



11660 Upper Gilchrist Road
Mount Vernon, Ohio 43050

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September 01, 2020

RE: Lot Reviews for Johnsville Road and Updike Road

On Wednesday, August 26, 2020, Knox Public Health performed lot reviews at your request on the existing 85.407 acre parcel located on the corner of Johnsville and Updike Roads in Knox County, Ohio. 12 lots in total were reviewed for the potential placement of on-lot household sewage treatment systems. Please be advised that all future residences will require a soil evaluation from a certified soil scientist to determine the design of all future household sewage treatment systems. A map with coordinating numbers has been included with this letter for referencing purposes. Our findings of those 12 lots are as follows:

- Lot Number 1: This first lot that we reviewed is a 5.906 acre lot that is located on the northwest corner of the lot and is located along both Johnsville and Updike Road. There is a ridge that starts a highpoint right in the middle of the property. We were able to take grade shots greater than 200 feet in length on contour along Updike Road. The 5.906 parcel is large enough to site primary and secondary sewage absorption fields. The parcel is mapped as having Bennington silt loam and Centerburg silt loam soils. These two soils have a concern of depth to the perched seasonal water table and typically drain moderately slowly. There is also pewamo soil mapped right behind the ridge that starts on the property; this soil is generally unsuited to sewage absorption fields and another form of treatment may be needed if the household sewage treatment system is placed in this area.
- Lot Number 2: This lot is 5.906 acres in size and runs along Johnsville Road and is the second of six consecutive 5.906 acre lots. This lot has a high ridge running through the middle of the property and we recommend the future residence being sited on this ridge. There is enough length on contour to place the household sewage treatment in front of the house or behind the house. The 5.906 acres is large enough to place both a primary and secondary field on. We recommend placing the sewage treatment system along the ridge and as close to the house as possible. There is a large flat spot along the eastern most edge of the lot that could be utilized but it is mapped as having pewamo soil. The



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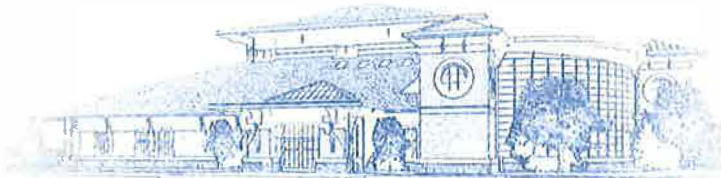
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ridge is mapped as having centerburg soil and is much more favorable than that of the pewamo soil.

- Lot Number 3: This 5.906 acre parcel is very similar to lot number 2 in our recommendations. We were able to reach at least 200 feet on contour on this lot and it is large enough to place a primary and secondary field. The pewamo soil to the east of the ridge is more prevalent on this lot than lot number 2.
- Lot Number 4: Lot 4 is 5.906 acres in size and is where the big ridge that ran through lots 2 and 3 starts to taper off. We still recommend putting the house on the highest spot on the parcel. We were able to find 200 feet of length on contour along the eastern half of the parcel. There is a terrace that starts after the ridge and is mapped as having bogarts silt loam. This soil is moderately well drained with perched seasonal water tables that vary from 24-42 inches. Sewage absorption fields are generally installed shallow in these soils as once you get into the soil substratum the water can move too quickly through the soil and pollute the groundwater supply. There is enough room on this parcel for both primary and secondary sewage absorption fields.
- Lot Number 5: Lot 5 is another 5.906 acre parcel that slopes from northwest to southeast. There is a high spot about halfway back on the parcel that is best suited for a future residence. Both of the sewage treatment fields should be placed out front of the recommended residence area. The contour will have the lines running to the northwest from the house. There is enough room to site a primary and secondary system on this parcel. This parcel has a large chunk of pewamo mapped on it. The pewamo is located along the northern edge of the parcel with a small vein that extends to lot number 6. Centerburg and bogarts soils mapped on this parcel as well and these are the preferred soils for the sewage absorption fields.
- Lot Number 6: Lot 6 is a 5.905 acre parcel located along Johnsville Road. This lot is very similar to lot 5. There is a large tract of mapped centerburg soil that is large enough to site a primary and secondary system. The slope and direction of the contours are exactly the same as lot 5. If the house is built at the front of the parcel, there is adequate room at the back of the parcel to site a primary and secondary system. The back of the lot is mapped as having bogart soil and should have the household sewage treatment system installed shallow to avoid contaminating groundwater.
- Lot Number 7: Lot 7 is a 10.992 acre flag lot parcel in size and comes off of Johnsville Road. There is a small knoll in the middle of the property that we recommend the future residence be sited. We were able to get more than 200 feet along contour on this parcel. The contours run from north to south and then turn to the southeast. This parcel is mapped as having Pewamo and Bennington silt loam soils. The pewamo soil should not be an issue on this parcel if the future residence is placed on the knoll. There is enough room for a primary and secondary system on this lot.
- Lot Number 8: Lot 8 is another flag lot that is 9.804 acres and comes off of Johnsville Road. We recommend keeping the future residence as far north on the property as



