Animal Waste Management Plan

Name of Landowner/Operator: Frank Ausman
Address: 872 Enterprise Ave.
City: Nyssa
State: OR 97913
Phone: 541-372-3415
Plan Prepared by: Jim Hendrickson
Date: June 12, 2002

Oregon Dairy Farmers Association
10505 S.W. Barbur Blvd., Portland, Oregon 97219
(503) 229-5033 Fax: (503) 245-7916

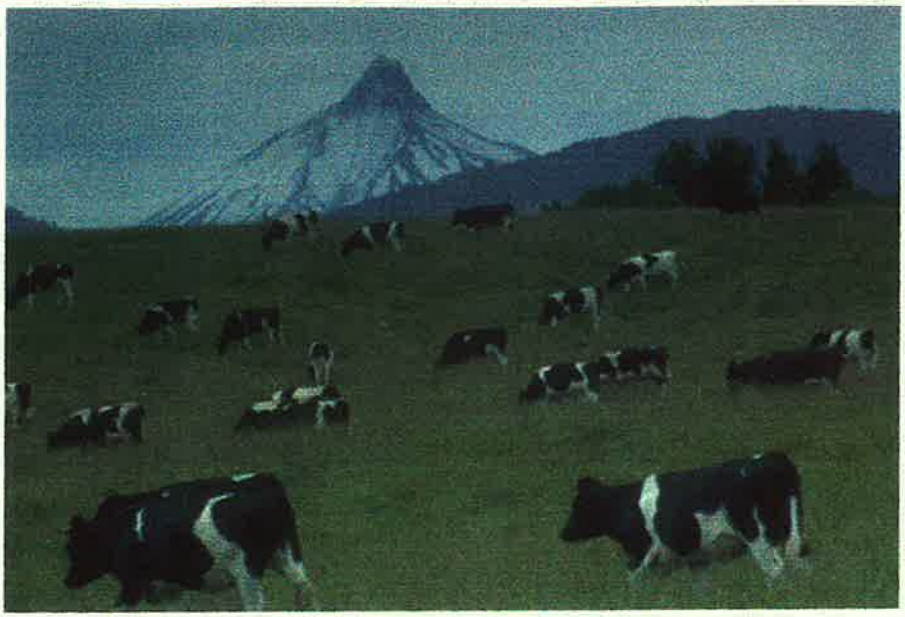
Jim Hendrickson
Water Quality Specialist (503) 887-1956

AWMP #0235
Due Date: 8-1-02

As the owner and operator of the Dairy of Ozz, I intend to install the conservation practices described in this plan and manage them in accordance with the operation and maintenance section of this plan.

Signature Frank Ausman *Date* 6-25-02

MA# 138707



Dairy of Ozz 2002

Animal Waste Management Plan
Dairy of Ozz 2002
Oregon Dairy Farmers Association

Dairy of Ozz 2002

Nyssa, Oregon

General Description

The Dairy of Ozz consists of 350 Holstein cows and is located near Nyssa, Oregon in Malheur County. The operation will consist of 135 milk cows, 35 dry cows, 110 heifers, and 70 bottle calves. The dairy has approximately 326 acres total. Of those 326 acres, 311 acres are available for manure distribution. See *"Dairy of Ozz 2002 Property Map"*. None of the land is tiled or on a flood plain. The operator confines the cattle year round in several dry lot pens. Please view *"Dairy of Ozz 2002 Site Map"* for dairy layout. As the manure accumulates in the pens, it is dehydrated and stacked in piles. The pens are cleaned once a year, in the fall to utilize the manure for crop production. There are 6 soil types found on the farm including, Nyssa silt loam types, Nyssa-Malheur silt loam types, and Xeric Torriorthents. Please view *"Dairy of Ozz 2002 Soil Map"* for location of soils. The operation is very efficient in respect to water usage in the parlor. The system is set up to collect wash water in a storage tank and reuse it to wash down the parlor. Parlor wash is gravity fed to an evaporation pond, which is just east of the milking parlor. See attached diagram titled, "Dairy of Ozz 2002 Evaporation Pond". The diagrams explain the construction done for water collection. This is done using an overflow catch basin, which empties, into the evaporation pond. This pond is placed so it can also collect and runoff from the dry lot pens that may accumulate from rainfall or melting snow. Care should be taken when applying manures within 50-foot or an appropriate buffer zone from irrigation laterals so not to contaminate either waterway or waters of the state. This plan will need to be updated if cattle numbers exceed the CAFO permits allotted amount or any structural changes that would affect liquid storage

Storage & Application

Solid manure is collected and stacked in individual dry lots from March through October of each year. Beginning in October after the crops are harvested, the manure will be spread on acreage that will be planted in barley or corn the following spring or fields that will be seeded with a new planting of alfalfa. The dry manure will primarily be applied to soils that are of poorer quality to improve soil tilth and percentage of organic matter. Solids are applied to the acreage via the use of a GEHL model (325) solid spreader that has a capacity of 243-cu.ft. Annual soil testing will be the most beneficial for application and nutrient monitoring.

The liquid waste water is collected from the milk house, parlor, and rain water from unsurfaced lots will be stored in an evaporation pond measuring 300'x 86'x 3.5' which equals 1.3 acre feet (AF). Due to the size of the pond and the average evaporation rate in this climatic region, it is anticipated that the liquid will evaporate into the atmosphere. During a May visit I noticed no appreciable accumulation of liquids in the pond. ORAWM v.1.5 anticipates for 90 days of storage the evaporation pond should equal 1.0 AF of storage. In the case of a heavy rainfall event causing the pond to fill to capacity, a "honey wagon" will be used to apply the wastewater to the cropland. Currently the operation does not apply any liquids from the facility to the cropping system. There is not enough produced to make any financial difference.

The operator will contain all wastewater within the facilities, while diverting clean water out of the system. Manure will be applied to the acreage to meet the expected nutrient

uptake of the cropping system. Application of manure will be done at appropriate times of the year as to utilize nutrients for maximal forage production.

Nutrient Utilization-Data Estimated by ORAWM v. 1.5

Nutrient Uptake by Cropping System

Crop	*Acres*	*N (lbs)*	*Total N*	*P2O5 (lbs)*	*Total P*	*K2O(lbs)*	*Total K*
Corn Silage	106	270	28,620	140	14,840	322	34,132
Spring Barley	60	154	9,240	61	3,660	120	7,200
Alfalfa	145	270	39,150	60	8,700	270	39,150
Totals	**311**		**77,010**		**27,200**		**80,482**

- *Totals Represent Total Nutrients Needed for Cropping System.*

Total Nutrient Balance After Denitrification

Nutrient (lbs)	*Nitrogen*	*Phosphorus*	*Potassium*
Needed	77,010	27,200	80,482
Produced by Dairy	23,616	17,035	36,798
Difference	**-53,394**	**-10,165**	**-43,684**

Breakdown in Pounds per Acre are Shown

Nitrogen	*Phosphorus*	*Potassium*
-171 lbs/acre	**-33 lbs/acre**	**-140 lbs/acre**

- Data Provided by USDA-NRCS ORAWM v.1.5

These figures are only *estimates* and proper manure application equipment calibration should be done coupled with annual fall soil testing to verify the nutrient levels in the soil prior to spring application. Also recommended is manure application record keeping ensuring proper application rates are monitored.

