



# BERRIEN COUNTY HEALTH DEPARTMENT

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## BERRIEN COUNTY SEWAGE APPEALS BOARD

### 6/2/21 Proposed Minutes

**Present:** Peg Kohring (Berrien County Board of Health), Dr. Gleiber (Great Lakes Scientific), Matt Derby (on behalf of Berrien County Corporate Counsel), Ezra Scott (Berrien County Commissioner), Nick Margaritis (Manager of Environmental Health, BCHD), Drew Dean (EH, BCHD), Brian Murphy (EH Supervisor), Chris Nagy (Registered Sanitarian, EH), Andrew Fleming (owner of 775 Browntown Rd.), Daryl Veldman (Veldman Engineering on behalf of Josh Wilson (Builder for 775 Browntown), Talia Greiger (neighboring property owner), Mr. Dillon Barnes & Mrs. Angelete Barnes (owners of Hillandale Rd. property), Meeks Contracting Services LLC (on behalf of Mr. & Mrs. Barnes), Mr. John Jackson IV ( 8410 Stickles Rd. property owner), Ryan Rapp (Licensed Installer, R-One Inc., representing Mr. Jackson)

**10:31** Meeting called to order by Peg Kohring

**Approval of Agenda:** Dr. Gleiber made a motion to approve the agenda, a second was made by Matt Derby, motion passed and approved.

**Approval of 4/7/2021 Minutes:** Dr. Gleiber made a motion to approve the minutes, tabled for approval of minutes until next meeting.

**Introductions (1):** Peg Kohring (Berrien County Board of Health), Dr. Gleiber (Great Lakes Scientific), Matt Derby (on behalf of Berrien County Corporate Counsel), Nick Margaritis (Manager of Environmental Health, BCHD), Drew Dean (EH, BCHD), Brian Murphy (EH Supervisor), Chris Nagy (Registered Sanitarian, EH), Ezra Scott (Berrien County Commissioner)

**Owner/Installer Presentation:** Daryl Veldman (Veldman Engineering on behalf of Josh Wilson (Builder) and Andrew Fleming (owner)) for 775 Browntown Rd., 6.69 acres, Tax ID# 11-02-0036-0006-06-3, Baroda Twp., Section #36.

Veldman: Basis of design for 4 bedroom home with garbage disposal in kitchen. Approximated 600 gallons per day plus 150 gal for garbage disposal, total of 750 gal per day. Application rate of 0.5 for 6A stone 4ft sand bed for total of 1500 sq ft bed size, 404 gallons dosing volume. Site plan for 775 Browntown, 2000 gal septic tank, 1000 gal dosing tank. Dosing tank to pump system. Mound location to be NE of home. Multiple calls in to Nick Margaritis to ensure cooperation with local health department requirements. Specs and cross section views of drain bed provided for reference.

**Berrien County Health Department Presentation:** Chris Nagy: we made site visit in April 2021, the area was marked out. Tested that area and there was very heavy hard clay in that area so he moved and did another test in separate site, and found the same soils with seasonal water table in the upper 5 feet. After those soil borings he contacted the builder and he agreed to bring the backhoe out and dig deeper holes, the backhoe they provided only went about 10 feet down. We were able to dig about 5 locations, see the diagram provided with marked locations of each backhoe cut. Choice #1 and #2 was the area in which they would like to put the system. We dug to about 10 feet and were not able to break through the clay. We tested 3 more sites without better soils being found. Suggestion was made to bring out bigger backhoe to make deeper cuts and see what soils were deeper than 10 feet, we can explore to 20 feet maximum. A third visit was made with a bigger backhoe, starting at choice #1 and #2, we got down about 17 feet and there was a mixture of clay silty soils and we were unable to break through that to find better soils. Conclusion was that this property did not pass sewage ordinance #17 and the ability to take this to appeals was available.

Margaritis: Daryl Veldman approached us about this system, and we approached it as if there was an existing house on the property and what would we do to repair a failed septic system. They went a little above and beyond with this proposal in the sense that they aren't doing gravity bed system, but a dosed system with a pump though smaller diameter piping that very evenly distribute the effluent through the stone bed, we typically use these style for commercial type systems. Everything is agreeable to us, along with garbage disposal. We typically see range of minimum of 4:1 to maximum 7:1 slope, 4:1 which is outlined in the proposed system. Total capacity is what we are interested in, so the 2000 gal tank and 1000 dosing tank. Alarm on the dosing chamber will be on system as well.

