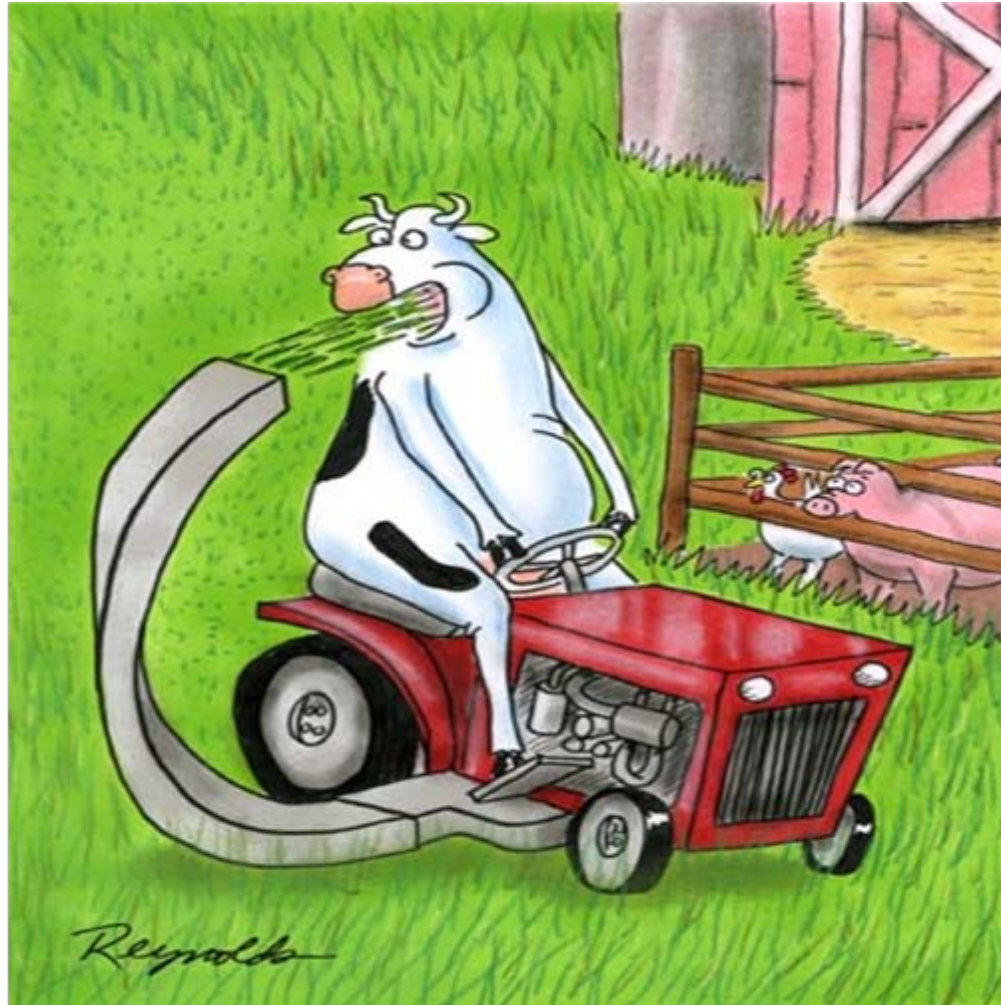


TAKING GROUNDWATER QUALITY FOR A RIDE?



**MILLIONS OF PIGS, CHICKENS,
CATTLE . . .**

**AND DAIRY COWS ARE KEPT IN
CONFINED
ANIMAL
FEEDING
OPERATIONS**

“CAFOs”



**CONFINED ANIMAL FEEDING
OPERATIONS PRODUCE EGGS,
BEEF, PORK, MILK & BIG
PROFITS FOR INDUSTRIAL
"FARMERS" THAT USE THEM---
THEY ALSO PRODUCE MASSIVE
QUANTITIES OF ANIMAL FECAL
AND LIQUID WASTE**





**DISCHARGES OF UNCONTROLLED
AND IMPROPERLY CONTROLLED
ANIMAL WASTES POLLUTE OUR
GROUNDWATER---**

**REQUIRING PERMITTING
AND ENFORCEMENT**

**TO PROTECT HUMAN HEALTH AND
GROUNDWATER RESOURCES**

BACKGROUND TO NEW REGULATIONS:

DAIRY INDUSTRY POLLUTION OF GROUNDWATER IN NEW MEXICO

Table 2. Dairy farms, milking cows, and milk production in New Mexico, 2005/2006.

