Year 2

Dairy Annual Nutrient Manager

Date	12/3/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]
Dairy	Dominguez Dairy				N Loss	0%	
Crop_Year	2010-2011 (alt)						
Field_ID	DM-6				Goal/Real	Nutrient Needed	
Area (ac)	30						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'10-May'11	Triticale (Wheat for green chop 70%)		t/ac	20	8410	1116
2nd Crop	Jun'11-Oct'11	Cotton		lb/ac	1250	1140	143
						0	0
Total		Nutrient Needed				9,550	1,259
						Soil Analyses	
Texture by Feel		Sandy Clay				N	P
Nutrient Available in Soil				lb/ac		133	75.98
		Nutrient Still Needed				5,560	-1,021
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	534	242
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				5,026	-1,263
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				5,026	-1,263
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	670	5025	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				1	-1,263

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	33	Date:	11/2/2009	Field ID:	DM-6

Application Information (Enter the units that will be or has been applied to the field):					
Crop Rotation:	Triticale Silage			Needed for field (acin):	9.405
Liquid Applied:	0.285	Acin/ac		(gal):	255,346
Solids Applied:		ton/ac		Needed for field (tons):	
Liquid Loads Applied:		1000gal/ac		Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Poorly Drained	60

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	17	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	4.9	7.5	58.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	30	Date:	11/2/2009	Field ID:	DM-6

Application Information	Crop Rotation: Cotton			Needed for field (acin):	12.81
***nter the units that will be or has been applied to the field*):**	Liquid Applied:	0.427	Acln/ac	(gal):	347,792
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	10.9	11.2	87.4

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Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

used for triticale

Wheat, for green chop

Forage

Triticum sp.

Plant part harvested: Aboveground biomass

Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 70% moisture percentage.

Nitrogen	Phosphorus	Potassium
14.0160	1.8600	

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
280.3200	37.2000	

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
8409.6000	1116	

Element-Fertilizer Equivalents

Average NPK Percentages

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USDA Natural Resources Conservation Service
PLANTS

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Cotton, for seed with lint or seed cotton
Fiber and miscellaneous
Gossypium sp.
Plant part harvested: Seed and lint
Crop yield unit: lb of seed and lint

Nutrients in harvested part (lb/lb of seed and lint) at 7.80% moisture percentage.

Nitrogen	Phosphorus	Potassium
.0304	.0038	.0045

Nutrients removed in harvested part (lb/acre) at 1250 lb of seed and lint yield level.

Nitrogen	Phosphorus	Potassium
37.9864	4.7253	5.6473

Nutrients removed in harvested part (lb/lb of seed and lint) at 1250 lb of seed and lint yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
1139.5920	141.7575	169.4175

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Nov'10 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Triticale
Soil Permeablity (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Low	Total Index Points:	13.0
Phosphorus Application Classification:	N Based		

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/10 to 5/11) 0.33 t/ac + (RUSLE 2) 0.15 t/ac = 0.38 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Jun'11 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Cotton
Soil Permeability (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 Inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 In.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	X					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			X			3

P Hazard Class: Low **Total Index Points:** 13.0

Phosphorus Application Classification: N Based

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/11 to 10/11) 0.41 t/ac + (RUSLE 2) 0.40 t/ac = 0.81 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy **Tract:** 1579
Planner: Chet Wyant **Field(s) No.:** DM-6
Current Land Use: Triticale Silage / Cotton **Total Acres:** 30
Date: 11/20/2009 **Date to apply:** Nov'10 alt

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage:	**Anthony Vinton FSL; 44-12**	Intake Family (in/hr):	**1.00**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6
Cotton; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop:	Wheat, winter, silage; Las Cruces		**Total Irrigation Needed:**	10.2 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan	>1 Mo.	1.2	**Jul**		0.0
Feb	22	2.1	**Aug**		0.0
Mar	14	3.3	**Sep**	>1 Mo.	0.3
Apr		0.0	**Oct**	>1 Mo.	1.3
May		0.0	**Nov**	>1 Mo.	1.2
Jun		0.0	**Dec**	>1 Mo.	0.9

Crop:	Cotton; Las Cruces		**Total Irrigation Needed:**	30.2 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**	6	7.5
Feb		0.0	**Aug**	6	7.3
Mar		0.0	**Sep**	8	5.4
Apr	>1 Mo.	0.3	**Oct**	16	2.8
May	23	2.0	**Nov**	>1 Mo.	0.6
Jun	10	4.4	**Dec**		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):	**6000**	GPM		
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Applicaiton Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Wheat, winter, silage; Las Cruces	1	8.53	0.11	System meets CU for crop
Cotton; Las Cruces	4	8.53	0.25	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: [illegible] Domingez **Date:** 11-23-2009

Conservationist: [illegible] **Date:** 11-23-09

Completed by: [illegible] **Date:**

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy | Planner: Chet Wyant | Location: Mesquite, NM | Tract: 1579 | Field: DM-6

Crop Rotation: Triticale Silage / Cotton | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1103

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (see instr.)

Sum Period Erosion (t/ac): 0.8 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.8 (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	11/02/10	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	0	19.8	0.2	1.00	0.03
11/2	12/02/10	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	3544	0.0	5.0	1.00	0.00
12/2	01/01/11	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	3898	0.0	7.4	0.97	0.00
1/1	01/31/11	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	6010	0.0	4.0	1.00	0.00
1/31	03/02/11	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	6999	0.0	24.7	1.00	0.00
3/2	03/17/11	2	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	12.9	0.87	0.00
3/17	04/01/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3544	0.0	12.9	1.00	0.00
4/1	04/16/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3544	0.0	8.8	0.93	0.00
4/16	05/01/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3544	0.0	8.8	1.00	0.00
5/1	05/16/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	4282	0.0	5.3	1.00	0.00
5/16	05/23/11	1	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	1103	89	3.9	2.5	0.86	0.08
5/23	05/29/11	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	1103	27	6.7	2.1	0.83	0.12
5/29	06/13/11	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1103	23	5.8	1.7	1.00	0.10
6/13	06/28/11	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1136	16	32.0	0.8	0.93	0.24
6/28	07/13/11	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1136	21	31.8	0.3	0.93	0.09
7/13	07/28/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1136	203	30.0	0.2	0.93	0.05
7/28	08/12/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1136	668	17.1	0.1	0.93	0.02
8/12	08/27/11	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.01	1114	1367	4.1	0.1	0.93	0.00
8/27	09/11/11	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.01	1114	2319	0.0	0.3	0.93	0.00
9/11	09/20/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.00	1103	943	4.6	0.3	1.00	0.01
9/20	09/21/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.00	1103	1178	2.1	0.0	1.00	0.00
9/21	10/31/11	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.00	1103	5304	0.0	1.6	1.00	0.00
		0			2	10											
		0															
		0															
		0															

NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: (Alt) Triticale Silage Nov'10 to May'11, Cotton Jun'11 to Oct'11

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-6

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ap ANTHONY-VINTON FINE SANDY LOAMS\ANTHONY fine sandy loam 45%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Triticale, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.15	
a.Single Year/Single Crop Templates\Cotton, CT 2 bale	b. absolute row grade 0.5 percent	(none)	(none)	0.40	

Year 3

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		[redacted]	
Dairy	Dominguez Dairy				N Loss	0%	
Crop_Year	2011-2012 (alt)				Goal/Real	Nutrient Needed	
Field_ID	DM-6						
Area (ac)	30						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'11-May'12	Oats for green chop (boot to early bloom 69%)		t/ac	20	13505	2521
2nd Crop	Jun'12-Oct'12	Corn-Field for Silage (dough 68%)		t/ac	22	5219	781
						0	0
Total		Nutrient Needed				18,724	3,303
						Soil Analyses	
Texture by Feel		Sandy Clay				N	P
Nutrient Available in Soil				lb/ac		133	75.98
		Nutrient Still Needed				14,734	1,023
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	534	242
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				14,200	781
						Manure Analyses	
						N	P
Dry Manure Application		NM Dairy Cattle Net from J.S. 590 L&MLA		t/ac	33.8	14196	3103
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				4	-2,322
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**4**	**-2,322**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	30	Date:	11/2/2009	Field ID:	DM-6

Application Information	Crop Rotation: Oat Silage			Needed for field (acin):	8.55
nter the units that will be or has been applied to the field):	Liquid Applied:	0.285	AcIn/ac	(gal):	232,133
	Solids Applied:	33.8	ton/ac	Needed for field (tons):	1014
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:		2.3	89	0.5	

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Dairy Cattle (30% wet wt) NM (Aver	30	0	0	46	0.0	0.2	0	9	35	0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	16	7	28
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	14
P_2O_5	0.0	26	7
K_2O	0.0	205	28

