Preliminary Dairy Facility Assessment

Use the "TAB" key to move to data entry fields (yellow cells) or mouse pointer to pulldown menus.

Facility Name:
Facility Address:
County:
Contact Name:
Contact Telephone Number: **Cellular Phone Number:**

Land Area:

Land Use	Acres Owned	Acres Leased	Acres Under Agreement	Acres (Subtotals)
Fields and Facility Combined				-
Dairy Production Area (Corrals, Barns, Ponds, Feed Storage)				-
Crop Land Area				-
Cropland Area used for Manure (Lagoon & Solids) Application				-

Herd and Milking:

Select predominant animal Breed: Select Predominant Breed

Enter appropriate information as requested.	Milk Cows	Dry Cows	Bred Heifers 15 - 24 Months	Heifers: 7 - 14 Months (to Breeding)	Calves 4 - 6 Months	Calves to 3 Months
Number/Head						
Average Live Weight (lbs)						
Average Milk Production (lbs/cow/day)						
Daily Hours (On Flush)						

Average number of Milk Cows per String sent to Milkbarn		Milk Cows/String
Storage Period in days (minimum recommended value is 120 days)	Select Period	days
Number of milkings (per day)		milkings/day
Number of times milk tank is cleaned each day		milk loads/day
Number of hours spent milking each day		hours/day
Bulk tank wash and sanitizing		Run Cycles
Pipeline wash and sanitizing		Run Cycles

Milkbarn and Parlor Floor Wash

Automated Parlor Deck (Floor) Flush Valve	Select Yes or No
Manual Parlor Deck (Floor) Flush	Select Yes or No
Rotary / Carousel Wash Down	Select Yes or No
Glycol/Air//Water Cooled Plate Coolers (Open Loop)	Select Yes or No
Water Cooled Plate Coolers (Open Loop)	Select Yes or No
Water Cooled Vacuum Pumps/Air Compressors/Ice Chillers (Open Loop)	Select Yes or No
All non-contact cooling water Recycled through Sprinkler Pen	Select Yes or No

Sprinkler Pen

Number of sprinklers in the holding pen		
How long is each spinkler cycle (minutes)		min
How many times does the sprinkler pen run/milking		
What is the water flow rate of each sprinkler head		gpm

Flush Water

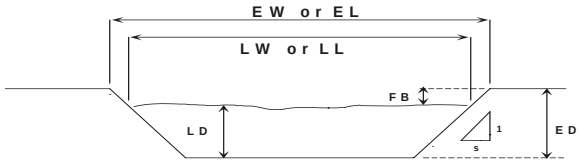
Fresh water used in manure flush lanes (gallons/day)		gal/day

TENTATIVE

Retention Pond and Settling Basin Dimensional Estimates

Enter pond type (settling basin, retention pond) then enter dimensions to estimate storage volumes.
Use "TAB" key to move to data entry fields or mouse pointer to pulldown menus.

No.	Description of Pond/Basin	Unuseable Storage (ft)	Inside Top Width (EW) ft.	Inside Total Length (EL) ft.	Total Depth (ED) ft.	Side Slope Horiz:Vert (S) ft./ft.	Free Board (FB) ft.
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							



Unit Abreviations

LW = liquid width, ft
EW = earthen basin width, ft
FB = freeboard, ft
S = sideslope, ft./ft.
LL = liquid length, ft
EL = earthen basin length, ft
LD = liquid depth, ft
ED = earthen basin depth, ft
LW = EW - 2 x FB x S
LL = EL - 2 x FB x S
LD = ED - FB

Precipitation Estimates

Select a rainfall station nearest to your facility: Select a Rainfall Station

25 Year/24 Hour Storm Event (NOAA Atlas 2, 1973)	-	inches
Critical Storage Period of ____ days Precipitation (DWR Climate Data)	-	inches
Combined Critical Storage Period and 25 year/24 Hour Storm Event	-	inches

Nutrient Application and Removal By Crops Estimates

Cropland where nutrients from dairy are applied to crops harvested, then fed to owner/operators own dairy herd or exported off-site.

