

Exhibit D

DEPARTMENT OF HEALTH, ENVIRONMENTAL HEALTH PROTECTION

SUBJECT: Onsite Wastewater Systems

DESCRIPTION: The Environmental Health Protection Section conducts a biennial revision to the Onsite Wastewater Systems Rules and Regulations to continue improving system designs and to remain abreast of the latest wastewater system technology. The 2014 changes will also clarify, define, and provide consistency throughout the state.

The main changes include:

1. Section 4, Sewer Connection update wording to reflect recent Act changes.
2. Section 8, Clarifying design and soil criteria requirements for interceptor drains.
3. Section 9, Adding design criteria for solids handling pump basins and requiring service risers for distribution boxes, adding dose requirements for distribution boxes with 7 or more lines.
4. Section 11, Updating septic tank design criteria and terminology.

PUBLIC COMMENT: A public hearing was held July 10, 2014. The public comment period expired July 10, 2014. The Department received the following public comments:

David Meints

COMMENT: I have been a designated representative for 19 years, an installer for 12 years, and a service provider for 6 years. I am in the business full time. I see all stages of the onsite waste water life cycle. New construction, repair, and maintenance. I spend a significant amount of time solving problems with failing systems. Some of the failures come from homeowner neglect, or possible lack of education on the homeowner, but some of the failures come from poor construction and / or inadequate product / material.

It is my comment then that any effort to improve the quality of the product / material we use today in the onsite business, or any clarification we can provide to design better onsite waste water systems is greatly needed appreciated.

I have reviewed the changes proposed and have no issues.

RESPONSE: We appreciate the comment.

COMMENT: I would like to see an effort in the future to require more continuing education of designers, installers, and service providers similar to the way ADEQ handles license renewals for their Class I, II, III, and IV Operators.

RESPONSE: Every attempt is made to provide training; however, we are extremely limited on extra training due to budgetary concerns.

Tim Tyler

COMMENT: 2.56 Standard Systems. I've always thought that Easy Flow 1201 is being utilized and it is half the system size, when the Health Department allows it to be used instead of mandating that it be Easy Flow 1202, and you allow them to put in 1201 and it's only one foot wide, not two foot wide. So anyway, that needs to be done away with in my opinion.

RESPONSE: The Department along with the University of Arkansas, Individual Sewage Disposal Advisory Committee, and private industry have been studying this concern. When the data is collected and analyzed the Department will be able to evaluate the products in a side by side comparison and will recommend changes as indicated.

COMMENT: Section 4.1 about the 300 feet from the public sewer. I think it really needs to be put in there that if public sewer is within 300 feet of a residence that is unfeasible to be able to hook to, whether it has to have an expensive bore across a highway or a under a creek or something that does not make it feasible to do. There needs to be wording put in there “if feasible to do”.

RESPONSE: The intent here was to add clarification as directed by new legislation, Act 1470 of 2013.

COMMENT: Section 8.4.7.1. Interceptor Drains. This also goes along with cap and fills, curtain drains and so forth. If there is a, nobody has been able to tell me where they came up with 3 percent. It’s just a number that was pulled out of a hat and if you have a place to drain a piece of ground somehow or other in a lower ditch. There needs to be something more scientific than just coming up with 3 percent. I have seen lots of systems work on interceptor drains work on less than 3 percent. If you’ve got a place to drain it out to.

RESPONSE: The 3 percent slope is a guide. To get much less than that over a field for gravity flow would be difficult. However, it is clear in some cases that groundwater can be pumped out of around a system. You are correct in your assessment that in the end we need a suitable site to discharge the drain.

COMMENT: Section 9.8.1. I think that putting a filter vault on all reduced orifice manifolds have an effluent filter I think that’s great and I think it also needs to be if you have a filtered pump vault that should take the place of an outlet filter. If you do a filter, it really needs a maintenance contract.

RESPONSE: One filter is sufficient to meet this requirement. The intent is to protect the reduced orifices from clogging as much as possible. I would encourage designated representatives and installers to educate the homeowner as much as possible on the systems utilized.

COMMENT: Under 9.8.11. Designs utilizing seven or more distribution outlets. I think 8 is a good number. I think if you done anything you need to shorten the lines to make it to where if you do that many lines do shorter lines and not 100 foot maximum. Because Petersons makes different standard concrete distribution box out there that utilizes 8 outlets. It’s very seldom used, but there is a distribution box that is manufactured with 8 outlets.