County	Producers ²	Milk Cows ³	Productivity ⁴ (lb milk/cow/yr)	Milk ⁵ (million lb)
Chaves	39	90,000	21,034	1,921,536,905
Roosevelt	41	65,000	20,750	1,327,724,400
Curry	24	66,000	20,127	1,308,246,539
Doña Ana	24	53,000	21,020	1,116,865,913
Lea	14	25,000	19,545	504,387,238
Eddy	5	19,000	19,167	290,811,282
Valencia	8	4,000	21,000	189,014,684
Socorro	7	11,000	21,250	165,179,124
Sierra	3	5,000	21,250	95,319,111
Bernalillo	4	2,000	18,750	63,627,400
Others ¹	3	-	21,250	134,321,166
Total/Average	172	340,000	20,468	7,117,033,760

¹ Torrance and Luna counties

² Agricultural Marketing Service (AMS), April 2006

³ National Agricultural Statistical Service (NASS), May 2006.

⁴ Re-calculated from AMS and NASS data

⁵ AMS from April 2005 to March 2006

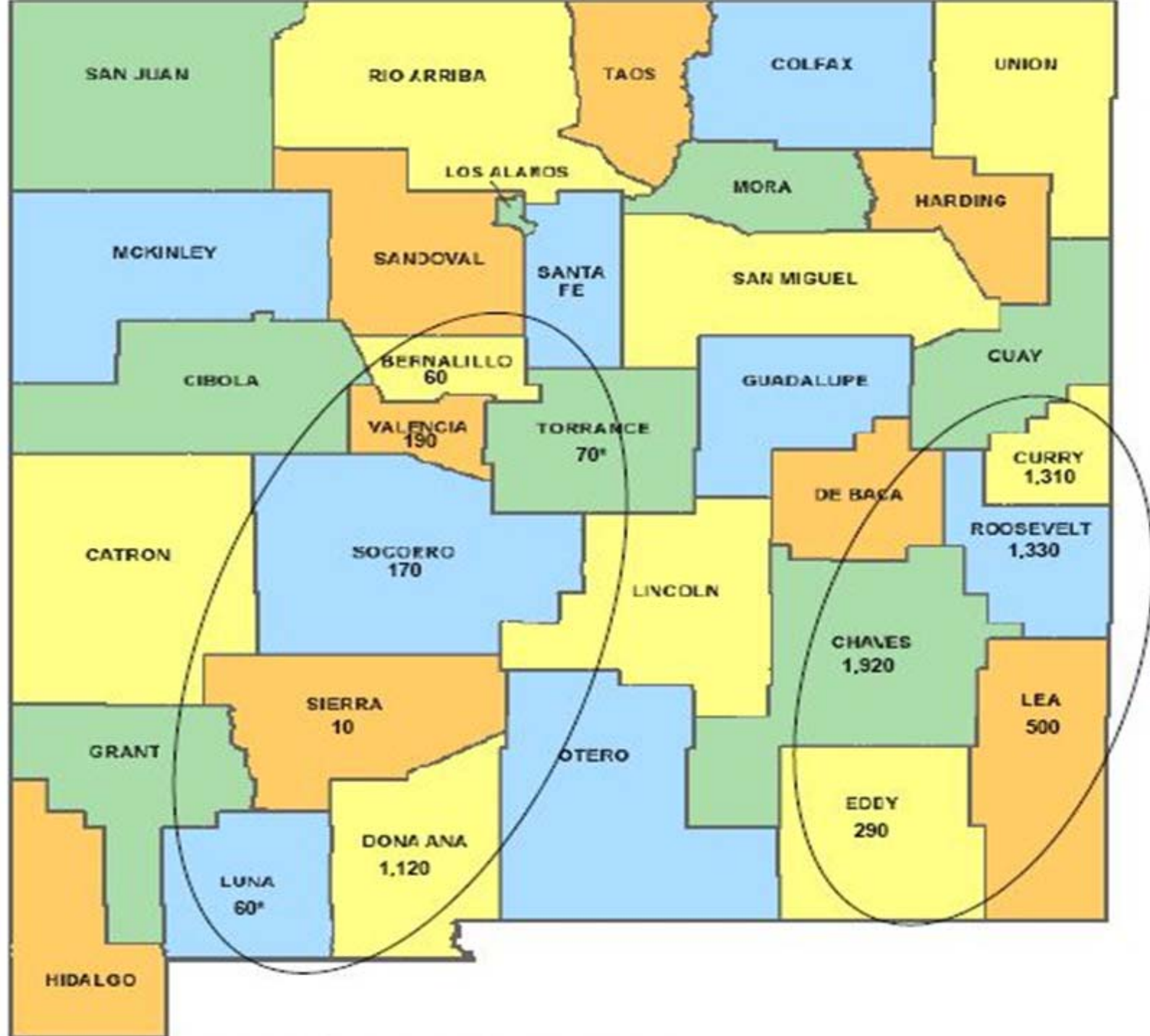
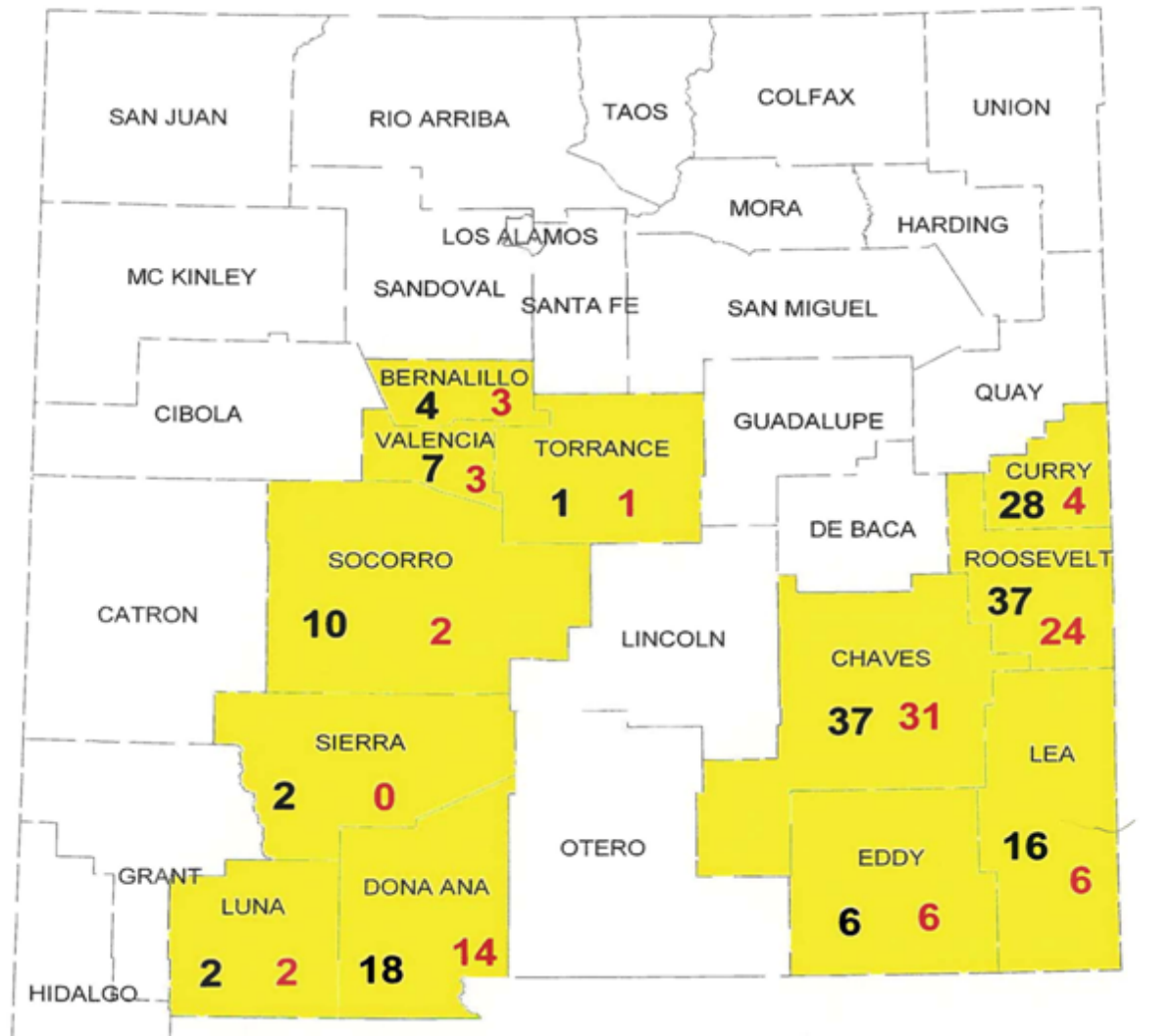


Figure 2. Milk production corridors in New Mexico.
 Note: Milk production in million of lbs. *Luna and Torrance counties measured together.

