Field C (LAA-C)

Years 1 thru 5

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

Dairy Annual Nutrient Manager

Date	11/19/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]
Dairy	River Valley Dairy						
Crop_Year	2009-2010						
Field_ID	LAA-C				N Loss	0%	
Area (ac)	29.1				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'09-May'10	Triticale (Wheat for green chop 70%)		t/ac	10	4079	541
2nd Crop	Jun'10-Oct'10	Sorghum/Sudangrass, for silage (70%)		t/ac	16	4576	587
						0	0
Total		Nutrient Needed				8,655	1,128
						Soil Analyses	
Texture by Feel		Clay Loam				N	P
Nutrient Available in Soil				lb/ac		40	138.86
		Nutrient Still Needed				7,491	-2,913
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	3.65	2762	605
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				4,729	-3,518
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				4,729	-3,518
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	650	4729	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**0**	**-3,518**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

Application Information (*enter the units that will be or has been applied to the field*):					
Crop Rotation:	Triticale Silage			Needed for field (acin):	42.486
Liquid Applied:	1.46	Acin/ac		(gal):	1,153,495
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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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
P dcast-incorporated in 4 days	Warm Wet	80 %	0 (lbs/ton) NH4-N

Liquid (type of application)	Type of Climate	Percent Remaining	
Surface Irr w/o incorp & w/crop canopy	Warm Dry	80 %	26.4 (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)
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	38.7	18.5	79.5

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

Application Information (*enter the units that will be or has been applied to the field*):					
Crop Rotation: Sudangrass Silage				Needed for field (acin):	63.729
Liquid Applied:	2.19	AcIn/ac		(gal):	1,730,242
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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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
P ›dcast-incorporated in 4 days	Warm Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	58.0	27.7	119.3

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)

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 10 ton yield level.

Nitrogen	Phosphorus	Potassium
140.1600	18.6000	

Nutrients removed in harvested part (lb/ton) at 10 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
4078.6560	541.2600	

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)

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 16 ton yield level.

Nitrogen	Phosphorus	Potassium
157.2480	20.1600	250.5600

Nutrients removed in harvested part (lb/ton) at 16 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
4575.9168	586.6560	7291.2960

Element-Fertilizer Equivalents | Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Rock Valley Dairy	Field(s):	LAA-C	Date:	Nov'09
Planner:	Chet Wyant	Location:	DonaAna	Crop:	triticale sil.
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
		X				1
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 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:	22.0
Phosphorus Application Classification:		N Based	

Notes:

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

Comments: Soil Erosion = (WEQ 10/09 to 5/10) 0.11 t/ac + (RUSLE2) 0.17 t/ac = 0.28 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	Rock Valley Dairy	Field(s):	LAA-C	Date:	Jun'10
Planner:	Chet Wyant	Location:	DonaAna	Crop:	sudan sil.
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Exist

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

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

Notes:

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

Comments: Soil Erosin = (WEQ 6/10 to 10/10) 0.95 t/ac + (RUSLE2) 0.00069 t/ac = 0.95 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: River Valley Dairy **Tract:** 735
Planner: Chet Wyant **Field(s) No.:** LAA-C
Current Land Use: Triticale silage/ Sudangrass Silage **Total Acres:** 29.1
Date: 11/19/2009 **Date to apply:** 11/1/2009

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: **Armijo CL, Mimbres and Verhalen soils; 12-16, 221f/** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	5.0	50%	2.5	14.7
Sudangrass, hay or silage; Deming	Medium	3.0	5.0	65%	3.3	23.3

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	>1 Mo.	2.1	Aug		0.0
Mar	23	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: Sudangrass, hay or silage; Deming **Total Irrigation Needed:** 14.1 ac in/ac

Month	Est. Frequency *(days between irr.)*	In/Mo	Month	Est. Frequency *(days between irr.)*	In/Mo
Jan		0.0	Jul	29	3.3
Feb		0.0	Aug	14	7.2
Mar		0.0	Sep	27	3.7
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):		**1400**	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	5	2.05	0.11	System meets CU for crop
Sudangrass, hay or silage; Deming	7	2.05	0.24	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: R Bonnett **Date:** 11-23-09

Conservationist: _____ **Date:** _____

Completed by: _____ **Date:** _____

USL NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Nov'09-May'10 Triticale Silage, Jun'10-Oct'10 Sundangrass Silage

Tract #: 735
Owner name: River Valley Dairy
Field name: LAA-C

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

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Triticale, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.17	
a.Single Year/Single Crop Templates\Haygrazer, sudangrass, disk	b. absolute row grade 0.5 percent	(none)	(none)	0.00069	

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: River Valley Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 735 | Field: LAA-C

