

LAND TREATMENT PRACTICES

Land Treatment Practices Overview

Land treatment practices are to be applied to fields to limit the potential for runoff or other hazardous incidents from occurring due to land application of manure. As part of this element of the CNMP, the RUSLE2 program was run for each of the fields indicated in the plan. The results of RUSLE2 are outlined in the following RUSLE2 reports.

Current Management Practices for Fields in CNMP

The cropland utilized in this CNMP was originally in a corn-soybean rotation. All fields currently utilize minimum tillage (field cultivated in the spring). All fields were run using RUSLE2 as outlined below. Fields with the same soil, crop rotation, and tillage were combined for running RUSLE2. More comprehensive RUSLE2 reports can also be found in the printed reports on the following pages.

Fields	Soil Type	Crop	Yield Goal (bu /ac)	Soil Loss T	Current Soil Loss RUSLE2
Fields 20, 23, 25 & 35	17A Keomah silt loam, 0-2% slope	Corn-Soy	170/50	3.0	1.0
Fields 29, 32, 33, 34, 36, 37 & 38	279B Rozetta silt loam, 2-5% slope	Corn-Soy	170/50	5.0	2.7
Fields 13 & 26	17B Keomah silt loam, 2-5% slope	Corn-Soy	170/50	3.0	3.0 (w/ cntr 3%) 2.8 (nt beans)
Fields 1, 2, 4, 5, 7, 8, 9, 10, 11, 14, 15, 22, 27, Far NE & NW, E 80 & N 80	279C2 Rozetta silt loam, 5-10% slopes	Corn-Soy	170/50	5.0	6.8
Field 3	605C2 Ursa silt loam, 5-10% slopes	Corn-Soy	170/50	3.0	7.9

Fields with 17B soil type – (Field #13 & #26)
beans must be no-tilled or maintain row grade (no-till is planned)

Fields with 279C2 soil type – either must be in a:
1. Corn-corn-soybean rotation with no-tilling 1st yr corn & beans, and only spring field cultivating after manure for 2nd yr corn, OR
2. Add wheat every 5th year to a corn-soy rotation (i.e. C-S-C-S-W)

Fields with 605C2 soil type must add wheat AND farm on contour at least 4% row grade (this field will be avoided where possible for manure application)

Land Treatment Practices Current & Planned

Nutrient Management – Code 590 – Animal manures and commercial fertilizer will be applied to land to help meet crop nutrient needs. Soil testing, manure analysis, and record keeping will be performed. (*planned- All Fields*)

Waste Utilization – Code 633 - Animal manures will be applied to land in an environmentally acceptable manner to maintain or improve soil, air, water, and plant resources. (*planned – All Fields*)

Manure Transfer – Code 634 – Manure will be conveyed using structures, conduit, or equipment in order to transfer manure through a hopper, reception pit, pump, conduit, or hauling equipment to a manure storage facility, loading area, or to agricultural land for final utilization. (*current-drag hose; planned- permanent pipeline & drag hose*)

Subsurface Drain – Code 606 – Use of a conduit installed underground to collect and/or convey drainage water to improve the soil environment for vegetative growth, reduce erosion, and improve water quality by regulating water table and ground water flows, intercepting and preventing water movement into a wet area, relieving artesian pressures, removing surface runoff, prevent leaching of saline and sodic soils, serving as an outlet for other subsurface drains, and regulating subirrigated areas or waste disposal areas, collect ground water for beneficial uses, remove water from heavy use areas, and regulate water to control health hazards. (*current – All Fields; none planned*)

Residue Management – Code 329A – Land will be managed so as to distribute crops and residues over the soil surface year-round, and crops will be planted in narrow slots, or tilled residue strips previously untilled by full-width inversion implements to reduce sheet & rill erosion, wind erosion, maintain soil organic matter & tilth, conserve soil moisture, manage snow to increase plant available moisture, reduce plant damage from freezing, and to provide food & cover for wildlife. (*current & planned – All fields – all fields are currently minimum tillage, some may be planned to go at least to no-till beans.*)

RUSLE2 Profile Erosion Calculation Record

Info: **Pinnacle Genetics – Fields #20, 23, 25, & 35**
Fields meet T with current operations & management

Inputs:

Location: Illinois\McDonough County
 Soil: 17A Keomah silt loam, 0 to 2 percent slopes\Keomah silt loam 100%
 Slope length (horiz): 150 ft
 Avg. slope steepness: 1.0 %