Owned, Leased or Agreement	Acres (Cropable)	Acres Planted	Crop	Single, Double or Triple Crop	Yield (tons/Acre)	Moisture Content (%)	Protein (%)	Phosphorus (%)	Select crop component value used in this table: Actual or Default
									Select Actual or Default
									Select Actual or Default
									Select Actual or Default
									Select Actual or Default
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									Select Actual or Default

Annual Nitrogen Import Estimates

Commercial Fertilizers (Combined)	Nitrogen (lbs)	Phosphorus (lbs)	Potassium (lbs)

Annual Nitrogen Export Estimates

Manure	Units (Tons or Gallons)	Tons or 1000 Gallons Exported	Moisture Content (% for solids, mg/L for liquids)	Total Nitrogen (% for solids, mg/l for liquids)	Phosphorus (% solids, mg/l for liquids)
Sep. Solids	Tons				
Corral Solids	Tons				
Liquid Manure	Gallons		NA		

TENTATIVE

These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

Summary

Land Use		
Fields and Facility Combined	-	acres
Dairy Production Area (Corrals, Barns, Ponds, Feed Storage)	-	acres
Crop Land Area	-	acres
Cropland Area used for Waste Application	-	acres
Herd, Milking and Milk Barn/Parlor		
Milk Cows	-	head
Dry Cows	-	head
Bred Heifers (15 - 24 months)	-	head
Heifers (7 - 14 months, to Breeding)	-	head
Calves (4 - 6 months)	-	head
Calves (to 3 months)	-	head
Total Number of Animals	-	head
Average number of Milk Cows per String sent to Milk House	-	Milk Cows/String
Number of milking strings entering milk barn (per milking)	-	Strings/Milking
Manure Production by herd for Storage Period:	-	cu. Ft.
Storage Period in days (minimum of 120 days is recommended:)	-	days storage
Estimated Manure production (cu. Ft.) for Storage Period:	-	cu. Ft.
Estimated gallons of waste production for Storage Period:	-	gallons
Total Barn Water Volume (gallons) for Storage Period:	-	gallons
Roof, Paved and Earthen Rainfall Runoff Areas		
Total Area Receiving Rainfall and Draining to Ponds	-	sq. ft.
Retention Pond and Settling Basin Estimates		
Liquid Storage Surface Area (Wastewater Ponds only)	-	sq. ft.
Rainfall Drained to Wastewater Storage Ponds for Storage Period	-	gallons
Waste Production	-	gallons
Barnwater	-	gallons
Barnwater Comparative Estimate (gallons/cow/day)		gallons/cow/day
Fresh Flush Water for Storage Period	-	gallons
25 Year/24 Hour Storm Event (NOAA Atlas 2, 1973)	-	inches
Critical Storage Period of ____ days Precipitation (DWR Climate Data)	-	inches
Combined Critical Storage Period and 25 year/24 Hour Storm Event	-	inches
Total Storage Capacity Required	-	gallons
Total Storage Capacity Required [Converted to Volume (cu. Ft.)]	-	cu. Ft.
Existing Storage Capacity (Adjusted for Dead Storage Loss)	-	cu. Ft.
Existing Capacity Meets Estimated Storage Needs?		
Nitrogen (N) and Phosphorus (P) Excretion Estimates		
Daily Gross Nitrogen Excretion Estimates	-	lbs N day
Annual Gross Nitrogen Excretion Estimates	-	lbs N year
Nitrogen to Pond Storage after Ammonia Losses (30% Loss Applied)	-	lbs N year
Nitrogen to Drylot Storage after Ammonia Losses (30% Loss Applied)	-	lbs N year
Total N in Storage (Ponds & Drylot Combined after 30% Ammonia Loss)	-	lbs N year
Daily Gross Phosphorus Excretion Estimates	-	lbs P day
Annual Gross Phosphorus Excretion Estimates	-	lbs P year
Phosphorus to Pond Storage	-	lbs P year
Phosphorus to Drylot Storage	-	lbs P year
Total P In Storage (Ponds and Drylot combined)	-	lbs P year
Nitrogen and Phosphorus Import Estimates		
Total Nitrogen Imports (Onto facility as chemical fertilizers)	-	lbs N year
Total Phosphorus Imports (Onto facility as chemical fertilizers)	-	lbs P year
Nitrogen and Phosphorus Export Estimates		
Total Nitrogen Exports (Off facility as manure)	-	lbs N year
Total Phosphorus Exports (Off facility as manure)	-	lbs P year
Annual Nitrogen and Phosphorus Balance Estimate		
Total N in Storage (after 30% Ammonia Loss)	-	lbs
Nitrogen Imported (Chemical Fertilizer)	-	lbs
Nitrogen Exported (As Manure)	-	lbs
Nitrogen Removed by all Crops	-	lbs
Nitrogen Balance (N Generated Minus N Removed)	-	lbs
Total Phosphorus in Storage	-	lbs
Phosphorus Imported (Chemical Fertilizer)	-	lbs
Phosphorus Exported (as Manure)	-	lbs
Phoshorus Removed by Crops	-	lbs
Phosphorus Balance (P Generated Minus P Removed)	-	lbs

