County

ITEM 9

COUNTY VERIFICATION RECEIPT OF DNR CONSTRUCTION PERMIT APPLICATION

This form provides proof that the County Board of Supervisors has been provided with a complete copy of the construction permit application documents (everything except the fees) for the confinement feeding operation or a complete MMP has been provided to the County because manure will be applied in that county:

Applicant: William D. and Nancy Couser Telephone: 515-231-0614

Name of operation: Couser Cattle Company

Location:

NW	SW	19	T84N R22W	Richland Twp	Story
(1/4 1/4)	(1/4)	(Section)	(Tier & Range)	(Name of Township)	(County)

Documents being submitted to the county:

- ☒ Construction permit application form: submit items 1 to 9 (see Submittal Checklist No. 1 or 2)
- ☒ Attachment 1 - Aerial photos: Must clearly show the location of the proposed confinement feeding operation structure[1] and that all the separation distances are met, including those claimed for points in the master matrix (if applicable).
- ☒ Attachment 2 - Statement of design certification, submit any of the following (see Checklist No. 1 or 2):
  - ☒ Construction Design Statement form
  - ☐ Professional Engineer (PE) Design Certification form
  - ☐ Engineering report, construction plans and technical specifications
  - ☐ In addition, if proposing an unformed manure storage structure[3] or an egg washwater storage structure submit documentation required in Addemdum "A" of this construction application form.
- ☒ Attachment 3 - Manure management plan.
- ☒ Attachment 4 - Master Matrix (if required). You must include supporting documents (see Checklist No. 1 or 2)

THIS SECTION IS RESERVED FOR THE COUNTY

As soon as DNR receives a construction permit application, the DNR will fax your County Auditor a "Courtesy reminder letter" explaining what actions your County Board of Supervisors must complete and the deadlines.

Public Notice is required for **all** construction permit applications, including those applications not required to be evaluated with the master matrix and applications in counties not participating in the Master matrix.

Counties participating in the master matrix: the county's master matrix evaluation and county's recommendation is required for the following cases:

- A new confinement feeding operation that is applying for a construction permit
- An existing confinement feeding operation that was first constructed on or after April 1, 2002 that is applying for a construction permit.
- An existing confinement feeding operation that was first constructed prior to April 1, 2002 that is applying for a construction permit with an animal unit capacity (AUC) is 1,667 animal units (AU) or more.

I have read and acknowledge the county's duty with this construction permit application, as specified in 567 IAC 65.10 and Iowa Code 459.304. On behalf of the Board of Supervisors for:

COUNTY: STORY

NAME: MARGARET C. JAYNES Margaret C. Jaynes

TITLE: DIRECTOR - EH

(Member of the County Board of Supervisors or its designated official/employee)

Date: JUNE 21, 20 17.

If you do not receive the courtesy reminder letter within a reasonable time, or if you have any questions, please contact the animal feeding operations (AFO) Program at (712) 262-4177 or visit www.IowaDNR.gov

Please staple check here

Iowa Department of Natural Resources

Construction Permit Application Form
Confinement Feeding Operations

INSTRUCTIONS:
Prior to constructing, installing, modifying or expanding a confinement feeding operation structure[1], answer questions 1-8 on Item 3, Section A (page 2), to determine if a construction permit is required. To calculate the animal unit capacity (AUC) of the operation, complete Table 1 (page 4.) If a construction permit is required, complete the rest of the form, have the applicant(s) sign it on pages 5 and 6. Mail to the DNR (see address on page 5) this application form, documents and fees requested in Checklist No. 1 or 2 (pages 10-15). See item 5 (page 5), to determine which checklist to use.

If a construction permit is not needed, some pre-construction requirements may still apply prior to the construction of a formed manure storage structure[2]. See page 5 for additional DNR contact information.

THIS APPLICATION IS FOR:

1. ☐ **A new confinement feeding operation**
2. ☒ **An existing confinement feeding operation** *(answer all of the following questions):*
   a) Facility ID No. (5 digit number): 56450
   b) Date when the operation was first constructed: 2008
   c) Date when the last construction, expansion or modification was completed: 8/2012

(Not needed if the confinement operation has previously received a construction permit from DNR.)

d) Is this also an ownership change? ☐ Yes ☒ No If yes box is checked additional fees apply. See page 8

ITEM 1 – LOCATION AND CONTACT INFORMATION (*See page 17 for instructions and an example*):

A) Name of operation: Couser Cattle Company

Location:

NW	SW	19	T84N R22W	Richland Twp	Story Co.
(1/4 1/4)	(1/4)	(Section)	(Tier & Range)	(Name of Township)	(County)

B) Applicant information:

Name: William D. Couser and Nancy Couser Title: Owners

Address: 20408 620th Avenue, Nevada, Iowa 50201

Telephone: 515-231-0614 Fax: Email:

C) Person to contact with questions about this application (if different than applicant):

Name: Twin Lakes Environmental Services, LLC Title: Becky Sexton, Consultant

Address: 2203 Ogden Avenue, Rockwell City, Iowa 50579 Becky Cell: 712-210-2164

Telephone: 712-297-5530 Fax: 712-297-5527 Email: becky@twinlakesenviro.com

☒ Enclose aerial photo or engineering drawing showing the proposed location of the confinement feeding operation structure[1] and all applicable separation distances, as requested in Attachment 1 (pages 11-12 or 14-15). See example of aerial photo on pages 18 to 19, at the end of this form.

☐ I manage or am the majority owner of another confinement feeding operation located within 2,500 feet of the proposed site. Please contact the DNR AFO Program staff at (712) 262-4177 to verify site adjacency requirements.

[1] Confinement feeding operation structure = animal feeding operation structure (confinement building, manure storage structure or egg washwater storage structure) that is part of a confinement feeding operation. Manure storage structures include formed and unformed manure storage structures.

[2] Formed manure storage structure = covered or uncovered concrete or steel tanks, and concrete pits below the building.

ITEM 2 – SITING INFORMATION:

A) Karst Determination: Go to DNR AFO Siting Atlas at http://programs.iowadnr.gov/maps/afo/. Agree to the disclaimer, then search for your site by either scrolling into your location or entering an address or legal description in the bottom search bar. Left click on the location of your proposed structure. Make sure the karst layer box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact the AFO Engineer at (712) 262-4177. Check one of the following:

☒ The site is not in karst or potential karst. Print and enclose the map with the name and location of the site clearly marked.

☐ The site is in karst. The upgraded concrete standards of 567 IAC 65.15(14)"c" must be used. Refer to "Applicant's submittal checklist" on page 10 for karst documentation.

☐ The site is within 1,000 feet of a known sinkhole, Secondary Containment Barrier is required in accordance with 567 IAC 65.15(17).

B) Alluvial Soils Determination: Go to the AFO Siting Atlas as described above. Make sure the alluvial layer box is checked on the map legend. If you cannot access the map, or if you have questions about this issue, contact DNR Flood Plain at (866) 849-0321. Check one of the following:

☒ The site is not in alluvial soils. Print and enclose the map with the name and location of the site clearly marked.

☐ The site is in alluvial soils. You will need to submit a request for a flood plain determination from DNR Flood Plain (866) 849-0321. After receiving determination submit one of the following:

- ☐ Not in 100-year floodplain or does not require a flood plain permit. Include correspondence from the DNR Flood Plain Section.
- ☐ Requires flood plain permit. Include flood plain permit.
- ☐ Documentation has been submitted to determine site is not in alluvial soils. Refer to "Applicant's Submittal Checklist" on page 10 for alluvial soils documentation.

ITEM 3 – OPERATION INFORMATION:

A) A construction permit is required prior to any of the following:

1. ☐ Constructing or modifying any unformed manure storage structure[3], or constructing or modifying a confinement building that uses an unformed manure storage structure[3].
2. ☒ Constructing, installing or modifying a confinement building or a formed manure storage structure[2] at a confinement feeding operation if, after construction, installation or expansion, the AUC of the operation is 1,000 animal units (AU) or more. This also applies to confinement feeding operations that store manure exclusively in a dry form.
3. ☐ Initiating a change that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in any unformed manure storage structure[3], even if no construction or physical alteration is necessary. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
4. ☐ Initiating a change, even if no construction or physical alteration is necessary, that would result in an increase in the volume of manure or a modification in the manner in which manure is stored in a formed manure storage structure[2] if, after the change, the AUC of the operation is 1,000 AU or more. Increases in the volume of manure due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
5. ☐ Constructing or modifying any egg washwater storage structure or a confinement building at a confinement feeding operation that includes an egg washwater storage structure.
6. ☐ Initiating a change that would result in an increase in the volume of egg washwater or a modification in the manner in which egg washwater is stored, even if no construction or physical alteration is necessary. Increases in the volume of egg washwater due to an increase in animal capacity, animal weight capacity or AUC up to the limits specified in a previously issued construction permit do not require a new construction permit.
7. ☐ Repopulating a confinement feeding operation if it was closed for 24 months or more and if any of the following apply:
   1. ☐ The confinement feeding operation uses an unformed manure storage structure[3] or egg washwater storage structure;
   2. ☐ The confinement feeding operation includes only confinement buildings and formed manure storage structures[2] and has an AUC of 1,000 AU or more.
8. ☐ Installing a permanent manure transfer piping system, unless the department determines that a construction permit is not required.

[3] Unformed manure storage structure = covered or uncovered anaerobic lagoon, earthen manure storage basin, aerobic earthen structure.

B) **In your own words, describe in detail, the proposed construction, expansion, installation, modification or repair being proposed in this project.(Must be completed) Attach additional pages if necessary:**

We are not constructing any new confinement spaces. We are filing this permit packet only to clarify points on our permit.

C) **Master Matrix** *(must check one)*. If any of boxes 1 to 3 are checked, the operation is required to be evaluated with the master matrix if the county, where the confinement feeding operation structure[1] is or would be located, has adopted a 'Construction Evaluation Resolution' (CER). Select the one that best describes your confinement feeding operation:

1. ☐ A new confinement feeding operation proposed in a county that has adopted a CER.
2. ☒ An existing operation constructed on or after April 1, 2002, in a county that has adopted a CER.
3. ☐ An existing operation constructed prior to April 1, 2002, with a current or proposed AUC of 1,667 AU or more, in a county that has adopted a CER.
4. ☐ None of the above. Therefore, the master matrix evaluation is not required.

D) **Qualified Operation** *(must check one)*. If any of boxes 1 to 4 are checked, the operation is also a 'qualified operation'. A qualified operation is required to use a manure storage structure that employs bacterial action which is maintained by the utilization of air or oxygen, and which shall include aeration equipment. However, this requirement does not apply if box 5 is checked. Select the one that best describes your confinement feeding operation:

1. ☐ A swine farrowing and gestating operation with an AUC of 2,500 AU or more. If the replacement breeding swine are raised and used at the operation, the animal units for those replacement animals do not count in the operations total AUC.
2. ☐ A swine farrow-to-finish operation with an AUC of 5,400 AU or more.
3. ☐ A cattle confinement feeding operation (including dairies) with an AUC of 8,500 AU or more.
4. ☐ Other confinement feeding operations with an AUC of 5,333 AU or more.
5. ☒ This is not a qualified operation because:
   a. ☒ It is below the limits shown on boxes 1 to 4.
   b. ☐ It includes a confinement feeding operation structure[1] constructed prior to May 31, 1995.
   c. ☐ It handles manure exclusively in a dry form (poultry).

ITEM 4 – ANIMAL UNIT CAPACITY (AUC) and, if applicable, ANIMAL WEIGHT CAPACITY (AWC):

A) Calculating AUC – Required for all operations

For each animal species, multiply the maximum number of animals that you would ever confine at one time by the appropriate factor, then add all AU together on Table 1 (page 4). Use the maximum market weight for the appropriate animal species to select the AU factor.

You must complete all applicable columns in Table 1. Use column a) to calculate the existing AUC, before permit for existing operations only. Use column b) to calculate the 'Total proposed AUC' (after a permit is issued) including new operations. The number obtained in column b) is the AUC of the operation and must be used to determine permit requirements. Use column c) to calculate the 'New AU' to be added to an existing operation. To calculate the indemnity fee (see page 7), also use column c), however, if the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in the "New AU" (column c).

In calculating the AUC of a confinement feeding operation, you must include the AUC of all confinement buildings which are part of the confinement feeding operation, unless a confinement building has been abandoned. A confinement feeding operation structure[1] is abandoned if the confinement feeding operation structure[1] has been razed, removed from the site of a confinement feeding operation, filled in with earth, or converted to uses other than a confinement feeding operation structure[1] so that it cannot be used as a confinement feeding operation structure[1] without significant reconstruction. Therefore, in Table 1, enter the animal unit capacity of all the confinement buildings, including those that are from an "adjacent" operation located within 2,500 feet. For more information, contact the AFO Program at (712) 262-4177.

Table 1. Animal Unit Capacity (AUC): **(No. HEAD) x (FACTOR) = AUC**

Animal Species	a) Existing AUC (Before permit)			b) Total Proposed AUC (After permit)		
	(No. Head)	x (Factor)	= AUC	(No. Head)	x (Factor)	= AUC
Slaughter or feeder cattle	2700	1.0	2700	2700	1.0	2700
Immature dairy cattle		1.0			1.0	
Mature dairy cattle		1.4			1.4	
Gestating sows		0.4			0.4	
Farrowing sows & litter		0.4			0.4	
Boars		0.4			0.4	
Gilts		0.4			0.4	
Finished (Market) hogs		0.4			0.4	
Nursery pigs 15 lbs to 55 lbs		0.1			0.1	
Sheep and lambs		0.1			0.1	
Horses		2.0			2.0	
Turkeys 7lbs or more		0.018			0.018	
Turkeys less than 7 lbs		0.0085			0.0085	
Broiler/Layer chickens 3 lbs or more		0.01			0.01	
Broiler/Layer chickens less than 3 lbs		0.0025			0.0025	
Fish		0.001			0.001	

Note: If the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in the "New AU" (column c)

TOTALS: **a) Existing AUC:** 2700 **b) Total proposed AUC:** 2700 *(This is the AUC of the operation)*

c) New AU = b) - a): d) -0-

B) Calculating AWC - Only for operations first constructed prior to March 1, 2003

The AWC is needed for an operation that was first constructed prior to March 1, 2003, to determine some of the minimum separation distance requirements for construction or expansion.

The AWC is the product of multiplying the maximum number of animals that you would ever confine at any one time by their average weight (lbs) during the production cycle. Then add the AWC if more than one animal species is present (examples on how to determine the AWC are provided in 567 IAC 65.1(455B).)

If the operation was first constructed prior to March 1, 2003, you must complete all applicable columns in Table 2:

Table 2. Animal Weight Capacity (AWC): **(No. head) * (Avg. weight, lbs) = AWC, lbs**

Animal Species	a) Existing AWC (Before Permit)			b) Proposed AWC (After permit)		
	(No. head) x	avg weight	= AWC	(No. head) x	avg weight	= AWC
Slaughter or feeder cattle						
Immature dairy cattle						
Mature dairy cattle						
Gestating sows						
Farrowing sows & litter						
Boars						
Gilts						
Finished (Market) hogs						
Nursery pigs 15 lbs to 55 lbs						
Sheep and lambs						
Horses						
Turkeys 7lbs or more						
Turkeys less than 7 lbs						
Broiler/Layer chickens 3 lbs or more						
Broiler/Layer chickens less than 3 lbs						
Fish						

TOTALS: **a) Existing AWC:** **b) Total proposed AWC:** *(This is the AWC of the operation)*

c) New AWC = b) - a):

ITEM 5 – SUBMITTAL REQUIREMENTS Checklists No. 1 or 2 (pages 10-15) describe the submittal requirements, which are based on the type of confinement feeding operation structure[1] and AUC proposed. To determine which checklist to use, choose the option that best describes your confinement feeding operation:

A) ☒ **Formed manure storage structures**[2]: The proposed confinement feeding operation structure[1] will be or will use a formed manure storage structure[2]. Check one of the following boxes:

1. ☐ A swine farrowing and gestating operation with an AUC of 1,250 AU or more. Use Submittal Checklist No. 2 (page 13).
2. ☐ A swine farrow-to-finish operation with an AUC of 2,750 AU or more. Use Submittal Checklist No. 2 (page 13).
3. ☐ A cattle confinement feeding operation (including dairies) with an AUC of 4,000 AU or more. Use Submittal Checklist No. 2 (page 13).
4. ☐ Other confinement feeding operations with an AUC of 3,000 AU or more. Use Submittal Checklist No. 2 (page 13).
5. ☒ None of the above. Use Submittal Checklist No. 1 (page 10).

If any of boxes 1 to 4 are checked, the operation meets the threshold requirements for an engineer[4] and a Professional Engineer (PE), licensed in Iowa, is required. For these cases, use Submittal Checklist No. 2 (page 13).

If you checked box 5, your operation is below threshold requirements for an engineer[4] and a Professional Engineer (PE) is not required. Use Submittal Checklist No. 1 (page 10).

B) ☐ **Unformed manure storage structure**[3]: The proposed confinement feeding operation structure[1], will be or will use an unformed manure storage structure[3] or an egg washwater storage structure. A Professional Engineer (PE) licensed in Iowa must design and sign the engineering documents for any size of operation. Use Submittal Checklist No. 2 (page 13) and Addendum "A" (page 16).

ITEM 6 – SIGNATURE:

I hereby certify that the information contained in this application is complete and accurate.

Signature of Applicant(s): William D Olsen Date: 6/20/2017

MAILING INSTRUCTIONS:

To expedite the application process, follow the submittal requirements explained in Checklist No. 1 or 2 (pages 10 to 16), whichever applies. Page 1 of this form should be the first page of the package. Mail all documents and fees to:

Iowa DNR
AFO Program
1900 N Grand Ave
Gateway North, Ste E17
Spencer, IA 51301

(Note: Incomplete applications will be returned to the sender.)

Questions

Questions about construction permit requirements or regarding this form should be directed to an engineer of the animal feeding operations (AFO) Program at (712) 262-4177 To contact the appropriate DNR Field Office, go to http://www.iowadnr.gov/InsideDNR/DNRStaffOffices/EnvironmentalFieldOffices.aspx.

[4] Threshold requirements for an engineer apply to the construction of a formed manure storage structure[2]. Operations that meet or exceed the threshold requirements for an engineer are required to submit engineering documents signed by a professional engineer licensed in the state of Iowa. Please refer to Checklist No. 2 (pages 13-15).

ITEM 7

Interested Parties Form
Confinement Feeding Operation

Interest means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly or indirectly through a spouse or dependent child, or both.

INSTRUCTIONS:

Please list all persons (including corporations, partnerships, etc.) who have an interest in any part of the confinement feeding operation covered by this permit application.

Full Name	Address	City/State	Zip
Couser Cattle Company	20408 620th Avenue	Nevada, IA	50201
William D. Couser	20408 620th Avenue	Nevada, IA	50201
Nancy Couser	20408 620th Avenue	Nevada, IA	50201

For each name above, please list below all other confinement feeding operations in Iowa in which that person has an interest. Check box "**None**", below, if there are no other confinement feeding operations in Iowa in which the above listed person(s) has or have an interest.

Operation Name	Location (1/4 1/4, 1/4, Section, Tier, Range, Township, County)	City
☒ **None** [There are no other confinements in Iowa in which the above listed person(s) has or have an interest].		

I hereby certify that the information provided on this form is complete and accurate.

Signature of Applicant(s): William D Couser Date: 6/20/2017

ITEM 8

Manure Storage Indemnity Fee Form for Construction Permits

CASHIER'S USE ONLY
0474-542-474A-0431
Facility ID #
County

Credit fees to: William D. and Nancy Couser

Name of operation: Couser Cattle Company

INSTRUCTIONS:

1) Use the 'Total Proposed AUC' from column b), Table 1 (page 4), to select the appropriate fee line in the table below. The 'Total Proposed AUC' is the AUC of the operation.
2) Select the animal specie and row number (see examples). Enter the 'New AU' from column c), Table 1 (page 4). The 'New AU' is the number of AU to be added to an existing operation or being proposed with a new operation. **Note**: If the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in "New AU" (column c).
3) Multiply the 'New AU' by the appropriate 'Fee per AU'. The resulting number is the indemnity fee due.

- **Example 1**: An existing swine operation is expanding from an 'Existing AUC' of 1,000 AU to a 'Total Proposed AUC' of 1,800 AU, and has previously paid an indemnity fee for the existing 1,000 AU. Calculate the indemnity fee as follows: The 'Total Proposed AUC' is between 1,000 AU and 3,000 AU; the animal specie is other than poultry; enter 800 AU in the 'New AU' column, row 4, and multiply it by $ 0.15:
  (800 AU) x ($ 0.15 per AU) = $ 120.00
- **Example 2**: An existing poultry operation is expanding from an 'Existing AUC' of 250 AU to a 'Total Proposed AUC' of 2,000 AU and has not paid the indemnity fee for animals housed in the existing buildings. Calculate the indemnity fee as follows: The 'Total Proposed AUC' is between 1,000 AU and 3,000 AU; the animal specie is poultry and the indemnity fee has not previously been paid, enter 2,000 AU in the 'New AU' column on row 3, and multiply it by $0.06:
  (2,000 AU) x ($ 0.06 per AU) = $ 120.00
- **Example 3**: If you are proposing a new swine confinement feeding operation with a 'Total Proposed AUC' of 3,500 AU, enter 3,500 AU in the 'New AU' column, row 6 and multiply it by $ 0.20:
  (3,500 AU) x ($ 0.20 per AU) = $ 700.00
- **Example 4**: If you are applying for a construction permit but you are not increasing the AUC of the operation, and has previously paid the applicable indemnity for the animals housed in the existing buildings, there is no indemnity fee due ($ 0.00). If no indemnity fee is due, do not submit this page.

Indemnity Fee Table:

Total Proposed AUC - (After permit) from column b), Table 1	Row	Animal species	New AU - from column c), Table 1	x	Fee per AU	Indemnity Fee
Less than 1,000 AU	1	Poultry		x	$ 0.04 =	
	2	Other		x	$ 0.10 =	
1,000 AU or more to less than 3,000 AU	3	Poultry		x	$ 0.06 =	
	4	Other		x	$ 0.15 =	
3,000 AU or more	5	Poultry		x	$ 0.08 =	
	6	Other		x	$ 0.20 =	

ITEM 8 (Cont.)

Filing Fees Form for Construction Permits

CASHIER'S USE ONLY
0473-542-473A-0431
0474-542-474A-0431
Facility ID #
County

Credit fees to: William D. and Nancy Couser

Name of operation: Couser Cattle Company

INSTRUCTIONS:

1. If the operation is applying for a construction permit enclose a payment for the following:
   ☒ Construction application fee $250.00.
   (Note: This fee is non-refundable)
2. A manure management plan must be submitted with a filing fee.
   ☒ Manure management plan filing fee $250.00
   (Note: This fee is non-refundable)
3. If this is a change in ownership then indemnity fees must also be paid on the current (existing) total AUC at the appropriate rate on page 7.

   ☐ Indemnity fee due to ownership change $ _____
4. Total filing fees: Add the fees paid in items 1, 2 and 3 (above): $ 500.00

SUMMARY:

- Manure Storage Indemnity Fee (see previous page) to be deposited in the Manure Storage Indemnity Fee Fund (474)	$	-0-
- Total filing fees (see item 4 on this page) to be deposited in the Animal Agriculture Compliance Fund (473)	$	500.00
TOTAL DUE:	$	500.00

Make check payable to: Iowa Department of Natural Resources or Iowa DNR; and send it along with the construction application documents (See Submittal Checklist No. 1 or 2, pages 10-15.) Note: Do not send this fee to the county.

Alluvial/Karst Siting Map

NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

There are no Alluvial or Karst concerns on this site.

Building is located 155' from ROW and 165' from closest well.

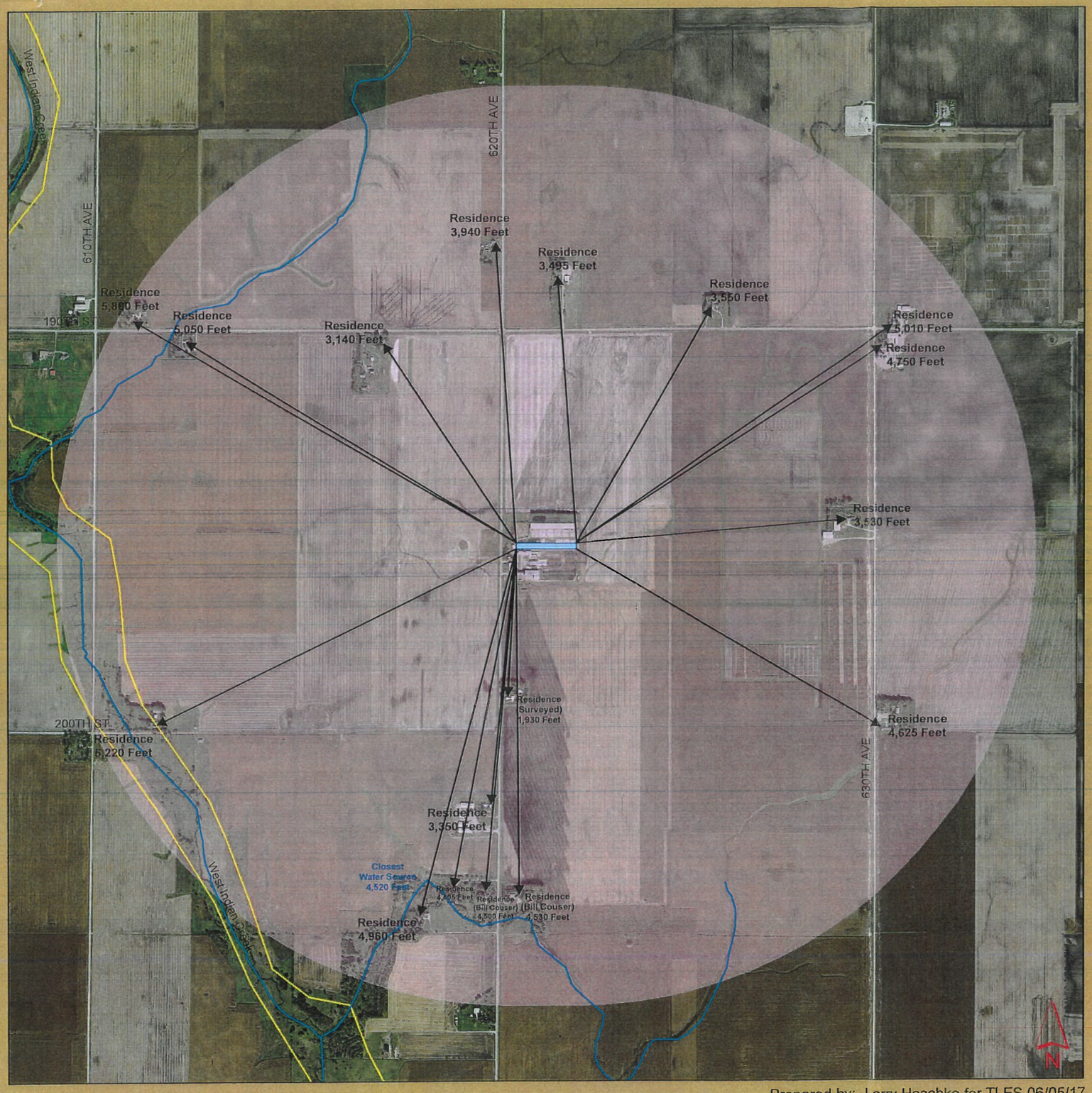
0 150 300 600 900 1,200 Feet

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- Karst
- Karst
- Karst
- Alluvial

Prepared by: Larry Heschke for TLES 06/07/17

6000 Foot Siting Separation Map



In the targeted area there exists:
17 Residences, Vulnerable Groundwater Area, and 3 Water Sources (West Indian Creek and Tributaries).

In the targeted area there are not any of the following:
State Owned Land, Public Use Areas, Critical Public Areas, CAFO's/MMP's, Major Water Sources, Impaired Water Sources, Agricultural Drainage Wells, Designated Wetlands, or Known Sinkholes.

Site Notes
Closest State Owned Property (Soper's Mill)
31,890 Feet North West
Closest Major Water Source (W Indian Creek)
23,690 Feet South
Closest Impaired Water Source (S Skunk River)
31,920 Feet North West
Closest Conservation Area (Larson Marsh)
17,780 Feet South West
Closest CAFO/MMP (#68136)
11,420 Feet North West
Closest Incorporated City (Nevada)
13,000 Feet South

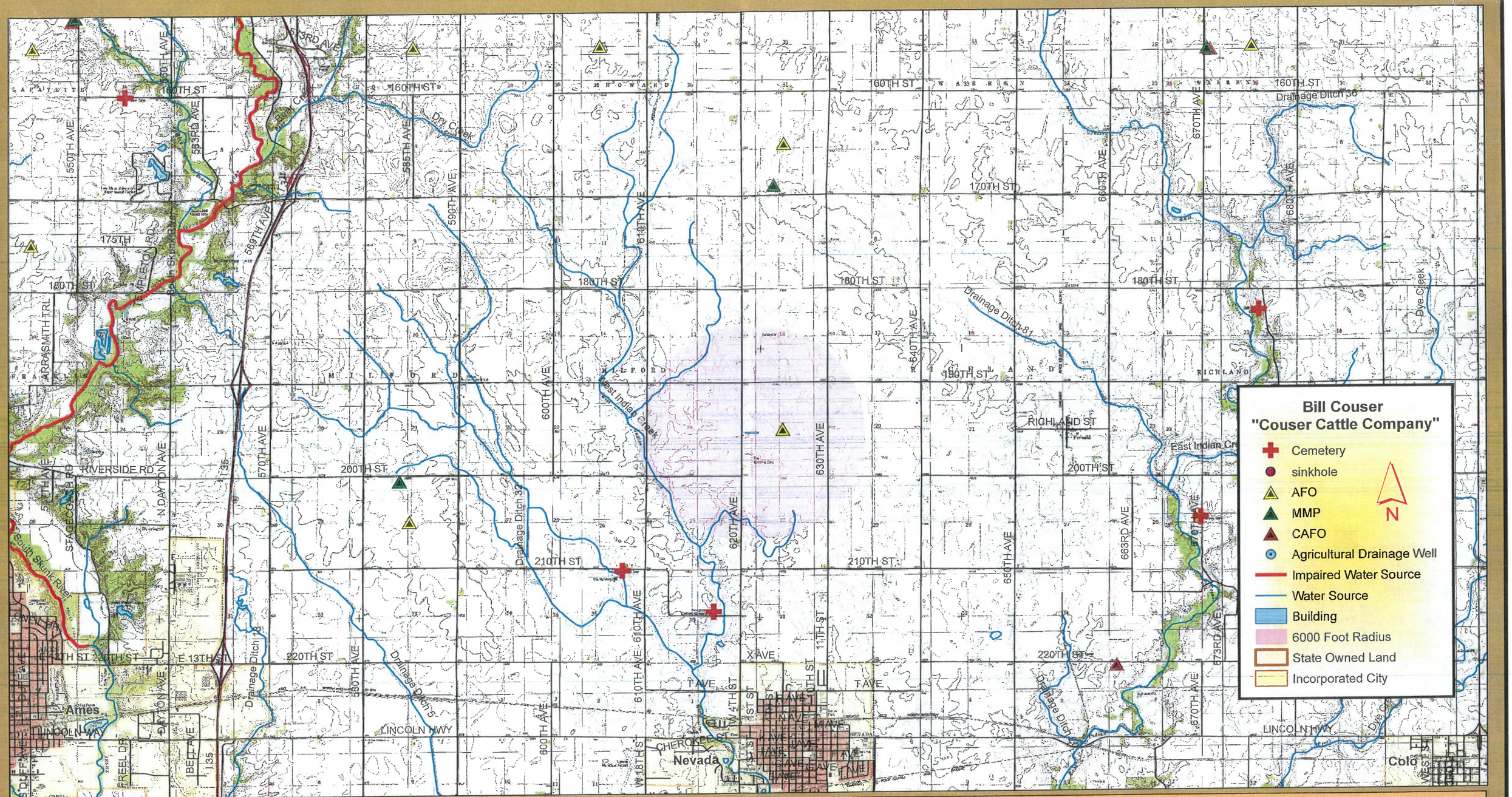
NW1/4 SW1/4 Section 19 T84N R22W Richland Plat
Story County

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius
- Vulnerable Groundwater Area

0 750 1,500 3,000 4,500 6,000 Feet

Prepared by: Larry Heschke for TLES 06/05/17



SW1/4 NW1/4 & NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

USGS Siting Map

Prepared by: Larry Heschke for TLES 06/05/17

Construction Design Statement (CDS)

Instructions:

1. This form is for new or expanding confinement feeding operations with an AUC[1] of more than 500 AU, not required to have a professional engineer (PE)[2], that are proposing to construct a formed manure storage structure[3].
2. Complete and submit Sections 1, 2 and 3 (pages 1 to 6).
3. Complete and submit Section 4 (page 6) only if you are applying for a construction permit and are constructing three or more confinement feeding operation structures[4].
4. Mail only pages 1 to 6, as instructed on page 6 and 7. Do not mail the remainder of this form.
5. If the site-specific design is sealed by a PE[2], do not use this CDS instead use DNR Form 542-8122.

Section 1 - Information about the proposed formed manure storage structure[3](s)

A) Information about the operation:

Name of operation: Couser Cattle Company Facility ID No.: 56450

Location:	NW	SW	19	T84N R22W	Richland Twp	Story County
	(¼ ¼)	(¼)	(Section)	(Tier & Range)	(Name of Township)	(County)

B) Description of the proposed formed manure storage structure[3]. Include dimensions (length, width, or diameter, depth). Indicate if it is aboveground or belowground; covered or uncovered, made of concrete or steel, address location of pit fans, if applicable, and address water line entry into buildings. If necessary attach more pages:

No construction is taking place. We are filing this permit packet only to clarify the terms of our permit.

C) **Aerial photos:** Aerial photos must be submitted that clearly show the location of all existing and proposed confinement feeding operation structures and show at least a one-mile radius around the structures. The photos must either show roads on the north and south or east and west sides of a section (so that a mile distance is apparent), or include a distance scale.

The photo(s) must show that the proposed structures comply with all statutory minimum required separation distances to the objects listed below:

- Residences (not owned by the permit applicant), churches, businesses, schools, public use areas
- Water wells (depends on type)
- Major water sources, wellhead or cistern of an agricultural drainage well or known sinkholes
- Water sources (other than major water sources) and surface intakes of an agricultural drainage well
- Designated wetlands
- Road right-of-way

The separation distance to each of the above objects must be noted with a straight line between the proposed structure(s) and the object. If any of the above objects is not located within one mile from the proposed structures, note the fact on the photo(s) or use additional pages. (Example: "No agricultural drainage wells within one mile.")

All separation distances that are not clearly in excess of the required minimum separation distance must be measured according to 567 IAC 65.11(9) using standard survey methods. Go to the DNR fact sheet page at http://www.iowadnr.gov/Environmental-Protection/Land-Quality/Animal-Feeding-Operations/AFO-Resources/AFO-Factsheets and select DNR fact sheet "Distance Requirements for Construction" to find the required separation distances. Or, go directly to: http://www.iowadnr.gov/Portals/idnr/uploads/forms/5421420.pdf. An example aerial photo can be found on pages 18 to 19 of the AFO Construction Permit Application (DNR Form 542-1428). Or, go directly to: http://www.iowadnr.gov/Portals/idnr/uploads/afo/fs_iemap.pdf.

Note: If a master matrix is required, the photos must also show that the additional separation distances required for any points claimed in matrix criteria one through ten will be met for the objects listed above. Note the additional separation distance by drawing a straight line between the proposed structures and the matrix item.

[1] To determine the AUC see the 'Manure Storage Indemnity Fee' (Form 542-4021) or the 'Construction Permit Application' (Form 542-1428), or visit http://www.iowadnr.gov

[2] PE is a professional engineer licensed in the state of Iowa or a NRCS-Engineer working for the USDA-Natural Resources Conservation Service (NRCS).

[3] Formed manure storage structure means a covered or uncovered concrete or steel tank, including concrete pits below the floor.

[4] Confinement feeding operation structure = A confinement building, a formed or unformed manure storage structure, or an egg washwater storage structure.

D) **Karst Determination:** Go to DNR AFO Siting Atlas at http://programs.iowadnr.gov/maps/afo/. Search for your site by either scrolling into your location or entering an address or legal description in the bottom search bar. Left click on the location of your proposed structure. Make sure the karst layer box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact the AFO Engineer at 712-262-4177. Check one of the following:

☒ The site is not in karst or potential karst. Print and enclose the map with the name and location of the site clearly marked.

☐ The Siting Atlas has indicated that the site is in karst. The upgraded concrete standards of 567 IAC 65.15(14)"c" must be used. Complete and sign Section 3.H (page 5).

E) **Alluvial Soils Determination:** Go to the AFO Siting Atlas as described above. Make sure the alluvial box is checked on the map layers. If you cannot access the map, or if you have questions about this issue, contact DNR Flood Plain at 866-849-0321. Check one of the following:

☒ The site is not in alluvial soils. Print and enclose the map with the name and location of the site clearly marked.

☐ If the site is in alluvial soils contact DNR Flood Plain at 866-849-0321. You will be required to submit a petition for a declaratory order if less than 1000 AU or request a flood plain determination if 1000 AU or greater. After receiving Flood Plain determination, submit one of the following:

☐ Include correspondence from the DNR showing the site is not in 100-year flood plain or does not require a Flood Plain permit. .

☐ Include copy of the Flood Plain permit if a Flood Plain permit is required.

Section 2 - Manure management plan:

☒ An original manure management plan (MMP) is enclosed with this form, even if a MMP was previously filed.

Couser Cattle Company	William D Couser	6/20/2017
Owner's Name (print)	Owner's Signature	Date

Section 3 - Construction design standards: The person responsible for constructing the formed manure storage structure(s)[3] must complete Section 3.

A) Liquid and semi-liquid manure: The proposed formed manure storage structure[3] will be (check one):

A.1 ☐ A non-circular concrete tank, belowground, with walls laterally braced or below the building concrete pit designed according to 567 IAC Chapter 65, Appendix D.

A.2 ☐ A non-circular concrete tank, belowground, walls designed according to MidWest Plan Service (MWPS), publication MWPS-36. Include design calculations.

A.3 ☐ A circular concrete tank, walls designed according to MidWest Plan Service (MWPS), publication MWPS TR-9. Include design calculations.

A.4 ☐ Will be made of steel, constructed aboveground according to the manufacturer's recommendations.

B) Dry manure: The proposed formed manure storage structure[3] will be (check one):

B.1 ☐ An aboveground concrete tank, with walls designed according to MWPS-36. Include design calculations.

B.2 ☐ Will be made of steel, constructed aboveground according to the manufacturer's recommendations.

B.3 ☐ Will be a belowground or partially belowground concrete tank, with walls laterally braced designed according to 567 IAC Chapter 65, Appendix D or MWPS-36. Include design calculations.

Manure Management Plan Form
Animal Feeding Operation Information

Pa

Instructions: Complete this form for your animal feeding operation. Footnotes are provided on page 4.

The information within this form, and the attachments, describes my animal feeding operation, my manure storage and handling system, and my planned manure management system. I (we) will manage the manure, and the nutrients it contains, as described within this manure management plan (MMP) and any revisions of the plan, individual field information, and field summary sheet, and in accordance with current rules and regulations. Deviations permitted by Iowa law will be documented and maintained in my records.

Signed: Bill Couser (Signature) Bill & Nancy Couser (Print name) **Date** 5/22/2017

Name of operation: Couser Cattle Company **Facility ID No.** 56450

Location of the operation: 19568 620th Ave (911 address)

Nevada (Town) IA (State) 50201 (Zip)

NW (1/4 1/4) 1/4 of the SW (1/4) 1/4 of Sec 19 (Section) T 84 R 22 (Tier & Range) Richland (Township Name) Story (County)

Owner and contacts of the animal feeding operation:

Owner Bill & Nancy Couser Phone 515-382-6101

Address 20408 620th Ave, Nevada, IA 50201

E-mail address (optional) _____ Cell phone (optional) 515-231-0614

Contact person (if different than owner) _____ Phone _____

Address _____

E-mail address (optional) _____ Cell phone (optional) _____

Contract company (if applicable) _____ Phone _____

Address _____

This manure management plan is for (check one)

X existing operation, not expanding ____ existing operation, expanding ____ existing operation, new owner ____ new operation

Construction and Expansion Dates: 2009 date of initial construction

2011 _____ _____ and all expansions

Table 1. Information about livestock production and manure management system

1	2	3	4	5	6	7	8
Animal type/ Production phase[a]	Max # of animals confined	Manure Storage Structure [b]	N[c]	P_2O_5[c]	gal/space/dy[d] or tons/yr	Days/yr Facility occupied	Annual Manure Produced[e]
Beef, Finishing	2,700	Deep Bed Confinement	13.9	16.6	11.0	365	29,700
Beef, Finishing	2,500	Open Feedlot	13.9	16.6	3.0	365	7,500
						Total Gallons	
						Total Tons	**37,200**

Estimated annual animal production: 5,247 animals/year

Source of Manure Nutrient Content Data (standard tables, manure analysis, other): _____

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g] A = C-SB (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[i] USDA Iowa Ag Statistics County yields **Timing of application** Spring/Fall

Method of application Surface-apply liquid or solid (dry) manure with incorp. within 24 hours **Application loss factor** 0.95

If spray irrigation is used, identify method[j]

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s) [k]	Deep Bed Pack				
Total N [l]	13.9		P_2O_5	16.6	
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

			Corn	Soybean	Corn	Soybean
1	Applying Manure For (crop to be grown) [q]		Corn	Soybean	Corn	Soybean
2	Optimum Crop Yield [h]	bu or ton/acre	179	52.6	179	52.6
3	P_2O_5 removed with crop by harvest [r]	lb/acre	57.3	37.9	57.3	37.9
4	Crop N utilization [s]	lb/acre	215	200	215	200
5a	Legume N credit [t]	lb/acre	50	0	50	0
5b	Commercial N planned [u]	lb/acre	50	0	50	0
5c	Manure N carryover credit [v]	lb/acre	0	7.6	0	7.6
6	Remaining crop N need [w]	lb/acre	115	0	115	0
7	Manure rate to supply remaining N [x]	ton/acre	25	0	25	0
8	P_2O_5 applied with N-based rate [y]	lb/acre	412	0	412	0

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned [z]	lb/acre				
10	Manure rate to supply P removal [aa]	ton/acre	0.0	0.0	0.0	0.0
11	Manure rate for P based plan [bb]	ton/acre				
12	Manure N applied with P-based plan [cc]	lb/acre	0	0	0	0

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate [dd]	ton/acre	25	0	25	0

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g] B = SB-C (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[i] USDA Iowa Ag Statistics County yields **Timing of application** Spring/Fall

Method of application Surface-apply liquid or solid (dry) manure with incorp. within 24 hours **Application loss factor** 0.95

If spray irrigation is used, identify method[j]

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s) [k]	Deep Bed Pack				
Total N [l]	13.9		P_2O_5	16.6	
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

1	Applying Manure For (crop to be grown) [q]		Soybean	Corn	Soybean	Corn
2	Optimum Crop Yield [h]	bu or ton/acre	52.6	179	52.6	179
3	P_2O_5 removed with crop by harvest [r]	lb/acre	37.9	57.3	37.9	57.3
4	Crop N utilization [s]	lb/acre	200	215	200	215
5a	Legume N credit [t]	lb/acre	0	50	0	50
5b	Commercial N planned[u]	lb/acre	0	50	0	50
5c	Manure N carryover credit [v]	lb/acre	7.6	0.0	7.6	0.0
6	Remaining crop N need [w]	lb/acre	0	115	0	115
7	Manure rate to supply remaining N [x]	ton/acre	0	25	0	25
8	P_2O_5 applied with N-based rate [y]	lb/acre	0	412	0	412

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned [z]	lb/acre				
10	Manure rate to supply P removal [aa]	ton/acre	0.0	0.0	0.0	0.0
11	Manure rate for P based plan [bb]	ton/acre				
12	Manure N applied with P-based plan [cc]	lb/acre	0	0	0	0

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate [dd]	ton/acre	0	25	0	25

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g] C = C-C (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[l] USDA Iowa Ag Statistics County yields **Timing of application** Spring/Fall

Method of application Surface-apply liquid or solid (dry) manure with incorp. within 24 hours **Application loss factor** 0.95

If spray irrigation is used, identify method[j]

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s) [k]	Deep Bed Pack				
Total N [l]	13.9		P_2O_5	16.6	
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

			Corn	Corn	Corn	Corn
1	Applying Manure For (crop to be grown) [q]					
2	Optimum Crop Yield [h]	bu or ton/acre	179	179	179	179
3	P_2O_5 removed with crop by harvest [r]	lb/acre	57.3	57.3	57.3	57.3
4	Crop N utilization [s]	lb/acre	215	215	215	215
5a	Legume N credit [t]	lb/acre	0	0	0	0
5b	Commercial N planned[u]	lb/acre	75	75	75	75
5c	Manure N carryover credit [v]	lb/acre	6.8	6.8	6.8	6.8
6	Remaining crop N need [w]	lb/acre	133	133	133	133
7	Manure rate to supply remaining N [x]	ton/acre	29	29	29	29
8	P_2O_5 applied with N-based rate [y]	lb/acre	478	478	478	478

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned [z]	lb/acre				
10	Manure rate to supply P removal [aa]	ton/acre	3.5	3.5	3.5	3.5
11	Manure rate for P based plan [bb]	ton/acre	7.0	7.0	7.0	7.0
12	Manure N applied with P-based plan [cc]	lb/acre	32	32	32	32

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate [dd]	ton/acre	29	29	29	29

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2018 & 2020 (Couser Cattle Co.)

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
JBM South	SE 1/4 sec 30, Richland Twp, Story Co.	B	Beans	0	Rented	0.53	N	0	0	Yes
Loan Farm	NE 1/4 sec 7, Richland Twp, Story Co.	A	Corn	147.4	Leased (1yr rollover)	0.57	N	25	3,685	Yes
Burnotte West	SE 1/4 of SW 1/4 & SW 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	78.8	Rented	0.62	N	29	2,285	Yes
Burnotte East	SE 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	25.1	Rented	2.74	N	7	176	Yes
Rierson East	E 1/2 of E 1/2 sec 24, Milford Twp, Story Co.	A	Corn	154.1	Rented	1.54	N	25	3,853	Yes
Dicks 60	S 1/2 of SW 1/4 sec 24, Milford Twp, Story Co.	B	Beans	0	Rented	0.67	N	0	0	Yes
Jeffs Place	N 1/2 of SE 1/4 sec 25, Milford Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.39	N	0	0	Yes
Otto North	E 1/2 of NW 1/4 sec 36, Milford Twp, Story Co.	A	Corn	76.9	Rented	0.73	N	25	1,923	Yes
Otto South	E 1/2 of SW 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Rented	1.59	N	0	0	Yes
Milford 36	SE 1/4 of SE 1/4 sec 36, Milford Twp, Story Co.	A	Corn	31.5	Leased (1yr rollover)	0.37	N	25	788	Yes
Chucks	W 1/2 of NW 1/4 sec 26, Milford Twp, Story Co.	C	Corn	76.9	Rented	0.98	N	29	2,230	Yes
Menzel North	NW 1/4 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	13.7	Rented	1.06	N	29	397	Yes
Menzel South	S 1/2 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	47.3	Rented	2.39	N	7	331	Yes
Paul East	W 1/2 of NW 1/4 sec 13, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.66	N	29	2,227	Yes
Paul West	E 1/2 of NE 1/4 sec 14, Milford Twp, Story Co.	C	Corn	74.5	Rented	0.73	N	29	2,161	Yes
Bergstrom	NW 1/4 & W 1/2 of NE 1/4 sec 10, Milford Twp, Story Co.	A	Corn	219.7	Rented	0.42	N	25	5,493	Yes
Bills N 60	N 1/2 of NE 1/4 sec 4, Milford Twp, Story Co.	C	Corn	56.3	Owned	0.53	N	29	1,633	Yes
Coder South	NE 1/4 sec 21, Milford Twp, Story Co.	A	Corn	153.8	Rented	0.53	N	25	3,845	Yes
Hadley Home	SE 1/4 sec 21, Milford Twp, Story Co.	B	Beans	0	Rented	0.52	N	0	0	Yes
Hadley East	W 1/2 of SW 1/4 sec 22, Milford Twp, Story Co.	A	Corn	77.4	Rented	0.49	N	25	1,935	Yes
Morfey	N 1/2 of NE 1/4 sec 33, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.70	N	29	2,227	Yes
Neasham	S 1/2 sec 29, Milford Twp, Story Co.	C	Corn	297.4	Rented	0.67	N	29	8,625	Yes
Total acres available for manure application				1,684.4	**Total tons that could be applied**				43,812	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2018 & 2020 (Couser Cattle Co.) cont.

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
Wind Farm	NW 1/4 & N 1/2 of SW 1/4 sec 10, Grant Twp, Story Co.	C	Corn	175.1	Leased (1yr rollover)	0.38	N	29	5,078	Yes
Bates West	N 1/2 of SE 1/4 & SE 1/4 of SE 1/4 sec 9, Nevada Twp, Story Co.	A	Corn	105.2	Leased (1yr rollover)	0.47	N	25	2,630	Yes
Bates East	W 1/2 of SW 1/4 sec 10, Nevada Twp, Story Co.	A	Corn	71.7	Leased (1yr rollover)	0.58	N	25	1,793	Yes
	Total acres available for manure application			352.0	**Total tons that could be applied**				9,500	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2019 & 2021 (Couser Cattle Co.)

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
JBM South	SE 1/4 sec 30, Richland Twp, Story Co.	A	Corn	157.6	Rented	0.53	N	25	3,940	Yes
Loan Farm	NE 1/4 sec 7, Richland Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.57	N	0	0	Yes
Burnotte West	SE 1/4 of SW 1/4 & SW 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	78.8	Rented	0.62	N	29	2,285	Yes
Burnotte East	SE 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	25.1	Rented	2.74	N	7	176	Yes
Rierson East	E 1/2 of E 1/2 sec 24, Milford Twp, Story Co.	B	Beans	0	Rented	1.54	N	0	0	Yes
Dicks 60	S 1/2 of SW 1/4 sec 24, Milford Twp, Story Co.	A	Corn	60.4	Rented	0.67	N	25	1,510	Yes
Jeffs Place	N 1/2 of SE 1/4 sec 25, Milford Twp, Story Co.	A	Corn	53.7	Leased (1yr rollover)	0.39	N	25	1,343	Yes
Otto North	E 1/2 of NW 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Rented	0.73	N	0	0	Yes
Otto South	E 1/2 of SW 1/4 sec 36, Milford Twp, Story Co.	A	Corn	75.1	Rented	1.59	N	25	1,878	Yes
Milford 36	SE 1/4 of SE 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.37	N	0	0	Yes
Chucks	W 1/2 of NW 1/4 sec 26, Milford Twp, Story Co.	C	Corn	76.9	Rented	0.98	N	29	2,230	Yes
Menzel North	NW 1/4 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	13.7	Rented	1.06	N	29	397	Yes
Menzel South	S 1/2 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	47.3	Rented	2.39	N	7	331	Yes
Paul East	W 1/2 of NW 1/4 sec 13, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.66	N	29	2,227	Yes
Paul West	E 1/2 of NE 1/4 sec 14, Milford Twp, Story Co.	C	Corn	74.5	Rented	0.73	N	29	2,161	Yes
Bergstrom	NW 1/4 & W 1/2 of NE 1/4 sec 10, Milford Twp, Story Co.	B	Beans	0	Rented	0.42	N	0	0	Yes
Bills N 60	N 1/2 of NE 1/4 sec 4, Milford Twp, Story Co.	C	Corn	56.3	Owned	0.53	N	29	1,633	Yes
Coder South	NE 1/4 sec 21, Milford Twp, Story Co.	B	Beans	0	Rented	0.53	N	0	0	Yes
Hadley Home	SE 1/4 sec 21, Milford Twp, Story Co.	A	Corn	129.6	Rented	0.52	N	25	3,240	Yes
Hadley East	W 1/2 of SW 1/4 sec 22, Milford Twp, Story Co.	B	Beans	0	Rented	0.49	N	0	0	Yes
Morfey	N 1/2 of NE 1/4 sec 33, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.70	N	29	2,227	Yes
Neasham	S 1/2 sec 29, Milford Twp, Story Co.	C	Corn	297.4	Rented	0.67	N	29	8,625	Yes
	Total acres available for manure application			1,300.0	**Total tons that could be applied**				34,202	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2019 & 2021 (Couser Cattle Co.) cont.

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
Wind Farm	NW 1/4 & N 1/2 of SW 1/4 sec 10, Grant Twp, Story Co.	C	Corn	175.1	Leased (1yr rollover)	0.38	N	29	5,078	Yes
Bates West	N 1/2 of SE 1/4 & SE 1/4 of SE 1/4 sec 9, Nevada Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.47	N	0	0	Yes
Bates East	W 1/2 of SW 1/4 sec 10, Nevada Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.58	N	0	0	Yes
Total acres available for manure application				175.1	**Total tons that could be applied**				5,078	

Couser Cattle Company
Matrix Submittal Scoring

	Score	Air	Water	Community
1	0	0	0	0
2	30	12	0	18
3	30	12	0	18
4	30	0	30	0
5	0	0	0	0
6	10	4	0	6
7	0	0	0	0
8	50	5	25	20
9	25	7.5	7.5	10
10	30	0	22.5	7.5
11	0	0	0	0
12	0	0	0	0
13	20	0	18	2
14	0	0	0	0
15	20	10	0	10
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	20	0	0	20
20	30	0	0	30
21	0	0	0	0
22	0	0	0	0
23	25	0	0	25
24	10	0	0	10
25	25	0	12.5	12.5
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	10		10	
30	10	6.5	0	3.5
31	5	2	0	3
32	5	2	0	3
33	10	0	8	2
34	0	0	0	0
35	10	0	7.5	2.5
36	0	0	0	0
37	0	0	0	0
38	0	0	0	0
39	10	0	0	10
40	5	0	2.5	2.5
41	5	0	2.5	2.5
42	0	0	0	0
43	0	0	0	0
44	15	0	10.5	4.5
Total	440	61	156.5	222.5

APPENDIX C MASTER MATRIX

Proposed Site Characteristics

The following scoring criteria apply to the site of the proposed confinement feeding operation. Mark one score under each criterion selected by the applicant. The proposed site must obtain a minimum overall score of 440 and a score of 53.38 in the "air" subcategory, a score of 67.75 in the "water" subcategory and a score of 101.13 in the "community impacts" subcategory.

1. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest:
   * Residence not owned by the owner of the confinement feeding operation,
   * Hospital,
   * Nursing home, or
   * Licensed or registered child care facility.

	Score	Air	Water	Community
250 feet to 500 feet	25	16.25		8.75
501 feet to 750 feet	45	29.25		17.50
751 feet to 1,000 feet	65	42.25		22.75
1,001 feet to 1,250 feet	85	55.25		29.75
1,251 feet or more	100	65.00		35.00

(A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
(B) The department will award points only for the single building, of the four listed above, closest to the proposed confinement feeding operation.
(C) "Licensed child care center" – a facility licensed by the department of human services providing child care or preschool services for seven or more children, except when the facility is registered as a child care home.
(D) "Registered child development homes" - child care providers certify that they comply with rules adopted by the department of human services. This process is voluntary for providers caring for five or fewer children and mandatory for providers caring for six or more children.
(E) A full listing of licensed and registered child care facilities is available at county offices of the department of human services.

2. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest public use area.

	Score	Air	Water	Community
250 feet to 500 feet	5	2.00		3.00
501 feet to 750 feet	10	4.00		6.00
751 feet to 1,000 feet	15	6.00		9.00
1,001 feet to 1,250 feet	20	8.00		12.00
1,251 feet to 1,500	25	10.00		15.00
1,501 feet or more	30	12.00		18.00

(A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
(B) "Public use area" - a portion of land owned by the United States, the state, or a political subdivision with facilities which attract the public to congregate and remain in the area for significant periods of time. Facilities include, but are not limited to, picnic grounds, campgrounds, cemeteries, lodges, shelter houses, playground equipment, lakes as listed in Table 2 of 567--Chapter 65, and swimming beaches. It does not include a highway, road right-of-way, parking areas, recreational trails or other areas where the public passes through, but does not congregate or remain in the area for significant periods of time.

3. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest:
   * Educational institution,
   * Religious institution, or
   * Commercial enterprise.

	Score	Air	Water	Community
250 feet to 500 feet	5	2.00		3.00

501 feet to 750 feet	10	4.00		6.00
751 feet to 1,000 feet	15	6.00		9.00
1,001 feet to 1,250 feet	20	8.00		12.00
1,251 feet to 1,500	25	10.00		15.00
1,501 feet or more	30	12.00		18.00

(A) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.
(B) The department will award points only for the single building, of the three listed above, closest to the proposed confinement feeding operation.
(C) "Educational institution" - a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area educational agencies, community colleges, institutions of higher education under the control of the state board of regents, and accredited independent colleges and universities.
(D) "Religious institution" - a building in which an active congregation is devoted to worship.
(E) "Commercial enterprise" - a building which is used as a part of a business that manufactures goods, delivers services, or sells goods or services, which is customarily and regularly used by the general public during the entire calendar year and which is connected to electric, water, and sewer systems. A commercial enterprise does not include a farm operation.

4. Additional separation distance, above minimum requirement of 500 feet, from proposed confinement structure to the closest water source.

	Score	Air	Water	Community
250 feet to 500 feet	5		5.00	
501 feet to 750 feet	10		10.00	
751 feet to 1,000 feet	15		15.00	
1,001 feet to 1,250 feet	20		20.00	
1,251 feet to 1,500	25		25.00	
1,501 feet or more	30		30.00	

"Water source" - a lake, river, reservoir, creek, stream, ditch, or other body of water or channel having definite banks and a bed with water flow, except lakes or ponds without an outlet to which only one landowner is riparian.

5. Separation distance of 300 feet or more from the proposed confinement structure to the nearest thoroughfare.

	Score	Air	Water	Community
300 feet or more	30	9.00		21.00

(A) "Thoroughfare" - a road, street, bridge, or highway open to the public and constructed or maintained by the state or a political subdivision.
(B) The 300-foot distance includes the 100-foot minimum setback plus additional 200 feet.

6. Additional separation distance, above minimum requirements, from proposed confinement structure to the closest critical public area.

	Score	Air	Water	Community
500 feet or more	10	4.00		6.00

(A) All critical public areas as defined in 567--65.1(455B), are public use areas, and therefore subject to public use area minimum separation distances.
(B) Refer to the construction permit application package to determine the animal unit capacity (or animal weight capacity if an expansion) of the proposed confinement feeding operation. Then refer to Table 6 of 567--Chapter 65 to determine minimum required separation distances.

7. Proposed confinement structure is at least two times the minimum required separation distance from all private and public water wells.

	Score	Air	Water	Community
Two times the minimum separation distance	30		24.00	6.00

Refer to Table 6 of 567--Chapter 65 for minimum required separation distances to wells.

8. Additional separation distance, above the minimum requirement of 1,000 feet, from proposed confinement structure to the closest:

* Agricultural drainage well,
* Known sinkhole, or
* Major water source.

	Score	Air	Water	Community
250 feet to 500 feet	5	0.50	2.50	2.00
501 feet to 750 feet	10	1.00	5.00	4.00
751 feet to 1,000 feet	15	1.50	7.50	6.00
1,001 feet to 1,250 feet	20	2.00	10.00	8.00
1,251 feet to 1,500 feet	25	2.50	12.50	10.00
1,501 feet to 1,750 feet	30	3.00	15.00	12.00
1,751 feet to 2,000 feet	35	3.50	17.50	14.00
2,001 feet to 2,250 feet	40	4.00	20.00	16.00
2,251 feet to 2,500 feet	45	4.50	22.50	18.00
2,501 feet or more	50	5.00	25.00	20.00

(A) The department will award points only for the single item, of the three listed above, that is closest to the proposed confinement feeding operation.
(B) "Agricultural drainage wells" - include surface intakes, cisterns and wellheads of agricultural drainage wells.
(C) "Major water source" - a lake, reservoir, river or stream located within the territorial limits of the state, or any marginal river area adjacent to the state which can support a floating vessel capable of carrying one or more persons during a total of a six-month period in one out of ten years, excluding periods of flooding. Major water sources in the state are listed in Tables 1 and 2 in 567--Chapter 65.

9. Distance between the proposed confinement structure and the nearest confinement facility that has a submitted department manure management plan.

	Score	Air	Water	Community
Three-quarter of a mile or more (3,960 feet)	25	7.50	7.50	10.00

Confinement facilities include swine, poultry, and dairy and beef cattle.

10. Separation distance from proposed confinement structure to closest:
* High quality (HQ) waters,
* High quality resource (HQR) waters, or
* Protected water areas (PWA)

is at least two times the minimum required separation distance

	Score	Air	Water	Community
Two times the minimum separation distance	30		22.50	7.50

(A) The department will award points only for the single item, of the three listed above, closest to the proposed confinement feeding operation.
(B) HQ waters are identified in 567--Chapter 61.
(C) HQR waters are identified in 567--Chapter 61.
(D) A listing of PWAs is available at:
http://www.iowadnr.gov/Recreation/CanoeingKayaking/StreamCare/ProtectedWaterAreas.aspx

11. Air quality modeling results demonstrating an annoyance level less than 2 percent of the time for residences within two times the minimum separation distance.

	Score	Air	Water	Community
University of Minnesota OFFSET model results demonstrating an annoyance level less than 2 percent of the time	10	6.00		4.00e

(A) OFFSET can be found at http://www.extension.umn.edu/agriculture/manure-management-and-air-quality/feedlots-and-manure-storage/offset-odor-from-feedlots/. For more information, contact Dr. Larry Jacobson, University of Minnesota, (612) 625-8288, jacob007@tc.umn.edu.
(B) A residence that has a signed waiver for the minimum separation distance cannot be included in the model.
(C) Only the OFFSET model is acceptable until the department recognizes other air quality models.

12. Liquid manure storage structure is covered.

	Score	Air	Water	Community
Covered liquid manure storage	30	27.00		3.00

(A) "Covered" - organic or inorganic material, placed upon an animal feeding operation structure used to store manure, which significantly reduces the exchange of gases between the stored manure and the outside air.

Organic materials include, but are not limited to, a layer of chopped straw, other crop residue, or a naturally occurring crust on the surface of the stored manure. Inorganic materials include, but are not limited to, wood, steel, aluminum, rubber, plastic, or Styrofoam. The materials shall shield at least 90 percent of the surface area of the stored manure from the outside air. Cover shall include an organic or inorganic material which current scientific research shows reduces detectable odor by at least 75 percent. A formed manure storage structure directly beneath a floor where animals are housed in a confinement feeding operation is deemed to be covered.

(B) The design, operation and maintenance plan for the manure cover must be in the construction permit application and made a condition in the approved construction permit.

13. Construction permit application contains design, construction, operation and maintenance plan for emergency containment area at manure storage structure pump-out area.

	Score	Air	Water	Community
Emergency containment area	20		18.00	2.00

(A) The emergency containment area must be able to contain at least 5 percent of the total volume capacity of the manure storage structure.

(B) The emergency containment area must be constructed on soils that are fine-grained and have low permeability.

(C) If manure is spilled into the emergency containment area, the spill must be reported to the department within six hours of onset or discovery.

(D) The design, construction, operation and maintenance plan for the emergency containment area must be in the construction permit application and made a condition in the approved construction permit.

14. Installation of a filter(s) designed to reduce odors from confinement building(s) exhaust fan(s).

	Score	Air	Water	Community
Installation of filter(s)	10	8.00		2.00

The design, operation and maintenance plan for the filter(s) must be in the construction permit application and made a condition in the approved construction permit.

15. Utilization of landscaping around confinement structure.

	Score	Air	Water	Community
Utilization of Landscaping	20	10.00		10.00

The design, operation and maintenance plan for the landscaping must be in the construction permit application and made a condition in the approved construction permit. The design should contain at least three rows of trees and shrubs, of both fast and slow-growing species that are well suited for the site.

16. Enhancement, above minimum requirements, of structures used in stockpiling and composting activities, such as an impermeable pad and a roof or cover.

	Score	Air	Water	Community
Stockpile and compost facility enhancements	30	9.00	18.00	3.00

(A) The design, operation and maintenance plan for the stockpile or compost structure enhancements must be in the construction permit application and made a condition in the approved construction permit.

(B) The stockpile or compost structures must be located on land adjacent or contiguous to the confinement building.

17. Proposed manure storage structure is formed

	Score	Air	Water	Community
Formed manure storage structure	30		27.00	3.00

(A) "Formed manure storage structure" -a covered or uncovered impoundment used to store manure from an animal feeding operation, which has walls and a floor constructed of concrete, concrete block, wood, steel, or similar materials. Similar materials may include, but are not limited to, plastic, rubber, fiberglass, or other synthetic materials. Materials used in a formed manure storage structure shall have the structural integrity to withstand expected internal and external load pressures.

(B) The design, operation and maintenance plan for the formed manure storage structure must be in the construction permit application and made a condition in the approved construction permit.

18. Manure storage structure is aerated to meet departmental standards as an aerobic structure, if aeration is not already required by the department.

	Score	Air	Water	Community
Aerated manure storage structure	10	8.00		2.00

(A) Aerobic structure - an animal feeding operation structure other than an egg wash water storage structure which relies on aerobic bacterial action which is maintained by the utilization of air or oxygen and which includes

aeration equipment to digest organic matter. Aeration equipment shall be used and shall be capable of providing oxygen at a rate sufficient to maintain an average of 2 milligrams per liter dissolved oxygen concentration in the upper 30 percent of the depth of manure in the structure at all times.

(B) The design, operation and maintenance plan for the aeration equipment must be in the construction permit application and made a condition in the approved construction permit.

19. Proposed confinement site has a suitable truck turnaround area so that semitrailers do not have to back into the facility from the road

	Score	Air	Water	Community
Truck turnaround	20			20.00

(A) The design, operation and maintenance plan for the truck turn around area must be in the construction permit application and made a condition in the approved construction permit.