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	489.5	240.7	1012.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	**Acres:**	30	**Date:**	11/2/2009	**Field ID:**	DM-6

Application information *(enter the units that will be or has been applied to the field):*					
Crop Rotation: Corn Silage				**Needed for field (acin):**	12.81
Liquid Applied:	0.427	Acin/ac		**(gal):**	347,792
Solids Applied:		ton/ac		**Needed for field (tons):**	
Liquid Loads Applied:		1000gal/ac		**Loads needed for field:**	

Nutrient Content of Organic Material

Solid-Lab Report	**% Moisture**	**TKN (%) (dry)**	**NH_4-N (ppm) (dry)**	**P_2O_5 (%) (dry)**	**K_2O (%) (dry)**
Fill in Lab data:					

Solid Book Values (select even if test values are used)	**% Moisture**		**TKN (lbs/wet ton)**		**NH_4-N (lbs/ton)**		**P_2O_5 (lbs/wet ton)**		**K_2O (lbs/wet ton)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	**NH_3-N (mg/L)**	**TKN (mg/L)**	**NO_3-N (mg/L)**	**Tot-PO_4 (mg/L)**	**K (mg/L)**
Fill in Lab data:		205	0.17		

Liquid	**% Moisture**		**TKN (lbs/acin)**		**NH_4-N (lbs/acin)**		**P_2O_5 (lbs/acin)**		**K_2O (lbs/acin)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		**NH_4-N (lbs/1000gal)**		**P_2O_5 (lbs/1000gal)**		**K_2O (lbs/1000gal)**	
			Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	**Type of Climate**	**Percent Remaining**	**NH_4-N Remaining**
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	**Percent Nutrient Available the 1st Year**			
	Organic N	**P**	**K**	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	**Solid Source**
Lagoon or diluted Pond	40 %	75 %	80 %	**Liquid Source**

Solid	**Organic N (lbs/ton)**	**P_2O_5 (lbs/ton)**	**K_2O (lbs/ton)**
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	**Soil Drainage Class** (See Survey Information)	**Percent Remaining (%)**
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	**lbs/1000gal**	**lbs/ac in**	**lbs/ton**
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	**All Forms N (lbs/ac)**	**P_2O_5 (lbs/ac)**	**K_2O (lbs/ac)**
	10.9	11.2	87.4

USDA Natural Resources Conservation Service
PLANTS

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Oat, for green chop (boot to early bloom)
Forage
Avena sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 69% moisture percentage.

Nitrogen	Phosphorus	Potassium
12.2508	2.1046	11.6554

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
245.0165	42.0916	233.1076

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
7350.4962	1262.7489	6993.2271

Element-Fertilizer Equivalents | Average NPK Percentages

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Time Generated: **Mon 4:48 PM - 11/30/2009**

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Corn-Field, for silage (dough stage)
Forage
Zea mays ssp. mays
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 68% moisture percentage.

Nitrogen	Phosphorus	Potassium
7.9078	1.1840	6.6560

Nutrients removed in harvested part (lb/acre) at 22 ton yield level.

Nitrogen	Phosphorus	Potassium
173.9725	26.0480	146.4320

Nutrients removed in harvested part (lb/ton) at 22 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
5219.1744	781.4400	4392.9600

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Nov'11 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat Silage
Soil Permeability (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
					X	8
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
			X			2
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	18.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/11 to 5/12) 0.25 t/ac + (RUSLE 2) 0.12 t/ac = 0.37 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Jun'12 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class: Low **Total Index Points:** 13.0

Phosphorus Application Classification: N Based

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/12 to 10/12) 0.17 t/ac + (RUSLE 2) 0.079 t/ac = 0.25 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy **Tract:** 1579
Planner: Chet Wyant **Field(s) No.:** DM-6
Current Land Use: Oat Silage / Corn Silage **Total Acres:** 30
Date: 11/20/2009 **Date to apply:** Nov'11 alt

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage:	Anthony Vinton FSL; 44-12	Intake Family (in/hr):	1.00

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Oat, hay; Deming	Medium	3.0	3.0	50%	1.5	0.6
Corn, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop:	Oat, hay; Deming		Total Irrigation Needed:	9.4 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar	19	2.3	Sep		0.0
Apr	9	5.0	Oct		0.0
May	21	2.1	Nov		0.0
Jun		0.0	Dec		0.0

Crop:	Corn, silage; Las Cruces		Total Irrigation Needed:	29.3 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul	5	9.4
Feb		0.0	Aug	7	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	11	4.2	Nov		0.0
Jun	6	7.9	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Applicaiton Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Oat, hay; Deming	1	8.53	0.17	System meets CU for crop
Corn, silage; Las Cruces	3	8.53	0.31	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Joe and Dominguez **Date:** 11-23-2009

Conservationist: [signature] **Date:** 11-23-09

Completed by: [signature] **Date:**

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 1579 | Field: DM-6

Crop Rotation: Oat Hay/Corn Silage | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1103

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (see instr.)

Sum Period Erosion (t/ac): 0.4 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.4 (t/ac/yr)

Calculations and Output

Mgt Periods Dates		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Begin	End	No. of (#)	"I" (t/ac)	Dev. (deg)	Ht. (in.)	Sp. (in.)	"Krd" (factor)	"Krr" (factor)	Dev. (deg)	Prep. (factor)	WED (factor)	"L" (ft)	"V" (lbs/ac)	"E" (t/ac)	EWE (%)	"IF" (%)	Loss (t/ac)
11/1	11/02/11	0	56	0.0	2	18	0.58	0.86	0.0	4.0	1.000	1103	0	29.1	0.2	1.00	0.05
11/2	11/17/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	2.5	0.93	0.00
11/17	12/02/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3820	0.0	2.5	1.00	0.00
12/2	12/17/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	4012	0.0	3.7	1.00	0.00
12/17	01/01/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	4721	0.0	3.7	0.93	0.00
1/1	01/16/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6446	0.0	2.0	1.00	0.00
1/16	05/15/12	4	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	6999	0.0	75.1	0.97	0.00
5/15	05/22/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3587	0.0	2.5	1.00	0.00
5/22	05/29/12	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	1103	661	1.5	2.5	1.00	0.04
5/29	05/29/12	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	1103	239	5.6	0.0	0.00	0.00
5/29	06/29/12	1	56	0.0	8	30	0.21	0.99	0.0	4.0	1.000	1103	210	6.4	2.6	0.97	0.16
6/29	07/14/12	1	56	22.5	2	18	0.71	0.86	22.5	1.2	1.030	1136	199	33.9	0.3	0.93	0.09
7/14	07/29/12	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	1136	203	35.2	0.2	0.87	0.06
7/29	08/13/12	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	1136	730	18.5	0.1	0.87	0.02
8/13	08/28/12	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	1114	1639	2.0	0.1	0.93	0.00
8/28	09/12/12	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	1114	5442	0.0	0.4	0.93	0.00
9/12	10/01/12	0	56	0.0	2	18	0.58	0.99	0.0	4.0	1.000	1103	6999	0.0	0.6	1.00	0.00
10/1	11/01/12	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	1114	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
		0															
		0															
		0															
		0															
		0															

NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: (Alt) Oat Silage Nov'11 to May'12, Corn Silage Jun'12 to Oct'12

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-6

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ap ANTHONY-VINTON FINE SANDY LOAMS\ANTHONY fine sandy loam 45%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Forage\Oats, hay and grain, conv till, irr, CMZ29	b. absolute row grade 0.5 percent	(none)	(none)	0.12	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.079	

Year 4

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		[redacted]	
Dairy	Dominguez Dairy						
Crop_Year	2012-2013 (alt)				N Loss	0%	
Field_ID	DM-6						
Area (ac)	30				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'12-May'13	Barley-6 row, for green chop (boot)		t/ac	20	5384	904
2nd Crop	Jun'13-Oct'13	Corn-Field for Silage (dough 68%)		t/ac	22	5219	781
						0	0
Total		Nutrient Needed				10,603	1,685
						Soil Analyses	
Texture by Feel		Sandy Clay				N	P
Nutrient Available in Soil				lb/ac		133	75.98
		Nutrient Still Needed				6,613	-594
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	534	242
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				6,079	-836
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				6,079	-836
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	774	5805	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**274**	**-836**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	**Acres:**	30	**Date:**	11/2/2009	**Field ID:**	DM-6

Application Information *nter the units that will be or has been applied to the field*):					
	Crop Rotation: Barley Silage			**Needed for field (acin):**	8.55
	Liquid Applied:	0.285	Acin/ac	**(gal):**	232,133
	Solids Applied:		ton/ac	**Needed for field (tons):**	
	Liquid Loads Applied:		1000gal/ac	**Loads needed for field:**	

