

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	LinRd-3
Field ID #	LinRd-3 M+S
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P ₂ O ₅)	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	98.00 ppm	Mehlich 3
	86.24 ppm	
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :		
County	Shelby	
Soil Type	Crosby silt loam, 0 to 2 percent slopes	
Hydrologic Soil Group	C	
The Nitrogen Agronomic Rate, the Multi-Year Phosphate Agronomic Rate, or the Phosphorus Index.		
Year 1		
Crop Type(s)	Crop 1	Crop 2
Expected Crop Yield(s)(bu/acre or tons/acre)	Corn (Grain)	Crop 3
	185	Crop 4
Year 2		
Crop Type(s)	Crop 1	Crop 2
Expected Crop Yield(s)(bu/acre or tons/acre)	Soybean	Crop 3
	60	Crop 4
Year 3		
Crop Type(s)	Crop 1	Crop 2
Expected Crop Yield(s)(bu/acre or tons/acre)	Corn (Grain)	Crop 3
	185	Crop 4
Year 4		
Crop Type(s)	Crop 1	Crop 2
Expected Crop Yield(s)(bu/acre or tons/acre)	Soybean	Crop 3
	60	Crop 4
Year 5		
Crop Type(s)	Crop 1	Crop 2
Expected Crop Yield(s)(bu/acre or tons/acre)		Crop 3
		Crop 4
Crop Nitrogen Requirements (Year 1)	200 lbs/acre	
Existing Available Nitrogen	30 lbs/acre	
Non-Biosolids Nitrogen Application	45 lbs/acre	
Phosphate (P ₂ O ₅) Fertilizer Application	0 lbs/acre	
Non-Biosolids Organic Phosphate (P ₂ O ₅) Application	0 lbs/acre	
Biosolids Phosphate (P ₂ O ₅) Beneficial Use	247.26 lbs/acre	
Total Organic Phosphate (P ₂ O ₅) Fertilizer Application	247.26 lbs/acre	

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.		0
Runoff Class - Slope Range	1-3%		4
Soil Phosphorus			6.04
Application - Phosphate (P ₂ O ₅) Fertilizer			0
Method - Phosphate (P ₂ O ₅) Fertilizer	None applied.		0
Application - Organic Phosphate (P ₂ O ₅) Fertilizer			14.84
Method - Organic Phosphate (P ₂ O ₅) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.		1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No		0
Total Phosphorus Index			30.87

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.95	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre
Phosphorus Index	High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	62	dry tons
Phosphate (P ₂ O ₅) Beneficially Used Per Acre	247.35	lbs/acre
Acreage	31.8	
Date Biosolids Delivered to Beneficial Use Site	4/17/2019	
Dates of Beneficial Use	5/7/2019	to 5/7/2019
Total Days Biosolids Stored at Beneficial Use Site	20.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No
Is a permanent sign posted at the beneficial use site?		

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	KIRK-1
Field ID #	KIRK-1
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P ₂ O ₅)	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	74.00 ppm	Mehlich 3
	65.12 ppm	
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :		
County	Shelby	
Soil Type	Crosby silt loam, 0 to 2 percent slopes	
Hydrologic Soil Group	C	
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)	185	
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)	60	
Year 3	Crop 1	Crop 2 Crop 3 Crop 4 Crop 5
Crop Type(s)	Corn (Grain)	
Expected Crop Yield(s)(bu/acre or tons/acre)	185	
Year 4	Crop 1	Crop 2 Crop 3 Crop 4 Crop 5
Crop Type(s)	Soybean	
Expected Crop Yield(s)(bu/acre or tons/acre)	60	
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)	200 lbs/acre	
Existing Available Nitrogen	30 lbs/acre	
Non-Biosolids Nitrogen Application	45 lbs/acre	
Phosphate (P ₂ O ₅) Fertilizer Application	0 lbs/acre	
Non-Biosolids Organic Phosphate (P ₂ O ₅) Application	0 lbs/acre	
Biosolids Phosphate (P ₂ O ₅) Beneficial Use	250.81 lbs/acre	
Total Organic Phosphate (P ₂ O ₅) Fertilizer Application	250.81 lbs/acre	

