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PNL-RAP-33

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RLO/2227/T25-3

REGIONAL ASSESSMENT PROGRAM

**Projected Energy and Water
Consumption of Pacific Northwest
Irrigation Systems**

October 1978

Oregon State University
Corvallis, Oregon

Prepared for the U.S. Department of Energy
under Contract No. EY-76-S-06-2227
Task Agreement No. 25

In cooperation with

Pacific Northwest Laboratory
Operated by Battelle Memorial Institute

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UNITED STATES DEPARTMENT OF ENERGY
Under Contract EY-76-C-06-1830

Printed in the United States of America
Available from
National Technical Information Service
United States Department of Commerce
5285 Port Royal Road
Springfield, Virginia 22151

Price: Printed Copy \$ ____*; Microfiche \$3.00

*Pages	NTIS Selling Price
001-025	\$4.00
026-050	\$4.50
051-075	\$5.25
076-100	\$6.00
101-125	\$6.50
126-150	\$7.25
151-175	\$8.00
176-200	\$9.00
201-225	\$9.25
226-250	\$9.50
251-275	\$10.75
276-300	\$11.00

PROJECTED ENERGY AND WATER CONSUMPTION OF
PACIFIC NORTHWEST IRRIGATION SYSTEMS

by

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October 1978

PREPARED FOR THE
U.S. DEPARTMENT OF ENERGY
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ABSTRACT

A computer model has been developed to predict present and future regional water, energy, labor and capital requirements of irrigated agricultural production in the Pacific Northwest states of Idaho, Oregon and Washington. The energy requirements calculated were on-farm pumping, and total energies. Total energies are the combined energies of on-farm pumping, manufacture and installation. This model, with modification, can provide output by subarea, subregion, state or region.

Calculation of regional water, energy, labor and capital requirements was achieved by minimizing irrigation costs. To accomplish this, irrigation system selections and modifications were based on an economic analysis utilizing the following input parameters: water, energy, labor and capital costs and requirements; groundwater and surface water pumping lifts; improved application efficiencies; and pumping plant efficiencies.

Major conclusions and implications resulting from this analysis indicate that:

As water application efficiencies increase for a given level of development, additional quantities of water will not become available to other users.

An overall increase in water application efficiencies resulted in decreases in gross water applications and increases in overall on-farm pumping and total energy consumptions, respectively.

More energy will be consumed as pumping and total energies than will be conserved through decreased diversion pumping energy requirements.

Pump-back and similar technologies are the only currently available technologies having the potential of both increasing application efficiencies and energy conservation. Because of their high labor demands, they will not be readily adopted unless automated.

The interrelationships between applying water in quantities greater than required for crop consumptive use and leaching, and late season in-stream flow augmentation and/or aquifer recharge are not well understood. Therefore, sound policy decisions concerning agricultural use of water and energy cannot be made until these interrelationships are better understood.

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ACKNOWLEDGEMENT

The preparation of this report was supported in part by Contract No. EY-76-S-06-2227, Task Agreement No. 25, U.S. Department of Energy via Battelle Pacific Northwest Laboratories. The cooperation of Dr. John B. Burnham and Dr. Darryl Hessel, Program Managers and J. W. Currie, Service Research Economist, Battelle Pacific Northwest Laboratories, Richland, Washington, is gratefully acknowledged.

In addition, the authors sincerely appreciate the technical assistance of numerous utility company and state agency personnel throughout the region, especially the following individuals and organizations:

Lou Bevandich, Northwest Irrigation Systems, Corvallis,
Oregon

Mel A. Hagood, Irrigation Consultants, Grandview,
Washington

Dale Killingsworth, Towery Irrigation, Madras, Oregon

Dorrel C. Larsen, Idaho Extension Irrigationist

Helen Palmer, Bonneville Power Administration

Computer programming assistance by E. S. Baker was instrumental to the completion of this report.

Thanks is also extended to Pete Lyngstrand for technical assistance with respect to map and figure production. Finally, typing by Karen Bland, Mary Connors, Cindy Pratt and Jean Wrench made possible the professional and timely presentation of this publication.

INTRODUCTION

The Columbia River and its tributaries have been developed into an abundant source of water for large portions of the Pacific Northwest states of Idaho, Oregon and Washington. Historically, this water supply has faithfully met all demands placed upon it. Agricultural, industrial and urban growth has and will continue to place increased demands upon the water supplies of the region. As the unusual drought year of 1977 demonstrated, and Vining, et al. (1976) postulated, average flows in the region's rivers, specifically the Columbia River and its tributaries, are presently being fully utilized. Despite the high level of development and regulation, water periodically flows over the region's dams without being utilized for hydropower generation or other beneficial uses during the excess flow months of January to July (SEIRR, 1975).

Current development on the Columbia River and its tributaries provide numerous water storage and conveyance facilities to store water from periods of excess flow to periods of low flow. These facilities were directly responsible for substantially reducing crop losses during the 1977 drought period. Had these facilities not been available to store and provide timely irrigation water to crops in the region, catastrophic losses in yield would have occurred.

However, for numerous reasons, opposition to development of future water storage facilities, facilities which could conserve more of these excess flows, has become increasingly intense. This intense opposition to future development projects indicates that existing water supplies will have to be used more efficiently and that all water users, especially irrigators, will be expected to initiate measures to conserve water.

Water conservation, in the Pacific Northwest, is nearly synonymous with energy conservation, energy generation and enhanced instream uses. Water diverted and used consumptively for agricultural, industrial and municipal purposes is not available for hydropower generation, fisheries, navigation or recreation. Moreover, the removal and use of this water consumes energy which is usually obtained from the hydropower network.

The next 22 years show promise of increased agricultural production. Most of these increases will be a direct result of irrigation development. When considering that the alternatives to irrigation are a greatly reduced yield or no yield, the price of irrigation would appear to be cheap, whatever the cost in either dollars or energy. Yet, despite the essential nature of its products, agriculture cannot assume that it will always have sufficient energy and water available to constantly increase its output, or even continue at its present level of production.

The vital dependence of crop production upon irrigation water in much of the region, and the equally vital dependence upon energy to deliver that water, make it important to understand water and energy use relationships in the irrigation process.

This study projects, for the Pacific Northwest states of Idaho, Oregon and Washington, electrical energy, water, labor and capital investment requirements associated with three levels of projected irrigation development in 1985 and 2000 based on minimizing irrigation costs. The three levels of projected development include: no growth, a moderate level of growth, and a high level of growth. All input costs utilized in this cost minimization procedure.

were deflated to 1967 (real) dollars and all rates of change of these input costs were represented as real rates of change, thus determination of an inflation rate was unnecessary. Therefore, all rates of change must be viewed as being in excess of any assumed inflation rate and all input costs inflated to determine current prices.

Changes in the region's irrigated crop production and demand for irrigation water, labor, electrical energy and irrigation system capital investment relative to those estimated in 1975 are also determined.

The objectives of this study were to:

1. Determine present (1975) energy, water and labor requirements of irrigated agriculture in the Pacific Northwestern states of Idaho, Oregon and Washington.
2. Project, using alternative scenarios, electrical energy, water and labor requirements associated with irrigated agricultural production in 1985 and 2000 in Idaho, Oregon and Washington.
3. Assess changes in the region's irrigated crop production demand and determine the relative tradeoffs between energy consumption, water utilization and labor requirements.

Objectives 2 and 3 are presented in this report. The first objective was presented in the September 1977 report entitled, "Energy and Water Consumption of Pacific Northwest Irrigation Systems" (King, et al., 1977) and "Supplement to Energy and Water Consumption of Pacific Northwest Irrigation Systems" (King, et al., 1978).

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STUDY AREA

The Pacific Northwest is defined for the purposes of this study as encompassing the three contiguous states of Idaho, Oregon and Washington. The region has been partitioned into 14 subregions (hydrologic basins) as shown in Figure 1. Eight of the subregions are contained entirely within one of the three states (Idaho-2, Oregon-3, and Washington-3). In addition, five subregions are shared between two states: one between Idaho and Oregon, one between Idaho and Washington, and three between Oregon and Washington. Finally, one subregion is shared between all three states. These subregions are further subdivided into 45 subareas (hydrologic sub-basins) as illustrated in Figure 2. The energy, water, labor and capital requirements associated with future levels of irrigated agricultural crop production were determined for the region and subregions.

Determination of these associated requirements utilized by the irrigation technologies of the region necessitates an understanding of the various irrigation systems and methods of obtaining irrigation water. Water may be acquired from the following sources: wells (groundwater), streams and gravity diversion canals (surface water) and canals or closed conduits supplied by pump and diversions (either ground or surface water sources). Pumped diversions also occur where water in a gravity diversion system is pumped to higher elevations to increase utilization.

Irrigation methods can be partitioned into two broad categories: surface systems and pressurized systems. Surface systems generally transport water from the source to the field either in an open ditch, which may or may not be lined with an impermeable material, or through closed

Figure 1. Map of Idaho, Oregon and Washington, partitioned into 14 Subregions.

Figure 2. Map of Idaho, Oregon and Washington, partitioned into 14 Subregions and 45 Subareas.

conduits. Water is then applied using any of a variety of surface irrigation techniques which wet all or part of the field surface. Some users of surface systems recover the runoff from fields by pumping it back to a higher elevation for reuse; such systems are known as pump-back (return-recovery) systems. Approximately 38 million acres are surface irrigated in the United States, of which 4.1 million acres are in the Pacific Northwest. (Irrigation Journal, 1977).

Pressurized irrigation systems include both surface and drip systems. There are seven basic types of pressurized systems which range in operating pressure from over 100 psi for big gun and some center pivot systems to less than 10 psi for some drip systems. These systems collectively irrigate over 17.6 million acres in the United States, of which 3.4 million acres are in the Pacific Northwest. (Irrigation Journal, 1977). The approximate United States and regional acreages for each of these systems are as follows:

System	United States (acres)	Pacific Northwest (acres)
Hand Moved	3,800,000	1,360,000
Center Pivot	6,700,000	650,000
Side Roll	3,500,000	1,200,000
Solid Set and Permanent	770,000	140,000
Big Gun	1,300,000	38,000
Drip	180,000	3,300
Unspecified*	1,500,000	

Source: Irrigation Journal

*Irrigated acreage not differentiated by irrigation system

Pressurized Irrigation System Descriptions

Hand Move

The hand move system is typically hand-assembled for a particular irrigation set, operated for approximately 10 hours, then the lateral line with sprinklers is disassembled and manually transported approximately 50 feet across the field for reassembly and operation at the next set. This type of system requires sprinkler operating pressures of approximately 50 psi and a significant amount of labor.

Side Roll

The side roll system is similar to the hand move system except that wheels are installed on the laterals with the pipe serving as the axle. The lateral is not disassembled but rolled intact from one irrigation set to the next by a mechanical mover. Side roll systems, when compared with hand move systems, reduce labor requirements about 50 percent. Sprinkler operating pressures of 50 psi are common for side roll.

Solid Set

The solid set system is designed to irrigate an entire area without being moved, therefore requiring a large number of pipes and sprinklers. Sprinklers are usually spaced 30 to 70 feet apart. The entire system is usually disassembled after the last irrigation to facilitate harvest. Minimum labor is required except for initial assembly and final disassembly. Sprinkler operating pressures are around 50 psi.

Permanent

The permanent system is similar to a solid set system except the mainline, laterals and sprinklers are permanently installed. Supply lines and laterals are buried; and in many cases, the complete system is controlled by an electric

clock. This method requires a minimum of labor. Operating pressures are approximately 50 psi.

Big Gun

The big gun system is designed to reduce both labor and initial investment by using large sprinklers spaced 100 or more feet apart. Large sprinklers may be stationary during operation or mounted on trailers which move continuously while irrigating. These systems can require operating pressures in excess of 100 psi at the sprinkler.

Center Pivot

The center pivot system utilizes one lateral to irrigate a circular field of usually 126 acres or more, requires minimum labor, and uses sprinkler operating pressures ranging between 70 and 90 psi at the pivot point. This system is adapted primarily to large fields and high intake rate soils.

Drip/Trickle

The drip system (sometimes called trickle) is a network of small plastic pipe and emitters which frequently distribute water to individual plants at low pressure. This technique requires large quantities of plastic, polyethylene or polyvinyl chloride (PVC) tubing which is usually installed on or directly below the ground surface. This system has low labor requirements, a high potential water application efficiency, and can provide water to areas otherwise impossible to irrigate because of topography. Plugging of individual drippers, holes or emitters is a major problem, however, drip irrigation technology is still evolving and research is continuing to solve many of the existing problems.

