INFORMATION SHEET

PRESIDING: Chair Charlotte A. Mitchell, Commissioner Kimberly W. Duffley, and Commissioner Jeffrey A. Hughes
PLACE: Dobbs Building, Raleigh, NC
DATE: Wednesday February 2, 2022
TIME: 6:30 p.m. to 7:45 p.m.
DOCKET NOS.: W-1333, Sub 0 and W-1130, Sub 11
COMPANY: Currituck Water and Sewer, LLC
DESCRIPTION: Application by Currituck Water and Sewer, LLC, 4700 Homewood Court, Suite 108, Raleigh, North Carolina 27609, and Sandler Utilities at Mill Run, LLC, 448 Viking Drive, Suite 220, Virginia Beach, Virginia 23452, for Authority to Transfer the Sandler Utilities at Mill Run Wastewater System and Public Utility Franchise in Currituck County, North Carolina and for Approval of Rates

VOLUME NUMBER: 2

APPEARANCES
See Attached

WITNESSES
See Attached

EXHIBITS
See Attached

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PLACE: Via Videoconference

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BEFORE: Chair Charlotte A. Mitchell, Presiding
Commissioner Kimberly W. Duffley
Commissioner Jeffrey A. Hughes

IN THE MATTER OF:

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VOLUME 2

NORTH CAROLINA UTILITIES COMMISSION

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NORTH CAROLINA UTILITIES COMMISSION

APPEARANCE SLIP

DATE: 2/2/2022 **DOCKET NO.:** W-1333, Sub 0 and W-1130, Sub 11

ATTORNEY NAME and TITLE: Karen M. Kemerait

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ADDRESS: 434 Fayetteville Street, Suite 2800

CITY: Raleigh **STATE:** NC **ZIP CODE:** 27601

APPEARANCE ON BEHALF OF: Sandler Utilities at Mill Run, LLC

APPLICANT: X **COMPLAINANT:** ___ **INTERVENOR:** ___

PROTESTANT: ___ **RESPONDENT:** ___ **DEFENDANT:** ___

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☒ **Yes, I have signed the Confidentiality Agreement.**

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SIGNATURE: /s/Karen M. Kemerait

(Required for distribution of CONFIDENTIAL transcript)

NORTH CAROLINA UTILITIES COMMISSION
PUBLIC STAFF - APPEARANCE SLIP

DATE February 2,2022 DOCKET #: W-1333, Sub 0, W-1130, Sub 11

PUBLIC STAFF ATTORNEY Gina Holt, Munashe Magarira

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COUNSEL/MEMBER(s) REQUESTING A **CONFIDENTIAL** TRANSCRIPT WHO HAS SIGNED A CONFIDENTIALITY AGREEMENT WILL NEED TO SIGN BELOW.

/s/ Gina C. Holt

Written testimony of David Shepheard to be orally presented at Utilities Commission Hearing, Docket number (W-1333, Sub 0) Wednesday, February 2, 2022

Good Evening, my name is David Shepheard, and my wife Janet and I have lived at 173 Saint Andrews Rd in Eagle Creek since purchasing our home in 2002. My son, Matthew Shepheard and my daughter, Elizabeth Edwards also own and live in Eagle Creek. I have been the Drainage Committee Chairman for the Eagle Creek HOA since 2006 and have been on the HOA Board of Directors since 2015, and have worked to understand the operation of our sewer system and its dependence on a working drainage system throughout that time.

I am speaking to you tonight because I oppose the sale of our system to Currituck Water and Sewage. While I supported the connection of a force main to our plant to service the Fost and Flora developments in order to provide more efficient and less expensive sewage treatment for our community, I can't at this time support the purchase of our system by CWS for a number of reasons.

