Year 5

Dairy Annual Nutrient Manager

Date	11/25/2009	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	D-2					
Area (ac)	85.2					
	Month - Month	Crop	Unit	Yield	N	P
1st Crop	Nov'13-Oct'14	Alfalfa, for hay	t/ac	12	51522	4827
2nd Crop					0	0
					0	0
Total		Nutrient Needed			51,522	4,827
					Soil Analyses	
Texture by Feel		Sandy Clay			N	P
Nutrient Available in Soil			lb/ac		62	74.23
		Nutrient Still Needed			46,240	-1,497
					Effluent Analyses	
					N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA	ac-in	0.712	1517	689
			ac-in		0	0
			ac-in		0	0
		Nutrient Still Needed			44,723	-2,185
					Manure Analyses	
					N	P
Dry Manure Application			t/ac		0	0
			t/ac		0	0
			t/ac		0	0
		Nutrient Still Needed			44,723	-2,185
					Fertilizer Content	
					N	P
Chemical Fertilizers Applied			lb/ac		0	0
			lb/ac		0	0
			lb/ac		0	0
		Annual Nutrient Balance			**44,723**	**-2,185**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	85.2	Date:	11/2/2009	Field ID:	D-2

pplication information (*enter the units that will be or has been applied to the field*):					
Crop Rotation:	Alfalfa			Needed for field (acin):	60.6624
Liquid Applied:	0.712	AcIn/ac		(gal):	1,646,984
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
ace 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

USDA Natural Resources Conservation Service
PLANTS
Crop Nutrient Tool

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 85.2 acres.

Nitrogen	Phosphorus	Potassium
51522.3513	4827.4263	39151.7079

Element-Fertilizer Equivalents | Average NPK Percentages

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Time Generated: Tues 4:10 PM - 11/24/2009

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Nov'13
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeablity (in/hr):	0.75	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 11/13 to 10/14) .08 t/ac + (RUSLE 2) 0.032 t/ac = 0.11 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.:** D-2
Current Land Use: Alfalfa **Total Acres:** 85.2
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: **Pajarito FSL; 144-52** Intake Family (in/hr): **0.75**

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	5.0	50%	2.5	2.0

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	8	9.7
Feb		0.0	Aug	10	7.7
Mar	>1 Mo.	1.6	Sep	13	5.7
Apr	18	4.2	Oct	28	2.7
May	11	6.9	Nov		0.0
Jun	8	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	16	3.00	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 Domingo **Date:** 11-23-2009

Conservationist: [signature] **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:	D-2
Crop Rotation:	Alfalfa	Climate Data Station:	NM, LAS CRUCES					Site "C" Value:	150
Tillage Direction (NS/EW):	NS	Length/width ratio:	2	Field Direction (NS/EW):	NS			Field Width (Ft.):	1324
Irrigation (Y or N):	Y	Soil "I":	86	Wind Erodibility Group:	3	(1-7)	TWF:	1	(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	01/02/14	0	56	0.0	0	0	1.00	0.99	0.0	4.0	1.010	1337	0	62.7	12.6	1.00	0.08
1/2	01/17/14	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			2.0	1.00	
1/17	02/01/14	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			2.0	1.00	
2/1	02/16/14	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			12.7	0.93	
2/16	03/03/14	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			12.7	1.00	
3/3	03/18/14	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			12.9	0.93	
3/18	04/02/14	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			12.6	1.00	
4/2	04/17/14	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			8.8	0.93	
4/17	05/02/14	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			8.6	0.93	
5/2	05/17/14	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			5.3	1.00	
5/17	06/06/14	2	56	0.0	0	0	1.00	0.94	0.0	4.0	1.010	1337			5.6	0.90	
6/6	06/21/14	0	56	22.5	0	0	1.00	0.94	22.5	1.2	1.370	1814			0.8	1.00	
6/21	07/11/14	2	56	22.5	0	0	1.00	0.94	22.5	1.2	1.370	1814			0.7	0.90	
7/11	07/26/14	0	56	67.5	0	0	1.00	0.94	67.5	1.1	1.475	1953			0.2	1.00	
7/26	08/15/14	2	56	67.5	0	0	1.00	0.94	67.5	1.1	1.475	1953			0.2	0.90	
8/15	08/30/14	0	56	90.0	0	0	1.00	0.94	90.0	2.8	2.000	2648			0.1	1.00	
8/30	09/19/14	2	56	90.0	0	0	1.00	0.94	90.0	2.8	2.000	2648			0.6	0.90	
9/19	11/01/14	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.01	1337			1.7	0.98	
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

USL NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'13 to Oct'14

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: D-2

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Pa PAJARITO FINE SANDY LOAM\PAJARITO fine sandy 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)	0.032	

Field D-2

Years 2 thru 5

Alternate Crop Options

Dairy Annual Nutrient Manager

Date	11/28/2009	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	2010-2011 (alt)				Goal/Real	Nutrient Needed
Field_ID	D-2					
Area (ac)	85.2					
	Month - Month	Crop	Unit	Yield	N	P
1st Crop	Nov'10-May'11	Triticale (Wheat for green chop 70%)	t/ac	20	23883	3169
2nd Crop	Jun'11-Oct'11	Cotton	lb/ac	1250	3238	405
					0	0
Total		Nutrient Needed			27,121	3,574
					Soil Analyses	
Texture by Feel		Sandy Clay			N	P
Nutrient Available in Soil			lb/ac		62	74.23
		Nutrient Still Needed			21,838	-2,750
					Effluent Analyses	
					N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA	ac-in	0.712	1517	689
			ac-in		0	0
			ac-in		0	0
		Nutrient Still Needed			20,322	-3,439
					Manure Analyses	
					N	P
Dry Manure Application			t/ac		0	0
			t/ac		0	0
			t/ac		0	0
		Nutrient Still Needed			20,322	-3,439
					Fertilizer Content	
					N	P
Chemical Fertilizers Applied		22-0-0	lb/ac	1106	23558	0
			lb/ac		0	0
			lb/ac		0	0
		Annual Nutrient Balance			**-3,236**	**-3,439**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	85.2	Date:	11/2/2009	Field ID:	D-2

