



Jo Daviess County Health Department • 9483 US Rt. 20 West • P. O. Box 318 • Galena, Illinois 61036

**Jo Daviess County Health Department  
Board of Health Meeting  
Elizabeth Nursing Home, 540 Pleasant St., Elizabeth, IL 61028  
Wednesday, August 5, 2020 @ 7:00 pm**

**MINUTES**

This meeting was also hosted virtually via Zoom for any members of the public wishing to attend.

- 1. Call to Order** – President Merri Berlage called the meeting to order at 7:07 pm.
- 2. Roll Call** - Voice roll call vote was taken.  
Members present: Merri Berlage, Peg Dittmar, Don Hill, Hesper Nowatzki, Tracy Bauer, Lisa Haas, and Dr. Barbara Kepner. All members present, a quorum was established.  
Staff present: Sandra Schleicher and Marcia Christ  
Others present: Tracy Heidenreich, Brandon Behlke, and Craig Brown.  
Present electronically: John Hay, Beth Baranski, and Jeanie Norman
- 3. Approval of Minutes**
  - a) Minutes from the July 8, 2020 Board of Health Meeting – Don Hill motioned to approve the July 8, 2020 Board of Health Special Meeting minutes, Tracy Bauer seconded the motion. All were in favor, motion carried.
- 4. Citizens' Comments** – Attorney Craig Brown, representing Sproule Septic Service, addressed board members regarding a public request for review of the Jo Daviess County Private Sewage Ordinance (Item 7a). Attorney Brown stated that this issue is related to an ongoing family feud that had been addressed by the board 5 years ago and is now being brought up again. He requests the board does not move forward with the review and let the decision made in 2016 stand. Two documents submitted by Laurie Sproule had been included in board member packets for review (August 5, 2020 meeting minutes addendums 2 and 3).  
Merri Berlage then read the document that had been submitted by Beth Baranski and Jeanie Norman to board members (August 5, 2020 meeting minutes addendum 1); Beth Baranski, and Jeanie Norman both commented that this is not a family issue. Merri stated this would be discussed further and will be a board decision.
- 5. Financial Reports** – Public Health fund, Public Health Capital Investment fund, Animal Control fund – Sandra Schleicher presented the June 2020 budget comparison reports for review. Board members had no further questions or concerns.
- 6. Unfinished Business**

- a. Discussion and possible action regarding Elizabeth properties – Merri stated this agenda item would be discussed later in the meeting.
- b. Discussion and action to approve revised Public Health Nurse Job Description – Sandra presented job descriptions for both an RN and LPN for review and approval; stating she plans to fill only one nurse position at this time.  
Lisa Haas motioned to approve the job descriptions as presented; seconded by Tracy Bauer. All were in favor, motion carried.

## 7. New Business

- a. Discussion and possible action regarding public request for review of Jo Daviess County Private Sewage ordinance 5-8 Article A -  
Following board member discussion, Tracy Bauer made a motion to remove the agenda item, that there had been no violation of ordinance; Don Hill seconded the motion. The motion carried by voice vote: Ayes – Merri Berlage, Peg Dittmar, Don Hill, Tracy Bauer, and Lisa Haas. Nays – Hesper Nowatzki and Dr. Barbara Kepner. Ayes: 5. Nays: 2

*At this time Craig Brown had left the meeting.*

- b. Discussion and possible action regarding isolation and quarantine ordinance – John Hay, State’s Attorney, stated Scott Toot, County Board Chair, had requested John develop an isolation and quarantine ordinance; considering the state code process and what penalties could be applied if someone tests positive and they violate quarantine. Board members questioned how it could feasibly be enforced as well as concerns of privacy and protected health information issues. Members discussed other options; that a mask mandate be considered, increasing public education, and reaching out to employers that they all follow the same guidelines in the workplace.  
Merri Berlage stated John Hay would develop an ordinance for review at the next meeting and asked board members to research other options and recommendations for preventing the spread of the virus.
- c. Discussion and possible action to approve Public Health Administrative Assistant Job Description – Following no further discussion, Don Hill motioned to approve the job description as presented; seconded by Peg Dittmar. All were in favor, motion carried.
- d. Discussion and possible action to approve Public Health Contact Tracer/Interpreter job descriptions – Sandra stated these are 2 part-time positions; a Contact Tracer and a Contact Tracer/Interpreter, which would be the first position filled.  
Following no further discussion, Tracy Bauer made a motion to approve both position descriptions; seconded by Hesper Nowatzki. All in favor, motion carried.  
*At this time all present toured the Elizabeth Nursing home facility; following the tour, Tracy Heidenreich left the meeting.*
- e. Discussion and possible action to approve Public Health Fund (003), PH Emergency Preparedness Fund (005), PH Catastrophic Fund (046), and PH Capital Investment Fund (055) FY2021 Budgets and move forward to the Joint Committee Budget Meeting.  
Sandra reviewed Public Health FY2021 revenue and expense budget estimations and reported on how the Contact Tracing Grant could affect FY2020 and FY2021 budgets. Following further discussion; board members requested that Sandra

