

B2.41 ENERGY LOGS and Efficiencies of Pumps and Plants #1

[RETURN to MAIN Menu](#)

Source or Plant: Well #9R		Utility Co: Community Power			Rate Tariff: 6			Service Type: 3 Phase			Peak Pump Hp: 200			Date of		
Month-Year:		Jan-2001	Feb-2001	Mar-2001	Apr-2001	May-2001	Jun-2001	Jul-2001	Aug-2001	Sep-2001	Oct-2001	Nov-2001	Dec-2001	2001 Tot.	2001 Ave.	
Meter Period Ending Date:											10/15/01	11/14/01	12/17/01			
Billing Charges	Energy (kW-hr) Billing Charge:										2,505.10	5,417.19		7,922.29	3,961.15	
	Power (kW) Demand Billing Charge:										670.00	1,000.00		1,670.00	835.00	
	Power Factor (pf) Penalty Charge:										83.00	56.00		139.00	69.50	
	TOTAL BILLING Charge:										3,258.10	6,500.00		9,758.10	4,879.05	
	Other Charges (taxes, base min. fees, etc):	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	26.81	26.81	2.23	
	Days in Billing Cycle:	0	0	0	0	0	0	0	0	0	0	0	30	33	5	
Water Pump Flow and Other Operational Data	Sum of all Pump Run Meters in Hours:										800	1,200		2,000	1,000	
	Gallons Pumped in Period in 1,000's:										5,000	7,000		12,000	6,000	
	Ave. Monthly Pumping Head (H) in feet:										1,000	1,000		1,000	1,000	
	If a Well - Average Drawdown for Mo. (ft):										65	71		68	68	
	Ave. VFD Operational Frequency in Hz:										45	45		45	45	
	Hours of Pump Run in Billing Cycle:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	400.00	400.00	33.33	
	Average Monthly Pump Flow (Q) in gpm:	0	0	0	0	0	0	0	0	0	0	0	292	292	24	
	Acre-Feet Pumped, Delivered, or Produced:											15.35	21.48		36.83	3.35
	Specific Capacity (if Well) in gpm/ft:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.11	4.11	0.34	
	Water Power Required in Horsepower HP:	0.00	0.00	0.00	0.00	0	0	0.00	0.00	0.00	0.00	0.00	73.65	73.65	6.14	
	Water Power Required in Kilowatts KW:	0	0	0	0	0	0	0	0	0	0	0	55	55	5	
	Pump Running Period Duty Cycle %:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.51%	50.51%	4.21%	
Total Elec. Unit Costs	Electrical Cost per Operating Day:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	108.60	196.97	25.46		
	Electrical Cost per 1,000 gallons:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.6516	0.9286	0.1317		
	Electrical Cost per Pump Run Hour:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	16.2500	16.2500	1.3542		
	Electrical Cost per Operating gpm:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	22.2857	22.2857	1.8571		
	Specific Operating Cost in \$'s/gpm/ft:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,582.29	1,582.29	131.86	
Power, Energy and System Efficiency Calculations	Billing Peak Demand (True) Power in KW:										184	183		184	184	
	Billing Energy Consumption in KW-hrs:										28,440	125,120		153,560	76,780	
	Billing Reactive Energy in KVAR-hrs:										8,880	62,720		71,600	35,800	
	Peak Horsepower (HP) from Billing:	0	0	0	0	0	0	0	0	0	0	247	245	41		
	Power Demand Cost per KW:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.64	5.46	0.76		
	Energy Cost per KW-hr:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0881	0.0433	0.0109		
	Power Factor Penalty Cost per KVAR-hr:	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0093	0.0009	0.0009		
	Total Transformer Energy KVA-hrs:	0	0	0	0	0	0	0	0	0	0	29,794	139,960	169,754	14,146	
	Total Transformer (Apparent) Power KVA:	0	0	0	0	0	0	0	0	0	0	193	205	33		
	Total Reactive Power KVAR:	0	0	0	0	0	0	0	0	0	0	57	92	12		
	Calculated Power Factor pf as (cos θ):	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.89	0.15		
Calculated Wire to Water Efficiency:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	26.84%	26.84%	2.24%		
Statistical and Design Data	Gallons per KW-hr:	0	0	0	0	0	0	0	0	0	0	1,996	1,292	274		
	Energy Cost per 1,000 gallons:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.501	0.774	0.106		
	Energy Cost per Acre-Foot:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	163.25	252.15	34.62		
	Fixed Power Cost per GPM Capacity:	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.429	3.429	0.286	
	Fixed Power Cost per MGD Capacity:												2,381	2,381	216	
	Total Electrical Cost / 1,000 Gals. Pumped:		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.652	0.929	0.929	0.144	
Total Electrical Cost / Acre-Feet Pumped:		0	0	0	0	0	0	0	0	0	212	303	303	47		