Soils Descriptions

21A – Nyssa Silt Loam, 0-2% slopes.
The Nyssa series consists of moderately deep, *well-drained* soils that formed in mixed lacustrine materials. Nyssa soils are on terraces and have slopes of 0 to 20 percent. The mean annual precipitation is about 10 inches and the mean annual air temperature is about 52 degrees F. 0 to 13 inches; light brownish gray (10YR 6/2) silt loam, dark grayish brown (10YR 4/2) moist; weak medium granular structure; slightly hard, friable,

slightly sticky and slightly plastic; few roots; many very fine tubular pores; mildly alkaline (ph 7.5); clear smooth boundary. (5 to 13 inches thick)
The mean annual soil temperature ranges from 52 to 56 degrees F. The soils are usually dry but are moist for more than 60 days during the winter season. Depth to the duripan ranges from 20 to 40 inches. The A and B-horizons above the duripan are slightly to moderately alkaline and commonly no calcareous but some pedons are weakly calcareous in the B-horizon. The A and B horizons above the duripan are silt loam or very fine sandy loam and have less than 18 percent clay and less than 15 percent fine sand and coarser. Nyssa soils are on nearly level to gently sloping terraces with gradients up to 20 percent but commonly less than 8 percent at elevations of 2,100 to 2,600 feet. The soils formed in lacustrine materials with the surface reworked by wind. The climate is semiarid and has hot dry summers and cold winters. Mean annual precipitation is 9 to 11 inches. The mean annual temperature is 50 to 54 degrees F., the mean summer temperature is 70 to 74 degrees F., and the mean winter temperature is 31 to 33 degrees F. The frost-free period ranges from 150 to 170 days.
Principal use is irrigated crops: sugar beets, potatoes, onions, small grain, specialty seed crops, mint, and alfalfa. Native vegetation is mainly big sagebrush, bud sagebrush, needle grass, Sandberg bluegrass, annual fescue, and associated forbs.

21B & C – Nyssa Silt Loam, 2-5% slopes.
The Nyssa series consists of moderately deep, *well-drained* soils that formed in mixed lacustrine materials. Nyssa soils are on terraces and have slopes of 0 to 20 percent. The mean annual precipitation is about 10 inches and the mean annual air temperature is about 52 degrees F. 13 to 20 inches; pale brown (10YR 6/3) silt loam, dark brown (10YR 3/3) moist; weak coarse sub angular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; few roots; many very fine tubular pores; neutral (pH 7.0); clear wavy boundary. (7 to 10 inches thick)
The mean annual soil temperature ranges from 52 to 56 degrees F. The soils are usually dry but are moist for more than 60 days during the winter season. Depth to the duripan ranges from 20 to 40 inches. The A and B-horizons above the duripan are slightly to moderately alkaline and commonly no calcareous but some pedons are weakly calcareous in the B-horizon. The A and B horizons above the duripan are silt loam or very fine sandy loam and have less than 18 percent clay and less than 15 percent fine sand and coarser. Nyssa soils are on nearly level to gently sloping terraces with gradients up to 20 percent but commonly less than 8 percent at elevations of 2,100 to 2,600 feet. The soils formed in lacustrine materials with the surface reworked by wind. The climate is semiarid and has hot dry summers and cold winters. Mean annual precipitation is 9 to 11 inches. The mean annual temperature is 50 to 54 degrees F., the mean summer temperature is 70 to 74 degrees F., and the mean winter temperature is 31 to 33 degrees F. The frost-free period ranges from 150 to 170 days.
Principal use is irrigated crops: sugar beets, potatoes, onions, small grain, specialty seed crops, mint, and alfalfa. Native vegetation is mainly big sagebrush, bud sagebrush, needle grass, Sandberg bluegrass, annual fescue, and associated forbs.

23A & 23B – Nyssa-Malheur silt loams, 0-2% slopes
This complex consists of about 50 to 60% Nyssa silt loam; about 20 to 40% Malheur silt loam; about 5% Virtue soils; about 5% Nyssa silt loam, gravel substratum; and about 5% Owyhee soils. It is in irregularly shaped areas on terraces. Runoff is slow, and the hazard of erosion is slight.

36F Xeric Torriorthents
These soils consist of gravelly and silty alluvium that is variable in characteristics. Slopes are normally 20-60 percent. Areas are along sidewalls on terrace scarps. Most of this mapping unit is nearly barren of vegetation. The sparse vegetation consists of hop sage, desert shrubs, and annual weeds and grasses.

Operation & Maintenance Plan

Pipeline
Pipeline route and water line will be inspected periodically for leaks. Any leaks and or broken pipes will be repaired and or replaced. Line will be flushed periodically to assure no sediment buildup in lines. Water will be drained during cold weather to prevent frozen lines and possible breakage. Shut off valves will be inspected annually. Broken valves will be replaced.

Concrete Gutters
Floor gutters and grates will be inspected periodically. All foreign material restricting manure flow will be removed. Broken floor gutters will be repaired and or replaced.

Concrete Curb
Concrete curbs will be inspected periodically. Broken curbs will be repaired. Manure will be prevented from flowing over the curb.

Pump
Pump(s) will be operated and maintained according to manufacturer's manual. Liquids will be drained from pump during freezing weather. Pump will be inspected periodically to prevent debris from wrapping around the impeller. Broken lines will be replaced or repaired. Loose connections will be tightened.

Waste Transfer Pipeline
Pipeline will be flushed regularly to prevent clogging. Any leaks or broken section will be repaired and or replaced.

Gutters & Downspouts
Gutters will be inspected annually to insure all gutters are free of foreign materials. Broken gutters or downspouts will be replaced and or repaired. All gutters will be connected to downspouts. Leaky gutters and downspouts will be repaired. Weeds and sediment will be removed from outlets. All downspouts will be connected to outlets, which are kept free flowing. Broken rodent guards will be repaired or replaced.

Roof
Roof will be inspected annually. All rusted sections will be repaired and or replaced if needed. Loose sections will be secured. All broken trusses, rafters, beams, poles, gutters and downspouts will be repaired and or replaced.

Trough or Tank
Watering facility will be inspected periodically. Damaged facility will be repaired. Float valves will be maintained in working order. Area immediately around the facility will be maintained in a stable condition.

Access Road
Promptly repair or replace damaged components as needed. Remove debris and litter from roadway surfaces, road ditches and drainage facilities. Maintain drainage facility capacities. Maintain good vegetative cover on all slopes and watercourses.

Structure for Water Control

Culvert
Inspect annually. All foreign material restricting water flow will be removed. Damaged sections will be repaired and or replaced. Erosion around inlet or outlet will be corrected.

Surface Drainage (Main or Lateral)
Ditches will be inspected annually. They will be cleaned periodically to remove sediment and vegetation. .

Pest Management (if applicable)

Maintain mechanical equipment in good working condition and calibrate application equipment to ensure recommended rates are applied. Replace worn components of pesticide application equipment as well as other pest management implements.

Operators of equipment must be alert at all times to avoid bodily injury and unnecessary exposure to chemicals. Pesticide users must read and follow label directions, maintain appropriate Material Safety Data Sheets (MSDS), and become certified to apply restricted use pesticides. Apply chemicals during periods of minimum potential for drift. Minimize exposure to chemicals, wear protective clothing, and use safety equipment when appropriately needed. Ensure that the pesticide applicator knows the exact field location to be treated. Post signs according to label directions or state and federal laws around fields that have been treated. Follow the established re-entry time as stated on the MSDS.
Properly locate chemical mixing and equipment rinsing stations relative to potential for contamination of ground or surface water. Extreme care must be taken to follow loading and mixing procedures. Provide for managing accidental spills. Properly rinse equipment and re-use rinse solution for subsequent batches of the same pesticides, where possible. Store pesticides in original containers in a locked, well-ventilated weather resistant building. Post warning signs on or around the building in plain view. Locate

the building so that accidental spills will create minimal environmental effects. Dispose of pesticide containers according to label directions and adhere to local or state regulations.