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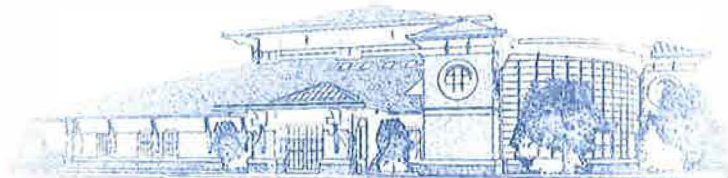
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possible due to the entire south end of the parcel being mapped as pewamo soil. The contours at the north end of the parcel run from northwest to southeast. The north end of the lot is mapped as having bennington silt loam soils with a little bit of bogart silt loam soils.

- Lot Number 9: Lot 9 is a 5.773 acre parcel that comes off of Johnsville Road. Our recommendation is to place the sewage treatment system in the front of this lot about a third to halfway back. The contours run from north to south and there is enough room to site primary and secondary treatment systems on this parcel. This parcel is mapped as having Pewamo soil at the very front and very back of the parcel. The middle of the parcel is mapped as having Centerburg silt loam soil and is more favorable for a household sewage treatment system.
- Lot Number 10: Lot 10 is a 5.672 acre parcel that comes off of Johnsville Road. There is a knoll that comes off of the neighboring parcel to the south that the future residence should be sited on, as it is the highest point on the parcel. We were able to get 200 lineal feet of contour out of the front and the back of the parcel. The contours at the front of the parcel run from north to south in a horseshoe shape. The mapped soils on the front half of the parcel are Centerburg silt loam soil and a small amount of pewamo soil along Johnsville Road. The contours at the back of the parcel are a lot more gradual. If the system was placed behind the proposed future residence site, the household sewage treatment system would run from south to northeast in orientation. The back of the parcel is mapped pewamo and bennington soils.
- Lot Number 11: Lot 11 is a 5.412 acre parcel along Updike Road. This parcel has really good contours to work with. The contours on this lot will allow us to have a gradual fall from the house to the household sewage treatment system; along with being able to install a system along those contours that meets the necessary requirements established through the soil evaluation. This parcel is mapped as having Centerburg soil with a couple small pockets of Pewamo soil. The Pewamo soil is located in the shallowest parts of this parcel. We were able to get well over 200 lineal feet along the contours. The lot gradually slopes from front to back meaning the system will be placed behind the recommended future residence site unless the system is pumped uphill.
- Lot Number 12: Lot 12 is a 12.322 acre flag shaped parcel that comes off of Updike Road. This has few spots that could be built on due to the fluctuation of the contours. We were able to get over 200 linear feet of contour along a ridge near the middle of the parcel. That particular ridge is mapped as having bogart silt loam soil which would be the most suited soil for primary and secondary treatment systems on the entire parcel. The rest of the parcel is mapped as having Pewamo and Centerburg soils. The Centerburg soil can be found in the northeast corner of the lot. The contours in the northeast corner are gradual and have a horseshoe shape to them. We strongly recommend no future residences be sited in the low areas on this parcel due to visible areas that surface water holds and does not drain away quickly.