pplication information (*enter the units that will be or has been applied to the field*):	Crop Rotation:	Triticale Silage		Needed for field (acin):	24.282
	Liquid Applied:	0.285	Acin/ac	(gal):	659,256
	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
ace 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:	85.2	Date:	11/2/2009	Field ID:	D-2

pplication information (*enter the units that will be or has been applied to the field*):					
Crop Rotation: Cotton				Needed for field (acin):	36.3804
Liquid Applied:	0.427	AcIn/ac		(gal):	987,728
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
ace 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 85.2 acres.

Nitrogen	Phosphorus	Potassium
23883.2640	3169.4400	

Element-Fertilizer Equivalents | Average NPK Percentages

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USDA Natural Resources Conservation Service
PLANTS
Crop Nutrient Tool

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 2500 lb of seed and lint yield level.

Nitrogen	Phosphorus	Potassium
75.9728	9.4505	11.2945

Nutrients removed in harvested part (lb/lb of seed and lint) at 2500 lb of seed and lint yield level and 85.2 acres.

Nitrogen	Phosphorus	Potassium
6472.8826	805.1826	962.2914

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Nov'10 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Triticale
Soil Permeablity (in/hr):	0.75	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	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		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:	Medium	Total Index Points:	20.0
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 5/11) 0.25 t/ac + (RUSLE 2) 0.15 t/ac = 0.40 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	**Field(s):**	D-2	**Date:**	Jun'11 (alt)
Planner:	Chet Wyant	**Location:**	DonaAna	**Crop:**	Cotton
Soil Permeablity (in/hr):	0.75	**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 6/11 to 10/11) 0.48 t/ac + (RUSLE 2) 0.39 t/ac = 0.87 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.:** D-2

Current Land Use: Triticale Silage / Cotton **Total Acres:** 85.2

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: **Pajarito FSL; 144-52** Intake Family (in/hr): **0.75**

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	4.0	50%	2.0	1.4
Cotton; Las Cruces	Medium	3.0	4.0	50%	2.0	1.4

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	29	2.1	Aug		0.0
Mar	18	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	8	7.5
Feb		0.0	Aug	8	7.3
Mar		0.0	Sep	11	5.4
Apr	>1 Mo.	0.3	Oct	21	2.8
May	>1 Mo.	2.0	Nov	>1 Mo.	0.6
Jun	14	4.4	Dec		0.0

used winter wheat silage

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	3	3.00	0.11	System meets CU for crop
Cotton; Las Cruces	10	3.00	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: Isaac Dominguez **Date:** 11-23-2009

Conservationist: [signature] **Date:** 11-25-09

Completed by: _____ **Date:** _____

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

(ALT)

Producer:	Dominguez Dairy	Planner:	Chet Wyant	Location:	Mesquite, NM	Tract:	1579	Field:	D-2		
Crop Rotation:	Triticale Silage / Cotton	Climate Data Station:	NM, LAS CRUCES					Site "C" Value:	150		
Tillage Direction (NS/EW):	NS	Length/width ratio:	2	Field Direction (NS/EW):	NS			Field Width (Ft.):	1324		
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:	0.0	(t/ac/yr)		

Calculations and Output

Mgt. Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SQe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"tF"	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	1.010	1337	0	21.0	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	1.010	1337	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	1.010	1337	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	1.010	1337	6010	0.0	4.0	1.00	0.00
1/31	03/02/11	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.010	1337	6999	0.0	24.7	0.97	0.00
3/2	03/17/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	6999	0.0	12.9	1.00	0.00
3/17	04/01/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	3544	0.0	12.9	0.93	0.00
4/1	04/16/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	3544	0.0	8.8	1.00	0.00
4/16	05/01/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	3544	0.0	8.8	0.93	0.00
5/1	05/16/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	4282	0.0	5.3	1.00	0.00
5/16	05/23/11	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.010	1337	89	4.4	2.5	1.00	0.11
5/23	05/29/11	2	56	0.0	4	30	0.37	0.50	0.0	4.0	1.010	1337	27	7.5	2.1	0.67	0.11
5/29	06/13/11	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.010	1337	23	6.6	1.7	1.00	0.11
6/13	06/28/11	0	56	22.5	2	10	0.62	0.86	22.5	1.2	1.370	1814	16	36.0	0.8	1.00	0.29
6/28	07/13/11	2	56	22.5	2	10	0.62	0.86	22.5	1.2	1.370	1814	21	35.8	0.3	0.87	0.10
7/13	07/28/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.475	1953	203	34.5	0.2	0.93	0.06
7/28	08/12/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.475	1953	668	20.0	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	2.00	2648	1367	5.5	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	2.00	2648	2319	0.0	0.3	0.93	0.00
9/11	09/20/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.01	1337	943	5.0	0.3	0.89	0.01
9/20	09/21/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.01	1337	1178	2.2	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	1.01	1337	5304	0.0	1.6	1.00	0.00
		0			2	10											
		0															
		0															
		0															

USDA NRCS Natural Resources Conservation Service

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: D-2

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Pa PAJARITO FINE SANDY LOAM\PAJARITO fine sandy 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\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)	0.39	

