



## Comprehensive Nutrient Management Plan Amendment

For  
J. B. Timmermann Farms, Ltd.  
Breese, Illinois 62230  
PROJECT #: 23810004.01

Prepared in Cooperation with the:

**USDA – Natural Resources Conservation Service  
Breese Field Office  
and  
Clinton County Soil and Water Conservation District**

1790 North 4<sup>th</sup> Street  
Breese, Illinois 62230  
618-656-7300 ext 3

### Approved Conservation Planner and Certified CNMP Specialist

As an Approved Conservation Planner, I certify that I have reviewed this CNMP for technical adequacy and that the elements of the CNMP are technically compatible, reasonable and implementable.

### MANURE AND WASTEWATER HANDLING AND STORAGE SECTION INCLUDING AMENDMENT

Signature

*Terry L. Feldmann*

Date:

6/14/10

Name & Title: Terry L. Feldmann, P.E.

TSP # 03-1172



### Owner/Operator

As the owner/operator of this CNMP, I certify that I, as the decision maker, have been involved in the planning process and agree the items/practices listed in each element are needed. I understand that I am responsible for keeping all the necessary records associated with the implementation of this CNMP. It is my intent to implement/accomplish this CNMP in a timely manner as described in the plan.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited basis apply to all programs.) Persons with disabilities who require alternative means for communication or program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.

# ***Manure and Wastewater Handling and Storage Amendments***

***By***

***Michael E Andreas and Terry L Feldmann, Maurer-Stutz Inc.***

This CNMP Amendment was prepared based on review of the existing facility description, calculations, resource concerns and alternatives contained in the existing CNMP prepared in part by Netemeyer Engineering. Additional facility descriptions, resource concerns and alternatives are contained in this amendment in order to address remaining resource concerns at the livestock management facility.

## **Existing Facility Description**

### **Livestock Management Area:**

The Timmerman facility consists of an average 750 milk cow operation as described by Netemeyer Engineering. Reference is made to JB Timmerman Farm Manure Handling Flow Chart for manure train and attached aerial-photo, site map with building descriptions/labels. Existing buildings, pits and waste storage components are labelled E1 – E25. Additional planned components are labelled P1 – P7.

Approximately 7.82 acres of stormwater is currently entering the facility from the north and west. Approximately 2.34 acres of runoff from the west and north will be diverted. According to computations by Netemeyer Engineering the remaining 5.39 acres of building, paved access roads and earthen areas will be contained between freestall barns E19 and E22 called stormwater basin E25 and outlets through an existing 12 inch diameter culvert with a 50 ft weir emergency overflow and a 1 ft x 2 ft box culvert on the south east corner of freestall barn E19. Curbing was planned by Netemeyer Engineering and is installed on the bred heifer pens E11 and at the entrance to the lot between dry stack E12 and freestall barn E14.

Additional stormwater between freestall barns E14 and E19 is conveyed by a 1 ft x 2 ft box culvert to the south of slatted pit E16.

Feed storage is a combination of open silage bunkers and a commodity shed. According to Netemeyer Engineering, the stormwater runoff from the silage bunkers will be collected by gutters, piped to a pump station and pumped to the existing lagoon. This has been installed by the landowner.

### **Mortality Management Area:**

Off-site Rendering – The dead animals shall be hauled away and disposed of by licensed render.

## Resource Concerns (Water Quality, Soil Erosion, etc)

The following water quality issues have been addressed by this section of the Comprehensive Nutrient Management Plan.

### Manure/Wastewater/Stormwater Runoff

1. A concrete curb, P1, shall be installed on the south end of the east entrance to big freestall barn E23 to prevent lot runoff and divert to settling basin/pond E20.
2. An earthen berm with a mountable curb P7 shall be installed around the calf barn manure stack E9.
3. To divert clean water from manure composter stacking area E18 and prevent off site runoff, a ridged roof system is proposed to cover the composted manure stack area P3.

### Clean Stormwater Runoff into Lot/Manure System

1. To divert clean surface runoff from entering the feedlot between freestall barns E22 and E23 and mixing with the manure transfer, raise the transfer alley P2 and divert stormwater runoff through a pipe under the alley to the stormwater basin and underground outlet pipe E25.
2. Prevent stormwater overflow into slatted pit E16.
3. Prevent stormwater runoff from entering lot on the northwest end of freestall barn E15 and east side of milking parlor/holding pen E8.

## Alternatives Discussed

### Livestock Management Area

- Construct a raised manure transfer alley between freestall barns E22 and E23 over a new 12 inch diameter culvert or underground outlet. (**selected**)
- Construct a concrete curb and gutter from the east entrance to the freestall barn E23. (**selected**)
- Construct a concrete curb on the northwest side freestall barn E15 and east side of milking parlor/holding pen E8. (**selected**)
- Construct a concrete curb on the west side of slatted pit E16. (**selected**)
- Construct a rigid roof structure over composted manure stacking area E18. (**selected**)
- Construct a concrete curb to divert composter runoff from E18 to holding pond E20.
- Gutter buildings E9, E10, E14, E15, E19, E22 and E23.
- Construct an earthen berm with mountable curb around the calf barn E9 stacking area. (**selected**)
- Roof calf barn stacking area.

