ANIMAL WASTE MANAGEMENT PLAN

Ricky Reed
Poultry Production Operation

Section 36- T21N R24E

Other property in:
Section 31- T21N R25E
Delaware County, Oklahoma

Agricultural Environmental Management Services
(AEMS)

Oklahoma Department of Agriculture, Food and Forestry
PO Box 528804
Oklahoma City, OK 74105

RECEIVED
DEC 05 2006
AG ENVIRONMENTAL MGMT SVCS
OKLA DEPT OF AGRICULTURE

TABLE OF CONTENTS

Introduction	**2**
Description of Operation	**2**
Application Rates	**3**
Dead Bird Disposal	**3**
Waste Utilization Guidelines	**4**
Best Management Practices	**4**
Environmental Statement	**5**
Additional Information	**5**
Aerial Photographs Showing Boundaries	**6-7**
Soils Map	**8-9**
Soils Name and Description	**10**
Waste Analysis	**11**
Soil Test	**12-14**
Topographical Map	**15-16**
Plat Map	**17-18**

ANIMAL WASTE MANAGEMENT PLAN
Ricky Reed
Prepared November 2006
To be revised by November 2012

A. INTRODUCTION

Plants remove from the soil four to ten times as much nitrogen as phosphorus. Consequently a significant buildup of phosphorus in the soil can take place over a period of time. Much of the build up can be lost through runoff, which greatly reduces the quality of water downstream. Due to these water quality concerns, future land application of poultry litter will be based upon the phosphorus content in the soil and the amount of phosphorus in the chicken litter applied. The law requires that the Natural Resources Conservation Service (NRCS) recommendations for litter application rates be followed. NRCS recommends the application maximum of 200 lbs. of phosphorus per acre per year if the soil test shows a phosphorus index below 250. If the soil tests phosphorus index is between 250 and 400 then the rate applications are reduced by one-half. If the phosphorus index is above 400 then no litter is to be applied. If the maximum amount of litter that can be applied does not supply sufficient nitrogen for the desired production then the nitrogen from other sources can be applied (ex: ammonium nitrate). About 50 lbs of nitrogen is needed to produce one ton of bermuda grass and about 60 lbs is needed to produce one ton of fescue.

B. DESCRIPTION OF OPERATION

This animal waste management plan includes the production, handling, and distribution of waste and litter from two broiler houses. These houses are located in the Tenkiller Reservoir nutrient limited watershed and in an area of highly vulnerable groundwater. One house is 32 feet wide and 250 feet long and the other house is 40 feet wide and 400 feet long. These houses are located in Section 36, T.21N, R.24E., Delaware County, Oklahoma. On an average there will be 7 batches of chickens each year for a yearly production of 210,000 birds. Total yearly waste and litter production is 140 tons (from records). This waste is accumulated on wood shavings bedding material. Total clean out is done in the spring each year. Cake out is not done. A litter saver is used. Part of the litter is being removed from this property. If it should become necessary to store litter outside it will be protected from outside water and there will be no runoff from the stockpile. There are 120 acres in this property of which about 62 acres are suitable for receiving litter.

C. APPLICATION RATES

Field 1, 2, 3 & 4: Section 36, T.21N, R.24E., Delaware County, Oklahoma
Field5: Section 31, T.21N, R.24E., Delaware County, Oklahoma

Nutrient Content:
According to the latest (2/06) litter test, each ton of litter contains:
N-68 lbs. P_2O_5-57 lbs. K_2O-64 lbs.

Soil Test results (2/06):

Field #	NO_3	P. Index	K Index
1	15	214	273
2	31	414	332
3	13	282	92

Soil test P Index is 120 and 300 in fields 1 and 3. Litter can be applied at one-half rate (100 lbs. P_2O_5 per acre). 100 lbs. P_2O_5 per ton of litter = 1.8 of litter per acre maximum application rate. This 1.8 tons will supply enough nitrogen to produce about 1.7 tons of bermuda grass or about 1.4 tons of fescue (Fertilizer is 70 percent effective the first year). The phosphorus index is greater than 300 in field 2. This field should not receive litter.

The application of 1.2 tons pf ECCE lime in field 2 will make the fertilizer more readily availably for plant use. The application of lime in fields 1 and 3 is not needed.

Do not apply litter within 50 to 100 feet of ponds, streams, or water wells.

Application Summary:

Field #	Acres	Application Rate in tons	Tons Used
1	26	1.8	47
2	20	0	0
3	9	1.8	16
4	16	No test	0
5	46	Woodlands	0

140 tons of litter produced minus 63 tons that can be used = 77 tons that must be removed from this farm.

D. DEAD BIRD DISPOSAL

Birds from normal death loss are disposed of in an incinerator. Catastrophic losses are disposed of in a dug pit as approved by the appropriate poultry inspector.