First and foremost is my opposition to the hard proposal by CWS to replace our existing vacuum collection system with a gravity collection system. From the beginning of the discussion several years ago to the present, CWS has shown no interest in the proper operation of our collection system or truly entertained the wishes of the community to retain our current vacuum system. Instead, they have proposed replacement options that include primarily varied gravity system layouts and, more recently, a low

pressure system which, in addition to excavation/boring at roadways and possibly the golf course, includes large tanks and grinder pumps in every yard. Their town halls and meetings have concentrated on selling the concept of gravity replacement and providing mis-information and outright falsehoods on vacuum collection systems to promote their replacement plan. We have been told that our system is at the end of its life, that vacuum systems only last 10-12 years. I have no idea where this belief comes from except the possible maintenance requirement that valves and controllers be rebuilt or replaced around this time. A controller rebuild at a cost of approx $35 parts cost + less than 30 minute tech rebuild each around 10 years and valve rebuild at 15 years, cost $40 parts, far less than 30 minute tech time to rebuild. There are active working vacuum systems in the US installed in the 70's that are still operating efficiently. There is a 9,000 pit system in Florida that requires about 20 calls per month for ALL reasons, testifying to the low daily manpower requirement. Eagle Creek is experiencing more calls than that in a week and only AirVac or FloVac can be trusted to tell us exactly why. Clearly, our system has many years left before it needs to be torn out.

Why do I oppose their gravity replacement option? This starts with the "if it isn't really broken, why fix it?" question and the answer depends on whether it is really broken and, if not, why replace it. Many, including many residents, would say our vacuum system is broken since we have experienced service interruptions, backups in houses, spills in yards, and constant disruption in our lives, ie, no showers, limited toilet flushes, not washing clothes for extended periods,canceled family visits, dinners, and parties over a 16 month timeframe. My answer would be that, for over 20 years we seldom had any issues, only

suffering single pit VERY temporary disruptions with the exception of major storm events which resulted in widespread flooding over most of Currituck county. With the understanding that our current system experiences aging and wear with every day it operates, it still makes no sense to suggest that, even with the lack of maintenance and new parts our system suffered over those 20 odd years, that it would suddenly suffer a catastrophic failure in the middle of dry weather 7 months after Envirolink purchased Envirotech, the previous operator of the system, and began to oversee operations. Between the operational changeover and the failure, the knowledgeable technicians formerly employed by Envirotech and now employed by Envirolink resigned or were fired and, when the system began to go into distress, no one knew how to fix it. One pit after another failed to operate due to low suction in the system, then entire lines went down, and the whole system waterlogged, suction pumps failed, and there was 0 working sewer in the neighborhood for weeks. So, what actually broke the system? While the failure to do proper preventative maintenance over time was a contributing factor, it appears evident to me that it was the failure of the operator at the time, Envirolink, that pushed the system to total failure. Is the system sick, yes, does it need work, yes, is it broken beyond repair, no, it needs new parts and pieces, upgrades, and, very importantly, proper operation. This can be accomplished at a FAR lower cost in $ and neighborhood disruption than completely replacing a system that is still functioning after all the abuse it has suffered. New vacuum pumps, new controllers, new valves in the pits, some new pits, new monitoring system and our existing system is as dependable as any gravity system. Thus, in lieu of a complete and utter disruption of our neighborhood roads, utilities, yards,

driveways and drainage we get basically a brand new system that, with standard maintenance, is designed to last 50+ years.

This now leads to the second reason I oppose the sale. While I understand that Sandler at Mill Run LLC has no interest in continuing to own a sewage treatment system, they are currently, under court order and judicial supervision, making the first real upgrades that have been made to our system in years. While the upgrades ordered fall short of making the system as new, it's a giant leap in the right direction, and the Sandler employees I have communicated with appear to have a genuine interest in trying to improve the situation. I have serious concerns that, if ownership is transferred to CWS and is still under Envirolink operation, all improvements will stop, as CWS presses forward with their stated mission of replacing vacuum with gravity and simply throwing away all of the improvements made to that date. As Sandler began to provide funds and replacement parts to restore the system efficiency, Envirolink has continued to operate it in such a manner that many of the new parts were rendered useless until rebuilt or replaced. Parts installed or rebuilt incorrectly, certain deficiencies (pits with on-going problems not repaired or replaced), help from AirVac or FloVac grudgingly accepted. Why has this shoddy work and operation continued until recently? Because, again in my opinion, Envirolink had no interest in bettering the system since their end game is to replace it, and the worse it operates the easier it will be for them to get approval to do so.

