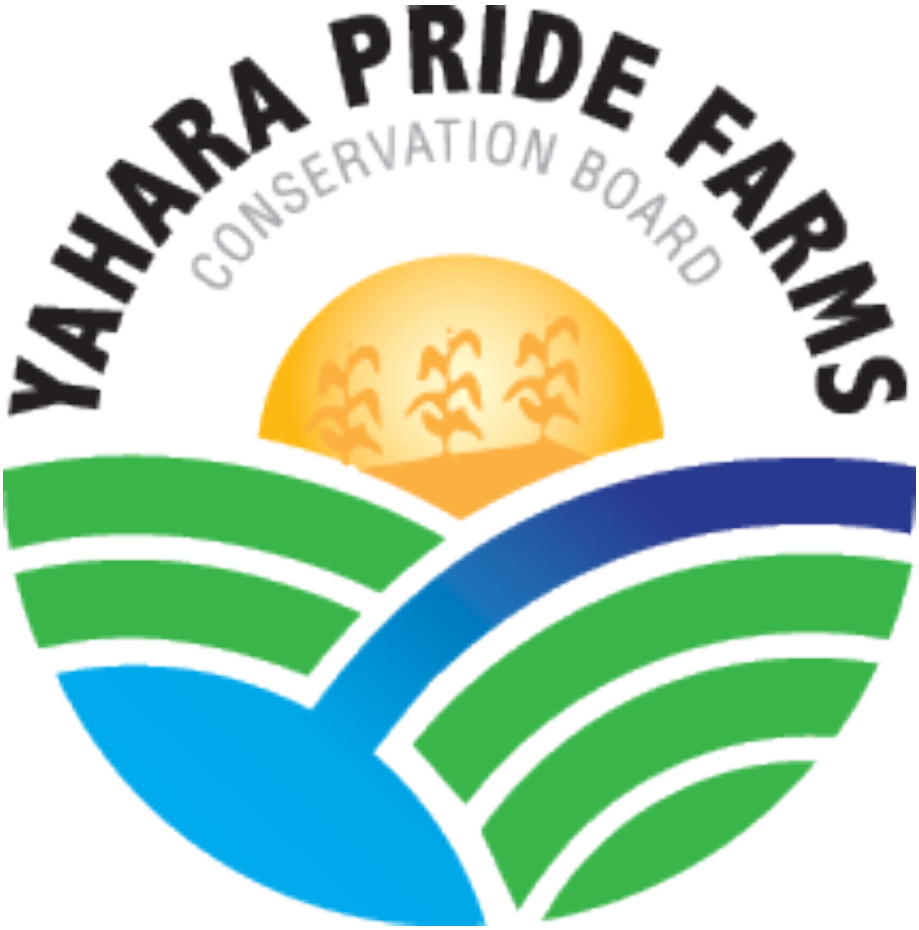
Yahara Pride Farms

2017 Phosphorus Reduction Report



Yahara Pride Board of Directors

May 27, 2018

Executive Summary

What the data represents

This report provides the data and summary information for the 35 farms cooperating in the 2017 Yahara Pride Farms (YPF) cost share program. In 2017 there were 4 new farms in the program. There were also farms that implemented practices but did not provide a SNAP+ file for evaluation or payment. The information provided is based on the difference in predicted phosphorus loss from the adoption of a practice such as strip tillage, low disturbance manure injection, cover crops, headland stacking of manure, or combination of two. The 2017 data is based off the "SNAP+" plans provided to YPF by the farmers and/or their crop advisors.

All the data presented in this report are derived from the individual farms nutrient management plan, which takes into account tillage, crop rotations, nutrient applications from both manure and fertilizer, and crop yields. This is the best representation of what is actually happening on the farms that participate in the Yahara Pride Cost Share program. Each farm and field has unique characteristics that influence yields, the tillage system and the risks for sediment and nutrient loss. That is why we see such large variation in losses within this data set.

Summary of phosphorus reductions

Table 1 shows a comparison of the number of farms, acres and phosphorus reductions achieved through the **cover crop program** from 2013 to 2017.

Year	2013	2014	2015	2016	**2017**
Farms	20	37	35	37	**33**
Fields	80	53	160	290	**212**
Acres	2,436	4,732	4,908	5,851	**4,483**
Average (lbs/acre)	0.7	0.8	1.8	1.5	**1.8**
Total P reduction (In pounds)	1,730	3,691	6,572	7,130	**7,300**

Table 1 Number of farms, acres and phosphorus reductions through the cover crop program

In 2017 there was a reduction in the number of farms cooperating in the cover crop program. This could be due to weather conditions, timing of planting or the general farm economy. However, the acres reported in 2016 in table 1 contained both the acres planted with just a cover crop and the acres with low disturbance deep tillage and a cover crop. Therefore, a more accurate comparison would be to add the two together, which yields:

- 2016 5,851 acres with cover crops 7,130 pounds of P reduced
- **2017 5,439 acres with cover crops 9,281 pounds of P reduced**

Table 2 shows a comparison of the low disturbance deep tillage plus cover crop program (LDDT), which was first offered to farmers in the watershed in 2016. In the 2016 YPF Phosphorus report the acres implemented using LDDT

Year	2016	**2017**
Farms	8	**11**
Fields	?	**52**
Acres	730	**956**
Average (lbs/acre)	1.48	**2.2**
Total P reduction (In pounds)	1,080	**1,981**

Table 2 Number of farms, acres and phosphorus reductions through the LDDT + cover crop program

Table 3 shows a comparison of the number of farms, acres and phosphorus reductions achieved through the **low disturbance manure injection program** from 2013 to 2017.

Low Disturbance Manure Injection Program	2013	2014	2015	2016	**2017**
Number of farms	11	14	4	7	**15**
Number of fields	20	20	32	76	**223**
Tillable acres in program	361	841	566	1,203	**3,885**
Average phosphorus reduction (lbs./acre)	1.0	0.6	1.9	0.9	**1.4**
Total phosphorus reduction (in pounds)	357	530	1,081	1,106	**6,039**

Table 3 Number of farms, acres and phosphorus reductions through the LDMI program

The LDMI program grew at a tremendous rate this year compared to previous years. Much of this is due to the cost share program for the purchase of LDMI equipment. It is clear that in the future there will continue to be an increase in LDMI acres.

The table 4 shows a comparison of the number of farms, acres and phosphorus reductions achieved through **strip tillage program** from 2013 to 2017.

Strip Tillage Program	2013	2014	2015	2016	**2017**
Number of farms	3	3	3	3	**4**
Number of fields	11	15	20	21	**35**
Tillable acres in program	156	253	1,489	917	**1,829**
Average phosphorus reduction (lbs./acre)	1.4	0.9	0.8	0.9	**0.8**
Total phosphorus reduction (in pounds)	225	220	1,221	703	**1,458**

Table 4 Number of farms, acres and phosphorus reductions through strip tillage program

Strip tillage grew to the largest number of acres since the beginning of the cost share program. It appears that the average phosphorus reduction is very stable (around 0.85 pounds per acre). This year strip tillage had the largest reduction in the history of the program.

Yahara Pride Farms also provided an incentive payment for farmers who did not apply manure during the critical runoff period (on frozen or snow cover ground). They also provided this payment in 2016 and had one cooperator who did not apply manure on 50.4 acres. This yielded a phosphorus reduction of 2.1 pound per acre and had the greatest impact on soluble phosphorus loss.

In 2017, headland stacking had 9 farms participating in the program. There was a total of 301 acres of land where manure was not applied during the critical runoff period. Some of the cooperating farms were farms that had a WPDES permit so they could not apply manure during this period. In 2017 the average reduction of phosphorus was 2.1 pounds per acre (same as in 2016) and the total reduction in the risk of phosphorus loss was 665 pounds.

In 2017 YPF provided a bonus payment for farms that either combined two practices on a field (one practice was always cover crops while the second practice was either strip tillage or LDMI). In 2017, the average predicted phosphorus reduction for combining two practices was **0.9 pounds per acre**. This year's data set contained 66 fields totaling 1,704 acres. This reduction in phosphorus is over and above the individual practice data set.

2017 Summary of Predicted Phosphorus Reduction

Practice	Average P Reduction	Total Predicted P Reduction
➢ **Cover Crops**	**1.8**	**7,300 lbs**
➢ **LDDT + cover crop**	**2.2**	**1,981 lbs**
➢ **LDMI**	**0.9**	**6,039 lbs**
➢ **Strip Tillage**	**0.8**	**1,458 lbs**
➢ **Headland Stacking Manure**	**2.1**	**665 lbs**
➢ **Combined Practices**	**0.9**	**1,416 lbs**
	Total	**18,859 lbs**

Introduction

First and foremost – Thank you to all the farmers in the Yahara Pride Watershed program for working with Yahara Pride Farms and Yahara WINS to implement practices that reduce the potential for phosphorus loss to the streams and rivers that contribute water to the Yahara Lakes. The farmers in this area continue to be supportive of Yahara Pride Farms and continue to seek alternative farming systems and conservation practices that reduce phosphorus and sediment loss. This report shows how hard each and every one of you works to keep soil and nutrients on your fields and out of our water. ***Farmers are the heart and soul of the Yahara Pride Farms program and we thank you!***

Yahara Pride Farms and the farmers in the Yahara Watershed are also indebted to "The Yahara Watershed Improvement Network (Yahara WINs), led by MMSD", *which began in 2012 as a four-year pilot project to reduce phosphorus loads and meet more stringent water quality standards established by the Wisconsin Department of Natural Resources (WDNR). This groundbreaking program employs watershed adaptive management, a strategy in which all sources of phosphorus pollution in an area work together to meet water quality goals. This strategy is more effective and less expensive than the sources working separately on individual solutions.* ***Partners in Yahara WINs include cities, villages, towns, wastewater treatment plants, agricultural producers, environmental groups and others.***

Thanks also to the businesses and organizations who provide support (both financial and in-kind), to Yahara Pride Farms. It takes people and money to offer this cost share, certification and outreach and education events, and we wouldn't be able to do it without your support. This farmer-led watershed approach has become a model for others around the state because we have been able to offer programs and events based on your support. Thank you for being an important of the Yahara Pride Farms program.

Finally, thanks to the members of the Yahara Pride Farms board of directors and all the staff who have worked with us over the past 4 – 5 years. Your guidance and support have shaped this program and we cannot thank you enough for the time you committed to this organization.

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Programs offered in 2017

During 2017 the Yahara Pride Farms (YPF) board of directors continued operating and implementing a number of agricultural conservation programs designed to reduce the loss of phosphorus within the Yahara Watershed. There were five major incentive programs offered within the watershed in 2017 including:

1. Cover Crop Assistance,
2. Low Disturbance Deep Tillage and Cover Crop,
3. Low Disturbance Manure Injection,
4. Strip tillage, and
5. Headland Stacking of Manure / Composting

In addition to these five programs, YPF offered bonus payments to farms that implemented a combination of practices on the same field (two or more practices). Each of these programs offers unique benefits both from a phosphorus reduction standpoint as well as educational and confidence/trust building within the watershed.

This report provides an update on the number of acres, fields and farms involved in each of these programs. The Wisconsin Phosphorus Index (P Index) is a model that estimates the pounds of phosphorus prevented from reaching the nearest waterbody. The nearest waterbody would in most cases be streams and rivers. These estimates of the pounds of phosphorus prevented from reaching a waterbody can then be used (with the appropriate delivery factors) to estimate the pounds of phosphorus prevented from entering the Madison chain of Lakes.

1. Cover Crop Assistance Program:

Cover crops are grasses, legumes, small grains or other crops grown between regular grain crop production periods for the purpose of protecting and improving the soil. The most common cover crops are fall-seeded cereals, such as rye, barley or wheat, and fall-seeded annual ryegrass. Late summer-seeded spring oats or spring barley is sometimes used if winterkill is preferred to avoid spring termination by tillage or herbicide. One of the two major reasons for growing winter cover crops is to reduce soil erosion. In the Yahara Watershed a significant amount of the tillable acres has sufficient slope to be at risk for erosion if not adequately protected. Eroding soil particles not only fill in wetlands and streams, but they also carry particulate bound phosphorus to surface water.

Based on the data collected by the Yahara Pride Farms over the years of this cost share program, the use of cover crops is most effective when targeted to specific fields and farming systems. Cover crops have a high potential to reduce phosphorus loss on fields being harvested as corn silage with manure incorporated in the late summer or fall. Research has shown that fields with winter cover incorporated in the spring have 55 percent less water runoff and 50 percent less soil loss annually than do fields with no winter cover. More recent studies show soil losses from corn or soybeans no-

tilled into a vigorous growth of rye or wheat to be 90-95 percent less than soil losses from corn and soybeans conventionally tilled.

The Yahara Pride Farms began working with cover crops as a demonstration program in 2012. The program got a fair amount of publicity and recognition and other farmers within the watershed became interested in cooperating because of the ease of getting into the program. While not all the fields in the watershed planted into cover crops can be attributed to the Yahara Pride Farms program, it is clear that cover crops are becoming a recognized and accepted practice in the watershed. There are still a number of important considerations that need to be evaluated and addressed in regards to cover crops in this region of the state. Some of these include the cover crop species planted, the timing of planting, targeting fields that have the greatest potential for nutrient and sediment loss and targeting farming systems that have the greatest potential for nutrient and sediment loss.

In 2017 YPF worked with local crop consultants to get the information required to calculate the potential environmental benefits of all three cost shared practices. The information on the following pages for the cover crop program shows that in 2017 there were 212 fields with crop rotations and farming systems in the SNAP format. **This represented 100% of the total acres** planted with cover crops through the cost share program, though most of these acres were not cost shared. The wide range of farms and farming systems reflected in the data improves our understanding of the potential for cover crops to reduce phosphorus loss.

Based on the field data collected during the 2017 seasons, the cover crop incentive program reduced the risk of phosphorus loss by 7,300 pounds (compared to 7,130 pounds in 2016). The average reduction in phosphorus loss was 1.8 pounds per acre in 2017 compared to 1.5 lbs/acre in 2016. Care should be used when comparing year-to-year changes in the predictions of phosphorus loss because of changes to the SNAP+ program.

This year's phosphorus reduction = 7,300 lbs

Cost share program sponsored at $40 / acre for a maximum of 50 acres

Total acres planted using a cover crop system = 4,483 acres

Total estimated acres cost shared = 1,365 acres

Acres planted without cost share in watershed = 3,118 acres

30.4% of the acres planted to cover crops on YPF's land were cost shared

The table in appendix 1 provides the information from each field in the cover crop program.

Looking at the data based on phosphorus reduction for each reach of stream is in table 14 (below).

Stream Reach	Acres	Percentage of Acres
62	225	5.0%
63	363.4	8.1%
64	2,872	64.1%
65	9	0.2%
66	36	0.8%
69	978	21.8%

Table 5 Acres in the cover crop program by stream reach

2. Low Disturbance Deep Tillage and Cover Crop:

The low disturbance deep tillage and cover crop program was offered in 2016 because of the wet fall and the very high potential for soil compaction done on fields harvested during high soil moisture conditions. The program offered cost share assistance to farmers willing to implement deep tillage practices that were also low disturbance. The goal was to reduce the potential for aggressive deep tillage conducted within the watershed, which would increase the potential for soil erosion. The cost share program offered a payment of $55 per acre with a 50 acre maximum for a total possible payment of $2,750 per operation.

Based on the information contained in the SNAP+ program it was impossible to determine the impact of low disturbance deep tillage verses other methods of deep tillage. This tillage system is not contained in the SNAP+ so farmers and crop consultants had to identify a tillage system that produces similar results.

In 2017 crop consultants identified the fields where LDDT with a cover crop was conducted. The low disturbance deep tillage and cover crop cost share program had **52 fields identified** with a total of **956 acres within the watershed**.

Total acres planted with the LDDT plus cover crop system = 956 acres

Total acres cost shared = 448 acres

Acres planted without cost share in watershed = 508 acres

The fields identified using LDDT plus a cover crop reduced the risk of phosphorus loss by 1,981 lbs.

Average reduction in P loss = 2.2 pounds per acre

Appendix 2 contains the individual field data for the LDDT plus cover crop program.

Of the ten farms participating in the LDDT + cover crop program nine were located in stream reach 64, while the other was in 62. The acres are:

- Stream reach 64 884.3 acres
- Stream reach 63 71.5 acres

3. <u>Low Disturbance Manure Injection:</u>

The northern portion of the Yahara Watershed is an area with high concentrations of livestock and therefore a great deal of manure. Manure is either incorporated into the soil using a number of different tillage implements (chisel plow, disk, or field cultivator) or it is applied to the soil's surface and not incorporated. Surface applications of manure have been shown to increase nitrogen and phosphorus runoff to rivers and streams, while injection/incorporation places manure below the surface where it doesn't interact with runoff water during storms. However, on steep slopes injection/incorporation of manure can make the soil more susceptible to erosion.

For many livestock operations in the Yahara, manure incorporation is a standard practice. Traditional incorporation methods move a great deal of soil and increase the potential for soil erosion. Field evaluations conducted by the Yahara Pride Certification Program during the spring of 2013 and 2014 identified reducing soil erosion as a high priority. Since much of the tillage was conducted to incorporate manure, a system of incorporating manure with minimal soil disturbance needed to be implemented in the watershed. Minimum disturbance equipment also works well with no-till farming systems and allows farmers to experiment with new methods of preserving nitrogen, phosphorus and potassium to save on fertilizer costs. In addition to the economic benefits, improved manure utilization benefits the environment by ensuring efficient nutrient use and improving soil and water quality.

Yahara Pride Farms was one of the first groups in Wisconsin to experiment with vertical manure injection (VMI). VMI is a farming system that incorporates manure into the soil with minimal soil disturbance. Since YPF began using VMI there have been a number of companies that have made equipment to incorporate manure with low soil disturbance. These systems often use a single large fluted coulter to cut crop residue and open a channel in the soil surface for manure placement. Significantly less soil disturbance occurs with this process than with either chisel or chisel/disk manure incorporation systems. Since 2013, YPF has been encouraging farmers to try low disturbance manure injection (LDMI) systems. Dane County now offers cost share to farmers and custom manure applicators to upgrade their manure application equipment to LDMI.

