

## ***B. Facility Inventories***

### **1. Animals**

**Table B-1**

<b>Animal</b>	<b>No. of Animals</b>	<b>Avg. Size</b>	<b>Animal Units (LMFA)</b>	<b>Animal Units (per 1,000 lbs)</b>
Nursery Pigs	2100	35	63	73.5
Finisher Pigs	3000	160	1200	480
Finisher Pigs	2300	160	920	368
Finisher Pigs	40	160	16	6.4
<b>Total Animal Units</b>			<b>2199</b>	<b>927.9</b>

### **2. Buildings**

**Table B-2 Livestock Facility Capacity(s)**

<b>Facility</b>	<b>Facility Population</b>	<b>Total Square Feet</b>	<b>Storage Facility</b>
Nursery Building	2100	9,350	Holding Ponds
West Finishers	3000	25,092	Holding Ponds
East Finishers	2300	23,884	Holding Ponds
Overflow Finishers	40	2,450	Holding Ponds

### **3. Seasonal High Water Table**

- See Site Soils & Geologic Information Table (A-1)

#### 4. Livestock Waste Production

**Table B-3 Livestock Waste Storages**

<b>Storage</b>	<b>Animals</b>	<b>Waste Produced (ft<sup>3</sup> annually)</b>	<b>Capacity (ft<sup>3</sup>)</b>	<b>Storage Days</b>
Nursery Holding Ponds	2100	61,242	192,984	1,150
West Finishers Holding Ponds	3000	185,125	96,189	190
East Finishers Holding Ponds	2300	187,322	569,031	1,109

Total Livestock Waste Production

*See calculations on following page for manure production calculation details.*

#### 5. Rainfall Volumes & Evaporation from storage facilities

See following page for rainfall & evaporation calculations expected from lots & open storages.

Kevin Logeman Overflow Barn - Earthen Storage Waste Volume Calculations

DAILY VOLUME CALCULATIONS	Average (1) Animal Weight (lbs)	Max Design No. of Head at any time	Average Total (2) Animal Weight at any time (lbs)	Solid Manure (3) Production (cu.ft./day)	Liquid Manure (3) Production (cu.ft./day)	Total Manure (3) Production (cu.ft./day)	Total Manure (3) Production (lbs./day)
Finishing Hogs	160	40	6,400	0.6	5.8	6.4	392.0
Totals		40	6,400	0.6	5.8	6.4	392.0

Rainfall vs. Evaporation on Earthen Storage (4)	
	Precip./Evap. (in.)
Annual Rainfall	46
Annual Evaporation	38.4
Total Precip vs. Evap.	7.6

Liquid Storage Volume					
	Length (ft.)	Width (ft.)	Height (ft.) (5)	Number of Components	Volume (ft³) (10)
Earthen Storage #1	125	See plot plan included in section 5 of CNMP		1	30,816.0
				Total Volume (cu.ft.)	13,945
				Total Volume (gal)	104,316

Annual Liquid Waste Generated			
Daily Volume		Period	Total Volume
	(cu.ft.)	(days)	(cu.ft.)
Liquid Waste Generated	6.4	365	2,336
		Rainfall Runoff	0
		Rainfall vs. Evap. on Earthen Storage	4,212
		Liquid Absorbed into bedding	0
		Annual Parlor Water	0
		Annual Volume Generated (cu.ft.) (7)	6,548
		Annual Volume Generated (gal.) (7)	48,980.0

Storage Days
777

1 - Average Animal weight obtained from MWPS-18, Table 2-1  
2 - Average Total Animal Weight at any time = Average Weight of Animal x Max design capacity.  
3 - Manure Storage Volume = Average No.of Head at any time x Manure Production.  
Manure Production values obtained from MWPS-18, Table 2-1  
4 - Rainfall & Evaporation data assumes annual amounts obtained from MWPS-18, figures 11-12b, 11-14, & 11-7  
5 - Height of earthen storage assumes 2' for freeboard and 6.23" for 25yr/24 hour rainfall event.

Kevin Logeman Nursery- Earthen Storage Waste Volume Calculations

DAILY VOLUME CALCULATIONS	Average (1) Animal Weight (lbs)	Max Design No. of Head at any time	Average Total (2) Animal Weight at any time (lbs)	Solid Manure (3) Production (cu.ft./day)	Liquid Manure (3) Production (cu.ft./day)	Total Manure (3) Production (cu.ft./day)	Total Manure (3) Production (lbs./day)
Nursery Pigs	35	2100	73,500	7.7	76.3	84.0	4830.0
Totals		2,100	73,500	7.7	76.3	84.0	4830.0

Rainfall vs. Evaporation on Earthen Storage (4)	
	Precip./Evap. (in.)
Annual Rainfall	46
Annual Evaporation	38.4
Total Precip vs. Evap.	7.6

Liquid Storage Volume					
	Length (ft.)	Width (ft.)	Height (ft.) (5)	Number of Components	Volume (ft³) (10)
Earthen Storage #1	388	88	7.48	1	134,017.0
Earthen Storage #2	208	68	7.48	1	40,267.0
Building #1	170	55	2	1	18,700.0
				Total Volume (cu.ft.)	192,984
				Total Volume (gal)	1,443,621