Dairy Annual Nutrient Manager

Date	11/25/2009	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	2011-2012 (alt)				Goal/Real	**Nutrient Needed**
Field_ID	D-2					
Area (ac)	85.2					
	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	38355	7160
2nd Crop	Jun'12-Oct'12	Corn-Field for Silage (dough 68%)	t/ac	22	14822	2219
					0	0
Total		Nutrient Needed			53,177	9,380
					Soil Analyses	
Texture by Feel		Sandy Clay			N	P
Nutrient Available in Soil			lb/ac		62	74.23
		Nutrient Still Needed			47,895	3,055
					Effluent Analyses	
					N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA	ac-in	0.712	1517	689
			ac-in		0	0
			ac-in		0	0
		Nutrient Still Needed			46,378	2,367
					Manure Analyses	
					N	P
Dry Manure Application			t/ac		0	0
			t/ac		0	0
			t/ac		0	0
		Nutrient Still Needed			46,378	2,367
					Fertilizer Content	
					N	P
Chemical Fertilizers Applied		22-0-0	lb/ac	2177	46370	0
		0-18-36	lb/ac	353	0	2364
			lb/ac		0	0
		Annual Nutrient Balance			**8**	**3**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	85.2	Date:	11/2/2009	Field ID:	D-2

Application Information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Oat Silage			Needed for field (acin):	24.282
Liquid Applied:	0.285	AcIn/ac		(gal):	659,256
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**
ace 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:	85.2	Date:	11/2/2009	Field ID:	D-2

Application Information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Corn Silage			Needed for field (acin):	36.3804
Liquid Applied:	0.427	AcIn/ac		(gal):	987,728
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**
ace 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
Crop Nutrient Tool

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 85.2 acres.

Nitrogen	Phosphorus	Potassium
20875.4093	3586.2068	19860.7649

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Nov'11 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat Silage
Soil Permeablity (in/hr):	0.75	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			2
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<8 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:	15.0
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 11/11 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):	D-2	Date:	Jun'12 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	0.75	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			2
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 60% Dry Matter as Supplemental Feed	Pasture 60 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:	15.0
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 10/112) 0.37 t/ac + (RUSLE 2) 0.078 t/ac = 0.45 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.:** D-2
Current Land Use: Oat Silage / Corn Silage **Total Acres:** 85.2
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: **Pajarito FSL; 144-52** Intake Family (in/hr): **0.75**

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	4.0	50%	2.0	1.4
Corn, silage; Las Cruces	Medium	3.0	4.0	50%	2.0	1.4

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	26	2.3	Sep		0.0
Apr	12	5.0	Oct		0.0
May	28	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	6	9.4
Feb		0.0	Aug	9	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	14	4.2	Nov		0.0
Jun	8	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	3.00	0.17	System meets CU for crop
Corn, silage; Las Cruces	10	3.00	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: [signature] 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: D-2 (ALT)

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

Tillage Direction (NS/EW): NS | Length/width ratio: 2 | Field Direction (NS/EW): NS | Field Width (Ft.): 1324

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (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"	"Kr"	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	11/02/11	0	56	0.0	2	18	0.58	0.86	0.0	4.0	1.010	1337	0	30.5	0.2	1.00	0.05
11/2	11/17/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	3774	0.0	2.5	1.00	0.00
11/17	12/02/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	3820	0.0	2.5	1.00	0.00
12/2	12/17/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	4012	0.0	3.7	0.93	0.00
12/17	01/01/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	4721	0.0	3.7	1.00	0.00
1/1	01/16/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	6446	0.0	2.0	1.00	0.00
1/16	05/15/12	3	56	0.0	2	10	0.44	0.99	0.0	4.0	1.010	1337	6999	0.0	75.1	0.98	0.00
5/15	05/22/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	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	1.010	1337	661	1.7	2.5	1.00	0.04
5/29	05/29/12	0	56	0.0	4	30	0.37	0.50	0.0	4.0	1.010	1337	239	6.2	0.0	1.00	0.00
5/29	06/29/12	0	56	0.0	8	30	0.21	0.99	0.0	4.0	1.010	1337	210	7.2	2.6	1.00	0.18
6/29	07/14/12	0	56	22.5	2	18	0.71	0.86	22.5	1.2	1.370	1814	199	37.8	0.3	1.00	0.10
7/14	07/29/12	1	56	67.5	2	18	0.74	0.86	67.5	1.1	1.475	1953	203	40.0	0.2	0.93	0.07
7/29	08/13/12	1	56	67.5	2	18	0.74	0.86	67.5	1.1	1.475	1953	730	21.6	0.1	0.93	0.02
8/13	08/28/12	1	56	90.0	2	18	0.86	0.86	90.0	2.8	2.000	2648	1639	2.7	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	2.000	2648	5442	0.0	0.4	0.93	0.00
9/12	10/01/12	1	56	0.0	2	18	0.58	0.99	0.0	4.0	1.010	1337	6999	0.0	0.6	0.95	0.00
10/1	11/01/12	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	1337	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
		0															
		0															
		0															
		0															
		0															

USDA NRCS Natural Resources Conservation Service

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: D-2

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Pa PAJARITO FINE SANDY LOAM\PAJARITO fine sandy 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)	0.12	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.078	

