

Manure Group Information Crop Yrs. 2018	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Appendix 3 Manure Group Information Crop Yrs. 2018	Uncollected Manure: Nutrient Analysis Book Values	Uncollected Manure: Nutrient Analysis Book Values
Manure Generation per Animal Group	Manure Generation per Animal Group	Manure Generation per Animal Group
Barn 1 Steers & Heifers Beef, Finishing Cattle	Barn 1 Steers & Heifers Beef, Finishing Cattle	Barn 1 Steers & Heifers Beef, Finishing Cattle
Animal Number	48	48
Animal Weight	900	900
Animal Group AUs	43.2	43.2
Animal Group AEU's	21.6	21.6
Daily Manure Production per AU	65.0	65.0
Total Days Manure Produced	183	183
Total Manure Produced	256	256
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	39	39
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	295	295
Animal Group 4	Barn 2 Steers Beef, Finishing Cattle	Barn 2 Steers Beef, Finishing Cattle
Animal Number	50	50
Animal Weight	900	900
Animal Group AUs	45.0	45.0
Animal Group AEU's	22.5	22.5
Daily Manure Production per AU	66.0	66.0
Total Days Manure Produced	183	183
Total Manure Produced	267	267
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	78	78
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	345	345

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

Manure Group Information Crop Yrs. 2018	Spring Applied Cattle Manure		Fall Applied Cattle Manure	
	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group	Uncollected Manure: Nutrient Analysis Book Values
Appendix 3 Manure Group Information Crop Yrs. 2018	Proposed HUA Cows Beef: Cow	Proposed HUA Cows - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)	Proposed HUA Cows Beef: Cow	Proposed HUA Cows - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)
Animal Group 1	40	11	40	11
Animal Type	Beef: Cow		Beef: Cow	
Animal Number	1,400	Total Phosphate (P2O5) (lbs/ton or 1000 gal)	1,400	Total Phosphate (P2O5) (lbs/ton or 1000 gal)
Animal Weight	56.0	7	56.0	7
Animal Group AUs	23.0	Total Potash (K2O) (lbs/ton or 1000 gal)	33.0	Total Potash (K2O) (lbs/ton or 1000 gal)
Animal Group AEU's	90.0	10	90.0	10
Daily Manure Production per AU	150	PSC Value	215	PSC Value
Total Days Manure Produced	378	0.8	542	0.8
Total Manure Produced	30		190	
Days On Pasture	18		18	
Hours Per Day On Pasture	80		20	
Total Bedding	0		0	
Total Washwater	57		359	
CALCULATED - Total Uncollected Manure	401	57 - Tons	203	359 - Tons
CALCULATED - Total Manure Collected Per				
Animal Group 2	Proposed HUA Calves Beef: Calf	Proposed HUA Calves - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)	Proposed HUA Calves Beef: Calf	Proposed HUA Calves - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)
Animal Type	Beef: Calf		Beef: Calf	
Animal Number	40	11	40	11
Animal Weight	300	Total Phosphate (P2O5) (lbs/ton or 1000 gal)	300	Total Phosphate (P2O5) (lbs/ton or 1000 gal)
Animal Group AUs	12.0	7	12.0	7
Animal Group AEU's	1.9	Total Potash (K2O) (lbs/ton or 1000 gal)	6.0	Total Potash (K2O) (lbs/ton or 1000 gal)
Daily Manure Production per AU	90.0	10	90.0	10
Total Days Manure Produced	57	PSC Value	183	PSC Value
Total Manure Produced	31	0.8	99	0.8
Days On Pasture	57		183	
Hours Per Day On Pasture	18		18	
Total Bedding	0		0	
Total Washwater	0		0	
CALCULATED - Total Uncollected Manure	23	23 - Tons	74	74 - Tons
CALCULATED - Total Manure Collected Per	8		24	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *gaw*

Appendix 3 Manure Group Information Crop Yrs. 2018	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Manure Report Date (note if averaging several reports)	September 17, 2015	September 17, 2015
Laboratory Name	Spectrum Analytic	Spectrum Analytic
Manure Type	Other	Other
Manure Unit (lbs/ton or 1000 gal)	lb/ton	lb/ton
Total Nitrogen (N) (lbs/ton or 1000 gal)	9.8	9.8
Ammonium N (NH ₄ -N) (lbs/ton or 1000 gal)	2.8	2.8
Total Organic N (lbs/ton or 1000 gal)	7.0	7.0
Total Phosphate (P ₂ O ₅) (lbs/ton or 1000 gal)	7.8	7.8
Total Potash (K ₂ O) (lbs/ton or 1000 gal)	11.4	11.4
Percent Solids	25.4	25.4
PSC Value (analytical or book value)	0.65	0.65
Manure Group AELU's	69.40	83.77
Inventory Method	Calculated	Calculated
Manure Group Identification	Collected Calc. Spring Applied Cattle Manure -	Collected Calc. Fall Applied Cattle Manure -
Description: Site & Season Applied	Removed from Storage or confinement areas Spring	Removed from Storage or confinement areas Fall
Manure Collected Per Manure Group	1,054 Tons	876 Tons
RECORDS: Total Manure Collected Per Manure Group	Uncollected Calc. Spring Applied Cattle Manure - 80 Tons	Uncollected Calc. Fall Applied Cattle Manure - 433 Tons
Manure Used On-Farm	Collected 1,138 Tons	Collected 966 Tons
Manure Allocation Balance	0 Tons	0 Tons
Manure Exported	0 tons	0 tons
Total Rainfall and Runoff	0 Tons	0 Tons

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *JML*

Manure Group Information Crop Yrs. 2017	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Appendix 3 Manure Group Information Crop Yrs. 2017	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group
Animal Group 5	Barn 1 Finishing Hogs	Barn 1 Finishing Hogs
Animal Type	Swine:Grow-Finish	Swine:Grow-Finish
Animal Number	20	20
Animal Weight	125	125
Animal Group AUs	2.5	2.5
Animal Group AELUs	0.4	0.7
Daily Manure Production per AU	50.0	50.0
Total Days Manure Produced	60	100
Total Manure Produced	4	6
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	1	2
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	5	8

Manure Group Information Crop Yrs. 2017	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Appendix 3 Manure Group Information Crop Yrs. 2017	Uncollected Manure: Nutrient Analysis Book Values	Manure Generation per Animal Group
Animal Group 5	Barn 1 Finishing Hogs	Barn 1 Finishing Hogs
Animal Type	Swine:Grow-Finish	Swine:Grow-Finish
Animal Number	20	20
Animal Weight	125	125
Animal Group AUs	2.5	2.5
Animal Group AELUs	0.4	0.7
Daily Manure Production per AU	50.0	50.0
Total Days Manure Produced	60	100
Total Manure Produced	4	6
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	1	2
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	5	8

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *AW*

Manure Group Information Crop Yrs. 2017	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Appendix 3 Manure Group Information Crop Yrs. 2017	Manure Generation per Animal Group	Manure Generation per Animal Group
Appendix 3 Manure Group Information Crop Yrs. 2017	Uncollected Manure: Nutrient Analysis Book Values	Uncollected Manure: Nutrient Analysis Book Values
Animal Group 3	Barn 1 Steers & Heifers	Barn 1 Steers & Heifers
Animal Type	Beef, Finishing Cattle	Beef, Finishing Cattle
Animal Number	48	48
Animal Weight	900	900
Animal Group AUs	43.2	43.2
Animal Group AEU6	21.6	21.6
Daily Manure Production per AU	65.0	65.0
Total Days Manure Produced	183	183
Total Manure Produced	256	256
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	39	39
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	295	295
Animal Group 4	Barn 2 Steers	Barn 2 Steers
Animal Type	Beef, Finishing Cattle	Beef, Finishing Cattle
Animal Number	50	50
Animal Weight	900	900
Animal Group AUs	45.0	45.0
Animal Group AEU6	22.5	22.5
Daily Manure Production per AU	65.0	65.0
Total Days Manure Produced	183	183
Total Manure Produced	267	267
Days On Pasture	0	0
Hours Per Day On Pasture	0	0
Total Bedding	78	78
Total Washwater	0	0
CALCULATED - Total Uncollected Manure		
CALCULATED-Total Manure Collected Per	345	345

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *AW*

Manure Group Information Crop Yrs. 2017	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Appendix 3 Manure Group Information Crop Yrs. 2017	Manure Generation per Animal Group	Manure Generation per Animal Group
Animal Group 1	Proposed HUA Cows Beef: Cow	Proposed HUA Cows Beef: Cow
Animal Type	40	40
Animal Number	1,400	1,400
Animal Weight	56.0	56.0
Animal Group AUs	25.0	33.0
Animal Group AEU's	90.0	90.0
Daily Manure Production per AU	150	215
Total Days Manure Produced	378	542
Total Manure Produced	30	190
Days On Pasture	18	18
Hours Per Day On Pasture	80	20
Total Bedding	0	0
Total Washwater	57	359
CALCULATED - Total Uncollected Manure	401	203
CALCULATED - Total Manure Collected Per		
Animal Group 2	Proposed HUA Calves Beef: Calf	Proposed HUA Calves Beef: Calf
Animal Type	40	40
Animal Number	300	300
Animal Weight	12.0	12.0
Animal Group AUs	1.9	6.0
Animal Group AEU's	90.0	90.0
Daily Manure Production per AU	57	193
Total Days Manure Produced	31	99
Total Manure Produced	57	183
Days On Pasture	18	18
Hours Per Day On Pasture	0	0
Total Bedding	0	0
Total Washwater	23	74
CALCULATED - Total Uncollected Manure	8	24
CALCULATED - Total Manure Collected Per		
Uncollected Manure: Nutrient Analysis Book Values	Uncollected Manure: Nutrient Analysis Book Values	Uncollected Manure: Nutrient Analysis Book Values
Proposed HUA Cows - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)	11	11
Total Phosphata (P2O5) (lbs/ton or 1000 gal)	7	7
Total Potash (K2O) (lbs/ton or 1000 gal)	10	10
PSC Value	0.8	0.8
57 - Tons		389 - Tons
Proposed HUA Calves - uncollected Total Nitrogen (N) (lbs/ton or 1000 gal)	11	11
Total Phosphata (P2O5) (lbs/ton or 1000 gal)	7	7
Total Potash (K2O) (lbs/ton or 1000 gal)	10	10
PSC Value	0.8	0.8
23 - Tons		74 - Tons

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ad*

Appendix 3 Manure Group Information Crop Yrs.	Spring Applied Cattle Manure	Fall Applied Cattle Manure
Manure Report Date (note if averaging several reports)	September 17, 2015	September 17, 2015
Laboratory Name	Spectrum Analytic	Spectrum Analytic
Manure Type	Other	Other
Manure Unit (lbs/ton or 1000 gal)	lb/ton	lb/ton
Total Nitrogen (N) (lbs/ton or 1000 gal)	9.8	9.8
Ammonium N (NH ₄ -N) (lbs/ton or 1000 gal)	2.8	2.8
Total Organic N (lbs/ton or 1000 gal)	7.0	7.0
Total Phosphorus (P ₂ O ₅) (lbs/ton or 1000 gal)	7.8	7.8
Total Potash (K ₂ O) (lbs/ton or 1000 gal)	11.4	11.4
Percent Solids	25.4	25.4
PSC Value (analytical or book value)	0.65	0.65
Manure Group AEU's	69.40	69.77
Inventory Method	Calculated	Calculated
Manure Group Identification	Collected Calc. Spring Applied Cattle Manure	Collected Calc. Fall Applied Cattle Manure
Description, Site & Season Applied	Removed from Storage or confinement areas	Removed from Storage or confinement areas
CALCULATED: Total Manure Collected Per Manure Group	1,054 Tons	876 Tons
RECORDS: Total Manure Collected Per Manure Group	0 Tons	0 Tons
Manure Used On-Farm	Collected 1,054 Tons	Collected 876 Tons
Manure Allocation Balance	0 Tons	0 Tons
Manure Exported	0 tons	0 tons
Total Rainfall and Runoff	0 Tons	0 Tons

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

County(s)

Carbon

Name of Receiving Stream(s)/Watershed(s)

Lizard Creek Watershed

Notation of Special Protection Waters

CWF

Operation Acres

Total Acres: 204.7

Total Acres Available for Nutrient Application Under Operator's Control

Owned: 122.4

Rented: 53

Names & Addresses of Owners of Rented or Leased Land

Dennis Cunfer - 66 Cunfer Ln, Leighton, PA

Brian Eckert - 896 Lower Nis Hollow Dr, Leighton, PA

Richard Barilla - 1128 Lower Nis Hollow Dr, Leighton, PA

Nancy Wilk - 850 W. Bowmans Rd, Leighton, PA

Rodney McFarland - 299 W. Lizardcreek Rd, Leighton, PA

Existing Manure Storages & Capacity

Type of storage, dimensions, useable capacity, freeboard, top or bottom loaded, dimensions and description of contributing runoff area, description of wastewater additions, types and amounts of bedding. Briefly describe, for each manure group, manure storage management during removal (degree of agitation, method of manure removal, extent the storage is emptied, type of unremoved manure, etc.) and manure sampling procedures.

There are no existing manure storages on the operation

Manure Application Equipment Capacity & Practical Application Rates

Description of application equipment, practical application rates based on calibration and calibration method used, the data recorded during equipment calibration is to be retained on the farm.

15 ton/A pen manure may be applied to all crops, in all fields except H11-16 + H19, where 7.5 ton/A may be applied to small grains and 15 ton/A may be applied to summer crops.

The New Idea manure box spreader shall be calibrated in spring 2017.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

Justin Cunfer, along with his father, own and operate a beef operation in East Penn Township, Carbon County. Justin Cunfer provided the following information on the animal groups associated with the facility:

(40) cow/calf pairs at an average weight of 1800 pounds per pair for a total of 72 Animal Units (AUs)
(98) beef heifers and steer at an average weight of 900 pounds per animal for a total of 88.2 AUs
(20) Finishing hogs at an average weight of 125 pounds per animal for a total of 2.5 AUs.

All Best Management Practices, (BMPs) proposed in this report that are based on animal units were determined using these herd numbers.


Current management of the animals is as follows: Cows are not provided roofed confinement during the winter. They have access to paddocks & pasture April through December & are confined in 2 small areas (one area in the paddocks & one area in the pasture adjacent to the run-in shed). See the Farmstead map for additional information on the locations of these areas. Calves are pastured with cows until fall, then are moved to the finishing areas (barn 1 & barn 2). Both finishing areas are total confinement.

Environmental concerns associated with the operation center around the overwintering animal concentrated areas (ACAs) in both the paddocks and pasture. The paddocks ACA is used annually & soil phosphorus levels exceed 200 ppm. The pasture ACA is also used annually, has soil P over 200 ppm, and is located on a soil with poor drainage. Neither ACA can maintain vegetation throughout the year and erosion is evident. The pasture area also has a P Index score of 185 using current management as there is no way to reduce animal access / manure deposition.

This CNMP proposes a Heavy Use Area Protection structure to relieve pressure on the overwintering ACAs and allow animal access to the pasture to be reduced so P Index scores fall into a manageable range. The existing run-in shed in the pasture shall be decommissioned as a overwintering area for the cow herd, and the pasture ACA shall be seeded & managed as pasture for sick cows and/or bulls. Cropland is managed using no till techniques for establishment of all crops. 2 locations on the farm require implementation of practices to protect soil and water resources:

1. The intermittent stream emerging from the pasture pond & flowing west between fields H11-16 & H19 shall be protected by installing a 35' grass buffer to separate the cropland (manure application areas) from the surface water.

2. The concentrated flow areas in fields F1-F6 shall be addressed through various means. The smaller flow areas (west side of the field) shall be addressed through implementing annual cover cropping. The eastern flow area shall be addressed through installation of a diversion & grassed waterway to safely convey stormwater originating at the road to the southern property boundary.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY 

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

Operation Description
Animal types and numbers; cropland, hayland and pastureland acreage; farmstead acreage; crop rotation (crops, sequence of crops, and number of years for each crop); manure group management, including atypical manure (contributing animal groups, collection, storage and handling procedures); mortality composting management.

Appendix 2
Operation Information

CNMP 590 Nutrient Management Plan Agreement & Responsibilities

Appendix 1

NRCS program participants must develop and provide a copy of an NRCS-approved Comprehensive Nutrient Management Plan (CNMP) including a 590 nutrient management plan before NRCS provides technical or financial assistance involving manure or wastewater handling, storage and treatment and nutrient management that involves the application of manure and wastewater associated with the operation.


Plan Implementation Requirements

This nutrient management plan meets the NRCS 590 Nutrient Management conservation practice standard. Implementation of this plan is required to maintain compliance with your conservation plan. Implementation includes adherence to manure and fertilizer application rates, timing, setbacks and conditions and record keeping obligations.

The following records are required to be maintained:

1. Annual crop yields by field
2. Manure and fertilizer application rates, locations and date of application
3. Soil test reports (testing required every 3 years per crop management unit)
4. Manure test reports (testing required once a year for each manure group)
5. Number of animals on pasture, number of days on pasture, and hours per day on pasture
6. Manure imports, exports, and internal transfers

Develop a revised CNMP 590 when significant changes in nutrient management occur on operation. Significant changes in nutrient management include implementation of practices that affect the planned time, rate, form, and placement of nutrients, such as a new waste storage facility.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY 

Soil Testing Record

NRCS Nutrient Management (590) requires that soil tests for each crop management unit or field be current within the last three years. To fulfill Act 38 record keeping requirements a file of all soil test reports must be maintained. In addition, the following table can be used (optional) to summarize the soil test results for easier reference and use.

CMU/Field ID	Lab	Date Sampled	Soil Test Levels			Soil Test Report Levels ¹ (If not in ppm)	
			pH	ppm Mehlich-3 P	ppm K	Phosphorus (lbs P or lbs P ₂ O ₅)	Potassium (lbs K or lbs K ₂ O)

¹ Complete only if laboratory did not report phosphorus and potassium levels in ppm. Indicate units used on the soil test report.

Pasture Uncollected Manure Record

NRCS Nutrient Management (590) requires that the number of animals, number of days and average number of hours per day be recorded for each pasture unit listed in the nutrient management plan.

Pasture ID	Period Dates	Animal Type	Number of Animals	Average Weight	Number of Days	Average Number of Hours Per Day

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fall*

Manure Sampling Record

NRCS Nutrient Management (590) requires annual sampling and analysis of each manure group listed in the nutrient management plan. To fulfill keeping requirements a file of all manure analysis reports must be maintained. In addition, the following table can be used (optional) to summarize the manure analysis results for easier reference and use.

Manure Group	Lab	Date Sampled	Note lb/ton or lb/1000 gal				Percent Solids	P Source Coefficient Value
			Total Nitrogen (N)	Ammonium N (NH ₄ -N)	Total Phosphate (P ₂ O ₅)	Total Potash (K ₂ O)		

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*

Field Information			Manure Application Information			
CMU/Field ID	Field Acres	Acres Covered	Application Rate	Application Method	Days to Incorporation (if < 7 days)	Total Amount Applied

Manure Group Application Record

NRCS Nutrient Management (590) requires the following land application information be recorded annually: application location, number of acres, date of application, and application rate for each crop management unit.

Manure Group	Date	Spreader Calibrated Rates & Direction ¹	Manure Source/Location	Weather Conditions	Notes
Spreader ID ¹					
Temperature ¹					
Applicator ¹					

¹ Optional information not required by 590.

Field Information			Manure Application Information			
CMU/Field ID	Field Acres	Acres Covered	Application Rate	Application Method	Days to Incorporation (if < 7 days)	Total Amount Applied

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *MA*

Field Crop Record

NRCS Nutrient Management (590) requires an annual accounting of the application rate of nutrients and the resulting crop for each crop management unit.

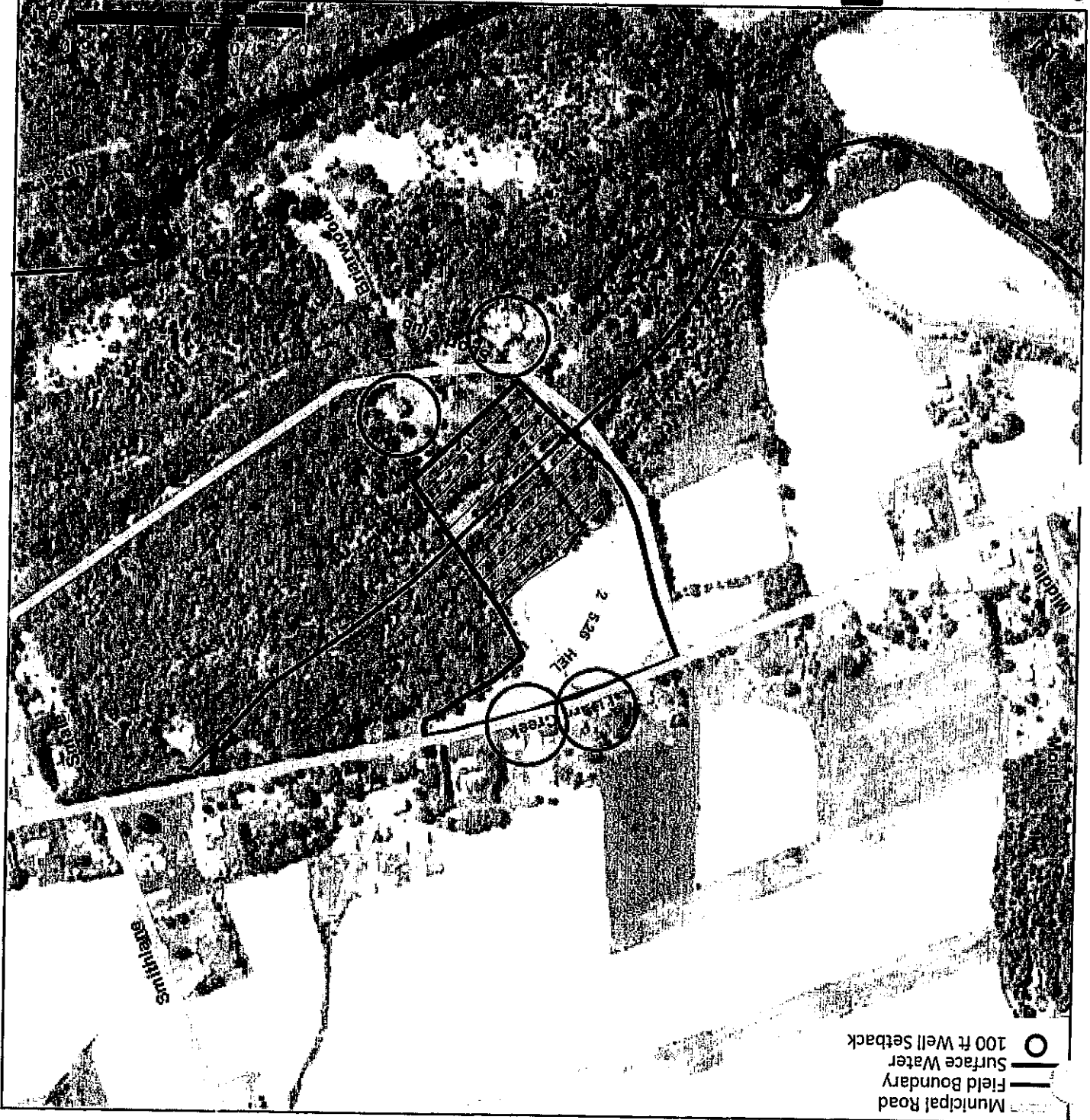
CMU/ Field ID	Crop Information			Manure & Fertilizer Application Information (lb/a, ton/a or gal/a)								
	Crop	Yield		Application 1			Application 2			Application 3		
				Date	Manure or Fertilizer Type	Application Rate	Date	Manure or Fertilizer Type	Application Rate	Date	Manure or Fertilizer Type	Application Rate

NRCS Nutrient Management (590) Record Keeping Checklist

Comprehensive Nutrient Management Plans

The following records are required to be maintained on the operation:

- _____ **Manure Test Results** - annually; manure analysis results for each manure group
- _____ **Soil Test Results** - current within 3 years; current soil test results for each crop management unit
- _____ **Land Application of Nutrients** - annually; location (ID) & number of acres, date of application, and application rate for each crop management unit
- _____ **Crop Yields** - annually; approximate yield levels for each crop management unit
- _____ **Uncollected Manure Information** - annually; number of animals, number of days, and average number of hours per day on each pasture unit
- _____ **Manure Export Sheets** - (if applicable) completed manure export sheets for each importing operation (copy to importer; copy retained on exporting operation; small quantity exclusion only requires name, amount of manure transferred and date)
- _____ **Exported Manure Applied Under Exporter Direction** - (if applicable) annually; application location (ID and notation of observation of application setbacks), number of acres, date of application, application methods, and application rate
- _____ **Exported Manure Through Broker** - **Broker Responsible** - (if applicable) annually; broker is responsible for application records; application location (ID and notation of observation of application setbacks), number of acres, date of application, application methods, and application rate and provide copies to the importing operations
- _____ **Alternative Manure Utilization Other Than Manure Export** - (if applicable) annually; amount and use of manure



Common Land Unit
 Tract Boundary

Non-Cropland
 Cropland

Wetland Determination Identifiers

- Restricted Use
- ▲ Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) Imagery. The producer accepts the data as is and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

All fields are NI, unless otherwise noted.

2017 Program Year
 Map Created April 26, 2017
 2015 NAIP Imagery

Operator Shares:
 Farm 1635

Owner Shares:
 Tract Cropland Total: 5.26 acres

Tract 2064
Farm 1635



United States
Department of
Agriculture

Justin Cunfer - Tract 299 Carbon County, Pennsylvania

- 100 ft Well Setback
- Surface Water
- Field Boundary
- Municipal Road



Common Land Unit Tract Boundary

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

Non-Cropland

Cropland

Operator Shares:

Owner Shares:

Tract Cropland Total: 15.86 acres

Farm 1504

Tract 299

2017 Program Year

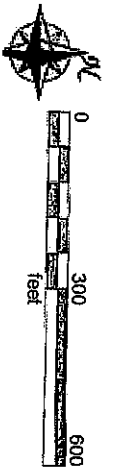
Map Created April 28, 2017

2015 NAIP Imagery

All fields are NI, unless otherwise noted.

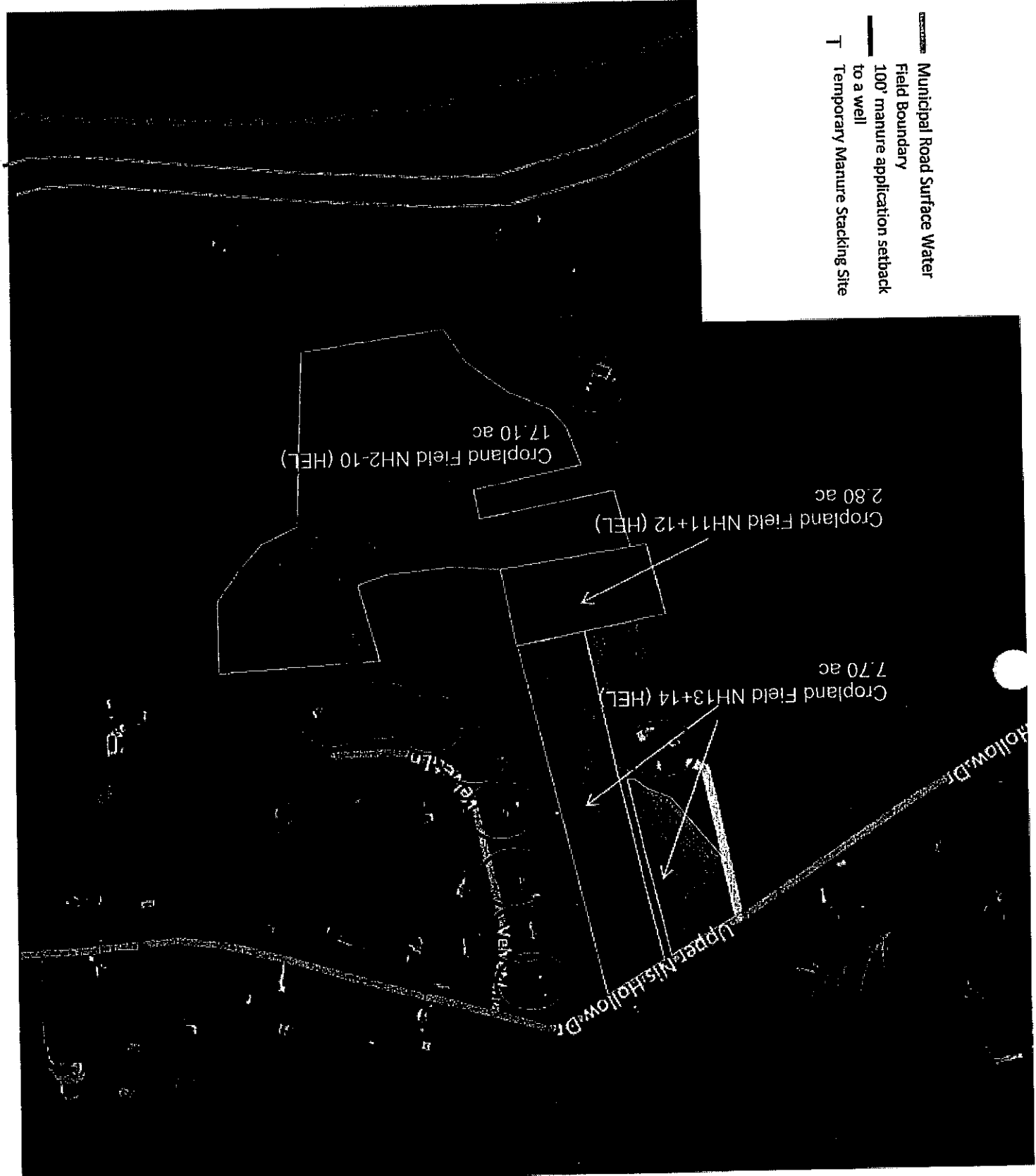
United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data as is and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

Frank Place

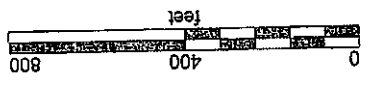


- Municipal Road Surface Water
- Field Boundary
- 100' manure application setback to a well
- (addressed in conservation plan through 340, 362, 412)

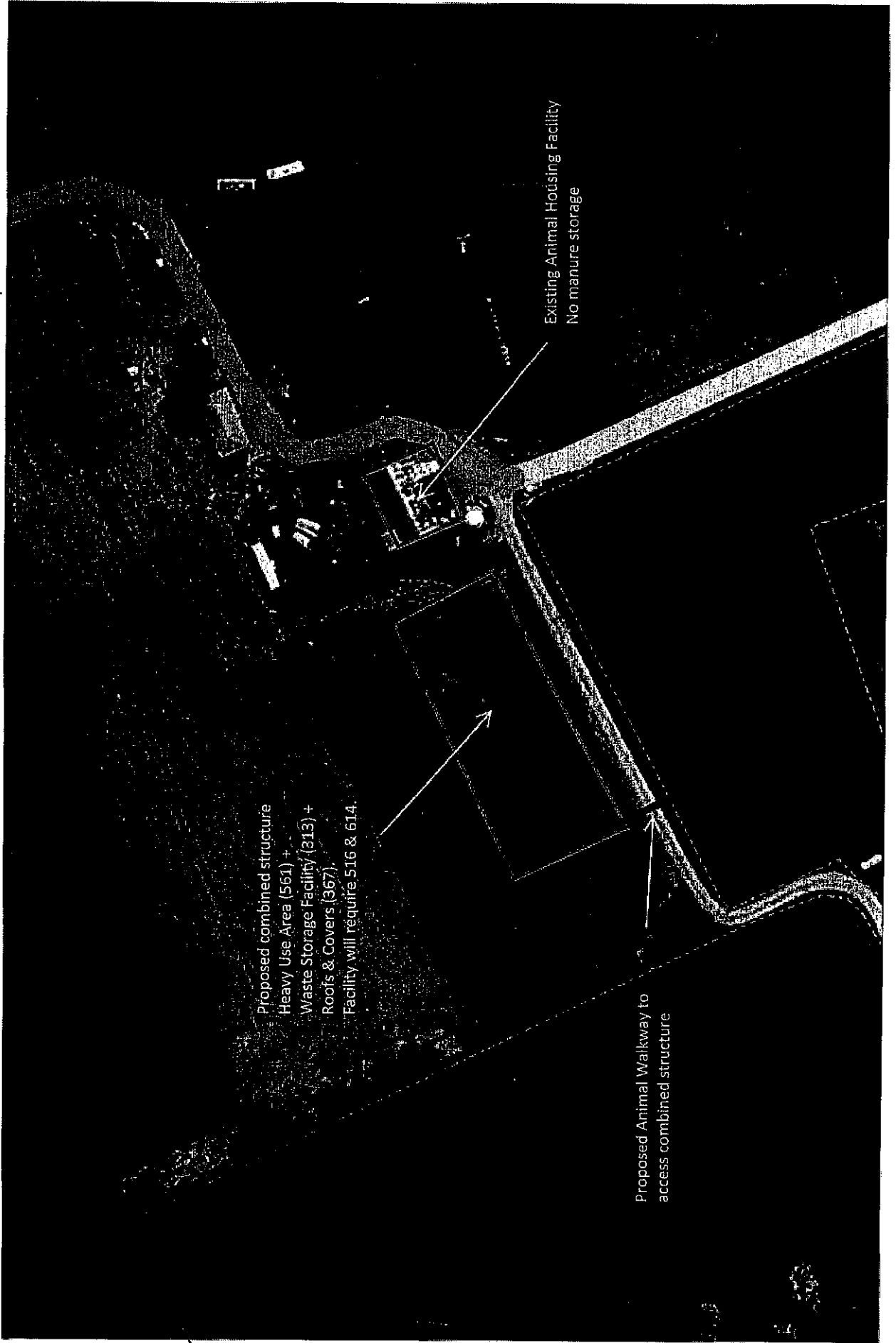
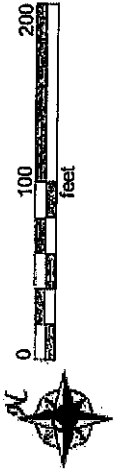
- Municipal Road Surface Water
- Field Boundary
- 100' manure application setback to a well
- T Temporary Manure Stacking Site



Nice's Hollow



Barn 2 - Farmstead Closeup "Justin's Barn"

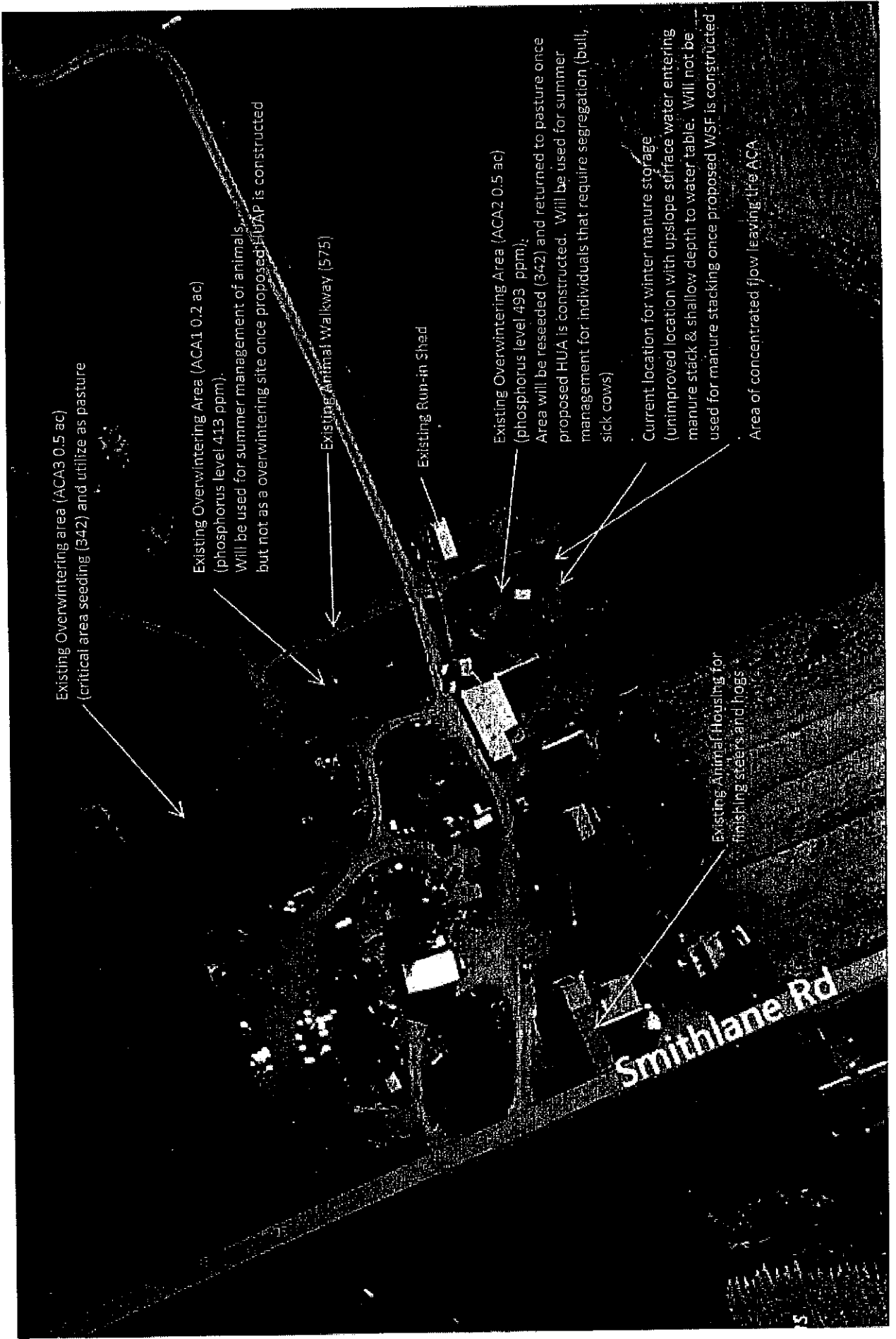


Proposed combined structure
Heavy Use Area (561) +
Waste Storage Facility (313) +
Roofs & Covers (367).
Facility will require 516 & 614.