Annual Liquid Waste Generated			
Daily Volume		Period	Total Volume
	(cu.ft.)	(days)	(cu.ft.)
Liquid Waste Generated	84.0	365	30,660
		Rainfall Runoff	0
		Rainfall vs. Evap. on Earthen Storage	30,582
		Liquid Absorbed into bedding	0
		Annual Parlor Water	0
		Annual Volume Generated (cu.ft.) (7)	61,242
		Annual Volume Generated (gal.) (7)	458,122.0

Storage Days
1,150

1 - Average Animal weight obtained from MWPS-18, Table 2-1  
2 - Average Total Animal Weight at any time = Average Weight of Animal x Max design capacity.  
3 - Manure Storage Volume = Average No.of Head at any time x Manure Production.  
Manure Production values obtained from MWPS-18, Table 2-1  
4 - Rainfall & Evaporation data assumes annual amounts obtained from MWPS-18, figures 11-12b, 11-14, & 11-7  
5 - Height of earthen storage assumes 2' for freeboard and 6.23" for 25yr/24 hour rainfall event.

Kevin Logeman Finishing West - Earthen Storage Waste Volume Calculations

DAILY VOLUME CALCULATIONS	Average (1) Animal Weight (lbs)	Max Design No. of Head at any time	Average Total (2) Animal Weight at any time (lbs)	Solid Manure (3) Production (cu.ft./day)	Liquid Manure (3) Production (cu.ft./day)	Total Manure (3) Production (cu.ft./day)	Total Manure (3) Production (lbs./day)
Finishing Hogs	160	3000	480,000	44.2	435.8	480.0	29400.0
Totals		3,000	480,000	44.2	435.8	480.0	29400.0

Rainfall vs. Evaporation on Earthen Storage (4)	
	Precip./Evap. (in.)
Annual Rainfall	46
Annual Evaporation	38.4
Total Precip vs. Evap.	7.6

Liquid Storage Volume					
	Length (ft.)	Width (ft.)	Height (ft.) (5)	Number of Components	Volume (ft³) (10)
Earthen Storage #1	125	See plot plan included in section 5 of CNMP		1	30,816.0
Earthen Storage #2	105			1	15,189.0
Building #1	260	41	2	1	21,320.0
Building #2	134	41	2	1	10,988.0
Building #3	218	41	2	1	17,876.0
				Total Volume (cu.ft.)	96,189
				Total Volume (gal)	719,544

Annual Liquid Waste Generated			
Daily Volume			Total Volume
	(cu.ft.)	Period (days)	(cu.ft.)
Liquid Waste Generated	480.0	365	175,200
		Rainfall Runoff	0
		Rainfall vs. Evap. on Earthen Storage	9,925
		Liquid Absorbed into bedding	0
		Annual Parlor Water	0
		Annual Volume Generated (cu.ft.) (7)	185,125
		Annual Volume Generated (gal.) (7)	1,384,831.0

Storage Days
190

1 - Average Animal weight obtained from MWPS-18, Table 2-1  
2 - Average Total Animal Weight at any time = Average Weight of Animal x Max design capacity.  
3 - Manure Storage Volume = Average No.of Head at any time x Manure Production.  
Manure Production values obtained from MWPS-18, Table 2-1  
4 - Rainfall & Evaporation data assumes annual amounts obtained from MWPS-18, figures 11-12b, 11-14, & 11-7  
5 - Height of earthen storage assumes 2' for freeboard and 6.23" for 25yr/24 hour rainfall event.

Illinois Counties All Units in Inches		Bulletin-70	Runoff from Concrete Feedlots (Inches)											Runoff from Earth Lots (Inches)							
		Rainfall	Rainfall	Yearly	Yearly	Maximum Runoff Volume for Monthly Period (Inches)								Maximum Runoff Volume for Monthly Period (Inches)							
		25yr-24hr	25yr-5min	Rainfall	Evaporation	5-Month	6-Month	7-Month	8-Month	9-Month	10-Month	11-Month	12-Month	5-Month	6-Month	7-Month	8-Month	9-Month	10-Month	11-Month	12-Month
65	MASSAC	6.23	0.64	46	38.4	13.77	15.98	18.6	20.93	23.49	25.52	27.66	29.33	6.37	7.39	8.56	9.61	10.89	11.83	12.81	13.53

## **Animal Unit Calculations**

**Logeman Brothers Farm**

**Per 1,000 lb Animal Unit**

Type of animal	Building	Weight	# of Animals	LMFA AU	Total LMFA AU	Total 1000# AU
Nursery Pigs	Nursery	35	2100	0.03	63	73.5
Finishing Pigs	East Finishers	160	3000	0.4	1200	480
Finishing Pigs	West Finishers	160	2300	0.4	920	368
Finishing Pigs	Overflow Finishers	160	40	0.4	16	6.4
			<b>7440</b>		<b>2199</b>	<b>927.9</b>