Finally, and already referred to, the total disruption of the neighborhood. Roads re-paved 4 years ago, miles of vegetated ditches to rebuild, existing sewage service disruption (they tell us 4 hours to shift but that isn't possible), internet disruption

(lots of people working from home), cable, phone, county water to every home. An average lot frontage of 100' with 5 underground utility connections each x 422 homes equals well over 2000 opportunities to sever a utility. In addition, Eagle Creek is a conservation subdivision with side yard swales between every house feeding water to roadside ditches which take the water to outlet ditches and to our major canals. The ditch disruption for 9 months plus and the major impact of dewatering in our high groundwater community open the door for disastrous flooding if we experience any heavy rainfall during the course of construction.

It now seems that we are caught in a frying pan/fire situation. We stay with Sandler as the unwilling owner and Envirolink as the operator and continue to see court ordered improvements and supervision until the court and state authorities determine the job is done, or ownership is transferred to CWS with Envirolink as the operator the community being protected only by the conditions of sale determined reasonable by the Utilities Commission and other invested state agencies. I can only be hopeful that, with the ordered improvements and upgrades, our system will be able to demonstrate it's worth and any justification to change it out will disappear.

Public Witness Hutson Exhibit 1 I/--

(Witness sent this 5-page report instead of the 36-page report that he mentioned while testifying) ktm

Background

This study was developed as a rebuttal to a report provided by Envirolink to the residents of Eagle Creek on 28 January, 2022. Envirolink, LLC, manages the vacuum sewer system, currently owned by Sandler Utilities.

The study provided by Envirolink concluded that a gravity system is ideal for the neighborhood of Eagle Creek. The veracity of the report was called into question by many residents for many reasons. Rather than detail the many concerns of the residents which are well founded, one salient factor will be mentioned – Sources. The Envirolink report provides numerous examples of percentages regarding what the reader is left to assume are examples of the systematic failure of vacuum systems over an unspecified period of time in support of a gravity system, however, no sources or references are provided to support the assertions made by Envirolink. The report does not mention where the data was sourced; it does not mention the research methodologies used, whether quantitative, qualitative, or mixed methods; in regards to the percentages mentioned, no mention of stochastic or deterministic methods are mentioned when the data was being compiled.

The conclusion is clear – It is this researcher's opinion that data as presented by Envirolink in its report was manipulated in an attempt to persuade opinion in favor of a gravity system. Envirolink's argument over replacing the vacuum with a gravity system has been disputed for quite some time. The doubts of residents are based on comments made by the County Engineer in 2016 at a neighborhood meeting following catastrophic sewage backup experienced by Eagle Creek following Hurricane Matthew. During the meeting certain residents mentioned the possibility of the county taking over management/ownership of the sewage system for purposes of accountability and the assumed

increased oversight that would result. The county engineer replied a takeover would not be feasible for several reasons, primarily due to budget constraints. In the course of the same meeting questions were asked by some residents regarding the implementation of a gravity sewage system as a suitable replacement. The county engineer replied a gravity system would not be a wise choice. He commented further the vacuum system in use needs to be updated through parts replacement and properly maintained by trained technicians. The county engineer's opinion regarding the choice of keeping the vacuum system, rather than switch to gravity, was supported at a more recent meeting last fall where a resident, Mr. Paul Desimone, a public works professional, commented on the subject. Mr. Desimone helped install the vacuum system in the neighborhood, and went on to explain why a vacuum system was chosen over gravity. His opinion was compelling, and countered Envirolink's argument as to why a gravity system would be the wiser choice.

