

1 **Board of Health**
2 **12VAC5-613**
3 **Emergency Regulations for Alternative Onsite Sewage Systems**
4

5 **Part 1: General**
6

7 **12VAC5-613-10. Definitions.** The following terms used in this chapter shall have the
8 following meanings. Terms not defined in this chapter shall have the meanings
9 prescribed in Chapter 6 of Title 32.1 of the *Code of Virginia* or in 12VAC5-610-20 et
10 seq. (or successor regulation) unless the plain reading of the language requires a different
11 meaning.

12 “Ammonia nitrogen” or “ammonia” means the non-ionized form of reduced nitrogen
13 (NH₃).

14 “Ammonium nitrogen” or “ammonium” means the ionized form of reduced nitrogen
15 (NH₄⁺).

16 “Alternative onsite sewage system,” “AOSS,” or “alternative onsite system” means a
17 treatment works that is not a conventional onsite sewage system and does not result in a
18 point source discharge.

19 “Biochemical oxygen demand” (BOD) is the measure of the amount of oxygen required
20 by bacteria for stabilizing material that can be decomposed under aerobic conditions.

21 “BOD₅” or “biochemical oxygen demand, five-day” means the quantitative measure of
22 the amount of oxygen consumed by bacteria while stabilizing, digesting, or treating
23 biodegradable organic matter under aerobic conditions over a five-day incubation period;
24 expressed in milligrams per liter (mg/L).

25 “Conventional onsite sewage system” means a treatment works consisting of one or
26 more septic tanks with gravity, pumped, or siphoned conveyance to a gravity distributed
27 subsurface drainfield.

28 “Disinfection” means a process used to destroy or inactivate pathogenic microorganisms
29 in wastewater to render them non-infectious.

30 “Dissolved oxygen” (DO) means the concentration of oxygen dissolved in effluent,
31 expressed in mg/l or as percent saturation, where saturation is the maximum amount of
32 oxygen that can theoretically be dissolved in water at a given altitude and temperature.

33 “Effluent” means partially or fully treated sewage flowing from a treatment unit or septic
34 tank.

35 “Ksat” means saturated hydraulic conductivity.

1 “Large AOSS” means an AOSS that serves more than 3 single-family residences or a
2 non-residential facility with an average daily sewage flow in excess of 1,000 gpd.

3 “Local health department” means the local health department having jurisdiction over the
4 AOSS.

5 “Maintenance” means performing adjustments to equipment and controls and in-kind
6 replacement of normal wear and tear parts such as light bulbs, fuses, filters, pumps,
7 motors, or other like components. Maintenance includes pumping the tanks or cleaning
8 the building sewer on a periodic basis. Maintenance shall not include replacement of
9 tanks, drainfield piping, distribution boxes, or work requiring a construction permit and
10 installer.

11 “Nitrate nitrogen” or “nitrate” means the stable form of oxidized nitrogen (NO_3^-)

12 “Nitrite nitrogen” or “nitrite” means the unstable form of oxidized nitrogen (NO_2^-)

13 “Non-tidal surface waters” means any perennial stream, river, lake, pond, or other body
14 of water which is not affected by tidal actions. A perennial stream is one that is shown as
15 a solid blue line on a United States Geological Survey (USGS) topographic map.

16 “Operate” means the act of making a decision on one’s own volition (i) to place into or
17 take out of service a unit process or unit processes or (ii) to make or cause adjustments in
18 the operation of a unit process at a treatment works.

19 “Operation” means the biological, chemical, and mechanical processes of transforming
20 sewage or wastewater to compounds or elements and water that no longer possess an
21 adverse environmental or health impact.

22 “Operator” means any individual employed or contracted by any owner, who is licensed
23 or certified under Chapter 23 (§ [54.1-2300](#) et seq.) of Title 54.1 as being qualified to
24 operate, monitor, and maintain an alternative onsite sewage system.

25 “Organic loading rate” means the biodegradable fraction of chemical oxygen demand
26 (biochemical oxygen demand, biodegradable FOG, and volatile solids) delivered to a
27 treatment component in a specified time interval expressed as mass per time or area; e.g.,
28 pounds per day or pounds per cubic foot per day (pretreatment); pounds per square foot
29 per day (infiltrative surface or pretreatment). For a typical residential system these
30 regulations assume that biochemical loading (BOD_5) equals organic loading.