RESPONSE: Studies have demonstrated the inability of distribution boxes to distribute effluent equally. This effect increases with the number of outlets. When many lines are utilized, there are devices that can be utilized to distribute effluent equally that are non-mechanical, as well as, pump systems.

COMMENT: There may be a contradiction in 9.8.13.4. the pump basin must have a gas-tight removable lid and under 9.8.13.5. the basin must be properly vented. There is a little bit of a contradiction.

RESPONSE: This is correct the properly vented means it is vented through the house plumbing vent system.

COMMENT: On septic tanks, the minimum capacity which is in Appendix C , I think garbage grinders should be outlawed in septic systems. I think that is a killer of a septic system and the Health Department the longer they keep dancing around with garbage grinders being allowed on septic systems - they just need to draw a line in the sand and say “no more”.

RESPONSE: The department discourages the use of garbage grinders on onsite wastewater systems.

COMMENT: On the septic tank, 11.4. Just like I stated before, I think that really “gravel” needs to be taken out and “septic tank be put on a firm level surface”, in the hole. Very, very few, if any installers, put gravel in a hole to bed a septic tank when they have got good dirt, chips, or something that’s there already. A reputable septic tank installer is not going to put a septic tank on a big chunk of rock.

RESPONSE: The department understands this concern we will be asking the manufacturers to provide instructions on the setting of their tanks.

COMMENT: On the thickness of the septic tank walls, I think if you do a proper vacuum test and the vacuum test passes the smaller thickness walls should not matter.

RESPONSE: This is our position on existing forms.

COMMENT: I think the Onsite Wastewater Monitoring Program, under 13.6, you’ve got that the monitoring license may be revoked or suspended whenever any of the provisions of these rules and regulations are violated, I think there needs to be something put in there about who makes that decision. And not necessarily on my part, but I can see it on any monitoring license personnel. If they’ve done something that they didn’t know they have done wrong you shouldn’t just jerk their license because of it. They need to have a hearing or due process. It needs to have something in there that says “due process or hearing” and actually “who” is going to make that decision.

RESPONSE: The Department is required to follow administrative procedures before removing or revoking any license that Environmental Health Protection is responsible.

COMMENT: I think under the EHP-19 criteria, on number 8 the date, any design on land or subdivision that was prior to 1977, if it’s a new house, new construction, not a repair, they need to use the current water usage numbers instead of the old water usage numbers and to go along.

RESPONSE: We use current loading rates from the current regulations for all systems.

COMMENT: Because I'm a land surveyor, I don't have a problem with this but it has never been done under EHP-criteria, number 14, bottom of page nine, brief legal description of the proposed system should be taken down to a minimum of 2 ½ acres, that very, very, very rarely ever happens and that most DRs don't know how to do that and that 40 acres is usually two call SE to SE to whatever Section, Township and Range is pretty good to go to, especially because you put GPS Coordinates up there on another line item. GPS Coordinates are going to get you closer than that 2 ½-acre call. To do a 2 ½-acre call you really have to get down to the nitty-gritty. I don't have a problem with that but most DRs do. And it is a lot of thinking to do that.

RESPONSE: We are not asking Designated Representatives to make these calls. A legal description of the property should be presented to the designated representative on any design containing this information.

COMMENT: On number 19, the signature of the applicant, I think the signature of the applicant is good but I think they also need a space there to print name, because a lot of people, you can't read their name. The Health Department makes the DR type and print their name and sign their name. And that goes along with number 21 where the Environmental Health Specialist, they need to print their name as well.

RESPONSE: We will address this issue by ensuring the Environmental Health Specialist includes their ID number.

COMMENT: Now on the back page, page 12, Designated Representatives Responsibilities, I think that flagging the house, you get so many flags out there it's just like a pin farm. You cannot understand what's going on and the more flags you put there, people have lots of questions anyway. I think that the stub-out is a critical place to put on the septic system. The center line of the tank, so forth, I think those are all great. Now when you go to putting the house structure location being flag are you talking about, which I don't think you are, the four main corners the four rough corners, I don't think that is needed. I think the stub-out is fine. Most of the time the homeowner is going to stake out their own house so you can utilize it, but if they don't, and you've got a big enough lot the main thing is the stub-out. I don't think the house location being flagged is that critical.

RESPONSE: Flagging the four corners of the home is a reference point for the ADH, builder, installer, and homeowner to understand the relevant locations of the system. It is not necessary to flag every corner of a home with multiple corners. However, the drawing should be detailed enough to provide the point of beginning and any additional stub-outs planned.