Existing Animal Housing Facility
No manure storage

Proposed Animal Walkway to
access combined structure

Barn 1 - Farmstead Closeup "Dad's Barn"



Existing Overwintering area (ACA3 0.5 ac)
(critical area seeding (342) and utilize as pasture

Existing Overwintering Area (ACA1 0.2 ac)
(phosphorus level 413 ppm).
Will be used for summer management of animals
but not as a overwintering site once proposed HUA is constructed

Existing Animal Walkway (575)

Existing Run-in Shed

Existing Overwintering Area (ACA2 0.5 ac)
(phosphorus level 493 ppm).
Area will be reseeded (342) and returned to pasture once
proposed HUA is constructed. Will be used for summer
management for individuals that require segregation (bull,
sick cows)

Current location for winter manure storage
(unimproved location with upslope surface water entering
manure stack & shallow depth to water table. Will not be
used for manure stacking once proposed WSF is constructed











Area of concentrated flow leaving the ACA

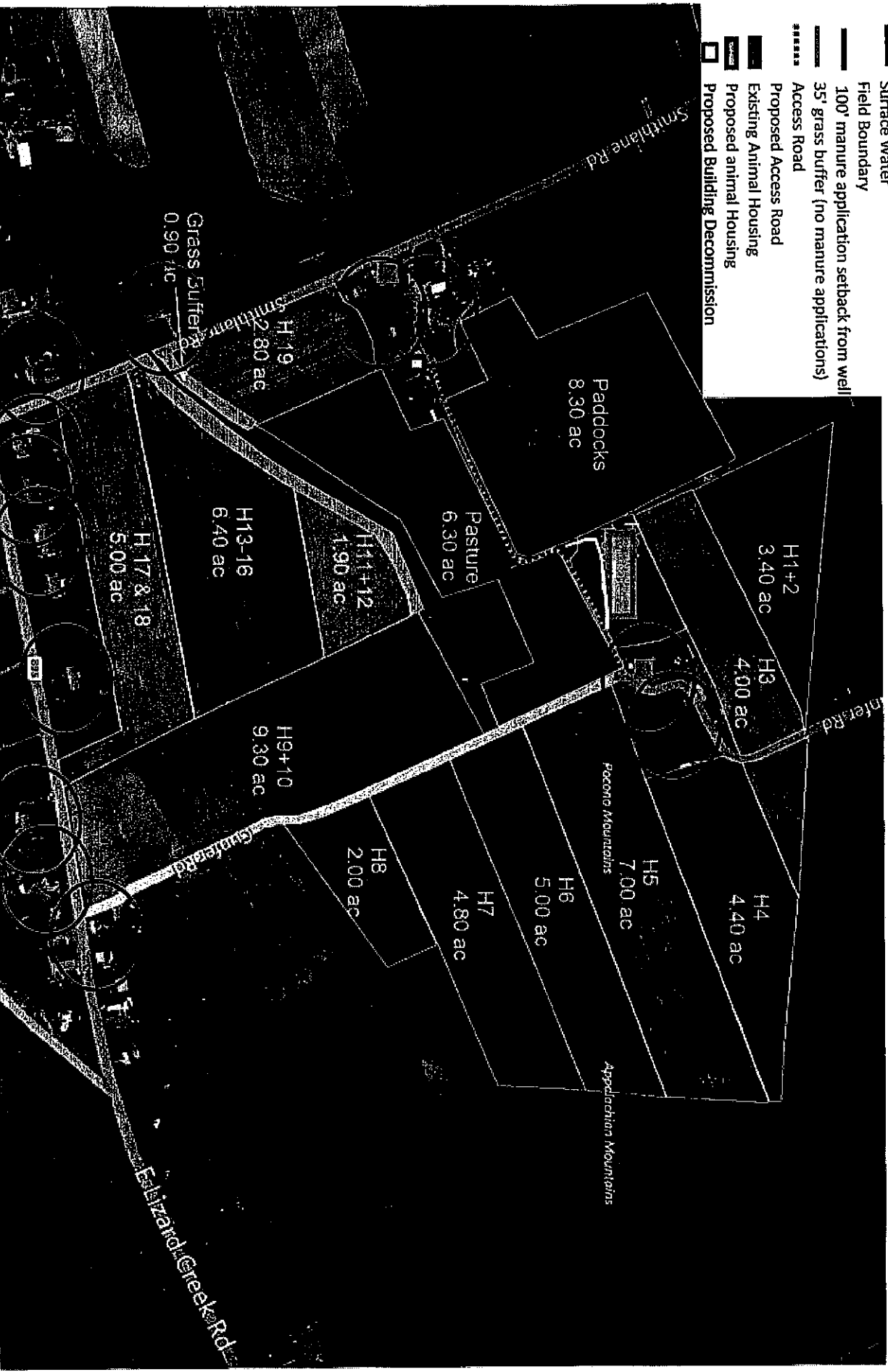
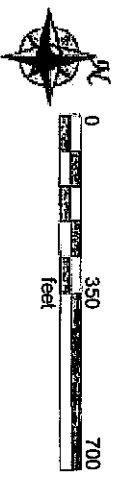
Existing Animal Housing for
finishing steers and hogs

Smithlane Rd

Home arm

Establish a 35' vegetated buffer on either side of the field ditch. Manure may not be applied within 100' of the field ditch when water is flowing, unless a 35' vegetated buffer separates the cropland from the ditch. Manage the buffer as a hayfield, as outlined in the soil conservation plan.

-  Municipal Road
-  Surface Water
-  Field Boundary
-  100' manure application setback from well
-  35' grass buffer (no manure applications)
-  Access Road
-  Proposed Access Road
-  Existing Animal Housing
-  Proposed animal Housing
-  Proposed Building Decommission



Type, dimensions, volume, freeboard and location on map.

Heffer Heavy Use Area - roofed waste stacking area

Dimensions: 175' x 60' x 6'

Volume: 1,890 tons

Freeboard: None

Location on Map: Proposed HUAP

Description of Planned Alternative Manure Technology Practices

Type of practice, volume of manure addressed, and result of practice.

None

Exported Manure Summary

Summarize in a short paragraph the arrangements proposed for the manure to be exported from the operation.

This information is described in more detail in Appendix 8 of this plan.

No manure is exported

Operator Management Map

Three types of maps are required for a CNMP 590 Nutrient Management Plan: 1) Topographic Map, 2) Soils Map, and 3) Operator Management Map. The Operator Management Map is to be included here in the Nutrient Management Plan Summary and must include field identification, acreage and boundaries, manure application setback areas and buffers and associated landscape features (streams and other water bodies, sinkholes and active water wells), location of existing and proposed structural BMPs (including manure storage facilities), location of existing or proposed emergency manure stacking areas and in-field manure stacking areas, and road names adjacent to and within the operation. All features on the map must be clearly identified and include a legend for setback areas and other features. The Topographic Map and Soils Map must be included in Appendix 9.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

Additional Nutrient Management Plan Requirements

Manure Management and Stormwater BMP Implementation Summary

Best Management Practice	NRCS Practice Code ¹	BMP Location	Implementation Season & Year
Waste Storage Facility	313/ 316	Proposed HUAP	Fall 2020
Vegetated Treatment Area (VTA) / Manure Transfer / Pumping Plant	634/635/533	Proposed HUAP	Fall 2020
Roofs & Covers	367	Proposed HUAP	Fall 2020
Heavy Use Area Protection	561	Proposed HUAP	Fall 2020
Roof Runoff Structure / Underground Outlet	558 / 620	Proposed HUAP	Fall 2020
Animal Trails & Walkways	575	Proposed HUAP	Fall 2020
Diversion	362	Proposed HUAP	Fall 2020
Grassed Waterway	412	Proposed HUAP	Fall 2020
Fence	382	Proposed HUAP & VTA	Fall 2020
Pipeline & Watering Facility	516 / 614	Proposed HUAP	Fall 2020
Critical Area Planting	342	Proposed HUAP	Fall 2020

¹ If applicable, enter USDA-NRCS Practice Code. For other non-technical BMPs, leave blank.

In-Field Manure Stacking Procedures

Manure must be applied to the field within 120 days of stacking or the stacks must be covered. Stacks must be implemented and maintained according to sound BMPs, addressing concerns such as soil type, soil slope, shape of the pile, setbacks, and rotation of piles.

There are no plans for in-field stacking of manure

Additional CAFO Requirements

In-field stacking criteria, winter storage requirements, and other issues identified by DEP's review of the nutrient management plan.

Not applicable

Proposed Manure Storage Description

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY
[Signature]

Manure Spreader Calibration Notes

Crop Years 2017

Manure Application Rate	Manure Spreader Used	Spreader Settings	Tractor Used (if applicable)	Tractor Settings (speed, gear, rpm, pto, etc.)
7.5 ton/A	New Idea Box Spreader	TBD	TBD	TBD
15 ton/A	New Idea Box Spreader	TBD	TBD	TBD

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *AW*

CNU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
H9-10	9.3	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall; Early Spring incorporated after 7 days or more	15 tons/A	0	0	0	50	0	0	0	-77	29	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
H9-10	9.3	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring; Incorporated after 7 days or more	15 tons/A	5	11	5	70	0	0	3	-145	-37	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + 70 lbs/A nitrogen as supplemental fertilizer to corn
H11-12	1.9	Soybeans					0	0	0	0	0	0	0	0	50	Maintain 35' of permanent vegetation separating the cropland area from the surface water. No well setbacks exist for this field. No additional fertilizer is recommended for soybeans
H13-19	9.2	Soybeans					0	0	0	0	0	0	0			Maintain 35' of permanent vegetation separating the cropland area from the surface water. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
H17&18	5	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall; Early Spring incorporated after 7 days or more	15 tons/A	0	0	0	50	0	0	0	-117	-1	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
H17&18	5	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring; Incorporated after 7 days or more	15 tons/A	5	11	5	70	0	0	3	-245	-117	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + 70 lbs/A nitrogen as supplemental fertilizer to corn
NH2-10	17.1	Soybeans					0	0	0	0	0	0	0	80	140	No surface water seeps exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
NH11-12	2.8	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring; Incorporated after 7 days or more	15 tons/A	5	11	5	35	0	0	6	-68	-116	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + 35 lbs/A nitrogen as supplemental fertilizer to corn
NH13-14	7.7	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring; Incorporated after 7 days or more	15 tons/A	5	11	5	35	0	0	6	-68	-116	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + 35 lbs/A nitrogen as supplemental fertilizer to corn
T2064 - 2	5.26	Established Alfalfa with Manure	Spring Applied Cattle Manure	Spring	Spring; Incorporated after 7 days or more	15 tons/A	0	0	0	90	0	0	0	-117	-1	No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 150 lbs/ A of 0-0-60 to established alfalfa.
T299 - 1	6.35	Established Alfalfa with Manure					0	0	0	90	0	0	0			No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 0 - 130 - 180 lbs/ A of total plant food to established alfalfa.
T299 - 2	2.04	Established Alfalfa with Manure					0	0	0	90	0	0	0			No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 0 - 130 - 180 lbs/ A of total plant food to established alfalfa.
T299 - 3	7.47	Established Alfalfa with Manure					0	0	0	90	0	0	0			No surface water seeps exist for this field. Do not apply manure within 100' of a well. Apply 0 - 130 - 180 lbs/ A of total plant food to established alfalfa.

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fill*

CULT/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lbs/A)			Supplemental Fertilizer (lbs/A)			Nutrient Balance (lbs/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
H4	3.2	Oats	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	-77	-31	No surface water seeps/exists for this field. Do not apply manure within 100' of a well. Apply up to 30 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
H4	3.2	Sorghum-Sudangrass					0	0	0	65	0	0	2	-27	59	No surface water seeps/exists for this field. Do not apply manure within 100' of a well. Apply 65 lbs/A nitrogen as supplemental fertilizer to sorghum.
H5 + H6 + H7	17.5	Oats	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	-7	19	No surface water seeps/exists for this field. Do not apply manure within 100' of a well. Apply up to 30 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
H5 + H6 + H7	17.5	Sorghum-Sudangrass	Fall Applied Cattle Manure	Summer	Summer: Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	3	-14	108	No surface water seeps/exists for this field. Do not apply manure within 100' of a well. Apply 35 lbs/A nitrogen as supplemental fertilizer to sorghum.
H8	2	Oats					0	0	0	50	0	0	9	80	170	No surface water or well seeps/exists for this field. Apply up to 50 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
H8	2	Small Grain Silage	Fall Applied Cattle Manure	Summer	Summer: Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	2	3	189	No surface water or well seeps/exists for this field. Apply 35 lbs/A nitrogen as supplemental fertilizer to small grains.

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit; Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

CMAU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Standard/Other Fertilizer (lbs/A)			Supplemental Fertilizer (lbs/A)			Nutrient Balance (lbs/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
F13	2.6	Oats					0	0	0	35	0	0	0	0	150	No surface water or well setbacks exist for this field. Apply up to 35 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
F13	2.6	Sorghum-Sudangrass	Fall Applied Cattle Manure	Early Fall	Early Fall Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	6	-117	129	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to sorghum.
F14A	3.2	Soybeans					0	0	0	0	0	0	0	50	110	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for soybeans.
F14B + F21 + Gabby	7.9	Oats					0	0	0	50	0	0	9	80	170	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply up to 50 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
F14B + F21 + Gabby	7.9	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	2	3	189	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 35 lbs/A nitrogen as supplemental fertilizer to small grains.
F15 + F17	5.6	Oats	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	0	0	6	-37	-1		No surface water or well setbacks exist for this field. No additional fertilizer may be required for the stated yield goal.
F16 + F17	5.6	Sorghum-Sudangrass					0	0	0	50	0	0	6	73	189	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to sorghum.
F16 + F18 + F19 + F20	8.2	Established Alfalfa					0	0	0	0	180	0	0	80	90	No surface water or well setbacks exist for this field. Apply 180 lbs/A potassium in the form of commercial fertilizer.
Pasture	6.3	Established Pasture (without legume)	Proposed H2A Cows - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	0	0	0	0	0		No mechanical applications of manure will occur within this pasture. Beef Cow & calf pairs will access this pasture April through November, as conditions are fit. This pasture is P fertilized, due to proximity to surface water, drainage conditions and soil test P. Limit animal access to this pasture. Apply up to 80 lbs nitrogen as supplemental fertilizer.
Pasture	6.3	Established Pasture (without legume)	Proposed H2A Cows - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	80	0	0	4	-88	-121	No mechanical applications of manure will occur within this pasture. Beef Cow & calf pairs will access this pasture April through November, as conditions are fit. No additional fertilizer is recommended for this paddock. Paddocks must have 3" of desirable vegetation at all times to meet minimum pasture requirements.
Pasture Paddocks	8.3	Established Pasture (without legume)	Proposed H2A Cows - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	0	0	0	1	-361	-486	No surface water or well setbacks exist for this field. Apply up to 50 lbs/A nitrogen, as supplemental fertilizer, to oat grain.
H1+2	3.4	Oats					0	0	0	50	0	0	9	40	140	No surface water or well setbacks exist for this field. Apply 35 lbs/A nitrogen as supplemental fertilizer to small grains.
H1+2	3.4	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	2	-57	139	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 180 lbs/A potassium in the form of commercial fertilizer.
H3	4	Established Alfalfa					0	0	0	0	180	0	0	40	80	

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

Nutrient Management Plan Summary

Crop Year(s) 2019

Total acres reported in NMP Summary: 172.3
Mode Farm Note: If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the Net Nutrients Required for that field.

Operation Acres: 204.7 **Total Acres Available For Nutrient Application Under Operator's Control:** Owned: 122.4 Rented: 53

Animal Equivalent Units: 153.17 **Animal Equivalent Units Per Acre:** 0.87

CMAA/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ²			Notes	
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O		
F1+3+5+7	7.8	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	0	0	0	0	0	-117	-1	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F1+3+5+7	7.8	Corn for Grain (No-ill)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	16 tons/A	5	11	5	70	0	0	0	3	-245	-107	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F2+4	3	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	0	-117	-1	No surface water or well setbacks exist for this field. Apply 35 lbs/A nitrogen as supplemental fertilizer to sorghum
F2+4	3	Sorghum-Studgrass	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	3	0	-234	-22	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. Apply 180 lbs/A potassium in the form of commercial fertilizer
F6	2.4	Established Alfalfa					0	0	0	0	180	0	0	0	0	80	No surface water or well setbacks exist for this field. Apply 5 gals/A 9-18-9 starter fertilizer + 110 lbs/A nitrogen as supplemental fertilizer to corn
F7A	2.2	Corn for Grain (No-ill)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	110	0	0	5	0	-128	-106	No surface water or well setbacks exist for this field. Apply 5 gals/A 9-18-9 starter fertilizer + 110 lbs/A nitrogen as supplemental fertilizer to corn
F8+9	4.4	Corn for Grain (No-ill)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	110	0	0	5	0	-128	-106	No surface water setbacks exist for this field. Apply 180 lbs/A potassium in the form of commercial fertilizer
F10+11	3.4	Established Alfalfa					0	0	0	0	180	0	0	0	0	80	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F12	2.8	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	0	-117	-1	No surface water or well setbacks exist for this field. Apply 5 gals/A 9-18-9 starter fertilizer + 70 lbs/A nitrogen as supplemental fertilizer to corn
F12	2.8	Corn for Grain (No-ill)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	70	0	0	3	0	-245	-107	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains

User Note: Complete the Yellow shaded cells as appropriate. The value entered in the Crop Year(s) will be transferred to all other worksheets to be printed. Important: Click on the Create/Update Summary Button to populate the NMP Summary. Each time App 4 input is updated be sure to click on the Create/Update Summary Button to transfer the most recent changes to the NMP Summary.

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

CAU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
H9-10	9.3	Sorghum-Sudangrass	Fall Applied Cattle Manure	Summer	Summer: Incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	3	-44	38	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply up to 35 lbs/A nitrogen, as supplemental fertilizer, to sorghum
H11+12	1.9	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	8 tons/A	5	11	5	45	0	0	0	-70	-51	Maintain 35' of permanent vegetation separating the cropland area from the surface water. No well setbacks exist for this field. Apply 5 gal/A 9-18-9 starter fertilizer + up to 45 lbs/A nitrogen as supplemental fertilizer
H13b/16+19	9.2	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	85	0	0	5	-128	-116	Maintain 35' of permanent vegetation separating the cropland area from the surface water. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + up to 85 lbs/A nitrogen as supplemental fertilizer to corn
H17&18	5	Oats	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	-117	-31	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply up to 30 lbs/A nitrogen, as supplemental fertilizer, to oat grain
H17&18	5	Sorghum-Sudangrass					0	0	0	65	0	0	2	-117	89	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply up to 65 lbs/A nitrogen, as supplemental fertilizer, to sorghum
NH2-10	17.1	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	tons/A	5	11	5	65	0	0	5	79	125	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-19 starter fertilizer + up to 65 lbs/A nitrogen as supplemental fertilizer
NH11+12	2.8	Soybeans				15	0	0	0	0	0	0	0	50	80	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
NH13+14	7.7	Soybeans				15	0	0	0	0	0	0	0	50	80	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
T2064 - 2	5.26	Established Alfalfa					0	0	0	180	0	0	0	0	80	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 300 lbs/A of 0 - 0 - 60 to established alfalfa.
T289 - 1	6.35	Established Alfalfa					130	180	180	0	0	0	0	0	110	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 0 - 130 - 180 lbs/A of total plant food to established alfalfa.
T289 - 2	2.04	Established Alfalfa					130	180	180	0	0	0	0	0	110	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 0 - 130 - 180 lbs/A of total plant food to established alfalfa.
T289 - 3	7.47	Established Alfalfa with Manure	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	120	0	0	0	13	-1	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 200 lbs/A of 0 - 0 - 60 to established alfalfa.

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

CHMUField ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lbs/A)			Supplemental Fertilizer (lbs/A)			Nutrient Balance (lbs/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
H3	4	Established Alfalfa					0	0	0	0	0	180	0	0	80	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 150 lbs/A potassium in the form of commercial fertilizer
H4	3.2	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-97	-1	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen, in the form of commercial fertilizer, to small grain silage
H4	3.2	Soybeans					5	11	5	0	0	0	0	-78	74	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
H5 + H6 + H7	17.5	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-37	49	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen, in the form of commercial fertilizer, to small grain silage
H5 + H6 + H7	17.5	Soybeans with Manure	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	0	0	0	0	-64	28	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans
H8	2	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization. Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-77	29	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grain silage
H8	2	Coat for Grain (No- ill)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	100	0	0	0	-88	-66	No surface water or well setbacks exist for this field. Apply 5 gal/A 9-18-9 starter fertilizer + up to 100 lbs/A nitrogen as supplemental fertilizer
H8+10	9.3	Oats	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	-37	-1	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply up to 30 lbs/A nitrogen, as supplemental fertilizer to oat grain

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit, Negative numbers = nutrient excess

Version 5.1 - Jan 2016

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

CMAU/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starter/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ²			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
F12	2.8	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization, Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-117	-1	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F12	2.8	Sorghum-Sudangrass					0	0	0	65	0	0	2	-117	149	No surface water or well setbacks exist for this field. Apply 65 lbs/A nitrogen as supplemental fertilizer to sorghum
F13	2.6	Soybeans					0	0	0	0	0	0	0	0	90	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for soybeans
F14A	3.2	Corn for Grain (No-till)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	35	0	0	6	-68	-76	No surface water or well setbacks exist for this field. Apply 5 gal/A 9-18-9 starter fertilizer + up to 35 lbs nitrogen as supplemental fertilizer to corn
F14B + F21 + Gabby	7.9	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization, Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-77	19	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F14B + F21 + Gabby	7.9	Corn for Grain (No-till)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	20	0	0	3	-145	-57	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 9-18-9 starter fertilizer + up to 20 lbs nitrogen as supplemental fertilizer to corn
F15 + F17	5.6	Soybeans					0	0	0	0	0	0	0	50	110	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for soybeans
F16 + F18 + F19 + F20	8.2	Established Acre					0	0	0	0	0	0	0	80	90	No surface water or well setbacks exist for this field. Apply 160 lbs/A potassium in the form of commercial fertilizer
Pasture	6.3	Established Pasture (without legume)	Proposed HUA Cows - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	0	0	0	0			No mechanical applications of manure will occur within this pasture. Beef Cow & calf pairs will access this pasture April through November, as conditions are fit. No additional fertilizer is recommended for this pasture. Paddocks must have 3" of desirable vegetation at all times to meet minimum pasture requirements.
Pasture	6.3	Established Pasture (without legume)	Proposed HUA Calves - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	80	0	0	4	-88	-121	No mechanical applications of manure will occur within this pasture. Beef Cow & calf pairs will access this pasture April through November, as conditions are fit. No additional fertilizer is recommended for this pasture. Paddocks must have 3" of desirable vegetation at all times to meet minimum pasture requirements.
Pasture Paddocks	8.3	Established Pasture (without legume)	Proposed HUA Cows - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	0	0	0	1	-851	-186	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grain silage
Pasture Paddocks	8.3	Established Pasture (without legume)	Proposed HUA Calves - Uncollected	Grazing	Grazing anytime with nutrient uptake during growing season	See Notes	0	0	0	0	0	0	0	-97	-1	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grain silage
H1+2	3.4	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall: Early Spring Utilization, Incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	-97	-1	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grain silage
H1+2	3.4	Corn for Grain (No-till)	Spring Applied Cattle Manure	Spring	Spring: Incorporated after 7 days or none	15 tons/A	5	11	5	20	0	0	3	-195	-117	No surface water or well setbacks exist for this field. Apply 5 gal/A 9-18-9 starter fertilizer + up to 20 lbs/A nitrogen as supplemental fertilizer

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess



NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *MLL*

Nutrient Management Plan Summary

Crop Year(s) 2018

Total acres reported in NMP Summary: 174.3
Whole Farm Note: If manure runs out for any field, consult Appendix 4 of the plan for that field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Operation Acres: 204.7 **Total Acres Available For Nutrient Application Under Operator's Control:** Owned: 122.4 Rented: 82.3

Animal Equivalent Units: 153.17 **Animal Equivalent Units Per Acre:** 0.37

CMAA/Field ID	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure Rate ¹	Starting/Other Fertilizer (lb/a)			Supplemental Fertilizer (lb/a)			Nutrient Balance (lb/a) ²			Notes		
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O			
F1+3+5+7	7.8	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall; Early Spring Utilization, incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	0	0	-117	-1	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F1+3+5+7	7.8	Sorghum-Sudangrass	Spring Applied Cattle Manure	Spring	Spring; incorporated after 7 days or none	15 tons/A	0	0	0	35	0	0	0	0	3	-234	-22	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 35 lbs/A nitrogen as supplemental fertilizer to sorghum
F2+4	3	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall; Early Spring Utilization, incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	0	0	-117	-1	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F2+4	3	Small Grain Silage	Fall Applied Cattle Manure	Early Fall	Early Fall; Early Spring Utilization, incorporated after 7 days or none	15 tons/A	0	0	0	50	0	0	0	0	3	-245	-107	No surface water or well setbacks exist for this field. Apply 50 lbs/A nitrogen as supplemental fertilizer to small grains
F2+4	3	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring; incorporated after 7 days or none	15 tons/A	5	11	5	20	0	0	0	0	0	0	0	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 100 lbs/A potashum in the form of commercial fertilizer
F6	2.4	Established Alfalfa					0	0	0	0	0	0	180	0	0	0	80	No surface water or well setbacks exist for this field. Apply 30 lbs/A nitrogen as supplemental fertilizer to oat grain
F7A	2.2	Oats	Spring Applied Cattle Manure	Spring	Spring; incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	0	0	-117	-21	No surface water or well setbacks exist for this field. Apply 30 lbs/A nitrogen as supplemental fertilizer to oat grain
F7A	2.2	Small Grain Silage					0	0	0	35	0	0	0	0	2	-117	149	No surface water or well setbacks exist for this field. Apply 35 lbs/A nitrogen as supplemental fertilizer to oat forage
F9+9	4.4	Oats	Spring Applied Cattle Manure	Spring	Spring; incorporated after 7 days or none	15 tons/A	0	0	0	30	0	0	0	0	0	-117	-21	No surface water or well setbacks exist for this field. Apply 30 lbs/A nitrogen as supplemental fertilizer to oat forage
F9+9	4.4	Small Grain Silage					0	0	0	35	0	0	0	0	2	-117	149	No surface water setbacks exist for this field. Apply 35 lbs/A potashum in the form of commercial fertilizer
F10+11	3.4	Established Alfalfa					0	0	0	0	0	0	180	0	0	0	80	No surface water setbacks exist for this field. Apply 180 lbs/A potashum in the form of commercial fertilizer

User Note: Complete the Yellow shaded cells as appropriate. The value entered in the Crop Year(s) will be transferred to all other worksheets to be printed. **Important:** Click on the **Create/Update Summary Button** to populate the NMP Summary. Each time App 4 input is updated be sure to click on the **Create/Update Summary Button** to transfer the most recent changes to the NMP Summary.

¹ See rate calibration table (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit, Negative numbers = nutrient excess

Version 5.1 - Jan 2016

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

Cultural ID	Acres	Crop	Business Group	Application Season	Application Management	Planned Means	Start/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ¹			Notes
							N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
NH2-10	17.1	Soybeans with Maize					0	11	0	0	0	120	89	135	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans.	
NH11-12	2.6	Corn for Grain (No-til)	Spring Maize	Spring	Spring: Incorporated after 7 days or more	15 lb/acre/A	0	0	0	46	0	0	-57	-111	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 8-18-0 starter fertilizer + top to 45 lb/A nitrogen as supplemental fertilizer to corn.	
NH13-14	7.7	Corn for Grain (No-til)	Spring Maize	Spring	Spring: Incorporated after 7 days or more	15 lb/acre/A	0	0	0	46	0	0	-57	-111	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 5 gal/A 8-18-0 starter fertilizer + top to 45 lb/A nitrogen as supplemental fertilizer to corn.	
T2884-2	0.26	Established Maize with Maize									0	180	215	0	80	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 300 lb/A of 0-0-50
T289-1	6.35	Established Maize with Maize									130	180	215	0	110	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 0 - 150 - 180 lb/A of total plant food to established field.
T289-2	2	Established Maize with Maize									130	168	215	0	110	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 0 - 150 - 180 lb/A of total plant food to established field.
T289-3	7.4	Established Maize with Maize									130	180	215	0	110	No surface water restrictions exist for this field. Do not apply manure within 100' of a well. Apply 0 - 150 - 180 lb/A of total plant food to established field.

¹ See web calculator below (Nutrient Management Plan Summary Notes).
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

[Signature]

CLAIM/Field ID	Acres	Crop	Measure Group	Application Season	Application	Application	Planned Nitrogen Rate ¹	Standard/Other Fertilizer (lb/A)			Supplemental Fertilizer (lb/A)			Nutrient Balance (lb/A) ²			Notes
								N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	N	P ₂ O ₅	K ₂ O	
3172318	5	Soybeans	FBI Applied with Insecticide	Leaf Fall	Leaf Fall	Leaf Fall	45 lb/acre	0	0	0	0	0	0	-17	-91	No surface water collection credit for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans.	

¹ See rate calibration table (Nutrient Management Plan Summary Attach)
² Positive numbers = nutrient deficit. Negative numbers = nutrient excess

Version 5.1 - Jan 2016

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

CULTURE ID	Acres	Crop	Mature Growth	Application	Application	Standard/Other		Supplemental		Nutrient Balance		Notes			
						Fertilizer (lb/A)	P2O5	K2O	Fertilizer (lb/A)	P2O5	K2O		(lb/A)²	K2O	
F14B + F21 + Galley	7.9	Spring-Seedlings	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	0	0	0	0	3	-84	28	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 35 bush nitrogen as supplemental fertilizer to undergrasses	
F16 + F17	5.6	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	6	11	5	80	0	1	-89	-78	No surface water or well setbacks exist for this field. Apply 5 gals 5-16-9 starter fertilizer + up to 80 lbs nitrogen as supplemental fertilizer to corn
F16 + F18 + F19 + F20	8.2	Established Pasture (No-til)	Fall Applied Cattle Manure	Late Fall	Late Fall for most summer use by corn or annuals-No cover or cover	15 lb/acre	0	0	0	0	0	0	-57	59	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for alfalfa
Pasture	6.3	Established Pasture (No-til)	Proposed H2A Com-Untreated	Grazing	Grazing system with nutrient uptake	15 lb/acre	0	0	0	0	0	0	0	0	No mechanical applications of manure will occur within this pasture. Best Cow & calf pens will access this pasture April through November, as conditions are fit. This pasture is P limited, due to proximity to surface water, drainage conditions and soil test P. Limit animal access to this pasture. Apply up to 80 lbs nitrogen as supplemental fertilizer
Pasture	6.3	Established Pasture (No-til)	Proposed H2A Com-Untreated	Grazing	Grazing system with nutrient uptake	15 lb/acre	0	0	0	0	0	0	0	0	No mechanical applications of manure will occur within this pasture. Best Cow & calf pens will access this pasture April through November, as conditions are fit. No additional fertilizer is recommended for this paddock. Paddock must have 2" of desirable vegetation at all times to meet minimum pasture requirements.
Pasture	6.3	Established Pasture (No-til)	Proposed H2A Com-Untreated	Grazing	Grazing system with nutrient uptake	15 lb/acre	0	0	0	0	0	0	0	0	No surface water or well setbacks exist for this field. Apply 50 bush nitrogen as supplemental fertilizer to undergrasses
Pasture	6.3	Established Pasture (No-til)	Proposed H2A Com-Untreated	Grazing	Grazing system with nutrient uptake	15 lb/acre	0	0	0	0	0	0	0	0	No surface water or well setbacks exist for this field. Apply 50 bush nitrogen as supplemental fertilizer to undergrasses
Pasture	6.3	Established Pasture (No-til)	Proposed H2A Com-Untreated	Grazing	Grazing system with nutrient uptake	15 lb/acre	0	0	0	0	0	0	0	0	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for alfalfa
H11+2	3.4	Spring-Seedlings	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	0	0	0	35	0	0	-184	-42	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for alfalfa
H3	4	Established Pasture (No-til)	Fall Applied Cattle Manure	Late Fall	Late Fall for most summer use by corn or annuals-No cover or cover	15 lb/acre	0	0	0	0	0	0	-17	89	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 5 gals 5-16-9 starter fertilizer + up to 80 bush nitrogen as supplemental fertilizer
H4	3.2	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	5	11	5	90	0	1	-88	-116	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. Apply 5 gals 5-16-9 starter fertilizer + up to 80 bush nitrogen as supplemental fertilizer
H5 + H8 + H7	17.5	Corn for Grain (No-til)	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	5	11	5	90	0	1	-28	-88	No surface water or well setbacks exist for this field. Apply 50 bush nitrogen as supplemental fertilizer to undergrasses
H8	2	Spring-Seedlings	Spring Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	0	0	0	80	0	0	-7	39	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean
H9+10	8.3	Spring-Seedlings	Fall Applied Cattle Manure	Late Fall	Late Fall for most summer use by corn or annuals-No cover or cover	15 lb/acre	0	0	0	0	0	0	-87	-41	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean
H11+12	1.9	Spring-Seedlings	Fall Applied Cattle Manure	Early Fall	Early Fall for most summer use by corn or annuals-No cover or cover	15 lb/acre	0	0	0	80	0	0	-59	84	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean
H11+12	1.9	Spring-Seedlings	Fall Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	0	0	0	90	0	0	-176	43	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean
H13+16+19	9.2	Spring-Seedlings	Fall Applied Cattle Manure	Early Fall	Early Fall for most summer use by corn or annuals-No cover or cover	15 lb/acre	0	0	0	80	0	0	-58	84	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean
H13+16+19	9.2	Spring-Seedlings	Fall Applied Cattle Manure	Spring	Spring incorporated after 7 days or more	15 lb/acre	5	11	5	95	0	0	-187	-32	No surface water setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybean

1. See rate calibration table (Nutrient Management Plan Summary Table).
 2. Positive numbers = nutrient deficit. Negative numbers = nutrient excess.