31 “Owner” means the Commonwealth or any of its political subdivisions, including
32 sanitary districts, sanitation district commissions and authorities, any individual, any
33 group of individuals acting individually or as a group, or any public or private institution,
34 corporation, company, partnership, firm or association which owns or proposes to own a
35 sewerage system or treatment works.

1 “pH” means the measure of the acid or base quality of water that is the negative log of the
2 hydrogen ion concentration.

3
4 “Project area” means a recorded lot or a portion of a recorded lot owned or controlled by
5 easement by the owner of an AOSS upon which an AOSS is located or contiguous to an a
6 soil treatment area and is designated as such for purposes of compliance with the
7 performance requirements of this chapter. In the case of an AOSS serving multiple
8 dwellings, the project area may include multiple recorded lots as in a subdivision.

9
10 “Relationship with an operator” means an agreement between the owner of an AOSS and
11 operator wherein the operator has been retained by the owner to operate the AOSS in
12 accordance with the requirements of this chapter.

13
14 “Reportable incident” means one or more of the following: an alarm event, any failure to
15 achieve one or more performance requirement, loss of power, removal of solids,
16 replacement of media, or replacement of any major component of the system including
17 electric and electronic components, pumps, blowers, and valves. Routine maintenance of
18 effluent filters is not included.

19
20 “Saturated hydraulic conductivity” means a quantitative measure of a saturated soil's
21 ability to transmit water when subjected to a hydraulic gradient.

22
23 “Secondary effluent” means effluent that has been treated to produce BOD₅ and TSS
24 concentrations equal to or less than 30 mg/L each on a 30-day average basis and a total
25 and an NH₃ content equal to or less than 1 mg/L.

26
27 “Secondary treatment” means biological and chemical treatment processes, individually
28 or in combination, designed to remove organic matter.

29
30 “Settleable Solids” means a measure of the volume of suspended solids that will settle out
31 of suspension within a specified time, expressed in milliliters per liter (mL/L).

32
33 “Sewage Handling and Disposal Regulations” or “SHDR” means 12VAC5-610-20 et seq.
34 or successor regulation adopted by the Board of Health.

35
36 “Small AOSS” means an AOSS that serves no more than 3 single family residences or a
37 non-residential facility with an average daily sewage flow of less than or equal to 1,000
gpd.

38
39 “Subsurface drainfield” means a system installed within the soil and designed to
accommodate treated sewage from a treatment works.

40
41 “Soil treatment area” means the physical location in or on the naturally-occurring soil
42 medium where final treatment and dispersal of effluent occurs; includes subsurface
drainfields, drip dispersal fields, and spray fields.

1 “Tertiary effluent” means effluent that has been treated to produce BOD₅ and TSS
2 concentrations equal to or less than 10 mg/L each on a 30 day average basis, a total NH₃
3 content equal to or less than 1 mg/L.

4 “Total Kjeldahl Nitrogen” or “TKN” means a measure of the total concentration of
5 organic nitrogen, ammonia, and ammonium nitrogen

6 “Total nitrogen” means the measure of the complete nitrogen content of wastewater
7 including TKN, nitrate nitrogen, and nitrite nitrogen expressed in mg/L.

8 “Total residual chlorine” (TRC) is a measure of the combined available chlorine and the
9 free available chlorine available in a sample after a specified contact time.

10

11 “Total suspended solids” means a measure of the mass of all suspended solids in a
12 sample typically measured in milligrams per liter (mg/L).

13

14 “Treatment train” means a site-specific combination of components that make up a
15 wastewater treatment system; a simple example of a treatment train is a septic tank and a
16 soil treatment area.

17 “Treatment unit” or “treatment device” means a method, technique, equipment, or
18 process other than a septic tank or septic tanks used to treat sewage to produce effluent of
19 a specified quality before the effluent is discharged to a soil treatment area.

20 “Turbidity” means the relative clarity of effluent as a result of the presence of varying
21 amounts of suspended organic and inorganic materials or color.

22 “Vertical separation” means the vertical distance between the point of effluent
23 application to the soil and a limiting condition of the site of the soil treatment area such
24 as seasonal high ground water, bedrock, or other restriction.