Gleiber: where will the water flow when it rains? Daryl shows contours on site plans- not concerned with any ponding.

Talia Greiger: (Resident of 846 Browntown) If something should fail on this system, it could run across onto our property and potentially contaminate the pond. How will landscaping play into this potential to contaminate surrounding property with run off? There is old tiling on my property to enhance flow of water. Who will be taking care of property if it's not occupied full time, to hear an alarm if it goes off? Very concerned considering the property was rejected initially.

Kohring: Concerns are heard, we cannot comment on landscaping choices. Open for discussion amongst owner, builder and County.

Fleming: My nephew and I have reached out to this neighbor and were ignored. We have plans to occupy the home full time so there are no concerns there. The engineers have designed a system that goes above and beyond general specifications of the local health department. We are here to ensure that the septic system is built properly, that the home is built proper, ensuring safety for the land and neighboring lands.

Kohring: Just a reflection; a public hearing is where the land owner and neighboring land owners can speak so that is a normal part of the process. So your adjacent land owner is welcome here, whatever happened between you two is not something we will discuss today. Question about the home being occupied fully, that was addressed and clarified that you (Fleming) will be living on the property and you have someone living adjacent to the property as well.

Veldman: I can also address this question, if the alarm goes off it is because effluent is coming into the tank. If they're gone on vacation for a month in Europe, there is no effluent and the alarm will not sound. So if the alarm goes off, they will be home. And if it fails, it will go into the septic field before it ever overflows outside of the system that is designed. Being that the soils are heavy clay, if a failure were to happen it will most likely flow away from the pond because of the topography of the land.

Margaritis: Comment on Daryl's explanation of the alarm. The alarm will sound if the pump failed and there was no way to evacuate the sewage effluent out of the dosing chamber into the system, it's a high water level alarm so it is set to a certain point where if the pump fails the tanks fills up to a certain point it triggers the alarm and it notifies the homeowner that there is something wrong with the system and they can go to investigate. The alarm

will continue to go off until system issue is corrected. As far as the pond goes, Ms. Greiger your land is on the opposite side of the road, not adjacent. I believe you're at a higher elevation and your side of the yard is higher than where the system is going to be located, we don't have elevations to prove that but I do believe that is the case. The only comment I can offer is that you have a septic system of your own that is probably way closer to this pond than the neighboring property across the street. I can't comment on the tiling in your property, as we don't have any records of what farmers have done to this property in the past. In all the excavation pits we did, we never hit any tiles.

**Appeal Board Discussion:**

Scott: the pond is directly east of the neighboring home? So Talia Greiger's septic field is much closer than this new mound system will be to the pond.

**Appeal Board Decision:**

Kohring: resolution to approve 2000 gallon tank, with 1000 gallon dosing tank with pump and visual alarm for 4 bedroom home. Mound system with 4:1 to 7:1 slopes, and garbage disposal. Resolution entered by Peg Kohring and second by Commissioner Ezra Scott. All approved, motion carried.

**Introductions(2):** Mr. Dillon Barnes & Mrs. Angelete Barnes, Meeks Contracting Services LLC

**Owner/Installer Presentation:** Mr. Dillon Barnes & Mrs. Angelete Barnes for Hillandale Rd., 4 acres, Tax ID# 11-03-0036-0002-07-1, Benton Twp., Section #36

Meeks: proposed 2-1500 gallon septic tanks, a 500 gallon dosing tank with visual alarm, 20x45 raised drain bed between 4:1 to 7:1 slopes as shown in the drawing. Proposed to take out 12 inches of top soil and fill with 40 inches of sand and septic gravel fabric and topsoil.

**Berrien County Health Department Presentation:**

Nagy: April 27<sup>th</sup> 2021 I visited the property and met with Meeks and the homeowners, we did some deep excavations as I had been to the property previously and done some soil borings and I found very heavy clay soil to 5 feet with seasonal high water table was between 0-12 inches shown by mottling in the clay. Maps of the area show this to be clay loam type soil. I

explained procedure for bringing out a backhoe since previous soil borings were done on this property but no field notes were found. We did five excavation pits which resulted in blue clay to 13 feet, 18-20 feet overall depth and all pits were pretty consistent throughout each pit. Explained that the soils did not pass Sewage Ordinance #17 and he had to the right to appeal the decision and how to go about it, bringing us to today.