Nutrient Management Plan Summary

Crop Year(s) 2017

Total acres reported in NMP Summary: 1222
 Whole Farm Note: If manure was not applied, consult Appendix 4 of the plan for field. The fertilizer required on any part of the field that does not receive manure can be determined from the 'Net Nutrients Required' for that field.

Operation Acres: 2047

Total Acres Available For Nutrient Application Under Operator's Control: 1224

Residue: 53

Animal Equivalents Units: 15317

Animal Equivalents Units Per Acre: 0.87

User Note: Complete the Yellow shaded cells as appropriate. The values entered in this Crop Year(s) will be transferred to all other worksheets to be printed. Important: Click on the Draft/Update Summary Button to populate the NMP Summary. Each time App 4 Input is updated be sure to click on the Draft/Update Summary Button to transfer the most recent changes to the NMP Summary.

Crop/Field to	Acres	Crop	Manure Group	Application Season	Application Management	Planned Manure (lb/acre)	Standardized Fertilizer (lb/A)		Supplemental Fertilizer (lb/A)		Nutrient Balance (lb/A)		Notes			
							N	P ₂ O ₅	N	P ₂ O ₅	N	P ₂ O ₅		K ₂ O		
F1306-7	2.8	Corn for Grain (No-89)	Spring Cattle Manure	Spring	Spring: Incorporated after 7 days or more	15 lb/acre	0	11	5	30	0	0	1	-120	-106	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. Apply 5 galls 5-15-9 starter fertilizer + 30 lbs nitrogen as supplemental fertilizer.
F2-4	3	Soybeans with Manure	Fall Applied Cattle Manure	Late Fall	Late Fall: For corn summer corn by corn or soybean-Green manure cover crop	15 lb/acre	0	0	0	0	0	0	0	-117	-81	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for soybeans.
F8	2.4	Established Pasture with Manure	Fall Applied Cattle Manure	Late Fall	Late Fall: For corn summer corn by corn or soybean-No cover crop	15 lb/acre	0	0	0	0	0	0	0	-117	89	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. No additional fertilizer is recommended for alfalfa.
F7A	2.2	Small Grain Strips	Fall Applied Cattle Manure	Early Fall	Early Fall: Strip Strip incorporated after 7 days or more	15 lb/acre	0	0	0	0	0	0	0	-117	-1	No surface water or well setbacks exist for this field. Apply 50 lbs nitrogen as supplemental fertilizer to small grains.
F7A	2.2	Corn for Grain (No-89)	Spring Cattle Manure	Spring	Spring: Incorporated after 7 days or more	15 lb/acre	5	11	5	70	0	0	3	-245	-107	No surface water or well setbacks exist for this field. Apply 5 galls 5-15-9 starter fertilizer + 70 lbs nitrogen as supplemental fertilizer to corn.
F6+9	4.4	Small Grain Strips	Fall Applied Cattle Manure	Early Fall	Early Fall: Strip Strip incorporated after 7 days or more	15 lb/acre	0	0	0	30	0	0	0	-117	-1	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for alfalfa.
F3+9	4.4	Corn for Grain (No-89)	Spring Cattle Manure	Spring	Spring: Incorporated after 7 days or more	15 lb/acre	5	11	5	70	0	0	3	-245	-107	No surface water or well setbacks exist for this field. Apply 5 galls 5-15-9 starter fertilizer + 70 lbs nitrogen as supplemental fertilizer to corn.
F10+11	3.4	Established Pasture with Manure	Fall Applied Cattle Manure	Late Fall	Late Fall: For corn summer corn by corn or soybean-No cover crop	15 lb/acre	0	0	0	0	0	0	0	-117	89	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for alfalfa.
F72	2.8	Soybeans with Manure	Fall Applied Cattle Manure	Late Fall	Late Fall: For corn summer corn by corn or soybean-Green manure cover crop	15 lb/acre	0	0	0	0	0	0	0	-117	-81	No surface water or well setbacks exist for this field. Apply 50 lbs nitrogen as supplemental fertilizer to small grains.
F13	2.8	Small Grain Strips	Fall Applied Cattle Manure	Early Fall	Early Fall: Strip Strip incorporated after 7 days or more	15 lb/acre	0	0	0	30	0	0	0	-117	-1	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for alfalfa.
F13	2.8	Corn for Grain (No-89)	Spring Cattle Manure	Spring	Spring: Incorporated after 7 days or more	15 lb/acre	5	11	5	70	0	0	3	-245	-107	No surface water or well setbacks exist for this field. Apply 5 galls 5-15-9 starter fertilizer + 70 lbs nitrogen as supplemental fertilizer to corn.
F14	3.2	Soybeans with Manure	Fall Applied Cattle Manure	Late Fall	Late Fall: For corn summer corn by corn or soybean-Green manure cover crop	15 lb/acre	0	0	0	0	0	0	0	-87	-81	No surface water or well setbacks exist for this field. No additional fertilizer is recommended for alfalfa.
F18+19 + Other	7.8	Small Grain Strips	Fall Applied Cattle Manure	Early Fall	Early Fall: Strip Strip incorporated after 7 days or more	15 lb/acre	0	0	0	30	0	0	0	-77	19	No surface water or well setbacks exist for this field. Do not apply manure within 100' of a well. Apply 50 lbs nitrogen as supplemental fertilizer to small grains.

* See rate calibration table (Nutrient Management Plan Summary Note).
 † Positive numbers = nutrient deficit. Negative numbers = nutrient excess.



Table of Contents

Nutrient Management Plan Summary (Excel)

Nutrient Management Plan Summary Notes (Excel)

Manure Spreader Calibration Notes (Excel)

Additional Nutrient Management Plan Requirements (Word)

Operator Management Map (Mapping Program)

Record Keeping Checklist & Guidance (Word)

Appendix 1: Nutrient Management Plan Agreement & Responsibilities (Word)

Appendix 2: Operation Information (Word)

Appendix 3: Manure Group Information (Excel)

Appendix 4: Crop & Manure Management Information (Excel)

Appendix 5: Phosphorus Index (Excel)

Appendix 6: Manure Management (Word)

Appendix 7: Stormwater Control (Word)

Appendix 8: Importer/Broker Agreements & Nutrient Balance Sheets (Word & Excel)

Appendix 9: Operation Maps (Mapping Program)

Topographic Map

Soils Map

Appendix 10: Supporting Information & Documentation (Excel)
(List below the required documents included in the plan.)

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *mt*

NRCS Nutrient Management (590) Plan
Act 38-equivalent (content & format)
Implementation Requirements
for Comprehensive Nutrient Management Plan (CNMP)

For Crop Year(s)
2017, 2018, 2019

Prepared For
Operator's Name, Mailing Address, Telephone Number(s)

Justin Cunter
351 Cunter Lane
Lehighton PA 18235
570.401.6106

Operator's Location Address (if different than above)

Prepared By
Technical Service Provider's Name, Address, Phone Number(s)

Eric Rosenbaum
TSP - 03 - 2743
1024 NMC
Rosetree Consulting
20 Glenbrook Drive Shillington PA 19607
484.788.7263 / EricRosenbaum@RosetreeConsulting.com
Technical Service Provider's TechReg ID Number

Date of Plan Submission
10/1/16

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *tru*

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *W*

Rosetree Consulting, LLC
20 Glenbrook Drive
Shillington, PA 19607
(484) 788.7263

Rosetree Consulting

Agricultural - Environmental

Eric W. Rosenbaum

Prepared by:

JUSTIN CUNFER

File Folder Created For:

NRCS 590 Nutrient Management Plan

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *tr*

Part 4. CNMP Format – Nutrient Management Plan

RUSLE2 Management Description Record

File: managements\GMZ\c.Other Local Mgt Records\2 yr corn soybean

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover mat add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc, lb/ac
4/15/1	Sprayer, kill crop						
4/15/1	Manure spreader, solid and semi-solid			Manure, semi-solid	3000	19	
5/4/1	Planter, double disk opr w/fluted coulters with starter fertilizer	Corn, grain	160				
6/15/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/1	Fert applic. side-dress, liquid						
10/25/1	Harvest, killing crop 30pct standing stubble				6100	90	2600
10/31/1	Shred residue, 6 inch stubble						
4/15/2	Sprayer, kill crop						
5/1/2	Fert applic. surface broadcast						
5/21/2	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	50.0				
6/17/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
7/1/2	Sprayer, fungicide and insecticide tank mix						
10/14/2	Harvest, killing crop 20pct standing stubble				1400	55	340

Long-term natural rough: 6.0 mm
 Normally used as a rotation?: Yes
 Duration: 2 yr

Info:

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *AW*

10/29/4	Rake or windrower											
10/31/4	Bale corn stover											

Long-term natural rough.: 6.0 mm

Normally used as a rotation?: Yes

Duration: 4 yr

Info:

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *tw*

4/1/3	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	6.00						
6/1/3	Harvest, silage				44	2.6	46		
6/4/3	Manure spreader, solid and semi-solid				3000	19			
6/4/3	Sprayer, kill crop								
6/6/3	Planter, double disk opnr w/fluted coulter	Sorghum, sudangrass, 7in rows, seeding to 1st cut	5.00						
7/20/3	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00		98	5.3			
7/22/3	Fert applic. surface broadcast								
8/22/3	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00		92	5.0			
8/24/3	Fert applic. surface broadcast								
10/13/3	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	4.00		98	5.3			
10/14/3	Kill crop				67	3.7	29		
10/15/3	Manure spreader, solid and semi-solid				3000	19			
10/16/3	Sprayer, kill crop								
10/17/3	Drill or airseeder, double disk, w/ fluted coulters	Rye, cereal silage	15.0						
5/20/4	Harvest, silage				410	21	430		
5/23/4	Manure spreader, solid and semi-solid				3000	19			
5/23/4	Sprayer, kill crop								
5/25/4	Planter, double disk opnr w/fluted coulter with starter fertilizer	Corn, grain	160						
6/15/4	Sprayer, post emergence					14			
6/20/4	Fert applic. side-dress, liquid								
10/25/4	Harvest, killing crop 30pct standing stubble				6100	90	2600		
10/27/4	Shred residue, 6 inch stubble								

DIP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

RUSLE2 Management Description Record

File: managements\CMZ 65\c.Other Local Mgt Records\Justin Cunfer H4-8, H9-10, H11-18, H19

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover mat add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
5/1/1	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19	
5/5/1	Sprayer, kill crop						
5/15/1	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, silage	23.0				
6/15/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/1	Fert applic. side-dress, liquid						
9/15/1	Harvest, silage				760	25	800
9/16/1	Sprayer, kill crop						
9/20/1	Manure spreader, solid and semi-solid			Manure, mod. bedding	1500	10	
9/21/1	Drill or airseeder, double disk, w/fluted coulters	Rye, cereal silage	15.0				
5/15/2	Harvest, silage				430	22	450
5/20/2	Sprayer, kill crop						
5/22/2	Drill or airseeder, double disk, w/fluted coulters	Soybean, mw 7in rows	50.0				
7/22/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
9/1/2	Sprayer, fungicide and insecticide tank mix						
11/10/2	Harvest, killing crop 20pct standing stubble				1400	55	340
3/27/3	Sprayer, kill crop						
3/27/3	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *MC*

8/15/13	Fert applic. surface broadcast							
9/23/13	Harvest, hay, legume	Alfalfa, yr3 senes to yr4 regrowth	2.00		250		13	
5/25/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		440		22	
7/5/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250		13	
8/14/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250		13	
8/15/14	Fert applic. surface broadcast							
9/23/14	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	2.00		250		13	
5/25/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		440		22	
7/5/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250		13	
8/14/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250		13	
9/23/15	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	2.00		250		13	

Long-term natural rough.: 6.0 mm
Normally used as a rotation?: Yes
Duration: 15 yr


Info:

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

5/23/10	Manure spreader, solid and semi-solid				3000	19	
5/24/10	Sprayer, kill crop						
5/25/10	Planter, double disk opnr w/fluted coulter with starter fertilizer	Corn, grain	160				
6/15/10	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/10	Fert applic. side-dress, liquid						
10/25/10	Harvest, killing crop 30pct standing stubble				6100	90	2600
10/27/10	Shred residue, 6 inch stubble						
10/29/10	Rake or windrower						
10/31/10	Bale corn stover						
4/20/11	Sprayer, kill crop						
4/21/11	Drill or air seeder single disk openers 7-10 in spac.	Alfalfa/oat(silage), spring seed	1.75				
6/25/11	Harvest, silage				69	4.0	73
6/26/11	Regrow	Alfalfa/oat, silage harv to yr2 1st cut	1.00				
8/18/11	Harvest, hay, legume	Alfalfa, spring seed regrowth after cutting	1.00		260	13	
9/27/11	Harvest, hay, legume	Alfalfa, spring seed senes to yr2 regrowth	2.00		250	13	
5/25/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		420	21	
7/5/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		250	13	
8/14/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		250	13	
8/15/12	Fert applic. surface broadcast						
9/23/12	Harvest, hay, legume	Alfalfa, yr2 senes to yr3 regrowth	2.00		250	13	
5/25/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		440	22	
7/5/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		250	13	
8/14/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		250	13	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *AW*

11/1/7	Shred residue, 6 inch stubble										
5/15/8	Sprayer, kill crop										
5/20/8	Fert applic. surface broadcast										
5/21/8	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	50.0								
6/17/8	Sprayer, post emergence						weeds; 0-3 mo	250	14		
7/1/8	Sprayer, fungicide and insecticide tank mix										
9/14/8	Harvest, killing crop 20pct standing stubble							2300	74		580
3/27/9	Sprayer, kill crop										
3/28/9	Manure spreader, solid and semi-solid						Manure, mod. bedding	3000	19		
4/1/9	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	6.00								
6/1/9	Harvest, silage							44	2.6		46
6/4/9	Manure spreader, solid and semi-solid						Manure, semi-solid	3000	19		
6/5/9	Sprayer, kill crop										
6/6/9	Planter, double disk opnr w/fluted coulters	Sorghum, sudangrass, 7in rows, seeding to 1st cut	5.00								
7/20/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00					98	5.3		
7/22/9	Fert applic. surface broadcast										
8/22/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00					92	5.0		
8/24/9	Fert applic. surface broadcast										
10/13/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	4.00					98	5.3		
10/14/9	Kill crop							67	3.7		29
10/15/9	Manure spreader, solid and semi-solid						Manure, mod. bedding	3000	19		
10/16/9	Sprayer, kill crop										
10/17/9	Drill or airseeder, double disk, w/ fluted coulters	Rye, cereal silage	15.0								
5/20/10	Harvest, silage							410	21		430

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY 

5/24/5	Sprayer, kill crop							
5/25/5	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160					
6/15/5	Sprayer, post emergence			weeds; 0-3 mo	250		14	
6/20/5	Fert applic. side-dress, liquid							
10/25/5	Harvest, killing crop 30pct standing stubble				6100		90	2600
10/27/5	Shred residue, 6 inch stubble							
10/29/5	Rake or windrower							
10/31/5	Bale corn stover							
4/10/6	Sprayer, kill crop							
4/15/6	Fert applic. surface broadcast							
4/16/6	Drill or airseeder, double disk, w/fluted coulters	Oats, spring	80.0					
7/25/6	Harvest, killing crop 20pct standing stubble				4000		91	1000
8/1/6	Disk, tandem heavy primary op.							
8/2/6	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	15.0					
11/1/6	Harvest, small grain haylage 5 in ht				65		3.8	200
4/1/7	Fert applic. surface broadcast							
4/15/7	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000		19	
4/25/7	Sprayer, kill crop							
5/1/7	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160					
6/15/7	Sprayer, post emergence			weeds; 0-3 mo	250		14	
6/20/7	Fert applic. side-dress, liquid							
10/25/7	Harvest, killing crop 30pct standing stubble				6100		90	2600

C
F
T

NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *me*

5/20/3	Fert applic. surface broadcast							
5/21/3	Drill or air seeder single disk openers 7-10 in spac.	Soybean, m/w 7in rows	50.0					
6/17/3	Sprayer, post emergence				weeds: 0-3 mo	250	14	
7/1/3	Sprayer, fungicide and insecticide tank mix							
9/14/3	Harvest, killing crop 20pct standing stubble					2300	74	580
3/27/4	Sprayer, kill crop							
3/28/4	Manure spreader, solid and semi-solid				Manure, mod. bedding	3000	19	
4/1/4	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	6.00					
6/1/4	Harvest, silage					44	2.6	46
6/4/4	Manure spreader, solid and semi-solid				Manure, semi-solid	3000	19	
6/5/4	Sprayer, kill crop							
6/6/4	Planter, double disk opnr w/fluted coulters	Sorghum, sudangrass, 7in rows, seeding to 1st cut	5.00					
7/20/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00			98	5.3	
7/22/4	Fert applic. surface broadcast							
8/22/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00			92	5.0	
8/24/4	Fert applic. surface broadcast							
10/13/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	4.00			98	5.3	
10/14/4	Kill crop					67	3.7	29
10/15/4	Manure spreader, solid and semi-solid				Manure, mod. bedding	3000	19	
10/16/4	Sprayer, kill crop							
10/17/4	Drill or air seeder, double disk w/fluted coulters	Rye, cereal silage	15.0					
5/20/5	Harvest, silage					410	21	430
5/23/5	Manure spreader, solid and semi-solid				Manure, mod. bedding	3000	19	

DFP

NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *me*



RUSLE2 Management Description Record

File: managements\CMZ 65\c.Other Local Mgt Records\Justin Cumer H1-3, Gabby, Frank 1-7, Frank 8-13, Frank 14-20

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover matl add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
4/10/1	Sprayer, kill crop				46	2.5	870
4/15/1	Fert applic. surface broadcast						
4/16/1	Drill or air-seeder double disk, w/ fluted coulters	Oats, spring	80.0				
7/25/1	Harvest, killing crop 20pct standing stubble				4000	91	1000
8/1/1	Disk, tandem heavy primary op.						
8/2/1	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	15.0				
11/1/1	Harvest, small grain haylage 5 in ht				65	3.8	200
4/1/2	Fert applic. surface broadcast						
4/15/2	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19	
4/29/2	Sprayer, kill crop						
5/1/2	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160				
6/15/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/2	Fert applic. side-dress, liquid						
10/25/2	Harvest, killing crop 30pct standing stubble				6100	90	2600
11/1/2	Shred residue, 6 inch stubble						
5/15/3	Sprayer, kill crop						

DEF
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *AW*

5/25/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		440	22	
7/5/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		250	13	
8/14/13	Harvest, hay, legume	Alfalfa, yr3 regrowth after cutting	1.00		250	13	
8/15/13	Fert applic. surface broadcast						
9/23/13	Harvest, hay, legume	Alfalfa, yr3 senes to yr4 regrowth	2.00		250	13	
5/25/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		440	22	
7/5/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250	13	
8/14/14	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250	13	
8/15/14	Fert applic. surface broadcast						
9/23/14	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	2.00		250	13	
5/25/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		440	22	
7/5/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250	13	
8/14/15	Harvest, hay, legume	Alfalfa, yr4 regrowth after cutting	1.00		250	13	
9/23/15	Harvest, hay, legume	Alfalfa, yr4 senes to yr5 regrowth	2.00		250	13	

Long-term natural rough.: 6.0 mm
Normally used as a rotation?: Yes
Duration: 15 yr

Info:

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

10/17/9	Drill or airseeder, double disk, w/ fluted coulters	Rye, cereal silage	15.0					
5/20/10	Harvest, silage				410	21	430	
5/23/10	Manure spreader, solid and semi-solid				3000	19		
5/24/10	Sprayer, kill crop							
5/25/10	Planter, double disk opr w/fluted coulter with starter fertilizer	Corn, grain	160					
6/15/10	Sprayer, post emergence							
6/20/10	Fert applic. side-dress, liquid							
10/1/10	Harvest, killing crop 30pct standing stubble				6100	90	2600	
10/5/10	Shred residue, 6 inch stubble							
10/7/10	Rake or windrower							
10/8/10	Bale corn stover							
10/15/10	Drill or air seeder single disk openers 7-10 in spac.	Rye, winter cover	2240					
4/20/11	Sprayer, kill crop				36	2.1	690	
4/21/11	Drill or air seeder single disk openers 7-10 in spac.	Alfalfa/oat(silage), spring seed	1.75					
6/25/11	Harvest, silage	Alfalfa/oat, silage harv to yr2 1st cut	1.00		69	4.0	73	
6/26/11	Regrow							
8/18/11	Harvest, hay, legume	Alfalfa, spring seed regrowth after cutting	1.00		260	13		
9/27/11	Harvest, hay, legume	Alfalfa, spring seed senes to Y2 regrowth	2.00		250	13		
5/25/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		420	21		
7/5/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		250	13		
8/14/12	Harvest, hay, legume	Alfalfa, yr2 regrowth after cutting	1.00		250	13		
8/15/12	Fert applic. surface broadcast							
9/23/12	Harvest, hay, legume	Alfalfa, yr2 senes to yr3 regrowth	2.00		250	13		

DEP
 NORTHWEST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*

10/15/7	Drill or air seeder single disk openers 7-10 in spac.	Rye, winter cover	2240					
5/15/8	Sprayer, kill crop							
5/20/8	Fert applic. surface broadcast							
5/21/8	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	50.0					
6/17/8	Sprayer, post emergence							
7/1/8	Sprayer, fungicide and insecticide tank mix							
9/14/8	Harvest, killing crop 20pct standing stubble							
10/10/8	Drill or air seeder single disk openers 7-10 in spac.	Rye, winter cover	2240					
3/27/9	Sprayer, kill crop							
3/28/9	Manure spreader, solid and semi-solid							
4/1/9	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	6.00					
6/1/9	Harvest, silage							
6/4/9	Manure spreader, solid and semi-solid							
6/5/9	Sprayer, kill crop							
6/6/9	Planter, double disk opnr w/fluted coulter	Sorghum, sudangrass, 7in rows, seeding to 1st cut	5.00					
7/20/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00					
7/22/9	Fert applic. surface broadcast							
8/22/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00					
8/24/9	Fert applic. surface broadcast							
10/13/9	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	4.00					
10/14/9	Kill crop							
10/15/9	Manure spreader, solid and semi-solid							
10/16/9	Sprayer, kill crop							

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*

5/25/5	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160						
6/15/5	Sprayer, post emergence			weeds: 0-3 mo	250	14			
6/20/5	Fert applic. side-dress, liquid								
10/1/5	Harvest, killing crop 30pct standing stubble				6100	90		2600	
10/5/5	Shred residue, 6 inch stubble								
10/7/5	Rake or windrower								
10/9/5	Bale corn stover								
10/15/5	Drill or air seeder single disk openers 7-10 in spac.	Rye, winter cover	2240						
4/10/6	Sprayer, kill crop				29	1.7		560	
4/15/6	Fert applic. surface broadcast								
4/16/6	Drill or airseeder, double disk, w/fluted coulters	Oats, spring	80.0						
7/25/6	Harvest, killing crop 20pct standing stubble				4000	91		1000	
8/1/6	Disk, tandem heavy primary op.								
8/2/6	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	15.0						
11/1/6	Harvest, small grain haylage 5 in ht				65	3.8		200	
4/1/7	Fert applic. surface broadcast								
4/15/7	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19			
4/25/7	Sprayer, kill crop								
5/1/7	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160						
6/15/7	Sprayer, post emergence			weeds: 0-3 mo	250	14			
6/20/7	Fert applic. side-dress, liquid								
10/1/7	Harvest, killing crop 30pct standing stubble				6100	90		2600	

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *me*

5/21/3	Drill or air seeder single disk openers 7-10 in spac.	Soybean, mw 7in rows	50.0					
6/17/3	Sprayer, post emergence			weeds: 0-3 mo	250	14		
7/1/3	Sprayer, fungicide and insecticide tank mix							
9/14/3	Harvest, killing crop 20pct standing stubble				2300	74	580	
10/1/3	Sprayer, kill crop							
10/1/3	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19		
10/10/3	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	15.0					
6/1/4	Harvest, silage				430	22	450	
6/4/4	Manure spreader, solid and semi-solid			Manure, semi-solid	3000	19		
6/5/4	Sprayer, kill crop							
6/6/4	Planter, double disk opnr w/fluted coulters	Sorghum, sudangrass, 7in rows, seeding to 1st cut	5.00					
7/20/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00		98	5.3		
7/22/4	Fert applic. surface broadcast							
8/22/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	5.00		92	5.0		
8/24/4	Fert applic. surface broadcast							
10/13/4	Harvest, forage sorghum	Sorghum, sudangrass, 7in rows regrowth after cut	4.00		98	5.3		
10/14/4	Kill crop				67	3.7	29	
10/15/4	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19		
10/16/4	Sprayer, kill crop							
10/17/4	Drill or air seeder, double disk, w/ fluted coulters	Rye, cereal silage	15.0					
5/20/5	Harvest, silage				410	21	430	
5/23/5	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19		
5/24/5	Sprayer, kill crop							

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *MC*

RUSLE2 Management Description Record

File: managements\CMZ 65\c-Other Local Mgt Records\Justin Cunfer Frank 1-7 intensive cover

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover matl add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
4/10/1	Sprayer, kill crop				46	2.5	870
4/15/1	Fert applic. surface broadcast						
4/16/1	Drill or airseeder, double disk, w/ fluted coulters	Oats, spring	80.0				
7/25/1	Harvest, killing crop 20pct standing stubble				4000	91	1000
8/1/1	Disk, tandem heavy primary op.						
8/2/1	Drill or air seeder single disk openers 7-10 in spac.	Rye, cereal silage	15.0				
11/1/1	Harvest, hay, grass	Ryegrass, annual, regrowth	1.50		260	13	
4/1/2	Fert applic. surface broadcast						
4/15/2	Manure spreader, solid and semi-solid			Manure, mod. bedding	3000	19	
4/29/2	Sprayer, kill crop				90	4.9	1700
5/1/2	Planter, double disk opnr w/fluted coulters with starter fertilizer	Corn, grain	160				
6/15/2	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/2	Fert applic. side-dress, liquid						
10/1/2	Harvest, killing crop 30pct standing stubble				6100	90	2600
10/10/2	Drill or air seeder single disk openers 7-10 in spac.	Rye, winter cover	2240				
5/15/3	Sprayer, kill crop				89	5.2	1700
5/20/3	Fert applic. surface broadcast						



RUSLE2 Management Description Record

File: managements\CMZ 65\c:Other Local Mgt Records\1 year soybeans

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover mat add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
5/1/1	Sprayer, kill crop						
5/10/1	Fert applic. surface broadcast						
5/21/1	Drill or air seeder single disk openers 7-10 in spac.	Soybean, row 7in	50.0				
6/17/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
7/1/1	Sprayer, fungicide and insecticide tank mix						
9/14/1	Harvest, killing crop 20pct standing stubble				2300	74	580

Long-term natural rough.: 6.0 mm
 Normally used as a rotation?: Yes
 Duration: 1 yr

Info:

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*



RUSLE2 Management Description Record

File: managements\CMZ 65\c.Other Local Mgt Records\1 year corn grain

Date	Operation	Vegetation	Yield (harv. units)	Type of cover material	Cover matl add/remove, lb/ac	Cover from addition, %	Standing res. added by op. desc., lb/ac
4/25/1	Sprayer, kill crop						
4/30/1	Planter, double disk opnr w/fluted coultter with starter fertilizer	Corn, grain	160				
6/15/1	Sprayer, post emergence			weeds; 0-3 mo	250	14	
6/20/1	Fert applic. side-dress, liquid						
10/15/1	Harvest, killing crop 30pct standing stubble				6100	90	2600

Long-term natural rough.: 6.0 mm
 Normally used as a rotation?: Yes
 Duration: 1 yr

Info:

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY

Results:

Field name	Description	Cons. plan, soil loss, t/ac/yr	Sed. delivery, t/ac/yr	Soil conditioning index (SCI)	STIR value
H1-3	Benchmark	1.2	1.2	0.53	11
H4-8	Benchmark	1.3	1.3	0.45	9.7
H9-10	Benchmark	0.84	0.84	0.48	9.7
H11-18	Benchmark	1.3	1.3	0.45	9.7
H19	Benchmark	2.3	2.3	0.37	9.7
F1-7	Benchmark	1.9	1.9	0.47	11
F1-7	Intensive Cover Crop	1.2	1.2	0.57	11
F8-13	Benchmark	2.8	2.8	0.40	11
F8-13	Intensive Cover Crop	1.8	1.8	0.52	11
F14-20	Benchmark	1.6	1.6	0.50	11
NH 2-10, 11+12, 13+14	Benchmark	0.66	0.66	0.65	3.7
Pasture	Benchmark	0.20	0.20	0.98	4.1
Paddocks	Benchmark	0.15	0.15	0.99	4.1

The SCI is the Soil Conditioning Index rating. If the calculated index is a negative value, soil organic matter levels are predicted to decline under that production system. If the index is a positive value, soil organic matter levels are predicted to increase under that system.

The STIR value is the Soil Tillage Intensity Rating. It utilizes the speed, depth, surface disturbance percent and tillage type parameters to calculate a tillage intensity rating for the system used in growing a crop or a rotation. STIR ratings tend to show the differences in the degree of soil disturbance between systems. The kind, severity and number of ground disturbing passes are evaluated for the entire cropping rotation as shown in the management description.