In 2017 the manure application program includes any manure application equipment defined as low disturbance (Low Disturbance Manure Injection – LDMI). Participants in the cost share program were either farmers who had purchased LDMI equipment, or hired a custom operator who had LDMI

equipment. In 2017, YPF had **fourteen farms (up from 4 in 2015 and 7 in 2016)** participate in the LDMI program. The cost share program was modified to provide $20 per acre with a 100-acre maximum payment ($2,000 maximum). The fourteen farms used the equipment on **223 separate fields** (up from 32), which **totaled 3,885 acres** (566 acres in 2015 and 1,203 fields in 2016). There was additional manure applied using this equipment, but some of that land was out of the Yahara Watershed. **The data contained in appendix 3 are from the fields within the Yahara Watershed.**

The estimates for the reductions in phosphorus loss were conducted using crop rotation, tillage practices and manure application data provided by farmers and their crop consultants in the watershed. The average reduction in the risk of phosphorus loss for the **LDMI program was 1.4 pounds of P per acre.**

Based on the 2017 data, the LDMI cost share program reduced phosphorus loss by 6,039 lbs.

Total acres with manure applied with the LDMI system = 3,885 acres

Total acres cost shared = 1,378 acres

Acres planted without cost share in watershed = 2,507 acres

Looking at the data based on phosphorus reduction for each reach of stream is in table 9 (below).

Stream Reach	Acres	Percentage of Acres
63	571.0	14.7%
64	3,110.2	80.1%
65	12.6	0.3%
66	191.2	4.9%

Table 6 Acres implementing LDMI by stream reach

4. Strip Tillage:

Strip-tillage is a conservation system that offers an alternative to no-till, full-till and minimum tillage. It combines the soil drying and warming benefits of conventional tillage with the soil-protecting advantages of no-till by disturbing only the portion of the soil that is to contain the seed row (similar to zone tillage). Each row that has been strip-tilled is usually about eight to ten inches wide. The system still allows for some soil water contact that could cause erosion, however, the amount of potential erosion on a strip-tilled field would be lower than compared to the amount of erosion on an intensively tilled field. Compared to intensive tillage, strip tillage saves considerable time, fuel and money. Another benefit is that strip-tillage conserves more soil moisture compared to intensive

tillage systems. However, compared to no-till, strip-tillage may in some cases reduce soil moisture and increase the potential for soil loss.

Strip-tillage is performed with a special piece of equipment and the YPF's strip till program originally assisted with the rental of a strip till machine to determine if this farming system fit into a farms overall farming system and management. In the first two years of the Yahara cost share program a unique partnership was formed between the Yahara Pride Farms Inc. and Kalscheur Implement. Since 2015, Kalscheur Implement was no longer able to provide a strip tillage machine, so the YPF's board dropped the rental of a machine and approved a payment of $15/acre for up to 50 acres for farmers wanting to experiment with strip tillage (maximum payment of $750 per farm).

The data contained in appendix 4 shows the soil types, slope, soil test phosphorus and the changes in the estimated annual phosphorus index from all fields that were tilled using a strip till machine. There were four farms that cooperated in the strip tillage program and these operations were spread out around a wide area of the Yahara watershed. Strip tillage was conducted on 34 different fields with a large variation of soil types, soil test and slopes. This year the number of acres planted using a strip tillage system was about 1,829 compared to last years total of 917.

Running the SNAP calculations for each field is important because as demonstrated in the table, assuming that phosphorus reductions directly correspond to slope is not an accurate assumption. Based on the information gathered over the four years of this project, the factors that influence phosphorus loss (or reductions in phosphorus loss) include slope, tillage prior and after strip tillage, soil test levels, manure management program and the crop rotation. All of these factors play a large role in predicted phosphorus loss.

The 2017 strip tillage program was conducted on 1,829 acres in the Yahara Watershed. However, the vast majority of these acres were not cost shared by the Yahara Pride Farms program.

- **Total acres stripped tilled 1,829**
  - **YPF cost share acres 195.0**

Acres of strip tillage done without financial assistance = 1,634acres

Overall the average reduction in phosphorus loss was 0.8 pounds.

For the 1,829 acres in the program the risk of phosphorus loss was reduced 1,458 pounds by adopting strip tillage.

Stream Reach	Acres	Percentage of Acres
64	480.5	26.3%
69	1,348.0	73.7%

Table 7 Acres in the Yahara Watershed adopting strip tillage by stream reach

5. **Headland Stacking Manure**

Based on data collected at the Discovery Farms and Pioneer Farms, winter runoff events that occur as a combination of increased temperatures and rainfall, along with frozen soils and deep snow cover, produces a high potential for surface runoff from fields. Livestock producers who make manure applications to cropland during this high-risk period need to understand that spreading manure during snowmelt does have an extremely high risk of runoff. Studies from farms cooperating in the Discovery Farm Program indicate that manure applied to snow covered and/or frozen soils during conditions of snowmelt or rain on frozen soils **can contribute the majority of the annual nutrient losses. One inappropriately timed manure application can generate large losses of phosphorus to surface waters.**

Yahara Pride Farms decided to provide an incentive to farmers who sometimes have to clean out lots with solid manure during this critical runoff period. The goals of this program were to reduce the risk of manure run off by:

- Offering an incentive to farmers for stacking, reloading and spreading manure during a low risk runoff period.
- The incentive payment is offered to help offset the cost of double handling manure.

Calculating the predicted reductions in phosphorus loss from headland stacking during critical runoff periods can be accomplished using the SNAP+ program by comparing the risk of a manure application in the winter (surface applied) and in the spring (incorporated). The predicted reductions in phosphorus loss are shown in appendix 5.

There were 9 farms that cooperated in the headland-stacking program in 2017. These farms stacked about 3,007 tons of solid dairy manure on sites approved for stacking. If the manure had been applied to cropland during the critical runoff period, the application would have covered about 301 acres of cropland.

As shown in the table in appendix 5, staking manure during the critical runoff period reduced the loss of phosphorus by 2.1 pounds per acre. Headland stacking showed a greater reduction in the risk of phosphorus loss than any other single practice. It is also important to note that headland stacking of manure during the critical runoff period is the only practices where soluble phosphorus losses are the dominant form of phosphorus reduction.

Manure application rates were the same on each field, the only variable was whether manure was spread during the winter on frozen and/or snow covered ground or during the spring and incorporated within 72 hours. These operations stacking just 3,007 tons of manure reduced the predicted risk of phosphorus loss to nearby surface water by 665 pounds.

Practices that reduce losses of soluble phosphorus are of particular importance because once phosphorus is in runoff water there is little that can be done to remove it prior to reaching nearby surface water. Most conservation practices are designed to capture and slow water running off of fields so that particulate soil particles fall out of the runoff and remain in the buffers settling basins and wetlands. However, soluble phosphorus is not tied to particles and therefore flows with the water. Keeping soluble phosphorus out of runoff is a critical factor in reducing the overall phosphorus loads to the Madison chain of lakes.

Of the nine farms participating in the headland stacking manure program, the breakdown of the acres without manure application based on stream reach is:

- Stream reach 64 372.0 acres
- Stream reach 63 264.1 acres

6. Combined Practices

The incredible cooperation of the local crop advisors and farmers provided YPF with an adequate data set so that we could evaluate "How does stacking different best management practices impact the potential for phosphorus loss"? **This question was evaluated on 66 fields in 2017 and the data is contained in appendix 6.**

To determine the impact of applying more than one best management practices, we first ran the SNAP calculation with all the practices in place. Then one practice was removed from the field and the numbers were entered into the table for that practice. Then the practice that was removed was added back to the field and the second practice was removed. Those numbers were then entered into the spreadsheet for that practice. Finally both best management practices were removed from the field and the impact on the potential phosphorus loss was recorded. The data contained in the tables in appendix 6 compare fields with and without both practices. Most of the fields have two lines of data because one of the practices impacted the current year, while the other practice impacted the following year. Fields with one line had practices that impacted the same crop year.

The phosphorus reductions for these fields appear in the individual practice sections of the report (LDMI, strip tillage and cover crops) so the reductions in predicted phosphorus loss for each single practice are not part of the data in appendix 6. This table shows only the impact of adopting two practices above and beyond the individual practices. However, for the purposes of the discussion the three cost shared practices (cover crops, low disturbance manure injection and strip tillage) were evaluated on fields that had multiple practices applied. The 2017 data set did not contain any fields that had all three practices and in all cases one of the practices was cover crops in combination of either LDMI or strip tillage.

The 66 fields totaled 1,704 tillable acres. The average phosphorus reduction for these fields was 4.3 lbs per acre, however that includes the reductions already in the individual practice data. When you take off the reductions from the other practice, combining practices results in an additional reduction of 0.9 pounds per acre.

1,704 acres were managed with a combination of practices adopted

The average reduction in the risk of phosphorus loss was 0.9 lbs greater than both practices

Combining practices resulted in an additional 1,416 pounds of phosphorus reduced

- **YPF needs to continue promoting the use of more than one conservation practice on a field in order to have adequate samples numbers to clearly identify the impact of two or more practices,**

Conclusion:

The 2017 Yahara Pride Cost Share Program has engaged a large number of farmers in one or more of the five cost share programs. This report provides information on the predicted reductions in phosphorus loss by farmers adopting one or more of these practices. The report provides both a total for the entire watershed and the reductions for each of the six stream reaches that Yahara Pride Farms is working with farmers on adoption of conservation systems.

This report did not evaluate multiple year data but a closer look at the impact of farms continuing a conservation practice is desirable. Future analysis should attempt to do a better job of looking at multiple years of adoption to understand the impacts of multiple years on a field.

The headland-stacking program is the only program that has a dramatic potential reduction in soluble phosphorus loss.

Additional work should be done to accurately reflect the cost that farmers bare in adopting these conservation systems. The cost of seed, planting, killing and impact of the cover crop on yield have not been examined. The cost of handling manure twice and hauling to an approved stacking site and then to the field, also need to be considered. A report evaluating the cost to farmers for adoption should be done to accurately reflect the total cost of these programs. Protecting water quality is important to everyone, and everyone needs to be part of the solution.

Appendix

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		2017 Phosphorus Report - Cover Crops																			
					Without Cover Crop					With Cover Crop											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
1.0	Plano	PnC2	9%	31	1.3	2	1	1.0	0.1	0.9	1	0	0.1	0.1	0.9	0.9	5	PlC2	PlC2	64
1.9	Plano	PnC2	9%	44	3.9	4	3	2.8	0.3	3.8	4	3	2.3	0.3	0.5	1.0	5	PnC2	PnC2	64
2.2	Troxel	TrB	9%	73	2.2	4	5	4.7	0.4	2.2	4	5	4.3	0.4	0.4	0.9	5	RnC2	TrB	63
2.3	Radford	RaA	50%	348	0.5	4	4	1.4	2.7	0.5	4	4	1.0	2.6	0.5	1.2	4	EgA	RaA	64
2.5	Griswold	GwB	4%	22	0.5	2	2	0.7	1.0	0.4	1	1	0.5	0.3	0.9	2.3	5	GwB	GwB	64
2.7	McHenry	MdD2	16%	114	11.0	4	4	2.8	0.8	10.7	4	3	2.4	0.9	0.3	0.8	5	MdD2	MdD2	64
3.0	McHenry	MdC2	9%	42	0.5	0	0	0.3	0.1	0.2	0	0	0.1	0.1	0.2	0.6	5	MdC2	MdC2	62
3.1	McHenry	MdC2	9%	15	1.7	1	1	0.7	0.1	1.2	1	0	0.2	0.1	0.5	1.6	5	MdC2	MdC2	62
3.2	McHenry	MdC2	9%	47	0.5	0	0	0.2	0.1	0.4	0	0	0.2	0.1	0.0	0.0	5	MdC2	MdC2	62
3.2	Kidder	KdD2	16%	42	0.8	1	1	0.5	0.1	0.8	1	1	0.5	0.1	0.0	0.0	5	KdD2	DnC2	64
3.3	McHenry	MdC2	9%	49	0.7	1	1	0.4	0.1	0.4	1	0	0.2	0.1	0.2	0.7	5	MdC2	MdC2	62
3.4	McHenry	MdD2	13%	107	4.1	6	12	11.0	0.7	3.5	5	5	4.8	0.6	6.3	21.4	5	MdD2	MDD2	62
3.5	DunBarton	1180D2	16%	67	2.0	2	3	2.6	0.5	0.9	1	3	2.0	0.6	0.5	1.8	1	1180D2	1180D2	64
3.8	Ringwood	RnC2	9%	19	0.9	1	4	3.4	0.3	0.1	0	0	0.2	0.1	3.4	12.9	5	RnC2	RnC2	64
3.9	McHenry	MdC2	9%	38	1.6	1	2	1.8	0.5	1.6	1	2	1.5	0.5	0.3	1.2	5	MdC2	MdC2	64
4.0	St Charles	ScB	3%	102	0.1	0.4	0.5	0.2	0.3	0.2	0.6	0.7	0.3	0.4	-0.2	-0.8	5	ScB	ScB	66
4.2	Kidder	KdD2	16%	53	1.5	1	1	0.8	0.2	1.0	1	0	0.3	0.2	0.5	2.1	5	KdD2	MdC2	63
4.2	Military	MhD2	16%	46	1.8	2	3	2.4	0.3	2.0	2	2	2.1	0.2	0.4	1.7	3	MhD2	MhD2	64
4.2	Griswold	GwD2	16%	21	2.9	3	2	1.6	0.2	0.6	1	0	0.2	0.2	1.4	5.9	4	GwD2	PnC2	64
4.6	St Charles	ScC2	9%	75	0.2	1	1	0.3	0.4	0.1	0	0	0.1	0.3	0.3	1.4	5	ScC2	EgA	62
4.8	Batavia	BbB	4%	156	4.5	6	7	6.0	1.3	4.0	5	4	2.7	0.9	3.7	17.8	4	BbB	BbB	64
5.0	McHenry	MdC2	9%	63	3.3	6	7	6.3	0.6	2.6	5	4	3.5	0.5	2.9	14.5	5	MdC2	DnB	62
5.3	McHenry	MdD2	16%	42	2.4	2	2	2.3	0.2	2.4	2	3	2.7	0.2	-0.4	-2.1	5	MdD2	MdD2	64
5.4	Dresden	DrD2	16%	32	2.7	3	3	3.1	0.2	2.8	3	3	3.0	0.2	0.1	0.5	3	DrD2	DrD2	64
5.6	Kidder	KdD2	16%	57	1.8	2	4	3.5	0.4	1.0	1	1	1.1	0.3	2.5	14.0	5	KdD2	MdC2	62
5.6	Dodge	DnC2	9%	65	0.7	2	2	1.8	0.6	0.6	2	2	1.0	0.7	0.7	3.9	5	DnC2	DnB	64
5.9	Batavia	BbB	2%	161	2.6	7	9	7.8	1.2	2.4	6	8	6.5	1.0	1.5	8.9	4	BbB	BbB	63
6.0	Griswold	GwC	9%	36	1.8	3	7	5.7	1.3	1.6	3	6	4.8	1.2	1.0	6.0	5	GwC	GwC	62
6.0	Plano	PnB	4%	42	1.6	4	9	7.1	2.0	1.3	4	5	3.6	1.7	3.8	22.8	5	PnB	PnB	64
6.0	Batavia	BbB	9%	49	1.0	1	1	0.9	0.3	0.4	1	0	0.3	0.2	0.7	4.2	3	DsC2	BbB	64
6.1	Troxel	TrB	2%	90	1.6	2	3	2.3	0.3	1.3	1	1	1.0	0.2	1.4	8.5	5	TrB	TrB	63
6.2	Griswold	GrC2	8%	34	0.9	1	3	2.8	0.5	0.7	1	2	1.9	0.5	0.9	5.6	4	GrC2	RdC2	64
6.7	Griswold	GwC	8%	112	1.6	2	2	1.6	0.7	1.6	2	2	1.7	0.6	0.0	0.0	5	GwC	GwC	63
7.0	McHenry	MdC2	9%	53	5.2	7	6	5.4	1.1	4.8	7	6	4.9	1.1	0.5	3.5	5	MdC2	DnB	62
7.2	Boyer	BoC2	9%	47	2.3	2	4	3.8	0.1	1.5	1	2	1.5	0.0	2.4	17.3	3	BoC2	SeB	64
7.3	Plano	PoB	9%	115	4.8	6	10	9.1	0.7	4.3	5	8	7.4	0.7	1.7	12.4	5	PnC2	PoB	64
7.4	Ringwood	RnC2	9%	96	5.1	9	15	13.2	2.3	4.8	9	11	9.2	1.9	4.4	32.6	5	RnC2	RnC2	63
7.4	Kidder	KdD2	16%	56	1.7	2	1	1.1	0.3	1.6	2	1	0.9	0.3	0.2	1.5	5	KdD2	SmC2	64
7.4	Plano	PnB	4%	119	3.9	6	7	6.1	0.6	3.7	6	5	4.8	0.5	1.4	10.4	5	PnB	PnB	64