DATA COLLECTION PROCEDURE

Data collected for this study included levels of irrigation development; water, energy, labor costs and trends, and capital investment of irrigation systems; labor requirements of individual systems; useful lives of irrigation systems; and estimated changes in irrigation efficiencies.

Irrigation Development

Three levels of irrigation development have been chosen to reflect a range of irrigation growth in the region by 2000. These projections should neither be considered goals or guidelines for future development, nor should any judgements concerning the intrinsic value of any one level of irrigation development over another be made. Two of these three levels of development were chosen because they are compatible with development levels being used in the Pacific Northwest River Basins Commission's (PNRBC) study entitled, "Water - Today and Tomorrow: A Pacific Northwest Regional Program for Water and Related Resources" (1978)..

The first alternative future is no growth. This level of irrigation development was presented in King, et al. (1977). The inclusion of this alternative shows the effects of changing prices of irrigation inputs (water, energy, labor, and capital costs) and irrigation efficiencies on the energy, water, labor, and capital requirements for existing development.

Moderate and extensive levels, the second and third alternatives, of projected regional irrigated agricultural production were obtained from the PNRBC (1978), and unpublished information received from the PNRBC. These levels of development are used to show the effects of changing relative

prices between inputs, improved irrigation efficiencies and additional lands being irrigated on the demands for water, energy, labor and capital.

The moderate alternative future was based on the Office of Business Economics and Economic Research Service (OBERS) baseline series of population projections (PNRBC, 1978). These projections are generally applicable to Oregon and Washington, but not Idaho. The Series E population projections were unsatisfactory for Idaho because in July 1974 the population of the state exceeded the year 2000 level by nearly 65,000 people (PNRBC, 1978). Substitution of the state's projections for Idaho results in a set of population projections termed, for the purpose of this study, "OBERS Projection." The OBERS Projection constitutes a reference framework through which alternative projections of the economic activity for one region can be compared with similar projections for other regions or for the rest of the nation and the probable effects of alternative actions can be compared. (PNRBC, 1978).

The extensive alternative future, termed for the purposes of this study "Regional Trend" was based on the assumptions that (1) the Northwest would continue to grow in the future as it did in the 1960 to 1972 period and (2) that local, state and regional public action would be relatively neutral; that is, no action would be taken to either direct, stimulate or dampen the existing pattern of regional growth (PNRBC, 1978).

The regional goal for irrigation development used by the PNRBC (1978) was to:

"maintain or achieve a level of irrigated agriculture in an economical and water-efficient manner which in conjunction with non-irrigated agriculture would utilize regional production advantages in helping to maintain,

or increase if practical, the region's production to help meet increasing national and international demand for agricultural products."

This was based on the premise that future markets for agricultural products in the United States and abroad, would continue to grow. Therefore, increased agricultural production in the region is a reasonable assumption under any alternative future. This PNRBC conclusion stems from the large arable land base and favorable climate available in the Pacific Northwest. If future increases in markets for agricultural products occur, an increase in irrigated area would be necessary because crop production in many parts of the region is totally dependent upon irrigation. (PNRBC, 1978).

Year 2000 projections made by the PNRBC (1978) were used to facilitate comparison between the PNRBC's report entitled, "Water - Today and Tomorrow: A Pacific Northwest Regional Program for Water and Related Resources" (1978) and this regional irrigation study. The 1985 projections used in this regional study are straight line interpolations between the 1975 level of irrigation development identified by King, et al. (1977) and year 2000 projections. Table 1 includes irrigated acreage for the years 1985 and 2000 for all three levels of projected irrigation development; no growth (1975 level), moderate growth (OBERS Projection) and high growth (Regional Trend) and the PNRBC 1970 level (PNRBC, 1978). Table A1 through A6 in Appendix A give a complete comparison by state, subregion and subarea to the PNRBC base and projections to the base and projections identified by King, et al. (1977).

The Pacific Northwest region, as identified by King, et al. (1977) includes two subregions not identified by the PNRBC; the Klamath in southcentral Oregon and Bear River in southeastern Idaho. They have been included in this study because it encompasses the entire tri-state area of Idaho, Oregon and

Table 1. Irrigated Acreages for 1970, 1975 and Projected Irrigated Acreages for 1985 and 2000. Area in 1000's of acres.

Sub-region	State	Irrigated Acreages		Projected Irrigated Acreage		
		CNP ¹ 1970	EWC ² 1975	OBERS ³ 1985 ^{3a}	2000 ^{3b}	Regional Trend ⁴ 1985 ^{4a} 2000 ^{4b}
1.	Idaho	28.0	25.1	39.9	62.0	64.7 124.0
	Washington	27.0	27.8	33.9	43.0	33.1 41.0
	Total	55.0	52.9	73.8	105.0	97.8 165.0
2.	Washington	804.0	767.4	958.0	1,244.0	993.2 1,332.0
3.	Washington	509.0	526.0	530.0	536.0	536.8 553.0
4.	Idaho	2,480.9	2,542.7	2,639.9	2,785.9	2,739.1 3,033.9
5.	Idaho	911.3	902.8	1,048.3	1,266.3	1,184.2 1,606.3
	Oregon	455.3	417.7	441.6	477.3	468.8 545.3
	Total	1,366.6	1,320.5	1,489.9	1,743.6	1,653.0 2,151.6
6.	Idaho	143.0	139.1	145.9	156.0	148.3 162.0
	Oregon	101.0	83.0	100.2	126.0	105.4 139.0
	Washington	46.0	45.2	72.3	113.0	96.3 173.0
	Total	290.0	267.3	218.4	395.0	350.0 474.0
7.	Oregon	497.1	456.2	527.3	634.1	555.3 704.1
	Washington	92.0	119.4	166.8	238.0	206.5 337.0
	Total	589.1	575.6	694.1	872.1	761.8 1,041.1
8.	Oregon	2.0	1.1	1.5	2.0	1.5 2.0
	Washington	16.0	11.9	16.3	23.0	16.3 23.0
	Total	18.0	13.0	17.8	25.0	17.8 25.0
9.	Oregon	244.0	262.1	294.5	343.0	332.5 438.0
10.	Oregon	158.9	109.8	135.4	173.9	135.8 174.9
	Washington	13.4	4.7	9.4	16.4	9.0 15.4
	Total	172.3	114.5	144.8	190.3	144.8 190.3
11.	Washington	68.0	92.1	90.1	87.0	89.7 86.0
12.	Oregon	300.0 ⁵	262.1	279.7	306.0	280.5 308.0
13.	Oregon	240.4 ⁶	258.6	257.6	256.1	262.1 267.4
14.	Idaho	186.8 ⁷	236.6	233.9	229.8	246.2 260.5
State Totals:						
	Idaho	3,750.0	3,846.3	4,107.9	4,500.0	4,382.5 5,186.7
	Oregon	1,998.7	1,850.6	2,037.8	2,318.4	2,141.9 2,578.7
	Washington	1,575.4	1,594.5	1,876.8	2,300.4	1,980.9 2,560.4
Regional Total		7,324.1	7,291.4	8,022.5	9,118.8	8,505.3 10,325.8

¹1970 Irrigated Acreages as presented by the Pacific Northwest River Basins Commission, (PNRBC, 1978) designated CNP 1970 Base.

²1975 Irrigated Acreages as presented by King, et al. (1975) "Energy and Water Consumption of Pacific Northwest Irrigation Systems", designated EWC 1975 Base.

³Projections of irrigated acreages based on OBERS Series E'Modified as presented by the PNRBC (1978)

a. A straight line interpolation between the OBERS Series E'Modified as presented by 1975 irrigated acreages.

b. The year 2000 projections.

⁴Projections of irrigated acreages based on the Regional Trend as presented by the PNRBC (1978).

a. A straight line interpolation between the Regional Trend (2000) and the 1975 irrigated acreages.

b. The year 2000 projections.

⁵The PNRBC indicated an irrigated acreage of 327.0 which included 27.0 of the Klamath Subregion.

⁶The 1970 Base level of irrigation development was obtained from the 1969 Census of Agriculture. Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

⁷The 1970 Base level of irrigation development was obtained from the Idaho Water Resource Board (1972). Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

Washington. The 1970 levels of irrigation development and the projected levels of irrigation development for the Bear River subregion were obtained from the Idaho Water Resource Board (1972). Irrigation development for the Klamath region in 1970 was obtained from the 1969 Census of Agriculture. The projected levels of irrigation development for both subregions were obtained from unpublished data obtained from the PNRBC.

It must be reemphasized that the "alternative futures", other than the no growth future, used in this study are conditional forecasts of future irrigation development. They are based on projections of past relationships, modified by assumptions regarding the future of those relationships. These assumptions are outlined in "Alternative Futures for Irrigation" (PNRBC, 1978) and "Water - Today and Tomorrow: A Pacific Northwest Regional Program for Water and Related Resources" (PNRBC, 1978). The projections represent estimates of irrigation development expected to occur if all the assumed conditions materialize. However, these "projections are in no sense a goal, an assigned share, or a constraint on a region's...activity. They carry no connotations as to desirability or undesirability. Especially, they should not constrain the planner in considering alternative levels of growth which might be achieved through more or less resource development" (PNRBC, 1978).

Water Costs and Trends

Many users of water, including irrigators, pay only for the storage and delivery costs of water. Water users not requiring sophisticated storage facilities or extensive conveyance systems incur only the cost of purchasing, maintaining and operating their own personal water delivery systems.

Charges to irrigators for the storage and delivery of water vary by delivery organization. Some methods of pricing water are based on the farmer's ability to pay. Other methods include a fixed price per acre regardless of the quantity of water used, a fixed price per acre foot of water used, a fixed price for several acre feet with either an increasing or decreasing price for each additional acre foot used, etc. Further complicating procedures for determining water costs, there are irrigators who provide their own diversion and distribution facilities and have virtually no-cost water at their disposal. The diversity in pricing methods makes the calculation of a water cost very difficult. Average water prices were therefore estimated by subregion.

Subregional water prices were estimated from unpublished data provided by the Idaho Department of Water Resources, Wheeler (1974) and URS/Hill, et al. (1974). These data include the irrigation water delivery organization name, acreage irrigated and water cost per acre. Individual development was determined by subtracting the area irrigated by irrigation water delivery organizations from the total area irrigated (King, et al., 1978). A weighted average water price was determined by multiplying "total water delivered" by "water cost per acre" for each delivery system, then dividing by the summation of "total water delivered." Delivery cost for individual development was considered \$0.00 per acre since these costs are considered part of the irrigation system operating costs. The calculated weighted average water prices were then deflated to 1967 dollars by the Consumer Price Index.

Water costs were projected to 2000 based on the Bureau of Reclamation's (1976) Composite Construction Cost for Irrigation Water (1960-75) and the Consumer Price Index.

Dividing the Composite Construction Cost Index by the Consumer Price Index resulted in a set of ratios, when fitted to an exponential curve ($R^2 = 0.85$), indicated the real cost of irrigation water; in 1985 and 2000, would be approximately 1.32 and 1.66 times the 1975 costs, respectively. Therefore, the assumption has been made that future water prices will increase annually in terms of real dollars by $y = 0.3673e^{0.0153x}$; where y equals the ratio of Composite Construction Cost Index to Consumer Price Index and x equals the chosen year. Real water prices throughout the region are given in Table 2.

Table 2. Water Prices by Subregion. Dollars per acre-foot.

Subregion	1975*	1985*	2000*
1	\$3.20	\$4.21	\$5.30
2	5.72	7.53	9.47
3	4.87	6.41	8.06
4	2.04	2.69	3.38
5	1.62	2.13	2.68
6	0.07	0.09	0.12
7	1.73	2.28	2.86
8	0.02	0.03	0.03
9	0.35	0.46	0.58
10	1.75	2.30	2.90
11	0.38	0.50	0.63
12	0.05	0.07	0.08
13	0.68	0.90	1.13
14	1.78	2.34	2.95

*Deflated to 1967 dollars.

Energy Costs and Trends

Electrical energy rates varied dramatically between sub-areas within the region in 1975. Irrigators in the Wenatchee, Entiat, Chelan Subarea in Subregion 2 were served primarily by public power utilities and had the lowest energy rate in the region - 8.29 mils per kilowatt hour; whereas irrigators

in the Willamette Subarea, Subregion 9, received their electrical power primarily from private utilities and paid the highest overall electrical energy rate in the region--25.16 mills per kilowatt hour. Electrical energy rates vary because of differing utility price schedules and whether or not the utility is public or private. One of the many factors causing private utilities to have higher rates than public utilities is public utilities have priority to low priced hydropower generated by public dams within the region whereas private utilities are required to blend what low cost energy they receive from hydropower with high priced energy obtained from thermoelectric sources.