E. WASTE UTILIZATION GUIDELINES

1. All waste will be applied in accordance with all state and local laws and ordinances.
2. All waste applications will be timed to minimize pollution.
3. Any one of the following conditions will prohibit the surface application of litter:
   a. High velocity wind is toward a populated area.
   b. There is high probability of a runoff producing rainfall.
   c. The ground is frozen.
   d. Saturated conditions exist.
   e. The Phosphorus Index is 300 or greater in nutrient limited watersheds.
   f. The Phosphorus Index is 400 or greater in non-nutrient limited watersheds.
   g. Frequently flooded areas.
   h. Areas where there will be discharge from the application site.
   i. Severely eroding areas.
   j. Soils are less than 10 inches deep.
   k. Slopes are greater than 15% (fifteen feet rise or fall in 100 feet).
   l. Very stony areas.

F. BEST MANAGEMENT PRACTICES

1. Apply litter not to exceed amounts given in the waste management plan or a revised recommendation based on new soil and litter tests.

2. Obtain new soil and litter tests every 3 years.

3. Secure enough soil tests to adequately represent the conditions of your farm. Generally one composite sample is needed for each 40 acres where litter is to be applied.

4. Maintain a good growth of grass at all times. Grass should not be less than 4 inches tall. This reduces runoff, erosion, and nutrient loss.

5. Spread litter during growth season of dominant plants.

6. Control weeds and brush to maintain a good stand of grass.

7. Do not apply litter within 50 to 100 feet of streams, ponds, and water wells. Buffer strips should be maintained in these areas.

8. On slopes of 8 to 15%, use one-half the normal prescribed rate of litter.

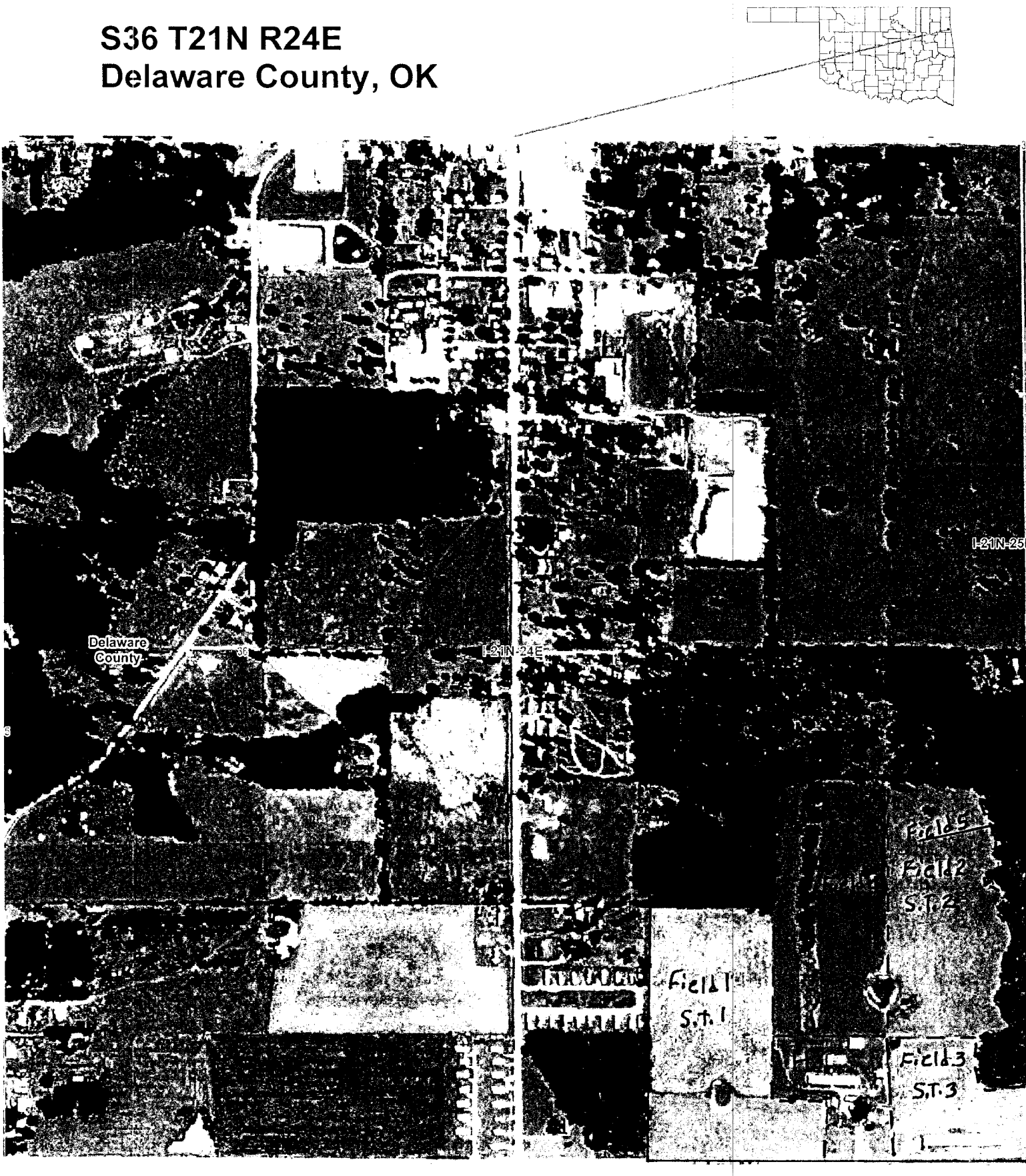
G. ENVIRONMENTAL STATEMENT

There are ponds and intermittent streams on this property that require special precautions when spreading litter (See statement F 7). The moderately high to high phosphorus index is a concern when using litter on this property. The steep and/or stony area is still in woodland.