Management	Vegetation	Yield units	Yield (# of units)
CMZ 16\c.Other Local Mgt Records\C-S - sfcult corn & beans	Corn, grain	bushels	170.00
CMZ 16\c.Other Local Mgt Records\C-S - sfcult corn & beans	Soybean, mw 15 - 20 in rows	bu	50.000

Contouring: b. absolute row grade 3 percent
 Strips/barriers: (none)
 Diversion/terrace, sediment basin: (none)
 Subsurface drainage: (none)
 Adjust res. burial level: Normal res. burial
 General yield level: Set by user
 Rock cover: 0 %

Outputs:

T value: 3.0 t/ac/yr
 Soil loss erod. portion: 1.0 t/ac/yr
 Detachment on slope: 1.0 t/ac/yr
 Soil loss for cons. plan: 1.0 t/ac/yr
 Sediment delivery: 1.0 t/ac/yr
 Net C factor: 0.11
 Net K factor: 0.36

Crit. slope length: --
 Surf. cover after planting: --

Date	Operation	Vegetation	Surf. res. cov. after op, %
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

Soil conditioning index (SCI): 0.5
 Avg. annual slope STIR: 27.16

RUSLE2 Profile Erosion Calculation Record

Info: **Pinnacle Genetics – Fields #29, 32, 33, 34, 36, 37, & 38**
Fields meet T with current management & rotations

Inputs:

Location: Illinois\McDonough County

Soil: 279B Rozetta silt loam, 1 to 5 percent slopes\Rozetta silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 3.0 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 16\c.Other Local Mgt Records\C-S - sfcult corn & beans	Corn, grain	bushels	170.00
CMZ 16\c.Other Local Mgt Records\C-S - sfcult corn & beans	Soybean, mw 15 - 20 in rows	bu	50.000

Contouring: default

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

General yield level: Set by user

Rock cover: 0 %

Outputs:

T value: 5.0 t/ac/yr

Soil loss erod. portion: 2.7 t/ac/yr

Detachment on slope: 2.7 t/ac/yr

Soil loss for cons. plan: 2.7 t/ac/yr

Sediment delivery: 2.7 t/ac/yr

Net C factor: 0.10

Net K factor: 0.36

Crit. slope length: --

Surf. cover after planting: --

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

Soil conditioning index (SCI): 0.4

Avg. annual slope STIR: 27.16

RUSLE2 Profile Erosion Calculation Record

Info: **Pinnacle Genetics – Field #31 - Alfalfa**

Inputs:

Location: Illinois\McDonough County

Soil: 279C2 Rozetta silt loam, 5 to 10 percent slopes, eroded\Rozetta silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

<i>Management</i>	<i>Vegetation</i>	<i>Yield units</i>	<i>Yield (# of units)</i>
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, fall seed senes to yr2 regrowth	tons	1.0000
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr2 regrowth after cutting	tons	1.5000
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr2 regrowth after cutting	tons	1.5000
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr2 senes to yr3 regrowth	tons	1.0000
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr3 regrowth after cutting	tons	1.6500
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr3 regrowth after cutting	tons	1.6500
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr3 senes to yr4 regrowth	tons	1.0000
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr4 regrowth after cutting	tons	1.7500
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr4 regrowth after cutting	tons	1.7500
CMZ 16\c.Other Local Mgt Records\Alfalfa no manure	Alfalfa, yr4 senes to yr5 regrowth	tons	1.0000

Contouring: default

Strips/barriers: (none)

Diversion/terrace, sediment basin: (none)

Subsurface drainage: (none)

Adjust res. burial level: Normal res. burial

General yield level: Set by user

Rock cover: 0 %

Outputs:

T value: 5.0 t/ac/yr

Soil loss erod. portion: 4.4 t/ac/yr

Detachment on slope: 4.4 t/ac/yr

Soil loss for cons. plan: 4.4 t/ac/yr

Sediment delivery: 4.4 t/ac/yr

Net C factor: 0.072

Net K factor: 0.36

Crit. slope length: --

Surf. cover after planting: --

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
8/1/0	Drill or airseeder, double disk	Alfalfa, fall seed senes to yr2 regrowth	33
5/25/1	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	34
7/1/1	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	35
8/10/1	Harvest, hay, legume	Alfalfa, yr2 senes to yr3 regrowth	36
5/25/2	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	22
7/1/2	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	30
8/10/2	Harvest, hay, legume	Alfalfa, yr3 senes to yr4 regrowth	34
5/25/3	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	22
7/1/3	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	31
8/10/3	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	35