Margaritis: internal review, slope inconsistency 8:1 in description and 4:1 slopes in diagram which I know Mr. Meeks tried to clear up for us earlier. Typically we do expect to see at least a 1200 square feet drain bed, which changes the dimensions quite dramatically. The amount of sand is not agreeable, we require 4 foot above grade, not 2 feet as proposed. This changes the overall size of the drain bed and slopes as well.

Nagy: if we go with 7:1 on a 6 foot mound, that adds 84 feet of drain bed to slope, they have a small lot for this system however it does fit on the lot but it may not appear to maintain isolation distances, 114 x124 feet total needed. East lot line jogs a little and pushes the reserve area a little bit it does seem to fit. Neighboring wells are quite far away.

Margaritis: considerations need to be done for reserve/replacement system needs to be identified on the site plan to ensure there is adequate space. Meeks specified a septic sand, what are you referring to?

Meeks: a washed 2ns sand for the entire system, including slopes and all

Margaritis: it's an extra step that goes above what we typically do, so we have no objections to that sand being used.

Preconstruction site meeting would be required. Soil conditions will be as such there will be very little impact on compaction, we won't allow installation during weather that would impact that.

### **Appeal Board Discussion:**

Scott: how far from the lot lines, there are no dimensions on the diagram.

Meeks: 20 feet from each corner of the property line

Scott: proposal wasn't shown on any documents we have seen. So if approved, it needs to be on a document to show proper points that we have discussed.

Margaritis: typically that comes a as a proposal from the engineer or contactor. We cannot issue a permit based on these 3 evaluations, we do not assume the responsibility of designing the system. They bring a proposal to us and we evaluate it based on what we know works and offer our suggestions to the board and they can choose to resubmit plans at that time.

Kohring: would that be a part of the pre-construction meeting or would that need to be submitted prior to the board giving an approval?

Margaritis: typically we like to see what was submitted be what is approved at the meeting but it can be added to the approval after the meeting. We file all the appeals paperwork with the permit when we file it.

Scott: if we approve this system, will the paperwork be submitted and coincide with what is approved here, if it is approved?

Nagy: this is why I looked it up on beacon and played around with the dimensions to get a better mental picture to ensure it would fit, and it appears it will fit.

Margaritis: our opinion is just that, an opinion. We do not design the system for the property owners, and we cannot assume that someone will follow our opinion. It is within their rights to say that they would like proposal evaluated based on this given information regardless of what the health department says. If there was dialog before but it was not, we only have what we have offered here and now.

Scott: Would you (Mr. Barnes& Meeks) be willing to resubmit the appropriate paperwork to coincide with what is approved here today?

Barnes: we will absolutely make any modifications necessary to the board and we will resubmit those documents to the staff here at the Health Department.

Margaritis: I need to caution you to the fact that you are planning a walk out basement and how this will position and fit onto your property, not just aesthetically but the slope of the mound towards the home so there are other repercussions that will come along with changing the design to what you proposed to what we are talking about now is being taken into consideration.

Scott: I just want to make sure we are all on the same page as the initial design proposed to us is not the same as what we would be approval.

**Appeal Board Decision:**

Kohring: motion to approve 2- 1500 gallon tanks, 500 gallon dosing tank with alarm for a 4 bedroom home with no garbage grinder in kitchen. Slope size 7:1 and 1200 square feet drain bed. The owner installer will resubmit a plan for mound system and reserve area as a condition of the permit which needs to meet all isolation distances. Scott seconds motion, all approved.

**Introductions (3):** Mr. John Jackson IV, Ryan (Licensed Installer)

**Owner/Installer Presentation:** John Jackson IV for 8410 Stickles Rd., 22.76 acres, Tax ID# 11-20-0017-0001-06-3, Three Oaks Twp., Section #32. Ryan Rapp, R-One Inc. - registered installer.