(B) The turnaround area should be at least 120 feet in diameter and be adequately surfaced for traffic in inclement weather.

20. Construction permit applicant's animal feeding operation environmental and worker protection violation history for the last five years at all facilities in which the applicant has an interest.

	Score	Air	Water	Community
No history of Administrative Orders in last five years	30			30.00

(A) "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

(B) An environmental violation is a final Administrative Order (AO) from the department of natural resources or final court ruling against the construction permit applicant for environmental violations related to an animal feeding operation. A Notice of Violation (NOV) does not constitute a violation.

21. Construction permit applicant waives the right to claim a Pollution Control Tax Exemption for the life of the proposed confinement feeding operation structure.

	Score	Air	Water	Community
Permanent waiver of Pollution Control Tax Exemption	5			5.00

(A) Waiver of Pollution Control Tax Exemption is limited to the proposed structure(s) in the construction permit application.

(B) The department and county assessor will maintain a record of this waiver, and it must be in the construction permit application and made a condition in the approved construction permit.

22. Construction permit applicant can lawfully claim a Homestead Tax Exemption on the site where the proposed confinement structure is to be constructed

- OR -

the construction permit applicant is the closest resident to the proposed confinement structure.

	Score	Air	Water	Community
Site qualifies for Homestead Tax Exemption or permit applicant is closest resident to proposed structure	25			25.00

(A) Proof of Homestead Tax Exemption is required as part of the construction permit application.

(B) Applicant includes persons who have ownership interests. "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

23. Construction permit applicant can lawfully claim a Family Farm Tax Credit for agricultural land where the proposed confinement feeding operation is to be located pursuant to Iowa Code chapter 425A.

	Score	Air	Water	Community
Family Farm Tax Credit qualification	25			25.00

Applicant includes persons who have ownership interests. "Interest" - means ownership of a confinement feeding operation as a sole proprietor or a 10 percent or more ownership interest held by a person in a confinement feeding operation as a joint tenant, tenant in common, shareholder, partner, member, beneficiary or other equity interest holder. Ownership interest is an interest when it is held either directly, indirectly through a spouse or dependent child, or both.

24. Facility size.

	Score	Air	Water	Community
1 to 2,000 animal unit capacity	20			20.00
2,001 to 3,000 animal unit capacity	10			10.00
3,001 animal unit capacity or more	0			0.00

(A) Refer to the construction permit application package to determine the animal unit capacity of the proposed confinement structure at the completion of construction.
(B) If the proposed structure is part of an expansion, animal unit capacity (or animal weight capacity) must include all animals confined in adjacent confinement structures.
(C) Two or more animal feeding operations under common ownership or management are deemed to be a single animal feeding operation if they are adjacent or utilize a common area or system for manure disposal. In addition, for purposes of determining whether two or more confinement feeding operations are adjacent, all of the following must apply:
  (a) At least one confinement feeding operation structure must be constructed on and after May 21, 1998.
  (b) A confinement feeding operation structure which is part of one confinement feeding operation is separated by less than a minimum required distance from a confinement feeding operation structure which is part of the other confinement feeding operation. The minimum required distance shall be as follows:
    (1) 1,250 feet for confinement feeding operations having a combined animal unit capacity of less than 1,000 animal units.
    (2) 2,500 feet for confinement feeding operations having a combined animal unit capacity of 1,000 animal units or more.

25. Construction permit application includes livestock feeding and watering systems that significantly reduce manure volume.

	Score	Air	Water	Community
Wet/dry feeders or other feeding and watering systems that significantly reduce manure volume	25		12.50	12.50

The design, operation and maintenance plan for the feeding system must be in the construction permit application and made a condition in the approved construction permit.

Proposed Site Operation and Manure Management Practices

The following scoring criteria apply to the operation and manure management characteristics of the proposed confinement feeding operation. Mark <u>one</u> score under each criterion that best reflects the characteristics of the submitted manure management plan.

26. Liquid or dry manure (choose only one subsection from subsections "a" - "e" and mark one score in that subsection).

		Score	Air	Water	Community
a.	Bulk dry manure is sold under Iowa Code Chapter 200A and surface-applied	15		15.00	
	Bulk dry manure is sold under Iowa Code Chapter 200A and incorporated on the same date it is land-applied	30	12.00	12.00	6.00
b.	Dry manure is composted and land-applied under the requirements of an approved department manure management plan	10	4.00	4.00	2.00
	Dry manure is composted and sold so that no manure is applied under the requirements of an approved department manure management plan	30	12.00	12.00	6.00
c.	Methane digester is used to generate energy from manure and remaining manure is surface-applied under the requirements of an approved department manure management plan	10	3.00	3.00	4.00
	After methane digestion is complete, manure is injected or incorporated on the same date it is land-applied under the requirements of an approved department manure management plan	30	12.00	12.00	6.00
d.	Dry manure is completely burned to generate energy and no	30	9.00	9.00	12.00

	remaining manure is applied under the requirements of an approved department manure management plan				
	Some dry manure is burned to generate energy, but remaining manure is land-applied and incorporated on the same date it is land applied	30	12.00	12.00	6.00

e.	Injection or incorporation of manure on the same date it is land-applied	30	12.00	12.00	6.00

(A) Choose only ONE line from subsection "a", "b," "c," "d," or "e" above and mark only one score in that subsection.
(B) The injection or incorporation of manure must be in the construction permit application and made a condition in the approved construction permit.
(C) If an emergency arises and injection or incorporation is not feasible, prior to land application of manure the applicant must receive a written approval for an emergency waiver from a department field office to surface-apply manure.
(D) Requirements pertaining to the sale of bulk dry manure under pursuant to Iowa Code chapter 200A must be incorporated into the construction permit application and made a condition of the approved construction permit.
(E) The design, operation and maintenance plan for utilization of manure as an energy source must be in the construction permit application and made a condition in the approved construction permit.
(F) The design, operation and maintenance plan for composting facilities must be in the construction permit application and made a condition in the approved construction permit.

27. Land application of manure is based on a two-year crop rotation phosphorus uptake level.

	Score	Air	Water	Community
Two-year phosphorus crop uptake application rate	10		10.00	

(A) Land application of manure cannot exceed phosphorus crop usage levels for a two-year crop rotation cycle.
(B) The phosphorus uptake application rates must be in the construction permit application and made a condition in the approved construction permit.

28. Land application of manure to farmland that has USDA Natural Resources Conservation Service (NRCS) approved buffer strips contiguous to all water sources traversing or adjacent to the fields listed in the manure management plan.

	Score	Air	Water	Community
Manure application on farmland with buffer strips	10		8.00	2.00

(A) The department may request NRCS maintenance agreements to ensure proper design, installation and maintenance of filter strips. If a filter strip is present but not designed by NRCS, it must meet NRCS standard specifications.
(B) The application field does not need to be owned by the confinement facility owner to receive points.
(C) On current and future manure management plans, the requirement for buffer strips on all land application areas must be in the construction permit application and made a condition in the approved construction permit.

29. Land application of manure does not occur on highly erodible land (HEL), as classified by the USDA NRCS.

	Score	Air	Water	Community
No manure application on HEL farmland	10		10.00	

Manure application on non-HEL farmland must be in the construction permit application and made a condition in the approved construction permit.

30. Additional separation distance, above minimum requirements (0 or 750 feet, see below), for the land application of manure to the closest:

* Residence not owned by the owner of the confinement feeding operation,
* Hospital,
* Nursing home, or
* Licensed or registered child care facility.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	3.25		1.75
Additional separation distance of 500 feet	10	6.50		3.50

(A) The department will award points only for the single building, of the four listed above, closest to the proposed confinement feeding operation.
(B) Minimum separation distance for land application of manure injected or incorporated on the same date as application: 0 feet.

(C) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
(D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.
(E) "Licensed child care center" -- a facility licensed by the department of human services providing child care or preschool services for seven or more children, except when the facility is registered as a child care home.
(F) "Registered child development homes" - child care providers certify that they comply with rules adopted by the department of human services. This process is voluntary for providers caring for five or fewer children and mandatory for providers caring for six or more children.
(G) A full listing of licensed and registered child care facilities is available at county offices of the Department of Human Services

31. Additional separation distance, above minimum requirements (0 or 750 feet, see below), for land application of manure to closest public use area.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	2.00		3.00

(A) "Public use area" - a portion of land owned by the United States, the state, or a political subdivision with facilities which attract the public to congregate and remain in the area for significant periods of time. Facilities include, but are not limited to, picnic grounds, campgrounds, cemeteries, lodges, shelter houses, playground equipment, lakes as listed in Table 2 in 567--Chapter 65, and swimming beaches. It does not include a highway, road right-of-way, parking areas, recreational trails or other areas where the public passes through, but does not congregate or remain in the area for significant periods of time.
(B) Minimum separation distance for land application of manure injected or incorporated on the same date as application: 0 feet.
(C) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
(D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.

32. Additional separation distance, above minimum requirements (0 or 750 feet, see below), for the land application of manure to the closest:
* Educational institution,
* Religious institution, or
* Commercial enterprise.

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	2.00		3.00

(A) Minimum separation distance for land application of manure broadcast on soil surface: 750 feet.
(B) Minimum separation distance for land application of manure injected or incorporated on same date as application: 0 feet.
(C) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.
(D) "Educational institution" - a building in which an organized course of study or training is offered to students enrolled in kindergarten through grade 12 and served by local school districts, accredited or approved nonpublic schools, area educational agencies, community colleges, institutions of higher education under the control of the state board of regents, and accredited independent colleges and universities.
(E) "Religious institution" - a building in which an active congregation is devoted to worship.
(F) "Commercial enterprise" - a building which is used as a part of a business that manufactures goods, delivers services, or sells goods or services, which is customarily and regularly used by the general public during the entire calendar year and which is connected to electric, water, and sewer systems. A commercial enterprise does not include a farm operation.

33. Additional separation distance of 50 feet, above minimum requirements (0 or 200 feet, see below), for the land application of manure to the closest private drinking water well or public drinking water well - OR well is properly closed under supervision of county health officials.

	Score	Air	Water	Community
Additional separation distance of 50 feet or well is properly closed	10		8.00	2.00

(A) Minimum separation distance for land application of manure injected or incorporated on the same date as application or 50-foot vegetation buffer exists around well and manure is not applied to the buffer: 0 feet.
(B) Minimum separation distance for land application of manure broadcast on soil surface: 200 feet.
(C) If applicant chooses to close the well; the well closure must be incorporated into the construction permit application and made a condition in the approved construction permit.

34. Additional separation distance, above minimum requirements, for the land application of manure to the closest:

* Agricultural drainage well,
* Known sinkhole,
* Major water source, or
* Water source

	Score	Air	Water	Community
Additional separation distance of 200 feet	5	0.50	2.50	2.00
Additional separation distance of 400 feet	10	1.00	5.00	4.00

(A) "Agricultural drainage wells" - include surface intakes, cisterns and wellheads of agricultural drainage wells.
(B) "Major water source" - a lake, reservoir, river or stream located within the territorial limits of the state, or any marginal river area adjacent to the state, which can support a floating vessel capable of carrying one or more persons during a total of a six-month period in one out of ten years, excluding periods of flooding. Major water sources in the state are listed in Tables 1 and 2 in 567--Chapter 65.
(C) "Water source" - a lake, river, reservoir, creek, stream, ditch, or other body of water or channel having definite banks and a bed with water flow, except lakes or ponds without an outlet to which only one landowner is riparian.
(D) The additional separation distances must be in the construction permit application and made a condition in the approved construction permit.

35. Additional separation distance above minimum requirements, for the land application of manure, to the closest:

* High quality (HQ) water,
* High quality resource (HQR) water, or
* Protected water area (PWA).

	Score	Air	Water	Community
Additional separation distance of 200 feet	5		3.75	1.25
Additional separation distance of 400 feet	10		7.50	2.50

(A) HQ waters are identified in 567--Chapter 61.
(B) HQR waters are identified in 567--Chapter 61.
(C) A listing of PWAs is available at: http://www.iowadnr.gov/Recreation/CanoeingKayaking/StreamCare/ProtectedWaterAreas.aspx.

36. Demonstrated community support.

	Score	Air	Water	Community
Written approval of 100% of the property owners within a one mile radius	20			20.00

37. Worker safety and protection plan is submitted with the construction permit application.

	Score	Air	Water	Community
Submission of worker safety and protection plan	10			10.00

(A) The worker safety and protection plan must be in the construction permit application and made a condition in the approved construction permit.
(B) The worker safety and protection plan and subsequent records must be kept on site with the manure management plan records.

38. Applicant signs a waiver of confidentiality allowing public to view confidential manure management plan land application records

	Score	Air	Water	Community
Manure management plan confidentiality waiver	5			5.00

The waiver of confidentiality must be in the construction permit application and made a condition in the approved construction permit. The applicant may limit public inspection to reasonable times and places.

39. Added economic value based on quality job development (number of full time equivalent (FTE) positions), and salary equal to or above Iowa department of workforce development median (45-2093)
-OR-
the proposed structure increases commercial property tax base in the county.

	Score	Air	Water	Community
Economic value to local community	10			10.00

The Iowa Department of Workforce Development regional profiles are available at http://www.iowaworkforce.org/centers/regionalsites.htm. Select the appropriate region and then select "Regional Profile."

40. Construction permit application contains an emergency action plan.

	Score	Air	Water	Community
Emergency action plan	5		2.50	2.50

(A) Iowa State University Extension publication PM 1859 lists the components of an emergency action plan. The emergency action plan submitted should parallel the components listed in the publication.
(B) The posting and implementation of an emergency action plan must be in the construction permit application and made a condition in the approved construction permit.
(C) The emergency action plan and subsequent records must be kept on site with the manure management plan records.

41. Construction permit application contains a closure plan.

	Score	Air	Water	Community
Closure Plan	5		2.50	2.50

(A) The closure plan must be in the construction permit application and made a condition in the approved construction permit.
(B) The closure plan must be kept on site with the manure management plan records.

42. Adoption and implementation of an environmental management system (EMS) recognized by the department.

	Score	Air	Water	Community
EMS	15	4.50	4.50	6.00

(A) The EMS must be in the construction permit application and made a condition in the approved construction permit.
(B) The EMS must be recognized by the department as an acceptable EMS for use with confinement operations.

43. Adoption and implementation of NRCS approved Comprehensive Nutrient Management Plan (CNMP).

	Score	Air	Water	Community
CNMP	10	3.00	3.00	4.00

The implementation and continuation of a CNMP must be in the construction permit application and made a condition in the approved construction permit.

44. Groundwater monitoring wells installed near manure storage structure, and applicant agrees to provide data to the department.

	Score	Air	Water	Community
Groundwater monitoring	15		10.50	4.50

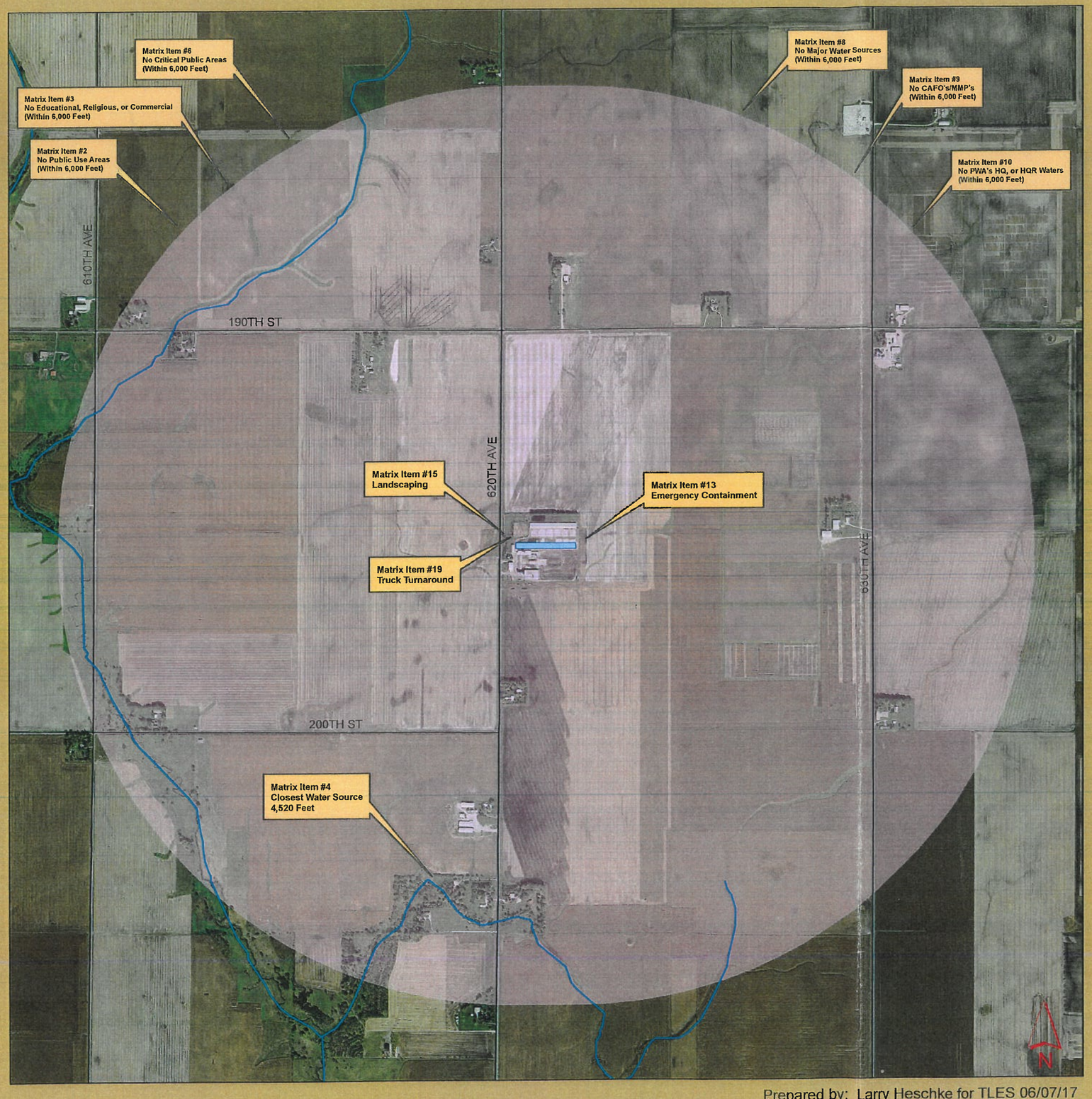
(A) Monitoring well location, sampling and data submission must meet department requirements.
(B) The design, operation and maintenance plan for the groundwater monitoring wells, and data transfer to the department, must be in the construction permit application and made a condition in the approved construction permit.

	Total Score	Air	Water	Community
	880	213.50	271.00	404.50
Score to pass	440	53.38	67.75	101.13

SUPPLEMENTAL MATRIX DOUMENTATION
for
Couser Cattle Company

Contact: Becky Sexton, Twin Lakes Environmental Services, LLC
712-297-5530

Matrix Summary Map



Prepared by: Larry Heschke for TLES 06/07/17

*Matrix Item #2 - 30 Points
(No Public Use Areas within 6,000')

*Matrix Item #3 - 30 Points
(No Educational Institutions, Religious Institutions, or commercial Enterprises within 6,000')

*Matrix Item #4 - 30 Points
(Closest Water Source - 4,020' above minimum requirement of 500')

*Matrix Item #6 - 10 Points
(No Critical Public Areas located within 6,000')

*Matrix Item #8 - 50 Points
(Closest Major Water Source - 22,690' above minimum requirement of 1,000')

*Matrix Item #9 - 25 Points
(Closest CAFO/MMP - 7,460' above minimum requirement of 3,960' to receive points)

*Matrix Item #10 - 30 Points
(No High quality (HQ) waters, High quality resource (HQR) waters, or Protected water areas (PWA) within 6,000')

*Matrix Item #13 - 20 Points
(Emergency Containment)

*Matrix Item #15 - 20 Points
(Utilization of Landscaping)

*Matrix Item #19 - 20 Points
(Truck Turnaround)

Matrix Item #20 - 30 Points
(No History of Administrative Orders in the Last Five Years)

Matrix Item #23 - 25 Points
(Family Farm Tax Credit qualification)

Matrix Item #24 - 10 Points
(Facility Size - 2,001 to 3,000 Animal Unit Capacity)

Matrix Item #25 - 25 Points
(Feeding and Watering Systems that Significantly Reduce Manure Volume)

Matrix Item #29 - 10 Points
(No Manure Application on HEL Farmland)

Matrix Item #30 - 10 Points
(Manure application - additional 500' from closest residence, hospital, nursing home, or childcare facility)

Matrix Item #31 - 5 Poins
(Manure application - additional 200' from closest public use area)

Matrix Item #32 - 5 Points
(manure application - addition 200' from closest educational institution, religious institution, or commercial enterprise)

Matrix Item #33 - 10 Points
(Manure application - addtional 50 feet from closest private or public drinking water well)

Matrix Item #35 - 10 Points
(Additional Separation Disance of 400' to the Closest HQ Water, HQR Water, or PWA)

Matrix Item #39 - 10 Points
(Economic Value to Local Community)

Matrix Item #40 - 5 Points
(Emergency Action Plan)

Matrix Item #41- 5 Points
(Construction Permit Application Contains a Closure Plan)

Matrix Item #44 - 15 Points
(Groundwater Monitoring)

*Item Shown On Map

440
Total Points

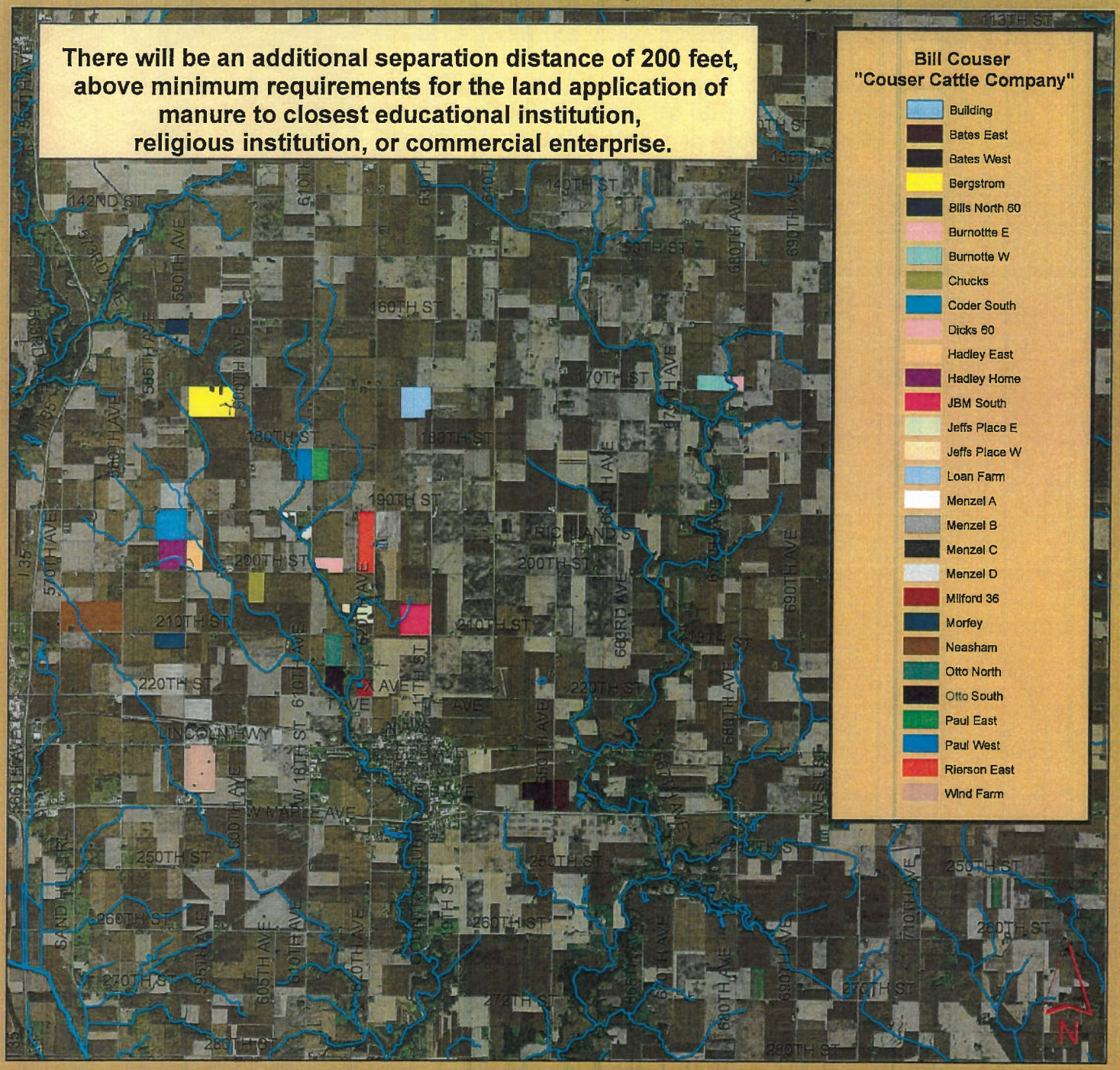
Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius

NW1/4 SW1/4 Section 19 T84N R22W Richland Plat
Story County

0 750 1,500 3,000 4,500 6,000 Feet

Matrix Item #32 (5 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Minimum separation distance for land application of manure injected or incorporated on the same date as application is 0 feet.

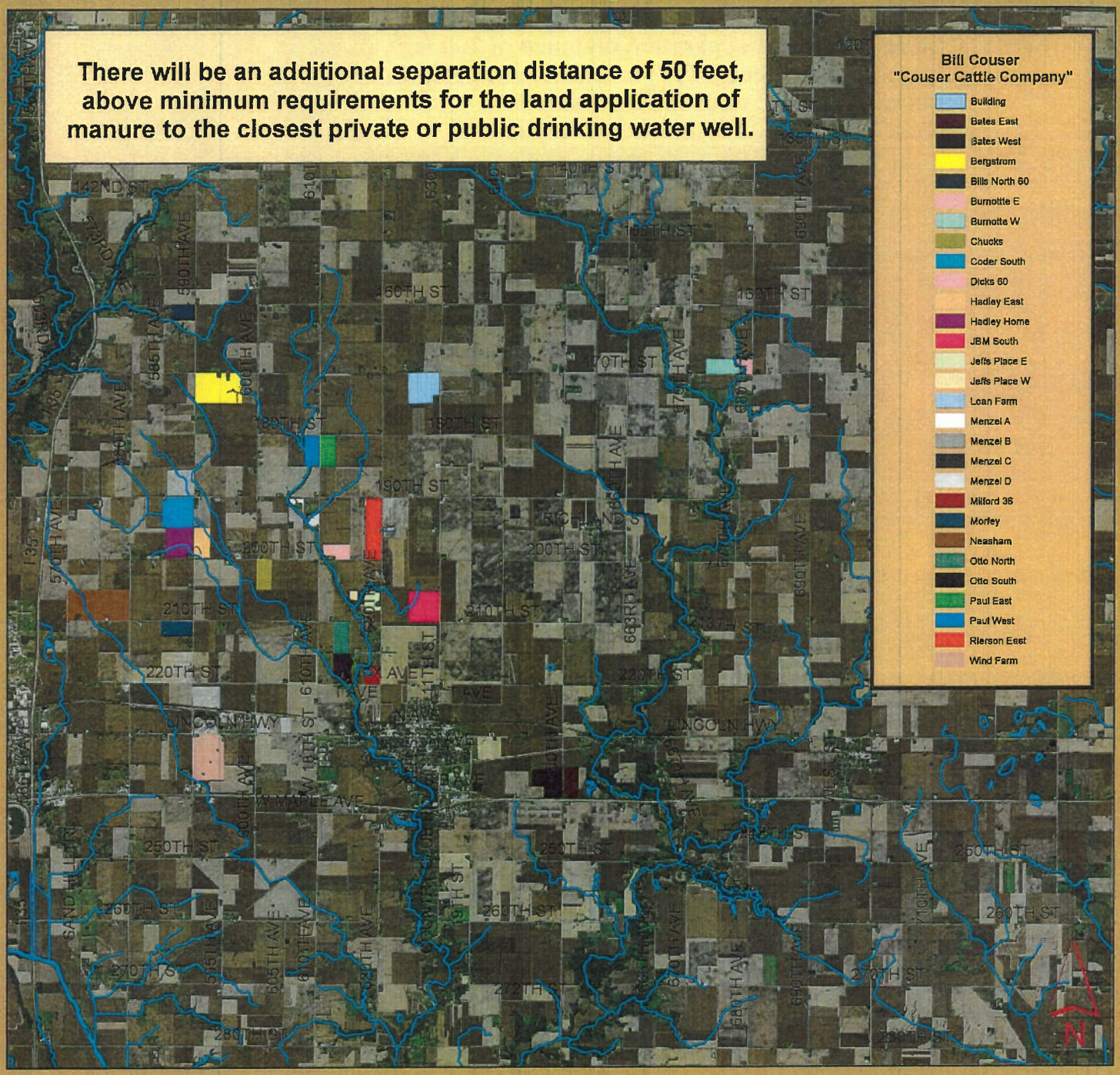
There will be an addition separation distance of 200 feet to the closest educational institution, religious institution, or commercial enterprise.

Qualifies for 5 Points.

0 5,500 11,000 22,000 33,000 44,000 Feet

Prepared by: Larry Heschke for TLES 06/07/17

Matrix Item #33 (10 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Minimum separation distance for land application
of manure injected or incorporated on the same date
as application is 0 feet.

There will be an addition separation distance
of 50 feet from the closest private or public drinking water well.

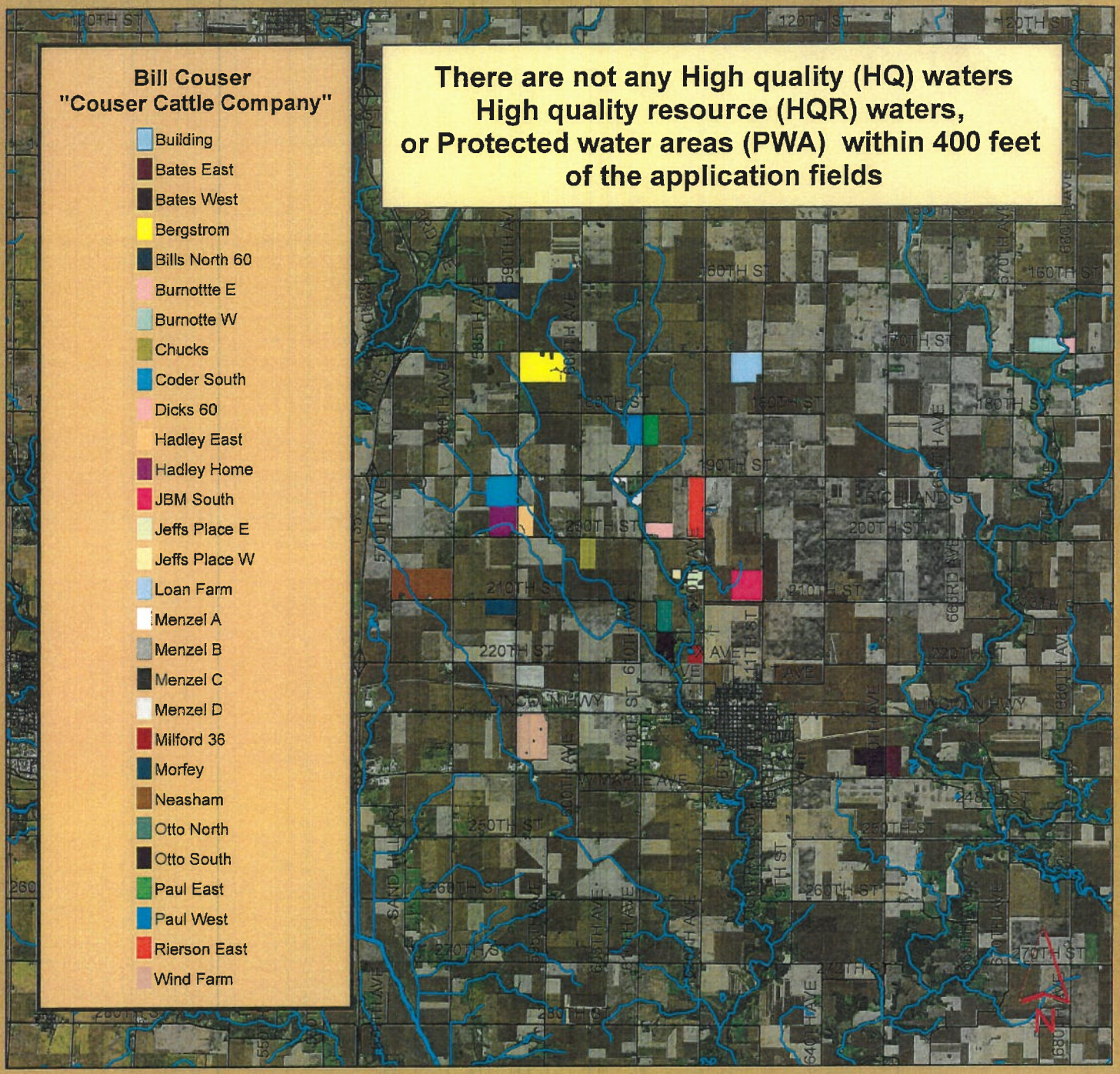
Qualifies for 10 Points.

0 5,000 10,000 20,000 30,000 40,000 Feet

Prepared by: Larry Heschke for TLES 06/07/17

34. No points were taken.

Matrix Item #35 (10 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Additional separation distance above minimum requirements,
for land application of manure to the closest: High quality (HQ) water,
High quality resource (HQR) water, or Protected water area (PWA).

There is no HQ water, HQR water, or PWA within the addition separation of
400 feet of each application area.

Qualifies for 10 Points.

0 5,50011,000 22,000 33,000 44,000 Feet

Prepared by: Larry Heschke for TLES 06/05/17

36. No points were taken on this item.
37. No points were taken on this item.
38. No points were taken on this item.

Matrix/Item #39 (10 points)

23. Our full time equivalent position and salary is above the Iowa department of workforce development median as we pay our full time employee $16.50/ hour while the state median wage for this work is $13.21 and the experienced wage is $15.77.

Matrix/Item#40 (5 points)

40. Construction permit application contains an emergency action plan. See attached.

We qualify for 5 points.

Contact Names and Numbers

Partial System Failure

Electricity
Name: Alliant Energy
Phone: 800-822-4348

Plumbing
Name:Rewarts Plump
Phone:515-290-3981

Ventilation
Name: Sorem Sales
Phone: 515-231-0162

Heating
Name: Van Sickel Heating
Phone: 515-291-8099

Feed
Name: Key Coop
Phone: 515-380-5461

Veterinarian
Name: Iowa State Uni
Phone: 515-294-2192

Mortality Disposal
Until compost facility is complete or in case of emergencies:
Name: National By Produces
Phone:515-288-2168

Insurance Carrier
Name: Town and Country Phone:800-418-3188
Policy#:3026660721
Other:

_____

_____

Contact Names and Numbers

Site Name:
Couser Cattle Company

Owner/Operator:
Name:Bill Couser

Phone:515-231-0614

Site Address (including e911 address)

19567 620th Ave.
Nevada, Iowa 50201

Special Directions to the Site:
620th Ave North of Nevada Iowa
3.5 miles East

Human Injury:
First Aid Kit is located: Shop Bathroom

Rescue Unit/Ambulance:
Phone: 911

Doctor or Physician:
Name:Zimmerman ----
Phone:515-382-5471

Hospital or Medical Clinic Name:
McFarland Clinic
Phone:515-382-5471

Fire Depattment Phone:211

Fire extinguisher located:
West Shop

County Sheriff
Name: Paul Fitzgerald

Phone: 911

County Health Official
Name: Margert Jayne

Phone:515-382-7230

Poison Control Center
Phone: 800-222-1222

Other Important Numbers:

Name: Tim Couser

Phone:515-231-3851

Name: Casey Couser

Phone:515-231-6149

Name: Nancy Couser

Phone:515-231-1853

Contact Names and Numbers
For Emergency Action Plan

Stop all activity and focus all attention and resources to controlling manure release.

Iowa Department of Natural
Resources Field Office
State law requires that you report manure spills or leaks to the Iowa Department of Natural Resources as soon as possible, but not later than 6 hours from onset or discovery of the problem.
Field Office
Work Days (8 a.m. - 4 :30 p.m.) Phone :

Weekends, Holidays, and After Business Hours
Phone :515-725-8694

Contact Twin Lakes Environmental Services, LLC, at any time for environmental consulting.
Twin Lakes Environmental Services, LLC
712-297-5530 - Office
712-297-8720 - Residence
712-210-2164- Becky Sexton
Cell 712-830-3960 -Mike Sexton Cell
County Sheriff
Name :
Phone : 911

Contractors

Earth Moving
Name:Construct

Phone: 515-203-6838

Pumping Equipment
Name: Same
Phone:

Hauling Equipment
Name :Same
Phone:

Equipment Owners
Name:Same

Phone:
County Engineer
Name: Jake Hall
Phone: 515-382-7355

Matrix/Item#41 (5 points)

41 This is our Closure Plan as of 3/10/15. This plan has been written in accordance with NRCS Conservation Practice Standard "Closure of Waste Impoundments". In meeting the standards of the NRCS' Code #360 (enclosed herewith) this also meets the standards and requirements which are set forth by the Iowa DNR. This closure plan is based off of the NRCS Conservation Practice Standard "Waste Facility Closure" (#Code 360). The closure shall comply with all federal, state, local and tribal laws, rules and regulations that are in place at the time of the closure.

Applicant will notify the DNR Field Office of their intent to close this structure subsequent to six (6) months of the structure being empty of livestock. Applicant will follow any closure rules that may be established at that time that is more stringent than this closure plan. The applicant and the DNR will establish a time line of completion for the closure plan.

1. Manure should be well agitated to try to remove as much manure as possible. The effluent, solids and any sludge will have an analysis for both nitrogen and phosphorus. This analysis will be used in determining the amount of material to be applied on a per acre basis according to the Manure Management Plan.
2. Non-concrete construction material should be removed and disposed of following DNR guidelines.
3. Slats should be removed for pit cleaning. Slats can be broken and added back after the pit is clean and walls have been knocked in.
4. All solids left in concrete containment shall be removed and field applied using agronomic rates.
5. After concrete containment is cleaned, applicant shall contact the DNR Field Office for visual inspection if DNR so advises. If DNR determines containment clean enough to not create environmental impact, applicant may proceed to the next step.
6. Floor of containment shall be broken up so as to not impound water. Sub drain tile may be removed. Containment walls will be broken up and pulled into pit area. Demolished building materials shall be placed on top of concrete if not disposed of in another way.
7. Materials are to be covered with soil to a settled depth of one foot, and the backfill be sufficiently mounded such that runoff will be diverted from the site after the backfill settles.
8. Measures shall be taken during the construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

We qualify for 5 points.

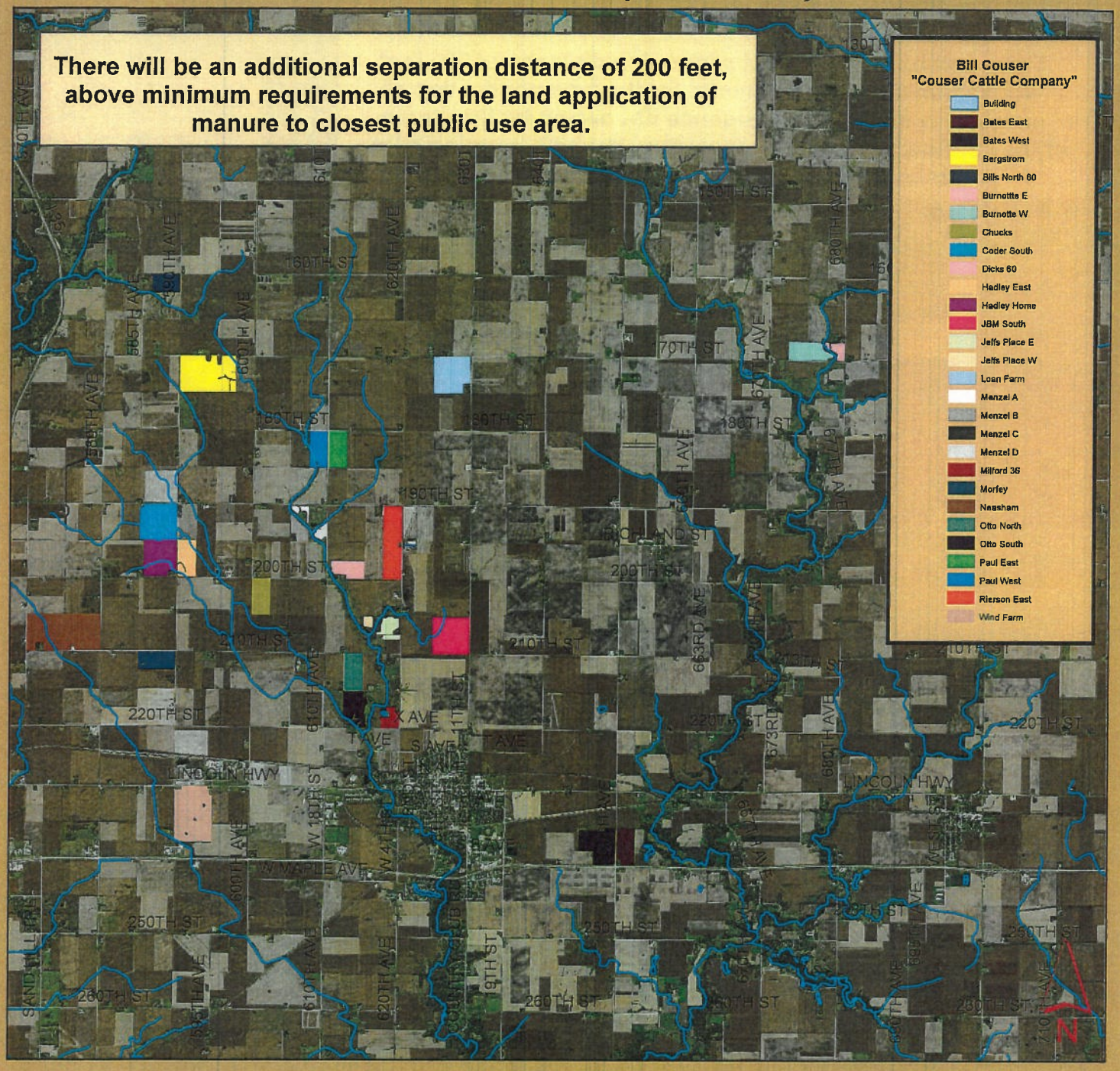
42. No points were taken on this item.
43. No points were taken on this item.

Matrix/Item#44 (15 points)

44. We have changed nothing from our original matrix filing for Matrix Item #44, our groundwater monitoring has not changed since we initially installed this system on our farm and continue to report to the department as required by our agreement.

We qualify for these 15 points.

Matrix Item #31 (5 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Minimum separation distance for land application of manure injected or incorporated on the same date as application is 0 feet.

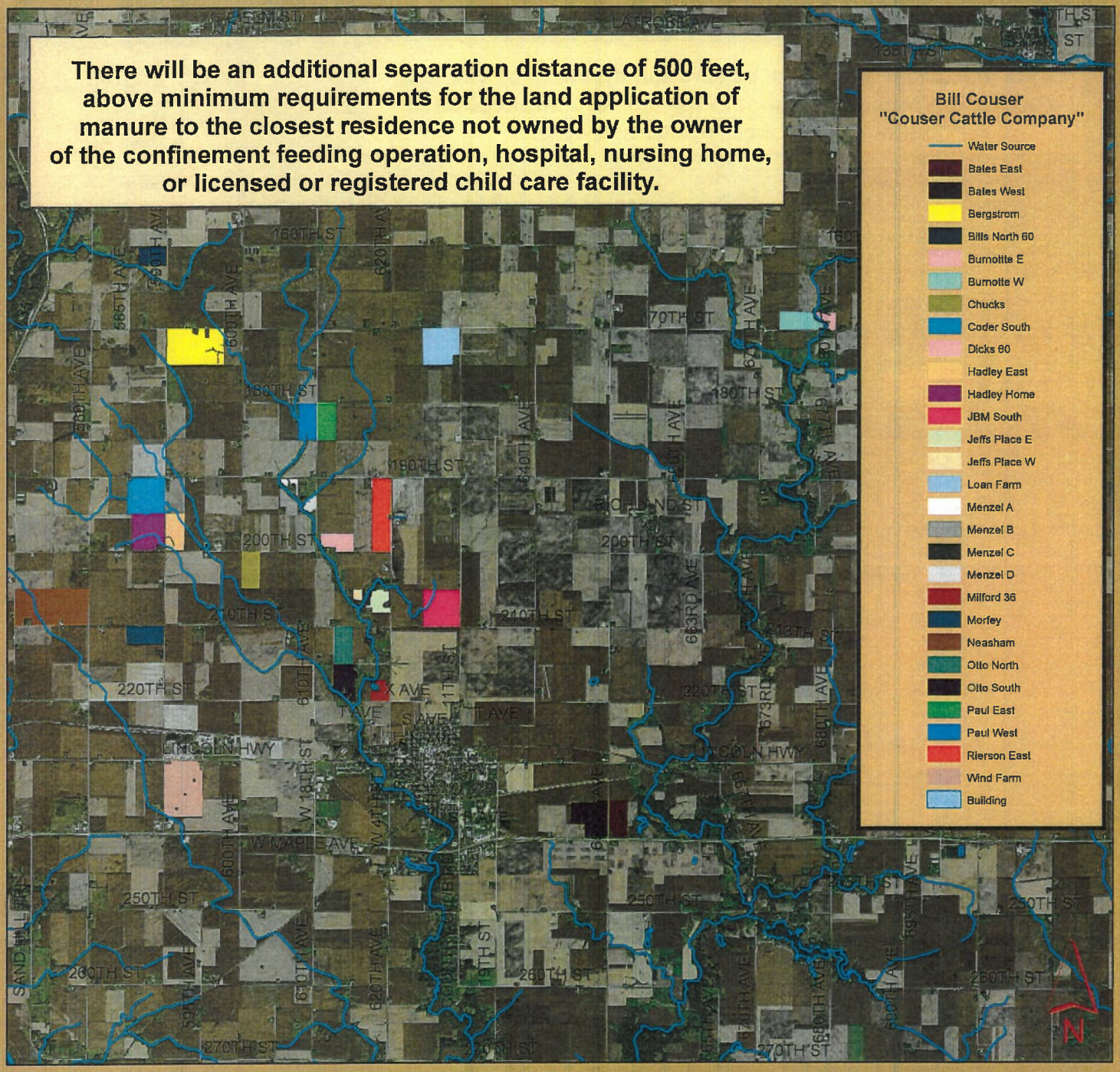
There will be an addition separation distance of 200 feet to the closest public use area.

Qualifies for 5 Points.

0 4,500 9,000 18,000 27,000 36,000 Feet

Prepared by: Larry Heschke for TLES 06/07/17

Matrix Item #30 (10 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Minimum separation distance for land application of manure injected or incorporated on the same date as application is 0 feet.

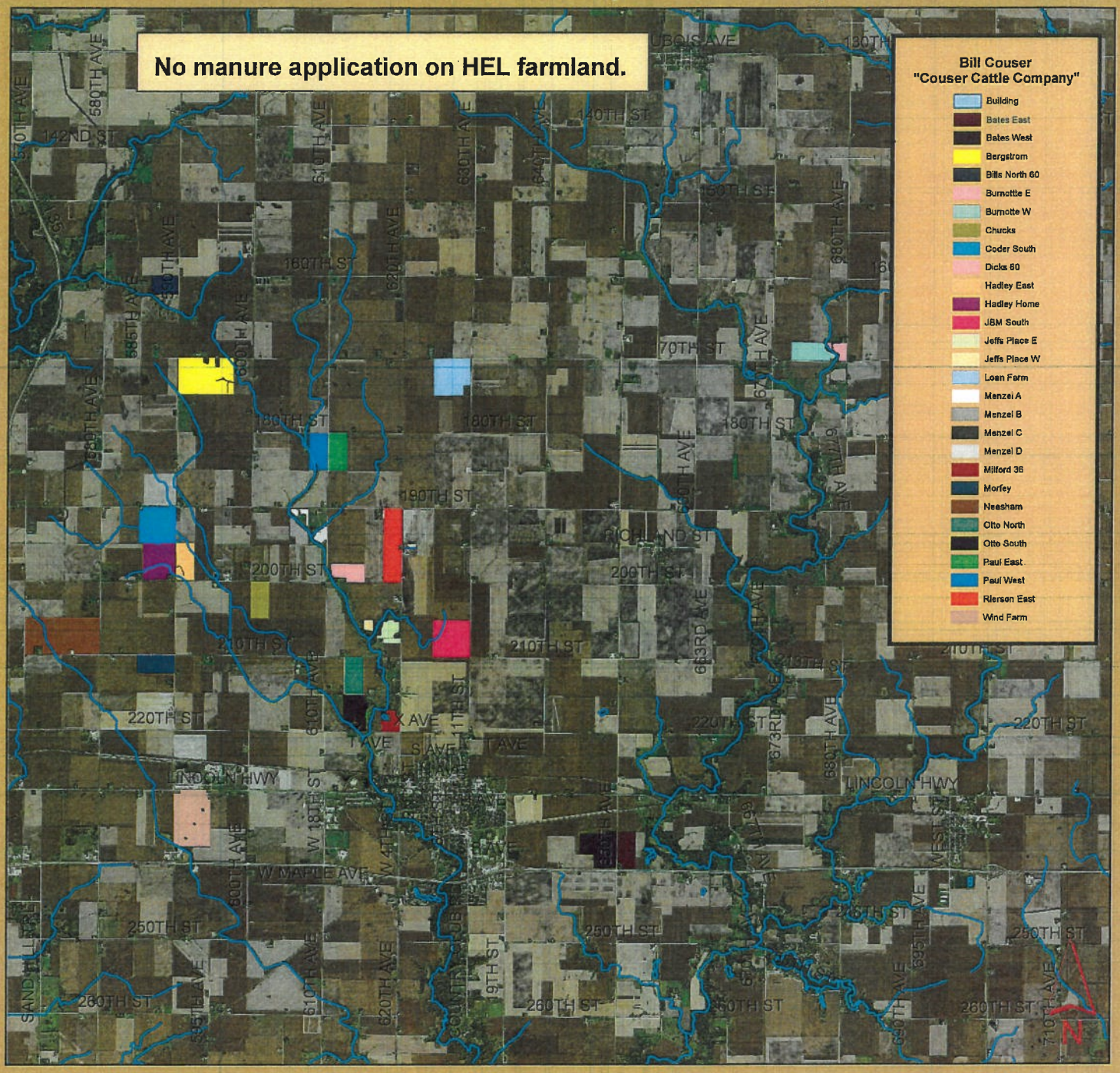
There will be an addition separation distance of 500 feet to the closest residence not owned by the owener of the confinement feeding operation, hospital, nursing home, or licensed or registered child care facility.

Qualifies for 10 Points.

0 5,00010,000 20,000 30,000 40,000 Feet

Prepared by: Larry Heschke for TLES 06/07/17

Matrix Item #29 (10 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Land application of manure does not occur on highly erodible land (HEL), as classified by the USDA NRCS.

Qualifies for 10 Points.

0 4,250 8,500 17,000 25,500 34,000 Feet

Prepared by: Larry Heschke for TLES 06/07/17

26. No points were taken on this item.
27. No points were taken on this item.
28. No points were taken on this item.

Matrix/Item #25 (25 points)

25. We have claimed the 25 points because livestock feeding and watering systems are significantly reducing manure volume. Traditional cattle feeding and watering equipment consisted of dry feeders with a wall or gate mounted nipple waterers. A cow can eat dry food from a shelf or eat food from a bottom shelf that can be mixed with water from a nipple in the lower trough. They are made of industrial plastics and stainless steel. The nipples or floats are placed inside the unit for protection and adjustment. Water is regulated to use less energy in the winter and maintaining fresh water year round. Waters are placed in the walls between pens to maximize use and no waste making pen and manure dryer.

Design: Several manufacturers can supply wet/dry feeders however, they are similar in they all provide for waterers that are contained in a trough so when the cow drinks any spillage is caught in the trough and mixed with feed. The troughs are welded watertight and strong enough to withstand any breakage from abuse. Materials are made of industrial plastics or stainless steel to withstand any breakage from abuse and prevent corrosion. The feeders have adjustable feed flow valves to reduce waste. Waterers are placed in the walls between pens to maximize use, waste less water and keep pen and manure dryer. The water in the waterers is regulated, especially in the winter, to use less energy and maintain fresh water year round. Refer to the enclosed study on wet/dry feeders and on the attached manufacturer's information.

Operation: The feed flow valves and water pressure regulators have standard setting as there are these applications in use. Easy adjustments can be made in the field to optimize feeding yet reduce waste. There are humans in the barn daily and perhaps the most important observation that is made is to check to see if feed and water is being delivered to these animals.

Maintenance: Maintenance of the feeders and waterers is a continuous process as this if the life blood of the facility. The barns are occupied with personnel on a daily basis looking specifically at feeders, waterers and cows. The equipment has easy adjustments and small inventory of the common replacement parts is kept on site. All water usage on site is metered by either the utility or owner. Water usage for a given number of cows is a fairly predictive number. Monitoring of this number will indicate proper functioning of the equipment.

We qualify for 25 points.

Table 1. Animal Unit Capacity (AUC): **(No. HEAD) x (FACTOR) = AUC**

Animal Species	a) Existing AUC (Before permit)			b) Total Proposed AUC (After permit)		
	(No. Head)	x (Factor)	= AUC	(No. Head)	x (Factor)	= AUC
Slaughter or feeder cattle	2700	1.0	2700	2700	1.0	2700
Immature dairy cattle		1.0			1.0	
Mature dairy cattle		1.4			1.4	
Gestating sows		0.4			0.4	
Farrowing sows & litter		0.4			0.4	
Boars		0.4			0.4	
Gilts		0.4			0.4	
Finished (Market) hogs		0.4			0.4	
Nursery pigs 15 lbs to 55 lbs		0.1			0.1	
Sheep and lambs		0.1			0.1	
Horses		2.0			2.0	
Turkeys 7lbs or more		0.018			0.018	
Turkeys less than 7 lbs		0.0085			0.0085	
Broiler/Layer chickens 3 lbs or more		0.01			0.01	
Broiler/Layer chickens less than 3 lbs		0.0025			0.0025	
Fish		0.001			0.001	

Note: If the "Existing AUC" (column a) is 500 AU or less, enter the "Total proposed AUC" (column b) in the "New AU" (column c)

TOTALS:	a) Existing AUC:	2700	b) Total proposed AUC:	2700	c) New AU = b) - a): d)	-0-

(This is the AUC of the operation)

B) Calculating AWC - Only for operations first constructed prior to March 1, 2003

The AWC is needed for an operation that was first constructed prior to March 1, 2003, to determine some of the minimum separation distance requirements for construction or expansion.

The AWC is the product of multiplying the maximum number of animals that you would ever confine at any one time by their average weight (lbs) during the production cycle. Then add the AWC if more than one animal species is present (examples on how to determine the AWC are provided in 567 IAC 65.1(455B).)

If the operation was first constructed prior to March 1, 2003, you must complete all applicable columns in Table 2:

Table 2. Animal Weight Capacity (AWC): **(No. head) * (Avg. weight, lbs) = AWC, lbs**

Animal Species	a) Existing AWC (Before Permit)			b) Proposed AWC (After permit)		
	(No. head) x	avg weight	= AWC	(No. head) x	avg weight	= AWC
Slaughter or feeder cattle						
Immature dairy cattle						
Mature dairy cattle						
Gestating sows						
Farrowing sows & litter						
Boars						
Gilts						
Finished (Market) hogs						
Nursery pigs 15 lbs to 55 lbs						
Sheep and lambs						
Horses						
Turkeys 7lbs or more						
Turkeys less than 7 lbs						
Broiler/Layer chickens 3 lbs or more						
Broiler/Layer chickens less than 3 lbs						
Fish						

TOTALS:	a) Existing AWC:		b) Total proposed AWC:		c) New AWC = b) - a):	

(This is the AWC of the operation)

Matrix/Item #24 (10 points)

24. This farm will have an animal unit capacity of 2700 animals which qualifies them for a score of 10 points on this item. See attached.

We qualify for 10 points.

Matrix/Item #23 (25 points)

23. The Story County Treasurer has confirmed that William D. and Nancy Couser have the family farm tax credit for this property.

We qualify for 25 points.

21. No points were taken on this item.
22. No points were taken on this item.

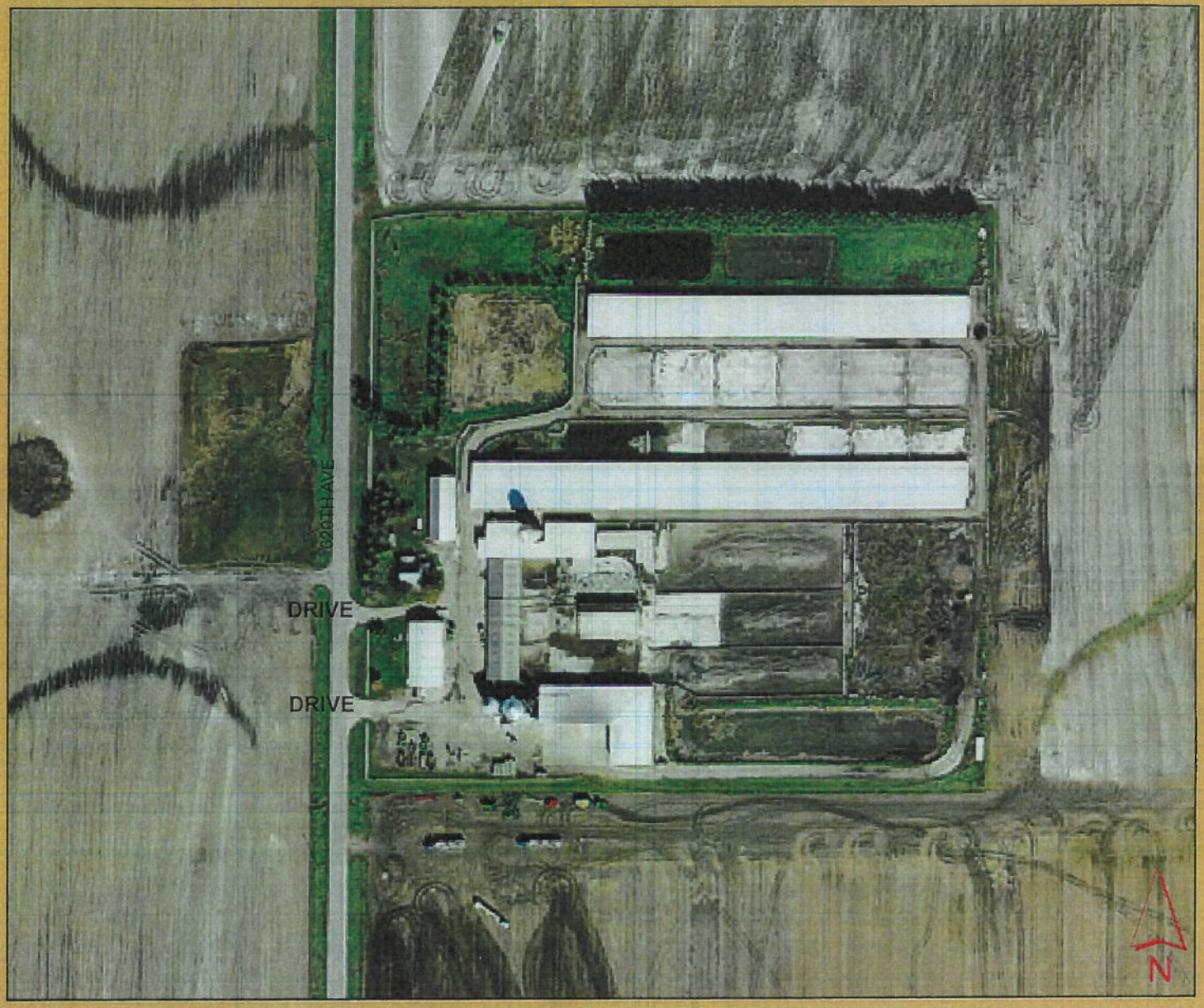
Matrix/Item #20 (30 points)

20. Couser Cattle Company has not had any Administrative Orders at any point in the last five years. Further, no one with an ownership interest in any part of the site has had any Administrative Order within the past five years which qualifies them for these points.

The following web site provided evidence we qualified for these points:
https://programs.iowadnr.gov/animalfeedingoperations/FacilitySummary.aspx

We qualify for 30 points.

Matrix Item #19 (20 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

A. Design: The site will be built to allow ample room for trucks to enter the site and turn around for delivery or load out of animals or feed. The layout will consist of an area east of the buildings for a truck turn-a-round. The driveway area will be surfaced with layered crushed rock to a thickness adequate to support loaded trucks. A diagram is enclosed to help envision what is proposed.

B. Operation: The driveway will be operated to provide for safe entrance and exit to the property for delivery vehicles and not to obstruct the county road.

C. Maintenance: Crushed rock will be applied as necessary to the driveway to keep trucks from sinking on entering/exiting the property for delivery or load outs; Snow will be removed in a timely fashion to keep the drive clear and safe for trucks. Sufficient amount of rock will be kept on the drive to keep the trucks from tracking mud onto the county roadway.

Qualifies for 20 points.

0 100 200 400 600 800 Feet

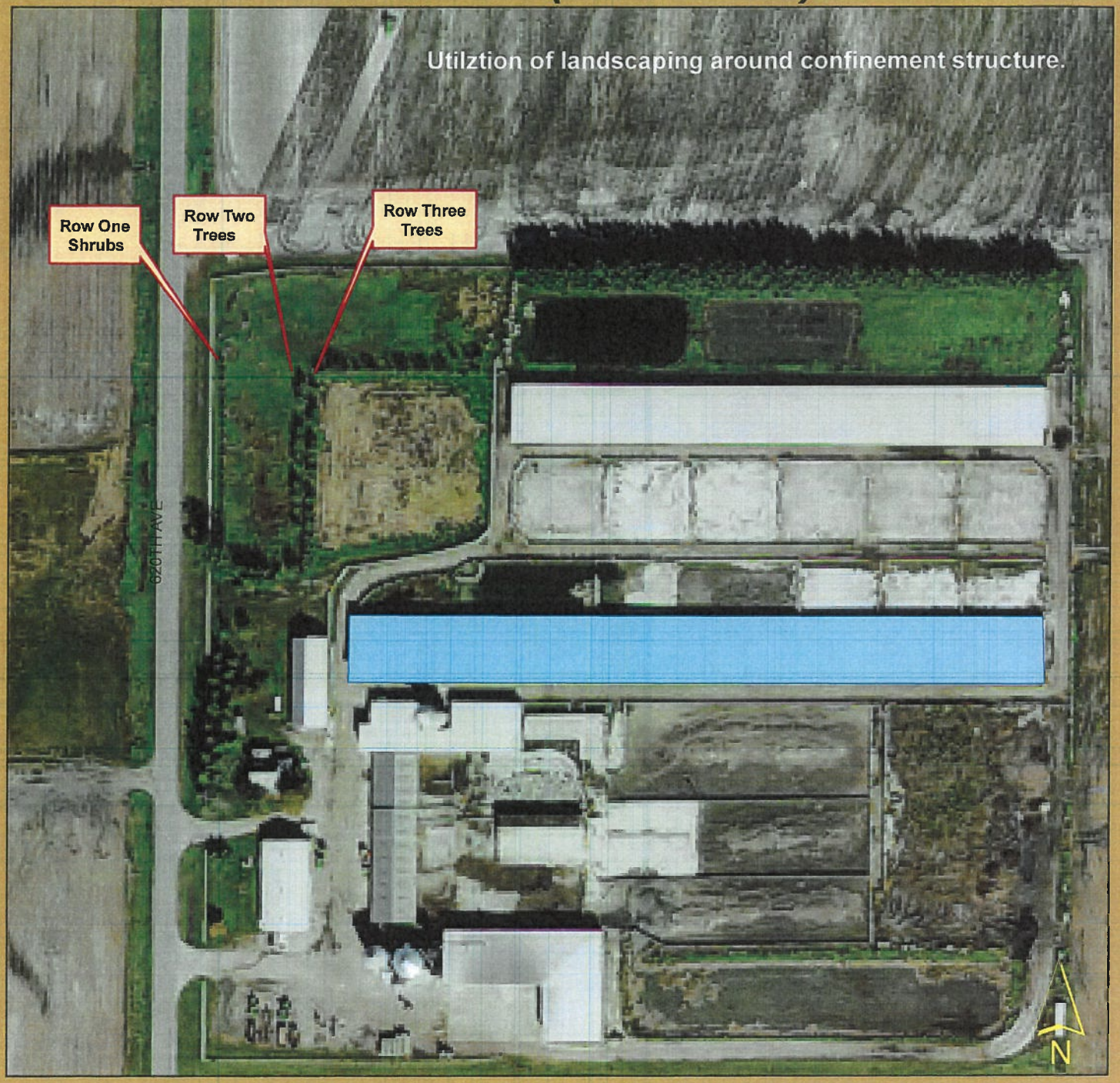
Bill Couser
"Couser Cattle Company"

—Water Source

Prepared by: Larry Heschke for TLES 06/05/17

16. No points were taken on this item.
17. No points were taken on this item.
18. No points were taken on this item.

Matrix #15 (20 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes

The design, operation, and maintenance plan for the landscaping must be in the construction permit application and made a condition in the approved construction permit. The design should contain at least three rows of trees and shrubs, of both fast and slow-growing species that are well suited for the site.

