Ohio Environmental Protection Agency
Division of Surface Water

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	59-00170	
Field ID #	MOS-01-07	
Generator Name	Emerald BioEnergy	

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	63600.00	mg/kg
Total Kjeldahl Nitrogen	111000.00	mg/kg
Total Phosphorus	22000.00	mg/kg
Organic Nitrogen	94.80	lbs/ton
Available Nitrogen	155.64	lbs/ton
Phosphate (P_2O_5)	50.38	lbs/ton
Will Immediate Incorporation / Injection be performed?	Yes	

Beneficial Use Site Information

Soil Phosphorus	37.00	ppm	Mehlich 3		
	32.50	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the *Calculated Agronomic Rates* section; however, based upon the above provided *Soil Phosphorus* result, you must utilize the most limiting factor or the *Phosphorus Index*:	The nitrogen agronomic rate, a phosphate beneficial use rate of <250 lbs/acre, a phosphate beneficial use rate of 256-500 lbs/acre if injected/incorporated within 24 hours of beneficial use or if there is >50% ground cover, or the Phosphorus Index.				
County	Morrow				
Soil Type	Blount silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	D				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	150				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	50				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	215	lbs/acre			
Existing Available Nitrogen		lbs/acre			
Non-Biosolids Nitrogen Application		lbs/acre			
Phosphate (P_2O_5) Fertilizer Application		lbs/acre			
Non-Biosolids Organic Phosphate (P_2O_5) Application		lbs/acre			
Biosolids Phosphate (P_2O_5) Beneficial Use	69.59	lbs/acre			
Total Organic Phosphate (P_2O_5) Fertilizer Application	69.59	lbs/acre			

Phosphorus Index

		Subvalue
Soil Loss	5 tons/acre/year	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perenial stream.	0
Runoff Class - Slope Range	1-3%	7
Soil Phosphorus		2.28
Application - Phosphate (P_2O_5) Fertilizer		0
Method - Phosphate (P_2O_5) Fertilizer	None applied.	0
Application - Organic Phosphate (P_2O_5) Fertilizer		4.18
Method - Organic Phosphate (P_2O_5) Fertilizer	Immediate incorporation or applied on ≥80% cover.	0.5
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		**18.95**

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.38	dry tons/acre
i. Calculated Agronomic Rate	1.38	dry tons/acre
Single Year Phosphate Agronomic Rate	1.19	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.98	dry tons/acre
Phosphorus Index	Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	235.06	dry tons		
Phosphate (P_2O_5) Beneficially Used Per Acre	291.32	lbs/acre		
Acreage	81.3			
Date Biosolids Delivered to Beneficial Use Site	4/13/2018			
Dates of Beneficial Use	4/13/2018	to	5/5/2018	
Total Days Biosolids Stored at Beneficial Use Site	0.00	Days		
Date Signage Posted at Beneficial Use Site	4/6/2018		☐ Yes	is a permanent sign posted at the beneficial use site?
Date Signage Removed from Beneficial Use Site	5/13/2018		☑ No	