increase expenses in appropriate PH funds in order to cover the cost of potential additional services and to present the revised budgets at the September meeting. Don Hill recommended also to consider lowering or waiving EH fees when a business has closed due to COVID-19.

- f. Discussion and possible action to approve Animal Control Fund (020) and Pet Population Fund (080) FY2021 Budgets and move forward to the Joint Committee Budget Meeting.

Sandra reviewed Animal Control FY2021 budgets; there was discussion as to whether Animal Control should continue with city contracts for picking up stray dogs or to consider other options. Members also discussed ticket reimbursement going back to Animal Control and that it would again need to be reviewed.

Tracy Bauer then motioned to approve both Animal Control Fund (020) and Pet Population Fund (080) budgets as presented and move forward to the Joint Committee Budget meeting; seconded by Barbara Kepner. All in favor, motion carried.

**Returned to Agenda Item 6a** – Sandra stated that she had just received appraisals for the Elizabeth properties, noting that an approval had been made to take sealed bids back in March.

8. **Closed Session:** At 9:04 pm, Merri Berlage read the statements below and Hesper Nowatzki made a motion to enter into closed session, which was seconded by Barbara Kepner. All members were in favor, motion passed. Voice roll call was taken; all members were present along with Marcia Christ and Sandra Schleicher. Brandon Behlke had left the meeting and the Zoom portion of the meeting was suspended for closed session.

- a) *Purchase/lease property section 2(c)5 "The purchase or lease of real property for the use of the public body, including meetings held for the purpose of discussing whether a particular parcel should be acquired."*

- b) *Personnel section 2(c)1 "The appointment, employment, compensation, discipline, performance, or dismissal of specific employees of the public body or legal counsel for the public body, including hearing testimony on a complaint lodged against an employee of the public body or against legal counsel for the public body to determine its validity."*  
Topics of discussion: staff complaint

- c) *Litigation Section 2(c)11 "Litigation, when an action against, affecting or on behalf of the particular public body has been filed and is pending before a court or administrative tribunal, or when the public body finds that an action is probable or imminent, in which case the basis for the finding shall be recorded and entered into the minutes of the closed meeting."* Topic of discussion: Case No. 2020-SC-051

At 9:19 pm, Peg Dittmar made a motion to return to open session, seconded by Barb Kepner. All members were in favor, motion carried. Voice roll call was taken; all members, Marcia Christ and Sandra Schleicher were present.

9. **Possible action as a result of closed session** – No action was needed as a result of closed session.

- 10. Administrator's Comments** – Sandra reported that Environmental Health has been very busy with realtor inspections, and that she is in the process of completing development training at no cost through the state of Illinois.
- 11. President's Comments** – no additional comments
- 12. Board Member Comments** – Don questioned whether COVID numbers can be divided up within the county. Sandra mentioned the state provides numbers over 5 cases by each zip code.
- 13. Citizen's Comments** – no citizen comments
- 14. Next Scheduled Meeting Date:** September 2, 2020 @ 7:00 p.m. This meeting will be held at the Elizabeth Nursing Home building.
- 15. Adjourn** – Peg Dittmar made a motion to adjourn the meeting at 9:30 pm, seconded by Lisa Haas. All members in favor, motion carried.

August 3, 2020

To Members of the Jo Daviess County Board of Health:

Jo Daviess County currently offers five methods of domestic septage disposal by ordinance (please see below). We are concerned about the negative health, safety, and welfare issues related to the land application of domestic septage (item E). We ask that the county revisit this practice and consider removing it from the list of approved disposal options.