Nutrient Content of Organic Material

Solid-Lab Report	**% Moisture**	**TKN (%) (dry)**	**NH_4-N (ppm) (dry)**	**P_2O_5 (%) (dry)**	**K_2O (%) (dry)**
Fill in Lab data:					

Solid Book Values (select even if test values are used)	**% Moisture**		**TKN (lbs/wet ton)**		**NH_4-N (lbs/ton)**		**P_2O_5 (lbs/wet ton)**		**K_2O (lbs/wet ton)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	**NH_3-N (mg/L)**	**TKN (mg/L)**	**NO_3-N (mg/L)**	**Tot-PO_4 (mg/L)**	**K (mg/L)**
Fill in Lab data:		205	0.17		

Liquid	**% Moisture**		**TKN (lbs/acin)**		**NH_4-N (lbs/acin)**		**P_2O_5 (lbs/acin)**		**K_2O (lbs/acin)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		**NH_4-N (lbs/1000gal)**		**P_2O_5 (lbs/1000gal)**		**K_2O (lbs/1000gal)**	
			Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	**Type of Climate**	**Percent Remaining**	**NH_4-N Remaining**
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	**Percent Nutrient Available the 1st Year**			
	Organic N	**P**	**K**	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	**Solid Source**
Lagoon or diluted Pond	40 %	75 %	80 %	**Liquid Source**

Solid	**Organic N (lbs/ton)**	**P_2O_5 (lbs/ton)**	**K_2O (lbs/ton)**
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	**Soil Drainage Class** (See Survey Information)	**Percent Remaining (%)**
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	**lbs/1000gal**	**lbs/ac in**	**lbs/ton**
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	**All Forms N (lbs/ac)**	**P_2O_5 (lbs/ac)**	**K_2O (lbs/ac)**
	7.3	7.5	58.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	30	Date:	11/2/2009	Field ID:	DM-6

Application Information					
nter the units that will be or has been applied to the field):	Crop Rotation: Corn Silage			Needed for field (acin):	12.81
	Liquid Applied:	0.427	Acin/ac	(gal):	347,792
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	**NH_4-N Remaining**
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	20.8 (lbs/acin) NH4-N 0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	10.9	11.2	87.4

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Barley-6 row, for green chop (boot)
Forage
Hordeum vulgare
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 69% moisture percentage.

Nitrogen	Phosphorus	Potassium
13.6688	2.2951	9.7854

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
273.3764	45.9023	195.7077

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
8201.2930	1377.0703	5871.2324

Element-Fertilizer Equivalents | Average NPK Percentages

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Time Generated: Mon 4:51 PM - 11/30/2009

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Corn-Field, for silage (dough stage)
Forage
Zea mays ssp. mays
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 68% moisture percentage.

Nitrogen	Phosphorus	Potassium
7.9078	1.1840	6.6560

Nutrients removed in harvested part (lb/acre) at 22 ton yield level.

Nitrogen	Phosphorus	Potassium
173.9725	26.0480	146.4320

Nutrients removed in harvested part (lb/ton) at 22 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
5219.1744	781.4400	4392.9600

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Nov'12 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Barley Silage
Soil Permeability (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion realstant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Low	Total Index Points:	13.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/12 to 5/13) 0.24 t/ac + (RUSLE 2) 0.09 t/ac = 0.33 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Jun'13 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the appropriate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	X					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			X			3

P Hazard Class: Low **Total Index Points:** 13.0

Phosphorus Application Classification: N Based

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/13 to 10/13) 0.16 t/ac + (RUSLE 2) 0.079 t/ac = 0.24 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy **Tract:** 1579
Planner: Chet Wyant **Field(s) No.:** DM-6
Current Land Use: Barley Silage / Corn Silage **Total Acres:** 30
Date: 11/20/2009 **Date to apply:** Nov'12 alt

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage: **Anthony Vinton FSL; 44-12** Intake Family (in/hr): **1.00**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6
Corn, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop: Wheat, winter, silage; Las Cruces **Total Irrigation Needed:** 10.2 ac in/ac

Month	Est. Frequency *(days between irr.)*	In/Mo	Month	Est. Frequency *(days between irr.)*	In/Mo
Jan	>1 Mo.	1.2	Jul		0.0
Feb	22	2.1	Aug		0.0
Mar	14	3.3	Sep	>1 Mo.	0.3
Apr		0.0	Oct	>1 Mo.	1.3
May		0.0	Nov	>1 Mo.	1.2
Jun		0.0	Dec	>1 Mo.	0.9

Crop: Corn, silage; Las Cruces **Total Irrigation Needed:** 29.3 ac in/ac

Month	Est. Frequency *(days between irr.)*	In/Mo	Month	Est. Frequency *(days between irr.)*	In/Mo
Jan		0.0	Jul	5	9.4
Feb		0.0	Aug	7	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	11	4.2	Nov		0.0
Jun	6	7.9	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Application Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Wheat, winter, silage; Las Cruces	1	8.53	0.11	System meets CU for crop
Corn, silage; Las Cruces	3	8.53	0.31	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Juan Domingez **Date:** 11-23-2009

Conservationist: _____ **Date:** 11-23-09

Completed by: _____ **Date:** _____

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 1579 | Field: DM-6

Crop Rotation: Barley Silage/Corn Silage | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1103

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (see instr.)

Sum Period Erosion (t/ac): 0.4 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.4 (t/ac/yr)

Calculations and Output

Mgt Periods Dates		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Begin	End	No. of (#)	"I" (t/ac)	Dev. (deg)	Ht. (in.)	Sp. (in.)	"Krd" (factor)	"Krr" (factor)	Dev. (deg)	Prep. (factor)	WED (factor)	"L" (ft)	"V" (lbs/ac)	"E" (t/ac)	EWE (%)	"IF" (%)	Loss (t/ac)
11/1	11/02/12	0	56	0.0	2	18	0.58	0.86	0.0	4.0	1.000	1103	0	29.1	0.2	1.00	0.05
11/2	11/17/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	2.5	0.93	0.00
11/17	12/02/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	2.5	1.00	0.00
12/2	12/17/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	3.7	0.93	0.00
12/17	01/01/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	3.7	1.00	0.00
1/1	01/16/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	3774	0.0	2.0	1.00	0.00
1/16	05/15/13	3	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	3774	0.0	75.1	0.97	0.00
5/15	05/22/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	4282	0.0	2.5	1.00	0.00
5/22	05/29/13	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	1103	789	1.1	2.5	1.00	0.03
5/29	05/29/13	0	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	1103	285	5.2	0.0	1.00	0.00
5/29	06/29/13	0	56	0.0	8	30	0.21	0.99	0.0	4.0	1.000	1103	251	6.1	2.6	1.00	0.16
6/29	07/14/13	1	56	22.5	2	18	0.71	0.86	22.5	1.2	1.030	1136	237	33.0	0.3	0.93	0.08
7/14	07/29/13	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	1136	242	34.3	0.2	0.87	0.06
7/29	08/13/13	1	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	1136	763	17.5	0.1	0.93	0.02
8/13	08/28/13	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	1114	1671	1.7	0.1	0.93	0.00
8/28	09/12/13	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	1114	5473	0.0	0.4	0.93	0.00
9/12	10/01/13	0	56	0.0	2	18	0.58	0.99	0.0	4.0	1.000	1103	6999	0.0	0.6	1.00	0.00
10/1	11/01/13	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	1114	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
		0															
		0															
		0															
		0															
		0															

NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: (Alt) Barley Silage Nov'12 to May'13, Corn Silage Jun'13 to Oct'13

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-6

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ap ANTHONY-VINTON FINE SANDY LOAMS\ANTHONY fine sandy loam 45%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.090	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.079	

used WWheat for Barley

Year 5

Dairy Annual Nutrient Manager

Date	12/3/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			
Dairy	Dominguez Dairy						
Crop_Year	2013-2014 (alt)				N Loss	0%	
Field_ID	DM-6						
Area (ac)	30				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'13-May'14	Wheat Silage (Wheat for green chop 70%)		t/ac	20	8410	1116
2nd Crop	Jun'14-Oct'14	Sorghum/Sudangrass, for silage (70%)		t/ac	21	6192	794
						0	0
Total		Nutrient Needed				14,601	1,910
						Soil Analyses	
Texture by Feel		Sandy Clay				N	P
Nutrient Available in Soil				lb/ac		133	75.98
		Nutrient Still Needed				10,611	-370
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	534	242
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				10,077	-612
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				10,077	-612
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	1343	10073	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**5**	**-612**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	30	Date:	11/2/2009	Field ID:	DM-6

Application Information *nter the units that will be or has been applied to the field):*	Crop Rotation: Winter Wheat Silage			Needed for field (acin):	8.55
	Liquid Applied:	0.285	Acin/ac	(gal):	232,133
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0

	TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
	Book	Test	Book	Test	Book	Test	Book	Test
	0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	20.8 (lbs/acin) NH4-N 0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	7.3	7.5	58.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	30	Date:	11/2/2009	Field ID:	DM-6

Application information *(enter the units that will be or has been applied to the field):*	Crop Rotation: Sorghum Silage			Needed for field (acin):	12.81
	Liquid Applied:	0.427	Acin/ac	(gal):	347,792
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	10.9	11.2	87.4

USDA Natural Resources Conservation Service

PLANTS

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Wheat, for green chop
Forage
Triticum sp.
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 70% moisture percentage.