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

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1150

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

Sum Period Erosion (t/ac): 1.1 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 1.1 (t/ac/yr)

Calculations and Output

Sgt Periods		Inv.	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)
10/7	10/14/09	0	56	0.0	2	30	0.70	0.86	0.0	3.3	1.010	1162	0	37.7	0.3	1.00	0.11
10/14	10/21/09	0	56	0.0	3	30	0.52	0.52	0.0	3.3	1.010	1162	6999	0.0	0.3	1.00	0.00
10/21	11/01/09	0	56	0.0	4	11	0.26	0.52	0.0	3.3	1.010	1162	3403	0.0	0.5	1.00	0.00
11/1	01/30/10	1	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	3312	0.0	16.3	0.98	0.00
1/30	02/14/10	2	56	0.0	2	30	0.69	0.86	0.0	4.0	1.000	1150	6429	0.0	11.3	0.73	0.00
2/14	03/01/10	1	56	0.0	2	30	0.69	0.86	0.0	4.0	1.000	1150	6552	0.0	12.7	0.87	0.00
3/1	05/01/10	1	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	6583	0.0	44.3	0.97	0.00
5/1	06/01/10	0	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	6999	0.0	11.0	1.00	0.00
6/1	06/11/10	0	56	22.5	3	30	0.67	0.52	22.5	1.2	1.030	1185	1365	0.8	0.5	1.00	0.00
6/11	06/21/10	0	56	22.5	4	11	0.48	0.52	22.5	1.2	1.030	1185	283	8.4	0.5	1.00	0.04
6/21	07/21/10	1	56	22.5	2	30	0.79	0.99	22.5	1.2	1.030	1185	275	43.6	0.8	0.93	0.32
7/21	08/20/10	1	56	67.5	2	30	0.81	0.99	67.5	1.1	1.030	1185	275	44.8	0.3	0.93	0.11
8/20	10/01/10	1	56	90.0	2	30	0.90	0.99	90.0	2.8	1.010	1162	275	51.3	1.0	0.95	0.48
10/1	10/07/10	1	56	0.0	2	30	0.70	0.86	0.0	3.3	1.010	1162	6999	0.0	0.3	0.67	0.00
		0			2	30											
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Year 2

Dairy Annual Nutrient Manager

Date	11/19/2009	NM STATE UNIVERSITY Dairy Extension Program [redacted]	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		[redacted]	
Dairy	River Valley Dairy						
Crop_Year	2010-2011				N Loss	0%	
Field_ID	LAA-C				Goal/Real	Nutrient Needed	
Area (ac)	29.1						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'10-May'11	Wheat Silage (Wheat for green chop 70%)		t/ac	10	4079	541
2nd Crop	Jun'11-Oct 11	Corn-Field for Salage (dough 68%)		t/ac	24	5523	827
						0	0
Total		Nutrient Needed				9,601	1,368
						Soil Analyses	
						N	P
Texture by Feel		Loam				40	138.86
Nutrient Available in Soil				lb/ac		8,437	-2,673
		Nutrient Still Needed					
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	3.65	2762	605
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				5,676	-3,278
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				5,676	-3,278
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	780	5675	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				1	-3,278

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

pplication information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Wheat Silage			Needed for field (acin):	42.486
	Liquid Applied:	1.46	Acin/ac	(gal):	1,153,495
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	38.7	18.5	79.5

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

pplication information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Corn Silage			Needed for field (acin):	63.729
	Liquid Applied:	2.19	Acin/ac	(gal):	1,730,242
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	58.0	27.7	119.3

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)

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 10 ton yield level.

Nitrogen	Phosphorus	Potassium
140.1600	18.6000	

Nutrients removed in harvested part (lb/ton) at 10 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
4078.6560	541.2600	

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)

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 24 ton yield level.

Nitrogen	Phosphorus	Potassium
189.7882	28.4160	159.7440

Nutrients removed in harvested part (lb/ton) at 24 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
5522.8355	826.9056	4648.5504

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Nov'10
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Wheat Sil.
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

P Hazard Class: Medium **Total Index Points:** 20.5

Phosphorus Application Classification: N Based

Notes:

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

Comments: Soil Erosion = (WEQ 10/10 to 5/11) 0.35 t/ac + (RUSLE 2) 0.093 t/ac = 0.44 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Jun'11
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Sil.
Soil Permeability (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

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

Notes:

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

Comments: Soil Erosion = (WEQ 6/11 to 10/11) 0.15 t/ac + (RUSLE 2) 0.088 t/ac = 0.24 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: River Valley Dairy **Tract:** 735
Planner: Chet Wyant **Field(s) No.:** LAA-C
Current Land Use: Wheat Silage/ Corn Silage **Total Acres:** 29.1
Date: 11/19/2009 **Date to apply:** 11/1/2010