- A. Discharge to a municipal sanitary sewer system that is approved by the Illinois Environmental Protection Agency (IEPA).
- B. Discharge to a sludge lagoon or sludge drying bed that is approved by the IEPA.
- C. Discharge to an incinerator device that is approved by the IEPA.
- D. Discharge to sanitary landfill that is approved by the IEPA.
- E. Application to agricultural land.

We hope the county will use its resources and rely on knowledgeable individuals and sound science to make a well-reasoned decision. We ask that you please consider the following points in your deliberations:

- Both surface water and groundwater are at-risk of contamination. Given our hydrogeology, surface water and groundwater come more here than in many other landscapes. Microplastics (as well as pharmaceuticals and personal care products) have been found in wells and springs tested in Jo Daviess County. The microplastics consisted of fibers from gray water discharge of septage into the aquifer (probably from private septic systems), and the presence of these microplastics indicates that particulate matter can enter and migrate through the karst aquifer.
- Because of the nature of our hydrogeology, surface water and groundwater contamination can occur both as a result of surface run-off and from infiltration through the thin soils to conduits comprised of enlarged bedrock crevices and bedding planes in our Galena-Platteville karst aquifer. Private wells in Jo Daviess County draw from this aquifer.
- Human pathogens can be carried in feces. Some local governments are measuring the rate of COVID-19 infection in their communities by testing virus levels in the sewage entering their treatment plants.
- There is evidence that land-applied domestic septage is entering surface water in spite of the county's carefully designed application requirements. For example, two water samples taken on the same day (July 8, 2020 - see attached)) showed a significant increase in the levels of coliform bacteria (from >800 cfu/100mL up to 29,800 cfu/100 mL) and E. Coli (from 248 cfu/100mL up to 2,900 cfu/100 mL) from the waterway area above to the waterway area below a field where domestic septage is being applied. A few possible reasons for this may:
  - County regulations are not being properly adhered to,
  - County regulations are insufficient given the area hydrogeology, and/or
  - County regulations are insufficient given the increase in the number and intensity of precipitation events.
- Most septage haulers operating in the county are not land applying.

The lab technician and University of Illinois Prairie Research Institute scientists that have provided us with information are willing to answer questions you may have, and we can provide you with their contact information.

Thank you for your consideration.

Sincerely,

  
Jeanie Norman  
(815) 281-1675

  
Beth Baranski  
(563) 580-6192

East side of field

Water Sample Collection Information Form

Do not use this form for Public Water Compliance Samples

Collection Date (MM/DD/YY) 07, 08, 2020	Time: 4:15 AM/PM	Collected By Ron Norman	License # (pump installer/well driller)
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Owners Name Ron Norman	Owners Telephone Number (815) 881-1675
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Owners Street Address 12567 W. Norris Lane	Well Address (Street or Legal Description) East Side of field / Creek Water <sup>1st Test</sup>
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City, State, Zip Code Galena, IL 61036	Town or City Galena	County IL
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Mail Results To: Name: Ron + Jeanie Norman Address: 12567 W. Norris Lane City: Galena, State: IL, Zip Code: 61036	Email Address (for electronic results) norman_jeanie@yahoo.com
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Test(s) Requested	
Bacteriological <input checked="" type="checkbox"/>	Nitrate <input type="checkbox"/>
Arsenic <input type="checkbox"/>	Other <input checked="" type="checkbox"/> MPN

Sampler Remarks, if needed:  
1st test field on East side

**Private Sample Information Only**

Reason for Test:

<input type="checkbox"/> Annual Test	<input type="checkbox"/> Real Estate
<input type="checkbox"/> Taste/Odor	<input type="checkbox"/> Previous Unsafe
<input type="checkbox"/> Other	

Sample Location:

<input type="checkbox"/> Bath Tap	<input type="checkbox"/> Pressure Tnk. Tap
<input type="checkbox"/> Kitchen Tap	<input type="checkbox"/> Milk house
<input type="checkbox"/> Other	

Is Chlorine Present? Yes  No

Does the well serve the public? Yes  No

Public #:

**Laboratory Use Only**

Bacteriological Approved Method	Nitrate Approved Method
<input checked="" type="checkbox"/> MMO-MUG (Colisure)	4500-NO3, SM 20th ed.
<input type="checkbox"/> Membrane Filter	
<input type="checkbox"/> Presence/Absence	
<input type="checkbox"/> Other	