Qualifies for 20 Points

0 75 150 300 450 600 Feet

Bill Couser
"Couser Cattle Company"

Water Source
Building

Prepared by: Larry Heschke for TLES 06/05/17

14. No points were taken on this item.

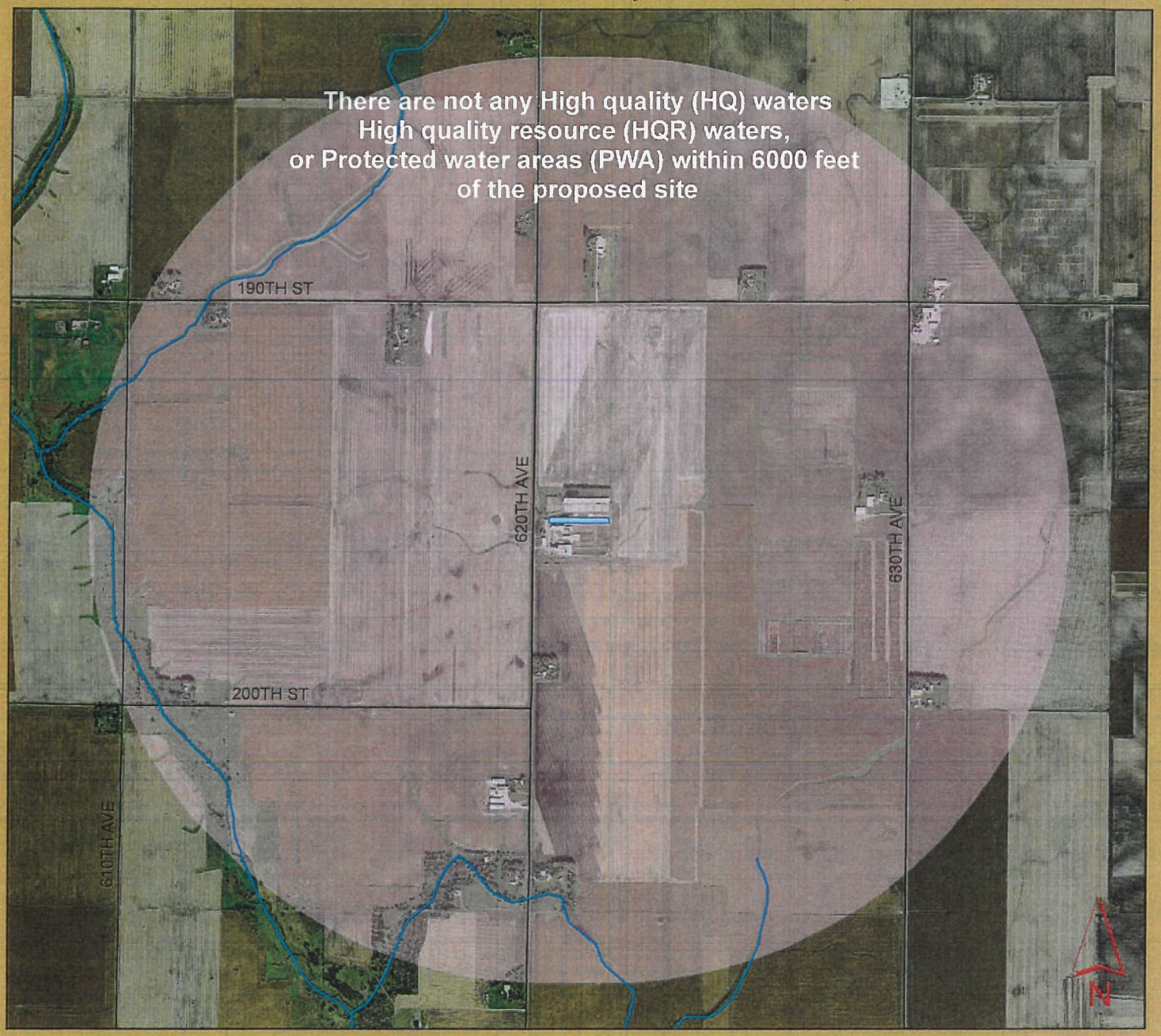
Matrix/Item#13 (20 points)

13. We have changed nothing from our original matrix filing for Matrix Item #13, when we built our site we installed an emergency containment area that we have maintained and contained as required by Iowa law. This system is working very well for our facility.

We qualify for these 20 points.

11. No points were taken on this item.
12. No points were taken on this item.

Matrix Item #10 (30 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6 (included in application) Separation distance from proposed confinement structure to closest: High quality (HQ) waters, High quality resource (HQR) waters, or Protected water areas (PWA) is at least two times the minimum required separation distance of 1000 feet.

The measured distance to High quality (HQ) watersHigh quality resource (HQR) waters, or Protected water areas (PWA) is more than 6000 feet or more than two times the minimum distance of a 1000 feet.

Qualifies for 30 Points.

0 750 1,500 3,000 4,500 6,000 Feet

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius

Prepared by: Larry Heschke for TLES 06/05/17

Matrix - Item #9 (25 Points)

Distance between the proposed confinement structure and the nearest confinement facility that has a submitted department manure management plan is 11,420 feet.

NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Required distance between the proposed confinement structure and the nearest confinement facitlity that has a submitted department manure management plan that is 3,960 feet or more.

The measured distance to the closest confinement facility that has a submitted department manure management plan is 11,420 feet which is 7,460 feet above the required separation distance of 3,960 feet.

Qualifies for 25 Points.

0 600 1,200 2,400 3,600 4,800 Feet

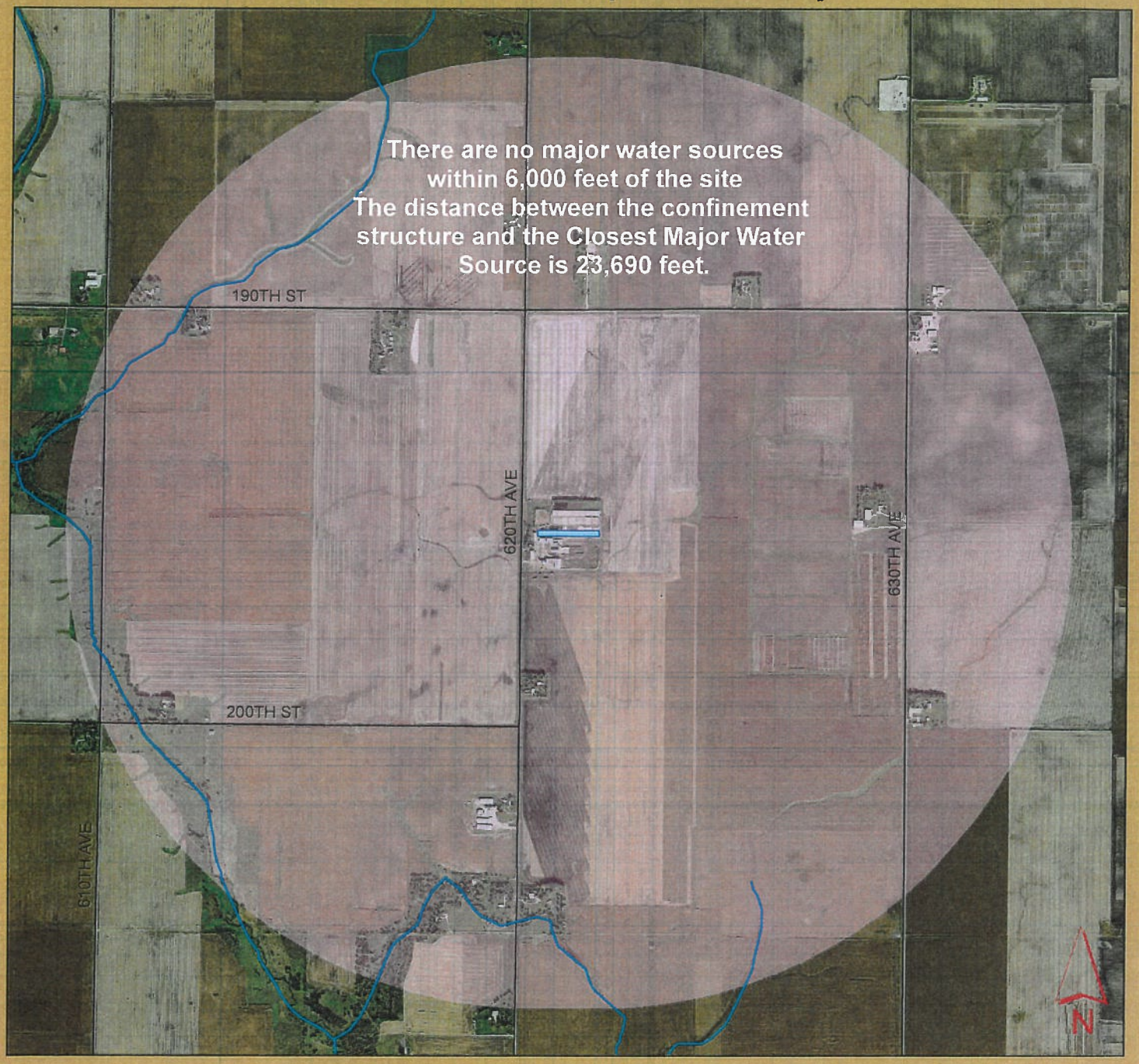
Bill Couser
"Couser Cattle Company"

Water Source

Building

Prepared by: Larry Heschke for TLES 06/05/17

Matrix Item #8 (50 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6 (included in application) the minimum required separation for Closest Agricultural Drainage Well, Known Sinkhole or Mafor Water Source is 1,000 feet.

The measured distance to Closest Major Water Source (West Indian Creek) is 23,690 feet or 22,690 feet above the minimum requirement of 1,000 feet.

Qualifies for 50 Points.

0 750 1,500 3,000 4,500 6,000 Feet

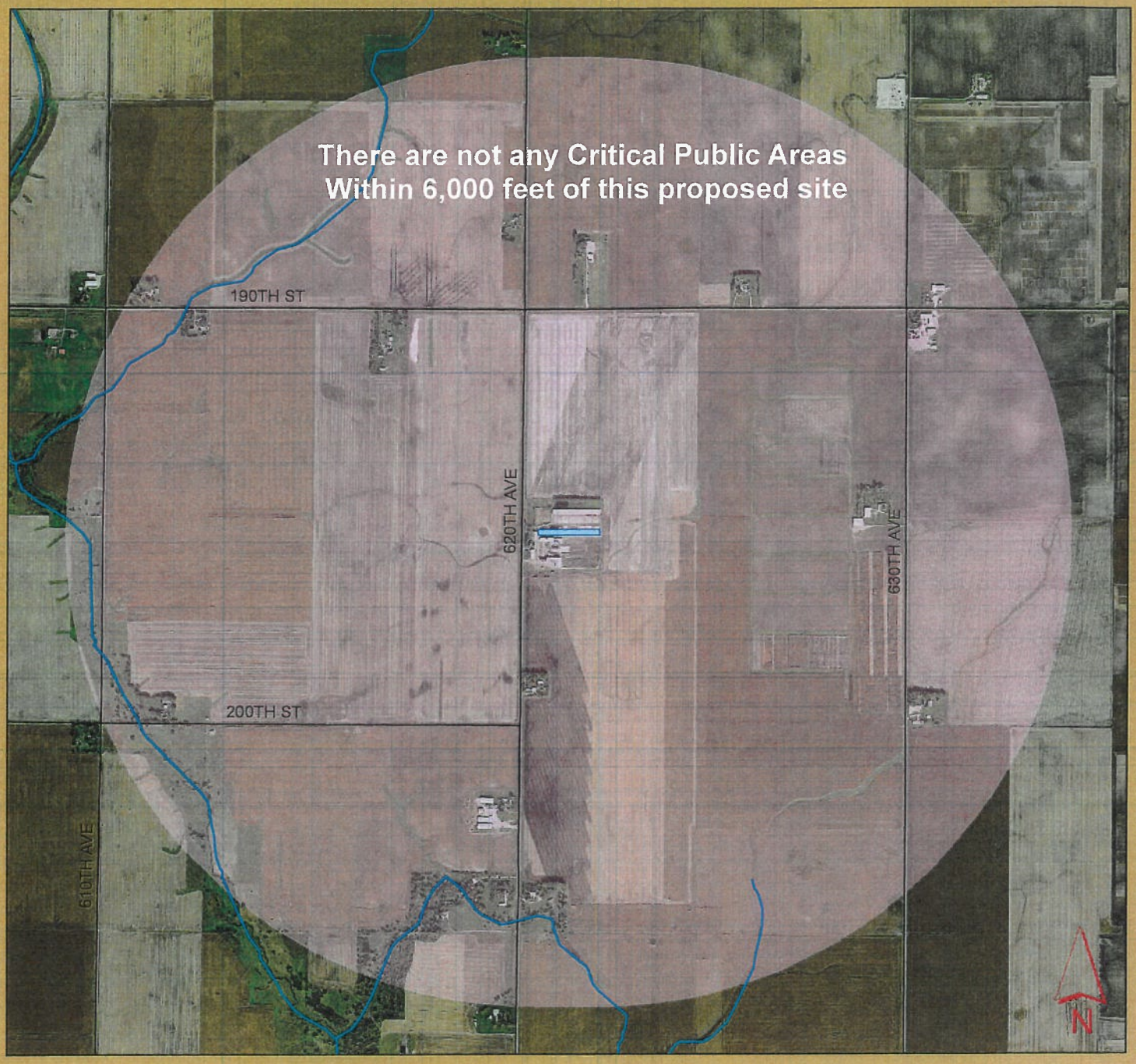
Bill Couser
"Couser Cattle Company"

Water Source
Building
6000 Foot Radius

Prepared by: Larry Heschke for TLES 06/05/17

7. No points were taken for this item.

Matrix Item #6 (10 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6, (included in application) the minimum required separation for Closest Critical Public Use Area is 2,500 feet.

The mearsured distance to Closest Critical Public Use Area is over 6,000 feet and is therefore more than the additonal 1,501 feet over the minimum requirement of 2,500 feet.

Qualifies for 10 Points.

0 750 1,500 3,000 4,500 6,000 Feet

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius

Prepared by: Larry Heschke for TLES 06/05/17

5. No points were taken on this item.

Matrix Item #4 (30 Points)

NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6 (included in application) the minimum required separation for Closest Water Source is 500 feet.

The measured distance to Closest Water Source is 4,520 feet or 4,020 feet above the minimum requirement of 500 feet.

Qualifies for 30 Points.

0 250 500 1,000 1,500 2,000 Feet

Bill Couser
"Couser Cattle Company"

— Water Source

Prepared by: Larry Heschke for TLES 06/05/17

Matrix Item #3 (30 Points)

NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6, (included in application) the minimum required separation for Closest Educational institution, Religious institution, or Commercial Enterprise is 1,875 feet.

The measured distance to Closest Educational institution, Religous institution, or Commercial Enterprise is more than 6,000 feet and is therefore more than the additional 1501 feet over the minimum requirement of 1,875 feet.

Qualifies for 30 Points.

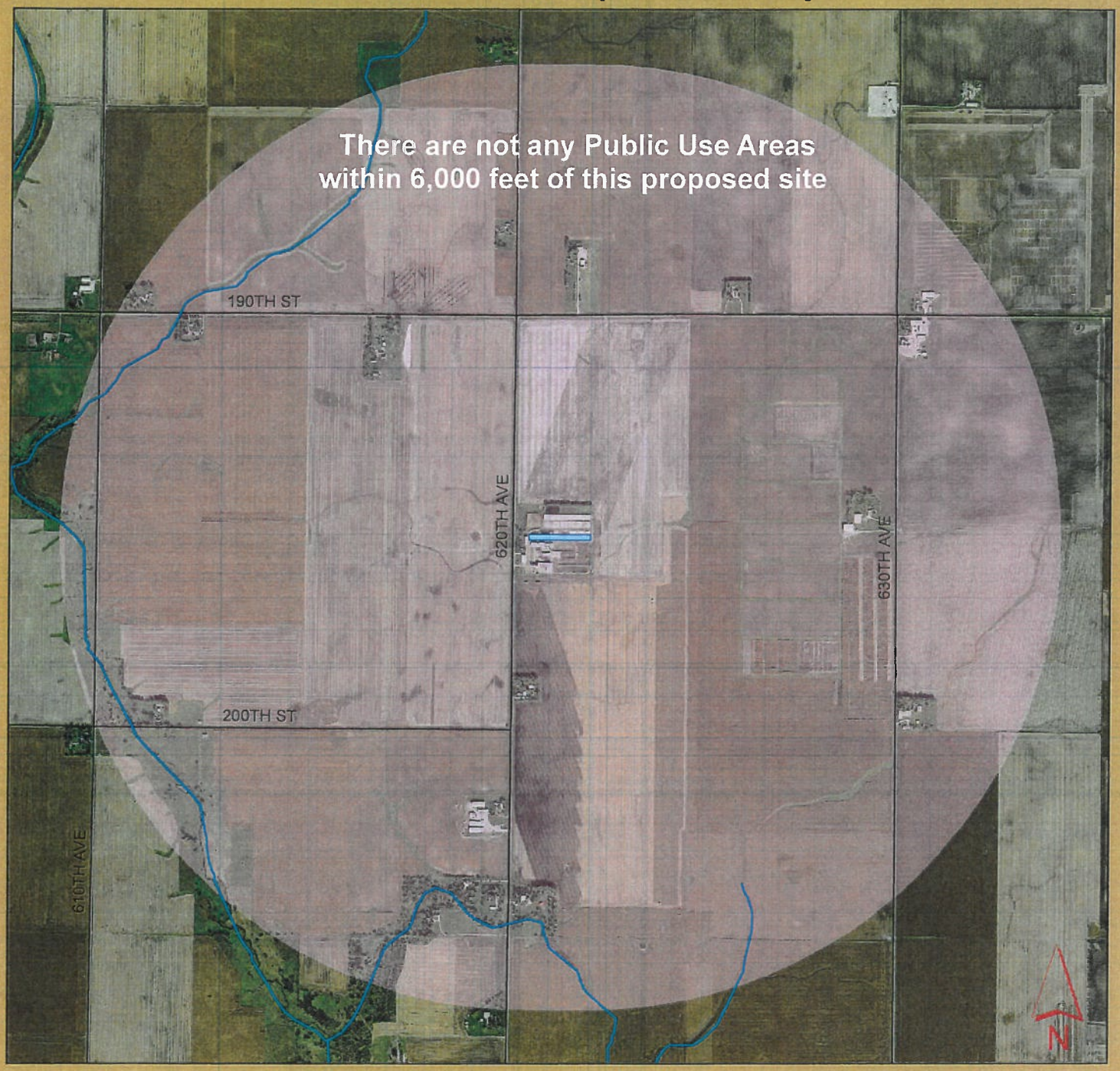
0 750 1,500 3,000 4,500 6,000 Feet

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius

Prepared by: Larry Heschke for TLES 06/05/17

Matrix Item #2 (30 Points)



NW1/4 SW1/4 Section 19 T84N R22W Richland Plat Story County

Site Notes:

Per Table 6, (included in application) the minimum required separation for Closest Public Use Area is 2,500 feet.

Distance to Closest Public Use Area is over 6,000 feet and is therefore more than the additional 1,501 feet over the minimum requirement of 2,500 feet.

Qualifies for 30 Points.

0 750 1,500 3,000 4,500 6,000 Feet

Bill Couser
"Couser Cattle Company"

- Water Source
- Building
- 6000 Foot Radius

Prepared by: Larry Heschke for TLES 06/05/17

1. No points were taken.

Manure Management Plan Form
Animal Feeding Operation Information

Pa

Instructions: Complete this form for your animal feeding operation. Footnotes are provided on page 4.

The information within this form, and the attachments, describes my animal feeding operation, my manure storage and handling system, and my planned manure management system. I (we) will manage the manure, and the nutrients it contains, as described within this manure management plan (MMP) and any revisions of the plan, individual field information, and field summary sheet, and in accordance with current rules and regulations. Deviations permitted by Iowa law will be documented and maintained in my records.

Signed: Bill Couser (Signature) Bill & Nancy Couser (Print name) **Date** 5/22/2017

Name of operation: Couser Cattle Company **Facility ID No.** 56450

Location of the operation: 19568 620th Ave (911 address)

Nevada (Town) IA (State) 50201 (Zip)

NW (1/4 1/4) 1/4 of the SW (1/4) 1/4 of Sec 19 (Section) T 84 R 22 (Tier & Range) Richland (Township Name) Story (County)

Owner and contacts of the animal feeding operation:

Owner Bill & Nancy Couser Phone 515-382-6101

Address 20408 620th Ave, Nevada, IA 50201

E-mail address (optional) _____ Cell phone (optional) 515-231-0614

Contact person (if different than owner) _____ Phone _____

Address _____

E-mail address (optional) _____ Cell phone (optional) _____

Contract company (if applicable) _____ Phone _____

Address _____

This manure management plan is for (check one)

X existing operation, not expanding ____ existing operation, expanding ____ existing operation, new owner ____ new operation

Construction and Expansion Dates: 2009 date of initial construction

2011 _____ _____ and all expansions

Table 1. Information about livestock production and manure management system

1	2	3	4	5	6	7	8
Animal type/ Production phase[a]	Max # of animals confined	Manure Storage Structure [b]	N[c]	P_2O_5[c]	gal/space/dy[d] or tons/yr	Days/yr Facility occupied	Annual Manure Produced[e]
Beef, Finishing	2,700	Deep Bed Confinement	13.9	16.6	11.0	365	29,700
Beef, Finishing	2,500	Open Feedlot	13.9	16.6	3.0	365	7,500
						Total Gallons	
						Total Tons	**37,200**

Estimated annual animal production: 5,247 animals/year

Source of Manure Nutrient Content Data (standard tables, manure analysis, other): _____

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g] A = C-SB (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[i] USDA Iowa Ag Statistics County yields **Timing of application** Spring/Fall

Method of application Surface-apply liquid or solid (dry) manure with incorp. within 24 hours **Application loss factor** 0.95

If spray irrigation is used, identify method[j]

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s) [k]	Deep Bed Pack				
Total N [l]	13.9		P_2O_5	16.6	
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

			Corn	Soybean	Corn	Soybean
1	Applying Manure For (crop to be grown) [q]		Corn	Soybean	Corn	Soybean
2	Optimum Crop Yield [h]	bu or ton/acre	179	52.6	179	52.6
3	P_2O_5 removed with crop by harvest [r]	lb/acre	57.3	37.9	57.3	37.9
4	Crop N utilization [s]	lb/acre	215	200	215	200
5a	Legume N credit [t]	lb/acre	50	0	50	0
5b	Commercial N planned [u]	lb/acre	50	0	50	0
5c	Manure N carryover credit [v]	lb/acre	0	7.6	0	7.6
6	Remaining crop N need [w]	lb/acre	115	0	115	0
7	Manure rate to supply remaining N [x]	ton/acre	25	0	25	0
8	P_2O_5 applied with N-based rate [y]	lb/acre	412	0	412	0

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned [z]	lb/acre				
10	Manure rate to supply P removal [aa]	ton/acre	0.0	0.0	0.0	0.0
11	Manure rate for P based plan [bb]	ton/acre				
12	Manure N applied with P-based plan [cc]	lb/acre	0	0	0	0

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate [dd]	ton/acre	25	0	25	0

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g]

B = SB-C (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[i]: USDA Iowa Ag Statistics County yields — **Timing of application**: Spring/Fall

Method of application: Surface-apply liquid or solid (dry) manure with incorp. within 24 hours — **Application loss factor**: 0.95

If spray irrigation is used, identify method[j]:

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s)[k]	Deep Bed Pack				
Total N[l]	13.9	P_2O_5	16.6		
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

			Soybean	Corn	Soybean	Corn
1	Applying Manure For (crop to be grown)[q]					
2	Optimum Crop Yield[h]	bu or ton/acre	52.6	179	52.6	179
3	P_2O_5 removed with crop by harvest[r]	lb/acre	37.9	57.3	37.9	57.3
4	Crop N utilization[s]	lb/acre	200	215	200	215
5a	Legume N credit[t]	lb/acre	0	50	0	50
5b	Commercial N planned[u]	lb/acre	0	50	0	50
5c	Manure N carryover credit[v]	lb/acre	7.6	0.0	7.6	0.0
6	Remaining crop N need[w]	lb/acre	0	115	0	115
7	Manure rate to supply remaining N[x]	ton/acre	0	25	0	25
8	P_2O_5 applied with N-based rate[y]	lb/acre	0	412	0	412

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned[z]	lb/acre				
10	Manure rate to supply P removal[aa]	ton/acre	0.0	0.0	0.0	0.0
11	Manure rate for P based plan[bb]	ton/acre				
12	Manure N applied with P-based plan[cc]	lb/acre	0	0	0	0

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate[dd]	ton/acre	0	25	0	25

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

Manure Management Plan Form

Determining Maximum Allowable Manure Application Rate

Instructions: Complete a worksheet for each unique combination of the following factors (crop rotation, optimum crop yield, manure nutrient concentration, remaining crop N need, method of application) that occurs at this operation. Complete form by filling in blanks, yellow-colored cells, and drop down menus. Gray shaded cells will calculate automatically. Footnotes are given on pages 4, 5 and 6.

Management Identification (Mgt ID)[g]

C = C-C (Couser)

(identify this application scenario by letter)

Method to determine optimum crop yield[l] USDA Iowa Ag Statistics County yields **Timing of application** Spring/Fall

Method of application Surface-apply liquid or solid (dry) manure with incorp. within 24 hours **Application loss factor** 0.95

If spray irrigation is used, identify method[j]

Table 2. Manure nutrient concentration

Manure Nutrient Content (lbs/1000gal or lbs/ton)					
Manure Storage Structure(s) [k]	Deep Bed Pack				
Total N [l]	13.9	P_2O_5	16.6		
%TN Available 1st year	35%	2nd year	10%	3rd year	0%
Available N 1st year[m]	4.6	2nd year[n]	1.3	3rd year[o]	0.0

Table 3. Crop usage rates[p]

lb/bu or lb/ton	N	P_2O_5
Corn	1.2	0.32
Soybean	3.8	0.72
Alfalfa	50	13
Other crop	0	0

*Use blank space above to add crop not listed.

Table 4. Calculations for rate based on nitrogen (always required)

			Corn	Corn	Corn	Corn
1	Applying Manure For (crop to be grown) [q]					
2	Optimum Crop Yield [h]	bu or ton/acre	179	179	179	179
3	P_2O_5 removed with crop by harvest [r]	lb/acre	57.3	57.3	57.3	57.3
4	Crop N utilization [s]	lb/acre	215	215	215	215
5a	Legume N credit [t]	lb/acre	0	0	0	0
5b	Commercial N planned [u]	lb/acre	75	75	75	75
5c	Manure N carryover credit [v]	lb/acre	6.8	6.8	6.8	6.8
6	Remaining crop N need [w]	lb/acre	133	133	133	133
7	Manure rate to supply remaining N [x]	ton/acre	29	29	29	29
8	P_2O_5 applied with N-based rate [y]	lb/acre	478	478	478	478

Table 5. Calculations for rate based on phosphorus (fill out only if P-based rates are planned)

9	Commercial P_2O_5 planned [z]	lb/acre				
10	Manure rate to supply P removal [aa]	ton/acre	3.5	3.5	3.5	3.5
11	Manure rate for P based plan [bb]	ton/acre	7.0	7.0	7.0	7.0
12	Manure N applied with P-based plan [cc]	lb/acre	32	32	32	32

Table 6. Application rates that will be carried over to page 3

13	Planned manure application rate [dd]	ton/acre	29	29	29	29

When applicable, manure application rates must be based on the P index value as follows:
(0-2) N-based manure management.
(>2-5) N-based manure management but P application rate cannot exceed two times the P removal rate of the crop schedule.
(>5-10) Until December 31, 2008, P-based manure management while adopting practices to reduce P index to 5 or below.
(>10) No manure application until practices are adopted to reduce P index to 5 or below

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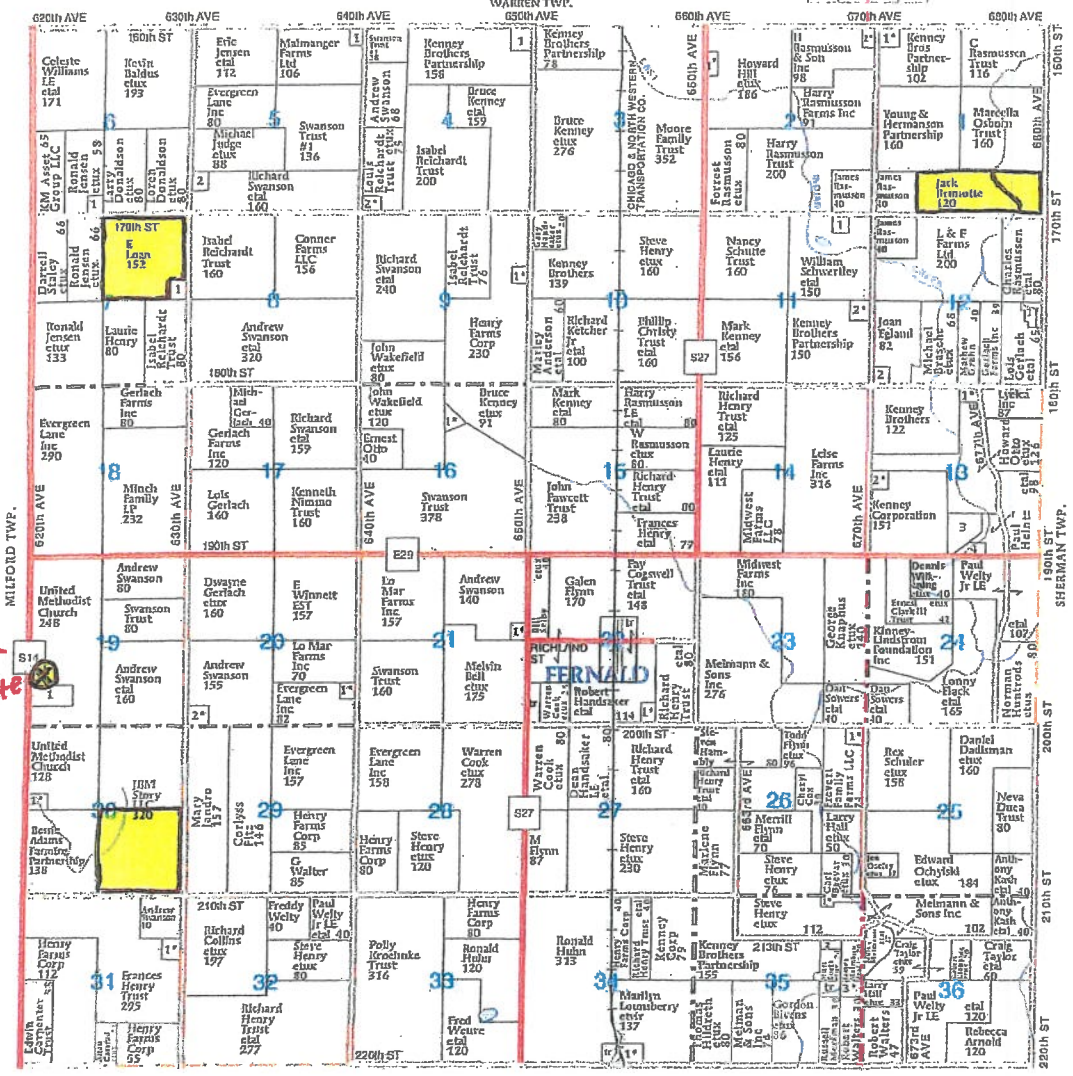
T-84-N

RICHLAND PLAT

(Landowners)

R-22-W



RICHLAND TOWNSHIP

SECTION 1
1. Campbell, Kirk 11

SECTION 2
1. Uhlenhopp, Darrow 6
2. Thompson, Kenneth 5

SECTION 4
1. Lounsberry Farms Inc 10
2. Berk, Jonathan 8

SECTION 5
1. Hendrick, LaDonna 6
2. Evergreen Lane Inc 8

SECTION 6
1. Crawford Premium Pork LLC 7

SECTION 7
1. Kruzic, Barbara 8

SECTION 9
1. Koudelka, Darryl 6

SECTION 11
1. Miller, Diane 10
2. Hayes, Mark 10

SECTION 12
1. Brasche, Michael 13
2. Bergeson, Mark 7

SECTION 13
1. Black, Derrick 22
2. Zelsnelse, Clark 6
3. Handsaker, Larry 14
4. County of Story 5

SECTION 16
1. Swanson, Dale 7

SECTION 19
1. Couser Cattle Company 21

SECTION 20
1. Dewell, Grant 5
2. Griffin, Shane 5

SECTION 21
1. Black, Michael 6

SECTION 22
1. Handsaker, Gary 10

SECTION 29
1. Wonders, Daniel 6

SECTION 30
1. Couser, William 8

SECTION 31
1. Henry, Steve 10

SECTION 34
1. Mack, Richard 10

SECTION 35
1. Becvar, Carl 8
2. Cline, Douglas 5
3. Hall, Larry 10

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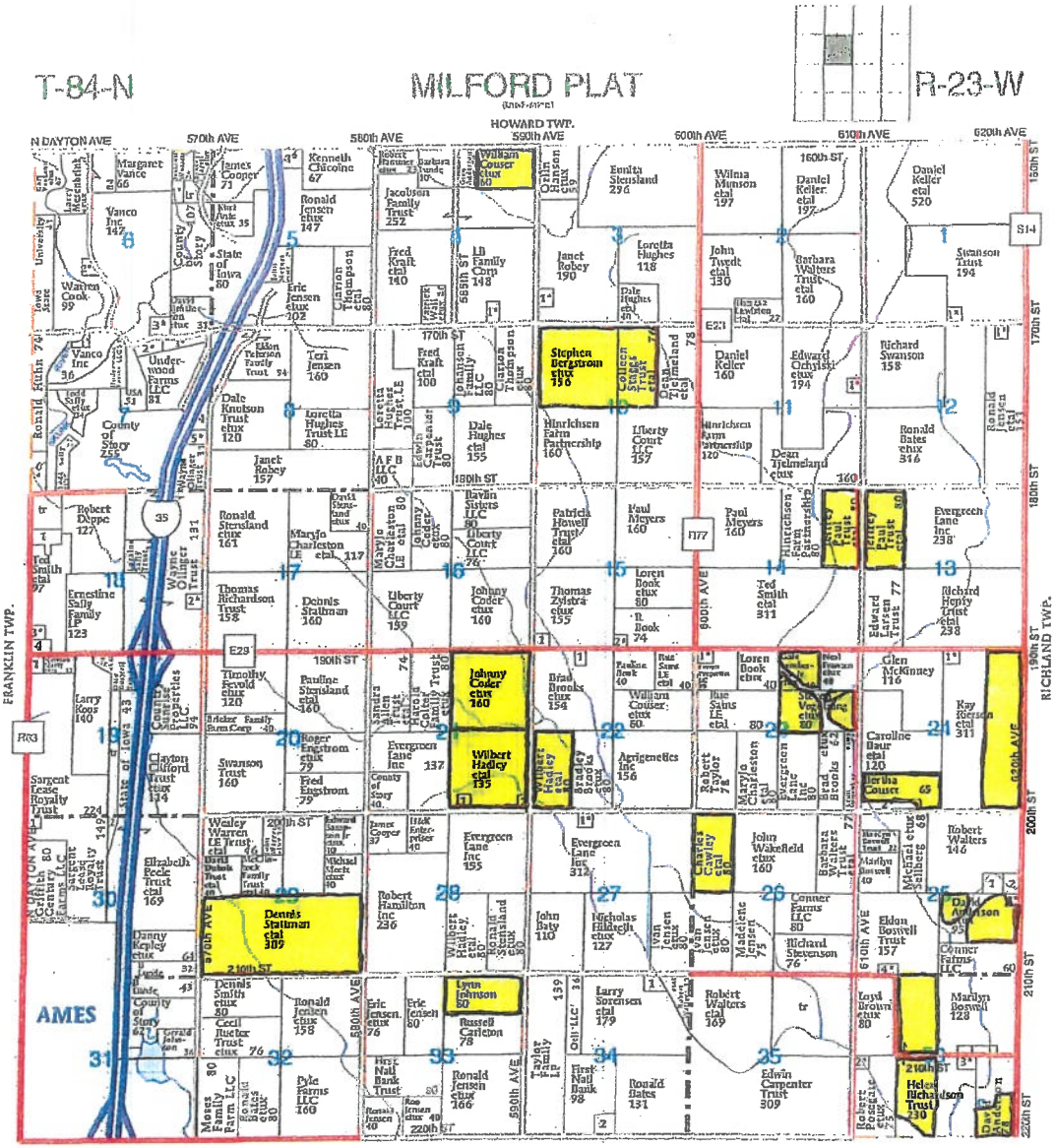

MILFORD TOWNSHIP

SECTION 1
1. McCoy, Douglas 6

SECTION 3
1. Brown, Ryan 10

SECTION 4
1. McCoy Jr, Fred 12

SECTION 5
1. Hesberlin, Dennis 14

SECTION 6
1. Vance, Scott 11
2. Moss, Victor 5
3. Roberts, Gene 8

SECTION 7
1. Jones, Steven 6
2. Roberts, Gene 6
3. Wrage, Marty 11
4. French Estate, Fannie 17
5. Knutson Trust, Dale 13
6. Kayser, Christopher 17

SECTION 11
1. Borer, Jeffrey 5

SECTION 12
1. Foster Jr, Martin 5

SECTION 15
1. Kelly, James 5
2. Book, Loren 6

SECTION 18
1. Tullamore Glen Park Association 12
2. Olinger, L 11
3. Gammon, Carey 7
4. Hickory Grove Court LLC 11

SECTION 19
1. County of Story 10

SECTION 21
1. Berry, Steven 5
2. Hadley, Wilbert 5

SECTION 22
1. Syngenta Seeds Inc 7

SECTION 23
1. Cordray, Joseph 9

SECTION 24
1. Brasche, Michael 9
2. Schmidt Trust, Steffen 15

SECTION 25
1. Swanson, Michael 11
2. Swanson, Marlys 9
3. Lillard, Steven 5
4. Anderson, Brian 7

SECTION 27
1. Heintz, James 7

SECTION 30
1. Capstone Farms LLC 6
2. E I Sargent & Associates LLC 14

SECTION 34
1. Sorensen, Larry 7
2. County of Story 11

SECTION 36
1. Jasper Story Memorial Gardens Ltd 10
2. Valline, John 5
3. Otto, Dennis 10

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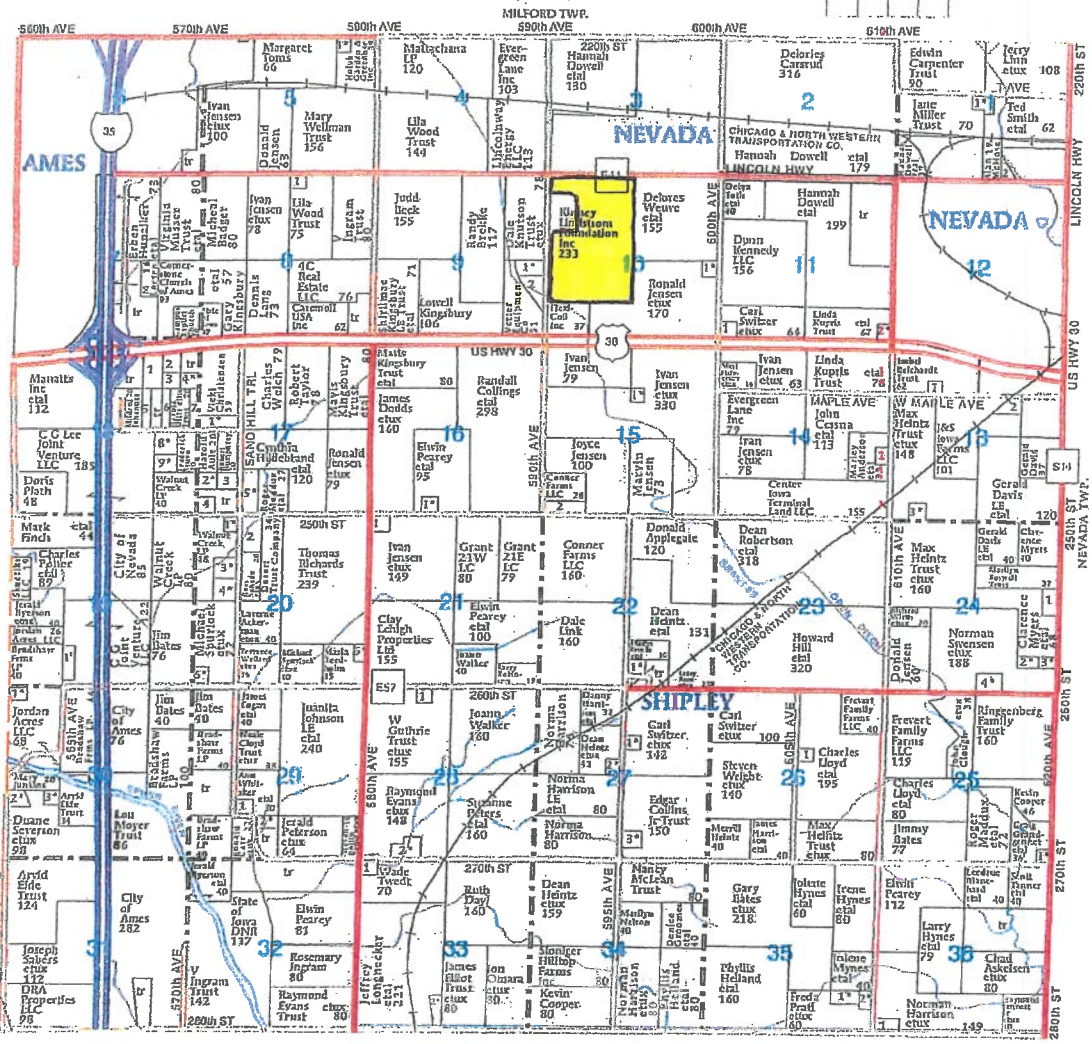
T-83-N

GRANT PLAT

R-23-W



GRANT TOWNSHIP
SECTION 1
1. Samson, Roger 13
2. GWC Real Estate LLC 10
SECTION 5
1. Miller, Tracy 5
SECTION 6
1. Williams Trust, Phyllis 5
SECTION 8
1. Ungs, Jayme 10
2. Satre, Wayne 10
SECTION 10
1. Smith, Mark 6
SECTION 11
1. Pakerian, Terietal 6
2. Rullestad, Lavern 6
SECTION 13
1. Anderson, Brett 5
2. Central Iowa FS Inc 10
3. Ballantyne, David 8
SECTION 14
1. Filbrandt, Shari 7
SECTION 15
1. Jensen, Joyce 6
2. McEachran Trust, Ellen 12
SECTION 16
1. Borwick, Kenneth 5
SECTION 17
1. Kingsbury, Bruce 13
2. Woodman, William 6
3. Burleson, Terrell 8
4. Burke Trust, William 7
5. Paff, Lester 14
SECTION 18
1. Hansen, Russell 13
2. Simpson Trust, Loran 8
3. Newell Family LLC 10
4. Schaefer, Vernon 10
5. Shevokas, Rose 10
6. Cable, Gerald 10
7. Kingsbury, Dennis 10
8. Rulgh, Dale 10
9. Anderson, Brian 11
SECTION 19
1. Baldus, Earl 10
SECTION 20
1. Milligan, William 5
2. Wilcox, Rose 14
3. Simpson, Mark 13
4. Swenson, David 13
5. Schlotfeldt, Paul 5
6. Despain, Randy 7
SECTION 21
1. Jensen, Donald 7
SECTION 22
1. French, Jodi 8
SECTION 24
1. Myers, Timothy 12
2. Heintz, Mark 5
3. Coussens, Bryan 7
4. Swensen, David 12
SECTION 25
1. Larson, Roger 5
SECTION 26
1. Krebs, Kim 5
SECTION 27
1. Milligan, Kelly 6
2. Ripley, Merwyn 7
3. Heintz, Shane 10
SECTION 28
1. Williams, Edna 5
2. Trickey, Craig 10
SECTION 29
1. Jepsen, Rebecca 8
2. Sellberg, Michael 10
SECTION 30
1. Ryerson, Jerald 9
2. Hobbs, James 12
3. Thomason, Daryl 5
SECTION 33
1. Jensen Trust, Maxine 10
2. Dannen, Richard 12
SECTION 35
1. Bates, Gary 11
2. Wycoff, Steven 9
SECTION 36
1. Wauson, Mary 9

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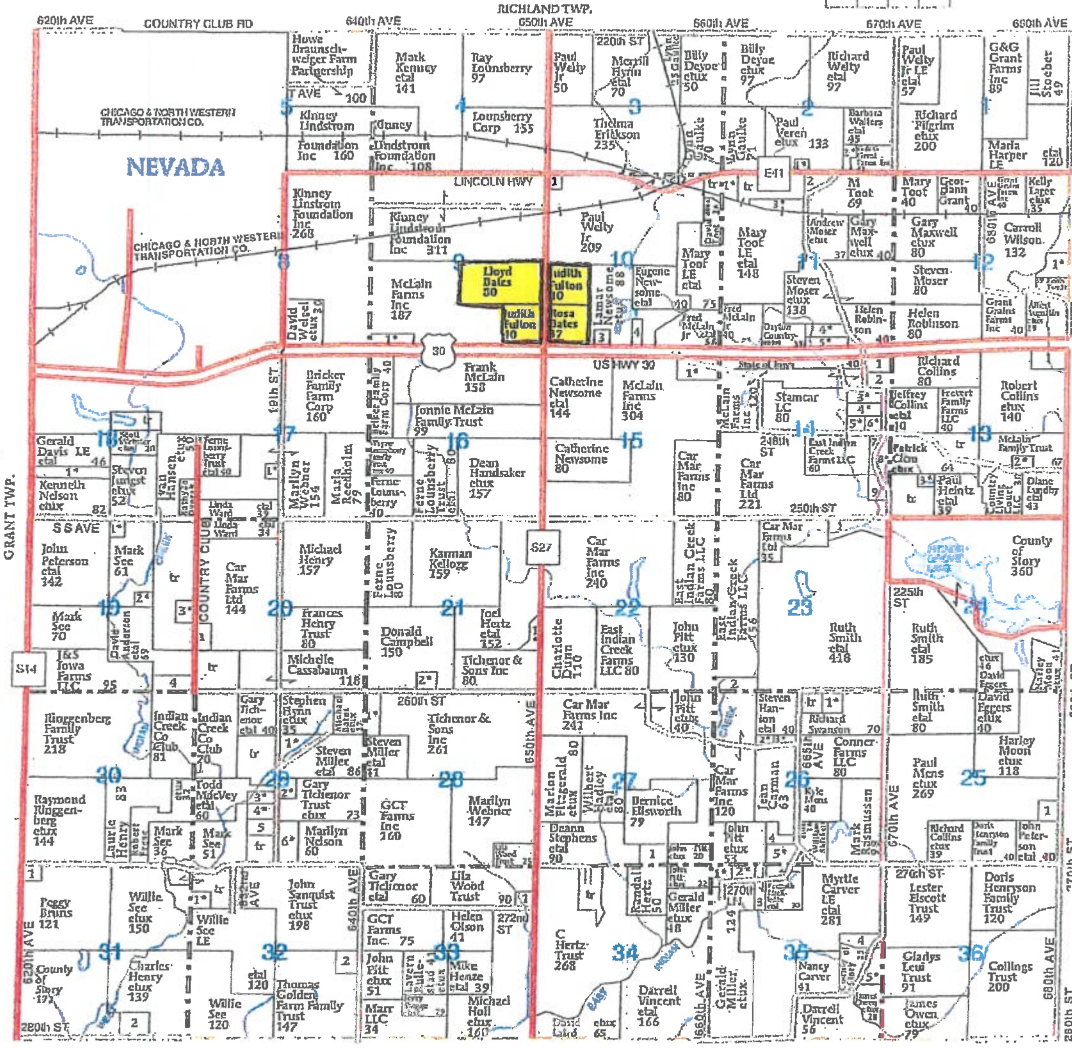
T-83-N NEVADA PLAT R-22-W



NEVADA TOWNSHIP

SECTION 2
1. Harris, Jeffery 6
2. Tharrington, W 13

SECTION 9
1. Renfrow, Harry 14

SECTION 10
1. Grant Grain Farms Inc 8
2. Houghton, Cindy 11
3. Moreland, Mori 8
4. Newsome, Catherine 9

SECTION 11
1. Vansickle, William 6
2. Smith, Dorothy 7
3. Toot, Paul 9
4. Smith, Mark 14
5. Pope, Theodore 10

SECTION 12
1. Miller Trust, Harold 10

SECTION 13
1. Kimberley Trust, Harold 19
2. Gross, Rex 7
3. Handsaker, Dannie 5

SECTION 14
1. Robinson, Helen 8
2. Collins, Richard 7
3. Collins, Jeffrey 12
4. Naughton, William 16
5. Parrish, D 12
6. McDonald, Stephen 13
7. Mortenson, Timothy 8
8. Clem, Patrick 12
9. Manci, Ahmed 8

SECTION 15
1. McLain, Frank 15

SECTION 17
1. Vansickle, Morris 6

SECTION 18
1. Davis, Gerald 10

SECTION 19
1. Myers, Larry 6
2. Olson, Norman 11
3. Harrison, Dennis 10
4. Indian Creek Co Club 14

SECTION 20
1. Clem Trust, Gary 14

SECTION 21
1. Dean, Philip 7
2. Guyll, Max 6

SECTION 23
1. Lyle Smith Farms Inc 13
2. Car Mar Farms Inc 14

SECTION 25
1. Mens, Kathryn 10

SECTION 26
1. Corsaut, Timothy 10
2. Carmen, Shane 7
3. Schulz, Victor 6
4. Hanson, Stephanie 7
5. Blackledge, Kenneth 6

SECTION 27
1. Hertz, Randall 10

SECTION 28
1. Bates, Michael 5

SECTION 29
1. Gordon, Kenneth 11
2. Stephenson, Bernard 7
3. Bergquist, Brandon 5
4. Serio Jr, Ronny 10
5. Forest Park Property Mgmt LLC 8
6. Engler, Daniel 11

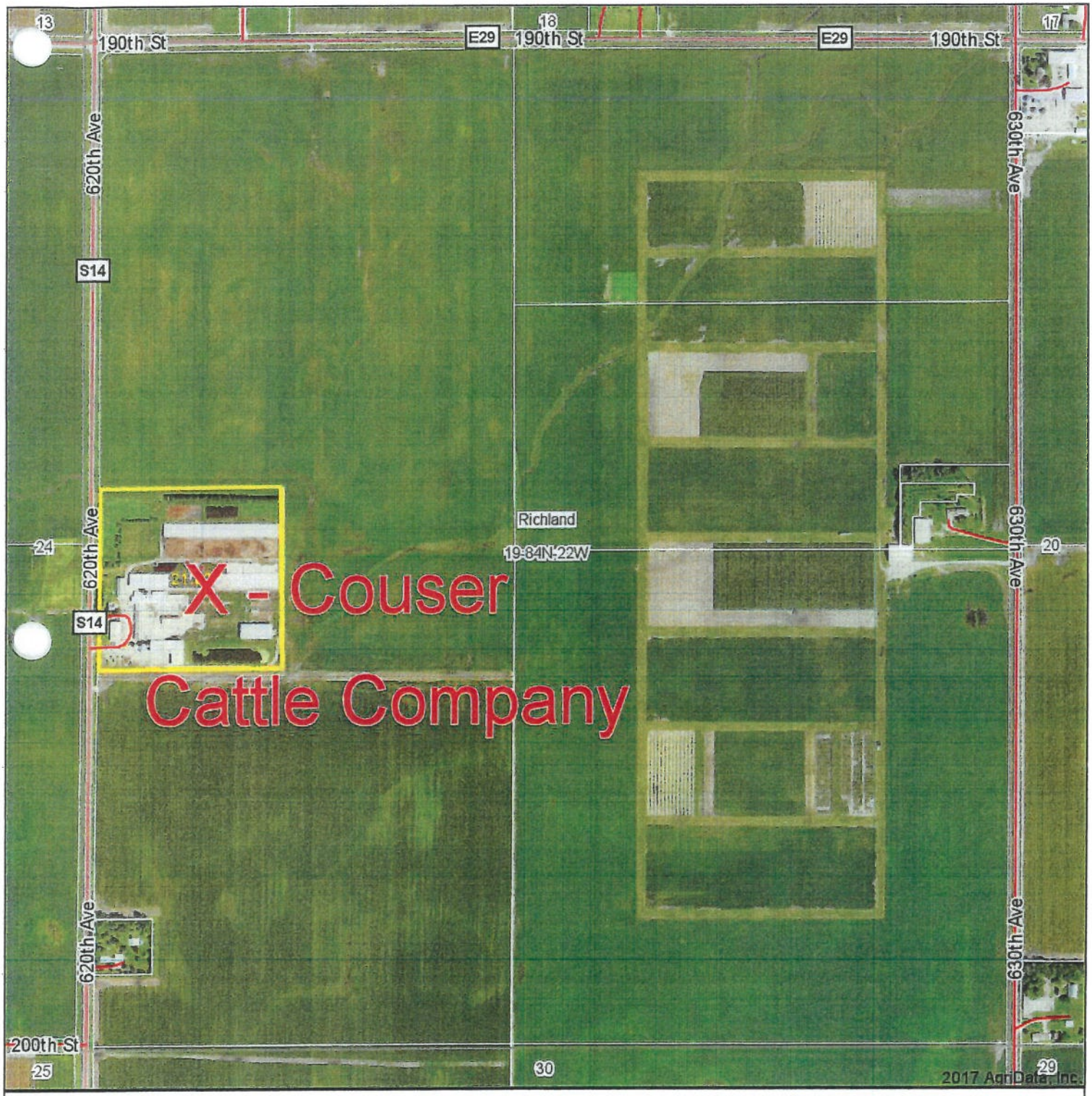
SECTION 31
1. Kelly, Jamey 7
2. Indian Creek Diary LLC 14

SECTION 32
1. Kelley Trust, David 11
2. Golden, Sandra 13

SECTION 33
1. Vincent, Brian 8

SECTION 35
1. Pitt, John 14
2. Moore, James 11
3. Ellsworth, Bernice 10
4. Leui Trust, Gladys 11
5. Donaldson, Loren 5

Aerial Map



ADVANCED CROP MANAGEMENT

Maps Provided By:

surety CUSTOMIZED ONLINE MAPPING

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map center: 42° 4' 14.72, -93° 27' 13.52

0ft 814ft 1627ft

19-84N-22W
Story County
Iowa

N W E S

5/11/2017

Field borders provided by Farm Service Agency as of 5/21/2008.

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – JBM South

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

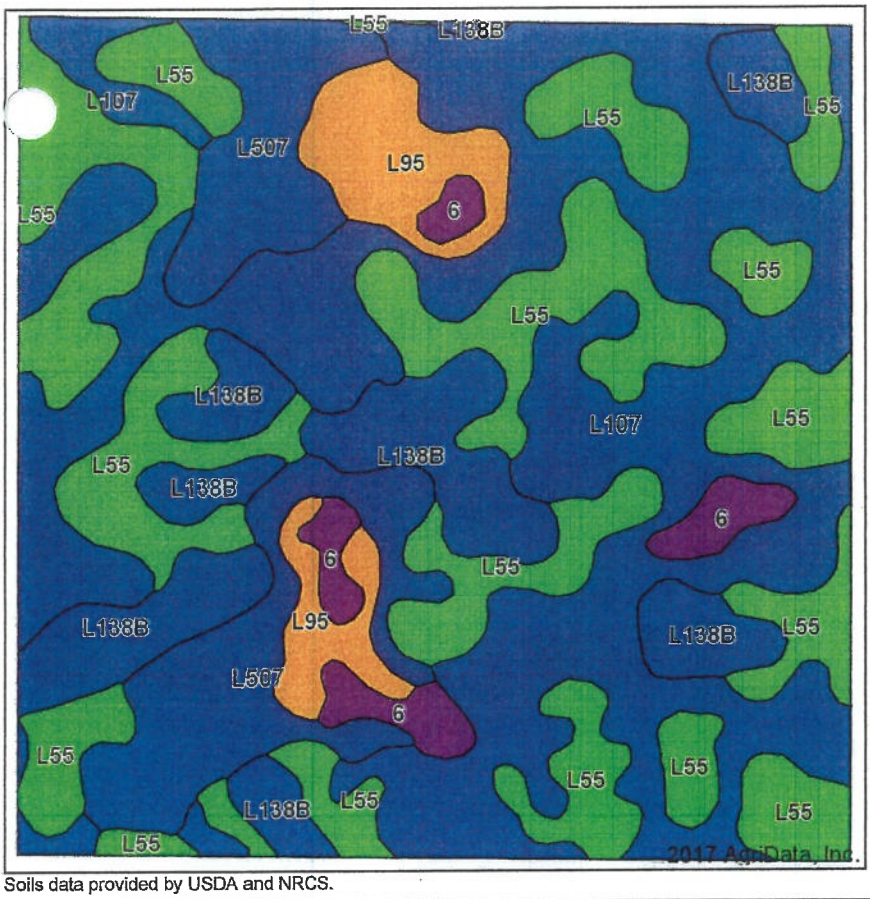
Iowa Phosphorus Index

v. 1/22/2007

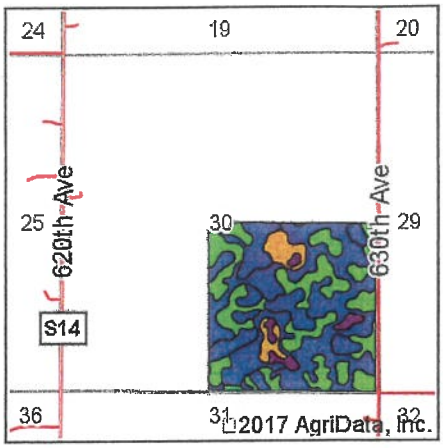
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion							+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x Sediment Trap Factor	x SDR	x Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI			Flow Factor	x STP Factor	= Tile/Sub PI		P Index
JBM South --	1.60	1.00	0.06	1.00	1.10	0.88	0.09		1.32	0.27	0.07	0.44			0.00	0.07	0.00		0.53

JBM South Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **30-84N-22W**
Township: **Richland**
Acres: **155.72**
Date: **5/11/2017**

Maps Provided By:

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Soil Symbol: 1A169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	56.70	36.4%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	46.79	30.0%		Ie	91	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	21.19	13.6%		IIe	88	
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	18.06	11.6%		IIw	87	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	8.16	5.2%		IIw	75	
6	Okoboji silty clay loam, 0 to 1 percent slopes	4.82	3.1%		IIIw	59	59
					Weighted Average	**87.2**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

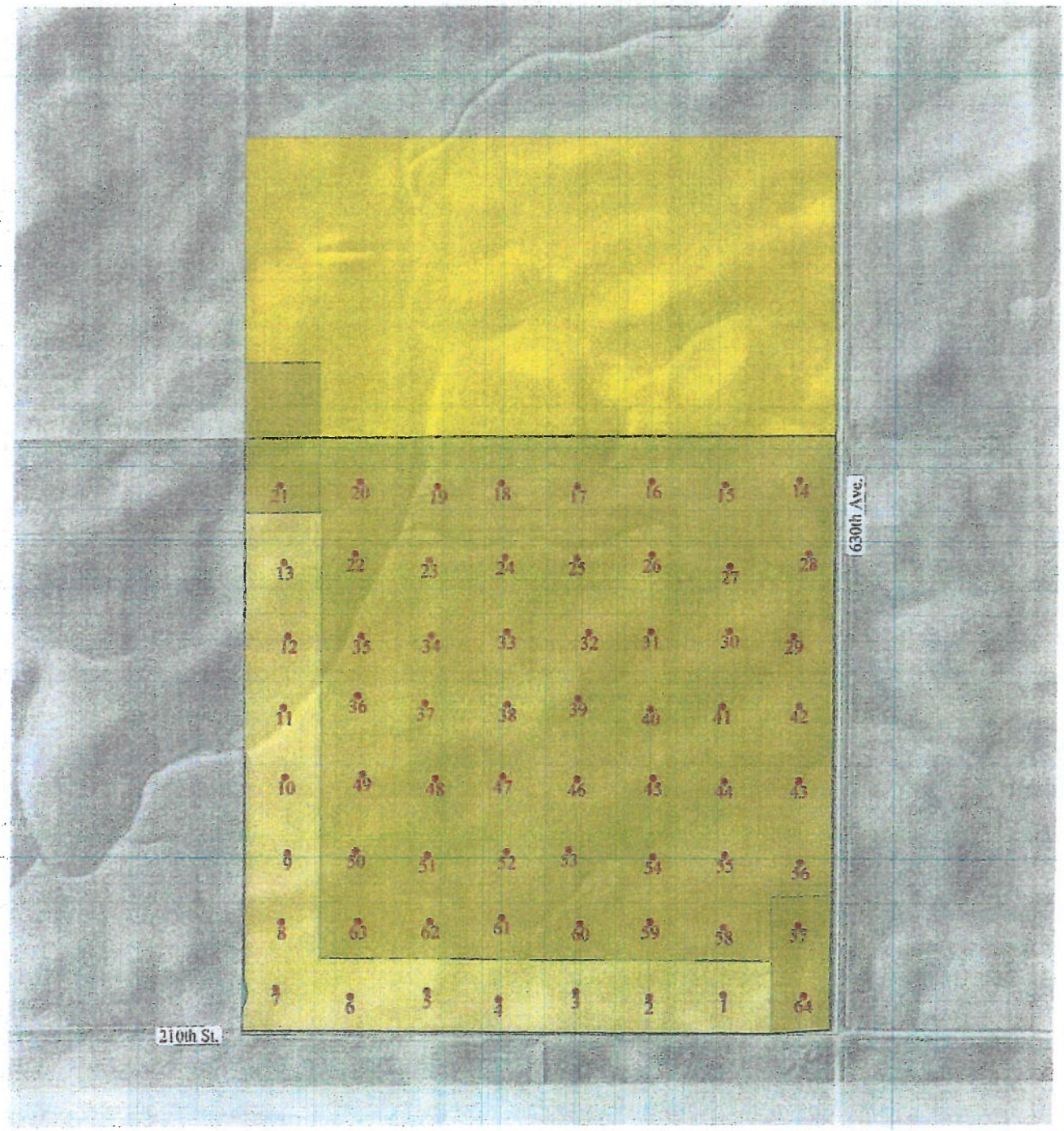
*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