Nitrate-Nitrogen Contamination in Ground Water from Dairies



Black Number = Number of Dairies in County
Red Number = Number of Dairies Causing Contamination

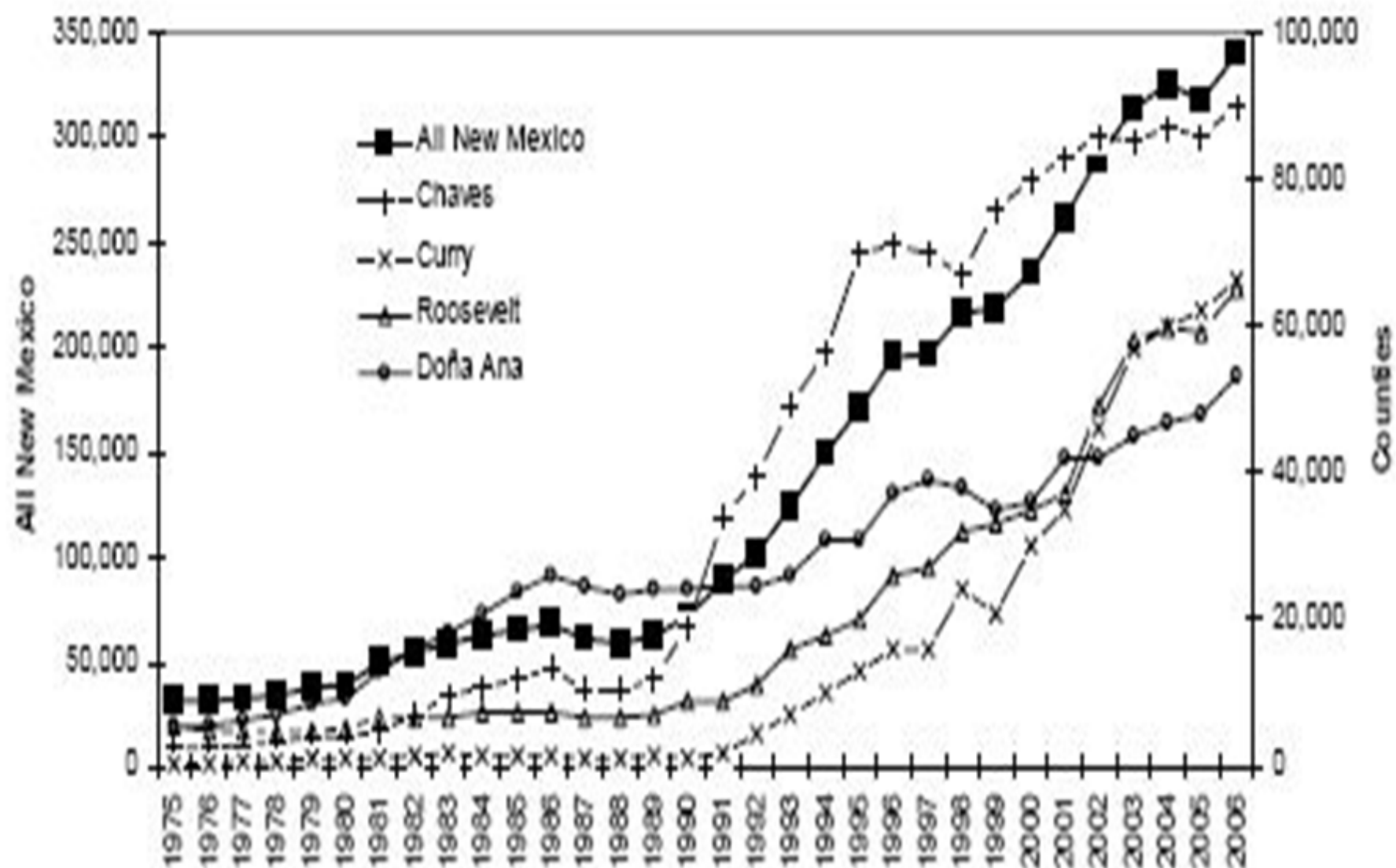


Figure 3. Number of milking cows in New Mexico and in the most important counties, 1975-2006.