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: **Armijo CL, Mimbres and Verhalen soils; 12-16, 221f/** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	5.0	50%	2.5	14.7
Corn, silage; Las Cruces	Medium	3.0	5.0	50%	2.5	14.7

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	>1 Mo.	2.1	Aug		0.0
Mar	23	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	8	9.4
Feb		0.0	Aug	11	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	18	4.2	Nov		0.0
Jun	9	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):	**1400**	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	5	2.05	0.11	System meets CU for crop
Corn, silage; Las Cruces	14	2.05	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: R Bonst **Date:** 11-23-09

Conservationist: _____ **Date:** _____

Completed by: _____ **Date:** _____

USL NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Nov'10-May'11 Wheat Silage, Jun'11-Oct'11 Corn Silage

Tract #: 735
Owner name: River Valley Dairy
Field name: LAA-C

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

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.093	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.088	

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: River Valley Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 735 | Field: LAA-C

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

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1150

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

Sum Period Erosion (t/ac): 0.6 | No. Yrs in Rotation: 1.1 | Av. Annual Wind Erosion: 0.5 (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	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
10/1	11/02/10	0	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1162	5317	0.0	1.5	1.00	0.00
11/2	11/17/10	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.5	0.87	0.00
11/17	12/02/10	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.5	0.87	0.00
12/2	12/17/10	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	3.7	0.87	0.00
12/17	01/01/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	3.7	0.87	0.00
1/1	01/16/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.0	0.87	0.00
1/16	05/15/11	4	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	1667	0.3	75.1	0.93	0.23
5/15	05/22/11	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	4282	0.0	2.5	1.00	0.00
5/22	05/29/11	0	56	0.0	3	30	0.50	0.52	0.0	4.0	1.000	1150	1473	0.0	2.5	1.00	0.00
5/29	06/29/11	0	56	0.0	4	11	0.22	0.68	0.0	4.0	1.000	1150	210	4.6	2.6	1.00	0.12
6/29	07/14/11	0	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1185	159	29.3	0.3	1.00	0.08
7/14	07/29/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	163	31.2	0.2	0.87	0.05
7/29	08/13/11	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	658	17.5	0.1	0.87	0.02
8/13	08/28/11	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	1551	2.2	0.1	0.87	0.00
8/28	09/12/11	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	5336	0.0	0.4	0.87	0.00
9/12	10/01/11	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	6999	0.0	0.6	0.89	0.00
10/1	11/01/11	0	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1162	5317	0.0	1.3	1.00	0.00
		0			2	10											
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

Year 3

Dairy Annual Nutrient Manager

Date	11/19/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			
Dairy	River Valley Dairy						
Crop_Year	2011-2012				N Loss	0%	
Field_ID	LAA-C				Goal/Real	Nutrient Needed	
Area (ac)	29.1						
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'11-May'12	Barley-6 row, for green cut (boot 69%)		t/ac	10	3978	668
2nd Crop	Jun'12-Oct'12	Corn-Field for Salage (dough 68%)		t/ac	24	5523	827
						0	0
Total		Nutrient Needed				9,500	1,495
						Soil Analyses	
Texture by Feel		Loam				N	P
Nutrient Available in Soil				lb/ac		40	138.66
		Nutrient Still Needed				8,336	-2,540
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	3.65	2762	605
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				5,575	-3,146
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				5,575	-3,146
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied		22-0-0		lb/ac	766	5573	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**2**	**-3,146**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

pplication information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Barley Silage			Needed for field (acin):	42.486
	Liquid Applied:	1.46	Acin/ac	(gal):	1,153,495
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	38.7	18.5	79.5

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

pplication Information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Corn Silage			Needed for field (acin):	63.729
	Liquid Applied:	2.19	Acin/ac	(gal):	1,730,242
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	58.0	27.7	119.3

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 10 ton yield level.

Nitrogen	Phosphorus	Potassium
136.6882	22.9512	97.8539

Nutrients removed in harvested part (lb/ton) at 10 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
3977.6271	667.8791	2847.5477

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)

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 24 ton yield level.