#539 JBM Story LLC

Sec 30 - T84N - R22W
Richland Twp, Story Co

SoilTest ID - 2013



GeoMAPS
Mapping & GIS Precision Services

#539 JBM

SoilTests - Fall 2013 - South 160

Sample	Main Soil Type	Acres	Corn Yld Goal	Bean Yld Goal	%OM		P (ppm)		K (ppm)		2 Yr Recs (Corn/Beans) MAP	Potash	pH	BpH	Lime #/Ac for 6.5	CEC	S (ppm)		Zn (ppm)	
1	55	2.4	240	70	3.6	O	26	O	125	H	310	185	7.5	7.3	-	20.7	5.7	L	1.2	O
2	55	2.4	240	70	5.4	VH	34	O	108	O	246	258	7.7	7.3	-	30.9	9.2	O	1.1	O
3	107	2.4	235	69	5.5	VH	44	H	234	VH	92	132	7.7	7.3	-	37.1	9.1	O	1.4	O
4	55	2.4	240	70	4.8	VH	39	H	182	VH	192	135	7.9	7.3	-	30.7	10.2	O	1.3	O
5	138B	2.4	235	69	2.8	L	39	H	239	VH	140	132	6.3	6.8	1,000	14.2	8.8	O	0.7	L
6	507	2.4	225	66	5.2	VH	43	H	250	VH	81	122	7.7	7.3	-	35.3	9.0	O	1.6	O
7	55	2.4	240	70	4.4	H	43	H	256	VH	96	135	7.2	7.0	-	24.0	7.4	O	1.1	O
8	55	2.4	240	70	4.4	H	61	VH	264	VH	67	135	6.8	6.9	-	25.8	7.4	O	1.6	O
9	138B	2.4	240	70	5.8	VH	51	VH	232	VH	67	135	7.3	7.1	-	32.4	7.8	O	1.5	O
10	55	2.4	235	69	4.6	VH	36	H	192	VH	242	132	5.6	6.4	5,833	25.2	8.1	O	1.0	O
11	55	2.4	240	70	4.9	VH	32	O	208	VH	246	135	7.3	7.0	-	29.0	7.7	O	1.1	O
12	55	2.4	240	70	3.7	O	46	VH	215	VH	67	135	5.3	6.3	7,000	22.5	9.9	O	1.0	O
13	138B	2.4	240	70	2.6	L	38	H	276	VH	192	135	6.5	6.9	-	14.1	8.0	O	0.7	L
14	55	2.4	235	69	2.7	L	30	O	324	VH	273	132	6.2	6.8	1,000	15.1	6.8	L	0.6	L
15	107	2.4	240	70	4.1	H	49	VH	140	H	67	185	6.0	6.4	5,833	25.9	8.1	O	0.9	L
16	55	2.4	235	69	2.3	VL	40	H	127	H	140	182	6.1	7.4	-	23.0	8.2	O	0.7	L
17	107	2.4	235	69	4.6	VH	33	O	92	O	242	315	7.8	7.4	-	30.1	7.3	O	0.8	L
18	95	2.4	206	60	6.2	VH	50	VH	149	H	25	153	7.8	7.5	-	37.4	9.0	O	1.3	O
19	507	2.4	225	66	5.2	VH	31	O	117	O	231	215	7.9	7.4	-	38.7	8.6	O	0.9	L
20	55	2.4	240	70	4.1	H	37	H	115	O	192	258	7.8	7.3	-	28.5	8.8	O	1.0	O
21	55	2.4	240	70	4.1	H	35	H	134	H	246	185	5.1	6.1	9,500	26.9	10.7	O	1.0	O
22	55	2.4	240	70	3.5	O	37	H	144	H	192	185	5.0	6.3	7,000	19.3	10.9	O	0.6	L
23	507	2.4	225	66	3.5	O	27	O	124	H	262	172	6.5	7.0	-	20.4	8.2	O	0.9	L
24	95	2.4	206	60	4.8	VH	32	O	122	H	212	153	7.8	7.3	-	30.1	7.6	O	1.1	O
25	95	2.4	206	60	4.2	H	25	L	95	O	275	287	7.8	7.2	-	29.5	7.5	O	1.0	O
26	55	2.4	240	70	3.6	O	36	H	137	H	192	185	6.0	6.6	3,500	23.4	8.0	O	0.7	L
27	107	2.4	235	69	4.5	H	33	O	90	O	242	315	7.7	7.5	-	28.7	8.5	L	0.9	L
28	55	2.4	240	70	3.6	O	54	VH	232	VH	67	135	6.7	7.0	-	17.9	6.5	L	1.0	O
29	55	2.4	240	70	3.7	O	35	H	183	VH	246	135	6.7	7.0	-	23.7	6.6	L	1.0	O
30	107	2.4	235	69	4.6	VH	42	H	163	VH	92	132	6.1	6.6	3,500	26.9	8.3	O	1.1	O
31	55	2.4	240	70	3.7	O	40	H	183	VH	144	135	5.6	6.5	4,667	21.2	7.8	O	0.9	L
32	55	2.4	240	70	3.4	O	23	L	115	O	310	258	6.1	6.7	2,167	18.4	6.6	L	0.6	L
33	55	2.4	240	70	3.8	O	28	O	141	H	277	185	5.4	6.5	4,667	18.7	8.7	O	0.7	L
34	107	2.4	235	69	4.3	H	42	H	166	VH	140	132	5.8	6.6	3,500	27.3	10.2	O	1.0	O
35	507	2.4	225	66	4.2	H	36	H	110	O	231	245	7.4	7.1	-	27.6	7.2	O	1.0	O
36	55	2.4	240	70	3.8	O	35	H	148	H	246	185	5.5	6.3	7,000	20.5	9.6	O	0.8	L
37	138B	2.4	235	69	3.0	L	34	O	191	VH	242	132	5.6	6.5	4,667	18.6	8.2	O	0.8	L
38	138B	2.4	235	69	3.6	O	42	H	195	VH	140	132	5.9	6.5	4,667	18.6	7.8	O	1.0	O
39	138B	2.4	235	69	3.2	L	34	O	149	H	242	182	5.5	6.6	3,500	15.0	8.4	O	0.8	L
40	107	2.4	235	69	4.1	H	35	O	172	VH	242	132	7.8	7.2	-	28.3	7.3	O	1.2	O
41	107	2.4	235	69	5.2	VH	45	H	127	H	92	182	7.0	6.8	-	28.8	6.8	L	1.4	O
42	55	2.4	240	70	3.6	O	42	H	189	VH	96	135	6.3	6.9	-	17.4	7.8	O	0.9	L
43	107	2.4	235	69	5.3	VH	31	O	106	O	242	285	6.7	6.9	-	19.3	4.8	L	1.0	O
44	107	2.4	235	69	5.1	VH	47	VH	192	VH	63	132	7.9	7.4	-	33.8	7.4	O	1.3	O
45	55	2.4	240	70	4.4	H	72	VH	267	VH	67	135	7.9	7.4	-	30.2	6.7	L	1.3	O
46	138B	2.4	235	69	3.3	O	37	H	191	VH	188	132	6.1	6.7	2,167	13.4	5.4	L	0.5	VL
47	507	2.4	225	66	4.8	VH	43	H	189	VH	81	122	6.0	6.5	4,667	21.6	6.7	L	1.0	O
48	507	2.4	225	66	5.1	VH	53	VH	232	VH	52	122	8.0	7.4	-	37.3	8.2	O	1.9	O
49	138B	2.4	235	69	2.7	L	40	H	276	VH	140	132	6.2	6.8	1,000	14.2	8.2	O	0.5	VL
50	138B	2.4	235	69	3.6	O	75	VH	313	VH	63	132	5.8	6.4	5,833	21.3	9.0	O	0.8	L
51	507	2.4	225	66	4.9	VH	52	VH	222	VH	52	122	5.9	6.5	4,667	21.2	8.9	O	1.1	O
52	507	2.4	225	66	3.8	O	34	O	128	H	231	172	5.9	6.6	3,500	17.0	7.5	O	0.7	L
53	55	2.4	240	70	4.5	H	39	H	168	VH	144	135	5.8	6.4	5,833	19.2	7.1	O	0.7	L
54	107	2.4	235	69	5.5	VH	59	VH	206	VH	63	132	7.1	7.2	-	27.8	6.3	L	1.5	O
55	138B	2.4	235	69	3.6	O	41	H	236	VH	140	132	5.6	6.5	4,667	16.0	8.4	O	0.6	L
56	55	2.4	240	70	4.4	H	51	VH	229	VH	67	135	6.4	6.8	1,000	15.4	4.7	L	0.9	L
57	107	2.4	235	69	5.4	VH	68	VH	294	VH	63	132	7.0	7.1	-	26.8	7.0	O	1.8	O
58	55	2.4	240	70	4.3	H	60	VH	248	VH	67	135	5.5	6.4	5,833	23.9	8.9	O	1.1	O
59	55	2.4	240	70	4.9	VH	73	VH	239	VH	67	135	7.8	7.4	-	34.9	7.9	O	1.2	O
60	107	2.4	235	69	4.2	H	45	H	183	VH	92	132	7.1	7.1	-	27.8	8.6	O	1.2	O
61	95	2.4	206	60	4.2	H	60	VH	208	VH	25	103	7.8	7.4	-	30.4	9.1	O	1.4	O
62	507	2.4	225	66	3.8	O	46	VH	178	VH	52	122	7.6	7.3	-	24.8	7.1	O	1.0	O
63	507	2.4	225	66	6.2	VH	67	VH	225	VH	52	122	6.4	6.9	-	27.1	6.3	L	1.6	O
64	55	2.4	240	70	2.5	L	37	H	164	VH	192	135	8.1	7.4	-	26.1	6.3	L	3.0	H
		155.8																		
Ave		2.4	234	68	4.2	H	43	H	166	VH	164	161	6.7	6.9	1,846	24.6	7.9	O	1.1	O
Min		2.4	206	60	2.3	VL	23	L	90	O	25	103	5.0	6.1	-	13.4	4.7	L	0.5	VL
Max		2.4	240	70	6.2	VH	75	VH	324	VH	310	315	8.1	7.5	9,500	38.7	10.9	O	3.0	H

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Loan Farm

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138C2 Clarion loam, 5 to 9 percent slopes, moderately eroded\Clarion loam moderately eroded 95%
Slope length (horiz): 98 ft
Avg. slope steepness: 8.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	213.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	62.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 4.9 t/ac/yr
Detachment on slope: 4.9 t/ac/yr
Soil loss for cons. plan: 4.9 t/ac/yr
Sediment delivery: 4.9 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		85
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		89
11/10/1	Chisel, st. pt.		66
5/1/2	Disk, tandem secondary op.		55
5/1/2	Cultivator, field 6-12 in sweeps		55
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	56
10/10/2	Harvest, killing crop 50pct standing stubble		83

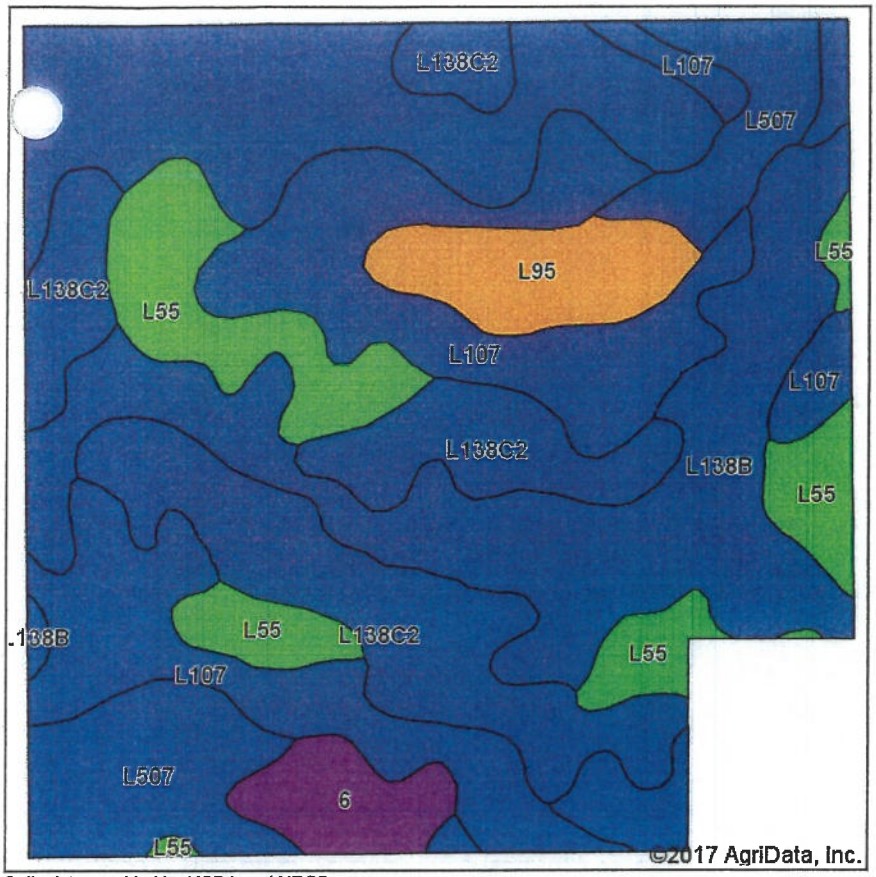
Iowa Phosphorus Index

v. 1/22/2007

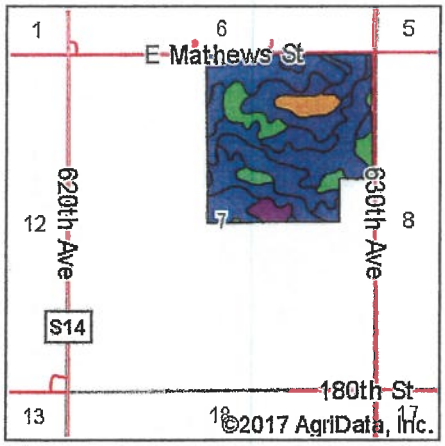
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion									+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x STP Factor =	Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor) =	Runoff PI		Flow Factor	x	STP Factor =	Tile/Sub PI		P Index
Loan Farm --	4.90		1.00		0.05		1.00		1.10	0.83	0.24		1.32		0.21		0.04	0.33		0.00		0.07	0.00		0.57

Loan Farm Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **7-84N-22W**
Township: **Richland**
Acres: **148.7**
Date: **3/28/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

A... Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	49.87	33.5%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	32.27	21.7%		IIw	88	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	26.73	18.0%		IIIe	83	
L55	Nicollet loam, 1 to 3 percent slopes	15.45	10.4%		Ie	91	
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	13.65	9.2%		IIw	87	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	6.48	4.4%		IIw	75	
6	Okoboji silty clay loam, 0 to 1 percent slopes	4.25	2.9%		IIIw	59	59
					Weighted Average	85.9	*-

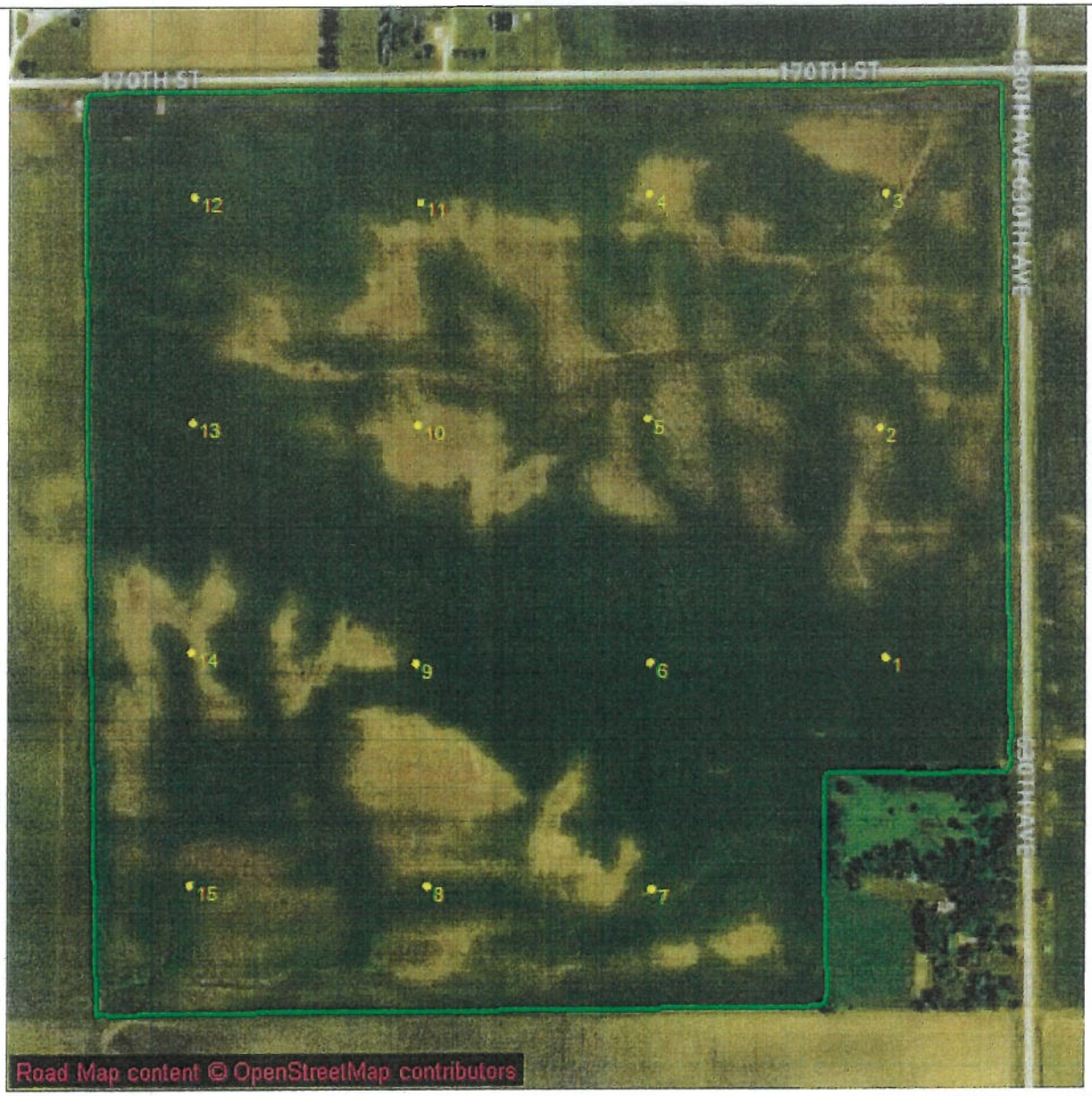
**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-
Anderson/Hoffman
Farm: Farm
Field: Loan Farm
Area: 147.39 ac

One in = 469 feet

0 212 424 635 847 1059

Field Boundary
Soil Sample Points

KEY COOPERATIVE

REPORT NUMBER
16-07 .-0260

REPORT DATE
Mar 15, 2016

ACCOUNT
28482

RECEIVED DATE
Mar 11, 2016

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TODAY'S DATE
Mar 15, 2016

IDENTIFICATION

ACM/KEY COOP
CORY DEJONG
22703 600TH AVENUE
NEVADA IA 50201

K02 ANDERSONHOFFMAN
LOAN FARM

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		Index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
29517704	1	3.1	18	27		167	265	2623		6.3	6.7	17.6	2.4	12.5	74.5	10.6				0-6		16	0.6								
29517705	2	4.1	38	60		199	311	2675		5.6	6.5	21.6	2.4	12.0	61.9	23.7				0-6		10	0.4								
29517707	3	4.1	19	65		151	376	3131		6.7		19.2	2.0	16.3	81.7	0.0				0-6		9	0.5								
29517708	4	3.3	33	51		161	221	2418		6.5	6.8	15.5	2.7	11.9	78.0	7.4				0-6		8	0.3								
29517709	5	6.0	27	60		201	286	5272		7.5		29.3	1.8	8.1	90.1	0.0				0-6		12	0.5								54
29517710	6	3.3	34	54		224	171	2331		5.9	6.6	16.5	3.5	8.6	70.6	17.3				0-6		10	0.6								
29517711	7	2.5	17	28		149	225	2412		6.5	6.8	15.5	2.5	12.1	77.8	7.6				0-6		9	0.3								
29517712	8	4.1	22	83		186	295	4329		7.0		24.6	1.9	10.0	88.1	0.0				0-6		9	0.4								
29517713	9	3.1	29	35		183	200	2113		5.4	6.5	17.8	2.6	9.4	59.4	28.6				0-6		18	0.4								
29517714	10	3.4	27	43		160	299	2879		6.1	6.6	20.1	2.0	12.4	71.6	14.0				0-6		15	0.2								
29517715	11	3.2	42	56		227	195	2023		5.7	6.6	15.6	3.7	10.4	64.8	21.1				0-6		9	0.4								
29517716	12	3.3	31	40		192	163	1890		5.7	6.6	14.3	3.4	9.5	66.1	21.0				0-6		19	0.5								
29517717	13	2.7	28	40		183	145	1928		6.2	6.8	12.8	3.7	9.4	75.3	11.6				0-6		11	0.7								
29517718	14	3.8	39	59		200	298	2723		5.9	6.6	20.0	2.6	12.4	68.1	16.9				0-6		11	0.6								
29517719	15	5.9	12	66		241	323	5957		7.5		33.1	1.9	8.1	90.0	0.0				0-6		9	0.4								49

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.
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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Burnotte West

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

USDA NRCS
Natural Resources Conservation Service

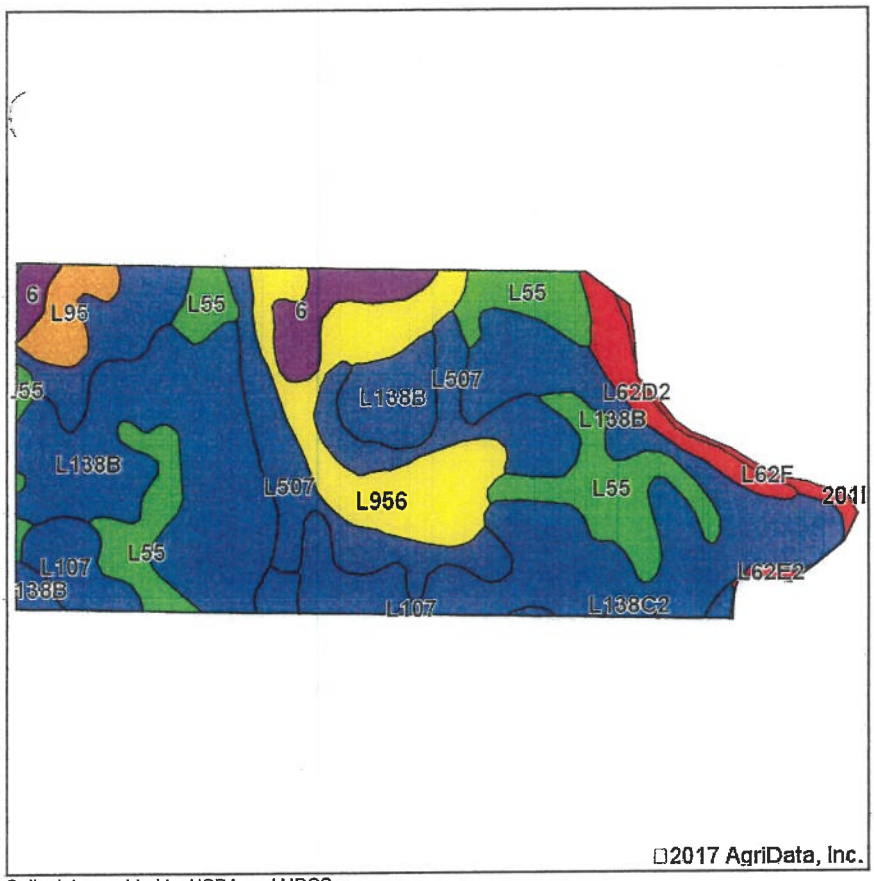
v. 1/22/2007

Iowa Phosphorus Index

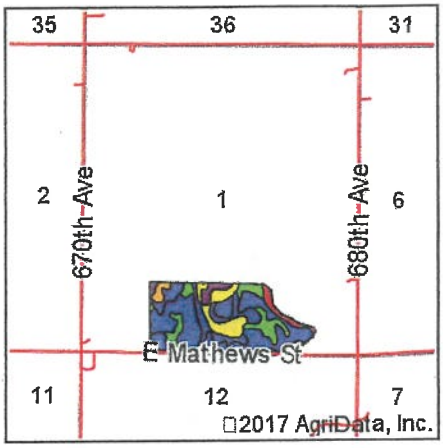
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x	STP Factor	= Tile/Sub PI		P Index
Burnotte West --	0.84		1.00		0.09		1.00		1.10		0.95	0.08		1.32		0.34	0.07	0.54		0.00		0.07	0.00		0.62

Burnotte West Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **1-84N-22W**
Township: **Richland**
Acres: **78.86**
Date: **5/11/2017**

Maps Provided By:

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A. . Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	34.47	43.7%		IIe	88	
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	13.25	16.8%		IIw	87	
L55	Nicollet loam, 1 to 3 percent slopes	10.90	13.8%		Ie	91	
L956	Harps-Okoboji complex, Bemis moraine, 0 to 2 percent slopes	8.63	10.9%		IIw	69	
6	Okoboji silty clay loam, 0 to 1 percent slopes	3.08	3.9%		IIIw	59	59
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	2.87	3.6%		IIw	88	
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	2.40	3.0%		IVe	41	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	1.81	2.3%		IIw	75	
L62F	Belview loam, Bemis moraine, 16 to 30 percent slopes	0.78	1.0%		VIe	16	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	0.46	0.6%		IIIe	83	
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	0.21	0.3%		IVe	32	
					Weighted Average	**82.4**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Burnotte East

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\62E3 Storden loam, 14 to 18 percent slopes, severely eroded\Storden loam severely eroded 95%
Slope length (horiz): 97 ft
Avg. slope steepness: 16 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	131.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	131.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 11 t/ac/yr
Detachment on slope: 11 t/ac/yr
Soil loss for cons. plan: 11 t/ac/yr
Sediment delivery: 11 t/ac/yr

Crit. slope length: 97 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		84
11/10/0	Chisel, st. pt.		57
4/15/1	Disk, tandem secondary op.		41
4/15/1	Cultivator, field 6-12 in sweeps		41
4/22/1	planter, double disk opnr	Corn, grain	41
10/20/1	Harvest, killing crop 50pct standing stubble		77
11/5/1	Manure spreader, solid and semi-solid		85
11/10/1	Chisel, st. pt.		58
4/15/2	Disk, tandem secondary op.		42
4/15/2	Cultivator, field 6-12 in sweeps		42
4/22/2	Planter, double disk opnr	Corn, grain	43
10/10/2	Harvest, killing crop 50pct standing stubble		77

USDA NRCS
Natural Resources Conservation Service

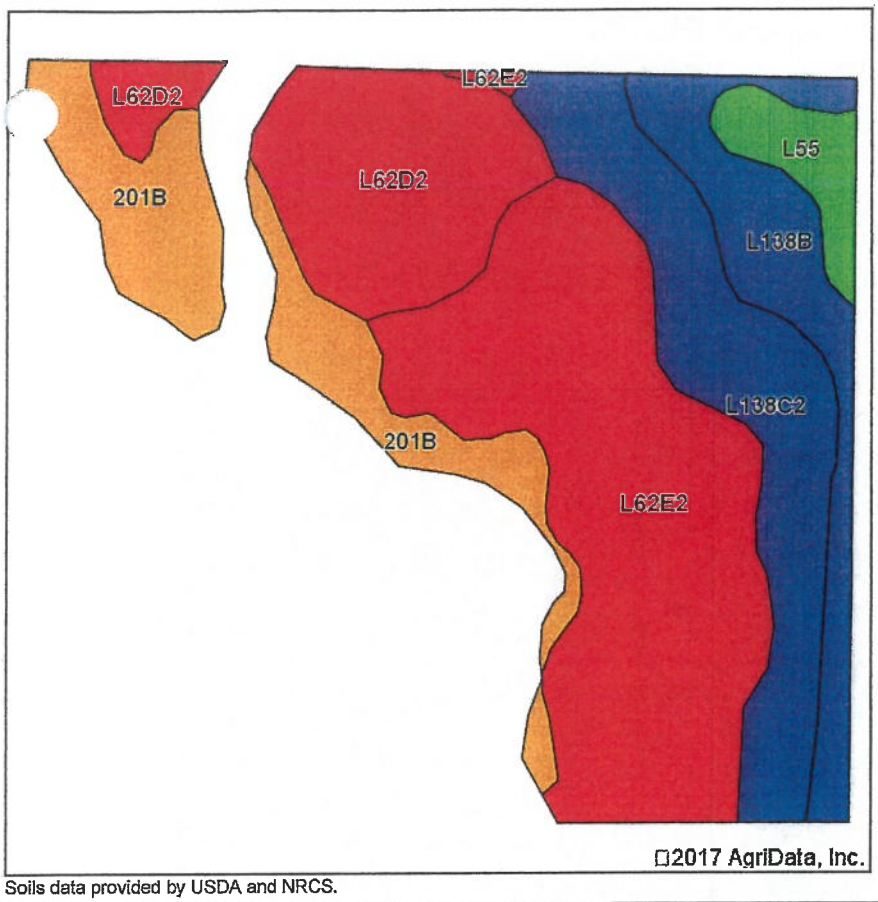
v. 1/22/2007

Iowa Phosphorus Index

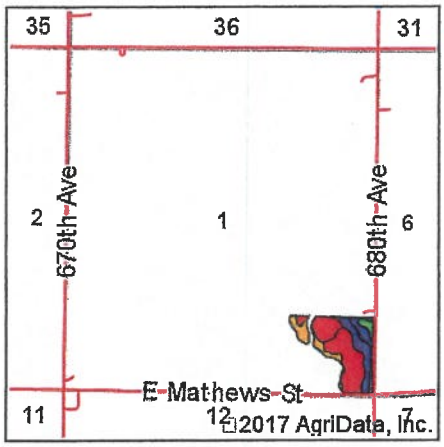
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x	STP Factor	= Tile/Sub PI		P Index
Burnotte East --	11.00		1.00		0.20		1.00		1.10		0.93	2.23		1.32		0.32	0.07	0.52		0.00		0.07	0.00		2.74

Burnotte East Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **1-84N-22W**
Township: **Richland**
Acres: **25.2**
Date: **5/11/2017**

Maps Provided By:

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Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	9.03	35.8%		IVe	32	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	4.49	17.8%		IIIe	83	
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	4.21	16.7%		IVe	41	
201B	Coland-Terril complex, 1 to 5 percent slopes	3.76	14.9%		IIw	76	40
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	2.78	11.0%		IIe	88	
L55	Nicollet loam, 1 to 3 percent slopes	0.93	3.7%		Ie	91	
					Weighted Average	**57.5**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points

Grower: K02-Couser Custom
Farm: Farm
Field: Esthers
Area: 100.50 ac

One in = 686 feet

0 315 629 944 1259 1574

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-140-0211

REPORT DATE
May 22, 2014

ACCOUNT
28482

RECEIVED DATE
May 20, 2014

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TODAY'S DATE
May 22, 2014

IDENTIFICATION

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ESTHERS

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26660076	1	4.7	9	100		248	365	5433		7.7		30.8	2.1	9.9	88.0	0.0				0-6		15	1.1						0.5		75
26660077	2	4.9	95	116		364	621	4538		6.4	6.6	31.6	3.0	16.4	71.8	8.8				0-6		26	1.6						0.7		
26660078	3	3.9	62	129		388	445	3803		6.6	6.8	25.2	3.9	14.7	75.5	5.9				0-6		25	1.2						0.6		
26660079	4	5.9	21	130		325	353	5590		7.6		31.7	2.6	9.3	88.1	0.0				0-6		15	1.5						0.5		110
26660080	5	3.8	10	68		226	299	5068		7.8		28.4	2.0	8.8	89.2	0.0				0-6		13	0.9						0.5		66
26660081	6	3.8	69	108		287	422	3560		6.3	6.7	24.7	3.0	14.2	72.1	10.7				0-6		21	1.1						0.6		
26660082	7	4.1	61	90		252	480	3532		6.2	6.6	25.3	2.6	15.8	69.8	11.8				0-6		23	1.1						0.4		
26660083	8	3.9	48	63		206	404	3370		6.2	6.6	23.5	2.2	14.3	71.7	11.8				0-6		20	1.1						0.5		
26660084	9	4.2	54	86		212	518	3959		6.5	6.7	26.7	2.0	16.2	74.1	7.7				0-6		19	1.1						0.6		
26660085	10	2.6	49	81		192	381	3149		6.7		19.4	2.5	16.4	81.1	0.0				0-6		17	0.8						0.4		
26660086	11	3.2	8	86		213	297	4989		7.7		28.0	2.0	8.8	89.2	0.0				0-6		12	0.8						0.5		58
26660087	12	2.5	29	47		194	317	3286		6.8		19.6	2.5	13.5	84.0	0.0				0-6		17	0.6						0.4		
26660088	13	3.8	36	53		221	370	3658		6.7		21.9	2.6	14.1	83.3	0.0				0-6		18	0.8						0.5		
26660089	14	3.0	32	52		174	384	3081		6.7		19.1	2.3	16.8	80.9	0.0				0-6		15	0.5						0.5		
26660090	15	2.9	22	31		219	346	2723		6.4	6.7	18.8	3.0	15.3	72.4	9.3				0-6		24	0.5						0.4		
26660091	16	2.1	21	45		163	391	3016		6.9		18.8	2.2	17.3	80.5	0.0				0-6		17	0.5						0.4		
26660092	17	2.4	36	50		224	272	2336		6.2	6.7	16.5	3.5	13.7	70.8	12.0				0-6		19	0.5						0.5		
26660093	18	3.8	21	86		189	393	4879		7.6		28.2	1.7	11.6	86.7	0.0				0-6		14	1.0						0.5		49
26660094	19	4.9	11	115		339	450	5134		7.8		30.3	2.9	12.4	84.7	0.0				0-6		15	1.3						0.6		80
26660095	20	3.5	45	62		199	412	3134		6.3	6.7	21.9	2.3	15.7	71.6	10.4				0-6		23	1.0						0.6		
26660096	21	4.2	60	95		284	547	3626		6.2	6.6	26.6	2.7	17.1	68.2	12.0				0-6		23	1.4						0.6		
26660097	22	2.9	43	59		189	314	2583		6.4	6.8	17.6	2.8	14.9	73.4	8.9				0-6		21	1.3						0.5		
26660098	23	2.9	83	108		233	339	2930		6.7		18.1	3.3	15.6	81.1	0.0				0-6		25	1.9						0.6		
26660100	24	2.6	58	66		271	264	2812		6.8		17.0	4.1	12.9	83.0	0.0				0-6		18	0.7						0.5		
26660101	25	2.5	79	96		315	395	2948		6.7		18.8	4.3	17.5	78.2	0.0				0-6		22	1.3						0.7		
26660102	26	2.3	61	94		239	406	2814		6.7		18.1	3.4	18.7	77.9	0.0				0-6		22	1.4						0.6		
26660103	27	3.5	107	120		414	442	3054		6.5	6.8	21.6	4.9	17.1	70.7	7.3				0-6		28	2.4						0.7		
26660104	28	4.1	70	136		328	630	3977		6.5	6.7	28.1	3.0	18.7	70.8	7.5				0-6		23	1.9						0.7		
26660105	29	3.5	27	93		428	621	3338		6.8		23.0	4.8	22.5	72.7	0.0				0-6		39	1.5						0.7		
26660106	30	2.7	51	115		292	489	2933		6.9		19.5	3.8	20.9	75.3	0.0				0-6		33	1.5						0.6		
26660107	31	2.0	59	88		274	376	2878		6.7		18.2	3.9	17.2	78.9	0.0				0-6		27	1.3						0.5		
26660108	32	5.1	74	138		466	727	4355		6.7		29.0	4.1	20.9	75.0	0.0				0-6		37	3.1						0.7		

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TODAY'S DATE
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22703 600TH AVENUE
NEVADA IA 50201

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26660109	33	3.0	99	147		564	441	3319		7.5		21.7	6.7	16.9	76.4	0.0				0-6		10	6.3						0.4		192
26660110	34	2.8	33	50		417	327	2975		7.1		18.7	5.7	14.6	79.7	0.0				0-6		12	1.2						0.5		
26660111	35	3.1	19	45		258	377	3203		7.0		19.8	3.3	15.9	80.8	0.0				0-6		12	0.7						0.4		
26660112	36	4.0	38	65		298	467	3785		7.0		23.6	3.2	16.5	80.3	0.0				0-6		12	1.2						0.4		
26660113	37	2.7	46	53		241	288	2365		6.4	6.8	16.3	3.8	14.7	72.5	9.0				0-6		20	0.6						0.5		
26660114	38	1.7	8	42		158	374	2802		8.1		17.5	2.3	17.8	79.9	0.0				0-6		12	0.4						0.4		43
26660115	39	2.4	38	84		251	477	2711		7.8		18.2	3.5	21.8	74.7	0.0				0-6		17	0.5						0.5		57
26660116	40	2.7	43	107		291	453	2600		7.7		17.5	4.3	21.6	74.1	0.0				0-6		14	3.6						0.5		70
26660117	41	2.2	16	31		141	351	2082		7.2		13.7	2.6	21.4	76.0	0.0				0-6		11	0.7						0.4		
26660118	42	1.7	15	38		137	351	2812		7.7		17.3	2.0	16.9	81.1	0.0				0-6		11	0.2						0.4		46
26660119	43	3.1	30	50		120	364	2321		6.1	6.7	17.3	1.8	17.5	67.1	13.6				0-6		6	0.4						0.2		
26660120	44	4.3	66	89		257	292	1879		5.3	6.2	18.1	3.6	13.4	51.9	31.1				0-6		8	0.9						0.3		

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Rierson East

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

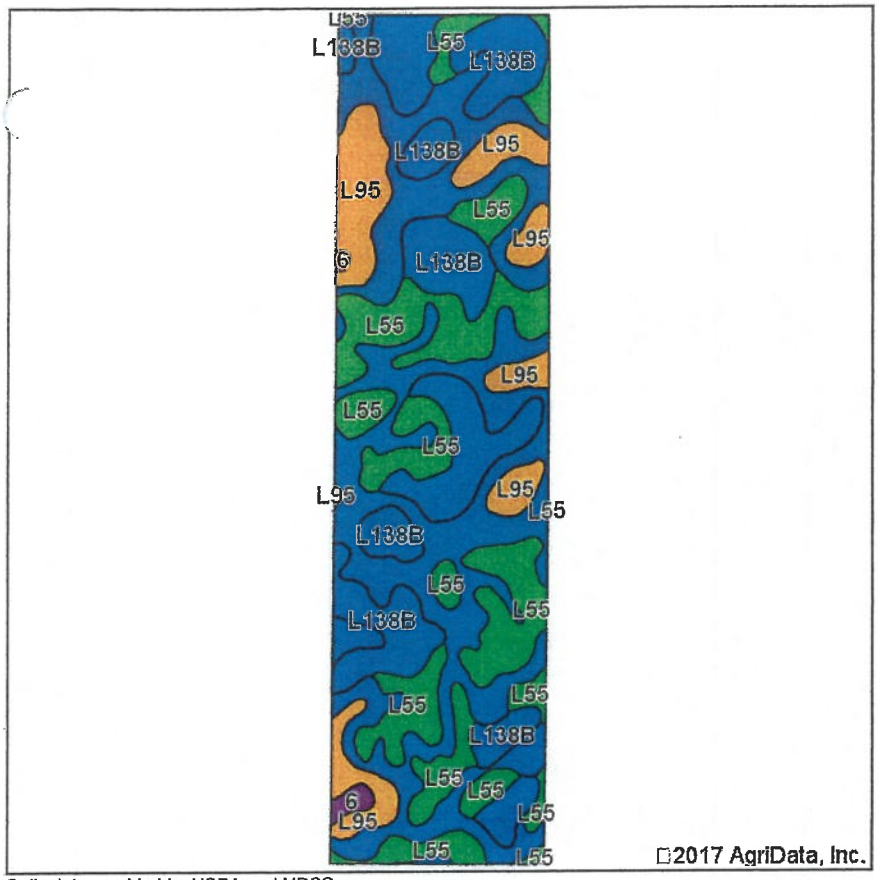
v. 1/22/2007

Iowa Phosphorus Index

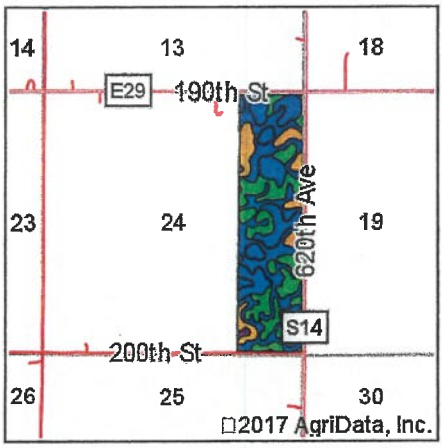
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x SDR x	Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI			Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Rierson East --	1.60		1.00	0.06	1.00	1.10	1.48	0.16		1.32	0.98	0.07	1.38			0.00	0.15	0.00		1.54

Rierson East Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **24-84N-23W**
Township: **Milford**
Acres: **155.56**
Date: **5/11/2017**

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	57.35	36.9%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	40.47	26.0%		Ie	91	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	39.72	25.5%		IIe	88	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	16.94	10.9%		IIw	75	
6	Okoboji silty clay loam, 0 to 1 percent slopes	1.08	0.7%		IIIw	59	59
					Weighted Average	**87.2**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Ryerson East

KEY COOPERATIVE
Connect. Build. Grow.

Grower : Couser Cattle Company

Field : Ryerson East

Year : 2013

Operation : Soil Sampling

PS Count : 64

Area : 151.2 ac

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess	Soluble	NH3-	MP3
																		Surface			Total							Lime	Salts	N	Color
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25353980	1	5.3	172	173		396	639	4540		7.1		29.0	3.5	18.4	78.1	0.0				0-6		16	3.6	4	37	1.4	0.9				
25353981	2	4.1	174	175		433	428	2892		6.5	6.8	20.7	5.4	17.2	69.9	7.5				0-6		15	4.6	15	81	1.3	0.6				
25353982	3	5.1	192	193		493	668	4433		7.0		29.0	4.4	19.2	76.4	0.0				0-6		14	5.9	23	92	2.2	0.8				
25353983	4	4.2	148	180		410	599	3627		6.8		24.2	4.3	20.6	75.1	0.0				0-6		14	4.4	13	96	1.6	0.7				
25353984	5	4.0	164	182		449	548	3749		7.0		24.5	4.7	18.6	76.7	0.0				0-6		16	4.6	11	75	1.4	0.7				
25353985	6	4.7	140	160		426	625	5457		7.6		33.6	3.3	15.5	81.2	0.0				0-6		16	4.5	4	27	1.6	1.2				296
25353986	7	4.4	134	148		299	753	5232		7.2		33.2	2.3	18.9	78.8	0.0				0-6		12	4.3	5	53	1.8	0.8				
25353987	8	4.1	79	131		311	419	5341		7.9		31.0	2.6	11.3	86.1	0.0				0-6		11	2.7	7	29	1.6	1.3				144
25353988	9	3.4	125	128		334	425	3313		6.5	6.7	22.7	3.8	15.6	73.0	7.6				0-6		17	3.0	12	103	1.6	0.8				
25353989	10	4.7	27	154		245	433	6428		7.9		36.4	1.7	9.9	88.4	0.0				0-6		12	3.0	4	31	1.7	1.4				152
25353990	11	3.8	137	177		328	530	3739		7.3		24.0	3.5	18.4	78.1	0.0				0-6		13	4.0	4	37	1.4	0.9				192
25353991	12	5.1	97	182		367	468	6011		7.7		34.9	2.7	11.2	86.1	0.0				0-6		13	3.4	2	23	1.6	1.0				236
25353992	13	3.7	127	180		314	536	3506		6.8		22.8	3.5	19.6	76.9	0.0				0-6		11	3.3	6	46	1.2	0.8				
25353993	14	6.1	65	180		372	431	6255		7.8		35.8	2.7	10.0	87.3	0.0				0-6		13	4.1	7	32	1.9	1.4				204
25353994	15	4.1	130	182		354	514	3727		6.5	6.7	25.7	3.5	16.7	72.5	7.3				0-6		12	4.2	9	83	1.4	0.6				
25353995	16	2.9	169	170		380	322	2178		7.0		14.5	6.7	18.5	74.8	0.0				0-6		12	4.1	4	34	0.9	0.6				
25353996	17	3.3	55	76		209	370	3146		6.9		19.3	2.8	16.0	81.2	0.0				0-6		13	2.1	9	58	0.9	0.6				
25353997	18	3.0	78	110		248	351	2676		6.4	6.7	18.6	3.4	15.7	71.9	9.0				0-6		9	2.6	9	63	1.0	0.5				
25353998	19	5.3	13	129		287	400	5880		7.9		33.5	2.2	10.0	87.8	0.0				0-6		11	3.0	5	25	1.5	1.6				156
25353999	20	3.8	129	173		320	440	3461		6.8		21.8	3.8	16.8	79.4	0.0				0-6		10	3.8	8	65	1.1	0.7				
25354000	21	3.2	94	136		319	297	2408		6.0	6.7	18.0	4.5	13.8	66.9	14.8				0-6		17	3.3	15	97	1.2	0.5				
25354001	22	3.9	170	182		359	367	2758		6.1	6.6	20.7	4.4	14.8	66.6	14.2				0-6		13	4.6	13	117	1.5	0.6				
25354002	23	4.0	178	179		602	559	3639		7.6		24.4	6.3	19.1	74.6	0.0				0-6		19	4.8	12	67	2.3	1.2				312
25354003	24	3.3	140	175		324	354	2524		6.1	6.7	19.1	4.3	15.4	66.1	14.2				0-6		10	3.4	10	85	1.2	0.6				
25354004	25	3.0	189	190		372	368	2327		6.4	6.8	17.2	5.5	17.8	67.6	9.1				0-6		13	4.1	17	77	1.2	0.6				
25354005	26	4.5	118	152		420	722	4427		7.1		29.2	3.7	20.6	75.7	0.0				0-6		18	4.3	6	61	2.0	0.9				
25354006	27	5.6	53	180		349	472	5725		7.6		33.5	2.7	11.7	85.6	0.0				0-6		11	3.8	4	26	1.9	1.6				256
25354007	28	4.5	124	128		336	607	4750		7.6		29.7	2.9	17.0	80.1	0.0				0-6		14	3.2	13	30	2.1	1.4				208
25354008	29	4.9	112	125		402	604	5086		7.6		31.5	3.3	16.0	80.7	0.0				0-6		11	3.2	3	27	1.6	1.3				188
25354009	30	3.5	132	153		309	408	2873		6.0	6.6	21.9	3.6	15.5	65.6	15.3				0-6		11	3.2	15	87	1.3	0.6				
25354010	31	5.4	136	168		310	706	3983		6.6	6.7	28.3	2.8	20.8	70.4	6.0				0-6		12	4.0	18	150	2.5	0.9				
25354011	32	4.5	67	181		248	413	4906		7.6		28.6	2.2	12.0	85.8	0.0				0-6		11	2.3	7	29	1.4	1.4				136

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus										Percent Base Saturation					Nitrate											Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic	K	Mg	Ca	Na	pH	Buff	CEC						Surface			Total	S	Zn	Mn	Fe	Cu	B				
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25354012	33	4.0	87	180		253	427	4696		7.8		27.7	2.3	12.8	84.9	0.0				0-6		12	2.3	3	21	1.3	1.3				232
25354013	34	4.6	189	190		455	676	3992		7.3		26.8	4.4	21.0	74.6	0.0				0-6		11	4.9	7	35	1.5	1.4				340
25354014	35	5.6	200	201		595	668	4777		7.4		31.0	4.9	18.0	77.1	0.0				0-6		13	5.5	7	35	2.0	1.7				344
25354016	36	4.7	218	219		500	618	3315		6.8		23.0	5.6	22.4	72.0	0.0				0-6		13	5.1	7	68	1.6	0.8				
25354017	37	3.9	196	197		465	505	2690		6.8		18.9	6.3	22.3	71.4	0.0				0-6		14	5.3	13	70	1.4	0.7				
25354018	38	5.2	171	172		418	672	4760		7.5		30.5	3.5	18.4	78.1	0.0				0-6		17	5.2	8	35	2.1	1.4				324
25354019	39	3.6	101	169		262	591	3966		7.6		25.4	2.6	19.4	78.0	0.0				0-6		17	3.7	8	46	2.0	1.2				212
25354020	40	5.0	151	176		496	564	4611		7.5		29.0	4.4	16.2	79.4	0.0				0-6		12	3.6	4	34	1.8	1.4				260
25354021	41	5.4	135	182		407	476	4832		7.6		29.2	3.6	13.6	82.8	0.0				0-6		12	4.8	4	26	1.8	1.6				348
25354022	42	4.5	197	198		834	633	3765		7.5		26.2	8.2	20.1	71.7	0.0				0-6		15	6.3	6	67	2.3	1.3				372
25354023	43	4.2	115	151		391	519	3438		6.6	6.8	23.9	4.2	18.1	71.9	5.8				0-6		12	3.9	19	124	1.9	0.7				
25354024	44	3.6	150	164		420	336	2837		6.6	6.8	19.3	5.6	14.5	73.5	6.4				0-6		12	2.9	12	72	1.1	0.5				
25354025	45	3.8	146	153		365	538	3337		6.9		22.1	4.2	20.3	75.5	0.0				0-6		10	3.5	7	63	1.4	0.7				
25354026	46	3.0	120	154		387	300	2656		7.0		16.8	5.9	14.9	79.2	0.0				0-6		11	3.0	7	39	0.8	0.6				
25354027	47	2.8	115	133		287	341	2233		6.6	6.9	15.6	4.7	18.2	71.6	5.5				0-6		11	3.1	8	61	1.0	0.6				
25354028	48	3.7	110	116		297	422	2919		7.2		18.9	4.0	18.6	77.4	0.0				0-6		12	4.0	10	77	1.3	0.7				
25354029	49	3.5	95	138		211	498	2881		5.9	6.6	23.0	2.4	18.0	62.6	17.0				0-6		9	2.7	12	143	1.8	0.6				
25354030	50	4.0	122	177		281	405	4089		7.5		24.5	2.9	13.8	83.3	0.0				0-6		9	3.7	7	42	1.4	1.0				180
25354031	51	5.3	14	182		293	344	5260		7.9		29.9	2.5	9.6	87.9	0.0				0-6		10	3.5	3	23	1.5	1.6				184
25354032	52	5.7	25	180		313	376	5510		7.8		31.5	2.5	9.9	87.6	0.0				0-6		11	3.9	4	29	1.8	1.7				228
25354033	53	4.2	95	172		252	500	3898		7.3		24.3	2.7	17.1	80.2	0.0				0-6		9	2.8	6	43	1.6	1.0				160
25354034	54	5.6	120	156		423	711	4429		7.2		29.2	3.7	20.3	76.0	0.0				0-6		10	3.8	9	75	1.9	0.9				
25354035	55	4.3	105	148		235	580	4115		7.2		26.0	2.3	18.6	79.1	0.0				0-6		10	2.9	6	30	1.5	1.2				
25354036	56	4.6	136	180		303	687	4534		7.4		29.2	2.7	19.6	77.7	0.0				0-6		16	3.7	5	42	1.7	1.1				240
25354037	57	4.3	118	132		249	585	3974		7.5		25.4	2.5	19.2	78.3	0.0				0-6		13	3.0	9	57	1.6	1.0				176
25354038	58	4.3	121	134		287	657	4180		7.5		27.1	2.7	20.2	77.1	0.0				0-6		21	3.6	17	64	2.1	1.0				256
25354039	59	4.9	193	194		429	683	3973		7.2		26.7	4.1	21.3	74.6	0.0				0-6		19	5.2	19	94	2.5	1.0				
25354040	60	4.0	153	162		394	640	3607		7.1		24.4	4.1	21.9	74.0	0.0				0-6		12	4.4	14	57	1.7	0.9				
25354041	61	4.3	58	182		281	381	4781		7.6		27.8	2.6	11.4	86.0	0.0				0-6		13	2.9	5	20	1.3	1.5				188
25354042	62	4.5	97	180		427	417	4646		7.7		27.8	3.9	12.5	83.6	0.0				0-6		17	4.3	4	27	1.6	1.2				316
25354043	63	4.6	128	180		438	484	5051		7.7		30.4	3.7	13.3	83.0	0.0				0-6		12	3.8	12	30	1.9	1.3				292
25354044	64	4.1	117	161		224	408	2696		5.8	6.6	21.6	2.7	15.7	62.4	19.2				0-6		11	3.0	15	142	1.4	0.6				

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Dicks 60

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

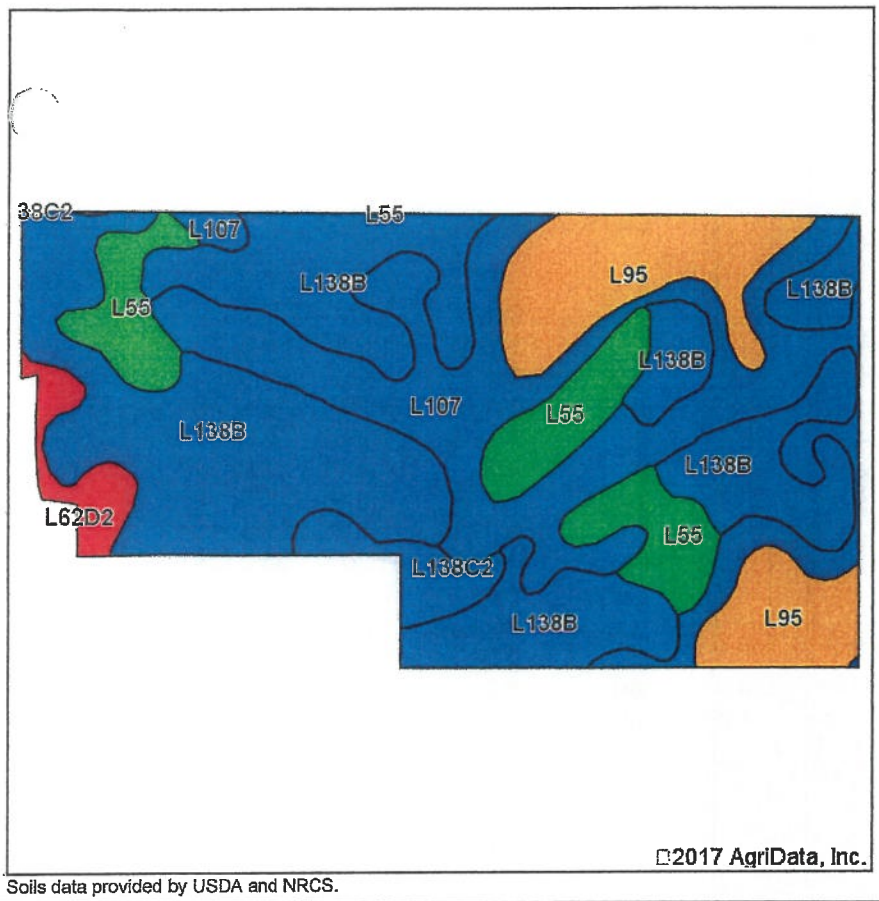
v. 1/22/2007

Iowa Phosphorus Index

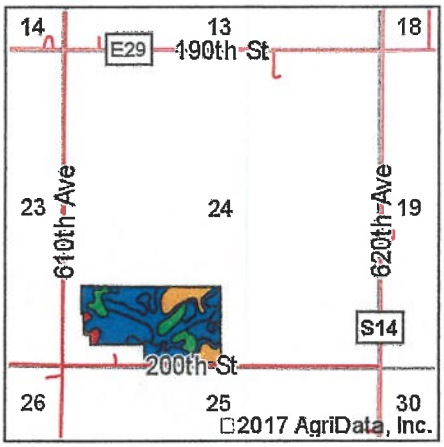
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion									+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI	RCN Factor	x (	STP Factor	+	P App Factor	) = Runoff PI	Flow Factor	x	STP Factor	= Tile/Sub PI	P Index
Dicks 60 –	1.60		1.00		0.09		1.00		1.10		0.95	0.15	1.32		0.35		0.04	0.51	0.00		0.07	0.00	0.67

Dicks 60 Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **24-84N-23W**
Township: **Milford**
Acres: **61.18**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	27.48	44.9%		IIe	88
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	16.16	26.4%		IIw	88
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	7.94	13.0%		IIw	75
L55	Nicollet loam, 1 to 3 percent slopes	6.43	10.5%		Ie	91
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	1.72	2.8%		IIIe	83
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	1.45	2.4%		IVe	41
					Weighted Average	**85.4**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

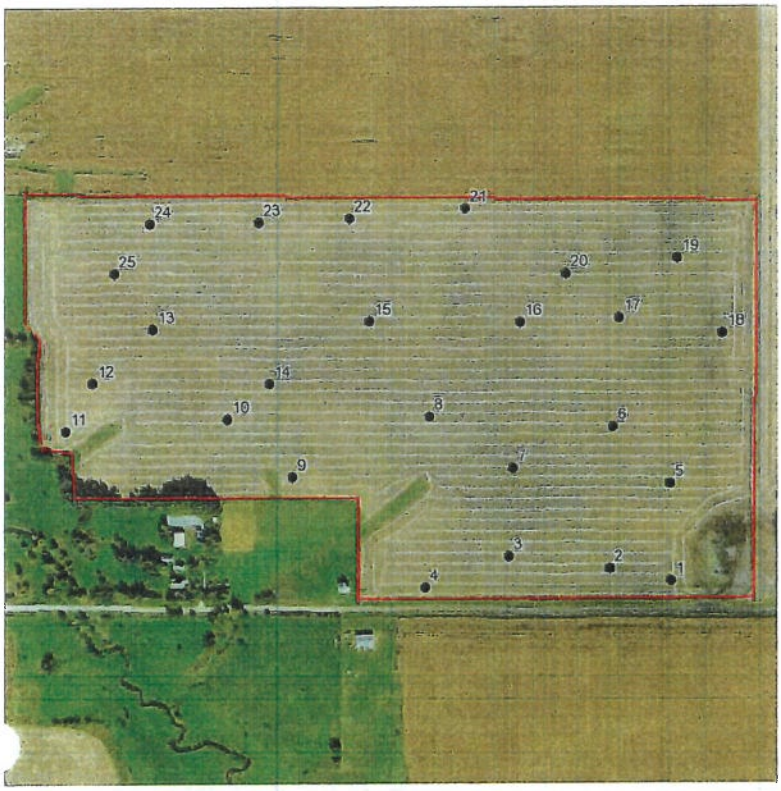
Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 30 Dick60 Main
Acres: 60.44

Field(s): Dicks 60

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933



Element	Average	Range
P:	59 VH	3 VL - 126 VH
K:	176 M	131 L - 258 H
Mg:	403 VH	299 H - 521 VH
Ca:	3184 M	1795 L - 4846 VH
S:	13.3 M	7.0 VL - 19.0 M
B:	0.7 L	0.4 VL - 1.2 M
Zn:	2.7 M	1.8 M - 5.4 H
Mn:	3.9 VL	2.0 VL - 7.0 L
Fe:	44.3 VH	15.0 M - 96.0 VH
Cu:	0.9 L	0.7 L - 1.3 M
Na:	18.8 VL	11.0 VL - 25.0 VL
SS:	0.30	0.10 - 0.50
NN:	5.8	3.0 - 10.0
OM:	3.1 M	2.1 L - 4.3 H
pH:	7.1	6.3 - 8.0
Buffer:	7.0	6.7 - 7.1
ENR:	N/A	N/A
CeC:	20.3	13.0 - 27.4

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
Dicks 60																				
1	1	1-1	23	196	299	4013	9	1.0	2.8	3	22.0	1.0	17.0	0.4	10.0	3.5	7.9	7.1	n/a	23.1
2	2	1-2	113	246	433	4041	9	1.0	3.3	2	31.0	1.3	15.0	0.4	8.0	3.7	7.7	7.1	n/a	24.5
3	3	1-3	126	258	408	2520	15	0.6	3.6	4	47.0	1.2	19.0	0.2	8.0	3.0	6.9	7.1	n/a	16.7
4	4	1-4	97	234	341	1892	19	0.5	2.3	5	57.0	0.9	23.0	0.2	6.0	2.2	7.0	7.1	n/a	13.0
5	5	1-5	52	141	337	3598	16	0.9	2.1	4	36.0	0.8	22.0	0.4	6.0	3.4	7.3	7.1	n/a	21.3
6	6	1-6	72	177	521	2837	16	0.6	3.1	5	59.0	1.0	25.0	0.2	5.0	3.2	6.5	6.8	n/a	20.6
7	7	1-7	46	147	404	4405	16	1.0	5.4	2	18.0	0.9	22.0	0.4	6.0	3.7	7.7	7.1	n/a	25.9
8	8	1-8	64	158	416	2329	17	0.5	3.2	3	35.0	0.7	23.0	0.2	5.0	2.4	7.1	7.1	n/a	15.6
9	9	1-9	64	166	429	2243	8	0.5	2.7	4	50.0	0.8	14.0	0.2	6.0	2.6	6.7	7.1	n/a	15.3
10	10	1-10	63	241	361	2017	7	0.4	2.6	5	52.0	0.8	11.0	0.2	6.0	2.5	6.6	6.9	n/a	14.7
11	11	1-11	54	172	357	1816	8	0.4	2.2	5	40.0	0.8	13.0	0.2	8.0	2.1	6.3	6.8	n/a	14.1
12	12	1-12	93	188	340	1795	15	0.4	2.8	7	96.0	0.8	22.0	0.1	7.0	2.5	6.3	6.8	n/a	13.9
13	13	1-13	55	142	368	1978	14	0.4	2.4	5	67.0	0.9	21.0	0.1	5.0	2.8	6.3	6.8	n/a	15.0
14	14	1-14	73	176	506	2688	15	0.5	2.5	6	70.0	1.2	20.0	0.2	7.0	3.3	6.4	6.7	n/a	20.0
15	15	1-15	69	162	517	4153	9	0.9	3.2	2	27.0	1.0	14.0	0.4	8.0	3.6	7.4	7.1	n/a	25.5
16	16	1-16	61	154	485	4308	16	0.9	2.5	2	32.0	1.0	21.0	0.5	6.0	3.8	7.3	7.1	n/a	26.1
17	17	1-17	66	155	505	2991	14	0.6	3.4	6	65.0	1.0	25.0	0.2	5.0	3.6	6.5	6.8	n/a	21.3
18	18	1-18	9	148	344	4716	15	1.1	3.0	2	19.0	0.9	21.0	0.4	5.0	3.7	8.0	7.1	n/a	26.9
19	19	1-19	70	241	457	4462	19	1.0	2.9	4	35.0	1.1	23.0	0.4	4.0	4.0	7.5	7.1	n/a	26.8
20	20	1-20	3	147	355	4799	10	1.2	2.2	2	17.0	0.9	14.0	0.4	4.0	3.9	8.0	7.1	n/a	27.4
21	21	1-21	14	179	318	4846	10	1.1	2.6	2	15.0	1.0	11.0	0.4	4.0	4.3	8.0	7.1	n/a	27.4
22	22	1-22	52	162	498	3873	10	0.9	2.2	3	32.0	0.9	12.0	0.4	5.0	3.3	7.7	7.1	n/a	24.0
23	23	1-23	46	131	344	2192	15	0.5	1.8	5	53.0	0.7	21.0	0.2	3.0	2.5	6.5	6.8	n/a	15.5
24	24	1-24	48	141	391	2220	17	0.5	1.8	5	76.0	0.9	21.0	0.4	4.0	2.4	6.8	7.1	n/a	14.8

AgPhD SOIL TEST

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SAMPLE DATE:
ISSUED: 1:24pm EDT Sep22, 2015
A Product of Agfleet Version 3.00

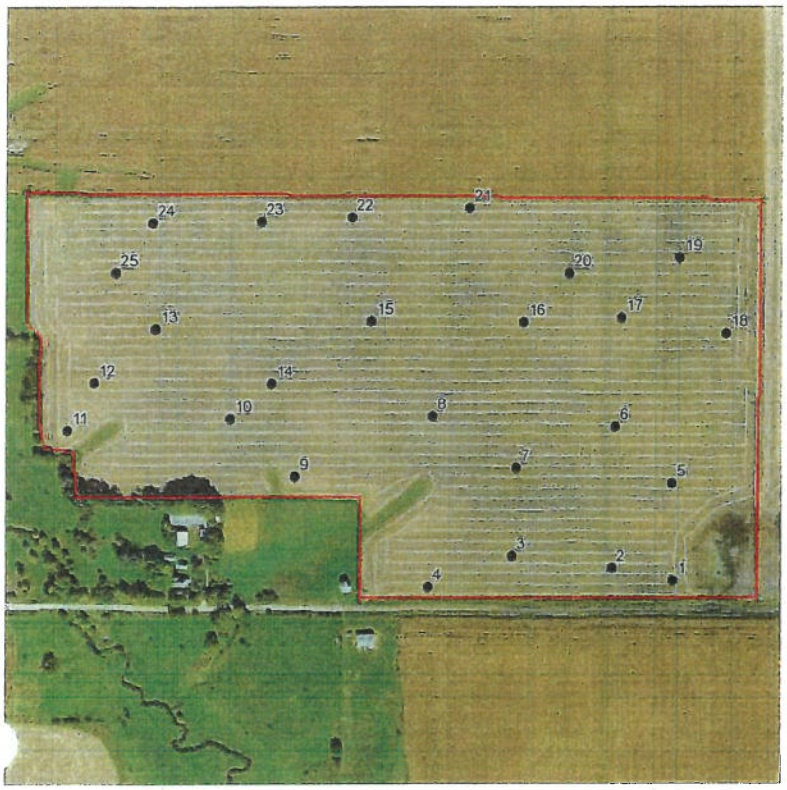
Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 30 Dick60 Main
Acres: 60.44

Field(s): Dicks 60

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933



Element	Average	Range
P:	59 VH	3 VL - 126 VH
K:	176 M	131 L - 258 H
Mg:	403 VH	299 H - 521 VH
Ca:	3184 M	1795 L - 4846 VH
S:	13.3 M	7.0 VL - 19.0 M
B:	0.7 L	0.4 VL - 1.2 M
Zn:	2.7 M	1.8 M - 5.4 H
Mn:	3.9 VL	2.0 VL - 7.0 L
Fe:	44.3 VH	15.0 M - 96.0 VH
Cu:	0.9 L	0.7 L - 1.3 M
Na:	18.8 VL	11.0 VL - 25.0 VL
SS:	0.30	0.10 - 0.50
NN:	5.8	3.0 - 10.0
OM:	3.1 M	2.1 L - 4.3 H
pH:	7.1	6.3 - 8.0
Buffer:	7.0	6.7 - 7.1
ENR:	N/A	N/A
CeC:	20.3	13.0 - 27.4

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
25	25	1-25	50	139	352	2864	14	0.5	1.9	4	57.0	0.7	19.0	0.4	4.0	2.4	7.0	7.1	n/a	17.7

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SAMPLE DATE:
ISSUED: 1:24pm EDT Sep22, 2015
A Product of Agfleet Version 3.00

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Jeffs Place

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

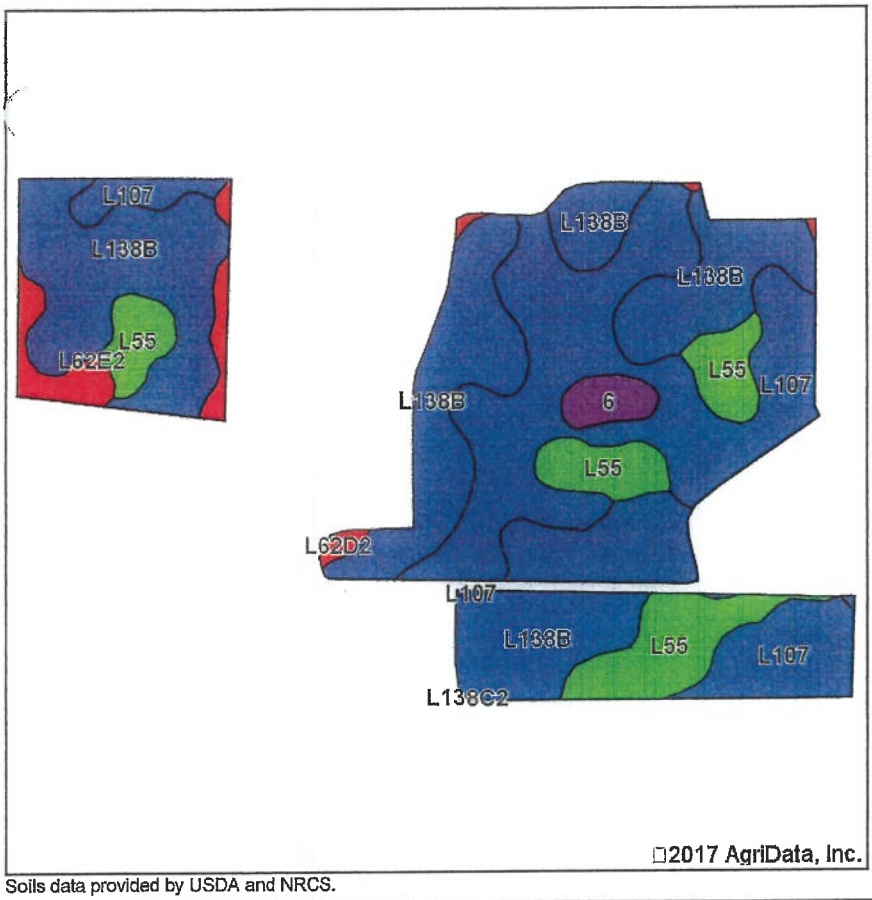
v. 1/22/2007

Iowa Phosphorus Index

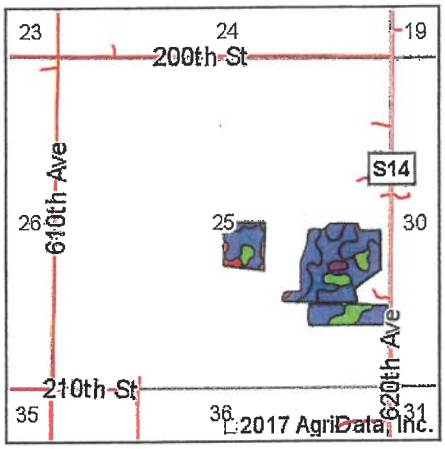
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion										Runoff					Tile / Subsurface Recharge				Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI	RCN Factor	x (STP Factor | + P App Factor |) = Runoff PI	+	Flow Factor	x STP Factor	= Tile/Sub PI	=	P Index
Jeffs Place --	1.60		1.00		0.10		1.00		1.10		0.78	0.13	1.32	0.15	0.04	0.25		0.00	0.07	0.00		0.39