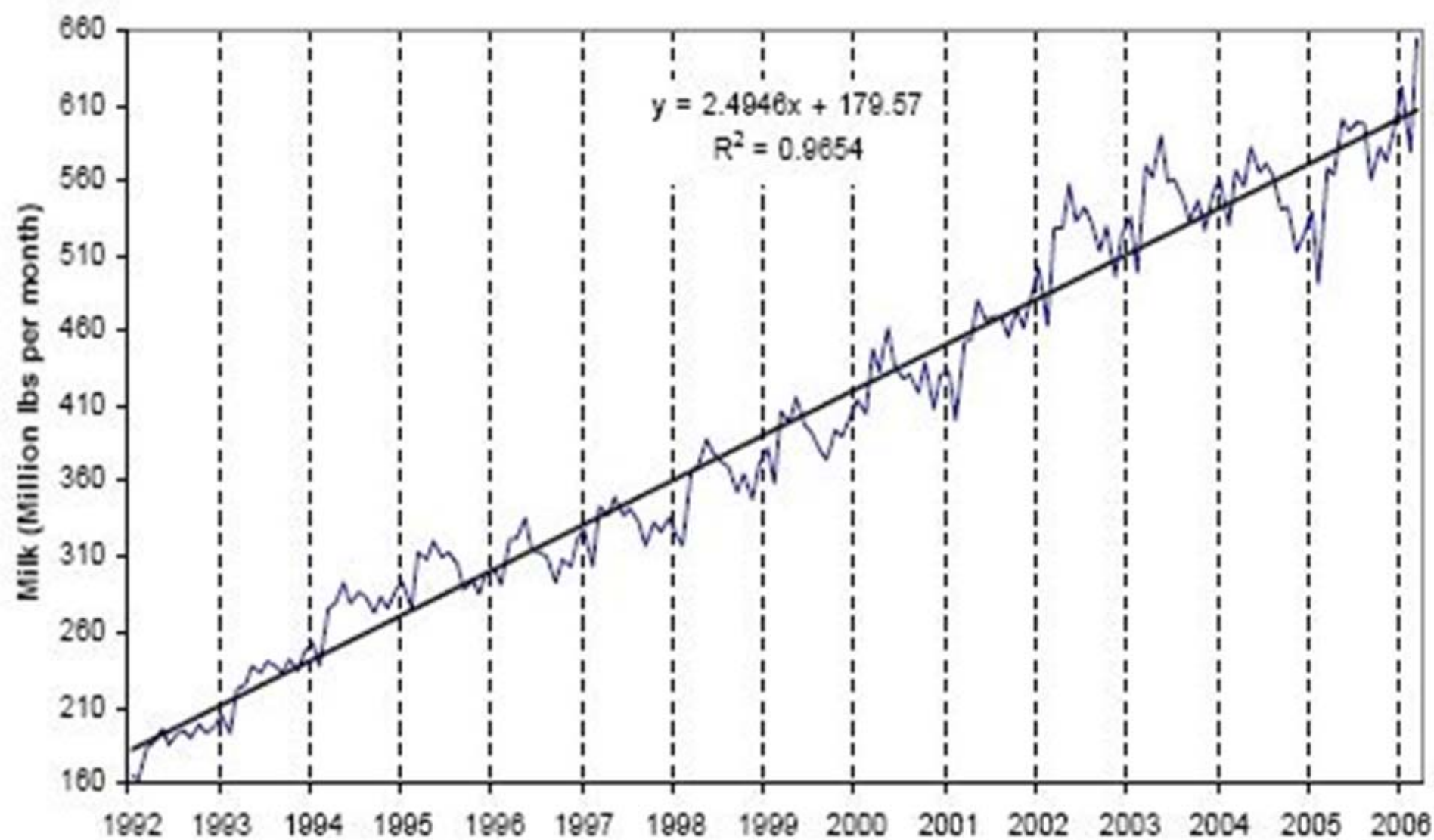