Year 4

Dairy Annual Nutrient Manager

Date	11/25/2009	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	2012-2013 (alt)				Goal/Real	Nutrient Needed
Field_ID	D-2					
Area (ac)	85.2					
	Month - Month	Crop	Unit	Yield	N	P
1st Crop	Nov'12-May'13	Barley-6 row, for green chop (boot)	t/ac	20	15290	2567
2nd Crop	Jun'13-Oct'13	Corn-Field for Silage (dough 68%)	t/ac	22	14822	2219
					0	0
Total		Nutrient Needed			30,112	4,787
					Soil Analyses	
Texture by Feel		Sandy Clay			N	P
Nutrient Available in Soil			lb/ac		62	74.23
		Nutrient Still Needed			24,830	-1,538
					Effluent Analyses	
					N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA	ac-in	0.712	1517	689
			ac-in		0	0
			ac-in		0	0
		Nutrient Still Needed			23,313	-2,226
					Manure Analyses	
					N	P
Dry Manure Application			t/ac		0	0
			t/ac		0	0
			t/ac		0	0
		Nutrient Still Needed			23,313	-2,226
					Fertilizer Content	
					N	P
Chemical Fertilizers Applied		22-0-0	lb/ac	1202	25603	0
			lb/ac		0	0
			lb/ac		0	0
		Annual Nutrient Balance			-2,289	-2,226

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	85.2	Date:	11/2/2009	Field ID:	D-2

pplication Information (*enter the units that will be or has been applied to the field*):	Crop Rotation:	Barley Silage		Needed for field (acin):	24.282
	Liquid Applied:	0.285	AcIn/ac	(gal):	659,256
	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**
ace 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:	85.2	Date:	11/2/2009	Field ID:	D-2

Application Information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Corn Silage			Needed for field (acin):	36.3804
Liquid Applied:	0.427	AcIn/ac		(gal):	987,728
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**
.ace 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
Crop Nutrient Tool

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 85.2 acres.

Nitrogen	Phosphorus	Potassium
23291.6720	3910.8796	16674.3001

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 85.2 acres.

Nitrogen	Phosphorus	Potassium
14822.4553	2219.2896	12476.0064

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Nov'12 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Barley Silage
Soil Permeablity (in/hr):	0.75	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 11/12 to 5/13) 0.57 t/ac + (RUSLE 2) 0.078 t/ac = 0.65 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Jun'13 (alt)
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Silage
Soil Permeablity (in/hr):	0.75	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) 0.19 t/ac + (RUSLE 2) 0.078 t/ac = 0.27 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.:** D-2
Current Land Use: Barley Silage / Corn Silage **Total Acres:** 85.2
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: **Pajarito FSL; 144-52** Intake Family (in/hr): **0.75**

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	4.0	50%	2.0	1.4
Corn, silage; Las Cruces	Medium	3.0	4.0	50%	2.0	1.4

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	29	2.1	Aug		0.0
Mar	18	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	6	9.4
Feb		0.0	Aug	9	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	14	4.2	Nov		0.0
Jun	8	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
Wheat, winter, silage; Las Cruces	3	3.00	0.11	System meets CU for crop
Corn, silage; Las Cruces	10	3.00	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: [signature] **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: D-2

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

Tillage Direction (NS/EW): NS | Length/width ratio: 2 | Field Direction (NS/EW): NS | Field Width (Ft.): 1324

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)

(ALT)

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	1.010	1337	0	30.5	0.2	1.00	0.05
11/2	11/17/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	1667	0.2	2.5	1.00	0.00
11/17	12/02/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	1667	0.2	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	1.010	1337	1667	0.2	3.7	0.93	0.01
12/17	01/01/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	1667	0.2	3.7	1.00	0.01
1/1	01/16/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	1667	0.2	2.0	1.00	0.00
1/16	05/15/13	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.010	1337	1667	0.4	75.1	1.00	0.28
5/15	05/22/13	3	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	4282	0.0	2.5	0.57	0.00
5/22	05/29/13	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.010	1337	724	1.4	2.5	1.00	0.04
5/29	05/29/13	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.010	1337	201	6.5	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	1.010	1337	181	7.4	2.6	0.97	0.18
6/29	07/14/13	2	56	22.5	2	18	0.71	0.86	22.5	1.2	1.370	1814	173	38.5	0.3	0.87	0.09
7/14	07/29/13	1	56	67.5	2	18	0.74	0.86	67.5	1.1	1.475	1953	177	40.7	0.2	0.93	0.07
7/29	08/13/13	1	56	67.5	2	18	0.74	0.86	67.5	1.1	1.475	1953	668	23.8	0.1	0.93	0.03
8/13	08/28/13	1	56	90.0	2	18	0.86	0.86	90.0	2.8	2.000	2648	1558	3.4	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	2.000	2648	5341	0.0	0.4	0.93	0.00
9/12	10/01/13	1	56	0.0	2	18	0.58	0.99	0.0	4.0	1.010	1337	6999	0.0	0.6	0.95	0.00
10/1	11/01/13	0	56	0.0	2	18	0.59	0.99	0.0	3.3	1.01	1337	5317	0.0	1.3	1.00	0.00
		0			2	18											
		0															
		0															
		0															
		0															
		0															
		0															
		0															

USDA NRCS Natural Resources Conservation Service

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: D-2

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Pa PAJARITO FINE SANDY LOAM\PAJARITO fine sandy 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\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.087	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.078	

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				N Loss	0%	
Crop_Year	2013-2014 (alt)				Goal/Real	Nutrient Needed	
Field_ID	D-2						
Area (ac)	85.2						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'13-May'14	Wheat Silage (Wheat for green chop 70%)		t/ac	20	23883	3169
2nd Crop	Jun'14-Oct'14	Sorghum/Sudangrass, for silage (70%)		t/ac	21	17584	2254
						0	0
Total		Nutrient Needed				41,468	5,424
						Soil Analyses	
						N	P
Texture by Feel		Sandy Clay				62	74.23
Nutrient Available in Soil				lb/ac		36,185	-901
		Nutrient Still Needed				Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1517	689
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				34,669	-1,589
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				34,669	-1,589
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	1627	34655	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**13**	**-1,589**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	85.2	Date:	11/2/2009	Field ID:	D-2

Application Information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Winter Wheat Silage			Needed for field (acin):	24.282
Liquid Applied:	0.285	AcIn/ac		(gal):	659,256
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
ace 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:	85.2	Date:	11/2/2009	Field ID:	D-2

Application information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Sorghum / Sudangrass Silage			Needed for field (acin):	36.3804
Liquid Applied:	0.427	AcIn/ac		(gal):	987,728
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
ace 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 85.2 acres.