These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

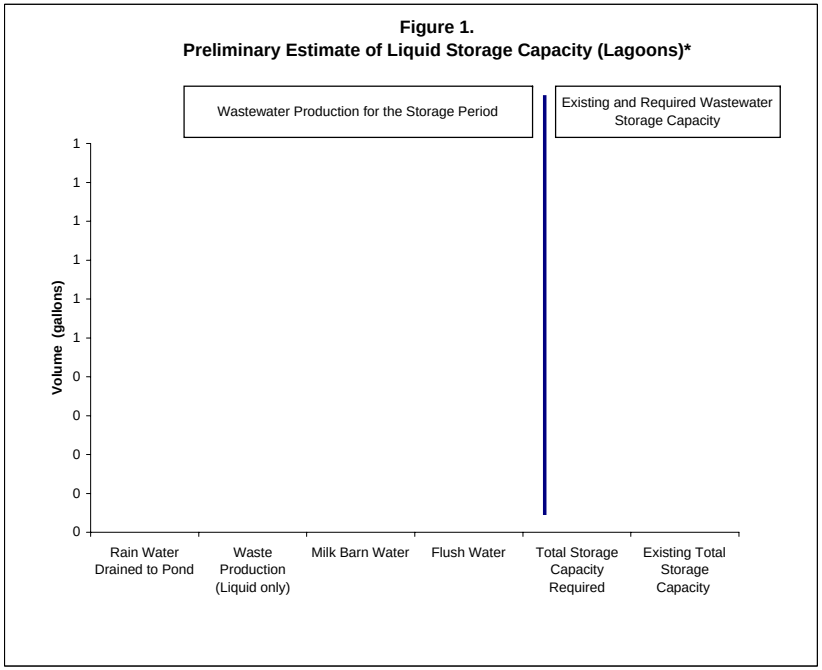

Figure 1. Preliminary Estimate of Liquid Storage Capacity (Lagoons)

This graph estimates how many gallons of water and waste are sent to the wastewater storage ponds (lagoons) on your dairy during the selected **0** day storage period.

Your wastewater storage ponds (lagoons) must be very close to empty as a result of applying nutrients to crops over the last year starting in the beginning of October and should not fill before

Are my ponds (lagoons) large enough?

In your case you have:	-	gallons of liquid storage capacity
You need:	-	gallons of liquid storage capacity
Answer:	**-**	