**Sample Rejection:**

<input type="checkbox"/> Old	<input type="checkbox"/> Chlorine Present-CL
<input type="checkbox"/> Overgrown	<input type="checkbox"/> Frozen-FR
<input type="checkbox"/> Turbidity	<input type="checkbox"/> Shipping Problem-SP

**Laboratory Results:**

**Bacteriological Interpretation:**

<input type="checkbox"/> SAFE (Coliform Absent)	MPN: > 800 CFU/100 ml Coliform
<input checked="" type="checkbox"/> UNSAFE (Coliform Present) and:	
<input checked="" type="checkbox"/> Fecal/E. Coli Present	
<input type="checkbox"/> Fecal/E. Coli Absent	248 CFU/100ml E-Coli

**Arsenic:** \_\_\_\_\_ ug/L

Wisconsin Department of Health Services (DHS) recommends that you stop using your water for drinking or food preparation if Arsenic level is greater than 10 ug/L (ppb)

**Pump or Well Information Only**

\*Results are Required to be submitted to DNR

Reason for Test:

<input type="checkbox"/> *Pump Work	<input type="checkbox"/> *New Well
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**Well Construction Information**

<input type="checkbox"/> Drilled	<input type="checkbox"/> Driven Point
<input type="checkbox"/> Jetted	<input type="checkbox"/> Dug
<input type="checkbox"/> Other:	

Driller (If new Well):

Lab Name: LV Laboratories LLC Les Vondra 1015 S. Madison St Lancaster, WI. 53813 (608)723-4096	Lab Cert. # 105-443 Email: lasv@chorus.net
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**Nitrate:** \_\_\_\_\_ mg/L as N

Department of Natural Resources state that water is considered unsafe for infants under 1 year of age and pregnant women when nitrate level is greater than 10 mg/L (ppm)

**Other:** \_\_\_\_\_ : \_\_\_\_\_ mg/L or ug/L

Amount Paid: \_\_\_\_\_  Cash  Check

Date Paid: \_\_\_\_\_ Check No. \_\_\_\_\_

Staff Initials: \_\_\_\_\_

Date/Time Received: 7/9/20 12:00

Bacteriological Sample No. E 1936	Arsenic Sample No.
Date Reported 7/10/20	Date Received by DNR

**Sampling Disclaimer**

LV Laboratories, LLC reserves the right to reject any sample that is received non-compliant. All sample(s) must be received within 48 hours from the time the sample is collected. For additional samples rejections, see above. Sampler will be notified of sample rejection. If sampler requests testing to be done upon notification of sample rejection, LV Laboratories, LLC agrees to accept the sample(s) for testing and will qualify the results by dating and initialing below.

LV Labs will keep copies for five years before disposal.

\*Sample not preserved on ice upon collection. Results cannot be used for SDWA compliance but are acceptable for NR 812 compliance"

LV Laboratories, LLC \_\_\_\_\_ Date: \_\_\_\_\_

West side of field/creek

**Water Sample Collection Information Form** Do not use this form for Public Water Compliance Samples

Collection Date (MM/DD/YY) <b>07/08/2020</b>	Time: <b>10:30</b> AM/PM	Collected By <b>Norm Norman Bill Randecker</b>	License # (pump installer/well driller)
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Owners Name <b>Bill + Carla Randecker</b>	Owners Telephone Number <b>(815) 281-1675</b>
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Owners Street Address <b>4109 General Grant</b>	Well Address (Street or Legal Description) <b>Creek / 4109 General Grant</b>
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City, State, Zip Code <b>Galena, IL 61036</b>	Town or City <b>Galena</b>	County <b>Jo Daviess</b>
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<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%; text-align: center;"><b>Mail Results To:</b></td> <td>Name <b>Norm + Jeanie Norman</b></td> </tr> <tr> <td></td> <td>Address <b>12557 W. Norris Lane</b></td> </tr> <tr> <td></td> <td>City State Zip Code <b>Galena IL 61036</b></td> </tr> </table>	<b>Mail Results To:</b>	Name <b>Norm + Jeanie Norman</b>		Address <b>12557 W. Norris Lane</b>		City State Zip Code <b>Galena IL 61036</b>	Email Address (for electronic results) <b>norman_jeanie@yahoo.com</b>
<b>Mail Results To:</b>	Name <b>Norm + Jeanie Norman</b>						
	Address <b>12557 W. Norris Lane</b>						
	City State Zip Code <b>Galena IL 61036</b>						