Jackson: 2 bedroom 3 bath house, Looking to install 1000 gallon septic tank with a 500 gallon dosing tank, 900 square feet total mound area which can be configured in 12x75 or 20x45. Two proposed systems, one system is middle feed system 12x75 with 4 laterals on each side 3 feet on center and the other is 20x45 with 7 laterals, 3 feet on center. Proposal says finished bed height at 4 feet above grade, but I propose now to take out 12 inches and bring in 5 feet of sand so we will begin the bed height at 4 feet above grade which is county recommendation. We will bring in LS stone 6 inches with 4 inch pipe and another 2 inches of stone, then 6-12 inches of top soil so finished bed height will be about 6 feet above grade. Which I know will change dimensions a bit but we have the room for that. Option 1 is where we would like to see the septic built if possible (northeast section of property).

Rapp: Option 1 is highest spot of the land, pitches 2 feet to south west. One thing that isn't on the site plan is that in southwest of the property is a ravine that flows into the Galien River, so our proposed site is on higher side of the yard. There are two other proposed site options as well, but option 1 is the best soils (driest) we could find while excavating the site to see what soils were available.

**Berrien County Health Department Presentation:**

Margaritis: January 2019 we visited the property and it was initially denied then, but Mr. Jackson had begun construction of his barn already. We had to call building inspector and put a stop work order on it because the barn was converted to part living quarters as well. Mr. Jackson filled out another application to which we went out to the property May 15<sup>th</sup> 2021 and we once

again denied the site because of the heavy clay soils, high water table and in some areas standing water. They modified some of the drainage ditches to divert some water, but the property still does not meet the county requirements. We did offer a variance since the property is over 10 acres, but there are deed restrictions and Mr. Jackson did not want to go that route, so he decided to go through with this appeal instead. Option #3 is most desired for BCHD, it appears to be an area that has not been worked on, more natural and appears to be higher ground. Our objection to the other two locations is the high water table and standing water, we do not issue any permits for soils with standing water. Where is option #1 exactly, is it in the woods because we never went into the wooded area.

Rapp: pushed back towards the woods but not in the woods. Tried to get it closer to property line.

Margaritis: Option #1 is not desired as we explained on site that we wouldn't entertain the idea of that spot.

Rapp: I understand the concerns and am still working the ground there and ditching to move water away from that area all together, towards the ditch and ravine.

Margaritis: for the size of the home itself, the size of the system is fine but I would advise to go bigger for the tank itself to 2000 gallon instead of the proposed 1000 gallon tank simply for the fact that this is a new system and we (BCHD) would rather see it oversized than undersized. Although it does meet code at 1000 gallon septic tank, we (BCHD) would still like to see the larger size tank. The size of the drain bed actually exceeds our requirements through the county, so that works to everyone's advantage. No garbage grinder in kitchen. The slopes at 7:1 are fine, the drawing we have today is not to scale so we need a drawing that will be to scale showing the exact area for the drain bed. The only objection we have is to locations #2 and #1. If you do plan any field tiles they have to be placed far enough away from this system to not encourage any sewage effluent to drain towards the ravine, at least 40 feet away from the edge of the slopes of the system.

**Appeal Board Discussion:**

Gleiber: are we talking about site option #1 or #3 because I thought the BCHD already opposed option #1.

Rapp: we are talking about #1 specifically but #3 shows all distances on the drawing provided, so that would be 300 feet from the edge of the home and 20 feet from the property corner edge.

Scott: are either of the other two options better than the other when compared to site #3.

Rapp: they are equal, I believe the system will be sufficient on any site noted.

Scott: what are we looking at option #1 or #2 for the site location #3 (west property side)?

Margaritis: we have not field verified these dimensions on site so I cannot verify if either of these options will fit. We have not field verified setbacks either so I don't know how things will actually fit.

Rapp: I think either option will fit into location #3, even with expanding the drain bed size. I think the 12x75 foot system is best option though.

Scott: Option #1 which is the 12x75 foot system it says on the bottom of the page that no wheeled vehicles and must be installed during dry weather. It does not say that on option #2, why?

Rapp: just a miss, it would be the same installation requirements for either system.

Margaritis: it is regular verbage that we use for the installation of any mound system. We say it is to be installed in dry weather conditions and no wheeled vehicles allowed only track vehicles, so they can't just drive their dump trucks onto the mound, they have to dump and push it in, to avoid compaction and smearing of soils.