Jeffs Place Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **25-84N-23W**
Township: **Milford**
Acres: **51.34**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	24.32	47.4%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	17.42	33.9%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	6.68	13.0%		Ie	91	
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	1.66	3.2%		IVe	32	
6	Okoboji silty clay loam, 0 to 1 percent slopes	0.91	1.8%		IIIw	59	59
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	0.35	0.7%		IVe	41	
					Weighted Average	**85.7**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points

Grower: K02-Anderson, Dave
Farm: Farm
Field: Jeffs Place
Area: 53.69 ac

One in = 464 feet

0 210 419 629 838 1048

Field Boundary
Soil Sample Points

KEY COOPERATIVE

REPORT NUMBER
17-06[illegible]-0203

COMPLETED DATE
Mar 9, 2017

ACCOUNT
28482

RECEIVED DATE
Mar 7, 2017

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Mar 09, 2017

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

ACM/KEY COOP
CORY DEJONG
22703 600TH AVENUE

NEVADA IA 50201

IDENTIFICATION
K02-DAVE ANDERSON
JEFFS PLACE

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate			Total	S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface												
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
31129301	1	4.1	29	132		235	323	5175		7.6		29.2	2.1	9.2	88.7	0.0				0-6		17	0.6							48
31129302	2	3.5	10	21		143	320	3658		7.0		21.3	1.7	12.5	85.8	0.0				0-6		14	0.7							
31129303	3	2.0	6	10		172	209	2398		6.7		14.2	3.1	12.3	84.6	0.0				0-6		15	0.2							
31129304	4	2.4	3	10		173	193	2273		6.3	6.8	15.0	3.0	10.7	75.8	10.5				0-6		16	0.8							
31129305	5	2.1	10	17		110	218	2508		7.0		14.6	1.9	12.4	85.7	0.0				0-6		15	0.7							
31129306	6	3.6	71	99		275	254	2782		5.9	6.6	20.1	3.5	10.5	69.2	16.8				0-6		18	1.4							
31129307	7	2.9	17	21		172	268	2685		6.3	6.7	18.0	2.5	12.4	74.6	10.5				0-6		14	1.6							
31129308	8	2.7	12	15		147	275	2538		6.6	6.9	16.4	2.3	14.0	77.4	6.3				0-6		18	0.5							
31129309	9	1.9	18	23		124	276	1582		5.5	6.6	14.2	2.2	16.2	55.7	25.9				0-6		16	0.2							
31129310	10	1.9	19	26		119	207	1256		5.3	6.5	12.0	2.5	14.4	52.3	30.8				0-6		18	0.4							
31129311	11	3.6	21	29		135	444	2685		5.7	6.5	22.1	1.6	16.7	60.7	21.0				0-6		19	0.8							
31129312	12	2.1	11	18		150	248	1386		5.3	6.4	13.6	2.8	15.2	51.0	31.0				0-6		18	0.3							
31129313	13	3.1	15	29		167	374	3442		6.6	6.8	22.1	1.9	14.1	77.9	6.1				0-6		17	0.5							
31129314	14	5.6	20	126		254	334	6112		7.5		34.0	1.9	8.2	89.9	0.0				0-6		18	0.8							54
31129315	15	4.2	7	67		187	580	5327		7.3		31.9	1.5	15.2	83.3	0.0				0-6		19	0.4							16
31129316	16	4.1	62	77		161	434	3745		6.2	6.6	25.9	1.6	14.0	72.3	12.1				0-6		17	1.0							
31129317	17	4.0	42	68		178	503	4226		6.9		25.8	1.8	16.2	82.0	0.0				0-6		15	0.6							
31129318	18	2.2	8	12		90	190	2413		6.6	6.9	14.8	1.6	10.7	81.5	6.2				0-6		15	0.2							
31129319	19	3.6	36	48		206	423	3917		6.5	6.7	25.5	2.1	13.8	76.8	7.3				0-6		15	0.7							
31129320	20	2.6	12	15		109	227	2403		6.2	6.7	16.1	1.7	11.7	74.6	12.0				0-6		16	0.3							
31129321	21	1.6	5	11		117	203	3221		7.7		18.1	1.7	9.3	89.0	0.0				0-6		17	0.1							13
31129322	22	2.0	19	29		108	199	2143		6.4	6.8	14.0	2.0	11.8	76.5	9.7				0-6		17	0.1							
31129323	23	3.8	16	24		226	370	3559		6.5	6.7	23.2	2.5	13.3	76.7	7.5				0-6		17	0.5							
31129324	24	2.5	24	40		135	275	2506		6.2	6.7	17.3	2.0	13.2	72.4	12.4				0-6		20	0.3							

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.
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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Otto North

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

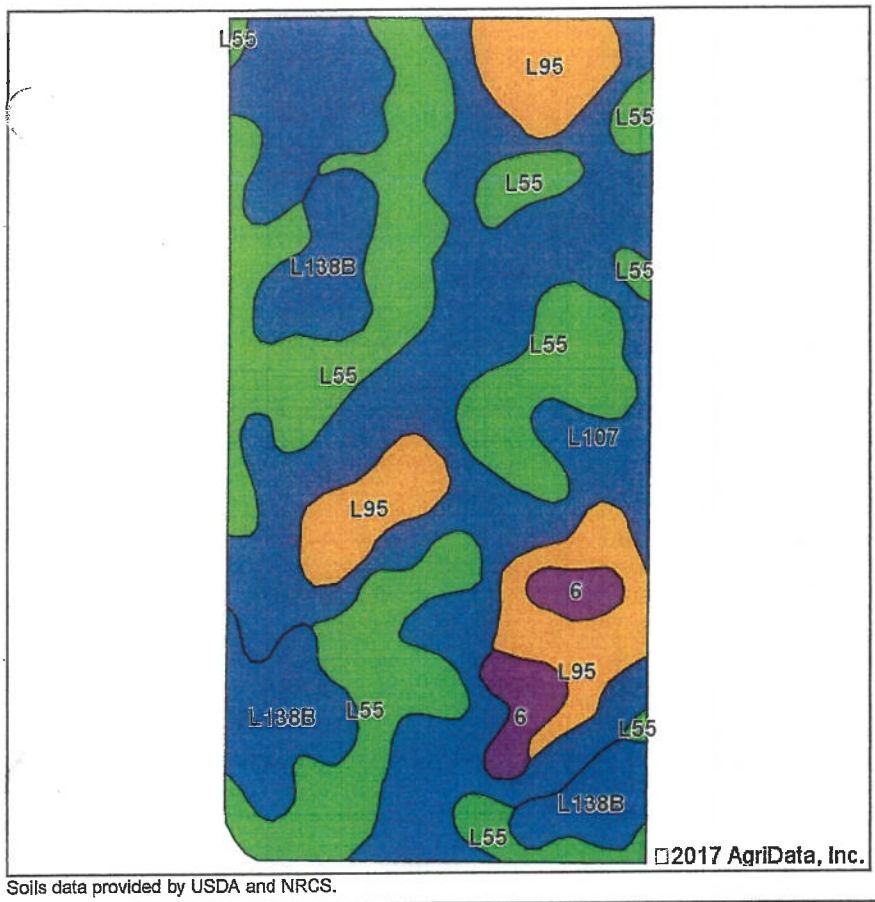
Iowa Phosphorus Index

v. 1/22/2007

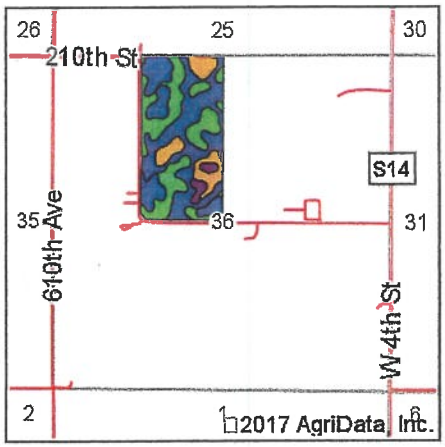
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion									+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x STP Factor =	Erosion PI		RCN Factor	x (STP Factor | + P App Factor |) =	Runoff PI		Flow Factor	x STP Factor =	Tile/Sub PI		P Index
Otto North --	1.60		1.00		0.08		1.00		1.10	0.99	0.14		1.32	0.40	0.04		0.59		0.00	0.07	0.00		0.73

Otto North Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **36-84N-23W**
Township: **Milford**
Acres: **76.88**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	32.55	42.3%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	23.77	30.9%		Ie	91	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	9.30	12.1%		IIw	75	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	8.92	11.6%		IIe	88	
6	Okoboji silty clay loam, 0 to 1 percent slopes	2.34	3.0%		IIIw	59	59
					Weighted Average	**86.5**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 57, 58, 59, 60 Otto
Acres: 76.85

Field(s): 57 Otto N80

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933

Element	Average	Range
P:	70 VH	23 H - 135 VH
K:	225 H	141 L - 368 VH
Mg:	455 VH	335 VH - 597 VH
Ca:	3613 H	1883 L - 5920 VH
S:	15.1 M	8.0 L - 24.0 H
B:	0.6 L	0.3 VL - 1.1 M
Zn:	1.5 M	0.5 VL - 2.6 M
Mn:	5.3 L	2.0 VL - 10.0 M
Fe:	51.4 VH	22.0 H - 108.0 VH
Cu:	1.0 M	0.6 L - 1.5 H
Na:	22.3 VL	13.0 VL - 33.0 VL
SS:	0.29	0.10 - 0.50
NN:	7.7	5.0 - 11.0
OM:	3.5 M	1.9 L - 5.7 VH
pH:	6.8	5.7 - 7.9
Buffer:	6.9	6.5 - 7.1
ENR:	N/A	N/A
CeC:	24.0	14.4 - 34.0

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
57 Otto N80																				
3508	1	M3-3508	60	190	344	2782	8	0.5	1.1	3	33.0	0.6	13.0	0.2	7.0	2.4	7.7	7.1	n/a	17.3
3509	2	M3-3509	53	149	529	3268	16	0.6	2.0	5	51.0	1.1	24.0	0.2	7.0	3.6	6.6	6.8	n/a	22.6
3510	3	M3-3510	49	141	335	1883	16	0.3	1.0	5	45.0	0.6	20.0	0.1	7.0	2.3	6.2	6.7	n/a	14.4
3511	4	M3-3511	33	287	453	5527	17	1.0	2.1	3	25.0	1.1	29.0	0.4	11.0	4.5	7.9	7.1	n/a	32.3
3512	5	M3-3512	135	368	580	3512	24	0.7	2.6	8	108.0	1.5	33.0	0.4	8.0	3.8	6.9	7.1	n/a	23.5
3513	6	M3-3513	75	202	356	2167	14	0.4	1.3	4	28.0	0.6	15.0	0.2	7.0	1.9	7.2	7.1	n/a	14.4
3514	7	M3-3514	74	263	597	4823	12	0.9	2.3	4	50.0	1.3	22.0	0.4	8.0	4.0	7.4	7.1	n/a	29.9
3515	8	M3-3515	92	212	446	2518	9	0.4	1.4	10	86.0	1.2	14.0	0.3	8.0	3.1	5.7	6.5	n/a	21.4
3516	9	M3-3516	85	207	540	3918	17	0.6	1.7	7	64.0	1.3	25.0	0.5	10.0	3.9	6.4	6.7	n/a	27.1
3517	10	M3-3517	52	169	449	4687	15	1.0	1.0	3	24.0	1.0	22.0	0.4	10.0	4.2	7.3	7.1	n/a	27.7
3518	11	M3-3518	68	186	526	3331	15	0.6	1.4	5	51.0	0.9	23.0	0.2	8.0	3.7	6.3	6.7	n/a	24.1
3519	12	M3-3519	23	334	407	5920	17	1.1	2.2	2	22.0	1.3	24.0	0.4	6.0	5.7	7.8	7.1	n/a	34.0
3520	13	M3-3520	105	263	428	2549	19	0.4	1.4	9	76.0	1.0	27.0	0.2	7.0	3.1	5.7	6.5	n/a	21.6
3521	14	M3-3521	98	231	443	2894	17	0.5	0.9	9	86.0	1.2	26.0	0.2	7.0	3.6	5.8	6.5	n/a	23.3
3522	15	M3-3522	47	170	391	4409	10	0.7	0.5	2	22.0	0.8	17.0	0.3	5.0	3.1	7.7	7.1	n/a	25.8

AgPhD SOIL TEST

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SAMPLE DATE:
ISSUED:12:49pm EDT Oct 8, 2015
A Product of Agfleet Version 3.00

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Otto South

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\62D3 Storden loam, 9 to 14 percent slopes, severely eroded\Storden loam severely eroded 95%
Slope length (horiz): 97 ft
Avg. slope steepness: 12 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	146.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	42.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 12 t/ac/yr
Detachment on slope: 12 t/ac/yr
Soil loss for cons. plan: 12 t/ac/yr
Sediment delivery: 12 t/ac/yr

Crit. slope length: 97 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		75
11/11/0	Chisel, st. pt.		33
4/15/1	Disk, tandem secondary op.		13
4/15/1	Cultivator, field 6-12 in sweeps		13
4/22/1	planter, double disk opnr	Corn, grain	12
10/20/1	Harvest, killing crop 50pct standing stubble		78
11/10/1	Chisel, st. pt.		53
5/1/2	Disk, tandem secondary op.		43
5/1/2	Cultivator, field 6-12 in sweeps		43
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	44
10/10/2	Harvest, killing crop 50pct standing stubble		71

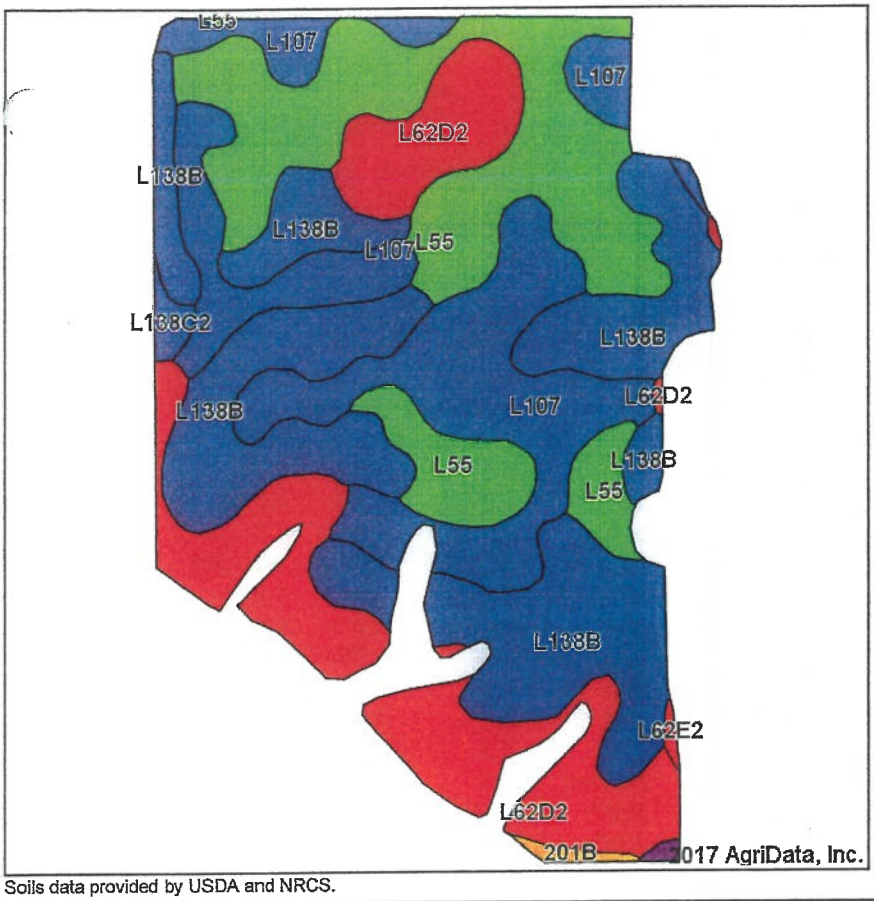
Iowa Phosphorus Index

v. 1/22/2007

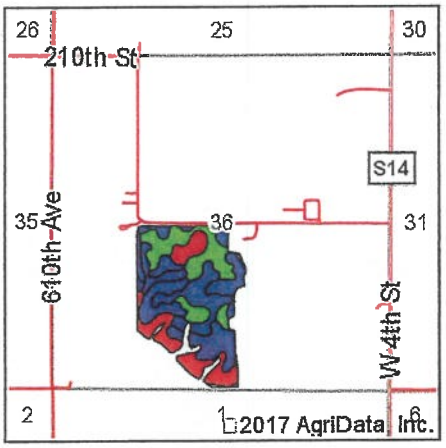
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion									+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x STP Factor =	Erosion PI		RCN Factor	x (| STP Factor | + | P App Factor |) =	Runoff PI		Flow Factor	x STP Factor =	Tile/Sub PI		P Index
Otto South --	12.00		1.00		0.09		1.00		1.10	0.92	1.12		1.32		0.31		0.04		0.47		0.00	0.07	0.00		1.59

Otto South Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **36-84N-23W**
Township: **Milford**
Acres: **75.13**
Date: **5/11/2017**

Maps Provided By:

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A... Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	23.84	31.7%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	17.85	23.8%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	17.35	23.1%		Ie	91	
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	15.04	20.0%		IVe	41	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	0.47	0.6%		IIIe	83	
201B	Coland-Terril complex, 1 to 5 percent slopes	0.31	0.4%		IIw	76	40
135	Coland clay loam, 0 to 2 percent slopes	0.14	0.2%		IIw	57	84
L62E2	Storden loam, Bemis moraine, 10 to 22 percent slopes, moderately eroded	0.13	0.2%		IVe	32	
					Weighted Average	79	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 57, 58, 59, 60 Otto
Acres: 80.79

Field(s): 58 Otto S60

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933

Element	Average	Range
P:	52 VH	8 VL - 100 VH
K:	131 M	50 VL - 204 H
Mg:	457 VH	237 H - 731 VH
Ca:	3117 H	2158 M - 4288 VH
S:	12.9 L	8.0 L - 21.0 H
B:	0.5 L	0.4 VL - 0.6 L
Zn:	1.0 L	0.4 VL - 1.9 M
Mn:	2.8 VL	1.0 VL - 4.0 VL
Fe:	46.9 VH	15.0 M - 86.0 VH
Cu:	0.7 L	0.3 VL - 1.2 M
Na:	18.2 VL	9.0 VL - 30.0 VL
SS:	0.30	0.20 - 0.50
NN:	6.3	4.0 - 9.0
OM:	2.9 M	1.6 VL - 4.9 VH
pH:	7.2	6.5 - 7.9
Buffer:	7.1	6.8 - 7.1
ENR:	N/A	N/A
CeC:	20.0	14.7 - 28.1

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
58 Otto S60																				
3100	1	M3-3100	100	204	731	4288	13	0.6	1.9	3	77.0	1.2	20.0	0.5	9.0	4.9	6.9	7.1	n/a	28.1
3101	2	M3-3101	76	155	435	3007	18	0.4	1.0	2	27.0	0.5	23.0	0.2	6.0	2.0	7.4	7.1	n/a	19.2
3102	3	M3-3102	8	50	237	2530	8	0.4	0.6	2	21.0	0.4	11.0	0.3	4.0	2.3	6.8	7.1	n/a	14.8
3103	4	M3-3103	16	91	336	3465	11	0.5	0.4	3	19.0	0.8	17.0	0.3	4.0	3.0	7.6	7.1	n/a	20.4
3104	5	M3-3104	9	78	512	2962	21	0.6	1.2	4	41.0	1.0	30.0	0.2	4.0	3.3	7.5	7.1	n/a	19.4
3105	6	M3-3105	24	110	317	2158	10	0.4	1.2	4	41.0	0.6	16.0	0.2	6.0	2.9	6.6	6.9	n/a	14.7
3106	7	M3-3106	59	127	411	2703	12	0.4	1.1	4	62.0	0.7	16.0	0.3	7.0	2.8	6.5	6.8	n/a	18.7
3107	8	M3-3107	60	150	628	3983	13	0.5	1.3	2	72.0	1.0	17.0	0.4	9.0	3.6	6.9	7.1	n/a	25.6
3108	9	M3-3108	83	202	586	3732	12	0.5	1.6	4	86.0	1.0	19.0	0.4	8.0	3.4	6.9	7.1	n/a	24.1
3109	10	M3-3109	72	152	480	2881	12	0.4	0.8	2	44.0	0.5	17.0	0.3	8.0	2.4	7.2	7.1	n/a	18.9
3110	11	M3-3110	55	111	365	2408	13	0.4	0.7	2	36.0	0.5	19.0	0.3	6.0	2.3	7.5	7.1	n/a	15.4
3111	12	M3-3111	40	96	343	2747	9	0.5	0.4	1	15.0	0.3	9.0	0.2	4.0	1.6	7.9	7.1	n/a	16.9
3523	13	M3-3523	63	146	484	3308	14	0.5	1.0	3	72.0	0.8	21.0	0.4	6.0	3.1	7.1	7.1	n/a	21.0
3524	14	M3-3524	62	162	535	3465	14	0.6	1.3	3	43.0	0.8	20.0	0.2	7.0	2.9	7.7	7.1	n/a	22.3

AgPhD SOIL TEST

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SAMPLE DATE:
ISSUED:12:49pm EDT Oct 8, 2015
A Product of Agfleet Version 3.00

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Milford 36

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

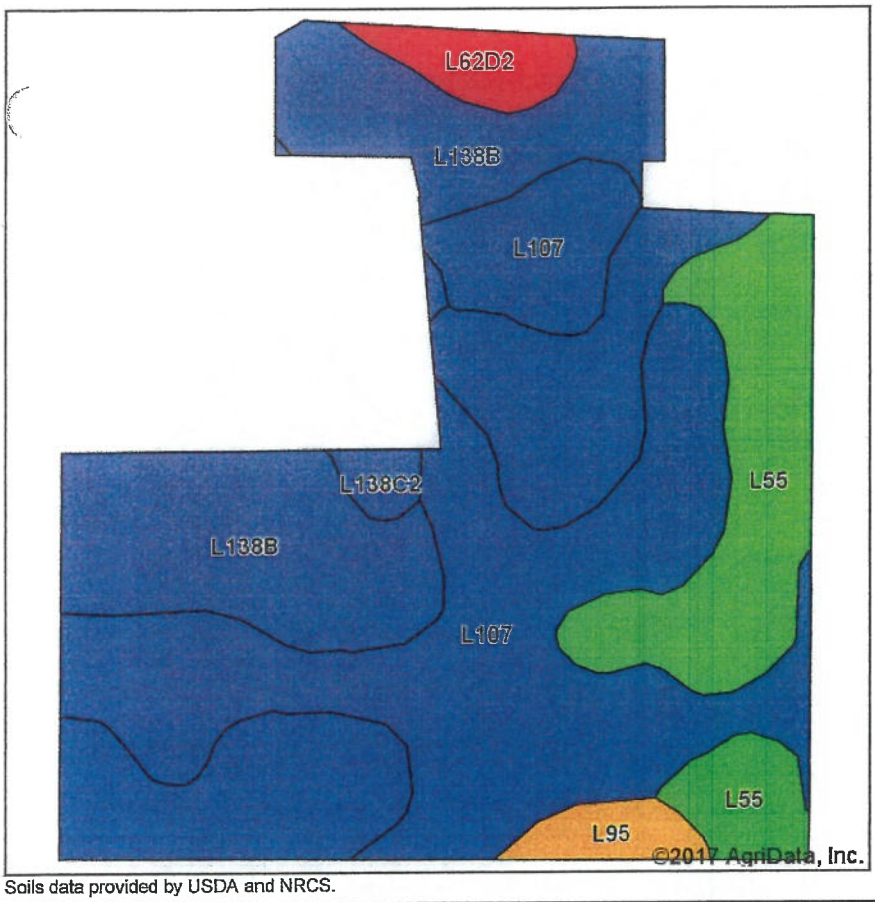
Iowa Phosphorus Index

v. 1/22/2007

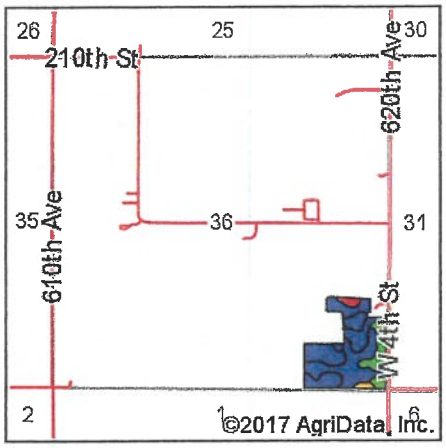
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x	STP Factor	= Tile/Sub PI		P Index
Milford 36 –	1.60		1.00		0.10		1.00		1.10		0.77	0.13		1.32		0.14	0.04	0.24		0.00		0.07	0.00		0.37

Milford 36 Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **36-84N-23W**
Township: **Milford**
Acres: **31.73**
Date: **3/28/2017**

Maps Provided By:

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Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	13.04	41.1%		IIe	88
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	12.03	37.9%		IIw	88
L55	Nicollet loam, 1 to 3 percent slopes	4.72	14.9%		Ie	91
L62D2	Storden loam, Bemis moraine, 10 to 16 percent slopes, moderately eroded	0.86	2.7%		IVe	41
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	0.66	2.1%		IIw	75
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	0.42	1.3%		IIIe	83
					Weighted Average	**86.8**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points

Grower: K02-Anderson, Dave
Farm: Farm
Field: Milford 36
Area: 31.49 ac

One in = 262 feet

0 119 237 356 474 593

Field Boundary
Soil Sample Points

KEY COOPERATIVE

REPORT NUMBER
15-34[illegible]-0657

REPORT DATE
Dec 16, 2015

ACCOUNT
28482

RECEIVED DATE
Dec 14, 2015

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TODAY'S DATE
Dec 16, 2015

ACM/KEY COOP
CORY DEJONG
22703 600TH AVENUE
NEVADA IA 50201

IDENTIFICATION
K02-DAVE ANDERSON
MILFORD 36

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
29302216	1	2.8	14	20		135	299	2357		5.8	6.6	18.0	1.9	13.8	65.5	18.8				0-6		18	0.6							
29302217	2	3.8	13	76		129	454	4902		7.4		28.6	1.2	13.2	85.6	0.0				0-6		16	0.4							23
29302218	3	3.2	11	19		106	391	3000		6.3	6.7	20.7	1.3	15.7	72.5	10.5				0-6		17	1.0							
29302219	4	2.6	24	38		134	287	2553		6.8		15.5	2.2	15.4	82.4	0.0				0-6		16	1.6							

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.
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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Chucks

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

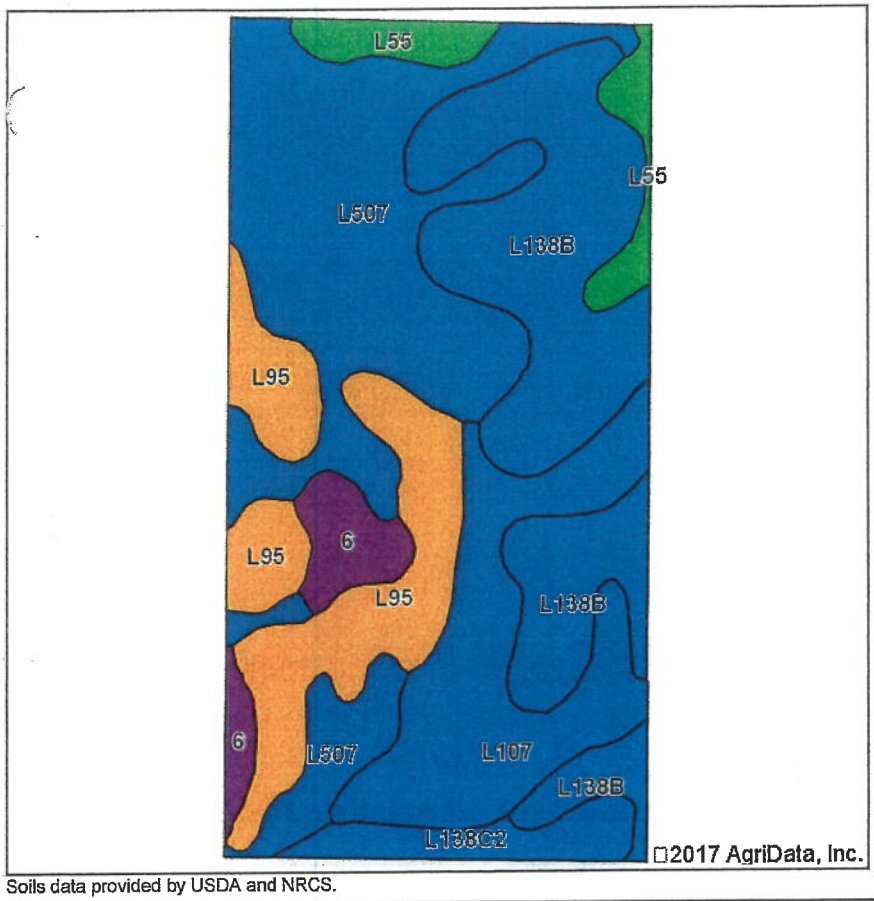
Iowa Phosphorus Index

v. 1/22/2007

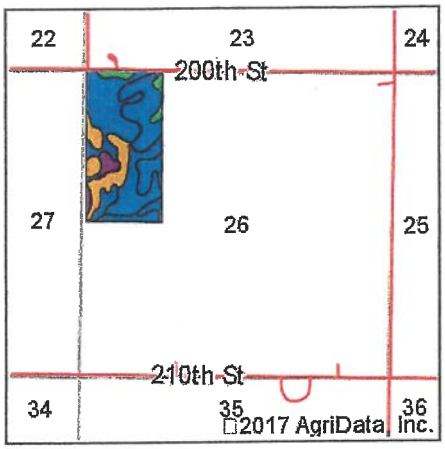
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion							+	Runoff				+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x Sediment Trap Factor	x SDR	x Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Chucks --	0.84	1.00	0.08	1.00	1.10	1.17	0.09		1.32	0.61	0.07	0.90		0.00	0.15	0.00		0.98

Chucks Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **26-84N-23W**
Township: **Milford**
Acres: **78.6**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By: surety CUSTOMIZED ONLINE MAPPING

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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	23.78	30.3%		IIw	87	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	20.69	26.3%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	12.43	15.8%		IIw	88	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	12.19	15.5%		IIw	75	
L55	Nicollet loam, 1 to 3 percent slopes	3.32	4.2%		Ie	91	
6	Okoboji silty clay loam, 0 to 1 percent slopes	3.25	4.1%		IIIw	59	59
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	2.94	3.7%		IIIe	83	
					Weighted Average	84.4	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Chuck's

KEY COOPERATIVE
Connect. Build. Grow.

Grower : Couser Cattle Company

Field : Chuck's

Year : 2013

Operation : Soil Sampling

PS Count : 32

Area : 75.3 ac

REPORT NUMBER
13-17[illegible]-0184

REPORT DATE
Jun 27, 2013

ACCOUNT
28482

RECEIVED DATE
Jun 25, 2013

PAGE 1/1

ISSUE DATE
Jun 27, 2013

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IDENTIFICATION

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

COUSER CATTLE COMPANY
CHUCKS

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25345899	1	1.9	27	88		170	576	3884		7.8		24.7	1.8	19.4	78.8	0.0				0-6		10	0.9	3	23	1.0	0.6				47
25345900	2	2.3	89	102		316	319	1789		5.3	6.7	18.0	4.5	14.8	49.7	31.0				0-6		13	2.0	19	84	0.9	0.5				
25345901	3	2.7	109	129		305	499	3245		7.6		21.2	3.7	19.6	76.7	0.0				0-6		20	2.7	7	52	1.1	0.7				168
25345902	4	2.0	79	139		282	345	2842		7.9		17.8	4.1	16.2	79.7	0.0				0-6		13	2.3	5	26	0.8	0.7				128
25345904	5	3.2	98	126		218	628	3557		6.3	6.6	26.4	2.1	19.8	67.4	10.7				0-6		12	2.7	8	73	1.6	0.7				
25345905	6	2.7	66	114		234	410	3467		7.5		21.4	2.8	16.0	81.2	0.0				0-6		11	2.1	4	34	0.8	0.7				112
25345906	7	3.1	82	137		188	611	3467		7.3		22.9	2.1	22.2	75.7	0.0				0-6		13	2.1	3	44	1.1	0.7				140
25345907	8	1.8	107	139		384	254	2672		7.5		16.5	6.0	12.8	81.2	0.0				0-6		14	2.1	4	30	0.7	0.7				184
25345908	9	2.8	69	116		322	431	3590		7.7		22.4	3.7	16.0	80.3	0.0				0-6		14	1.9	5	46	0.9	0.8				132
25345909	10	3.9	80	137		288	622	4490		7.6		28.4	2.6	18.3	79.1	0.0				0-6		11	2.6	3	30	1.1	1.0				148
25345910	11	4.7	94	142		313	635	4908		7.7		30.6	2.6	17.3	80.1	0.0				0-6		14	2.8	3	28	1.4	1.2				176
25345911	12	3.7	91	135		303	462	3920		7.5		24.2	3.2	15.9	80.9	0.0				0-6		17	2.4	4	31	0.9	1.0				132
25345912	13	4.3	57	139		256	651	4443		7.7		28.3	2.3	19.2	78.5	0.0				0-6		17	2.7	3	36	1.1	1.1				132
25345913	14	2.8	64	111		254	480	3748		7.5		23.4	2.8	17.1	80.1	0.0				0-6		15	2.1	4	47	0.9	0.8				120
25345914	15	4.3	84	117		292	652	3852		6.2	6.6	28.9	2.6	18.8	66.6	12.0				0-6		11	3.0	12	153	1.7	0.8				
25345915	16	2.0	50	76		188	314	2459		7.2		15.4	3.1	17.0	79.9	0.0				0-6		10	1.4	4	47	0.6	0.6				
25345916	17	3.1	52	112		209	587	3831		7.3		24.6	2.2	19.9	77.9	0.0				0-6		10	1.7	4	36	1.3	0.9				76
25345917	18	4.1	69	110		236	655	3979		7.0		26.0	2.3	21.0	76.7	0.0				0-6		9	2.7	7	74	1.3	0.9				
25345918	19	6.0	19	128		259	678	5974		7.7		36.2	1.8	15.6	82.6	0.0				0-6		11	3.4	3	39	1.8	1.4				132
25345919	20	4.2	3	21		234	498	4448		8.0		27.0	2.2	15.4	82.4	0.0				0-6		12	2.1	4	57	1.2	1.5				108
25345920	21	6.0	48	139		419	541	6074		7.8		36.0	3.0	12.5	84.5	0.0				0-6		11	3.0	4	39	1.8	1.5				264
25345921	22	4.8	95	142		282	403	5257		7.7		30.4	2.4	11.0	86.6	0.0				0-6		12	2.7	3	31	1.3	1.1				172
25345922	23	4.1	34	134		253	404	4693		7.9		27.5	2.4	12.2	85.4	0.0				0-6		12	2.1	3	27	1.1	1.0				124
25345923	24	2.5	68	106		276	288	3109		7.6		18.7	3.8	12.8	83.4	0.0				0-6		11	1.5	5	28	0.6	0.6				108
25345924	25	2.2	22	66		127	290	3154		7.0		18.5	1.8	13.1	85.1	0.0				0-6		8	0.7	5	31	0.8	0.7				
25345925	26	3.8	3	9		108	239	4664		8.2		25.6	1.1	7.8	91.1	0.0				0-6		9	1.0	4	20	0.9	1.1				15
25345926	27	6.0	6	57		185	389	6117		8.1		34.3	1.4	9.5	89.1	0.0				0-6		10	1.4	4	30	1.7	1.4				48
25345927	28	4.8	53	153		313	428	6105		8.0		34.9	2.3	10.2	87.5	0.0				0-6		10	1.8	4	42	1.6	1.2				148
25345928	29	2.6	69	184		206	270	3623		7.9		20.9	2.5	10.8	86.7	0.0				0-6		8	1.7	2	24	0.9	0.8				112
25345929	30	2.8	41	132		188	491	3834		8.1		23.7	2.0	17.3	80.7	0.0				0-6		9	1.2	2	28	1.2	0.9				108
25345930	31	3.7	50	112		201	738	3924		6.8		26.3	2.0	23.4	74.6	0.0				0-6		8	1.5	8	58	1.7	0.8				
25345931	32	3.9	49	141		220	860	5130		8.1		33.4	1.7	21.5	76.8	0.0				0-6		19	1.3	4	27	1.9	1.1				100

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Menzel North

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138C2 Clarion loam, 5 to 9 percent slopes, moderately eroded\Clarion loam moderately eroded 95%
Slope length (horiz): 98 ft
Avg. slope steepness: 8.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	213.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	213.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 2.5 t/ac/yr
Detachment on slope: 2.5 t/ac/yr
Soil loss for cons. plan: 2.5 t/ac/yr
Sediment delivery: 2.5 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		73
4/15/1	Disk, tandem secondary op.		56
4/15/1	Cultivator, field 6-12 in sweeps		56
4/22/1	planter, double disk opnr	Corn, grain	57
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/5/1	Manure spreader, solid and semi-solid		94
11/10/1	Chisel, st. pt.		73
4/15/2	Disk, tandem secondary op.		57
4/15/2	Cultivator, field 6-12 in sweeps		57
4/22/2	Planter, double disk opnr	Corn, grain	58
10/10/2	Harvest, killing crop 50pct standing stubble		90

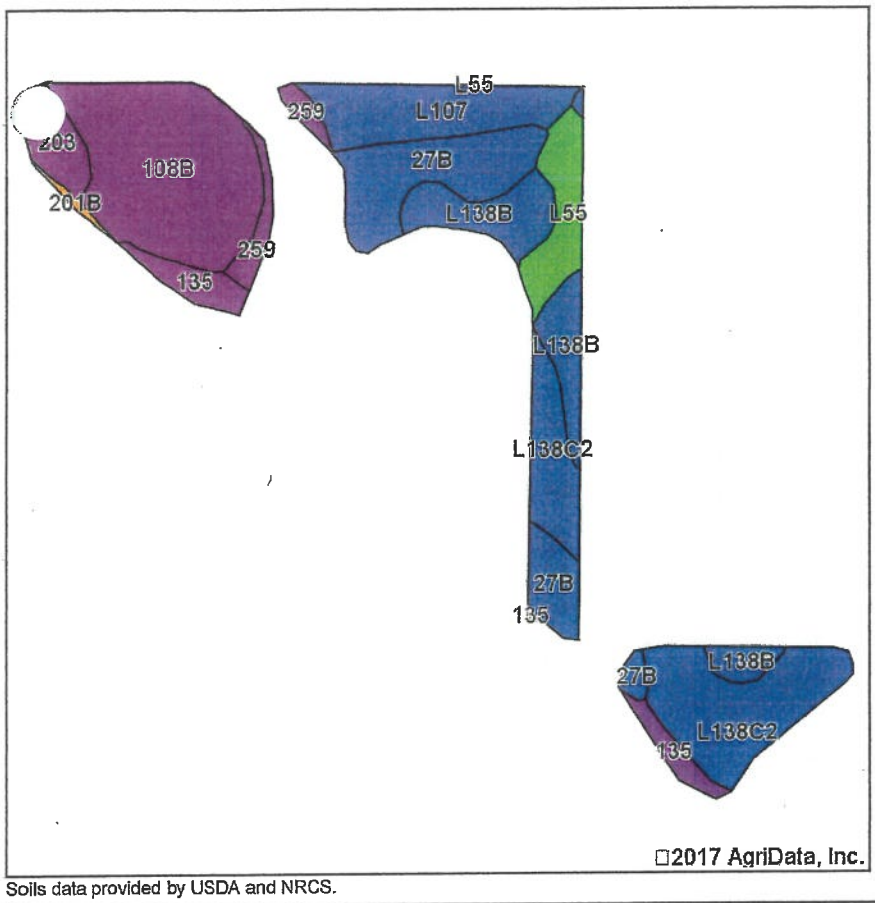
Iowa Phosphorus Index

v. 1/22/2007

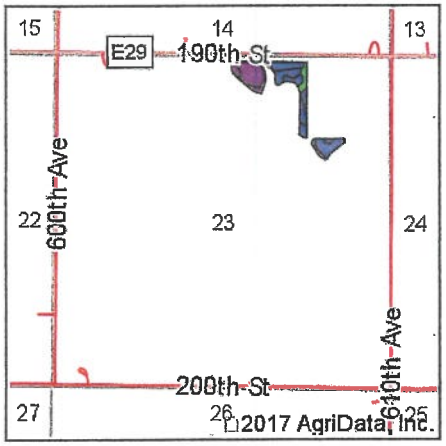
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x	STP Factor	= Tile/Sub PI		P Index
Menzel North --	2.50		1.00		0.20		1.00		1.10		0.95	0.52		1.32		0.35	0.07	0.55		0.00		0.07	0.00		1.06

Menzel North Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **23-84N-23W**
Township: **Milford**
Acres: **13.07**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
108B	Wadena loam, 2 to 6 percent slopes	3.08	23.6%		IIe	52	52
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	2.63	20.1%		IIIe	83	
27B	Terril loam, 2 to 6 percent slopes	2.05	15.7%		IIe	87	86
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	1.57	12.0%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	1.40	10.7%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	0.77	5.9%		Ie	91	
135	Coland clay loam, 0 to 2 percent slopes	0.63	4.8%		IIw	57	84
203	Cylinder loam, 0 to 2 percent slopes	0.49	3.7%		IIs	58	82
259	Biscay clay loam, 0 to 2 percent slopes	0.39	3.0%		IIw	52	81
201B	Coland-Terril complex, 1 to 5 percent slopes	0.06	0.5%		IIw	76	40
					Weighted Average	**74.8**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Menzel South

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138C2 Clarion loam, 5 to 9 percent slopes, moderately eroded\Clarion loam moderately eroded 95%
Slope length (horiz): 98 ft
Avg. slope steepness: 8.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	213.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	213.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 2.5 t/ac/yr
Detachment on slope: 2.5 t/ac/yr
Soil loss for cons. plan: 2.5 t/ac/yr
Sediment delivery: 2.5 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		73
4/15/1	Disk, tandem secondary op.		56
4/15/1	Cultivator, field 6-12 in sweeps		56
4/22/1	planter, double disk opnr	Corn, grain	57
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/5/1	Manure spreader, solid and semi-solid		94
11/10/1	Chisel, st. pt.		73
4/15/2	Disk, tandem secondary op.		57
4/15/2	Cultivator, field 6-12 in sweeps		57
4/22/2	Planter, double disk opnr	Corn, grain	58
10/10/2	Harvest, killing crop 50pct standing stubble		90

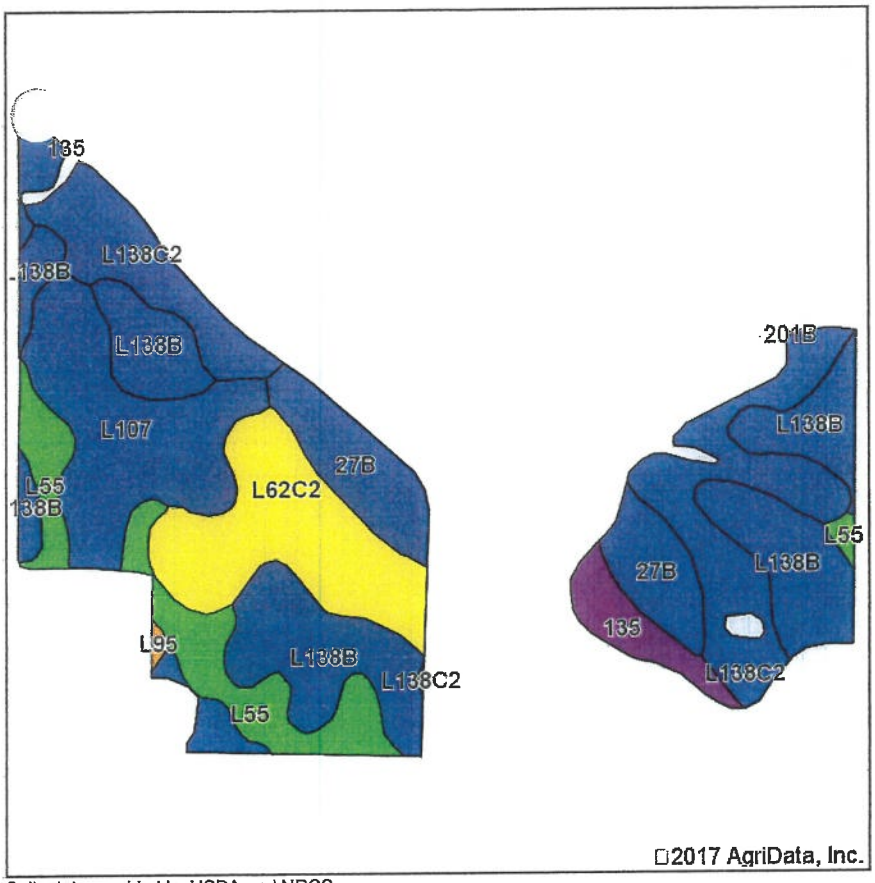
Iowa Phosphorus Index

v. 1/22/2007

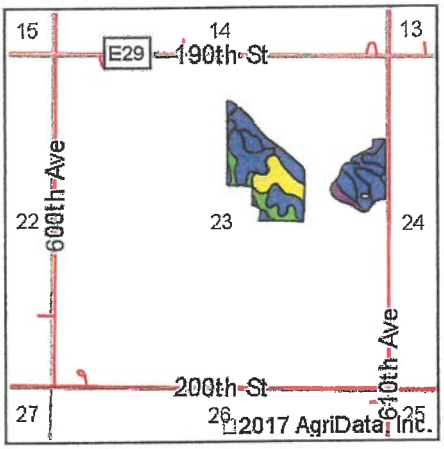
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x SDR	x Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor)	= Runoff PI			Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Menzel South --	2.50		1.00	0.16	1.00	1.10	1.65	0.73		1.32	1.19	0.07	1.66			0.00	0.15	0.00		2.39

Menzel South Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **23-84N-23W**
Township: **Milford**
Acres: **47.28**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	11.99	25.4%		IIe	88	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	9.74	20.6%		IIIe	83	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	7.72	16.3%		IIw	88	
L62C2	Storden loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	6.53	13.8%		IIIe	64	
27B	Terril loam, 2 to 6 percent slopes	4.81	10.2%		IIe	87	86
L55	Nicollet loam, 1 to 3 percent slopes	4.78	10.1%		Ie	91	
135	Coland clay loam, 0 to 2 percent slopes	1.61	3.4%		IIw	57	84
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	0.10	0.2%		IIw	75	
					Weighted Average	**82.8**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Menzel

KEY COOPERATIVE
Connect. Build. Grow.

Grower : Couser Cattle Company

Field : Menzel

Year : 2013

Operation : Soil Sampling

'S Count : 29

Area : 61.8 ac

REPORT NUMBER
13-16[illegible]-0076

REPORT DATE
Jun 18, 2013

ACCOUNT
28482

RECEIVED DATE
Jun 14, 2013

Midwest Laboratories Inc.®

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www.midwestlabs.com

ISSUE DATE
Jun 18, 2013

IDENTIFICATION

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

COUSER CATTLE COMPANY
MENZEL

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25313601	1	1.2	110	170		435	190	1223		6.0	6.8	10.4	10.7	15.2	58.8	15.3				0-6		15	4.1	9	61	0.7	0.5				
25313602	2	2.9	182	183		497	628	3395		7.4		23.5	5.4	22.3	72.3	0.0				0-6		15	8.1	5	78	1.1	0.9				376
25313603	3	3.1	142	143		496	710	3181		7.6		23.1	5.5	25.6	68.9	0.0				0-6		13	10.0	4	75	1.4	1.2				380
25313604	4	1.9	18	64		449	1111	2609		8.3		23.5	4.9	39.4	55.7	0.0				0-6		27	5.2	11	131	1.5	2.0				172
25313605	5	1.3	115	151		335	582	2179		8.1		16.6	5.2	29.2	65.6	0.0				0-6		13	4.9	6	117	0.8	1.2				352
25313606	6	2.8	77	144		323	612	3227		7.6		22.1	3.7	23.1	73.2	0.0				0-6		18	3.9	13	90	1.0	1.1				176
25313607	7	1.6	91	115		286	500	2783		7.9		18.8	3.9	22.2	73.9	0.0				0-6		13	3.6	6	51	0.8	1.0				188
25313608	8	1.0	63	82		237	157	1200		6.4	6.9	8.7	7.0	15.0	69.0	9.0				0-6		8	1.4	10	97	0.5	0.6				
25313609	9	1.4	51	61		224	172	1175		5.7	6.7	10.0	5.7	14.3	58.8	21.2				0-6		9	0.7	22	98	0.6	0.5				
25313610	10	1.5	33	41		145	222	1359		6.2	6.8	10.2	3.6	18.1	66.6	11.7				0-6		7	1.1	16	81	0.8	0.4				
25313612	11	2.5	62	91		199	457	2572		6.5	6.8	18.6	2.7	20.5	69.1	7.7				0-6		8	2.0	11	108	1.3	0.6				
25313613	12	2.4	30	37		170	275	1816		5.7	6.6	14.9	2.9	15.4	60.9	20.8				0-6		11	1.4	19	109	0.9	0.5				
25313614	13	2.9	66	81		347	368	2141		5.9	6.6	17.7	5.0	17.3	60.5	17.2				0-6		11	2.1	26	141	1.1	0.6				
25313615	14	2.7	41	74		196	507	3206		7.3		20.8	2.4	20.3	77.3	0.0				0-6		12	1.8	6	57	0.8	0.8				66
25313616	15	4.3	39	158		242	670	4465		7.8		28.5	2.2	19.6	78.2	0.0				0-6		12	3.7	4	25	1.1	1.7				176
25313617	16	4.6	28	115		342	783	5335		7.9		34.1	2.6	19.1	78.3	0.0				0-6		16	4.5	4	29	1.5	1.8				260
25313618	17	3.9	24	124		355	801	4923		7.8		32.2	2.8	20.7	76.5	0.0				0-6		16	3.7	6	39	1.3	1.7				140
25313619	18	4.4	35	153		327	932	4883		7.7		33.0	2.5	23.5	74.0	0.0				0-6		19	4.5	6	51	1.7	1.6				188
25313620	19	2.7	114	116		322	654	3301		7.5		22.8	3.6	23.9	72.5	0.0				0-6		19	4.3	12	66	1.3	1.1				228
25313621	20	2.7	104	170		364	670	3520		7.1		24.1	3.9	23.2	72.9	0.0				0-6		20	4.3	10	93	1.3	1.0				
25313622	21	3.2	143	156		437	606	3400		7.4		23.2	4.8	21.8	73.4	0.0				0-6		17	6.5	7	78	1.3	1.0				304
25313623	22	2.9	51	112		315	506	3201		7.4		21.0	3.8	20.1	76.1	0.0				0-6		13	3.2	5	65	0.7	0.8				104
25313624	23	3.2	117	136		321	649	3896		7.5		25.7	3.2	21.0	75.8	0.0				0-6		15	4.8	6	70	1.3	1.1				208
25313625	24	1.6	108	136		319	399	2519		7.7		16.7	4.9	19.9	75.2	0.0				0-6		12	3.9	8	33	0.8	0.8				176
25313626	25	1.9	92	153		316	552	2605		7.8		18.4	4.4	25.0	70.6	0.0				0-6		13	3.6	6	42	1.1	1.0				208
25313627	26	2.9	102	121		370	602	3318		7.4		22.6	4.2	22.2	73.6	0.0				0-6		16	4.7	7	61	1.0	1.0				224
25313628	27	2.1	95	118		280	373	2927		7.8		18.5	3.9	16.8	79.3	0.0				0-6		11	3.1	5	41	0.8	0.8				224
25313629	28	1.9	103	139		289	511	2818		7.9		19.1	3.9	22.3	73.8	0.0				0-6		13	3.8	7	52	0.9	1.0				188
25313630	29	3.1	38	87		218	727	3853		7.7		25.9	2.2	23.4	74.4	0.0				0-6		15	2.6	9	54	1.2	1.1				88

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.
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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Paul East

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

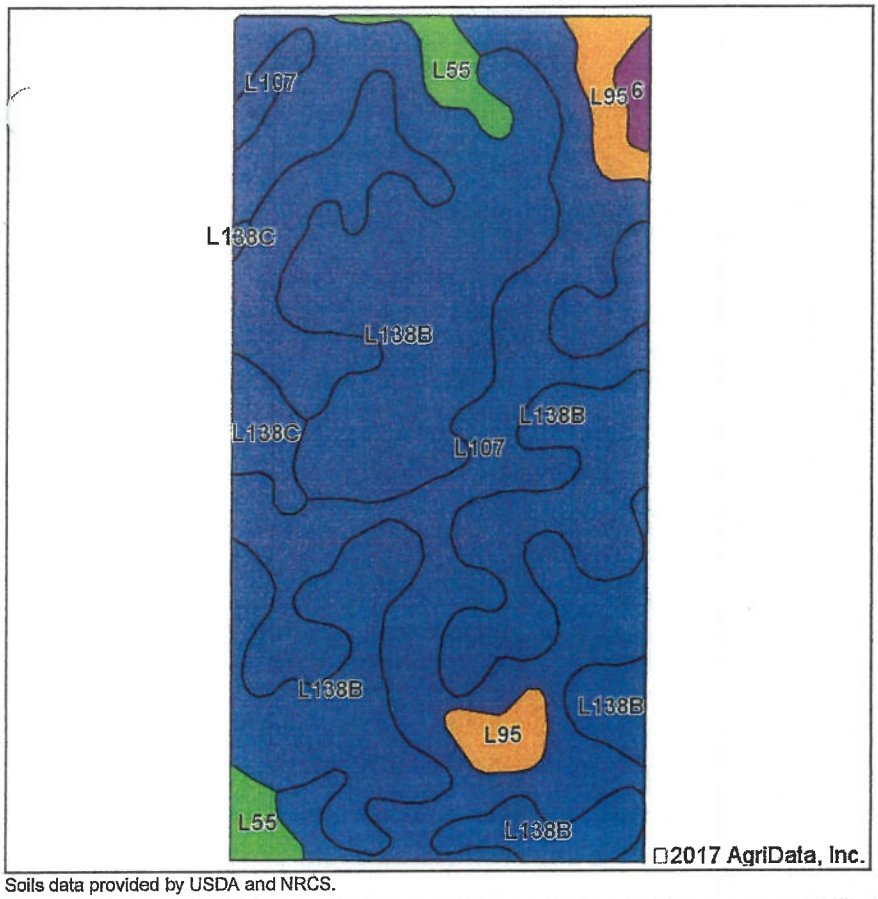
Iowa Phosphorus Index

v. 1/22/2007

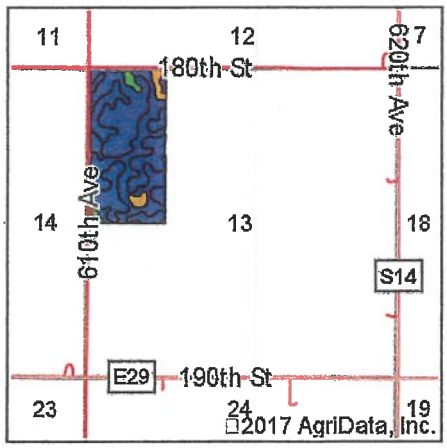
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Paul East --	0.84		1.00		0.08		1.00		1.10		0.98	0.07		1.32		0.38		0.07		0.59		0.00		0.07		0.00		0.66

Paul East Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **13-84N-23W**
Township: **Milford**
Acres: **76.75**
Date: **5/11/2017**

Maps Provided By:

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A . Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	39.42	51.4%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	29.59	38.6%		IIw	88	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	2.98	3.9%		IIw	75	
L55	Nicollet loam, 1 to 3 percent slopes	2.39	3.1%		Ie	91	
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	1.72	2.2%		IIIe	84	
6	Okoboji silty clay loam, 0 to 1 percent slopes	0.65	0.8%		IIIw	59	59
					Weighted Average	**87.3**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

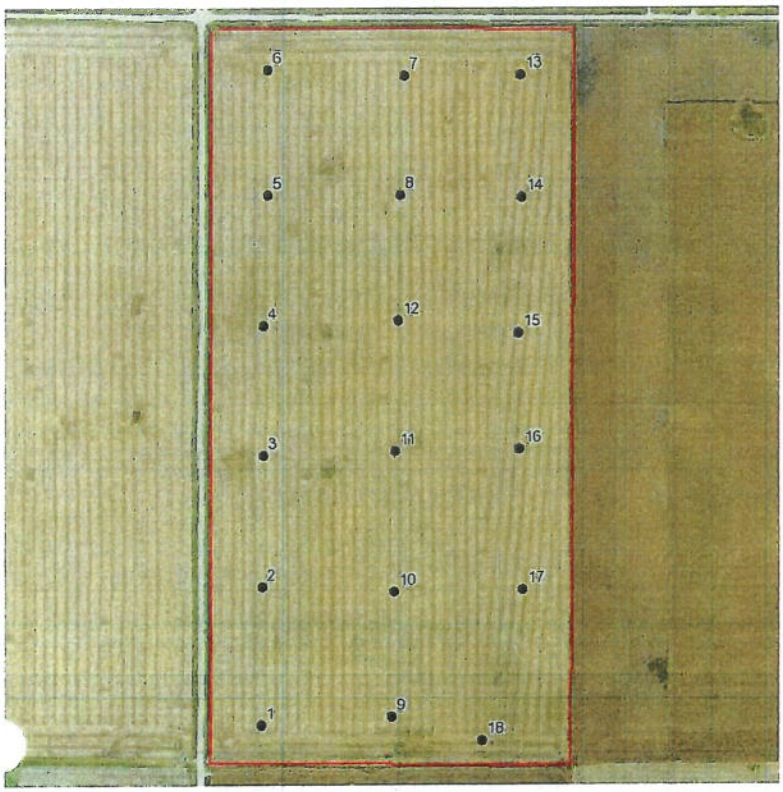
Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 62 Paul NE80
Acres: 76.77

Field(s): 62 Paul NE80

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933



Element	Average	Range
P:	66 VH	8 VL - 109 VH
K:	208 M	138 L - 457 VH
Mg:	474 VH	358 VH - 667 VH
Ca:	3682 H	2909 M - 4556 VH
S:	17.3 M	10.0 L - 23.0 H
B:	0.8 L	0.6 L - 1.3 M
Zn:	3.7 H	2.4 M - 6.4 VH
Mn:	3.0 VL	2.0 VL - 6.0 L
Fe:	53.9 VH	29.0 VH - 93.0 VH
Cu:	1.1 M	0.9 L - 1.2 M
Na:	21.6 VL	8.0 VL - 45.0 VL
SS:	0.33	0.30 - 0.40
NN:	1.8	1.0 - 4.0
OM:	3.4 M	2.5 L - 4.8 VH
pH:	7.5	7.0 - 7.8
Buffer:	7.1	7.1 - 7.1
ENR:	N/A	N/A
CeC:	23.0	18.1 - 27.8

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
62 Paul NE80																				
3350	1	M3-3350	69	219	667	4314	23	0.9	4.5	3	55.0	1.2	25.0	0.4	1.0	4.4	7.7	7.1	n/a	27.8
3351	2	M3-3351	109	232	590	3871	13	0.9	5.3	3	54.0	1.2	16.0	0.3	1.0	4.1	7.6	7.1	n/a	24.9
3352	3	M3-3352	108	270	422	3240	22	0.8	4.8	3	51.0	1.1	29.0	0.3	1.0	3.2	7.6	7.1	n/a	20.5
3353	4	M3-3353	96	250	498	3294	22	0.8	6.4	3	70.0	1.1	25.0	0.3	1.0	3.6	7.5	7.1	n/a	21.4
3354	5	M3-3354	60	204	515	3516	22	0.7	4.1	3	54.0	1.0	30.0	0.3	1.0	2.7	7.8	7.1	n/a	22.5
3355	6	M3-3355	68	457	389	2912	21	0.7	3.8	6	93.0	1.2	45.0	0.3	1.0	3.0	7.6	7.1	n/a	19.2
3356	7	M3-3356	52	150	417	3568	14	0.7	3.1	3	47.0	0.9	16.0	0.3	1.0	3.0	7.7	7.1	n/a	21.8
3357	8	M3-3357	85	203	358	2909	10	0.6	3.6	3	61.0	0.9	8.0	0.3	2.0	2.6	7.3	7.1	n/a	18.1
3358	9	M3-3358	12	138	427	4523	10	1.1	2.4	3	29.0	1.1	13.0	0.3	2.0	3.8	7.7	7.1	n/a	26.6
3359	10	M3-3359	40	151	493	4181	17	1.1	3.2	2	29.0	1.1	19.0	0.3	4.0	4.0	7.6	7.1	n/a	25.5
3360	11	M3-3360	80	166	450	3403	20	0.7	3.2	3	56.0	1.0	23.0	0.3	2.0	2.5	7.3	7.1	n/a	21.3
3361	12	M3-3361	92	189	430	3284	20	0.6	3.7	3	55.0	1.0	25.0	0.3	2.0	2.9	7.5	7.1	n/a	20.6
3362	13	M3-3362	8	158	462	4263	19	1.2	3.1	2	30.0	1.1	22.0	0.4	3.0	3.9	7.8	7.1	n/a	25.7
3363	14	M3-3363	53	167	548	4166	20	1.0	3.0	2	37.0	1.2	26.0	0.3	2.0	3.6	7.6	7.1	n/a	25.9
3364	15	M3-3364	82	203	488	3722	22	0.7	3.3	3	73.0	1.1	24.0	0.4	2.0	3.2	7.1	7.1	n/a	23.3
3365	16	M3-3365	92	200	419	3171	12	0.6	4.2	3	87.0	1.1	15.0	0.3	1.0	3.4	7.0	7.1	n/a	19.9
3366	17	M3-3366	64	166	460	3381	14	0.7	2.9	3	60.0	1.0	14.0	0.4	2.0	3.2	7.2	7.1	n/a	21.2
3367	18	M3-3367	21	212	508	4556	11	1.3	2.6	3	30.0	1.1	13.0	0.4	3.0	4.8	7.8	7.1	n/a	27.6

AgPhD SOIL TEST

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SAMPLE DATE:
ISSUED:12:45pm EDT Oct 8, 2015
A Product of Agfleet Version 3.00

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Paul West

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

USDA NRCS
Natural Resources Conservation Service

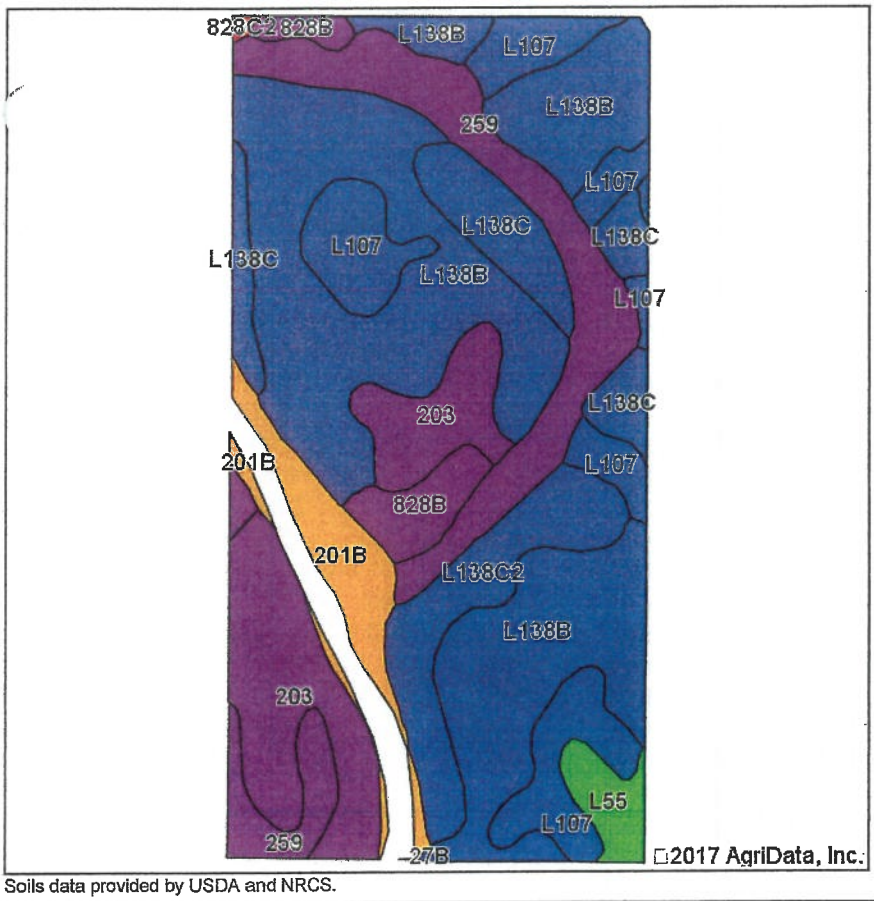
v. 1/22/2007

Iowa Phosphorus Index

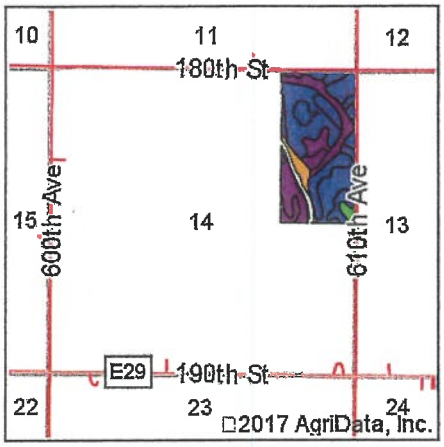
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff						+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Paul West --	0.84		1.00		0.18		1.00		1.10		0.96	0.16		1.32		0.37		0.07		0.57		0.00		0.07		0.00		0.73