Rusle Program Version: Aug 18 2014
 Rusle Science Version: 7/29/2014
 Data Base: MOSES 05012014



Rusle Program Version:
Rusle Science Version:
Data Base:

RUSLE2 Erosion Calculation Record

File: plans\Justin Cunfer
Access Group: R2_NRCS_Fld_Office

Inputs:
Owner name: Justin Cunfer
Location: USA\Pennsylvania\Carbon County
Info:

Field name	Soil	Slope T Value	Slope length, ft	Slope steepness, %
H1-3	soils\Carbon County, Pennsylvania\Hab2 Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded\Hartleton Channery silt loam 100%	3.0	200	6.00
H4-8	soils\Carbon County, Pennsylvania\Cma Comly silt loam, 0 to 3 percent slopes\Comly silt loam 90%	4.0	200	3.00
H9-10	soils\Carbon County, Pennsylvania\Ada Allenwood gravelly loam and silt loam, 0 to 3 percent slopes\Allenwood Gravelly loam 90%	5.0	200	3.00
H11-18	soils\Carbon County, Pennsylvania\Cma Comly silt loam, 0 to 3 percent slopes\Comly silt loam 90%	4.0	200	3.00
H19	soils\Carbon County, Pennsylvania\ShB2 Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded\Shelmadine Silt loam 100%	4.0	200	3.00
F1-7	soils\Carbon County, Pennsylvania\Hab2 Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded\Hartleton Channery silt loam 100%	3.0	200	8.00
F8-13	soils\Carbon County, Pennsylvania\Moc2 Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded\Montevallo Channery silt loam 99%	2.0	150	10.0
F14-20	soils\Carbon County, Pennsylvania\Hab2 Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded\Hartleton Channery silt loam 100%	3.0	200	8.00
NH 2-10, 11+12, 13+14	soils\Carbon County, Pennsylvania\KcC3 Klinesville channery silt loam, 8 to 15 percent slopes, severely eroded\Klinesville Channery silt loam frost churned 95%	3.0	200	12.0
Pasture	soils\Carbon County, Pennsylvania\ShB2 Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded\Shelmadine Silt loam 100%	4.0	200	6.00
Paddocks	soils\Carbon County, Pennsylvania\Hab2 Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded\Hartleton Channery silt loam 100%	3.0	200	6.00

DTP

NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY



































DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *mt*

5. RUSLE II Soil Loss Information

Map Unit Legend

Carbon County, Pennsylvania (PA025)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CMB2	Comly silt loam, 3 to 8 percent slopes, moderately eroded	11.5	39.0%
HAB2	Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded	5.8	19.6%
SHB2	Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded	12.2	41.5%
Totals for Area of Interest		29.4	100.0%

MAP LEGEND

	Spoil Area
	Stony Spot
	Very Stony Spot
	Wet Spot
	Other
	Special Line Features
	Water Features
	Streams and Canals
	Transportation
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
	Aerial Photography
	Background
	Background
	Aerial Photography
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background
	Background

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County, Pennsylvania
Survey Area Data: Version 14, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

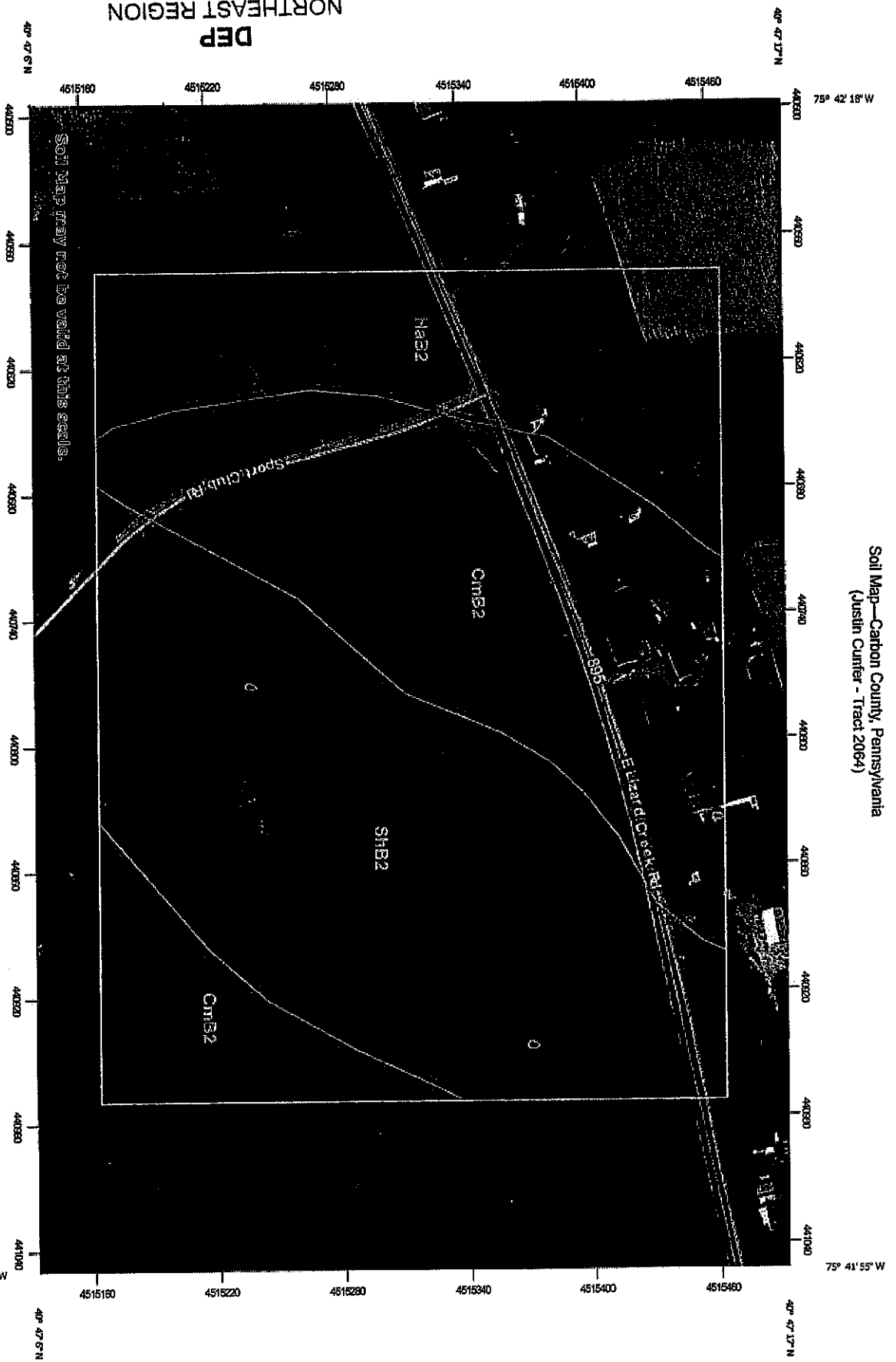
Date(s) aerial images were photographed: Mar 20, 2011—May 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ML*

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *for*

Soil Map—Carbon County, Pennsylvania
(Justin Currier - Tract 2064)



Map Scale: 1:2,540 if printed on A landscape (11" x 8.5") sheet.
0 35 70 140 Feet
0 100 200 400 600 210 Meters
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

USDA
Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

Map Unit Legend

Carbon County, Pennsylvania (PA025)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ada	Allenwood gravelly loam and silt loam, 0 to 3 percent slopes	0.9	1.9%
HaB2	Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded	6.3	13.1%
HaC3	Hartleton channery silt loam, 8 to 15 percent slopes, severely eroded	1.8	3.8%
Hy	Holly silt loam	2.2	4.7%
Mn	Mine dumps, coal	0.3	0.6%
MoB2	Montevallo channery silt loam, 3 to 8 percent slopes, moderately eroded	7.6	15.9%
MoC2	Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded	13.4	28.0%
MoD2	Montevallo channery silt loam, 15 to 25 percent slopes, moderately eroded	8.1	17.1%
MoE2	Montevallo channery silt loam, 25 to 35 percent slopes, moderately eroded	7.1	14.9%
Totals for Area of Interest		47.7	100.0%

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County, Pennsylvania
Survey Area Data: Version 14, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

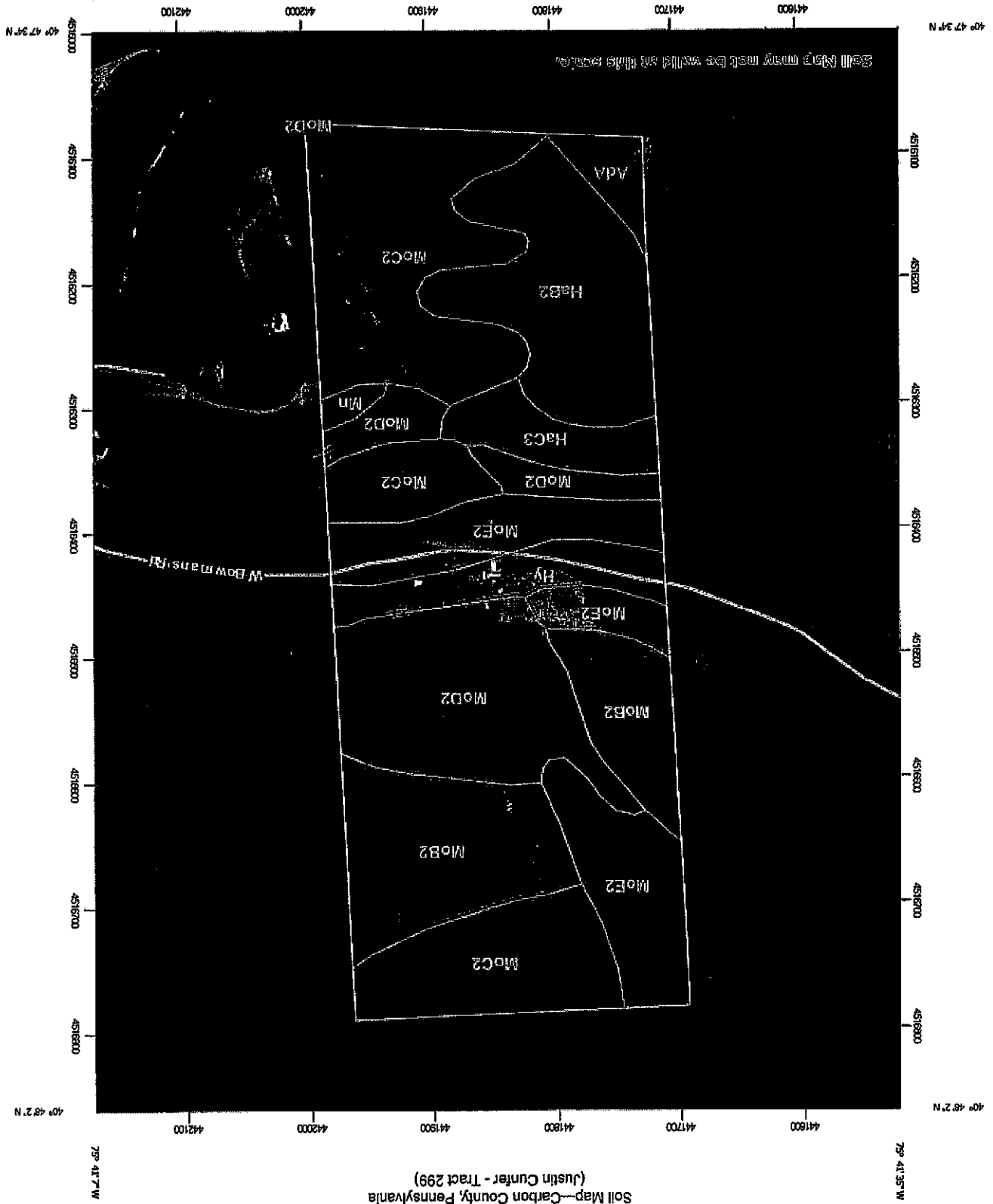
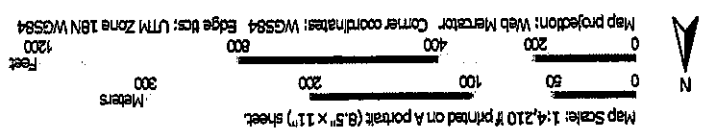
Date(s) aerial images were photographed: Mar 20, 2011—May 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *JK*

DFP

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY



Map Unit Legend

Carbon County, Pennsylvania (PA025)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HaC2	Hartton channery silt loam, 8 to 15 percent slopes, moderately eroded	0.2	0.3%
HaD3	Hartton channery silt loam, 15 to 25 percent slopes, severely eroded	0.0	0.0%
Hy	Holly silt loam	3.3	5.2%
KcB2	Klinesville channery silt loam, 3 to 8 percent slopes, moderately eroded	13.7	21.8%
KcC2	Klinesville channery silt loam, 8 to 15 percent slopes, moderately eroded	1.2	1.9%
KcC3	Klinesville channery silt loam, 8 to 15 percent slopes, severely eroded	24.3	38.8%
KcD2	Klinesville channery silt loam, 15 to 25 percent slopes, moderately eroded	2.5	4.0%
KcD3	Klinesville channery silt loam, 15 to 25 percent slopes, severely eroded	3.8	6.1%
KcE3	Klinesville channery silt loam, 25 to 35 percent slopes, severely eroded	0.9	1.4%
MdB	Middlebury silt loam, 3 to 8 percent slopes	5.4	8.6%
MoB2	Montevallo channery silt loam, 3 to 8 percent slopes, moderately eroded	1.2	1.9%
MoC2	Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded	3.9	6.2%
MoD2	Montevallo channery silt loam, 15 to 25 percent slopes, moderately eroded	0.8	1.2%
W	Water	0.7	1.2%
WaA	Watson silt loam, 0 to 3 percent slopes	0.8	1.3%
Totals for Area of Interest		62.7	100.0%

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closed Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

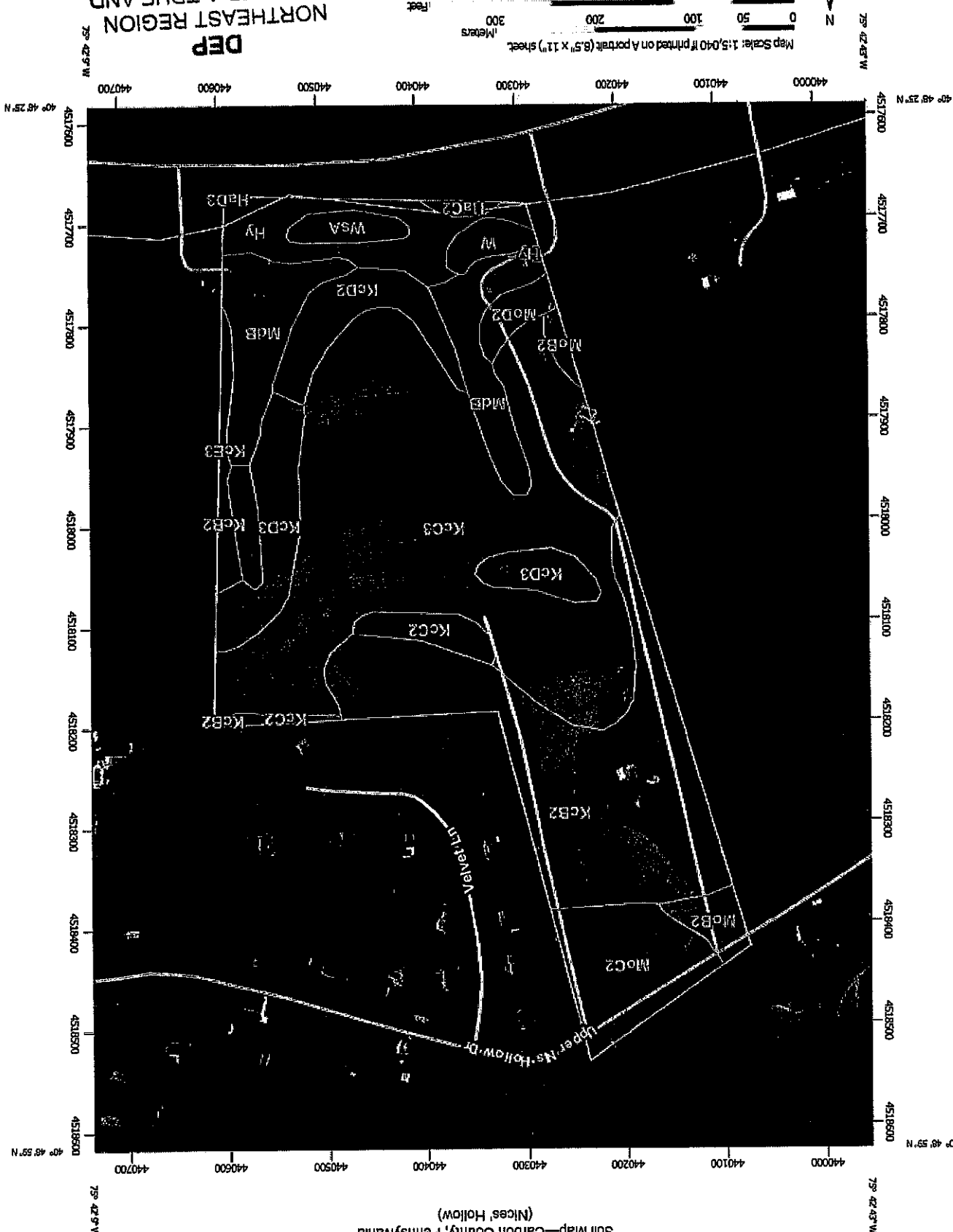
Soil Survey Area: Carbon County, Pennsylvania
Survey Area Data: Version 11, Sep 15, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 20, 2011—May 10, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*



Soil Map—Carbon County, Pennsylvania
(Nices' Hollow)

USDA Natural Resources Conservation Service
 Web Soil Survey National Cooperative Soil Survey
 10/10/2015 Page 1 of 3
 CERTIFIED A TRUE AND CORRECT COPY
 DEP
 NORTH EAST REGION
 Map Scale: 1:5,040 if printed on A portrait (8.5" x 11") sheet.
 Map projection: Web Mercator Corner coordinates: WGS84 Edge files: UTM Zone 18N WGS84
 0 50 100 200 300 Meters
 0 200 400 800 1200 Feet
 75° 42' 43" W
 40° 48' 25" N













































CORRECT COPY
CERTIFIED A TRUE AND
CORRECT COPY

Map Unit Legend

Carbon County, Pennsylvania (PA025)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ada	Allenwood gravelly loam and silt loam, 0 to 3 percent slopes	10.7	4.9%
ADB2	Allenwood gravelly loam and silt loam, 3 to 8 percent slopes, moderately eroded	1.2	0.5%
CMA	Comly silt loam, 0 to 3 percent slopes	31.3	14.3%
CMB2	Comly silt loam, 3 to 8 percent slopes, moderately eroded	4.5	2.1%
HA	Hartleton channery silt loam, 0 to 3 percent slopes	9.8	4.5%
HAB2	Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded	83.6	38.3%
HAC2	Hartleton channery silt loam, 8 to 15 percent slopes, moderately eroded	10.1	4.6%
HAC3	Hartleton channery silt loam, 8 to 15 percent slopes, severely eroded	5.1	2.3%
HAD2	Hartleton channery silt loam, 15 to 25 percent slopes, moderately eroded	0.8	0.4%
HY	Holly silt loam	6.3	2.9%
MOB2	Montevallo channery silt loam, 3 to 8 percent slopes, moderately eroded	5.0	2.3%
MOC2	Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded	21.2	9.7%
MOD2	Montevallo channery silt loam, 15 to 25 percent slopes, moderately eroded	5.4	2.5%
MOE2	Montevallo channery silt loam, 25 to 35 percent slopes, moderately eroded	8.3	3.8%
SHA	Shelmadine silt loam, 0 to 3 percent slopes	0.4	0.2%
SHB2	Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded	14.6	6.7%
VEF	Very stony land, 25 to 120 percent slopes	0.0	0.0%
W	Water	0.1	0.0%
Totals for Area of Interest		218.6	100.0%

MAP LEGEND

	Area of Interest (AOI)		Spill Area
	Area of Interest (AOI)		Stony Spot
	Soils		Very Stony Spot
	Soil Map Unit Polygons		Wet Spot
	Soil Map Unit Lines		Other
	Soil Map Unit Points		Special Line Features
	Special Point Features		Water Features
	Blowout		Streams and Canals
	Borrow Pit		Transportation
	Clay Spot		Rails
	Closest Depression		Interstate Highways
	Gravel Pit		US Routes
	Gravelly Spot		Major Roads
	Landfill		Local Roads
	Lava Flow		Background
	Marsh or swamp		Aerial Photography
	Mine or Quarry		
	Miscellaneous Water		
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Scodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carbon County, Pennsylvania
Survey Area Data: Version 11, Sep 15, 2014

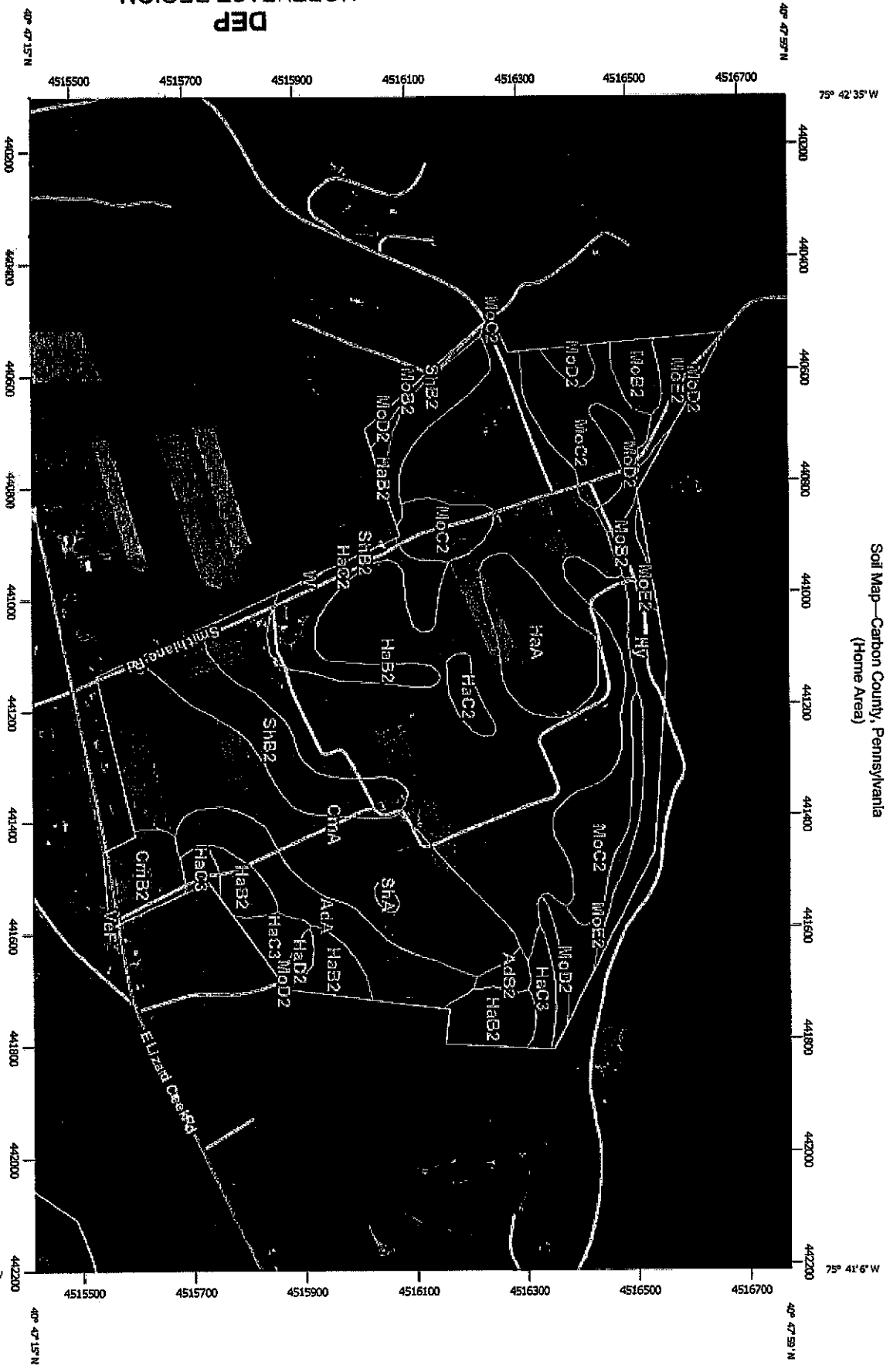
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 19, 2011—Jul 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

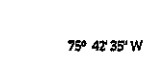
DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

Soil Map—Carbon County, Pennsylvania
(Home Area)



DEP
 NORTH-EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *mu*

Map Scale: 1:9,590 if printed on A landscape (11" x 8.5") sheet.
 Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84



USDA
 Natural Resources
 Conservation Service

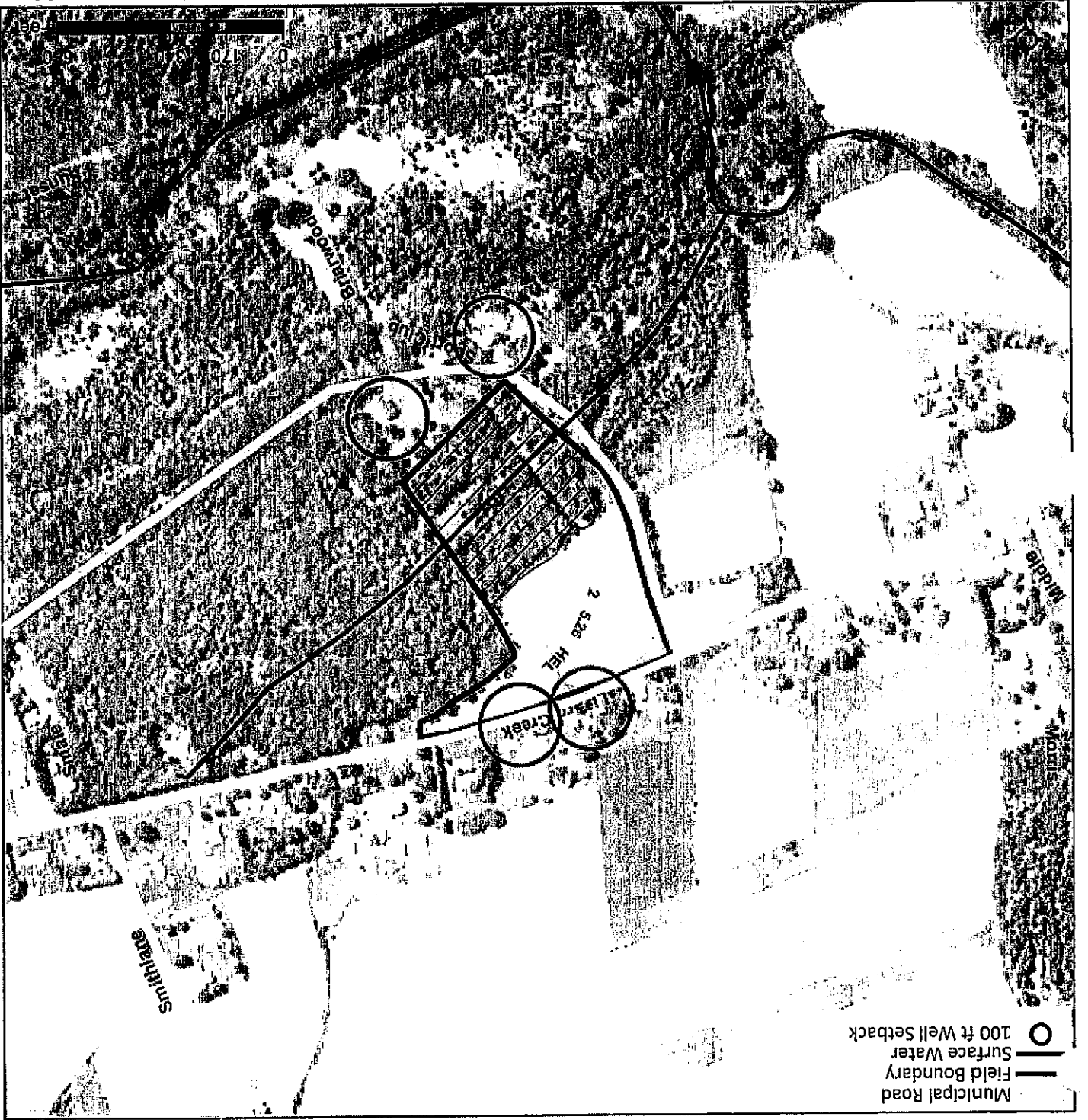
Web Soil Survey
 National Cooperative Soil Survey

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ms*

4. Soils Map(s) for the land treatment areas with the appropriate soil interpretations

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ms*

USDA United States Department of Agriculture
Justin Cunfer - Tract 299
 Carbon County, Pennsylvania



- Municipal Road
- Field Boundary
- Surface Water
- 100 ft Well Setback

Common Land Unit Tract Boundary

- Non-Cropland
- Cropland

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data as is and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-028 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

All fields are NI, unless otherwise noted.

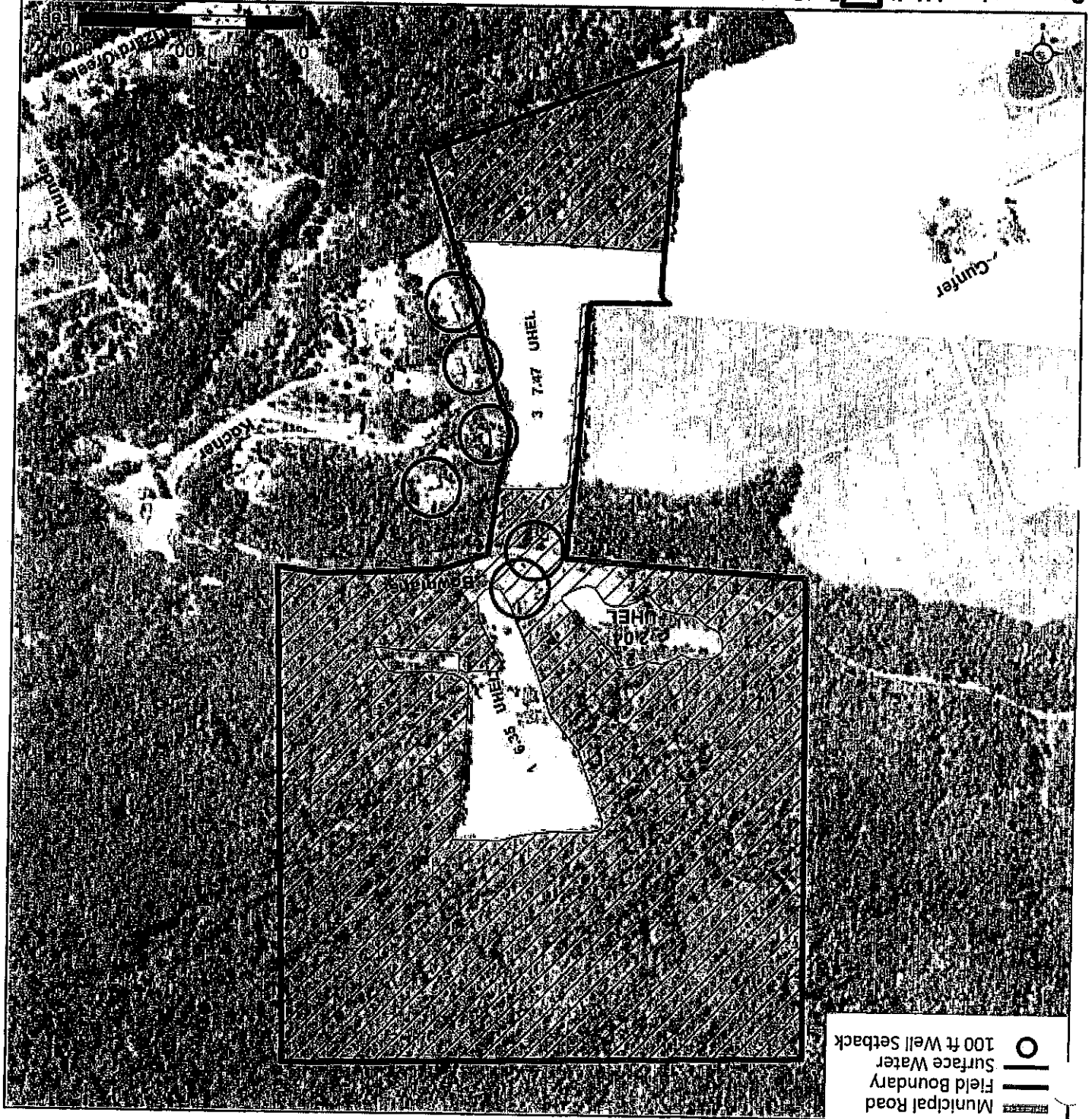
2017 Program Year
 Map Created April 26, 2017
 2015 NAIP Imagery

Operator Shares:
 Owner Shares:

Tract Cropland Total: 5.26 acres

Farm 1635
 Tract 2064

Justin Cunfer - Tract 299
Carbon County, Pennsylvania



- Municipal Road
- Field Boundary
- Surface Water
- 100 ft Well Setback

Common Land Unit Tract Boundary

- Non-Cropland
- Cropland

Wetland Determination Identifiers

- Restricted Use
- Limited Restrictions
- Exempt from Conservation
- Compliance Provisions

Operator Shares:

Farm 1504

2015 NAIP Imagery

Tract Cropland Total: 15.86 acres

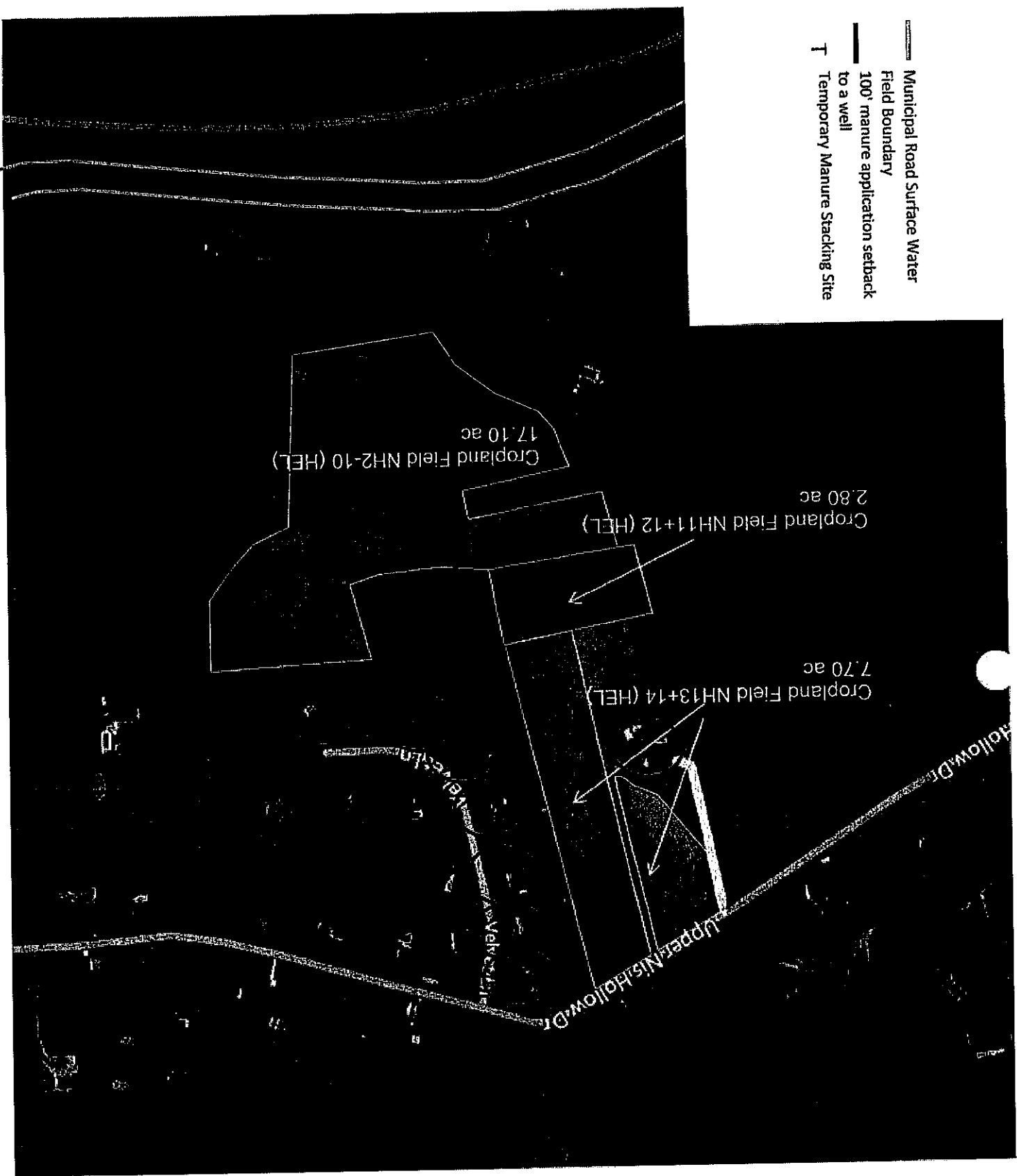
Tract 299

All fields are NI, unless otherwise noted.

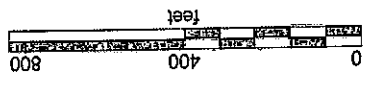
2017 Program Year
 Map Created April 26, 2017

United States Department of Agriculture (USDA) Farm Service Agency (FSA) maps are for FSA Program administration only. This map does not represent a legal survey or reflect actual ownership; rather it depicts the information provided directly from the producer and/or National Agricultural Imagery Program (NAIP) imagery. The producer accepts the data as is and assumes all risks associated with its use. USDA-FSA assumes no responsibility for actual or consequential damage incurred as a result of any user's reliance on this data outside FSA Programs. Wetland identifiers do not represent the size, shape, or specific determination of the area. Refer to your original determination (CPA-026 and attached maps) for exact boundaries and determinations or contact USDA Natural Resources Conservation Service (NRCS).

- Municipal Road Surface Water
- Field Boundary
- 100' manure application setback to a well
- T Temporary Manure Stacking Site













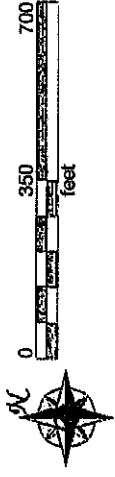
Nice's Hollow



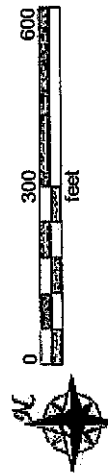
Hom arm

Establish a 35' vegetated buffer on either side of the field ditch. Manure may not be applied within 100' of the field ditch when water is flowing, unless a 35' vegetated buffer separates the cropland from the ditch. Manage the buffer as a hayfield, as outlined in the soil conservation plan.

-  Municipal Road
-  Surface Water
-  Field Boundary
-  100' manure application setback from well
-  35' grass buffer (no manure applications)
-  Access Road
-  Proposed Access Road
-  Existing Animal Housing
-  Proposed animal Housing
-  Proposed Building Decommission



Frank Place



- Municipal Road Surface Water
 - Field Boundary
 - 100' manure application setback to a well
- (addressed in conservation plan through 340, 362, 412)



DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

3. Plan map(s) for the land treatment areas showing existing and planned practices, as well as manure application setback areas.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ms*

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *mm*

590 Nutrient Management, continued

Additional Criteria for Late Fall & Winter Manure Applications:

Manure may not be mechanically applied in fall on a CMU having less than 25% plant cover or crop residue at the time of application, unless the CMU is planted to a cover crop in time to allow for appropriate growth (80% ground cover 4-6" of growth by December 1) to control runoff until the next growing season, or the manure is injected or mechanically incorporated within 5 days. Winter is December 15 to February 28, or anytime the ground is frozen at least 4 inches deep or is snow covered.

For winter application of manure, the following apply:

1. The application procedure shall be described in the plan
2. The plan must list the following:

- a. The CMUs where winter application is planned or restricted
- b. The application procedures that will be utilized at those CMUs.
- c. The field conditions that must exist for winter application.
3. Fields where manure will be applied in winter must have at least 25% residue, or an established cover crop.