Provide emergency wash stations for personnel who might be accidentally exposed to chemicals, and formulate a safety plan complete with information about locations or emergency treatment centers for personnel exposed to chemicals.

Ensure that back flow prevention devices are installed and operating properly on irrigation systems used for applying pesticides. Recognize the dangers from excessive exposure to take the appropriate precautionary measures. This is especially important for farm workers who spend long hours in the field.

Nutrient Management

- Calibrate manure and fertilizer application equipment to ensure recommended rates are applied.
- Minimize exposure to animal and organic wastes, manure gasses, and chemical fertilizers. Wear protective clothing when appropriate.
- Protect commercial fertilizer and agricultural waste storage facilities from weather and accidental leakage or spillage that will result in undesirable effects on soil, water, and plants.
- When cleaning equipment after nutrient application, remove and save fertilizers or wastes in an appropriate manner. If system is flushed, use rinse water in the following batch of nutrient mixture, where possible, or dispose of it according to state and local regulations, always avoiding high runoff areas, pond, lakes, streams, and other water bodies. Extreme care must be exercised to avoid contaminating wells.

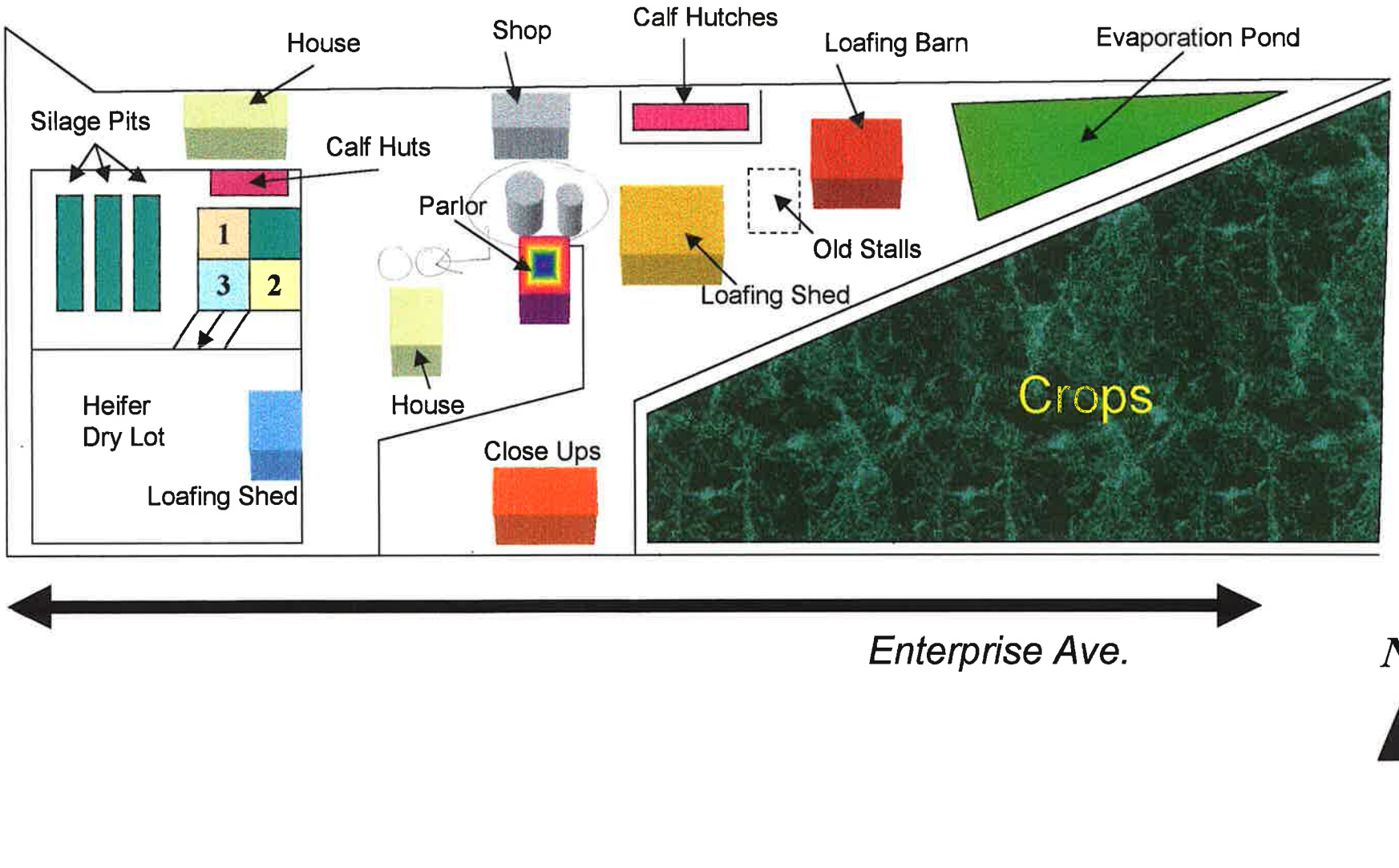
Resources

- *All aerial photographs are supplied by Malheur County Farm Service Agency.*
- *Data Supplied by USDA-NRCS ORAWM v.1.5.*
- *Soil information provided by Malheur County Natural Resources Conservation Service.*
- *Topographical information provided by TopoZone.com.*
- *Property Boundary & Acreage Verification – Malheur County Farm Service Agency.*
- *Facility Information – Frank Ausman (Owner)*

Any questions regarding calibrations or nutrient management can be made to the ***Oregon Dairy Farmers Association @ 503-229-5033.***