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is adjacent to an intermittent or perennial stream.		4
Runoff Class - Slope Range	1-3%		4
Soil Phosphorus			4.56
Application - Phosphate (P ₂ O ₅) Fertilizer			0
Method - Phosphate (P ₂ O ₅) Fertilizer	None applied.		0
Application - Organic Phosphate (P ₂ O ₅) Fertilizer			15.05
Method - Organic Phosphate (P ₂ O ₅) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.		1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No		0
Total Phosphorus Index			33.61

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.98	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre
Phosphorus Index	High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	85	dry tons
Phosphate (P ₂ O ₅) Beneficially Used Per Acre	250.78	lbs/acre
Acreage	43	
Date Biosolids Delivered to Beneficial Use Site	4/17/2019	
Dates of Beneficial Use	5/1/2019 to 5/1/2019	Days
Total Days Biosolids Stored at Beneficial Use Site	14.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is a permanent sign posted at the beneficial use site?		

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	Scott-1
Field ID #	Scott-1 M+5
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P ₂ O ₅)	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	47.00 ppm	Mehlich 3
	41.36 ppm	
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :		
County	Shelby	
Soil Type	Crosby silt loam, 0 to 2 percent slopes	
Hydrologic Soil Group	C	
Year 1	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	
Expected Crop Yield(s)(bu/acre or tons/acre)	185	
Year 2	Crop 1	Crop 2
Crop Type(s)	Soybean	
Expected Crop Yield(s)(bu/acre or tons/acre)	60	
Year 3	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	
Expected Crop Yield(s)(bu/acre or tons/acre)	185	
Year 4	Crop 1	Crop 2
Crop Type(s)	Soybean	
Expected Crop Yield(s)(bu/acre or tons/acre)	60	
Year 5	Crop 1	Crop 2
Crop Type(s)		
Expected Crop Yield(s)(bu/acre or tons/acre)		
Crop Nitrogen Requirements (Year 1)	200 lbs/acre	
Existing Available Nitrogen	30 lbs/acre	
Non-Biosolids Nitrogen Application	45 lbs/acre	
Phosphate (P ₂ O ₅) Fertilizer Application	0 lbs/acre	
Non-Biosolids Organic Phosphate (P ₂ O ₅) Application	0 lbs/acre	
Biosolids Phosphate (P ₂ O ₅) Beneficial Use	252.08 lbs/acre	
Total Organic Phosphate (P ₂ O ₅) Fertilizer Application	252.08 lbs/acre	

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.		0
Runoff Class - Slope Range	1-3%		4
Soil Phosphorus			2.90
Application - Phosphate (P ₂ O ₅) Fertilizer			0
Method - Phosphate (P ₂ O ₅) Fertilizer	None applied.		0
Application - Organic Phosphate (P ₂ O ₅) Fertilizer			15.12
Method - Organic Phosphate (P ₂ O ₅) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.		1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No		0
Total Phosphorus Index			28.02

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.99	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre
Phosphorus Index	Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	60	dry tons
Phosphate (P ₂ O ₅) Beneficially Used Per Acre	252.05	lbs/acre
Acreage	30.2	
Date Biosolids Delivered to Beneficial Use Site	4/23/2019	
Dates of Beneficial Use	5/8/2019	to 5/8/2019
Total Days Biosolids Stored at Beneficial Use Site	15.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No
Is a permanent sign posted at the beneficial use site?		

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	KIRK-2
Field ID #	KIRK-2
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P ₂ O ₅)	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	70.00 ppm	Mehlich 3
	61.60 ppm	
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor of the <i>Phosphorus Index</i> :		
County	Shelby	
Soil Type	Crosby silt loam, 0 to 2 percent slopes	
Hydrologic Soil Group	C	
Year 1	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	
Expected Crop Yield(s)(bu/acre or tons/acre)	185	
Year 2	Crop 1	Crop 2
Crop Type(s)	Soybean	
Expected Crop Yield(s)(bu/acre or tons/acre)	60	
Year 3	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	
Expected Crop Yield(s)(bu/acre or tons/acre)	185	
Year 4	Crop 1	Crop 2
Crop Type(s)	Soybean	
Expected Crop Yield(s)(bu/acre or tons/acre)	60	
Year 5	Crop 1	Crop 2
Crop Type(s)		
Expected Crop Yield(s)(bu/acre or tons/acre)		
Crop Nitrogen Requirements (Year 1)	200 lbs/acre	
Existing Available Nitrogen	30 lbs/acre	
Non-Biosolids Nitrogen Application	45 lbs/acre	
Phosphate (P ₂ O ₅) Fertilizer Application	0 lbs/acre	
Non-Biosolids Organic Phosphate (P ₂ O ₅) Application	0 lbs/acre	
Biosolids Phosphate (P ₂ O ₅) Beneficial Use	249.67 lbs/acre	
Total Organic Phosphate (P ₂ O ₅) Fertilizer Application	249.67 lbs/acre	