Paul West Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **14-84N-23W**
Township: **Milford**
Acres: **74.68**
Date: **5/11/2017**

Maps Provided By:

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Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	28.12	37.7%		IIe	88	
259	Biscay clay loam, 0 to 2 percent slopes	10.33	13.8%		IIw	52	81
203	Cylinder loam, 0 to 2 percent slopes	9.45	12.7%		IIs	58	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	8.49	11.4%		IIw	88	
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	5.38	7.2%		IIIe	84	
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	5.30	7.1%		IIIe	83	
201B	Coland-Terril complex, 1 to 5 percent slopes	3.72	5.0%		IIw	76	40
828B	Zenor sandy loam, 2 to 5 percent slopes	2.37	3.2%		IIIe	53	52
L55	Nicollet loam, 1 to 3 percent slopes	1.43	1.9%		Ie	91	
828C2	Zenor sandy loam, 5 to 9 percent slopes, moderately eroded	0.09	0.1%		IIIe	42	35
					Weighted Average	**76.9**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

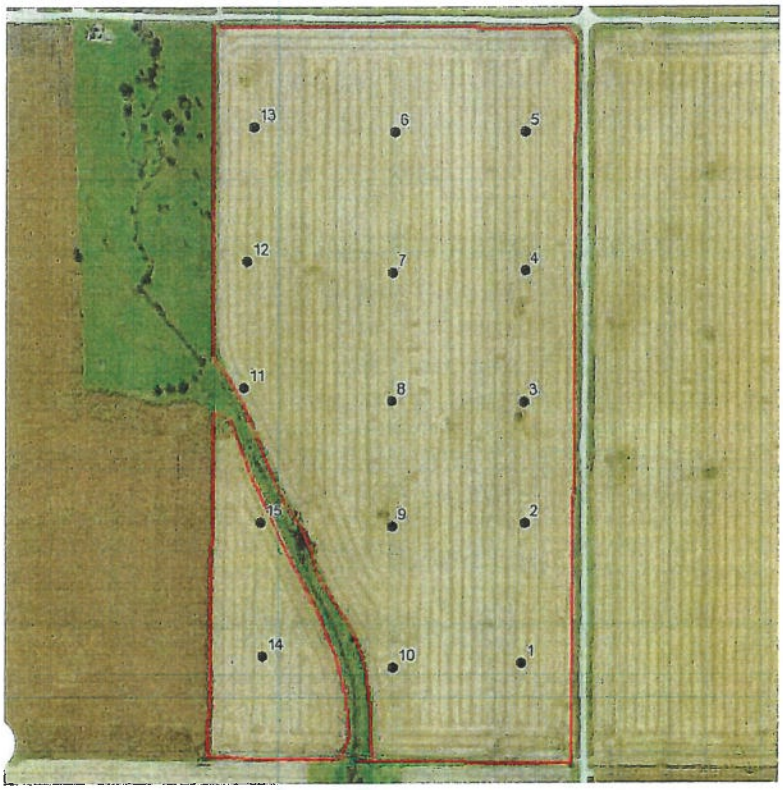
Field Sampler

Boundary & Soil Nutrients

Grower: Greenfield Farms, Inc.
Farm: 61 Paul NW80
Acres: 74.46

Field(s): 61 Paul NW80

AgPhD Midwest
13611 B. St.
Omaha, NE 68144
PHONE: 855-755-6933



Element	Average	Range
P:	63 VH	25 H - 115 VH
K:	140 M	87 L - 236 VH
Mg:	297 VH	149 L - 541 VH
Ca:	2552 M	1383 L - 3845 VH
S:	12.9 L	8.0 L - 23.0 H
B:	0.5 L	0.3 VL - 0.8 L
Zn:	2.1 M	1.2 M - 3.7 H
Mn:	8.1 L	3.0 VL - 33.0 VH
Fe:	64.1 VH	33.0 VH - 198.0 VH
Cu:	0.9 L	0.6 L - 1.6 H
Na:	16.5 VL	10.0 VL - 30.0 VL
SS:	0.22	0.10 - 0.40
NN:	7.9	3.0 - 13.0
OM:	3.0 M	1.8 L - 5.3 VH
pH:	6.6	5.0 - 7.6
Buffer:	6.8	5.7 - 7.1
ENR:	N/A	N/A
CeC:	17.3	10.9 - 25.5

Field No.	MapNo.	LabNo.	P (ppm)	K (ppm)	Mg (ppm)	Ca (ppm)	S (ppm)	B (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)	Cu (ppm)	Na (ppm)	SS (mmhos)	NN (ppm)	OM (%)	pH	Buffer	ENR (meq)	CeC (meq)
61 Paul NW80																				
3368	1	M3-3368	78	176	541	3824	23	0.8	3.0	3	43.0	1.0	30.0	0.4	13.0	3.4	7.6	7.1	n/a	24.2
3369	2	M3-3369	115	236	363	3141	13	0.7	3.7	3	33.0	0.8	13.0	0.3	13.0	3.0	7.5	7.1	n/a	19.4
3370	3	M3-3370	66	143	385	3160	15	0.7	2.2	4	41.0	0.8	16.0	0.3	10.0	2.8	7.4	7.1	n/a	19.4
3371	4	M3-3371	102	209	508	3845	12	0.8	3.4	3	55.0	1.2	10.0	0.4	11.0	4.3	7.5	7.1	n/a	24.0
3372	5	M3-3372	52	118	275	2510	11	0.5	2.2	4	37.0	0.7	19.0	0.3	9.0	2.7	6.9	7.1	n/a	15.2
3373	6	M3-3373	63	156	311	3216	16	0.6	2.7	8	73.0	1.2	20.0	0.2	8.0	4.1	6.4	6.7	n/a	21.1
3374	7	M3-3374	53	117	188	2214	9	0.5	2.0	9	48.0	0.8	11.0	0.2	9.0	2.6	6.4	6.8	n/a	14.3
3500	8	M3-3500	25	87	158	1791	8	0.4	1.3	9	63.0	0.7	10.0	0.1	5.0	2.2	6.0	6.7	n/a	12.4
3501	9	M3-3501	62	142	211	2161	18	0.5	1.9	5	35.0	0.6	22.0	0.2	6.0	2.1	7.0	7.1	n/a	13.0
3502	10	M3-3502	46	106	169	1950	10	0.4	1.6	6	41.0	0.6	12.0	0.1	5.0	2.4	6.6	6.9	n/a	12.2
3503	11	M3-3503	87	143	149	1383	12	0.4	1.2	11	78.0	0.8	20.0	0.1	3.0	1.8	5.7	6.7	n/a	10.9
3504	12	M3-3504	35	90	190	1535	11	0.3	1.4	7	45.0	0.7	15.0	0.1	5.0	1.8	6.1	6.8	n/a	11.2
3505	13	M3-3505	34	101	241	2458	9	0.5	1.4	5	42.0	0.7	15.0	0.2	6.0	2.6	7.2	7.1	n/a	14.6
3506	14	M3-3506	52	138	422	3102	12	0.5	1.6	11	129.0	1.2	16.0	0.2	10.0	5.3	5.6	6.4	n/a	25.5
3507	15	M3-3507	79	139	349	1996	15	0.5	2.2	33	198.0	1.6	18.0	0.2	6.0	4.6	5.0	5.7	n/a	22.6

AgPhD SOIL TEST

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SAMPLE DATE:
ISSUED:12:45pm EDT Oct 8, 2015
A Product of Agfleet Version 3.00

USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser -- Bergstrom

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

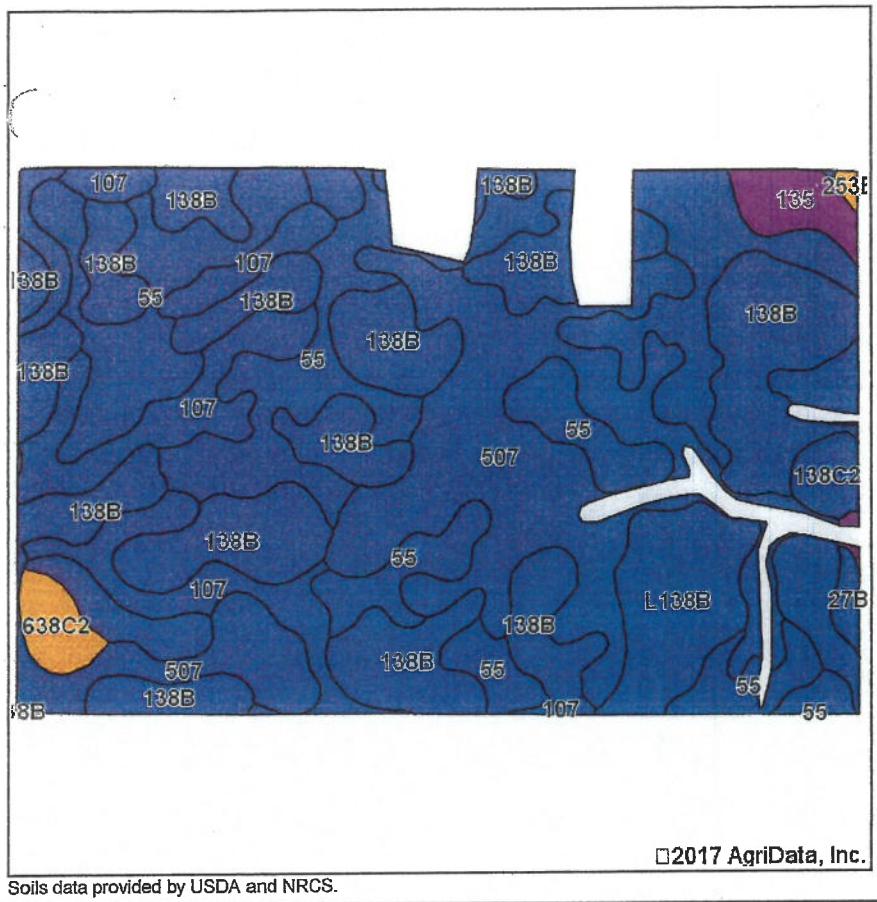
v. 1/22/2007

Iowa Phosphorus Index

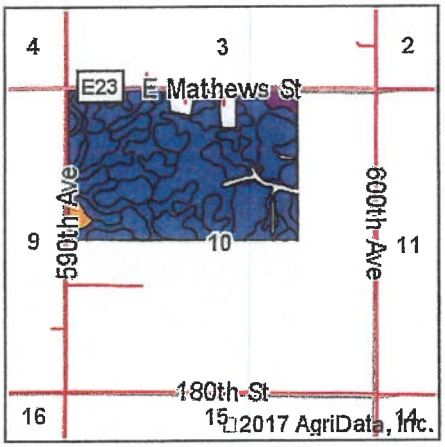
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x SDR	x Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI			Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Bergstrom --	1.60		1.00	0.06	1.00	1.10	0.83	0.09		1.32	0.20	0.04	0.33			0.00	0.07	0.00		0.42

Bergstrom Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **10-84N-23W**
Township: **Milford**
Acres: **218.94**
Date: **5/11/2017**

Maps Provided By:
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A... Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
138B	Clarion loam, 2 to 6 percent slopes	67.95	31.0%		IIe	89	86
55	Nicollet clay loam, 1 to 3 percent slopes	57.27	26.2%		Iw	89	94
507	Canisteo clay loam, 0 to 2 percent slopes	46.12	21.1%		IIw	84	84
107	Webster clay loam, 0 to 2 percent slopes	21.15	9.7%		IIw	86	89
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	12.29	5.6%		IIe	88	
138C2	Clarion loam, 6 to 10 percent slopes, moderately eroded	5.99	2.7%		IIIe	83	68
135	Coland clay loam, 0 to 2 percent slopes	3.89	1.8%		IIw	57	84
638C2	Clarion-Storden complex, 6 to 10 percent slopes, moderately eroded	2.90	1.3%		IIIe	75	61
27B	Terril loam, 2 to 6 percent slopes	1.07	0.5%		IIe	87	86
253B	Farrar fine sandy loam, 2 to 5 percent slopes	0.31	0.1%		IIe	76	64
					Weighted Average	**86.7**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Bergstrom

KEY COOPERATIVE
Connect. Build. Grow.

Grower : Couser Cattle Company

Field : Bergstrom

Year : 2013

Operation : Soil Sampling

PS Count : 93

Area : 219.7 ac

REPORT NUMBER
13-16[illegible]-0078

REPORT DATE
Jun 18, 2013

ACCOUNT
28482

RECEIVED DATE
Jun 14, 2013

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ISSUE DATE
Jun 18, 2013

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

IDENTIFICATION
COUSER CATTLE COMPANY
BERGSTROM

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25313655	1	3.4	18	30		133	599	4258		7.5		26.6	1.3	18.8	79.9	0.0				0-6		15	0.9	6	62	1.1	1.0				37
25313656	2	2.3	19	21		108	459	3117		7.8		19.7	1.4	19.4	79.2	0.0				0-6		15	0.4	6	47	0.6	0.9				21
25313657	3	1.6	19	22		85	235	1777		6.7		11.1	2.0	17.6	80.4	0.0				0-6		14	0.3	8	76	0.5	0.5				
25313658	4	1.8	29	32		120	324	2888		7.2		17.4	1.8	15.5	82.7	0.0				0-6		13	0.4	7	81	0.6	0.7				
25313659	5	4.2	57	93		194	591	4643		7.3		28.6	1.7	17.2	81.1	0.0				0-6		13	1.0	5	57	1.2	0.9				72
25313660	6	2.2	22	23		122	319	2740		7.0		16.7	1.9	15.9	82.2	0.0				0-6		31	0.5	7	58	0.7	0.6				
25313661	7	1.5	12	17		106	283	2552		7.1		15.4	1.8	15.3	82.9	0.0				0-6		16	0.3	3	31	0.5	0.5				
25313662	8	2.5	31	91		141	195	3811		7.7		21.0	1.7	7.7	90.6	0.0				0-6		92	0.6	4	23	0.7	0.7				53
25313663	9	1.9	15	20		81	147	1084		4.9	6.4	12.3	1.7	10.0	44.1	44.2				0-6		61	0.6	23	198	0.6	0.6				
25313664	10	2.6	23	33		149	273	3225		6.6	6.8	20.0	1.9	11.4	80.6	6.1				0-6		14	0.6	13	88	0.7	0.6				
25313665	11	3.9	30	57		152	483	4073		6.7		24.8	1.6	16.2	82.2	0.0				0-6		40	0.9	8	103	1.5	0.8				
25313666	12	2.5	16	22		119	320	2688		6.5	6.8	17.7	1.7	15.1	75.9	7.3				0-6		18	0.6	12	94	0.9	0.6				
25313667	13	2.1	15	23		142	338	2935		7.0		17.9	2.0	15.7	82.3	0.0				0-6		13	0.4	8	68	0.7	0.7				
25313668	14	3.3	16	31		143	559	4289		7.2		26.5	1.4	17.6	81.0	0.0				0-6		12	0.7	6	76	1.1	0.8				
25313669	15	2.2	8	16		155	523	3251		7.4		21.0	1.9	20.8	77.3	0.0				0-6		106	0.4	7	60	0.7	0.9				20
25313670	16	4.2	28	50		173	566	4077		7.3		25.5	1.7	18.5	79.8	0.0				0-6		11	1.1	6	49	1.1	0.8				45
25313671	17	1.6	14	21		133	359	3253		7.2		19.6	1.7	15.3	83.0	0.0				0-6		14	0.3	5	35	0.6	0.6				
25313672	18	2.6	18	33		133	349	3265		6.9		19.6	1.7	14.8	83.5	0.0				0-6		13	0.6	8	61	0.8	0.7				
25313673	19	2.3	11	17		146	357	3135		6.8		19.0	2.0	15.7	82.3	0.0				0-6		56	0.4	8	55	0.8	0.7				
25313674	20	3.5	19	49		153	650	4668		7.0		29.1	1.3	18.6	80.1	0.0				0-6		34	0.7	4	65	1.6	0.8				
25313675	21	2.2	12	18		130	278	2798		6.9		16.6	2.0	14.0	84.0	0.0				0-6		38	0.6	8	65	0.9	0.6				
25313676	22	2.1	8	13		105	246	2723		7.4		15.9	1.7	12.9	85.4	0.0				0-6		9	0.4	6	33	0.6	0.6				15
25313677	23	2.6	19	28		150	290	2761		6.6	6.8	17.7	2.2	13.7	78.0	6.1				0-6		12	0.6	9	79	0.8	0.6				
25313678	24	2.2	13	15		93	155	1111		4.9	6.3	12.7	1.9	10.2	43.7	44.2				0-6		26	0.7	36	140	0.7	0.5				
25313679	25	3.5	4	33		138	284	5717		7.7		31.3	1.1	7.6	91.3	0.0				0-6		9	0.6	8	32	1.1	1.0				25
25313680	26	4.6	22	117		202	431	5208		7.8		30.1	1.7	11.9	86.4	0.0				0-6		99	1.0	5	39	1.1	1.5				47
25313681	27	1.7	20	29		164	232	2720		7.4		16.0	2.6	12.1	85.3	0.0				0-6		31	0.4	4	30	0.6	0.6				32
25313682	28	2.8	17	25		160	323	3547		6.8		20.8	2.0	12.9	85.1	0.0				0-6		44	0.6	8	76	0.8	0.6				
25313683	29	3.3	32	58		193	400	3713		6.8		22.4	2.2	14.9	82.9	0.0				0-6		55	1.2	19	135	1.1	0.8				
25313684	30	4.3	16	85		249	632	4631		7.1		29.1	2.2	18.1	79.7	0.0				0-6		58	1.8	12	157	1.7	1.1				
25313685	31	3.8	15	82		163	488	4176		7.3		25.4	1.6	16.0	82.4	0.0				0-6		70	1.4	9	80	1.3	1.1				52
25313686	32	2.7	10	19		100	367	3331		7.4		20.0	1.3	15.3	83.4	0.0				0-6		12	0.9	7	94	0.9	0.9				28

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IDENTIFICATION

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RYAN RISDAL
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NEVADA IA 50201

COUSER CATTLE COMPANY
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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess	Soluble	NH3-	MP3
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25313687	33	2.1	12	15		99	305	2843		7.1		17.0	1.5	15.0	83.5	0.0				0-6		11	0.5	6	40	0.6	0.6				
25313688	34	2.7	10	33		159	573	3282		7.6		21.6	1.9	22.1	76.0	0.0				0-6		59	1.3	7	99	0.9	1.2				60
25313690	35	1.5	39	73		187	385	2722		7.1		17.3	2.8	18.5	78.7	0.0				0-6		46	0.8	8	78	0.9	1.0				
25313691	36	2.4	20	42		203	458	3147		7.3		20.1	2.6	19.0	78.4	0.0				0-6		16	0.9	9	71	0.8	1.0				58
25313692	37	2.7	27	36		173	354	3144		6.9		19.1	2.3	15.4	82.3	0.0				0-6		29	1.1	10	75	0.9	0.7				
25313693	38	4.0	32	68		232	570	4187		6.7		26.3	2.3	18.1	79.6	0.0				0-6		84	1.4	13	132	1.6	0.8				
25313694	39	4.1	40	76		248	460	4509		6.7		27.0	2.4	14.2	83.4	0.0				0-6		82	1.2	11	105	1.4	0.7				
25313695	40	4.0	32	52		154	333	3209		5.7	6.5	24.3	1.6	11.4	66.0	21.0				0-6		74	1.5	27	125	1.5	0.6				
25313696	41	2.0	12	13		109	161	1094		4.7	6.0	14.3	2.0	9.4	38.3	50.3				0-6		92	0.5	35	99	0.8	0.5				
25313697	42	2.9	30	42		150	391	3631		6.9		21.8	1.8	14.9	83.3	0.0				0-6		102	0.8	12	96	1.0	0.8				
25313698	43	2.6	16	22		147	433	3651		7.1		22.2	1.7	16.3	82.0	0.0				0-6		146	0.5	8	69	0.9	0.8				
25313699	44	1.8	22	36		162	345	2999		7.0		18.3	2.3	15.7	82.0	0.0				0-6		109	0.5	10	68	0.7	0.6				
25313700	45	2.6	24	36		164	409	3433		6.8		21.0	2.0	16.2	81.8	0.0				0-6		124	0.6	14	115	0.9	0.7				
25313701	46	2.4	25	31		161	254	2467		6.4	6.8	16.4	2.5	12.9	75.2	9.4				0-6		66	0.5	13	73	0.8	0.6				
25313702	47	3.5	97	142		384	479	3567		7.4		22.8	4.3	17.5	78.2	0.0				0-6		14	6.8	5	93	1.3	1.0				164
25313703	48	3.0	35	61		198	535	3619		7.0		23.1	2.2	19.3	78.5	0.0				0-6		69	2.0	8	127	1.2	0.9				
25313704	49	3.4	35	58		258	352	3476		7.4		21.0	3.2	14.0	82.8	0.0				0-6		91	1.3	6	56	1.1	0.8				68
25313705	50	2.1	36	55		208	285	2943		7.3		17.6	3.0	13.5	83.5	0.0				0-6		17	1.0	5	61	0.8	0.6				62
25313706	51	3.9	66	122		329	491	3845		7.0		24.2	3.5	16.9	79.6	0.0				0-6		84	2.0	7	85	1.3	0.8				
25313707	52	3.3	9	42		174	314	4332		8.0		24.7	1.8	10.6	87.6	0.0				0-6		9	0.7	4	27	0.9	1.5				29
25313708	53	3.6	25	75		242	583	4679		7.6		28.9	2.1	16.8	81.1	0.0				0-6		21	0.8	4	36	1.1	1.1				49
25313709	54	3.5	21	38		197	512	4556		7.2		27.6	1.8	15.5	82.7	0.0				0-6		105	0.8	6	58	1.2	1.0				
25313710	55	1.8	15	21		128	415	2994		7.1		18.8	1.7	18.4	79.9	0.0				0-6		132	0.4	9	56	0.8	0.8				
25313711	56	2.0	12	16		129	163	1093		4.8	6.1	13.5	2.5	10.1	40.5	46.9				0-6		40	0.4	34	96	0.9	0.4				
25313712	57	1.9	35	55		159	193	1391		5.0	6.3	15.2	2.7	10.6	45.8	40.9				0-6		83	0.9	32	183	1.3	0.5				
25313713	58	2.2	18	33		189	314	3310		7.2		19.7	2.5	13.3	84.2	0.0				0-6		80	0.5	10	64	0.7	0.6				
25313714	59	3.9	29	59		220	569	4866		7.1		29.6	1.9	16.0	82.1	0.0				0-6		63	0.8	7	64	1.2	0.9				
25313715	60	3.8	10	45		177	567	4551		7.4		27.9	1.6	16.9	81.5	0.0				0-6		13	0.8	6	55	1.3	1.2				29
25313716	61	2.2	16	27		132	356	3387		7.5		20.2	1.7	14.7	83.6	0.0				0-6		102	0.5	7	49	0.7	0.9				37
25313717	62	4.2	7	76		222	563	4916		7.9		29.8	1.9	15.7	82.4	0.0				0-6		141	0.7	5	30	1.0	1.5				39
25313718	63	2.5	21	29		170	313	3483		7.2		20.5	2.1	12.7	85.2	0.0				0-6		91	0.9	9	51	0.8	0.8				
25313719	64	2.5	13	19		163	313	3391		7.5		20.0	2.1	13.0	84.9	0.0				0-6		95	0.6	6	47	0.7	0.7				24

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab Number	Sample ID	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
		%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25313720	65	2.7	9	34		132	454	3758		7.5		22.9	1.5	16.5	82.0	0.0				0-6		38	0.7	7	56	0.7	1.0				27
25313721	66	4.4	33	101		232	648	4857		7.0		30.3	2.0	17.8	80.2	0.0				0-6		50	1.3	9	108	1.5	1.1				
25313722	67	2.8	29	36		170	297	2769		6.6	6.8	17.9	2.4	13.8	77.3	6.5				0-6		65	0.8	19	101	1.0	0.7				
25313723	68	3.2	25	37		171	384	3366		6.7		20.5	2.1	15.6	82.3	0.0				0-6		75	0.6	16	102	1.1	0.7				
25313724	69	3.2	40	69		231	478	3758		6.8		23.4	2.5	17.0	80.5	0.0				0-6		85	1.0	20	163	1.5	0.8				
25313725	70	2.6	13	17		132	239	1752		5.2	6.2	16.9	2.0	11.8	51.8	34.4				0-6		18	0.7	39	162	1.2	0.5				
25313726	71	2.2	10	13		111	176	1368		5.2	6.4	13.1	2.2	11.2	52.2	34.4				0-6		48	0.3	22	84	0.8	0.4				
25313727	72	2.0	21	26		148	215	2276		7.0		13.6	2.8	13.2	84.0	0.0				0-6		76	0.3	8	48	0.6	0.5				
25313729	73	2.1	18	22		164	273	2816		7.1		16.8	2.5	13.5	84.0	0.0				0-6		79	0.8	9	48	1.1	0.6				
25313730	74	3.1	18	31		159	433	3672		7.1		22.4	1.8	16.1	82.1	0.0				0-6		207	0.6	8	101	0.9	0.8				
25313731	75	2.7	24	37		191	385	3288		7.1		20.1	2.4	16.0	81.6	0.0				0-6		117	0.7	8	96	0.8	0.8				
25313732	76	4.3	45	75		280	622	4158		7.4		26.7	2.7	19.4	77.9	0.0				0-6		104	2.2	8	102	1.3	1.1				96
25313733	77	2.5	7	17		103	270	1906		5.7	6.6	15.2	1.7	14.8	62.7	20.8				0-6		54	0.6	11	77	1.0	0.5				
25313734	78	3.2	49	80		177	329	2814		6.2	6.7	19.7	2.3	13.9	71.4	12.4				0-6		74	1.0	10	84	1.0	0.6				
25313735	79	2.3	20	27		158	245	2946		7.1		17.2	2.4	11.9	85.7	0.0				0-6		44	0.5	12	69	0.8	0.6				
25313736	80	2.4	21	31		179	283	3130		7.3		18.5	2.5	12.7	84.8	0.0				0-6		14	0.5	9	62	0.7	0.8				40
25313737	81	2.1	18	23		171	243	2963		7.4		17.3	2.5	11.7	85.8	0.0				0-6		59	0.3	6	34	0.5	0.6				27
25313738	82	1.5	10	20		114	332	2951		7.5		17.8	1.6	15.5	82.9	0.0				0-6		111	0.2	5	39	0.5	0.8				22
25313739	83	1.9	16	19		140	279	2976		7.2		17.6	2.0	13.2	84.8	0.0				0-6		90	0.3	11	54	0.8	0.6				
25313740	84	2.6	33	45		202	345	2841		6.9		17.6	2.9	16.3	80.8	0.0				0-6		111	0.5	18	108	0.9	0.7				
25313741	85	2.6	19	26		154	298	1948		5.4	6.5	17.6	2.2	14.1	55.3	28.4				0-6		44	0.8	28	140	1.3	0.6				
25313742	86	2.1	15	18		119	208	1491		5.1	6.4	15.3	2.0	11.3	48.7	38.0				0-6		16	0.3	17	64	0.7	0.4				
25313743	87	1.9	20	33		204	371	2944		7.6		18.3	2.9	16.9	80.2	0.0				0-6		98	0.4	7	35	0.5	0.6				38
25313744	88	1.2	9	24		136	287	3100		7.7		18.2	1.9	13.1	85.0	0.0				0-6		108	0.2	4	24	0.6	0.6				23
25313745	89	1.1	9	30		144	299	2976		8.2		17.7	2.1	14.1	83.8	0.0				0-6		40	0.1	3	18	0.5	0.7				22
25313746	90	2.3	20	24		154	268	3032		6.9		17.8	2.2	12.5	85.3	0.0				0-6		19	0.4	9	58	0.7	0.6				
25313747	91	2.2	29	35		178	265	2816		7.2		16.7	2.7	13.2	84.1	0.0				0-6		85	0.4	7	50	0.6	0.6				
25313748	92	2.6	6	25		155	509	3038		7.8		19.8	2.0	21.4	76.6	0.0				0-6		113	0.4	9	41	0.8	0.9				43
25313749	93	4.9	38	93		214	410	5193		7.4		29.9	1.8	11.4	86.8	0.0				0-6		155	1.5	7	50	1.1	0.9				72

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Bills N 60

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: --- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

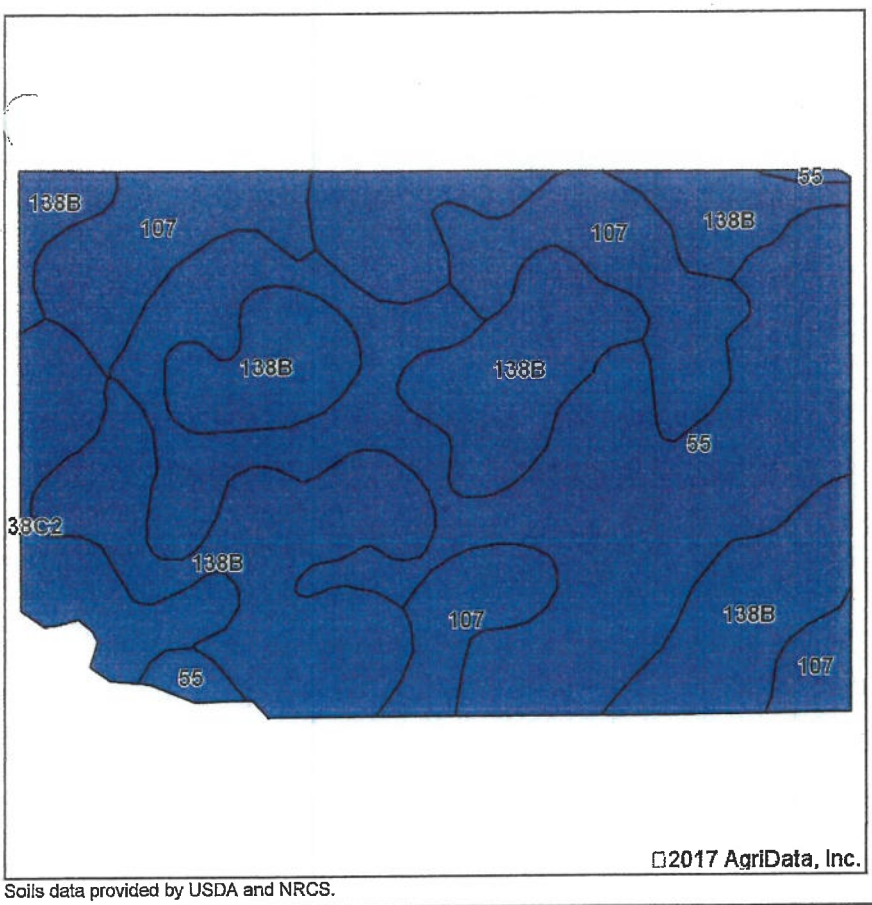
Iowa Phosphorus Index

v. 1/22/2007

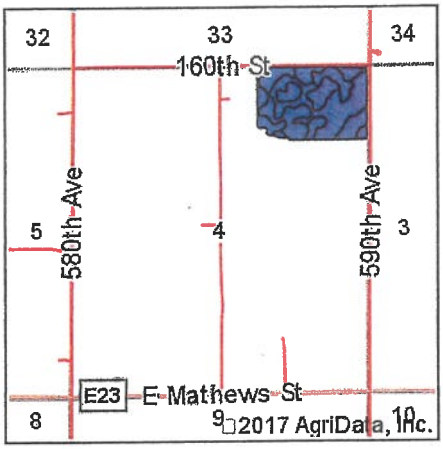
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x SDR	x	Buffer Factor	x	Enrichment Factor	x STP Factor =	Erosion PI		RCN Factor	x (| STP Factor | + P App Factor) =	Runoff PI		Flow Factor	x	STP Factor = Tile/Sub PI		P Index
Bills N 60 --	0.84		1.00	0.10		1.00		1.10	0.89	0.08		1.32		0.27	0.07	0.45		0.00		0.07	0.00	0.53

Bills N 60 Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **4-84N-23W**
Township: **Milford**
Acres: **56.29**
Date: **5/11/2017**

Maps Provided By:
surety® CUSTOMIZED ONLINE MAPPING
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Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
138B	Clarion loam, 2 to 6 percent slopes	22.76	40.4%		IIe	89	86
55	Nicollet clay loam, 1 to 3 percent slopes	19.41	34.5%		Iw	89	94
107	Webster clay loam, 0 to 2 percent slopes	10.56	18.8%		IIw	86	89
138C2	Clarion loam, 6 to 10 percent slopes, moderately eroded	3.56	6.3%		IIIe	83	68
					Weighted Average	**88.1**	**88.2**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Bill's N 60

KEY COOPERATIVE
Connect. Build. Grow.

Grower : Couser Cattle Company

Field : Bill's N 60

Year : 2013

Operation : Soil Sampling

PS Count : 24

Area : 55.7 ac

REPORT NUMBER
13-16--0075

REPORT DATE
Jun 18, 2013

ACCOUNT
28482

RECEIVED DATE
Jun 14, 2013

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ISSUE DATE
Jun 18, 2013

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

IDENTIFICATION
COUSER CATTLE COMPANY
BILLS N 60

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25313577	1	2.5	55	64		233	212	1418		4.6	6.0	20.6	2.9	8.6	34.4	54.1				0-6		27	0.8	56	156	1.2	0.5				
25313578	2	2.7	27	56		123	396	2963		5.9	6.6	22.2	1.4	14.9	66.7	17.0				0-6		11	0.4	19	81	1.2	0.6				
25313579	3	3.4	65	91		227	308	2566		5.1	6.1	25.8	2.3	9.9	49.7	38.1				0-6		18	0.9	36	164	1.4	0.5				
25313580	4	3.2	43	57		177	380	2757		5.2	6.4	26.6	1.7	11.9	51.8	34.6				0-6		16	0.7	27	157	1.7	0.6				
25313581	5	2.8	49	61		194	269	1982		5.0	6.0	21.4	2.3	10.5	46.3	40.9				0-6		19	0.8	38	166	1.4	0.5				
25313582	6	2.2	44	55		247	197	1548		5.0	6.5	17.0	3.7	9.7	45.5	41.1				0-6		23	0.6	38	106	0.9	0.4				
25313583	7	1.9	28	38		194	214	2051		5.7	6.6	15.8	3.1	11.3	64.9	20.7				0-6		18	0.3	20	62	0.7	0.4				
25313584	8	3.3	54	76		223	377	2875		5.4	6.3	25.3	2.3	12.4	56.8	28.5				0-6		10	0.8	26	149	1.5	0.5				
25313585	9	1.7	34	38		243	148	1179		4.6	6.2	16.9	3.7	7.3	34.9	54.1				0-6		18	0.4	32	81	0.8	0.4				
25313586	10	3.0	45	62		227	274	2493		5.5	6.5	20.7	2.8	11.0	60.2	26.0				0-6		10	1.2	26	107	1.5	0.6				
25313587	11	1.8	17	32		148	225	3447		7.5		19.5	1.9	9.6	88.5	0.0				0-6		15	0.3	8	34	0.6	0.6				22
25313588	12	2.3	48	79		234	302	2237		6.3	6.7	16.0	3.8	15.7	69.9	10.6				0-6		15	0.6	27	103	0.9	0.6				
25313589	13	1.9	55	67		249	151	1049		4.7	6.2	14.4	4.4	8.7	36.4	50.5				0-6		20	0.7	59	103	0.8	0.5				
25313590	14	2.1	23	29		188	181	1535		4.8	6.5	18.3	2.6	8.2	41.9	47.3				0-6		26	0.3	31	92	0.8	0.4				
25313591	15	1.9	32	38		193	159	1710		5.2	6.6	15.9	3.1	8.3	53.8	34.8				0-6		13	0.3	24	96	0.8	0.4				
25313592	16	2.6	49	61		230	220	2231		4.9	6.2	24.3	2.4	7.5	45.9	44.2				0-6		15	0.9	42	179	1.3	0.5				
25313593	17	3.3	41	51		188	440	3033		5.4	6.3	27.0	1.8	13.6	56.2	28.4				0-6		16	0.8	22	125	1.4	0.6				
25313594	18	2.3	54	68		287	266	1910		5.0	6.4	21.2	3.5	10.5	45.0	41.0				0-6		24	0.6	34	144	0.9	0.5				
25313595	19	1.9	31	38		223	163	1385		4.9	6.8	15.9	3.6	8.5	43.6	44.3				0-6		19	0.3	52	94	0.8	0.4				
25313596	20	2.4	68	87		206	260	2178		5.2	6.4	20.8	2.5	10.4	52.4	34.7				0-6		15	0.7	39	125	1.1	0.5				
25313597	21	3.2	66	117		217	436	3697		5.5	6.3	30.7	1.8	11.8	60.2	26.2				0-6		14	0.6	27	111	1.4	0.7				
25313598	22	1.5	31	38		185	147	1506		5.0	6.5	15.6	3.0	7.9	48.3	40.8				0-6		19	0.4	28	138	0.8	0.6				
25313599	23	1.5	44	63		216	142	1615		5.8	6.7	12.1	4.6	9.8	66.7	18.9				0-6		25	0.4	31	71	0.6	0.5				
25313600	24	0.9	40	65		157	291	2508		7.7		15.4	2.6	15.7	81.7	0.0				0-6		23	0.4	12	38	0.8	0.5				64

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Coder South

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

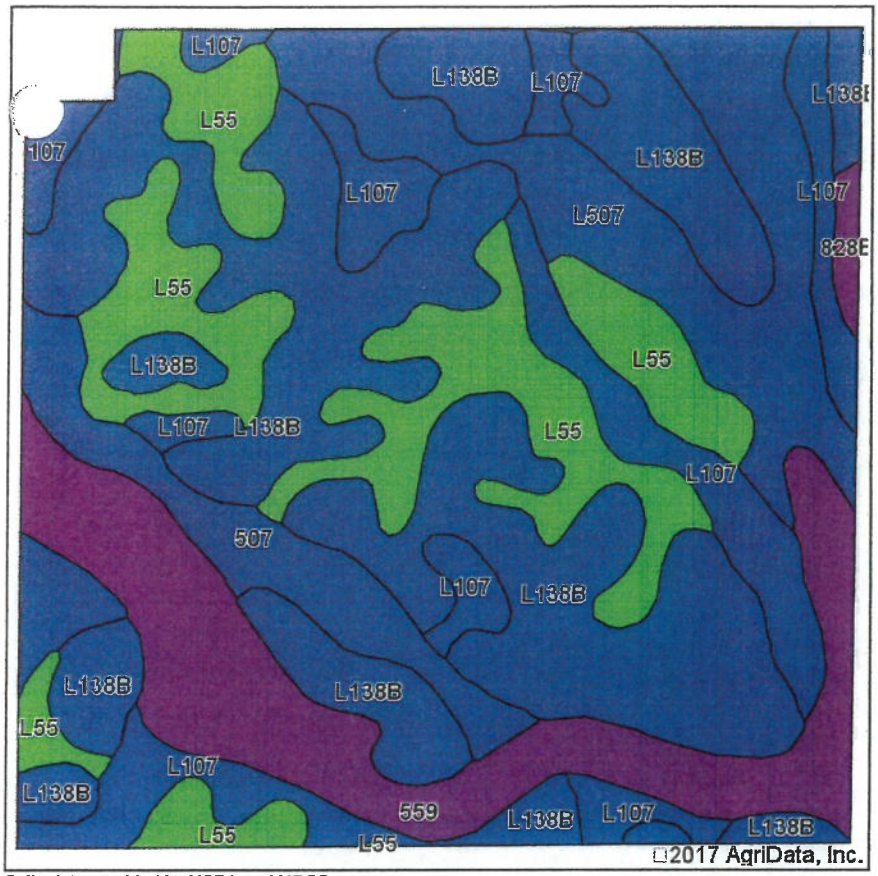
v. 1/22/2007

Iowa Phosphorus Index

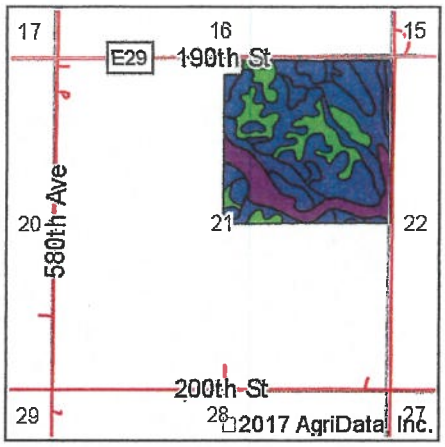
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x SDR x	Buffer Factor	x Enrichment Factor	x STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI			Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Coder South --	1.60		1.00	0.06	1.00	1.10	0.90	0.09		1.32	0.29	0.04	0.44			0.00	0.07	0.00		0.53

Coder South Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **21-84N-23W**
Township: **Milford**
Acres: **153.83**
Date: **5/11/2017**

Maps Provided By:

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. Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	57.03	37.1%		IIe	88	
L55	Nicollet loam, 1 to 3 percent slopes	25.96	16.9%		Ie	91	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	21.82	14.2%		IIw	88	
559	Talcot clay loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	21.19	13.8%		IIw	54	75
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	17.65	11.5%		IIw	87	
507	Canisteo clay loam, 0 to 2 percent slopes	7.98	5.2%		IIw	84	84
107	Webster clay loam, 0 to 2 percent slopes	1.34	0.9%		IIw	86	89
828B	Zenor sandy loam, 2 to 5 percent slopes	0.86	0.6%		IIIe	53	52
					Weighted Average	83.3	*-

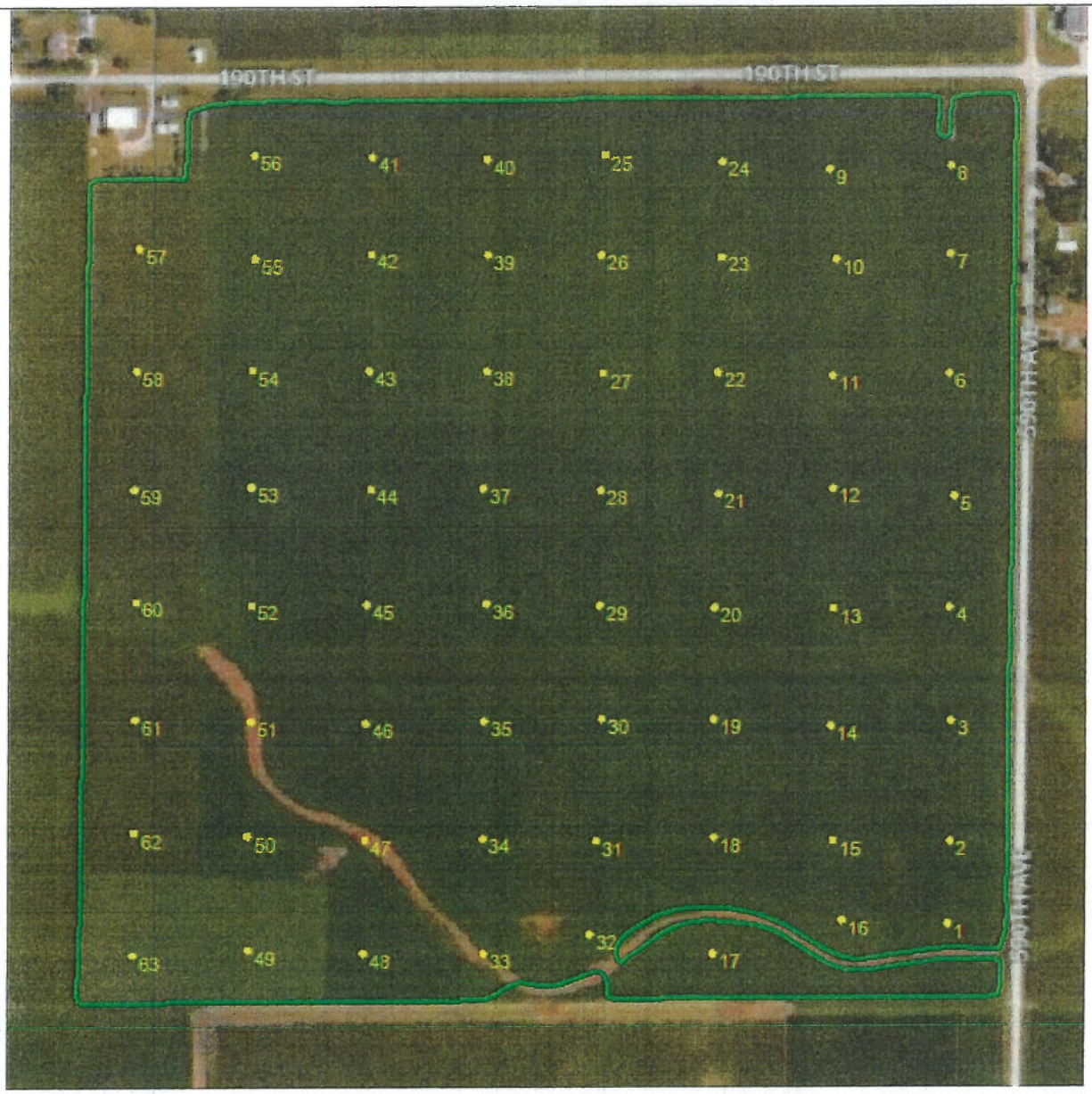
**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Couser Custom
Farm: Farm
Field: Coder South
Area: 151.28 ac

One In = 470 feet

0 212 425 637 850 1062

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-140-0261

REPORT DATE
May 22, 2014

ACCOUNT
28482

RECEIVED DATE
May 20, 2014

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TODAY'S DATE
May 22, 2014

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

IDENTIFICATION
COUSER CUSTOM
CODER SOUTH

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26660541	1	3.7	51	117		170	428	3522		6.7		21.6	2.0	16.5	81.5	0.0				0-6		9	1.1						0.3		
26660542	2	2.6	77	132		197	362	2413		6.5	6.8	16.9	3.0	17.9	71.4	7.7				0-6		11	1.6						0.3		
26660543	3	5.0	26	127		170	580	5078		7.1		30.7	1.4	15.7	82.9	0.0				0-6		14	1.0						0.4		
26660544	4	5.3	59	82		253	518	5930		7.5		34.6	1.9	12.5	85.6	0.0				0-6		15	1.6						0.5		82
26660545	5	5.3	24	135		206	409	6790		7.7		37.9	1.4	9.0	89.6	0.0				0-6		17	1.3						0.5		54
26660546	6	3.7	31	132		145	382	3760		7.2		22.4	1.7	14.2	84.1	0.0				0-6		15	1.4						0.3		
26660547	7	5.2	8	40		120	278	5585		7.8		30.5	1.0	7.6	91.4	0.0				0-6		14	0.8						0.4		30
26660548	8	4.0	38	140		190	471	4829		7.6		28.6	1.7	13.7	84.6	0.0				0-6		14	1.4						0.6		66
26660549	9	2.3	35	54		127	289	2321		7.0		14.3	2.3	16.8	80.9	0.0				0-6		7	0.8						0.2		
26660550	10	2.0	31	36		163	259	1589		5.9	6.7	12.7	3.3	17.0	62.6	17.1				0-6		10	0.9						0.1		
26660551	11	4.3	62	88		173	537	3505		6.2	6.6	25.5	1.7	17.5	68.7	12.1				0-6		11	1.8						0.3		
26660552	12	3.5	38	81		156	481	3927		6.8		24.0	1.7	16.7	81.6	0.0				0-6		10	1.2						0.3		
26660553	13	4.1	76	119		188	491	3601		5.7	6.4	28.6	1.7	14.3	63.0	21.0				0-6		15	1.5						0.3		
26660554	14	2.3	54	59		184	270	1700		5.4	6.5	15.7	3.0	14.3	54.1	28.6				0-6		16	1.2						0.2		
26660555	15	2.3	43	49		164	227	1379		5.2	6.5	14.0	3.0	13.5	49.2	34.3				0-6		19	0.8						0.2		
26660556	16	4.0	83	113		207	418	2752		5.8	6.5	22.0	2.4	15.8	62.5	19.3				0-6		16	2.3						0.1		
26660557	17	3.9	33	45		151	421	2831		5.7	6.5	22.9	1.7	15.3	61.8	21.2				0-6		12	1.3						0.1		
26660558	18	2.0	28	42		143	270	1827		5.8	6.6	14.6	2.5	15.4	62.6	19.5				0-6		16	1.0						0.2		
26660559	19	2.6	31	34		174	243	1878		5.3	6.4	17.2	2.6	11.8	54.6	31.0				0-6		13	0.8						0.2		
26660560	20	2.4	33	47		135	285	2170		6.2	6.7	15.5	2.2	15.3	70.0	12.5				0-6		10	0.9						0.2		
26660561	21	5.7	63	154		239	516	5321		6.5	6.7	34.1	1.8	12.6	78.0	7.6				0-6		12	2.2						0.5		
26660562	22	4.1	40	75		157	510	3693		6.2	6.6	26.3	1.5	16.2	70.2	12.1				0-6		12	1.4						0.3		
26660563	23	4.4	54	102		171	582	4126		6.5	6.7	28.0	1.6	17.3	73.7	7.4				0-6		13	1.5						0.3		
26660564	24	3.7	57	83		203	467	3207		6.2	6.6	23.2	2.2	16.8	69.1	11.9				0-6		16	1.7						0.3		
26660565	25	2.3	28	48		143	331	2646		7.1		16.4	2.2	16.8	81.0	0.0				0-6		18	0.9						0.2		
26660566	26	3.6	39	76		155	508	3549		6.4	6.7	24.6	1.6	17.2	72.1	9.1				0-6		17	1.3						0.2		
26660568	27	3.2	37	50		163	428	3187		6.3	6.7	22.2	1.9	16.1	71.8	10.2				0-6		12	1.3						0.2		
26660569	28	3.5	46	74		151	432	2901		5.9	6.6	22.3	1.7	16.1	65.0	17.2				0-6		9	1.4						0.2		
26660570	29	2.3	31	42		146	247	1903		5.6	6.6	15.6	2.4	13.2	61.0	23.4				0-6		12	0.8						0.2		
26660571	30	3.9	67	86		225	393	2624		5.2	6.2	25.9	2.2	12.6	50.7	34.5				0-6		13	1.5						0.2		
26660572	31	2.6	40	50		132	295	2025		5.2	6.4	19.7	1.7	12.5	51.4	34.4				0-6		11	1.0						0.2		
26660573	32	2.5	39	52		120	319	2288		5.8	6.6	17.8	1.7	14.9	64.3	19.1				0-6		11	0.7						0.1		

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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REPORT NUMBER
14-14[illegible]-0261

REPORT DATE
May 22, 2014

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RYAN RISDAL
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NEVADA IA 50201

IDENTIFICATION
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CODER SOUTH

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16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		Index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26660574	33	2.9	25	105		123	507	4265		7.9		25.9	1.2	16.3	82.5	0.0				0-6		9	0.8						0.2		49
26660575	34	2.1	22	34		108	275	2070		6.4	6.8	14.2	2.0	16.1	72.9	9.0				0-6		9	0.6						0.2		
26660576	35	2.9	42	61		150	264	1943		5.4	6.5	17.2	2.2	12.8	56.5	28.5				0-6		12	1.1						0.2		
26660577	36	3.0	34	44		153	319	2399		5.5	6.5	20.3	1.9	13.1	59.1	25.9				0-6		14	1.1						0.1		
26660578	37	2.3	32	79		172	367	3232		6.9		19.7	2.2	15.5	82.3	0.0				0-6		10	1.1						0.2		
26660579	38	3.2	49	70		183	393	2889		6.1	6.6	21.2	2.2	15.4	68.1	14.3				0-6		10	1.5						0.2		
26660580	39	3.3	15	50		112	357	4323		7.6		24.9	1.2	11.9	86.9	0.0				0-6		10	0.8						0.4		28
26660581	40	4.7	52	145		212	601	4987		7.3		30.5	1.8	16.4	81.8	0.0				0-6		13	1.7						0.5		75
26660582	41	3.6	45	124		183	666	4725		7.1		29.6	1.6	18.7	79.7	0.0				0-6		10	1.5						0.3		
26660583	42	2.8	34	56		182	361	3061		6.8		18.8	2.5	16.0	81.5	0.0				0-6		11	1.0						0.3		
26660584	43	2.0	38	69		188	268	3295		7.2		19.2	2.5	11.6	85.9	0.0				0-6		12	1.1						0.4		
26660585	44	2.6	30	44		159	254	2640		6.1	6.7	18.3	2.2	11.6	72.1	14.1				0-6		12	1.1						0.2		
26660586	45	2.6	30	40		137	285	2355		5.7	6.6	18.4	1.9	12.9	64.0	21.2				0-6		12	0.9						0.2		
26660587	46	4.8	17	64		145	367	6234		7.7		34.6	1.1	8.8	90.1	0.0				0-6		10	0.9						0.5		42
26660588	47	3.5	18	88		137	560	5512		7.8		32.6	1.1	14.3	84.6	0.0				0-6		12	1.2						0.4		60
26660589	48	4.9	37	166		206	589	6699		7.7		38.9	1.4	12.6	86.0	0.0				0-6		10	1.0						0.3		73
26660590	49	4.5	26	115		168	560	6319		7.8		36.7	1.2	12.7	86.1	0.0				0-6		11	0.9						0.4		60
26660591	50	4.2	30	133		145	585	4968		7.3		30.1	1.2	16.2	82.6	0.0				0-6		12	1.1						0.3		57
26660592	51	4.0	33	137		164	620	5646		7.8		33.8	1.2	15.3	83.5	0.0				0-6		14	1.4						0.5		74
26660593	52	4.0	50	97		155	483	3327		5.8	6.5	26.0	1.5	15.5	64.0	19.0				0-6		13	1.5						0.2		
26660594	53	1.7	10	34		112	273	3464		7.8		19.9	1.4	11.4	87.2	0.0				0-6		13	0.6						0.3		22
26660595	54	3.2	56	98		215	270	2952		6.2	6.7	20.0	2.8	11.2	73.8	12.2				0-6		17	2.0						0.2		
26660596	55	3.1	53	86		251	233	2591		6.4	6.8	17.0	3.8	11.4	76.2	8.6				0-6		18	1.8						0.2		
26660597	56	3.3	59	106		215	436	3392		6.9		21.1	2.6	17.2	80.2	0.0				0-6		15	2.1						0.4		
26660598	57	3.7	63	121		247	318	3105		6.4	6.7	20.7	3.1	12.8	75.0	9.1				0-6		12	3.6						0.1		
26660599	58	2.2	28	77		142	251	3440		7.4		19.7	1.8	10.6	87.6	0.0				0-6		12	1.6						0.3		54
26660600	59	4.1	87	128		235	434	2730		5.9	6.6	21.6	2.8	16.7	63.2	17.3				0-6		12	2.1						0.1		
26660601	60	4.4	43	141		194	588	5282		7.9		31.8	1.6	15.4	83.0	0.0				0-6		12	1.5						0.4		81
26660602	61	4.4	28	132		164	510	6818		8.0		38.8	1.1	11.0	87.9	0.0				0-6		18	1.3						0.4		79
26660603	62	2.7	29	41		107	294	2634		6.6	6.9	16.9	1.6	14.5	77.9	6.0				0-6		10	1.0						0.1		
26660604	63	3.0	17	64		124	445	4420		7.8		26.1	1.2	14.2	84.6	0.0				0-6		12	0.6						0.2		37

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Hadley Home

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

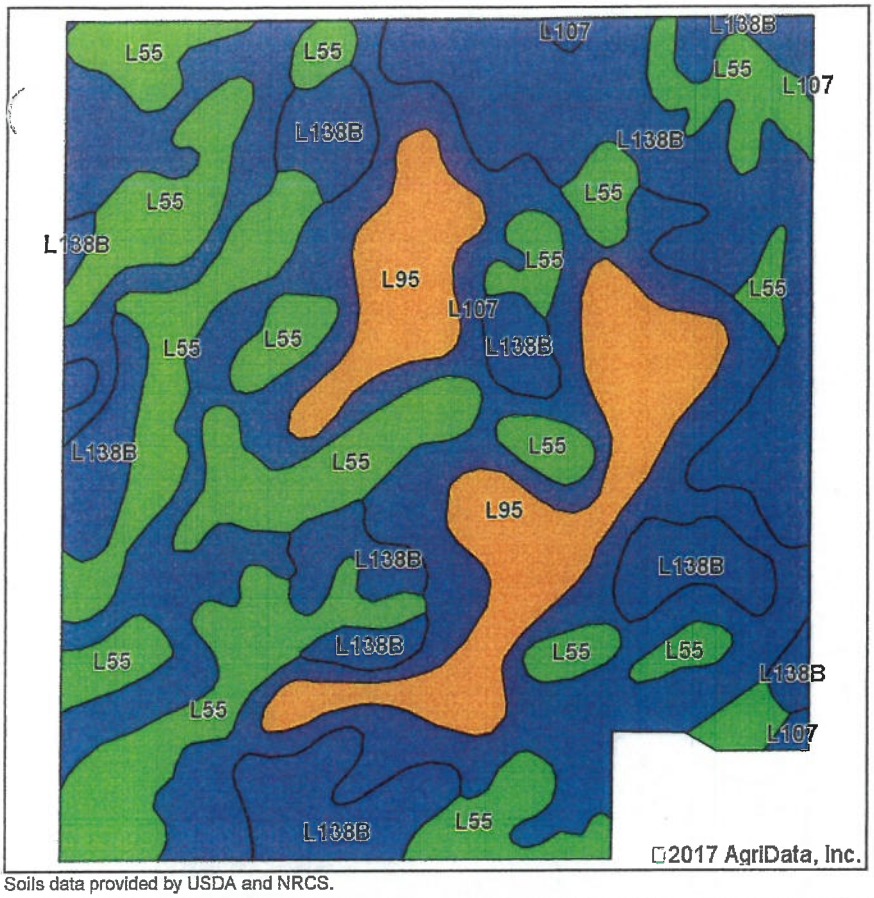
Iowa Phosphorus Index

v. 1/22/2007

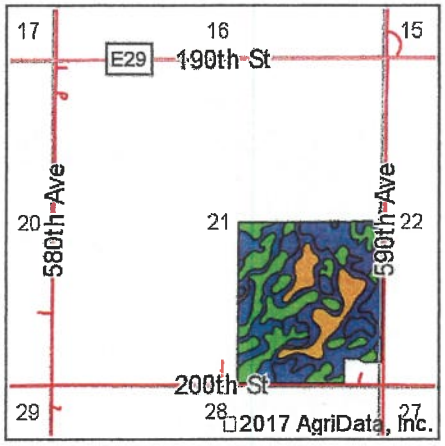
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Hadley Home --	1.60		1.00		0.06		1.00		1.10		0.89	0.09		1.32		0.28		0.04		0.43		0.00		0.07		0.00		0.52

Hadley Home Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **21-84N-23W**
Township: **Milford**
Acres: **132.88**
Date: **5/11/2017**

Maps Provided By:

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A. . Symbol: IA169, Soil Area Version: 27

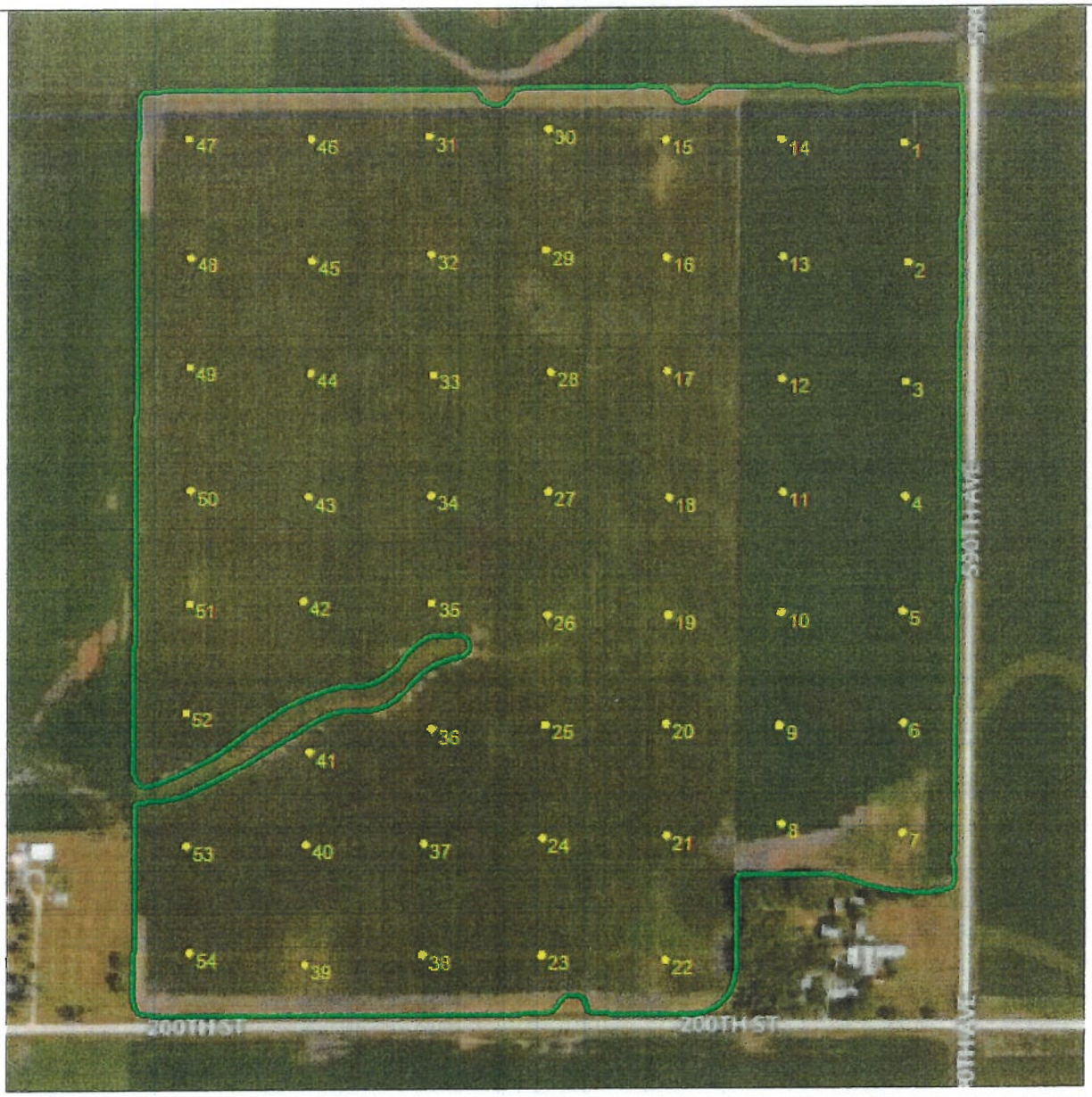
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	47.29	35.6%		IIw	88
L55	Nicollet loam, 1 to 3 percent slopes	36.77	27.7%		Ie	91
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	33.01	24.8%		IIe	88
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	15.81	11.9%		IIw	75
					Weighted Average	**87.3**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Couser Custom
Farm: Farm
Field: Hadley Home
Area: 129.73 ac

N

One In = 463 feet

0 209 419 628 838 1047

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-120-0122

REPORT DATE
May 12, 2014

ACCOUNT
28482

RECEIVED DATE
May 8, 2014

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TODAY'S DATE
May 12, 2014

IDENTIFICATION

COUSER CUSTOM
HADLEY HOME

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16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26616729	1	2.7	47	60		216	295	1804		5.4	6.5	16.8	3.3	14.6	53.7	28.4				0-6		15	1.0						0.3		
26616730	2	2.9	30	36		141	350	2124		5.7	6.6	17.6	2.1	16.6	60.3	21.0				0-6		12	1.1						0.3		
26616732	3	2.0	23	27		126	310	1857		5.8	6.6	15.1	2.1	17.1	61.5	19.3				0-6		11	0.9						0.2		
26616733	4	4.0	59	83		205	542	3432		6.2	6.6	25.2	2.1	17.9	68.1	11.9				0-6		9	1.3						0.3		
26616734	5	3.2	31	44		162	434	2635		6.2	6.7	19.5	2.1	18.5	67.6	11.8				0-6		10	1.0						0.2		
26616735	6	3.0	25	47		121	477	2976		7.1		19.2	1.6	20.7	77.7	0.0				0-6		10	0.9						0.3		
26616736	7	3.7	47	87		166	633	3939		7.2		25.4	1.7	20.8	77.5	0.0				0-6		11	1.2						0.3		
26616737	8	3.0	26	54		142	429	3944		7.5		23.7	1.5	15.1	83.4	0.0				0-6		10	0.8						0.4		39
26616738	9	2.3	20	45		139	312	3581		7.5		20.9	1.7	12.4	85.9	0.0				0-6		11	0.6						0.4		27
26616739	10	4.3	20	69		209	382	5944		7.6		33.4	1.6	9.5	88.9	0.0				0-6		11	1.0						0.5		55
26616740	11	4.8	31	138		214	478	5587		7.4		32.5	1.7	12.3	86.0	0.0				0-6		11	0.9						0.4		51
26616741	12	2.8	24	35		141	431	2847		5.7	6.5	23.0	1.6	15.6	61.9	20.9				0-6		9	0.8						0.2		
26616742	13	1.7	22	26		145	215	1296		5.2	6.3	13.2	2.8	13.6	49.1	34.5				0-6		13	0.5						0.1		
26616743	14	2.1	21	28		137	262	1605		5.4	6.5	14.8	2.4	14.8	54.2	28.6				0-6		13	0.5						0.3		
26616744	15	2.0	19	28		165	231	2115		6.4	6.8	14.2	3.0	13.6	74.5	8.9				0-6		16	0.5						0.3		
26616745	16	3.6	19	39		145	504	3383		5.9	6.5	25.9	1.4	16.2	65.3	17.1				0-6		9	0.7						0.3		
26616746	17	3.6	24	65		164	560	4761		7.0		28.9	1.5	16.1	82.4	0.0				0-6		11	1.0						0.4		
26616747	18	2.4	14	38		123	324	3623		7.3		21.1	1.5	12.8	85.7	0.0				0-6		10	0.7						0.3		20
26616748	19	4.6	45	124		234	439	5505		7.7		31.8	1.9	11.5	86.6	0.0				0-6		9	1.6						0.4		80
26616749	20	3.8	36	84		168	616	4257		6.7		26.8	1.6	19.2	79.2	0.0				0-6		10	1.3						0.4		
26616750	21	3.2	24	44		112	454	2954		6.7		18.8	1.5	20.1	78.4	0.0				0-6		8	1.2						0.2		
26616751	22	3.8	4	58		159	393	5165		7.8		29.5	1.4	11.1	87.5	0.0				0-6		10	1.3						0.5		55
26616752	23	2.4	35	55		167	424	2721		7.2		17.6	2.4	20.1	77.5	0.0				0-6		12	1.3						0.4		
26616753	24	5.1	86	174		283	611	5840		7.5		35.0	2.1	14.5	83.4	0.0				0-6		15	2.6						0.3		130
26616754	25	4.3	76	123		258	497	3767		6.7		23.6	2.8	17.5	79.7	0.0				0-6		16	2.6						0.4		
26616755	26	4.2	72	124		245	634	4413		6.8		28.0	2.2	18.9	78.9	0.0				0-6		18	2.2						0.4		
26616756	27	4.0	23	86		171	434	5265		7.5		30.4	1.4	11.9	86.7	0.0				0-6		14	1.3						0.5		37
26616757	28	3.4	11	71		152	242	4645		7.8		25.6	1.5	7.9	90.6	0.0				0-6		12	1.0						0.5		39
26616758	29	4.1	16	91		171	305	5407		7.8		30.0	1.5	8.5	90.0	0.0				0-6		12	1.3						0.5		56
26616759	30	1.8	21	42		158	251	2215		6.0	6.7	16.0	2.5	13.1	69.2	15.2				0-6		20	0.7						0.3		
26616760	31	3.0	24	49		139	409	3421		6.6	6.8	22.2	1.6	15.4	77.0	6.0				0-6		12	0.9						0.4		
26616761	32	2.0	42	75		130	309	2362		6.3	6.7	16.4	2.0	15.7	72.0	10.3				0-6		12	1.4						0.3		

