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11104 IL Hwy 82  
Cambridge, Illinois 61238

**EPA**

February 20, 2004

Beverly Booker  
Illinois EPA Bureau of Water  
CAS #19  
P.O. Box 19276  
Springfield, Illinois 62794-9276

Org: Beverly Booker  
cc: Barb Conner  
Roger Callaway  
Tim Kluge  
Peoria Region, WPC  
Records Unit

Dear Ms. Booker,

I am following up with a written response to you after having a meeting with your agency on Feb. 3, 2004 at your Peoria, Illinois Regional office. Enclosed are my proposed Compliance Commitment plans concerning the violation notice W-2002-00470 that I received from your agency dated December 3, 2003. My facility I D is ILU000454.

After the meeting I had with your agency I met with Rich Stewart, USDA-NCRS and Steve Hobson, agricultural engineer from the Macomb RC&D office at my farm. Steve Hollister, agronomist with the NRCS was also suppose to be present but had a last minute conflict and was unable to attend. I have enclosed a copy of ag engineer Steve Hobson's overview of my livestock buildings and his recommendations to address your concerns on my open front livestock buildings and attached concrete lots.

In addressing your three main concerns as I understood them at our meeting on February 3, 2004 in Peoria Illinois:

1) Livestock waste runoff off the cropland that lies directly north of my cattle pasture and south of the 2 confinement buildings.

Compliance Method: This field was used in this instance for an emergency application. As outlined in my first response to your agency, if we are unable to get a custom waste applicator to apply our livestock waste when needed we will from now on apply the liquid waste on cropland or hay land on the farm in a manner not to affect the Spring Creek watershed making sure we stay away from all watersheds the required 200 feet.

2) Livestock waste runoff from my open front buildings.

Compliance Method: After meeting with Steve Hobson, ag engineer at my farm I have decided to use his recommendation of adding concrete blocks on the downhill side of each of the four open lot building areas to contain livestock waste and the associated runoff from these lots. I am also going to discontinue having swine on the dirt lot off the concrete floor of the 50 by 90 livestock barn. (Barn #1 in Steve Hobson's report, attachment A)

3) Manure and Hay build up in the cattle feeding area.

Compliance Method: We have moved our cattle feeding area in the winter as far away from the watershed area as we can in our pasture and are moving the feeding area weekly as to not have a buildup of cattle manure or left over hay in any one concentrated area. We are cleaning the past feeding site up.

We are applying this material on cropland and hay land in a manner so we do not affect any watersheds. When finished with the cleanup of this area we are going to seed it down with a grass mixture recommended by Rich Stewart D.C. (USDA-NRCS) of Henry county. We will construct a fence to keep the cattle herd off this area except for occasional grazing and for corralling them up to our barn areas.

I have forwarded my yield data and soil test information to Steve Hollister the agronomist with the NRCS and Rich Stewart. They are helping me at this time in making a Nutrient Management Plan. This will be finished as soon as Mr. Hollister is done analyzing all of my information. I will forward this to you as soon as Steve, Rich, and I have completed it.

I am setting a completion date of August 1, 2004 to be finished with all of these compliance goals. I would hope that what I have outlined in this amended letter to the one I sent to you on January 13, 2004 addresses your concerns. I await your review of my proposed CCA and hope you will accept this proposal.

Sincerely,

A handwritten signature in cursive script that reads "Randy Edmund".

Randy Edmund

United States Department of Agriculture



Natural  
Resources  
Conservation  
Service

321 University Drive  
Macomb, IL 61455

Phone: (309) 833-4747 Fax: (309) 833-4019

SUBJECT: Randy Edmund, Swine Site  
Trip Report

DATE: February 12, 2004

TO: Rich Stewart, DC  
USDA-NRCS  
301 E. North Street  
Cambridge, IL 61238

FILE CODE: 210-0  
EPA Violation # W-2003-00470

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On February 10, 2004 Rich Stewart, District Conservationist Cambridge Field Office, Steve Hobson, Agricultural Engineer Macomb RC&D Office met with landowner Randy Edmund on his farm.