Soil conditioning index (SCI): 0.2

Avg. annual slope STIR: 1.922

RUSLE2 Worksheet Erosion Calculation Record

Info: **Pinnacle Genetics, Field # 13 & #26**

Options are to either spring field cultivate both cornstalks & bean stubble AND farm at least somewhat along the contour OR to no-till beans into cornstalks

Currently, the producer would be farming at least somewhat along the contour, but it might not be enough to justify the 3% grade

Inputs:

Location: Illinois\McDonough County

Soil: 17B Keomah silt loam, 2 to 5 percent slopes\Keomah silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 3.5 %

Yields: Corn – 170 bu/ac; Beans – 50 bu/ac

T value: 3.0 t/ac/yr

Outputs:

<i>Management</i>	<i>Contouring</i>	<i>Strips / barriers</i>	<i>Diversion/terrace, sediment basin</i>	<i>Soil loss erod. portion, t/ac/yr</i>	<i>Soil detachment, t/ac/yr</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>
c.Other Local Mgt Records\C-S - sfcult corn & beans	b. absolute row grade 3 percent	(none)	(none)	3.0	3.0	3.0	3.0
c.Other Local Mgt Records\C-S - fman inj, sfcult bean stubble, no-till beans	default	(none)	(none)	2.8	2.8	2.8	2.8

C-S - sfcult corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

C-S - fman inj, sfcult bean stubble, no-till beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		88
4/1/1	Cultivator, field 6-12 in sweeps		65
5/1/1	Planter, double disk opnr	Corn, grain	54
10/15/1	Harvest, killing crop 50pct standing stubble		84
5/1/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	84
10/20/2	Harvest, killing crop 50pct standing stubble		88

RUSLE2 Worksheet Erosion Calculation Record

Info: **Pinnacle Genetics – Fields #1, 2, 4, 5 & 7, 8 & 9, 10 & 11, 14 & 15, 22, & 27, Far North West & Far North East, East 80 & North 80**
Fields do NOT meet T with current operations & management
Options are to change to a C-C-S rotation & nt beans, AND farm along the contour at least 5% row grade OR
C-C-S, with manure only after 1st year corn, with no-till 1st year corn & beans OR add wheat in every 5th year

Inputs:

Location: Illinois\McDonough County
 Soil: 279C2 Rozetta silt loam, 5 to 10 percent slopes, eroded\Rozetta silt loam 100%
 Slope length (horiz): 150 ft
 Avg. slope steepness: 7.5 %
 T Value: 5.0 t/ac/yr
 Yields: Corn – 170 bu/ac; Beans – 50 bu/ac

Outputs:

<i>Management</i>	<i>Contouring</i>	<i>Strips / barriers</i>	<i>Diversion/terrace, sediment basin</i>	<i>Soil loss erod. portion, t/ac/yr</i>	<i>Soil detachment, t/ac/yr</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>
c.Other Local Mgt Records\C-S - sfcult corn & beans	default	(none)	(none)	6.8	6.8	6.8	6.8
c.Other Local Mgt Records\C-S - fmaninj, sfcult, nt beans	default	(none)	(none)	6.1	6.1	6.1	6.1
c.Other Local Mgt Records\C-C-S, fmaninj, sfcult, nt beans	default	(none)	(none)	5.4	5.4	5.4	5.4
c.Other Local Mgt Records\C-C-S, fmaninj, sfcult, nt beans	b. absolute row grade 5 percent	(none)	(none)	4.9	4.9	4.9	4.9
c.Other Local Mgt Records\C-C-S, fmaninj, sfcult after 1st yr Corn only, nt 1st yr corn & beans	default	(none)	(none)	4.3	4.3	4.3	4.3
c.Other Local Mgt Records\C-S-C-S-W - fchisel, sfcult wht stb, man after wht, nt beans, man inj, sfcult stb, nt beans	default	(none)	(none)	4.5	4.5	4.5	4.5

C-S - sfcult corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

C-S - fman inj, sfcult bean stubble, no-till beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		88
4/1/1	Cultivator, field 6-12 in sweeps		65
5/1/1	Planter, double disk opnr	Corn, grain	54
10/15/1	Harvest, killing crop 50pct standing stubble		84
5/1/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	84
10/20/2	Harvest, killing crop 50pct standing stubble		88