## Planned System Summary

The following pages list planned practices for this facility.

### Livestock Management Area

#### **Waste Storage Facility (313) (See Section 6 for Quantities)**

A new rigid roof, waste storage structure P3 is proposed to be installed over the composted manure stacking area. The structure will consist of a rigid roofed structure with the dimensions of 44 ft by 88 ft to address the water quality concern of manure and wastewater lot runoff.

#### **Waste Transfer (634) (See Section 6 for Quantities)**

A new waste transfer curb P1 is proposed to be installed on the east end of freestall barn E23 to contain manure/runoff from barn. The mountable curb (18" wide x 13" high) will divert runoff to settling basin E20.

A new waste transfer curb P4, 1.5 ft high x 8 inch wide, is propose to be installed on the west end of slatted pit E16 to prevent clean stormwater from entering the slatted, concrete pit E16.

A new waste transfer curb P6 is proposed to be installed on the northwest end of freestall barn E15 and east side of milking parlor/holding pen E8. The mountable curb (18" wide x 13" high) will divert clean stormwater and contain feedlot runoff.

A new elevated waste transfer scrape alley P2 with curbs is proposed to be installed between feestall barns E22 and E23 to scrape manure and serve as a livestock walkway. The elevated alley will provide a diversion block for stormwater flow into new 12" diameter stormwater pipe P5.

An earthen berm is proposed to be installed around the calf barn stacking area to prevent runoff. The berm shall be 18 inches high with a mountable curb at the entrance.

#### **Roof Runoff Management (558) (See Section 6 for Quantities)**

A new roof runoff management system is proposed to be installed on the new ridged roofed structure P3. The system will comprise of new gutters, downspouts, and underground outlet piping.

#### **Underground Outlet (620) (See Section 6 for Quantities)**

Clean roof water from the new guttered composter stacking area P3 will need to be diverted underground below the existing lot at the composter stacking area and outlet beyond the lot. An 8" diameter PVC pipe will be needed to convey the guttered water.

Install a new 12 inch diameter PVC pipe P5 under new elevated manure transfer alley P2 to convey stormwater flow to stormwater basin area E25.

**Critical Area Seeding/Mulching (342) (See Section 6 for Quantities)**

Seeding permanent grass and mulching will be required in disturbed areas around the diversion berms, mountable curbs, etc. in order to stabilize soils and control erosion.