Nitrogen	Phosphorus	Potassium
189.7882	28.4160	159.7440

Nutrients removed in harvested part (lb/ton) at 24 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
5522.8355	826.9056	4648.5504

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Nov'11
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Barley Sil.
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

P Hazard Class: Medium **Total Index Points:** 20.5

Phosphorus Application Classification: N Based

Notes:

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

Comments: Soil Erosion = (WEQ 10/11 to 5/12) 0.35 t/ac + (RUSLE 2) 0.093 t/ac = 0.44 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Jun'12
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Corn Sil.
Soil Permeablity (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

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

Notes:

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

Comments: Soil Erosion = (WEQ 6/12 to 10/12) 0.15 t/ac + (RUSLE 2) 0.088 t/ac = 0.24 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: River Valley Dairy **Tract:** 735
Planner: Chet Wyant **Field(s) No.:** LAA-C
Current Land Use: Barley Silage/ Corn Silage **Total Acres:** 29.1
Date: 11/19/2009 **Date to apply:** 11/1/2011

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: **Armijo CL, Mimbres and Verhalen soils; 12-16, 221f/** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Wheat, winter, silage; Las Cruces	Medium	3.0	5.0	50%	2.5	14.7
Corn, silage; Las Cruces	Medium	3.0	5.0	50%	2.5	14.7

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	>1 Mo.	2.1	Aug		0.0
Mar	23	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	8	9.4
Feb		0.0	Aug	11	6.6
Mar		0.0	Sep		0.0
Apr	>1 Mo.	1.2	Oct		0.0
May	18	4.2	Nov		0.0
Jun	9	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): **1400** 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	5	2.05	0.11	System meets CU for crop
Corn, silage; Las Cruces	14	2.05	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: R Donart **Date:** 11-23-09

Conservationist: _____ **Date:** _____

Completed by: _____ **Date:** _____

USL NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Nov'11-May'12 Barley Silage, Jun'12-Oct'12 Corn Silage

Tract #: 735
Owner name: River Valley Dairy
Field name: LAA-C

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

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\WWheat, silage, plow, irr CT	b. absolute row grade 0.5 percent	(none)	(none)	0.093	
a.Single Year/Single Crop Templates\Corn, silage, plow	b. absolute row grade 0.5 percent	(none)	(none)	0.088	

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: River Valley Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 735 | Field: LAA-C

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

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1150

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

Sum Period Erosion (t/ac): 0.6 | No. Yrs in Rotation: 1.1 | Av. Annual Wind Erosion: 0.6 (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)
10/1	11/02/11	0	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1162	5317	0.0	1.5	1.00	0.00
11/2	11/17/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.5	0.87	0.00
11/17	12/02/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.5	0.87	0.00
12/2	12/17/11	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	3.7	0.87	0.00
12/17	01/01/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	3.7	0.87	0.00
1/1	01/16/12	1	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1667	0.1	2.0	0.87	0.00
1/16	05/15/12	4	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	1667	0.3	75.1	0.93	0.23
5/15	05/22/12	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	4282	0.0	2.5	1.00	0.00
5/22	05/29/12	0	56	0.0	3	30	0.50	0.52	0.0	4.0	1.000	1150	1473	0.0	2.5	1.00	0.00
5/29	06/29/12	0	56	0.0	4	11	0.22	0.68	0.0	4.0	1.000	1150	210	4.6	2.6	1.00	0.12
6/29	07/14/12	0	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1185	159	29.3	0.3	1.00	0.08
7/14	07/29/12	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	163	31.2	0.2	0.87	0.05
7/29	08/13/12	1	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	658	17.5	0.1	0.87	0.02
8/13	08/28/12	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	1551	2.2	0.1	0.87	0.00
8/28	09/12/12	1	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	5336	0.0	0.4	0.87	0.00
9/12	10/01/12	1	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	6999	0.0	0.6	0.89	0.00
10/1	11/01/12	0	56	0.0	2	10	0.46	0.99	0.0	3.3	1.010	1162	5317	0.0	1.3	1.00	0.00
		0			2	10											
		0															
		0															
		0															
		0															
		0															
		0															
		0															
		0															

Year 4

Dairy Annual Nutrient Manager

Date	11/19/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]
Dairy	River Valley Dairy						
Crop_Year	2012-2013				N Loss	0%	
Field_ID	LAA-C						
Area (ac)	29.1				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'12-May'13	Oats for green chop (boot to early bloom 69%)		t/ac	10	6550	1223
2nd Crop	Jun'13 - Oct'13	Sorghum/Sudangrass, for silage (70%)		t/ac	16	4576	587
						0	0
Total		Nutrient Needed				11,126	1,809
						Soil Analyses	
Texture by Feel		Loam				N	P
Nutrient Available in Soil				lb/ac		40	138.86
		Nutrient Still Needed				9,962	-2,231
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	3.65	2762	605
				ac-in		0	0
				ac-in		0	0
		Nutrient Still Needed				7,200	-2,837
						Manure Analyses	
						N	P
Dry Manure Application		NM Dairy Cattle Net from J.S. 590 L&MLA		t/ac	22.49	7199	4575
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				1	-7,411
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				**1**	**-7,411**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

