has been routed and approved; staff has had e-mail discussions regarding the scope and budget. The scope to consist of the services needed listed in the RFQ and the budget to be the cost proposal submitted with Linda Young's response to the RFQ. GIS information

has been sent to Linda Young and a telephone conference has been tentatively scheduled for the following week.

- iv. **Task 4** (Cost-effective solutions): At the last meeting, RRAC decided to let staff work on this in-house and report back on progress. Eberhard Roeder presented his approach during this meeting. Many issues were discussed. Cost effectiveness is the cost to remove the last pound of N for a given strategy. Determining cost effectiveness provides no “yes or no” answer but allows a comparison between strategies. He discussed how there appear to be discrete packages such as a recirculating ATU, an optimized recirculating N-treatment, adding carbon, etc. Some of these costs can be found, while others will be more difficult as either the technology is not there yet, or there are none permitted in the State of Florida. One approach would be to look at the cost differences between, for example, a recirculating ATU and a system with added carbon, to see cost effectiveness. Treatment results and costs are variable from one site to another. Eberhard Roeder also discusses how important timelines are to the process as it relates to the effectiveness in removal strategies for nitrogen as well as interest rate costs. Several graphs were shown demonstrating the yearly costs and pounds of nitrogen removed over time. He discussed the need for a cost-sharing mechanism such as a utility, pollution trading, a grant program, etc, so that a lot-owner who installs a more cost-effective N-reduction system does not end up paying for the savings of those lot-owners who do not have to install a less cost-effective N-reduction system. David Carter stresses the importance of the variability between field and laboratory results. He asks whether the existing maintenance structure is adequate to support any area-wide requirements for advanced systems. Paul Booher indicates that there needs to be a strong maintenance program in place with financial support. There is a discussion on the importance of having a clear management concept for onsite systems and having a permanent revenue stream to support managed systems. Staff is to continue with this review and look at the more easily available information first and work on the more technical information and cost assessments later.
- v. **Subdivision site selection:**
- Criteria has been further refined at last RRAC meeting
  - Sites have been reduced to 4 at this point with others being added as they are located:
    1. Mandarin (Seminole County)
    2. Rivercrest (Seminole County)
    3. Wingfield (Seminole County)
    4. Sweetwater West (Orange County)
  - Plan is to start with one site ASAP and then follow-up with the other two as they are refined.

- It is difficult to find a suitable site in Lake County, but every effort will be made to find a suitable site.
- Ellis and Associates to assist with locating the specific location with help from DOH (including County Health Depts.) and the subcontractor

## 5. Discussion on Disassembling Lysimeter Stations

- a. The station is at USF and was built about 10-years ago. Nothing has happened with this station recently, and there are currently no plans to use it. A decision should be made on whether to disassemble the lysimeter stations or not. It would be DOH's responsibility to pay to have this removed. There was some urgency in the past to remove the facility, but currently it is unknown on whether this is a priority. Doug Everson suggests possibly advertising so other states can use the facility. Staff will check with USF to see what they want, and will report back at the next RRAC meeting.

## 6. Updates on other projects

### a. Ongoing projects

- i. Florida Alternative Disposal Systems Assessment
  - Attachment I draft in review with DOH then it will be forwarded to Kevin Sherman for his review. Once everyone is on the same page then the contract can be routed for signatures. Main negotiation points were to look at three alternative drainfield products in addition to aggregate in gravity and low pressure dose configurations. There will be a lysimeter installed that will receive no effluent to record background levels. There will be an option for DOH to continue the study up to three years after the contract is complete.
- ii. Monroe County PBTS Performance Assessment
  - An ITB was sent out for the lab work and there were two bids submitted. One has been selected and the next step is to get the contract in place. The sampling plan is close to completion.
- iii. Manatee Springs, Phase II
  - Quarterly reporting to EPA done.
- iv. Remote Sensing of Optical Brighteners Study
  - The field sampling has been largely completed and there was a conference call with EPA, DEP, and DOH to discuss the process forward. An initial review shows variability of the optical responses, which may require further investigation before sensing remotely. There will be a refinement of the scope and an amendment of the DOH contract and EPA work plan. Quarter reporting to EPA completed.
- v. Taylor County Source Tracking Study

- Most of the sampling has been completed, and quarterly reports were submitted to EPA.
- vi. Glass Cullet Assessment
  - The packing and the loading of the columns has been completed and the report is to be completed in the next month. The preliminary results were shown in graphical form showing that Coliphage and E. coli moved very quickly through the glass cullet and not so quickly through the fill sand and the control. Eberhard Roeder asks the RRAC whether this is enough information or whether another test should be done with a different loading rate to see if there are any differences. The cost would be approximately \$5,000 to run the tests again. The consensus was not to do an additional study.
- vii. Columbia County Well Testing Project
  - The county health department has received the results from the first round of samples.
- b. Projects coming up
  - i. 319 Project on Performance and Management of Advanced Onsite Systems
    - A draft application was sent to DEP for review and comment. This will be a general assessment on how the systems work and how they should be managed. The keys study would be DOH's match. A random sample of systems throughout the state will be surveyed to find out what is working and what is not working.

## 7. Public Comment

- a. There was a discussion on an article written by Eberhard Roeder with the Florida Department of Health published in the Florida Onsite Wastewater Association Journal. Several audience members expressed a concern regarding a statement made in the article regarding a rough estimate of the available numbers estimating that onsite systems contribute approximately 40% of the nitrogen discharged as wastewater in the study area. There was a question on where these numbers came from and Eberhard Roeder explained that this was discussed at the last RRAC meeting and that the numbers mainly came from DEP and DOH. John Higgins states that the objectivity of staff is questioned. Bart Harriss states that this amount is going into the study area, not the groundwater. Eberhard Roeder states that this is the first performance boundary, the second performance boundary is what makes it to the groundwater, and the third performance boundary is what makes it to the springs. David Carter states that he is patiently waiting for the results of the study. Stan Keely states that what comes out of the RRAC committee is fair and balanced. John Higgins mentions a presentation to the Markham Woods Homeowners Association made by Bart Harriss where Mr. Harriss stated

publicly that staff is objective and withholding any judgment until the study has been completed. Paul Booher with the Florida Department of Health indicated that this would be discussed with Gerald Briggs and Eberhard Roeder to determine what course of action will be taken. John Heber states that this could be clarified to say that the numbers that Eberhard Roeder references is input to the region, but not necessarily direct discharge to the groundwater or spring. Clay Tappan states that it can be difficult to communicate highly technical information to the public vernacular, and that the reports have to be clear and understandable to all audiences.

**8. Closing Comments, Next Meeting, and Adjournment**

- a. A tentative date of February 6 or 8, 2007 was set, with the meeting beginning at 9:30 at a location to be determined that is within the Wekiva Study Area.