Projections of the annual percentage rate of change in electrical energy rates, by state in 1967 dollars, were obtained from the moderate growth scenario given by McHugh (1977). Since these projections were for all utilities, they were assumed to be a weighted average rate of change. To determine the annual rate of change for each type of utility, the average was broken into its respective public and private utility components. This was accomplished by first determining the percentage power delivered by each type of utility by state. Public utilities deliver 7, 47, and 43 percent of the electricity consumed for irrigation purposes, exclusive of Bureau of Reclamation uses, in Idaho, Oregon and Washington, respectively.

It was also necessary to determine the annual percentage rate of change in electrical energy rates by type of utility. A representative annual percentage rate of change for public and private utilities was presented by the Oregon Department of Energy (1976). Although these projections were for the State of Oregon, they were applied to all private and public utilities in the region.

The Oregon Department of Energy (1976) indicated utility rates would increase in real dollars, at an annual rate of 3.59 percent for private utilities, and 1.89 percent for public utilities during the 1977-1985 period. For the 1985-2000 period the annual rate of rate change, in real dollars, was 2.69 and 2.94 percent for the private and public utilities, respectively.

These projections and the projections presented by McHugh (1977), when weighted on percentage of electricity sold by type of utility, were the basis of calculating projected rates of electrical rate change by state and utility. Table 3 gives these rates for both public and private utilities in Idaho, Oregon and Washington.

Table 3. Annual Percentage Rate of Real Change in the Rates of Electrical Energy--Public and Private Utilities by State.

	1975-1985		1985-2000	
	Private	Public	Private	Public
Idaho	3.14	1.65	1.01	1.10
Oregon	4.63	2.44	1.37	1.50
Washington	3.56	1.87	1.79	1.96

Data for determining the 1977 costs of electricity were obtained through correspondence with the public and private utilities within the region and from unpublished material received from the Bonneville Power Administration. Due to the quality and quantity of these data, a price for electrical energy was determined for all 45 subareas within the study.

Individual utility electrical rates, in 1985, were determined by compounding the 1977 deflated electrical rates with the appropriate annual rate of real change, for the 1977-1985 period (Table 3), then aggregating into subareas. Sub-area electrical rates for 2000 were calculated in the same manner by using the 1985-2000 annual rate of change (Table 3). Table 4 gives, for each subarea, the 1977 rates in 1977 dollars and the 1977, 1985 and 2000 real rates for electrical energy and annual percentage rate of change for the 1975-1985 and 1985-2000 periods.

Labor Cost Trends and Requirements

Labor costs across the region are fairly uniform, ranging from a low \$3.10 per hour in Subregion 10 to \$3.91 an hour in Subregion 14. Wage information was provided by the Idaho Department of Labor, the Oregon Employment Division and the Employment Security Department in the State of Washington. Differentiation of labor costs between the various irrigation technologies was not attempted because data was not available. The general nature of these data dictated that labor costs be allocated on a subregional rather than a subareal basis.

Wages paid to agricultural employees have been increasing at a rate greater than that of inflation (USDA, 1977). This indicates the real cost of labor over the next 25 years will increase provided this trend continues. To project labor prices, the Farm Wage Price Index (USDA, 1977) was divided by the Consumer Price Index. This ratio shows the relationship of farm wages to consumer prices. These ratios were then fitted to a logarithmic curve ($R^2 = 0.86$) and projected by the formula $y = -10.7669 + 2.8197 \ln x$ to determine the real price of labor in the years 1985 to 2000. The variable y equals the Farm Wage Index to Consumer Price Index ratio

Table 4. Electrical Energy Costs and Annual Percentage Rate of Real Change by Subarea in prices in mills per kWh for the 1975-1985 and 1985-2000 periods.

Subareas	1977 Energy Cost (1977 dollars)	1977 Energy Cost (1967 dollars)	1975-1985 Annual Percentage Rate of Change	1985 Energy Cost (1967 dollars)	1985-2000 Annual Percentage Rate of Change	2000 Energy Cost (1967 dollars)
Pend Oreille	14.29	7.87	2.28	9.43	1.79	12.31
Spokane	10.84	5.97	2.64	7.36	1.67	9.44
Kootenai	17.60	9.70	1.65	11.06	1.10	13.03
Lower Clark Fork	0.0	0.0	0.0	0.0	0.0	0.0
Methow, Okanogan	9.08	5.00	1.87	5.80	1.96	7.77
Wenatchee, Entiat, Chelan	8.29	4.57	1.87	5.30	1.96	7.09
Ferry Stevens	11.04	6.08	3.49	8.00	1.80	10.46
Big Bend	9.62	5.30	1.92	6.17	1.96	8.25
Yakima	12.83	7.07	2.47	8.59	1.90	11.40
West Side	18.19	10.02	3.13	12.82	1.01	14.90
Northern Streams	23.54	12.97	2.98	16.40	1.02	19.09
Neeley Milner	16.46	9.07	2.78	11.30	1.03	13.17
Heise, Neeley	20.59	11.34	3.14	14.53	1.01	16.88
Henry's Fork	24.38	13.43	2.67	16.58	1.04	19.36
South Fork	16.51	9.10	3.14	11.65	1.01	13.54
Malheur	15.67	8.63	3.11	11.03	1.03	12.86
Owyhee	16.92	9.32	3.13	11.93	1.02	13.88
Burnt, Powder	16.95	9.34	3.63	12.42	1.13	14.69
Weiser	18.22	10.04	3.14	12.86	1.01	14.94
Payette	18.22	10.04	3.14	12.86	1.01	14.94
Boise	18.22	10.04	3.14	12.86	1.01	14.94
Bruneau	18.22	10.04	3.14	12.86	1.01	14.94
Clearwater	11.23	6.19	3.44	8.11	1.75	10.51
Salmon	12.38	6.82	3.17	8.76	1.65	11.19
Upper Salmon	17.81	9.81	2.27	11.75	1.06	13.76
Palouse, Lower Snake	11.01	6.07	2.82	7.58	1.86	9.99
Grande Ronde	20.88	11.50	4.63	16.52	1.37	20.28
Northside Columbia	8.62	4.75	1.87	5.51	1.96	7.37
Walla Walla	14.04	7.74	2.98	9.78	1.72	12.63
Hood	20.05	11.05	4.02	15.14	1.41	18.68
Deschutes	16.34	9.00	3.45	11.81	1.44	14.64
John Day	11.11	6.12	2.58	7.50	1.49	9.37
Umatilla	10.12	5.58	2.53	6.81	1.50	8.51
Lower Columbia	11.95	6.58	1.88	7.64	1.96	10.22
Willamette	25.16	13.86	4.42	19.60	1.39	24.09
Washington Coast	18.31	10.09	1.93	11.75	1.95	15.72
Oregon Coast	20.04	11.04	2.84	13.82	1.48	17.22
Umpqua	21.52	11.86	4.30	16.60	1.39	20.43
Rogue	22.22	12.24	4.56	17.49	1.38	21.47
Puget Sound	17.20	9.48	3.07	12.07	1.84	15.87
Fort Rock, Christmas Lake, Chewaucan	14.70	8.10	2.44	9.82	1.50	12.28
Silvies, Silver, Donner and Blitzen	16.90	9.36	2.84	11.71	1.48	14.59
Alvord	18.32	10.09	3.36	13.15	1.45	16.31
Klamath	15.06	8.30	2.55	10.15	1.50	12.68
Bear River	23.34	12.86	3.00	16.28	1.02	18.95

and x equals any year. Table 5 gives the 1978 subregional price of labor, including incidental labor costs, along with the wage rate, 1967 dollars, by subregion for 1978 wages. Wage rates, in 1967 dollars, for 1985 and the year 2000 are also given.

Table 5. Wage Rates by Subregion. Dollars Per Hour.

Subregion	1978	1978*	1985*	2000*
1	3.14	1.64	2.64	3.33
2	3.43	1.79	2.90	3.65
3	3.17	1.66	2.68	3.38
4	3.29	1.72	2.78	3.49
5	3.16	1.65	2.66	3.36
6	3.43	1.79	2.90	3.65
7	3.39	1.77	2.86	3.60
8	3.39	1.77	2.86	3.60
9	3.39	1.77	2.86	3.60
10	3.10	1.62	2.61	3.29
11	3.39	1.77	2.86	3.60
12	3.11	1.63	2.62	3.31
13	3.30	1.73	2.79	3.51
14	3.91	2.05	3.30	4.17

*Deflated to 1967 dollars.

According to Chen et al. (1976), Cothorn, et al. (1969), Doran, et al. (1967), Gossett, et al. (1976), Hughes (1971), Lacewell, et al. (1971) and Turner, et al. (1971), labor requirements for various irrigation technologies range from 0.01 to 0.35 man-hours per acre-inch of water applied. These labor values were studied and modified when necessary to fit regional circumstances by Extension Irrigation Specialists in each state (Larsen, Shearer, Hagood, 1978). Table 6 allows comparison between the labor requirements selected for use in the Northwest and labor requirements found in the literature.

Table 6. Labor Requirements of Pacific Northwest Irrigation Systems. Man-hours per acre-inch (gross water application).

	Labor Requirements	
	Regional Averages	Range*
Center Pivot	0.04	0.02 - 0.06
Side Roll	0.09	0.06 - 0.14
Hand Move	0.17	0.14 - 0.35
Solid Set	0.08	0.06
Permanent	0.03	0.01
Big Gun	0.06	----
Gravity	0.20	0.13 - 0.35
Pump Back	0.36	0.13 - 0.35
Drip	0.11	0.03

*Chen, et al. (1976), Cothorn, et al. (1969), Doran, et al. (1967), Gossett, et al. (1976), Hughes (1971), Lacewell, et al. (1971) and Turner, et al. (1971).

Irrigation System Capital Requirements and Useful Life

Determination of the capital investment required to purchase and install an irrigation system necessitated assuming a field size for each system. The side roll, hand move, big gun, gravity and pump-back (return-recovery) systems were assumed as operating on an 80 acre field. One hundred and sixty acres was assumed as the typical field size for a center pivot, while the solid set and permanent systems were to be installed on 40 acre fields. The drip (trickle) system was assumed to have a field size of 20 acres. These field sizes were selected because they represent field sizes commonly used throughout the region for the irrigation systems studied.

Capital investment (purchase price plus installation costs) required for the center pivot, hand move, side roll, solid set and permanent systems were obtained from Chen (1976). Purchase price and installation costs for the big gun traveler and the pump-back (return-recovery) irrigation systems were obtained from Dale Killingsworth, Towyery Irrigation, Madras, Oregon. Lou Bevandich, Northwest Irrigation Systems, Corvallis, Oregon, provided purchase price and installation costs for drip irrigation systems.

Capital investments obtained from Chen (1976) were for 1975 and deflated to 1967 dollars. The data obtained from Killingsworth and Bevandich were for 1978 and were also deflated to 1967 dollars. Since time series data on the relative real purchase prices and installation costs of irrigation systems were not readily available, it is assumed the relative prices were increasing at the rate of inflation. Therefore, real prices of the individual systems will remain constant for the years 1985 and 2000. Real capital investment was amortized for a period equal to the useful life of an individual irrigation system with the cost of capital being 10 percent. Table 7 gives the purchase and installation price of the nine irrigation systems selected.

The useful lives of differing types of irrigation systems vary significantly (Pair, 1975). The highly automated continuously operating type systems have the shortest life span. These systems include center pivot, big gun traveler and drip. The life span typically expected for these types of equipment is 10 years. The less automated systems requiring more labor have a useful life of approximately 15 years. These systems include the hand move, side roll, solid set, gravity and pump-back systems. The system with the longest life (35 years) is the permanently buried solid set system.

This system although highly automated has its laterals and mainlines buried and therefore protected from damage.

Table 7. Capital Investment of Selected Irrigation Technologies. Dollars Per Acre.

	1975 (1975 dollars)	1975 (1967 dollars)
Center Pivot	262.70	162.97
Hand Move	127.50	79.09
Side Roll	315.00	195.41
Permanent	1,325.00	821.96
Solid Set	810.00	502.48
Gravity	271.30	168.30
Pump Back	73.52*	45.61*
Big Gun	299.14	185.57
Drip/Trickle	758.39	470.47

*Capital investment required to replace a gravity system with a pump-back system. Conversion to pump-back from other systems require adding the capital investment of the gravity system.