Application information (*enter the units that will be or has been applied to the field*):					
Crop Rotation:	Triticale silage / Sudangrass silage			Needed for field (acin):	42.486
Liquid Applied:	1.46	Acin/ac		(gal):	1,153,495
Solids Applied:	22.49	ton/ac		Needed for field (tons):	654.459
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:	11.51	2.0		1.2	3.1

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		12	0	35	0.4	0.0	0	21	0	54

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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68

	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**	26.4 (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)
	12	16	43
Liquid	**Organic N (lbs/acin)**	**P_2O_5 (lbs/acin)**	**K_2O (lbs/acin)**
	4	13	54
	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	26	11
P_2O_5	0.0	13	16
K_2O	0.0	54	43

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	280.7	379.7	1053.9

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

Application information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Sudangrass Silage			Needed for field (acin):	63.729
	Liquid Applied:	2.19	Acin/ac	(gal):	1,730,242
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	58.0	27.7	119.3

Dairy Annual Nutrient Manager

Date	6/28/2010	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		
Dairy	River Valley Dairy					
Crop_Year	2012-2013					
Field_ID	LAA-C			N Loss	0%	
Area (ac)	29.1			Goal/Real	Nutrient Needed	
	Month - Month	Crop	Unit	Yield	N	P
1st Crop	Nov'12-May'13	Oats for green chop (boot to early bloom 69%)	t/ac	10	6550	1223
2nd Crop	Jun'13 - Oct'13	Sorghum grain (moisture 11.18%)	bu/ac	107	2892	515
					0	0
Total		Nutrient Needed			9,442	1,738
					Soil Analyses	
Texture by Feel		Loam			N	P
Nutrient Available in Soil			lb/ac		40	138.86
		Nutrient Still Needed			8,278	-2,303
					Effluent Analyses	
					N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA	ac-in	3.65	2762	605
		Irrigation	ac-in	36	950	0
			ac-in		0	0
		Nutrient Still Needed			4,567	-2,908
					Manure Analyses	
					N	P
Dry Manure Application		NM Dairy Cattle Net from J.S. 590 L&MLA	t/ac	14.26	4565	2901
			t/ac		0	0
			t/ac		0	0
		Nutrient Still Needed			2	-5,809
					Fertilizer Content	
					N	P
Chemical Fertilizers Applied			lb/ac		0	0
			lb/ac		0	0
			lb/ac		0	0
		Annual Nutrient Balance			**2**	**-5,809**

Crop Nutrient Results

Select Crops
About the Crop Nutrient Tool
Nutrient Data Sources
Download Crop Nutrient Database

Nutrient Details

The following is a detailed list of nutrient information based on each specific crop type chosen.

Sorghum, for grain

Crop type:	Cereal and oil
Scientific name:	Sorghum bicolor
Crop yield unit:	bu
Harvested plant part:	Caryopsis

Nutrients in harvested part (lb/bu) at 11.18% moisture percentage.

Nitrogen	Phosphorus	Potassium
0.9288	0.1655	0.1924

Nutrients removed in harvested part (lb/acre) at 107.0 bu yield level.

Nitrogen	Phosphorus	Potassium
99.3836	17.7086	20.5824

Element-Fertilizer Equivalents | Average NPK Percentages

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 10 ton yield level.

Nitrogen	Phosphorus	Potassium
122.5083	21.0458	116.5538

Nutrients removed in harvested part (lb/ton) at 10 ton yield level and 29.1 acres.

Nitrogen	Phosphorus	Potassium
3564.9907	612.4332	3391.7151

Element-Fertilizer Equivalents

Average NPK Percentages

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- Disclaimers
- USDA non-discrimination policy

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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)

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 16 ton yield level.

Nitrogen	Phosphorus	Potassium
157.2480	20.1600	250.5600

Nutrients removed in harvested part (lb/ton) at 16 ton yield level and 39.1 acres.