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Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
7.6	Dodge	DnB	9%	58	2.3	3	2	2.1	0.2	2.3	2	2	2.0	0.2	0.1	0.8	5	MdC2	DnB	64
7.6	Plano	PnC2	9%	86	1.9	4	10	8.7	1.3	1.4	3	5	3.7	1.0	5.3	40.3	5	PnC2	PnC2	64
7.7	Virgil	VrB	3%	77	0.9	2	2	1.1	0.8	0.8	2	2	0.8	0.7	0.4	3.1	5	VrB	VrB	64
8.0	McHenry	MdC2	9%	30	4.2	5	13	12.6	0.6	3.6	4	11	10.2	0.5	2.5	20.0	5	MdC2	MdC2	62
8.0	Sable	SaA	1%	221	0.9	5	6	2.9	3.5	0.8	5	4	1.6	2.8	2.0	16.0	5	SaA	SaA	63
8.0	Ringwood	RnC2	9%	58	2.3	4	8	6.6	1.0	2.0	4	4	3.5	0.9	3.2	25.6	5	RnC2	RnC2	64
8.1	McHenry	MDC2	9%	89	3.9	5	3	2.6	0.4	3.9	5	3	2.4	0.4	0.2	1.6	5	MdC2	DnB	64
8.1	Griswold	GwD2	16%	21	3.1	4	7	6.7	0.2	2.8	4	6	5.4	0.2	1.3	10.5	4	GwD2	RnC2	64
8.2	Dodge	DnC2	8%	136	1.2	2	3	2.4	0.6	1.1	2	3	2.2	0.6	0.2	1.6	5	MdD2	DnC2	64
8.3	Boyer	BoC2	9%	161	1.4	2	2	1.3	1.0	1.1	2	2	1.0	0.9	0.4	3.3	3	BoC2	BoB	64
8.4	Dodge	DnB	9%	50	2.3	2	2	2.0	0.3	2.3	2	2	1.9	0.3	0.1	0.8	5	DnC2	DnB	64
8.4	Plano	PoB	4%	170	2.7	8	7	5.4	1.1	2.4	7	3	2.5	1.1	2.9	24.4	4	PoB	PoB	64
8.7	Boyer	BoD2	16%	124	2.5	3	8	7.4	0.6	1.6	2	4	3.1	0.4	4.5	39.2	3	BoD2	DsB	64
9.0	Griswold	GwC	8%	94	1.5	2	2	1.9	0.2	1.5	1	2	2.1	0.3	-0.3	-2.7	5	GwC	GwC	64
9.0	McHenry	MdC2	9%	56	0.4	0.6	1.1	0.9	0.2	0.2	0.4	0.4	0.3	0.1	0.7	6.3	5	MdC2	Mdc2	65
9.1	Dresden	DrD2	16%	47	2.9	3	8	7.6	0.3	1.9	2	3	3.1	0.3	4.5	41.0	3	DrD2	DrD2	64
9.1	Dresden	DsB	2%	83	1.9	1	1	0.7	0.4	1.8	1	1	0.6	0.4	0.1	0.9	3	DsB	DsB	64
9.2	Ringwood	RnC2	9%	17	1.5	1	3	3.0	0.2	0.7	1	2	1.3	0.2	1.7	15.6	5	RnC2	RnC2	64
9.2	Ringwood	RnC2	9%	54	2.8	4	9	8.4	0.7	2.4	4	6	5.9	0.5	2.7	24.8	5	RnC2	RnC2	64
9.7	Rockton	RoD2	10%	60	1.8	2	6	4.9	1.1	1.5	2	3	2.2	1.0	2.8	27.2	2	RoD2	RoD2	64
9.9	Military	MhD2	16%	33	1.2	1	2	1.8	0.2	1.4	1	2	1.5	0.2	0.3	3.0	3	MhD2	SmB	64
9.9	Plano	PnB	4%	56	3.1	4	5	4.7	0.4	2.5	3	2	1.8	0.3	3.0	29.7	5	PnB	PnB	64
10.0	Dodge	DnC2	9%	43	3.4	5	10	9.7	0.4	3.1	4	9	8.3	0.4	1.4	14.0	5	MdC2	DnC2	62
10.0	Griswold	GwC	8%	80	1.5	2	4	3.3	0.8	0.9	1	2	1.4	0.6	2.1	21.0	5	GwC	PnB	64
10.0	McHenry	MdC2	9%	64	3.6	4	9	8.3	0.6	2.3	3	4	3.8	0.5	4.6	46.0	5	MdC2	MdC2	64
10.0	Sable	SaB	4%	72	2.0	5	4	2.7	1.1	1.5	4	2	1.2	0.8	1.8	18.0	5	GwB	SaB	64
10.0	Kidder	KdC2	9%	36	3.6	2	4	4.0	0.2	2.2	2	2	1.6	0.1	2.5	25.0	5	KdC2	KdC2	64
10.0	Warsaw	WrC2	9%	47	1.4	2	1	1.1	0.4	1.0	1	1	0.4	0.4	0.7	7.0	3	WrC2	PoB	64
10.0	Plano	PnB	2%	92	1.8	4	4	2.9	0.8	1.6	3	2	1.3	0.6	1.8	18.0	5	PnB	PnB	64
10.0	McHenry	MdC2	9%	173	0.3	0.9	1.2	0.6	0.6	0.5	1.3	1.9	1.2	0.7	-0.7	-7.0	5	MdC2	Mdc2	66
10.2	McHenry	MdC2	9%	127	3.2	5	3	2.8	0.7	2.4	4	2	1.1	0.6	1.8	18.4	5	MdC2	MdC2	63
10.2	Batavia	BbB	4%	97	3.9	4	5	4.8	0.4	2.8	3	2	1.9	0.3	3.0	30.6	4	BbB	BbB	63
10.2	Dodge	DnC2	9%	44	1.6	3	2	1.6	0.6	1.6	3	2	1.6	0.5	0.1	1.0	5	DnC2	DnB	64
10.7	Kidder	KdD2	9%	38	2.6	2	4	3.3	0.2	1.7	1	2	1.4	0.1	2.0	21.4	5	KdD2	KdD2	63
11.0	Dodge	DnC2	9%	44	3.6	4	5	4.8	0.3	3.2	4	3	2.8	0.3	2.0	22.0	5	DnC2	DnC2	63
11.0	Edmund	EdB2	4%	163	1.1	4	6	4.2	1.8	0.9	3	4	2.2	1.5	2.3	25.3	1	EdB2	EdB2	64
11.1	Griswold	GwC	8%	13	0.8	2	4	2.5	1.0	0.4	1	1	0.7	0.2	2.6	28.9	5	GwC	GwC	64
11.1	Batavia	BbB	8%	46	2.1	3	1	1.1	0.2	2.1	3	1	1.0	0.2	0.1	1.1	3	DsC2	BbB	64
11.3	Griswold	GwD2	15%	43	1.3	2	4	3.4	0.4	0.1	0	0	0.2	0.2	3.4	38.4	4	GwD2	GwC	64

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11.7	Plano	PnB	4%	18	1.0	1	2	1.4	0.2	0.7	1	1	0.5	0.1	1.0	11.7	5	PnB	PnB	64
11.8	Ringwood	RnC2	9%	17	1.9	2	3	3.4	0.1	1.0	1	2	1.5	0.1	1.9	22.4	5	RnC2	RnC2	64
11.9	Ringwood	RnC2	9%	43	2.2	2	5	4.6	0.3	0.2	0	0	0.2	0.2	4.5	53.6	5	RnC2	RnC2	64
12.0	Plano	PoB	4%	210	2.2	4	4	2.6	0.9	2.2	4	3	2.6	0.9	0.0	0.0	4	PoB	PoB	64
12.2	St Charles	ScB	4%	75	1.0	2	4	2.5	1.0	0.6	1	1	0.7	0.6	2.2	26.8	5	ScB	ScB	64
12.3	Kidder	KdD2	8%	43	1.2	1	2	1.7	0.2	0.8	1	1	0.7	0.1	1.1	13.5	5	KdD2	KdD2	63
12.5	Whalan	WxB	4%	101	1.7	3	5	3.8	0.9	1.2	2	2	1.6	0.7	2.4	30.0	2	WxB	Os	64
13.0	McHenry	MdC2	9%	91	2.3	2	5	4.6	0.2	2.1	2	4	3.3	0.3	1.2	15.6	5	MdC2	MdC2	64
13.1	Plano	PnC2	12%	71	2.5	3	7	6.1	1.0	2.5	3	6	5.5	0.8	0.8	10.5	5	KrD2	PnC2	64
13.2	Rockton	RoC2	9%	58	4.0	5	6	5.4	0.5	2.0	2	2	1.9	0.4	3.6	47.5	2	RoC2	RoC2	64
13.2	Plano	PoB	13%	170	2.4	4	4	3.8	0.6	1.9	3	3	2.6	0.6	1.2	15.8	2	RpE	PoB	64
13.2	Rockton	RoC2	9%	58	2.1	3	5	4.9	0.4	1.4	2	2	1.7	0.3	3.3	43.6	2	RoC2	RoC2	64
13.3	McHenry	MdD2	16%	85	3.0	4	4	3.5	0.4	3.0	4	4	3.4	0.3	0.2	2.7	5	MdD2	DnC2	64
13.5	McHenry	MdD2	16%	87	3.8	5	8	7.6	0.5	3.5	5	7	6.6	0.5	1.0	13.5	5	MdD2	MdD2	62
13.6	Plano	PnC2	9%	66	0.3	1	1	0.5	0.4	0.1	0	0	0.2	0.3	0.4	5.4	5	PnC2	ScB	62
13.6	Rockton	RoC2	9%	64	7.8	9	9	7.6	0.9	4.3	5	3	2.4	0.6	5.5	74.8	2	RoC2	RoC2	64
13.6	Rockton	RoC2	9%	64	2.8	4	7	6.7	0.7	2.1	3	3	2.2	0.5	4.7	63.9	2	RoC2	RoC2	64
13.9	McHenry	MdD2	16%	113	4.6	7	19	18.0	0.8	3.4	5	8	6.9	0.7	11.2	155.7	5	MdD2	MdD2	64
13.9	Troxel	TrB	4%	113	6.1	7	8	6.7	0.8	5.8	7	6	5.4	0.7	1.4	19.5	4	PoB	TrB	64
14.0	Warsaw	WrC2	9%	155	3.7	6	10	8.9	1.1	3.2	5	5	4.2	0.9	4.9	68.6	3	WrC2	WrB	64
14.0	Plano	PoB	4%	105	2.9	6	8	6.8	1.2	2.8	6	7	5.7	1.2	1.1	15.4	4	PoB	EgA	64
14.0	Kidder	KdC2	9%	25	1.0	2	4	1.0	2.7	0.8	2	3	0.7	2.6	0.4	5.6	5	KdC2	KdC2	64
14.0	Elburn	EfB	3%	60	1.8	4	3	2.2	0.7	1.6	3	1	1.0	0.5	1.4	19.6	5	EfB	EfB	64
14.3	Ringwood	RnC2	9%	53	4.2	3	7	6.6	0.4	4.1	3	2	1.9	0.2	4.9	70.1	5	RnC2	RnC2	63
14.4	Dodge	DnC2	9%	27	4	4	3	3.2	0.1	4.0	4	3	3.0	0.1	0.2	2.9	5	DnC2	Mdc2	64
14.4	Warsaw	WrC2	9%	79	1.2	2	2	1.4	0.3	1.2	2	2	1.8	0.5	-0.6	-8.6	3	WrC2	WrC2	64
14.5	Edmund	EdD2	16%	24	5.7	6	6	5.2	0.5	5.7	6	6	5.0	0.5	0.2	2.9	1	EdD2	GwB	64
15.0	Griswold	GrC2	8%	20	0.8	2	4	3.1	0.7	0.4	1	2	1.8	0.7	1.3	19.5	4	GrC2	GrC2	64
15.0	Dodge	DoC2	9%	26	3.6	5	3	3.0	0.3	3.5	4	3	2.5	0.3	0.5	7.5	5	DoC2	DoC2	64
15.0	Whalan	WxC2	16%	95	8.9	12	17	16.2	1.2	7.9	11	8	7.2	1.0	9.2	138.0	2	WxC2	WxC2	64
15.0	Grays	GsB	1%	68	0.8	2	2	0.8	0.8	0.8	2	1	0.6	0.7	0.3	4.5	5	GsB	Os	64
15.0	Rockton	RoC2	9%	35	2.1	2	3	2.3	0.3	2.0	2	2	2.2	0.3	0.1	1.5	2	RoC2	RoB	64
15.1	Ringwood	RnB	4%	24	0.7	1	3	2.3	0.5	0.3	1	1	0.7	0.2	1.9	28.7	4	PoB	RnB	64
15.4	Ringwood	RnB	8%	20	5.0	5	6	5.5	0.3	4.6	4	4	3.3	0.2	2.3	35.4	5	GwC	RnB	64
15.5	Kidder	KdC2	8%	66	5.2	5	6	5.7	0.6	3.8	4	2	2.1	0.3	3.9	60.5	5	KdC2	KdC2	63
15.5	Ringwood	RnC2	9%	31	5.1	6	7	6.9	0.1	4.8	5	6	5.8	0.1	1.1	17.1	5	PnC2	PnC2	64
15.6	Batavia	BbB	4%	83	3.8	5	7	6.6	0.7	2.5	3	3	2.3	0.5	4.5	70.2	4	BbB	BbB	62
15.7	Virgil	VrB	3%	189	3.5	8	10	7.5	2.5	2.1	5	5	3.0	1.7	5.3	83.2	5	VrB	VrB	64
16.0	Griswold	GrD2	16%	28	1.3	2	4	3.6	0.3	0.7	1	2	2.2	0.3	1.4	22.4	5	GrD2	RdC2	64

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16.0	Elburn	EoA	2%	64	0.6	1	1	0.5	0.7	0.6	1	1	0.4	0.7	0.1	1.6	5	EoA	EoA	69
16.1	Radford	RaA	2%	69	1.7	3	4	2.5	1.1	1.7	3	3	2.0	1.0	0.6	9.7	5	RaA	RaA	64
16.3	Ringwood	RnC2	9%	142	5.4	10	15	11.6	3.1	4.5	8	11	8.2	3.0	3.5	57.1	5	RnC2	RnC2	63
16.4	Dresden	DrD2	16%	151	1.7	3	4	2.9	0.8	1.3	3	3	2.4	0.7	0.6	9.8	3	DrD2	TrB	64
16.4	Dresden	DrD2	16%	151	3.1	8	13	11.7	0.9	1.6	4	6	4.7	0.8	7.1	116.4	3	DrD2	TrB	64
16.6	Dresden	DsC2	9%	31	3.1	3	8	7.5	0.2	2.1	2	3	2.8	0.2	4.7	78.0	3	DsC2	DsC2	64
16.8	Griswold	GwC	9%	122	1.8	4	5	4.6	0.7	1.2	3	3	1.5	1.1	2.7	45.4	5	GwC	GwC	63
16.8	St Charles	ScB	4%	53	1.0	1	3	2.5	0.4	0.7	1	1	0.7	0.4	1.8	30.2	5	ScB	ScB	64
17.0	Troxel	TrB	4%	54	6.4	7	8	6.9	0.7	4.2	5	5	4.4	0.6	2.6	44.2	5	PnB	TrB	64
17.1	Ringwood	RnC2	9%	68	1.7	3	4	3.0	0.5	1.7	3	3	2.1	0.4	1.0	17.1	5	RnC2	RnC2	64
17.3	Kidder	KrD2	15%	67	5.2	6	5	4.4	0.4	2.7	4	1	0.5	0.3	4.0	69.2	5	KrD2	KrD2	63
17.3	Griswold	GwC	9%	47	0.9	2	2	1.9	0.3	0.8	1	1	0.8	0.2	1.2	20.8	5	GwC	GwC	64
17.6	Whalen	WxD2	16%	47	2.5	2	8	7.5	0.3	1.8	2	4	3.9	0.3	3.6	63.4	2	WxD2	TrB	64
17.7	Plano	PnC2	9%	32	4.3	5	8	7.6	0.2	3.7	4	6	5.7	0.2	1.9	33.6	5	PnC2	PnB	64
18.0	Griswold	GwC	9%	49	1.2	1	1	0.8	0.3	0.9	1	1	0.6	0.3	0.2	3.6	5	GwC	PnB	64
18.5	Ringwood	RnC2	9%	51	2.6	3	2	1.8	0.3	2.4	3	2	1.2	0.3	0.6	11.1	5	RnC2	RnC2	64
18.7	Dresden	DsC2	8%	106	2.7	4	9	8.6	0.8	2.2	4	5	4.2	0.7	4.5	84.2	3	DsC2	BbB	64
18.7	Ringwood	RnB	4%	61	2.0	2	4	3.3	0.3	2.0	2	3	2.1	0.5	1.0	18.7	5	RnB	RnB	64
18.8	Dodge	DnC2	9%	51	3.4	4	5	5.7	0.4	3.2	4	6	5.8	0.4	-0.1	-1.9	5	DnC2	DnB	62
18.8	Ringwood	RdC2	9%	38	3.1	4	3	2.5	0.3	3.0	4	2	2.1	0.3	0.4	7.5	5	RdC2	RdC2	64
18.9	Dresden	DsC2	9%	56	2.3	3	6	5.7	0.2	1.1	2	1	0.6	0.3	5.0	94.5	3	DsC2	PoB	62
19.2	Plano	PnB	4%	48	3.8	4	6	5.4	0.4	3.4	4	5	4.3	0.3	1.2	23.0	5	PnB	PnB	64
19.6	Virgil	VrB	4%	82	4.4	6	6	5.4	0.7	4.2	5	5	4.4	0.6	1.1	21.6	5	PNB	VrB	64
19.9	Batavia	BbB	2%	173	2.7	8	10	8.5	1.4	2.5	7	8	7.1	1.1	1.7	33.8	4	BbB	BbB	63
20.0	Ringwood	RnC2	9%	46	1.1	1	1	1.0	0.3	1.1	1	1	0.8	0.3	0.2	4.0	5	RnC2	PnA	64
20.0	Plano	PoB	4%	57	2.8	3	5	4.7	0.4	2.6	3	4	3.9	0.4	0.8	16.0	4	PoB	PoB	64
20.3	Plano	PoB	4%	60	3.6	4	5	4.9	0.4	3.5	3	4	4.0	0.4	0.9	18.3	4	PoB	PoA	64
20.5	Radford	RaA	2%	85	0.4	2	2	0.8	1.1	0.3	1	1	0.4	0.9	0.6	12.3	5	RaA	RaA	64
20.6	Ringwood	RnC2	9%	17	2.8	4	2	2.1	0.3	1.9	3	1	1.0	0.3	1.1	22.7	5	RnC2	PnB	64
20.9	Plano	PnB	4%	43	6.4	7	7	6.4	0.6	4.2	4	5	4.1	0.5	2.4	50.2	5	PnB	TrB	64
21.0	McHenry	MdC2	9%	27	2.1	3	4	3.4	0.2	1.6	2	2	1.9	0.1	1.6	33.6	5	MdC2	MdC2	64
21.5	Griswold	GwD2	15%	27	2.9	4	3	2.3	0.4	2.3	3	2	1.4	0.4	0.9	19.4	4	GwD2	WrB	64
21.8	Plano	PnC2	9%	41	1.0	1	2	2.2	0.2	0.2	1	1	0.5	0.2	1.7	37.1	5	PnC2	PnB	64
22.0	Rockton	RoD2	21%	72	3.5	5	10	9.8	0.7	1.8	3	5	4.1	0.6	5.8	127.6	2	RoD2	RoC2	64
22.0	St Charles	ScB	4%	153	0.2	1	1.2	0.5	0.7	0.4	1.3	1.8	1.0	0.8	-0.6	-13.2	5	ScB	ScB	66
22.2	Plano	PnB	4%	60	0.8	1	2	1.2	0.3	0.3	1	1	0.2	0.3	1.0	22.2	5	PnB	PnB	64
22.5	Troxel	TrB	4%	103	2.4	4	5	4.4	0.5	2.2	3	4	3.8	0.4	0.7	15.8	3	DsB	TrB	64
22.5	Dresden	DsB	4%	103	2.3	4	6	5.5	0.5	2.2	4	5	4.6	0.5	0.9	20.3	3	DsB	TrB	64
24.0	Kidder	KdD2	16%	65	3.5	3	8	7.1	0.5	2.4	2	4	3.6	0.2	3.8	91.2	5	KdD2	ScC2	62