H. ADDITIONAL INFORMATION

1. **The dominant grasses are bermuda grass and fescue.**
2. **Owner does his own clean out. Cake out is not done.**
3. **Keep records of amount of litter produced, date of total clean out, and where litter is applied if not sold.**
4. **Any person taking litter from this property must be given a copy of a current litter test.**
5. **Litter and soil testing should be done about one month before time of total clean out. This will allow adequate time for test results to be returned and used in determining application rates.**
6. **If assistance is needed, please call Ed Abernathy at (918)-647-3094.**

S36 T21N R24E
Delaware County, OK

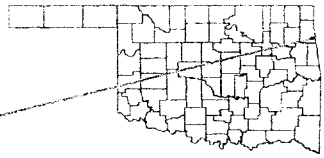


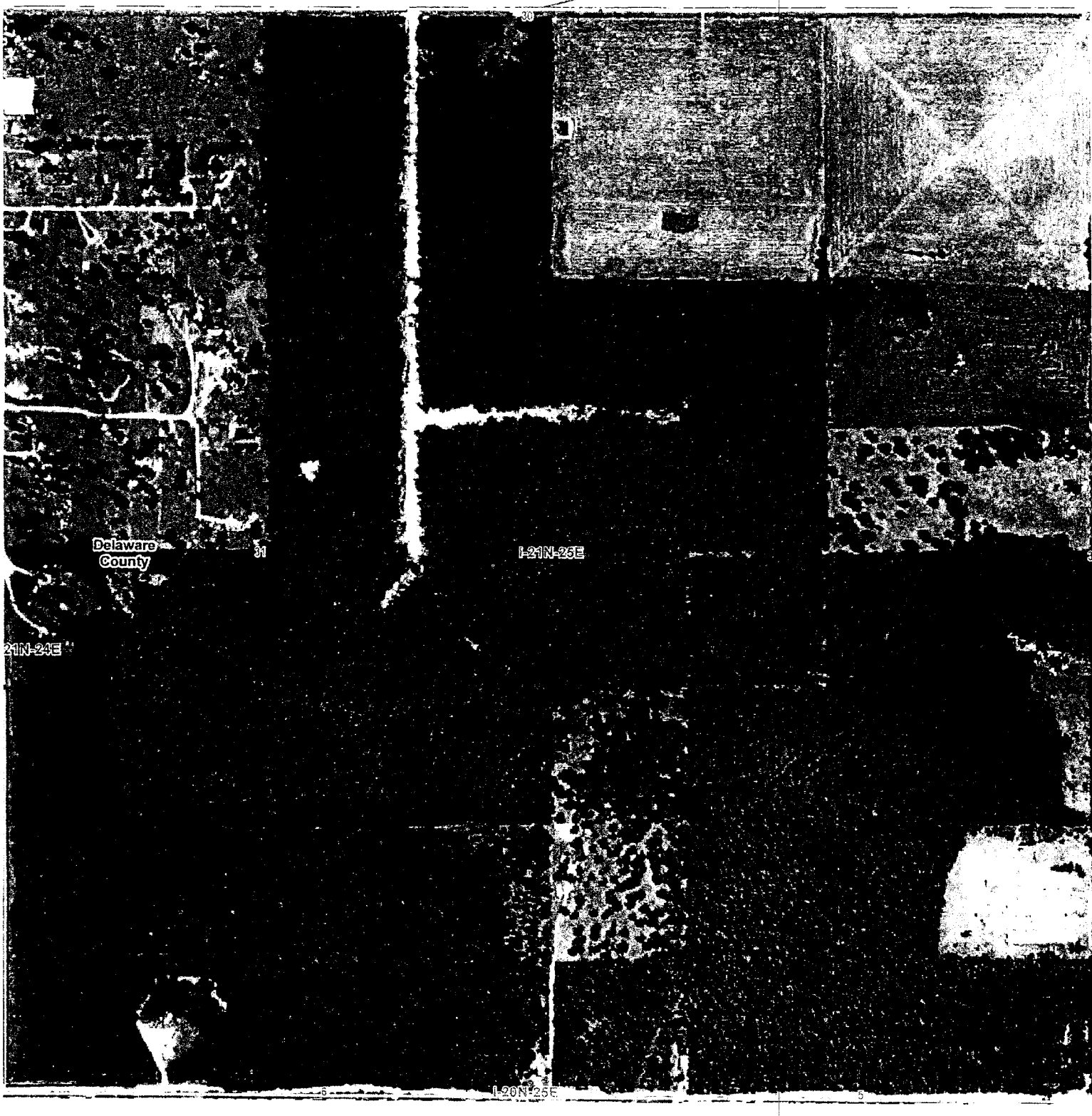
0 660 1320 1980 2640 Feet

Produced by the Oklahoma Department of Agriculture Geographic Information System.