Scott: why is this a problem for either owner/installer or the BCHD, to go with the smaller tank size provided in proposal of 1000 gallon tank and 500 gallon dosing tank, based on size of home those exceed what is needed, correct?

Margaritis: If it was standard soils and a conventional system, then yes but this is a mound system.

Scott: but the tank shouldn't leak/fail either way no matter of the size, the tank is just to hold solids to give it time.

Margaritis: The more time you increase that settling time for the solids to separate, the cleaner the effluent will be and the longevity of the drain bed

will increase dramatically. Typically, if it was an existing house we would just maintain the system they have but with this being new construction so it's that level of safety factor that we want bigger.

Scott: If the BCHD doesn't design systems, so if 1000 gallon meets requirement then would you consider a 1500 gallon tank instead of 2000 gallon tank.

Jackson: I don't mind consider over doing it but if it already meets requirements why go even bigger?

Scott: because of the water problem you do have on site, that's the main concern. The longer you have the water sit in the main tank, the cleaner the water will be the longer your field will last and the cheaper it will be for you with that longevity potentially getting 20+ years out of a system instead of 15 years for example.

Jackson: I am fine with the 1500 gallon option. My only concern is with the option #3 as field location because it is 300 feet away and you want to see an uphill rise of the 2 inch pipe that it's pumping it to that field. So now I have to install the tank way in the ground to keep that rise going to the field so it will pump properly. So now the tank might be 6 feet deep or more.

Margaritis: in most cases that is completely impossible, you will not put a tank 6, 9 or 10 feet deep. If you do that you have to meet tank manufacturer specifications for load of soil on the tank. Most manufactures will only allow 30 to 36 inches before the top will collapse. There are some tanks that are specially made for deeper burial but that is completely unnecessary, the line does not need to have the constant uphill pitch. What you have to be careful of is the topography of the land for air locking the pumps and there are devices for that as well. So we're getting into the design too much but I am just offering our knowledge.

Nagy: so proposed is 12x75 when you add the slopes depending on the height of the bed is now 96x159 when you add the height that we spoke about which adds a lot of space so to what Nick (Margaritis) was saying to actually see the slopes on here to scale would be easier to digest.

Scott: what would it be with the size of the other option?

Nagy: you add 82 feet to each dimension, so 104x129 total area required.

Kohring: we won't specify the size option (1 or 2) but will specify location.

**Appeal Board Decision:**

Kohring: motion to approve 2 bedroom home with 3 baths, 1500 gallon septic tank, 500 gallon dosing tank with alarm, no garbage grinder, placed in location #3, no field tile within 30-40 feet from the slopes of toe of system. When you're out in the field you will verify proper isolation distances which will include reserve area.

Margaritis: concerns we have for reserve area in location #3

Scott: is there enough space for reserve? I can see the 20 feet from property corner but I don't see distances from the side. It has to be a certain isolation distance from other field, correct?

Margaritis: it has to be at least 5 feet from the old mound, but we also don't see the edge of the ravine and we can't see how that all fits.

Kohring: Site of septic system and reserve will be decided on site?

Jackson: explain the reserve area to me, does it just add on the length of it or side by side?

Margaritis: You would be duplicating the original design and side by side. Otherwise a completely different approved area.

Jackson: I think we would be able to meet the requirement if I can put them side by side, but it would be getting close to the ravine.

Margaritis: that's our main concern is the ravine, and being able see a scaled drawing.

Jackson: I would have to measure to be sure I am far enough off the ravine

Margaritis: From a body of water we have to stay 50 feet away, from the edge of a bluff we have to stay 15 feet away. We need specific measurements.

Kohring: sounds like the sit will need to be staked for the site and reserve. Resolution amended to reflect that would be ok?

Round table: yes

Kohring: motion to approve 2 bedroom home with 3 baths, 1500 gallon septic tank, 500 gallon dosing tank with alarm, no garbage grinder, placed in location #3, no field tile within 30-40 feet from the slopes of toe of system. When you're out in the field you will verify proper isolation distances which will include reserve area. Proper isolation distances, a reserve area all to be staked by owner prior to the pre-construction meeting, all in location #3. New site plan to be submitted to BCHD.

Commissioner Scott seconds, all approved, motion carried.

**12:11pm Meeting Adjourned**

Minutes Submitted by S. Bowie 6/9/2021