Water Application Efficiency

It was the consensus of Extension Irrigation Specialists (Larsen, Shearer, Hagood, 1978) in each of the three states that irrigation application efficiencies, the ratio of the quantity of water utilized by a crop to the quantity of water delivered to the field, would improve over the next 25 years in the arid regions of the tri-state area. Table 8 illustrates the irrigation application efficiencies for each of the years of the study period, 1975, 1985 and 2000. Generally about a five percent increase in application efficiencies was projected by 1985 and another five percent increase in application efficiencies by 2000.

Table 8. Irrigation System Operating Pressures and Application Efficiencies for 1975, 1985 and 2000.

System	Operating Pressure (feet)	Application Efficiencies ⁺					
		1975		1985		2000	
		Humid	Arid	Humid	Arid	Humid	Arid
Center Pivot	200	87	82	87	85	87	85
Hand Move	155	75	65	75	70	75	75
Side Roll	160	75	65	75	70	75	75
Solid Set	160	75	65	75	70	75	75
Permanent	160	75	65	75	70	75	75
Big Gun	300	74	66.5	74	71.5	74	76.5
Gravity*	-0-	45	45	50	50	55	55
Pump Back	15	80	80	80	80	80	85
Drip/Trickle	50	90	85	90	85	90	85

⁺In Percent

*When pumping is required to deliver water for gravity systems, that lift plus 5 feet of additional lift is used.

It was felt these increased application efficiencies were obtainable for all systems, except center pivot, pump-back, and drip, in the arid portions of the region through continued irrigation technology improvement, increased farmer awareness of problems surrounding irrigation methods and management, increased energy prices, increasing public pressure on the farmers to conserve both energy and water, and federal water quality requirements.

Additional Model Inputs

Accessory irrigation system parameters include pumping plant efficiencies and pumping lifts. Pumping plant efficiencies were a function of the individualized pumps. However, values in general fall between the following ranges:

72-82 percent for large Bureau of Reclamation pumps; 65-75 percent for large private pumps; 54-66 percent for intermediate pumps and 50-58 percent for small on-farm pumps (King, et al., 1977).

On-farm pumping lifts for projected levels of irrigation development were acquired from Extension Irrigation Specialists in each state (Larsen, Shearer, and Hagood, 1978). In addition to these on-farm pumping lifts, these individuals provided information concerning the pumping requirements (acre-feet) and lifts for diversion pumping in the subareas. The on-farm pumping lifts and diversion pumping requirements and lifts were estimated based on the projections made in this study and development trends occurring in each state.

These additional inputs when consolidated with the previously mentioned inputs form the data bank from which the computer model calculates water, energy, labor and capital requirements of projected future levels of irrigated agriculture in the Pacific Northwest.

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COMPUTER MODEL

The computer model developed for this study determines future energy, water, labor and capital investment requirements of irrigated agricultural production in the Pacific Northwest states of Idaho, Oregon, and Washington. Regional and subregional requirements are aggregations of subareal requirements determined from selecting the least cost irrigation system, constrained to feasible systems, for each subareal crop-irrigation system possibility. As a base, the model utilizes the cropping pattern (which is assumed to remain constant throughout the study period), irrigation technology combination and designed crop water requirements previously recorded by King, et al. (1977) and King, et al. (1978).

Ascertaining the least cost irrigation system first requires calculating annual variable costs (operating capital, maintenance, water, labor, and energy costs), annual fixed costs (capital investment, property tax, insurance and depreciation costs) and total annual costs (sum of variable and fixed costs) for each crop-irrigation system possibility. Existing irrigation systems were allowed to change whenever the total annual costs of another irrigation system was less than the variable costs of the existing irrigation system. Irrigation systems having the lowest annual cost were placed on new lands coming into production.

These determinations are based on the following assumptions:

1. Unlimited capital availability.
2. Unlimited labor availability.
3. All technologies have the potential of increasing by the same ratio as the acreage increases.

4. No major innovations in technology development will occur before the year 2000.
5. Technology selection is indiscriminate and constrained only by crop considerations.
6. Adjustments to prices and costs only occurred in 1985 and 2000.

Also, the model, with modification, has enough flexibility to allow input costs of water, labor or energy to be varied, and to provide output by subarea, subregion, state, or region.

The mathematical description of the model as shown by Equation (1), includes the following subscripted variables: W, L, E, and K. These variables represent cost of water, labor, electrical energy and capital investment, respectively. The subscripts, k, j and i, refer to subareas, crop groups and irrigation systems, respectively.

$$Y = \sum_{k=1}^{45} \sum_{j=1}^{24} \sum_{i=1}^9 \left[(W_k \times Wa_{ijk}) + (L_k \times Lhr_{ijk}) + (E_k \times Er_{ijk}) + (K_{ijk}) \right] A_{ijk} \quad (1)$$

where:

- Y = minimum cost of irrigation
- W_k = water price, 1967 dollars per acre-foot, in subarea k
- Wa_{ijk} = gross water application, acre-inch per acre, in system i, crop j and subarea k
- L_k = labor price, 1967 dollars per man-hour, in k
- Lhr_{ijk} = labor requirements, man-hours per acre, in i, j and k
- E_k = energy prices, 1967 dollars per kilowatt-hour, in k
- Er_{ijk} = energy requirements, kilowatt-hours per acre, in i, j and k

K_{ijk} = annual costs of ownership, 1967 dollars per acre, in i, j and k

A_{ijk} = irrigated lands, acres, in i, j and k

A complete mathematical description of the model is stated in Appendix B.

Model Output

The model also calculates on-farm water, energy, labor and capital requirements for irrigated agriculture in the Pacific Northwest, the model calculates the pumped diversion energy requirements. Pumped diversion is the pumping of irrigation water into or within community conveyance systems necessary to bring water to the farm. It includes pumping by water delivery organizations, not pumping by individual farmers, from a water source. The latter case is considered as on-farm pumping.

Community conveyance systems usually acquire water from a source not readily available to individual farmers and deliver it to individual farmers. At the point of delivery, the individual farmer may either repump the water into a pressurized irrigation system or allow the water to flow onto his field by the action of gravity. Therefore, diversion pumping energy requirements must be included in determining the total energy requirement of irrigated agriculture in the Pacific Northwest.

Finally, since pumping energy requirements of an irrigation system are only a portion of an irrigation system's total energy requirements, total energy requirements of the selected irrigation system mixes were calculated. Total energies include energies of manufacture and installation in addition to pumping energies. Manufacture and installation energies were reported by Batty, et al. (1975). These

energies were modified using the useful lives previously mentioned (Page 23) and converted to kWh/acre ($1 \text{ kcal} = 4.19 \text{ kJ} = 1.163 \times 10^3 \text{ kWh}$).

Therefore, to facilitate calculating energy requirements of Pacific Northwest agricultural production, irrigation energy use was divided into the following categories:

- A. Manufacture and installation - energies expended in manufacturing and installing an irrigation system
- B. Pumped diversions - energies expended by water delivery organizations to bring water to the farm
- C. On-farm pumping and pressurization - energies expended by farmers to bring water to the farm and the energies required to pressurize the irrigation system

Furthermore, the model calculates water, labor and capital investment requirements associated with Pacific Northwest irrigated agricultural production, subregional and regional weighted average labor and water application requirements, application efficiencies, pumping lifts and operating heads were also calculated as described in King, et al. (1978).

Model Validation

Validation of the computer model consisted of subjecting the actual 1975 Base Data as developed by King, et al. (1978) to 1975 simulation input parameters. Comparison of the 1975 Base Data (Table 10) to the 1975 Model Predictions (Table 11) demonstrates the model's performance.

Irrigation cost minimization procedures incorporated as input parameters caused the model to predict an irrigation system combination somewhat different than the 1975

Base Data. Simulation results indicated per acre on-farm pumping energy and total energy (sum of pumping, installation and manufacturing energies) consumptions as being diminished by approximately 0.8 percent and 0.2 percent, respectively. Water applications were reduced 6.1 percent and application efficiencies increased 7.5 percent. This increase in application efficiencies resulted from the addition of the pump-back system to the return-flow gravity system. Labor requirements increased 0.3 percent because of the increased use of the hand move system. Capital investment requirements necessary to achieve the replacement of irrigation systems was 29.1 million (1967) dollars.

Irrigation systems undergoing change in the validation run were the hand-move, solid set, permanent, return-flow gravity and pump-back irrigation systems. Acreage irrigated by the solid set, permanent and gravity irrigation systems were diminished by approximately 2,300 acres, 10,900 acres and 614,900 acres, respectively. Lands irrigated by the pump-back system increased approximately 615,000 acres and hand-move systems expanded approximately 13,100 acres. Acreages irrigated by the center pivot, side roll, big gun and drip systems remained unchanged.

Addition of the pump-back technology in the model to return-flow gravity systems cut across all crop categories. A shift from return-flow gravity systems to other types of irrigation methods has actually been rapidly occurring in the region for over a decade which trends to justify the model's substitution of pump-back methods for return-flow gravity techniques. However, this substitution differs from the actual situation where return-flow gravity systems are being replaced with various forms of pressurized irrigation systems rather than pump-back technology.

The model's tendency to replace return-flow gravity systems with pump-back gravity systems also results in a striking reduction in on-farm water delivery requirements (Figure 8). This decrease in on-farm water delivery requirements will occur, with varying impact, whenever any alternative irrigation system is adopted in preference to a return-flow gravity system. Since pumping and total energies are much lower for the pump-back technologies as compared to pressurized technologies, the model may slightly underestimate the energy requirements of the region.

The relationship between energy consumption and water applications is illustrated in Tables 10 through 17, Section 2 "Irrigation System Weighted Averages." Section 2 illustrates that irrigation systems having high water applications generally have low energy requirements and technologies with low water applications have high energy requirements. However, it must be noted the pump-back system is an exception to this relationship because it can significantly reduce water applications while only slightly increasing energy consumption.

The pump-back system's high labor requirement reduces its desirability as an alternate system for the return-flow gravity system. Since the pump-back system has a labor requirement similar to the return-flow gravity system, and labor is one of the primary motivating forces in determining what system will be selected by farmers when changing systems, the pump-back system will probably not be selected by farmers when labor is scarce.

Bearing in mind that federal environmental regulations prohibit the return of sediment laden water into the region's waterways, a sharp increase in the number of pump-back

systems or other methods of reducing and/or filtering irrigation return flows may be justifiable. Presently, the pump-back system offers a return-flow gravity irrigator the opportunity to reduce or eliminate return flows with only a very small increase in energy use and minimal capital investment. Should technology be developed to automate the pump-back system and that technology be adopted by farmers, the tendency to convert return-flow gravity systems to energy intensive, labor saving systems could diminish.

Choosing irrigation technologies on a purely least cost basis is a weakness of this model. This characteristic ignores individual farmer preference of irrigation technologies, environmental control for various crops (i.e. potatoes, vineyards and orchards), soil constraints on technology selection, labor availability and capital constraints.

However, the model provides a reasonable estimate of the water, energy, labor and capital requirements of irrigated agriculture for the selected levels of future development. Farmer expectations, preferences and reluctance to accept different irrigation technologies combined with both labor and capital restraints could result, when coupled with the assumptions stated on pages 28 and 29, in the model overestimating the acreage irrigated by hand-move and pump-back systems, while underestimating the acreages irrigated by the solid set, permanent and return-flow gravity irrigation technologies. This possible over and under estimation of the land irrigated by individual technologies should be kept in mind by individuals using these data. These individuals should make themselves aware of the vast differences in the water, energy and labor requirements of various irrigation systems before making extrapolations.

Although the model is subject to the above mentioned limitations, it provides a heretofore unavailable macroscopic picture of water, energy, labor and capital requirements of regional irrigated agriculture. This view can only be derived from the complicated interaction of parameters affecting irrigation practices previously limited to analysis on an individual or microscopic basis. As with any macroscopic view, "the economy of analytical scientific methods is soon lost in the large, complicated and often ill-defined problems which arise on a scale of a river basin..." (Philip, 1974).

RESULTS

Table Descriptions

Data generated by the computer model has been grouped into three general alternative growth strategies for 1985 and 2000: No Growth, OBERS Projections and Regional Trend Projections. Table 12 through Table 17 are regional summations of these three alternative future growth strategies. Each table is divided into six sections:

Section 1...."Crop and Method of Irrigation" presents the total irrigated acreage for each crop group and acreage irrigated by each type of irrigation method by crop group. The crop groups are numerically coded (crop number). Table 11 is a listing of the numerical designations.