S.T.= Soil test

S31 T21N R25E
Delaware County, OK

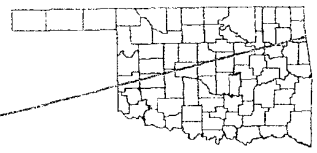




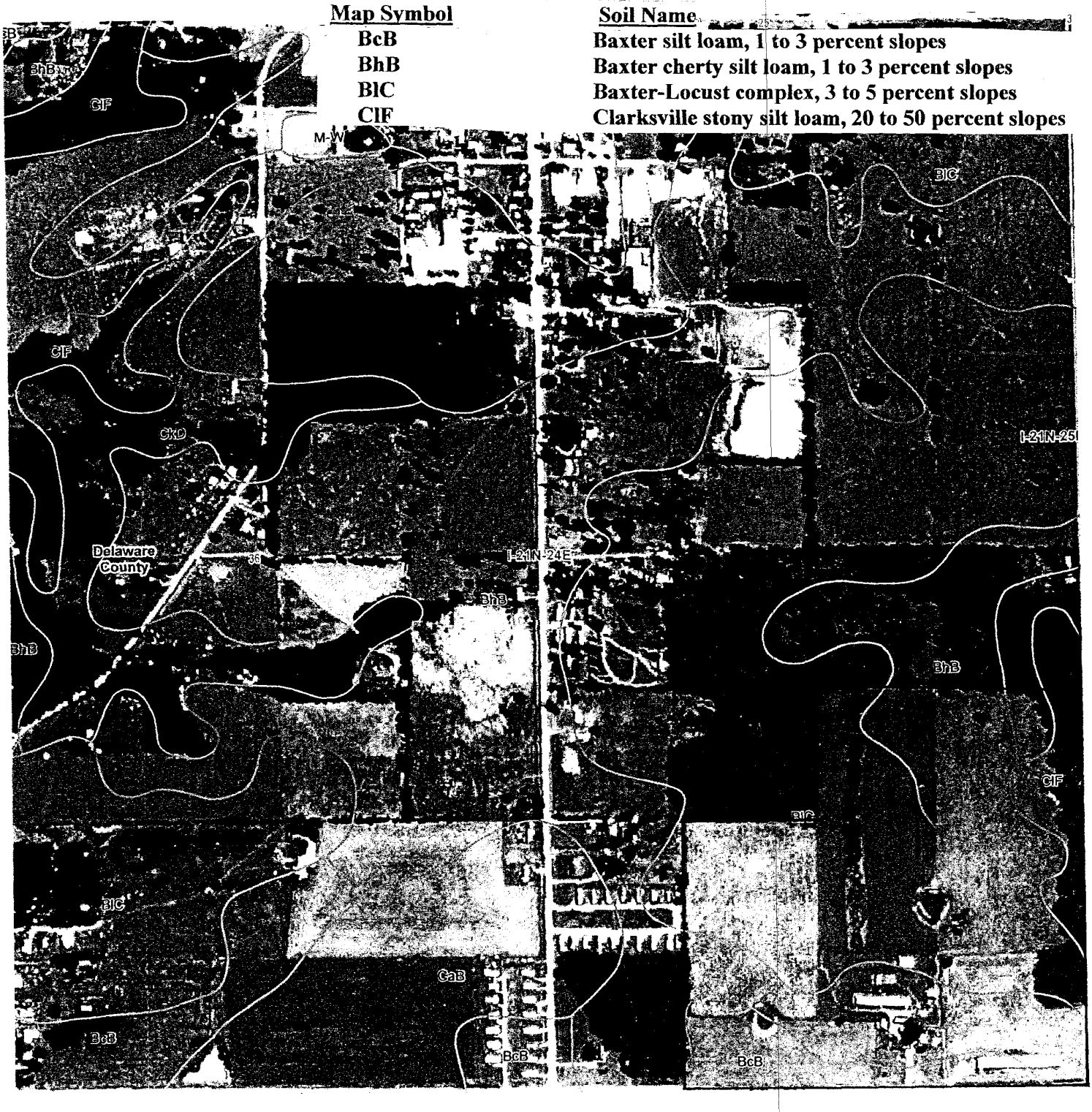
0 660 1320 1980 2640 Feet

Produced by the Oklahoma Department of Agriculture Geographic Information System.

S36 T21N R24E
Delaware County, OK



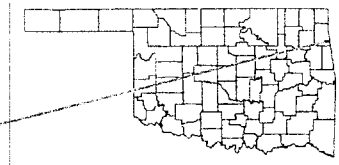
Map Symbol	Soil Name
BcB	Baxter silt loam, 1 to 3 percent slopes
BhB	Baxter cherty silt loam, 1 to 3 percent slopes
BlC	Baxter-Locust complex, 3 to 5 percent slopes
ClF	Clarksville stony silt loam, 20 to 50 percent slopes



0 660 1320 1980 2640 Feet

Produced by the Oklahoma Department of Agriculture Geographic Information System.

S31 T21N R25E
Delaware County, OK



Map Symbol	Soil Name
CIF	Clarksville stony silt loam, 20 to 50 percent slopes

Produced by the Oklahoma Department of Agriculture Geographic Information System.