Nitrogen	Phosphorus	Potassium
6148.3968	788.2560	9796.8960

Element-Fertilizer Equivalents

Average NPK Percentages

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PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Nov'12
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Oat Sil.
Soil Permeability (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

P Hazard Class:	Medium	Total Index Points:	25.5
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 10/12 to 5/13) 0.11 t/ac + (RUSLE 2) 0.13 t/ac = 0.24 t/ac

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Jun'13
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Sudan Sll.
Soil Permeablity (In/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

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

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

Notes:

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

Comments: Soil Erosion = (WEQ 6/13 to 10/13) 1.16 t/ac + (RUSLE 2) 0.00069 t/ac = 1.16 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client: River Valley Dairy **Tract:** 735
Planner: Chet Wyant **Field(s) No.:** LAA-C
Current Land Use: Oat Silage/ Sudangrass Silage **Total Acres:** 29.1
Date: 11/19/2009 **Date to apply:** 11/1/2012

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

Purposes (check all that apply)

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

Conditions where practice applies

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

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

Critical soil to manage: **Armijo CL, Mimbres and Verhalen soils; 12-16, 221f/** Intake Family (in/hr): **0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Oat, hay; Deming	Medium	3.0	5.0	50%	2.5	14.7
Sudangrass, hay or silage; Deming	Medium	3.0	5.0	65%	3.3	23.3

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	15	5.0	Oct		0.0
May	>1 Mo.	2.1	Nov		0.0
Jun		0.0	Dec		0.0

Crop:	Sudangrass, hay or silage; Deming		Total Irrigation Needed:	14.1 ac in/ac	
Month	**Est. Frequency** *(days between irr.)*	**In/Mo**	**Month**	**Est. Frequency** *(days between irr.)*	**In/Mo**
Jan		0.0	Jul	29	3.3
Feb		0.0	Aug	14	7.2
Mar		0.0	Sep	27	3.7
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):		1400	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	5	2.05	0.17	System meets CU for crop
Sudangrass, hay or silage; Deming	7	2.05	0.24	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: R Bonnet **Date:** 11-23-09

Conservationist: _____ **Date:** _____

Completed by: _____ **Date:** _____

USL NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Nov'12-May'13 Oat Silage, Jun'13-Oct'13 Sundangrass Silage

Tract #: 735
Owner name: River Valley Dairy
Field name: LAA-C

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

Alternatives:

Management	*Contouring*	*Strips / barriers*	*Diversion/terrace, sediment basin*	*Cons. plan. soil loss, t/ac/yr*	*Description*
a.Single Year/Single Crop Templates\Forage\Oats, hay and grain, conv till, irr, CMZ29	b. absolute row grade 0.5 percent	(none)	(none)	0.13	
a.Single Year/Single Crop Templates\Haygrazer, sudangrass, disk	b. absolute row grade 0.5 percent	(none)	(none)	0.00069	

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: River Valley Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 735 | Field: LAA-C

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

Tillage Direction (NS/EW): NS | Length/width ratio: 1 | Field Direction (NS/EW): NS | Field Width (Ft.): 1150

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

Sum Period Erosion (t/ac): 1.3 | No. Yrs in Rotation: 1.0 | Av. Annual Wind Erosion: 1.3 (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)
10/7	10/14/12	0	56	0.0	2	30	0.70	0.86	0.0	3.3	1.010	1162	0	37.7	0.3	1.00	0.11
10/14	10/21/12	0	56	0.0	3	30	0.52	0.52	0.0	3.3	1.010	1162	6999	0.0	0.3	1.00	0.00
10/21	11/01/12	0	56	0.0	4	11	0.26	0.52	0.0	3.3	1.010	1162	3403	0.0	0.5	1.00	0.00
11/1	01/30/13	1	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	3312	0.0	16.3	0.98	0.00
1/30	02/14/13	2	56	0.0	2	30	0.69	0.86	0.0	4.0	1.000	1150	3312	0.0	11.3	0.73	0.00
2/14	03/01/13	1	56	0.0	2	30	0.69	0.86	0.0	4.0	1.000	1150	3312	0.0	12.7	0.87	0.00
3/1	05/01/13	1	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	3312	0.0	44.3	0.97	0.00
5/1	06/01/13	0	56	0.0	2	30	0.69	0.99	0.0	4.0	1.000	1150	2593	0.0	11.0	1.00	0.00
6/1	06/11/13	0	56	22.5	3	30	0.67	0.52	22.5	1.2	1.030	1185	400	12.3	0.5	1.00	0.07
6/11	06/21/13	0	56	22.5	4	11	0.48	0.52	22.5	1.2	1.030	1185	83	10.2	0.5	1.00	0.05
6/21	07/21/13	1	56	22.5	2	30	0.79	0.99	22.5	1.2	1.030	1185	80	49.6	0.8	0.93	0.37
7/21	08/20/13	1	56	67.5	2	30	0.81	0.99	67.5	1.1	1.030	1185	80	50.9	0.3	0.93	0.13
8/20	10/01/13	1	56	90.0	2	30	0.90	0.99	90.0	2.8	1.010	1162	80	58.0	1.0	0.95	0.54
10/1	10/07/13	1	56	0.0	2	30	0.70	0.86	0.0	3.3	1.010	1162	6999	0.0	0.3	0.67	0.00
		0			2	30											
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Year 5