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IDENTIFICATION
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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26616762	33	5.3	34	129		222	511	6138		7.5		35.5	1.6	12.0	86.4	0.0				0-6		10	1.5						0.3		59
26616763	34	3.8	40	87		173	553	4143		6.7		25.8	1.7	17.9	80.4	0.0				0-6		10	1.5						0.3		
26616764	35	3.6	65	82		148	478	3617		6.6	6.8	23.8	1.6	16.7	76.0	5.7				0-6		17	2.1						0.3		
26616765	36	2.3	23	30		128	264	1759		5.3	6.6	16.4	2.0	13.4	53.6	31.0				0-6		21	1.2						0.2		
26616766	37	4.2	49	92		173	443	3759		6.4	6.7	25.2	1.8	14.6	74.6	9.0				0-6		14	1.8						0.2		
26616767	38	3.2	37	57		171	441	2813		6.0	6.6	21.4	2.0	17.2	65.7	15.1				0-6		11	1.6						0.3		
26616768	39	4.9	23	130		263	720	6302		7.7		38.2	1.8	15.7	82.5	0.0				0-6		25	1.8						0.6		134
26616769	40	3.4	61	100		174	445	3537		7.0		21.8	2.0	17.0	81.0	0.0				0-6		9	2.1						0.3		
26616771	41	3.8	62	115		169	540	3956		6.9		24.7	1.8	18.2	80.0	0.0				0-6		12	1.7						0.4		
26616772	42	3.0	30	51		144	381	2667		5.9	6.6	20.4	1.8	15.6	65.4	17.2				0-6		13	1.5						0.3		
26616773	43	5.4	43	140		200	383	6152		7.5		34.5	1.5	9.3	89.2	0.0				0-6		11	1.7						0.4		76
26616774	44	3.5	30	49		168	408	3313		6.2	6.6	23.2	1.9	14.7	71.4	12.0				0-6		12	1.0						0.2		
26616775	45	4.6	56	116		195	679	4724		6.4	6.6	32.7	1.5	17.3	72.2	9.0				0-6		13	1.5						0.4		
26616776	46	4.5	73	115		250	607	3707		5.8	6.4	29.9	2.1	16.9	62.0	19.0				0-6		15	1.5						0.3		
26616777	47	2.3	29	45		182	330	2989		6.4	6.7	20.0	2.3	13.8	74.7	9.2				0-6		11	0.8						0.4		
26616778	48	5.2	83	121		279	667	4016		5.8	6.4	32.6	2.2	17.1	61.6	19.1				0-6		12	2.5						0.4		
26616779	49	1.9	21	49		128	395	3550		7.6		21.4	1.5	15.4	83.1	0.0				0-6		12	1.2						0.4		34
26616780	50	3.3	61	101		207	363	2324		5.4	6.4	21.2	2.5	14.3	54.8	28.4				0-6		11	1.9						0.2		
26616781	51	2.2	29	56		161	274	3087		6.9		18.1	2.3	12.6	85.1	0.0				0-6		11	0.9						0.4		
26616782	52	3.7	48	67		215	361	2873		6.2	6.7	20.3	2.7	14.8	70.8	11.7				0-6		13	1.7						0.3		
26616783	53	3.1	43	56		173	355	2597		5.9	6.6	19.8	2.2	14.9	65.6	17.3				0-6		10	1.7						0.3		
26616784	54	3.0	47	67		210	308	2717		6.5	6.8	18.1	3.0	14.2	75.1	7.7				0-6		10	1.6						0.3		

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Hadley East

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

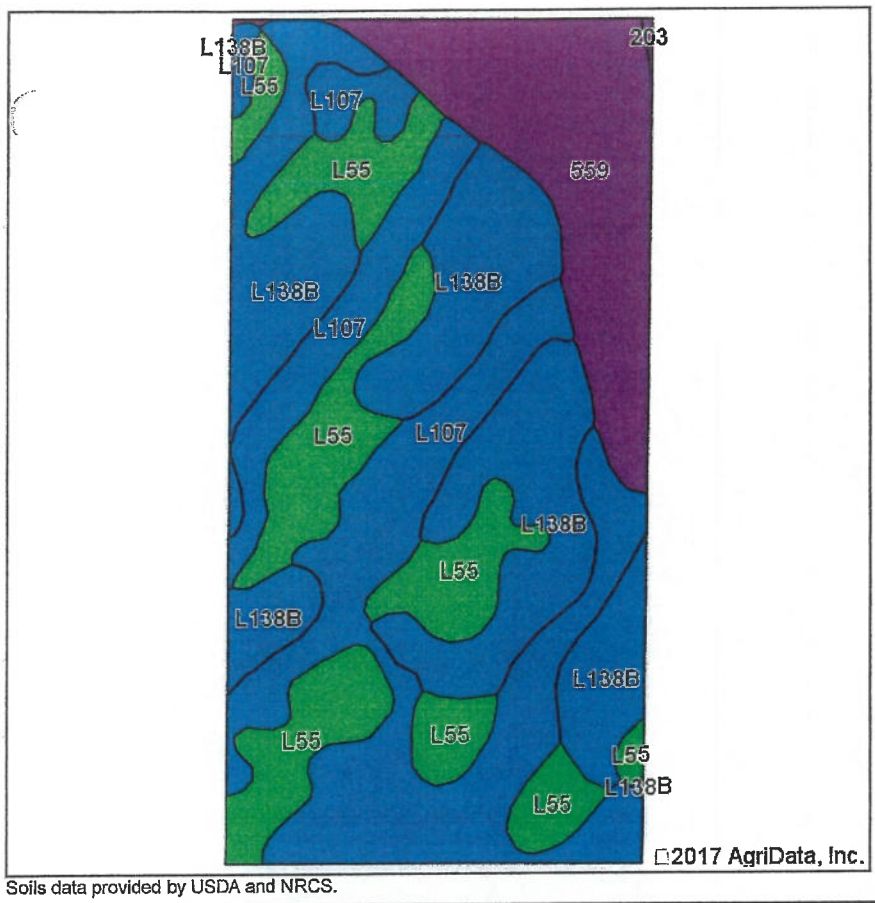
Iowa Phosphorus Index

v. 1/22/2007

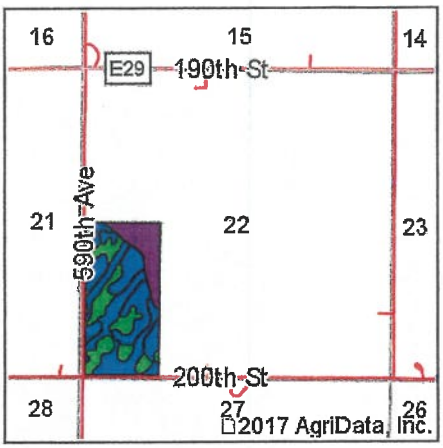
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Hadley East --	1.60		1.00		0.06		1.00		1.10		0.87	0.10		1.32		0.25		0.04		0.39		0.00		0.07		0.00		0.49

Hadley East Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **22-84N-23W**
Township: **Milford**
Acres: **77.42**
Date: **5/11/2017**

Maps Provided By:

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A. Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	24.19	31.2%		IIe	88	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	23.86	30.8%		IIw	88	
L55	Nicollet loam, 1 to 3 percent slopes	16.71	21.6%		Ie	91	
559	Talcot clay loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	12.59	16.3%		IIw	54	75
203	Cylinder loam, 0 to 2 percent slopes	0.07	0.1%		IIs	58	82
					Weighted Average	**83.1**	*-

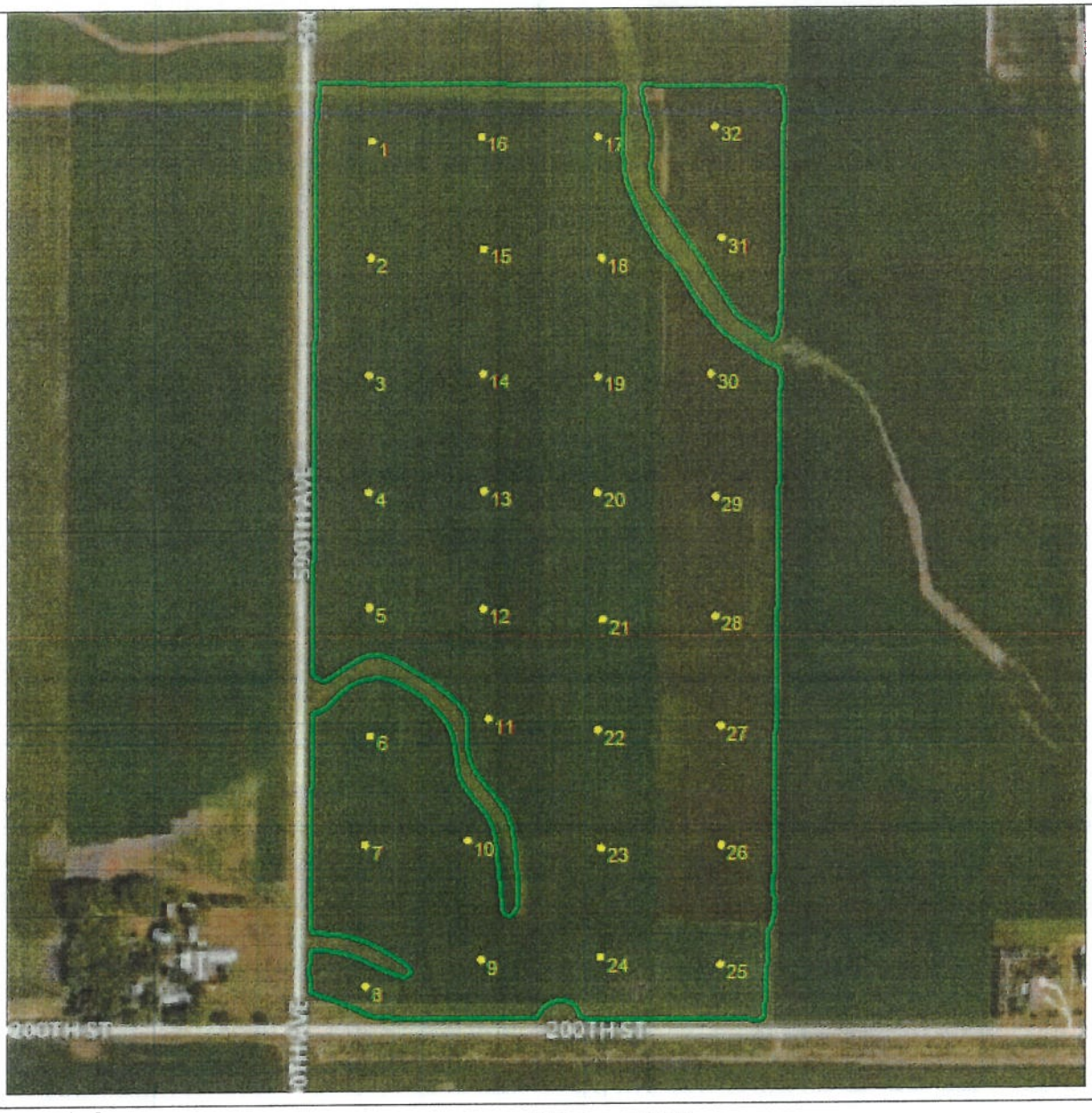
**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Couser Custom
Farm: Farm
Field: Hadley East
Area: 73.73 ac

One in = 461 feet

0 208 417 625 833 1042

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-12C-0123

REPORT DATE
May 12, 2014

ACCOUNT
28482

RECEIVED DATE
May 8, 2014

TODAY'S DATE
May 12, 2014

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NEVADA IA 50201

IDENTIFICATION
COUSER CUSTOM
HADLEY EAST

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26616785	1	3.1	27	58		168	634	3457		6.9		23.0	1.9	23.0	75.1	0.0				0-6		11	0.8						0.4		
26616786	2	2.2	24	28		132	346	2022		6.0	6.7	15.7	2.2	18.4	64.4	15.0				0-6		12	0.8						0.2		
26616787	3	1.9	25	32		150	297	1650		5.8	6.7	13.7	2.8	18.1	60.2	18.9				0-6		14	0.8						0.2		
26616788	4	2.2	30	35		141	310	1828		5.8	6.6	14.9	2.4	17.3	61.3	19.0				0-6		11	0.8						0.2		
26616789	5	2.0	16	31		117	402	2381		7.0		15.6	1.9	21.5	76.6	0.0				0-6		9	0.5						0.2		
26616790	6	1.9	22	31		109	324	2645		7.4		16.2	1.7	16.7	81.6	0.0				0-6		10	0.5						0.3		24
26616791	7	4.1	43	59		213	627	3665		6.5	6.7	26.1	2.1	20.0	70.2	7.7				0-6		11	1.4						0.3		
26616792	8	2.5	15	31		119	465	3012		7.3		19.2	1.6	20.2	78.2	0.0				0-6		8	0.6						0.3		24
26616793	9	5.9	33	156		226	585	6321		7.5		37.1	1.6	13.1	85.3	0.0				0-6		11	1.1						0.6		60
26616794	10	2.7	22	34		132	430	2798		6.7		17.9	1.9	20.0	78.1	0.0				0-6		14	0.7						0.3		
26616795	11	3.1	17	50		158	510	4396		7.5		26.6	1.5	16.0	82.5	0.0				0-6		12	0.5						0.5		28
26616796	12	4.2	34	62		179	486	4339		6.3	6.6	29.3	1.6	13.8	74.0	10.6				0-6		11	1.0						0.4		
26616797	13	2.1	15	23		138	334	2154		5.9	6.6	16.7	2.1	16.7	64.5	16.7				0-6		13	0.5						0.2		
26616798	14	3.5	44	66		188	518	2890		5.6	6.4	25.1	1.9	17.2	57.6	23.3				0-6		12	1.2						0.3		
26616799	15	3.4	34	40		198	433	2538		5.6	6.5	22.0	2.3	16.4	57.7	23.6				0-6		12	1.0						0.2		
26616800	16	3.1	29	47		172	412	3097		6.4	6.7	21.3	2.1	16.1	72.7	9.1				0-6		9	0.7						0.4		
26616801	17	5.9	31	114		320	325	6359		7.5		35.3	2.3	7.7	90.0	0.0				0-6		13	1.6						0.4		97
26616802	18	2.8	37	42		223	326	2166		5.3	6.6	20.4	2.8	13.3	53.1	30.8				0-6		15	0.9						0.2		
26616803	19	2.0	42	49		198	269	1541		5.4	6.5	14.7	3.5	15.2	52.4	28.9				0-6		16	0.8						0.2		
26616804	20	4.1	120	137		315	423	2571		5.4	6.4	24.1	3.4	14.6	53.3	28.7				0-6		17	2.5						0.2		
26616805	21	2.8	35	44		211	339	1971		5.2	6.2	20.2	2.7	14.0	48.8	34.5				0-6		24	1.3						0.2		
26616806	22	2.9	47	58		227	340	2057		5.4	6.5	19.2	3.0	14.8	53.6	28.6				0-6		16	1.4						0.3		
26616807	23	2.2	19	26		170	309	1931		5.8	6.6	15.7	2.8	16.4	61.5	19.3				0-6		13	0.7						0.3		
26616808	24	5.1	13	69		212	303	5894		7.6		32.5	1.7	7.8	90.5	0.0				0-6		11	1.1						0.5		66
26616810	25	3.2	22	26		122	462	2960		6.8		19.0	1.6	20.3	78.1	0.0				0-6		11	1.3						0.3		
26616811	26	2.4	47	60		442	228	1662		5.4	6.5	15.8	7.2	12.0	52.6	28.2				0-6		15	1.8						0.2		
26616812	27	2.7	26	32		173	299	1792		5.0	6.1	20.2	2.2	12.3	44.4	41.1				0-6		18	1.4						0.2		
26616813	28	3.1	26	34		182	347	2048		5.1	6.1	21.9	2.1	13.2	46.8	37.9				0-6		16	1.1						0.2		
26616814	29	2.6	22	24		143	295	1862		5.0	6.3	20.5	1.8	12.0	45.4	40.8				0-6		19	0.9						0.2		
26616815	30	4.3	65	75		267	476	2898		5.3	6.2	27.7	2.5	14.3	52.3	30.9				0-6		19	1.5						0.3		
26616816	31	3.8	41	139		219	457	5117		7.7		30.0	1.9	12.7	85.4	0.0				0-6		16	1.4						0.5		68
26616817	32	4.6	23	103		227	310	5563		7.6		31.0	1.9	8.3	89.8	0.0				0-6		27	0.9						0.8		50

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Morfey

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

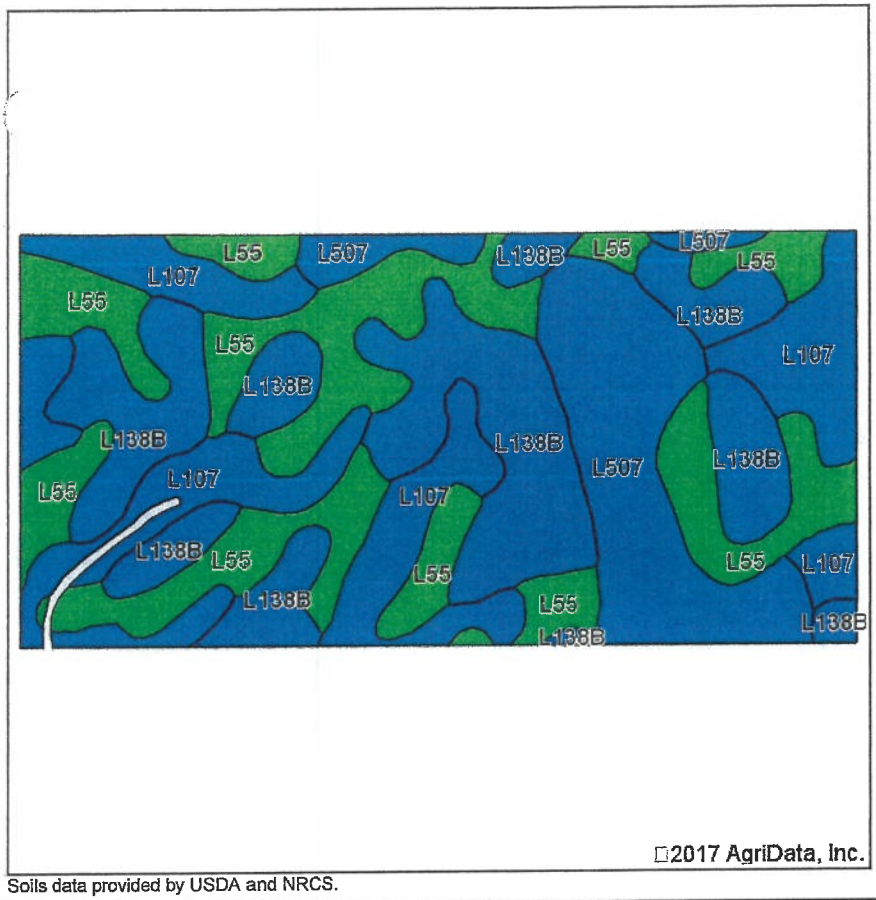
Iowa Phosphorus Index

v. 1/22/2007

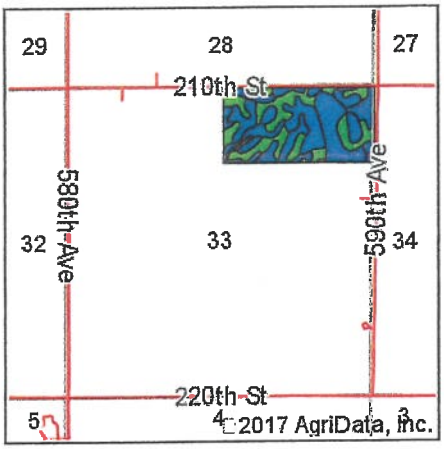
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Morfey --	0.84		1.00		0.06		1.00		1.10		1.01	0.06		1.32		0.42		0.07		0.64		0.00		0.07		0.00		0.70

Morfey Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **33-84N-23W**
Township: **Milford**
Acres: **76.83**
Date: **5/11/2017**

Maps Provided By:

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Soil Symbol: IA169, Soil Area Version: 27

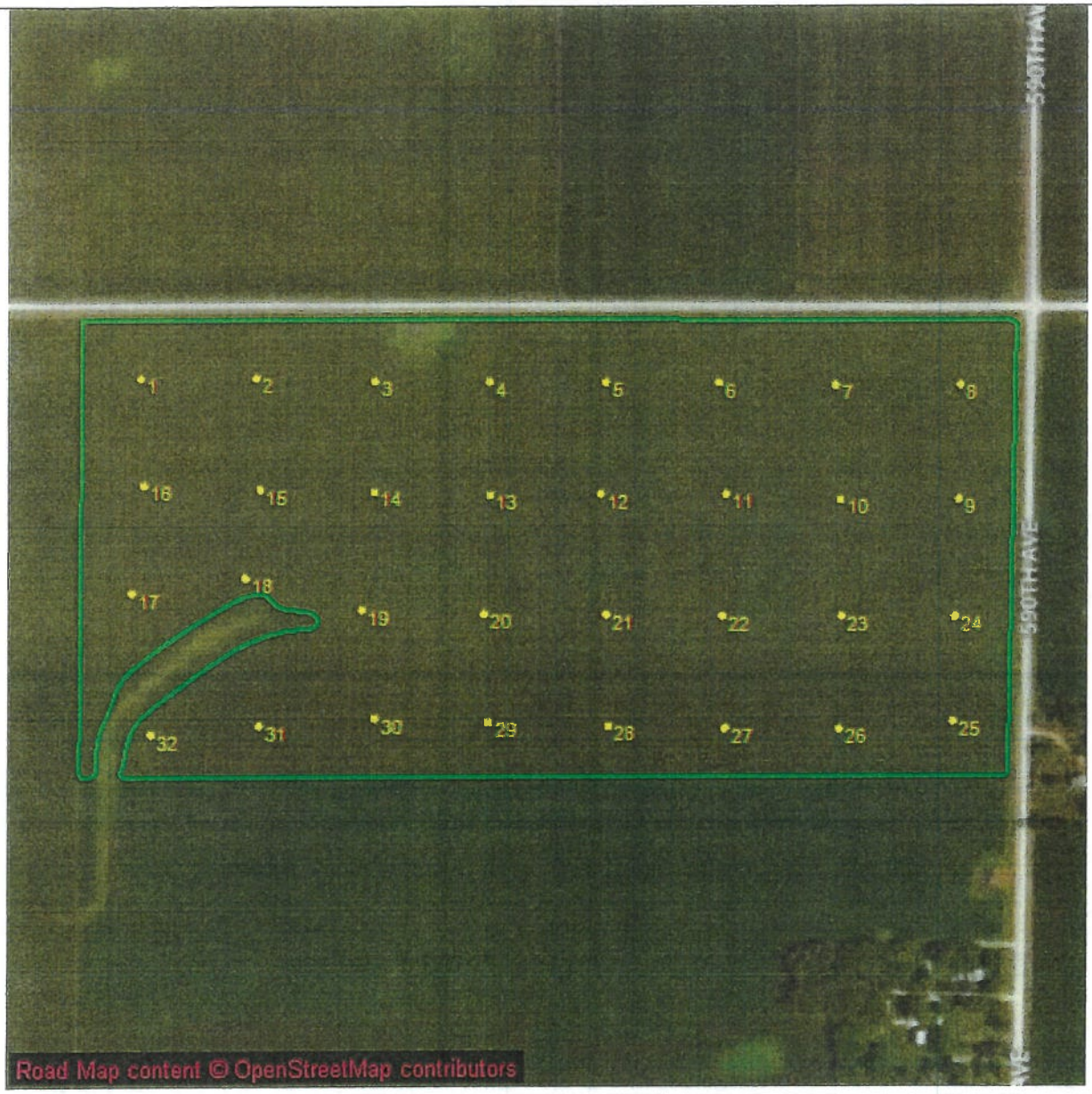
Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	23.34	30.4%		IIe	88
L55	Nicollet loam, 1 to 3 percent slopes	22.83	29.7%		Ie	91
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	17.89	23.3%		IIw	88
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	12.77	16.6%		IIw	87
					Weighted Average	**88.7**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Couser Custom
Farm: Farm
Field: Morfeys
Area: 75.10 ac

One in = 465 feet

0 210 420 630 840 1051

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-15[illegible]-0150

REPORT DATE
Jun 6, 2014

ACCOUNT
28482

RECEIVED DATE
Jun 4, 2014

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TODAY'S DATE
Jun 10, 2014

IDENTIFICATION

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

COUSER CUSTOM
MORFEYS

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26730446	1	3.4	30	44		164	449	2925		6.6	6.8	20.0	2.1	18.7	73.1	6.1				0-6		11	1.3						0.1		
26730447	2	4.4	85	128		210	694	4078		7.0		26.7	2.0	21.7	76.3	0.0				0-6		12	2.2						0.2		
26730448	3	3.5	67	108		212	578	3584		7.3		23.3	2.3	20.7	77.0	0.0				0-6		10	1.9						0.1		92
26730449	4	4.4	80	111		237	577	3402		6.3	6.7	25.0	2.4	19.2	68.0	10.4				0-6		10	2.6						0.2		
26730450	5	3.9	69	90		206	516	3498		6.5	6.7	24.1	2.2	17.8	72.6	7.4				0-6		11	2.2						0.2		
26730451	6	4.6	65	114		214	574	4143		7.2		26.0	2.1	18.4	79.5	0.0				0-6		9	1.9						0.2		
26730452	7	3.4	62	86		213	405	2901		6.3	6.7	20.6	2.7	16.4	70.4	10.5				0-6		11	2.0						0.1		
26730453	8	3.3	52	90		178	478	3250		7.0		20.7	2.2	19.2	78.6	0.0				0-6		14	1.6						0.1		
26730454	9	5.0	82	190		282	724	4367		6.9		28.6	2.5	21.1	76.4	0.0				0-6		16	2.4						0.2		
26730455	10	3.5	63	102		206	515	3865		7.5		24.1	2.2	17.8	80.0	0.0				0-6		14	1.6						0.2		72
26730456	11	5.4	26	131		289	416	6326		7.9		35.8	2.1	9.7	88.2	0.0				0-6		17	1.8						0.1		90
26730457	12	4.0	66	99		234	398	3078		6.3	6.7	21.6	2.8	15.4	71.2	10.6				0-6		13	2.5						0.2		
26730458	13	3.6	65	85		233	387	2646		6.1	6.6	19.9	3.0	16.2	66.5	14.3				0-6		14	2.1						0.1		
26730460	14	2.4	70	82		205	343	2154		6.5	6.8	15.3	3.4	18.7	70.4	7.5				0-6		10	1.6						0.2		
26730461	15	2.7	68	69		209	342	2336		6.0	6.7	17.8	3.0	16.0	65.6	15.4				0-6		11	1.9						0.2		
26730462	16	3.0	32	46		170	383	2550		6.2	6.7	18.6	2.3	17.2	68.5	12.0				0-6		10	1.2						0.1		
26730463	17	3.5	91	111		281	445	2674		5.9	6.6	21.4	3.4	17.3	62.5	16.8				0-6		15	2.5						0.2		
26730464	18	3.3	42	53		186	323	2260		5.4	6.4	20.3	2.3	13.3	55.7	28.7				0-6		15	1.3						0.1		
26730465	19	3.2	83	90		316	471	2634		6.0	6.6	21.1	3.8	18.6	62.4	15.2				0-6		16	1.8						0.2		
26730466	20	3.1	36	60		181	477	3039		6.6	6.8	20.9	2.2	19.0	72.7	6.1				0-6		17	1.3						0.2		
26730467	21	3.5	76	127		270	390	2713		6.1	6.6	20.4	3.4	15.9	66.5	14.2				0-6		16	2.0						0.1		
26730468	22	3.2	76	92		294	350	2385		5.9	6.6	18.8	4.0	15.5	63.4	17.1				0-6		15	1.7						0.1		
26730469	23	3.9	63	76		233	415	3137		6.2	6.7	22.4	2.7	15.4	70.0	11.9				0-6		10	1.6						0.2		
26730470	24	3.1	55	64		215	363	2527		6.1	6.7	18.8	2.9	16.1	67.2	13.8				0-6		11	1.4						0.1		
26730471	25	4.6	64	124		257	518	4816		7.8		29.1	2.3	14.8	82.9	0.0				0-6		10	1.7						0.3		85
26730472	26	5.8	132	168		418	529	4324		6.9		27.1	4.0	16.3	79.7	0.0				0-6		12	3.0						0.4		
26730473	27	4.5	115	122		328	449	2986		6.1	6.6	22.7	3.7	16.5	65.8	14.0				0-6		18	3.5						0.2		
26730474	28	3.7	82	116		308	388	2534		5.6	6.5	21.8	3.6	14.8	58.1	23.5				0-6		20	2.4						0.2		
26730475	29	4.5	101	122		336	688	3994		6.7		26.6	3.2	21.6	75.2	0.0				0-6		20	2.8						0.3		
26730476	30	2.8	94	128		338	365	2144		6.1	6.7	17.0	5.1	17.9	63.1	13.9				0-6		17	2.3						0.1		
26730477	31	2.4	56	125		229	393	2574		7.4		16.7	3.5	19.6	76.9	0.0				0-6		16	1.7						0.1		91
26730478	32	3.1	44	67		155	445	2611		6.4	6.7	18.9	2.1	19.6	69.1	9.2				0-6		12	1.5						0.1		

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser -- Neasham

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

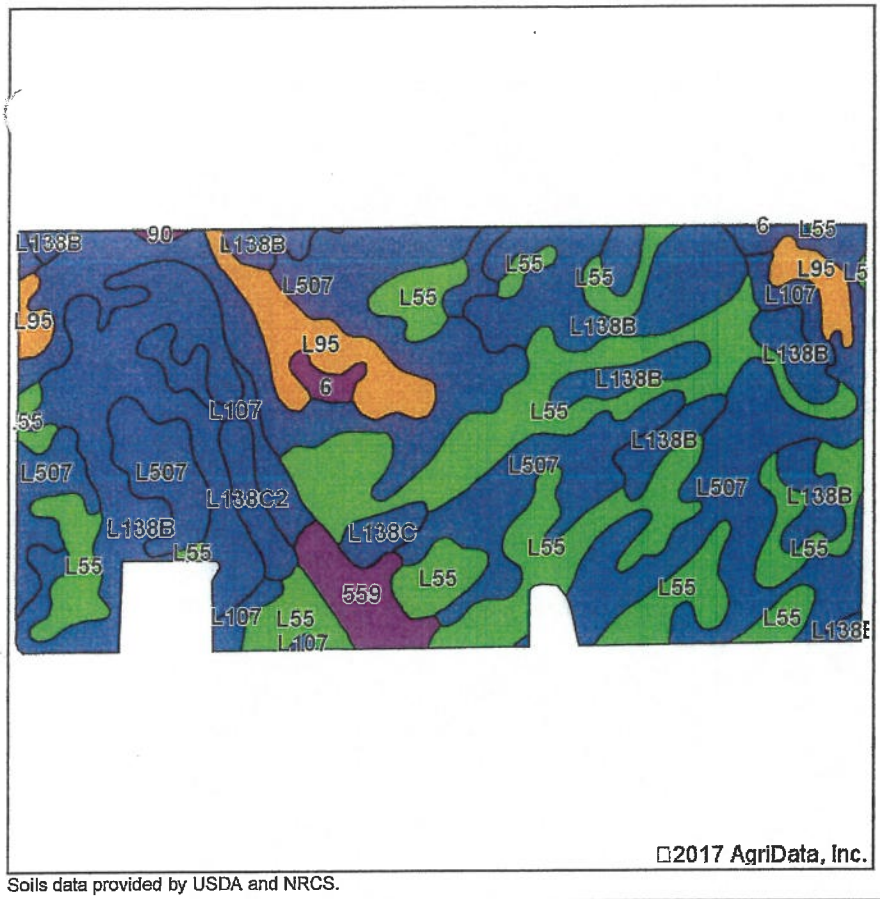
Iowa Phosphorus Index

v. 1/22/2007

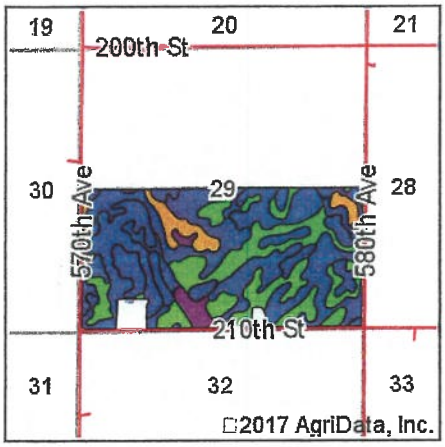
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x STP Factor	= Tile/Sub PI		P Index
Neasham --	0.84		1.00		0.05		1.00		1.10		1.00	0.04		1.32	0.41	0.07	0.62		0.00	0.07	0.00		0.67

Neasham Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **29-84N-23W**
Township: **Milford**
Acres: **299.81**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	101.35	33.8%		IIw	87	
L55	Nicollet loam, 1 to 3 percent slopes	77.45	25.8%		Ie	91	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	71.96	24.0%		IIe	88	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	16.07	5.4%		IIw	75	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	15.91	5.3%		IIw	88	
559	Talcot clay loam, 32 to 40 inches to sand and gravel, 0 to 2 percent slopes	7.69	2.6%		IIw	54	75
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	4.23	1.4%		IIIe	83	
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	2.87	1.0%		IIIe	84	
6	Okoboji silty clay loam, 0 to 1 percent slopes	1.88	0.6%		IIIw	59	59
90	Okoboji mucky silt loam, 0 to 1 percent slopes	0.40	0.1%		IIIw	56	62
					Weighted Average	**86.5**	*-

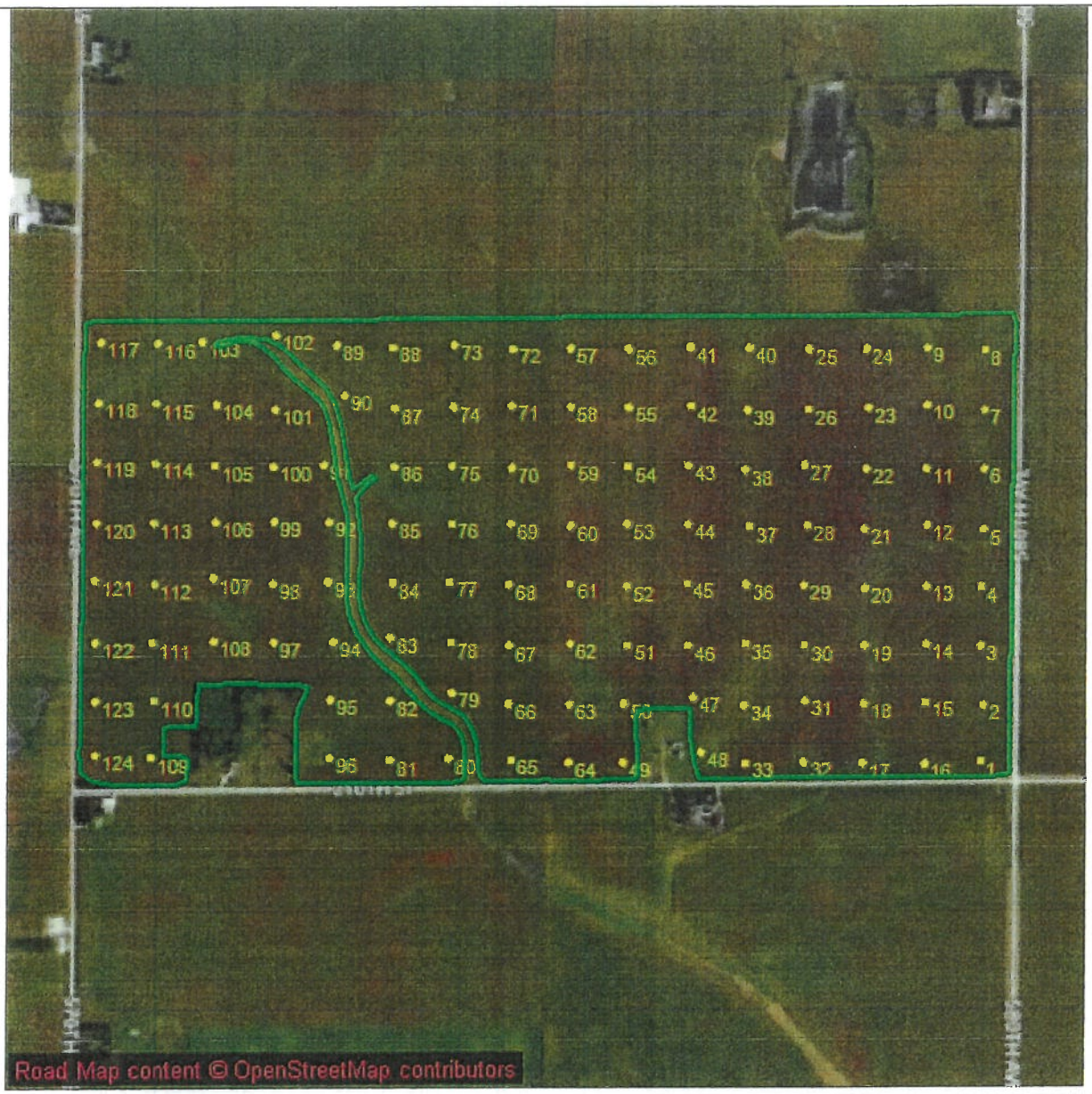
**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Couser Custom
Farm: Farm
Field: Neasums
Area: 292.33 ac

One in = 925 feet

0 418 836 1254 1672 2090

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

REPORT NUMBER
14-16[illegible]-0163

REPORT DATE
Jun 16, 2014

ACCOUNT
28482

RECEIVED DATE
Jun 12, 2014

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TODAY'S DATE
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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26764653	1	3.7	47	90		247	531	4289		7.9		26.5	2.4	16.7	80.9	0.0				0-6		13	1.2						0.3		75
26764654	2	4.1	18	81		215	665	5416		7.7		33.2	1.7	16.7	81.6	0.0				0-6		12	1.0						0.3		37
26764655	3	2.2	29	65		196	380	3605		8.0		21.7	2.3	14.6	83.1	0.0				0-6		19	0.9						0.3		44
26764656	4	3.6	43	77		207	501	4065		7.6		25.0	2.1	16.7	81.2	0.0				0-6		19	1.2						0.4		73
26764657	5	3.4	22	77		174	558	4377		7.6		27.0	1.7	17.2	81.1	0.0				0-6		18	1.0						0.3		51
26764658	6	4.8	22	101		282	483	5797		7.9		33.7	2.1	11.9	86.0	0.0				0-6		18	1.3						0.4		76
26764659	7	5.7	6	69		266	480	6469		7.9		37.0	1.8	10.8	87.4	0.0				0-6		13	1.5						0.4		65
26764660	8	4.7	2	43		207	455	6001		7.9		34.3	1.5	11.1	87.4	0.0				0-6		11	0.7						0.4		45
26764661	9	4.3	2	6		184	459	4538		7.9		27.0	1.7	14.2	84.1	0.0				0-6		15	0.7						0.4		35
26764663	10	3.7	11	71		200	372	4948		7.8		28.4	1.8	10.9	87.3	0.0				0-6		13	1.0						0.3		53
26764664	11	3.2	54	94		264	369	3673		7.4		22.1	3.1	13.9	83.0	0.0				0-6		16	1.4						0.4		76
26764665	12	4.2	48	130		262	532	5010		7.6		30.2	2.2	14.7	83.1	0.0				0-6		19	1.5						0.4		80
26764666	13	2.6	56	83		222	305	2774		7.0		17.0	3.3	15.0	81.7	0.0				0-6		18	1.3						0.3		
26764667	14	3.7	68	100		279	421	3780		7.3		23.1	3.1	15.2	81.7	0.0				0-6		21	1.9						0.4		114
26764668	15	4.3	57	131		275	580	4685		7.4		29.0	2.4	16.7	80.9	0.0				0-6		19	2.1						0.4		116
26764669	16	4.1	68	125		199	388	3244		7.6		20.0	2.6	16.2	81.2	0.0				0-6		12	1.6						0.4		111
26764670	17	5.5	65	134		346	505	5261		7.7		31.4	2.8	13.4	83.8	0.0				0-6		13	2.2						0.5		172
26764671	18	3.8	9	101		216	558	4765		7.8		29.0	1.9	16.0	82.1	0.0				0-6		14	1.0						0.4		44
26764672	19	4.5	18	138		287	594	5278		7.9		32.1	2.3	15.4	82.3	0.0				0-6		15	1.7						0.4		118
26764673	20	4.3	23	122		287	438	5385		7.8		31.3	2.4	11.7	85.9	0.0				0-6		16	1.6						0.5		96
26764674	21	3.7	74	118		287	532	4258		7.4		26.5	2.8	16.7	80.5	0.0				0-6		15	1.6						0.4		108
26764675	22	3.0	46	56		200	454	3530		7.0		21.9	2.3	17.3	80.4	0.0				0-6		14	1.1						0.4		
26764676	23	3.1	48	80		214	427	3418		7.1		21.2	2.6	16.8	80.6	0.0				0-6		19	1.2						0.4		
26764677	24	3.3	41	76		188	419	3728		7.2		22.6	2.1	15.4	82.5	0.0				0-6		19	1.0						0.4		
26764678	25	2.4	42	78		170	324	3643		7.2		21.4	2.0	12.6	85.4	0.0				0-6		15	1.0						0.2		
26764679	26	1.8	28	50		167	324	3217		7.8		19.2	2.2	14.1	83.7	0.0				0-6		17	1.3						0.2		50
26764680	27	2.0	24	57		175	408	3523		7.9		21.5	2.1	15.8	82.1	0.0				0-6		12	1.0						0.2		49
26764681	28	4.3	91	137		318	462	3616		6.6	6.8	24.2	3.4	15.9	74.7	6.0				0-6		16	2.0						0.4		
26764682	29	3.5	50	106		205	514	3921		7.4		24.4	2.2	17.6	80.2	0.0				0-6		12	1.9						0.4		102
26764683	30	3.2	25	81		175	583	4235		7.4		26.5	1.7	18.3	80.0	0.0				0-6		11	1.4						0.4		75
26764684	31	4.4	11	97		181	789	5152		7.7		32.8	1.4	20.0	78.6	0.0				0-6		12	1.3						0.4		64
26764685	32	3.5	83	54		341	672	4232		7.9		27.6	3.2	20.3	76.5	0.0				0-6		17	2.1						0.4		168

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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Jun 16, 2014

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26764686	33	3.4	114	157		441	511	3289		7.7		21.8	5.2	19.5	75.3	0.0				0-6		14	2.8						0.3		204
26764687	34	4.4	4	28		237	749	5263		8.0		33.2	1.8	18.8	79.4	0.0				0-6		11	1.7						0.5		76
26764688	35	4.8	51	139		333	787	4659		7.5		30.7	2.8	21.4	75.8	0.0				0-6		12	2.5						0.4		163
26764689	36	3.3	49	85		282	497	3633		7.1		23.0	3.1	18.0	78.9	0.0				0-6		13	1.5						0.4		
26764690	37	4.0	65	117		288	528	4164		6.9		26.0	2.8	16.9	80.3	0.0				0-6		12	1.8						0.5		
26764691	38	3.8	77	139		275	510	3839		7.3		24.2	2.9	17.6	79.5	0.0				0-6		12	2.3						0.4		154
26764692	39	4.3	28	121		223	618	4904		7.7		30.2	1.9	17.1	81.0	0.0				0-6		10	1.9						0.4		79
26764693	40	4.4	4	84		238	455	5296		7.9		30.9	2.0	12.3	85.7	0.0				0-6		10	1.3						0.5		67
26764694	41	2.7	34	64		251	407	3419		7.3		21.1	3.1	16.1	80.8	0.0				0-6		15	1.2						0.4		66
26764695	42	2.1	42	54		189	340	3179		7.2		19.2	2.5	14.8	82.7	0.0				0-6		19	1.2						0.4		
26764696	43	3.1	50	78		245	408	3692		7.3		22.5	2.8	15.1	82.1	0.0				0-6		14	1.5						0.4		77
26764697	44	3.1	27	59		169	436	3866		7.5		23.4	1.9	15.5	82.6	0.0				0-6		14	1.2						0.4		58
26764698	45	5.6	11	115		326	453	5444		7.9		31.8	2.6	11.9	85.5	0.0				0-6		12	1.8						0.5		79
26764699	46	4.0	52	128		263	589	4593		7.6		28.5	2.4	17.2	80.4	0.0				0-6		9	1.6						0.4		74
26764700	47	4.1	92	129		614	562	3780		7.6		25.2	6.2	18.6	75.2	0.0				0-6		11	4.5						0.3		203
26764702	48	5.3	22	177		426	817	5633		7.8		36.1	3.0	18.9	78.1	0.0				0-6		13	3.1						0.4		67
26764703	49	4.5	67	108		266	684	4586		7.7		29.3	2.3	19.5	78.2	0.0				0-6		13	2.3						0.1		102
26764704	50	4.5	25	130		259	681	4831		7.9		30.5	2.2	18.6	79.2	0.0				0-6		12	2.0						0.4		83
26764705	51	5.4	6	80		238	647	5669		7.9		34.3	1.8	15.7	82.5	0.0				0-6		17	2.0						0.5		85
26764706	52	5.5	11	79		248	605	5311		7.9		32.2	2.0	15.7	82.3	0.0				0-6		14	1.7						0.5		77
26764707	53	3.4	34	79		189	491	4260		7.5		25.9	1.9	15.8	82.3	0.0				0-6		13	1.4						0.3		68
26764708	54	3.4	45	85		416	913	6140		7.1		39.4	2.7	19.3	78.0	0.0				0-6		24	1.8						0.4		
26764709	55	2.6	40	63		195	315	2652		6.9		16.4	3.0	16.0	81.0	0.0				0-6		13	1.0						0.4		
26764710	56	3.3	31	55		192	412	3771		7.1		22.8	2.2	15.1	82.7	0.0				0-6		12	1.0						0.4		
26764711	57	4.5	35	129		216	605	4980		7.5		30.5	1.8	16.5	81.7	0.0				0-6		11	1.5						0.4		79
26764712	58	2.6	27	67		138	456	3779		7.4		23.0	1.5	16.5	82.0	0.0				0-6		10	1.1						0.4		46
26764713	59	5.4	8	105		218	431	5427		7.7		31.3	1.8	11.5	86.7	0.0				0-6		10	1.5						0.5		71
26764714	60	4.4	10	93		234	595	4796		7.8		29.5	2.0	16.8	81.2	0.0				0-6		13	1.6						0.5		74
26764715	61	2.0	42	52		173	384	3319		7.3		20.2	2.2	15.8	82.0	0.0				0-6		15	1.3						0.3		71
26764716	62	5.3	3	65		190	503	5228		7.9		30.8	1.6	13.6	84.8	0.0				0-6		14	1.6						0.5		71
26764717	63	4.6	16	129		201	525	4970		7.9		29.7	1.7	14.7	83.6	0.0				0-6		13	1.6						0.5		75
26764718	64	4.0	66	98		207	499	3445		6.5	6.7	23.7	2.2	17.5	72.7	7.6				0-6		11	2.0						0.4		

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess	Soluble	NH3-	MP3
													Surface								Total							Lime	Salts	N	Color
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26764719	65	4.0	35	103		184	720	5161		7.7		32.3	1.5	18.6	79.9	0.0				0-6		10	1.6						0.5		52
26764720	66	3.2	15	67		142	453	3016		7.0		19.2	1.9	19.7	78.4	0.0				0-6		10	1.1						0.4		
26764721	67	3.0	44	84		198	381	2833		6.7		17.8	2.9	17.8	79.3	0.0				0-6		11	1.2						0.1		
26764722	68	3.9	40	98		220	580	4880		7.5		29.8	1.9	16.2	81.9	0.0				0-6		11	1.3						0.4		68
26764723	69	4.9	1	10		185	410	5009		7.9		28.9	1.6	11.8	86.6	0.0				0-6		9	1.2						0.4		46
26764724	70	4.6	6	83		194	490	5608		7.9		32.6	1.5	12.5	86.0	0.0				0-6		8	1.0						0.5		48
26764725	71	3.2	28	52		146	468	3915		7.2		23.8	1.6	16.4	82.0	0.0				0-6		12	0.9						0.4		
26764726	72	5.9	5	82		247	498	6136		7.8		35.5	1.8	11.7	86.5	0.0				0-6		11	1.5						0.5		70
26764727	73	4.7	7	107		246	500	5796		7.8		33.8	1.9	12.3	85.8	0.0				0-6		13	1.2						0.5		54
26764728	74	4.4	5	81		195	419	5536		7.9		31.7	1.6	11.0	87.4	0.0				0-6		9	1.3						0.4		65
26764729	75	6.1	4	92		269	475	6054		7.8		34.9	2.0	11.3	86.7	0.0				0-6		12	1.6						0.5		79
26764730	76	5.5	4	73		244	378	5617		7.9		31.9	2.0	9.9	88.1	0.0				0-6		10	1.6						0.5		60
26764731	77	3.1	40	70		210	353	3174		6.7		19.4	2.8	15.2	82.0	0.0				0-6		13	1.1						0.4		
26764732	78	2.1	38	71		171	334	2888		7.1		17.7	2.5	15.7	81.8	0.0				0-6		12	1.2						0.2		
26764733	79	2.3	62	106		176	339	2870		7.2		17.6	2.6	16.1	81.3	0.0				0-6		11	1.2						0.2		
26764734	80	5.7	16	124		238	378	5710		7.9		32.3	1.9	9.8	88.3	0.0				0-6		10	1.5						0.4		75
26764735	81	3.4	48	77		243	516	3728		7.5		23.6	2.6	18.2	79.2	0.0				0-6		14	1.3						0.2		71
26764736	82	3.2	39	77		169	497	3812		7.2		23.6	1.8	17.5	80.7	0.0				0-6		13	1.3						0.3		
26764737	83	3.5	7	113		192	450	4216		7.9		25.3	1.9	14.8	83.3	0.0				0-6		11	1.1						0.3		56
26764738	84	2.8	40	60		195	368	3167		7.0		19.4	2.6	15.8	81.6	0.0				0-6		13	1.0						0.2		
26764739	85	3.5	7	78		170	360	4319		7.9		25.0	1.7	12.0	86.3	0.0				0-6		9	0.8						0.3		68
26764741	86	5.9	23	185		338	510	6410		7.9		37.2	2.3	11.4	86.3	0.0				0-6		9	2.0						0.6		109
26764742	87	3.8	12	113		165	342	4372		7.9		25.1	1.7	11.4	86.9	0.0				0-6		8	1.3						0.4		60
26764743	88	3.1	19	46		111	381	3924		7.5		23.1	1.2	13.7	85.1	0.0				0-6		8	0.7						0.3		25
26764744	89	2.8	33	55		134	351	2921		7.2		17.9	1.9	16.3	81.8	0.0				0-6		11	1.0						0.3		
26764745	90	2.9	12	76		154	324	3802		8.0		22.1	1.8	12.2	86.0	0.0				0-6		13	0.8						0.3		49
26764746	91	4.5	18	132		193	376	4733		7.9		27.3	1.8	11.5	86.7	0.0				0-6		10	1.4						0.3		75
26764747	92	4.1	53	139		192	583	4125		7.7		26.0	1.9	18.7	79.4	0.0				0-6		12	1.5						0.3		79
26764748	93	3.0	39	64		163	450	3390		7.3		21.1	2.0	17.8	80.2	0.0				0-6		14	1.2						0.3		71
26764749	94	1.8	27	69		136	345	2709		8.0		16.8	2.1	17.1	80.8	0.0				0-6		9	0.8						0.2		54
26764750	95	2.5	53	76		371	388	2838		7.1		18.4	5.2	17.6	77.2	0.0				0-6		11	1.3						0.2		
26764751	96	3.6	53	25		209	629	3682		7.6		24.2	2.2	21.7	76.1	0.0				0-6		9	1.3						0.3		82

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
26764752	97	4.0	16	131		195	560	4666		7.8		28.5	1.8	16.4	81.8	0.0				0-6		9	1.2						0.4		65
26764753	98	2.8	44	87		204	447	3418		6.9		21.3	2.5	17.5	80.0	0.0				0-6		13	1.2						0.4		
26764754	99	4.2	77	111		303	526	3670		6.6	6.8	25.0	3.1	17.5	73.4	6.0				0-6		15	1.8						0.6		
26764755	100	3.8	44	83		211	495	3695		6.7		23.1	2.3	17.9	79.8	0.0				0-6		16	1.6						0.5		
26764756	101	2.4	35	68		190	348	2537		6.8		16.1	3.0	18.0	79.0	0.0				0-6		14	0.9						0.4		
26764757	102	6.4	46	140		424	562	5643		7.8		34.0	3.2	13.8	83.0	0.0				0-6		14	1.8						0.5		179
26764758	103	4.6	45	144		293	606	4962		7.8		30.6	2.5	16.5	81.0	0.0				0-6		12	1.9						0.4		149
26764759	104	2.7	37	63		192	368	2705		6.7		17.1	2.9	17.9	79.2	0.0				0-6		12	1.3						0.4		
26764760	105	3.8	74	91		311	454	2905		6.6	6.8	20.3	3.9	18.6	71.6	5.9				0-6		13	1.7						0.4		
26764761	106	2.4	59	132		242	366	2903		7.4		18.2	3.4	16.8	79.8	0.0				0-6		10	1.4						0.3		92
26764762	107	3.4	45	127		228	535	3987		7.8		25.0	2.3	17.8	79.9	0.0				0-6		10	1.4						0.3		90
26764763	108	2.9	21	59		120	427	3260		7.5		20.2	1.5	17.6	80.9	0.0				0-6		10	1.0						0.3		41
26764764	109	2.7	48	79		209	303	2465		7.1		15.4	3.5	16.4	80.1	0.0				0-6		11	0.9						0.3		
26764765	110	4.7	58	93		236	582	3826		6.6	6.8	26.2	2.3	18.5	73.0	6.2				0-6		12	1.7						0.5		
26764766	111	3.9	51	95		207	539	3614		7.1		23.1	2.3	19.4	78.3	0.0				0-6		15	1.6						0.4		
26764767	112	3.7	50	120		205	538	4011		7.3		25.1	2.1	17.9	80.0	0.0				0-6		11	1.4						0.4		84
26764768	113	3.4	53	88		215	412	2861		6.6	6.8	19.5	2.8	17.6	73.4	6.2				0-6		13	1.5						0.4		
26764769	114	2.1	36	76		196	312	2468		6.8		15.4	3.3	16.9	79.8	0.0				0-6		11	0.9						0.3		
26764770	115	4.2	20	113		134	300	3864		7.7		22.2	1.5	11.3	87.2	0.0				0-6		8	1.1						0.4		60
26764771	116	6.5	36	186		299	659	5807		7.8		35.3	2.2	15.6	82.2	0.0				0-6		9	2.2						0.5		145
26764772	117	2.9	34	78		159	487	3550		7.7		22.2	1.8	18.3	79.9	0.0				0-6		13	1.2						0.4		71
26764773	118	6.3	31	173		321	646	5159		7.9		32.0	2.6	16.8	80.6	0.0				0-6		9	2.0						0.5		152
26764774	119	6.3	9	113		322	476	4862		7.9		29.1	2.8	13.6	83.6	0.0				0-6		11	1.8						0.5		105
26764775	120	3.4	51	97		297	536	3189		7.7		21.2	3.6	21.1	75.3	0.0				0-6		13	1.3						0.2		84
26764776	121	2.5	11	109		262	458	4662		7.9		27.8	2.4	13.7	83.9	0.0				0-6		12	1.8						0.4		100
26764777	122	6.0	5	72		306	584	4852		8.0		29.9	2.6	16.3	81.1	0.0				0-6		16	2.3						0.5		122
26764778	123	3.7	43	95		231	581	3850		7.7		24.7	2.4	19.6	78.0	0.0				0-6		10	1.6						0.3		83
26764780	124	3.2	33	63		200	482	3781		7.8		23.4	2.2	17.2	80.6	0.0				0-6		10	2.5						0.3		56

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser – Wind Farm

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-C/Semi-solid Manure, Disk Ripper	vegetations\Corn, grain	bushels	222.00

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 0.84 t/ac/yr
Detachment on slope: 0.84 t/ac/yr
Soil loss for cons. plan: 0.84 t/ac/yr
Sediment delivery: 0.84 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: – %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/5/0	Manure spreader, solid and semi-solid		94
11/10/0	Chisel, st. pt.		74
4/15/1	Disk, tandem secondary op.		57
4/15/1	Cultivator, field 6-12 in sweeps		57
4/22/1	planter, double disk opnr	Corn, grain	58
10/20/1	Harvest, killing crop 50pct standing stubble		91
11/5/1	Manure spreader, solid and semi-solid		95
11/10/1	Chisel, st. pt.		75
4/15/2	Disk, tandem secondary op.		59
4/15/2	Cultivator, field 6-12 in sweeps		59
4/22/2	Planter, double disk opnr	Corn, grain	60
10/10/2	Harvest, killing crop 50pct standing stubble		91

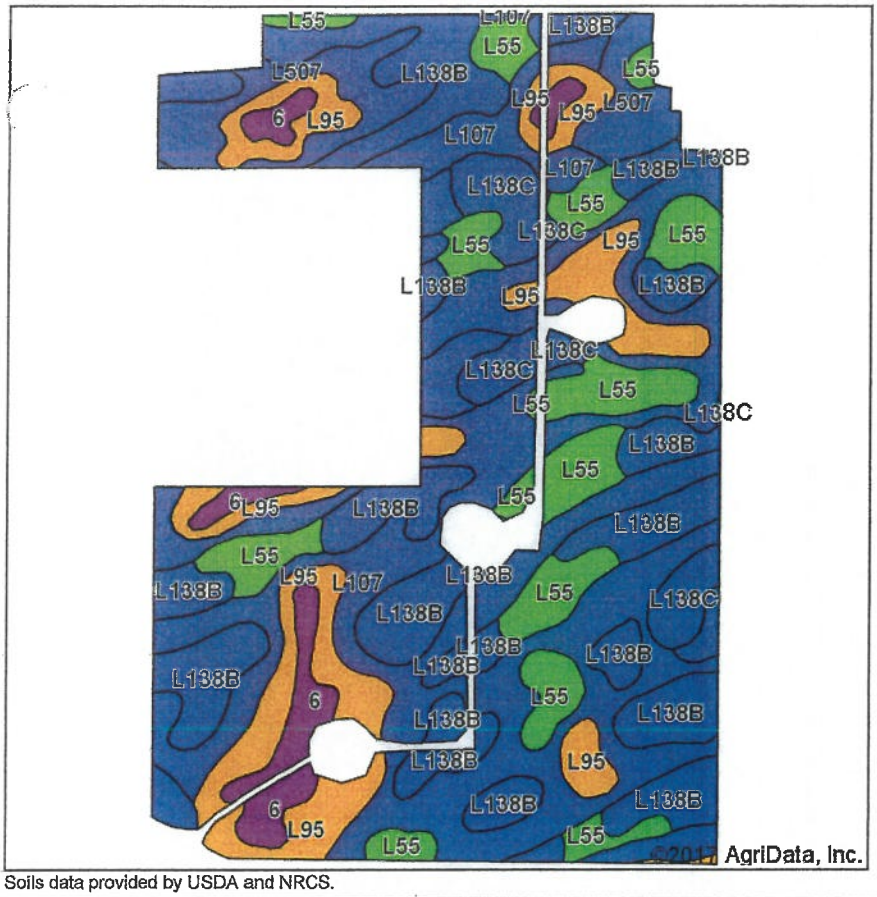
Iowa Phosphorus Index

v. 1/22/2007

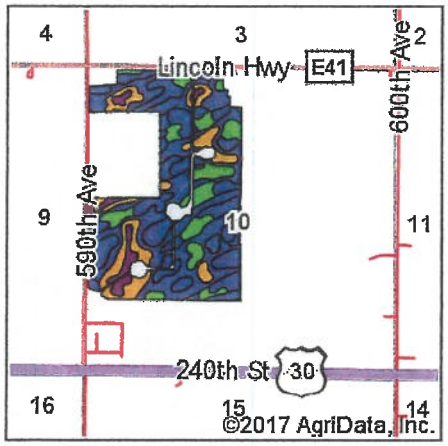
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Wind Farm –	0.84		1.00		0.08		1.00		1.10		0.81	0.06		1.32		0.18		0.07		0.32		0.00		0.07		0.00		0.38

Wind Farm Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **10-83N-23W**
Township: **Grant**
Acres: **175.13**
Date: **3/2/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
surety® CUSTOMIZED ONLINE MAPPING

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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	57.22	32.7%		IIw	88	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	46.10	26.3%		IIe	88	
L55	Nicollet loam, 1 to 3 percent slopes	23.08	13.2%		Ie	91	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	21.70	12.4%		IIw	75	
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	11.50	6.6%		IIw	87	
L138C	Clarion loam, Bemis moraine, 6 to 10 percent slopes	8.18	4.7%		IIIe	84	
6	Okoboji silty clay loam, 0 to 1 percent slopes	7.35	4.2%		IIIw	59	59
					Weighted Average	**85.3**	*-

Area Symbol: IA169, Soil Area Version: 27

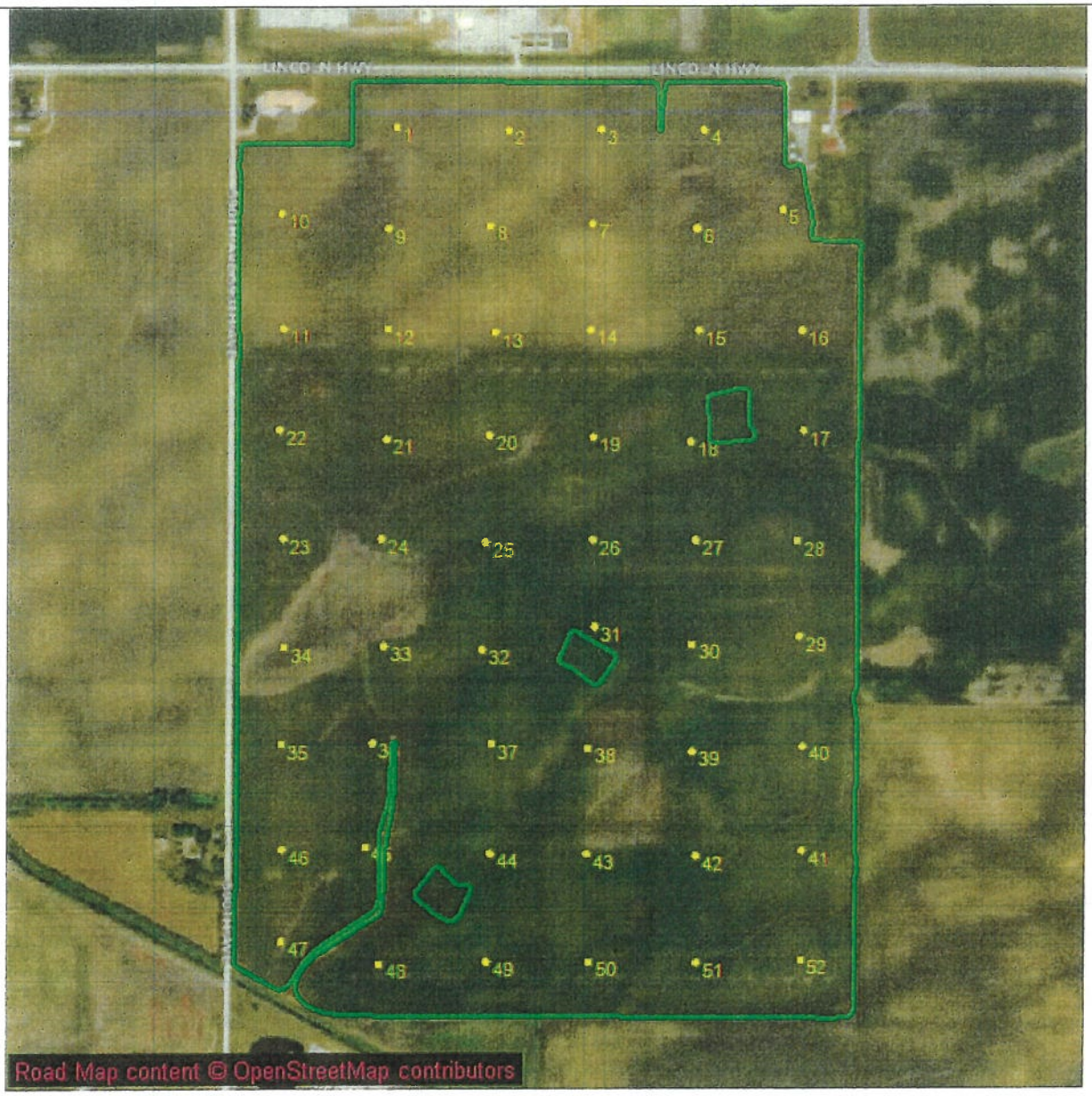
**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

Soil Sample Points



Grower: K02-Myers, Chub
Farm: Farm
Field: Wind Farm
Area: 222.92 ac

One in = 684 feet

0 314 628 942 1256 1569

Field Boundary
Soil Sample Points

KEY COOPERATIVE
Connect. Build. Grow.