Map Symbol	SOIL NAME AND DESCRIPTION
BcB	**Baxter silt loam, 1 to 3 percent slopes** This is a deep soil with a silt loam surface layer and a subsoil of silt clay loam that contains 10 to 35 percent cherty fragments. This soil is medium in natural fertility, organic matter content and available water capacity.
BhB	**Baxter cherty silt loam, one to 3 percent loam** They are deep well drained soils with cherty silt loam surface layers and cherty subsoils. They are medium in natural fertility organic matter content and available water capacity.
BlC	**Baxter-Locust complex, 3 to 5 percent slopes** These soils occur in such a pattern they could not be shown separately on the soils map. They are both deep soils and have cherty silt loam surface layers. Baxter is dominantly a cherty clay in the subsoil and Locust is a cherty silty clay loam in the subsoil. Natural fertility organic matter content, and available water capacity are medium.
ClF	**Clarksville stony silt loam, 20 to 50 percent slopes** This is a deep, well drained to excessively drained soil with a stony, silt loam surface layer and a silty clay loam subsoil. It is low in natural fertility, organic matter content and available water capacity.

Soil, Water & Forage Analytical Laboratory
Oklahoma State University
048 Agricultural Hall, Stillwater, OK 74078
Email: Soils_lab@mail.pss.okstate.edu

ANIMAL WASTE ANALYSIS REPORT

DELAWARE CTY EXT OFC	Name:	Lab ID No.:	402745
	RICKY REED	Customer Code:	21
PO BOX 1020	Location:	Sample No.:	109
JAY OK 74346		Received:	2/8/2006
(918) 253-4332		Report Date:	2/23/2006

TEST RESULTS FOR: *Solid* SOURCE: *Poultry*

TEST	As Received	Dry Basis(lbs/ton)	As Received(lbs/ton)
Moisture	25.1 %		
Dry Matter	74.9 %		
pH	8.3		
EC	14600 µS		
Soluable Salts	9782 ppm	26	20
Phosphorus(P2O5)	2.8 ppm	76	56.9
Calcium(Ca)	2.5 ppm	66	49.4
Potassium(K2O)	3.2 ppm	85	63.7
Magnesium(Mg)	0.5 ppm	14.4	10.8
Soduim(Na)	0.8 ppm	20.9	15.6
Sulfur(S)	0.8 ppm	21	15.7
Iron(Fe)	287.8 ppm	0.8	0.6
Zinc(Zn)	387.7 ppm	1	0.8
Copper(Cu)	386.4 ppm	1	0.8
Manganese(Mn)	397.8 ppm	1.1	0.8
Total C	28.9 %	772.6	578.4
Total N	3.4 %	90.7	67.9

DELAWARE COUNTY OSU EXTENSION CTR
PO BOX 1020 - FAIR GROUNDS
JAY, OK 74346
(918) 253-4332

Signature

Soil, Water & Forage Analytical Laboratory
Oklahoma State University
048 Agricultural Hall, Stillwater, OK 74078
Email: Soils_lab@mail.pss.okstate.edu

SOIL TEST REPORT

DELAWARE CTY EXT OFC	**Name:**	**Lab ID No.:**	**402627**
	RICKY REED	**Customer Code:**	**21**
PO BOX 1020	**Location:**	**Sample No.:**	**5386**
JAY OK 74346	FIELD 1 WEST FESCUE	**Received:**	**2/7/2006**
(918) 253-4332		**Report Date:**	**2/10/2006**

Reaction		**NO3-N (lbs/acre)**		**Test Index(mehlich3)**	
pH:	5.6	Surface:	15	P:	214
Buffer Index:	6.8	Subsoil:		K:	273

Secondary Nutrients	**Micronutrients**	**Additional**
Surface SO4-S (lbs/A):	Fe (ppm):	OM (%):
Subsoil SO4-S (lbs/A):	Zn (ppm):	
Ca (lbs/A):	B (ppm):	
Mg (lbs/A):		

Interpretation and Requirements for *Fescue* **(YIELD GOAL =** *3 tons/acre* **)**

Test	**Interpretation**	**Requirement**	**Recommendation and Comments**
pH	Adequate	No lime required	
Nitrogen	Deficient	165.0 lbs /acre N	
Phosphorus	Adequate	None	
Potassium	Adequate	None	

Additional Comments:

DELAWARE COUNTY OSU EXTENSION CTR
PO BOX 1020 - FAIR GROUNDS
JAY, OK 74346
(918) 253-4332

JASON HOLLENBACK
Extension Educator-Agriculture/4-H

Soil, Water & Forage Analytical Laboratory
Oklahoma State University
048 Agricultural Hall, Stillwater, OK 74078
Email: Soils_lab@mail.pss.okstate.edu

SOIL TEST REPORT

DELAWARE CTY EXT OFC	**Name:**	**Lab ID No.:**	**402628**
	RICKY REED	**Customer Code:**	**21**
PO BOX 1020	**Location:**	**Sample No.:**	**5387**
JAY OK 74346	FIELD 2 EAST BERMUDA	**Received:**	**2/7/2006**
(918) 253-4332		**Report Date:**	**2/10/2006**

Reaction		**NO_3-N (lbs/acre)**		**Test Index(mehlich3)**	
pH:	5.6	Surface:	31	P:	414
Buffer Index:	6.8	Subsoil:		K:	332