Dairy of Ozz
2002 Site Map

*Map Not to Scale



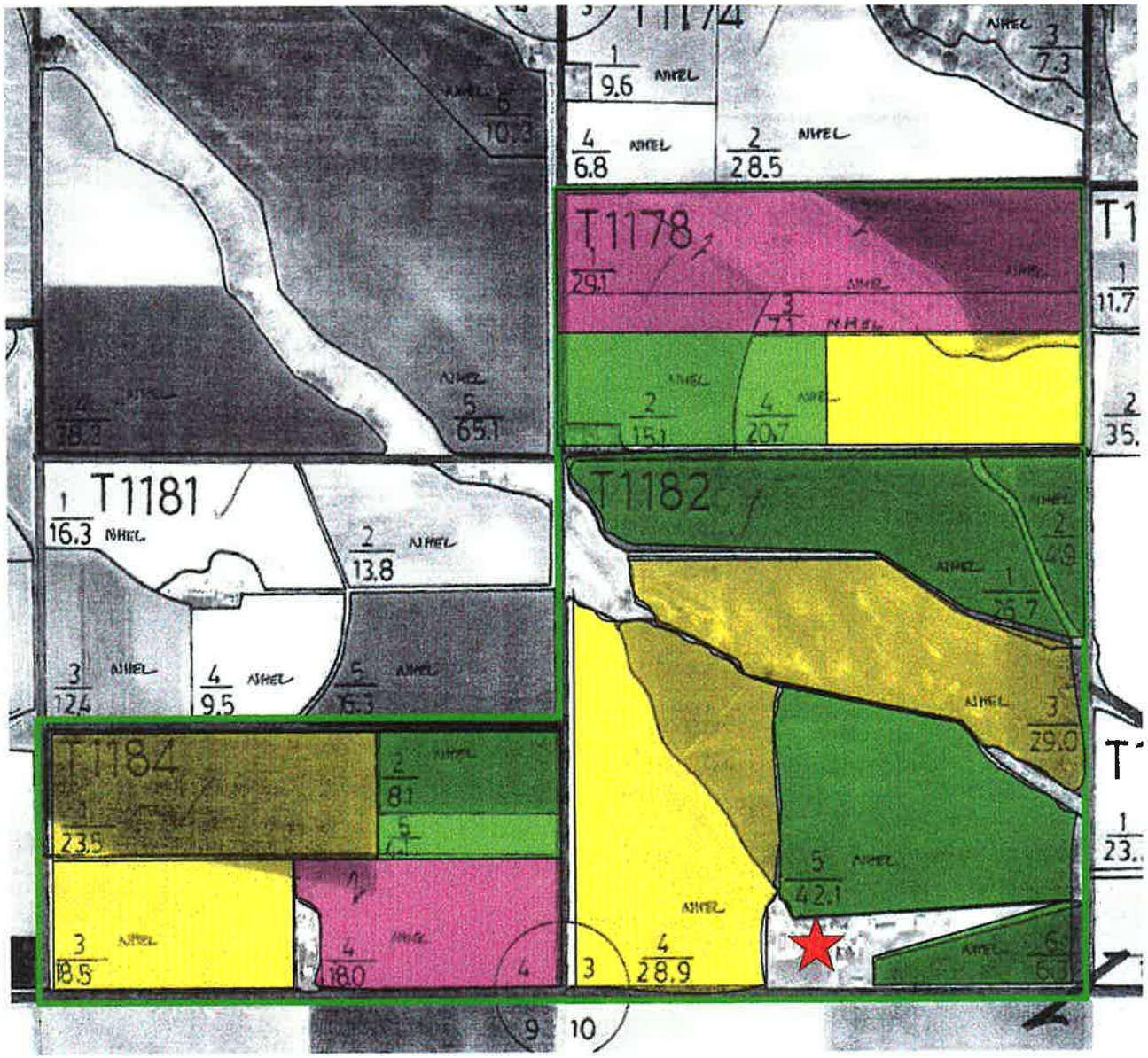
Dairy of Ozz 2002
Cropping System

Barley

Corn Silage

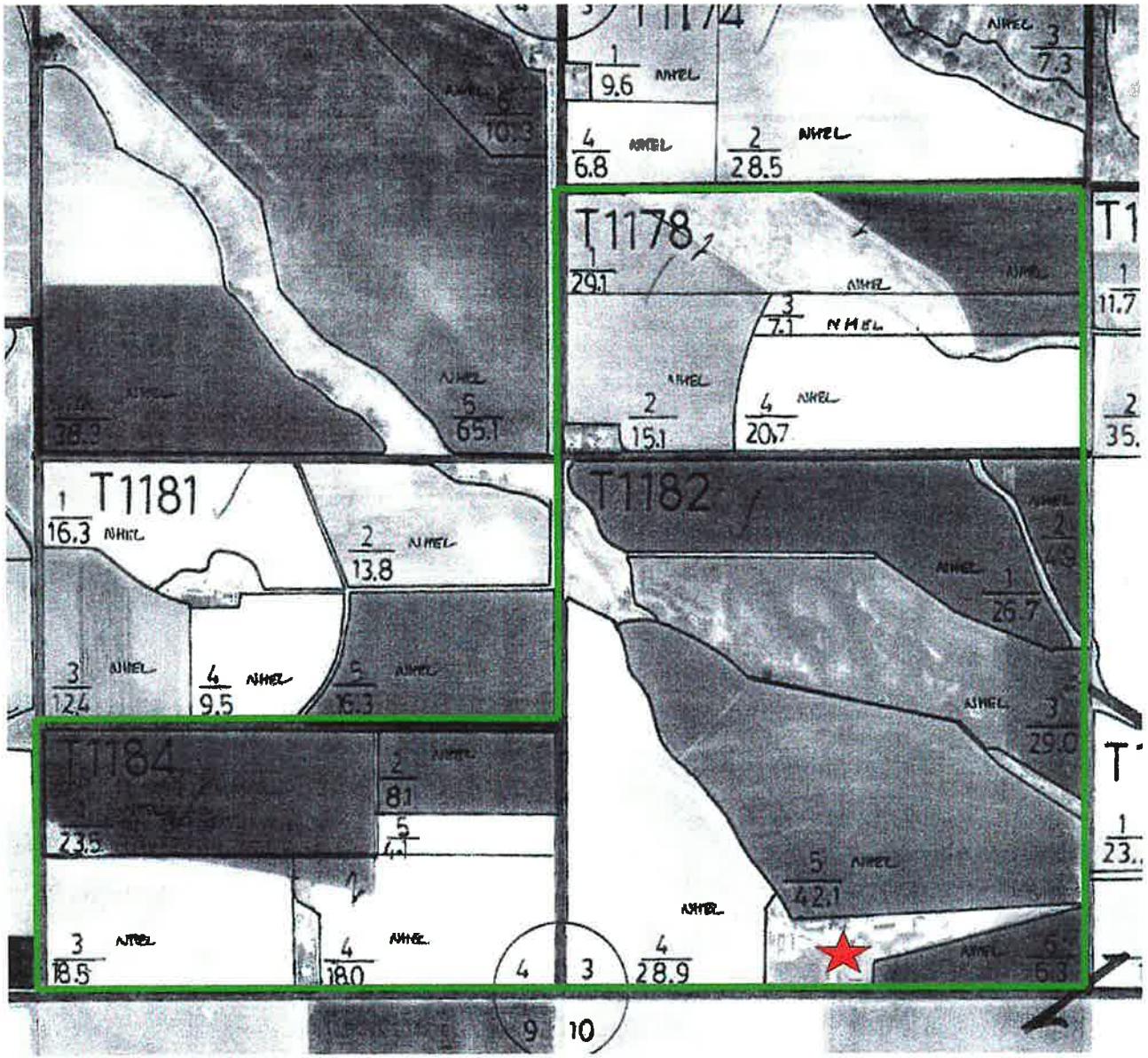
Hay

Dairy Facility



*Aerial Map Provided by
Malheur County Farm Service Agency.