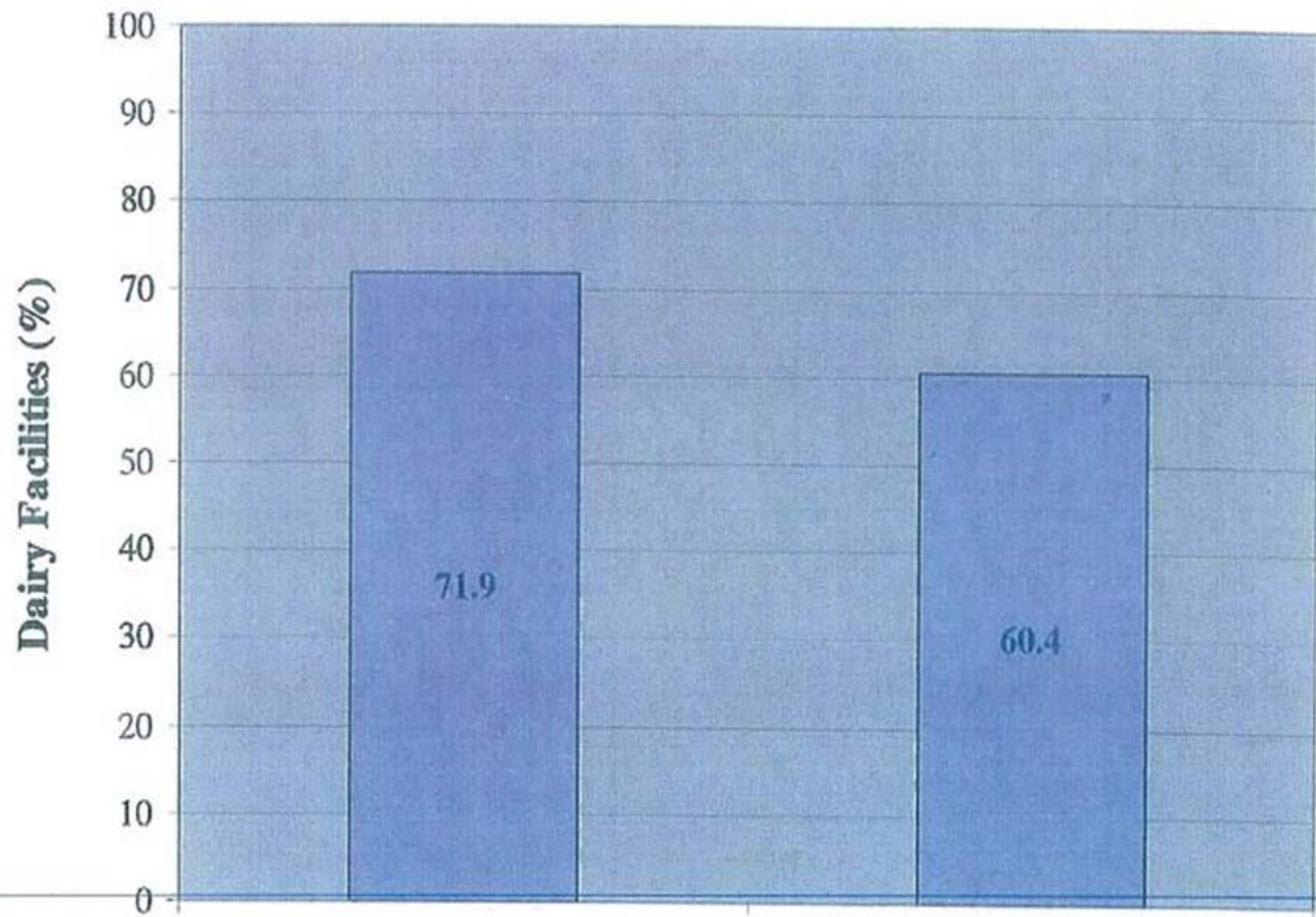