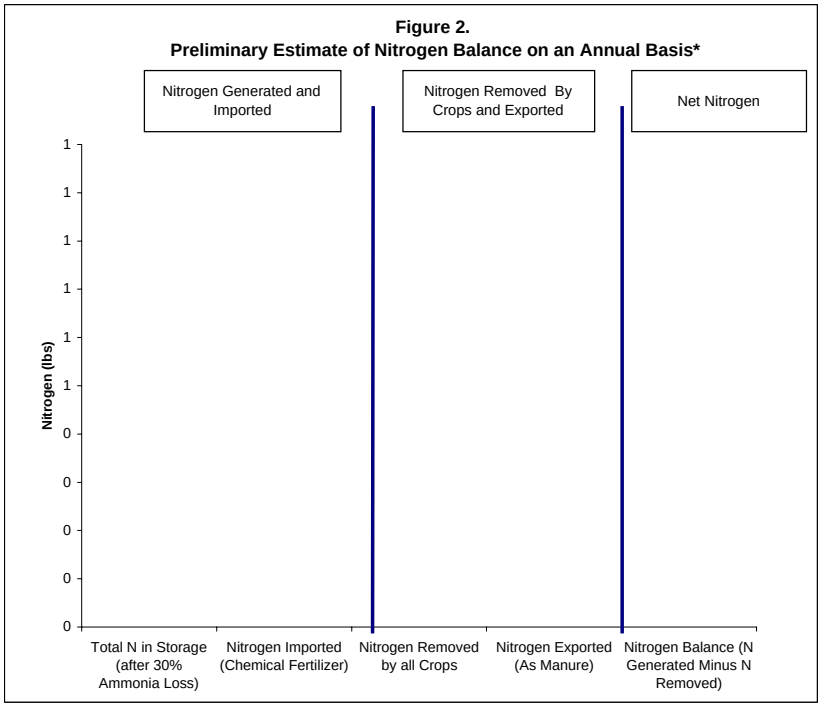

Figure 2 - Preliminary Estimate of Nitrogen Balance on an Annual Basis

This graph estimates the total pounds of Nitrogen Excreted from the herd ending up in storage, Nitrogen Imported (as fertilizer), Nitrogen taken up by all Crops associated with the dairy, Nitrogen Exported (typically as dry manure), and ultimately Nitrogen Balance, Excess or Deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

Do I have enough cropland to take up the Nitrogen I generate?

Total N in Storage (after 30% Ammonia Loss)	-	pounds
Nitrogen Imported (Chemical Fertilizer)	-	pounds
Nitrogen Removed by all Crops	-	pounds
Nitrogen Exported (As Manure)	-	pounds
Answer:	**-**	**pounds**

It appears that the Crop rotation is _____ of taking up the Nitrogen generated by your herd on an annual basis.

***These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.**

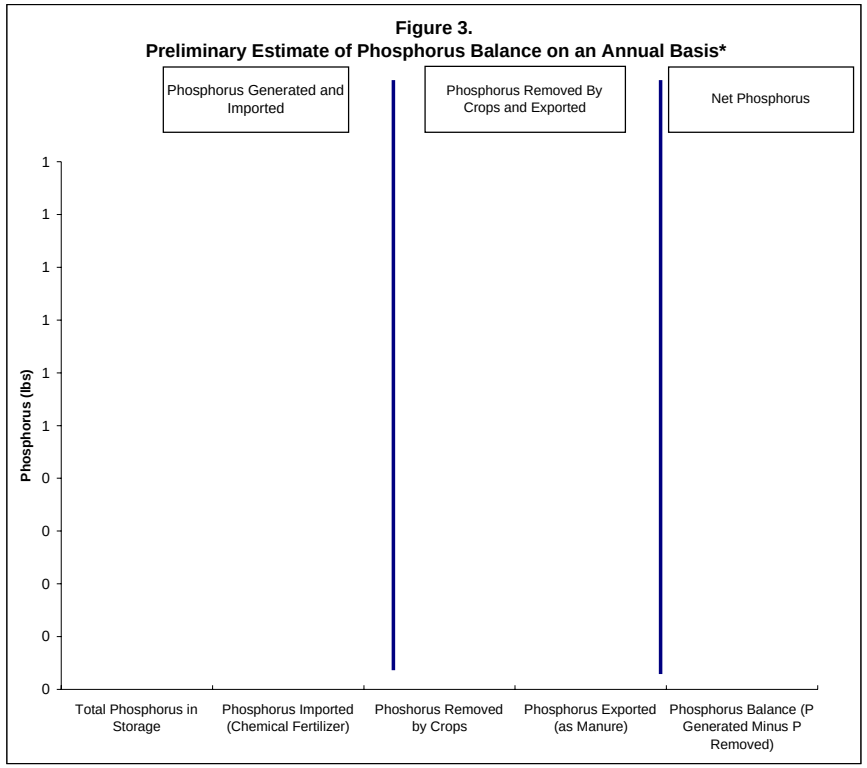

Figure 3 - Preliminary Estimate of Phosphorus Balance on an Annual Basis

This graph estimates the total pounds of Phosphorus Excreted from the herd ending up in storage, Phosphorus Imported (as fertilizer), Phosphorus taken up by all Crops associated with the dairy, Phosphorus Exported (typically as dry manure), and ultimately Phosphorus Balance, Excess or Deficiency on an annual basis.

Nutrients must be applied at rates and times appropriate for the crop to prevent surfacewater and groundwater degradation.

Do I have enough cropland to take up the Phosphorus I generate?