25 Statutory Authority

26 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

27 **12VAC5-613-20. Purpose and Authority.** Pursuant to the requirements of *Va. Code* §§
28 32.1-12 and -164 et seq., 2.2-4011, and Acts of Assembly 2009, Chapter 0220, the Board
29 of Health has promulgated this chapter to:

30 A. Establish a program for regulating the operation and maintenance of alternative
31 onsite sewage systems;

32 B. Establish performance requirements for alternative onsite sewage systems;

33 C. Establish horizontal setbacks for alternative onsite sewage systems that are
34 necessary to protect public health and the environment;

- 1 D. Discharge the Board’s responsibility to supervise and control the safe and sanitary
2 collection, conveyance, transportation, treatment, and disposal of sewage by onsite
3 sewage systems and treatment works as they affect the public health and welfare;
- 4 E. Protect the quality of surface water and ground water;
- 5 F. Guide the State Health Commissioner in determining whether a permit or other
6 authorization for an alternative onsite sewage system shall be issued or denied; and
- 7 G. Inform owners, applicants, onsite soil evaluators, system designers, and other
8 persons of the requirements for obtaining a permit or other authorization for an
9 alternative onsite sewage system.

10 Statutory Authority

11 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

12 **12VAC5-613-30. Applicability and Scope.**

- 13
- 14 A. As provided in this section, this chapter governs the design, construction, and
15 operation of AOSSs.
- 16
- 17 B. Part 3 of this chapter, Operation and Maintenance Requirements, shall apply to all
18 AOSSs, including those in operation prior to the effective date of this chapter.
- 19
- 20 C. The laboratory sampling requirements of this chapter apply only to AOSSs
21 permitted pursuant to applications filed on or after the effective date of this chapter.
- 22
- 23 D. Part 2 of this chapter, Performance Requirements, apply only to alternative onsite
24 sewage systems permitted pursuant to applications filed on or after the effective
25 date of this chapter.
- 26
- 27 E. Any AOSS in operation prior to the effective date of this chapter is subject to the
28 performance requirements contained in the regulations in effect at the time the
29 system was permitted.
- 30
- 31 F. AOSS designed, constructed, permitted, and operated in accordance with this
32 chapter and the prescriptive design, location, and construction criteria of 12VAC5-
33 610-20 et seq., the policies, and procedures of the Department are deemed to
34 comply with the ground water quality requirements of Section 70.A.12 of this
35 chapter.
- 36
- 37 G. This chapter shall be effective for twelve months following the effective date,
38 unless extended in accordance with the provisions of *Va. Code* § 2.2-4011.
- 39

1 H. AOSSs designed pursuant to *Va. Code* § 32.1-163.6 are subject to the following
2 requirements:

- 3
- 4 1. performance requirements of this chapter;
- 5
- 6 2. horizontal setback requirements of this chapter;
- 7
- 8 3. operation, maintenance, inspection, and sampling requirements of this
9 chapter; and
- 10
- 11 4. standard engineering practice.

12 Statutory Authority

13 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

14
15 **12VAC5-613-40. Relationship to other regulations.** This chapter is supplemental to
16 12VAC5-610-20 et seq. (the *Sewage Handling and Disposal Regulations* or *SHDR*) and
17 supersedes Table 5.4 of the SHDR. All procedures pertaining to enforcement, the
18 minimum requirements for filing applications, and the processing of applications,
19 including appeals, and case decisions contained in 12VAC5-610-20 et seq. (or successor
20 regulation) shall apply to the permitting of AOSS under this chapter. In any case where
21 there is a conflict between this chapter and 12VAC5-610-20 et seq. (or successor
22 regulation), this chapter shall be controlling.

23 Statutory Authority

24 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

25
26 **12VAC5-613-50. Violations, enforcement.**

27
28 A. Failure by any person or AOSS to achieve one or more performance requirements
29 prescribed by this chapter, to accomplish any mandated visit, or any operation,
30 maintenance, monitoring, sampling, reporting, or inspection requirement of this chapter,
31 either individually or in combination, shall be a violation of this chapter.

32
33 B. Nothing in this chapter shall be construed to limit the authority of the Board, the
34 Commissioner, or the Department to enforce this chapter or the requirements of
35 12VAC5-610-20 et seq. (or successor regulation).

36
37 C. In accordance with the SHDR and *Va. Code* § 32.1-25 the commissioner may take
38 such samples and conduct such monitoring, including ground water samples and
39 monitoring, he deems necessary to enforce this chapter.