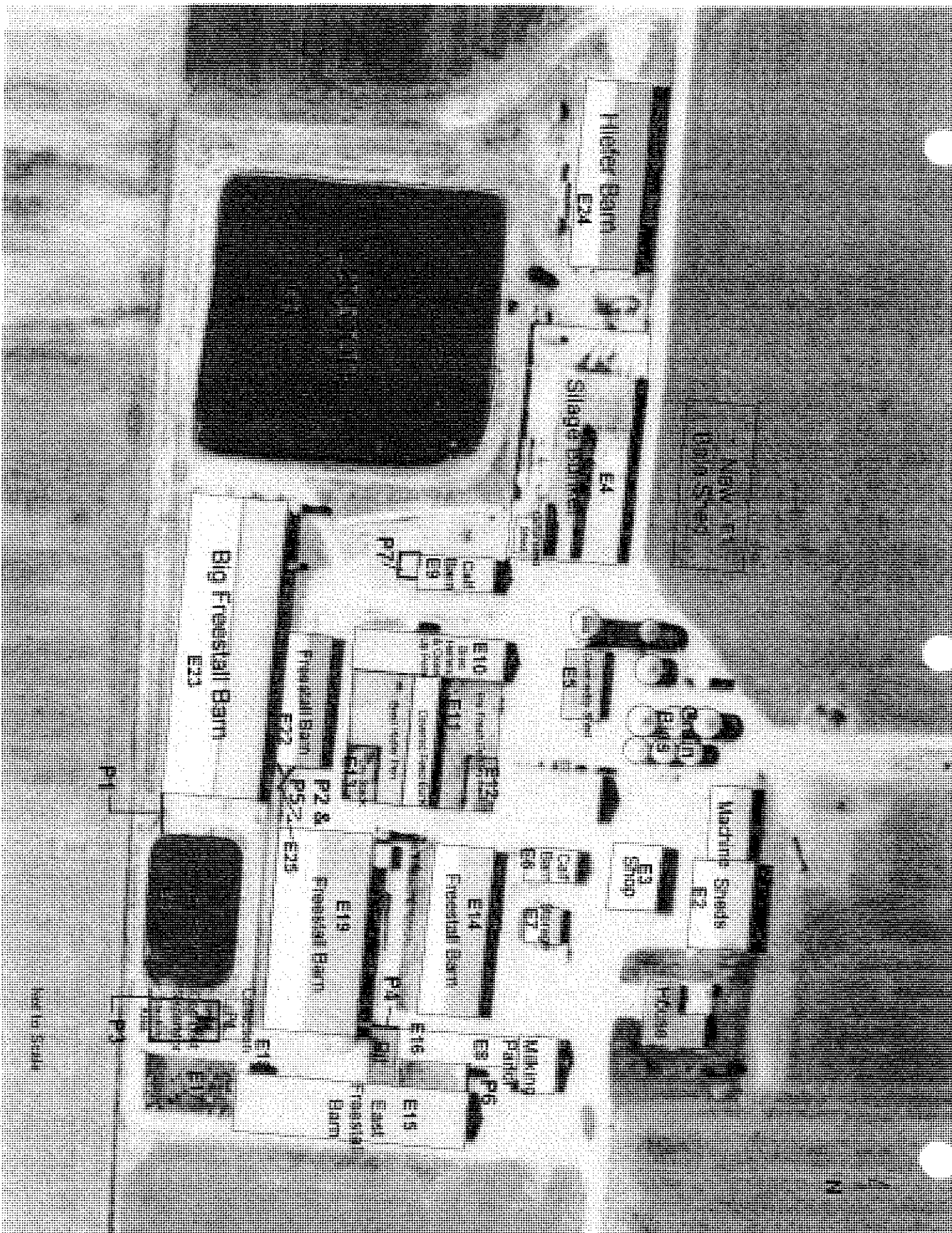
**Mortality Area**

Off-site Rendering – The dead animals shall be hauled away and disposed of by licensed render

It is recommended that the owner/operator purchase more/larger spreading equipment in order to minimize the required window for transporting manure, bedding, and wastewater to fields for utilization.

Any changes in animal numbers, average weights, or manure storages will require this plan to be updated.

Call Maurer-Stutz, Inc. at (309)693-7615



ITEM	NRCS PRACTICE CODE	CONSERVATION PRACTICE	NO OF UNITS	UNIT TYPE	MSI UNIT COST	MSI Est. TOTAL \$	NRCS UNIT COST	NRCS TOTAL COST	NOTES
		Waste Transfer	4.5	CY					
	634	Waste transfer	3	CY	\$ 350.00	\$ 1,050.00	\$ 209.41	\$ 942.35	Concrete Alleys & Curbing P1, P2, P4, P6 & P7
	634	Waste transfer	1.7	CY	\$ 350.00	\$ 595.00			Reinforced concrete - Formed (Curbing P2 both sides & P4: 13' x 12" x 8")
		Totals				\$ 1,645.00			Reinforced concrete - Formed (mountable Curbing P1, P6, & P7 (80' x 13" x 18"))
		Waste Transfer	25.4	CY			\$ 209.41	\$ 5,319.01	Concrete Alleys & Curbing P2
	634	Waste transfer	11.5	CY	\$ 275.00	\$ 3,162.50			Reinforced concrete - Flatwork (scrap alley P2: 45' x 16.5' x 5')
	634	Waste transfer	5.6	CY	\$ 350.00	\$ 1,960.00			Reinforced concrete - formed (elevated wall P2: 45' x 2.5' x 8")
	634	Waste transfer	8.3	CY	\$ 275.00	\$ 2,282.50			Reinforced concrete - Flatwork (scrap alley footings P2: 3' x 90' x 10")
		Totals				\$ 5,122.50			
		Totals				\$ 6,767.50			
		Total Waste Transfer				\$ 6,767.50		\$ 6,261.36	Practice 634 (Waste Transfer) the USDA-NRCS has \$75,000.00 Cap
		Waste Storage Facility	3.873	sft			\$ -	-	Ridged Roofed Structure P3
	313	Waste Storage Facility	3873	sft	\$ 6.78	\$ 26,258.94			Ridged Roofed Structure P3 for composter stacking area E1B (44' x 88')
		Total				\$ 26,258.94			
		Total Waste Storage Facility				\$ 26,258.94		\$ -	Practice 313 (Waste storage facility) the USDA-NRCS has \$150,000.00 Cap
		Roof Runoff Structure	176	FT			\$ 4.21	\$ 740.96	Gutter (P3) - 88' x 2 sides
	558	Roof Runoff Structure	176	FT	\$ 8.00	\$ 1,408.00			
		Totals				\$ 1,408.00			
		Underground Outlet	20	FT			\$ 4.56	\$ 91.20	Underground Outlet with Riser(s), 12" tile
	620	Underground Outlet	20	FT	\$ 2.70	\$ 54.00			12 inch PVC stormwater pipe P5
		Totals				\$ 108.00			
	620	Underground Outlet	40	FT	\$ 2.70	\$ 108.00		\$ 120.80	Underground Outlet with Riser(s), 8" tile
		Totals				\$ 162.00			outlet for gutters P3
		Critical Area Planting	0.2	AC			\$ 375.62	\$ 75.12	Critical Area Planting without earthwork
	342	Critical Area Planting	0.2	AC	\$ 350.00	\$ 70.00			Vegetation establishment, critical area (including seeding and fertilizer)
		Totals				\$ 70.00			
		Mulching	0.2	AC			\$ 211.68	\$ 42.34	Mulching with Straw Bales
	342	Mulching	0.2	AC	\$ 400.00	\$ 80.00			Mulching
		Totals				\$ 80.00			
		Totals				\$ 34,746.44		\$ 7,331.78	USDA-NRCS has \$300,000.00 Cap
		Waste Utilization	0	AC			\$ 30.00	\$ -	Waste Utilization (Per Year)
	633	Waste Utilization	0	AC	\$ 30.00	\$ -			Acre used for manure application per year
		Totals				\$ -			3 year plan
		Nutrient Management		AC	NC	NC			Existing Waterways that need to be maintained
	412	Grass Waterways		AC	NC	NC			
	344	Residue Management		AC	NC	NC			