Nitrogen	Phosphorus	Potassium
14.0160	1.8600	

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
280.3200	37.2000	

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
8409.6000	1116	

Element-Fertilizer Equivalents

Average NPK Percentages

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Time Generated: Mon 4:46 PM - 11/30/2009

USDA Natural Resources Conservation Service

PLANTS

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Sorghum/Sudangrass, for silage

Forage

Sorghum bicolor ssp. drummondii

Plant part harvested: Aboveground biomass

Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 70% moisture percentage.

Nitrogen	Phosphorus	Potassium
9.8280	1.2600	15.6600

Nutrients removed in harvested part (lb/acre) at 21 ton yield level.

Nitrogen	Phosphorus	Potassium
206.3880	26.4600	328.8600

Nutrients removed in harvested part (lb/ton) at 21 ton yield level and 30 acres.

Nitrogen	Phosphorus	Potassium
6191.6400	793.8000	9865.8000

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Nov'13 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Wheat Silage
Soil Permeablity (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Low	Total Index Points:	13.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/13 to 5/14) 0.26 t/ac + (RUSLE 2) 0.09 t/ac = 0.35 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-6	Date:	Jun'14 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Sudangrass
Soil Permeablity (in/hr):	1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
			X			2
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
	x					0
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class: Low **Total Index Points:** 13.0

Phosphorus Application Classification: N Based

Notes:

This evaluation has a Low P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/14 to 10/14) 0.17 t/ac + (RUSLE 2) 0.00059 t/ac = 0.17 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy
Planner: Chet Wyant
Current Land Use: Winter Wheat Silage / Sorghum Silage
Date: 11/20/2009

Tract: 1579
Field(s) No.: DM-6
Total Acres: 30
Date to apply: Nov'13 alt

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- [ ] Manage soil moisture to improve crops
- [x] Optimize use of water
- [x] Minimize Irrigation Erosion
- [ ] Decrease non-point source pollution
- [ ] Manage salt in the root zone
- [ ] Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage: **Anthony Vinton FSL; 44-12** | Intake Family (in/hr): **1.00**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	0.6
Sorghum, silage; Deming	Medium	3.0	3.0	65%	2.0	0.9

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop: Wheat, winter, silage; Las Cruces — **Total Irrigation Needed:** 10.2 ac in/ac

Month	Est. Frequency (days between irr.)	In/Mo	Month	Est. Frequency (days between irr.)	In/Mo
Jan	>1 Mo.	1.2	Jul		0.0
Feb	22	2.1	Aug		0.0
Mar	14	3.3	Sep	>1 Mo.	0.3
Apr		0.0	Oct	>1 Mo.	1.3
May		0.0	Nov	>1 Mo.	1.2
Jun		0.0	Dec	>1 Mo.	0.9

Crop: Sorghum, silage; Deming — **Total Irrigation Needed:** 23.5 ac in/ac

Month	Est. Frequency (days between irr.)	In/Mo	Month	Est. Frequency (days between irr.)	In/Mo
Jan		0.0	Jul	7	8.5
Feb		0.0	Aug	11	5.5
Mar		0.0	Sep	>1 Mo.	1.0
Apr		0.0	Oct		0.0
May	>1 Mo.	1.6	Nov		0.0
Jun	8	7.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System: **Flood, controlled** System Efficiency (%): **80%**

System Capacity (Ditch/Pump/Well): **6000** GPM

Crop Grown	Days of Operation for CU by crop (days)	Est. System Applicaiton Rate (in/day)	Needed Application Rate (in/day)	System Evaluation
Wheat, winter, silage; Las Cruces	1	8.53	0.11	System meets CU for crop
Sorghum, silage; Deming	3	8.53	0.28	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Isaac Dominguez **Date:** 11-23-2009

Conservationist: [illegible] **Date:** 11-23-09

Completed by: [illegible] **Date:**

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 1579 | Field: DM-6

Crop Rotation: Wheat Silage/Sudangrass Hay | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1103

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (see instr.)

Sum Period Erosion (t/ac): 0.4 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.4 (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	11/02/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	0	19.8	0.2	1.00	0.03
11/2	11/17/13	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	2.5	0.93	0.00
11/17	12/02/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	2.5	1.00	0.00
12/2	12/17/13	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	3.7	0.93	0.00
12/17	01/01/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	3.7	1.00	0.00
1/1	01/16/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	6999	0.0	2.0	1.00	0.00
1/16	05/15/14	3	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	6999	0.0	75.1	0.97	0.00
5/15	05/22/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1103	4282	0.0	2.5	1.00	0.00
5/22	05/29/14	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	1103	789	1.1	2.5	1.00	0.03
5/29	06/29/14	0	56	0.0	4	30	0.37	0.65	0.0	4.0	1.000	1103	285	7.7	2.6	1.00	0.20
6/29	07/14/14	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1136	202	28.2	0.3	0.93	0.07
7/14	07/29/14	2	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1136	227	29.5	0.2	0.87	0.05
7/29	08/13/14	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1136	313	27.2	0.1	0.93	0.03
8/13	08/28/14	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1114	706	22.4	0.1	0.93	0.02
8/28	09/12/14	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1114	1869	0.7	0.4	0.93	0.00
9/12	10/01/14	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1103	2297	0.0	0.6	0.95	0.00
10/1	11/01/14	1	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1114	6999	0.0	1.3	0.97	0.00
		0			2	10											
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: (Alt) Winter Wheat Silage Nov'13 to May'14, Sudangrass Silage Jun'14 to Oct'14

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-6

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ap ANTHONY-VINTON FINE SANDY LOAMS\ANTHONY fine sandy loam 45%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.090	
a.Single Year/Single Crop Templates\Haygrazer, sudangrass, disk	b. absolute row grade 0.5 percent	(none)	(none)	0.00059	

Field DM-7

Years 1 thru 5

NMSU Annual Nutrient Manager Calculation
590 Nutrient Mgt. Jobsheet for Organic & Manure Land Application
USDA-NRCS PLANTS Crop Nutrient Tool
NRCS Phosphorus Index Worksheet for New Mexico
NRCS Irrigation Water Mgt. Conservation Practice Jobsheet 449
NRCS - WEQ Calculations
NRCS RUSLE2 Worksheet Erosion Calculation Record

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		[redacted]	
Dairy	Dominguez Dairy						
Crop_Year	2009-2010				N Loss	0%	
Field_ID	DM-7						
Area (ac)	91				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'09-Oct'10	Alfalfa, for hay		t/ac	12	55030	5156
2nd Crop						0	0
						0	0
Total		Nutrient Needed				55,030	5,156
						Soil Analyses	
Texture by Feel		Clay				N	P
Nutrient Available in Soil				lb/ac		63	176.42
		Nutrient Still Needed				49,297	-10,898
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1620	735
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				47,677	-11,634
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				47,677	-11,634
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**47,677**	**-11,634**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name: Dominguez Dairy	**Acres:**	91	**Date:**	11/2/2009	**Field ID:** DM-7

Application Information *nter the units that will be or has been applied to the field*):					
Crop Rotation: Alfalfa				**Needed for field (acin):**	64.792
Liquid Applied:	0.712	Acin/ac		**(gal):**	1,759,103
Solids Applied:		ton/ac		**Needed for field (tons):**	
Liquid Loads Applied:		1000gal/ac		**Loads needed for field:**	

Nutrient Content of Organic Material

Solid-Lab Report	**% Moisture**	**TKN (%) (dry)**	**NH_4-N (ppm) (dry)**	**P_2O_5 (%) (dry)**	**K_2O (%) (dry)**
Fill in Lab data:					

