NMG010054, Dominguez Dairy No. 1
Nutrient Management Plan
Appendix D

EnviroCompliance Services, Inc.
564 State Road 523
Clovis, NM 88101

Certified Mail 7008 1830 0001 0006 5269

May 6, 2011

Att: Mr. Brent E. Larson, Chief
Permits and Technical Section
US EPA Region 6
1445 Ross Ave.(6WQ-PP)
Dallas, TX 75202-2733

FILE
mailed to EPA
5-10-11

Re: CAFO NPDES Permit NOI Submittal; Dominguez Dairy No. 1.

Dear Mr. Larson

I have enclosed with this letter the items requested in your March 23, 2011 letter. I believe this information will satisfy your request.

Our response includes the following, which correspond to the attachments:

1) I have attached a brief explanation of the conservation control practices that provide equivalent or better pollutant reduction for the Mesquite Drain, Del Rio Drain and East Side Canal. Attachment 1

2) A revised site plan showing, a) outline of runoff control drainage areas; b) flow direction; and c) structural controls is attached. Attachment 2

3) The 2009 retention structure certifying reports are attached. Attachment 3

4) The retention control structure capacity certification is attached. Attachment 3

5) Section 4.1 of the NMP refers to mortality composting in accordance with NMSU Cooperative Extension Service Guide D-108, which can be found at http://aces.nmsu.edu/pubs/_d/d-108.pdf .

6) Section 10 of the NMP has been revised and copies are attached. Attachment 4

   6a) We have modified the Annual Nutrient Manager to address the irrigation water nitrate issue. An example of how this modification works and the effect it will have on the calculation results is attached. We do not have actual analysis results for the EBID water, however, the calculation will work in the same way. The Annual Nutrient Manager will now account for either or both well and ditch district irrigation water nitrogen, in addition to all other possible sources.

6b) We normally convert the soil nitrate-nitrogen analysis, expressed in ppm, to lbs/ac by multiplying the ppm value by 2, or we use the total lbs/ac value provided by the soil laboratory. For use in our NOI submittals, we have taken the soil nitrogen reserve value, in total lbs/ac, from the Practice 590 Nutrient Management Jobsheet results.

6c) The NRCS AG57 Phosphorus Index work sheet for New Mexico is our primary tool for determining Nitrogen or Phosphorus based land application rates. The P Index number is then entered into 590 Nutrient Management Jobsheet for Phosphorus Removed by Crop Harvest, which further evaluates the basis for land application. If these jobsheets indicate a phosphorus based application rate, then using the Annual Nutrient Manager we calculate the appropriate application rate based on the expected crop removal or 1.5 times crop removal, whichever applies. The P value (in lbs/ac-in) used in the Annual Nutrient Manager is taken from the 590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application.

6d) Based on effluent nitrogen analysis, a value in ppm or mg/l is entered into the 590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application. The jobsheet provides a Summary of Nutrients in Net by Form as applied (lbs/ac-in), for the LAA-D-2 example this is 25.0 lbs/ac-in. We move this value (25.0 lbs/ac-in) to the Annual Nutrient Manager which then simply calculates the total applied (25.0 lbs/ac-in x 0.712 ac-in x 85.2 acres = 1516.56 lbs N on 85.2 ac).

Within the 590 Nutrient Mgt. Jobsheet Summary there is also a calculation for Total Nutrients Applied-All Forms which derives a slightly larger number in pounds per acre. We cannot access the formula for this value and therefore are not able to comment on the basis of the difference in these totals (1517 lbs total vs. 1534 lbs total). However, we are confident that by using the 590 Nutrient Mgt. Jobsheet to establish the nutrient value in lbs/ac-in and then moving this value to the Annual Nutrient Manager for a simple calculation of the application rate, we are able to compile the Practice 590 computations into an accurate and review friendly, management and documentation format. This will aid both the producer and the inspector in their respective compliance responsibilities.

Regarding Item 3 above, for the retention structure certifications I have attached the certifying statement page. I did not send the entire documentation package.

Please let me know if you need more information on any of these items.

Sincerely,

Chet Wyant

Enclosures: Setback Statement, Revised Site Plan, Certifications & Practice 590 Jobsheet Examples.