Record Keeping Requirements:

- Soil analysis every 3 years for all acres receiving manure
- Manure analysis annually for all manure groups listed in the Act 38 Nutrient Management Plan
- Quantities, analyses and sources of nutrients applied,
- Dates and method(s) of nutrient applications,
- Lapsed time between manure incorporation, rainfall or irrigation event.
- Crops planted, planting and harvest dates, yields, and crop residues removed,
- Dates of plan review, name of reviewer, and recommended changes resulting from the review.

Records should be maintained for three years, or for a longer period if required by other Federal, state or local ordinances, or program or contract requirements.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H9-10				9.3 ac	10/2015
H11-18				13.3 ac	10/2015
H19				2.8 ac	10/2015
Frank 1-7				15.4 ac	10/2015
Frank 8-13				14.2 ac	10/2015
Frank 14-20				20.5 ac	10/2015
Gabby				4.4 ac	10/2015
NH2-10				17.1 ac	10/2015
NH11+12				2.8 ac	10/2015
NH13+14				7.7 ac	10/2015
T2064 - 2				5.26 ac	10/2015
T299 - 1 - 3				15.86 ac	10/2015
Total:				160.8 ac	

590 Nutrient Management, continued

Nutrients must be applied with the right placement, in the right amount, at the right time, and from the right source to minimize nutrient losses to surface and groundwater. The following nutrient use efficiency strategies or technologies must be considered:

- "Enhanced Efficiency (EE)" fertilizer products decrease losses to the environment as compared to a "reference soluble" product. EE products include:
 - "Slow Release" fertilizers with coatings or occlusions that slow nutrient release,
 - "Stabilized" fertilizers amended with an additive that reduces the rate of transformation of fertilizer compounds
- Cover crops
- Injection and low disturbance incorporation techniques
- Reduced rate and split application
- In-season soil and leaf analyses based decision
- In-season analysis, such as PSNT, Nitrogen prediction modeling, or Chlorophyll Meter Test, and late season Corn Stalk Nitrate Test to guide management.

Additional Criteria Applicable to Properly Utilize Manure or Organic By-Products as a Plant Nutrient Source

Coordinate crop production activities and nutrient use efficiency technologies that minimize excess mineralized plant-available nitrogen to minimize the potential for nitrogen losses due to denitrification, leaching, and volatilization.

Select best management techniques to plan nutrient rates, timing and method of nitrogen and phosphorus application to reduce nitrogen leaching risks and P-index ratings.

For fields where P-index evaluation results in a **LOW** or **MEDIUM** rating indicating low to medium potential for phosphorus loss, additional phosphorus can be applied at rates greater than crop requirement not to exceed the amount of nitrogen necessary to achieve realistic expected crop yields recommended by Penn State Extension. The chance for adverse impacts on surface waters exists. Assess current farm nutrient management and conservation practices that minimize the risk of future P loss to assure functionality. Maintenance of these practices is required to minimize the risk of future P loss impacts on surface waters.

590 Nutrient Management, continued

Additional Criteria to Minimize Agricultural Nonpoint Source Pollution of Surface and

Groundwater

Practices and management techniques included in the NMP to address quality criteria for water quality (sediment, nitrogen, phosphorus) and soil quantity (tolerable erosion) must be compatible and consistent with the operation's Soil Conservation Plan or Agricultural Erosion and Sedimentation Plan. Existing Critical Runoff Areas shall be identified during the planning process. These runoff pathways between field and water resources shall be treated, as needed, to control and trap sediment and nutrients through implementation of additional conservation practices.

Nutrient placement, timing, source, and rate shall be managed to avoid nutrient and sediment loading to stormwater runoff.

Nutrients shall be managed to minimize soil nitrate leaching losses to groundwater. The following leaching reduction strategies and technologies shall be considered in the planning process:

Corn fertilization considerations:

- Treat pre-plant and early post plant broadcast applied nitrogen fertilizer with a nitrification inhibitor (does not apply to in-row starter fertilizer)
- Split apply nitrogen fertilizer application applying majority of N as sidedress after corn has reached the four true-leaf stage
- Under normal conditions, apply no more than 50 lbs/acre actual N as starter fertilizer (in-row plus broadcast)
- When manure is applied between previous crop harvest and corn planting time, apply no more than 20 lbs/acre N as in-row starter and zero N broadcasted. Assess need for sidedress N based on in-season analysis
- Evaluate nitrogen management program performance using CSNT and adjust management according that data

Fall/winter considerations

- Do not fall incorporate sod/forage crops with tillage. Sod/forage crops may be terminated with herbicides when soil temperature at 4- inch depth is approaching 45°F
- Add winter crops and winter hardy cover crops to crop rotation whenever possible and especially when fall/winter manure application is planned
- Always plant a winter hardy cover crop as soon as possible after corn silage harvest to allow establishment and vigorous growth when fall manure application is planned
- Manure may be applied in fall where there is a growing crop (perennial crops, winter grain, hardy cover crops). Applications should generally not exceed the greater of 50 lbs/acre of first year available N or 50% of the expected N requirement of next year's crop
- For legume crops, limit annual manure application to no more than 150 lbs of available N/acre.

Implement a Manure Management Plan meeting state requirements and a Nutrient Management Plan meeting NRCS requirements on the entire operation, utilizing 4R Nutrient Stewardship practices, to manage the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments to minimize the impact of erosion, nitrogen, and phosphorus on water quality

The purpose of implementing this practice is to:

- Budget, supply, and conserve nutrients for plant production.
- Minimize agricultural nonpoint source pollution of surface and groundwater resources.
- Properly utilize manure or organic byproducts as a plant nutrient source.
- Protect air quality by reducing odors, nitrogen emissions (ammonia, oxides of nitrogen), and the formation of atmospheric particulates.
- Maintain or improve the physical, chemical, and biological condition of soil.

590 Nutrient Management
This practice has not been applied to the operation

Field	Pasture 1	Pasture Paddocks	Total:
Planned Amount			
Month			
Year			
Applied Amount	6.3 ac	8.3 ac	14.6 ac
Date	5/2000	5/2000	

Maintain rotational grazing in the Pasture and Pasture Paddocks. The purpose of implementing this practice is to maintain the desired species composition of pastures and maintain forage quality from grazed materials. Pasture Paddocks should be renovated as per the Forage & Biomass Planting Standard (512). See the Nutrient Management Plan (590) for recommended supplemental nutrient application rates & timing. The success of this practice is dependent on the management level of the operation.

Water shall be supplied to grazing cattle in all pastures by above ground hose & moveable watering tub. Supplemental hay & minerals will be available in ACA1 during the grazing season. Grazing frequency & intensity shall be adjusted to meet the objectives listed above (maintain sward & maximize yield/quality). Recovery periods will change based on time of year, temperatures and soil moisture. State regulations require a minimum of 3" of vegetation be maintained at all times. If minimum vegetation cannot be maintained, due to drought or other factors, confine animals in the proposed Heavy Use Area (561) until conditions allow pasture growth to commence.

528 Prescribed Grazing
This practice has been applied to the operation

Field	Planned Amount	Month	Year	Applied Amount	Date
Pasture Paddocks	8.3 ac	5	2020		
Total:	8.3 ac				

Do not allow cattle to graze newly established pastures until 12" of growth is attained. See 528 Prescribed Grazing jobsheet for further guidance on pasture management. Monitor fields for pest concerns and provide treatment when pest pressure exceed economic threshold. Evaluate stands annually to assist in rotational decisions and management input decisions.

- Cool season pasture renovation can occur either early spring or early fall. Seed either 10 lbs/A orchardgrass or 12 lbs/A entophyte free tall fescue + 2-3 lbs white clover. Apply 50 lbs/A nitrogen prior to planting. The following provides situational guidance for pasture renovation
 - Full Renovation -- Completely kill established vegetation by chemical means (herbicides). For best results apply herbicides (glyphosate) in early fall. Once vegetation is completely killed, new seed can be planted. Summer sacrifice lot (ACA 1) -- perform enough tillage to remediate any compacted soil layers prior to seeding. Seeding rates are provided in the 342 Critical Area Planting standard
 - Summer sacrifice lot (ACA 1) -- perform enough tillage to remediate any compacted soil layers prior to seeding. Seeding rates are provided in the 342 Critical Area Planting standard

Renovate Pasture Paddocks every 3-4 years using forage species that are best suitable for soil and animal needs. Select forage species based on the intended use, realistic expected yield, maturity stage, compatibility with other species and level of management the producer is willing to provide. Consider forage species that are most capable of meeting the desired level of nutrition (quantity and quality) for the kind and class of the livestock to be fed. Apply lime and fertilizer prior to seeding as per soil test recommendations.

512 Pasture and Hay Planting
This practice has not been applied to the operation

512 Forage & Biomass Planting

This practice has not been applied to the operation

Establish a hayland buffer along the field ditch (classified as surface water) dividing fields H11-18 & H19. The purpose of this practice is to improve soil and water quality. PA manure management regulations state manure may not be applied within 100' of surface water unless a 35' vegetated buffer is present. Additionally, the hayland buffer will further protect the surface water from normal farming practices.

Ground cover and root mass need to be sufficient to protect the soil from water erosion. When the stand is deemed not to be sufficient to serve as a buffer to trap overland flow of sediment & nutrients, renovate by killing the hayland buffer with glyphosate in May and no tilling sorghum/sudangrass once the grass is completely killed. After a September cutting of sorghum/sudangrass (multiple cuttings prior to September may be possible), no till rye into the standing crop as a cover crop. The Hayland Buffer should be reestablished the following spring.

Select forage species based on the intended use, realistic expected yield, maturity stage, compatibility with other species and level of management the producer is willing to provide. Consider forage species that are most capable of meeting the desired level of nutrition (quantity and quality) for the kind and class of the livestock to be fed.

- Establish a grass mix using 12 lbs/A orchardgrass in late April or early May. A legume (with the proper inoculant) may be included in the seeding mix. Inclusion of switchgrass at 10 lbs/A PLS (pure live seed) will increase the functionality of the practice as a nutrient trap. Control weeds prior to seeding by applying a "burndown" herbicide application of glyphosate. Plant seed ½" deep using a no till drill. A oat nurse crop may be included. All seed will be certified seed and will not contain any noxious or invasive species. See the Nutrient Management Plan (590) for nutrient recommendations.

Operations & Maintenance

Forage Harvest Management (511) standard narrative provides maintenance guidelines for established forages. Monitor fields for pest concerns and provide treatment when pest pressure exceed economic threshold. Soil test once every 3 years to monitor pH & nutrient levels and apply supplemental fertilizer as recommended by the soil test or Penn State ASSL recommendations. Evaluate stands annually to assist in rotational decisions and management input decisions.

Field	Planned Amount	Month	Year	Applied Amount	Date
Hayland Buffer	0.9 ac	5	2017		
T2064 - 2				5.26 ac	2000
T299 - 1 - 3				15.86 ac	2000
Total:	0.9 ac			21.12 ac	

511 Forage Harvest Management

This practice has been applied to the operation

Harvest forage in a timely manner by mechanical harvest. Apply lime and nutrients according to soil test recommendations and manage pests by spraying or mowing. Utilize proper timing of harvest to promote vigorous regrowth and optimize yield.

Purpose of this practice is to use forage plant biomass (orchardgrass) as a nutrient uptake tool in the Hayland Buffer. Employ a harvest regime that utilizes the maximum amount of available or targeted nutrients. Using this practice for this purpose may require more frequent harvests to increase uptake instead of managing for stand longevity. Renovate the stand following the 512 standard.

Mow grass mixed hay prior to grass seed head emergence so as to leave 3" of stubble present. Grass hay stores energy reserves in the bottom 3" of stem. Mowing closer to the soil surface will reduce the plants ability to regenerate, causing more weeds & longer harvest interval. Over time, repeated scalping of grass hay will reduce the longevity of the stand.

Maintain at least 6" of vegetation prior to winter kill to aid in the prevention of soil loss & nutrient capture.

OPERATION AND MAINTENANCE

- Before forage harvest, clear fields of debris that could damage machinery, or if ingested by livestock, lead to sickness (for example, hardware disease) or death.
- Monitor weather conditions and take action accordingly before and after cutting to optimize forage wilting or curing time to preserve feed quality and prevent forage swaths or windrows from smothering underlying plants.
- Inspect and repair harvesting equipment following manufacturer's preventative maintenance procedures. All shields shall be in place during machine operation to prevent injury or death. Shut off machinery before working on or unplugging moving parts.
- Select equipment sizes and capacities that will in a timely and economically feasible manner handle the acreage normally harvested.
- Operate all forage harvesting equipment at the optimum settings and speeds to minimize loss of leaves.

Field	Planned Amount	Month	Year	Applied Amount	Date
Hayland Buffer	0.9 ac	5	2017		
T2064 - 2				5.26 ac	2000
T299 - 1 - 3				15.86 ac	2000
Total:	0.9 ac			21.12 ac	

Field	Planned Amount	Month	Year	Applied Amount	Date
F1-7	400 ft	9	2020		
Total:	400 ft				

- Establish a maintenance program to maintain watershed capacity, vegetative cover, and outlet stability. Vegetation damaged by machinery, herbicides, or erosion must be repaired promptly.
 - Protect watershed from concentrated flow by using diversion of runoff or mechanical means of stabilization such as silt fences, mulching, hay bale barriers and etc. to stabilize grade during vegetation establishment.
 - Minimize damage to vegetation by excluding livestock whenever possible, especially during wet periods. Permit grazing in the watershed only when a controlled grazing system is being implemented.
 - Inspect grassed waterways regularly, especially following heavy rains. Fill, compact, and reseed damaged area immediately. Remove sediment deposits to maintain capacity of grassed waterway. Avoid use of herbicides that would be harmful to the vegetation in and adjacent to the waterway area. Avoid using waterways as turn-rows during tillage and cultivation operations.
 - Mow or periodically graze vegetation to maintain capacity and reduce sediment deposition. Mowing may be appropriate to enhance wildlife values, but must be conducted to avoid peak nesting seasons and reduced winter cover.
 - Apply supplemental nutrients as needed to maintain the desired species composition and stand density of the waterway.
 - Control noxious weeds.
 - Do not use as field road. Avoid crossing with heavy equipment when wet.
- Provide an operation and maintenance plan to review with the landowner. Include the following items and others as appropriate in the plan.
- OPERATION AND MAINTENANCE**

412 Grassed Waterway
This practice as not been applied to the operation

Install a constructed waterway in F1-7 to convey upslope surface water runoff to a stable outlet. The waterway shall be established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet.

Vegetative Establishment. Grassed waterways shall be vegetated according to NRCS Conservation Practice Standard Critical Area Planting (342)

382 Fence

OPERATION AND MAINTENANCE

Operation and Maintenance (O&M) includes the following: A schedule for regular inspections and maintenance as well as after storms and other disturbance events. Maintenance and repairs shall be performed in a timely manner to maintain the desired control.

Maintenance activities:

- Repair or replacement of loose or broken material, gates and other forms of ingress/egress
- Removal of trees/limbs
- Replacement of water gaps as necessary
- Repair of eroded areas as necessary
- Repair or replacement of markers or other safety and control features as required.
- Annual clearing of weeds and brush under and near the fence systems will prolong life expectancy.

Field	Planned Amount	Month	Year	Applied Amount	Date
Pasture				3400 ft	5/2000
Paddocks				2700 ft	5/2000
FS (575)				400 ft	5/2000
Total:				6500 ft	

382 Fence

This practice has been applied to the operation – Pasture & Paddocks, existing Animal Walkway

Maintain the 5-strand high tensile electric perimeter fencing surrounding the Pasture & Paddocks. The purpose of this practice is to control the movement of animals.

Maintain the 5-strand high tensile electric fencing associated with the existing Animal Walkway (575). The purpose of this practice is to control the movement of animals.

Associated practices include 528 Prescribed Grazing, 575 Animal Trails & Walkways (existing)

SAFETY

Safety is a concern when constructing electric fences. The following are safety guidelines to adhere to:

9. Do not erect wires or ground wires near overhead power lines, telephone wires, or radio antennas. It is illegal to cause interference.
10. Install energizers inside a building when possible. Energizers need not be attached to a power pole. All power supply lines should comply with local electrical codes.
11. All energizers must be connected to a separate grounding system. Never attach an energizer to other farm related grounding devices (e.g. electric panels, ground rods, lightning rods on buildings, houses, barns, etc).
12. Fence charger ground rods need to be at least 50 feet away from grounding rods that are not part of the fencing system.
13. Only one energizer should be installed onto a fence line.
14. Where there is public access to the fence, both interior and exterior fence, warning signs should be placed at a minimum of 300 feet apart.
15. Warn all children that electric fencing is being used and let neighbors know where and how to shut off the current.
16. Install lightning arrestors and chokes to protect fence.

Field	Planned Amount	Month	Year	Applied Amount	Date
F1-7	150 ft	9	2020		
Total:	150 ft				

Associated practices include 342 Critical Area Planting, 412 Grassed Waterway, install a diversion in field F1-7 to convey road runoff safely through the cropland unit.

362 Diversion
This practice has not been applied to the operation

Field	Planned Amount	Month	Year	Applied Amount	Date
F1-7	0.5 ac	9	2020		
Total:	0.5 ac				

Associated Practices include 362 Diversion, 412 Grassed Waterway, Seed a mixture of 25 lbs perennial ryegrass or tall fescue + 15 lbs Kentucky Bluegrass per acre.

Establish permanent vegetation within the proposed Grassed Waterway (412) and diversion (362). The waterway and diversion will need to be seeded and mulched as soon as possible to eliminate the potential for erosion in case a high intensity storm occurs prior to re-establishment of vegetation. Due to the considerable length of the water conveyance channels, a Rolled Erosion Control Blanket (R.E.C.B.) should be installed within channels to provide additional protection against potential erosion. All seeded areas should be properly mulched to conserve soil moisture, moderate soil temperature, suppress weed growth, minimize soil erosion and facilitate the establishment of vegetative cover.

342 Critical Area Planting
This practice has not been applied to the operation

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H9-10				9.3 ac	10/2015
H11-18				13.3 ac	10/2015
H19				2.8 ac	10/2015
Frank 1-7				15.4 ac	10/2015
Frank 8-13				14.2 ac	10/2015
Frank 14-20				20.5 ac	10/2015
Gabby				4.4 ac	10/2015
T2064 - 2				5.26 ac	10/2015
T299 - 1 - 3				15.86 ac	10/2015
Total:				133.2 ac	

345 Residue Management – Mulch Till

This practice has been applied to the operation

Managing the amount, orientation and distribution of crop and other plant residue on the soil surface year-round while limiting the soil-disturbing activities used to grow and harvest crops in systems where the field surface is tilled prior to planting. The purpose of this practice is to maintain sheet & rill erosion below T and to maintain/improve soil quality. Fall seeded forage oats may be established by broadcasting uncleaned bin-run seed and disked to incorporate seed. Uncleaned seed will not flow through the grain drill. Associated practices include 340 Cover Crop and 328 Conservation Crop Rotation.

This practice includes tillage methods commonly referred to as mulch tillage where a majority of the soil surface is disturbed by tillage operations such as vertical tillage, chiselling and disking and also includes tillage/planting systems with relatively minimal soil disturbance but which do not meet the criteria for Residue and Tillage Management (No-Till/Strip Till/Direct Seed (code 329).

Additional Criteria to Reduce Sheet/Rill Erosion: The amount and orientation for surface residue needed and the amount of soil disturbance allowed to reduce soil erosion to the planned soil loss objective, is listed below.

Additional Criteria to Improve Soil Organic Matter: Soil Conditioning Index within the RUSLE II tool shall result in a positive trend.

340 Cover Crop, continued

Current Cover Crop Establishment Practices:

- Establish cereal rye (for silage) at 3-4 bushels per acre in fall for spring harvest.
- Establish oats (for silage) at 3-4 bushels per acre for spring or fall harvest.

Cover Crop Considerations for intensive cover cropping in field Frank 7 & Frank 8-13:

- Include Annual Ryegrass (15 lbs/A) + Crimson Clover (15 lbs/A) with August oat plantings to provide fall forage, winter cover and a spring forage from overwintered ryegrass & clover.
- Establish a winter grain (cereal rye or wheat) at 2 bu/A for a unharvested cover crop.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H9-10				9.3 ac	10/2015
H11-18				13.3 ac	10/2015
H19				2.8 ac	10/2015
Frank 1-7	15.4 ac	5	2017		
Frank 8-13	14.2 ac	5	2017		
Frank 14-20				20.5 ac	10/2015
Gabby				4.4 ac	10/2015
H1-3				9.0 ac	10/2015
Total	29.6 ac			91.5 ac	

Cover crops will be established by early October using no till or minimum tillage techniques and attain 80% canopy before the expected period(s) of nutrient leaching (December 15th). Cover crops may be harvested for silage. Termination of the cover crop will occur using herbicides or winter kill. Ensure herbicides used with cover crops are compatible with the following crop.

Additional criteria to increase soil organic matter content: Cover crop species will be selected on the basis of producing high volumes of organic material and or root mass to maintain or improve soil organic matter. To maximize plant biomass production, plant as early as possible and terminate as late as feasible considering planting dates of subsequent crops and soil moisture management.

Additional criteria to reduce erosion: Time cover crop establishment so soil will be adequately protected during critical erosion periods.

The purpose of this practice is to provide forage for domestic livestock, reduce erosion & increase soil organic matter. Associated practices include 328 Conservation Crop Rotation, 329 Residue Management – No Till & 345 Residue Management – Mulch Till

Implement intensive cover cropping to address till erosion in this field. Continue establishment of fall planted winter grain forage cover crop after sorghum/sudangrass. Modify the summer forage cover crop planted after the harvest of oat grain by including annual ryegrass and crimson clover in the seed mix to provide soil cover after oats are harvested as forage. Establish a winter grain cover crop following corn grain and soybean harvest. The goal of implementing this practice in field F1-7 is to have growing vegetative surface cover over winter & early spring periods when surface runoff may be most problematic.

Frank 1-7, Frank 8-13:

Continue the practice of establishing a fall planted winter grain forage cover crop following sorghum/sudangrass and a summer planted forage cover crop following harvest of oat grain.

H1-3, H4-8, H9-10, H11-18, H19, Frank 14-20, Gabby:

*This practice has been applied to the operation – H1-3, H4-8, H9-10, H11-18, H19, Frank 8-13, Frank 14-20, Gabby
F1-7 – this practice, as described, has not been applied to the operation*

340 Cover Crop

330 Contour Farming, continued

Operations and Maintenance:

Perform all tillage and planting operations parallel to contour baselines or terraces, diversions, or contour buffer strip boundaries where these practices are used, provided the applicable row grade criteria are met.

Where terraces, diversions, or contour buffer strips are not present, maintain contour markers on grades that, when followed during establishment of each crop, will maintain crop rows at designed grades. Contour markers may be field boundaries, a crop row left untilled near or on an original contour baseline or other readily identifiable, continuous, lasting marker. All tillage and planting operations shall be parallel to the established marker. If a marker is lost, re-establish a contour baseline within the applicable criteria set forth by this standard prior to seeded preparation for the next crop.

Farming operations should begin on the contour baselines and proceed both up and down the slope in a parallel pattern until patterns meet. Where field operations begin to converge between two non-parallel contour baselines, establish a correction area that is permanently in sod or established to an annual close-grown crop. Where contour row curvature becomes too sharp to keep machinery aligned with rows during field operations, establish sod turn strips on sharp ridge points or other odd areas as needed.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H11-18				13.3 ac	10/2015
Frank 1-7				15.4 ac	10/2015
Frank 8-13				14.2 ac	10/2015
NH2-10				17.1 ac	10/2015
NH11+12				2.8 ac	10/2015
NH13+14				7.7 ac	10/2015
T2064 - 2				5.26 ac	10/2015
T299 - 1 - 3				15.86 ac	10/2015
Total:				123.8 ac	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

330 Contour Farming

This practice has been applied to the operation. Implementation of this practice is necessary for compliance.

Maintain ridges, furrows, and roughness formed by tillage, planting and other operations to alter velocity and/or direction of water flow to around the hillslope. The intended purpose of implementing this practice is to:

- Reduce sheet and rill erosion (Resource Concern SOIL EROSION – Sheet, rill, & wind erosion).
- Reduce transport of sediment, other solids and the contaminants attached to them (Resource Concern SOIL EROSION – Sheet, rill, & wind erosion).
- Reduce transport of contaminants found in solution runoff (Resource Concern WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters; Pesticides transported to surface and ground waters; Excess pathogens and chemicals from manure, bio-solids or compost applications).

Associated practices include 328 Conservation Crop Rotation

Row Grade:

Crop rows shall have a minimum row grade sufficient to ensure that runoff water does not pond or cause unacceptable crop damage. Maximum row grades shall not exceed either ½ the up-and-down hill slope used in RUSLE II or 4%, whichever is less.

Ridge Height:

Row spacing greater than 10 inches. The minimum ridge height shall be 2 inches during the period of the rotation that is most vulnerable to sheet and rill erosion. Ridge height will be determined using the current approved erosion prediction technology.
Row spacing 10 inches or less. The minimum ridge height shall be one inch for close-grown crops, such as small grains. Plant height shall be at least 6 inches high and the spacing between plants within the row shall not be greater than 2 inches during the time most vulnerable to sheet and rill erosion.
The minimum ridge height criteria are not required when the practice Residue and Tillage Management, No Till/Strip Till/Direct Seed (code 329) is used on the contour and at least 50 percent surface residue cover is present between the rows after planting.

329 Residue & Tillage Management -- No till

Operations & Maintenance

Evaluate/measure the crop residues cover and orientation after each crop to ensure the planned amounts and orientation are being achieved. Adjust management as needed to either plan a new residue amount and orientation or adjust the planting and/or harvesting equipment.

Limited tillage is allowed to close or level ruts from harvesting equipment. No more than 25% of the field may be tilled for this purpose.

If there are areas of heavy residue accumulation (because of movement by water or wind) in the field, spread the residue prior to planting so it does not interfere with planter operation.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H9-10				9.3 ac	10/2015
H11-18				13.3 ac	10/2015
H19				2.8 ac	10/2015
Frank 1-7	15.4 ac	5	2017		
Frank 8-13	14.2 ac	5	2017		
Frank 14-20				20.5 ac	10/2015
Gabby				4.4 ac	10/2015
NH2-10				17.1 ac	10/2015
NH11+12				2.8 ac	10/2015
NH13+14				7.7 ac	10/2015
Total:	29.6 ac			110.1 ac	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

329 Residue & Tillage Management -- No till

This practice has been applied to the operation. Implementation of this practice is necessary for compliance.

Limiting soil disturbance to manage the amount, orientation and distribution of crop and other plant residue on the soil surface year-round. All residues shall be uniformly distributed over the entire field by harvesting equipment. The intended purpose of implementing this practice is to:

- Reduce sheet, rill and wind erosion (Resource Concern SOIL EROSION - Sheet, rill, & wind erosion).
- Maintain or increase soil quality and organic matter content (Resource Concern SOIL QUALITY DEGRADATION—Organic matter depletion).

The operation intends to no till all crops where certified, cleaned seed is utilized (corn, soybeans, oats for grain, sorghum/sudangrass, hay, etc.). Bin-run oats, used for forage, will not be no tilled as uncleaned seed will not flow through the drill properly.

Associated practices include 328 Conservation Crop Rotation, 340 Cover Crop

This practice includes planting methods commonly referred to as no-till, strip till, direct seed, zero till or zone till. Approved implements are: no-till and strip-till planters; certain drills and air seeders; strip-type fertilizer and manure injectors and applicators; in-row chisels; and similar implements that only disturb strips and slots. All others are considered to be full-width or capable of full disturbance and therefore not compatible (this includes Salford, Turbo till, and McFarlane tillage equipment).

The Soil Tillage Intensity Rating (STIR) value shall include all field operations that are performed during the crop interval between harvest or termination of the previous cash crop and harvest or termination of the current cash crop (includes fallow periods). The STIR value shall be no greater than 20.

Additional Criteria to Reduce Sheet/Rill Erosion: The amount of surface residue needed, the time of year residue needs to be present and the amount of soil disturbance allowed to reduce soil erosion to the planned soil loss objective, is as follows, is listed below.

Additional Criteria to Improve Soil Organic Matter: Soil Conditioning Index within the RUSLE II tool shall result in a positive trend.

The operation will install a hayland buffer, following the Filter Strip (393) practice code.

BMP Alternatives for Low Cover (<25%) Near-Stream Crop Fields		Fields within 100' of surface water listed on left, corresponding conditions creating low cover near-stream conditions listed in the center, BMP alternatives provided on the right	
Field	Low Cover Near Stream Field Condition	Best Management Practice	
	Sorghum silage harvest leaving low surface residue	Cover crop established immediately after harvest. The interval between summer crop harvest & cover crop planting should never exceed 10 days. Follow criteria provided in the 340 standard.	
		Establish and maintain 35-foot <i>Permanent Vegetated Buffer</i> using 393, 390, and/or 391 standards	
		Practice continuous (> 7 years) no-till system, following the 329 standard.	
		Harvest silage leaving >20" stalks, then roll stalks flat against the ground.	
H11-18, H19	Inversion tillage or aggressive tillage leaves low surface residue for part of the year	After fall tillage - plant cover crop as soon as practical. The interval between tillage and planting should never exceed 10 days.	
		In spring, till near the stream last, plant as soon as practical. The interval between tillage and planting should never exceed 10 days.	
		Establish a permanent grass or other sod in near-stream field	
H11-18, H19	Rotation includes low residue crop	Substitute high residue crop near-stream.	
		Establish and maintain 35-foot <i>Permanent Vegetated Buffer</i> using 393, 390, and/or 391 standards.	
		Establish a permanent grass or other sod in near-stream field.	
		Practice continuous (> 7 years) no-till system, following the 329 standard.	

Management of Near Stream Areas

State Erosion and Sedimentation regulations require that all crop fields within 100 feet of a river or a perennial or intermittent stream have 25% plant cover (living and dead plant material) throughout the year or implement additional BMPs to minimize accelerated erosion and sedimentation. Pennsylvania DEP has provided the following BMPs that when implemented are acceptable alternatives to meet near-stream requirements when cover is <25%.

1. Modify the crop rotation to exclude the low cover situation in the field near the stream. The near-stream field may be planted to permanent sod forming crops such as grass hay, or when silage is in the rotation, substitute corn grain for silage in the near-stream field.
2. Buffers may be used alone or as part of a system in these field locations.
 - a 35-foot Permanent Vegetated Buffer and NRCS conservation practice standards for Filter Strip (393) Riparian Herbaceous Cover (390) Riparian Forest Buffer (391)
 - 35-foot Permanent Vegetated Buffers between the cropped field and the stream may be woody and/or herbaceous vegetation (in any combination) provided runoff flowing into, within, or out of the buffer is primarily sheet flow with no converging rills or gullies visible. Additional field edge vegetation may need to be established in existing partial buffers to meet these criteria. Refer to Section IV of the PA Tech Guide for NRCS practice criteria. Buffers serve as the last line of defense between field and stream.
3. Continuous Residue and Tillage Management – No-till (329) must be practiced continuously for seven or more uninterrupted years. After seven years, soil consolidation reduces erosivity by approximately 50% compared to tilled soil. No-till must be continuous and permanent for this management to achieve this conservation benefit.
4. Harvest corn silage to leave 20 or more inches of standing stalks, then flatten remaining stalks by rolling the field stubble.
5. Cover Crop (340) should be planted as soon as practically possible, ideally within several days of summer crop harvest. The interval between summer crop harvest and cover crop planting should never exceed 10 days. Cover crops provide cover, scavenge nutrients, reduce erosion, and improve soil quality. When properly managed, certain cover crops are suitable for grazing and silage forage sources. Select species from Table 1 of the 340 standard meeting the purpose Erosion Control and Surface Water Protection.
6. Tillage – Inversion tillage (moldboard plow) and/or chisel/disk systems that leave less than 25% cover will require additional BMPs or greater attention to management details. The most common tillage scenarios and management recommendations include:
 - Spring tillage for summer annual or perennial forage crops: Nearstream fields should be the last fields tilled prior to planting and planting should occur as soon as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.
 - Late-summer tillage for annual or perennial forage crops: The nearstream fields should be planted as soon as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.
 - Fall tillage for winter grain or cover crops: For winter grains, the near-stream fields should be planted as soon after tillage as practically possible, ideally within several days of tillage. The interval between tillage and planting should never exceed 10 days.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *mt*

328 Conservation Crop Rotation, continued

Operations & Maintenance:

In case of crop failure for summer corn crops, annual forages like sorghum/sudangrass, forage sorghums, millet, small grains, clovers & brassicas can be planted to meet forage needs. If drought conditions reduce overall summer crop yields, winter grains may be planted to provide spring forage. All manures, residuals and nutrients are applied following DEP regulations, Act 38 Nutrient Management regulations, and/or PSU Agronomy Guide guidelines. Follow all label requirements, including setbacks to surface water and/or shallow groundwater when applying pesticides.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				9.0 ac	10/2015
H4-8				23.2 ac	10/2015
H9-10				9.3 ac	10/2015
H11-18				13.3 ac	10/2015
H19				2.8 ac	10/2015
Frank 1-7	15.4 ac	5	2017		
Frank 8-13	14.2 ac	5	2017		
Frank 14-20				20.5 ac	10/2015
Gabby				4.4 ac	10/2015
NH2-10				17.1 ac	10/2015
NH11+12				2.8 ac	10/2015
NH13+14				7.7 ac	10/2015
Total:	29.6 ac			110.1 ac	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY

Proposed Rotations – Frank 1-7, Frank 8-13

Oats (80 bu/A; no till w/ manure), Oat / ryegrass + crimson clover forage (4 ton/A; broadcast seed & disk w/ manure)
Corn Grain (160 bu/A; no till w/ manure); cover crop (no till)
Soybeans (50 bu/A; no till); cover crop (no till)
Oat Forage (4 ton/A; no till), sorghum/sudangrass (12 ton/A; no till w/ manure)
Small Grain Forage (6 ton/A; no till w/ manure); Corn Grain (160 bu/A; no till w/ manure); cover crop (no till)
Oats (80 bu/A; no till w/ manure), Oat / ryegrass + crimson clover forage (4 ton/A; broadcast seed & disk w/ manure)
Corn Grain (160 bu/A; no till w/ manure); cover crop (no till)
Soybeans (50 bu/A; no till); cover crop (no till)
Oat Forage (4 ton/A; no till), sorghum/sudangrass (12 ton/A; no till w/ manure)
Small Grain Forage (6 ton/A; no till w/ manure); Corn Grain (160 bu/A; no till w/ manure); cover crop (no till)
New Seeded Alfalfa w/oat silage nurse crop (8 ton/A; no till)
4 years established alfalfa (5 ton/A)

328 Conservation Crop Rotation, continued

The operation's rotation, listed below, meets the 3 conditions required for Pennsylvania's Chapter 102.4 (a) Agricultural Erosion and Sedimentation regulations (cropping system meets T over the rotation, fields within 100' of surface water have 25% cover throughout the year, gullies are treated to eliminate concentrated flow).