Solid Book Values (select even if test values are used)	**% Moisture**		**TKN (lbs/wet ton)**		**NH_4-N (lbs/ton)**		**P_2O_5 (lbs/wet ton)**		**K_2O (lbs/wet ton)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	**NH_3-N (mg/L)**	**TKN (mg/L)**	**NO_3-N (mg/L)**	**Tot-PO_4 (mg/L)**	**K (mg/L)**
Fill in Lab data:		205	0.17		

Liquid	**% Moisture**		**TKN (lbs/acin)**		**NH_4-N (lbs/acin)**		**P_2O_5 (lbs/acin)**		**K_2O (lbs/acin)**	
	Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		**NH_4-N (lbs/1000gal)**		**P_2O_5 (lbs/1000gal)**		**K_2O (lbs/1000gal)**	
			Book	**Test**	**Book**	**Test**	**Book**	**Test**	**Book**	**Test**
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	**Type of Climate**	**Percent Remaining**	**NH_4-N Remaining**
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	**Percent Nutrient Available the 1st Year**			
	Organic N	**P**	**K**	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	**Solid Source**
Lagoon or diluted Pond	40 %	75 %	80 %	**Liquid Source**

Solid	**Organic N (lbs/ton)**	**P_2O_5 (lbs/ton)**	**K_2O (lbs/ton)**
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	**Soil Drainage Class** (See Survey Information)	**Percent Remaining (%)**
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	**lbs/1000gal**	**lbs/ac in**	**lbs/ton**
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	**All Forms N (lbs/ac)**	**P_2O_5 (lbs/ac)**	**K_2O (lbs/ac)**
	18.1	18.7	145.7

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Alfalfa, for hay
Forage
Medicago sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 9.65% moisture percentage.

Nitrogen	Phosphorus	Potassium
50.3935	4.7217	38.2939

Nutrients removed in harvested part (lb/acre) at 12 ton yield level.

Nitrogen	Phosphorus	Potassium
604.7224	56.6599	459.5271

Nutrients removed in harvested part (lb/ton) at 12 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
55029.7415	5156.0539	41816.9650

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

Intellectual Property Statement / How to Cite the PLANTS Database

Disclaimers

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Time Generated: **Mon 4:55 PM - 11/30/2009**

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Nov'09
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/09 to 10/10) 0.08 t/ac + (RUSLE 2) 0.036 t/ac = 0.12 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client:	Dominguez Dairy	**Tract:**	1579
Planner:	Chet Wyant	**Field(s) No.:**	DM-7
Current Land Use:	Alfalfa	**Total Acres:**	91
Date:	11/20/2009	**Date to apply:**	Nov'09

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage:	**Glendale CL, Alkali, Hondale Mimbres complex, Alk**	Intake Family (in/hr):	**0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Alfalfa, hay, southern; Las Cruces	Deep	4.0	4.0	50%	2.0	10.0

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop:	Alfalfa, hay, southern; Las Cruces		**Total Irrigation Needed:**	47.7 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**	6	9.7
Feb		0.0	**Aug**	8	7.7
Mar	>1 Mo.	1.6	**Sep**	11	5.7
Apr	14	4.2	**Oct**	22	2.7
May	9	6.9	**Nov**		0.0
Jun	6	9.3	**Dec**		0.0

Crop:			**Total Irrigation Needed:**	ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**		0.0
Feb		0.0	**Aug**		0.0
Mar		0.0	**Sep**		0.0
Apr		0.0	**Oct**		0.0
May		0.0	**Nov**		0.0
Jun		0.0	**Dec**		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Applicaiton Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Alfalfa, hay, southern; Las Cruces	17	2.81	0.32	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Isaac Domingez **Date:** 11-23-2009

Conservationist: _____ **Date:** 11-23-09

Completed by: _____ **Date:** _____

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy #1 | Planner: Chet Wyant | Location: Mesquite, NM | Tract: 1579 | Field: DM-7

Crop Rotation: Alfalfa | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 2006

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 4L (1-7) | TWF: 2 (see instr.)

Sum Period Erosion (t/ac): 0.0 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	01/02/10	0	56	0.0	0	0	1.00	0.99	0.0	4.0	1.000	2006	0	62.7	12.6	1.00	0.08
1/2	01/17/10	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
1/17	02/01/10	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
2/1	02/16/10	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.7	0.87	
2/16	03/03/10	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.7	1.00	
3/3	03/18/10	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.9	0.87	
3/18	04/02/10	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.6	1.00	
4/2	04/17/10	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.8	0.87	
4/17	05/02/10	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.6	0.87	
5/2	05/17/10	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.3	1.00	
5/17	06/06/10	2	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.6	0.80	
6/6	06/21/10	0	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.8	1.00	
6/21	07/11/10	2	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.7	0.80	
7/11	07/26/10	0	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	1.00	
7/26	08/15/10	2	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	0.80	
8/15	08/30/10	0	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.1	1.00	
8/30	09/19/10	2	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.6	0.80	
9/19	11/01/10	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.00	2006			1.7	0.95	
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'09 to Oct'10

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-7

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Gg GLENDALE CLAY LOAM, ALKALI\GLENDALE clay loam 85%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
b.Mullti-year Rotation Templates\Alfalfa-Small Grain, 5yr, 5cuts CMZ 23	b. absolute row grade 0.5 percent	(none)	(none)	0.036	

Year 2

Dairy Annual Nutrient Manager

Date	11/30/2009	Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]
Dairy	Dominguez Dairy						
Crop_Year	2010-2011				N Loss	0%	
Field_ID	DM-7						
Area (ac)	91				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'10-Oct'11	Alfalfa, for hay		t/ac	12	55030	5156
2nd Crop						0	0
						0	0
Total		Nutrient Needed				55,030	5,156
						Soil Analyses	
Texture by Feel		Clay				N	P
Nutrient Available in Soil				lb/ac		63	176.42
		Nutrient Still Needed				49,297	-10,898
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1620	735
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				47,677	-11,634
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				47,677	-11,634
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				47,677	-11,634

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application information	Crop Rotation: Alfalfa			Needed for field (acin):	64.792
***nter the units that will be or has been applied to the field*):**	Liquid Applied:	0.712	Acln/ac	(gal):	1,759,103
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	18.1	18.7	145.7

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Alfalfa, for hay
Forage
Medicago sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 9.65% moisture percentage.

Nitrogen	Phosphorus	Potassium
50.3935	4.7217	38.2939

Nutrients removed in harvested part (lb/acre) at 12 ton yield level.

Nitrogen	Phosphorus	Potassium
604.7224	56.6599	459.5271

Nutrients removed in harvested part (lb/ton) at 12 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
55029.7415	5156.0539	41816.9650

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

Intellectual Property Statement / How to Cite the PLANTS Database

Disclaimers

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Time Generated: **Mon 4:55 PM - 11/30/2009**

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Nov'10
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/10 to 10/11) 0.08 t/ac + (RUSLE 2) 0.036 t/ac = 0.12 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client:	Dominguez Dairy	**Tract:**	1579
Planner:	Chet Wyant	**Field(s) No.:**	DM-7
Current Land Use:	Alfalfa	**Total Acres:**	91
Date:	11/20/2009	**Date to apply:**	Nov'10

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage:	**Glendale CL, Alkali, Hondale Mimbres complex, Alk**	Intake Family (in/hr):	**0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Alfalfa, hay, southern; Las Cruces	Deep	4.0	4.0	50%	2.0	10.0

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop:	Alfalfa, hay, southern; Las Cruces		**Total Irrigation Needed:**	47.7 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**	6	9.7
Feb		0.0	**Aug**	8	7.7
Mar	>1 Mo.	1.6	**Sep**	11	5.7
Apr	14	4.2	**Oct**	22	2.7
May	9	6.9	**Nov**		0.0
Jun	6	9.3	**Dec**		0.0

Crop:			**Total Irrigation Needed:**	ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**		0.0
Feb		0.0	**Aug**		0.0
Mar		0.0	**Sep**		0.0
Apr		0.0	**Oct**		0.0
May		0.0	**Nov**		0.0
Jun		0.0	**Dec**		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
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Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Application Rate** (in/day)	**Needed Application Rate** (in/day)	**System Evaluation**
Alfalfa, hay, southern; Las Cruces	17	2.81	0.32	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Isaac Domínguez **Date:** 11-23-2009

Conservationist: [illegible] **Date:** 11-23-09

Completed by: [illegible] **Date:**

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy #1 | Planner: Chet Wyant | Location: Mesquite, NM | Tract: 1579 | Field: DM-7

Crop Rotation: Alfalfa | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 2006

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 4L (1-7) | TWF: 2 (see instr.)