2017 Phosphorus Report - Cover Crops

					Without Cover Crop					With Cover Crop										
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
24.7	Griswold	GwC	8%	51	1.4	2	2	1.5	0.4	1.2	1	2	1.5	0.4	0.0	0.0	5	GwC	GwC	63
24.7	Troxel	TrB	2%	151	3.1	6	6	4.5	1.4	2.9	6	3	1.8	1.0	3.1	76.6	5	TrB	TrB	64
25.0	Plano	PnA	1%	129	1.8	4	4	3.8	0.7	1.5	4	3	2.6	0.7	1.2	30.0	5	PnA	PnA	64
25.0	Plano	PnB	4%	66	3.5	5	7	7.1	0.3	3.4	5	6	5.8	0.3	1.3	32.5	5	PnB	PnB	64
25.2	Plano	PnB	4%	26	1.3	2	2	1.6	0.2	1.2	2	2	1.3	0.2	0.3	7.6	5	PnB	PnB	64
25.6	Ringwood	RnC2	9	46	3.7	5	11	10.0	1.2	3.1	5	8	6.3	2.2	2.7	69.1	5	RnC2	GwC	64
25.8	Plano	PnB	4%	158	3.4	6	9	8.6	0.7	3.3	6	8	7.0	0.6	1.7	43.9	5	PnB	PnB	64
26.0	Griswold	GwC	8%	23	7.4	7	7	6.6	0.6	4.9	4	5	4.3	0.5	2.4	62.4	5	GwC	TrB	64
26.0	Ringwood	RnC2	15%	14	3.5	2	4	4.2	0.0	2.1	2	2	2.0	0.0	2.2	57.2	4	GwD2	RnC2	64
26.6	McHenry	MdD2	16%	64	7.9	4	11	10.9	0.2	4.1	2	4	3.4	0.1	7.6	202.2	5	MdD2	MdD2	62
27.0	Kidder	KrD2	10%	17	5.3	7	11	10.5	0.3	3.0	4	4	3.6	0.2	7.0	189.0	5	KrD2	KrD2	64
27.0	Griswold	GwD2	16%	56	1.2	3	11	10.3	1.0	1.0	2	7	6.5	0.9	3.9	105.3	4	GwD2	GwD2	64
28.1	Boyer	BoC2	9%	78	4.0	2	4	1.4	3.0	3.2	2	3	0.8	2.6	1.0	28.1	3	BoC2	EgA	64
29.3	St Charles	ScB	4%	120	1.9	4	7	5.7	0.9	1.5	3	4	3.0	0.7	2.9	85.0	5	ScB	TrB	64
29.3	McHenry	MdD2	6%	39	1.7	3	2	2.2	0.2	1.5	2	1	1.2	0.2	1.0	29.3	5	MdD2	MdD2	64
29.4	McHenry	MdC2	9%	24	4.3	4	10	9.3	0.4	2.7	3	3	2.4	0.4	6.9	202.9	5	MdC2	HaA	64
30.0	Kegonsa	KeB	4%	74	2.7	3	5	4.1	0.6	2.4	2	4	3.0	0.5	1.2	36.0	3	KeB	KeB	64
30.1	Ringwood	RnC2	9%	91	2.4	3	3	2.8	0.5	2.0	3	2	1.5	0.5	1.3	39.1	5	RnC2	RnC2	64
30.8	Plano	PoB	4%	140	3.7	7	11	9.7	1.4	3.5	7	9	8.0	1.1	2.0	61.6	4	PoB	PoB	63
31.1	Orion	Os	1%	82	1.0	3	3	1.9	1.4	0.9	3	2	1.0	1.0	1.3	40.4	5	Os	Os	64
31.2	Troxel	TrB	2%	71	0.9	2	2	1.6	0.5	0.8	2	1	0.7	0.4	1.0	31.2	5	TrB	TrB	64
31.8	McHenry	MdC2	9%	59	3.3	4	10	9.1	0.6	2.0	2	4	3.7	0.5	5.5	174.9	5	MdC2	DnC2	62
31.9	Plano	PoB	4%	98	2.1	4	7	5.6	1.0	1.9	3	5	4.0	0.9	1.7	54.2	4	PoB	PoB	63
33.6	Kidder	KdC2	9%	27	0.5	1	1	0.9	0.3	0.5	1	1	0.8	0.3	0.1	3.4	5	KdC2	DnB	64
33.7	Virgil	VrB	3%	65	1.3	3	2	1.2	0.8	1.3	3	2	0.9	0.7	0.4	13.5	5	VrB	VrB	64
33.8	Griswold	GwD2	16%	19	0.8	1	1	0.8	0.1	0.9	1	1	0.4	0.2	0.3	10.1	2	WxD2	GwD2	64
34.0	Sable	SaB	4%	49	1.5	2	2	1.6	0.3	1.4	1	2	1.4	0.3	0.2	6.8	5	SaB	SaB	69
34.5	Seaton	SmC2	9%	32	1.4	2	2	2.1	0.2	1.4	1	2	1.8	0.2	0.3	10.4	5	SmC2	SmC2	64
35.0	Ringwood	RnC2	9%	36	1.1	1	2	1.5	0.3	1.0	1	1	1.0	0.3	0.5	17.5	5	RnC2	RnB	64
36.9	Dresden	DsC2	12%	54	6.1	7	5	4.7	0.6	6.2	7	6	5.3	0.7	-0.7	-25.8	3	DsC2	DsC2	63
37.0	Griswold	GwD2	15%	82	1.7	2	3	2.1	0.6	1.2	2	1	0.7	0.5	1.5	55.5	4	GwD2	RnC2	64
38.6	Whalan	WxD2	16%	25	2.0	1	1	0.8	0.3	0.8	1	1	0.3	0.3	0.5	19.3	2	WxD2	WxD2	64
39.1	Dresden	DsC2	9	118	4.8	2	2	1.2	1.2	2.8	2	2	0.7	0.8	0.9	35.2	3	DsC2	DsC2	64
39.5	Dresden	DsC2	9%	39	4.5	4	6	5.8	0.4	2.8	3	3	3.0	0.3	2.9	114.6	3	DsC2	PoB	64
41.8	Plano	PnB	4%	111	4.4	6	9	8.3	0.6	3.8	6	6	5.3	0.7	2.9	121.2	5	PnB	PnB	64
42.0	Troxel	TrB	4%	84	1.4	2	3	3.0	0.3	1.1	2	2	1.7	0.3	1.3	54.6	5	PnB	TrB	64
43.0	Plano	PnB	4%	81	1.9	3	5	4.7	0.6	1.7	3	3	2.9	0.5	1.9	81.7	5	PnB	PnB	64
44.1	St Charles	ScB	5%	135	3.7	4	6	4.7	0.7	3.0	4	3	2.2	0.5	2.7	119.1	5	ScB	ScB	63
46.0	Plano	PnC2	9%	70	3.7	5	5	4.7	0.3	3.8	5	4	3.6	0.4	1.0	46.0	5	PnC2	PnB	64

		2017 Phosphorus Report - Cover Crops																			
					Without Cover Crop					With Cover Crop											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
46.1	Plano	PoA	4%	160	3.4	9	13	11.4	2.1	3.0	8	7	5.5	1.7	6.3	290.4	4	BbB	PoA	64
47.4	Ringwood	RnC2	9%	27	2.9	3	5	5.1	0.4	1.6	2	2	2.2	0.3	3.0	142.2	5	RnC2	ScB	64
50.7	Plano	PnB	4%	61	2.9	4	5	4.2	4.0	2.3	3	2	1.6	0.3	6.3	319.4	5	PnB	PnB	64
54.0	Ringwood	RnC2	9%	77	4.0	6	7	6.3	0.4	2.1	2	2	1.6	0.1	5.0	270.0	5	RnC2	RnC2	64
55.0	Plano	PlB	4%	125	1.3	2	1	0.8	0.6	1.2	2	1	0.7	0.7	0.0	0.0	5	PlB	PlB	69
57.0	Kegonsa	KeB2	4%	46	1.8	2	2	1.6	0.2	1.7	1	2	1.5	0.2	0.1	5.7	5	KeB2	KeB2	69
58.0	Griswold	GwC	8%	61	1.9	2	4	3.0	0.6	1.1	1	2	1.4	0.5	1.7	98.6	5	GwC	GwC	64
60.9	Plano	PoB	4%	89	1.0	1	1	0.7	0.5	0.4	1	1	0.2	0.5	0.5	30.5	4	PoB	PoB	64
71.4	Dresden	DsC2	9%	113	8.0	4	3	2.2	1.2	3.0	2	2	0.9	0.7	1.8	128.5	3	DsC2	DsC2	64
75.0	Rockton	RoD2	21%	36	1.9	2	3	2.7	0.4	1.6	2	2	1.9	0.4	0.8	60.0	2	RoD2	RnC2	64
90.0	Plano	PlA	1%	48	0.3	1	1	0.3	0.2	0.3	0	0	0.3	0.2	0.0	0.0	5	PlA	PlA	69
110.0	Batavia	BbA	9%	16	1.3	1	1	0.5	0.0	1.1	1	0	0.5	0.0	0.0	0.0	4	BbA	BbC2	69
111.0	Plano	PmA	1%	45	0.5	0	0	0.2	0.1	0.4	0	0	0.2	0.1	0.0	0.0	4	PmA	PmA	69
114.0	Sable	SaB	4%	27	1.5	1	2	1.3	0.2	1.4	1	1	1.2	0.2	0.1	11.4	5	SaB	SaB	69
117.0	Plano	PmA	1%	40	0.4	1	0	0.3	0.1	0.4	0	0	0.2	0.1	0.1	11.7	4	PmA	PmA	69
121.0	Plano	PlA	1%	40	0.4	1	1	0.5	0.2	0.4	1	1	0.4	0.2	0.1	12.1	5	PlA	PlA	69
153.0	Dresden	DsB	4%	33	1.1	1	1	0.7	0.1	1.1	1	1	0.6	0.1	0.1	15.3	3	DsB	DsB	69
4,483.4	Total Acres		212	Total Fields		62 225 acres	63 363.4 acres	64 2,872 acres			65 9 acres	66 36 acres	69 978 acres		Average Change in P Loss	1.8	Medium Change in P Loss	1.2	Total Lbs P	7,299.7

Appendix

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2017 Phosphorus Report - Low Disturbance Deep Tillage

					Without LDDT + Cover Crop					With LDDT + Cover Crop										
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
5.7	Dodge	DnC2	9%	74	3.9	6	10	9.2	0.8	2.3	5	4	3.2	0.6	6.2	35.3	5	DnC2	DnC2	64
5.9	Batavia	BbB	4%	30	1.6	2	1	1.2	0.2	5.3	2	1	0.9	0.2	0.3	1.8	4	BbB	BbB	64
6.4	Kidder	KrE2	28%	59	5.2	5	9	8.4	0.4	1.0	5	6	5.2	0.3	3.3	21.1	5	KrE2	PnB	64
7.4	Plano	PnB	4%	119	2.8	4	5	4.9	0.5	3.0	4	4	4.0	0.5	0.9	6.7	5	PnB	PnB	64
7.5	Houghton	Ho	1%	61	0.1	1	2	0.1	1.4	2.5	1	1	0.2	0.6	0.7	5.3	2	Ho	Ho	64
7.5	Kidder	KdD2	16%	56	6.1	6	8	7.7	0.4	2.6	4	3	2.8	0.3	5.0	37.5	5	KdD2	PnC2	64
8.1	Griswold	GwC	8%	103	2.2	4	5	4.1	1.1	1.4	3	3	1.8	0.8	2.6	21.1	5	GwC	RnB	64
9.0	Dresden	DsC2	9%	74	2.8	4	4	3.4	0.5	2.4	4	4	2.9	0.6	0.4	3.6	3	DsC2	DsC2	64
9.0	Whalan	WxC2	9%	14	2.1	3	2	1.4	0.5	0.9	2	1	1.0	0.4	0.5	4.5	2	WxC2	WxB	64
9.0	Dresden	DsC2	9%	74	2.8	4	4	3.4	0.5	1.7	4	4	2.9	0.6	0.4	3.6	3	DsC2	DsC2	64
9.8	Troxel	TrB	9%	55	3.5	4	6	6.1	0.3	4.6	2	2	2.0	0.3	4.1	40.2	5	RnC2	TrB	64
10.0	Batavia	BbC2	9%	38	3.0	4	6	5.4	0.3	2.2	3	4	4.2	0.3	1.2	12.0	4	BbC2	TrB	64
10.0	Whalan	WxD2	8%	32	2.3	3	6	4.9	0.6	4.5	3	4	3.1	0.5	1.9	19.0	2	WxD2	WxD2	64
10.1	Ringwood	RnC2	9%	39	2.9	4	8	7.6	0.6	3.0	4	6	5.3	0.5	2.4	24.2	5	RnC2	RnC2	64
10.2	Kidder	KrD2	15%	59	4.0	4	9	8.3	0.2	1.1	4	7	7.3	0.2	1.0	10.2	5	KrD2	PnC2	64
10.3	St Charles	ScD2	16%	58	3.4	4	6	5.5	0.2	0.8	2	2	1.7	0.2	3.8	39.1	4	ScD2	PnB	64
11.0	Ringwood	RnC2	9%	55	4.2	5	10	9.2	0.5	3.0	4	6	5.7	0.4	3.6	39.6	5	RnC2	RnC2	64
11.0	Batavia	BbB	4%	13	1.7	1	2	2.3	0.1	2.8	1	2	2.2	0.1	0.1	1.1	4	BbB	VwA	62
11.5	Warsaw	WrC2	9%	105	1.0	2	2	1.5	0.7	4.2	2	2	1.3	0.7	0.2	2.3	2	RoC2	WrC2	64
11.5	Warsaw	WrC2	9%	105	1.2	2	5	4.7	0.8	2.9	2	3	2.5	0.7	2.3	26.5	2	RoC2	WrC2	64
13.3	McHenry	MdC2	16%	15	4.7	4	12	12.1	0.2	1.7	4	12	11.8	0.2	0.3	4.0	5	MdD2	MdC2	62
13.6	Rockton	RoD2	21%	12	2.5	3	13	11.9	0.6	1.5	2	11	10.2	0.6	1.7	23.1	2	RoD2	RoD2	62
14.0	Plano	PnC2	9%	98	3.4	6	7	6.0	0.9	2.3	5	3	2.4	0.7	3.8	53.2	5	PnC2	PnC2	64
14.3	Grays	GsB	4%	93	2.9	6	7	5.0	1.7	5.3	5	4	2.8	1.6	2.3	32.9	5	GsB	GsB	64
14.7	Griswold	GwC	9%	28	2.6	4	2	2.2	0.2	1.0	4	1	1.1	0.2	1.1	16.2	5	GwC	Gwc	64
14.7	Griswold	GwC	9%	28	2.6	4	2	2.2	0.2	3.0	4	1	1.1	0.2	1.1	16.2	5	GwC	Gwc	64
14.7	Plano	PnB	4%	65	0.8	1	2	1.6	0.4	2.5	1	1	0.7	0.3	1.0	14.7	5	PnB	PnB	64
15.0	Ringwood	RnC2	9%	48	3.5	4	4	3.3	0.3	1.1	3	2	1.8	0.3	1.5	22.5	3	RnC2	PnB	62
15.3	Batavia	BbB	4%	114	1.9	4	12	10.5	1.0	0.1	4	8	6.8	1.2	3.5	53.6	3	KeB	BbB	64
18.4	Dresden	DrD2	16%	60	5.3	6	16	14.8	1.1	0.8	5	7	6.5	0.9	8.5	156.4	3	DrD2	KeB	64
18.6	Ringwood	RnC2	9%	58	5	6	5	4.2	0.3	0.8	6	3	2.3	0.6	1.6	29.8	5	RnC2	RnC2	62
20.0	Plano	PnB	4%	96	0.8	2	3	0.7	2.6	1.2	2	3	0.5	2.5	0.3	6.0	5	PnB	PnB	64
20.1	Sogin	SoE	33%	42	5.4	7	21	19.9	0.7	1.5	4	8	7.8	0.7	12.1	243.2	1	SoE	RoC2	64
20.6	Wacousta	Wa	1%	94	0.9	2	2	0.7	1.5	0.2	2	2	0.3	1.3	0.6	12.4	5	Wa	Wa	64
21.7	Batavia	BbB	4%	75	2.5	4	11	9.6	1.1	4.5	4	9	8.4	0.9	1.4	30.4	3	DsC2	BbB	64
22.0	Batavia	BbB	4%	76	1.5	3	6	5.7	0.3	0.6	3	6	5.4	0.3	0.3	6.6	4	BbB	PoA	64
22.6	Elburn	EfB	3%	84	1.2	3	6	3.4	2.8	1.5	2	4	1.7	1.9	2.6	58.8	5	EfB	EfB	64
23.5	Plano	PoB	4%	146	3.4	6	10	8.1	1.8	3.8	5	4	3.3	1.1	5.5	129.3	4	PoB	PoB	64
23.5	Kegonsa	KeB	2%	167	1.5	2	2	0.8	1.4	3.5	2	2	0.5	1.1	0.6	14.1	3	KeB	KeB	64