<b>Test(s) Requested</b>	
Bacteriological <input type="checkbox"/>	Nitrate <input type="checkbox"/>
Arsenic <input type="checkbox"/>	Other <input checked="" type="checkbox"/> <b>M.P.N.</b>

Sampler Remarks, if needed: <b>Retesting of runoff to creek</b>	<b>Laboratory Use Only</b>
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**Private Sample Information Only**

Reason for Test:

<input type="checkbox"/> Annual Test	<input type="checkbox"/> Real Estate
<input type="checkbox"/> Taste/Odor	<input type="checkbox"/> Previous Unsafe
<input type="checkbox"/> Other	

Sample Location:

<input type="checkbox"/> Bath Tap	<input type="checkbox"/> Pressure Tnk. Tap
<input type="checkbox"/> Kitchen Tap	<input type="checkbox"/> Milk house
<input type="checkbox"/> Other	

Is Chlorine Present? Yes  No

Does the well serve the public? Yes  No

Public #:

<b>Bacteriological Approved Method</b> <input checked="" type="checkbox"/> MMO-MUG (Colisure) <input type="checkbox"/> Membrane Filter <input type="checkbox"/> Presence/Absence <input type="checkbox"/> Other	<b>Nitrate Approved Method</b>  4500-NO3, SM 20th ed.
<b>Sample Rejection:</b>	
<input type="checkbox"/> Old	<input type="checkbox"/> Chlorine Present-CL
<input type="checkbox"/> Overgrown	<input type="checkbox"/> Frozen-FR
<input type="checkbox"/> Turbidity	<input type="checkbox"/> Shipping Problem-SP

**Pump or Well Information Only**

\*Results are Required to be submitted to DNR

Reason for Test:

<input type="checkbox"/> *Pump Work	<input type="checkbox"/> *New Well
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**Well Construction Information**

<input type="checkbox"/> Drilled	<input type="checkbox"/> Driven Point
<input type="checkbox"/> Jetted	<input type="checkbox"/> Dug
<input type="checkbox"/> Other: _____	

Driller (if new Well):

**Laboratory Results:**

**Bacteriological Interpretation:**

<input type="checkbox"/> SAFE (Coliform Absent)	<b>M.P.N:</b> <b>29,800</b> <b>cfu/100ml</b> <b>coliform</b> <hr/> <b>2900 cfu/100ml</b> <b>E. coli</b>
<input checked="" type="checkbox"/> UNSAFE (Coliform Present) and:	
<input checked="" type="checkbox"/> Fecal/E. Coli Present	
<input type="checkbox"/> Fecal/E. Coli Absent	

**Arsenic:** \_\_\_\_\_ ug/L

Wisconsin Department of Health Services (DHS) recommends that you stop using your water for drinking or food preparation if Arsenic level is greater than 10 ug/L (ppb)

Lab Name: **LV Laboratories LLC** Lab Cert. #: **105-443**

Les Vondra  
1015 S. Madison St  
Lancaster, Wi. 53813  
(608)723-4096 Email: [levv@chorus.net](mailto:levv@chorus.net)

**Nitrate:** \_\_\_\_\_ mg/L as N

Department of Natural Resources state that water is considered unsafe for infants under 1 year of age and pregnant women when nitrate level is greater than 10 mg/L (ppm)

**Other:** \_\_\_\_\_ mg/L or ug/L

Amount Paid: \_\_\_\_\_  Cash  Check

Date Paid: \_\_\_\_\_ Check No. \_\_\_\_\_

Staff Initials: \_\_\_\_\_

Date/Time Received: **7/9/20 12:00**

Bacteriological Nitrate Sample No. <b>E1937</b>	Arsenic Sample No.
Date Reported <b>7/10/20</b>	
Date Received by DNR	

**Sampling Disclaimer**

LV Laboratories, LLC reserves the right to reject any sample that is received non-compliant. All sample(s) must be received within 48 hours from the time the sample is collected. For additional samples rejections, see above. Sampler will be notified of sample rejection. If sampler requests testing to be done upon notification of sample rejection, LV Laboratories, LLC agrees to accept the sample(s) for testing and will qualify the results by dating and initialing below.

LV Labs will keep copies for five years before disposal.