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is adjacent to an intermittent or perennial stream.		4
Runoff Class - Slope Range	1-3%		4
Soil Phosphorus			4.31
Application - Phosphate (P ₂ O ₅) Fertilizer			0
Method - Phosphate (P ₂ O ₅) Fertilizer	None applied.		0
Application - Organic Phosphate (P ₂ O ₅) Fertilizer			14.98
Method - Organic Phosphate (P ₂ O ₅) Fertilizer	Incorporation in s one week or applied on 50% to 80% cover.		1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No		0
Total Phosphorus Index			33.29

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.97 dry tons/acre
i. Calculated Agronomic Rate	2.52 dry tons/acre
Single Year Phosphate Agronomic Rate	0.58 dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92 dry tons/acre
Phosphorus Index	High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	61 dry tons
Phosphate (P ₂ O ₅) Beneficially Used Per Acre	249.64 lbs/acre
Acreage	31
Date Biosolids Delivered to Beneficial Use Site	4/17/2019
Dates of Beneficial Use	4/30/2019 to 4/30/2019
Total Days Biosolids Stored at Beneficial Use Site	13.00 Days
Date Signage Posted at Beneficial Use Site	4/10/2019
Date Signage Removed from Beneficial Use Site	6/10/2019
	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
	Is a permanent sign posted at the beneficial use site?

Biosolids Agronomic Rate Calculation Worksheet

General Information

Ohio EPA #	Deerpen-1
Field ID #	Deerpen-1
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P ₂ O ₅)	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	39.00 ppm	Mehlich 3
	34.32 ppm	
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor of the <i>Phosphorus Index</i> :		
County	Shelby	
Soil Type	Crosby silt loam, 0 to 2 percent slopes	
Hydrologic Soil Group	C	
Year 1	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	Crop 3
Expected Crop Yield(s)(bu/acre or tons/acre)	185	Crop 4
Year 2	Crop 1	Crop 2
Crop Type(s)	Soybean	Crop 3
Expected Crop Yield(s)(bu/acre or tons/acre)	60	Crop 4
Year 3	Crop 1	Crop 2
Crop Type(s)	Corn (Grain)	Crop 3
Expected Crop Yield(s)(bu/acre or tons/acre)	185	Crop 4
Year 4	Crop 1	Crop 2
Crop Type(s)	Soybean	Crop 3
Expected Crop Yield(s)(bu/acre or tons/acre)	60	Crop 4
Year 5	Crop 1	Crop 2
Crop Type(s)		Crop 3
Expected Crop Yield(s)(bu/acre or tons/acre)		Crop 4
Crop Nitrogen Requirements (Year 1)	200 lbs/acre	Crop 5
Existing Available Nitrogen	30 lbs/acre	
Non-Biosolids Nitrogen Application	45 lbs/acre	
Phosphate (P ₂ O ₅) Fertilizer Application	0 lbs/acre	
Non-Biosolids Organic Phosphate (P ₂ O ₅) Application	0 lbs/acre	
Biosolids Phosphate (P ₂ O ₅) Beneficial Use	242.44 lbs/acre	
Total Organic Phosphate (P ₂ O ₅) Fertilizer Application	242.44 lbs/acre	

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue	5
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.		0
Runoff Class - Slope Range	1-3%		4
Soil Phosphorus			2.40
Application - Phosphate (P ₂ O ₅) Fertilizer			0
Method - Phosphate (P ₂ O ₅) Fertilizer	None applied.		0
Application - Organic Phosphate (P ₂ O ₅) Fertilizer			14.55
Method - Organic Phosphate (P ₂ O ₅) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.		1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No		0
Total Phosphorus Index			26.95

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.91	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre
Phosphorus Index	Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.	

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	13	dry tons
Phosphate (P ₂ O ₅) Beneficially Used Per Acre	242.54	lbs/acre
Acreage	6.8	
Date Biosolids Delivered to Beneficial Use Site	4/24/2019	
Dates of Beneficial Use	5/6/2019	to 5/6/2019
Total Days Biosolids Stored at Beneficial Use Site	12.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No
Is a permanent sign posted at the beneficial use site?		