Enclosed is a plan view sketch of the facility labeled **Attachment A**.

Enclosed is supporting documentation on quantity calculations labeled **Attachment B**.

Footnote references and documentation are in **Attachment B**.

Enclosed is 6 month runoff volume calculations from concrete feedlots labeled **Attachment C**.

Enclosed is calculations for "as excreted" manure book nutrient values labeled **Attachment D**.

**FACILITY DESCRIPTION:**

The site includes two swine grower/finisher confinement buildings with 8 foot deep concrete pits. Also there are four open face buildings/sheds with some concrete lots in front of each building. In the 2 confinement buildings are pigs on site 365 days per year. In some of the 4 open face buildings, are gestating sows on lot (Dec 1 - Mar 1 : 120 days) then they go to the pasture lots to farrow the other 8 months of the year. Also in some of the 4 open face buildings are grower/finishing pigs on lot (Nov 1 - Apr 30 : 180 days) then they go to the pasture.

The current EPA concerns as I understand are with the management of potential runoff from the open face buildings and attached concrete lots, clean up of an area near the open face buildings, where cattle are fed (buildup of hay/manure piles) and the land application of manures on cropland adjacent to streams and its tributaries.

**Several options are available:**

1. Shut down operation.
2. Add 6 months of storage for open lot areas (302,000 gallons) at an estimated cost of \$60,000 to \$75,000 plus engineering fees.
3. Add "modular concrete blocks" (dimensions 2' x 2' x 4' typically) around the downhill side of each open lot to contain manures and associated runoff for all four open lot buildings. Rotate cattle feeding area to prevent large buildup of manure/hay compost in one location.

Option 3 is the recommended choice as being the least cost, simple, and most preferred by the landowner.

The landowner will need to accommodate the minimum volumes specified in Footnote \*4 for each Barn lot #1, #2, #3, and #4 respectively. Also, the landowner proposes to clean up the cattle feeding area with location shown on Attachment A. The landowner plans to seed down the hillside that is between the stream and the four open lot areas, and to add proposed fencing to limit livestock access to the stream.

SUBJECT: Randy Edmund, Swine Site  
Trip Report

DATE: February 12, 2004

Seeding rates will be provided by Rich Stewart, USDA-NRCS District Conservationist; Cambridge Field Office. A Certified Nutrient Management Plan (CNMP) is to be prepared with oversight by Steve Hollister, USDA-NRCS Area Agronomist; Morrison Field Office.

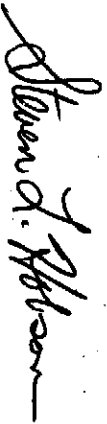
It is suggested that after each rainfall event, the landowner should remove any buildup of manure and rainwater from the containment area and either field apply or empty it into the confinement storage pits. It is also suggested, that the landowner will need to make sure that the confinement pits are lowered each Fall in anticipation of accommodating the open lot volumes, if adverse weather does not allow for field application during the winter months.

In Summary, Option 3 with proper landowner maintenance and removal after each rainfall event should be able to contain anticipated 25-year rainfall, winter runoff and keep livestock wastes from reaching Spring Creek.

Rich Stewart, please forward this letter to landowner Randy Edmund.

If you have any questions, please contact me at my Macomb office at (309) 833-4747.