COMMENT: Just a few more observations that I would like to talk about: water design volumes are outdated, I think current water saving fixtures that manufacturers have designed on new houses are a lot more, they use a lot less water than what they did a few years ago. You've got shower heads down to about five gallons when you take a shower. 1.4 to 1.5 gallons in a flush, they are not using that much water as they used to. Now under old designs or repairs, I think you can use the same water usage that we are using now for designs. But under new houses and current, need to look at newer, updated water volumes to design with.

RESPONSE: Onsite systems must have a buffer rate due to only having one method to disperse effluent. We are currently studying existing system and the loading rates and failure rates of those systems.

COMMENT: Septic systems are costing way too much. Right now septic system cost you anywhere from \$3,500 to \$20,000 depending on what the design is. Anything above \$10,000 or \$7,500 is just way too much for most people. I think, and I have been a big advocate, as a state we need to be looking at a grey water policy are utilized in all other states and are used for conserving water and we are trying to get rid of water and Act 402 encourages different ways of getting rid of water. And we need to be looking at a grey water policy subsurface to be able to get rid of our grey water in other ways to be done. And there has never been in the history of the United States a documented case of anybody every getting sick on grey water. Other than that, that's all I've got. Thank you.

RESPONSE: It is apparent that utilization of properties and soils, which would have previously never been considered for home sites, is an ongoing problem. The use of treatment systems and expensive technologies available is often the only way to develop those properties. The Department has no control over costs. The Department makes every effort to educate on new technologies regardless of cost. The Department does have the responsibility to protect public health and must consider this aspect as well. Studies have clearly shown grey water effluent contains the same constituents as black water and must be treated appropriately.

Peggy and Don Daley

COMMENT: Change to Soil Criteria Section 8.5 – changing ‘subsurface’ to ‘standard’ restricts the use of drip dispersal. These proposed changes define drip dispersal systems as ‘alternate’, therefore drip dispersal will only be able to be used in poor soil conditions. Drip dispersal will not be able to be used if the land area is compromised (i.e. fill, excavated, etc.) thus reduced area available or the lot is small.

RESPONSE: Drip dispersal is not considered an alternate system, but a method to distribute effluent. Drip dispersal is a unique design and effluent delivery system and has loading rates that consider this in the Rules and Regulations for Drip Dispersal.

COMMENT: Change to Soil Criteria Section 8.6 – changing ‘subsurface’ to ‘standard’ restricts the use of drip dispersal. These proposed changes define drip dispersal systems as ‘alternate’, therefore drip dispersal will only be able to be used in poor soil conditions. Drip dispersal will not be able to be used if the land area is compromised (i.e. fill, excavated, etc.) thus reduced area available. I do not believe that the availability of drip dispersal should be this restrictive.

RESPONSE: Drip dispersal is not considered an alternate system, but a method to distribute effluent. Drip dispersal is a unique design and effluent delivery system and has loading rates that consider this in the Rules and Regulations for Drip Dispersal.

Larry Duncan

COMMENT: Section 11.4. About the gravel included in the firm level bottom of the tank hole and the septic tank the wall thicknesses of the septic tanks and currently the rule says 2 ½ inches and revised to 3 inches.

RESPONSE: We will continue to approve tanks that can meet water tightness and or the required vacuum testing. This is intended to clarify that the department will assist, set parameters, and approve a tank design prior to the purchase of very expensive forms.

Jay Church

COMMENT: 8.4.7. Lowering Seasonal Water Tables Does the 30% clay apply to the entire 48" pit depth or just to the 18" brief?

RESPONSE: Interceptor drains are installed at or above the depth optimal for each situation. It is our opinion that drains installed in clay greater than 30 % are ineffective.

COMMENT: 8.4.7.1. Interceptor Drains. Interceptor drains can be utilized to lower the brief seasonal water table to a maximum depth of 18 inches in soils less than 30% clay on sites with 3% or more slope. No reduction is allowed in the moderate seasonal water table.

If the 30% applies to the entire depth of the pit then you have effectively eliminated the use of interceptor drains completely in north central Arkansas. The presence of clay is the main factor impeding ground water from moving downward and thus creating shallow briefs. If a pit has no moderate clay layer then there usually is no shallow brief.

Interceptor drains have been installed and in use for many years. So unless there is conclusive evidence of them not working how do you justify their inability to work in clay soils?