City of Sidney
Biosolids Conversion Factors & Grades

mg/kg dry = part per million (ppm)
 mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 * 2000 = lbs/dry ton
 Ex: 100 mg/kg / 1,000,000 * 2000 = 0.2 lbs/dry ton
 OR
 mg/kg dry *2 / 1000 = lbs/dry ton
 Ex: 100 mg/kg *2 / 1000 = 0.2 lbs/dry ton
 OR
 mg/kg * 0.002 = lbs/dry ton
 Ex: 100 mg/kg *.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019
 Final Grade Report

Site: Scott Farm
 SCOTT-1 M+S
 Total Dry Tons: 60.00 Total Acres: 30.2
 Dry Tons / Acre: 1.99 Spreadable Acres: 30.2
 Land Owner: Eric Smith
 Farm Operator: Eric Smith

soil test P 40-100 ppm (Bray) or 45-115 ppm (MIII)
 not to exceed N needs or multi-crop P2O5

Sludge Analysis May 2019

				Application @ 1.99 D.T.	Commercial Fertilizer Equivalency (lbs/acre)
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.2 lbs/acre	
Total Potassium as K2O	1872 mg/kg dry	=	3.7 lbs/dry ton	7.4 lbs/acre	12.4 0-0-60
(Total Potassium * 1.2)					
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	110.1 lbs/acre	
Total Phosphorus as P2O5	63433 mg/kg dry	=	126.9 lbs/dry ton	252.1 lbs/acre	484.7 11-52-0
(Total Phosphorus * 2.29)					
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	47.7 lbs/acre	170.3 28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	169.3 lbs/acre	604.5 28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	217.0 lbs/acre	774.8 28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.1 lbs/acre	8.6 36% Zinc Sulfate

Sludge as a Grade (N - P2O5 - K2O)

N P2O5 K2O
 0.0546 0.06343 0.00187

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate
 (lbs/acre applied)**

N P2O5 K2O
 217 252 7

(values reflect the values above)

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

This is a class "B" sewage sludge produced by The City of Sidney at 1091 Childrens Home Road Sidney Oh 45365.
 The vector attraction Option #1 is met by reducing the volatile content of the sludge by a minimum of 38%.
 The pathogen reduction Option #1 is met by fecal coliform testing with results less than 2,000,000 cfu/dry gram.
 Ohio NPDES permit number for this facility is 1PD00009*QD
 For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001

City of Sidney
Biosolids Conversion Factors & Grades

mg/kg dry = part per million (ppm)
 mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 * 2000 = lbs/dry ton
 Ex: 100 mg/kg / 1,000,000 * 2000 = 0.2 lbs/dry ton
 OR
 mg/kg dry * 2 / 1000 = lbs/dry ton
 Ex: 100 mg/kg * 2 / 1000 = 0.2 lbs/dry ton
 OR
 mg/kg * 0.002 = lbs/dry ton
 Ex: 100 mg/kg * .002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019
Final Grade Report

Site: Kirkwood Farm
 KIRK-1
Total Dry Tons: 85.00 **Total Acres:** 43.70
Dry Tons / Acre: 1.98 **Spreadable Acres:** 43.00
Land Owner: Eric Smith
Farm Operator: Eric Smith

soil test P 40-100 ppm (Bray) or 45-115 ppm (MIII)
not to exceed N needs or multi-crop P2O5

Sludge Analysis May 2019				Application @ 1.98 D.T.	Commercial Fertilizer Equivalency (lbs/acre)
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.2 lbs/acre	
Total Potassium as K2O	1872 mg/kg dry	=	3.7 lbs/dry ton	7.4 lbs/acre	12.3 0-0-60
<i>(Total Potassium * 1.2)</i>					
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	109.5 lbs/acre	
Total Phosphorus as P2O5	63433 mg/kg dry	=	126.9 lbs/dry ton	250.8 lbs/acre	482.3 11-52-0
<i>(Total Phosphorus * 2.29)</i>					
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	47.4 lbs/acre	169.4 28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	168.4 lbs/acre	601.5 28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	215.9 lbs/acre	770.9 28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.1 lbs/acre	8.6 36% Zinc Sulfate