Example

Dairy Annual Nutrient Manager

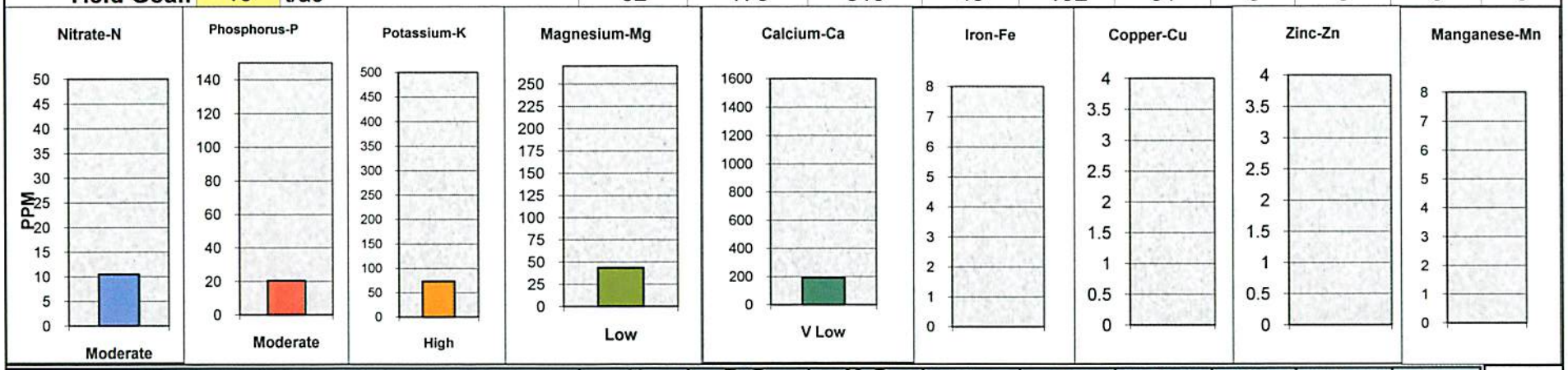
Date	5/10/2011	NM STATE UNIVERSITY Dairy Extension Program dairy.NMSU.edu	Victor E. Cabrera Dairy Specialist dairy.nmsu.edu: Tools vcabrera@nmsu.edu	PLANNED		Nutrient Balance (lb)	
Dairy	River Valley Dairy						
Crop_Year	2009-2010						
Field_ID	Example				N Loss	0%	
Area (ac)	85.2				Goal/Real	Nutrient Needed	
	Month - Month	Crop		Unit	Yield	N	P
1st Crop	Nov'09-May'10	Alfalfa, for hay		t/ac	10	42935	4023
						0	0
						0	0
Total		Nutrient Needed				42,935	4,023
						Soil Analyses	
Texture by Feel		Sandy Clay				N	P
Nutrient Available in Soil				lb/ac		62	74.23
		Nutrient Still Needed				37,653	-2,302
						Effluent Analyses	
						N	P
Effluent Manure Application		NM Dairy Ponds Net from J.S. 590 L&MLA		ac-in	0.712	1517	1134
Irrigation		Irriagation		ac-in	24	1853	0
		Irriagation ditch		ac-in	12	927	0
		Nutrient Still Needed				33,356	-3,436
						Manure Analyses	
						N	P
Dry Manure Application				t/ac		0	0
				t/ac		0	0
				t/ac		0	0
		Nutrient Still Needed				33,356	-3,436
						Fertilizer Content	
						N	P
Chemical Fertilizers Applied				lb/ac		0	0
				lb/ac		0	0
				lb/ac		0	0
		Annual Nutrient Balance				33,356	-3,436

N.M.S.U.-Soil Test Interpretation Report vs 4.10 - (590 Nutrient Management Jobsheet)

County:	Dona Ana	Save To Farm Sum	Field ID:	D-2	Crop Rotation: Alfalfa
Client Name:	Dominguez Dairy		Record #:		Acres: 85.20 Irr. Water (acin/ac):
Address:	P. O. Box 21		Planner Name:		Form
	Mesquite, NM			Chet Wyant	Notes:
Zip Code:	88048	Date: 11/2/2009	Depth increment (in):	12	Sodium Adsorb. Ratio: 8.2 ESP: 9.82
Phone:					

Note: E.C.-Electrical Conductivity or Saltiness, O.M.-Organic Matter, and ESP-Exchangeable Sodium %.