Nitrogen	Phosphorus	Potassium
23883.2640	3169.4400	

Element-Fertilizer Equivalents | Average NPK Percentages

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Time Generated: Tues 4:25 PM - 11/24/2009

USDA Natural Resources Conservation Service
PLANTS
Crop Nutrient Tool

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 85.4 acres.

Nitrogen	Phosphorus	Potassium
17625.5352	2259.6840	28084.6440

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	**Field(s):**	D-2	**Date:**	Nov'13 (alt)
Planner:	Chet Wyant	**Location:**	DonaAna	**Crop:**	Wheat Silage
Soil Permeablity (in/hr):	0.75	**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 60% Dry Matter as Supplemental Feed	Pasture 60 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) 0.31 t/ac + (RUSLE 2) 0.087 t/ac = 0.40 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	**Field(s):**	D-2	**Date:**	Jun'14 (alt)
Planner:	Chet Wyant	**Location:**	DonaAna	**Crop:**	Sudangrass
Soil Permeability (in/hr):	0.75	**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 6/14 to 10/14) 0.21 t/ac + (RUSLE 2) 0.00059 t/ac = 0.21 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.:** D-2
Current Land Use: Winter Wheat Silage / Sorghum Silage **Total Acres:** 85.2
Date: 11/20/2009 **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
- ☑ 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: **Pajarito FSL; 144-52** Intake Family (in/hr): **0.75**

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	4.0	50%	2.0	1.4
Sorghum, silage; Deming	Medium	3.0	4.0	65%	2.6	2.1

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	29	2.1	Aug		0.0
Mar	18	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	9	8.5
Feb		0.0	Aug	14	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	11	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	3	3.00	0.11	System meets CU for crop
Sorghum, silage; Deming	8	3.00	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: [signature] **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: D-2

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

Tillage Direction (NS/EW): NS | Length/width ratio: 2 | Field Direction (NS/EW): NS | Field Width (Ft.): 1324

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (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				SCe	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	1.010	1337	0	21.0	0.2	1.00	0.03
11/2	11/17/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	6999	0.0	2.5	1.00	0.00
11/17	12/02/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.010	1337	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	1.010	1337	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	1.010	1337	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	1.010	1337	6999	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	1.010	1337	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	1.010	1337	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	1.010	1337	724	1.4	2.5	1.00	0.04
5/29	06/29/14	0	56	0.0	4	30	0.37	0.65	0.0	4.0	1.010	1337	201	9.3	2.6	1.00	0.24
6/29	07/14/14	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.370	1814	152	32.9	0.3	0.93	0.08
7/14	07/29/14	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.475	1953	163	35.4	0.2	0.93	0.06
7/29	08/13/14	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.475	1953	231	33.8	0.1	0.93	0.04
8/13	08/28/14	1	56	90.0	2	10	0.81	0.86	90.0	2.8	2.000	2648	606	31.2	0.1	0.93	0.03
8/28	09/12/14	1	56	90.0	2	10	0.81	0.86	90.0	2.8	2.000	2648	1757	1.5	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	1.010	1337	2183	0.0	0.6	0.95	0.00
10/1	10/31/14	1	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1337	6999	0.0	1.3	0.97	0.00
		0			2	10											
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

US NRCS Natural Resources Conservation Service

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: D-2

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Pa PAJARITO FINE SANDY LOAM\PAJARITO fine sandy 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\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.087	
a.Single Year/Single Crop Templates\Haygrazer, sudangrass, disk	b. absolute row grade 0.5 percent	(none)	(none)	0.00059	

Field D-3

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

Year 1

Dairy Annual Nutrient Manager

Date	11/28/2009	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	2009-2010				Goal/Real	Nutrient Needed	
Field_ID	D-3						
Area (ac)	48.3						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'09-Oct'10	Alfalfa, for hay		t/ac	10	24340	2281
2nd Crop						0	0
						0	0
Total		Nutrient Needed				24,340	2,281
						Soil Analyses	
						N	P
Texture by Feel		Sandy Clay Loam					
Nutrient Available in Soil				lb/ac		53	65.94
		Nutrient Still Needed				21,780	-904
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	860	390
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				20,920	-1,295
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				20,920	-1,295
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**20,920**	**-1,295**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	48.3	Date:	11/2/2009	Field ID:	D-3

Application information (enter the units that will be or has been applied to the field):					
Crop Rotation: Alfalfa				Needed for field (acin):	34.3896
Liquid Applied:	0.712	Acln/ac		(gal):	933,678
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
ace 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

USDA Natural Resources Conservation Service
PLANTS
Crop Nutrient Tool

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 10 ton yield level.

Nitrogen	Phosphorus	Potassium
503.9354	47.2166	382.9392

Nutrients removed in harvested part (lb/ton) at 10 ton yield level and 48.3 acres.