Sludge as a Grade (N - P2O5 - K2O)

N P2O5 K2O
0.0546 0.06343 0.00187

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate
(lbs/acre applied)**

N P2O5 K2O
216 251 7

(values reflect the values above)

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

This is a class "B" sewage sludge produced by The City of Sidney at 1091 Childrens Home Road Sidney Oh 45365.
 The vector attraction Option #1 is met by reducing the volatile content of the sludge by a minimum of 38%.
 The pathogen reduction Option #1 is met by fecal coliform testing with results less than 2,000,000 cfu/dry gram.
 Ohio NPDES permit number for this facility is 1PD00009*QD
 For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001

City of Sidney
Biosolids Conversion Factors & Grades

mg/kg dry = part per million (ppm)
 mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 * 2000 = lbs/dry ton
 Ex: 100 mg/kg / 1,000,000 * 2000 = 0.2 lbs/dry ton
 OR
 mg/kg dry * 2 / 1000 = lbs/dry ton
 Ex: 100 mg/kg * 2 / 1000 = 0.2 lbs/dry ton
 OR
 mg/kg * 0.002 = lbs/dry ton
 Ex: 100 mg/kg * .002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019
 Final Grade Report

Site: Deerpen Farm
 DEERPEN-1
Total Dry Tons: 13.00 **Total Acres:** 19.0
Dry Tons / Acre: 1.91 **Spreadable Acres:** 6.8
Land Owner: Eric Smith
Farm Operator: Eric Smith

soil test P < 40 ppm (Bray) or 45 ppm (MIII)
not to exceed N needs or 250 lbs/a P2O5

Sludge Analysis May 2019

				Application @ 1.91 D.T.	Commercial Fertilizer Equivalency (lbs/acre)
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.0 lbs/acre	
Total Potassium as K2O	1872 mg/kg dry	=	3.7 lbs/dry ton	7.2 lbs/acre	11.9 0-0-60
(Total Potassium * 1.2)					
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	105.9 lbs/acre	
Total Phosphorus as P2O5	63433 mg/kg dry	=	126.9 lbs/dry ton	242.5 lbs/acre	466.4 11-52-0
(Total Phosphorus * 2.29)					
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	45.9 lbs/acre	163.9 28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	162.9 lbs/acre	581.7 28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	208.8 lbs/acre	745.6 28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.0 lbs/acre	8.3 36% Zinc Sulfate

Sludge as a Grade (N - P2O5 - K2O)

N P2O5 K2O
0.0546 0.06343 0.00187

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate
(lbs/acre applied)**

N P2O5 K2O
209 243 7

(values reflect the values above)

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

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City of Sidney
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 OR
 mg/kg dry * 2 / 1000 = lbs/dry ton
 Ex: 100 mg/kg * 2 / 1000 = 0.2 lbs/dry ton
 OR
 mg/kg * 0.002 = lbs/dry ton
 Ex: 100 mg/kg *.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019
 Final Grade Report

Site: Lindsey Rd Farm
 LinRd-3 M+S

Total Dry Tons: 62.00 **Total Acres:** 31.80

Dry Tons / Acre: 1.95 **Spreadable Acres:** 31.80

Land Owner: Eric Smith
Farm Operator: Eric Smith

soil test P 40-100 ppm (Bray) or 45-115 ppm (MIII)
not to exceed N needs or multi-crop P2O5

Sludge Analysis May 2019				Application @ 1.95 D.T.	Commercial Fertilizer Equivalency (lbs/acre)
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.1 lbs/acre	
Total Potassium as K2O	1872 mg/kg dry	=	3.7 lbs/dry ton	7.3 lbs/acre	12.2 0-0-60
(Total Potassium * 1.2)					
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	108.0 lbs/acre	
Total Phosphorus as P2O5	63433 mg/kg dry	=	126.9 lbs/dry ton	247.3 lbs/acre	475.7 11-52-0
(Total Phosphorus * 2.29)					
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	46.8 lbs/acre	167.1 28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	166.1 lbs/acre	593.3 28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	212.9 lbs/acre	760.4 28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.0 lbs/acre	8.5 36% Zinc Sulfate

Sludge as a Grade (N - P2O5 - K2O)

N P2O5 K2O
0.0546 0.06343 0.00187

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate
(lbs/acre applied)**

N P2O5 K2O
213 247 7

(values reflect the values above)

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

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