Dairy Annual Nutrient Manager

Date	11/19/2009	NM STATE UNIVERSITY Dairy Extension Program	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED			[redacted]	
Dairy	River Valley Dairy							
Crop_Year	2013-2014				N Loss	0%		
Field_ID	LAA-C				Goal/Real		Nutrient Needed	
Area (ac)	29.1							
	Month - Month	Crop		Unit	Yield		N	P
1st Crop	Nov'13-Oct'14	Alfalfa, for hay		t/ac	10		14665	1374
2nd Crop							0	0
							0	0
Total		Nutrient Needed					14,665	1,374
							Soil Analyses	
							N	P
Texture by Feel		Loam					40	138.86
Nutrient Available in Soil				lb/ac			13,501	-2,667
		Nutrient Still Needed						
							Effluent Analyses	
							N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	3.65		2762	605
				ac-in			0	0
				ac-in			0	0
		Nutrient Still Needed					10,739	-3,272
							Manure Analyses	
							N	P
Dry Manure Application				t/ac			0	0
				t/ac			0	0
				t/ac			0	0
		Nutrient Still Needed					10,739	-3,272
							Fertilizer Content	
							N	P
Chemical Fertilizers Applied				lb/ac			0	0
				lb/ac			0	0
				lb/ac			0	0
		Annual Nutrient Balance					**10,739**	**-3,272**

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

Client Name:	River Valley Dairy	Acres:	29.1	Date:	11/11/2009	Field ID:	LAA-C

pplication information (*enter the units that will be or has been applied to the field*):	Crop Rotation: Alfalfa			Needed for field (acin):	106.215
	Liquid Applied:	3.65	Acin/ac	(gal):	2,883,737
	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:	145.8	187.1	0.4	100	250

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	42	0	33	0	17	0	68
			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 Wet	80 %	0 (lbs/ton) NH4-N
Liquid (type of application)	**Type of Climate**	**Percent Remaining**	26.4 (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)**
	4	13	54
	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	26	0
P_2O_5	0.0	13	0
K_2O	0.0	54	0

Total Nutrients Applied (net to the field)	All Forms N (lbs/ac)	P_2O_5 (lbs/ac)	K_2O (lbs/ac)
	96.7	46.2	198.8

PHOSPHORUS INDEX WORKSHEET for New Mexico

Client Name:	River Valley Dairy	Field(s):	LAA-C	Date:	Nov'13
Planner:	Chet Wyant	Location:	DonaAna	Crop:	Alfalfa
Soil Permeability (in/hr):	0.1	Slope (%):	0.5	Planned/Exist.:	Planned

Site Characteristic	Place an X in the approprate box for each of the Site Characteristic listed below.					Sub Total
Soil Test P Level	Very Low <8 ppm	Low 8-15 ppm	Moderate >15-23 ppm	High >23-30 ppm	Very High >30 ppm	
					X	8
Phosphorus (P_2O_5) Application Rate	None Applied	<30 lbs/ac P_2O_5	30-90 lbs/ac P_2O_5	>90-150 lbs/ac P_2O_5	>150 lbs/ac P_2O_5	
			X			2
Organic Phosphorus Source Application Method	None Applied	Injected Deeper than 2 inches	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
				X		4
Phosphorus Fertilizer Application Method	None Applied	Placed with Planter Deeper than 2 in.	Incorporated Immediately before Planting	Incorp. >3 Mo. Before Planting or Surface Applied <3 Mo. before Planting	Surface Applied >3 Months Before Planting	
	X					0
Proximity of Nearest Field Edge to Named Stream or Lake	Very Low >1000 feet	Low >500-1000 feet	Medium >200-500 feet	High 30-200 feet	Very High <30 feet	
	X					0
Soil Erosion (wind & water)	Very Low <1 t/ac	Low 1-3 t/ac	Medium >3-5 t/ac	High >5-15 t/ac	Very High >15 t/ac	
	X					0
Runoff Class (Runoff Class Table 2)	Very Low or Negligible	Low	Medium	High	Very High	
			x			3
Irrigation Erosion (See QS note)	Not Irrigated or No Furrow Irrigation	Tailwater Recovery or QS<6 for very erodible soils or QS<10 for resistant soils	QS>10 for erosion resistant soils	QS>10 for erodible soils	QS>6 for very erodible soils	
			X			3
Grazing Management	Not Grazed	Graze Crop Residues	Pasture <30% Dry Matter as Supplemental Feed	Pasture 30 to 80% Dry Matter as Supplemental Feed	Pasture 80 to 100% Dry Matter as Supplemental Feed	
	X					0
Vegetative Buffer	> 100 ft wide	>65-100 ft wide	20-65 feet wide	< 20 feet wide	No Buffer	
		X				1.5
					Total Index Points:	21.5