Sum Period Erosion (t/ac): 0.0 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	01/02/11	0	56	0.0	0	0	1.00	0.99	0.0	4.0	1.000	2006	0	62.7	12.6	1.00	0.08
1/2	01/17/11	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
1/17	02/01/11	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
2/1	02/16/11	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.7	0.87	
2/16	03/03/11	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.7	1.00	
3/3	03/18/11	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.9	0.87	
3/18	04/02/11	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.6	1.00	
4/2	04/17/11	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.8	0.87	
4/17	05/02/11	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.6	0.87	
5/2	05/17/11	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.3	1.00	
5/17	06/06/11	2	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.6	0.80	
6/6	06/21/11	0	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.8	1.00	
6/21	07/11/11	2	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.7	0.80	
7/11	07/26/11	0	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	1.00	
7/26	08/15/11	2	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	0.80	
8/15	08/30/11	0	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.1	1.00	
8/30	09/19/11	2	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.6	0.80	
9/19	11/01/11	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.00	2006			1.7	0.95	
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'10 to Oct'11

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-7

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Gg GLENDALE CLAY LOAM, ALKALI\GLENDALE clay loam 85%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
b.Mullti-year Rotation Templates\Alfalfa-Small Grain, 5yr, 5cuts CMZ 23	b. absolute row grade 0.5 percent	(none)	(none)	0.036	

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]
Dairy	Dominguez Dairy						
Crop_Year	2011-2012				N Loss	0%	
Field_ID	DM-7						
Area (ac)	91				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'11-Oct'12	Alfalfa, for hay		t/ac	12	55030	5156
2nd Crop						0	0
						0	0
Total		Nutrient Needed				55,030	5,156
						Soil Analyses	
Texture by Feel		Clay				N	P
Nutrient Available in Soil				lb/ac		63	176.42
		Nutrient Still Needed				49,297	-10,898
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1620	735
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				47,677	-11,634
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				47,677	-11,634
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				47,677	-11,634

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application Information					
nter the units that will be or has been applied to the field):	Crop Rotation: Alfalfa			Needed for field (acin):	64.792
	Liquid Applied:	0.712	Acln/ac	(gal):	1,759,103
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	18.1	18.7	145.7

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Alfalfa, for hay
Forage
Medicago sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 9.65% moisture percentage.

Nitrogen	Phosphorus	Potassium
50.3935	4.7217	38.2939

Nutrients removed in harvested part (lb/acre) at 12 ton yield level.

Nitrogen	Phosphorus	Potassium
604.7224	56.6599	459.5271

Nutrients removed in harvested part (lb/ton) at 12 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
55029.7415	5156.0539	41816.9650

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

Intellectual Property Statement / How to Cite the PLANTS Database

Disclaimers

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Time Generated: Mon 4:55 PM - 11/30/2009

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Nov'11
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeability (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 In.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/11 to 10/12) 0.08 t/ac + (RUSLE 2) 0.036 t/ac = 0.12 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client:	Dominguez Dairy	**Tract:**	1579
Planner:	Chet Wyant	**Field(s) No.:**	DM-7
Current Land Use:	Alfalfa	**Total Acres:**	91
Date:	11/20/2009	**Date to apply:**	Nov'11

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage:	**Glendale CL, Alkali, Hondale Mimbres complex, Alk**	Intake Family (in/hr):	**0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Alfalfa, hay, southern; Las Cruces	Deep	4.0	4.0	50%	2.0	10.0

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop:	Alfalfa, hay, southern; Las Cruces		**Total Irrigation Needed:**	47.7 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**	6	9.7
Feb		0.0	**Aug**	8	7.7
Mar	>1 Mo.	1.6	**Sep**	11	5.7
Apr	14	4.2	**Oct**	22	2.7
May	9	6.9	**Nov**		0.0
Jun	6	9.3	**Dec**		0.0

Crop:			**Total Irrigation Needed:**	ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	**Jul**		0.0
Feb		0.0	**Aug**		0.0
Mar		0.0	**Sep**		0.0
Apr		0.0	**Oct**		0.0
May		0.0	**Nov**		0.0
Jun		0.0	**Dec**		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Applicaiton Rate** (in/day)	**Needed Application Rate** (in/day)	**System Evaluation**
Alfalfa, hay, southern; Las Cruces	17	2.81	0.32	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: [illegible] **Date:** 11-23-2009

Conservationist: [illegible] **Date:** 11-23-09

Completed by: _____ **Date:** _____

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy #1 | Planner: Chet Wyant | Location: Mesquite, NM | Tract: 1579 | Field: DM-7

Crop Rotation: Alfalfa | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 2006

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 4L (1-7) | TWF: 2 (see instr.)

Sum Period Erosion (t/ac): 0.0 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	01/02/12	0	56	0.0	0	0	1.00	0.99	0.0	4.0	1.000	2006	0	62.7	12.6	1.00	0.08
1/2	01/17/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
1/17	02/01/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			2.0	1.00	
2/1	02/16/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.7	0.87	
2/16	03/02/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			11.9	1.00	
3/2	03/17/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.9	0.87	
3/17	04/01/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			12.9	1.00	
4/1	04/16/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.8	0.87	
4/16	05/01/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			8.8	0.87	
5/1	05/16/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.3	1.00	
5/16	06/05/12	2	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	2006			5.9	0.80	
6/5	06/20/12	0	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.8	1.00	
6/20	07/10/12	2	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	2066			0.7	0.80	
7/10	07/25/12	0	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	1.00	
7/25	08/14/12	2	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	2066			0.2	0.80	
8/14	08/29/12	0	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.1	1.00	
8/29	09/18/12	2	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	2026			0.5	0.80	
9/18	11/01/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.00	2006			1.7	0.95	
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'11 to Oct'12

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-7

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Gg GLENDALE CLAY LOAM, ALKALI\GLENDALE clay loam 85%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
b.Mullti-year Rotation Templates\Alfalfa-Small Grain, 5yr, 5cuts CMZ 23	b. absolute row grade 0.5 percent	(none)	(none)	0.036	

Year 4

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		[redacted]	
Dairy	Dominguez Dairy				N Loss	0%	
Crop_Year	2012-2013				Goal/Real	Nutrient Needed	
Field_ID	DM-7						
Area (ac)	91						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'12-May'13	Oats for green chop (boot to early bloom 69%)		t/ac	20	40966	7648
2nd Crop	Jun'13-Oct'13	Corn-Field for Silage (dough 68%)		t/ac	22	15831	2370
						0	0
Total		Nutrient Needed				56,797	10,018
						Soil Analyses	
Texture by Feel		Clay				N	P
Nutrient Available in Soil				lb/ac		63	176.42
		Nutrient Still Needed				51,064	-6,036
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1620	735
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				49,444	-6,771
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				49,444	-6,771
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	2173	49436	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				9	-6,771

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application Information					
nter the units that will be or has been applied to the field):	Crop Rotation: Oat Silage			Needed for field (acin):	25.935
	Liquid Applied:	0.285	Acin/ac	(gal):	704,135
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	**20.8 (lbs/acin) NH4-N**
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	7.3	7.5	58.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application Information (Enter the units that will be or has been applied to the field):					
Crop Rotation:	Corn Silage			Needed for field (acin):	38.857
Liquid Applied:	0.427	AcIn/ac		(gal):	1,054,968
Solids Applied:		ton/ac		Needed for field (tons):	
Liquid Loads Applied:		1000gal/ac		Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	**NH_4-N Remaining**
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	20.8 (lbs/acin) NH4-N 0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	10.9	11.2	87.4

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Oat, for green chop (boot to early bloom)
Forage
Avena sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 69% moisture percentage.

Nitrogen	Phosphorus	Potassium
12.2508	2.1046	11.6554

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
245.0165	42.0916	233.1076

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
22296.5053	3830.3382	21212.7888

Element-Fertilizer Equivalents | Average NPK Percentages

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USDA Natural Resources Conservation Service
PLANTS

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Corn-Field, for silage (dough stage)
Forage
Zea mays ssp. mays
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 68% moisture percentage.

Nitrogen	Phosphorus	Potassium
7.9078	1.1840	6.6560

Nutrients removed in harvested part (lb/acre) at 22 ton yield level.