Section 2...."Irrigation System Weighted Averages" provides information concerning acreage irrigated by each type of irrigation system; per acre gross water application, pumping and total energy consumptions, and labor requirements.

Section 3...."Regional On-Farm Weighted Averages" furnishes information concerning on-farm irrigation application efficiency; system operating pressure; ground water, surface water and combined lifts; and total dynamic head.

Section 4...."Irrigation System On-Farm Totals" are the per acre irrigation system water, energy and labor requirements of Section 2, multiplied by acreage irrigated by each type of system. In addition, the capital investment required to make system substitutions and bring new land into development is included.

Section 5...."Regional Energy Consumption" combines the total on-farm pumping and total energy consumptions with the off-farm diversion pumping requirement to determine the regional average energy consumptions. Also included is the change from the 1975 regional average energy consumptions.

Section 6...."Changes from 1975 Irrigation System On-Farm Totals" illustrates the projected changes, from 1975, for the total water, energy and labor requirements listed in Section 4.

Table 10 is constructed identically to Tables 11-17, but contains data for only the 1975 base year. The first four sections are as previously described. Section 6 has been omitted since this is the 1975 base data and there are no changes. The capital investment given in Section 4 of Table 10 is the capital investment necessary to purchase and install the irrigation technologies now in place, in 1967 dollars.

Subregional tables similar to these regional tables are in Appendix C. They illustrate changes in irrigated acreage and technology combinations by subregion prior to being aggregated into the regional tables.

No Growth Futures

No Growth Futures for each study year provide illustration of how changing input costs effect irrigation system selection and the ensuing labor, energy, water and capital investment requirements without acreage increases.

1985 No Growth Future (Table 12)

Results of selecting least cost irrigation systems in 1985 over the 1975 base systems indicated an increase of approximately 6.0 percent (258,000 megawatt-hours) to 4.5 million megawatt-hours in pumping energy consumption and an increase of 7.6 percent (468,000 megawatt-hours) to 6.6 million megawatt-hours in total energy consumption (Figure 5). These increases were mainly caused by a shift from the hand move and return-flow gravity irrigation methods to center pivot irrigation methods and resulted, when coupled with the

Table 9. Crop Group and Irrigation Code Numbers

Crop Number	Crop Groups
1	Hay and pasture
2	Grain
3	Field corn
4	Mint, hops, and dill
5	Vegetables
6	Fruits, nuts, and berries
7	Potatoes
8	Grass seed
9	Corn
10	Field crops, miscellaneous
11	Orchards
12	Sugar beets, sugar
13	Dry beans and peas
14	Legume seed
15	Unenumerated
16	Vegetables
17	Mint
18	Grass and legume seed
19	Dry peas
20	Garlic
21	Forage seed
22	Specialty horticulture
23	Cranberries
24	Sugar beets, seed

Irrigation System Number	Irrigation System
1	Center pivot
2	Hand move
3	Side roll
4	Solid set
5	Permanent
6	Big gun
7	Gravity
8	Pump-back (a type of gravity)
9	Drip

TABLE 10

REGIONAL TOTALS 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	3673830	91033	654244	437254	4213	2000	12+25	2448640	24020	0
2	1603667	195300	353274	357539	1055	0	2103	713686	3740	0
3	159321	25145	13259	350	0	0	3335	126632	0	0
4	102746	600	19314	22557	0	0	399	58736	0	0
5	220235	1360	74507	33418	8025	0	20571	86418	0	0
6	202337	0	53512	0	1857	80374	114	63788	0	2662
7	455540	115667	126809	91266	76923	0	1510	43285	0	0
8	32844	700	11663	12475	0	0	31	7975	0	0
9	237	0	0	0	0	0	192	95	0	0
10	67	0	67	0	0	0	0	0	0	0
11	17162	0	6312	0	1000	150	200	0	0	500
12	264652	36912	43283	36816	13424	0	319	133898	0	0
13	272905	9734	23663	39555	0	0	0	196718	3000	0
14	72330	0	1989	15062	0	0	0	55249	0	0
15	147991	3363	24841	35489	46	15	902	83325	0	0
16	15112	0	0	0	0	0	0	15112	0	0
17	424	0	400	24	0	0	0	0	0	0
18	8323	0	2414	5764	0	0	0	14	0	0
19	2525	780	0	600	0	0	0	114	0	0
20	158	0	39	0	0	0	0	40	0	0
21	9635	0	8456	432	0	0	247	100	0	0
22	9111	0	2441	0	1236	5383	0	41	0	10
23	2030	0	200	0	1165	665	0	0	0	0
24	30	0	0	0	0	0	0	80	0	0
TOTALS	7291302	480594	1402872	1088720	117944	88587	43549	4035104	36760	3172

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	480594	27.1	1343.9	2220.4	1.1
2	1402872	30.1	1037.8	1278.3	5.1
3	1088720	31.7	1245.9	1547.5	3.0
4	117944	38.6	1334.1	2276.0	3.1
5	86587	55.7	1731.9	2051.5	1.7
6	43549	23.1	1195.7	1989.1	1.4
7	4035104	48.2	111.3	265.7	9.6
8	36760	28.6	195.0	390.8	10.3
9	3172	36.9	711.9	1911.8	4.1
WEIGHTED AVERAGES		40.9	586.8	847.1	7.0

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	57	244	22	37	94

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	480594	1087213	645884.4	1067127.4	521862	78288763
2	1402872	3518259	1455954.9	1793333.5	7177248	110826888
3	1088720	3059596	1356416.3	1684793.9	3304795	212735888
4	117944	379016	157345.0	263574.0	363855	59255066
5	86587	411382	102420.4	131733.2	148087	72859655
6	43549	83707	53071.7	86824.1	8829	8078340
7	4035104	16213525	448930.6	1078144.7	3991240	679108803
8	36760	73263	4944.3	12319.5	316495	1402656
9	3172	9743	2256.2	6364.3	12861	1492426
TOTALS	7291302	24836074	4276336.0	6176445.3	50817932	1223997684

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	4278336.0	6176445.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1332155.9	1332155.9
TOTAL ENERGY CONSUMPTION (MWH)	5610491.9	7508601.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	769.5	1029.8

TABLE 11

REGIONAL TOTALS 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	3673833	91033	656244	437854	4213	0	12426	2126747	345913	0
2	1603667	195300	331329	357889	0	0	2103	623381	93545	0
3	169321	25145	13259	360	0	0	3935	102386	24266	0
4	102746	600	19814	22597	0	0	993	22857	35679	0
5	228295	1360	78507	33418	8325	0	20571	36414	0	0
6	202307	0	50396	0	1511	77536	114	15492	48296	2662
7	455540	115667	126889	91266	76923	0	1513	36306	6979	0
8	32844	700	11663	12475	0	0	31	7975	0	0
9	287	0	0	0	0	0	192	95	0	0
10	67	0	67	0	0	0	0	0	0	0
11	17162	0	6234	0	1000	150	230	108	0	503
12	264652	36912	43283	36816	13424	0	319	97815	36083	0
13	272905	9734	23868	39585	0	0	0	172718	27080	0
14	72300	0	1989	15062	0	0	0	44749	10560	0
15	147981	3363	24902	35489	0	0	932	67173	16152	0
16	15112	0	0	0	0	0	0	15112	0	0
17	424	0	400	24	0	0	0	145	0	0
18	8323	0	2414	5764	0	0	0	0	1145	0
19	2525	780	0	600	0	0	0	0	0	0
20	158	0	39	79	0	0	0	400	0	0
21	9635	0	8256	432	0	0	247	100	0	0
22	9111	0	7824	0	1236	0	0	41	0	10
23	2030	0	2030	0	0	0	0	0	0	0
24	80	0	0	0	0	0	0	80	0	0
TOTALS	7291302	483594	1415977	1088720	115632	77686	43549	3420214	645758	3172

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	480594	27.1	1343.9	2220.4	1.1
2	1415977	30.1	1036.6	1277.1	5.1
3	1088720	33.7	1245.9	1547.5	3.0
4	115632	38.9	1347.6	2231.5	3.1
5	77686	58.7	1630.6	2150.2	1.8
6	43549	23.1	1195.7	1939.1	1.4
7	3420214	44.7	114.7	270.1	8.9
8	645758	37.6	46.8	242.6	13.6
9	3172	36.9	711.9	1911.3	4.1
WEIGHTED AVERAGES		38.4	582.2	845.6	7.0

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	61	242	23	39	100

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	480594	1087213	645884.4	1067127.4	521862	0
2	1415977	3552638	1467672.4	1808372.4	7247381	1043827
3	1088720	3559596	1356416.3	1694793.9	3304395	0
4	115632	375856	155823.9	264371.2	369392	0
5	77686	380284	142214.8	167338.3	136302	0
6	43549	83707	52671.9	85624.3	63269	0
7	3420214	1274324.0	392318.6	923912.5	3153376	18176
8	645758	2025752	36251.2	156657.7	3754422	26043909
9	3172	9743	2258.2	6064.3	12561	0
TOTALS	7291302	23317709	4245111.8	6165561.6	50979362	29105912

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	4245111.8	6165561.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1332185.9	1332185.9
TOTAL ENERGY CONSUMPTION (MWH)	5577297.8	7497747.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	764.9	1028.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-4.6	-1.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	13105	34379	11917.6	15068.9	70133
3	0	0	0.0	0.0	0
4	-2312	-3920	-1521.1	-3733.5	-3763
5	-10931	-31067	-11211.6	-14694.9	-11104
6	0	0	0.0	0.0	0
7	-614050	-3470285	-56662.0	-152232.5	-8328684
8	614998	1952533	24252.9	146638.6	4434928
9	0	0	0.0	0.0	0
TOTALS	0	-1518364	-33224.2	-10323.7	161429

TABLE 12

REGIONAL TOTALS 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	3673830	197234	669196	437254	4213	0	12426	2395066	258441	0
2	1603667	195300	331329	357589	0	0	2103	623831	93545	0
3	169321	49411	13259	350	0	0	3935	102366	0	0
4	102746	600	19314	22597	0	0	939	22337	35879	0
5	228235	1360	78507	33418	8025	0	26571	86414	0	0
6	202337	0	56396	0	1811	77536	114	15732	48296	2662
7	455540	216111	30860	91266	76923	0	1510	36306	2564	0
8	32844	700	11663	12475	0	0	31	793	0	0
9	287	0	67	0	0	0	192	0	0	0
10	67	0	67	0	0	0	0	0	0	0
11	17162	0	6234	0	1000	150	20	108	0	500
12	264632	65912	34283	36816	8424	0	319	97815	16683	0
13	272305	9734	23888	39585	0	0	0	172712	27500	0
14	72330	1000	1989	15062	0	0	0	44749	500	0
15	147981	19515	24902	35489	0	0	902	67173	0	0
16	15112	0	0	0	0	0	0	15112	0	0
17	424	0	40	24	0	0	0	0	0	0
18	8323	0	2414	5704	0	0	0	145	0	0
19	2525	780	0	600	0	0	0	0	1145	0
20	159	0	39	79	0	0	0	40	0	0
21	9635	0	8856	432	0	0	247	100	0	0
22	9111	0	7824	0	1236	0	0	41	0	10
23	2030	0	2030	0	0	0	0	0	0	0
24	80	0	0	0	0	0	0	80	0	0
TOTALS	7291302	766657	1328600	1088720	116632	77686	43549	3388333	483453	3172

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	766657	31.2	1458.9	2335.4	1.2
2	1328660	29.4	991.1	1230.5	5.0
3	1088720	33.7	1245.9	1947.5	3.0
4	110632	38.0	1313.0	2256.9	3.0
5	77636	53.7	1830.6	2150.2	1.8
6	43549	23.1	1195.7	1989.1	1.4
7	338833	44.7	115.8	271.2	8.9
8	483453	35.3	25.1	220.8	12.7
9	3172	36.9	711.9	1911.8	4.1
WEIGHTED AVERAGES		38.1	622.2	911.4	6.6

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	67	241	23	40	107

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	766657	1990873	1118449.3	1790428.0	955619	46599663
2	1328660	3258662	1311398.9	1634887.3	6647870	2562799
3	1088720	3359896	1326416.3	1984793.9	3304795	0
4	110632	350721	145259.4	249637.0	336592	0
5	77636	380284	142214.8	167838.3	136902	0
6	43549	83707	52071.9	86624.3	63269	0
7	338833	1261709	392318.6	919334.7	30280989	50490
8	483453	1422403	12113.1	106743.5	6144801	0
9	3172	9743	2258.2	6064.3	12361	0
TOTALS	7291302	23173473	4536500.5	6645306.3	47880599	49152952