Secondary Nutrients	**Micronutrients**	**Additional**
Surface SO_4-S (lbs/A):	Fe (ppm):	OM (%):
Subsoil SO_4-S (lbs/A):	Zn (ppm):	
Ca (lbs/A):	B (ppm):	
Mg (lbs/A):		

Interpretation and Requirements for *Bermudagrass* **(YIELD GOAL =** *3 tons/acre* **)**

Test	**Interpretation**	**Requirement**	**Recommendation and Comments**
pH	Lime needed	1.2 tons ECCE/A	
Nitrogen	Deficient	119.0 lbs /acre N	
Phosphorus	Excessive	None	
Potassium	Adequate	None	

Additional Comments:

DELAWARE COUNTY OSU EXTENSION CTR
PO BOX 1020 - FAIR GROUNDS
JAY, OK 74346
(918) 253-4332

JASON HOLLENBACK
Extension Educator-Agriculture/4-H

Soil, Water & Forage Analytical Laboratory
Oklahoma State University
048 Agricultural Hall, Stillwater, OK 74078
Email: Soils_lab@mail.pss.okstate.edu

SOIL TEST REPORT

DELAWARE CTY EXT OFC	Name:	Lab ID No.:	402630
	RICKY REED	Customer Code:	21
PO BOX 1020	Location:	Sample No.:	5388
JAY OK 74346	FIELD 3 EAST FESCUE	Received:	2/7/2006
(918) 253-4332		Report Date:	2/10/2006

Reaction		NO_3-N (lbs/acre)		Test Index(mehlich3)	
pH:	5.4	Surface:	13	P:	282
Buffer Index:	6.6	Subsoil:		K:	92

Secondary Nutrients	Micronutrients	Additional
Surface SO_4-S (lbs/A):	Fe (ppm):	OM (%):
Subsoil SO_4-S (lbs/A):	Zn (ppm):	
Ca (lbs/A):	B (ppm):	
Mg (lbs/A):		

Interpretation and Requirements for *Fescue* **(YIELD GOAL =** *3 tons/acre* **)**

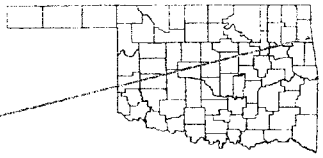
Test	Interpretation	Requirement	Recommendation and Comments
pH	Adequate	No lime required	
Nitrogen	Deficient	167.0 lbs /acre N	
Phosphorus	Adequate	None	
Potassium	73 % Sufficient	56.6 lbs /acre K_2O annually	

Additional Comments:

DELAWARE COUNTY OSU EXTENSION CTI
PO BOX 1020 - FAIR GROUNDS
JAY, OK 74346
(918) 253-4332

JASON HOLLENBACK
Extension Educator-Agriculture/4-H

S36 T21N R24E
Delaware County, OK

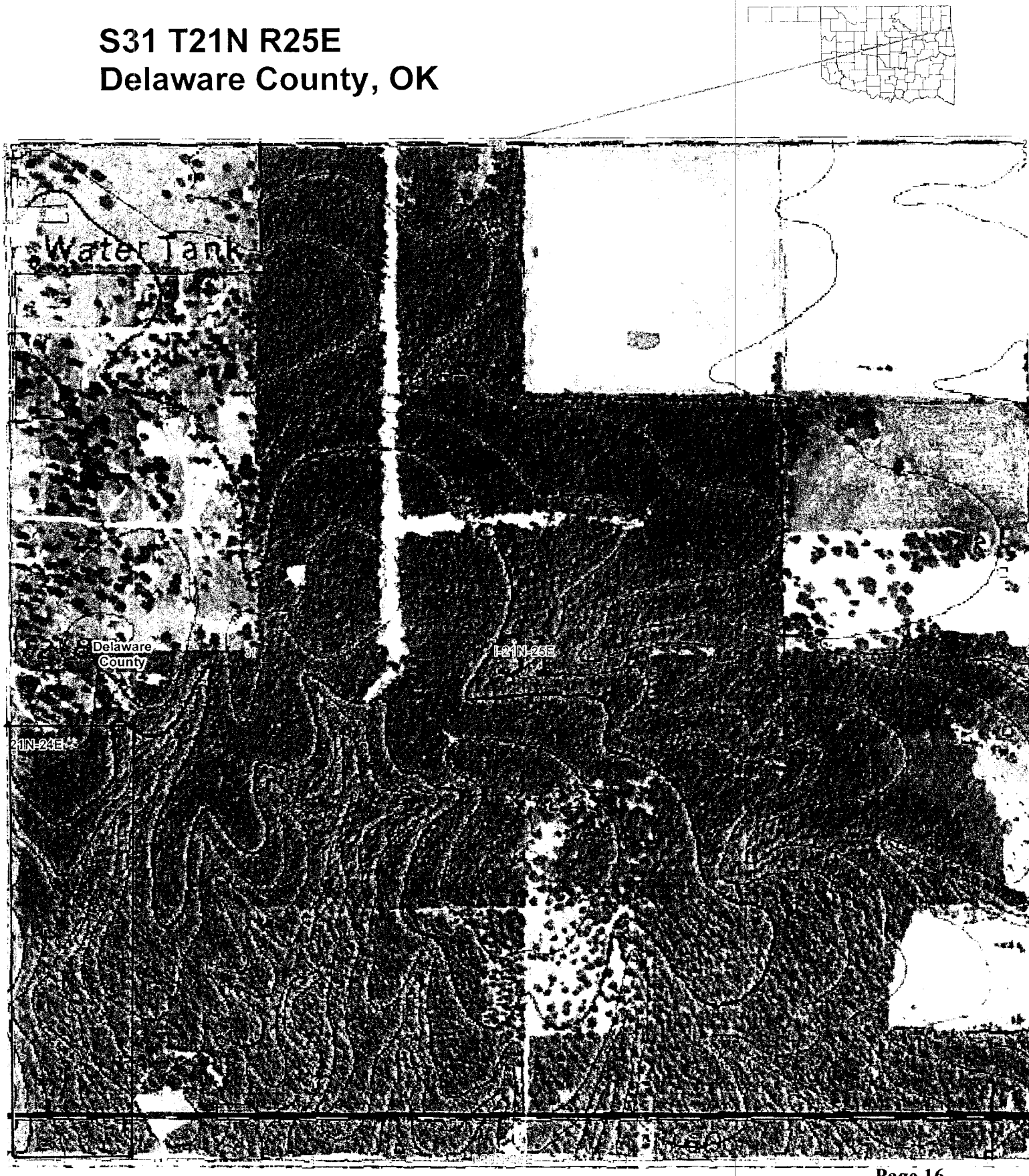


Page 15

0 660 1320 1980 2640 Feet

Produced by the Oklahoma Department of Agriculture Geographic Information System.

S31 T21N R25E
Delaware County, OK



0 660 1320 1980 2640 Feet

Produced by the Oklahoma Department of Agriculture Geographic Information System.

OKLAHOMA DEPARTMENT OF AGRICULTURE, FOOD, & FORESTRY
AGRICULTURAL ENVIRONMENTAL MANAGEMENT SERVICES

Legal Location Platt

NORTH

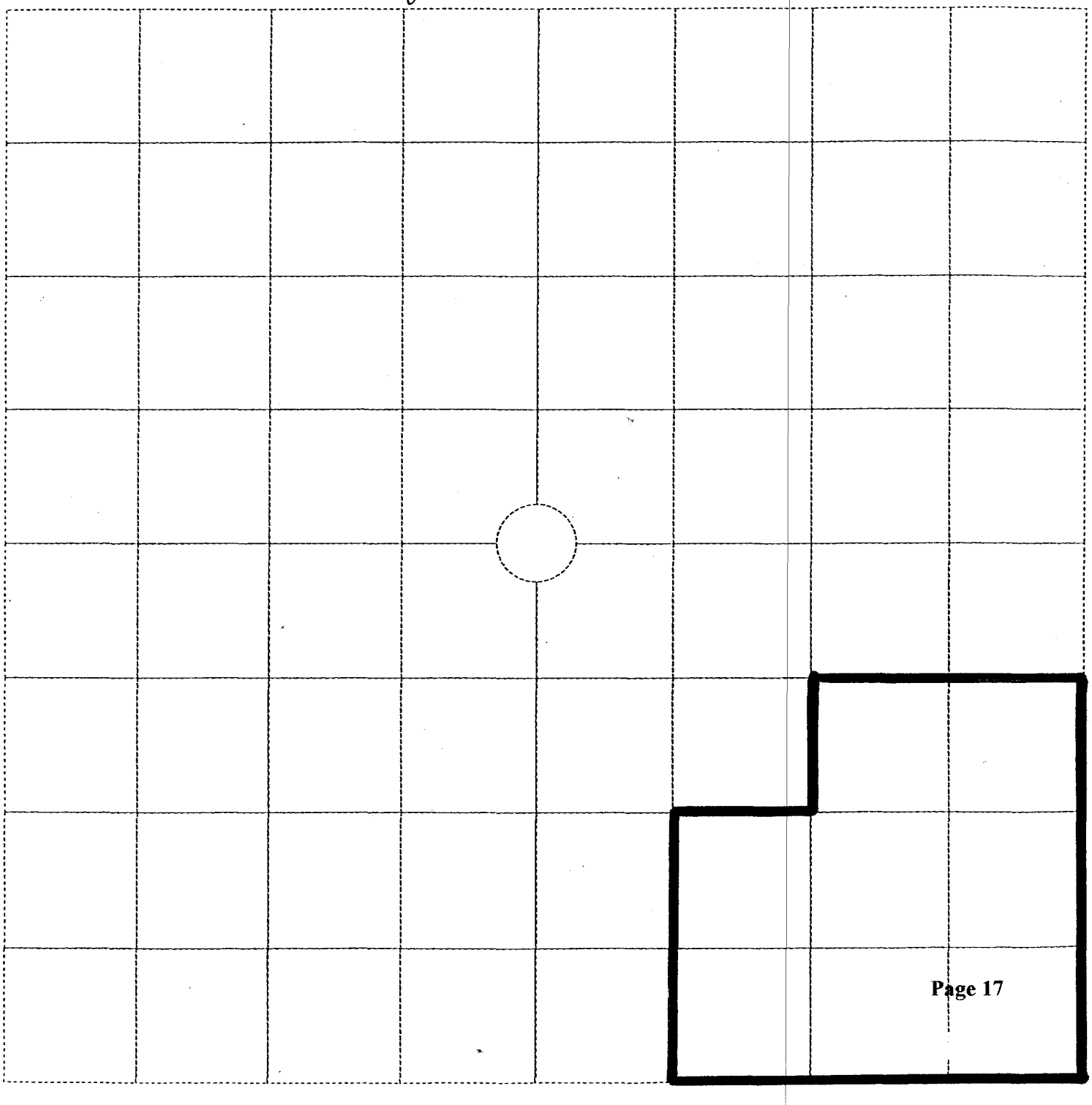
Size: 10 acre

Scale: 1" = 660 '