1 D. The Board, commissioner, and Department may use any lawful means to enforce this
2 chapter, including voiding a construction or operation permit, imposition of civil
3 penalties, or criminal prosecution.

4 Statutory Authority

5 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

6 **12VAC5-613-60. Operation permits, land records.**

7
8 A. The Department shall not issue an operation permit for an AOSS unless the
9 owner has established a relationship with an operator and provided the operator's name
10 and license number to the local health department. The owner shall maintain a
11 relationship with an operator at all times as long as the AOSS is in operation.

12
13 B. The Department shall not issue an operation permit for an AOSS until the owner
14 has recorded an instrument which complies with *Va. Code* § 15.2-2157.E in the land
15 records of the appropriate circuit court.

16 Statutory Authority

17 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

18
19 **Part 2: Performance Requirements**

20
21 **12VAC5-613-70. Performance requirements- general.**

22
23 A. All AOSS designed, constructed and operated pursuant to this chapter shall comply
24 with the following performance requirements:

- 25
26 1. The presence of raw or partially treated sewage on the ground's surface or in
27 adjacent ditches or waterways is prohibited. Spray irrigation systems and other
28 systems utilizing surface application of treated effluent require, by design, the
29 presence of effluent on the surface for short periods of time. With these systems
30 compete absorption of effluent must occur before the application of another dose.
31
32 2. The exposure of insects, animals, or humans to raw or partially treated sewage is
33 prohibited.
34
35 3. The backup of sewage into plumbing fixtures is prohibited.
36
37 4. All treatment units shall be designed for the anticipated wastewater strength and
38 peak flow.
39
40 5. All treatment units shall be designed to produce a minimum of secondary
41 effluent.

1
2 6. Dosing of the treatment unit shall accommodate the design peak flow within the
3 treatment unit's rated capacity
4

5 7. The soil treatment area shall be appropriately sized for the hydraulic capacity of the
6 underlying soils. Trench bottom hydraulic loading rates shall not exceed the values in
7 Table 1. Area hydraulic loading rates for systems such as drip dispersal, spray
8 irrigation, and mounds should be less than the trench bottom maximum values in
9 Table 1. Adherence to this performance requirement does not assure or guarantee
10 that other performance requirements of this chapter, including effluent dispersal or
11 ground water quality, will be met. It is the designer's responsibility to ensure that the
12 proposed design is adequate to achieve all performance requirements of this chapter.
13

14 **Table 1: Maximum Trench Bottom Hydraulic Loading Rates**

Soil Texture Group	Maximum % Ksat, trench bottom (gravity dosing)	Maximum % Ksat, trench bottom (pressure dosing)
I and below	Up to 10	Up to 15
II and III	Up to 20	Up to 25
IV and above	Up to 25	Up to 35

15
16 8. The soil treatment area must be appropriately sized for the organic capacity of the
17 underlying soils. Trench-bottom organic loading rates must meet the limits
18 established in Table 2. Area organic loading rates for systems such as drip dispersal,
19 spray irrigation, and mounds, should be reduced from the maximum trench bottom
20 organic loading rates in Table 2. Adherence to this performance requirement does not
21 assure or guarantee that other performance requirements of this chapter, including
22 effluent dispersal or ground water quality, will be met. It is the designer's
23 responsibility to ensure that the proposed design is adequate to achieve all
24 performance requirement of this chapter. will be met.
25

26 **Table 2**
27 **Maximum Trench Bottom Organic Loading Rates**

Vertical Separation to Water Table or Other limiting Condition	TB Loading Rate
≥ 18"	0.00150 lb/day/sf
17"-12"	0.00083 lb/day/sf
≤ 11"	0.00045 lb/day/sf

28
29 9. Septic effluent may only be discharged to a soil treatment area when the vertical
30 separation to a limiting condition consists of at least 18 inches of naturally-occurring,
31 in-situ soil.
32

33 10. Tertiary treatment and disinfection are required whenever one or more of the
34 following apply:
35 a. there is less than 12 inches of vertical separation to a limiting condition in the
36 soil treatment area

- b. there is less than 6” of vertical separation to a limiting condition in the naturally-occurring soil below the soil treatment area, or
- c. the AOSS utilizes surface application of effluent, such as spray irrigation.