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	4536500.5	6645306.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1332185.9	1332185.9
TOTAL ENERGY CONSUMPTION (MWH)	5868686.4	7977492.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	804.9	1094.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	35.4	64.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	286063	903660	472964.9	723300.6	433757
2	-74272	-259597	-140556.0	-158416.2	-529578
3	0	0	0.0	0.0	0
4	-7312	-23245	-12085.7	-14987.6	-27163
5	-10901	-31067	-11211.6	-14094.9	-11184
6	0	0	0.0	0.0	0
7	-646271	-3596446	-50662.0	-157110.0	-8631470
8	452693	1349145	6114.8	94729.6	5828306
9	0	0	0.0	0.0	0
TOTALS	0	-1662656	258164.4	468820.9	-2937333

TABLE 13

REGIONAL TOTALS 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT. (4)	PERMA- NENT (5)	3IG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	3673830	444870	651631	437254	4213	0	12426	2095366	28370	0
2	1603667	195300	331329	357509	0	0	2103	623101	93545	0
3	163321	49411	13259	358	0	0	3435	102366	0	0
4	162746	36419	19314	22547	0	0	999	22857	60	0
5	228295	1360	78507	33418	8025	0	20571	86414	0	0
6	202307	0	45694	0	1811	77536	114	21194	46296	7662
7	453540	244621	2350	91266	76923	0	1510	36306	2564	0
8	32844	700	11663	12475	0	0	31	7975	0	0
9	287	0	0	0	0	0	192	95	0	0
10	67	0	67	0	0	0	0	0	0	0
11	17162	0	6234	0	10000	150	203	108	0	500
12	264652	81995	39233	36816	8424	0	313	97815	0	0
13	272935	9734	23868	39585	0	0	0	172718	27000	0
14	72300	10500	1929	15002	0	0	0	44749	0	0
15	147981	26515	25339	35489	0	0	902	65736	0	0
16	15112	0	0	0	0	0	0	15112	0	0
17	424	0	400	24	0	0	0	0	0	0
18	8323	2403	11	5764	0	0	0	145	0	0
19	2525	780	0	606	0	0	0	0	1145	0
20	158	0	39	79	0	0	0	40	0	0
21	9635	0	8856	432	0	0	247	100	0	0
22	9111	0	7824	0	1236	0	0	41	0	10
23	2030	0	2030	0	0	0	0	80	0	0
24	80	0	0	0	0	0	0	0	0	0
TOTALS	7291302	1098608	1270157	1088720	110632	77686	43549	3392798	200980	8172

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	1098608	33.0	1427.2	2303.7	1.3
2	1270157	28.9	960.1	1200.5	4.9
3	1088720	33.7	1245.9	1547.5	3.0
4	110632	38.0	1313.0	2256.3	3.0
5	117632	38.7	1830.6	2150.2	1.8
6	43549	23.1	1195.7	1989.1	1.4
7	3392798	44.7	119.6	271.1	8.9
8	200930	30.5	45.1	240.3	11.0
9	8172	54.6	1056.9	2256.3	6.0
WEIGHTED AVERAGES		38.1	671.1	991.6	6.1

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	74	241	23	41	116

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	1098608	3023962	1567901.2	2530835.6	1451502	54074818
2	1270157	3364644	1219430.0	1524364.6	6250650	113523
3	1088720	3059996	1356416.3	1634793.9	330795	0
4	110632	350721	142594.4	249687.3	336692	0
5	77686	388284	142214.8	167038.3	136302	0
6	43549	83707	52071.9	86624.3	63269	0
7	3392798	12634262	392318.6	919651.0	3032228	909157
8	200980	510721	9002.3	48403.0	220317	0
9	8172	37207	8637.2	18442.6	45113	2352500
TOTALS	7291302	23144904	4893310.7	7230341.4	44118468	57449997

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	4893310.7	7230341.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1332185.9	1332185.9
TOTAL ENERGY CONSUMPTION (MWH)	6225496.7	8562527.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	853.8	1174.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	84.3	144.5

SECTION 6: CHANGES FROM 1975: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	618014	1936750	922015.9	1463708.2	929640
2	-132715	-454212	-236524.9	-268438.9	-926599
3	0	0	0	0	0
4	-7312	-28235	-12685.7	-18987.6	-27163
5	-10901	-31067	-11211.6	-14694.9	-11184
6	0	0	0	0	0
7	-642336	-3574263	-56662.0	-156443.7	-8593232
8	170226	437451	3064.0	16384.4	184422
9	5000	27463	6379.0	12373.5	36251
TOTALS	0	-1691164	614974.7	1053896.1	-6694405

TABLE 14

REGIONAL TOTALS 1985 (OTHER PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTR PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	4009134	234787	752595	499487	4950	0	14050	2236418	266837	0
2	1762589	236017	353287	411324	0	0	2413	658663	100930	0
3	190441	58113	15210	336	0	0	5138	111599	0	0
4	112223	635	22336	25437	0	0	1077	26114	36254	0
5	253342	1538	88359	39431	8086	0	22354	95540	0	0
6	225668	0	66560	0	1946	83132	123	18678	52328	2896
7	509258	247462	31354	97821	85337	0	1892	38309	2583	0
8	38210	304	13398	14447	0	0	35	9534	0	0
9	1594	0	0	0	0	0	1498	96	0	0
10	78	0	78	0	0	0	0	0	0	0
11	20225	0	7254	0	11692	227	234	164	0	654
12	300139	82512	42268	42114	9343	0	358	107339	16265	0
13	300131	13688	27230	47779	0	0	0	181262	33172	0
14	83810	12539	2267	18166	0	0	0	50335	504	0
15	164141	23671	27630	41478	0	0	936	70377	0	0
16	15506	0	0	0	0	0	0	15506	0	0
17	470	0	434	36	0	0	0	0	0	0
18	9832	0	2648	7025	0	0	0	159	0	0
19	2941	1183	0	665	0	0	0	0	1154	0
20	180	0	46	90	0	0	0	44	0	0
21	10839	0	9952	485	0	0	278	124	0	0
22	10264	0	8812	0	1369	0	0	51	0	120
23	3374	0	3374	0	0	0	0	0	0	0
24	99	0	0	0	0	0	0	99	0	0
TOTALS	8022500	939917	1475974	1246500	122745	83360	50490	3620411	509937	3562

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	909917	31.5	1449.3	2325.8	1.3
2	1475574	23.5	1029.3	1269.8	5.0
3	1246506	34.0	1254.6	1556.2	3.1
4	122745	38.4	1379.7	2323.6	3.1
5	83360	58.9	1886.0	2205.6	1.8
6	50490	23.1	1197.6	1591.0	1.4
7	3620411	44.9	111.0	266.4	9.0
8	509937	35.1	36.0	322.7	12.6
9	3562	37.2	754.9	1004.8	4.1
WEIGHTED AVERAGES		38.1	649.0	945.4	6.5

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
62	70	242	25	42	112

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	909917	2386127	1318714.5	2116261.1	1149341	69944328
2	1475574	3632347	1518611.4	1873642.0	7409988	14317930
3	1246506	3535372	1563832.9	1939801.4	3818202	31615821
4	122745	392880	169348.7	239209.6	377155	6161578
5	83360	488582	157226.1	183856.5	147233	4663052
6	50490	97058	63467.6	103526.9	69982	1329931
7	3620411	1354314	401036.0	364540.2	3258721	39321621
8	509937	1490238	13724.2	113543.8	543729	1237661
9	3562	11954	2831.6	7135.9	14591	188781
TOTALS	8022500	25497652	5206781.7	7584488.1	51924952	168149672

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	5206781.7	7584488.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	186427.5	186427.5
TOTAL ENERGY CONSUMPTION (MWH)	7070909.2	9448615.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	881.4	1177.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	111.9	148.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	429323	1298914	672830.2	1049133.7	623479
2	72742	114088	82456.5	80333.1	232740
3	157746	475377	207416.5	255307.5	513407
4	4831	13864	12003.7	16535.0	13309
5	-5227	-2370	3793.7	2123.3	-153
6	6941	13352	8395.7	13902.6	813
7	-414633	-2669491	-47150.0	-111604.5	-6407719
8	475177	1416975	7725.9	101524.3	5121334
9	390	1310	573.4	1041.6	1729
TOTALS	731198	661619	928445.7	1408002.8	1107919

TABLE 15 REGIONAL TOTALS 2000 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	4511895	559025	849214	592943	6047	0	16492	248433	39737	0
2	2300349	297010	366210	432034	0	0	2394	710845	111938	0
3	222034	71117	18128	424	0	0	6939	125436	0	0
4	126438	37111	26112	38763	0	0	1193	31004	316	0
5	295321	1805	103095	48413	8176	0	25182	109231	0	0
6	260859	0	39266	0	2150	91440	149	57843	58378	11419
7	579711	323417	4302	107663	97940	0	2465	41310	2613	0
8	46296	958	16303	17417	0	0	41	11800	0	0
9	3535	0	0	0	0	0	3437	99	0	0
10	96	0	96	0	0	0	0	0	0	0
11	24885	0	3853	0	14269	344	295	247	0	886
12	353316	123773	46743	50057	11714	0	418	121610	0	0
13	340335	12117	32283	60083	0	0	0	154069	42433	0
14	101087	16858	2684	22822	0	0	0	58703	0	0
15	108162	31541	31851	50460	0	0	1112	73398	0	0
16	16036	0	0	0	0	0	0	16096	0	0
17	539	0	484	55	0	0	0	0	0	0
18	12100	2991	14	8916	0	0	0	179	0	0
19	3565	1787	0	611	0	0	0	0	1167	0
20	214	0	58	107	0	0	0	49	0	0
21	12640	0	11591	565	0	0	323	160	0	0
22	11988	0	10288	0	1618	0	0	66	0	160
23	5382	0	5382	0	0	0	0	0	0	0
24	128	0	0	0	0	0	0	128	0	0
TOTALS	9118800	1479570	1592658	1483323	146914	91792	60349	4000789	256582	12322

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	1479570	33.1	1467.7	2344.2	1.3
2	1592658	29.1	1015.9	1236.4	4.9
3	1483323	34.4	1297.0	1593.7	3.1
4	140914	38.8	1403.8	2347.7	3.1
5	1792	59.0	1937.1	2256.6	1.8
6	61792	23.1	1281.3	1994.7	1.4
7	4000789	45.1	103.9	259.3	9.0
8	256582	30.1	46.9	244.7	10.9
9	12322	58.4	1066.9	2266.8	6.2
WEIGHTED AVERAGES		38.1	724.2	1055.9	5.9

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	79	249	27	46	125

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	1479570	4086283	2171578.2	3468429.1	1961416	92818181
2	1592658	3857484	1618023.1	2301009.6	7873346	16526076
3	1483323	4249774	1923941.5	2371333.3	4588676	46555059
4	140914	456178	197817.4	336828.5	437931	9244063
5	91732	451594	177895.9	207140.8	162574	6930658
6	60849	116975	73897.1	121375.8	84222	1934810
7	4000789	15037919	415661.0	1037491.7	3609105	64729549
8	256582	644481	12555.2	62781.3	2784159	1521328
9	12322	57915	13146.2	27331.2	7648	4129338
TOTALS	9118800	28959603	6603630.0	9628326.3	54059777	244429062

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	6603630.0	9628326.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	2972301.2	2972301.2
TOTAL ENERGY CONSUMPTION (MWH)	9575931.2	12600627.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1050.1	1381.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	280.6	352.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	998976	2999071	1525643.8	2401301.7	1439554
2	139746	341225	162084.2	207700.1	636038
3	334663	1184779	507505.1	686344.4	1283341
4	22370	77162	40472.3	62153.9	74875
5	3205	40242	24343.5	29457.6	10447
6	17400	33268	21625.1	34751.6	23453
7	-34115	-1175606	-33319.5	-33553.0	-2821455
8	225822	571219	6087.6	50761.8	2467665
9	9100	48112	10088.0	21806.9	63937
TOTALS	1827490	4123510	2325233.9	3451840.9	3241845