C-C-S, fmaninj, sfcult, nt beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		88
5/5/1	Cultivator, field 6-12 in sweeps		52
5/5/1	Planter, double disk opnr	Corn, grain	52
10/20/1	Harvest, killing crop 50pct standing stubble		84
11/1/1	Manure injector, liquid low disturb.30 inch		90
5/5/2	Cultivator, field 6-12 in sweeps		75
5/5/2	planter, double disk opnr	Corn, grain	75
10/20/2	Harvest, killing crop 50pct standing stubble		86
5/10/3	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/3	Harvest, killing crop 50pct standing stubble		91

C-C-S, fmaninj, sfcult after 1st yr Corn only, nt 1st yr corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Fert. applic. anhyd knife 30 in		88
5/5/1	Planter, double disk opnr	Corn, grain	69
10/20/1	Harvest, killing crop 50pct standing stubble		84
11/1/1	Manure injector, liquid low disturb.30 inch		91
5/5/2	Cultivator, field 6-12 in sweeps		75
5/5/2	planter, double disk opnr	Corn, grain	75
10/20/2	Harvest, killing crop 50pct standing stubble		86
5/10/3	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/3	Harvest, killing crop 50pct standing stubble		91

C-S-C-S-W - fchisel, sfcult wht stb, man after wht, nt beans, man inj, sfcult stb, nt beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		51
11/1/0	Chisel, st. pt.		51
5/5/1	Cultivator, field 6-12 in sweeps		39
5/5/1	planter, double disk opnr	Corn, grain	39
10/20/1	Harvest, killing crop 50pct standing stubble		86
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/2	Harvest, killing crop 50pct standing stubble		92
11/1/2	Manure injector, liquid low disturb.30 inch		89
5/5/3	Cultivator, field 6-12 in sweeps		53
5/5/3	Planter, double disk opnr	Corn, grain	53
10/20/3	Harvest, killing crop 50pct standing stubble		84
5/10/4	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	83
10/5/4	Harvest, killing crop 50pct standing stubble		91
11/1/4	Drill or airseeder, double disk	Wheat, winter 7in rows	84
7/1/5	Harvest, killing crop 50pct standing stubble		91

RUSLE2 Worksheet Erosion Calculation Record

Info: Info: **Pinnacle Genetics – Field #16,17,18 & 19**

Field does not meet T with current management & rotations

Option is to go to a corn-soybean-wheat rotation AND contour at a row grade of at least 6%

Inputs:

Location: Illinois\McDonough County

Soil: 279D2 Rozetta silt loam, 10 to 18 percent slopes, eroded\Rozetta silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 14 %

T value: 5.0 t/ac/yr

Yields: Corn – 170 bu/ac; Beans – 50 bu/ac

Outputs:

<i>Management</i>	<i>Contouring</i>	<i>Strips / barriers</i>	<i>Diversion/terrace, sediment basin</i>	<i>Soil loss erod. portion, t/ac/yr</i>	<i>Soil detachment, t/ac/yr</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>
c.Other Local Mgt Records\C-S - sfcult corn & beans	default	(none)	(none)	16	16	16	16
c.Other Local Mgt Records\C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble	default	(none)	(none)	8.1	8.1	8.1	8.1
c.Other Local Mgt Records\C-S-W, sfcult corn	b. absolute row grade 6 percent	(none)	(none)	4.9	4.9	4.9	4.9

C-S - sfcult corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		51
11/1/0	Chisel, st. pt.		51
5/5/1	Cultivator, field 6-12 in sweeps		40
5/5/1	planter, double disk opnr	Corn, grain	40
10/20/1	Harvest, killing crop 50pct standing stubble		86
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	89
7/1/3	Harvest, killing crop 50pct standing stubble		91

C-S-W, sfcult corn

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
8/1/0	Manure injector, liquid low disturb.30 inch		93
5/5/1	Cultivator, field 6-12 in sweeps		68
5/5/1	planter, double disk opnr	Corn, grain	68
10/20/1	Harvest, killing crop 50pct standing stubble		89
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	88
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	90
7/1/3	Harvest, killing crop 50pct standing stubble		91

RUSLE2 Worksheet Erosion Calculation Record

Info: **Pinnacle Genetics – Field #3**

Field does not meet T with current management & rotations

Option is to go to a corn-soybean-wheat rotation AND contour at a row grade of at least 4%

Inputs:

Location: Illinois\McDonough County

Soil: 605C2 Ursa silt loam, 5 to 10 percent slopes, eroded\Ursa silt loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

T value: 3.0 t/ac/yr

Yields: Corn – 170 bu/ac; Beans – 50 bu/ac

Outputs:

<i>Management</i>	<i>Contouring</i>	<i>Strips / barriers</i>	<i>Diversion/terrace, sediment basin</i>	<i>Soil loss erod. portion, t/ac/yr</i>	<i>Soil detachment, t/ac/yr</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>
c.Other Local Mgt Records\C-S - sfcult corn & beans	default	(none)	(none)	7.9	7.9	7.9	7.9
c.Other Local Mgt Records\C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble	b. absolute row grade 1 percent	(none)	(none)	2.7	2.7	2.7	2.7
c.Other Local Mgt Records\C-S-W, sfcult corn	b. absolute row grade 4 percent	(none)	(none)	3.1	3.1	3.1	3.1

C-S - sfcult corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		51
11/1/0	Chisel, st. pt.		51
5/5/1	Cultivator, field 6-12 in sweeps		40
5/5/1	planter, double disk opnr	Corn, grain	40
10/20/1	Harvest, killing crop 50pct standing stubble		86
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	89
7/1/3	Harvest, killing crop 50pct standing stubble		91

C-S-W, sfcult corn

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
8/1/0	Manure injector, liquid low disturb.30 inch		93
5/5/1	Cultivator, field 6-12 in sweeps		68
5/5/1	planter, double disk opnr	Corn, grain	68
10/20/1	Harvest, killing crop 50pct standing stubble		89
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	88
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	90
7/1/3	Harvest, killing crop 50pct standing stubble		91

RUSLE2 Worksheet Erosion Calculation Record

Info: **Pinnacle Genetics – Field #12**

Field does not meet T with current management & rotations

Option available is to: Go to a corn-soy-wheat rotation, running an Aerway, for at least some tillage prior to corn AND farming on the contour on at least 5% row grade

Inputs:

Location: Illinois\McDonough County

Soil: 7C3 Atlas silty clay loam, 5 to 10 percent slopes, severely eroded\Atlas silty clay loam 100%

Slope length (horiz): 150 ft

Avg. slope steepness: 7.5 %

T value: 2.0 t/ac/yr

Yields: Corn – 170 bu/ac; Beans – 50 bu/ac

Outputs:

<i>Management</i>	<i>Contouring</i>	<i>Strips / barriers</i>	<i>Diversion/terrace, sediment basin</i>	<i>Soil loss erod. portion, t/ac/yr</i>	<i>Soil detachment, t/ac/yr</i>	<i>Cons. plan. soil loss, t/ac/yr</i>	<i>Sed. delivery, t/ac/yr</i>
c.Other Local Mgt Records\C-S - sfcult corn & beans	default	(none)	(none)	7.7	7.7	7.7	7.7
c.Other Local Mgt Records\C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble	default	(none)	(none)	4.3	4.3	4.3	4.3
c.Other Local Mgt Records\C-S-W, sfcult corn	b. absolute row grade 0.6 percent (not possible)	(none)	(none)	2.0	2.0	2.0	2.0
c.Other Local Mgt Records\C-S-W- aerway prior to corn, nt beans & wheat	b. absolute row grade 5 percent	(none)	(none)	2.0	2.0	2.0	2.0

C-S - sfcult corn & beans

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		87
5/5/1	Cultivator, field 6-12 in sweeps		49
5/5/1	Planter, double disk opnr	Corn, grain	49
10/20/1	Harvest, killing crop 50pct standing stubble		83
5/10/2	Cultivator, field 6-12 in sweeps		76
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	76
10/5/2	Harvest, killing crop 50pct standing stubble		90

C-S-W, nt beans & wheat, man into wht stbl, fchisel & sfcult stubble

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Manure injector, liquid low disturb.30 inch		51
11/1/0	Chisel, st. pt.		51
5/5/1	Cultivator, field 6-12 in sweeps		40
5/5/1	planter, double disk opnr	Corn, grain	40
10/20/1	Harvest, killing crop 50pct standing stubble		86
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	85
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	89
7/1/3	Harvest, killing crop 50pct standing stubble		91

C-S-W, sfcult corn

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
8/1/0	Manure injector, liquid low disturb.30 inch		93
5/5/1	Cultivator, field 6-12 in sweeps		68
5/5/1	planter, double disk opnr	Corn, grain	68
10/20/1	Harvest, killing crop 50pct standing stubble		89
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	88
10/5/2	Harvest, killing crop 50pct standing stubble		92
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	90
7/1/3	Harvest, killing crop 50pct standing stubble		91