"Sample not preserved on ice upon collection. Results cannot be used for SDWA compliance but are acceptable for NR 812 compliance"

LV Laboratories, LLC Date: \_\_\_\_\_

## Domestic Septage Land Application and Disposal Guidance

Domestic septage is defined as any liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device or any similar systems that receives only domestic (non-commercial) septage.

Domestic septage may be disposed of in two different ways. The first option is to take the material to a municipal or private wastewater treatment facility where it can be properly treated. The second option is to beneficially reuse the material by land application at non-public contact sites. A non-public contact site is an area where the potential for public exposure is minimal, such as agricultural fields, forests, or mining reclamation sites.

To protect public health and the environment, there are five main requirements the septage must meet to be land applied. These are:

Pathogen Reduction,

Vector Attraction Reduction,

Screening,

Agronomic application rate, and

Site restrictions.

### Pathogen and Vector Attraction Reduction

Pathogens are disease-causing organisms such as bacteria, viruses, and parasites that may be present in septage. The Pathogen Reduction requirement is used to ensure that any potential pathogens in the septage are reduced to a level that is safe for land application. The next requirement the septage hauler has to meet is a Vector Attraction Reduction (VAR) requirement. Vectors are organisms such as mosquitoes, flies, or rodents that can spread disease by carrying and transferring pathogens. The VAR requirement is used to reduce the potential for attracting these disease-carrying vectors.

There are two options for meeting Pathogen and Vector Attraction Reduction requirements. These are:

lime (alkali) stabilization or

injection into the ground or disking into the ground within 6 hours of application.

Lime stabilization involves adding and thoroughly mixing lime (alkali) with each load of septage to ensure that the pH is raised to at least 12 for at least 30 minutes. Usually this requires about 50 lbs of lime per 1,000 gallons of septage. A pH meter must be used to determine whether the pH requirement was met. An operational log and records of the pH readings must be maintained to demonstrate that this requirement has been met for every load that has been land applied.

Septage that is injected into the ground or disked in within 6 hours of application does not have to be lime-stabilized.

### Screening

The septage must be screened to remove foreign or non-organic objects such as trash or other non-biodegradable objects. Options for this requirement include screening at the site where septage is being collected, screening out the back of the vehicle during land application, or screening using a tank setup. Screenings must be bagged and disposed of at a permitted municipal waste landfill.

### Agronomic Application Rate

The septage must be applied at an agronomic rate. The maximum volume of domestic septage that can be land applied in any year depends on the amount of nitrogen required by the crop grown and expected yield. The following equation is provided in the rules to calculate annual domestic septage application rates:

where:  $AAR = \text{Annual Application Rate (gallons / acre / year)}$

$N = \text{Nitrogen Required by Crop (lbs)}$

### Site Restrictions

Site restrictions for land applying domestic septage must be met and include minimum time restrictions for harvesting crops, grazing animals, maximum slope and distances from waterbodies, and restricting public access after land application. Site restrictions include:

Food crops (food or root crops are crops consumed by humans) with harvested parts that touch the soil surface but are totally above the ground, such as melons, tomatoes, etc., shall not be harvested for 14 months after application.

Root crops with harvested parts below the land surface, such as potatoes, onions, etc., shall not be harvested for 20 months after application if the septage is not disked in and remains on the land surface for four months or more.

Root crops cannot be harvested for 38 months after application if the septage remains on the land surface for less than four months.

No crop can be harvested for at least 30 days following application of septage.

Animals shall not be allowed to graze on the land within 30 days after application.

Public access to land shall be restricted for 30 days after application. This can include remoteness of site, posting with no trespassing signs, and/or fencing.

Domestic septage may not be applied within 250 feet of any well or residence.

Domestic septage may not be applied to land with a slope greater than 6%.

Domestic septage may be applied to land with a slope between 3% and 6% provided 85% of the area is covered with vegetation.

Domestic septage may not be applied within 100 feet of any surface water or within 100 feet of drainages.

#### Exceptions to Site Restrictions

When septage is lime stabilized prior to application, the restrictions on animal grazing, turf use, and public access no longer apply to the site. All other site restrictions still apply.

#### Required Recordkeeping

Records of domestic septage disposal must be maintained that show that the domestic septage hauler is meeting all of these requirements. These records must be maintained for a minimum of five (5) years.

Required records include:

Location of the application site (street address, latitude/longitude, etc);

Number of acres on which septage is applied at each site;

Date and time of each application;

Nitrogen requirement of the crop or vegetation grown on each site for each calendar year;

Gallons of septage applied to each site;

Description of pathogen and vector attraction reduction measures used; and

Required certification statement.