11. Anytime the vertical separation to a permeability-limiting feature, including rock, pans, and other restrictions is less than 18 inches and for any AOSS with a design flow greater than 1,000 gpd, the designer shall provide calculations to demonstrate that water mounding will not adversely affect the functioning of the soil treatment area, that hydraulic failure will not occur, and that adequate vertical separation will be maintained to ensure the performance requirements of this chapter are met.

12. The AOSS shall not pose a greater risk of ground water pollution than systems otherwise permitted pursuant to 12VAC5-610-20 et seq. After wastewater has passed through a treatment unit or septic tank, been disinfected where required, and passed through the soil in the soil treatment area, the concentration of fecal coliform organisms must not exceed 200 cfu/100 ml. When chlorine is used for disinfection, 30-minute contact is required with a TRC following the contact tank not less than 1 mg/l nor more than 2 mg/l.

13. The following minimum effluent and site condition requirements must be met:

Table 3: Minimum Effluent Requirements for Site Conditions

Vertical separation from point of effluent application in the soil treatment area to a limiting feature	Description	BOD (mg/l)	TSS (mg/l)	Ammonia Nitrogen (mg/l)
≥ 18” (must be naturally-occurring soils)	Septic	≤ 250	≤ 140	NA
> 18” to 12” (may utilize engineered fill)	Secondary	30	30	≤ 3
< 12” (may utilize engineered fill)	Tertiary	10	10	≤ 3

42
43
44
45
46

1
2
3 14. Total nitrogen loading shall not exceed the values in Table 4.
4

5 **Table 4: Total Nitrogen Loading**

Location	Limit (lb/ac/yr)
≤ 1,000 feet from tidal waters	5.0
≤ 1,000 feet from non-tidal surface waters	8.0
All others	13.3

6
7 15. Prior to the issuance of a construction permit, the designer shall demonstrate
8 through modeling or other calculations that the concentration of nitrate nitrogen in
9 ground water will not exceed 5 mg/l at the project area boundary.

10
11 16. The total nitrogen limits shall not apply to any lot recorded on or before the
12 effective date of this chapter, or for which there is a valid certification letter
13 issued on or before the effective date of this chapter, or where an onsite sewage
14 system originally installed on or before the effective date of this chapter has failed
15 and is being replaced or repaired pursuant to this chapter.

16
17 17. The AOSS shall be designed so that all components are of sufficient structural
18 integrity to minimize the potential of physical harm to humans and animals.

19
20 18. The AOSS shall be designed to minimize noise, odor, or other nuisances at
21 the property boundary.

22
23 19. The conveyance system for any AOSS shall be designed and installed with
24 sufficient structural integrity to resist inflow and infiltration and to maintain
25 forward flow.

26
27 20. Spray irrigation systems are limited to AOSSs with average daily sewage
28 flows of 1,000 gpd or less.

29
30 B. Plans for AOSS not submitted pursuant to 12VAC5-610-20 et seq., the policies,
31 and procedures of the Department must state clearly, preferably on the title page that they
32 are being submitted pursuant to Virginia Code § 32.1-163.6. The Department will review
33 any plans that are not clearly marked in this fashion under the SHDR.

34
35 C. Each application shall include a site characterization report using the Field Book for
36 Describing and Sampling Soils, Version 2.0, National Soil Survey Center, Natural
37 Resources Conservation Service, U.S. Department of Agriculture, September 2002.
38 The report may contain such information that the designer deems appropriate,
39 however it must describe the following minimum attributes of the site of the proposed
40 soil treatment area:
41

- 1 1. Depth to limiting feature(s), including seasonal or perched water table, pans,
2 restrictions, pervious or impervious bedrock;
3
 - 4 2. Slope of the project area;
5
 - 6 3. Ksat at the proposed installation depth and at depths below the soil treatment
7 area to demonstrate compliance with this chapter. Ksat may be estimated
8 when the proposed system will have a daily sewage flow of 1,000 gallons per
9 day or less; the Ksat must be measured using an appropriate device when the
10 proposed system will have a daily sewage flow of greater than 1,000 gallons
11 per day.
12
 - 13 4. Landscape or landform; and
14
 - 15 5. Project area, along with those physical features in the vicinity of the proposed
16 AOSS normally associated with plans for onsite sewage systems, including
17 streams, bodies of water, roads, utilities, wells and other drinking water
18 sources, existing and proposed structures, and property boundaries.
19
- 20 D. All large AOSS shall discharge only secondary effluent or tertiary effluent to the soil
21 treatment area; septic effluent is prohibited for large AOSSs.