Dairy of Ozz 2002
Property Map



Dairy Facility

326 Acres

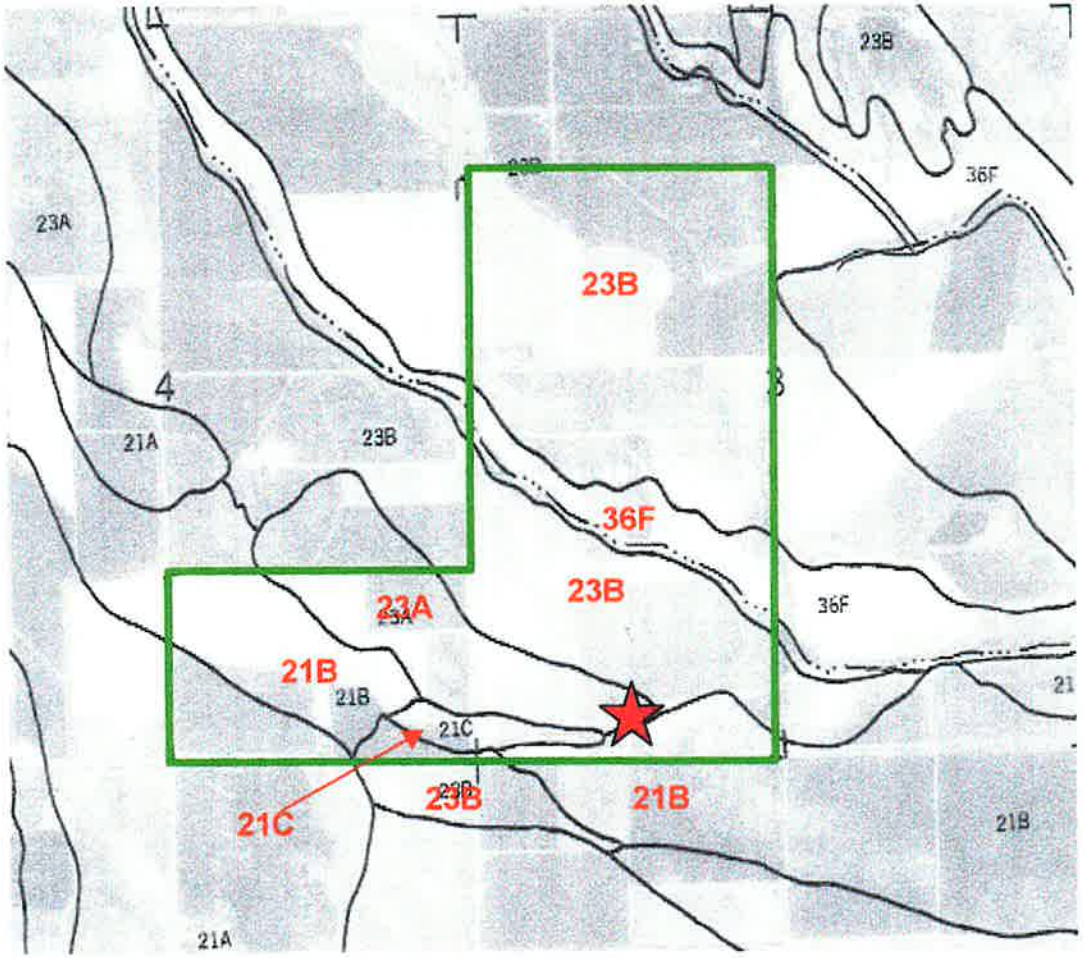
*Aerial Map Provided by
Malheur County Farm Service Agency.

Dairy of Ozz 2002
Soils Map

Nyssa Silt Loam (21A, 21B, 21C)

Nyssa-Malheur Silt Loam (23A, 23B)

Xeric Torriorthents (36F)

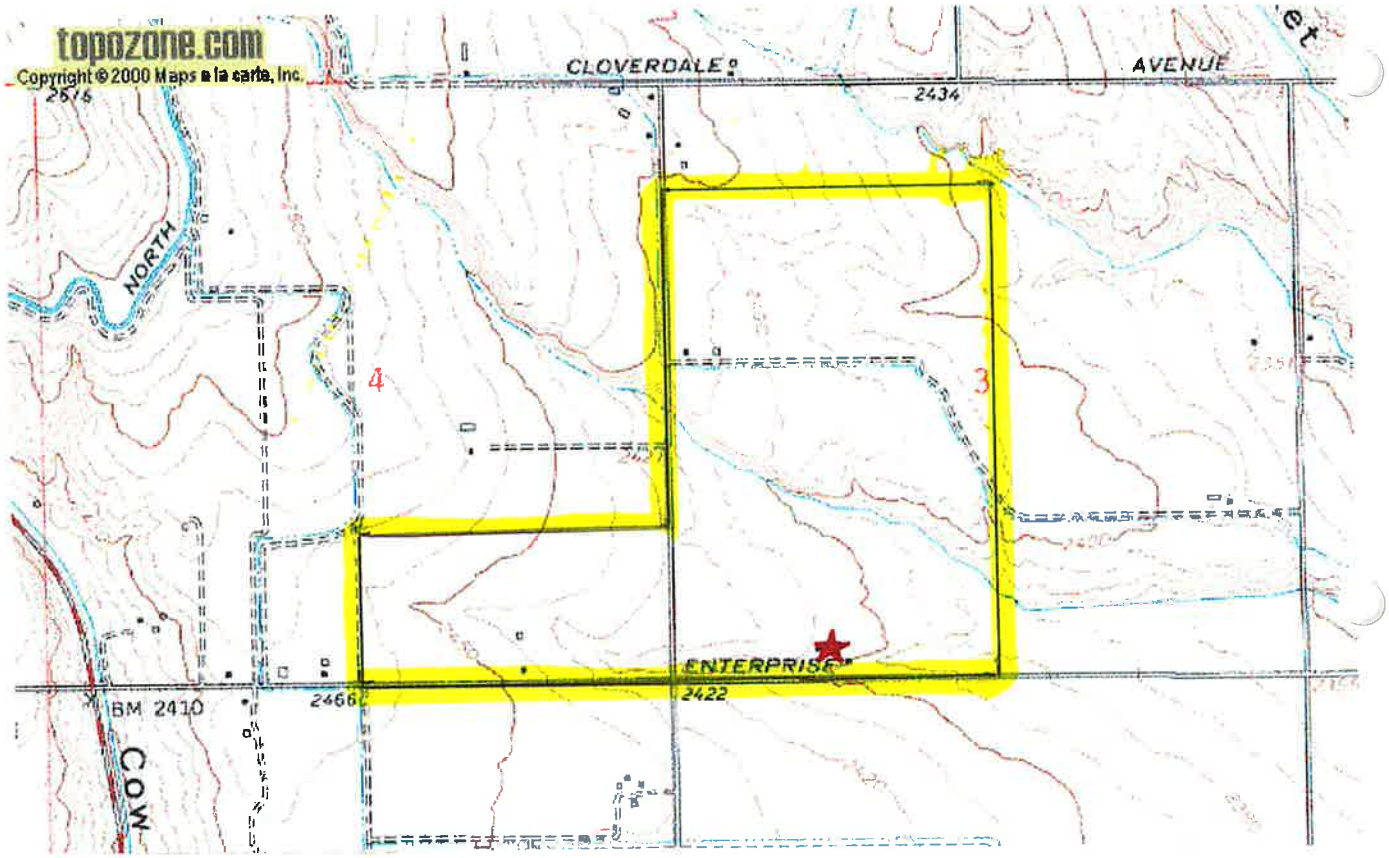


Dairy Facility

*Soil Map Provided by
Malheur County USDA/NRCS
Soils Book Sheet # 30..

Dairy of Ozz 2002 Topographical Map

*Avg.. Elevation = ~2,400 ft.



Dairy Facility

*Topographical Map Provided by TopoZone.com.