		2017 Phosphorus Report - Low Disturbance Deep Tillage																				
						Without LDDT + Cover Crop						With LDDT + Cover Crop										
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM		Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI		Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI		Annual P change per acre	Annual P change for field		Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
23.5	Plano	PnB	9%	63		4.6	5	11	10.2	0.4		1.7	5	9	8.5	0.3		1.8	42.3		5	RnC2	PnB	64
23.7	Dodge	DnC2	9%	88		5.0	5	7	6.7	0.6		4.0	5	4	3.5	0.5		3.3	78.2		5	DnC2	RnB	64
24.0	Dresden	DsB	4%	66		3.5	5	7	5.7	1.1		4.8	4	3	2.4	0.8		3.6	86.4		3	DsB	VwA	64
26.7	Wacousta	Wa	1%	47		0.2	1	1	0.1	0.8		4.3	1	1	0.0	0.8		0.1	2.7		5	Wa	Wa	64
30.6	Plano	PnB	4%	84		2.9	7	3	2.1	0.6		1.0	7	2	1.6	0.7		0.4	12.2		5	PnB	PnB	64
30.6	Plano	PnB	4%	84		2.9	7	3	2.1	0.6		3.0	7	2	1.6	0.7		0.4	12.2		5	PnB	PnB	64
31.7	Plano	PnC2	9%	169		5.6	9	12	10.5	1.4		2.9	8	9	7.9	1.3		2.7	85.6		5	PnC2	PnC2	64
31.7	Plano	PnC2	9%	169		5.6	9	12	10.5	1.4		2.0	8	9	7.9	1.3		2.7	85.6		5	PnC2	PnC2	64
31.9	Troxel	TrB	2%	86		1.2	3	4	3.0	1.2		0.7	3	2	1.0	1.0		2.2	70.2		5	TrB	TrB	64
31.9	Troxel	TrB	2%	86		1.2	3	4	3.0	1.2		2.7	3	2	1.0	1.0		2.2	70.2		5	TrB	TrB	64
36.6	St Charles	ScB	9%	114		1.7	2	4	3.2	0.3		1.6	1	1	0.6	0.4		2.5	91.5		5	ScB	ScB	64
46.4	Kegonsa	KeB	4%	223		4.0	3	3	1.8	1.4		2.6	2	2	0.5	1.7		1.0	46.4		3	KeB	KeB	64
65.0	Ringwood	RnC2	9%	39		1.1	1	2	1.1	0.5		2.5	1	1	0.9	0.4		0.3	19.5		5	RnC2	RnC2	64
955.8	Total Acres		52	Total Fields			62 71.5 acres		64 884.3 acres									Average Change in P Loss	2.2		Medium Change in P Loss	1.7	Total Lbs P	1,980.7

Appendix

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2017 Phosphorus Report - Low Disturbance Manure Injection

					Without LDMI					With LDMI										
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
1.0	Plano	PnC2	9%	31	1.9	3	4	3.4	1.0	1.9	2	3	2.7	0.4	1.3	1.3	5	KdC2	KdC2	66
1.1	Hayfield	HaA	2%	89	1.1	1	2	1.6	0.8	1.1	1	1	1.0	0.1	1.3	1.4	5	KdC2	KdC2	66
1.2	Ringwood	RnB	4%	97	1.3	2	2	1.1	0.7	1.3	1	1	0.7	0.3	0.8	1.0	5	VrB	VrB	66
1.4	Dresden	DsB	4%	69	2.9	6	10	8.8	1.1	2.7	6	9	6.9	1.7	1.3	1.8	5	DnC2	DnC2	66
3.0	Batavia	BbB	4%	55	1.5	2	3	2.8	0.5	1.2	2	1	0.9	0.6	1.8	5.4	5	TrB	TrB	65
3.2	Batavia	BbB	4%	150	1.8	3	7	6.0	0.7	1.4	2	4	3.1	0.9	2.7	8.6	2	RoD2	RnC2	64
4.0	Dodge	DnB	4%	76	1.3	3	5	3.7	1.2	1.3	3	4	2.8	1.6	0.5	2.0	5	RnC2	RnB	64
4.0	Plano	PnB	4%	32	0.7	3	2	0.7	1.6	0.7	3	2	0.9	1.0	0.4	1.6	3	DsC2	DsC2	64
4.2	Troxel	TrB	2%	77	1.5	3	5	4.3	1.0	1.5	3	5	3.9	1.3	0.1	0.4	4	PoB	PoB	64
4.2	Dodge	DnC2	9%	36	2.0	4	6	5.8	0.7	1.8	4	5	4.0	1.3	1.2	5.0	4	BbB	BbA	64
4.3	St Charles	ScB	9%	24	1.9	4	5	3.9	0.9	1.8	4	5	3.5	1.1	0.2	0.9	4	PoB	PnA	64
5.0	Kidder	KdC2	9%	75	2.3	4	3	2.8	0.5	1.9	4	2	1.1	0.6	1.6	8.0	5	RaA	RaA	64
5.1	Griswold	GwC	8%	23	0.5	1	1	0.9	0.6	0.4	1	1	0.4	0.7	0.4	2.0	5	Ot	Ot	64
5.5	Elburn	EgA	4%	107	1.0	1	1	0.9	0.3	1.1	1	1	1.2	0.2	-0.2	-1.1	5	RaA	RaA	64
5.6	Griswold	GrD2	16%	11	1.0	1	1	0.8	0.3	0.9	1	1	0.4	0.6	0.1	0.6	5	PnB	PnB	64
5.7	Dodge	DnC2	9%	74	0.9	1	1	1.0	0.4	0.8	1	1	0.3	0.8	0.3	1.7	5	PnB	PnB	64
6.0	Ringwood	RnC2	16%	46	1.5	2	3	2.3	0.6	0.7	1	2	1.2	0.6	1.1	6.6	5	DnB	VrB	64
6.2	Dodge	DnC2	9%	48	0.5	1	1	0.4	0.3	0.2	1	0	0.1	0.3	0.3	1.9	5	PnB	PnB	64
6.4	Ringwood	RnB	2%	153	0.6	1	1	0.8	0.4	0.2	1	1	0.3	0.5	0.4	2.6	5	HuB	HuB	64
6.4	Kidder	KrE2	28%	59	1.3	1	1	1.0	0.2	1.0	1	1	0.5	0.2	0.5	3.2	5	RnB	RnB	64
6.5	Ringwood	RnB	4%	86	0.7	1	2	1.1	0.6	0.5	1	1	0.3	0.6	0.8	5.2	5	RnB	RnB	64
6.6	Whalan	WxC2	9%	45	2.8	5	10	8.8	0.7	2.4	4	5	3.9	0.6	5.0	33.0	3	DsC2	BbB	64
6.7	Plano	PnB	4%	86	2.0	3	7	6.0	0.5	1.8	3	4	3.6	0.3	2.6	17.4	2	RoD2	RoC2	64
7.0	Plano	PnB	4%	36	3.2	6	10	8.6	0.9	3.2	6	7	6.6	0.8	2.1	14.7	4	BbB	BbB	64
7.1	Dresden	DsC2	9%	32	4.5	7	11	10.3	0.7	4.4	7	8	7.6	0.7	2.7	19.2	5	DnB	DnB	64
7.2	Boyer	BoC2	9%	47	3.0	7	12	11.3	0.9	2.9	6	10	8.7	1.1	2.4	17.3	5	GsB	RaA	64
7.3	Plano	PnC2	9%	115	2.3	4	6	5.2	0.5	2.3	4	4	4.1	0.4	1.2	8.8	5	DnB	DnB	64
7.4	Plano	PnB	4%	119	2.0	4	4	3.3	0.4	1.9	3	3	2.2	0.5	1.0	7.4	5	RnC2	RnC2	64
7.4	Plano	PnB	4%	119	1.9	3	3	2.5	0.4	1.9	3	3	2.1	0.5	0.3	2.2	5	TrB	TrB	64
7.5	Kidder	KdD2	16%	56	1.8	3	5	4.2	0.5	1.8	3	4	3.2	0.4	1.1	8.3	5	GwC	TrB	64
7.6	McHenry	MdC2	9%	58	1.2	2	2	1.5	0.4	1.2	2	1	1.2	0.2	0.5	3.8	5	GwC	GwC	64
7.6	Plano	PnC2	9%	86	3.0	5	5	4.6	0.6	3.0	5	4	3.5	0.7	1.0	7.6	5	TrB	Ot	64
7.9	Griswold	GwD2	16%	27	3.4	4	5	4.9	0.4	3.2	4	3	2.7	0.3	2.3	18.2	5	RnC2	RnB	64
8.0	Grays	GsB	4%	146	1.5	3	2	1.7	0.3	1.4	3	1	1.0	0.2	0.8	6.4	5	GwC	GwC	64

		2017 Phosphorus Report - Low Disturbance Manure Injection																			
					Without LDMI					With LDMI											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
8.0	Dodge	DnC2	9%	50	3.9	7	8	7.2	0.9	3.9	6	6	5.4	0.8	1.9	15.2	5	PnB	PnB	64
8.1	Griswold	GwC	8%	103	3.0	6	6	5.5	0.7	3.0	6	5	4.2	0.8	1.2	9.7	5	TrB	RaA	64
8.1	McHenry	MdC2	9%	89	2.2	6	6	4.8	0.9	2.1	6	5	3.5	1.1	1.1	8.9	5	RnC2	PnB	64
8.1	Griswold	GwD2	16%	21	6.8	9	14	13.2	0.4	2.9	4	8	8.0	0.3	5.3	42.9	1	SoE	RoC2	64
8.1	Plano	PoC2	9%	26	4.8	7	8	7.6	0.3	4.6	6	6	5.4	0.2	2.3	18.6	5	SmD2	Dnc2	64
8.2	Dodge	DnC2	8%	136	1.5	3	4	3.4	0.8	1.5	3	3	2.3	0.7	1.2	9.8	5	GwC	RnB	64
8.2	Ringwood	RdC2	9%	53	3.0	3	3	3.2	0.2	2.9	3	2	2.3	0.1	1.0	8.2	5	KdD2	KdD2	64
8.4	Dodge	DnC2	9%	50	0.9	3	2	1.2	0.9	0.9	3	2	0.9	0.8	0.4	3.4	5	TrB	TrB	64
9.0	Ringwood	RnC2	9%	107	1.2	2	3	2.3	0.3	0.6	1	1	0.8	0.3	1.5	13.5	2	WxC2	WxB	64
9.1	Dresden	DrD2	16%	47	2.3	5	5	3.8	0.9	2.2	4	3	2.6	0.6	1.5	13.7	4	GwD2	RnC2	64
9.2	Ringwood	RnC2	9%	54	2.3	4	5	4.9	0.5	1.0	2	2	1.6	0.4	3.4	31.3	2	WxD2	WxD2	64
9.3	Ringwood	RdB2	4%	23	2.9	4	6	5.6	0.7	3.0	4	5	4.1	0.6	1.6	14.9	3	DsB	VwA	64
9.4	Boyer	BoC2	9%	105	4.4	5	9	8.1	0.5	4.2	5	5	4.4	0.3	3.9	36.7	3	DrD2	KeB	64
9.5	Plano	PnB	4%	104	0.7	1	1	0.9	0.5	0.7	1	1	0.7	0.4	0.3	2.9	4	BbB	BbB	64
9.7	Rockton	RoD2	10%	60	1.9	2	2	1.8	0.2	1.9	2	2	1.3	0.2	0.5	4.9	3	DrD2	DrD2	64
9.8	Griswold	GrC2	8%	17	0.6	1	1	0.8	0.6	0.6	1	1	0.6	0.4	0.4	3.9	4	EgA	RaA	64
9.8	Ringwood	RnC2	9%	55	1.8	2	3	2.5	0.4	1.8	2	2	2.0	0.3	0.6	5.9	2	WxD2	TrB	64
9.9	Plano	PnB	4%	56	1.7	3	2	1.8	0.4	1.6	3	2	1.5	0.5	0.2	2.0	5	DnC2	DnB	64
10.0	Kidder	KdC2	9%	122	2.2	4	9	8.1	0.8	2.2	4	9	7.9	0.7	0.3	3.0	3	DsC2	BbB	64
10.0	Dodge	DnC2	9%	109	1.5	1	1	0.8	0.0	1.5	1	1	0.7	0.0	0.1	1.0	3	BoC2	SeB	64
10.0	Dodge	DnB	4%	49	3.2	5	15	14.4	0.8	3.4	5	15	14.5	0.7	0.0	0.0	5	MdD2	MdD2	64
10.0	Troxel	TrB	2%	63	1.5	3	4	2.9	1.2	1.5	3	4	2.8	0.9	0.4	4.0	5	ScB	TrB	64
10.0	McHenry	MdC2	9%	14	3.8	5	4	3.3	0.5	3.9	5	4	3.2	0.5	0.1	1.0	5	MdC2	DnB	64
10.0	Whalan	WxC2	8%	81	3.4	4	3	2.5	0.4	3.0	4	1	1.0	0.4	1.5	15.0	5	MdD2	DnC2	64
10.0	Plano	PnB	2%	92	2.2	3	2	1.4	0.3	2.3	2	2	1.4	0.3	0.0	0.0	5	MdC2	DnB	64
10.1	Ringwood	RnC2	9%	39	1.1	2	2	1.5	0.6	1.1	2	2	1.5	0.6	0.0	0.0	5	MdD2	DnC2	64
10.2	Dodge	DnC2	9%	44	2.1	3	2	1.2	0.5	2.1	3	2	1.1	0.5	0.1	1.0	3	DsC2	BbB	64
10.2	Ringwood	RdC2	9%	12	2.4	3	2	1.6	0.4	2.3	2	2	1.4	0.3	0.3	3.1	5	DnC2	DnB	64
10.2	Kidder	KrD2	15%	59	4.1	5	4	3.8	0.3	4.1	5	3	2.6	0.1	1.4	14.3	5	DnC2	MdC2	64
10.3	St Charles	ScD2	16%	58	3.1	3	4	3.4	0.2	3.1	3	3	2.5	0.2	0.9	9.3	5	MdC2	ScB	64
10.4	Ringwood	RdB2	4%	24	3.0	3	3	3.1	0.3	3.2	3	3	2.3	0.3	0.8	8.3	5	MdC2	BbB	64
10.6	Dresden	DsC2	9%	42	1.2	2	2	1.2	0.5	1.3	2	2	1.2	0.5	0.0	0.0	3	BoC2	BoC2	64
10.7	McHenry	MdC2	9%	48	1.7	2	1	0.9	0.1	0.8	1	1	0.4	0.2	0.4	4.3	2	WxD2	GwD2	64
10.7	Batavia	BbB	4%	82	4.6	5	3	2.6	0.3	3.8	4	3	2.4	0.2	0.3	3.2	4	GwD2	RnC2	64