Nitrogen	Phosphorus	Potassium
24340.0780	2280.5623	18495.9653

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

Intellectual Property Statement / How to Cite the PLANTS Database

Disclaimers

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Time Generated: Tues 4:32 PM - 11/24/2009

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-3	Date:	Nov'09
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
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			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				1.5
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:	Low	Total Index Points:	16.0
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 11/09 to 10/10) 2.26 t/ac + (RUSLE 2) 0.042 t/ac = 2.30 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.:** D-3
Current Land Use: Alfalfa **Total Acres:** 48.3
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 L; 23-36** Intake Family (in/hr): **0.30**

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	8.0	50%	4.0	10.1

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	12	9.7
Feb		0.0	Aug	16	7.7
Mar	>1 Mo.	1.6	Sep	21	5.7
Apr	29	4.2	Oct	>1 Mo.	2.7
May	17	6.9	Nov		0.0
Jun	13	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 Application Rate (in/day)	Needed Application Rate (in/day)	System Evaluation
Alfalfa, hay, southern; Las Cruces	9	5.30	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: [signature] **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: Mesquite, NM | Tract: 1579 | Field: D-3

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.): 1360

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

Sum Period Erosion (t/ac): 2.3 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 2.3 (t/ac/yr)

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SCe	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	8	30	0.21	0.99	0.0	4.0	1.000	1360	0	8.7	12.6	1.00	1.09
1/2	01/17/10	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	5	6.7	2.0	1.00	0.13
1/17	02/01/10	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	47	6.5	2.0	1.00	0.13
2/1	02/16/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	104	6.2	12.7	0.93	0.73
2/16	03/03/10	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	1677	0.0	12.7	1.00	0.00
3/3	03/18/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	5385	0.0	12.9	0.93	0.00
3/18	04/02/10	0	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	5385	0.0	12.6	1.00	0.00
4/2	04/17/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	5385	0.0	8.8	0.93	0.00
4/17	05/02/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	5385	0.0	8.6	0.93	0.00
5/2	05/17/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	6999	0.0	5.3	0.93	0.00
5/17	06/01/10	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	6999	0.0	5.3	0.93	0.00
6/1	06/16/10	1	56	22.5	8	30	0.47	0.80	22.5	1.2	1.030	1401	6999	0.0	0.8	0.93	0.00
6/16	07/01/10	1	56	22.5	8	30	0.47	0.80	22.5	1.2	1.030	1401	6999	0.0	0.8	0.93	0.00
7/1	07/16/10	1	56	67.5	8	30	0.51	0.80	67.5	1.1	1.030	1401	6999	0.0	0.2	0.93	0.00
7/16	07/31/10	1	56	67.5	8	30	0.51	0.80	67.5	1.1	1.030	1401	6999	0.0	0.2	0.93	0.00
7/31	08/15/10	0	56	67.5	8	30	0.51	0.80	67.5	1.1	1.030	1401	6999	0.0	0.1	1.00	0.00
8/15	08/30/10	1	56	90.0	8	30	0.74	0.80	90.0	2.8	1.010	1374	6999	0.0	0.1	0.93	0.00
8/30	09/15/10	1	56	90.0	8	30	0.74	0.99	90.0	2.8	1.01	1374	5476	0.0	0.4	0.94	0.00
9/15	09/22/10	1	56	0.0	4	13	0.24	0.52	0.0	4.0	1.00	1360	1295	0.0	0.2	0.86	0.00
9/22	09/29/10	0	56	0.0	1	18	0.83	0.49	0.0	4.0	1.00	1360	29	22.7	0.2	1.00	0.05
9/29	10/04/10	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.00	1360	5	4.7	0.2	1.00	0.01
10/4	10/31/10	1	56	0.0	8	30	0.24	0.99	0.0	3.3	1.01	1374	5	10.8	1.1	0.96	0.12
		0			8	30											
		0															
		0															
		0															

USDA NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'09 to Oct'10

Tract #: 1579
Owner name: DOMINGUEZ DAIRY #1
Field name: D-3

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ge GLENDALE LOAM\GLENDALE 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)	0.042	

Year 2

Dairy Annual Nutrient Manager

Date	11/28/2009	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	2010-2011				Goal/Real	Nutrient Needed
Field_ID	D-3					
Area (ac)	48.3					
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'10-May'11	Oats for green chop (boot to early bloom 69%)		t/ac	20	21743	4059
2nd Crop	Jun'11-Oct'11	Alfalfa, for hay		t/ac	1	2434	228
						0	0
Total		Nutrient Needed				24,177	4,287
						Soil Analyses	
Texture by Feel		Sandy Clay Loam				N	P
Nutrient Available in Soil				lb/ac		53	65.94
		Nutrient Still Needed				21,617	1,102
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	860	390
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				20,758	712
						Manure Analyses	
						N	P
Dry Manure Application		NM Dairy Cattle Net from J.S. 590 L&MLA		t/ac	30.6	20692	4523
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				66	-3,811
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**66**	**-3,811**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	48.3	Date:	11/2/2009	Field ID:	D-3

Application Information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Oat Silage			Needed for field (acin):	13.7655
Liquid Applied:	0.285	AcIn/ac		(gal):	373,733
Solids Applied:	30.6	ton/ac	Needed for field (tons):		1477.98
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**
ace 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)
	443.9	218.6	922.0

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	48.3	Date:	11/2/2009	Field ID:	D-3

Application Information (enter the units that will be or has been applied to the field):

Crop Rotation:	Alfalfa			Needed for field (acin):	20.6241
Liquid Applied:	0.427	AcIn/ac		(gal):	559,944
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**
ace 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

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 48.3 acres.

