

## SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H2	32

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Wheat Silage (Ton)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="6.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
	264	24	120
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>	<input type="text"/>	<input type="text"/>
6. Plant Nutrients Needed Minus Credits (lbs/ac)	264	24	120
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	10.6	4.9	8.1
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> Enter Table 1 values or Enter zero if lab results are used in Step 7	80%	95%	95%
9. Net Retained Nutrients in Manure (lbs./ton)	8.5	4.7	7.7
10. Percent of Available Nutrients <input type="text" value="Table 2"/> Enter Table 2 value for N	40%	80%	100%
11. Net Available Nutrients (lbs./ton)	3.4	3.7	7.7
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	4	4	4
13. Net Application Amount for All Nutrients (lbs/ac)	14	15	31
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-250	-9	-89

Tons Available  - Tons Applied in Field  = Balance

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
<input type="text"/>	<input type="text"/>	<input type="text"/>

Chosen Application Rate MUST ENTER
<input type="text" value="4"/>

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## SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H7	32

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	Wheat Silage (Ton)		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	6.0		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
	264	24	120
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold		24	
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	264	24	120
7. Nutrients in Manure (lbs/ton) Enter lab results in box on right to override Worksheet 1 values	10.6	4.9	8.1
8. Percent Nutrients Retained in System First Worksheet 2 values are used or zero if lab results are used	80%	95%	95%
9. Net Retained Nutrients in Manure (lbs/ton)	8.5	4.7	7.7
10. Percent of Available Nutrients Enter Table 2 value for N	40%	80%	100%
	<input type="text" value="Table 2"/>		
11. Net Available Nutrients (lbs/ton)	3.4	3.7	7.7
12. Application Rate (tons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	2	2	2
13. Net Application Amount for All Nutrients (lbs/ac)	7	7	15
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-257	-17	-105
<b>Applied more than Available</b>			
Tons Available	<input type="text" value="56"/>	-	Tons Applied in Field <input type="text" value="64"/>
		= Balance	

- 401-500 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
- 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.
- > 800 STP - Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance).

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20

Chosen Application Rate MUST ENTER
<input type="text" value="2"/>

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**SOLIDS WORKSHEET 3 - APPLICATION RATES AND LAND REQUIREMENTS <sup>1</sup>**

Tract No.										
Field No.	Acres	Soil Test Phosphorus (STP)	Crop Rotation / Sequence	Planned Application Date or Timing	Planned Application Rate <sup>2</sup> (tons/ac)	Solid or Commercial Fertilizer (S or C)	Actual Application Date	Actual Application Rate <sup>2</sup> (tons/ac)	Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
H2	32	120	Wheat Silage (Ton)	Fall 2020	4					
H7	32	450	Wheat Silage (Ton)	Fall 2020	2					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					

1. Where land application is occurring under long term lease or agreement with adjacent landowner, fields must be included in the above table.  
 2. Fields that have a "High" soil test phosphorus (>400) should implement Best Management Practices (BMPs) to reduce the risk of nutrient movement to sensitive waterbodies. BMPs may include, but not be limited to: installing conservation buffers, reducing P2O5 application rate, incorporating manure, adding chemical treatments to litter that tie up soluble P and keep it from moving over the landscape, and/or adjusting application timing.  
 3. It is illegal to make land applications when the ground is frozen. It is recommended that land applications are not made within 48 hours of forecasted precipitation.

For the solid manure, the notes indicate solid manure to go on fields H2 & H7. In this situation, both fields have high soil test phosphorus and this would not be the best utilization of the manure, but these are the only two field where they can apply solid manure.

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H6	11

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Barley Grain (Bushel)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="70.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
	<input type="text" value="69"/>	<input type="text" value="29"/>	<input type="text" value="22"/>
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	<input type="text" value="69"/>	<input type="text" value="29"/>	<input type="text" value="22"/>
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	<input type="text" value="2.0"/>	<input type="text" value="1.0"/>	<input type="text" value="2.0"/>
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> Enter Table 1 values or Enter zero if lab results are used in Step 7	<input type="text" value="35%"/>	<input type="text" value="50%"/>	<input type="text" value="65%"/>
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	<input type="text" value="2.0"/>	<input type="text" value="1.0"/>	<input type="text" value="2.0"/>
10. Percent of Available Nutrients <input type="text" value="Table 2"/> Enter Table 2 value for N	<input type="text" value="50%"/>	<input type="text" value="80%"/>	<input type="text" value="100%"/>
11. Net Available Nutrients (lbs/1,000 gallons)	<input type="text" value="1.0"/>	<input type="text" value="0.8"/>	<input type="text" value="2.0"/>
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	<input type="text" value="5"/>	<input type="text" value="5"/>	<input type="text" value="5"/>
13. Net Application Amount for All Nutrients (lbs/ac)	<input type="text" value="5"/>	<input type="text" value="4"/>	<input type="text" value="10"/>
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	<input type="text" value="-64"/>	<input type="text" value="-25"/>	<input type="text" value="-12"/>