P Hazard Class: Medium

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 10/13 to 10/14) 0.04 t/ac + (RUSLE 2) 0.036 t/ac = 0.08 t/ac

NRCS Natural Resources Conservation Service

Irrigation Water Management

Conservation Practice Job Sheet 449

Natural Resources Conservation Service (NRCS) Jan, 2006

Client:	River Valley Dairy	**Tract:**	735
Planner:	Chet Wyant	**Field(s) No.:**	LAA-C
Current Land Use:	Alfalfa	**Total Acres:**	29.1
Date:	11/19/2009	**Date to apply:**	11/1/2013

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:	**Armijo CL, Mimbres and Verhalen soils; 12-16, 221f/**	Intake Family (in/hr):	**0.10**

Soil Interpretations for Irrigaiton

Crop Name	Rooting Depth	Moisture Replacement Depth (ft)	Water Holding Capacity (in)	Mgt Allowed Depletion (MAD) (%)	Net Water to Replace (in)	Time Needed to Infiltrate (hrs)
Alfalfa, hay, southern; Las Cruces	Deep	4.0	7.0	50%	3.5	26.4

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**	11	9.7
Feb		0.0	**Aug**	14	7.7
Mar	>1 Mo.	1.6	**Sep**	19	5.7
Apr	25	4.2	**Oct**	>1 Mo.	2.7
May	15	6.9	**Nov**		0.0
Jun	11	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):	**1400**	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	23	2.05	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: R. Bonnet **Date:** 11-23-09

Conservationist: _____ **Date:** _____

Completed by: _____ **Date:** _____

USDA NRCS Natural Resources Conservation Service

RUSLE2 Worksheet Erosion Calculation Record

Info: Nov'13-Oct'14 Alfalfa

Tract #: 735
Owner name: River Valley Dairy
Field name: LAA-C

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

Alternatives:

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

NRCS - WEQ CALCULATIONS

Version 9.03 11-19-2007

Producer: River Valley Dairy | Planner: Chet Wyant | Location: Anthony, NM | Tract: 735 | Field: LAA-C

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.): 1150

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

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

Calculations and Output

Mgt Periods		Irr.	Soil	Ridge Roughness				Random Roughness	Unsheltered Distance				SGe	Erosion			
Dates		No. of	"I"	Dev.	Ht.	Sp.	"Krd"	"Krr"	Dev.	Prep.	WED	"L"	"V"	"E"	EWE	"IF"	Loss
Begin	End	(#)	(t/ac)	(deg)	(in.)	(in.)	(factor)	(factor)	(deg)	(factor)	(factor)	(ft)	(lbs/ac)	(t/ac)	(%)	(%)	(t/ac)
11/1	11/02/13	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	0	20.0	0.2	1.00	0.03
11/2	01/02/14	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	2094	0.0	12.5	1.00	0.00
1/2	01/17/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1582	0.3	2.0	1.00	0.01
1/17	02/01/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1651	0.2	2.0	1.00	0.00
2/1	02/16/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	1722	0.1	12.7	1.00	0.00
2/16	03/03/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	3319	0.0	12.7	1.00	0.00
3/3	03/18/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	6994	0.0	12.9	1.00	0.00
3/18	06/16/14	0	56	0.0	2	10	0.44	0.99	0.0	4.0	1.000	1150	6994	0.0	41.5	1.00	0.00
6/16	07/01/14	0	56	22.5	2	10	0.62	0.86	22.5	1.2	1.030	1185	4124	0.0	0.8	1.00	0.00
7/1	07/16/14	0	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	2856	0.0	0.2	1.00	0.00
7/16	07/31/14	0	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	4124	0.0	0.2	1.00	0.00
7/31	08/15/14	0	56	67.5	2	10	0.65	0.86	67.5	1.1	1.030	1185	2856	0.0	0.1	1.00	0.00
8/15	08/30/14	0	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	4124	0.0	0.1	1.00	0.00
8/30	09/14/14	0	56	90.0	2	10	0.81	0.86	90.0	2.8	1.010	1162	2856	0.0	0.4	1.00	0.00
9/14	09/29/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	4124	0.0	0.5	1.00	0.00
9/29	10/14/14	0	56	0.0	2	10	0.44	0.86	0.0	4.0	1.000	1150	2856	0.0	0.6	1.00	0.00
10/14	10/29/14	0	56	0.0	2	10	0.46	0.86	0.0	3.3	1.010	1162	4124	0.0	0.6	1.00	0.00
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