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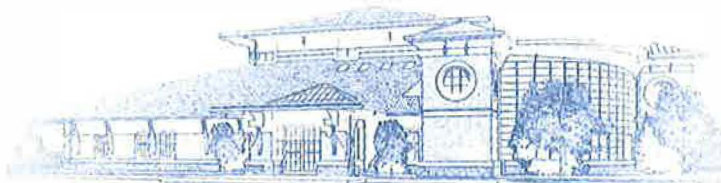
There is a proposed common tile that will run down the middle of this 85.407 acres that future residences can tie into to get rid of their excess surface water. Per our discussion at the Knox County Land Use Committee meeting on August 18, 2020, that common tile is supposed to be filed for and maintained through the Knox County Engineer's Office in conjunction with Knox County Soil and Water Conservation District . Knox Public Health strongly recommends interceptor drains for every household sewage treatment system that gets installed on these lots. These interceptor drains may be tied into that common tile if needed as it is not a part of the household sewage treatment system. An interceptor drain will help divert any groundwater that would be moving toward each leach field. This will help ensure that the system has enough pore spaces within the soil to treat the effluent. Interceptor drains also help lower the perched seasonal water table.

These lots will all have DELCO water available to them which helps us plan for the household sewage treatment systems. According to the Ohio Administrative Code (OAC) Rule 3701-29-06 a household sewage treatment must have an isolation distance of 10 feet from a public water supply line. Having the public water there makes it easier to get lines on contour because we do not have to worry about the 50 foot isolation distance that is required for a residence with a private water system. The rest of the isolation distances established within rule OAC 3701-29-06 will also need to be met as part of the building process and taken into account during the site evaluations.

In 2015, the statewide rules governing household sewage treatment systems were revised; part of that revision was the addition of soil reports prior to a site evaluation for primary and secondary household sewage treatment systems. According to OAC 3701-29-09 (A) Prior to accepting an application for a permit to install a new or replacement STS or alter an existing STS, the board of health shall require a site review. (1) A site review shall include: (a) The completed application and associated fee(s); (b) A soil evaluation completed in accordance with rule 3701-29-07 of the Administrative Code. The board of health may waive the requirement for a soil evaluation based on small lot size, for an alteration, or for an incremental repair plan; (c) A STS design completed in accordance with rule 3701-29-10 of the Administrative Code; and (d) When the applicant is requesting approval of a system subject to paragraph (C) of this rule, an incremental replacement plan shall be submitted with the site review request. All of these parcels will need a soil report completed to determine the type of household sewage treatment system that is to be installed. This soil report will also help the sewage treatment system designer figure out the length needed for the system along with how much absorption area is required. The soil report will designate a primary area for treatment along with setting a designated replacement field that will remain virgin until it is needed for replacement.



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The 12 lots located along Johnsville Road and Updike Road are approved as building lots by Knox Public Health. There is sufficient length along contour on each lot along with enough room to get a primary and secondary absorption field on. The type of sewage treatment system for each of the 12 lots will not be determined until a soil report is obtained from Certified Professional Soil Scientist, but at this time you are encouraged to move forward with your subdivision. If you have any questions you may contact me at 740-392-2200 Ext. 2227 or by email at kshackle@knoxhealth.com. You may also contact my colleague Landon Magers, SIT at 740-392-2200 Ext. 2281 or by email at lmagers@knoxhealth.com. I thank you for your business and I look forward to working with you in the future. Have a wonderful day.

Sincerely,

Kyle D. Shackle RS

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