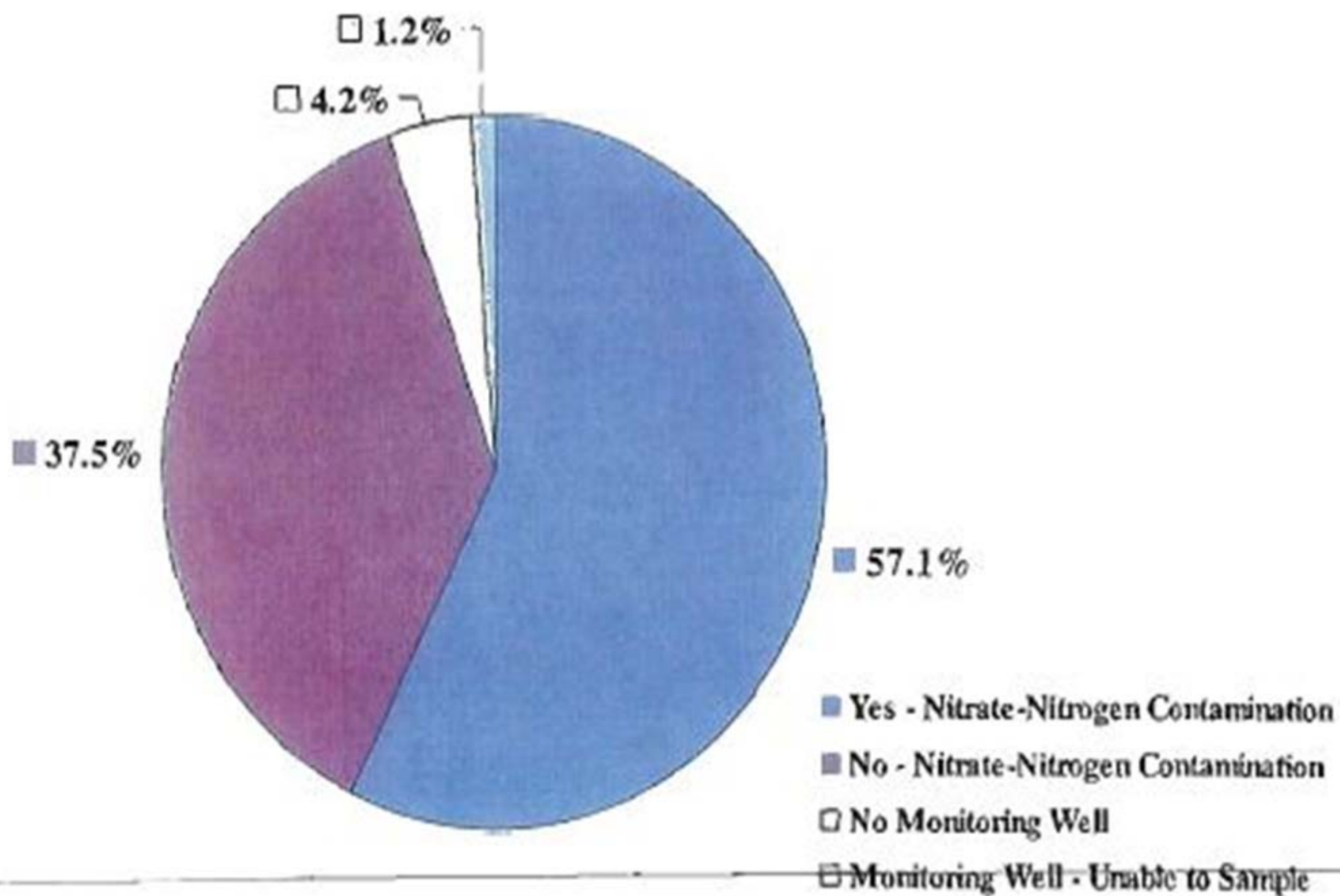
Figure 4. Trend of monthly milk production in New Mexico, 1992-2006. Source: Prepared with data from the Agricultural Marketing Service.