Facility Name Ricky Reed

Legal Desc. ____, ____, ____ Sec 36 T 21N R 24E Mer. ____

County Delaware County, Oklahoma



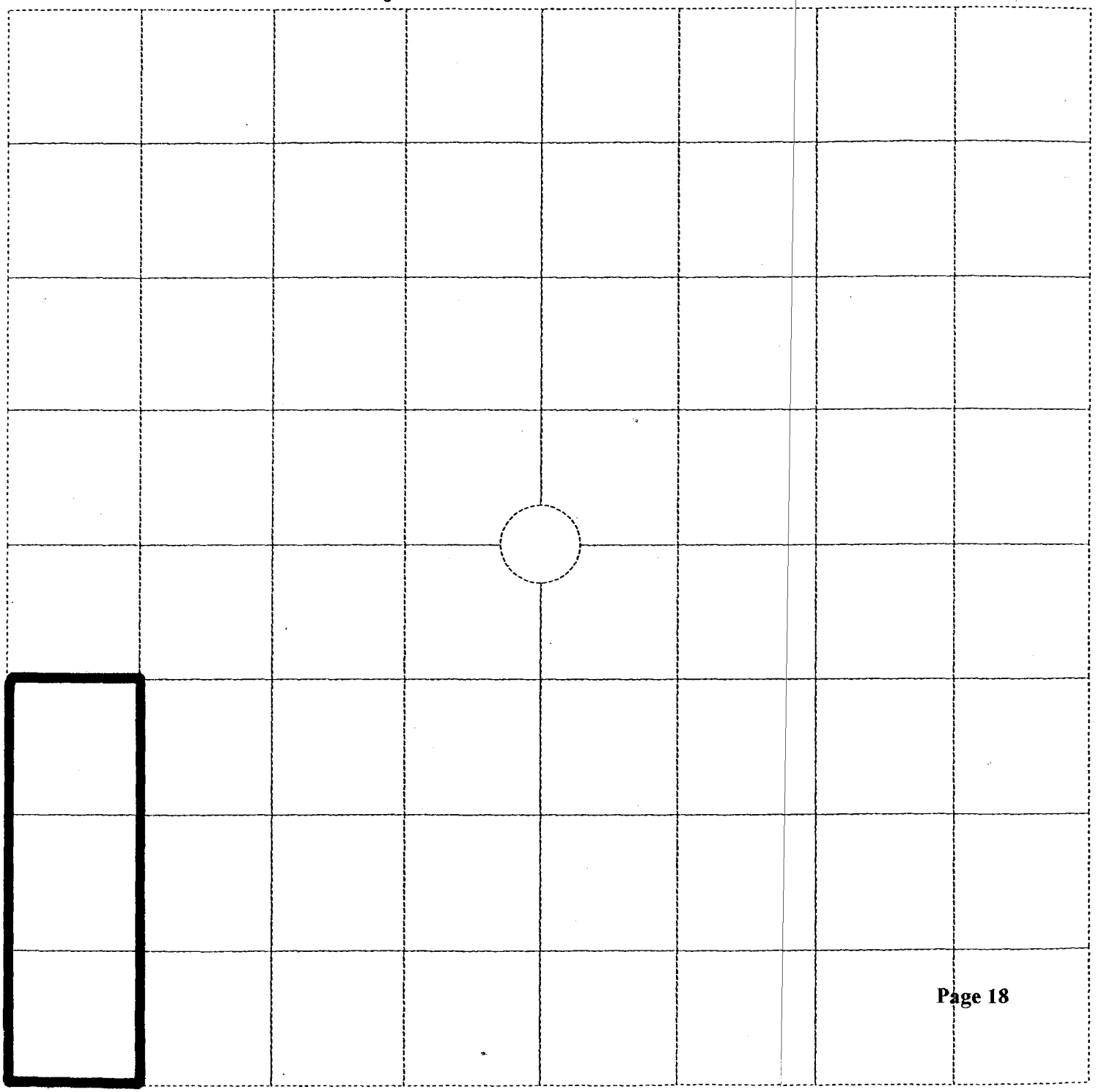
Page 17

OKLAHOMA DEPARTMENT OF AGRICULTURE, FOOD, & FORESTRY
AGRICULTURAL ENVIRONMENTAL MANAGEMENT SERVICES

Legal Location Platt

NORTH

Size:
10 acre

Scale:
1" = 660 '

Facility Name Ricky Reed
Legal Desc. ____, ____, ____ Sec 31 T21N R25E Mer. ____
County Delaware County, Oklahoma