DAIRY OF OZZ 2002
EVAPORATION POND

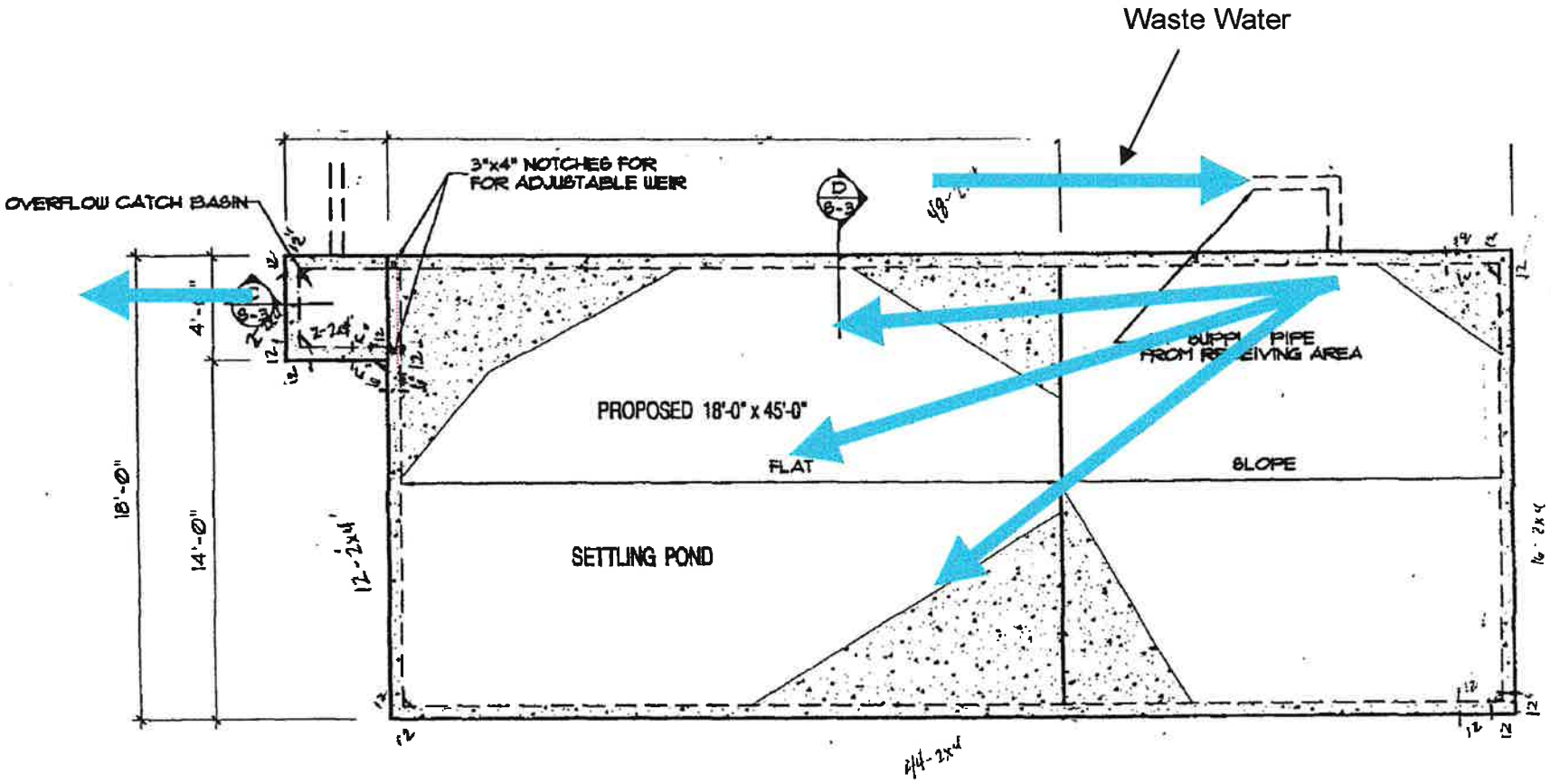
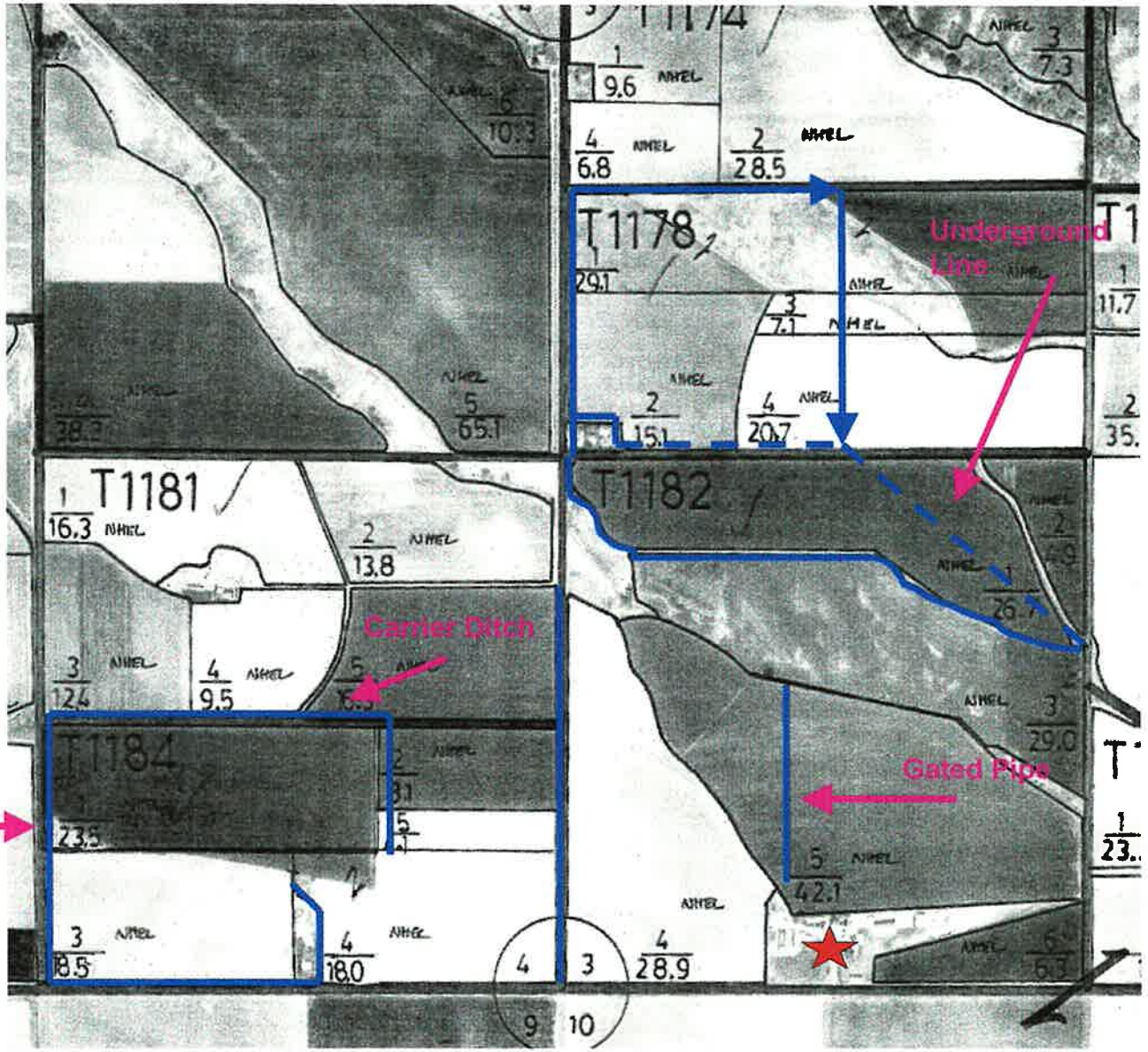


*Diagram Supplied by Malheur County USDA/NRCS Office.