Submitted by,



Steven L. Hobson, PE  
USDA-NRCS  
Lead Area-4 Agricultural Engineer

# ATTACHMENT A

Randy Edmund, Henry County, Illinois

Drawn 2-11-04

## LEGEND

..... Proposed Modular 2' x 2' x 4' Concrete Blocks

[X] Proposed fencing for limiting livestock access to stream

○ Cattle Feeding area to be cleaned up

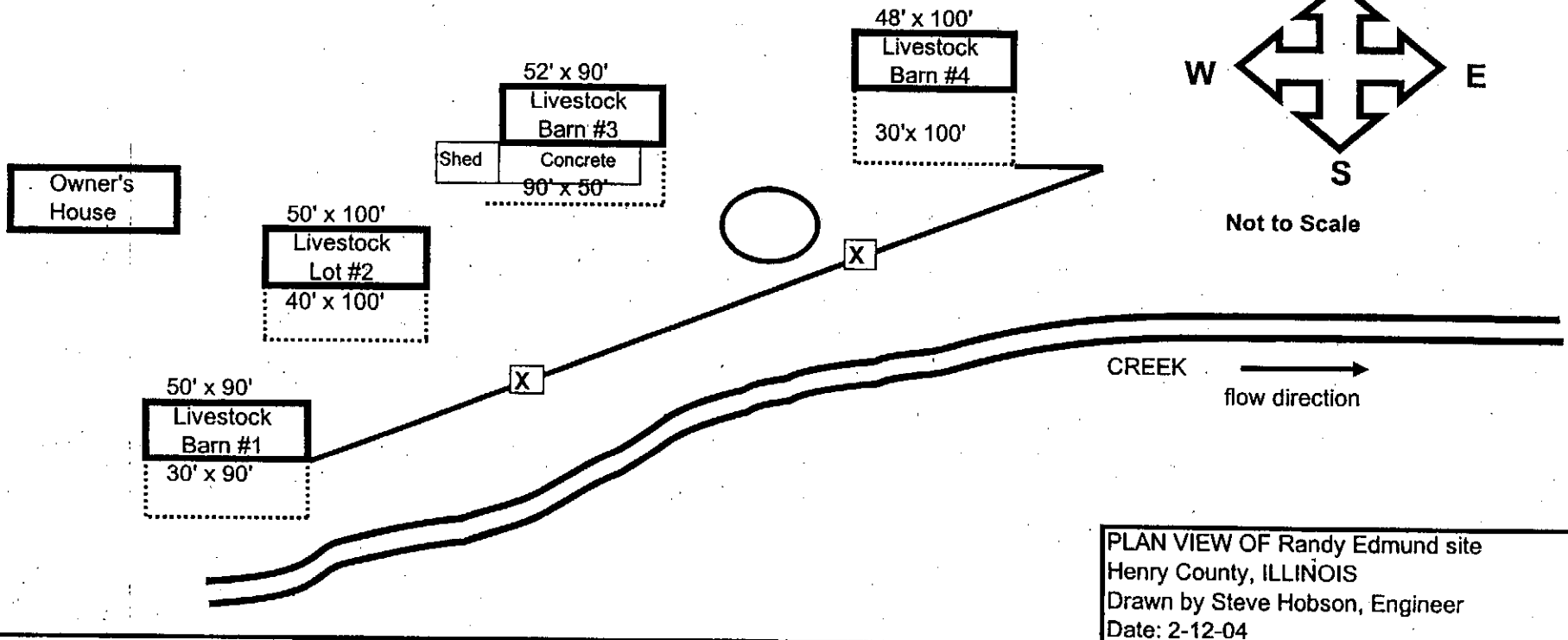
Confinement Buildings

132' x 51'

#5

#6

132' x 51'





## ATTACHMENT B: Calculations Randy Edmund

### ANIMAL NUMBERS (Swine):

Confinement Buildings: 2 Bldg x 830 pigs/ Bldg x [(10# + 270#) / 2] = 232.4 NRCS 1,000 lb Animal Units.

Sows on Open Face Lots: 375 Sows x 400# avg = 150.0 NRCS 1,000 lb Animal Units.

Grower/Finisher pigs on Open Face Lots: 550 pigs x [(45# + 270#) / 2] = 86,625 NRCS 1,000 lb AU.

### MANURE PRODUCTION: (Yearly basis for land application)

\*1 Confinement Buildings: 232.4 AU x 1.067 ft<sup>3</sup>/day/AU x 365 days = 90,481 ft<sup>3</sup> (677,000 gallons).

\*2 Sows on Open Face Lots: 150.0 AU x 0.545 ft<sup>3</sup>/day/AU x 120 days = 9,818 ft<sup>3</sup> (73,500 gallons).

\*1 Grower/Finisher pigs on Open Face Lots:  
86,625 AU x 1.067 ft<sup>3</sup>/day/AU x 180 days = 16,632 ft<sup>3</sup> (124,500 gallons).