RESPONSE: Addition to above. Interceptor drains can only divert perched ground water from moving laterally in the soil. Interceptor drains do not increase the ability of ground water moving down in the soil.

COMMENT: 35% clay ribbons 1" without breaking, how far does 30% clay ribbon?

RESPONSE: The number (30%) and the ability to texture soil is difficult thus we lowered the clay percentage to give a greater margin of error from the 35% clay (low hydraulic conductivity percentage).

Don Sanders

COMMENT: My first comment is concerning Page 3, Section 9.6.3 Serial distribution systems shall not be approved for dosing situations. Why would this be a problem for Hillside drop boxes?

RESPONSE: The hillside boxes have a baffling effect and should not create a problem for dosing.

COMMENT: My next question is regarding Page 3, Section 9.8.11. Why the need for mechanical dose for more than six outlets? Why would a system that utilizes an eight hole d-box with 25 or 30 foot field lines, which I have designed for in the past , be more critical than a system where I have designed six lines a 100 feet? Anyway, I just don't see the correlation there. And how will this impact hillside drop boxes, if you have more than three boxes in the system design?

RESPONSE: Studies demonstrated the inability of distribution boxes to effectively distribute effluent. That effect increases with the number of outlets. There are devices that can be used that are non-mechanical as well as pump systems that can better distribute the effluent when many lines are utilized.

COMMENT: Page 9, item 8. In regard to subdivision recorded prior to July 1977, my question is, why would you penalize the homeowner on a system design using the higher water usage rate that was required for a 3 bedroom house at 450 gallons, under Bulletin 9, versus the current water usage of 370 for a 3 bedroom house?

RESPONSE: We use current loading rates from the current regulations for all systems. The specific situation you mentioned was likely due to the disruption of some of the available original design field and the attempt was to get all the field line in that could be installed on the lot.

COMMENT: Page 12, item 3. Why would the DR be responsible for the flagging of the house or structure being designed for when the homeowner changes that at a whim? As long as it don't impact the design field system the primary and secondary areas the house location and then the septic tank really doesn't come into play unless it does impact on the system design. Whether it is gravity or needing to be pumped or something like that, but at that point that would be the only time and that is also done by the homeowner. And that's all I have.

RESPONSE: Flagging of the four corners of the home is a reference for the ADH, builder, installer, and homeowner to understand the relevant locations of the system. It is not necessary to flag every corner of a home with multiple corners. However, the drawing should be detailed enough to provide the point of beginning and any additional stub-outs planned.

Isaac Linam, an attorney with the Bureau of Legislative Research, asked the following question:

QUESTION: What is the legal authority for the licensing and registering of Monitoring Personnel in Section 13? Are these the people referred to as "certified maintenance persons" in the Arkansas Code?

RESPONSE: This authority is found in Acts 2007, No. 939, which provided that a "certified maintenance person" is subject to licensing and registration requirements. These requirements are now codified in Ark. Code Ann. § 14-236-101 et seq.

The proposed effective date for the final rule is December 1, 2014.

CONTROVERSY: This is not expected to be controversial.

FINANCIAL IMPACT: There is no financial impact.

LEGAL AUTHORIZATION: Ark. Code Ann. § 20-7-109 provides that the State Board of Health may promulgate rules to protect the public health and safety.

Ark. Code Ann. § 14-236-107 grants the Department rulemaking authority regarding onsite wastewater systems "in order that the wastes from the systems will not pollute any potable water supply, or source of water used for public or domestic supply purposes, or for recreational purposes, or other waters of this state, and will not give rise to a public health hazard by being accessible to insects, rodents, or other possible carriers which may

come into contact with food or potable water, or by being accessible to human beings, and will not constitute a nuisance due to odor or unsightly appearance”.

Ark. Code Ann. § 14-236-116 provides the regimen of fees the Department may impose for installer certification, manufacturer registration, annual training requirements, and site review applications.

Ark. Code Ann. § 14-236-106 provides that the Department may assess a civil penalty not to exceed \$1,000 per violation to anyone “who violates any of the provisions of this chapter or rules, regulations, or orders issued or promulgated by the State Board of Health or who violates any condition of a license, permit, certificate, or any other type of registration issued by the board”.

This rule implements a requirement of Acts 2013, No. 1470. That Act amended § 14-235-304 to provide that a municipal board of health may not compel a property owner to build a sewer more than three hundred feet from the sewer exit point of a building to a sewer connection unless the property is subject to an Arkansas Department of Environmental Quality or prosecuting attorney enforcement order.