Nitrogen	Phosphorus	Potassium
173.9725	26.0480	146.4320

Nutrients removed in harvested part (lb/ton) at 22 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
15831.4957	2370.3680	13325.3120

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Nov'12
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat Silage
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			X			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			X			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/12 to 5/13) 0.34 t/ac + (RUSLE 2) 0.13 t/ac = 0.47 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Jun'13
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 Inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/13 to 10/13) 0.17 t/ac + (RUSLE 2) 0.088 t/ac = 0.26 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy **Tract:** 1579
Planner: Chet Wyant **Field(s) No.:** DM-7
Current Land Use: Oat Silage / Corn Silage **Total Acres:** 91
Date: 11/20/2009 **Date to apply:** Nov'12

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage: **Glendale CL, Alkali, Hondale Mimbres complex, Alk** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Oat, hay; Deming	Medium	3.0	3.0	50%	1.5	6.1
Corn, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	6.1

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop: Oat, hay; Deming **Total Irrigation Needed:** 9.4 ac in/ac

Month	Est. Frequency (days between irr.)	In/Mo	Month	Est. Frequency (days between irr.)	In/Mo
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar	19	2.3	Sep		0.0
Apr	9	5.0	Oct		0.0
May	21	2.1	Nov		0.0
Jun		0.0	Dec		0.0

Crop: Corn, silage; Las Cruces **Total Irrigation Needed:** 29.3 ac in/ac

Month	Est. Frequency (days between irr.)	In/Mo	Month	Est. Frequency (days between irr.)	In/Mo
Jan		0.0	Jul	5	9.4
Feb		0.0	Aug	7	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	11	4.2	Nov		0.0
Jun	6	7.9	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	**Flood, controlled**		System Efficiency (%):	**80%**
System Capacity (Ditch/Pump/Well):		**6000**	GPM	
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Applicaiton Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Oat, hay; Deming	3	2.81	0.17	System meets CU for crop
Corn, silage; Las Cruces	10	2.81	0.31	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: Isaac Domingues **Date:** 11-23-2009

Conservationist: _____ **Date:** 11-23-09

Completed by: _____ **Date:** _____

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer:	Dominguez Dairy	Planner:	Chet Wyant	Location:	Anthony, NM	Tract:	1579	Field:	DM-7		
Crop Rotation:	Oat Hay/Corn Silage	Climate Data Station:	NM, LAS CRUCES			Site "C" Value:	150				
Tillage Direction (NS/EW):	NS	Length/width ratio:	1	Field Direction (NS/EW):	NS	Field Width (Ft.):	2006				
Irrigation (Y or N):	Y	Soil "I":	86	Wind Erodibility Group:	4L	(1-7)	TWF:	2	(see instr.)		
Sum Period Erosion (t/ac):	0.5	No. Yrs in Rotation:	1.0	Av. Annual Wind Erosion:	0.5	(t/ac/yr)					

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	11/02/12	0	56	0.0	2	18	0.58	0.86	0.0	4.0	1.000	2006	0	34.3	0.2	1.00	0.06
11/2	11/17/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3774	0.0	2.5	0.87	0.00
11/17	12/02/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3820	0.0	2.5	1.00	0.00
12/2	12/17/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	4012	0.0	3.7	1.00	0.00
12/17	01/01/13	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	4721	0.0	3.7	0.87	0.00
1/1	01/16/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	6446	0.0	2.0	1.00	0.00
1/16	05/15/13	4	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	2006	6999	0.0	75.1	0.93	0.00
5/15	05/22/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3587	0.0	2.5	1.00	0.00
5/22	05/29/13	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	2006	661	2.3	2.5	1.00	0.06
5/29	05/29/13	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	2006	239	8.1	0.0	0.00	0.00
5/29	06/29/13	1	56	0.0	8	30	0.21	0.99	0.0	4.0	1.000	2006	210	9.3	2.6	0.94	0.22
6/29	07/14/13	1	56	22.5	2	18	0.71	0.86	22.5	1.2	1.030	2066	199	39.1	0.3	0.87	0.09
7/14	07/29/13	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	2066	203	40.5	0.2	0.73	0.06
7/29	08/13/13	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	2066	730	21.9	0.1	0.73	0.02
8/13	08/28/13	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	2026	1639	2.5	0.1	0.87	0.00
8/28	09/12/13	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	2026	5442	0.0	0.4	0.87	0.00
9/12	10/01/13	0	56	0.0	2	18	0.58	0.99	0.0	4.0	1.000	2006	6999	0.0	0.6	1.00	0.00
10/1	11/01/13	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	2026	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
		0															
		0															
		0															
		0															
		0															

RUSLE2 Worksheet Erosion Calculation Record

Info: Oat Silage Nov'12 to May'13, Corn Silage Jun'13 to Oct'13

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-7

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Gg GLENDALE CLAY LOAM, ALKALI\GLENDALE clay loam 85%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Forage\Oats, hay and grain, conv till, irr, CMZ29	b. absolute row grade 0.5 percent	(none)	(none)	0.13	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.088	

Year 5

Dairy Annual Nutrient Manager

Date	11/30/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			
Dairy	Dominguez Dairy				N Loss	0%	
Crop_Year	2013-2014				Goal/Real	Nutrient Needed	
Field_ID	DM-7						
Area (ac)	91						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'13-May'14	Oats for green chop (boot to early bloom 69%)		t/ac	20	40966	7648
2nd Crop	Jun'14-Oct'14	Corn-Field for Silage (dough 68%)		t/ac	22	15831	2370
						0	0
Total		Nutrient Needed				56,797	10,018
						Soil Analyses	
Texture by Feel		Clay				N	P
Nutrient Available in Soil				lb/ac		63	176.42
		Nutrient Still Needed				51,064	-6,036
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1620	735
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				49,444	-6,771
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				49,444	-6,771
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	2173	49436	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				9	-6,771

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application Information	Crop Rotation:	Oat Silage		Needed for field (acin):	25.935
nter the units that will be or has been applied to the field):	Liquid Applied:	0.285	Acin/ac	(gal):	704,135
	Solids Applied:		ton/ac	Needed for field (tons):	
	Liquid Loads Applied:		1000gal/ac	Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	7.3	7.5	58.3

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	91	Date:	11/2/2009	Field ID:	DM-7

Application information (Enter the units that will be or has been applied to the field):					
Crop Rotation:	Corn Silage			Needed for field (acin):	38.857
Liquid Applied:	0.427	Acin/ac		(gal):	1,054,968
Solids Applied:		ton/ac		Needed for field (tons):	
Liquid Loads Applied:		1000gal/ac		Loads needed for field:	

Nutrient Content of Organic Material

Solid-Lab Report	% Moisture	TKN (%) (dry)	NH_4-N (ppm) (dry)	P_2O_5 (%) (dry)	K_2O (%) (dry)
Fill in Lab data:					

Solid Book Values (select even if test values are used)	% Moisture		TKN (lbs/wet ton)		NH_4-N (lbs/ton)		P_2O_5 (lbs/wet ton)		K_2O (lbs/wet ton)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
Beef (DM)		0		0		0.0		0		0

Liquid-Lab Report	NH_3-N (mg/L)	TKN (mg/L)	NO_3-N (mg/L)	Tot-PO_4 (mg/L)	K (mg/L)
Fill in Lab data:		205	0.17		

Liquid	% Moisture		TKN (lbs/acin)		NH_4-N (lbs/acin)		P_2O_5 (lbs/acin)		K_2O (lbs/acin)	
	Book	Test	Book	Test	Book	Test	Book	Test	Book	Test
NM Dairy Ponds (99-99.4% liq.)	99		0	46	0	26	35	0	256	0
			TKN (lbs/1000gal)		NH_4-N (lbs/1000gal)		P_2O_5 (lbs/1000gal)		K_2O (lbs/1000gal)	
			Book	Test	Book	Test	Book	Test	Book	Test
			0.0			0.0		0.0		0.0

N Volatilization

Solid (type of application)	Type of Climate	Percent Remaining	NH_4-N Remaining
Broadcast-Incorporated in 4 days	Warm Dry	60 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	20.8 (lbs/acin) NH4-N
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	0.0 (lbs/1000gal) NH4-N

Mineralization of N, P, & K

Manure Source	Percent Nutrient Available the 1st Year			
	Organic N	P	K	
Beef & Dairy Solid w/o bedding	35 %	75 %	80 %	Solid Source
Lagoon or diluted Pond	40 %	75 %	80 %	Liquid Source

Solid	Organic N (lbs/ton)	P_2O_5 (lbs/ton)	K_2O (lbs/ton)
	0	0	0
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	8	26	205
	Organic N (lbs/100gal)	**P_2O_5 (lbs/1000gal)**	**K_2O (lbs/1000gal)**
	0.00	0.0	0.0

Denitrification of N

Organic Matter Content (%)	Soil Drainage Class (See Survey Information)	Percent Remaining (%)
<2	Well Drained	88

Summary of Nutrients

Net by Form as applied	lbs/1000gal	lbs/ac in	lbs/ton
N	0.0	25	0
P_2O_5	0.0	26	0
K_2O	0.0	205	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	10.9	11.2	87.4

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Oat, for green chop (boot to early bloom)
Forage
Avena sativa
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 69% moisture percentage.