Samp. ID (#)	pH (#)	E.C. (mmhos/cm)	Soil Texture (class)	O. M. (%)	NO_3-N (ppm)	P (ppm)	K (ppm)	Mg (meq/l)	Ca (meq/l)	Na (meq/l)	Cu (ppm)	Zn (ppm)	Mn (ppm)	Fe (ppm)
Average	7.82	2.28	Sandy Clay	0.8	10.5	20.5	73.3	1.7	4.5	14.5				
Crop to grow:	Alfalfa, 21% Pro. (manure applied)				lbs/ac	P_2O_5 (lbs/ac)	K_2O (lbs/ac)	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac	lbs/ac
Yield Goal:	10	t/ac			62	170	319	43	192	31	0	0	0	0



Nutrient Recommendation:

	N lbs/ac	P_2O_5 lbs/ac	K_2O lbs/ac	Mg lbs/ac	Ca lbs/ac	Fe lbs/ac	Cu lbs/ac	Zn lbs/ac	Mn lbs/ac
Recommended Nutrient Rate:	610	80	0	0	0	0	0	0	0
Organic Nutrient Source (Liquid or Solid Manure):	18	19	146						
Irrigation Water Credits (ppm NO_3-N):	0								
Other Nutrient Sources (Standing Legume Crop.):									
Supplemental Nutrient Rate:	592	61	0	0	0	0	0	0	0
Available Nutrients > Crop Requirements:	NO	NO	Caution K	NO	NO	NO	NO	NO	NO

General Note: Manures contain P2O5 and sulfur among other plant nutrients. If application rate does not meet crop need then additional fertilizer may be needed.

Specific Notes:

EC Note: Low — Some limitations to sensitive plants

Gypsum Recom: 2133 lbs/ac or 49 lbs/1000 ft^2

Robert P. Flynn, Ph.D.
Agronomy and Soils
cc: Dona Ana County Extension Agent

Suggested Fertilizer Blend	1262 lbs/ac	Urea 45% N	####### lbs Total Needed
Total Blend (lbs/ac): 1395	133 lbs/ac	18-46-0 (DAP)	11,353.1 lbs Total Needed
Blend Cost ($/ac): $367.19	0 lbs/ac		0.0 lbs Total Needed
	N-P2O5-K2O G	42% 4% 0%	####### Tt Blend (lbs)

Client Signature: Planner Signature:

Fertilizer Cost Note: *Default costs are from NASS 10yr ave. ending 2001. Actual cost need local material cost and application charges. (See fert cost tab).*

590 Nutrient Management Jobsheet
for Phosphorus Removed by Crop Harvest

Client Name: Dominguez Dairy **Date:** 11/2/2009

Field: D-2

P Index (#): 19 **N Based**

Type of Application (Units)	P_2O_5 (lbs/units)	Crop (name)	Acres (Ac)	Organic P_2O_5 Applied (lbs/ac)	P_2O_5 Crop Uptake (lbs/ac)	Total Amt. that can be applied by type* (Units/ac)
Liquid (ac in):	26.3			19		N Based
Liquid (1000 gal units):	0.0	Alfalfa, 21% Pro. (manure applied)	85.2	0	153	NA
Solid (tons):	0.0			0		NA
			Total P Applied	19		

***Note: "None"** means that because of the risk of P in the enviroment no more organic nutrients can be applied until the PI drops to 37 or lower. **"NA"** means that no application of that type is scheduled.

The **number** is the number of acre inches, 1000 gal units, or tons that can be applied and meet the P restrictions.

"N Based" means that orgainic nutrients can be applied based on the N requirement of the Crop.

590 Nutrient Mgt. Jobsheet for Organic and Manure Land Application

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

Application information (*enter the units that will be or has been applied to the field*):					
Crop Rotation: Alfalfa				**Needed for field (acin):**	60.6624
Liquid Applied:	0.712	AcIn/ac		**(gal):**	1,646,984
Solids Applied:		ton/ac		**Needed for field (tons):**	
Liquid Loads Applied:		1000gal/ac		**Loads needed for field:**	

Nutrient Content of Organic Material

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

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

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

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

N Volatilization

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

Mineralization of N, P, & K

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

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

Denitrification of N

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

Summary of Nutrients

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

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