IALEHA Annual Wastewater Treatment Conference Panel Discussion

January 11-12, 2018, Bloomington-Normal, IL

ISCA was invited by IALEHA to participate in a panel discussion about concerns interpreting the IL State Sewage Code at their annual Wastewater Conference. This was in response to then President Brad Cates' Winter 2017 ISCA Newsletter Message and a follow-up call between Brad and Wil Hayes, Peoria Co. Environmental Health Administrator. The panel included an installer, Rick Maguire of Maguire Backhoe Inc., Chad Moorman, IDPH, and Don Fehrenbacher, ISCA with Donnie Simmons, Env. Health Admin., Livingston Co moderating. In preparation an ISCA Ad hoc Committee developed a list of concerns (the members were Brad Cate, Jerry Berning, Doug Gaines, Bill Teater and Don F.) Other classifiers were contacted to share their viewpoints, but they declined. The ISCA Council discussed and approved the Committee's list and these were provided to Donnie Simmons who developed the questions that were posed to the panelists.

Question 1: Does the State Code Require a Soil Investigation on Every Wastewater System installed in Illinois based on Section 905.190 b)3)? *Chad Moorman was asked first and he stated that some systems such as surface discharging ones should not necessarily require a soil investigation. Don F. stated that even these systems require a soil investigation to make the technological feasibility evaluation before a Waters of the U.S. (WOUS) determination as per the IL-NPDES IL-G62 general permit. Rick Maguire stated that he uses soil evaluations on all the systems he installs.*

Follow-Up to Question 1: What is the Correct Procedure for IL-NPDES General Permits and WOUS Determinations? *Donnie S. stated that some counties in southern IL were installing surface discharging systems based on the homeowner's determination that the discharge would not reach the WOUS. Chad stated that it is the responsibility of USEPA to set standards for the NPDES program. Don F. reiterated that a soil evaluation should be used for the technical feasibility part and that adjacent wetlands and ephemeral streams could be part of the WOUS based on Supreme Court Decisions and not just Traditional Navigable Waters. Rick Maguire did not have experience with NPDES permits. Chad stated that a berm could be used to contain a surface discharge and avoid the WOUS. [Later in the program, Jason Hewitt, NPDES Coordinator for USEPA, Region 5 Chicago, agreed for the most part with Don F.'s comments and defined ephemeral streams as ones that flow at least 3 months during the year. He also stated that USEPA hoped to turn over enforcement of NPDES in Illinois to IEPA.]*

Question 2: What is the proper Sampling Distance between Borings for a Soil Evaluation? *Don F. quoted the Code, "...borings shall be **at least** 50 feet apart..." as **a minimum not a maximum**. He said that a soil evaluation should represent the proposed absorption area and that if only one soil boring was in that area or close to the perimeter of it, that the other borings could be much further apart based on the classifier's judgment and to identify the best area. Also He stated that one boring should represent the lowest elevation of the proposed absorption area. He went on to state that the relationship between the classifier and installer should be a close one based on working together when possible and mutual sharing of knowledge. Rick Maguire said that he works primarily with one classifier and that they have an excellent professional relationship. The audience asked if there was a maximum distance and Don F. said that it was difficult to set a maximum as a hard and fast rule. Rick Maguire shared that he has pulled as many as 6 borings for the classifier he works with and this can be useful for a large site or a site that is altered after the investigation. He gave an example of a house built with a walk-out basement and that the construction ruined the proposed absorption area, but that additional borings some distance*

away identified an alternative suitable area. Don F. stated that additional borings should be part of a good soil investigation when a proposed absorption area is poorly suited or on a large lot.

Question 3: What is the Correct Separation Distance to a Limiting Layer and what is the Correct Depth below the System Trench to Determine the Loading Rate? *Donnie S. stated the distinction between the vertical separation distances of 2 feet or 3 feet (for soils with loading rates >.62 gal/day/ft^2) to a seasonal high water table and the depth to evaluate loading rates being 2 feet below the trench bottom. Don F. said Donnie S. was correct and restated what he said and clarified that a limiting layer is a seasonal high water table or a layer with essentially a 0.0 loading rate. The additional 1 foot of separation to limiting layer on the more permeable soils was designed to insure proper treatment of the effluent in these soils. The 2 feet depth below the trench for determining the design loading rate was considered adequate for all soils. [NOTE: The code states that the zone to determine loading rate starts at the top of the gravel or gravelless or chamber system to 2 feet below the bottom of the trench, Section 905.60a)1).] Rick and Chad agreed with the discussion.*

Question 4: How should Soil Fill be Evaluated for Wastewater System Design? *Don F. responded that a soil classifier evaluates fill soil that preexisted on a site much as they do a natural soil. He also stated that classifiers are generally conservative when evaluating fill material due to possible compaction or high variability. He said that he has encountered fill that was so carefully placed that it could not be distinguished from a natural soil until further sampling found the natural soil below, but that this was not a common situation. An audience member asked about determining seasonal high water table in fill and Don F. agreed it was difficult unless there was an undisturbed adjacent area or the fill could be penetrated to the natural soil below. Another audience member asked about a restored strip mine area with 20 feet or more fill and Don F. said that makes it more difficult to evaluate seasonal high water table by the soil borings alone. Someone then asked if a percolation test was required for fill as stated in Section 905.60a)9)c)v). Don F. said that Section 905.60 applies to the use of fill to construct an absorption system as it is titled "...Construction Requirements" and that a preexisting fill situation is covered in 905.55 "...Design Requirements." No one responded but an audience member asked if he was against additional testing. Don F. said that in general he was not opposed to additional testing but that the Code does make a distinction between design requirements and construction requirements. Another audience member stated that Indiana had criteria for evaluating fill. Don F. responded that our Illinois table has categories for Structureless or Massive soils. Another person in the audience stated that each discontinuity in fill could create permeability issues and that the colors are relict and Don F. agreed with them. Chad was asked the meaning of the statement: "The use of fill for installing subsurface seepage systems shall not be approved for lots platted after March 15, 1996." 905.60a)8)B) Chad responded that it means just what is says. A classifier in the audience asked about a gravel pit restored many years in the past but platted after the 1996 cutoff date and if that date referred to when the fill was placed and Chad answered, no it referred to the date the lot was platted. Chad said that a cluster system on an adjacent nonfilled area could be used in that situation. Don F. repeated for the third time that these requirements are in the section titled "Construction Requirements" not "Design Requirements."*

Overall the discussion was a good start to clarify some of the soil technical parts of the Illinois Sewage Code. ISCA looks forward to further coordination and training opportunities with IALEHA and other pertinent organizations and agencies.

Submitted by Don Fehrenbacher