Disposal of wastewater by irrigation not only disposes of municipal wastewater and wastewater from food-processing plants, lagoons, and storage ponds but also can improve crop production by increasing the amount of water available to crops. The ratings in the table are based on the soil properties that affect the design, construction, management, and performance of the irrigation system. The properties that affect design and management include the sodium adsorption ratio, depth to a water table, ponding, available water capacity, Ksat, slope, and flooding. The properties that affect construction include stones, cobbles, depth to bedrock or a cemented pan, depth to a water table, and ponding. The properties that affect performance include depth to bedrock or a cemented pan, bulk density, the sodium adsorption ratio, salinity, reaction, and the cation-exchange capacity, which is used to estimate the capacity of a soil to adsorb heavy metals. Permanently frozen soils are not suitable for disposal of wastewater by irrigation.

Overland flow of wastewater is a process in which wastewater is applied to the upper reaches of sloped land and allowed to flow across vegetated surfaces, sometimes called terraces, to runoff-collection ditches. The length of the run generally is 150 to 300 feet. The application rate ranges from 2.5 to 16.0 inches per week. It commonly exceeds the rate needed for irrigation of cropland. The wastewater leaves solids and nutrients on the vegetated surfaces as it flows downslope in a thin film. Most of the water reaches the collection ditch, some is lost through evapotranspiration, and a small amount may percolate to the ground water.

The ratings in the table are based on the soil properties that affect absorption, plant growth, microbial activity, and the design and construction of the system. Reaction and the cation-exchange capacity affect absorption. Reaction, salinity, and the sodium adsorption ratio affect plant growth and microbial activity. Slope, saturated hydraulic conductivity (Ksat), depth to a water table, ponding, flooding, depth to bedrock or a cemented pan, stones, and cobbles affect design and construction. Permanently frozen soils are unsuitable for waste treatment.

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[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Bc—Barbour loam					
Barbour	85	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Too acid	0.92	Too acid	0.92
				Flooding	0.40

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
Ff—Fluvaquents-Udifluvents complex, frequently flooded					
Fluvaquents	45	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	1.00
		Too acid	0.31	Seepage	1.00
				Too acid	0.31
Udifluvents	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Too acid	0.31	Seepage	1.00
				Too acid	0.31
HcC—Halcott, Mongaup, and Vly soils, 2 to 15 percent slopes, very rocky					
Halcott	27	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00
		Slow water movement	1.00	Too acid	1.00
		Too acid	1.00	Too steep for surface application	0.50
		Too steep for surface application	1.00		
Mongaup	25	Very limited		Very limited	
		Too acid	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Droughty	0.89	Too acid	1.00
		Depth to bedrock	0.65	Too steep for surface application	0.50
		Slow water movement	0.37		
Vly	23	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too acid	1.00	Depth to bedrock	1.00
		Droughty	1.00	Too acid	1.00
		Too steep for surface application	1.00	Too steep for surface application	0.50
		Depth to bedrock	0.35		

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
HcE—Halcott, Mongaup, and Vly soils, 15 to 35 percent slopes, very rocky					
Halcott	27	Very limited		Very limited	
		Droughty	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Depth to bedrock	1.00	Too acid	1.00
		Slow water movement	1.00		
Mongaup	25	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Depth to bedrock	1.00
		Droughty	0.89	Too acid	1.00
		Depth to bedrock	0.65		
Vly	23	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	1.00	Too acid	1.00
		Droughty	1.00		

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LkC—Lewbeach and Lewbath soils, 3 to 15 percent slopes, very stony					
Lewbeach, very stony	50	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too acid	0.92
		Too acid	0.92	Too steep for surface application	0.50
		Droughty	0.42	Cobble content	0.03
Lewbath, very stony	30	Very limited		Very limited	
		Slow water movement	1.00	Seepage	1.00
		Too steep for surface application	1.00	Too acid	0.96
		Too acid	0.96	Depth to saturated zone	0.95
		Depth to saturated zone	0.95	Too steep for surface application	0.50
		Too steep for sprinkler application	0.22	Cobble content	0.16
LkE—Lewbeach and Lewbath soils, 15 to 35 percent slopes, very stony					
Lewbeach, very stony	50	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too acid	0.92
		Too acid	0.92	Cobble content	0.03
Lewbath, very stony	30	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too acid	0.96
		Too acid	0.96	Depth to saturated zone	0.95
		Depth to saturated zone	0.95	Cobble content	0.16

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LkF—Lewbeach and Lewbath soils, 35 to 55 percent slopes, very stony					
Lewbeach, very stony	50	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Too acid	0.92
		Too acid	0.92	Cobble content	0.03
Lewbath, very stony	30	Very limited		Very limited	
		Slow water movement	1.00	Too steep for surface application	1.00
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too acid	0.96
		Too acid	0.96	Depth to saturated zone	0.95
		Depth to saturated zone	0.95	Cobble content	0.16
LoC—Lordstown channery silt loam, 8 to 15 percent slopes					
Lordstown	90	Very limited		Very limited	
		Too steep for surface application	1.00	Depth to bedrock	1.00
		Too steep for sprinkler application	0.78	Too steep for surface application	1.00
		Too acid	0.77	Seepage	1.00
		Depth to bedrock	0.46	Too acid	0.77
		Droughty	0.21		

Agricultural Disposal of Wastewater by Irrigation and Overland Flow–Delaware County, New York					
Map symbol and soil name	Pct. of map unit	Disposal of wastewater by irrigation		Overland flow of wastewater	
		Rating class and limiting features	Value	Rating class and limiting features	Value
LoD—Lordstown channery silt loam, 15 to 25 percent slopes					
Lordstown	85	Very limited		Very limited	
		Too steep for surface application	1.00	Too steep for surface application	1.00
		Too steep for sprinkler application	1.00	Depth to bedrock	1.00
		Too acid	0.77	Seepage	1.00
		Depth to bedrock	0.46	Too acid	0.77
		Droughty	0.21		
LoE—Lordstown channery silt loam, 25 to 40 percent slopes					
Lordstown	80	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too steep for sprinkler application	1.00	Too steep for surface application	1.00
		Too acid	1.00	Depth to bedrock	1.00
		Depth to bedrock	0.46	Too acid	1.00
		Droughty	0.19		
MaB—Maplecrest gravelly silt loam, 3 to 8 percent slopes					
Maplecrest	80	Somewhat limited		Very limited	
		Too acid	0.92	Seepage	1.00
		Too steep for surface application	0.68	Too acid	0.92
MaC—Maplecrest gravelly silt loam, 8 to 15 percent slopes					
Maplecrest	80	Very limited		Very limited	
		Too steep for surface application	1.00	Seepage	1.00
		Too acid	0.92	Too steep for surface application	1.00
		Too steep for sprinkler application	0.78	Too acid	0.92