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					Without LDMI					With LDMI											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field		Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
11.0	Whalan	WxD2	16%	31	2.0	2	3	2.6	0.1	1.9	2	2	2.1	0.0	0.6	6.6		5	KrD2	RnC2	64
11.0	Ringwood	RnC2	9%	55	1.3	2	1	0.9	0.1	1.3	1	1	0.7	0.1	0.2	2.2		5	PnC2	PnC2	64
11.0	Ringwood	RnC2	9%	19	3.1	4	7	6.4	0.2	2.1	3	4	4.0	0.2	2.4	26.4		4	GwD2	RnC2	64
11.1	Dresden	DsC2	8%	46	3.2	4	6	5.3	0.4	2.9	4	5	4.4	0.6	0.7	7.8		5	RnC2	PnB	64
11.1	Griswold	GrC2	8%	17	1.7	2	4	3.8	0.3	1.5	2	3	3.1	0.2	0.8	8.9		4	GwD2	RnC2	64
11.5	Warsaw	WrC2	9%	105	12.4	16	15	14.4	0.8	9.5	13	13	11.6	1.4	2.2	25.3		5	RnC2	PnB	64
11.5	Plano	PnB	9%	13	4.3	5	4	2.8	0.9	4.3	5	3	2.4	0.6	0.7	8.1		2	RoC2	RoC2	64
11.5	McHenry	MdC2	9%	61	2.4	4	5	4.5	0.6	2.4	4	4	4.0	0.5	0.6	6.9		5	PnB	PnB	64
11.5	Rockton	RoC2	9%	105	3.7	5	6	5.9	0.5	2.0	2	2	1.9	0.4	4.1	47.2		2	RoC2	RoC2	64
11.5	Griswold	GwD2	15%	53	2.1	3	5	4.1	0.6	2.2	3	4	3.8	0.4	0.5	5.8		3	DsB	TrB	64
11.8	McHenry	MdD2	16%	59	0.6	1	1	0.5	0.5	0.2	1	1	0.2	0.4	0.4	4.7		2	RoC2	RoC2	64
12.0	Troxel	TrB	4%	128	0.8	2	2	1.3	0.9	1.0	2	2	1.5	0.7	0.0	0.0		2	WrC2	RoC2	64
12.0	Virgil	VrB	4%	30	0.4	1	1	0.4	0.7	0.3	1	1	0.2	0.4	0.5	6.0		5	RnC2	PnB	64
12.0	Griswold	GwD2	16%	23	1.7	2	1	0.9	0.3	1.7	2	1	0.8	0.2	0.2	2.4		5	RdB2	RdB2	64
12.0	Plano	PoB	4%	210	1.2	1	1	0.8	0.2	1.2	1	1	0.7	0.1	0.2	2.4		5	RdB2	RdB2	64
12.1	Rockton	RoC2	9%	58	3.5	4	3	2.5	0.2	2.7	3	1	1.3	0.1	1.3	15.7		5	RdC2	RdC2	64
12.2	Griswold	GwD2	15%	25	2.2	3	2	1.8	0.2	2.2	3	2	1.5	0.1	0.4	4.9		5	RdC2	PnB	64
12.3	Virgil	VrB	4%	56	3.6	5	3	2.2	0.3	3.4	4	2	1.8	0.2	0.5	6.2		4	GrC2	PnB	64
12.3	Elburn	EgA	2%	129	4.3	5	3	3.1	0.2	4.2	5	3	2.6	0.2	0.5	6.2		4	GrC2	GrC2	64
12.4	Ringwood	RnC2	9%	36	3.2	3	2	1.9	0.2	3.0	3	2	1.4	0.1	0.6	7.4		5	RdC2	RdC2	64
12.5	Dodge	DnC2	9%	41	2.0	3	1	1.2	0.2	2.0	3	1	1.1	0.1	0.2	2.5		5	PnB	PnB	64
12.5	Plano	PnB	4%	79	4.4	6	8	7.4	0.9	4.4	6	7	6.4	0.9	1.0	12.5		5	PnB	PnB	64
12.6	Batavia	BbB	4%	85	4.8	5	3	3.1	0.2	4.6	5	3	2.7	0.2	0.4	5.0		5	PnC2	RnC2	64
12.6	Whalan	WxD2	16%	66	3.6	8	10	7.7	2.5	3.6	8	10	6.9	2.7	0.6	7.6		5	VrB	VrB	64
12.6	Ringwood	RdC2	9%	9	4.7	5	3	2.3	0.3	4.7	5	2	2.2	0.2	0.2	2.5		5	RnC2	RnC2	64
12.6	McHenry	MdD2	16%	70	4.2	6	9	7.9	1.0	4.2	5	8	6.9	0.9	1.1	13.9		5	PnB	VrB	64
13.0	Ringwood	RnC2	9%	126	2.9	3	3	2.9	0.2	2.4	2	2	2.0	0.2	0.9	11.7		5	RnC2	PnB	64
13.0	Ringwood	RnC2	9%	126	3.4	4	7	6.0	0.6	3.4	4	6	5.1	0.5	1.0	13.0		5	PnB	PnB	64
13.0	Warsaw	WrC2	9%	70	4.7	6	4	3.6	0.2	4.4	5	3	2.4	0.2	1.2	15.6		5	PnC2	PnB	64
13.2	Rockton	RoC2	9%	58	5.6	2	2	1.2	0.3	5.2	2	1	0.8	0.4	0.3	4.0		5	DnC2	PnB	64
13.2	Rockton	RoC2	9%	58	2.8	3	2	2.4	0.1	2.7	3	2	2.0	0.1	0.4	5.3		5	MdC2	MdC2	64
13.3	McHenry	MdD2	16%	85	4.1	2	1	0.5	0.2	3.9	2	1	0.4	0.2	0.1	1.3		5	DnC2	DnC2	64
13.4	Seaton	SmD2	16%	51	3.5	4	4	4.1	0.1	3.4	4	3	3.4	0.1	0.7	9.4		5	GrD2	RdC2	64
13.6	Rockton	RoC2	9%	64	6.4	7	4	3.7	0.2	6.2	7	2	2.2	0.2	1.5	20.4		5	DnC2	ScB	64

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13.6	Rockton	RoC2	9%	64	2.7	3	3	3.0	0.2	2.6	3	3	2.2	0.3	0.7	9.5	5	RdC2	PnB	64
13.7	Elburn	EgA	2%	129	3.1	4	3	3.0	0.1	3.0	4	3	2.5	0.1	0.5	6.9	5	MdC2	DnC2	64
13.9	McHenry	MdD2	16%	113	2.0	2	2	2.1	0.2	1.9	2	2	1.8	0.1	0.4	5.6	5	RdC2	PnB	64
13.9	Plano	PoB	4%	113	1.8	3	2	1.9	0.1	1.8	3	2	1.6	0.1	0.3	4.2	5	RdC2	RdC2	64
14.0	Griswold	GwC	8%	54	5.9	6	7	6.1	0.6	5.6	6	5	3.8	0.8	2.1	29.4	5	GwC	PnB	64
14.0	Troxel	TrB	2%	146	3.4	1	1	0.7	0.2	3.3	1	1	0.5	0.4	0.0	0.0	5	MdC2	MdC2	64
14.0	Plano	PnB	4%	110	4.8	6	5	4.2	0.4	4.4	5	2	1.6	0.5	2.5	35.0	5	RnB	WaA	64
14.0	Griswold	GwD2	15%	48	6.0	12	16	15.7	0.7	5.7	12	13	12.4	1.1	2.9	40.6	5	PnC2	RnC2	64
14.0	Plano	PnC2	9%	98	5.8	3	2	1.8	0.5	5.2	2	1	0.6	0.7	1.0	14.0	5	PnB	RnB	64
14.0	Elburn	EfB	3%	60	5.9	7	11	10.6	0.5	4.0	5	4	3.4	0.6	7.1	99.4	5	PnC2	PoB	64
14.1	Ringwood	RnC2	9%	57	2.1	3	4	3.0	0.8	1.9	3	2	1.4	1.0	1.4	19.7	5	RnB	EfB	64
14.4	McHenry	MdC2	9%	27	5.9	7	9	8.3	0.6	5.7	7	7	6.3	1.0	1.6	23.0	4	PoB	TrB	64
14.5	Plano	PnC2	9%	132	4.7	2	4	3.1	0.5	4.3	2	3	2.2	0.7	0.7	10.2	5	PnC2	PnB	64
14.7	Plano	PnB	4%	65	4.5	7	11	10.3	1.1	4.3	7	10	8.3	1.8	1.3	19.1	4	PoB	PoB	64
14.8	Huntsville	HuB	4%	59	9.3	2	3	2.9	0.4	8.7	2	3	2.1	0.4	0.8	12.4	5	PnC2	PnC2	64
15.1	Boyer	BoC2	9%	76	4.9	5	5	5.0	0.4	4.7	5	3	2.9	0.6	1.9	28.7	4	PoB	PoB	64
15.2	Plano	PnB	4%	89	3.0	3	3	2.7	0.3	2.8	3	2	1.6	0.3	1.1	16.7	4	GwD2	RnC2	64
15.2	Dodge	DnC2	9%	51	3.5	3	6	5.7	0.6	3.3	3	5	4.6	0.7	1.0	15.2	5	GwC	PnB	64
15.2	Ringwood	RnB	4%	16	12.5	13	13	12.1	0.8	11.6	10	10	9.9	0.6	2.4	36.5	2	RoC2	RoC2	64
15.3	Ringwood	RnC2	9%	202	1.1	1	1	0.6	0.2	0.9	1	1	0.6	0.2	0.0	0.0	5	MdD2	MdD2	64
15.4	Kidder	KdC2	9%	44	4.5	4	3	2.3	0.7	4.0	4	3	1.4	0.7	0.9	13.9	5	DnC2	DnC2	64
15.4	Griswold	GwC	8%	20	3.7	4	4	3.9	0.3	3.6	3	4	3.5	0.3	0.4	6.2	5	MdD2	DnC2	64
15.5	Ringwood	RnC2	9%	31	5.9	5	8	7.8	0.3	4.5	4	3	2.3	0.2	5.6	86.8	5	DnC2	DnC2	64
15.6	Batavia	BbB	4%	64	5.9	6	11	10.8	0.6	4.5	5	3	2.8	0.4	8.2	127.9	5	DnC2	KdC2	64
15.7	Virgil	VrB	3%	189	2.1	2	2	2.4	0.0	1.8	1	1	0.9	0.0	1.5	23.6	5	KrD2	RnC2	64
16.0	Griswold	GwD2	15%	53	1.2	1	2	1.5	0.2	1.2	1	1	1.3	0.1	0.3	4.8	5	PnB	PnA	64
16.0	Plano	PnA	1%	66	4.8	4	7	6.5	0.2	4.3	4	4	3.8	0.2	2.7	43.2	5	RnC2	RnC2	64
16.3	Plano	PnC2	9%	44	2.2	2	2	1.5	0.3	1.6	2	1	0.8	0.2	0.8	13.0	2	RoC2	RnB	64
16.5	Griswold	GwC	8%	79	1.8	2	2	2.2	0.2	0.7	1	1	0.5	0.1	1.8	29.7	2	WxD2	GwD2	64
16.5	Plano	PnB	4%	46	2.4	2	6	5.3	0.3	2.4	2	5	4.7	0.2	0.7	11.6	5	DnB	PnB	64
16.6	Hayfield	HaA	2%	82	1.6	2	2	1.8	0.3	1.6	2	2	1.6	0.2	0.3	5.0	5	PnB	PnA	64
16.6	Dresden	DsC2	9%	31	0.5	1	1	0.6	0.2	0.5	1	1	0.5	0.2	0.1	1.7	5	PnA	PnA	64
16.7	Otter	Ot	1%	95	1.3	2	3	2.6	0.5	0.9	1	2	1.2	0.3	1.6	26.7	1	EdB2	WrC2	64
16.7	Batavia	BbB	4%	117	4.7	9	15	14.7	0.8	4.7	9	14	13.3	0.7	1.5	25.1	5	RnC2	PnB	64

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Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
17.1	Kidder	KrE2	28%	60	4.3	4	8	7.9	0.2	4.2	4	8	7.6	0.3	0.2	3.4	5	PnC2	PoB	64
17.1	Ringwood	RnC2	9%	68	3.7	6	6	5.5	0.6	3.7	6	5	4.8	0.5	0.8	13.7	5	PnB	PnB	64
17.3	Kidder	KrD2	15%	67	3.2	6	4	3.3	1.1	3.1	6	4	2.9	1.1	0.4	6.9	3	DsB	PoB	64
17.3	Griswold	GwC	9%	47	2.2	4	6	5.3	0.6	2.2	4	5	4.6	0.5	0.8	13.8	3	DsB	TrB	64
17.5	Plano	PnB	9%	19	4.3	4	3	3.1	0.4	4.0	4	3	2.9	0.4	0.2	3.5	5	KrE2	DnC2	64
17.6	Whalen	WxD2	16%	47	0.8	2	3	2.5	0.7	0.6	2	2	1.1	0.7	1.4	24.6	2	RoC2	WrC2	64
17.9	Plano	PoB	4%	82	2.8	4	7	6.6	0.7	2.1	3	3	2.2	0.5	4.6	82.3	2	RoC2	RoC2	64
18.0	Ringwood	RnC2	9%	41	4.7	5	6	5.5	0.8	4.5	5	4	3.5	0.5	2.3	41.4	5	DnC2	RnB	64
18.2	Griswold	GwB	4%	62	2.2	3	6	5.3	0.4	1.4	2	2	1.7	0.3	3.7	67.3	2	RoC2	RoC2	64
18.3	Plano	PnC2	9%	77	1.3	2	2	1.8	0.2	1.3	2	2	1.9	0.2	-0.1	-1.8	5	RnC2	TrB	64
18.4	Dresden	DrD2	16%	60	1.4	2	2	1.8	0.2	1.4	2	2	1.7	0.2	0.1	1.8	2	RoD2	RoC2	64
18.7	Dresden	DsC2	8%	106	3.8	4	3	2.4	0.3	3.8	4	2	2.2	0.2	0.3	5.6	5	KrD2	PnC2	64
18.7	Griswold	GwD2	15%	53	1.4	2	1	0.7	0.2	1.4	2	1	0.7	0.2	0.0	0.0	5	PnB	PnB	64
18.8	Kidder	KdD2	16%	26	2.2	3	8	7.8	0.3	1.7	2	5	4.8	0.3	3.0	56.4	5	ScD2	PnB	64
18.9	Plano	PnB	4%	117	5.2	5	7	6.1	0.6	4.8	5	6	5.2	0.3	1.2	22.7	5	KrE2	PnB	64
19.1	Plano	PnC2	9%	123	3.3	3	2	1.8	0.3	2.4	3	1	0.4	0.2	1.5	28.7	2	WxD2	KdD2	64
19.2	Plano	PnV	4%	48	3.1	3	5	4.9	0.4	2.8	3	3	2.9	0.4	2.0	38.4	5	KdC2	KdC2	64
19.2	Dodge	DsC2	9%	89	3.8	4	9	8.4	0.5	4.0	4	9	8.4	0.4	0.1	1.9	5	KdD2	PnC2	64
19.3	Ringwood	RdC2	9%	19	4.3	5	9	8.6	0.6	4.3	5	9	8.1	0.5	0.6	11.6	5	RnC2	PnB	64
19.3	Dresden	DsB	4%	90	5.1	7	12	11.5	0.6	3.5	5	3	2.6	0.5	9.0	173.7	5	DnC2	PnC2	64
19.4	Rockton	RoD2	21%	66	3.3	4	6	5.8	0.5	3.5	4	6	5.4	0.4	0.5	9.7	5	RnC2	RnC2	64
19.5	Griswold	GwC	8%	84	1.5	2	3	2.2	0.4	1.4	2	3	2.1	0.4	0.1	2.0	4	GwD2	GwD2	64
19.5	Dresden	DsC2	9%	58	4.0	4	8	7.0	0.5	3.0	3	2	1.8	0.4	5.3	103.4	4	GwD2	DnB	64
19.6	Plano	PnB	4%	82	2.0	3	4	3.3	0.9	1.8	3	3	2.2	0.9	1.1	21.6	5	GwC	PnB	64
20.0	Dresden	DsC2	9%	130	2.5	3	2	1.5	0.4	2.5	3	2	1.4	0.3	0.2	4.0	5	PnB	PnB	64
20.0	Ringwood	RnC2	9%	39	1.5	2	2	1.7	0.5	1.4	2	2	1.2	0.5	0.5	10.0	5	PnB	PnB	64
20.1	Sogin	SoE	33%	42	1.0	1	1	1.3	0.2	1.0	1	1	1.2	0.1	0.2	4.0	5	PnB	RnB	64
20.3	Batavia	BbB	1%	96	3.7	6	8	7.4	0.5	3.7	6	7	6.5	0.4	1.0	20.3	5	MdD2	MdD2	64
20.5	Ringwood	RnC2	9%	38	1.2	1	2	2.2	0.3	1.2	1	2	2.0	0.2	0.3	6.2	5	RnC2	RnC2	64
20.7	McHenry	MdD2	10%	38	4.9	5	9	8.1	0.4	4.7	5	7	6.4	0.3	1.8	37.3	5	PnB	PnC2	64
20.9	Radford	RaA	2%	102	4.4	4	6	5.9	0.5	4.5	4	6	5.8	0.2	0.4	8.4	5	GwC	RnB	64
20.9	Edmund	EdB2	4%	28	2.4	2	5	4.4	0.2	2.1	2	3	2.8	0.2	1.6	33.4	5	RnC2	RnC2	64
21.2	Dodge	DnC2	9%	30	2.0	2	1	1.3	0.1	2.0	2	1	1.2	0.1	0.1	2.1	5	RnC2	PnB	64
21.4	McHenry	MdD2	14%	50	4.3	4	3	2.4	0.3	4.3	4	2	2.3	0.2	0.2	4.3	5	RnC2	PnB	64
21.5	Boyer	BoD2	16%	22	3.2	4	11	10.6	0.5	3.4	3	9	9.2	0.3	1.6	34.4	5	GwC	GwC	64
22.0	Rockton	RoD2	21%	72	3.2	4	12	11.8	0.4	3.0	4	9	8.6	0.4	3.2	70.4	4	GwD2	GwD2	64
22.5	Troxel	TrB	4%	103	3.0	4	9	9.2	0.3	2.7	4	5	5.0	0.2	4.3	96.8	2	RoD2	RoD2	64

