

DCR Guidance for Manure Storage Facilities for Nutrient Management Plans Developed for a VPA Permit

DCR Guidance NMP-3
January 2001

Description:

Manure storage capacity for nutrient management plans developed for VPA permit dairy and/or beef operations. State water control law does not allow discharge of waste to state waters (ground or surface) except as specifically authorized by a permit issued by DEQ. The Department of Conservation and Recreation does not require a minimum number of days of animal waste storage. However, some storage may be necessary for parlor water to avoid waste discharge to state waters and for animal waste when crops are not actively growing or field conditions are not suitable (frozen, saturated, etc.) for waste application.

Procedure:

Developing Nutrient Management Plans for VPA Permit Size Confined Animal Feeding Operations

The Department of Environmental Quality considers 120 days of waste storage to be the minimum for VPA permitted operations. Therefore, 120 days of storage can be required in nutrient management plans. However, less storage capacity may be possible on an approved case-by-case basis in some locations within Virginia, if careful attention is given to the following criteria:

1. Developing a cropping system which can utilize a mix of crops having a wide range of active growth periods throughout much of the year;
2. Availability of a crop mix to which the operator is willing to apply manure with ground equipment throughout much of the year;
3. Using conservative manure application rates during times of limited crop nutrient uptake to reduce the likelihood of runoff or leaching of waste and nutrients;
4. Availability of land with acceptable topographic and soil features which allow for wider windows of application with minimal risk to ground or surface waters;
5. Ensuring storage capacity is adequate and managed such that manure applications do not occur when soils are frozen or saturated; and
6. The number of animals or surface area of facility contributing to manure storage cannot increase above the number of animals and surface area used to develop the current plan.

Close attention to the factors listed above greatly increases the complexity of developing a sound nutrient management plan. In addition, adverse weather conditions in some years may impact crop selection and establishment, making increased flexibility in the form of adequate storage capacity important.

Minimum Manure Storage Determination:

1. The minimum days of manure storage capacity that is recommended for nutrient management plans for each county/city is provide in the attached table (Recommended Minimum Days of Manure Storage for Pits by Location in Virginia). Statistical weather data was used to determine the maximum expected number of consecutive days in which it would not be suitable to apply manure during late fall-winter period for each location.
2. Adjustments to the number of storage days should be based on the following.
 - a. Farms having poorly drained soils will need to plan for additional storage capacity. If manure application fields are primarily Hydrologic group D as identified in the soil survey, the greater of the result from number 1 above or 120 day storage capacity will be necessary, regardless of location in the state.
 - b. Farms having primarily well drained soils may be able to plan for less storage. Farms with manure application fields, which are primarily Hydrologic Group A and B as identified in the soil survey may deduct 15 days from the determined value in number 1.

* This is the minimum days of storage for a specific number of animals, estimated annual wastewater, and runoff. This minimum days of storage may not be adequate if animal numbers increase and/or wastewater and/or runoff are greater than the annual estimate that is shown in the plan. Any adjustments to the DEQ recommended 120 waste storage days shall be indicated in the plan narrative.

Farms should be encouraged to pursue 120-180 day waste storage capability. The planner should appraise the farmer concerning procedures to request cost-share assistance and the availability of state tax credits.

*This guidance document succeeds all other DCR guidance material pertaining to the description of NMP-3.

Recommended Minimum Days of Manure Storage for Pits by Location in Virginia

County/City	Days of Storage	County/City	Days of Storage
Accomack	50	King William	83
Albemarle	92	Lancaster	62
Alleghany	112	Lee	112
Amelia	82	Loudoun	106
Amherst	92	Louisa	102
Appomattox	82	Lunenburg	82
Augusta	100	City of Lynchburg	76
Bath	122	Madison	93
Bedford	96	Mathews	46
Bland	117	Mecklinburg	87
Botetourt	102	Middlesex	68
Brunswick	94	Montgomery	120
Buchanan	102	Nelson	87
Buckingham	78	New Kent	78
Campbell	78	Northhampton	53
Caroline	78	Northumberland	68
Carroll	126	Nottoway	72
Charles City	73	Orange	85
Charlotte	87	Page	121
City of Chesapeake	47	Patrick	86
Chesterfield	82	Pittsylvania	93
Clarke	117	Powhatan	78
Craig	117	Prince Edward	73
Culpeper	94	Prince George	84
Cumberland	78	Prince William	92
Dickenson	102	Pulaski	111
Dinwiddie	78	Rappahannock	98
Essex	82	Richmond	81
Fairfax	91	Roanoke	97
Fauquier	77	Rockbridge	107
Floyd	120	Rockingham	111
Fluvanna	101	Russell	102
Franklin	97	Scott	107
Frederick	93	Shenandoah	106
Giles	100	Smyth	120
Gloucester	71	Southampton	75
Goochland	101	Spotsylvania	85
Grayson	112	Stafford	80
Greene	83	City of Suffolk	67
Greenville	77	Surry	78
Halifax	83	Sussex	78
Hanover	97	Tazewell	140
Henrico	70	City of Virginia Beach	37
Henry	102	Warren	97
Highland	132	Washington	107
Isle of Wight	73	Westmoreland	76
James City	83	Wise	118
King and Queen	96	Wythe	110
King George	78	York	62