22 Statutory Authority

23 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.
24

25 **12VAC5-613-80. Performance requirements- laboratory sampling and monitoring.**
26

- 27 A. All sampling and monitoring shall be conducted according to procedures
28 approved under 40 CFR Part 136 or alternative methods approved by the U.S.
29 Environmental Protection Agency unless other procedures have been specified in
30 this permit.
31
- 32 B. The owner of each small AOSS is required to submit a grab sample of the effluent
33 from the treatment unit and have the sample analyzed by an EPA certified
34 laboratory within the first 180 days of operation. Thereafter, if the treatment unit
35 has received general approval, a sample is required once every five years.
36 Samples shall be analyzed for BOD, TSS, total nitrogen, and if applicable, total
37 residual chlorine or fecal coliform. Sample results must be received by the local
38 health department by the 10th of the month following the month in which the
39 sample was taken.
40
- 41 C. For small AOSSs that utilize a treatment unit that has not received general
42 approval, after the initial sample required by subsection A, a grab sample of the
43 effluent from the treatment unit is required once every six months for the first two
44 years of operation and annually thereafter. Sample results must be received by

1 the local health department by the 10th of the month following the month in which
 2 the sample was taken.

3
 4 D. All effluent samples must be taken from the end of the treatment train, prior to the
 5 point where the effluent is discharged to the soil treatment area.

6
 7 E. Laboratory sampling is not required for AOSSs discharging septic effluent to the
 8 soil treatment area.

9
 10 F. Sampling and monitoring requirements for AOSS are contained in Table 5.

11 **Table 5: SAMPLING PROGRAMS FOR AOSS.**

12
 13

PLANT SIZE	>2.01 MGD	1.0-2.0 MGD	0.101-0.999 MGD	0.041-0.1 MGD	0.011-0.04 MGD	0.0011-0.010 MGD	≤1000 gpd
Flow	Totalizing, Indicating & Recording	Totalizing, Indicating & Recording	Totalizing, Indicating & Recording	Totalizing, Indicating & Recording	Estimate	Estimate	Estimate
BOD ₅ , TSS	24-HC 1/Day	24-HC 5 Days/Wk	8-HC 3 Days/Wk	4-HC 1 Day/Wk	Grab quarterly	Grab 1/yr	Grab 1/yr
Total Nitrogen	24-HC weekly	24-HC weekly	8-HC ½ monthly	4-HC quarterly	Grab quarterly	Grab 1/yr	
TRC, Contact Tank**	Grab daily	Grab daily	Grab weekly	Grab weekly	Grab weekly	Grab 1/yr	Grab 1/yr
Fecal Coliform***	Grab weekly	Grab weekly	Grab monthly	Grab monthly	Grab quarterly	Grab 1/yr	Grab 1/yr

14
 15
 16 ** if disinfection required and chlorine used
 17 ***if disinfection required and another disinfecting process such as ultraviolet light is
 18 used

19 Statutory Authority

20 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

21
 22 **12VAC5-613-90. Performance requirements- field testing, and observations:**

23
 24 A. Field tests must be performed at each mandated visit and during any reportable
 25 incident response visit as indicated in Table 6. The operator must report the results of all
 26 field tests and observations.

27
 28 **Table 6: Field Observations and Testing - Systems from 1 gpd to 39,999 gpd**

29

Parameter	Average Daily Flow (gpd)		
	1- 1,000 gpd	1,001-9,9999	10,000-39,999

Flow	Required (measured or estimate)	Required	Required
pH	Operator discretion	Required	Required
TRC (After contact tank)	Required	Required	Required
DO (aeration tank)	Operator discretion	Required	Required
Odor	Operator discretion	Required	Required
Turbidity (visual)	Operator discretion	Required	Required
Settleable solids	Operator discretion	Required	Required

1 Statutory Authority

2 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

3

4

Part 3: Operation and Maintenance

5

6

12VAC5-613-100. Operator responsibilities.

7

8

A. Whenever an operator performs a visit that is required by this chapter, or observes a reportable incident he must document the results of that visit in accordance with 12VAC5-613-170.