Dairy of Ozz 2002
Irrigation Map



Dairy Facility

Gated Pipe

*Aerial Map Provided by
Malheur County Farm Service Agency.

U.S. Dep ent of Agriculture
Natural R urces Conservation Service

ANIMAL WASTE MANA MENT WORKSHEET

Version 1.5

3/2002
STATE EGON

CLIENT: Jerry Noble
ASSISTED BY: Jim Hendrickson CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

ANIMAL INVENTORY

Type of Animal	Number of Animals	Average Weight (lbs.)	Animal Units (1,000 lb.)	Milk Production in Pounds/Cow/Day=	80					Manure CF/D/AU	Annual	
				Nutrient Production								
				(lbs./day/1000 lb. Animal Unit)			(lbs./day)				Days Confined	Days Grazed
				N	P	K	N	P	K			
MILKER	135	1,400	189.0	0.62	0.10	0.33	117.51	18.41	63.31	1.69	365	0
MILKER (DRY)	35	1,300	45.5	0.36	0.05	0.23	16.38	2.28	10.47	1.10	365	0
HEIFERS (12-24 Months)	110	700	77.0	0.31	0.04	0.24	23.87	3.08	18.48	1.30	365	0
CALVES (1-12 Months)	70	200	14.0	0.31	0.04	0.24	4.34	0.56	3.36	1.30	365	0
Totals-	350	900	325.5	0.50	0.07	0.29	76.36	11.76	42.74	1.5		

GRAZING PERIOD

Type of Animal	Percent of Month and Number of Animals Grazing												
	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	AU-YR.
MILKER	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	135	135	135	135	135	135	135	135	135	135	135	135	0
MILKER (DRY)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	35	35	35	35	35	35	35	35	35	35	35	35	0
HEIFERS (12-24 Months)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	110	110	110	110	110	110	110	110	110	110	110	110	0
CALVES (1-12 Months)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
	70	70	70	70	70	70	70	70	70	70	70	70	0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
													0
Total AUM's Available>	56							56	84	111	167	84	558
Total AUM's Needed>>>	0	0	0	0	0	0	0	0	0	0	0	0	0
Total AUM's>>>>>>>>>>	56	0	0	0	0	0	0	56	84	111	167	84	558

ANIMAL WASTE MANA MENT WORKSHEET

Version 1.5

CLIENT: Jerry Noble

ASSISTED BY: Jim Hendrickson CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

WEATHER STATION

MALHEUR BRANCH EXP S

Month	25Yr-24Hr	1.80	Lot Runoff Factors as a Percent of Monthly Precipitation	
	Monthly Average in Inches			
	Precipitation	Evaporation	Paved	Unpaved
October	0.71	1.98	100%	0%
November	1.21	0.50	100%	0%
December	1.32	0.71	100%	0%
January	1.26	0.74	100%	0%
February	0.98	1.09	100%	0%
March	0.92	2.06	100%	0%
April	0.70	3.79	100%	0%
May	0.98	5.12	100%	0%
June	0.83	6.08	100%	0%
July	0.19	7.62	100%	0%
August	0.38	6.51	100%	0%
September	0.49	4.03	100%	0%
Annual	9.97	40.23		

AREAS CONTRIBUTING RUNOFF TO LIQUID STORAGE FACILITY

Description of Runoff Area	Area in SF
Paved Lot Area >> Is paved lot scraped daily? (Y/N) YES	900
Unpaved Lot Area >>>	87,120
Roof Area >>	
Surface Area of Silage Storage Facility>>>>>>>>>>>>>>>>>>>>>>>>>>>>> Does Silage Seepage Drain to Storage Facility? (Y/N) NO	0
Total Runoff Area Contributing to Liquid Storage Facility>>>>>>>>>>>>>>>	88,020

WATER USE THAT ENTERS LIQUID STORAGE FACILITY

Type of Water Use	Number of Animals	Number of Washes per Day	Gallons of Water Used per Wash-Day	Total Water Use per Day, Gallons	Total Water Use per Day, Cubic Feet
Animal Washwater	0.0	2	0.00	0	0.0
Equipment Wash		2	25.00	50	6.7
Flushwater		2	1.00	2	0.3
Miscellaneous		2	100.00	200	26.7
Total>>>				252	33.7

CROP DATA

Field Number	Acres	Crop	Condition	Yield Units	Target Yield	Nutrients Utilized in Pounds per Acre		
						Nitrogen N	Phosphorous P_2O_5	Potassium K_2O
1	106.0	Corn, Silage(wb)	35% DM	Ton	35.00	270	140	322
2	60.0	Barley, Grain Straw Removed		Ton	3.00	154	61	120
3	145.0	Alfalfa Hay	50% DM	Ton	6.00	270	60	270
Off-Farm								

OZZ

U.S. Dep~ ~ent of Agriculture
Natural I~ ~urces Conservation Service

ANIMAL WASTE MAN~ ~MENT WORKSHEET

Versi~ ~1.5

~3/2002
STATE ~EGON

CLIENT: Jerry Noble

ASSISTED BY: Jim Hendrickson CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM INVENTORY

BEDDING VOLUME

Type of Animal	Type of Bedding Facility	Bedding Material	Unit Weight Lbs/CF	Amount Needed Lbs/Day/AU	Volume CF/Day/AU	Total Volume CF/Day	Total Volume Lbs/Day
MILKER	Loose Housing						
MILKER (DRY)	Loose Housing						
HEIFERS (12-24 Months)	Loose Housing						
CALVES (1-12 Months)	Confined	Loose Straw	2.50	2.60	1.04	15	36

SOLIDS SEPARATION FACTOR

Type of Animal	Type of Separator	Separation Factor %	Volume of Solids Separated CF/Day	Volume of Solids in Liquids CF/Day	Volume of Manure in Liquids CF/Day	Volume of Manure in Solids CF/Day	Volume of Accumulated Solids CF/Day	Density of Separated Solids Lbs/CF	Weight of Separated Solids Lbs/Day
MILKER	Dry Scrape System	75%	239	80	80	239	13	35	8,365
MILKER (DRY)	Dry Scrape System	75%	38	13	13	38	3	35	1,314
HEIFERS (12-24 Months)	Dry Scrape System	75%	75	25	25	75	5	35	2,628
CALVES (1-12 Months)	Dry Scrape System	75%	19	6	5	14	1	35	669
Total Solids>>>			371	124	122	365	22		12,975

OZZ

U.S. Dep ent of Agriculture
Natural urces Conservation Service

ANIMAL WASTE MAN MENT WORKSHEET

Versi 1.5

3/2002
STATE EGON

CLIENT: **Jerry Noble**
ASSISTED BY: **Jim Hendrickson**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY VOLUMES