Note:

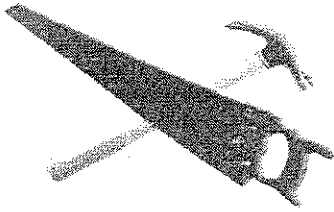
MSI estimated costs do not reflect NRCS cost share amounts

Practice 313 (Waste storage facility) NRCS has \$150,000.00 Cap

Practice 634 (Waste transfer) the USDA-NRCS has \$75,000.00 Cap

Practice 632 (Solid/Liquid Waste Generation Facility) the USDA-NRCS has \$22,500.00 Cap

Practice 633 (Waste Utilization) the USDA-NRCS has 400 Ac/Yr Cap



Donald Aibers, President  
PO Box 38, 1620 North Fourth St.  
Brees, IL 62230  
618-526-8300 618-526-2762 - fax

April 5, 2010

Timmermann Dairy

Cut and replace concrete to divert water into building pits  
Included is installing drain tile to allow rain water between buildings to drain

Materials	\$ 2,683.00
Equipment & Labor	<u>\$ 3,850.00</u>
Total	\$ 6,533.00

Install Two (2) 21' long x 6" thick walls above pit walls approximately 14" tall

Materials	\$ 300.00
Forms Equip& Labor	<u>\$ 800.00</u>
Total	\$ 1,100.00

Remove steel grate and install 4 pc 6" pipe and cover with concrete

Materials	\$ 420.00
Equipment & Labor	<u>\$ 700.00</u>
Total	\$ 1,120.00



Erect roof 44' 6" x 88' to cover manure separating storage area.  
Clearance beneath structure to be approximately 19'.  
Structure to consist of 6 x 6 post and wood stud walls.  
Roof to be truss rafters covered with 29 ga metal

Materials	\$ 14,734.00
Equipment & Labor	<u>\$ 11,500.00</u>
Total	\$ 26,234.00



# KOHLBRECHER EQUIPMENT, INC.

21924 St. Rose Rd.  
Highland, Illinois 62249  
618-654-9985 618-654-9807



Timmermann Farms

3-29-2010

## Quote on Balzer Lay Flat Supply Hose

### 6" Balzer (Regular) Strength Hose

Inner Diameter (in inches)	6.09
Pounds per foot	1.60
Wall thickness (in inches)	0.16
Burst pressure	600 PSI
Max working pressure	300 PSI
Tensile strength	36,500 lbs.
Color	Black

4 x 660 ft. Hose @\$9.64	25,449.60
(4) 6" magnum grip coupler	<u>1,720.00</u>
	27,169.60
Freight	960.00
Total	<u>\$28,129.60</u>



# KOHLBRECHER EQUIPMENT, INC.

21924 St. Rose Rd.  
Highland, Illinois 62249  
618-654-9985 618-654-9807



Timmermann Farms

3-29-2010

## Quote on Balzer Lay Flat Supply Hose

### 6" Balzer (Heavy Duty) Hose

Inner Diameter (in inches)	6.09
Pounds per foot	1.60
Wall thickness (in inches)	0.16
Burst pressure	750 PSI
Max working pressure	375 PSI
Tensile strength	51000 lbs.
Color	Black

4 x 660 ft. hose @\$10.23	27,007.20
(4) 6" magnum grip coupler	<u>1,720.00</u>
	28,727.20
Freight	960.00
Total	<u>\$29,687.20</u>