### WASTE WATER / RUNOFF WATER:

\*3 Confinement Buildings: 232.4 AU x 2.5 gallons / AU/day x 365 days = 212,065 gallons

\*4 Lot runoff volumes to accommodate 6 months of mean monthly runoff from concrete feedlots plus the 25-yr frequency storm event on the lot area.

Barn #1 2,635 ft<sup>3</sup>

Barn #2 3,904 ft<sup>3</sup>

Barn #3 4,392 ft<sup>3</sup>

Barn #4 2,928 ft<sup>3</sup>

### Footnotes:

\*1 Used Table 2-1 Manure Production page 2.1 Midwest Plan Service-18 livestock Waste Facilities Handbook. Finishing pig of 150 lbs in size produces 0.16 ft<sup>3</sup> / day of manure, which equates to (0.16 / .15 = 1.067 ft<sup>3</sup> per 1,000 lb NRCS Animal Unit).

\*2 Used Table 2-1 Manure Production page 2.1 Midwest Plan Service-18 livestock Waste Facilities Handbook Gestating Sow of 275 lbs in size produces 0.15 ft<sup>3</sup> / day of manure, which equates to (0.15 / .275 = 0.545 ft<sup>3</sup> per 1,000 lb NRCS Animal Unit).

\*3 Based on discussion with landowner that his confinement buildings filled up in about 11 months (330 days) Existing Pit dimensions for manure storage in each building are 132' x 51' x 8' deep x 2 Buildings = 107,712 ft<sup>3</sup> (805,793 gallons). Manure Production of 2 Confinement Buildings: 232.4 AU x 1.067 ft<sup>3</sup>/day/AU x 330 days = 81,805 ft<sup>3</sup> (611,982 gallons).

Water Gallons in Pit for 330 days = Maximum Storage in 2 Pits – 330 day manure production = 805,793 gallons - 611,982 gallons = 193,811 gallons.

Water to pit in gallons per day is 587.3 = 193,811 gallons / 330 days.

Gallons per Animal Unit per day waste water 2.527 used 2.5 = 587.3 gallons / 232.4 AU.

\*4 Open Lot Runoff + Precip-25yr volumes:

6 month runoff from concrete feedlots = 6.39 inches

25-yr frequency rainfall event (Bulletin 70 rainfall Data) = 5.32 inches

Total Runoff Depth = 11.71 inches (0.976 ft.)



## ATTACHMENT B: cont.

Randy Edmund

Volumes of anticipated 6 month (Nov – April) water runoff from concrete feedlots and the rainfall from the 25-yr storm frequency event:

Barn #1 (30' x 90') =  $2,700 \text{ ft}^2 \times (0.976 \text{ ft.}) = 2,635 \text{ ft}^3$   
Barn #2 (40' x 100') =  $4,000 \text{ ft}^2 \times (0.976 \text{ ft.}) = 3,904 \text{ ft}^3$   
Barn #3 (90' x 50') =  $4,500 \text{ ft}^2 \times (0.976 \text{ ft.}) = 4,392 \text{ ft}^3$   
Barn #4 (30' x 100') =  $3,000 \text{ ft}^2 \times (0.976 \text{ ft.}) = 2,928 \text{ ft}^3$

Sum volumes of all Barns = 13,859  $\text{ft}^3$  (104,000 gallons)

\*5 Volume of 6 months of Manure from animals on open lots + 6 mo. runoff + 25 yr storm =  
Runoff + 25-yr storm (\*4 Footnote) = 104,000 gallons  
Open lot sows = 124,500 gallons  
Open lot growers/finishers = 73,500 gallons  
Total = 302,000 gallons

\*6 Estimated Structure cost for storing 302,000 gallons by building a new concrete or glass fused steel tank is approximately 20cents to 25 cents per gallon stored = \$60,000 to 75,000.

(Nitrogen, P2O5, K2O values produced as excreted) See Attachment D.