TABLE 16. REGIONAL TOTALS 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	4237083	244598	812393	532364	5522	0	14389	2354053	273263	0
2	1868236	259389	373872	436120	0	0	2595	643296	103045	0
3	204275	63432	17379	399	0	0	552	120723	0	0
4	119493	612	24850	2761	0	0	1167	28416	36761	0
5	275825	1632	97979	43119	8257	0	24624	100216	0	0
6	233767	0	69378	0	1984	86483	145	19368	53405	3005
7	542929	269361	33684	102486	92423	0	1959	40401	2617	0
8	41940	837	15149	15896	0	0	39	10019	0	0
9	3898	0	0	0	0	0	3822	96	0	0
10	85	0	85	0	0	0	0	0	0	0
11	22116	0	7874	0	12692	300	254	216	0	780
12	322826	88888	45479	44713	10204	0	405	116724	16413	0
13	313257	11014	23520	49486	0	0	0	189982	34255	0
14	90641	12972	2521	18830	0	0	0	59807	510	0
15	170727	24380	29755	43212	0	0	1031	72295	0	0
16	15724	0	0	0	0	0	0	15724	0	0
17	504	0	456	48	0	0	0	0	0	0
18	11332	0	2911	8254	0	0	0	166	0	0
19	3339	1558	0	612	0	0	0	0	1169	0
20	190	0	49	95	0	0	0	46	0	0
21	12222	0	11236	540	0	0	313	124	0	0
22	11555	0	924	0	1568	0	0	51	0	12
23	3278	0	3278	0	0	0	0	0	0	0
24	99	0	0	0	0	0	0	99	0	0
TOTALS	8505347	975593	1587468	1323874	132650	86782	56324	3816821	521438	3797

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	975593	31.4	1462.5	2339.3	1.3
2	1587468	29.6	1032.0	1272.5	5.0
3	1323874	34.1	1268.2	1569.8	3.1
4	132650	38.5	1386.1	2330.0	3.1
5	86782	59.0	1907.0	2226.5	1.8
6	56924	22.7	1161.4	1974.8	1.4
7	3816821	45.0	105.3	260.7	9.0
8	521438	39.0	27.2	222.9	12.6
9	3797	37.7	846.0	2047.9	4.2
WEIGHTED AVERAGES		38.2	656.0	954.0	6.5

SECTION 3: REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
62	70	241	26	43	113

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	975593	2559023	1426819.4	2281931.8	1224311	80635383
2	1587468	3910772	1638248.1	2319933.5	7977975	23075608
3	1323874	3761342	1678928.9	2078233.2	4062250	46041970
4	132650	426009	183663.2	309073.6	408960	11127953
5	86782	426926	165492.0	193222.1	153694	7476342
6	56924	107869	67250.0	112414.3	77666	2530049
7	3816821	14326429	401830.6	999007.6	1438329	7208804
8	521438	1521360	14168.8	116239.7	6572276	1732110
9	3797	11943	3220.1	7776.6	15764	360431
TOTALS	8505347	27042664	5579821.1	8113945.3	54876024	245000651

SECTION 5: REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	5579821.1	8113945.3
DIVERSICH PUMPING ENERGY CONSUMPTION (MWH)	1997074.2	1997074.2
TOTAL ENERGY CONSUMPTION (MWH)	7576895.3	10111019.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	890.8	1186.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	121.4	159.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	494999	1462810	780935.0	1214604.4	732149
2	184536	392913	182233.3	226683.0	803727
3	245154	701347	320912.6	393439.3	75724
4	14736	46384	20510.1	40399.0	45105
5	-1835	15975	12065.5	11444.9	5607
6	13375	24162	15178.0	25790.0	17397
7	-218283	-1887066	-47150.0	-81077.1	-4529030
8	490678	1448047	8170.5	104228.2	6253781
9	625	2199	962.0	1712.3	2403
TOTALS	1214045	2206592	1301485.1	1937460.0	4653092

TABLE 17 REGIONAL TOTALS 2000 (REGIONAL TRENDS)

SECTION 14 CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLY (4)	PERMA- NENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	5080861	601135	930455	674925	7477	0	18566	2741261	47041	0
2	2265543	355321	437955	554246	0	0	3334	797441	117302	0
3	256088	76961	22777	472	0	0	8223	148254	0	0
4	144628	38288	32397	35338	0	0	1418	36760	426	0
5	347034	2038	127141	57627	8601	0	30692	126306	61070	12233
6	280905	0	45996	0	2244	99825	191	59346	2696	0
7	673845	379864	7173	119325	115614	0	2632	46542	0	0
8	55602	1043	20375	21640	0	0	52	13092	0	0
9	9295	0	0	0	0	0	9197	98	0	0
10	112	0	112	0	0	0	0	0	0	0
11	29611	0	10404	0	16769	524	335	377	0	1202
12	410049	140236	54773	56556	12865	0	533	145086	0	0
13	373809	12932	38111	64351	0	0	0	213374	45141	0
14	118153	17358	3320	24683	0	0	0	72393	0	0
15	205125	33455	37318	54860	0	0	1350	78122	0	0
16	16641	0	0	0	0	0	0	16641	0	0
17	624	0	540	84	0	0	0	0	0	0
18	15825	3639	15	11974	0	0	0	197	0	0
19	4260	2725	0	631	0	0	0	54	1204	0
20	237	0	64	118	0	0	0	0	0	0
21	16067	0	14802	722	0	0	413	160	0	16
22	15216	0	13068	0	2066	0	0	66	0	0
23	5143	0	5143	0	0	0	0	0	0	0
24	128	0	0	0	0	0	0	128	0	0
TOTALS	10325800	1665596	1661839	1676766	165666	100349	76935	4490298	274879	13451

SECTION 24 IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	1665596	32.9	1496.0	2372.5	1.3
2	1861839	29.1	1014.8	1255.2	4.9
3	1676766	34.4	1321.7	1623.3	3.1
4	165686	39.0	1414.3	2358.3	3.1
5	100349	59.4	1976.4	2297.9	1.8
6	76935	22.5	1170.7	1964.1	1.3
7	4490298	45.4	92.6	248.0	9.1
8	274879	30.0	49.1	244.8	10.8
9	13451	56.3	1097.9	2297.8	6.2
WEIGHTED AVERAGES		38.1	732.5	1064.8	5.9

SECTION 31 REGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	79	248	29	47	126

SECTION 41 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	1665596	4570495	2491753.4	3951656.9	2193838	112401489
2	1861839	4507317	1889335.8	2337352.2	9194926	29158392
3	1676766	4113434	2216215.3	2721959.1	5198559	69046303
4	165686	539007	234337.0	390730.9	517447	16698236
5	100349	496456	198527.8	235593.5	178724	11150576
6	76935	144802	90688.6	151110.1	103681	3786567
7	4490298	16990739	415661.0	1113574.6	40777893	113622855
8	274379	683139	13492.0	67299.3	2972760	2021959
9	13451	63113	14768.4	30908.6	83309	4551635
TOTALS	10325800	32812751	7564159.2	10994883.6	61221087	362528012

SECTION 51 REGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	7564159.2	10994883.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	3474239.6	3474239.6
TOTAL ENERGY CONSUMPTION (MWH)	11038398.8	14469123.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1069.0	1401.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	299.5	371.4

SECTION 61 CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	1185002	3433282	1845869.0	2384529.5	1671976
2	458967	989059	433331.0	543748.7	2017678
3	588046	1753434	829798.9	1037164.2	1833713
4	47742	159531	76931.9	123366.4	153591
5	11762	65135	45101.3	60849.8	30638
6	33366	60295	37936.7	64485.8	43412
7	455194	777264	-33319.6	37429.9	1805434
8	244119	614876	7449.7	93779.0	2656266
9	10274	53369	12511.2	24044.3	70448
TOTALS	3034498	7976679	3285823.2	4810398.2	10403155

addition of pump-back technology to the return-flow gravity system, in a 15.1 percent increase in on-farm application efficiencies. Because of this shift, water applications were reduced 6.7 percent (1.7 million acre-feet) for a total water application of 23.2 million acre-feet (Figure 9). Labor requirements diminished 2.9 million man-hours (5.8 percent) bringing labor requirements to 47.9 million man-hours (Figure 7). The capital required to alter actual 1975 technology combinations to meet the 1985 No Growth combinations was 49.2 million (1967) dollars.

2000 No Growth Future (Table 13)

The 1985 trend to increase utilization center pivot irrigation systems continues in the 2000 No Growth Future. However, a small increase in acreage irrigated by the return-flow gravity and drip systems occurred. The changes to return-flow gravity irrigation systems may be the beginning of a trend to substitute labor and capital for energy since they have high labor requirements and low energy requirements. As a result of these changes, water applications decreased 0.1 percent (29,000 acre-feet) to 23.1 million acre-feet (Figure 9) and labor requirements decreased 7.9 percent (3.8 million man-hours) to 44.1 million man-hours (Figure 7) from the 1985 No Growth Future. Furthermore, pumping and total energy consumptions increased 14.4 percent (357,000 megawatt-hours) to 4.9 million megawatt-hours and 585,000 megawatt-hours (8.8 percent) to 7.2 million megawatt-hours (Figure 5), respectively. These modifications in technology combinations required an additional investment of 57.4 million (1967) dollars from the 1985 No Growth combinations.

On-farm labor requirements and water applications decreased while pumping and total energy consumptions increased when comparing the 2000 No Growth Future to the 1975

Data Base. Water applications of approximately 23.1 million acre-feet represent a 6.8 percent decrease in on-farm water applications. Labor requirements were reduced approximately 13.2 percent to 44.1 million man-hours. Pumping and total energy consumptions increased 14.4 percent to 4.9 million megawatt-hours and 17.1 percent to 7.2 million megawatt-hours, respectively.

Growth Futures - OBERS

The OBERS Projections are part of a nationwide set of projections which provide a reference framework for alternative projections of economic activity of one region as compared to similar projections of economic activity for other regions. In the framework of this study, levels of future development of irrigated agriculture were based on modifications of the original OBERS Projections (PNRBC, 1976). This level of development was considered as being a moderate level of growth. The water, labor, energy and capital requirements reported result from selecting the least cost irrigation systems on new lands, by crop and subarea, and replacing existing irrigation technologies with new irrigation technologies whenever total annual costs of operating a new technology were less than the variable costs of operating an existing technology.

1985 OBERS Future (Table 14)

Results of this procedure for 1985 indicate on-farm water applications, labor requirements, pumping and total energy requirements increased as compared to the 1975 Base Data. Water applications of 25.5 million acre-feet (Figure 9), are 2.7 percent above the 1975 level. Labor increased 2.2 percent to 51.9 million man-hours (Figure 7). Pumping and total energy consumptions climbed 21.7 percent (928,000 megawatt-hours) and 22.8 percent (1.4 million megawatt-hours),

respectively. On-farm pumping energy consumption climbed to 5.2 million megawatt-hours and on-farm total energy consumption reached 7.6 million megawatt-hours (Figure 9). Capital requirements for the changes in irrigation technologies and the development of new acreage was 168.1 million (1967) dollars.

2000 OBERS Future (Table 15)

Comparing results from 2000 OBERS Projections to results from 1985 OBERS Projections indicate on-farm water, labor and energy requirements increased. This occurred because of large increases in acreage developed with center pivot, hand move and gravity systems while there was a large acreage decrease in pump-back systems. An increase of 13.6 percent elevated gross water applications to 29.0 million acre-feet (Figure 9). Increased demands for labor necessary to operate the selected irrigation technologies were 4.1 percent, raising labor requirements to 54.1 million man-hours (Figure 7). Pumping and total energy consumptions had respective increases of 26.8 and 26.9 percent, resulting in respective on-farm usage of 6.6 and 9.6 million megawatt-hours of electrical energy (Figure 5). Irrigation technologies for this level of development and changes in existing irrigation technologies required an infusion of 244.4 million (1967) dollars to purchase new irrigation equipment.

Comparison of the 2000 OBERS Projections to 1975 Base Data indicates water, labor and energy consumptions increased. Labor increased 6.4 percent or 3.2 million man-hours. Water applications, pumping and total energy requirements increased 16.6, 54.4 and 55.9 percent, respectively.

Growth Futures - Regional Trend

Regional Trend Projections were based upon the assumptions that (1) the Pacific Northwest would continue to grow

in the future as it did in the 1960-1972 period and (2) that local, state and regional public action would be relatively neutral; that is, no action would be taken to either direct, stimulate or dampen the existing pattern of regional growth (PNRBC, 1978).

The regional goal for irrigation development used by the PNRBC (1978) was to:

"maintain or achieve a level of irrigated agriculture in an economical and water-efficient manner which in conjunction with non-irrigated agriculture would utilize regional production advantages in helping to maintain, or increase if practical, the region's production to help meet increasing national and international demand for agricultural products."