Gallons Available 356,664 - Gallons Applied in Field 55,000 = Balance 301,664

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
<input type="text" value="2"/>	<input type="text" value="1"/>	<input type="text" value="2"/>

Chosen Application Rate MUST ENTER
<input type="text" value="5"/>

[Go to Worksheet 3 Liquids](#)

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H5	19

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Barley Grain (Bushel)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="70.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
	69	29	22
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	69	29	22
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	2.0	1.0	2.0
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	0%	0%	0%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	2.0	1.0	2.0
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	50%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	1.0	0.8	2.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	5	5	5
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	5	4	10
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-64	-25	-12

Gallons Available 301,664 - Gallons Applied in Field 95,000 = Balance 206,664

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
2	1	2

Chosen Application Rate MUST ENTER
5

Go to Worksheet 3 Liquids

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H10	8

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	<input type="text" value="Wheat Grain (Bushel)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="60.0"/>		
3. Plant Nutrients Needed or Allowed (lbs/ac)	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
	90	36	20
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	<input type="text" value="0"/>		
5. Fertilizer Credits (lbs/ac)	<input type="text"/>		
6. Plant Nutrients Needed Minus Credits (lbs/ac)	90	36	20
7. Nutrients in Manure (lbs./1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	2.0	1.0	2.0
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	0%	0%	0%
9. Net Retained Nutrients in Manure (lbs./1,000 gallons)	2.0	1.0	2.0
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	50%	80%	100%
11. Net Available Nutrients (lbs./1,000 gallons)	1.0	0.8	2.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	25	25	25
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	25	20	50
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-65	-16	30

Gallons Available 206,664 - Gallons Applied in Field 200,000 = Balance 6,664

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
2	1	2

Chosen Application Rate <b>MUST ENTER</b>
<input type="text" value="25"/>
One time application rate should not exceed ~13,500 gallons per acre (or 1/2 inch per acre)

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**LIQUIDS WORKSHEET 3 - APPLICATION RATES AND LAND REQUIREMENTS <sup>1</sup>**

Tract No.										
Field No.	Acres	Soil Test Phosphorus (STP)	Crop Rotation / Sequence	Planned Application Date or Timing	Planned Application Rate <sup>2</sup> (1,000 gal/ac)	Liquid or Commercial Fertilizer (L or C)	Actual Application Date	Actual Application Rate <sup>2</sup> (1,000 gal/ac)	Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
									H6	11
H5	19	36	Barley Grain (Bushel)	Fall 2020	5					
H10	8	126	Wheat Grain (Bushel)	Fall 2020	25					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					
0	0	0	0		0					

1. Where land application is occurring under long term lease or agreement with adjacent landowner, fields must be included in the above table.  
 2. Fields that have a "High" soil test phosphorus (>400) should implement Best Management Practices (BMPs) to reduce the risk of nutrient movement to sensitive waterbodies. BMPs may include, but not be limited to: installing conservation buffers, reducing P2O5 application rate, incorporating manure, adding chemical treatments to litter that tie up soluble P and keep it from moving over the landscape, and/or adjusting application timing.  
 3. It is illegal to make land applications when the ground is frozen. It is recommended that land applications are not made within 48 hours of forecasted precipitation.

In fall 2017 fields H5 & H6 can only receive 5,000 gallons per acre because the farmer will not compromise. The rest of the liquid manure only has one field it can go on (H10). Field H10 is a cover crop (usually wheat) but it will be burnt down. So all the manure/nutrients on field H 10 will go back to the soil because we are not taking a plant off. We can apply 25,000 G/ac because the nutrients in the lagoon are low, but it will need to be a split application. It would be best if the farmer would apply all the liquid manure to the barley crop (especially field H5) because it will be taken off as a crop.