Benchmark Rotations

H4-8, H9-10, H11-18, H19

Corn Silage (23 ton/A; no till w/ manure)

Small Grain Forage (6 ton/A; no till w/ manure), Soybeans (50 bu/A; no till)

Oat Forage (4 ton/A; no till), sorghum/sudangrass (12 ton/A; no till w/ manure)

Small Grain Forage (6 ton/A; no till w/ manure), Corn Grain (160 bu/A; no till w/ manure)

H1-3, Gabby, Frank 1-7, Frank 14-20

Oats (80 bu/A; no till w/ manure), Oat forage (4 ton/A; broadcast seed & disk w/ manure)

Corn Grain (160 bu/A; no till w/ manure)

Soybeans (50 bu/A; no till)

Oat Forage (4 ton/A; no till), sorghum/sudangrass (12 ton/A; no till w/ manure)

Small Grain Forage (6 ton/A; no till w/ manure), Corn Grain (160 bu/A; no till w/ manure)

Oats (80 bu/A; no till w/ manure), Oat forage (4 ton/A; broadcast seed & disk w/ manure)

Corn Grain (160 bu/A; no till w/ manure)

Soybeans (50 bu/A; no till)

Oat Forage (4 ton/A; no till), sorghum/sudangrass (12 ton/A; no till w/ manure)

Small Grain Forage (6 ton/A; no till w/ manure), Corn Grain (160 bu/A; no till w/ manure)

New Seeded Alfalfa w/oat silage nurse crop (8 ton/A; no till)

4 years established alfalfa (5 ton/A)

Corn Grain (160 bu/A; no till w/ manure) and Soybeans (50 bu/A; no till) may be planted more frequently than indicated in the above rotations without modifying the RUSLE II calculations (see RUSLE II calculations for 1 year corn and 1 year soybeans)

Nice's Hollow NH2-10, NH11+12, NH13+14

Corn Grain (160 bu/A; no till w/ manure)

Soybeans (50 bu/A; no till)

2. Narratives of Decisions (Implementation Requirements) for the land treatment areas

328 Conservation Crop Rotation

This practice has been applied to the operation. Implementation of this practice is necessary for compliance.

A crop rotation is a planned sequence of crops grown on the same ground over a period of time (the rotation cycle). Justin Cunfer implements this practice with the intended purposes to:

- Reduce sheet & rill erosion below T
- Maintain or increase soil health and organic matter content
- Reduce water quality degradation due to excess nutrients
- Provide feed and forage for domestic livestock

Additional Criteria to Reduce Sheet, Rill and Wind Erosion

Select crops, a tillage system, and cropping sequences that will produce sufficient and timely quantities of biomass or crop residue which, in conjunction with other practices in the management system, will reduce sheet, rill and wind erosion to the planned soil loss objective.

Determine the amount of biomass or crop residue needed by using current approved RUSLE2 erosion prediction technology.

Additional Criteria to Maintain or Increase Soil Health and Organic Matter Content

Grow crops that will produce a positive trend in the Organic Matter (OM) subfactor value over the life of the rotation, as determined by the Soil Conditioning Index using RUSLE2. Make appropriate adjustments for additions to or subtractions from biomass.

Additional Criteria to Reduce Water Quality Degradation Due to Excess Nutrients

To recover excess nutrients from the soil profile, use crops with:

- Quick germination and root system formation,
- A rooting depth sufficient to reach the nutrients not removed by the previous crop
- Nutrient requirements that readily utilize the excess nutrients.
- Credit nutrients provided by legumes and manure/compost.

Include perennial or annual legume crops in the rotation to provide nitrogen to non-legume crops

Additional Criteria to Provide Feed and Forage for Domestic Livestock

Select crops that balance the feed supply with livestock numbers. Determine the required amount of selected crops using an approved forage-livestock balance procedure.

1. A brief description of the AFO (both existing and proposed), including the crop rotation and tillage practices used.

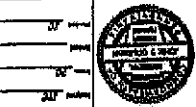
Current management of the animals is as follows: Cows are not provided roofed confinement during the winter. They have access to paddocks & pasture April through December & are confined in 2 small areas (1 area in the paddocks & 1 area in the pasture adjacent to the run-in shed). See the Farmstead map for additional information on the locations of these areas. Calves are pastured with cows until fall, then are moved to the finishing areas (barn 1 & barn 2). Both finishing areas are total confinement.

Cropland is managed using no till techniques for establishment of all crops. Corn Grain, small grain, soybeans and hay are raised, following the rotations outlined in the 328 standard. Two locations on the farm require implementation of practices to protect soil and water resources:

1. The intermittent stream emerging from the pasture pond & flowing west between fields H11-16 & H19 shall be protected by installing a 35' grass buffer to separate the cropland (manure application areas) from the surface water.
2. The concentrated flow areas in fields F1-F6 shall be addressed through various means. The smaller flow areas (west side of the field) shall be addressed through implementing annual cover cropping. The eastern flow area shall be addressed through installation of a diversion & grassed waterway to safely convey stormwater originating at the road to the southern property boundary.

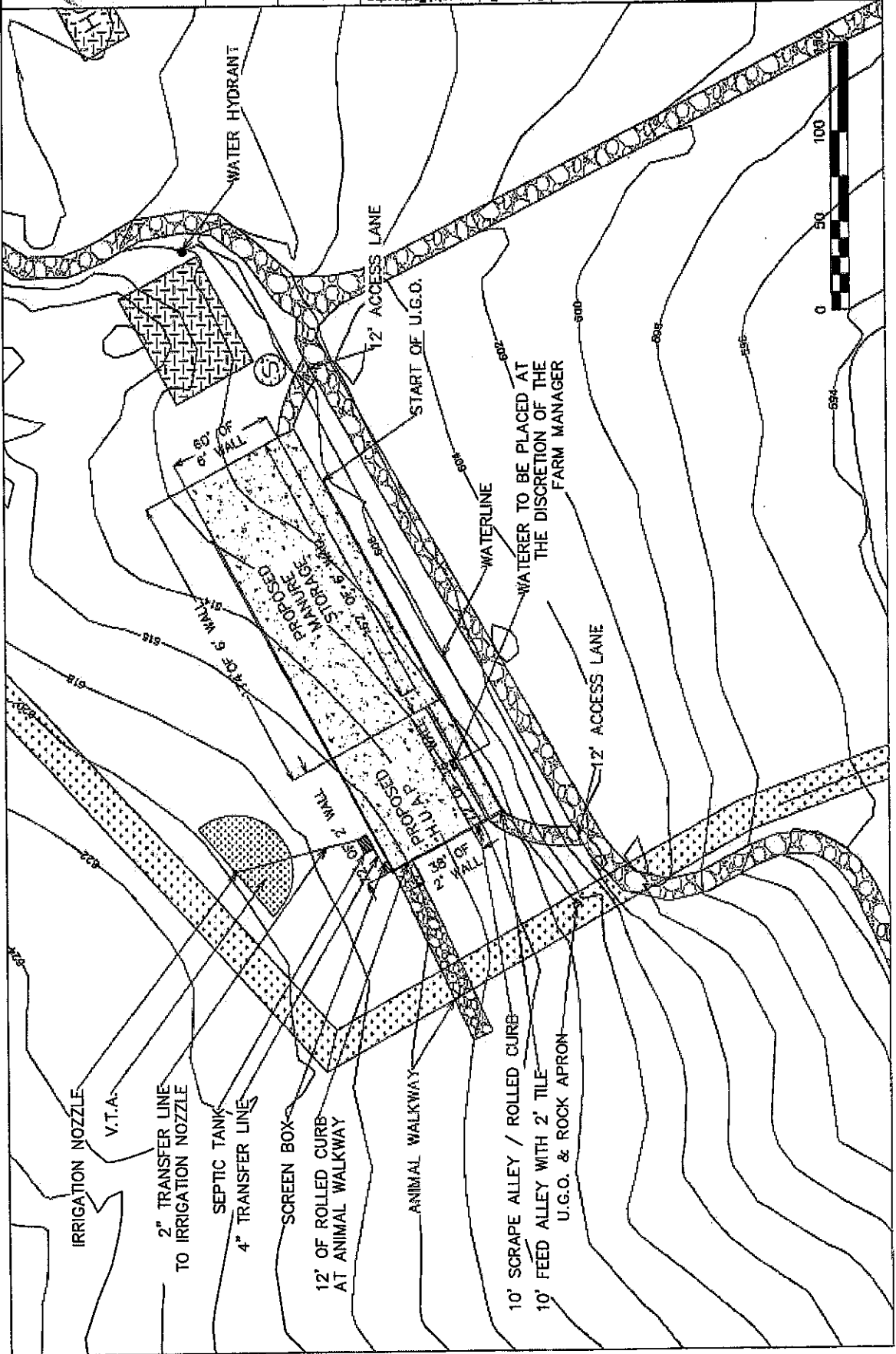
**Part 3. CNMP Format – Record of Decisions for the Crop,
Pasture, or Range Land (Land Treatment Areas Receiving
Manure Applications)**

Table of Contents:
1. A brief description of the AFO (both existing and proposed), including the crop rotation and tillage Practices used
2. Narratives of Decisions (Implementation Requirements) for the land treatment areas
3. Plan map(s) for the land treatment areas showing existing and planned practices, as well as manure application setback areas.
4. Soils Map(s) for the land treatment areas with the appropriate soil interpretations
5. RUSLE II Soil Loss information



Coleman Environmental Engineering
 Engineering Consultant
 220 Mount Snow Circle
 Zion Grove PA 17968
 Phone (570) 293-0583
 Email: coleman@colemantools.com

JUSTIN CUNFER BEER FARM
 CARBON COUNTY, PENNSYLVANIA
 SITE PLAN/EM - 60 SCALE



- IRRIGATION NOZZLE
- V.T.A.
- 2" TRANSFER LINE TO IRRIGATION NOZZLE
- SEPTIC TANK
- 4" TRANSFER LINE
- SCREEN BOX
- 12' OF ROLLED CURB AT ANIMAL WALKWAY
- ANIMAL WALKWAY
- 10' SCRAPE ALLEY / ROLLED CURB
- 10' FEED ALLEY WITH 2' TILE U.G.O. & ROCK APRON

- WATER HYDRANT
- 12' ACCESS LANE
- START OF U.G.O.
- WATERLINE
- WATERER TO BE PLACED AT THE DISCRETION OF THE FARM MANAGER
- 12' ACCESS LANE



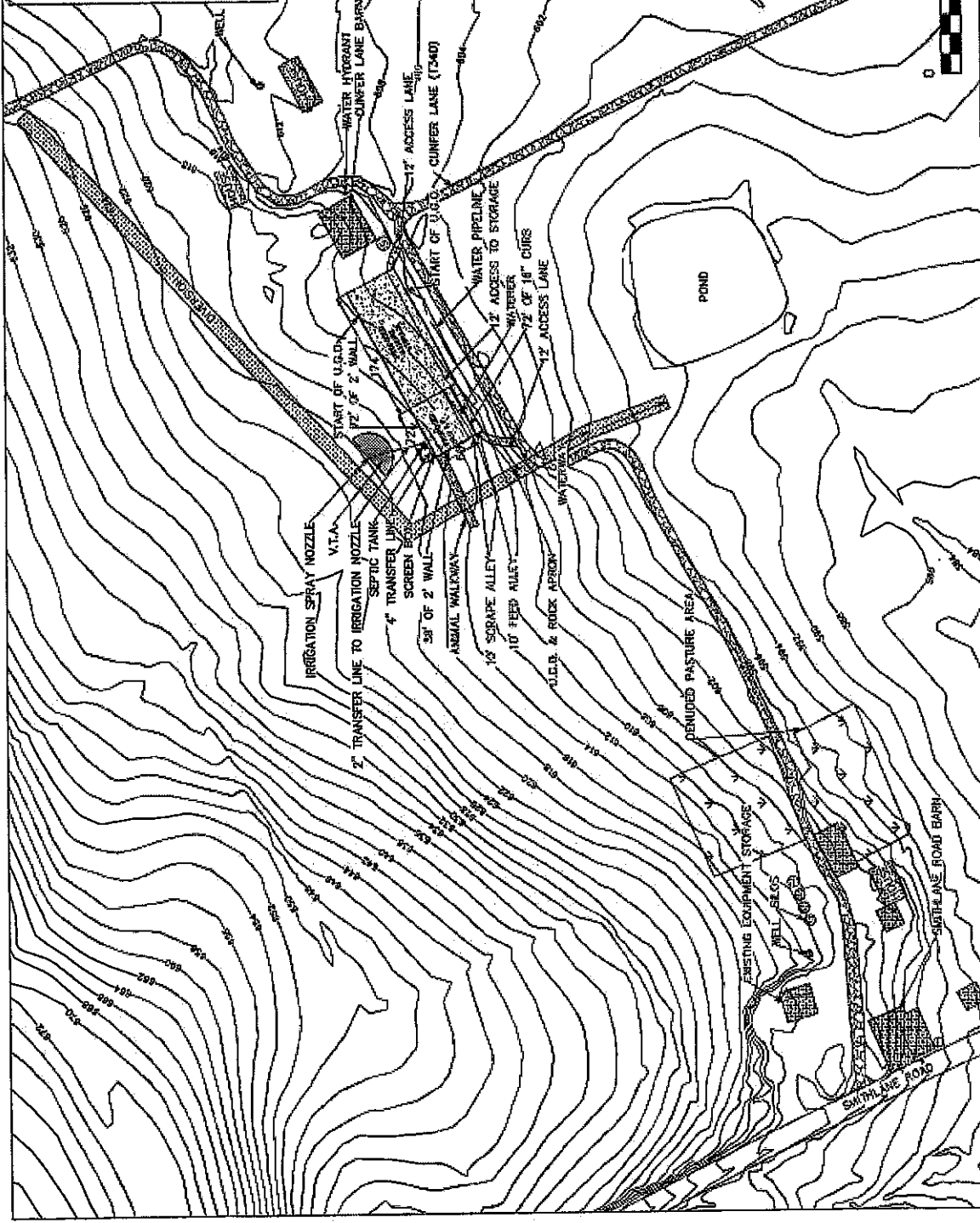
Coleman Environmental Engineering
 Engineering Consultant
 920 Mount Snow Circle
 Zion Grove PA 17965
 Phone (610) 233-0593
 Comment@colemanengineering.com

JUSTIN CUNFER BEER FARM
 CARBON COUNTY, PENNSYLVANIA
 SITE PLAN/DEM - 130 SCALE

LEGEND

These standard symbols will be found in the drawings.

- 2' CONTOURS
- WELL
- ▨ PROPOSED MANURE STORAGE & ILLA
- ▩ PROPOSED DIVERSION & V.T.A.
- ▧ TRAVEL LANE
- ▩ PROPOSED SCREEN BOX & SEPTIC TANK
- ▨ EXISTING BUILDINGS



DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *[Signature]*

SITE PLANVIEW DRAWING

APPENDIX 4

	Manure Stored			Manure Not Captured		
	(CF)	(Gal)	(Lbs)	(CF)	(Gal)	(Lbs)
64405	481749	3864300		0	0	0

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *for*

MMP Input Data from AWM for: Justin Cunfer

Assisted by: Coleman Environmental Engineering

Average Annual Manure Production Stored (for MMP "Analysis" tab)

Facility	Manure		Bedding		Wash Water		Flush Water		Runoff and Extrn Precip		Rainfall		Annual Throughput Volume w/o 25Yr Rainfall and Runoff	
	Tons	Gallons	Tons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Tons	Gallons	Tons	Gallons
Dry Stack (Covered) #1	1932	NA	240.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	2172.3	NA
Annual Total	1,932	0	240	0	0	0	0	0	0	0	0	0	2,172	0

Spreadable or Pumpable Capacity (for MMP "Storage" tab)

Facility	Manure		Bedding		Wash Water		Flush Water		Runoff & Extrn Precip		Rainfall		Design Storage Period		Design Volume w/o 25Yr Rainfall and Runoff	
	Tons	Gallons	Tons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Gallons	Months	Tons	Gallons	
Dry Stack (Covered) #1	971.4	NA	120.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	6	10922.2	NA	

Animal Production Data

Animal	Type of Animal	Weight in Lb	Manure Produced per Animal Unit in CF/Day	Total Manure Produced in CF/Day	Total Manure Produced in Lbs/Day	Annual Manure Produced in CF	Annual Manure Produced in Lbs
Cow	Beef	1500	1.00	60.00	3,600	21,960	1,317,600
Feeder Calf	Beef	300	0.93	11.16	670	4,085	245,074
High Energy	Beef	900	1.16	102.31	6,139	37,445	2,246,728
Grow-Finish	Swine	125	1.00	2.50	150	915	54,900
Totals	N/A	N/A	N/A	175.97	10,558	64,405	3,864,301

Annual Production vs Storage

AWM to MMP

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *ms*

Month	Runoff	Withdrawal	Waste	Prec - Evap	Ext Prec	CumStorageVol
January	0	<input type="checkbox"/>	9.98	1.14	0.00	9.98
February	0	<input type="checkbox"/>	9.33	0.98	0.00	9.33
March	0	<input type="checkbox"/>	9.98	1.12	0.00	9.98
April	0	<input type="checkbox"/>	9.66	0.66	0.00	9.66
May	0	<input type="checkbox"/>	9.98	0.22	0.00	9.98
June	0	<input type="checkbox"/>	9.66	0.00	0.00	9.66
July	0	<input type="checkbox"/>	9.98	0.00	0.00	9.98
August	0	<input type="checkbox"/>	9.98	0.00	0.00	9.98
September	0	<input type="checkbox"/>	9.66	0.00	0.00	9.66
October	0	<input type="checkbox"/>	9.98	0.00	0.00	9.98
November	0	<input type="checkbox"/>	9.66	0.25	0.00	9.66
December	0	<input type="checkbox"/>	9.98	1.13	0.00	9.98

Water Budget (1000 cu. ft.)

Waste Facilities

Dry Stack (Covered) #1

Max. Storage Vol. Method: Storage Volume
 Storage Months: 6 months

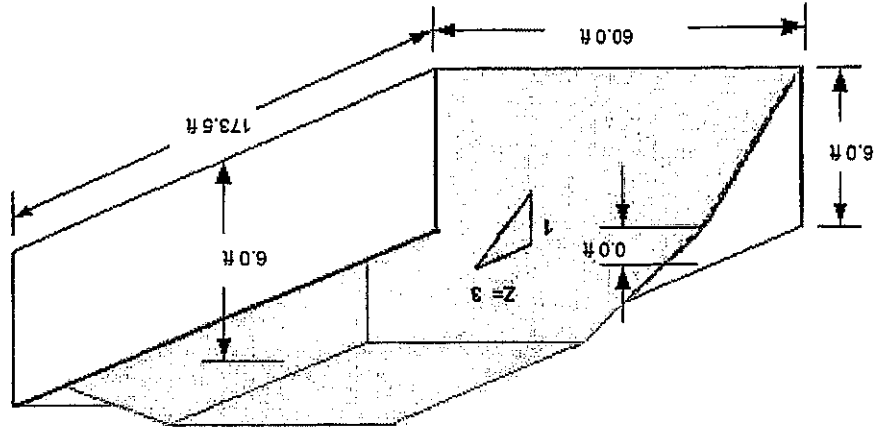
Critical Months: Mar - Aug

Design Dimensions

Shape: Rectangle
 Slope: 3:1
 Storage Depth: 6.0 ft
 Freeboard: 0.0 ft
 Wall Height: 6.0 ft

Design Quantities

Top Length: 155.5 ft
 Bottom Length: 173.5 ft
 Top Width: 60.0 ft
 Bottom Width: 60.0 ft
 Top Dimensions: 60.0 x 155.5 ft
 Bot Dimensions: 60.0 x 173.5 ft
 Volume Required (Wastes): 59222 cu. ft
 Prec Minus Evap Depth:
 25Yr24Hr Storm Depth:



DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *tru*

DEP
 NORTH EAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*

Facility Volume Data

Operating Period 1

Facility	Manure	Wash Water	Flush Water	Bedding	Total Vol
Dry Stack (Covered) #1	175.97	0.00	0.00	145.89	321.86

Management Train



Month	Pervious	Impervious	Month Total
January	0.00	0.00	0.00
February	0.00	0.00	0.00
March	0.00	0.00	0.00
April	0.00	0.00	0.00
May	0.00	0.00	0.00
June	0.00	0.00	0.00
July	0.00	0.00	0.00
August	0.00	0.00	0.00
September	0.00	0.00	0.00
October	0.00	0.00	0.00
November	0.00	0.00	0.00
December	0.00	0.00	0.00
Total	0.00	0.00	0.00

Runoff Volumes (1000 cu. ft.)

25 Year Pervious: 0.00 cu. ft.
 25 Year Impervious: 0.00 cu. ft.
 25 Year Total: 0.00 cu. ft.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *AM*

Runoff Volume Method: Calculate Monthly Runoff Volumes with AWM
 Pervious Watershed Area: 0 acres
 Pervious Curve Number Storm: 90
 Pervious Curve Number Monthly: 90 (1 day), 77 (30 day)
 Impervious Area: 0 sq. ft.

Runoff Data

Location	Wash Water	Flush Water	Bedding	Amount
Roofed Storage	0.00	0.00	Straw (baled)	1313.00

Operating Period: 1
 Waste Water VS Loading: 12.9

Additions Data

Roofed Storage	Animal Name	Percent Manure
100	Grow-Finish	100
100	High Energy	100
100	Feeder Calf	100
100	Cow	100
Totals	Animal Name	Percent Manure
100	Grow-Finish	100
100	High Energy	100
100	Feeder Calf	100
100	Cow	100

Period: 1
 Percent of Manure Deposited in Each Location:

Location Data

Animal	Type	Quantity	Weight	Manure	VS	TS	Manure	Manure	VS	TS
			lbs	cu.ft/day/AU	lbs/day/AU	cu.ft/day	lbs/day	lbs/day	lbs/day	lbs/day
Cow	Beef	40	1500	1.00	6.00	7.70	60.00	3600.00	360.00	462.00
Feeder Calf	Beef	40	300	0.93	6.40	7.55	11.16	669.6	76.80	90.60
Grow-Finish	Swine	20	125	1.00	6.33	6.67	2.50	150.0	13.33	16.68
High Energy	Beef	98	900	1.16	5.20	5.60	102.31	6138.6	458.64	493.92
Totals		198	N/A	N/A	N/A	N/A	175.97	10558.2	908.77	1063.20

Animal Data

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *JJC*

Month	Prec. (in)	Evap. (in)
January	2.52	1.00
February	2.32	1.00
March	3.13	1.60
April	3.18	2.20
May	3.67	3.20
June	3.66	4.20
July	3.74	4.80
August	2.88	4.50
September	3.18	3.80
October	2.26	2.90
November	2.33	1.90
December	2.51	1.00
Total	35.38	32.10

Anaerobic Load Rate: 0 lbs VS/1000 cu. ft/day

NRCS Design Method:

LRV Max: 0.00625 lbs VS/cu. ft/day

Load Rate for Odor, OCV: 0 lbs VS/cu. ft/day

Barth KVAL: 0

Rational Design Method:

Lagoon Loadings:

25 Yr - 24 Hr Storm Event: 6.3 inches

Station: MC KEESPORT PA573

County: Carbon

Climate Data

Operating Period: January - December

of Operating Periods: 1 State: PA Data Source: MWPS

Farm Information

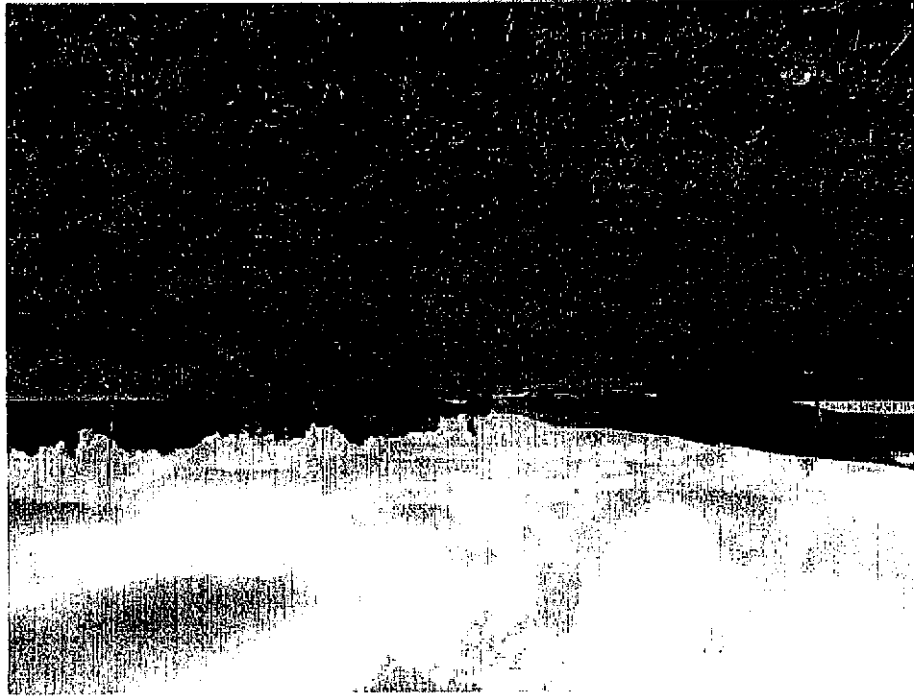
Animal Waste Management Plan Report		prepared for Justin Confer	
Designed By:	Coleman Environmental Engineering	Checked By:	<u>JJC</u>
Date:	11/10/2016	Date:	<u>11-10-16</u>

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *tw*

ANIMAL WASTE MANAGEMENT PLAN REPORT

APPENDIX 3

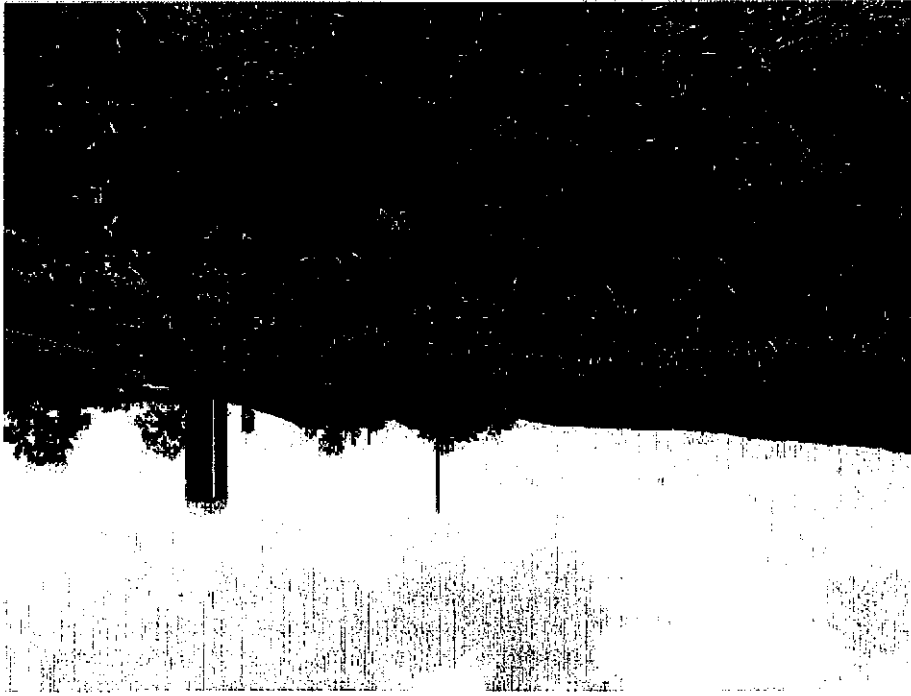
PROPOSED DIVERSION LOCATION



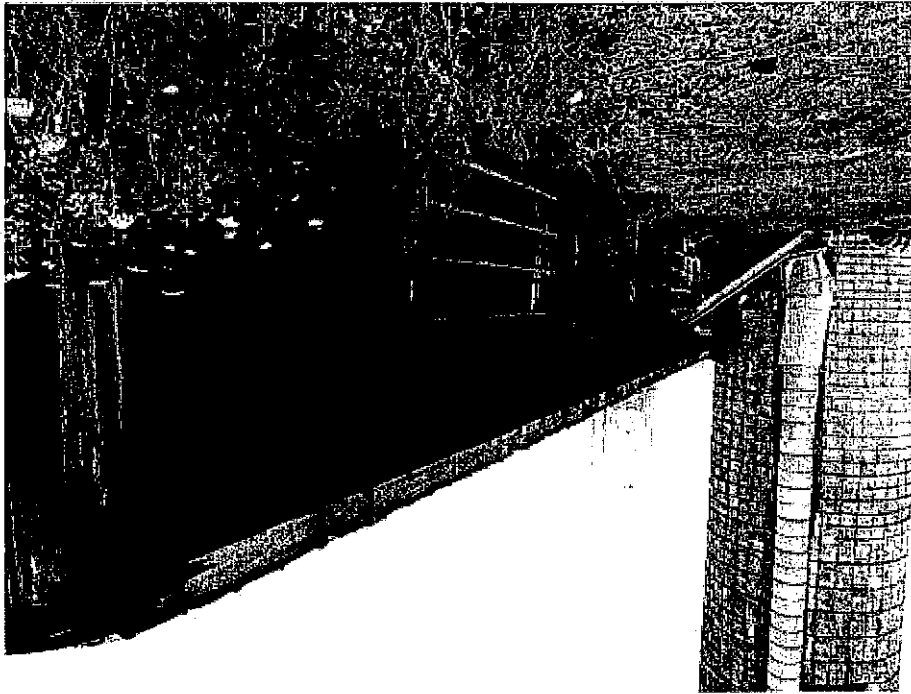
PROPOSED WATERWAY LOCATION



PROPOSED W.S.F. / H.U.A. LOCATION

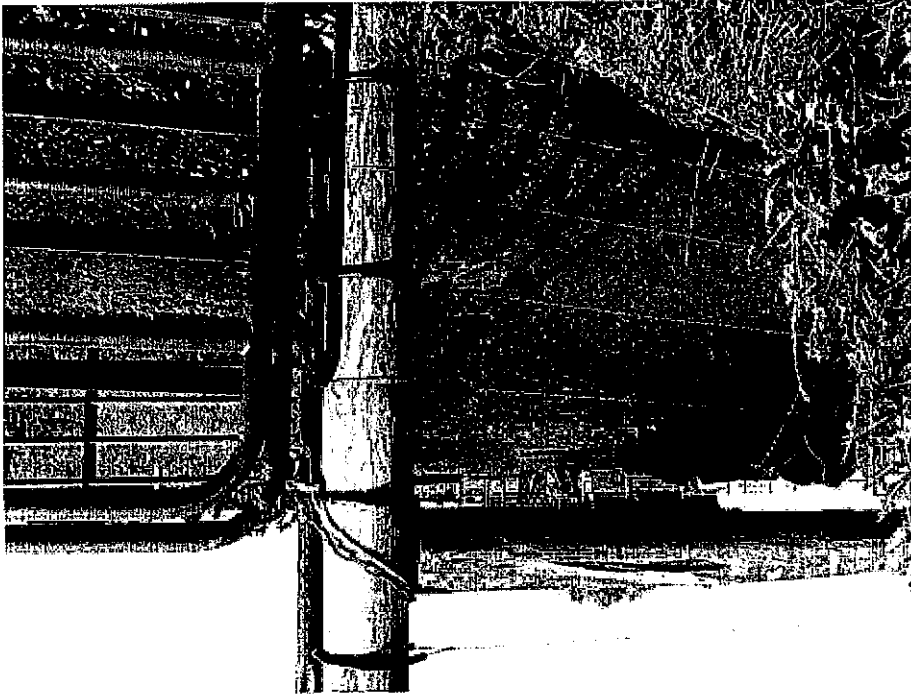


CUNFER LANE H.U.A.

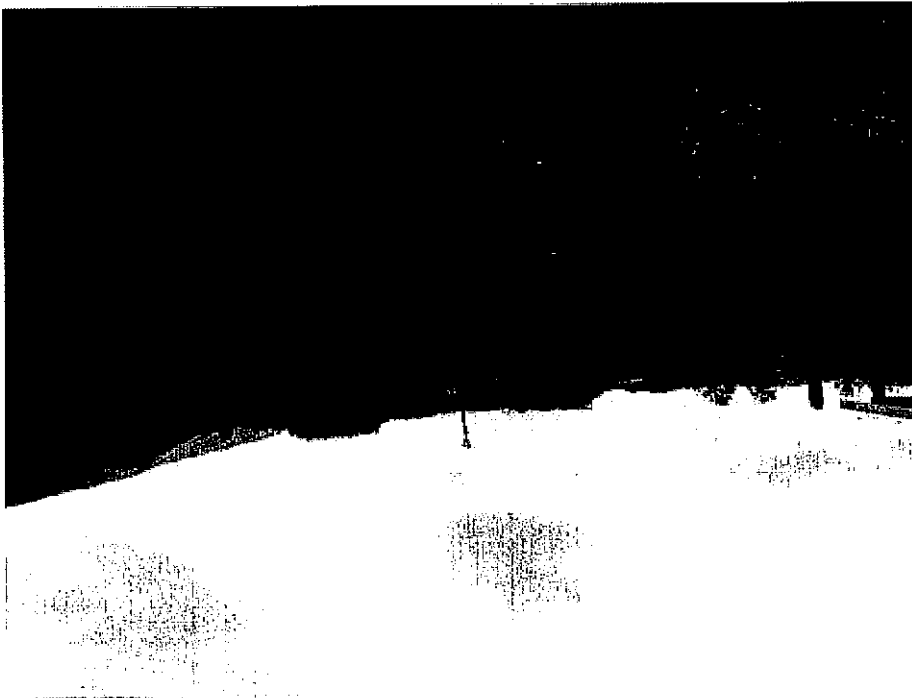


DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *the*

A.C.A. #2

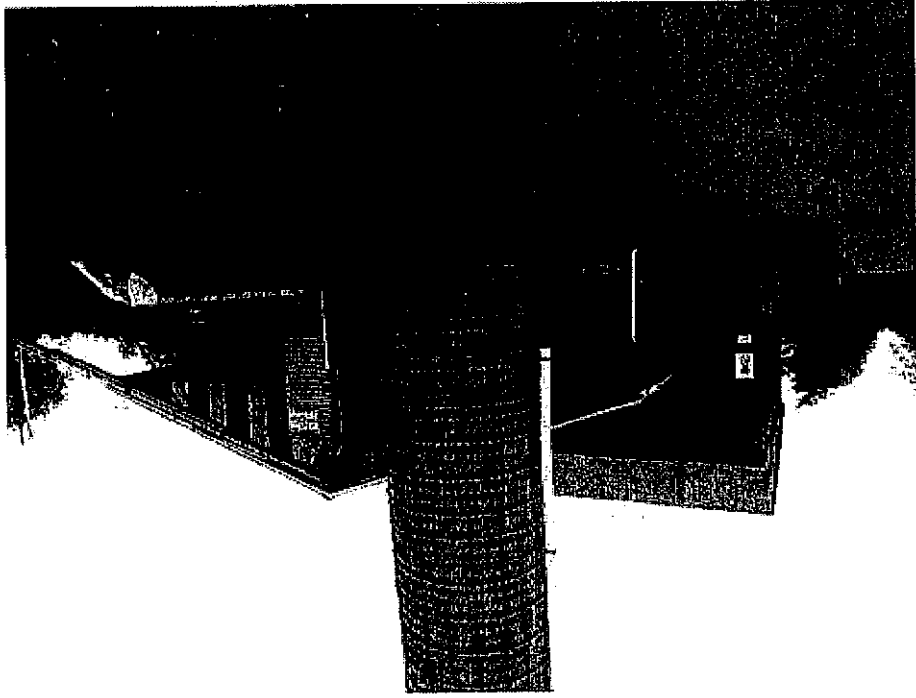


A.C.A. #1

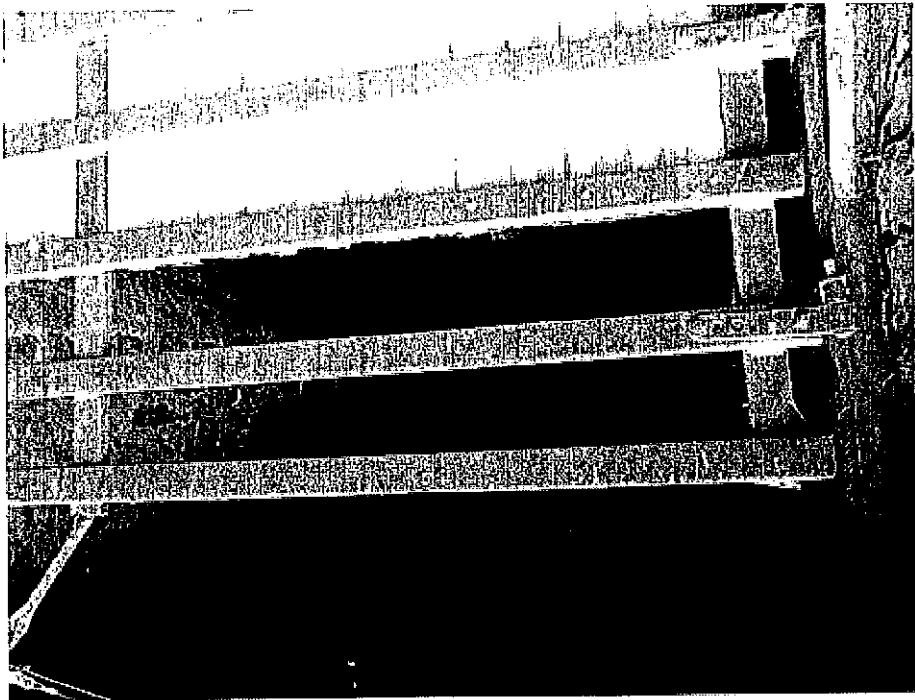


DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *tw*

SMITHLANE ROAD H.U.A.