## Land-Applied Septage: A Look Into the Future

It's time to break out of the 'disposal' mentality and look at septage as a resource that is beneficial if managed appropriately.

By John Buchanan, Ph.D., P.E., and A.R. Rubin

### NOWRA

In the United States, more than 20 million housing units are served by onsite wastewater treatment systems, each with a septic tank.

Within the tank, the accumulation of solids is faster than digestion, and thus the slurry within the tank must be removed periodically. The volume of septage generated by these systems is significant, and this material must be properly managed.

Land application and transport to an approved treatment facility are the most common means of managing septage, and both methods have benefits and drawbacks. Many smaller wastewater treatment plants have stopped receiving septage because it upsets their processes and makes it difficult for them to meet their discharge limits. This forces transporters to travel to the larger, regional treatment plants. The added cost adds to the price of pumping and can become a significant burden on homeowners.

Land-based septage application has been used for generations, but as people occupy what was once remote farmland, there is increased resistance to developing new land application sites. **Land application is a viable and sustainable septage management method, but its acceptance requires a change in thinking.** Most regulatory documents use the phrase "septage disposal." If land application is to be sustainable, septage must be recognized as a resource and managed appropriately.

### Different from biosolids

In 1991, the U.S. EPA promulgated 40 CFR Part 503 to set a national standard for the management and treatment of sewage sludge (now known as biosolids). This same rule considers domestic septage to be sewage sludge and sets separate requirements for its handling and treatment.

Domestic septage is defined as liquid or solid material removed from a septic tank, cesspool, portable toilet, type-III marine sanitation device or a similar system. To handle septage separately from biosolids, haulers must meet at least eight requirements.

First, the land applier must ensure that the septage is only from domestic sources (no commercial or industrial sources). Second, material can be applied only on sites to which the public does not have access. Third, the land applier must manage the application to reduce pathogens. Fourth, appliers must make the application area less attractive to vectors – insects and rodents that could transmit diseases.

Fifth, the owner of the application site must observe crop harvesting, animal grazing and site access restrictions. Sixth, the owner must certify that the pathogen and vector reduction activities are being met. Seventh, the amount of nitrogen applied may not be more than is needed to supply the crop. Eighth, all applicable state and local rules must be followed.

Within these rules, there is a strong notion of using the land to dispose of the septage rather than using the septage to benefit the land. Under vector attraction reduction, for example, a land applier could inject septage below the soil surface, plow the material under, or use lime to raise the septage pH to 12.

Raising the pH is easy, but continuous application of alkaline materials at the same location can increase the soil pH, limiting soil productivity. Of course, tillage practices are also problematic: Tilled soil is highly erosive during storms and the runoff can transport soil, pathogens and nutrients to waterways.

In order to be sustainable, septage application must be synchronized with the natural cycles of the land: Applied nutrients must be harvested with the crop or immobilized in the soil.

### Nutrient management

While we rarely use the term "manure" when discussing human wastes, land appliers of septage are in the manure management business. Those who manage livestock wastes from concentrated animal feeding operations (CAFOs) have the same issues of nutrients, pathogens and odors.

To reduce public and environmental health risk from the land application of livestock wastes, the U.S. Department of Agriculture National Resources Conservation Service (NRCS) developed Conservation Practice Standard 590 – Nutrient Management.

Nutrient management focuses on the soil system and how waste materials can benefit the soil and improve crop productivity. A comprehensive nutrient management plan (CNMP) balances the needs of the crop with the nutrients in the septage and the nutrients already in the soil.

The bad news is that most crops do not consume much phosphorus, and as such, phosphorus often limits the septage application rate. A different way of thinking is to grow a crop for the specific purpose of withdrawing the nutrients.

It is important to note that crops with greater biomass yields will remove more nutrients. This is an opportunity: Some types of biomass can be converted into ethanol. Using the plant matter for ethanol production removes nutrients from the land application area and converts them to animal feed (residuals from the biomass conversion).

### Continuing challenge

Management of septage will continue to be a challenge for all communities. Regardless of the management option selected, septage management programs must be permitted by appropriate regulatory agencies. Sustainability is more than just a buzzword – it is the new reality. Land application of septage can be a sustainable practice if all the elements are in balance.