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22.5	Troxel	TrB	4%	103	1.8	3	6	5.4	0.5	1.7	3	4	3.6	0.5	1.8	40.5	5	Os	Os	64
22.5	Radford	RaA	2%	130	2.2	5	5	4.1	1.2	2.2	5	5	3.8	1.1	0.4	9.0	5	RnC2	RnC2	64
22.6	Elburn	EfB	3%	84	2.1	4	6	5.8	0.6	2.1	4	6	5.2	0.5	0.7	15.8	5	MdD2	MdD2	64
23.3	Plano	PoB	4%	84	2.3	6	6	5.1	1.3	2.1	4	6	4.7	1.2	0.5	11.7	5	TrB	TrB	64
23.3	Ringwood	RnC2	9%	20	4.3	6	5	4.1	1.6	2.7	4	1	0.5	0.3	4.9	114.2	5	PnC2	PnC2	64
23.5	Ringwood	RnC2	9%	63	2.5	5	5	4.3	0.5	2.5	4	4	3.9	0.4	0.5	11.8	5	PnC2	PnC2	64
23.7	Dodge	DnC2	9%	88	2.8	4	6	5.5	0.6	2.9	4	5	4.9	0.4	0.8	19.0	5	DnC2	DnC2	64
24.0	Ringwood	RnC2	9%	42	2.7	5	7	6.9	0.5	2.5	4	6	6.0	0.4	1.0	24.0	5	EfB	EfB	64
24.0	Dresden	DsB	4%	66	3.5	4	8	7.9	0.3	3.5	4	7	6.5	0.2	1.5	36.0	2	WxC2	WxC2	64
24.3	Griswold	GwC	8%	96	1.1	1	3	2.5	0.1	0.7	1	1	1.0	0.0	1.6	38.9	5	PnB	PnB	64
24.4	McHenry	MdC2	9%	33	3.1	5	4	3.6	0.3	2.7	4	3	2.6	0.4	0.9	22.0	5	RnC2	RnC2	64
24.7	Troxel	TrB	2%	151	2.2	4	5	4.0	0.6	2.2	4	4	3.6	0.5	0.5	12.4	5	EfB	EfB	64
24.8	Radford	RaA	2%	48	4.5	6	2	1.6	0.2	3.3	5	1	0.4	0.2	1.2	29.8	5	RnC2	RnC2	64
24.9	Rockton	RoC2	9%	39	1.6	2	1	0.6	0.3	1.7	2	1	0.6	0.2	0.1	2.5	3	DsC2	DsC2	64
25.0	Batavia	BbB	2%	79	1.9	4	2	1.7	0.4	1.8	4	2	1.3	0.7	0.1	2.5	5	RaA	RaA	64
25.7	Plano	PnB	4%	37	1.9	4	3	1.8	7.0	1.9	3	2	1.8	0.7	6.3	161.9	5	PnB	PnB	64
26.0	Griswold	GwD2	15%	86	6.4	14	12	11.2	1.0	6.2	14	10	8.3	1.6	2.3	59.8	5	GwB	GwB	64
26.0	McHenry	MdC2	9%	20	5.0	6	4	4.1	0.3	3.8	5	2	2.0	0.2	2.2	57.2	5	PnB	PnB	64
26.5	Dresden	DsB	4%	148	0.7	1	1	0.7	0.5	0.7	1	1	0.6	0.5	0.1	2.7	3	BoD2	BoD2	64
26.7	Kidder	KrD2	15%	8	3.4	5	3	2.9	0.3	2.9	4	2	1.6	0.3	1.3	34.7	5	TrB	TrB	64
27.0	Griswold	GwD2	16%	56	3.0	3	2	1.9	0.3	2.9	3	2	1.3	0.5	0.4	10.8	5	RnC2	RnC2	64
27.1	Ringwood	RnC2	15%	14	2.5	4	4	3.7	0.6	2.4	4	4	2.7	0.9	0.7	19.0	5	MdD2	MdD2	64
27.3	Batavia	BbB	4%	122	2.5	2	1	1.0	0.4	2.3	2	1	0.6	0.4	0.4	10.9	4	BbB	BbB	64
28.1	Whalan	WxD2	16%	19	3.0	4	3	2.8	0.4	2.8	4	2	1.5	0.5	1.2	33.7	4	GwD2	PnB	63
28.7	Plano	PnB	4%	101	0.9	2	2	1.9	0.2	0.8	1	1	0.8	0.2	1.1	31.6	3	DsC2	DsC2	63
29.1	Dresden	DsC2	9%	62	1.1	2	4	3.6	0.4	1.0	2	2	2.0	0.3	1.7	49.5	4	PoC2	PoB	63
29.3	Troxel	TrB	4%	120	1.7	2	5	4.2	0.6	1.7	2	3	2.5	0.3	2.0	58.6	4	PoB	PoB	63
29.3	McHenry	MdD2	6%	39	1.0	3	3	2.3	1.1	0.8	3	2	1.0	1.2	1.2	35.2	4	EgA	SaA	63
29.8	Plano	PnC2	9%	38	2.1	3	6	5.0	0.5	1.7	3	3	2.1	0.4	3.0	89.4	4	BbB	BbB	63
30.3	Griswold	GwC	8%	39	1.9	3	5	4.4	0.3	1.5	2	2	1.4	0.3	3.0	90.9	4	EgA	RaA	63
31.1	Orion	Os	1%	82	2.8	6	7	5.5	1.4	2.9	6	6	4.6	1.4	0.9	28.0	5	KrD2	KrD2	63
31.1	Ringwood	RnC2	9%	83	1.5	3	3	3.1	0.3	1.4	3	2	1.9	0.4	1.1	34.2	3	DsB	BbB	63
31.2	Troxel	TrB	2%	71	3.6	6	10	9.1	0.6	3.0	5	3	2.5	0.7	6.5	202.8	4	GwD2	GwD2	63
31.5	Troxel	TrB	2%	92	3.9	6	12	11.8	0.7	2.9	5	4	3.1	0.7	8.7	274.1	3	DsC2	BbB	63
32.2	Ringwood	RnB	4%	44	1.8	4	4	3.1	0.7	1.5	3	2	1.1	0.6	2.1	67.6	5	PnB	PnB	63
32.6	Plano	PnC2	9%	51	2.5	4	5	4.9	0.3	2.0	3	2	1.9	0.2	3.1	101.1	3	DsC2	DsC2	63
33.8	Griswold	GwD2	16%	19	1.8	4	5	4.0	0.7	1.6	3	2	1.5	0.7	2.5	84.5	3	WrC2	TrB	63

		2017 Phosphorus Report - Low Disturbance Manure Injection																				
						Without LDMI						With LDMI										
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM		Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI		Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI		Annual P change per acre	Annual P change for field		Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
35.0	Ringwood	RnC2	9%	36		3.0	4	6	6.0	0.3		2.5	4	2	1.9	0.2		4.2	147.0		4	BbB	BbB	63
35.0	Ringwood	RnC2	9%	67		1.2	3	4	3.4	0.8		1.0	2	2	1.3	0.8		2.1	73.5		5	MdD2	RnC2	63
35.6	Ringwood	RnC2	9%	90		3.0	5	7	6.6	0.4		2.4	4	2	2.1	0.3		4.6	163.8		4	BbB	BbB	63
38.8	Plano	PnB	4%	78		2.2	2	3	3.1	0.2		2.1	2	2	2.0	0.2		1.1	42.7		4	PoB	EgA	63
47.2	Plano	PnB	4%	84		2.9	7	8	6.0	1.6		2.8	7	7	4.7	2.1		0.8	37.8		5	PnB	PnB	63
49.8	Plano	PoB	4%	84		0.8	1	1	1.1	0.3		0.7	1	1	0.3	0.4		0.7	34.9		4	Mc	BbB	63
52.1	Plano	PoB	4%	141		0.4	1	1	0.6	0.3		0.4	1	1	0.4	0.3		0.2	10.4		3	DsC2	BbB	63
56.4	Plano	PnB	4%	104		2.7	4	3	2.9	0.4		2.5	3	2	1.6	0.4		1.3	73.3		3	HaA	HaA	63
58.0	Plano	PnB	4%	89		1.3	1	1	0.9	0.1		1.2	1	1	0.7	0.1		0.2	11.6		4	BbB	BbB	63
60.0	Radford	RaA	2%	86		0.8	2	1	0.6	0.5		0.7	2	1	0.4	0.5		0.2	12.0		3	BoC2	PoA	63
75.0	Rockton	RoD2	21%	36		3.7	5	5	4.3	0.5		3.4	4	2	2	0.5		2.3	172.5		3	HaA	HaA	63
77.2	Rockton	RoC2	9%	42		2.2	3	5	4.4	0.2		1.8	2	2	1.9	0.2		2.5	193.0		3	DsB	DsB	63
114.5	Batavia	BbB	4%	98		3.8	6	5	4.9	0.5		3.5	5	2	1.8	0.4		3.2	366.4		4	BbB	BbB	63
3,885.0	Total Acres		223	Total Fields			63 571.0 acres		64 3,110.2 acres				65 12.6 acres		66 191.2 acres			Average Change in P Loss	1.4		Medium Change in P Loss	0.9	Total Lbs P	6039.2

Appendix

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		2017 Phosphorus Report -Strip Tillage																			
					Without Strip Tillage					With Strip Tillage											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
5.9	Batavia	BbB	4%	30	1.6	2	1	1.1	0.8	1.5	2	1	0.6	0.8	0.5	3.0	4	BbB	BbB	64
7.7	Virgil	VrB	3%	77	0.9	2	2	0.7	1.7	0.8	2	3	0.3	3.1	-1.0	-7.7	5	VrB	VrB	64
9.1	Dresden	DsB	2%	83	1.9	1	1	0.4	0.5	1.8	1	1	0.2	0.8	-0.1	-0.9	3	DsB	DsB	64
9.6	Troxel	TrB	2%	195	0.4	1	1	0.8	0.6	0.3	1	1	0.6	0.8	0.0	0.0	5	TrB	TrB	64
10.0	Kidder	KeB2	4%	17	4.8	5	10	9.3	0.7	4.3	4	8	7.4	0.8	1.8	18.0	5	KeB2	KeB2	69
13.6	McHenry	MdC2	9%	12	1.4	2	3	2.1	1.0	1.3	2	3	0.9	1.9	0.3	4.1	5	MdC2	MdC2	64
16.0	Elburn	EoA	2%	64	0.7	2	2	1.2	0.6	0.6	1	2	0.8	0.8	0.2	3.2	5	EoA	EoA	69
16.1	Radford	RaA	2%	69	1.9	3	3	2.3	1.2	1.7	3	3	1.3	1.3	0.9	14.5	5	RaA	RaA	64
17.5	Griswold	GrC2	8%	9	2.7	2	1	1.4	0.1	2.5	2	1	1.2	0.1	0.2	3.5	4	GrC2	GrC2	69
20.0	Batavia	BbB	4%	57	0.7	2	4	1.3	2.9	0.2	1	3	0.3	2.7	1.2	24.0	4	BbB	BbB	64
22.8	Westville	WfB2	4%	12	1.8	1	1	0.7	0.1	1.5	1	1	0.4	0.2	0.2	4.6	5	WfB2	WfB2	69
23.0	Dodge	DnB	4%	18	2.7	2	4	3.4	0.3	0.7	1	1	0.4	0.2	3.1	71.3	5	MdB	DnB	69
23.5	Kegonsa	KeB	2%	167	1.8	2	2	1.2	0.9	1.2	2	2	0.3	1.2	0.6	14.1	3	KeB	KeB	64
25.0	Dresden	DrD2	16%	49	3.7	4	8	7.4	0.3	2.7	3	4	3.5	0.3	3.9	97.5	3	DrD2	BbB	64
26.7	Wacousta	Wa	1%	47	0.2	1	2	0.1	1.5	0.2	1	2	0.1	2.4	-0.9	-24.0	5	Wa	Wa	64
28.4	Whalan	WxC2	9%	63	3.2	4	5	4.7	0.4	0.9	2	2	1.0	0.5	3.6	102.2	2	WxC2	WxC2	64
33.7	Virgil	VrB	3%	65	1.3	3	3	0.6	2.2	1.3	3	5	0.7	3.8	-1.7	-57.3	5	VrB	VrB	64
36.3	Sebewa	Se	1%	17	0.6	1	1	0.3	0.3	0.5	1	1	0.2	0.4	0.0	0.0	3	Se	Se	69
39.1	Dresden	DsC2	9%	118	4.0	2	2	1.3	0.5	2.8	2	1	0.7	0.8	0.3	11.7	3	DsC2	DsC2	64
44.7	Dodge	DnB	4%	15	1.3	1	1	1.0	0.3	1.1	1	1	0.5	0.4	0.4	17.9	5	DnB	MdB	69
55.0	Plano	PlB	4%	125	1.5	2	3	2.0	0.6	1.3	2	2	1.5	0.7	0.4	22.0	5	PlB	PlB	69
55.0	Plano	PnB	4%	17	1.0	1	1	0.6	0.1	0.9	1	0	0.1	0.1	0.5	27.5	5	PnB	PnB	64
57.1	Kegonsa	KeB2	4%	27	4.6	5	12	11.4	0.8	4.3	5	10	9.4	1.0	1.8	102.8	5	KeB2	KeB2	69
68.2	Kidder	KeB2	9%	15	2.7	1	1	1.1	0.1	1.8	1	1	0.4	0.1	0.7	47.7	5	KeB2	KdC2	69
71.4	Dresden	DsC2	9%	113	4.1	2	2	1.2	1.1	3.0	2	2	1.0	1.4	-0.1	-7.1	3	DsC2	DsC2	64
75.8	Salter	SfB2	4%	21	3.1	2	2	1.7	0.2	2.8	2	1	0.8	0.4	0.7	53.1	5	SfB2	SfB2	69
77.4	Plano	PlB	9%	25	11.5	13	25	23.7	1.4	10.8	12	20	18.7	1.6	4.8	371.5	5	KeC2	PlB	69
90.0	Plano	PlA	1%	48	0.3	1	1	0.6	0.2	0.3	1	1	0.4	0.3	0.1	9.0	5	PlA	PlA	69
95.7	Griswold	GwC	9%	20	1.2	1	1	0.8	0.1	0.2	0	0	0.1	0.1	0.7	67.0	5	GwC	GwC	64
109.1	Griswold	GrC2	8%	22	3.5	3	2	1.5	0.1	3.2	2	1	0.7	0.2	0.7	76.4	4	GrC2	GrC2	69
110.0	Plano	PmA	1%	45	0.5	1	1	0.6	0.2	0.5	0	1	0.4	0.2	0.2	22.0	4	PmA	PmA	69
110.0	Batavia	BbC2	9%	16	1.7	1	2	1.9	0.1	1.3	1	1	1.1	0.1	0.8	88.0	4	BbC2	BbA	69
117.0	Plano	PmA	1%	40	0.5	1	1	0.6	0.2	0.4	1	0	0.3	0.1	0.4	46.8	4	PmA	PmA	69
153.0	Dresden	DsB	4%	33	1.3	1	2	1.9	0.1	1.1	1	1	1.2	0.2	0.6	91.8	3	DsB	DsB	69
155.1	Sebewa	Se	1%	55	1.4	2	3	2.0	1.4	1.4	2	3	1.5	1.0	0.9	139.6	3	Se	Se	69
1,828.5	Total Acres		35	Total Fields		64 480.5 acres		69 1348.0 acres							Average Change in P Loss	0.8	Medium Change in P Loss	0.5	Total Lbs P	1457.6

Appendix

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2017 Phosphorus Report -Manure Stacking

					Winter Spreading					No Winter Spreading											
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Annual P change per acre	Annual P change for field	Tons of manure Stacked	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
35.5	Huntville	HuB	4%	87	1.1	2	4	1.9	2.3	1.1	2	2	1.6	0.5	2.1	74.6	355	5	HuB	HuB	64
37.2	McHenry	MdC2	9%	98	3.0	4	5	4.0	1.0	2.9	4	4	3.5	0.5	1.0	37.2	372	5	MdC2	MdC2	63
25.0															2.1	52.5	248				
59.0	McHenry	MdD2	16%	113	2.9	5	14	12.9	1.6	2.9	5	12	11.1	0.8	2.6	153.4	590	5	MdD2	MdD2	64
15.3	McHenry	MdD2	9%	27	1.6	3	3	1.5	1.1	1.6	3	2	1.2	0.2	1.2	18.4	153	5	MdD2	MdD2	64
20.0															2.1	42.0	196				
27.3	Dodge	DnC2	9%	160	5.6	8	11	8.0	2.6	5.6	8	6	5.2	1.0	4.4	120.1	275	5	DnC2	DnB	64
23.0	Plano	PoB	4%	177	2.2	4	4	2.4	1.9	2.2	4	3	2.3	0.9	1.1	25.3	228	3	WrB	PoB	64
59.0	Ringwood	RnC2	9%	78	3.7	6	7	5.3	1.7	3.7	6	5	4.5	0.1	2.4	141.6	590	5	RnC2	RnC2	64
301.3	Total Acres		9	Total Farms		63 37.2 acres		64 264.1 acres							Average Change in P Loss	2.1		Medium Change in P Loss	2.1	Total Lbs P	665.0
219.3	Acres that could have received manure		7	Farms																Total pounds of phosphorus not lost in winter	498.1

Appendix

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2017 Phosphorus Report - Combination of Practices