C-S-W- aerway prior to corn, nt beans & wheat

<i>Date</i>	<i>Operation</i>	<i>Vegetation</i>	<i>Surf. res. cov. after op, %</i>
11/1/0	Aerator, field surface, ground driven		85
5/5/1	planter, double disk opnr	Corn, grain	79
10/20/1	Harvest, killing crop 50pct standing stubble		91
5/10/2	Planter, double disk opnr	Soybean, mw 15 - 20 in rows	89
10/5/2	Harvest, killing crop 50pct standing stubble		93
10/11/2	Drill or airseeder, double disk	Wheat, winter 7in rows	90
7/1/3	Harvest, killing crop 50pct standing stubble		92

RUSLE2 Related Attributes

McDonough County, Illinois

Map symbol and soil name	Pct. of map unit	Hydrologic group	Kf	T factor	Representative value		
					% Sand	% Silt	% Clay
7C3: Atlas	90	D	.28	2	15.0	50.0	35.0
7D3: Atlas	90	D	.28	2	15.0	50.0	35.0
8D2: Hickory	90	B	.32	5	26.0	52.0	22.0
17A: Keomah	90	C	.43	5	4.0	76.0	20.0
17B: Keomah	90	C	.43	5	4.0	76.0	20.0
279B: Rozetta	91	B	.43	5	4.0	76.0	20.0
279C2: Rozetta	94	B	.43	5	4.0	75.0	21.0
279D2: Rozetta	95	B	.43	5	4.0	75.0	21.0
605C2: Ursa	90	C	.32	3	12.0	66.0	22.0
605D2: Ursa	90	C	.32	3	12.0	66.0	22.0

Water Features

McDonough County, Illinois

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>	<i>Ft</i>				
7C3: Atlas	D	Very high	January	0.5-2.0	1.2-2.5	—	—	None	—	None
			February	0.5-2.0	1.2-2.5	—	—	None	—	None
			March	0.5-2.0	1.2-2.5	—	—	None	—	None
			April	0.5-2.0	1.2-2.5	—	—	None	—	None
			May	0.5-2.0	1.2-2.5	—	—	None	—	None
7D3: Atlas	D	Very high	January	0.5-2.0	1.2-2.5	—	—	None	—	None
			February	0.5-2.0	1.2-2.5	—	—	None	—	None
			March	0.5-2.0	1.2-2.5	—	—	None	—	None
			April	0.5-2.0	1.2-2.5	—	—	None	—	None
			May	0.5-2.0	1.2-2.5	—	—	None	—	None
8D2: Hickory	B	Medium	Jan-Dec			—	—	None	—	None
17A: Keomah	C	Low	January	0.5-2.0	>6.0	—	—	None	—	None
			February	0.5-2.0	>6.0	—	—	None	—	None
			March	0.5-2.0	>6.0	—	—	None	—	None
			April	0.5-2.0	>6.0	—	—	None	—	None
			May	0.5-2.0	>6.0	—	—	None	—	None
17B: Keomah	C	High	January	0.5-2.0	>6.0	—	—	None	—	None
			February	0.5-2.0	>6.0	—	—	None	—	None
			March	0.5-2.0	>6.0	—	—	None	—	None
			April	0.5-2.0	>6.0	—	—	None	—	None
			May	0.5-2.0	>6.0	—	—	None	—	None

Water Features

McDonough County, Illinois

Map symbol and soil name	Hydrologic group	Surface runoff	Month	Water table		Ponding			Flooding	
				Upper limit	Lower limit	Surface depth	Duration	Frequency	Duration	Frequency
				<i>Ft</i>	<i>Ft</i>	<i>Ft</i>				
279B: Rozetta	B	Low	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None
279C2: Rozetta	B	Medium	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None
279D2: Rozetta	B	Medium	February	4.0->6.0	>6.0	---	---	None	---	None
			March	4.0->6.0	>6.0	---	---	None	---	None
			April	4.0->6.0	>6.0	---	---	None	---	None
605C2: Ursa	C	Very high	February	4.0->6.0	5.0->6.0	---	---	None	---	None
			March	4.0->6.0	5.0->6.0	---	---	None	---	None
			April	4.0->6.0	5.0->6.0	---	---	None	---	None
605D2: Ursa	C	Very high	February	4.0-5.5	5.0->6.0	---	---	None	---	None
			March	4.0-5.5	5.0->6.0	---	---	None	---	None
			April	4.0-5.5	5.0->6.0	---	---	None	---	None