Nitrogen	Phosphorus	Potassium
11834.2989	2033.0257	11259.0956

Element-Fertilizer Equivalents | Average NPK Percentages

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USDA Natural Resources Conservation Service

PLANTS

Crop Nutrient Tool

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 1 ton yield level.

Nitrogen	Phosphorus	Potassium
50.3935	4.7217	38.2939

Nutrients removed in harvested part (lb/ton) at 1 ton yield level and 48.3 acres.

Nitrogen	Phosphorus	Potassium
2434.0078	228.0562	1849.5965

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-3	Date:	Nov'10
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat 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			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		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 60% Dry Matter as Supplemental Feed	Pasture 60 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:	21.5
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 11/10 to 5/11) 0.30 t/ac + (RUSLE 2) 0.16 t/ac = 0.46 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-2	Date:	Jun'11
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeablity (in/hr):	0.3	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				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:	Low	Total Index Points:	14.5
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) 0.38 t/ac + (RUSLE 2) 0.042 t/ac = 0.42 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: Oat Silage / Alfalfa
Date: 11/20/2009

Tract: 1579
Field(s) No.: D-3
Total Acres: 48.3
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 L; 23-36** | Intake Family (in/hr): **0.30**

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	6.0	50%	3.0	6.3
Alfalfa, hay, southern; Las Cruces	Deep	4.0	8.0	50%	4.0	10.1

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	>1 Mo.	2.3	Sep		0.0
Apr	18	5.0	Oct		0.0
May	>1 Mo.	2.1	Nov		0.0
Jun		0.0	Dec		0.0

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	12	9.7
Feb		0.0	Aug	16	7.7
Mar	>1 Mo.	1.6	Sep	21	5.7
Apr	29	4.2	Oct	>1 Mo.	2.7
May	17	6.9	Nov		0.0
Jun	13	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

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	2	5.30	0.17	System meets CU for crop
Alfalfa, hay, southern; Las Cruces	9	5.30	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: Joe 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: Mesquite, NM | Tract: 1579 | Field: D-3
Crop Rotation: Oat Hay/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.): 1360
Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (see instr.)
Sum Period Erosion (t/ac): 0.7 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 0.7 (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"	"Kr"	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	1360	0	21.1	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	1360	1989	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	1360	1989	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	1360	1989	0.0	4.0	1.00	0.00
1/31	03/02/11	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1360	1989	0.0	24.7	0.97	0.00
3/2	03/17/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1360	1989	0.0	12.9	0.93	0.00
3/17	04/01/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1360	1989	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	1360	1989	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	1360	1989	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	1360	3587	0.0	5.3	1.00	0.00
5/16	05/23/11	0	56	0.0	4	13	0.24	0.52	0.0	4.0	1.000	1360	518	2.4	2.5	1.00	0.06
5/23	05/29/11	1	56	0.0	4	30	0.37	0.50	0.0	4.0	1.000	1360	187	6.6	2.1	0.83	0.12
5/29	06/13/11	1	56	0.0	8	30	0.21	0.80	0.0	4.0	1.000	1360	165	5.9	1.7	0.93	0.09
6/13	06/28/11	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1401	117	31.4	0.8	0.93	0.23
6/28	07/13/11	1	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1401	163	30.4	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	1401	220	31.1	0.2	0.93	0.06
7/28	08/12/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1401	1792	0.4	0.1	0.93	0.00
8/12	08/27/11	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.01	1374	5501	0.0	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	1374	5501	0.0	0.3	0.93	0.00
9/11	09/29/11	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.00	1360	2799	0.0	0.5	1.00	0.00
9/29	10/04/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.00	1360	2799	0.0	0.2	0.80	0.00
10/4	10/31/11	1	56	0.0	2	10	0.46	0.99	0.0	3.3	1.01	1374	2799	0.0	1.1	0.96	0.00
		0			2	10											
		0															
		0															
		0															

USL NRCS

RUSLE2 Worksheet Erosion Calculation Record

Info: Oat Silage Nov'10 to May'11, Alfalfa Jun'11 to Oct'11

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: D-3

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ge GLENDALE LOAM\GLENDALE 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)	0.16	
b.Mullti-year Rotation Templates\Alfalfa-Small Grain, 5yr, 5cuts CMZ 23	b. absolute row grade 0.5 percent	(none)	(none)	0.042	

Year 3

Dairy Annual Nutrient Manager

Date	11/28/2009	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	2011-2012				Goal/Real	Nutrient Needed	
Field_ID	D-3						
Area (ac)	48.3						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'11-Oct'12	Alfalfa, for hay		t/ac	12	29208	2737
2nd Crop						0	0
						0	0
Total		Nutrient Needed				29,208	2,737
						Soil Analyses	
						N	P
Texture by Feel		Sandy Clay Loam					
Nutrient Available in Soil				lb/ac		53	65.94
		Nutrient Still Needed				26,648	-448
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	585	390
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				26,064	-839
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				26,064	-839
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**26,064**	**-839**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	48.3	Date:	11/2/2009	Field ID:	D-3

Application information (enter the units that will be or has been applied to the field):					
Crop Rotation: Alfalfa				Needed for field (acin):	34.3896
Liquid Applied:	0.712	Acln/ac		(gal):	933,678
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**
ace 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

USDA Natural Resources Conservation Service

PLANTS Crop Nutrient Tool

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 48.3 acres.