Wastewater Impoundment

Land Application Area

Source of Nitrate-Nitrogen Contamination



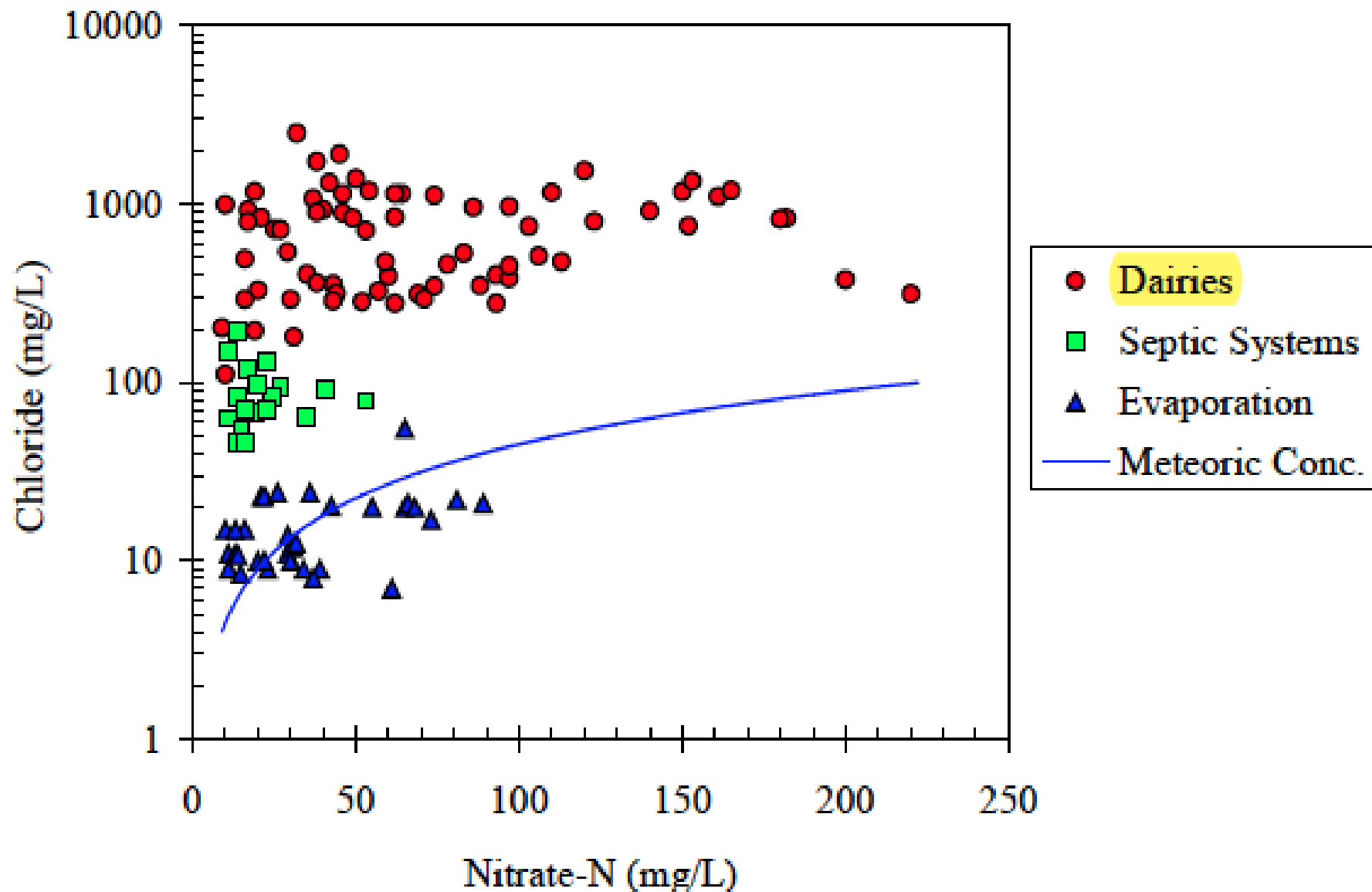


Fig. 4. Chloride and Nitrate in Contaminated Ground Water. All data are from the Middle Rio Grande Valley, N.M. Background chloride at each site is less than 20 mg/L. (N.M. Environment Department monitoring data and permit files)

Table 3. Nitrate and $\delta^{15}\text{N}$ in source-area ground water.

Nitrate Source	Nitrate-N (mg/L) maximum	$\delta^{15}\text{N}$ (‰) range & mean	Number of Samples
Septic systems	53	7.6 to 12.1 10.4 mean	12
Primary sewage plant	56	7.2 to 12.1 9.4 mean	4
Tertiary sewage plant	19	13.9 to 34.7 19.1 mean	9
Dairy	220	9.6 to 26.8 13.7 mean	9
Chemical fertilizer	43	1.8 to 4.1 2.6 mean	4
Explosives	109	1.0 to 4.1 3.1 mean	5
Nitric acid	38	-37.9 to 3.4 -9.29 mean	23
Uranium mill	130	12.0 to 26.6 16.9 mean	3
Evaporation	66	2.2 to 6.7 5.0 mean	22
Marine deposit	320	17.7 17.7 mean	1