10

11

12

B. Whenever an operator performs a visit that is required by this chapter, he shall do so in such a manner as to accomplish the various responsibilities and assessments required by this chapter using visual and other observations, laboratory and field tests he deems appropriate and as required by this chapter.

13

14

15

16

17

C. Each operator must keep a log for each AOSS for which he is responsible. The operator must provide a copy of the log to the owner. In addition, the operator shall make the log available to the Department upon request. At a minimum, the operator must record the following items in the log:

18

19

20

21

1. Results of all testing and sampling,

22

23

2. Reportable incidents,

24

25

3. Maintenance, corrective actions, and repair activities performed,

26

27

4. Recommendations for repair and replacement of system components,

28

29

5. Sludge or solids removal, and

30

31

6. The date and time reports were given to the owner.

32

33

1 D. At all times when performing activities pursuant to this chapter, the operator is
2 responsible for the entire AOSS, including treatment components and soil treatment area
3 components.

4
5 E. An operator must notify the appropriate local health department when his relationship
6 with an owner terminates.

7 Statutory Authority

8 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

9
10 **12VAC5-613-110. Sludge and Solids removal.** Any person who pumps or otherwise
11 removes sludge or solids from any portion of an AOSS shall file a report with the
12 appropriate local health department on a form approved by the Division.

13 Statutory Authority

14 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

15
16 **12VAC5-613-120. Owner responsibilities.** The owner of an AOSS must:

- 17
18 A. Maintain a relationship with an operator;
19
20 B. Have the AOSS operated by an operator;
21
22 C. Have an operator visit the AOSS at the frequency required by this chapter;
23
24 D. Have an operator collect any samples required by this chapter;
25
26 E. Keep a copy of the log provided by the operator on the property where the AOSS
27 is located, make the log available to the Department upon request, and make a
28 reasonable effort to transfer the log to any future owner;
29
30 F. Keep a copy of the Operation and Maintenance Manual (O&M Manual) on the
31 property where the AOSS is located, make the manual available to the
32 Department upon request, and make a reasonable effort to transfer the O&M
33 Manual to any future owner; and.
34
35 G. Comply with the onsite sewage system requirements contained in local ordinances
36 adopted pursuant to the Chesapeake Bay Preservation Act (§10.1-2100 et. seq.)
37 and the Chesapeake Bay Preservation Area Designation and Management
38 Regulations (9 VAC 10-20-10 et. seq.) when an AOSS is located within a
39 Chesapeake Bay Preservation Area.

40 Statutory Authority

1 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

2
3 **12VAC5-613-130. Operator requirements for AOSSs with flows up to 40,000 gpd,**
4 **minimum frequency of visits.** The owner of each AOSS shall have that AOSS visited
5 by an operator in accordance with Table 7.

6
7 **Table 7: Operator visit frequency for AOSS up to 40,000 gpd**

Avg. Daily Flow (gpd)	Initial Visit	Regular visits following initial visit
1-1,000	Within 180 calendar days of the issuance of the operation permit	Every 12 Months
1,001-10,000	First week of actual operation	Quarterly
10,001-40,000	First week of actual operation	Monthly

8 Statutory Authority

9 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

10
11 **12VAC5-613-140. Operator requirements for systems with flows greater than**
12 **40,000 gpd.**

13
14 A. AOSS's with average daily flows in excess of 40,000 gpd shall be attended by a
15 licensed operator and manned in accordance with the minimum frequencies established in
16 Table 1 of 9VAC25-790-300.

17 B. In instances where the hours of attendance by a licensed operator are less than the
18 daily hours the treatment works is to be manned by operating staff (see Table 1), a
19 licensed operator is not required to be physically located at the treatment works site
20 during the remaining designated manning hours, provided that the licensed operator is
21 able to respond to requests for assistance in a satisfactory manner, as described in the
22 Operation and Maintenance Manual.

23 C. In all cases, attendance by an operator is required. Attendance by the operator may
24 not be waived as suggested in Table 1, 9VAC25-790-300.

25 Statutory Authority

26 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

27
28 **12VAC5-613-150. Operation and Maintenance Manual.**

29
30 A. This chapter outlines minimum operation, maintenance, sampling, and inspection
31 requirements. Operation, maintenance, sampling, and inspection schedules for
32 some AOSS may exceed these minimum requirements, in which case the designer
33 is responsible for determining such additional requirements based upon the

1 proposed use, design flow, project area, hydraulic and organic loading rates,
2 nitrogen removal, treatment level, and other factors.