					Without Tillage/Cover Crops					With Tillage/Cover Crops														
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Combined Tillage P change per acre	Combined Cover Crop P change per acre	Total P change per acre	Phosphorus Reduction Tillage	Phosphorus Reduction Cover Crop	Increase or Decrease in Phosphorus Reduction	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
55.0	Plano	PlB	4%	125	1.8	2	4	3.5	0.4	1.3	2	2	1.5	0.7	1.7	0.5	2.2	0.4	0.0	1.8	99.0	5	PlB	PlB	69
					1.8	2	2	1.1	0.8	1.3	2	1	0.8	0.6											
111.0	Plano	PmA	1%	45	0.6	1	1	0.9	0.1	0.5	0	1	0.4	0.2	0.4	0.1	0.5	0.2	0.0	0.3	33.3	4	PmA	PmA	69
					0.6	1	0	0.3	0.1	0.5	0	0	0.2	0.1											
110.0	Batavia	BbC2	9%	16	1.9	1	3	2.5	0	1.3	1	1	1.1	0.1	1.3	0.3	1.6	0.8	0.0	0.8	88.0	4	BbC2	BbA	69
					1.9	1	1	0.8	0	1.3	1	1	0.5	0											
16.0	Elburn	EoA	2%	64	0.8	2	2	1.8	0.5	0.6	1	1	0.5	0.7	1.1	-0.1	1	0.2	0.1	0.7	11.2	5	EoA	EoA	69
					0.8	2	1	0.7	0.8	0.6	1	2	0.8	0.8											
90.0	Plano	PlA	1%	48	0.4	1	1	0.8	0.1	0.3	1	1	0.4	0.3	0.2	0.2	0.4	0.1	0.0	0.3	27.0	5	PlA	PlA	69
					0.4	1	1	0.4	0.3	0.3	1	1	0.3	0.2											
117.0	Plano	PmA	1%	40	0.5	1	1	0.9	0.1	0.4	1	1	0.4	0.2	0.4	0.1	0.5	0.4	0.1	0.0	0.0	4	PmA	PmA	69
					0.5	1	1	0.3	0.2	0.4	1	0	0.3	0.1											
153.0	Dresden	DsB	4%	33	1.5	1	3	2.7	0.1	1.1	1	1	1.2	0.2	1.4	0.3	1.7	0.6	0.1	1.0	153.0	3	DsB	DsB	69
					1.5	1	1	1	0.1	1.1	1	1	0.7	0.1											
22.0	Rockton	RoD2	21%	72	3.9	5	7	6.4	0.5	1.8	3	4	3.6	0.3	3	7.5	10.5	2.6	5.8	2.1	46.2	2	RoD2	RoC2	64
					3.9	5	12	11.5	0.7	1.8	3	5	4.1	0.6											
8.1	Griswold	GwC	8%	103	2.3	4	4	3.5	0.8	1.5	3	3	2.3	0.7	1.3	3	4.3	1.2	2.6	0.5	4.1	5	GwC	RnB	64
					2.3	4	6	4.5	1.1	1.5	3	3	1.8	0.8											
20.1	Sogin	SoE	33%	42	6.1	8	14	13.6	0.4	2.9	4	8	8.0	0.3	5.7	14.7	20.4	5.3	12.1	3.0	60.3	1	SoE	RoC2	64
					6.1	8	23	22.5	0.7	2.9	4	8	7.8	0.7											
24.0	Dresden	DsB	4%	66	3.5	5	7	5.8	0.7	3	4	5	4.1	0.6	1.8	3.7	5.5	1.6	3.6	0.3	7.2	3	DsB	VwA	64
					3.5	5	7	5.8	1.1	3	4	3	2.4	0.8											
18.4	Dresden	DrD2	16%	60	5.7	7	9	8.4	0.5	4.2	5	5	4.4	0.3	4.2	9.8	14	3.9	8.5	1.6	29.4	3	DrD2	KeB	64
					5.7	7	17	16.1	1.1	4.2	5	7	6.5	0.9											
7.4	Plano	PnB	4%	117	3.9	7	11	9.8	0.8	3.7	6	10	9.6	0.8	0.2	2.3	2.5	0.8	1.4	0.3	2.2	5	PnB	PnB	64
					3.9	7	8	6.9	0.7	3.7	6	5	4.8	0.5											
11.5	Warsaw	WrC2	9%	105	1.7	3	3	2.5	0.7	0.6	2	2	1.1	0.7	1.4	4.3	5.7	1.4	2.3	2.0	23.0	2	RoC2	WrC2	64
					1.7	3	8	6.6	0.9	0.6	2	3	2.5	0.7											
22.5	Dodge	DsB	4%	103	2.3	4	6	5.1	0.8	2.2	4	6	5.0	0.8	0.1	1.8	1.9	0.8	0.9	0.2	4.5	3	DsB	TrB	64
					2.3	4	7	6.3	0.6	2.2	4	5	4.6	0.5											
13.6	Rockton	RoC2	9%	64	3.0	4	5	4.5	0.7	2.1	3	4	3.1	0.5	1.6	6.2	7.8	1.1	4.7	2.0	27.2	2	RoC2	RoC2	64
					3.0	4	9	8.1	0.8	2.1	3	3	2.2	0.5											
13.2	Rockton	RoC2	9%	58	2.5	3	3	2.1	0.4	1.4	2	2	1.3	0.4	0.8	4.9	5.7	0.6	3.3	1.8	23.8	2	RoC2	RoC2	64
					2.5	3	7	6.4	0.5	1.4	2	2	1.7	0.3											
10.2	Kidder	KrD2	15%	84	4.0	4	3	2.5	0.3	3.8	4	2	2.2	0.2	0.4	6.1	6.5	0.3	1.0	5.2	53.0	5	KrD2	PnC2	64
					4.0	4	9	8.3	0.2	3.8	4	2	2.2	0.2											
9.8	Ringwood	RnC2	9%	55	2.4	3	3	3.1	0.2	1.4	2	2	2.0	0.2	1.1	3.1	4.2	-0.1	4.1	0.2	2.0	5	RnC2	TrB	64
					2.4	3	5	5.1	0.3	1.4	2	2	2.0	0.3											
10.3	St Charles	ScD2	16%	58	3.9	4	6	5.9	0.2	1.7	2	5	4.8	0.3	1	2.3	3.3	3.0	3.8	-3.5	-36.1	5	ScD2	PnB	64
					3.9	4	4	3.9	0.3	1.7	2	2	1.7	0.2											
6.4	Kidder	KrE2	28%	59	5.7	6	7	6.6	0.4	4.8	5	7	6.5	0.4	0.1	4.7	4.8	1.2	3.3	0.3	1.9	5	KrE2	PnB	64
					5.7	6	10	9.6	0.6	4.8	5	6	5.2	0.3											
11.0	Ringwood	RnC2	9%	55	4.2	5	6	5.9	0.5	3.5	4	6	5.4	0.4	0.6	3.6	4.2	0.5	3.6	0.1	1.1	5	RnC2	RnC2	64
					4.2	5	10	9.2	0.5	3.5	4	6	5.7	0.4											
23.5	Ringwood	RnC2	9%	63	4.6	5	10	8.9	0.6	4.3	5	9	8.1	0.5	0.9	1.8	2.7	0.6	1.8	0.3	7.1	5	RnC2	PnB	64
					4.6	5	11	10.2	0.4	4.3	5	9	8.5	0.3											
7.5	Kidder	KdD2	16%	56	6.0	6	10	9.6	0.5	4.0	4	9	8.4	0.4	1.3	4.9	6.2	0.1	5.0	1.1	8.3	5	KdD2	PnC2	64
					6.0	6	8	7.6	0.4	4.0	4	3	2.8	0.3											
15.4	Griswold	GwC	8%	20	5.0	5	7	6.4	0.4	4.5	4	6	5.8	0.2	0.8	2	2.8	0.4	2.3	0.1	1.5	5	GwC	RnB	64

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					Without Tillage/Cover Crops					With Tillage/Cover Crops														
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Combined Tillage P change per acre	Combined Cover Crop P change per acre	Total P change per acre	Phosphorus Reduction Tillage	Phosphorus Reduction Cover Crop	Increase or Decrease in Phosphorus Reduction	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
					5.0	6	5	5.4	0.3	4.5	4	4	3.4	0.3											
75.0	Rockton	RoD2	21%	36	1.9	2	3	2.7	0.4	1.6	2	2	1.9	0.4	0.8	2.3	3.1	1.3	0.8	1.0	75.0	2	RoD2	RnC2	64
					1.9	3	4	3.4	1.0	1.6	2	2	1.8	0.3											
35.0	Ringwood	RnC2	9%	35	1.1	1	2	1.5	0.3	1.0	1	1	1.0	0.3	0.5	1.3	1.8	1.3	0.5	0.0	0.0	5	RnC2	RnB	64
					1.1	1	2	1.6	0.8	1.0	1	1	1.0	0.1											
71.4	Dresden	DsC2	9%	113	10.2	4	3	2.4	0.9	3.0	2	2	1.0	1.4	0.9	2.8	3.7	-0.1	1.8	2.0	142.8	3	DsC2	DsC2	64
					10.2	4	4	3.2	0.9	3.0	2	2	0.9	0.4											
39.1	Dresden	DsC2	9%	118	8.2	3	2	1.4	0.5	2.8	2	1	0.7	0.8	0.4	1.6	2	0.3	0.9	0.8	31.3	3	DsC2	DsC2	64
					8.2	3	3	2.5	0.8	2.8	2	2	0.7	1.0											
23.5	Kegonsa	KeB	2%	167	2.0	2	2	1.0	0.8	1.2	2	2	0.3	1.2	0.3	1	1.3	0.6	0.6	0.1	2.4	3	KeB	KeB	64
					2.0	2	3	1.6	1.0	1.2	2	2	0.5	1.1											
5.9	Batavia	BbB	4%	30	1.7	2	2	1.2	0.3	1.5	2	1	0.6	0.8	0.1	0.6	0.7	0.5	0.3	-0.1	-0.6	4	BbB	BbB	64
					1.7	2	2	1.5	0.2	1.5	2	1	0.9	0.2											
26.7	Wacousta	Wa	1%	47	0.2	1	2	0.1	1.5	0.2	1	2	0.1	1.4	0.1	0.2	0.3	-0.9	0.1	1.1	29.4	5	Wa	Wa	64
					0.2	1	1	0.1	0.9	0.2	1	1	0.0	0.8											
9.1	Dresden	DsB	2%	83	2.0	1	1	0.5	0.5	1.8	1	1	0.3	0.8	-0.1	0.3	0.2	-0.1	0.1	0.2	1.8	3	DsB	DsB	64
					2.0	1	1	0.8	0.5	1.8	1	1	0.6	0.4											
16.1	Radford	RaA	2%	69	1.9	3	4	2.4	1.2	1.7	3	3	1.3	1.3	1	1.1	2.1	0.9	0.6	0.6	9.7	5	RaA	RaA	64
					1.9	3	4	2.9	1.2	1.7	3	3	2.0	1.0											
7.7	Virgil	VrB	3%	77	1.0	2	2	0.7	1.8	0.8	2	3	0.3	2.1	0.1	0.9	1	-1.0	0.4	1.6	12.3	5	VrB	VrB	64
					1.0	2	2	1.6	0.8	0.8	2	2	0.8	0.7											
33.7	Virgil	VrB	3%	65	1.4	3	3	0.5	2.2	1.3	3	5	0.7	3.8	-1.8	0.8	-1	-1.7	0.4	0.3	10.1	5	VrB	VrB	64
					1.4	3	2	1.6	0.8	1.3	3	2	0.9	0.7											
33.8	Griswold	GwD2	16%	19	0.9	1	1	0.4	0.2	0.8	1	1	0.2	0.1	0.3	0.4	0.7	0.4	0.3	0.0	0.0	2	WxD2	GwD2	64
					1.7	2	1	0.9	0.1	0.8	1	1	0.4	0.2											
1.0	Plano	PnC2	9%	31	1.3	2	1	0.9	0.1	1.3	1	1	0.7	0.1	0.2	0.9	1.1	0.2	0.9	0.0	0.0	5	PnC2	PnC2	64
					1.3	2	1	1.0	0.1	0.9	1	0	0.1	0.1											
8.1	Ringwood	RnC2	16%	21	3.1	4	7	6.7	0.2	2.8	4	6	5.4	0.2	1.3	1.6	2.9	2.4	1.3	-0.8	-6.5	4	GwD2	RnC2	64
					3.1	4	7	7.0	0.2	2.8	4	6	5.4	0.2											
7.4	Plano	PnB	4%	119	2.8	4	5	4.9	0.5	2.4	4	4	4.0	0.5	0.9	0.6	1.5	0.6	0.9	0.0	0.0	5	PnB	PnB	64
					2.4	4	6	4.5	0.6	2.4	4	4	4.0	0.5											
22.5	Troxel	TrB	4%	103	2.4	4	5	4.4	0.5	2.2	3	4	3.8	0.4	0.7	0.5	1.2	0.5	0.7	0.0	0.0	3	DsB	TrB	64
					2.1	3	5	4.1	0.6	2.2	3	4	3.8	0.4											
11.5	Warsaw	WrC2	9%	105	1.0	2	2	1.5	0.7	0.9	2	2	1.3	0.7	0.2	0	0.2	0.0	0.2	0.0	0.0	2	RoC2	WrC2	64
					1.0	2	2	1.5	0.7	0.8	2	2	1.3	0.9											
13.6	Rockton	RoC2	9%	64	7.8	9	9	7.6	0.9	4.3	5	3	2.4	0.6	5.5	0.7	6.2	0.7	5.5	0.0	0.0	2	RoC2	RoC2	64
					4.3	5	4	2.8	0.9	4.3	5	3	2.4	0.6											
13.2	Rockton	RoC2	9%	58	3.7	5	6	5.9	0.5	2.0	2	2	1.9	0.4	4.1	3.6	7.7	4.1	3.6	0.0	0.0	2	RoC2	RoC2	64
					4.0	5	6	5.4	0.5	2.0	2	2	1.9	0.4											
17.3	Griswold	GwC	9%	47	1.2	2	3	2.7	0.3	0.8	1	1	0.8	0.2	2	1.5	3.5	1.1	1.2	1.2	20.8	5	GwC	GwC	64
					1.2	2	4	3.2	0.3	0.8	1	2	1.5	0.5											
9.7	Rockton	RoD2	10%	60	2.2	2	4	3.3	0.3	1.5	2	2	1.3	0.5	1.8	0	1.8	2.0	2.8	-3.0	-29.1	2	RoD2	RoD2	64
					2.2	2	3	3.0	0.2	1.5	2	3	2.2	1.0											
24.7	Troxel	TrB	2%	151	3.1	6	7	5.7	1.4	2.9	6	6	4.6	1.4	1.1	3.2	4.3	0.9	3.1	0.3	7.4	5	TrB	TrB	64
					3.1	6	6	4.6	1.4	2.9	6	3	1.8	1.0											
27.0	Griswold	GwD2	16%	56	1.4	3	13	11.9	0.9	1.0	2	8	6.8	0.8	5.2	1.8	7	1.7	3.9	1.4	37.8	4	GwD2	GwD2	64
					1.4	3	4	3.7	0.4	1.0	2	2	2.0	0.3											
29.3	McHenry	MdD2	6%	39	2.2	3	3	2.6	0.2	1.5	2	1	1.2	0.2	1.4	3.5	4.9	3.0	1.0	0.9	26.4	5	MdD2	MdD2	64
					2.2	3	5	4.9	0.3	1.5	2	2	1.4	0.3											

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					Without Tillage/Cover Crops					With Tillage/Cover Crops														
Acres	Soil Type	Soil Symbol	Slope	Soil Test P PPM	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Actual Soil Loss	Rotat. PI	Annual PI	Part. PI	Soluble PI	Combined Tillage P change per acre	Combined Cover Crop P change per acre	Total P change per acre	Phosphorus Reduction Tillage	Phosphorus Reduction Cover Crop	Increase or Decrease in Phosphorus Reduction	Annual P change for field	Tolerable Soil Loss for the field	Critical Soil used	Predominant Soil used	Yahara Stream Reach field is located
31.1	Orion	Os	1%	82	1.2	3	3	2.3	1.1	0.8	3	2	1.0	1.2	1.2	1.8	3	2.3	1.3	-0.6	-18.7	5	Os	Os	64
					1.2	3	4	2.3	1.5	0.8	3	2	0.9	1.1											
7.6	Plano	PnC2	9%	86	2.1	5	4	3.4	0.3	1.4	3	2	1.9	0.4	1.4	6.4	7.8	1.1	5.3	1.4	10.6	5	PnC2	PnC2	64
					2.1	5	11	9.8	1.3	1.4	3	5	3.7	1.0											
14.0	Plano	PnC2	9%	98	4.7	8	10	9.5	1.0	3.0	5	3	2.7	0.6	7.2	7.5	14.7	6.5	3.8	4.4	61.6	5	PnC2	PnC2	64
					4.7	8	11	10.2	0.6	3.0	5	3	2.7	0.6											
10.0	Plano	PnC2	2%	92	2.2	4	5	3.7	0.9	1.6	3	2	1.3	0.6	2.7	2.6	5.3	2.5	1.8	1.0	10.0	5	PnB	PnB	64
					2.2	4	5	4.1	0.7	1.6	3	2	1.5	0.7											
14.0	Elburn	EfB	3%	60	2.1	4	3	2.8	0.7	1.5	3	1	1.0	0.5	2	2.1	4.1	2.1	1.4	0.6	8.4	5	EfB	EfB	64
					2.1	4	4	3.1	0.7	1.5	3	2	1.1	0.6											
22.6	Elburn	EfB	3%	84	1.5	3	8	4.7	2.9	1.0	2	4	1.7	2.2	3.7	2.2	5.9	2.1	2.6	1.2	27.1	5	EfB	EfB	64
					1.5	3	4	3.5	0.8	1.0	2	2	1.3	0.8											
5.7	Dodge	DnC2	9	74	5.4	8	13	12.3	0.9	2.9	5	4	3.2	0.6	9.4	10.1	19.5	8.7	6.2	4.6	26.2	5	DnC2	DnC2	64
					5.4	8	14	13.2	0.7	2.9	5	4	3.1	0.7											
10.1	Ringwood	RnC2	9	39	3.6	5	9	8.5	0.6	2.5	4	6	5.3	0.5	3.3	4.9	8.2	4.2	0.1	3.9	39.4	5	RnC2	RnC2	64
					3.6	5	7	6.7	0.3	2.5	4	2	1.9	0.2											
10.0	Whalan	WxD2	8%	81	3.0	4	8	7.4	0.7	2.0	3	4	3.1	0.5	4.5	3.1	7.6	3.1	1.2	3.3	33.0	2	WxD2	WxD2	64
					3.0	4	5	4.9	0.3	2.0	3	2	1.9	0.2											
9.2	Ringwood	RnC2	9%	54	3.5	5	10	9.4	0.7	2.4	4	6	5.9	0.5	3.7	5.5	9.2	4.6	2.7	1.9	17.5	5	RnC2	RnC2	64
					3.5	5	8	7.5	0.4	2.4	4	2	2.1	0.3											
16.6	Dresden	DsC2	9%	31	3.4	3	8	8.2	0.2	2.1	2	3	2.8	0.2	5.4	1.2	6.6	1.1	4.7	0.8	13.3	3	DsC2	DsC2	64
					3.4	3	3	3.2	0.2	2.1	2	2	2.0	0.2											
9.9	Plano	PnB	4%	56	3.4	4	6	5.5	0.4	2.5	3	2	1.8	0.3	3.8	1.4	5.2	1.3	3.0	0.9	8.9	5	PnB	PnB	64
					3.4	4	3	3.0	0.4	2.5	3	2	1.6	0.4											
14.7	Plano	PnB	4%	65	1.1	2	3	2.4	0.4	0.7	1	1	0.7	0.3	1.8	0.9	2.7	0.7	1.0	1.0	14.7	5	PnB	PnB	64
					1.1	2	2	1.2	0.4	0.7	1	1	0.3	0.4											
12.0	Virgil	VrB	4%	30	1.3	1	1	1.0	0.2	1.0	1	1	0.5	0.2			0.5			0.5	6.0	5	VrB	VrB	65
10.0	Dodge	DnC2	9%	109	0.7	1	2	1.1	0.6	0.5	1	1	0.3	0.6			0.8			0.8	8.0	5	DnC2	DnC2	66
20.0	Batavia	BbB	4%	57	0.7	2	4	1.3	2.9	0.2	1	3	0.3	2.7			1.2			1.2	24.0	4	BbB	BbB	64
17.1	Ringwood	RnC2	9%	68	2.2	3	7	6.4	0.6	1.7	3	3	2.1	0.4			4.5			4.5	77.0	5	RnC2	RnC2	64
1,703.8	Total Acres		65	Fields											64 480.5 acres	65 12.0 acres	69 652.0 acres	Average increase or decrease in P loss	0.9	Medium increase or decrease in P loss	0.75			Total Change in P loss from combining practices	1416.1