Nitrogen	Phosphorus	Potassium
29208.0935	2736.6747	22195.1584

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

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Time Generated: Tues 4:33 PM - 11/24/2009

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-3	Date:	Jun'11
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
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			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				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:	Low	Total Index Points:	14.5
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) 0.38 t/ac + (RUSLE 2) 0.042 t/ac = 0.42 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: Alfalfa
Date: 11/20/2009

Tract: 1579
Field(s) No.: D-3
Total Acres: 48.3
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 L; 23-36** | Intake Family (in/hr): **0.30**

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	8.0	50%	4.0	10.1

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	12	9.7
Feb		0.0	Aug	16	7.7
Mar	>1 Mo.	1.6	Sep	21	5.7
Apr	29	4.2	Oct	>1 Mo.	2.7
May	17	6.9	Nov		0.0
Jun	13	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	9	5.30	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: Jo Ann Dominguez **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: D-3
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.): 1360
Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (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"	"Kr"	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	1360	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	1360			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	1360			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	1360			12.7	0.93	
2/16	03/02/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			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	1360			12.9	0.93	
3/17	04/01/12	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			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	1360			8.8	0.93	
4/16	05/01/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			8.8	0.93	
5/1	05/16/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			5.3	0.93	
5/16	06/05/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			5.9	0.95	
6/5	06/20/12	1	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	1401			0.8	0.93	
6/20	07/10/12	1	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	1401			0.7	0.95	
7/10	07/25/12	1	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	1401			0.2	0.93	
7/25	08/14/12	1	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	1401			0.2	0.95	
8/14	08/29/12	1	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	1374			0.1	0.93	
8/29	09/18/12	1	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	1374			0.5	0.95	
9/18	10/31/12	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.00	1360			1.6	0.98	
		1															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

USDA NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'11 to Oct'12

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: D-3

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ge GLENDALE LOAM\GLENDALE 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)	0.042	

Year 4

Dairy Annual Nutrient Manager

Date	11/28/2009	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	2012-2013				Goal/Real	Nutrient Needed	
Field_ID	D-3						
Area (ac)	48.3						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'12-Oct'13	Alfalfa, for hay		t/ac	12	29208	2737
2nd Crop						0	0
						0	0
Total		Nutrient Needed				29,208	2,737
						Soil Analyses	
						N	P
Texture by Feel		Sandy Clay Loam					
Nutrient Available in Soil				lb/ac		42	32.75
		Nutrient Still Needed				27,179	1,155
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	585	390
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				26,595	765
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				26,595	765
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**26,595**	**765**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	Dominguez Dairy	Acres:	48.3	Date:	11/2/2009	Field ID:	D-3

Application information (enter the units that will be or has been applied to the field):					
Crop Rotation:	Alfalfa			Needed for field (acin):	34.3896
Liquid Applied:	0.712	AcIn/ac		(gal):	933,678
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

USDA Natural Resources Conservation Service

PLANTS Crop Nutrient Tool

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 48.3 acres.

Nitrogen	Phosphorus	Potassium
29208.0935	2736.6747	22195.1584

Element-Fertilizer Equivalents | Average NPK Percentages

«Contents»

Intellectual Property Statement / How to Cite the PLANTS Database

Disclaimers

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Time Generated: Tues 4:33 PM - 11/24/2009

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Dominguez Dairy	Field(s):	D-3	Date:	Nov'12
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeablity (in/hr):	0.3	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				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:	Low	Total Index Points:	14.5
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 10/13) .08 t/ac + (RUSLE 2) 0.042 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.:** D-3
Current Land Use: Alfalfa **Total Acres:** 48.3
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 L; 23-36** Intake Family (in/hr): **0.30**

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	8.0	50%	4.0	10.1

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	12	9.7
Feb		0.0	Aug	16	7.7
Mar	>1 Mo.	1.6	Sep	21	5.7
Apr	29	4.2	Oct	>1 Mo.	2.7
May	17	6.9	Nov		0.0
Jun	13	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	9	5.30	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: Joaquin Dominguez **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: D-3

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.): 1360

Irrigation (Y or N): Y | Soil "I": 86 | Wind Erodibility Group: 3 (1-7) | TWF: 1 (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				SCe	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	01/02/13	0	56	0.0	0	0	1.00	0.99	0.0	4.0	1.000	1360	0	62.7	12.6	1.00	0.08
1/2	01/17/13	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			2.0	1.00	
1/17	02/01/13	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			2.0	1.00	
2/1	02/16/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			12.7	0.93	
2/16	03/03/13	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			12.7	1.00	
3/3	03/18/13	0	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			12.9	1.00	
3/18	04/02/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			12.6	0.93	
4/2	04/17/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			8.8	0.93	
4/17	05/02/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			8.6	0.93	
5/2	05/17/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			5.3	0.93	
5/17	06/06/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.000	1360			5.6	0.95	
6/6	06/21/13	1	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	1401			0.8	0.93	
6/21	07/11/13	1	56	22.5	0	0	1.00	0.94	22.5	1.2	1.030	1401			0.7	0.95	
7/11	07/26/13	1	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	1401			0.2	0.93	
7/26	08/15/13	1	56	67.5	0	0	1.00	0.94	67.5	1.1	1.030	1401			0.2	0.95	
8/15	08/30/13	1	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	1374			0.1	0.93	
8/30	09/19/13	1	56	90.0	0	0	1.00	0.94	90.0	2.8	1.010	1374			0.6	0.95	
9/19	10/31/13	1	56	0.0	0	0	1.00	0.94	0.0	4.0	1.00	1360			1.6	0.98	
		1															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Alfalfa Nov'12 to Oct'13

Tract #: 1579
Owner name: DOMINGUEZ DAIRY
Field name: D-3

Location: New Mexico\DonaAna County\NM_Dona Ana R 9
Soil: Ge GLENDALE LOAM\GLENDALE 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)	0.042	