3
4 B. Prior to the issuance of an operating permit, the owner shall have the designer
5 submit an Operation and Maintenance ("O&M") Manual to the local health
6 department. The designer shall provide a copy of the O&M manual to the owner.
7 The Department may issue a temporary operation permit for a period not to
8 exceed 180 calendar days pending completion of the O&M Manual. Failure to
9 submit the O&M Manual within the time frame provided under a temporary
10 operation permit shall be deemed a violation of this chapter.

11
12 C. The O&M Manual shall be written language easily understood by any potential
13 owner and shall include the following minimum items:

- 14
15 1. A list of the components comprising the sewage system with dimensioned
16 site layout and contact numbers for replacement parts for each unit
17 process,
- 18
19 2. A list of any control functions and how to use them;
- 20
21 3. All operation, maintenance, sampling, and inspection schedules, including
22 any requirements that exceed the minimum requirements of this chapter,
23 for the AOSS;
- 24
25 4. The performance data sampling and reporting schedule;
- 26
27 5. The limits of the sewage system design and how to operate the system
28 within those design limits; and
- 29
30 6. Other information deemed necessary or appropriate by the designer.

31 Statutory Authority

32 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

33
34 **12VAC5-613-160. Mandatory visits, inspection requirements.** When an operator is
35 required to make a visit to an AOSS he shall, at a minimum accomplish the following:

- 36
37 A. Inspect all components of the AOSS and conduct field testing and other
38 observations required by this chapter, the O&M Manual, or deemed necessary by
39 the operator to assess the performance of the AOSS and its components.
- 40
41 B. Perform routine maintenance, make adjustments, and replace worn or
42 dysfunctional components with in-kind parts such that the system can reasonably
43 be expected to return to normal function.
- 44

1 C. If the AOSS is not functioning as designed or in accordance with the performance
2 requirements of this chapter and, in the operator’s professional judgment it cannot
3 be reasonably expected to return to normal function through routine operation and
4 maintenance, report immediately to the owner the remediation efforts necessary to
5 return the AOSS to normal function.

6 Statutory Authority

7 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

8
9 **12VAC5-613-170. Reports.** When required to file a report, the operator must complete
10 the report in a form approved by the Division. In accordance with *Va. Code* § 32.1-
11 164.H the operator must file each report using a web-based system and must pay a fee of
12 \$1.00. The operator may, solely at his own discretion, file reports in addition to those
13 required by this chapter. Each report must be filed by the 10th of the month following the
14 month in which the visit occurred and must include the following minimum elements:

- 15
16 A. The name and license number of the operator
17 B. The date and time of the report
18 C. The purpose of the visit, such as required visit, follow-up, or reportable incident;
19
20 D. A summary statement stating whether:
21
22 1. the AOSS is functioning as designed and in accordance with the
23 performance requirements of this chapter,
24
25 2. after providing routine operation and maintenance the operator believes
26 the AOSS will return to normal function, or
27
28 3. the system is not functioning as designed or in accordance with the
29 performance requirements of this chapter and additional actions are required
30 by the owner to return the AOSS to normal function.
31
32 C. All maintenance performed or adjustments made, including parts replaced;
33 D. The results of field tests and observations
34 E. Results of laboratory samples or the name of the laboratory that will process
35 samples;
36 F. Statement certifying the date and time the operator provided a copy of the report
37 to the owner.

38 Statutory Authority

39 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.

40
41 **Part 4: Horizontal Setback Requirements**
42

1 **12VAC5-613-180. Horizontal setback requirements.** AOSS designed pursuant to Va.
2 Code 32.1-163.6 are subject to the following horizontal setbacks which are necessary to
3 protect public health and the environment:

- 4
- 5 A. The horizontal setback distances that apply to public and private drinking water
6 sources of all types, including wells, springs, reservoirs and other surface water
7 sources, except that in cases where an existing sewage system is closer to a
8 private drinking water source the AOSS shall be no closer to the drinking water
9 source than the existing sewage system;
 - 10 B. The horizontal setback distances that apply to shellfish waters; and
 - 11 C. The horizontal setback distances that apply to sink holes.

12 Statutory Authority

13 §§32.1-12, 32.1-164, and 2.2-4011 of the Code of Virginia.
14
15
16
17
18