The debate has raged since. Residents cite a lack of transparency on the part of Sandler Utilities and Envirolink concerning not only maintenance and upkeep issues of the existing system, but the belief that the push for a gravity system is motivated solely for monetary gain alone. This is disconcerting indeed. As a result residents are left to wonder who has their best interest at heart. This doubt, and to be frank, anger, felt by residents over the situation is well founded. Two questions dominate the discussion of the issue – How will the sewage issue be resolved? And why is a gravity system being considered given the commentary by public works engineers who state it would be a detriment?

The Systems

While both systems serve the same purpose, they are unique and have varying characteristics, limitations for use, and operational constraints due to design and terrain suitable for their utilization. During the course of research the following dependent variables were discovered -

- Terrain/geology of the area
- Weather phenomena in the region/area
- Height of the water table in the area (also referred to as ground water by some sources)
- Skill and training of maintainers
- Cost of installation
- Cost of maintenance

The identified dependent variables will be discussed further in the study. However, a short description of gravity and vacuum systems will be provided in order to better inform the reader/researcher on the fundamental differences of the systems. Further, advantages and disadvantages will be provided as well.

The Vacuum Sewer System

The vacuum sewer system was developed and refined by Dutch engineer Charles Liernur in the last part of the 19th century and first installed in 1882. The system is unique with the main components being comprised of the following –

- Collection chambers and vacuum valve parts,
- Sewers,
- A central vacuum station,
- Monitoring and control components.

Since the systems debut it has been continuously refined. With the additional advances made in technology, the dependability of vacuum sewer systems has increased dramatically. This is due mainly to fault locating sensors which has helped lower maintenance costs (Gibbs, 2016).

Advantages to the Vacuum sewer system –

- Little impact during installation and/or repair due to the minimal size of the system.
- Manholes are not required
- In some cases service can be provided by a single vacuum pump station
- PVC piping allows for obstacles to be easily negotiated
- PVC piping has a relatively long service life compared to other forms and types of piping
- Odors are minimized
- Floodwater infiltration is not a factor because the system is 'closed'.
- No sewage leakages (vacuum avoids exfiltration), which is not only an ecological/public health benefit, but also makes repairs to the pipes easier and more sanitary for repair workers
- Cost is cheaper in the long term due to shallow trenching and easy identification of issues (provided adequately trained technicians are on hand)

Disadvantages –

- Vacuum systems are not ideal if sewage is to be transported over long distances
- Vacuum systems do not collect flood water
- Close attention must be paid to the integrity of the pipe joints
- Valves can stick in the open position if routine maintenance is overlooked
- Sensor tube(s) must be checked and cleaned periodically and on schedule to minimize failure

Why a vacuum system rather than a gravity system in Eagle Creek? Two major factors were responsible for the builder selecting a vacuum system over gravity –

- Weather. Eagle Creek is prone to seasonal flooding toward the back of the neighborhood. Backup or blockages are a non-issue with a vacuum system because it is closed and not influenced by this factor (Kenter, 2012).
- Flat ground. Eagle Creek is located at sea level, and results in flooding.
- High water table. A gravity system would require deep trenching in order to lay the required pipes and achieve the needed inclines and declines to facilitate the movement of sewage from the homes (Kenter, 2012). Moreover, dewatering of the aquafer would be required to facilitate the trenching. Hence, the selection of the vacuum system.

The matter of dewatering during the trenching process is one of grave concern to homeowners in the neighborhood. The cause of worry goes back to Mr. Desimones comment that the strata in the neighborhood cannot support a gravity system. The researcher determined that the possibility of sink holes forming as a result of dewatering could result. This finding cannot be discounted, and invites the following questions – If foundations were to sink, would homes be damaged? If so, how extensive would the damage be? Would the homes run the risk of being condemned as uninhabitable due to the damage?