Total Phosphorus in Storage	-	pounds
Phosphorus Imported (Chemical Fertilizer)	-	pounds
Phoshorus Removed by Crops	-	pounds
Phosphorus Exported (as Manure)	-	pounds
Answer:	**-**	**pounds**

It appears that the Crop rotation is _____ of taking up the Phosphorus generated by your herd on an annual basis.

***These calculations are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.**

TENTATIVE

Nutrient content of the above ground portion of several forage, fiber and grain crops*.

The information in this table is provided as a method to estimate crop yields and nutrient contents of common crops in the absence of laboratory derived values.

These values are preliminary and approximate only. Completion of your Waste Management Plan and Nutrient Management Plan will provide you with more detailed and precise calculations upon which to make important decisions.

Crop Code	Crop	Typical Yield	Yield Units	Moisture %	Typical Protien %	Pounds of nutrient per unit of yield**					Concentration, %***		
						N	P	P2O5	K	K2O	N	P	K
1	Barley, grain	2.5	tons	10%		64	10.4	24	53	64			
2	Barley silage, boot stage	8	tons	70%	15-19% (17%)	16	2.6	6	11.6	14	0.80	0.13	0.58
3	Barley silage, soft dough	16	tons	70%	8-12% (10%)	10	1.6	3.7	8.3	10	0.50	0.08	0.42
4	Corn, grain	5	tons	10%		48	8.7	20	40	48			
5	Corn silage	30	tons	70%	8-11% (9%)	8	1.5	3.5	6.6	8	0.40	0.08	0.33
6	Cotton, lint	3	bale			80	11	25	42	50	4.00	0.55	2.10
7	Oats, grain	1.6	tons	10%		100	11	37	83	100			
8	Oats silage, soft dough	16	tons	70%	8-15% (10%)	10	1.6	3.7	8.3	10	0.50	0.08	0.42
9	Oats, hay	4	tons	10%	8-15% (12%)	40	6.5	15	33	40	2.00	0.33	1.65
10	Safflower	2	tons			100	11	25	62	75			
11	Sorghum	4	tons	10%		50	8.7	20	40	48			
12	Sugar beets	30	tons			8.5	0.9	2	15	18			
13	Triticale, boot stage	12	tons	70%	14-18% (16%)	15	2.7	6.1	11.6	14	0.75	0.14	0.58
14	Triticale, soft dough	22	tons	70%	8-12% (10%)	10	1.7	3.8	7.5	9	0.50	0.09	0.38
15	Wheat, grain	3	tons	10%		58	10.9	25	50	60			
16	Wheat silage, boot stage	10	tons	70%	15-19% (17%)	16	2.8	6.4	12	15	0.80	0.14	0.60
17	Wheat silage, soft dough	18	tons	70%	9-13% (11%)	11	1.7	4	8.3	10	0.55	0.09	0.42
18	Alfalfa, hay	8	tons	10%	18-24% (21%)	60	5.4	12.4	42	50	3.00	0.27	2.10
19	Bermudagrass, hay	8	tons	10%	9-13% (11%)	35	4.6	10.5	42	50	1.75	0.23	2.10
20	Clover-grass, hay	6	tons	10%	10-14 (12%)	38	5.0	11.5	42	50	1.90	0.25	2.10
21	Orchardgrass, hay	6	tons	10%	9-14% (11%)	35	4.6	10.5	42	50	1.75	0.23	2.10
22	Ryegrass, hay	6	tons	10%	8-12 (10%)	32	4.6	10.5	42	50	1.60	0.23	2.10
23	Sudan silage	8/cut	tons	70%	8-12 (10%)	11	1.7	4	12	15	0.55	0.09	0.60
24	Sudan hay	8	tons	10%	8-12 (10%)	32	4.4	10	33	40	1.60	0.22	1.65
25	Tall Fescue, hay	6	tons	10%	8-12 (10%)	32	4.6	10.5	42	50	1.60	0.23	2.10
26	Timothy, hay	6	tons	10%	9-14% (11%)	35	4.6	10.5	42	50	1.75	0.23	2.10
50	Trees/Almond	1.5	tons			130							
60	Pasture	2	tons			30							

*Values are approximations. Actual nutrient removal may vary by 30% or more.

**P x 2.29 = P2O5, P2O5 x 0.437 = P, K x 1.20 = K2O, K2O x 0.83 = K.

***Concentration is expressed on the typical moisture % basis (Either 70 or 10%)

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