HOG BARN



DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *for*

APPENDIX 2
PHOTOGRAPHS

614: Watering Facility					
Frost Free Hydrants*	2	L.S.	\$1,000.00	\$2,000.00	
516: Livestock Pipeline					
Waterline*	363	Ln. Ft.	\$4.00	\$1,452.00	
382: Fence					
Permanent Fencing - HUA Perimeter	264	Ln. Ft.	\$2.00	\$528.00	
Permanent Fencing - Animal Walkway	218	Ln. Ft.	\$2.00	\$436.00	
Permanent Fencing - V.T.A. Perimeter	167	Ln. Ft.	\$2.00	\$334.00	
342: Critical Area Seeding					
Seeding Limits of Disturbance (L.O.D.)	0.4	Acre	\$1,800.00	\$720.00	
Seeding Waterway	0.16	Acre	\$1,800.00	\$288.00	
Seeding Diversion	0.35	Acre	\$1,800.00	\$630.00	
* Not NRCS Cost Share Eligible					
Total Estimated Cost				\$305,959.95	

ITEM	Quantity	Unit	Unit Cost	Total Unit Cost
313: Waste Storage Facility				
Manure Stacking Pad				
Concrete Paving	8100	Sq. Ft.	\$4.60	\$37,260.00
6" Walls (408 Ln. Ft. @ 0.333 Cu. Yd./Ln. Ft.)	137	Cu. Yd.	\$360.00	\$49,320.00
Rollled Curb (72 Ln. Ft.)	3	Cu. Yd.	\$275.00	\$825.00
561: Heavy Use Area Protection				
Barnyard (60' X 72')				
Cost Shared Concrete Paving	3247	Sq. Ft.	\$4.60	\$14,936.20
Additional Concrete - 10 Sq. Ft./AU*	720	Sq. Ft.	\$4.60	\$3,312.00
Rollled Curb (12 Ln. Ft.)	1	Cu. Yd.	\$275.00	\$275.00
2" Walls (130 Ln. Ft. @ 0.118 Cy./L.F.)	16	Cu. Yd.	\$360.00	\$5,760.00
16" Walls (72 Ln. Ft. @ 0.1 Cy./L.F.)	8	Cu. Yd.	\$360.00	\$2,880.00
Gravel Access Pads	1030	Sq. Ft.	\$3.60	\$3,708.00
Concrete Apron / Feed Table (10'X247)'	2470	Sq. Ft.	\$4.60	\$11,362.00
367: Roofs and Covers				
WSF				
Roof Area (174' X 70')				
Cost Shared Roof Area (174' X 62')	10788	Sq. Ft.	\$11.75	\$126,759.00
Roof Area @ Concrete Apron (174' X 9)'	1566	Sq. Ft.	\$11.75	\$18,400.50
558: Roof Runoff Control				
6" Gutters and Downspouts	348	Ln. Ft.	\$11.00	\$3,828.00
620: Underground Outlet				
6" SDR-35 Pipe	345	Ln. Ft.	\$7.25	\$2,501.25
Rock Apron & Animal Guard	1	L.S.	\$250.00	\$250.00
575: Trails and Walkways				
10' Wide Reinforced Gravel Walkway	1275	Sq. Ft.	\$3.60	\$4,590.00
634: Manure Transfer				
Proposed Barnyard				
Screen Box	1	L.S.	\$900.00	\$900.00
Dual Compartment Septic Tank (1250 Gal)	1250	Gallon	\$1.90	\$2,375.00
4" Transfer Line from Screen Box to Tank	20	Ln. Ft.	\$6.50	\$130.00
2" Transfer Line to Irrigation Nozzles	72	Ln. Ft.	\$4.00	\$288.00
533: Pumping Plant				
Submersible Effluent Pump	1	L.S.	\$2,250.00	\$2,250.00
635: Vegetated Treatment Area				
Rainbird Irrigation Nozzle (Equivalent)	1	L.S.	\$750.00	\$750.00
362: Diversion				
Grassed Diversion Channel	762	Ln. Ft.	\$6.00	\$4,572.00
412: Grass Lined Waterway				
Grassed Waterway Channel	390	Ln. Ft.	\$6.00	\$2,340.00

DEP

PROJECT COST ESTIMATE

PROJECT: JUSTIN CUNFER FARM

LOCATION: EAST PENN TOWNSHIP, CARBON COUNTY, PA

DATE: SEPTEMBER, 2016

PREPARED BY: JOHN T. COLEMAN, PE

VETERINARY AND ANIMAL PHARMACEUTICALS WASTE PRODUCTS

Veterinary and animal pharmaceutical waste products are returned to the farm's veterinarian for proper disposal.

VERIFICATION OF BEST MANAGEMENT PRACTICES

Some of the best management practices had estimated quantities such as lengths and areas. These estimated quantities should be verified in the field before setting final figures for contracting these practices.

PERMITTING REQUIREMENTS

Any building permits required by municipal or county government should be obtained by the landowner prior to construction. If the total disturbed area associated with the project would exceed 1.0 acre in size then the County Conservation District should be consulted on the need for a permit under PA Title 25

Chapter 102 and the National Pollution Discharge Elimination System (NPDES).

COST ESTIMATE

A cost estimate based on the proposed Agricultural BMP's has been included with this report. There may be additional practices or components to this project that were not incorporated into this engineering site evaluation.

Thank you for allowing Coleman Environmental Engineering, LLC the opportunity to be a part of this effort to improve upon water quality.

John T. Coleman, MB, PE

Coleman Environmental Engineering, LLC

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *ML*

COST ESTIMATE

APPENDIX 1

OTHER COMMENTS AND CONSIDERATIONS

MANURE AND WASTEWATER PRODUCTION VOLUMES

The proposed animal numbers and manure volumes are estimated and may vary with the animal numbers and bedding quantities provided by the facility owner. The Animal Waste Management software provided by USDA-NRCS was used to determine the animal waste production and storage facility sizings and is included in APPENDIX - 3 of this report.

MANURE AND WASTEWATER NOT STORED

The manure associated with all animal groups associated with the facility has been addressed within the Comprehensive Nutrient Management Report.

EFFECT ON NEIGHBORS' PROPERTIES

The effects on neighboring properties are estimated to be negligible.

PESTICIDE AND FUEL STORAGE

Any fuel stored in aboveground tanks should be monitored for leaks. If a leak is detected or suspected the tanks shall be decommissioned immediately. Pesticides are used seasonally and stored in a secure area. Currently, there is no need to modify or relocate these areas.

ANIMAL MORTALITIES

Animal mortality was discussed during the site visit but it is not a significant concern pertaining to this operation. The follow is a brief summary of some options available to address typical mortality losses associated with the facility.

- Onsite disposal can provided the farmer with the option of converting mortality losses into a nutrient rich resource and reuse them to improve soils. The most efficient processes to compost animals such as a cow are a wind row, static pile or bin. A stock pile of a carbon source such as wood chips should be available on the farm so any mortality incident can be immediately addressed.
- The farmer can bury their own domestic livestock on their own property not qualified as wetlands or a floodway, as long as the burial does not cause odors and is at sufficient depth to prevent wildlife or other animals from excavating the remains. All animal disposal methods must adhere to other requirements such as local ordinances.
- Animal mortalities can be taken off site for proper disposal.

Emergency response strategies for fire and manure spills are necessary. Contact information for emergencies should be included in the portion of the Comprehensive Nutrient Management Plan (CNMP) documentation provided by Roseetee Consulting, LLC.

EMERGENCY ACTION PLANNING

An Operation and Maintenance Plan shall be developed for all installed practices and provided to the operator at the time of design/construction. Some specific recommendations are as follows: Manure storages must be emptied at the times outlined in the farms nutrient management plan. Once field conditions are acceptable storages should be emptied to be available again when needed.

OPERATION AND MAINTENANCE PLANS

There is a degree of hazard associated with all manure storage facilities. All components should be inspected on a routine basis and repaired immediately if the integrity of any component has been degraded. Safety measures should be in place during emptying of the storage structure. When not in use the loading areas should be blocked or have limited access.

SAFETY ISSUES

All areas disturbed from project installation will need to be re-vegetated with grasses. The waterway and diversion will also need to be seeded and mulched as soon as possible to eliminate the potential for erosion in case a high intensity storm occurs prior to re-establishment of vegetation. Due to the considerable length of the water conveyance channels, a Rolled Erosion Control Blanket (R.E.C.B.) should be installed within channels to provide additional protection against potential erosion. All seeded areas should be properly mulched to conserve soil moisture, moderate soil temperature, suppress weed growth, minimize soil erosion and facilitate the establishment of vegetative cover.

Practice Code 342: Critical Area Planting

Fencing and access point gates will be required for the proposed HVA area, the animal trail and around the perimeter of the VTA. Fencing specifics for cattle per the Practice Code requires the use of a minimum of 3 strands of electric high tensile smooth wire, minimum of 2 hot, with wire spacing at 13", 24" and 36". Wire shall be fastened to on 4" diameter wooden post (Materials Specification 585), with a minimum placement depth of 30". Maximum recommended fence post spacing without post stays should be 20 to 30 feet but the fencing specification dictates large spacing intervals are permitted.

Practice Code 382: Fence

animals from entering and blocking the outlet pipes. A rock apron installed at the discharge location would provide a stable outlet to address erosion concerns associated with the roof runoff.

Practice Code 533: Pumping Plant
A submersible effluent pump would need to be installed in the septic tank to provide the hydraulic capacity required to deliver the water via a pressurized pipe line to the proposed VTA.

Practice Code 575: Trails and Walkways
An improved walkway would need to be installed to facilitate movement of the beef herd from the proposed HUA to the existing pasture paddock network of the farm. A 10' wide geotextile reinforced gravel walkway extended from the proposed HUA to the existing pasture paddock network would provide stable access for the animals.

Practice Code 362: Diversion
Surface water control concerns associated with the farm can be addressed by implementing runoff control measures. A diversion installed upslope of the beef facility would divert water away from the existing building and the proposed waste management system and will therefore need to be designed according to NRCS protocol associated with that level of protection. The diversion would be outletted to the proposed waterway.

Practice Code 412: Grass Lined Waterway
A grass lined waterway will provide a stable outlet for surface runoff from the area upslope of the proposed WSF/HUAF. The waterway will accommodate flows from a natural drainage way located between the pasture paddocks and the crop fields upslope of the proposed improvements as well as the discharge from the proposed diversion.

Practice Code 516: Livestock Pipeline & 614: Watering Facility
Water will need to be provided at the proposed ACA during times of animal confinement on the HUAF. An existing water pipeline that provides drinking water to the Cunter Lane barn could be extended to the proposed facility to supply the new waterers. 2 waterers will need to be installed on the cow/calf HUAF to accommodate the animals and frost free hydrants can provide a very reliable water source even during colder months of the year. Double waterers with 2 water access points would provide adequate water for the multiple herd populations. These BMPS are not NRCS cost share eligible when associated with an animal concentration area.

well suited to be used as a VTA in accordance with the PA Design Guide #5 - Wastewater Treatment Strip Design".

Runoff from the proposed concrete HUA will need to be collected and directed to an underground storage tank. The concrete pad of the lot would be sloped to direct runoff to a screen box that would be located at the low end of the barnyard. The screen box would also restrict a majority of the solids in the manure laden water from entering the storage tank. A 4" outlet pipe at the base of the screen box will deliver the water to the underground tank. The storage tank would be a multiple compartment septic tank that would provide for additional solids separation prior applying the wastewater to a vegetated treatment area (VTA). An irrigation nozzle would be used to provide an even distribution of waste water over the designated VTA area. Nutrient uptake by vegetation in the treatment area will address the resource concerns associated with the HUA discharge.

Practice Code 367: Roofs and Covers

A peaked roof structure would be installed to cover the proposed 175' X 60' manure stacking pad. The cost shared roof dimensions associate with the manure stacking area including 1' overhangs at each eave is 175' X 62'. The 9' roof area over the proposed concrete apron adjacent to the WSF would not be eligible for NRCS cost share program funding. Site conditions accommodate a Vegetated Treatment Area to address the cow/calf HUA runoff so a roof structure for the HUA does not qualify for NRCS cost share funding. The owner could fund a roof for the animal confinement area and any cost share funds allotted for the proposed waste transfer system could be used to fund the roof structure.

Practice Code 561: Heavy Use Area Protection (HUA)

The farmer would like to develop an improved HUA for the cow/calf pairs to minimize the resource concerns associated with the confinement areas currently being used for the animal group and that HUA would be attached to the proposed WSF. NRCS cost share provides funding for 50 sq. ft. of HUA per AU but the proposed HUA was sized using 60 sq. ft. per AU to provide a larger area for the animals per Mr. Cunter's request. The HUA associated with the 72 AUs would be 4,320 sq. ft. and have dimensions of 60' X 72' and 3600 Sq. Ft. of that area would be eligible for NRCS cost share funding. The HUA would include 2 foot curbing, 16" curbing, rolled curbing and flat work to stabilize the location. The landowner would also like to include a 10' feed alley and that improvement would not be eligible for NRCS cost share funding. Geotextile reinforced gravel at entrances to the facility would stabilize access to both the HUA and the WSF.

Practice Code 558: Roof Runoff Structure and 620: Underground Outlet

Gutters and downspouts or drip-line drains will need to be placed on all proposed roof lines of the waste storage facility. Underground outlets will need to be installed to accommodate the roof gutters and animal guards should be installed to prevent small

Practice Code 634: Waste Transfer & 635: Vegetated Treatment Area (VTA)
A NRCS WebSoil Survey Report was used to evaluate the soils within the proposed VTA location. The soil present at the location is identified as Hartleton (Hab2) channery silt loam on 8 to 15% slopes and has a Farmland Classification of "Farmland of Statewide Importance". The Hab2 soil is well drained with a soil depth up to 58" and a depth to water of > 80". All of these characteristics indicate that the location is

Practice Code 313: Waste Storage Facility (WSF)
Waste management concerns associated with the facility can be addressed by providing a stacked manure storage facility that would accommodate a 180 day duration period for all of the animal groups previously identified in this report. A manure stacking area with 6' concrete walls, rolled curb and flat work would accommodate the manure storage needs of the beef operation. Storage requirements for the 6 month duration of the manure and bedding is 59,222 cubic feet and would have dimensions of 60' X 174'. The storage volume required for the animals was calculated using the NRCS Animal Waste Management program and the Animal Waste Management Plan Reports are included in Appendix 3 of this CNMP engineering evaluation.

The remainder of this report will focus on the BMP's recommended to address these environmental concerns observed during the site visit. Other options could be considered but this report will describe the practices considered to be least cost and treat the problems to Pennsylvania NRCS Technical Guide standards. All proposed improvements shall be planned, designed, and installed to meet all applicable federal, state, and local laws and regulations.

ENGINEERING RECOMMENDATIONS

September until February when the finishers are sent to market. The remaining steer population is housed at a barn located on the other end of the farm at 351 Cunter Lane and the landowner stated that (12) 500 pound bales of straw bedding are used on a weekly basis for that facility. Two pasture areas that are used as animal confinement areas, primarily for the cow/calf pairs, show signs of over use. The landowner stated that use of these areas would be limited in the future if an improved heavy use area would become available. There is no stabilized manure storage area established for the facility and manure is hauled from the pens and land applied during routine cleanouts at multiple times of the year. There are no gutters on the existing roof lines and a portion of the runoff from the Cunter Lane barn is discharging directly onto the existing barnyard areas due to poor drainage conditions. That concern could be addressed by providing positive surface drainage around the entrance to the barn. Animal access to the current pasture paddock network should be improved to provide a stable trail for animals to access the grazing areas

INTRODUCTION

Eric Rosenbaum of Rosetree Consulting, LLC is preparing a Comprehensive Nutrient Management Plan, (CNMP) for the agricultural facility that is operated by Justin Cunter in East Penn Township, Carbon County, PA.

Coleman Environmental Engineering, LLC, is also providing assistance to prepare the CNMP by developing the Engineering Evaluation portion of the documentation. Guidance documents from United States Department of Agriculture's Natural Resource Conservation Service (NRCS) of Pennsylvania were followed in the preparation of this report. This engineering element of the plan addresses the manure handling and storage components as well as other aspects and activities associated with the facility located at 351 Cunter Lane, Lehighton, PA 18235.

Justin Cunter provided the following information on the animal groups associated with the facility that includes (40) cow/calf pairs at an average weight of 1800 pounds per pair for a total of 72 Animal Units (AUs), (98) beef heifers and steer at an average weight of 900 pounds per animal for a total of 88.2 AUs and (20) Finishing hogs at an average weight of 125 pounds per animal for a total of 2.5 AUs. All Best Management Practices, (BMPs) proposed in this report that are based on animal units were determined using these herd numbers.

CNMP ENGINEERING SITE VISIT SUMMARY

On June 29th, 2016 a site visit was conducted to evaluate the resource concerns and management aspects associated with the beef operation. Those in attendance included the land owners, Justin Cunter, Arna Cunter, and Dennis Cunter; Christopher Ribble, District Conservationist, Andrew Kearse, Soil Conservationist, NRCS; Eric Rosenbaum, Nutrient Management Planner, Rosetree Consulting, LLC; Pat Coleman, Environmental Technician, and John Coleman, Professional Engineer, Coleman Environmental Engineering, LLC.

The existing conditions of the site were noted during the site visit and are summarized in the following paragraph.

Approximately 1/2 of the 98 heifers and steers beef herd is housed in an existing barn located at 236 Smithlane Road and Mr. Cunter stated that he uses (6) 500 pound bales of straw bedding for the animals in that pen on a weekly basis. This building includes a roofed exercise lot and feed table for the beef animals. The hogs are also housed in the barn and (2) 500 pound bales of straw are used for bedding on a biweekly basis from

MANURE AND WASTEWATER PRODUCTION VOLUMES	
MANURE AND WASTEWATER NOT STORED	
EFFECT ON NEIGHBORS' PROPERTIES	
FEED STORAGE LEACHATE POLLUTION	
PESTICIDE AND FUEL STORAGE	
ANIMAL MORTALITIES	
VETERINARY AND ANIMAL PHARMACEUTICALS WASTE PRODUCTS	
VERIFICATION OF BEST MANAGEMENT PRACTICES	
PERMITTING REQUIREMENTS	
COST ESTIMATE	
APPENDIX 1 - PROJECT COST ESTIMATE	
APPENDIX 2 - SITE PHOTOGRAPHS	
APPENDIX 3 - ANIMAL WASTE MANAGEMENT PLAN REPORT	
APPENDIX 4 - SITE PLANVIEW MAPS	
Safety Issues.....	7
Operation & Maintenance Plans.....	7
Emergency Action Planning.....	7
Other Comments and Considerations.....	8

Table of Contents.....1

Introduction.....3

CNMP Engineering Site Visit Summary.....3

Engineering Recommendations.....4

- Practice Code 313: Waste Storage Facility
- Practice Code 634: Waste Transfer
- Practice Code 635: Vegetated Treatment Area
- Practice Code 367: Roofs and Covers
- Practice Code 561: Heavy Use Area Protection
- Practice Code 558: Roof Runoff Structure
- Practice Code 620: Underground Outlet
- Practice Code 533: Pumping Plant
- Practice Code 575: Trails and Walkways
- Practice Code 362: Diversion
- Practice Code 412: Grass Lined Waterway
- Practice Code 614: Watering Facility
- Practice Code 516: Livestock Pipe Line
- Practice Code 382: Fence
- Practice Code 342: Critical Area Planting

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *mt*

Project: CEE-JCBF-CC092016

PREPARED BY: JOHN T. COLEMAN, PE
DATE: 11/10/16



JUSTIN CUNFER BEEF FARM
LOCATED IN
EAST PENN TOWNSHIP
CARBON COUNTY, PA

www.colemanenvironmentalengineering.com

RR 1 Box 2320
320 Mt Snow Circle
Zion Grove, PA 17985
Voice: 570.233.0583

PREPARED: NOVEMBER, 2016

COMPREHENSIVE NUTRIENT
MANAGEMENT PLAN
ENGINEERING REPORT



The Montevallo component makes up 100 percent of the map unit. Slopes are 25 to 35 percent. This component is on valley sides. The parent material consists of residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, parallel, is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 7e. This soil does not meet hydric criteria.

Map Unit: SHa—Shelmadine silt loam, 0 to 3 percent slopes

Component: Shelmadine (100%)

The Shelmadine component makes up 100 percent of the map unit. Slopes are 0 to 3 percent. This component is on depressions. The parent material consists of loamy till. Depth to a root restrictive layer, fragipan, is 18 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map Unit: SHB2—Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded

Component: Shelmadine (100%)

The Shelmadine component makes up 100 percent of the map unit. Slopes are 3 to 8 percent. This component is on depressions. The parent material consists of loamy till. Depth to a root restrictive layer, fragipan, is 18 to 30 inches. The natural drainage class is poorly drained. Water movement in the most restrictive layer is moderately low. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 4w. This soil meets hydric criteria.

Map Unit: VeF—Very stony land, 25 to 120 percent slopes

Component: Very stony land (100%)

Generated brief soil descriptions are created for major soil components. The Very stony land is a miscellaneous area.

Map Unit: W—Water



Component: Montevallio (99%)

The Montevallio component makes up 99 percent of the map unit. Slopes are 3 to 8 percent. This component is on valley sides. The parent material consists of residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, parallelitic, is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 3e. This soil does not meet hydric criteria.

Map Unit: Moc2—Montevallio channery silt loam, 8 to 15 percent slopes, moderately eroded

Component: Montevallio (99%)

The Montevallio component makes up 99 percent of the map unit. Slopes are 8 to 15 percent. This component is on valley sides. The parent material consists of residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, parallelitic, is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 4e. This soil does not meet hydric criteria.

Map Unit: Mod2—Montevallio channery silt loam, 15 to 25 percent slopes, moderately eroded

Component: Montevallio (100%)

The Montevallio component makes up 100 percent of the map unit. Slopes are 15 to 25 percent. This component is on valley sides. The parent material consists of residuum weathered from shale and siltstone. Depth to a root restrictive layer, bedrock, parallelitic, is 10 to 20 inches. The natural drainage class is somewhat excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches (or restricted depth) is very low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 6e. This soil does not meet hydric criteria.

Map Unit: Moe2—Montevallio channery silt loam, 25 to 35 percent slopes, moderately eroded

Component: Montevallio (100%)

Component: Allenwood (90%)

The Allenwood component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on valley sides, uplands. The parent material consists of old till derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Map Unit: CmA—Comly silt loam, 0 to 3 percent slopes**Component: Comly (90%)**

The Comly component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on hills, valleys. The parent material consists of colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 15 to 24 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2w. This soil does not meet hydric criteria.

Component: Shelmadine (10%)

Generated brief soil descriptions are created for major components. The Shelmadine soil is a minor component.

Map Unit: CmB2—Comly silt loam, 3 to 8 percent slopes, moderately eroded**Component: Comly (90%)**

The Comly component makes up 90 percent of the map unit. Slopes are 3 to 8 percent. This component is on hills, valleys. The parent material consists of colluvium derived from shale and siltstone. Depth to a root restrictive layer, fragipan, is 15 to 24 inches. The natural drainage class is moderately well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. A seasonal zone of water saturation is at 20 inches during January, February, March, November, December. Organic matter content in the surface horizon is about 2 percent. Nonirrigated land capability classification is 2e. This soil does not meet hydric criteria.

Component: Shelmadine (10%)

Map Unit Description (Brief, Generated)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

The Map Unit Description (Brief, Generated) report displays a generated description of the major soils that occur in a map unit. Descriptions of non-soil (miscellaneous areas) and minor map unit components are not included. This description is generated from the underlying soil attribute data.

Additional information about the map units described in this report is available in other Soil Data Mart reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the Soil Data Mart reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description (Brief, Generated)

Carbon County, Pennsylvania

Map Unit: AdA—Allenwood gravelly loam and silt loam, 0 to 3 percent slopes

Component: Allenwood (90%)

The Allenwood component makes up 90 percent of the map unit. Slopes are 0 to 3 percent. This component is on valley sides, uplands. The parent material consists of old till derived from sedimentary rock. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches (or restricted depth) is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 3 percent. Nonirrigated land capability classification is 1. This soil does not meet hydric criteria.

Map Unit: AdB2—Allenwood gravelly loam and silt loam, 3 to 8 percent slopes, moderately eroded

DEP

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.










































Soil Survey Area: Carbon County, Pennsylvania
Survey Area Data: Version 11, Sep 15, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

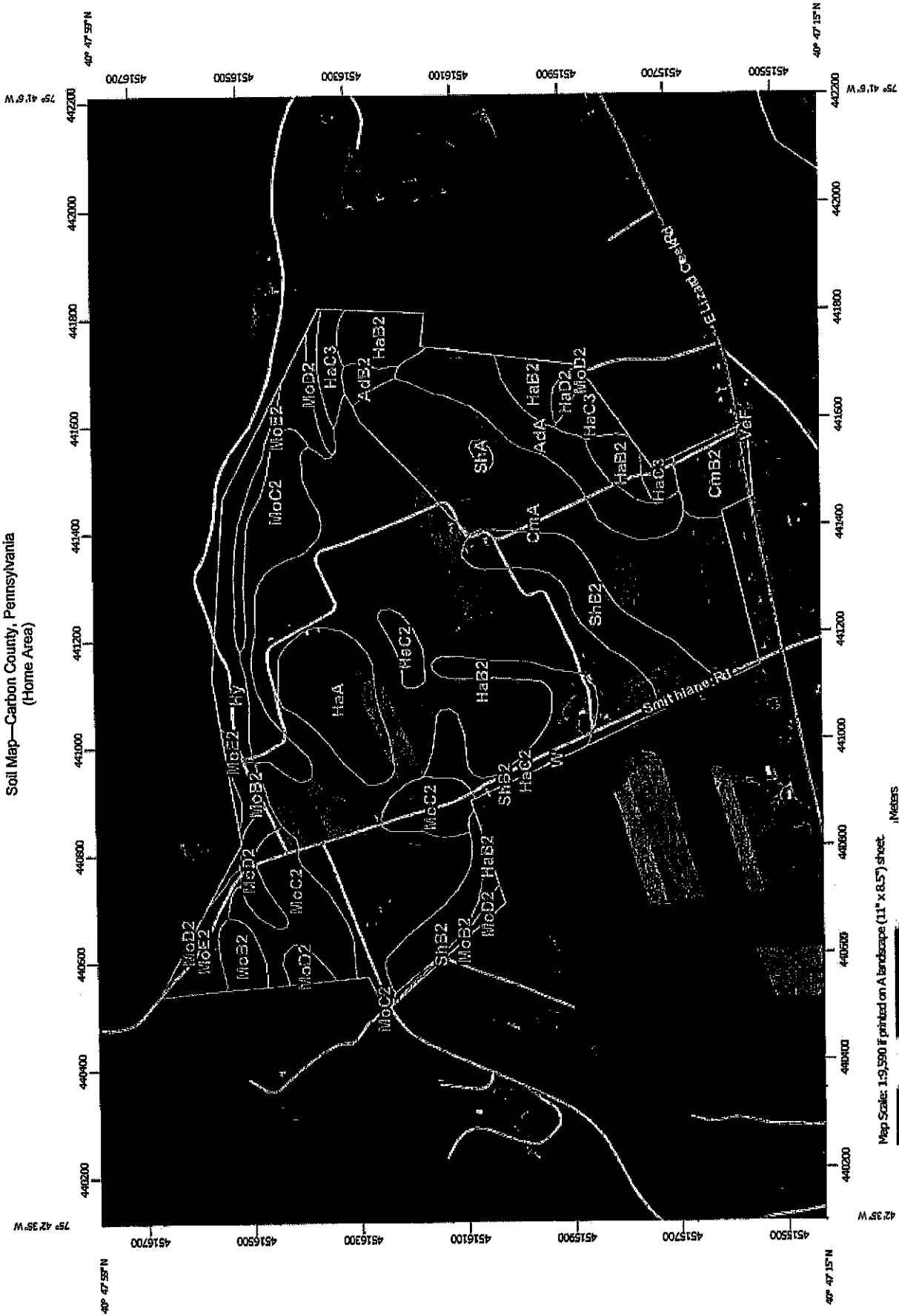
Date(s) aerial images were photographed: Mar 19, 2011—Jul 1, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
 Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
 Special Point Features	 Special Line Features
 Blowout	 Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	 Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	 Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

Soil Map—Carbon County, Pennsylvania
(Home Area)



Map Scale: 1:9,500 if printed on A landscape (11" x 8.5") sheet.
 0 100 200 400 600 Meters
 0 450 900 1800 2700 Feet
 Map projection: Web Mercator Corner coordinates: WGS84 Edge: UTM Zone 18N WGS84



USDA
 Natural Resources
 Conservation Service

Web Soil Survey
 National Cooperative Soil Survey

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *AA*

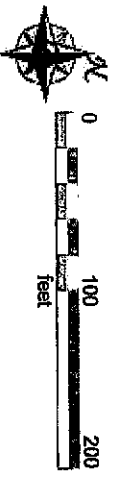
4. Soils Map(s) for the headquarters with the appropriate soil interpretations

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

Map Unit Legend

Carbon County, Pennsylvania (PA025)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AdA	Allenwood gravelly loam and silt loam, 0 to 3 percent slopes	10.7	4.9%
AdB2	Allenwood gravelly loam and silt loam, 3 to 8 percent slopes, moderately eroded	1.2	0.5%
CmA	Comly silt loam, 0 to 3 percent slopes	31.3	14.3%
CmB2	Comly silt loam, 3 to 8 percent slopes, moderately eroded	4.5	2.1%
HaA	Hartleton channery silt loam, 0 to 3 percent slopes	9.8	4.5%
HaB2	Hartleton channery silt loam, 3 to 8 percent slopes, moderately eroded	83.6	38.3%
HaC2	Hartleton channery silt loam, 8 to 15 percent slopes, moderately eroded	10.1	4.6%
HaC3	Hartleton channery silt loam, 8 to 15 percent slopes, severely eroded	5.1	2.3%
HaD2	Hartleton channery silt loam, 15 to 25 percent slopes, moderately eroded	0.8	0.4%
Hy	Holly silt loam	6.3	2.9%
MoB2	Montevallo channery silt loam, 3 to 8 percent slopes, moderately eroded	5.0	2.3%
MoC2	Montevallo channery silt loam, 8 to 15 percent slopes, moderately eroded	21.2	9.7%
MoD2	Montevallo channery silt loam, 15 to 25 percent slopes, moderately eroded	5.4	2.5%
MoE2	Montevallo channery silt loam, 25 to 35 percent slopes, moderately eroded	8.3	3.8%
ShA	Shelmadine silt loam, 0 to 3 percent slopes	0.4	0.2%
ShB2	Shelmadine silt loam, 3 to 8 percent slopes, moderately eroded	14.6	6.7%
VeF	Very stony land, 25 to 120 percent slopes	0.0	0.0%
W	Water	0.1	0.0%
Totals for Area of Interest		218.6	100.0%