Nitrogen	Phosphorus	Potassium
12.2508	2.1046	11.6554

Nutrients removed in harvested part (lb/acre) at 20 ton yield level.

Nitrogen	Phosphorus	Potassium
245.0165	42.0916	233.1076

Nutrients removed in harvested part (lb/ton) at 20 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
22296.5053	3830.3382	21212.7888

Element-Fertilizer Equivalents

Average NPK Percentages

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Time Generated: Mon 4:59 PM - 11/30/2009

Nutrient Report Summary for the Crop(s) Selected

The table below summarizes the nutrients removed for the crops selected in the previous page. Crop nutrient information for individual crops follow the summary table.

Return to the crop list and make a new selection of crop(s)

Corn-Field, for silage (dough stage)
Forage
Zea mays ssp. mays
Plant part harvested: Aboveground biomass
Crop yield unit: ton

Nutrients in harvested part (lb/ton) at 68% moisture percentage.

Nitrogen	Phosphorus	Potassium
7.9078	1.1840	6.6560

Nutrients removed in harvested part (lb/acre) at 22 ton yield level.

Nitrogen	Phosphorus	Potassium
173.9725	26.0480	146.4320

Nutrients removed in harvested part (lb/ton) at 22 ton yield level and 91 acres.

Nitrogen	Phosphorus	Potassium
15831.4957	2370.3680	13325.3120

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-7	Date:	Nov'13
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat Silage
Soil Permeability (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			X			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			X			3

P Hazard Class:	Medium	Total Index Points:	22.0
Phosphorus Application Classification:		N Based	

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 11/13 to 5/14) 0.34 t/ac + (RUSLE 2) 0.13 t/ac = 0.47 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	DM-2	Date:	Jun'14
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	0.3	Slope (%):	0.5	Planned/Exist.:	planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
		x				1.5
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
			x			3

P Hazard Class:	Medium	Total Index Points:	20.5
Phosphorus Application Classification:	N Based		

Notes:

This evaluation has a Medium P hazard class and the nutrient application can be based on N.

Comments: Soil Erosion = (WEQ 6/14 to 10/14) 0.17 t/ac + (RUSLE 2) 0.088 t/ac = 0.26 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: Dominguez Dairy **Tract:** 1579
Planner: Chet Wyant **Field(s) No.:** DM-7
Current Land Use: Oat Silage / Corn Silage **Total Acres:** 91
Date: 11/20/2009 **Date to apply:** Nov'13

See the Conservation Plan map for the location of the field(s) to applying IWM.

Purposes (check all that apply)

- ☐ Manage soil moisture to improve crops
- ☑ Optimize use of water
- ☑ Minimize Irrigation Erosion
- ☐ Decrease non-point source pollution
- ☐ Manage salt in the root zone
- ☐ Manage air, soil, or plant microclimate

Conditions where practice applies

This practice is applicable to all irrigated lands. An irrigation system adapted for the site conditions is available and capable of applying water to meet the intended purpose(s).

Soil (Series, Texture, and Map Unit) *Select the soil to manage for:*

Critical soil to manage: **Glendale CL, Alkali, Hondale Mimbres complex, Alk** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Oat, hay; Deming	Medium	3.0	3.0	50%	1.5	6.1
Corn, silage; Las Cruces	Medium	3.0	3.0	50%	1.5	6.1

Crop Consumptive Use (CU) Information *(inches/month needed)*

Crop: Oat, hay; Deming — **Total Irrigation Needed:** 9.4 ac in/ac

Month	Est. Frequency *(days between irr.)*	In/Mo	Month	Est. Frequency *(days between irr.)*	In/Mo
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar	19	2.3	Sep		0.0
Apr	9	5.0	Oct		0.0
May	21	2.1	Nov		0.0
Jun		0.0	Dec		0.0

Crop: Corn, silage; Las Cruces — **Total Irrigation Needed:** 29.3 ac in/ac

Month	Est. Frequency *(days between irr.)*	In/Mo	Month	Est. Frequency *(days between irr.)*	In/Mo
Jan		0.0	Jul	5	9.4
Feb		0.0	Aug	7	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	11	4.2	Nov		0.0
Jun	6	7.9	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** (days between irr.)	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Crop:			Total Irrigation Needed:		ac in/ac
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul		0.0
Feb		0.0	Aug		0.0
Mar		0.0	Sep		0.0
Apr		0.0	Oct		0.0
May		0.0	Nov		0.0
Jun		0.0	Dec		0.0

Farm Irrigation Rating System (FIRS, irrigation system efficiency)

Type of System:	Flood, controlled		System Efficiency (%):	80%
System Capacity (Ditch/Pump/Well):	6000	GPM		
Crop Grown	**Days of Operation for CU by crop (days)**	**Est. System Application Rate (in/day)**	**Needed Application Rate (in/day)**	**System Evaluation**
Oat, hay; Deming	3	2.81	0.17	System meets CU for crop
Corn, silage; Las Cruces	10	2.81	0.31	System meets CU for crop

Operation and Maintenance Requirements

1. Irrigate when the soils reaches the MAD level, determined by soil moisture monitoring. Use one of the following methods to monitor soil moisture; the feel method, tensiometers, electrical resistance blocks, or moisture probes. Drip or Center Pivots can be irrigated on an as needed basis to meet daily CU.

2. Test irrigation water for Nitrate and Salts (Total Desolved Solids/Electrical Conductivity)

3. Do not exceed the net water to replace listed above when irrigating, unless salts are being managed.

4. Do not apply water at rates that cause runoff or erosion.

5. Monitor the soil to maintain: pH, permeability, salinity, and structure.

6. Application of pond effluent shall not exceed the crop needs (water and nutrient), and will not exceed the water holding capacity listed above.

7. Consider using crops such as sorghum, cotton, or winter wheat when water supplies are short.

8. Avoid traffic on wet soils to minimize soil compaction.

Additional Requirements

Job Approval and Completion

Client: [illegible] **Date:** 11-23-2009

Conservationist: [illegible] **Date:** 11-23-09

Completed by: [illegible] **Date:**

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: Dominguez Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 1579 | Field: DM-7

Crop Rotation: Oat Hay/Corn Silage | Climate Data Station: NM, LAS CRUCES | Site "C" Value: 150

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 2006

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 4L (1-7) | TWF: 2 (see instr.)

Sum Period Erosion (t/ac): 0.5 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.5 (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	11/02/13	0	56	0.0	2	18	0.58	0.86	0.0	4.0	1.000	2006	0	34.3	0.2	1.00	0.06
11/2	11/17/13	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3774	0.0	2.5	0.87	0.00
11/17	12/02/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3820	0.0	2.5	1.00	0.00
12/2	12/17/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	4012	0.0	3.7	1.00	0.00
12/17	01/01/14	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	4721	0.0	3.7	0.87	0.00
1/1	01/16/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	6446	0.0	2.0	1.00	0.00
1/16	05/15/14	4	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	2006	6999	0.0	75.1	0.93	0.00
5/15	05/22/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	2006	3587	0.0	2.5	1.00	0.00
5/22	05/29/14	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	2006	661	2.3	2.5	1.00	0.06
5/29	05/29/14	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	2006	239	8.1	0.0	0.00	0.00
5/29	06/29/14	1	56	0.0	8	30	0.21	0.99	0.0	4.0	1.000	2006	210	9.3	2.6	0.94	0.22
6/29	07/14/14	1	56	22.5	2	18	0.71	0.86	22.5	1.2	1.030	2066	199	39.1	0.3	0.87	0.09
7/14	07/29/14	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	2066	203	40.5	0.2	0.73	0.06
7/29	08/13/14	2	56	67.5	2	18	0.74	0.86	67.5	1.1	1.030	2066	730	21.9	0.1	0.73	0.02
8/13	08/28/14	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	2026	1639	2.5	0.1	0.87	0.00
8/28	09/12/14	1	56	90.0	2	18	0.86	0.86	90.0	2.8	1.010	2026	5442	0.0	0.4	0.87	0.00
9/12	10/01/14	0	56	0.0	2	18	0.58	0.99	0.0	4.0	1.000	2006	6999	0.0	0.6	1.00	0.00
10/1	11/01/14	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	2026	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
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NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: Oat Silage Nov'13 to May'14, Corn Silage Jun'14 to Oct'14

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: DM-7

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Gg GLENDALE CLAY LOAM, ALKALI\GLENDALE clay loam 85%
Slope length (horiz): 100.0 ft
Avg. slope steepness: 0.50 %
T value: 5.0 t/ac/yr

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Forage\Oats, hay and grain, conv till, irr, CMZ29	b. absolute row grade 0.5 percent	(none)	(none)	0.13	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.088	