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IDENTIFICATION
K02 CHUB MYERS
WIND FARM

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
27326663	1	4.1	7	127		144	239	4922		7.7		27.0	1.4	7.4	91.2	0.0				0-6		9	0.8								33
27326664	2	3.1	20	26		122	366	2368		5.8	6.6	18.8	1.7	16.2	63.0	19.1				0-6		12	1.4								
27326665	3	3.7	11	32		111	377	3111		6.4	6.7	20.9	1.4	15.0	74.4	9.2				0-6		12	1.1								
27326666	4	5.1	8	133		138	267	5334		7.6		29.2	1.2	7.6	91.2	0.0				0-6		13	0.9								31
27326667	5	4.5	16	135		165	258	4787		7.6		26.5	1.6	8.1	90.3	0.0				0-6		10	0.9								33
27326668	6	6.3	48	104		361	432	3891		6.1	6.4	27.9	3.3	12.9	69.7	14.1				0-6		11	2.8								
27326669	7	2.6	37	40		129	197	1456		5.0	5.9	15.7	2.1	10.5	46.4	41.0				0-6		12	1.6								
27326670	8	2.4	19	34		108	243	1566		5.2	6.1	15.4	1.8	13.1	50.8	34.3				0-6		11	0.4								
27326671	9	4.1	3	44		124	172	4510		7.7		24.3	1.3	5.9	92.8	0.0				0-6		7	0.4								25
27326672	10	4.7	32	139		264	502	4345		6.9		26.6	2.5	15.7	81.8	0.0				0-6		13	1.3								
27326673	11	2.7	9	41		117	386	2730		6.1	6.6	20.0	1.5	16.1	68.2	14.2				0-6		15	0.6								
27326674	12	2.0	13	22		120	233	1624		5.3	6.2	15.1	2.0	12.9	53.8	31.3				0-6		18	0.4								
27326675	13	2.6	19	35		128	342	2200		5.8	6.6	17.5	1.9	16.3	62.9	18.9				0-6		15	0.6								
27326677	14	1.9	22	28		120	190	1387		5.1	6.1	14.2	2.2	11.2	48.8	37.8				0-6		15	0.6								
27326678	15	5.1	3	16		163	241	5536		7.6		30.1	1.4	6.7	91.9	0.0				0-6		15	0.7								24
27326679	16	3.8	31	60		166	438	3612		6.2	6.6	25.1	1.7	14.5	72.0	11.8				0-6		13	0.9								
27326680	17	3.7	15	132		144	441	4584		7.4		27.0	1.4	13.6	85.0	0.0				0-6		9	0.7								21
27326681	18	2.1	14	54		100	289	2362		7.1		14.5	1.8	16.6	81.6	0.0				0-6		8	0.6								
27326682	19	3.9	19	47		164	472	3386		6.1	6.6	24.8	1.7	15.9	68.3	14.1				0-6		9	0.9								
27326683	20	3.1	13	29		125	370	2456		5.5	6.5	21.2	1.5	14.5	57.9	26.1				0-6		19	0.7								
27326684	21	2.3	15	40		125	418	2988		6.1	6.6	21.8	1.5	16.0	68.5	14.0				0-6		14	0.4								
27326685	22	2.2	14	28		108	325	2146		5.9	6.6	16.5	1.7	16.4	65.0	16.9				0-6		16	0.4								
27326686	23	2.4	27	44		132	327	2423		6.2	6.7	17.3	2.0	15.8	70.0	12.2				0-6		16	0.8								
27326687	24	4.3	3	17		126	245	4437		7.6		24.5	1.3	8.3	90.4	0.0				0-6		15	0.5								19
27326688	25	4.5	6	46		165	269	5693		7.6		31.1	1.4	7.2	91.4	0.0				0-6		16	0.6								45
27326689	26	3.2	15	93		149	515	4215		7.5		25.7	1.5	16.7	81.8	0.0				0-6		12	0.4								22
27326690	27	3.1	30	58		146	455	2910		5.7	6.5	23.7	1.6	16.0	61.4	21.0				0-6		9	0.7								
27326691	28	2.4	22	36		145	287	1997		5.9	6.7	15.3	2.4	15.6	65.3	16.7				0-6		11	0.5								
27326692	29	2.4	27	28		177	251	1743		5.4	6.5	15.8	2.9	13.2	55.2	28.7				0-6		18	0.4								
27326693	30	3.1	19	31		134	356	2358		5.6	6.5	19.7	1.7	15.1	59.8	23.4				0-6		14	0.6								
27326694	31	5.7	7	41		199	287	6007		7.6		32.9	1.6	7.3	91.1	0.0				0-6		12	0.7								34
27326695	32	3.9	25	47		169	467	3624		6.2	6.6	25.5	1.7	15.3	71.1	11.9				0-6		11	0.7								

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TODAY'S DATE
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NEVADA IA 50201

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WIND FARM

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	mcq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
27326696	33	3.3	7	100		114	227	4615		7.8		25.3	1.2	7.5	91.3	0.0				0-6		17	0.5								27
27326697	34	4.3	19	132		206	321	5465		7.6		30.5	1.7	8.8	89.5	0.0				0-6		14	0.9								63
27326698	35	3.1	15	39		135	451	3110		6.2	6.7	22.4	1.5	16.8	69.4	12.3				0-6		15	0.7								
27326699	36	5.3	18	145		187	347	5728		7.5		32.0	1.5	9.0	89.5	0.0				0-6		12	1.0								42
27326700	37	2.3	26	29		129	265	1999		5.5	6.5	16.9	2.0	13.1	59.1	25.8				0-6		3	0.3								
27326701	38	6.0	43	132		327	489	5055		6.5	6.7	32.6	2.6	12.5	77.5	7.4				0-6		9	1.6								
27326702	39	4.2	5	53		141	253	5403		7.6		29.5	1.2	7.1	91.7	0.0				0-6		8	0.5								30
27326703	40	1.8	15	37		115	311	2649		6.6	6.9	17.1	1.7	15.2	77.5	5.6				0-6		10	0.3								
27326704	41	2.3	16	22		120	303	2013		5.4	6.5	18.0	1.7	14.0	55.9	28.4				0-6		12	0.3								
27326705	42	4.0	15	92		142	480	4879		7.2		28.8	1.3	13.9	84.8	0.0				0-6		11	0.5								
27326706	43	3.4	19	54		157	450	3010		5.9	6.6	23.1	1.7	16.2	65.2	16.9				0-6		13	0.5								
27326707	44	4.3	16	123		180	418	5628		7.5		32.1	1.4	10.9	87.7	0.0				0-6		11	0.4								34
27326708	45	3.5	6	72		115	257	4542		7.8		25.1	1.2	8.5	90.3	0.0				0-6		8	0.3								31
27326709	46	3.5	16	38		135	469	3205		6.4	6.7	22.3	1.6	17.5	71.9	9.0				0-6		9	0.7								
27326710	47	4.2	6	32		111	251	5076		7.8		27.8	1.0	7.5	91.5	0.0				0-6		9	0.3								28
27326711	48	5.8	22	137		177	514	5208		7.2		30.8	1.5	13.9	84.6	0.0				0-6		9	1.0								
27326712	49	4.8	32	128		184	502	4720		7.1		28.3	1.7	14.8	83.5	0.0				0-6		10	0.9								
27326713	50	3.0	15	55		133	412	3040		6.6	6.8	20.2	1.7	17.0	75.2	6.1				0-6		9	0.4								
27326714	51	4.4	19	107		160	305	5164		7.5		28.8	1.4	8.8	89.8	0.0				0-6		10	0.5								37
27326716	52	2.3	32	35		190	247	1594		5.2	6.2	16.0	3.0	12.9	49.8	34.3				0-6		18	0.5								

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Bates West

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

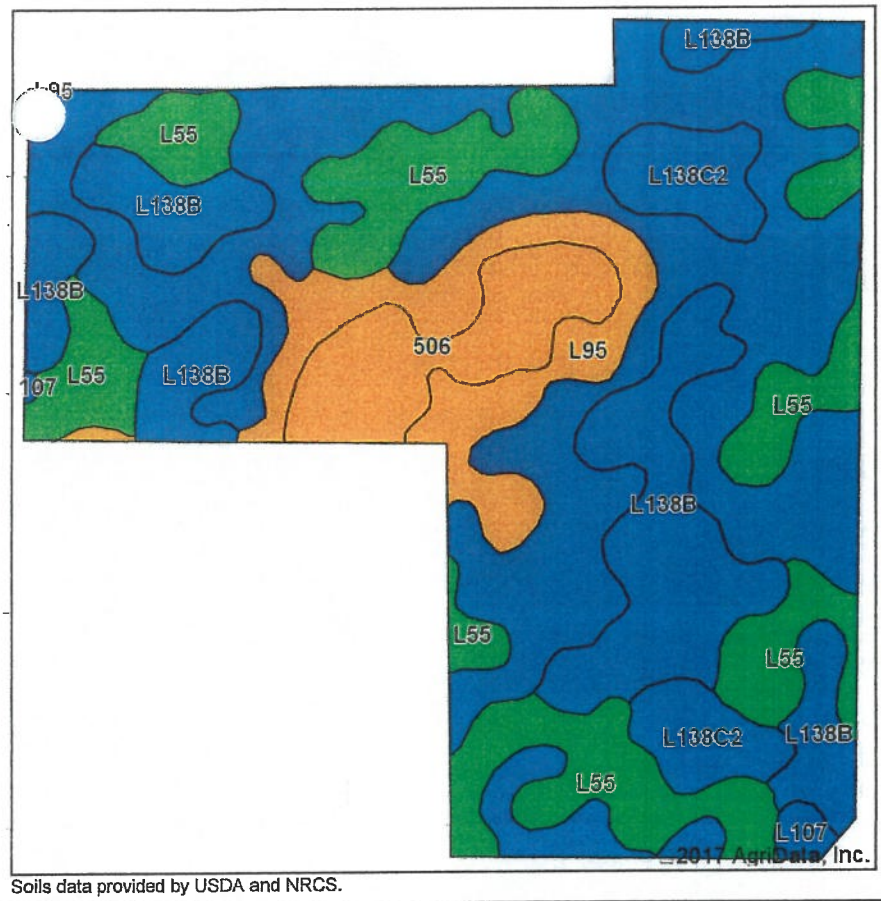
Iowa Phosphorus Index

v. 1/22/2007

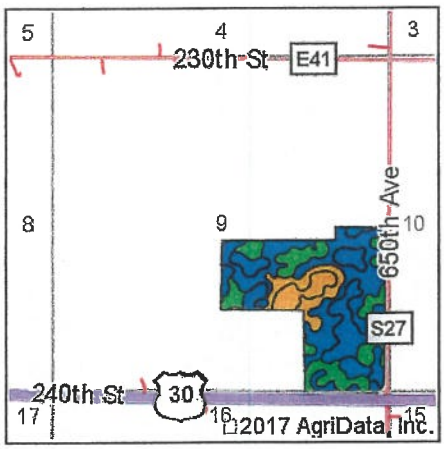
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+ P App Factor	) = Runoff PI		Flow Factor	x	STP Factor	= Tile/Sub PI		P Index
Bates West –	1.60		1.00		0.07		1.00		1.10		0.85	0.10		1.32		0.23	0.04	0.36		0.00		0.07	0.00		0.47

Bates West Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **9-83N-22W**
Township: **Nevada**
Acres: **106.55**
Date: **5/11/2017**

ADVANCED CROP MANAGEMENT

Maps Provided By:
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N W E S

A... Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**	CSR
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	40.27	37.8%		IIw	87	
L55	Nicollet loam, 1 to 3 percent slopes	23.27	21.8%		Ie	91	
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	20.21	19.0%		IIe	88	
L95	Harps clay loam, Bemis moraine, 0 to 2 percent slopes	8.97	8.4%		IIw	75	
506	Wacousta silty clay loam, 0 to 1 percent slopes	6.85	6.4%		IIIw	74	79
L138C2	Clarion loam, Bemis moraine, 6 to 10 percent slopes, moderately eroded	5.81	5.5%		IIIe	83	
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	1.17	1.1%		IIw	88	
					Weighted Average	**86**	*-

**IA has updated the CSR values for each county to CSR2.

*- CSR weighted average cannot be calculated on the current soils data, use prior data version for csr values.

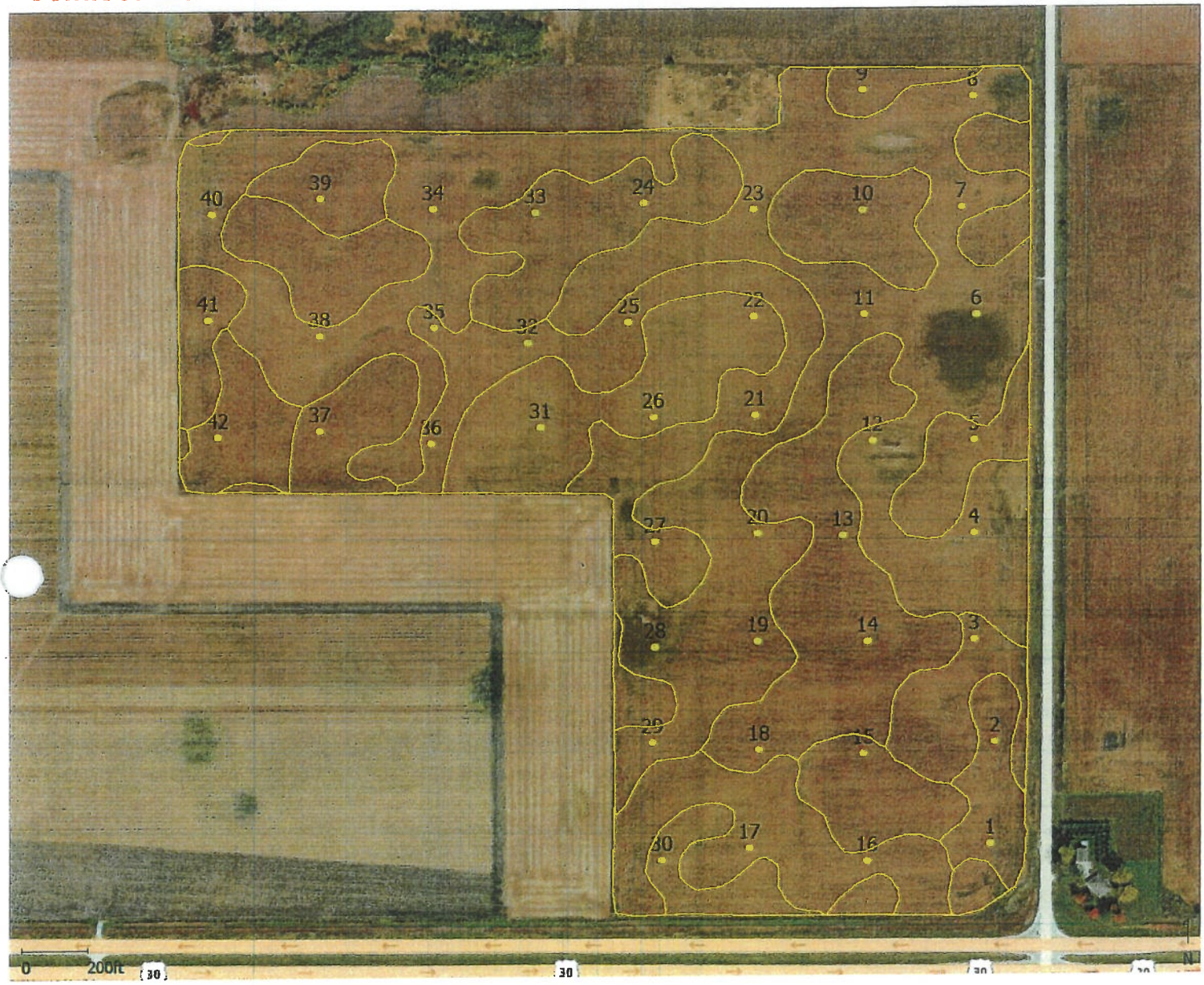
*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Nevada 9 Bates West

KEY COOPERATIVE
Connect. Build. Grow.



Grower : DDTAC - Doug Sampson

Field : Nevada 9 Bates West

Year : 2013

Operation : Soil Sampling

GPS Count : 42

Area : 105.1 ac

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DDTAC _ DOUG SAMPSON
NEVADA 9_BATES WEST

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
																		Surface			Total										
Number	ID	%	P1 ppm	P2 ppm	Bic ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25345991	1	2.1	66	128		219	442	2512		6.8		16.8	3.3	21.9	74.8	0.0				0-6											
25345992	2	2.3	36	44		207	396	2286		5.5	6.5	20.7	2.6	15.9	55.2	26.3				0-6											
25345993	3	2.5	30	51		155	385	2471		5.6	6.5	20.9	1.9	15.4	59.1	23.6				0-6											
25345994	4	5.2	46	127		309	572	6096		7.5		36.0	2.2	13.2	84.6	0.0				0-6											80
25345995	5	4.0	16	114		192	570	5116		7.9		30.8	1.6	15.4	83.0	0.0				0-6											31
25345996	6	4.7	48	157		279	541	4640		7.0		28.4	2.5	15.9	81.6	0.0				0-6											
25345997	7	4.6	62	119		229	522	5681		7.7		33.3	1.8	13.1	85.1	0.0				0-6											108
25345998	8	3.4	11	69		143	352	5582		8.1		31.2	1.2	9.4	89.4	0.0				0-6											43
25345999	9	1.7	17	25		121	263	1795		5.5	6.6	15.5	2.0	14.1	57.9	26.0				0-6											
25346000	10	2.0	26	33		132	268	1657		5.1	6.1	17.6	1.9	12.7	47.1	38.3				0-6											
25346001	11	4.1	10	78		181	296	6387		8.1		34.9	1.3	7.1	91.6	0.0				0-6											39
25346002	12	4.4	44	140		225	522	5040		7.5		30.1	1.9	14.5	83.6	0.0				0-6											62
25346003	13	2.2	17	24		163	357	2498		5.6	6.5	20.8	2.0	14.3	60.0	23.7				0-6											
25346004	14	2.2	18	33		145	298	1947		5.5	6.5	17.0	2.2	14.6	57.3	25.9				0-6											
25346005	15	1.4	30	62		164	352	1999		6.7		13.3	3.2	22.1	74.7	0.0				0-6											
25346006	16	2.7	20	43		153	454	2683		6.0	6.6	20.7	1.9	18.3	64.8	15.0				0-6											
25346007	17	2.6	17	39		134	514	3010		6.3	6.7	22.0	1.6	19.5	68.4	10.5				0-6											
25346008	18	1.5	15	23		102	256	1525		5.2	6.4	15.3	1.7	13.9	49.8	34.6				0-6											
25346009	19	1.8	15	21		117	300	1874		5.5	6.5	16.5	1.8	15.2	56.8	26.2				0-6											
25346010	20	2.9	14	46		125	510	3726		6.6	6.8	24.7	1.3	17.2	75.4	6.1				0-6											
25346011	21	3.6	5	41		151	283	5840		8.3		31.9	1.2	7.4	91.4	0.0				0-6											27
25346012	22	5.1	5	52		149	288	6468		8.2		35.1	1.1	6.8	92.1	0.0				0-6											29
25346013	23	3.8	12	80		164	312	6130		8.1		33.7	1.2	7.7	91.1	0.0				0-6											38
25346014	24	2.5	39	49		150	328	2453		5.4	6.4	21.5	1.8	12.7	57.0	28.5				0-6											
25346015	25	3.9	4	37		109	453	5773		8.0		32.9	0.8	11.5	87.7	0.0				0-6											29
25346016	26	3.6	14	133		199	442	5137		7.7		29.9	1.7	12.3	86.0	0.0				0-6											26
25346017	27	4.5	3	8		164	419	6231		8.2		35.1	1.2	9.9	88.9	0.0				0-6											33
25346018	28	4.8	59	113		362	592	6287		7.1		37.3	2.5	13.2	84.3	0.0				0-6											
25346019	29	4.9	43	138		275	586	6313		7.7		37.2	1.9	13.1	85.0	0.0				0-6											69
25346021	30	3.0	40	77		210	513	3263		6.0	6.6	24.8	2.2	17.2	65.8	14.8				0-6											
25346022	31	5.9	35	134		232	392	6468		7.8		36.2	1.6	9.0	89.4	0.0				0-6											75
25346023	32	4.1	3	44		126	288	6296		8.2		34.2	0.9	7.0	92.1	0.0				0-6											33

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ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate	mmhos/cm	ppm	ppm
25346024	33	2.6	20	31		151	360	2809		5.5	6.4	23.5	1.6	12.8	59.8	25.8				0-6											
25346025	34	3.0	30	44		162	452	2825		5.5	6.4	24.7	1.7	15.2	57.2	25.9				0-6											
25346026	35	3.5	8	70		148	392	6174		8.2		34.5	1.1	9.5	89.4	0.0				0-6											29
25346027	36	3.9	3	32		146	332	6420		8.2		35.2	1.1	7.9	91.0	0.0				0-6											29
25346028	37	2.4	15	26		128	350	2619		5.7	6.5	20.6	1.6	14.2	63.6	20.6				0-6											
25346029	38	4.5	27	123		181	587	6214		7.7		36.4	1.3	13.4	85.3	0.0				0-6											42
25346030	39	3.0	27	40		142	430	2920		5.8	6.5	22.9	1.6	15.6	63.8	19.0				0-6											
25346031	40	2.7	31	53		154	388	2587		6.0	6.6	19.5	2.0	16.6	66.3	15.1				0-6											
25346032	41	2.7	26	33		169	387	2424		5.7	6.5	20.0	2.2	16.1	60.6	21.1				0-6											
25346033	42	2.6	30	37		199	352	2209		5.4	6.4	20.3	2.5	14.4	54.4	28.7				0-6											

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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USDA NRCS Natural Resources Conservation Service

RUSLE2 Profile Erosion Calculation Record

Info:

File: profiles\Couser - Bates East

Inputs:
Location: USA\Iowa\Story County
Soil: Story County, Iowa\138B Clarion loam, 2 to 5 percent slopes\Clarion loam 85%
Slope length (horiz): 98 ft
Avg. slope steepness: 3.0 %

Management	*Vegetation*	*Yield units*	*# yield units, #/ac*
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Corn, grain	bushels	222.00
managements\CMZ 04\c.Other Local Mgt Records\C-SB/Semi-Solid Manure Disk Ripper	vegetations\Soybean, mw 30 in rows	bu	64.000

Contouring: a. rows up-and-down hill
Strips/barriers: (none)
Diversion/terrace, sediment basin: (none)
Subsurface drainage: (none)
Adjust res. burial level: Normal res. burial

Outputs:
T value: 5.0 t/ac/yr
Soil loss erod. portion: 1.6 t/ac/yr
Detachment on slope: 1.6 t/ac/yr
Soil loss for cons. plan: 1.6 t/ac/yr
Sediment delivery: 1.6 t/ac/yr

Crit. slope length: 98 ft
Surf. cover after planting: -- %
Avg. ann. forage harvest: 0 lb/ac

Date	*Operation*	*Vegetation*	*Surf. res. cov. after op, %*
11/10/0	Manure spreader, solid and semi-solid		86
11/11/0	Chisel, st. pt.		43
4/15/1	Disk, tandem secondary op.		18
4/15/1	Cultivator, field 6-12 in sweeps		18
4/22/1	planter, double disk opnr	Corn, grain	17
10/20/1	Harvest, killing crop 50pct standing stubble		90
11/10/1	Chisel, st. pt.		68
5/1/2	Disk, tandem secondary op.		56
5/1/2	Cultivator, field 6-12 in sweeps		56
5/5/2	Planter, double disk opnr	Soybean, mw 30 in rows	58
10/10/2	Harvest, killing crop 50pct standing stubble		84

USDA NRCS
Natural Resources Conservation Service

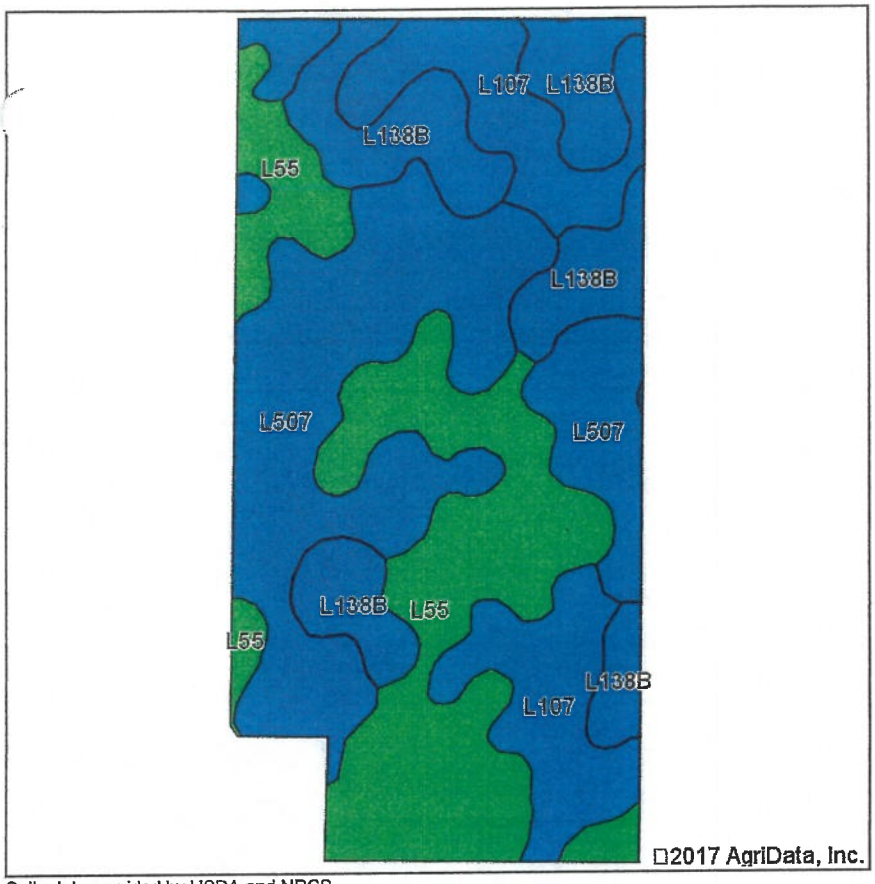
v. 1/22/2007

Iowa Phosphorus Index

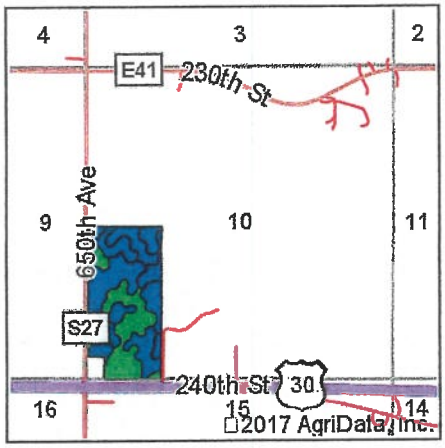
Credits: Iowa State University
USDA National Soil Tilth Laboratory
USDA Natural Resource Conservation Service

Field Number	Erosion								+	Runoff					+	Tile / Subsurface Recharge			=	Overall
	Gross Erosion	x	Sediment Trap Factor	x	SDR	x	Buffer Factor	x	Enrichment Factor	x	STP Factor	= Erosion PI		RCN Factor	x (	STP Factor	+	P App Factor	) =	Runoff PI		Flow Factor	x	STP Factor	=	Tile/Sub PI		P Index
Bates East --	1.60		1.00		0.09		1.00		1.10		0.90	0.14		1.32		0.29		0.04		0.44		0.00		0.07		0.00		0.58

Bates East Soils Map



Soils data provided by USDA and NRCS.



State: **Iowa**
County: **Story**
Location: **10-83N-22W**
Township: **Nevada**
Acres: **72.74**
Date: **5/11/2017**

Maps Provided By:
surety CUSTOMIZED ONLINE MAPPING
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N W E S

Area Symbol: IA169, Soil Area Version: 27

Code	Soil Description	Acres	Percent of field	CSR2 Legend	Non-Irr Class *c	CSR2**
L507	Canisteo clay loam, Bemis moraine, 0 to 2 percent slopes	25.09	34.5%		IIw	87
L55	Nicollet loam, 1 to 3 percent slopes	21.27	29.2%		Ie	91
L138B	Clarion loam, Bemis moraine, 2 to 6 percent slopes	13.83	19.0%		IIe	88
L107	Webster clay loam, Bemis moraine, 0 to 2 percent slopes	12.55	17.3%		IIw	88
					Weighted Average	**88.5**

**IA has updated the CSR values for each county to CSR2.

*c: Using Capabilities Class Dominant Condition Aggregation Method

Soils data provided by USDA and NRCS.

KEY COOPERATIVE
Connect. Build. Grow.

Nevada10 Bates East

KEY COOPERATIVE
Connect. Build. Grow.

Grower : DDTAC - Doug Sampson

Field : Nevada10 Bates East

Year : 2013

Operation : Soil Sampling

PS Count : 31

Area : 71.6 ac

REPORT NUMBER
13-17[illegible]-0185

REPORT DATE
Jun 27, 2013

ACCOUNT
28482

RECEIVED DATE
Jun 25, 2013

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ISSUE DATE
Jun 27, 2013

ACM/KEY COOP
RYAN RISDAL
22703 600TH AVENUE
NEVADA IA 50201

IDENTIFICATION
DDTAC _ DOUG SAMPSON
NEVADA 10_BATES EAST

3rd COPY TO
16400

ADVANCED CROP MANAGEMENT
MASTER ACCOUNT

Lab	Sample	OM	Phosphorus			K	Mg	Ca	Na	pH	Buff	CEC	Percent Base Saturation					Nitrate				S	Zn	Mn	Fe	Cu	B	Excess Lime	Soluble Salts	NH3-N	MP3 Color
			P1	P2	Bic													Surface			Total										
Number	ID	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm		index	meq/100	K	Mg	Ca	H	Na	ppm	lbs/A	depth	lbs/A	ppm	ppm	ppm	ppm	ppm	ppm	Rate		ppm	ppm
25345932	1	5.8	124	158		505	689	5247		7.3		33.3	3.9	17.2	78.9	0.0				0-6											204
25345933	2	3.5	18	41		184	488	3509		5.9	6.5	26.6	1.8	15.3	66.0	16.9				0-6											
25345934	3	4.3	16	65		176	353	5805		8.0		32.4	1.4	9.1	89.5	0.0				0-6											32
25345935	4	5.0	27	140		346	661	6027		7.7		36.5	2.4	15.1	82.5	0.0				0-6											58
25345936	5	5.0	27	114		221	616	4825		7.2		29.8	1.9	17.2	80.9	0.0				0-6											
25345937	6	2.7	16	26		153	358	2151		5.6	6.5	18.4	2.1	16.2	58.5	23.2				0-6											
25345938	7	4.4	87	135		451	457	2960		5.5	6.4	26.7	4.3	14.3	55.4	26.0				0-6											
25345939	8	4.4	27	76		234	508	4527		6.5	6.7	29.7	2.0	14.3	76.2	7.5				0-6											
25345940	9	1.9	12	17		101	270	1904		6.1	6.7	14.0	1.8	16.1	68.0	14.1				0-6											
25345941	10	2.4	20	73		158	349	3015		6.4	6.7	20.2	2.0	14.4	74.6	9.0				0-6											
25345943	11	3.2	11	18		151	437	2895		5.8	6.5	22.8	1.7	16.0	63.5	18.8				0-6											
25345944	12	5.5	62	145		329	436	6234		7.8		35.6	2.4	10.2	87.4	0.0				0-6											132
25345945	13	4.2	46	108		237	445	3735		6.0	6.6	27.1	2.2	13.7	68.9	15.2				0-6											
25345946	14	3.5	45	66		206	424	2693		6.0	6.6	20.6	2.6	17.2	65.4	14.8				0-6											
25345947	15	2.7	135	175		625	422	3051		7.9		20.4	7.9	17.2	74.9	0.0				0-6											276
25345948	16	2.2	24	40		175	347	2064		5.8	6.6	16.9	2.7	17.1	61.1	19.1				0-6											
25345949	17	2.9	11	16		140	432	2610		5.7	6.5	21.5	1.7	16.7	60.7	20.9				0-6											
25345950	18	3.6	18	22		172	466	2735		5.3	5.8	26.1	1.7	14.9	52.4	31.0				0-6											
25345951	19	2.6	13	21		139	334	2019		5.3	6.0	19.1	1.9	14.6	52.9	30.6				0-6											
25345952	20	3.3	22	29		153	350	2209		5.4	6.4	20.1	2.0	14.5	55.0	28.5				0-6											
25345953	21	4.0	13	65		194	306	5661		7.9		31.4	1.6	8.1	90.3	0.0				0-6											22
25345954	22	1.7	14	19		116	213	1441		5.4	6.6	13.0	2.3	13.7	55.4	28.6				0-6											
25345955	23	3.4	19	43		151	532	3302		6.2	6.6	24.2	1.6	18.3	68.2	11.9				0-6											
25345956	24	2.2	22	28		164	278	1648		5.1	6.0	17.7	2.4	13.1	46.6	37.9				0-6											
25345957	25	3.5	42	51		169	430	2596		5.6	6.5	22.2	2.0	16.1	58.5	23.4				0-6											
25345958	26	1.8	12	14		133	349	1858		5.5	6.5	16.9	2.0	17.2	55.0	25.8				0-6											
25345959	27	4.4	66	115		287	652	4052		6.3	6.6	29.5	2.5	18.4	68.7	10.4				0-6											
25345960	28	5.0	34	108		226	375	5905		7.4		33.2	1.7	9.4	88.9	0.0				0-6											55
25345961	29	4.0	33	44		173	544	3242		5.3	5.8	30.7	1.4	14.8	52.8	31.0				0-6											
25345962	30	2.6	23	24		173	264	1676		5.1	6.0	17.8	2.5	12.4	47.1	38.0				0-6											
25345963	31	5.1	78	131		310	736	4381		6.1	6.5	33.5	2.4	18.3	65.4	13.9				0-6											

The above analytical results apply only to the sample(s) submitted. Samples are retained a maximum of 30 days.

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Couser Cattle Company (June) 56450

Date	N	P	K
10/31/2012	12	22.4	16
12/27/2013	17.2	18.4	14.4
12/8/2014	11.4	10.2	23.4
1/21/2016	13.2	17.4	9.8
12/8/2016	15.8	14.6	13.2
Average	**13.9**	**16.6**	**15.4**

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PRELIMINARY REPORT ONLY

COUSER CATTLE COMPANY
20408 620TH AVE
NEVADA IA 50201

Date Received: May 22 2017
Date Reported: May 26 2017

Account #: 014224
WO #: 17-5001
Lab #: 17-N4182

SAMPLE INFORMATION
Site Name:
Sample ID: 1

Site No:

ANALYTE	ANALYSIS AS RECEIVED		TOTAL NUTRIENTS lbs/1000 gal	lbs/Ton
Moisture, Total	63.3	%		
Nitrogen, Total	1.32	%	110	26.4
Phosphorus as P2O5	1.20	%	100	24.0
Potassium as K2O	1.14	%	95.2	22.8

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

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MANURE ANALYSIS REPORT

COUSER CATTLE COMPANY
20408 620TH AVE
NEVADA IA 50201

Date Received: Dec 8 2016
Date Reported: Dec 9 2016

Account #: 014224
WO #: 17-11196
Lab #: 16-N13742

SAMPLE INFORMATION
Producer: BILL COUSER
Site Name:
Sample ID: 1

Animal Species: BEEF
Site No:

ANALYTE	ANALYSIS AS RECEIVED		TOTAL NUTRIENTS lbs/1000 gal	lbs/Ton
Moisture, Total	76.4	%		
Nitrogen, Total	0.79	%	66.0	15.8
Phosphorus as P2O5	0.73	%	61.0	14.6
Potassium as K2O	0.66	%	55.1	13.2

Approved by: J. Joel Sieh

J. Joel Sieh
Feed Laboratory Manager

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MANURE ANALYSIS REPORT

3/15

BILL COUSER
COUSER CATTLE COMPANY
20408 620TH AVE
NEVADA IA 50201

Date Received: Jan 21 2016
Date Reported: Jan 27 2016

Account #: 014224
WO #: 92-0007
Lab #: 16-N484

SAMPLE INFORMATION
Producer: COUSER CATTLE COMPANY
Site Name:
Sample ID: OLD BARN STOCK PILE

Animal Species: CATTLE
Site No:

ANALYTE	ANALYSIS AS RECEIVED		TOTAL NUTRIENTS lbs/1000 gal	lbs/Ton
Moisture, Total	79.1	%		
Nitrogen, Total	0.66	%	55.1	13.2
Phosphorus as P2O5	0.87	%	72.6	17.4
Potassium as K2O	0.49	%	40.9	9.8

Approved by: J. Joel Sieh

J. Joel Sieh
Feed Laboratory Manager

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Lab # 2348232 **Report of Analysis** Report Number: 14-349-4126

Account: 397	RYAN RISDAL KEY COOP GENERAL ACCOUNT 22703 600TH AVE NEVADA IA 50201-
Date Sampled:	
Date Received:	2014-12-08
Sample ID:	COMPOST PILE

Robert Ferris
Client Service Representative
402-829-9871

COUSER CATTLE CO
COUSER

		Analysis (as rec'd)	Analysis (dry weight)	Total content, lbs per ton (as rec'd)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	0.57	2.09	11.4
Organic Nitrogen	%	0.24	0.89	4.9
Ammonium Nitrogen	%	0.317	1.164	6.3
Nitrate Nitrogen	%	0.01	0.04	0.2
Major and Secondary Nutrients				
Phosphorus	%	0.51	1.87	10.2
Phosphorus as P2O5	%	1.17	4.30	23.4
Potassium	%	0.81	2.97	16.2
Potassium as K2O	%	0.98	3.60	19.6
Sulfur	%	0.18	0.66	3.6
Calcium	%	0.85	3.12	17.0
Magnesium	%	0.30	1.10	6.0
Sodium	%	0.240	0.881	4.8
Micronutrients				
Zinc	ppm	85.2	313	0.2
Iron	ppm	338	1241	0.7
Manganese	ppm	62.8	231	0.1
Copper	ppm	22.2	81	----
Boron	ppm	< 20	---	----
OTHER PROPERTIES				
Moisture	%	72.76		
Total Solids	%	27.24		544.8
Organic Matter	%	21.00	77.09	420.0
Ash	%	6.20	22.76	124.0
C:N Ratio		18 : 1		
Total Carbon	%	10.34	37.96	
Chloride	%	0.24	0.88	
pH		7.8		
Conductivity 1:5 (Soluble Salts)	mS/cm	6.27		

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REPORT NUMBER
13-365-9317

REPORT DATE
Dec 31, 2013

SEND TO
397

RECEIVED DATE
Dec 27, 2013

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ISSUE DATE
Dec 31, 2013

KEY COOP GENERAL ACCOUNT
RYAN RISDAL
22703 600TH AVE
NEVADA IA 50201-

Nutrient Land Application

For: (397) KEY COOP GENERAL ACCOUNT
COUSER
COUSER
MANURE

Sample ID: **BARN** Lab Number: **10078384**

Parameter	Analysis as Received	Pounds of Nutrient per ton	Est. First Year Availability lbs per ton	Method	Reviewer-Date
Ammonium nitrogen (total)	0.38 %	7.6	4	AOAC 2001.11	jjb4 2013-12-31 13:25:15
Organic nitrogen	0.48 %	9.6	3	CALCULATION	Auto 2013-12-31 13:25:15
Total Kjeldahl nitrogen (TKN)	0.86 %	17.2	7	AOAC 2001.11	jjb4 2013-12-31 13:25:15
Phosphorus (as P2O5)	0.92 %	18.4	13	AOAC 985.01 (mod) *	Auto 2013-12-31 13:25:15
Potassium (as K20)	0.72 %	14.4	13	AOAC 985.01 (mod) *	Auto 2013-12-31 13:25:15
Sulfur (total)	0.20 %	4.0	2	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Calcium (total)	0.46 %	9.2	6	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Magnesium (total)	0.20 %	4.0	3	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Sodium (total)	0.15 %	3.0	2	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Copper (total)	12 ppm	0.02	0.01	ICAP	jjb4 2013-12-31 13:25:15
Iron (total)	214 ppm	0.43	0.30	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Manganese (total)	34 ppm	0.07	0.05	ICAP	jjb4 2013-12-31 13:25:15
Zinc (total)	62 ppm	0.12	0.08	AOAC 985.01 (mod) *	jjb4 2013-12-31 13:25:15
Moisture	79.2 %			SM 2540 G 1997	jjb4 2013-12-31 13:25:15
Total solids	20.80 %	416		CALCULATION	Auto 2013-12-31 13:25:15
Total salts	1.91 %	38.2		CALCULATION	Auto 2013-12-31 13:25:15
pH	8.6 S.U.			EPA 9045C	jjb4 2013-12-31 13:25:15

First year availability of nitrogen is calculated based on pre-plant application with incorporation. Nitrogen available from previous year's application not considered. Total manure salts should not exceed 500 lbs/acre. Less than 500 lbs/acre if annual rainfall is less than 25 inches and/or the soil CEC is less than 12 meq/100g. Salt contributions from commercial fertilizer applications must also be considered. Soil test yearly to monitor phosphorus levels, organic matter, pH, and micronutrients. Spring soil test for residual nitrate - make accurate sidedress recommendations! Nitrogen availabilty will vary with methods of application and field conditions. The nitrogen availability values used on a manure management plan must comply with state regulations. These regulations vary from state to state.

The result(s) issued on this report only reflect the analysis of the sample(s) submitted.

Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.

Midwest Laboratories, Inc.
13611 B Street • Omaha, Nebraska 68144-3693 • (402) 334-7770 • FAX (402) 334-9121 • www.midwestlabs.com

Lab # 2058456 **Report of Analysis** Report Number: 12-311-2052

Account: 397	RYAN RISDAL KEY COOP GENERAL ACCOUNT 22703 600TH AVE NEVADA IA 50201-	 Robert Ferris Client Service Representative 402-829-9871
Date Sampled:		COUSER CATTLE COMPANY
Date Received:	31-Oct-12	
Sample ID:	PILE 1	

		Analysis (as rec'd)	Analysis (dry weight)	Total content, lbs per ton (as rec'd)
NUTRIENTS				
Nitrogen				
Total Nitrogen	%	0.60	2.06	12.0
Organic Nitrogen	%	0.38	1.31	7.6
Ammonium Nitrogen	%	0.200	0.687	4.0
Nitrate Nitrogen	%	0.02	0.07	0.4
Major and Secondary Nutrients				
Phosphorus	%	0.49	1.68	9.8
Phosphorus as P2O5	%	1.12	3.85	22.4
Potassium	%	0.66	2.27	13.2
Potassium as K2O	%	0.80	2.75	16.0
Sulfur	%	0.18	0.62	3.6
Calcium	%	1.33	4.57	26.6
Magnesium	%	0.38	1.31	7.6
Sodium	%	0.170	0.584	3.4
Micronutrients				
Zinc	ppm	104	357	0.2
Iron	ppm	1890	6495	3.8
Manganese	ppm	118	405	0.2
Copper	ppm	< 20		
Boron	ppm	< 20	—	—
OTHER PROPERTIES				
Moisture	%	70.90		
Total Solids	%	29.10		582.0
Organic Matter	%	15.95	54.81	319.0
Ash	%	13.20	45.36	264.0
C:N Ratio		14.1:1		
Total Carbon	%	8.43	28.97	
Chloride	%	0.21	0.72	
pH		8.6		
Conductivity 1:5 (Soluble Salts)	mS/cm	13.3		

Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced in whole or in part, nor may any reference be made to the work, the results, or the company in any advertising, news release, or other public announcements without obtaining our prior written authorization.

NUTRIENT EASEMENT

THIS EASEMENT ("Easement") is made between:

Donald F Anders ("Landlord"), whose address for the purpose of this Easement is:

_____

And

Bill Couser ("Nutrient Owner") whose address for the purpose of this Easement is:

20408 620th Avenue, Nevada, IA 50201

THE PARTIES AGREE AS FOLLOWS:

1. PREMISES. Landlord grants to Nutrient Owner an easement for the application of nutrients on the following real estate situated in Story County, Iowa (the "Real Estate"):

NE ¼, Section 7, Richland Twp.

and containing 150 acres, more or less. Actual acres and rate of application upon acres included in this tract will be identified in the current nutrient management plan.

2. PURPOSE AND USE. This easement is for the sole purpose of manure management and disposal of animal manure. Nutrient Owner shall be allowed to spread and dispose of animal manure on property owned by Landlord above described at such regular intervals as is necessary for Nutrient Owner. Disposal and distribution of animal manure, however, shall not interfere with the productivity, growing and harvesting of crops on the above described premises. Nutrient Owner further agrees to comply with all environmental laws in the disposal of such animal manure both, state and federal. Nutrient Owner further agrees to prevent all nuisances that may be created by such disposal and handling of animal manure.

3. TERM OF EASEMENT. The term shall commence on 1 of March 2017. The term shall be for a period of one (1) year. The Easement shall automatically renew upon expiration from year-to-year, upon the same terms and conditions unless either party gives due and timely written notice to the other of an election not to renew this Easement.

4. VIOLATION OF TERMS OF EASEMENT. If Tenant or Landlord violates the terms of this Easement, the other shall have the right to pursue the legal and equitable remedies to which it is entitled.

5. ASSIGNMENT. This Easement may be assigned by either party or by its legal representatives, successors in interest or assigns.

6. ATTORNEY FEES AND COURT COSTS. If either party files suit to enforce any of the terms of this Easement, the prevailing party shall be entitled to recover court costs and reasonable attorneys' fees.

7. CHANGE IN EASEMENT TERMS. The conduct of either party, by act or omission, shall not be construed as a material alteration of this Easement until such provision is reduced to writing and executed by both parties as addendum to this.

8. CONSTRUCTION. Words and phrases herein, including the acknowledgment, are construed as in the singular or plural and as the appropriate gender, according to the context.

9. NOTICES. The notices contemplated in this Easement shall be made in writing and shall either be delivered in person, or be mailed in the U.S. mail, registered mail, return receipt requested, to the recipient's last known mailing address.

10. SUCCESSORS and ASSIGNS bound; NUMBER; GENDER; AGENTS; CAPTIONS. The rights, covenants and agreements contained herein shall be binding upon and inure to the benefit of the respective legal representatives, successors and assigns of the parties. Words and phrases contained herein, including acknowledgment hereof, shall be construed as in the singular or plural number, and as masculine, feminine or neuter gender according to the contexts. The captions and headings of the paragraphs of this Agreement are for convenience only and are not to be used to interpret or define the provisions hereof.

11. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Iowa.

12. ADDITIONAL PROVISIONS.

DATED: 3-1-2017

NUTRIENT OWNER

Bill Couser

LANDLORD:

NUTRIENT EASEMENT

THIS EASEMENT ("Easement") is made between:

Lee F Anderson ("Landlord"), whose address for the purpose of this Easement is:

_____

And

Bill Couser ("Nutrient Owner") whose address for the purpose of this Easement is:

20408 620th Avenue, Nevada, IA 50201

THE PARTIES AGREE AS FOLLOWS:

1. PREMISES. Landlord grants to Nutrient Owner an easement for the application of nutrients on the following real estate situated in Story County, Iowa (the "Real Estate"):

N ½ of SE ¼, Section 25, Milford Twp.

SE ¼ of SE ¼, Section 36, Milford Twp.

and containing 90 acres, more or less. Actual acres and rate of application upon acres included in this tract will be identified in the current nutrient management plan.

2. PURPOSE AND USE. This easement is for the sole purpose of manure management and disposal of animal manure. Nutrient Owner shall be allowed to spread and dispose of animal manure on property owned by Landlord above described at such regular intervals as is necessary for Nutrient Owner. Disposal and distribution of animal manure, however, shall not interfere with the productivity, growing and harvesting of crops on the above described premises. Nutrient Owner further agrees to comply with all environmental laws in the disposal of such animal manure both, state and federal. Nutrient Owner further agrees to prevent all nuisances that may be created by such disposal and handling of animal manure.

3. TERM OF EASEMENT. The term shall commence on 1 of March 2017. The term shall be for a period of one (1) year. The Easement shall automatically renew upon expiration from year-to-year, upon the same terms and conditions unless either party gives due and timely written notice to the other of an election not to renew this Easement.

4. VIOLATION OF TERMS OF EASEMENT. If Tenant or Landlord violates the terms of this Easement, the other shall have the right to pursue the legal and equitable remedies to which it is entitled.

5. ASSIGNMENT. This Easement may be assigned by either party or by its legal representatives, successors in interest or assigns.

6. ATTORNEY FEES AND COURT COSTS. If either party files suit to enforce any of the terms of this Easement, the prevailing party shall be entitled to recover court costs and reasonable attorneys' fees.

7. CHANGE IN EASEMENT TERMS. The conduct of either party, by act or omission, shall not be construed as a material alteration of this Easement until such provision is reduced to writing and executed by both parties as addendum to this.

8. CONSTRUCTION. Words and phrases herein, including the acknowledgment, are construed as in the singular or plural and as the appropriate gender, according to the context.

9. NOTICES. The notices contemplated in this Easement shall be made in writing and shall either be delivered in person, or be mailed in the U.S. mail, registered mail, return receipt requested, to the recipient's last known mailing address.

10. SUCCESSORS and ASSIGNS bound; NUMBER; GENDER; AGENTS; CAPTIONS. The rights, covenants and agreements contained herein shall be binding upon and inure to the benefit of the respective legal representatives, successors and assigns of the parties. Words and phrases contained herein, including acknowledgment hereof, shall be construed as in the singular or plural number, and as masculine, feminine or neuter gender according to the contexts. The captions and headings of the paragraphs of this Agreement are for convenience only and are not to be used to interpret or define the provisions hereof.

11. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Iowa.

12. ADDITIONAL PROVISIONS.

DATED: 3-1-2017

NUTRIENT OWNER

Bill Couser

LANDLORD:

NUTRIENT EASEMENT

THIS EASEMENT ("Easement") is made between:

Clarence Myers ("Landlord"), whose address for the purpose of this Easement is:

25133 620th Avenue, Nevada, IA 50201

And

Bill Couser ("Nutrient Owner") whose address for the purpose of this Easement is:

20408 620th Avenue, Nevada, IA 50201

THE PARTIES AGREE AS FOLLOWS:

1. PREMISES. Landlord grants to Nutrient Owner an easement for the application of nutrients on the following real estate situated in Story County, Iowa (the "Real Estate"):

NW ¼ & N ½ of SW ¼, Section 10, Grant Twp. (T83N-R23W)

and containing 185 acres, more or less. Actual acres and rate of application upon acres included in this tract will be identified in the current nutrient management plan

2. PURPOSE AND USE. This easement is for the sole purpose of manure management and disposal of animal manure. Nutrient Owner shall be allowed to spread and dispose of animal manure on property owned by Landlord above described at such regular intervals as is necessary for Nutrient Owner. Disposal and distribution of animal manure, however, shall not interfere with the productivity, growing and harvesting of crops on the above described premises. Nutrient Owner further agrees to comply with all environmental laws in the disposal of such animal manure both, state and federal. Nutrient Owner further agrees to prevent all nuisances that may be created by such disposal and handling of animal manure.

3. TERM OF EASEMENT. The term shall commence on 1 of March 2017. The term shall be for a period of one (1) year. The Easement shall automatically renew upon expiration from year-to-year, upon the same terms and conditions unless either party gives due and timely written notice to the other of an election not to renew this Easement.

4. VIOLATION OF TERMS OF EASEMENT. If Tenant or Landlord violates the terms of this Easement, the other shall have the right to pursue the legal and equitable remedies to which it is entitled.

5. ASSIGNMENT. This Easement may be assigned by either party or by its legal representatives, successors in interest or assigns.

6. ATTORNEY FEES AND COURT COSTS. If either party files suit to enforce any of the terms of this Easement, the prevailing party shall be entitled to recover court costs and reasonable attorneys' fees.

7. CHANGE IN EASEMENT TERMS. The conduct of either party, by act or omission, shall not be construed as a material alteration of this Easement until such provision is reduced to writing and executed by both parties as addendum to this.

8. CONSTRUCTION. Words and phrases herein, including the acknowledgment, are construed as in the singular or plural and as the appropriate gender, according to the context.

9. NOTICES. The notices contemplated in this Easement shall be made in writing and shall either be delivered in person, or be mailed in the U.S. mail, registered mail, return receipt requested, to the recipient's last known mailing address.

10. SUCCESSORS and ASSIGNS bound; NUMBER; GENDER; AGENTS; CAPTIONS. The rights, covenants and agreements contained herein shall be binding upon and inure to the benefit of the respective legal representatives, successors and assigns of the parties. Words and phrases contained herein, including acknowledgment hereof, shall be construed as in the singular or plural number, and as masculine, feminine or neuter gender according to the contexts. The captions and headings of the paragraphs of this Agreement are for convenience only and are not to be used to interpret or define the provisions hereof.

11. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Iowa.

12. ADDITIONAL PROVISIONS.

DATED: 3-1-2017

NUTRIENT OWNER

Bill Couser

Bill Couser

LANDLORD:

Clarence Myers

Clarence Myers

NUTRIENT EASEMENT

THIS EASEMENT ("Easement") is made between:

Doug Sampson ("Landlord"), whose address for the purpose of this Easement is:

63329 210th Street, Nevada, IA 50201

And

Bill Couser ("Nutrient Owner") whose address for the purpose of this Easement is:

20408 620th Avenue, Nevada, IA 50201

THE PARTIES AGREE AS FOLLOWS:

1. PREMISES. Landlord grants to Nutrient Owner an easement for the application of nutrients on the following real estate situated in Story County, Iowa (the "Real Estate"):

SW ¼, Section 30, Richland Twp.

E ½ of SE ¼ & NW ¼ of SE ¼, Section 9, Nevada Twp.

W ½ of SW ¼, Section 10, Nevada Twp.

and containing 310 acres, more or less. Actual acres and rate of application upon acres included in this tract will be identified in the current nutrient management plan

2. PURPOSE AND USE. This easement is for the sole purpose of manure management and disposal of animal manure. Nutrient Owner shall be allowed to spread and dispose of animal manure on property owned by Landlord above described at such regular intervals as is necessary for Nutrient Owner. Disposal and distribution of animal manure, however, shall not interfere with the productivity, growing and harvesting of crops on the above described premises. Nutrient Owner further agrees to comply with all environmental laws in the disposal of such animal manure both, state and federal. Nutrient Owner further agrees to prevent all nuisances that may be created by such disposal and handling of animal manure.

3. TERM OF EASEMENT. The term shall commence on 1 of March 2016. The term shall be for a period of one (1) year. The Easement shall automatically renew upon expiration from year-to-year, upon the same terms and conditions unless either party gives due and timely written notice to the other of an election not to renew this Easement.

4. VIOLATION OF TERMS OF EASEMENT. If Tenant or Landlord violates the terms of this Easement, the other shall have the right to pursue the legal and equitable remedies to which it is entitled.

5. ASSIGNMENT. This Easement may be assigned by either party or by its legal representatives, successors in interest or assigns.

6. ATTORNEY FEES AND COURT COSTS. If either party files suit to enforce any of the terms of this Easement, the prevailing party shall be entitled to recover court costs and reasonable attorneys' fees.

7. CHANGE IN EASEMENT TERMS. The conduct of either party, by act or omission, shall not be construed as a material alteration of this Easement until such provision is reduced to writing and executed by both parties as addendum to this .

8. CONSTRUCTION. Words and phrases herein, including the acknowledgment, are construed as in the singular or plural and as the appropriate gender, according to the context.

9. NOTICES. The notices contemplated in this Easement shall be made in writing and shall either be delivered in person, or be mailed in the U.S. mail, registered mail, return receipt requested, to the recipient's last known mailing address.

10. SUCCESSORS and ASSIGNS bound; NUMBER; GENDER; AGENTS; CAPTIONS. The rights, covenants and agreements contained herein shall be binding upon and inure to the benefit of the respective legal representatives, successors and assigns of the parties. Words and phrases contained herein, including acknowledgment hereof, shall be construed as in the singular or plural number, and as masculine, feminine or neuter gender according to the contexts. The captions and headings of the paragraphs of this Agreement are for convenience only and are not to be used to interpret or define the provisions hereof.

11. GOVERNING LAW. This Agreement shall be governed by and construed in accordance with the laws of the State of Iowa.

12. ADDITIONAL PROVISIONS.

DATED: 3-1-2016

NUTRIENT OWNER

Bill Couser

Bill Couser

LANDLORD:

Doug Sampson

Doug Sampson

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2018 & 2020 (Couser Cattle Co.)

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
JBM South	SE 1/4 sec 30, Richland Twp, Story Co.	B	Beans	0	Rented	0.53	N	0	0	Yes
Loan Farm	NE 1/4 sec 7, Richland Twp, Story Co.	A	Corn	147.4	Leased (1yr rollover)	0.57	N	25	3,685	Yes
Burnotte West	SE 1/4 of SW 1/4 & SW 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	78.8	Rented	0.62	N	29	2,285	Yes
Burnotte East	SE 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	25.1	Rented	2.74	N	7	176	Yes
Rierson East	E 1/2 of E 1/2 sec 24, Milford Twp, Story Co.	A	Corn	154.1	Rented	1.54	N	25	3,853	Yes
Dicks 60	S 1/2 of SW 1/4 sec 24, Milford Twp, Story Co.	B	Beans	0	Rented	0.67	N	0	0	Yes
Jeffs Place	N 1/2 of SE 1/4 sec 25, Milford Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.39	N	0	0	Yes
Otto North	E 1/2 of NW 1/4 sec 36, Milford Twp, Story Co.	A	Corn	76.9	Rented	0.73	N	25	1,923	Yes
Otto South	E 1/2 of SW 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Rented	1.59	N	0	0	Yes
Milford 36	SE 1/4 of SE 1/4 sec 36, Milford Twp, Story Co.	A	Corn	31.5	Leased (1yr rollover)	0.37	N	25	788	Yes
Chucks	W 1/2 of NW 1/4 sec 26, Milford Twp, Story Co.	C	Corn	76.9	Rented	0.98	N	29	2,230	Yes
Menzel North	NW 1/4 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	13.7	Rented	1.06	N	29	397	Yes
Menzel South	S 1/2 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	47.3	Rented	2.39	N	7	331	Yes
Paul East	W 1/2 of NW 1/4 sec 13, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.66	N	29	2,227	Yes
Paul West	E 1/2 of NE 1/4 sec 14, Milford Twp, Story Co.	C	Corn	74.5	Rented	0.73	N	29	2,161	Yes
Bergstrom	NW 1/4 & W 1/2 of NE 1/4 sec 10, Milford Twp, Story Co.	A	Corn	219.7	Rented	0.42	N	25	5,493	Yes
Bills N 60	N 1/2 of NE 1/4 sec 4, Milford Twp, Story Co.	C	Corn	56.3	Owned	0.53	N	29	1,633	Yes
Coder South	NE 1/4 sec 21, Milford Twp, Story Co.	A	Corn	153.8	Rented	0.53	N	25	3,845	Yes
Hadley Home	SE 1/4 sec 21, Milford Twp, Story Co.	B	Beans	0	Rented	0.52	N	0	0	Yes
Hadley East	W 1/2 of SW 1/4 sec 22, Milford Twp, Story Co.	A	Corn	77.4	Rented	0.49	N	25	1,935	Yes
Morfey	N 1/2 of NE 1/4 sec 33, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.70	N	29	2,227	Yes
Neasham	S 1/2 sec 29, Milford Twp, Story Co.	C	Corn	297.4	Rented	0.67	N	29	8,625	Yes
	Total acres available for manure application			1,684.4	**Total tons that could be applied**				43,812	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2018 & 2020 (Couser Cattle Co.) cont.

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
Wind Farm	NW 1/4 & N 1/2 of SW 1/4 sec 10, Grant Twp, Story Co.	C	Corn	175.1	Leased (1yr rollover)	0.38	N	29	5,078	Yes
Bates West	N 1/2 of SE 1/4 & SE 1/4 of SE 1/4 sec 9, Nevada Twp, Story Co.	A	Corn	105.2	Leased (1yr rollover)	0.47	N	25	2,630	Yes
Bates East	W 1/2 of SW 1/4 sec 10, Nevada Twp, Story Co.	A	Corn	71.7	Leased (1yr rollover)	0.58	N	25	1,793	Yes
	Total acres available for manure application			352.0	**Total tons that could be applied**				9,500	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2019 & 2021 (Couser Cattle Co.)

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application ton/acre	Planned Application ton/field [kk]	Correct Soil Test for P[ll] (Yes or No)
JBM South	SE 1/4 sec 30, Richland Twp, Story Co.	A	Corn	157.6	Rented	0.53	N	25	3,940	Yes
Loan Farm	NE 1/4 sec 7, Richland Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.57	N	0	0	Yes
Burnotte West	SE 1/4 of SW 1/4 & SW 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	78.8	Rented	0.62	N	29	2,285	Yes
Burnotte East	SE 1/4 of SE 1/4 sec 1, Richland Twp, Story Co.	C	Corn	25.1	Rented	2.74	N	7	176	Yes
Rierson East	E 1/2 of E 1/2 sec 24, Milford Twp, Story Co.	B	Beans	0	Rented	1.54	N	0	0	Yes
Dicks 60	S 1/2 of SW 1/4 sec 24, Milford Twp, Story Co.	A	Corn	60.4	Rented	0.67	N	25	1,510	Yes
Jeffs Place	N 1/2 of SE 1/4 sec 25, Milford Twp, Story Co.	A	Corn	53.7	Leased (1yr rollover)	0.39	N	25	1,343	Yes
Otto North	E 1/2 of NW 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Rented	0.73	N	0	0	Yes
Otto South	E 1/2 of SW 1/4 sec 36, Milford Twp, Story Co.	A	Corn	75.1	Rented	1.59	N	25	1,878	Yes
Milford 36	SE 1/4 of SE 1/4 sec 36, Milford Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.37	N	0	0	Yes
Chucks	W 1/2 of NW 1/4 sec 26, Milford Twp, Story Co.	C	Corn	76.9	Rented	0.98	N	29	2,230	Yes
Menzel North	NW 1/4 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	13.7	Rented	1.06	N	29	397	Yes
Menzel South	S 1/2 of NE 1/4 sec 23, Milford Twp, Story Co.	C	Corn	47.3	Rented	2.39	N	7	331	Yes
Paul East	W 1/2 of NW 1/4 sec 13, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.66	N	29	2,227	Yes
Paul West	E 1/2 of NE 1/4 sec 14, Milford Twp, Story Co.	C	Corn	74.5	Rented	0.73	N	29	2,161	Yes
Bergstrom	NW 1/4 & W 1/2 of NE 1/4 sec 10, Milford Twp, Story Co.	B	Beans	0	Rented	0.42	N	0	0	Yes
Bills N 60	N 1/2 of NE 1/4 sec 4, Milford Twp, Story Co.	C	Corn	56.3	Owned	0.53	N	29	1,633	Yes
Coder South	NE 1/4 sec 21, Milford Twp, Story Co.	B	Beans	0	Rented	0.53	N	0	0	Yes
Hadley Home	SE 1/4 sec 21, Milford Twp, Story Co.	A	Corn	129.6	Rented	0.52	N	25	3,240	Yes
Hadley East	W 1/2 of SW 1/4 sec 22, Milford Twp, Story Co.	B	Beans	0	Rented	0.49	N	0	0	Yes
Morfey	N 1/2 of NE 1/4 sec 33, Milford Twp, Story Co.	C	Corn	76.8	Rented	0.70	N	29	2,227	Yes
Neasham	S 1/2 sec 29, Milford Twp, Story Co.	C	Corn	297.4	Rented	0.67	N	29	8,625	Yes
	Total acres available for manure application			1,300.0	**Total tons that could be applied**				34,202	

Manure Management Plan Form

Year by Year Manure Management Plan Summary

Instructions: Complete this form for each of the next four growing seasons, to demonstrate sufficient land base to apply manure over multiple crop years. If this page is identical for multiple years (e.g. every other year), submit only once for the identical years, and indicate which years the form represents. Footnotes are given on page 6.

Crop year(s): 2019 & 2021 (Couser Cattle Co.) cont.

1	2	3	4	5	6	7	8	9	10	11
Field Designation [ee]	Field Location ___1/4 of the___ 1/4 Sec___ T___ R___ Townsip Name_____, County Name _____	Mgt Id [ff]	Planned Crop	Acres receiving manure[gg]	Own, rent, agreement (include length of agreement) [hh]	P index value [ii]	HEL (Y/N)[jj]	Planned Application		Correct Soil Test for P[ll] (Yes or No)
								ton/acre	ton/field [kk]	
Wind Farm	NW 1/4 & N 1/2 of SW 1/4 sec 10, Grant Twp, Story Co.	C	Corn	175.1	Leased (1yr rollover)	0.38	N	29	5,078	Yes
Bates West	N 1/2 of SE 1/4 & SE 1/4 of SE 1/4 sec 9, Nevada Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.47	N	0	0	Yes
Bates East	W 1/2 of SW 1/4 sec 10, Nevada Twp, Story Co.	B	Beans	0	Leased (1yr rollover)	0.58	N	0	0	Yes
Total acres available for manure application				175.1	**Total tons that could be applied**				5,078	