

## A GROWERS EXPERIENCE WITH ELECTRICAL PUMPING BILLS IN 1977

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My experience with electrical bills this past year has not been good. They are high enough to put us out of business.

We are farming 10,000 acres on what we call the Gill Ranch in Madera County with 4,500 acres planted to alfalfa hay. We do not receive any surface water and pump it all from the underground. Our average pumping water level this summer was 155 feet, this is a drop of ten feet since the summer of 1976. Our wells vary all the way from 25 year old 250 feet deep cable tool wells to 500 feet deep gravel pack wells drilled this past year. Most of our soils are classified as sandy loams.

As most of you know the cost of electricity has risen from 2.5 cents to over 4 cents per kilowatt hour. This is an increase of over 58% just in the rate. This is not the extra cost of electricity used because of the drought. Our total electric bill will be up about 70% over last year. It now cost us \$15.00 per acre foot to pump water.

Our water requirements for alfalfa on the ranch is from 6 feet to over 13 feet, the average being 9 acre feet per year. Nine feet times \$15.00 per acre foot is \$135.00 per acre water bill. That is expensive!

We always have all our pumps tested each year by Pacific Gas and Electric Company. Pump work is expensive but the cost of electricity is worse. One way to keep the electric bills as low as possible is to keep the efficiency of the pumps as high as feasible. Work on the pumps can be a good investment.

Below is an example of a pump with low efficiency because the pump was worn out from pumping sand. We pulled the pump and rebuilt the bowls for \$1,800.00.

	Pump Data before	Pump Data after rebuilding
Cost per kilowatt hour	\$0.04	\$0.04
Water pumped - G.P.M.	900	1,242
Total lift - feet	114.4	143.3
Hp Input to motor	80.5	74.6
Kilowatt Input to motor	60.1	55.7
K.W.H. per acre foot pumped	362.4	243.4
Overall efficiency	39.9%	61.5%
Annual K.W.H. used	190,906	128,223
Annual cost	\$7,636.00	\$5,129.00
Acre-feet pumped	526.8	526.8
Cost per acre foot	\$14.50	\$9.74
Hours operated	3,176	2,303
	Savings per acre-foot	\$4.76
	Hours saved	873
	Savings on electricity	\$2,507.00
	Cost overhauling pump	( \$1,800.00 )
	Savings first year	\$707.00

In addition we gained the use of the pump for 873 hours in the first year. We were able to use the pump on more acres.

We have tried to sprinkler the hay to lower the water requirement on our sandy soils to 7 acre-feet. The electric bill to boost an acre-foot of water now cost \$13.50. The cost of sprinkler hay is as follows:

		Cost	Cost Per Acre
Water requirement	7 acre-feet	\$15.00	\$105.00
Booster	7 acre-feet	13.50	94.50
Cost of movable sprinkler system per year			<u>20.00</u>
		Total cost per acre	\$219.50
		Plus the extra labor to sprinkle	

The sprinkling will only help in very sandy soil where we can save at least 5.6 acre-feet per year. We just can't afford to sprinkle.

The electric bills are forcing us out of the alfalfa hay business in the sandy fields and will force us to decrease the hay acreage on the ranch. We hope to stay in the hay business in the heavier soils where the water requirement is the lowest.