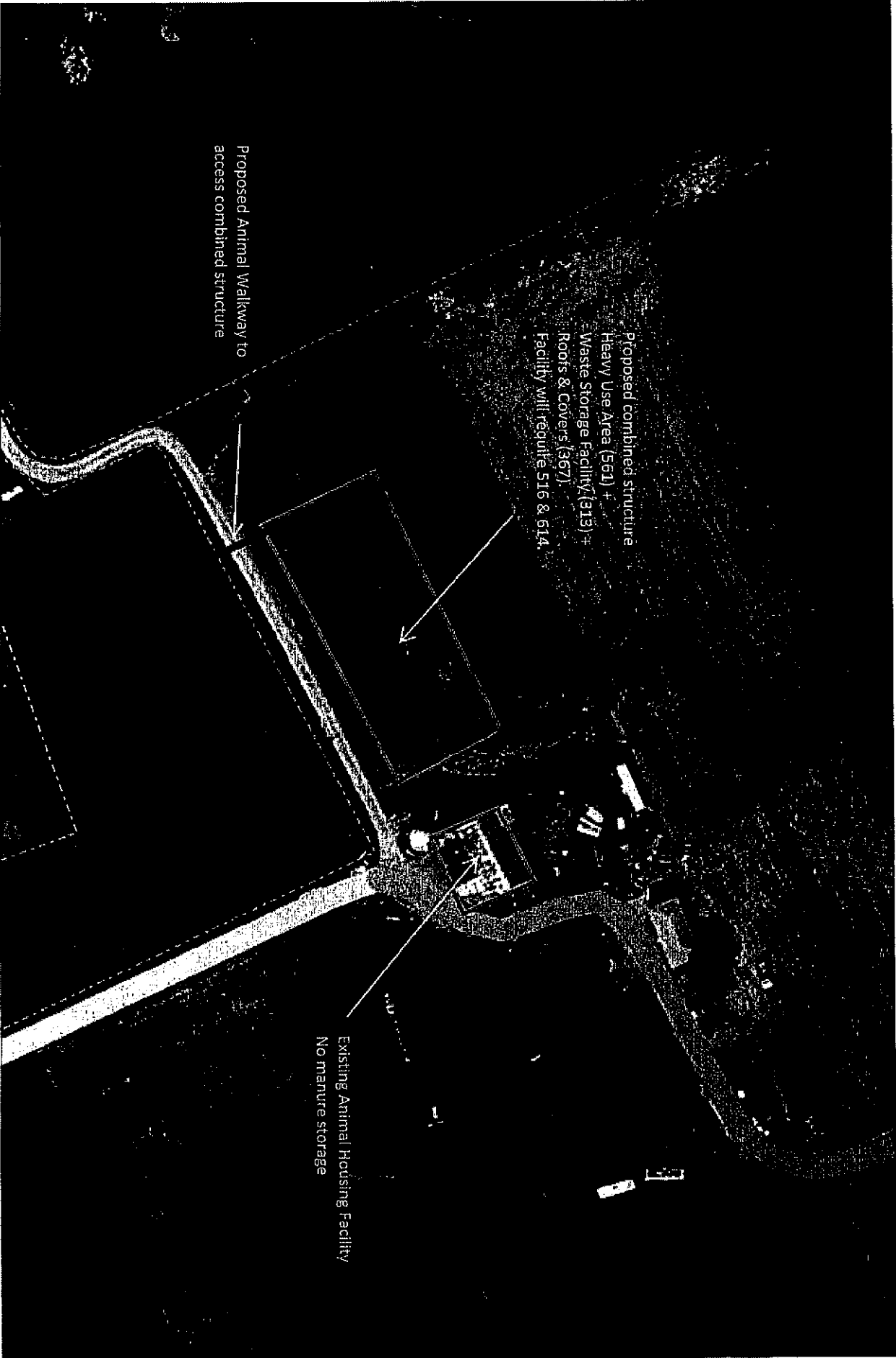
"Justin Barn



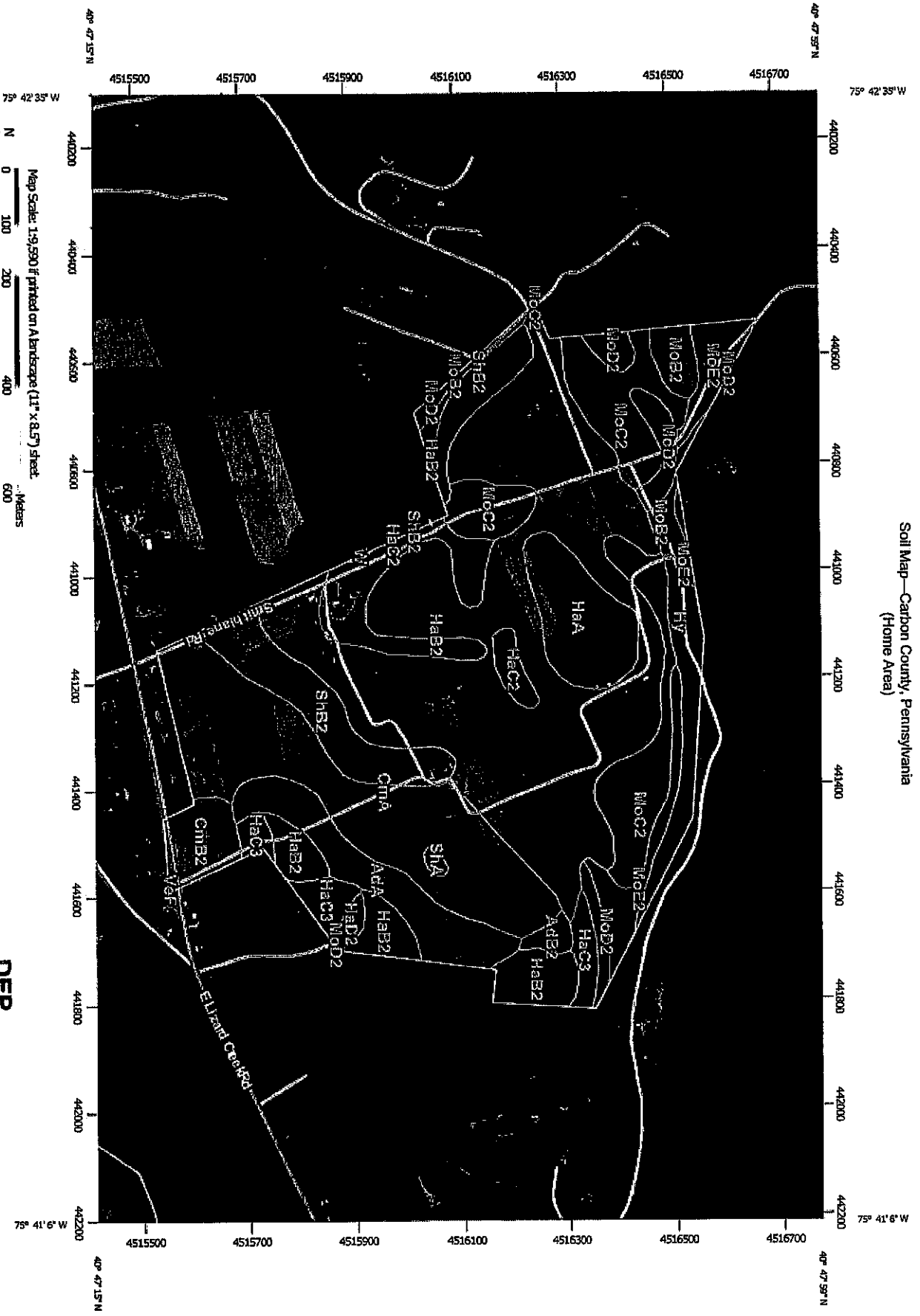
Proposed combined structure
Heavy Use Area (561) +
Waste Storage Facility (313) +
Roofs & Covers (367).
Facility will require 516 & 614.

Proposed Animal Walkway to
access combined structure

Existing Animal Housing Facility
No manure storage



Soil Map—Carbon County, Pennsylvania
(Home Area)



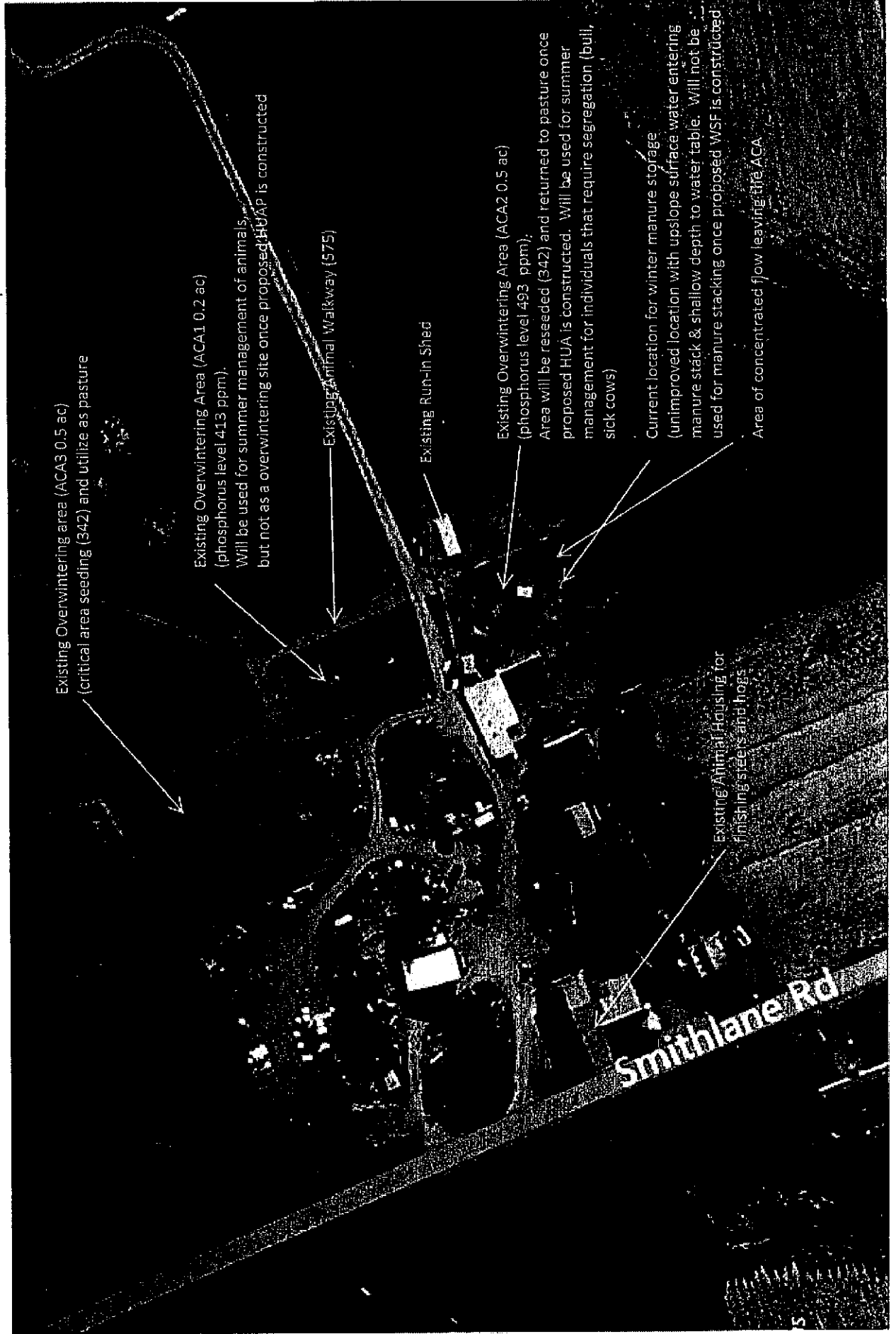
Map Scale: 1:9,590 if printed on A landscape (11" x 8.5") sheet.
 0 100 200 400 600 Meters
 0 450 900 1800 2700 Feet
 Map projection: Web Mercator Corner coordinates: WGS84 Edge UTM Zone 18N WGS84

USDA
 Natural Resources
 Conservation Service

Web Soil Survey
 National Cooperative Soil Survey

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *[Signature]*

Barn 1 - Farmstead Closeup



Existing Overwintering area (ACA3 0.5 ac)
(critical area seeding (342) and utilize as pasture

Existing Overwintering Area (ACA1 0.2 ac)
(phosphorus level 413 ppm).
Will be used for summer management of animals,
but not as a overwintering site once proposed HUAP is constructed

Existing Animal Walkway (575)

Existing Run-in Shed

Existing Overwintering Area (ACA2 0.5 ac)
(phosphorus level 493 ppm);
Area will be reseeded (342) and returned to pasture once
proposed HUA is constructed. Will be used for summer
management for individuals that require segregation (bull,
sick cows)

Current location for winter manure storage
(unimproved location with upslope surface water entering
manure stack & shallow depth to water table. Will not be
used for manure stacking once proposed WSF is constructed











Area of concentrated flow leaving the ACA

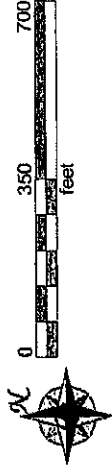
Existing Animal Housing for
finishing steers and hogs

Smithlane Rd

Hom arm

Establish a 35' vegetated buffer on either side of the field ditch. Manure may not be applied within 100' of the field ditch when water is flowing, unless a 35' vegetated buffer separates the cropland from the ditch. Manage the buffer as a hayfield, as outlined in the soil conservation plan.

-  Municipal Road
-  Surface Water
-  Field Boundary
-  100' manure application setback from well
-  35' grass buffer (no manure applications)
-  Access Road
-  Proposed Access Road
-  Existing Animal Housing
-  Proposed animal Housing
-  Proposed Building Decommission



DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

3. Plan map(s) showing existing and planned structures

614 Watering Facility

This practice has not been applied to the operation

Install 2 permanent frost free watering devices in the proposed Heavy Use Area (561/313 combination structure) to provide water to animals when animal access to pasture is restricted.

OPERATION AND MAINTENANCE

Monitor installations for adequacy of inflow and outflow. Check for leaks and repair as necessary. Periodically clean installations to remove accumulated debris.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	2 no	10	2020		
Total:	2 no				

620 Underground Outlet

This practice has not been applied to the operation

Install a pipe to convey collected roof runoff from the 558 Roof Runoff structures to a stable outlet. Animal guards shall be installed to prevent small animals from entering and blocking the pipes. A rock apron installed at the discharge location would provide a stable outlet to address erosion concerns associated with roof runoff.

Operations & Maintenance Notes:

- Periodic inspections, especially immediately following significant runoff events, to keep inlets, trash guards, and collection boxes and structures clean and free of materials that can reduce flow.
- Prompt repair or replacement of damaged components.
- Repair or replacement of inlets damaged by farm equipment.
- Repair of leaks and broken or crushed lines to insure proper functioning of the conduit.
- Periodic checking of the outlet and animal guards to ensure proper functioning.
- Repair of eroded areas at the pipe outlet.
- Maintenance of adequate backfill over the conduit.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	345 ft	10	2020		
Total:	345 ft				

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *fw*

575 Animal Trails and Walkways

This practice has been applied to the operation – walkway adjacent to ACA1

This practice has not been applied to the operation – walkway to proposed combination structure (561/313)

Maintain animal walkways leading from the Pasture Paddocks to ACA1 to provide access for animals to forage & supplemental hay/minerals.

Install a animal walkway to provide animal access to the proposed combination structure (561/313) from Pasture 1. Trails or walkways shall be constructed wide enough to accommodate livestock movement and access by the operator but shall be a minimum six (6) feet wide and a maximum of 14 feet wide.

OPERATIONS AND MAINTENANCE

- Periodically grade or re-shape trails or walkways to maintain the designed grade and dimensions
- Addition of surfacing materials may be necessary
- Re-seed areas in which adjacent vegetation has been damaged or destroyed (Critical Area Planting 342)
- Mend fences and replace gates when broken or damaged.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS (ACA1)				500 ft	5/2000
FS (proposed combination structure)	1275 ft	10	2020		
Total:	1275 ft			500 ft	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

561 Heavy Use Protection Area, continued

Additional Criteria for Livestock Areas

Planned concentrated livestock areas, as a part of a grazing system, shall be included in the overall waste management system plan (or CNMP) component of the conservation plan. All grass areas of the concentrated livestock heavy use areas shall meet the criteria for Prescribed Grazing (528). The proposed heavy use area shall be an appropriate size to accommodate the type, size and number of livestock and meet the operator's needs and purposes of the practice. Sizing guidelines in FOTG Section III, Concentrated Livestock Area Guidance (CLAG)-Exhibit 5 can be used as a guide.

Plans to construct a proposed combination structure (Heavy Use Area + Waste Storage Facility + Roof & cover) will allow ACA1, ACA2, ACA3 to be decommissioned & reduce the environmental impact of the areas as they are currently used. ACA 1, ACA2 & ACA3 will be reseeded as per the Critical Area Seeding (342) standard & managed as pasture. ACA2 & 3 will be included in the Pasture Paddocks and grazed as per the Prescribed Grazing Standard (528). ACA1 will be used for confinement of segregated animals (bull, sick animals) & will be continuously grazed, maintaining 3" of desired vegetation at all times.

Associated conservation practice standards Critical Area Planting (342) (planned); Fencing (382; Existing + Proposed); Animal Trails and Walkways (575; Existing + Proposed); Diversions (362; Proposed); Waste Storage Facility (313; Proposed), Prescribed Grazing (528; Proposed), Roof Runoff Structure (558; Proposed).

Operations & Maintenance:

The proposed roofed heavy use area / waste storage facility are to be inspected at least annually and after significant storm events to identify repair and maintenance needs. Removal of manure accumulations will occur in fall and manure will be land applied as per the Nutrient Management Plan (590).

Field	Planned Amount	Month	Year	Applied Amount	Date
FS (proposed combination structure)	60' x 72' (4,320 ft ²)	10	2020		
Total:	4,320 ft ²				

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

561 Heavy Use Protection Area

This practice has not been applied to the operation

Install and maintain a roofed heavy use area, where located on the map adjacent to barn 2-Justin's Barn, to confine & manage animals during winter months & during dry periods when pastures are not actively growing. The purpose of this practice is to protect water quality & protect soil quality, correcting the environmental concerns associated with the present method of animal management during winter months.

Existing earthen ACAs (ACA1, ACA2, ACA3) used continuously throughout the year do not meet the criteria for unpaved areas, presented below. See picture documentation in the Farmstead section of this plan:

Criteria for Unpaved Surface Treatment Areas

Under the following special conditions an unpaved surface may be used for a concentrated livestock area when associated with an adjacent vegetative grass buffer area:

- Use unpaved concentrated livestock area site no more than 150 days in a year – ACA1 & ACA2 are used 365 days per year
- Use the same unpaved concentrated livestock area site no more than once every 4 years, unless soil tests phosphorus levels show that more frequent use is possible – ACAs are used every year and P levels exceed 200 ppm (413 ppm in HUA1 & 493 ppm in HUA2)
- Provide a 150' flow length vegetative buffer located down-slope from the unpaved concentrated livestock area and the same width on the contour as the unpaved concentrated livestock area – not met for ACA2 or ACA3
- Ensure that runoff leaves the unpaved concentrated livestock area site and enters the vegetative buffer as sheet flow, not concentrated flow. Protect the buffer from damage from livestock. – runoff from HUA2 can enter the downslope vegetated area as concentrated flow
- Locate the unpaved concentrated livestock area site on average land slopes between 1% and 8% and locate the vegetative buffer area on average land slope between 1% and 15%.
- Locate the unpaved concentrated livestock area outside of natural or constructed drainage-ways, at least 100' from neighboring property lines, wells, springs, wetlands, karst basin intake areas, and ponds, etc. – ACA2 may be within 100' of a wet area with shallow groundwater table during winter months. ShB mapping unit has seasonal water table within 3" of the soil surface November through June & is a hydric soil.
- Locate the vegetative buffer area outside of natural or constructed drainage-ways, at least 50' from neighboring property lines, streams, 100-yr floodplains, wells, springs, wetlands, karst basin intake areas, and ponds, etc.
- The seasonal high water table must be no closer than 18" from the ground surface for the unpaved concentrated livestock area and 1' from the ground surface for the vegetative buffer area – ShB mapping unit has seasonal water table within 3" of the soil surface November through June & is a hydric soil.
- Locate the unpaved concentrated livestock area at least 100' from downslope subsurface drain lines
- Locate the unpaved concentrated livestock area and vegetative buffer area on soils with a permeability of less than 6"/hr in the upper 40 inches of the soil profile
- Locate on soils with convex slopes. Maintain positive slopes within the unpaved concentrated livestock area.
- Accumulated manure and feed must be removed from the unpaved concentrated livestock area after use and vegetation established for the next growing season.
- Limit each unpaved concentrated livestock areas to maximum 50 AU and 1 acre in size. Dimension the unpaved concentrated livestock area with a maximum flow length to width ratio of 1L to 2 W.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

558 Roof Runoff Structure

This practice has not been applied to the operation

Install and maintain roof gutters and downspouts or dripline drains on the front and back side of the proposed combined HUA/WSF structure (561/313). Collected water shall be conveyed through a proposed Underground Outlet (620) to a stable location.

Operations & Maintenance:

Keep roof runoff structures clean and free of obstructions that reduce flow
Make regular inspections and perform cleaning and maintenance as needed.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	350 ft	10	2020		
Total:	350 ft				

560 Access Road

This practice has been applied to the operation

Maintain access roads to allow farm equipment travel. The purpose of this practice is to allow equipment to access animal housing facilities and cropland while protecting adjacent areas. A wearing course of stone shall be applied to the access road connecting Dennis's barn to Justin's barn as a maintenance operation.

Access roads shall be 14' wide (10' tread width & 2' shoulder on each side) to allow safe. Upslope runoff is not a concern.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS				3,000 ft	5/2000
Total:				3,000 ft	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

516 Pipeline

This practice has not been applied to the operation

Install and maintain a frost-free underground pipeline connecting the well at Justin's farm to the proposed Watering Facility (614) in the proposed Heavy Use Area (561). The purpose of this practice is to provide water for livestock when they are confined in the Heavy Use Area over winter months. The pipeline should be buried below the frost depth to prevent freezing.

Operations and Maintenance:

- Opening/closing valves to prevent excessive water hammer shall be installed and checked regularly
- Inspecting and testing valves, pressure regulators, pumps, switches and other
- Appurtenances at least annually, but before winter use.
- Check for debris, minerals, algae and other materials which may restrict system flow at least annually, but before winter use

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	363 ft	10	2020		
Total:	363 ft				

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

412 Grassed Waterway

This practice as not been applied to the operation

Install a constructed waterway in the Farmstead area, as part of the proposed Heavy Use Area Protection (561) project, to convey upslope surface water runoff & roof runoff from the proposed Heavy Use Area Protection (561) structure and the proposed diversion (362) to a stable outlet in the pasture. and established with suitable vegetation to carry surface water at a non-erosive velocity to a stable outlet.

Vegetative Establishment. Grassed waterways shall be vegetated according to NRCS Conservation Practice Standard Critical Area Planting (342)

OPERATION AND MAINTENANCE

Provide an operation and maintenance plan to review with the landowner. Include the following items and others as appropriate in the plan.

- Establish a maintenance program to maintain waterway capacity, vegetative cover, and outlet stability. Vegetation damaged by machinery, herbicides, or erosion must be repaired promptly.
- Protect waterway from concentrated flow by using diversion of runoff or mechanical means of stabilization such as silt fences, mulching, hay bale barriers and etc. to stabilize grade during vegetation establishment.
- Minimize damage to vegetation by excluding livestock whenever possible, especially during wet periods. Permit grazing in the waterway only when a controlled grazing system is being implemented.
- Inspect grassed waterways regularly, especially following heavy rains. Fill, compacted, and reseed damaged area immediately. Remove sediment deposits to maintain capacity of grassed waterway.
- Avoid use of herbicides that would be harmful to the vegetation in and adjacent to the waterway area
- Avoid using waterways as turn-rows during tillage and cultivation operations.
- Mow or periodically graze vegetation to maintain capacity and reduce sediment deposition. Mowing may be appropriate to enhance wildlife values, but must be conducted to avoid peak nesting seasons and reduced winter cover.
- Apply supplemental nutrients as needed to maintain the desired species composition and stand density of the waterway.
- Control noxious weeds.
- Do not use as field road. Avoid crossing with heavy equipment when wet.

Field	Planned Amount	Month	Year	Applied Amount	Date
HUAP/WSF project	390 ft	9	2020		
F1-7	400 ft	9	2020		
Total:	790 ft				

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *fw*

382 Fence

OPERATION AND MAINTENANCE

Operation and Maintenance (O&M) includes the following: A schedule for regular inspections and maintenance as well as after storms and other disturbance events. Maintenance and repairs shall be performed in a timely manner to maintain the desired control.

Maintenance activities:

- Repair or replacement of loose or broken material, gates and other forms of Ingress/egress
- Removal of trees/limbs
- Replacement of water gaps as necessary
- Repair of eroded areas as necessary
- Repair or replacement of markers or other safety and control features as required.
- Annual clearing of weeds and brush under and near the fence systems will prolong life expectancy.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS (575)				400 ft	5/2000
HUAP project 561, 635, 575	649 ft	10	2020		
Total:	649 ft			6500 ft	

DEP
 NORTHEAST REGION
 CERTIFIED A TRUE AND
 CORRECT COPY *fw*

382 Fence

This practice has not been applied to the operation -- Proposed Animal Walkway

Fencing and access point gates will be required for the proposed HUA area, the animal trail and around the perimeter of the VTA. Fencing specifics for cattle per the Practice Code requires the use of a minimum of 3 strands of electric high tensile smooth wire, minimum of 2 hot, with wire spacing at 13", 24" and 36". Wire shall be fastened to on 4" diameter wooden post (Materials Specification 585), with a minimum placement depth of 30". Maximum recommended fence post spacing without post stays should be 20 to 30 feet but the fencing specification dictates large spacing intervals are permitted.

Associated practices include 561 Heavy Use Area Protection, 575 Animal Trails & Walkways (existing & proposed), 635 Vegetated Treatment Area

SAFETY

Safety is a concern when constructing electric fences. The following are safety guidelines to adhere to:

1. Do not erect wires or ground wires near overhead power lines, telephone wires, or radio antennas. It is illegal to cause interference.
2. Install energizers inside a building when possible. Energizers need not be attached to a power pole. All power supply lines should comply with local electrical codes.
3. All energizers must be connected to a separate grounding system. Never attach an energizer to other farm related grounding devices (e.g. electric panels, ground rods, lightning rods on buildings, houses, barns, etc).
4. Fence charger ground rods need to be at least 50 feet away from grounding rods that are not part of the fencing system.
5. Only one energizer should be installed onto a fence line.
6. Where there is public access to the fence, both interior and exterior fence, warning signs should be placed at a minimum of 300 feet apart.
7. Warn all children that electric fencing is being used and let neighbors know where and how to shut off the current.
8. Install lightening arrestors and chokes to protect fence.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

362 Diversion

This practice has not been applied to the operation

Install diversions on the upslope side of the proposed Heavy Use Area Protection (561) to divert upslope runoff from cropland areas from entering the proposed structure. This structure would divert water away from the existing facility and proposed improvements. The diversion will be protecting the existing building (barn 2 – Justin’s barn) and the proposed waste management system and will therefore need to be designed according to NRCS protocol associated with that level of protection. The diversion would be outletted to the proposed waterway.

Associated practices include 342 Critical Area Planting, 412 Grassed Waterway, 561 Heavy Use Area Protection

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	762 ft	9	2020		
Total:	762 ft				

367 Waste Facility Cover

This practice has not been applied to the operation

Install a peaked roof structure to cover the proposed 175' X 60' manure stacking pad. The cost shared roof dimensions' associate with the manure stacking area including 1' overhangs at each eave is 175' X 62'. The 9' roof area over the proposed concrete apron adjacent to the WSF would not be eligible for NRCS cost share program funding. Site conditions accommodate a Vegetated Treatment Area to address the cow/calf HUAP runoff so a roof structure for the HUAP does not qualify for NRCS cost share funding. The owner could fund a roof for the animal confinement area and any cost share funds allotted for the proposed waste transfer system could be used to fund the roof structure.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	10,850 ft ²	10	2020		
Total:	10,850 ft ²				

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

342 Critical Area Planting

This practice has not been applied to the operation

Establish permanent vegetation within the existing earthen ACAs (ACA2 & ACA3) after the proposed HUAP is constructed. These earthen ACAs shall be returned to pasture following planting. Perform tillage to smooth out areas & provide a suitable seedbed prior to seeding.

Establish vegetation in ACA2 annually, after manure is removed in fall, in an attempt to stabilize the site over winter and provide a method of nutrient uptake & removal. Established grass may be grazed in spring. See the Heavy Use Area Protection (561) standard for more information).

All areas disturbed from project installation will need to be re-vegetated with grasses. The waterway and diversion will also need to be seeded and mulched as soon as possible to eliminate the potential for erosion in case a high intensity storm occurs prior to re-establishment of vegetation. Due to the considerable length of the water conveyance channels, a Rolled Erosion Control Blanket (R.E.C.B.) should be installed within channels to provide additional protection against potential erosion. All seeded areas should be properly mulched to conserve soil moisture, moderate soil temperature, suppress weed growth, minimize soil erosion and facilitate the establishment of vegetative cover.

Seed a mixture of 25 lbs perennial ryegrass or tall fescue + 15 lbs Kentucky Bluegrass per acre.

Associated Practices include 362 Diversion, 412 Grassed Waterway, 561 Heavy Use Area Protection

Field	Planned Amount	Month	Year	Applied Amount	Date
ACA1	0.2 ac	5	2020		
ACA2	0.5 ac	5	2020		
ACA3	0.5 ac	5	2020		
HUAP project (412, 362, 561)	0.91 ac	10	2020		
Total:	2.11 ac				

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

316 Animal Mortality, continued

Operations & Maintenance

Composting is a biological process. It requires a combination of art and science for success. Hence, the operation may need to undergo some trial and error in the start-up of a new composting facility. Biosecurity issues will be minimized by following proper composting procedures and minimizing the herd's exposure to the deceased animal.

Adequate space and volume shall be provided within the composting location to establish a base layer for the compost mix. Sawdust or finished compost can be used in a 50-50 mixture with spent silage, chopped straw, chopped corn stover, or chopped soybean stubble as the base layer and cover material. Refrain from using wood chips as they are not well suited to absorb moisture and will result in odors due to porosity. Wood chips may be used as a 6" layer beneath the aforementioned base layer to promote air movement into the pile.

The following guidelines are for composting of animal mortality:

- In a windrow system, the base layer shall be at least 24" for animals over 250 lbs. Windrows should be 10 feet wide (for small carcasses) to 14 feet wide (for larger carcasses). Cover carcasses with at least 24" of suitable material. Refrain from disturbing the pile for 6 months. The compost pile should be turned at least 5 times after the initial 6 month period & prior to land application to introduce oxygen into the system and accelerate secondary composting.
- Maintain adequate moisture in the compost mix throughout the compost period within the range of 40-65%. Introduce water as necessary to achieve the proper moisture level. Prevent excess moisture from accumulating in the compost by constructing a roof over the proposed facility
- Temperatures for active mortality compost should be maintained above 130° F for at least 5 days. Take emergency action if temperatures exceed 185° F by introducing water.

Field	Planned Amount	Month	Year	Applied Amount	Date
H1-3				1 no	2000
Total:				1 no	

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

316 Animal Mortality

This practice has been applied to the operation

Animal mortality is handled by composting steer carcasses on the Home farm, along the western edge of field H1-3 (see site map for location). The purpose of mortality composting is to decrease the non-point source pollution of surface and groundwater, reducing the impact of odors resulting from improperly handled mortality and decreasing the potential for spreading disease/pathogens. Manure from diseased animals should be handled in accordance with state veterinarian's recommendations.

The designated area is located 500 feet from surface water, and 300 feet from the nearest drinking well.

Contingencies for catastrophic mortality events, resulting from non-pathogenic events, are provided below. Catastrophic mortality events due to pathogenic events should be handled in conjunction with consultation from the Pennsylvania Department of Agriculture.

Criteria Applicable to Catastrophic Mortality

The composting designated area shall be located as far away from neighboring dwellings and the livestock production facility as site conditions permit, or inside the livestock production facility. Locate on sites with restricted percolation and a minimum of two feet between the bottom of the designated area and the seasonal high water table. The operation will expand the current composting location in the event of catastrophic mortality.

Catastrophic mortality composting shall be in either passive piles or windrows as described in National Engineering Handbook Part 637, Chapter 2 – Composting (NEH 637.0210 and NEH 637.0211). Static piles or windrows covered with sawdust, finished compost, or other benign material will not need further protection. In situations involving catastrophic mortality losses, such as whole herd or flock disposal due to disease or catastrophic events, please contact the PA Department of Agriculture Bureau of Animal Health and Diagnostic Services at 717-772-2852 for additional information and instructions.

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

2. Narratives of Decisions for the Farmstead / Production Area

313 Waste Storage Facility

This practice has not been applied to the operation

Install and maintain a roofed concrete manure stacking structure, as part of the proposed Heavy Use Area Protection (561) to store animal waste produced by all the animals housed in the proposed HUA as well as manure transferred from "Dads Barn – barn 1" & "Justin's Barn – barn 2" for a period of 6 months. The estimated dimensions of the facility are 60' x 175' with 6'-concrete walls.

Associated practices include 561 (Heavy Use Area Protection), 367 (Roofs & Covers, 634 (Manure Transfer), 635 (Vegetated Treatment Area), 533 (Pumping Plant), 558 (Roof Runoff), 620 (Underground Outlet), 342 (Critical Area Planting), 575 (Animal Trails & Walkways), 362 (Diversion), 412 (Grassed Waterway), 382 (Fence)

Operations & Maintenance

The manure storage shall be emptied in both spring and fall, following application rates set forth in the nutrient management plan. The nutrient management plan provides a strategy for removal and disposition of waste with the least environmental damage during normal operating scenarios.

Field	Planned Amount	Month	Year	Applied Amount	Date
FS	1 no	10	2020		
Total:	1 no				

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *pw*

1. Brief Description of the AFO

Justin Cunfer, along with his father, own and operate a beef operation in East Penn Township, Carbon County. Justin Cunfer provided the following information on the animal groups associated with the facility:

- (40) cow/calf pairs at an average weight of 1800 pounds per pair for a total of 72 Animal Units (AUs)
- (98) beef heifers and steer at an average weight of 900 pounds per animal for a total of 88.2 AUs
- (20) Finishing hogs at an average weight of 125 pounds per animal for a total of 2.5 AUs.

All Best Management Practices, (BMPs) proposed in this report that are based on animal units were determined using these herd numbers.

Current management of the animals is as follows: Cows are not provided roofed confinement during the winter. They have access to paddocks & pasture April through December & are confined in 2 small areas (one area in the paddocks & one area in the pasture adjacent to the run-in shed). See the Farmstead map for additional information on the locations of these areas. Calves are pastured with cows until fall, then are moved to the finishing areas (barn 1 "Dad's Barn" & barn 2 "Justin's Barn"). Both finishing areas are total confinement.

Environmental concerns associated with the operation center around the overwintering animal concentrated areas (ACAs) in both the paddocks and pasture. The paddocks ACA is used annually & soil phosphorus levels exceed 200 ppm. The pasture ACA is also used annually, has soil P over 200 ppm, and is located on a soil with poor drainage. Neither ACA can maintain vegetation throughout the year and erosion is evident. The pasture area also has a P Index score of 185 using current management as there is no way to reduce animal access / manure deposition.

This CNMP proposes a Heavy Use Area Protection structure to relieve pressure on the overwintering ACAs and allow animal access to the pasture to be reduced so P Index scores fall into a manageable range. The existing run-in shed in the pasture shall be decommissioned as a overwintering area for the cow herd, and the pasture ACA shall be seeded & managed as pasture for sick cows and/or bulls.

Part 1. CNMP Format**Comprehensive Nutrient Management Plan (CNMP)**

The Comprehensive Nutrient Management Plan (CNMP) is an important part of the conservation management system for your Animal Feeding Operation (AFO). This CNMP documents the planning decisions and operation, maintenance, and record keeping for the animal feeding operation.

Farm/Facility: Justin Cunfer
351 Cunfer Lane Lehigh PA 18235
570.401.6106
angusndf@ptd.net

Client Name(s): Justin Cunfer

Plan Period: January 2017 – October 2020

Comprehensive Nutrient Management Planner

As a Certified CNMP Planner, I certify that I have reviewed both the *Comprehensive Nutrient Management Plan* and supporting documentation for technical adequacy and that the elements of the documents are technically compatible, reasonable and can be implemented.

Signature: _____ **Date:** _____

Name: Eric Rosenbaum

Title: _____ **Certification Credentials:** 1024 NMC; TSP – 03 – 274

Client

As the decision maker for the animal feeding operation covered by this CNMP, I, have been involved in the planning process and agree that the items/practices listed in each element of the CNMP are needed and will accomplish my management and conservation objectives. I understand that I am responsible for keeping all the necessary records associated with the implementation of this CNMP. It is my intention to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature: _____ **Date:** _____

Name: _____

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*

Part 2. CNMP Format – Record of Decisions for the Farmstead/Production Area

Table of Contents:

1. A brief description of the AFO (both existing and proposed), including the type of animal, number of animals, average weight, number of days confined, type of manure storage, existing storage volumes/sizes (when applicable) and maximum length of storage available
2. Narratives of Decisions for the Farmstead / Production Area
3. Plan map(s) showing existing and planned structures
4. Soils Map(s) for the headquarters with the appropriate soil interpretations
5. Comprehensive Nutrient Management Plan Engineering Report – prepared by John Coleman

DEP
NORTHEAST REGION
CERTIFIED A TRUE AND
CORRECT COPY *fw*