Attachment C  
Runoff Volumes

Randy Edmund, Henry Co IL

Last Updated 2-11-04 5:00 pm

MONTH	IL-10C-33 AWMFH Geneseo Normal Precip (Inches)	IL-10C-37 AWMFH Runoff from Concrete Feedlots as PERCENT of Mean Precipitation	Monthly Basis Calculated Runoff (Inches)	Rolling 5 Month Total Runoff (Inches)		Rolling 6 Month Total Runoff (Inches)		Rolling 7 Month Total Runoff (Inches)		Rolling 8 Month Total Runoff (Inches)		Rolling 9 Month Total Runoff (Inches)		Rolling 10 Month Total Runoff (Inches)		Rolling 11 Month Total Runoff (Inches)	
JAN	1.35	44.0	0.59														
FEB	1.19	37.0	0.44														
MAR	2.70	47.5	1.28														
APR	3.79	52.0	1.97														
MAY	4.03	56.0	2.26	6.54	Jan - May												
JUN	4.12	60.5	2.49	8.44	Feb - Jun	9.04	Jan - Jun										
JUL	4.54	62.0	2.81	10.82	Mar - Jul	11.26	Feb - July	11.85	Jan - July								
AUG	4.14	59.0	2.44	11.98	Apr - Aug	13.26	Mar - Aug	13.70	Feb - Aug	14.29	Jan - Aug						
SEP	3.72	61.0	2.27	12.28	May - Sep	14.25	Apr - Sep	15.53	Mar - Sep	15.97	Feb - Sep	16.56	Jan - Sep				
OCT	2.87	56.5	1.62	11.64	Jun - Oct	13.90	May - Oct	15.87	Apr - Oct	17.15	Mar - Oct	17.59	Feb - Oct	18.19	Jan - Oct		
NOV	2.48	51.0	1.26	10.41	Jul - Nov	12.91	Jun - Nov	15.16	May - Nov	17.13	Apr - Nov	18.42	Mar - Nov	18.86	Feb - Nov	19.45	Jan - Nov
DEC	1.99	42.0	0.84	8.43	Aug - Dec	11.25	Jul - Dec	13.74	Jun - Dec	16.00	May - Dec	17.97	Apr - Dec	19.25	Mar - Dec	19.69	Feb - Dec
JAN	1.35	44.0	0.59	6.59	Sep - Jan	9.03	Aug - Jan	11.84	Jul - Jan	14.34	Jun - Jan	16.59	May - Jan	18.56	Apr - Jan	19.85	Mar - Jan
FEB	1.19	37.0	0.44	4.76	Oct - Feb	7.03	Sep - Feb	9.47	Aug - Feb	12.28	Jul - Feb	14.78	Jun - Feb	17.03	May - Feb	19.00	Apr - Feb
MAR	2.70	47.5	1.28	4.42	Nov - Mar	6.04	Oct - Mar	8.31	Sep - Mar	10.75	Aug - Mar	13.57	Jul - Mar	16.06	Jun - Mar	18.31	May - Mar
APR	3.79	52.0	1.97	5.12	Dec - Apr	6.39	Nov - Apr	8.01	Oct - Apr	10.28	Sep - Apr	12.72	Aug - Apr	15.54	Jul - Apr	18.03	Jun - Apr
MAY	4.03	56.0	2.26			7.38	Dec - May	8.65	Nov - May	10.27	Oct - May	12.54	Sep - May	14.98	Aug - May	17.79	Jul - May
JUN	4.12	60.5	2.49					9.87	Dec - Jun	11.14	Nov - Jun	12.76	Oct - Jun	15.03	Sep - Jun	17.47	Aug - Jun
JUL	4.54	62.0	2.81							12.69	Dec - Jul	13.95	Nov - Jul	15.57	Oct - Jul	17.84	Sep - Jul
AUG	4.14	59.0	2.44									15.13	Dec - Aug	16.40	Nov - Aug	18.02	Oct - Aug
SEP	3.72	61.0	2.27											17.40	Dec - Sep	18.66	Nov - Sep
OCT	2.87	56.5	1.62													19.02	Dec - Oct
NOV	2.48	51.0	1.26														
DEC	1.99	42.0	0.84														