Month	Runoff in Cubic Feet				Facility Water Use Cubic Feet	Manure		Bedding		Solids Separated		Solids in Liquids		Total Solids Cubic Feet	Total Liquids Cubic Feet
	Roof Area Square Feet 0	Paved Slab Area Square Feet 900	Unpaved Lot Area Square Feet 87,120	Silage Pit Surface Area, SF 0		Solids Cubic Feet	Liquids Cubic Feet	Cubic Feet	Pounds	Cubic Feet	Pounds	Cubic Feet	Pounds		
October	0	53	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,707
November	0	91	0	0	1,011	1,749	12,862	437	1,092	11,122	389,264	3,707	129,755	11,122	8,465
December	0	99	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,752
January	0	95	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,748
February	0	74	0	0	943	1,632	12,004	408	1,019	10,380	363,314	3,460	121,105	10,380	7,890
March	0	69	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,722
April	0	53	0	0	1,011	1,749	12,862	437	1,092	11,122	389,264	3,707	129,755	11,122	8,427
May	0	74	0	0	1,044	1,807	13,291	451	451	11,493	402,240	3,831	134,080	11,493	8,727
June	0	62	0	0	1,011	1,749	12,862	437	1,092	11,122	389,264	3,707	129,755	11,122	8,436
July	0	14	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,668
August	0	29	0	0	1,044	1,807	13,291	451	1,128	11,493	402,240	3,831	134,080	11,493	8,682
September	0	37	0	0	1,011	1,749	12,862	437	1,092	11,122	389,264	3,707	129,755	11,122	8,411
Annual	**0**	**748**	**0**	**0**	**12,297**	**21,279**	**156,485**	**5,314**	**12,609**	**135,316**	**4,736,051**	**45,105**	**1,578,684**	**135,316**	**102,634**

DAILY NUTRIENT PRODUCTION

Type of Animal	Pounds/Day of Nutrients from LIQUIDS			Pounds/Day of Nutrients from SOLIDS			Pounds/Day of Nutrients from GRAZING		
	N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
MILKER	29.38	10.54	19.07	88.13	31.63	57.22	117.51	42.18	76.29
MILKER (DRY)	4.10	1.30	3.15	12.29	3.91	9.46	16.38	5.21	12.61
HEIFERS (12-24 Months)	5.97	1.76	5.57	17.90	5.29	16.70	23.87	7.06	22.27
CALVES (1-12 Months)	1.09	0.32	1.01	3.26	0.96	3.04	4.34	1.28	4.05
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

CLIENT: **Jerry Noble**
ASSISTED BY: **Jim Hendrickson**
CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM PRODUCTION

MONTHLY NUTRIENT PRODUCTION

Month	Pounds of Nutrients from LIQUIDS			Pounds of Nutrients from SOLIDS			Pounds of Nutrients from GRAZING			Pounds of Nutrients going OFF-FARM			Total Pounds of Nutrients from ALL SOURCES		
	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O	N	P_2O_5	K_2O
October	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
November	1,216	418	864	3,647	1,254	2,592	0	0	0	0	0	0	4,863	1,672	3,457
December	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
January	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
February	1,135	390	807	3,404	1,170	2,420	0	0	0	0	0	0	4,539	1,560	3,226
March	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
April	1,216	418	864	3,647	1,254	2,592	0	0	0	0	0	0	4,863	1,672	3,457
May	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
June	1,216	418	864	3,647	1,254	2,592	0	0	0	0	0	0	4,863	1,672	3,457
July	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
August	1,256	432	893	3,769	1,296	2,679	0	0	0	0	0	0	5,025	1,728	3,572
September	1,216	418	864	3,647	1,254	2,592	0	0	0	0	0	0	4,863	1,672	3,457
Annual	**14,792**	**5,085**	**10,514**	**44,375**	**15,255**	**31,541**	**0**	**0**	**0**	**0**	**0**	**0**	**59,167**	**20,340**	**42,054**

U.S. Depa[illegible]nt of Agriculture
Natural R[illegible]ces Conservation Service

ANIMAL WASTE MANA[illegible]MENT WORKSHEET
Versi[illegible].5

[illegible]3/2002
STAT[illegible]EGON

CLIENT: **Jerry Noble**
ASSISTED BY: **Jim Hendrickson**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

NUTRIENTS AVAILABLE AFTER STORAGE

Nutrient Source	Type of Operation: Dairy / Type of Storage Facility	Pounds of Nutrients Available			Percent Nutrients Retained After Storage			Pounds of Nutrients Retained After Storage		
		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
Liquids	Storage Pond (>50%) Dilution	14,792	5,085	10,514	44%	65%	80%	6,577	3,305	8,411
Solids	Open Lot (Arid Region)	44,375	15,255	31,541	65%	90%	90%	28,844	13,730	28,387
Grazing	NONE	0	0	0	100%	100%	100%	0	0	0

NUTRIENTS AVAILABLE AFTER APPLICATION

Nutrient Source	Type of Application System	Pounds of Nutrients Available			Percent Nutrients Retained After Application			Pounds of Nutrients Retained After Application		
		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
Liquids	Sprinkling	6,577	3,305	8,411	75%	100%	100%	4,932	3,305	8,411
Solids	Broadcast (Incorporated 7 or more days after application)	28,844	13,730	28,387	70%	100%	100%	20,191	13,730	28,387
Grazing	Grazing	0	0	0	85%	100%	100%	0	0	0

NUTRIENTS AVAILABLE AFTER DENITRIFICATION

Nutrient Source	Location: East of Cascade Mountains / Soil Drainage Class	Pounds of Nutrients Available			Percent Nutrients Retained After Denitrification			Pounds of Nutrients Retained After Denitrification		
		N	P2O5	K2O	N	P2O5	K2O	N	P2O5	K2O
Liquids	Well Drained	4,932	3,305	8,411	94%	100%	100%	4,637	3,305	8,411
Solids	Well Drained	20,191	13,730	28,387	94%	100%	100%	18,979	13,730	28,387
Grazing	Well Drained	0	0	0	94%	100%	100%	0	0	0

OZZ

U.S. Depa[illegible]nt of Agriculture
Natural F[illegible]ces Conservation Service

ANIMAL WASTE MANA[illegible]MENT WORKSHEET

Versi[illegible].5

[illegible]3/2002
STAT[illegible]EGON

CLIENT: **Jerry Noble**
ASSISTED BY: **Jim Hendrickson**

CHECKED BY:

ANIMAL WASTE MANAGEMENT SYSTEM UTILIZATION

PERCENT OF MANURE TO BE APPLIED TO FIELD AND UTILIZATION ACRES NEEDED BASED ON NITROGEN, N

Field Number	Acres	Crop	LIQUIDS			SOLIDS			GRAZING		
			Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients	Percent to be Applied	Pounds of Nutrients to be Applied	Acres Needed for Utilization of Nutrients
1	106.0	Corn, Silage(wb)	64%	2,990	11	64%	12,241	45	64%	0	0
2	60.0	Barley, Grain Straw Removed	13%	598	4	13%	2,447	16	13%	0	0
3	145.0	Alfalfa Hay	23%	1,049	4	23%	4,292	16	23%	0	0
0											
0											
0											
0											
0											
0											
Off-Farm			0%	0		0%	0		0%	0	
		TOTALS-	100%	4,637	19	100%	18,979	77	100%	0	0

NUTRIENT BALANCE BASED ON AVAILABLE ACRES

Field Number	Acres	Crop	NUTRIENTS APPLIED			- NUTRIENTS UTILIZED			= NUTRIENT BALANCE		
			Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre	Nitrogen, N Lbs/Acre	Phosphorous, P_2O_5 Lbs/Acre	Potassium, K_2O Lbs/Acre
1	106.0	Corn, Silage(wb)	144	104	224	270	140	322	-126	-37	-98
2	60.0	Barley, Grain Straw Removed	51	37	79	154	61	120	-103	-24	-41
3	145.0	Alfalfa Hay	37	27	57	270	60	270	-233	-34	-213
0											
0											
0											
0											
0											
0											
Off-Farm											

OZZ