Maximum 5 month Runoff Volume ———>> 12.28  
 Maximum 6 month Runoff Volume ———>> 14.25  
 Maximum 7 month Runoff Volume ———>> 15.87  
 Maximum 8 month Runoff Volume ———>> 17.15  
 Maximum 9 month Runoff Volume ———>> 18.42  
 Maximum 10 month Runoff Volume ———>> 19.25  
 Maximum 11 month Runoff Volume ———>> 19.85  
 Maximum 12 month Runoff Volume ———>> 20.29

6.39



# ATTACHMENT D

(Nitrogen, P2O5, K2O values produced from animals as excreted book values)

Randy Edmund, Henry County IL

Data Source:

AWMFIH page 4-12

Animal Waste Management Field Handbook USDA\_NRCS

## \* SOWS in Open lot Buildings

lbs / day /	Per AU	lbs / day /	Per AU	AU	days	Total lbs as excreted
N	0.190	N	0.190	150	120	3,420.0 N
P	0.063	P2O5	0.144	150	120	2,594.6 P2O5
K	0.123	K2O	0.148	150	120	2,667.9 K2O

## \* Growers in Open Lot Buildings

lbs / day /	Per AU	lbs / day /	Per AU	AU	days	Total lbs as excreted
N	0.420	N	0.420	86.625	180	6,548.9 N
P	0.160	P2O5	0.366	86.625	180	5,708.1 P2O5
K	0.220	K2O	0.265	86.625	180	4,133.6 K2O

## \*\* Growers in both Confinement Buildings

lbs / day /	Per AU	lbs / day /	Per AU	AU	days	Total lbs as excreted
N	0.420	N	0.420	232.4	365	35,626.9 N
P	0.160	P2O5	0.366	232.4	365	31,053.1 P2O5
K	0.220	K2O	0.265	232.4	365	22,487.4 K2O

### Notes:

\* Manure from sows and growers in open lot buildings will be spread on fields nearer the farmstead with a flail spreader.

\*\* Manure from both of the confinements buildings will be custom applied on fields farther away from farmstead



Owner: Randy Edmund County: Henry

Address: 1104 IL Hwy 82 Cambridge IL 61238

Phone #: 309-937-2603 (314-4961 cell)

Township: Cambridge Tract #: \_\_\_\_\_

Herd Size:

	# Animals Present Cond.	# Animals Future Cond.	Ave. Weight Or Wt. Range
Finishing	2 confinement @ 830 apiece open feedlot Breds hold about 500 to 600 hd.		10# TO 270# - 12 mos./yr 45# TO 270# - 6 mos./yr Nov-April
Sows w/Liter	Farewood in pasture		
Gestating Sows	350 - 400		400# - 4 mos. Duct Malt @ Bldg
Nursery Pigs	White Barn + Dark Blue Barn		

Wastewater Used:

- a. Wastewater \_\_\_\_\_ Gal./Day
- b. Cooling Water \_\_\_\_\_ Gal./Day \_\_\_\_\_ Days Used
- c. Other (describe below) \_\_\_\_\_ Gal./Day

Watering System Used: Underground water lines deliver water to Tanks

Existing System Description: and livestock drinking fountains

Describe your existing system (paved feedlot, confined feedlot, slatted floor, earthen feedlot, etc.):

Have a combination of confinement building - slatted floors with 8' pits and open front barn with concrete floors

What is the average time each animal spends per day on feedlot/in housing per day? ?  
On pasture per day? \_\_\_\_\_

Bedding:

Type	Quantity Used Lbs./Time or Ft. 3/Time
Sawdust (12 Lbs./Ft. 3)	_____
Long Straw (7 Lbs./Ft. 3)	<u>✓</u>
Chopped Straw (7 Lbs./Ft. 3)	_____
Other Description <u>Coal Shale</u>	<u>✓</u>

**What solids handling equipment is available for loading and unloading?**  
(place checkmark beside those available)

Front End Loader ☒ \_\_\_\_\_  
Conventional Spreader \_\_\_\_\_ W. or W/O Tailgate? \_\_\_\_\_  
Flat Spreader ☒ \_\_\_\_\_ Capacity \_\_\_\_\_ Gal. or Ft. 3 \_\_\_\_\_  
Other \_\_\_\_\_

**What liquid handling equipment is available for loading and unloading?**  
(place checkmark beside those available)

Slurry Wagon \_\_\_\_\_ Capacity \_\_\_\_\_ Gal. W or W/O Knives? \_\_\_\_\_  
Flair Spreader ☒ \_\_\_\_\_ Capacity \_\_\_\_\_ Gal. \_\_\_\_\_  
Conventional w/Tailgate \_\_\_\_\_ Capacity \_\_\_\_\_ Ft. 3 \_\_\_\_\_  
Irrigation System \_\_\_\_\_ Type \_\_\_\_\_  
Other \_\_\_\_\_

**Runoff Area:**

Feedlot:  
Earth \_\_\_\_\_ Sq. Ft. Concrete \_\_\_\_\_ Sq. Ft.  
Non-feedlot runoff:  
Earth \_\_\_\_\_ Sq. Ft. or Acres \_\_\_\_\_  
Guttered Roofs \_\_\_\_\_ Sq. Ft.  
Non-Guttered Roofs \_\_\_\_\_ Sq. Ft. (Outlet to lot)

**What duration of storage is requested? (365, 180 days?)**

Solids \_\_\_\_\_ Days  
Liquids \_\_\_\_\_ Days

**Is there any existing storage facilities (pits under holding area or barn, earthen pits, etc.?) If so, give the description and capacity of each.**

pits under confinement buildings - no storage facilities  
for open front barns

**What are the landowner's objectives? (How does he/she wish to store and utilize the waste?)**

Line the bottom side of concrete floors with  
concrete to contain the manure on the lots

**List soils information and other considerations (sandy, rocky, sinkholes, etc.; safety, proximity to residence, proximity to neighbors, buildings, wells, streams, etc.)**

The soils are clay loams around my livestock  
operation.

## Waste Utilization

List the fields by tract & field number (if known) which are available for waste utilization:

Field	Acres	Planning Soil Type	Typical Rotation	Date/Rate of last 3 Yrs Manure Applications
Home East Field 1	37		C/S.B.	2003 } Barnyard Fall Spreader
Home East Field 2	44		C/OATS/Hay	2002
Home East Field 3	50		C/S.B./Hay	2001
Anderson West - South Side	86		C/S.B./C/C/	2002
Anderson West - North Side	40		C/S.B.	2001
Home West	150		C/C/OATS/Pasture	

other fields available but entail considerable more travel time to reach  
\* Confinement manure goes to other fields

List all crops grown and give an estimated yield or range of yields for crops. Include forages, pasture, and any other land which is available for spreading:

Five (5) year crop yield average:						
FIELD	A	B	C	D	E	F
Corn	156	150	152	160	160	152
Soybean	54		56	49	49	
OATS - Small Grain						100
Hay		3 1/2 T	2 1/2 T			
Other						

Do you use starter fertilizer? No If yes, what analysis and rate? \_\_\_\_\_

### Type and amount of Nitrogen used:

Type: (circle) 28% solution Urea Anhydrous Ammonia Other (list analysis)  
Rate: 140# on 56. ground 160# on 66# ground

### Nitrogen application method:

Broadcast

Banded

Sidedress

Injected

Other

### Nitrogen application timing:

Fall

Spring

Summer

Other

If fall applied, do you use a Nitrogen stabilizer (N-Serve)? Yes No

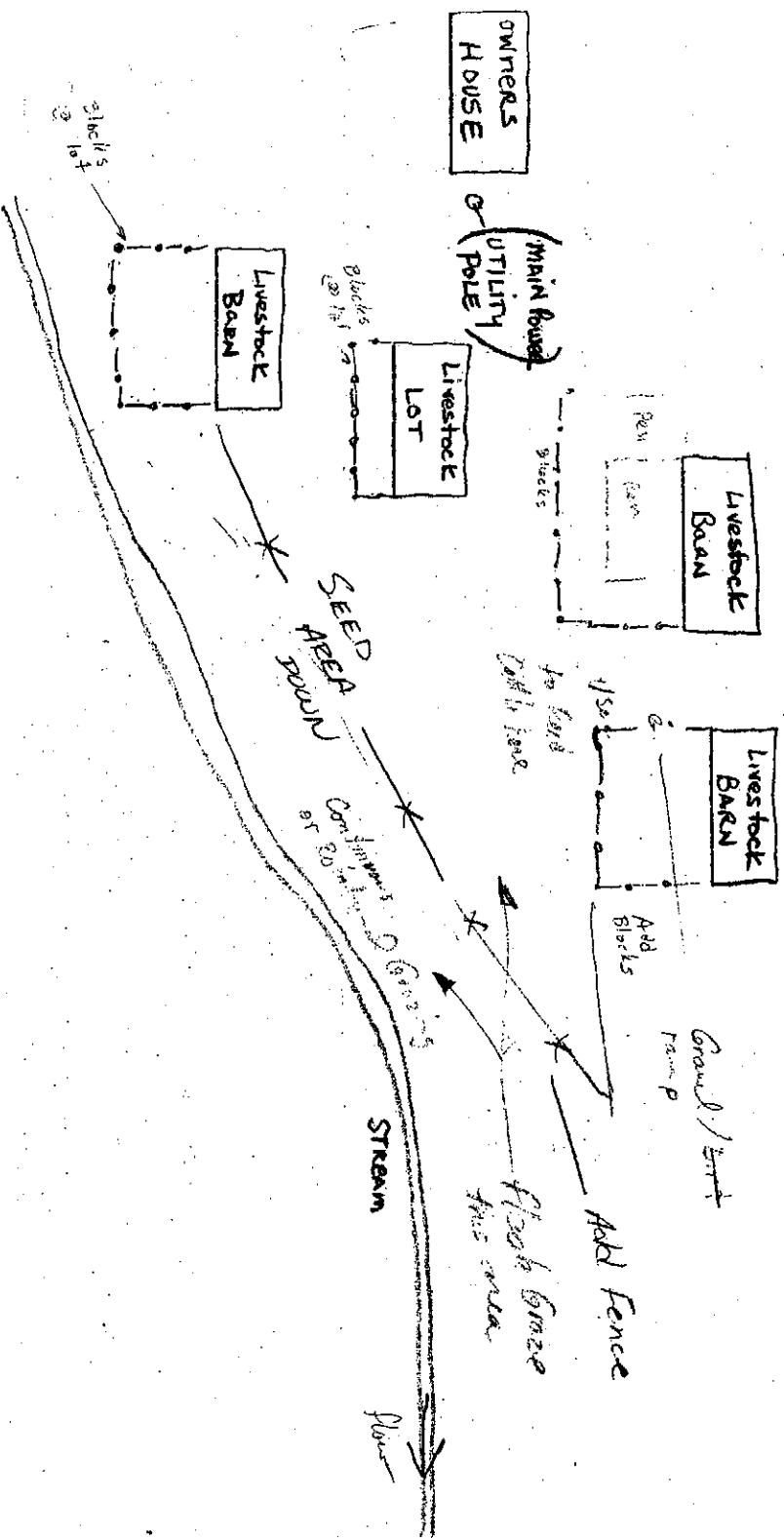
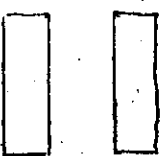
Please attach a copy of the most recent soil test (during the past 4 years) or your crop consultant plan, manure test, and manure plan, if applicable

**Sketch of existing and proposed facilities particularly indicating: north direction, prevailing winds, neighbors residence, owner's residence, wells, utilities, streams, etc. (Attach separate sheet if needed.)**

Prevailing  
winds

$$\begin{array}{r} 2 \\ 5 \overline{) 13} \\ \underline{10} \\ 3 \end{array}$$

## Confinement Buildings



Neighbours  
House

well