Growth levels indicated by the Regional Trend Projections are, for the purposes of this study, considered as an optimistic or high level of development. As for the OBERS Projections, the water, labor, energy and capital requirements were a result of determining least cost irrigation technologies for a particular crop group and subarea.

1985 Regional Trend Future (Table 16)

Selection of least cost irrigation technologies for the 1985 level of development resulted in increased on-farm water applications, labor requirements, pumping and total energy consumptions as compared to the 1975 Base Data. Water applications of 27.0 million acre-feet (Figure 9) represent an 8.8 percent (2.2 million acre-feet) increase. Labor requirements increased 8.0 percent (4.1 million man-hours) to a level of 54.9 million man-hours (Figure 7). Pumping and total energy consumptions have rather uniform increases of 30.4 and 31.4 percent, respectively. On-farm pumping and total energy consumption climbed to 5.6 and 8.1 million megawatt-hours (Figure 5), respectively. The capital

investment necessary to bring about the changes in existing systems and the development of new land was 245.0 million (1967) dollars.

2000 Regional Trend Future (Table 17)

Comparison between the 2000 Regional Trend and 1985 Regional Trend Futures indicate increases in on-farm gross water applications, pumping and total energies, and labor requirements. These increases resulted from large increases in acreage irrigated by the center pivot, hand move, side roll and gravity irrigation systems and a decrease in acreage irrigated by the pump-back system. Gross water requirements were 32.8 million acre-feet (Figure 9) representing an increase of 21.3 percent. Pumping and total energy consumptions increased much more rapidly. Pumping energy increased to 7.6 million megawatt-hours, 35.6 percent, while total energy consumption increased 35.5 percent, to 11.0 million megawatt-hours (Figure 5). Labor requirements increased 11.6 percent for a total labor demand of 61.2 million man-hours (Figure 7). Capital investment required to develop new land and changing existing technologies to least cost technologies was 362.5 million (1967) dollars.

Increases in on-farm pumping and total energy consumptions increased dramatically faster than increases in on-farm gross water applications and labor requirements as compared to the 1975 Base Data. Pumping and total energy consumptions increased 76.8 and 78.0 percent, respectively, while water applications and labor requirements increased only 23.1 and 20.5 percent, respectively.

Alternative Future Comparisons

Regional on-farm per acre water applications are approximately equal for both study years (1985 or 2000) regardless

of alternative future study. Gross water applications ranged from 38.1 to 38.2 acre-inches per acre (Figure 8), representing an approximate 6.7 percent reduction from the 1975 Base Data. Labor requirements ranged from 6.5 to 6.6 man-hours per acre for the 1985 alternative futures and from 5.9 to 6.1 man-hours per acre in the 2000 alternative futures (Figure 6). These are reductions of approximately 6.4 and 14.3 percent from the 1975 Base Data.

Although reductions in on-farm per acre water applications occurred in all alternative futures, on-farm per acre pumping and total energy consumptions increased. Pumping and total energy consumptions ranged from 622.2 to 656.0 and 911.4 to 954.0 kilowatt-hours (Figure 4), respectively for all 1985 alternative futures. This represents a maximum increase of approximately 11.8 percent for per acre pumping energies and 12.6 percent for per acre total energies from the actual 1975 data. Similarly, all 2000 alternative futures had ranges in on-farm per acre pumping and total energy consumptions of 671.1 to 732.5 and 991.6 to 1,064.8 kilowatt-hours (Figure 4), respectively. Per acre pumping energies had an approximate 24.8 percent increase as compared to the 1975 Base Data while the per acre total energies had an approximate 25.7 percent increase. These data illustrate, that as water application efficiencies increase, water applications decrease and energy requirements increase. This is illustrated succinctly when Figure 3, Figure 8 and Figure 4 are compared.

The nearly uniform per acre water applications and relatively narrow range in labor requirements and energy consumptions for the 1985 and 2000 alternative futures appears to indicate any growth occurring between the No Growth and Regional Trend Projections should have similar on-farm per acre water, energy and labor requirements.

Figure 3. Regional On-Farm Irrigation Application Efficiencies

Figure 4. Regional On-Farm per Acre Pumping and Total Energy Requirements

Figure 5. Regional On-Farm Pumping and Total Energy Requirements

Figure 6. Regional On-Farm Per Acre Labor Requirements

Figure 8. Regional On-Farm Per Acre Gross Water Applications

Figure 7. Regional On-Farm Labor Requirements

Figure 9. Regional On-Farm Gross Water Applications

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CONCLUSIONS AND IMPLICATIONS

The computer model developed to predict regional water, energy and labor requirements of Northwest irrigated agriculture indicated that per acre on-farm water applications would be relatively unaffected by increasing irrigated acreage. At the same time, per acre on-farm pumping and total energy consumptions would increase and labor requirements would decrease with increasing irrigated acreage. This occurred because of the majority of irrigation systems placed on the new lands were water and labor saving irrigation systems having high energy demands. These results appear to indicate that energy conservation means lower application efficiencies or, conversely, high application efficiencies mean large energy inputs.

Generally, society has been led to assume if on-farm application efficiencies were increased, water and energy would be saved. Analysis of both No Growth Futures indicate increasing application efficiencies requires, not conserves, energy. Additionally, many believe the water saved by increasing application efficiencies could be used to generate additional hydroelectric power and beneficially increase in-stream flows for recreation and wildlife use.

Assumptions concerning large quantities of water being made available to other users through irrigation conservation practices are not necessarily true. Hagan (1978) illustrated the optimization of irrigation system efficiencies in several California river basins resulted in only 2.2 percent savings of water. This means the quantity of water permanently removed from the hydrologic basin is approximately the same regardless of the technology combinations utilized to apply the water for a given level of development and cropping patterns.

Since this phenomenon is complex, it is necessary to understand what happens to water after it has been diverted for agricultural use. Once diverted, water is subject to several losses. These losses include: percolation, evaporation and non-beneficial consumptive uses (e.g. weed growth) along the entire length of the conveyance system. Upon application to the field, the water is resubjected to these losses in addition to being used consumptively by the crop. Runoff results when water is applied in excess of these immediate use potentials. However, in most cases runoff and percolation losses are: recaptured and used by other irrigators, augment instream flows and/or recharge aquifers. Since the hydrologic basin water use efficiency cannot be altered significantly by changing irrigation technologies (Hagan, 1978), benefits and costs of utilizing various technologies must be examined prior to making decisions on the desirability or undesirability of any irrigation technology.

Societal costs of utilizing irrigation systems with low application efficiencies include: unnecessary energy consumption for pumping and repumping water (diversion pumping); loss of some plant nutrients through erosion and leaching; and accelerated water quality degradation due to runoff caused by erosion, leaching of some plant nutrients and where applicable, the leaching of salts (Hagan, 1978).

Contrary to popular opinion, benefits gained by society via increased application efficiencies are not the converse of societal costs. Increasing on-farm application efficiencies above levels required for leaching salts is not justifiable. Doing this would result in a drastic reduction or total cessation of agricultural production in areas where salts accumulate. Therefore, leaching requirements must be considered part of a crop's irrigation requirement. Since

leaching involves moving water through the soil profile, minimal amounts of water soluble plant nutrients will also leach with the salts. Increasing application efficiencies to significantly reduce water degradation from runoff and still provide water for leaching is technologically feasible, however, irrigation systems presently being adopted by farmers with these capabilities have high pumping and total energy requirements.

Comparison of increased pumping and total energy consumption to decreased diversion energy requirements is necessary to determine potential energy savings from increased application efficiencies. This was accomplished by assuming the maximum percent reduction in diversion pumping energy requirements would equal the percent reduction in water applications. No Growth Futures for 1985 and 2000 were selected for illustration because they were not complicated by increasing levels of irrigated crop production.

Gross water applications in the 1985 No Growth Future decreased 6.7 percent. Applying this decrease to the 1.33 million megawatt-hours of energy required for diversion pumping indicates that 89,000 megawatt-hours of energy could be saved by increasing irrigation application efficiencies. The difference between the increased on-farm pumping energy of 258,000 megawatt-hours resulting from substitution of energy intensive sprinkler systems and the energy saved for diversion pumping indicate a net increase of 169,000 megawatt-hours for overall energy consumption. Comparing increases in total energy consumptions of 469,000 megawatt-hours instead of pumping energy consumptions indicate a net increase in overall energy use of 380,000 megawatt-hours.

Following the same procedure for the 2000 No Growth Future indicates 91,000 megawatt-hours of electrical energy could be saved in diversion pumping resulting in net increases in overall pumping and total energy consumptions of 526,000 and 960,000 megawatt-hours, respectively. These analyses indicate much more energy will be consumed by increasing application efficiencies than will be saved in the reduction of diversion pumping energy requirements.

As the foregoing discussion illustrates, water quality degradation due to runoff is the only societal cost significantly reduced or eliminated by increased water application efficiencies. However, for this to be achieved, large energy inputs will be required unless irrigation systems with high potential application efficiencies and low energy requirements are utilized.

Pump-back and similar technologies are the only currently available technologies having the potential of both increasing application efficiencies and energy conservation. Widespread use of these systems in conjunction with return-flow gravity systems currently irrigating lands could possibly result in reduced diversion pumping requirements while minimizing additional energy and capital inputs. A major drawback of these technologies is that they require an almost equal amount of labor as the return-flow gravity systems they modify. Until pump-back technologies become reliably automated, extensive utilization of them will not materialize because labor is usually a major determining factor in irrigation system selection.

As previously illustrated, most areas of the region cannot be guaranteed improved in-stream flows as a result of improved on-farm application efficiencies. Furthermore, a

possibility exists that in-stream flows in some areas may be diminished by increasing application efficiencies. This may occur because the water storage potential of some soils, their parent materials and underlying strata temporarily delay water movement resulting in water being released as the season progresses. This late season release of water has the potential of augmenting late season in-stream flows.

The interrelationships between applying water in quantities greater than required for crop consumptive use and late season in-stream flow augmentation and/or aquifer recharge are not well understood (PNRBC, 1978). Therefore, before major changes in the regional water-energy management scheme occur, or incentives are designed to produce such changes, evaluations are needed concerning the secondary and tertiary effects on the water supply for other farmers and users (Hagan, 1978; PNRBC, 1978) along with energy-water interrelationships. Without such evaluations, planners and decision makers cannot make well informed policy decisions concerning regional agricultural use of water and energy.

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APPENDIX A

Projected Irrigated Acreages by State Subregion and Subarea

Table A1 Projected Irrigated Acreages - Idaho
Area in 1990's of Acres

Subregion- Subarea	CNP ¹ 1970 Base	EWC ² 1975 Base	1985 Projections ³ Based on OBERS Projections		2000 Projections ⁴ Based on OBERS Projections		
			Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975	Total ^c
1. Kootenai	1.9	1.0	6.8	7.8	16.0	16.9	17.9
Pend Oreille	3.5	3.0	2.2	5.2	5.0	5.5	8.5
Spokane	22.6	21.1	5.8	26.9	13.0	14.5	35.6
Lower Clark	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	28.0	25.1	14.8	39.9	34.0	36.9	62.0
4. Henrys Fork	222.3	249.5	0.7	250.2	29.0	1.8	251.3
Heise-Neeley	792.3	806.7	34.6	841.3	101.0	86.6	893.3
Neeley-Milner	486.5	521.0	31.8	552.8	114.0	79.5	600.5
No. Streams	244.4	256.4	10.8	267.2	39.0	27.0	283.4
West Side	717.2	694.0	18.1	712.1	22.0	45.2	739.2
South Fork	18.2	15.1	1.2	16.3	0.0	3.1	18.2
Subtotal	2,480.9	2,542.7	97.2	2,639.9	305.0	243.2	2,785.9
5. Bruneau	208.9	209.9	71.2	281.1	179.0	178.0	387.9
Boise	473.2	458.0	59.7	517.7	134.0	149.2	607.2
Payette	150.7	165.0	8.7	173.7	36.0	21.7	186.7
Weiser	62.5	54.3	5.7	60.0	6.0	14.2	68.5
Owyhee	16.0	15.6	0.2	15.8	0.0	0.4	16.0
Subtotal	911.3	902.8	145.5	1,048.3	355.0	363.5	1,266.3
6. Upper Salmon ⁵	123.9	120.5	2.6	123.1	3.0	6.4	126.9
Salmon ⁵	17.2	16.7	0.2	16.9	0.0	0.5	17.2
Clearwater ⁵	1.9	1.9	4.0	5.9	10.0	10.0	11.9
Subtotal	143.0	139.1	6.8	145.9	13.0	16.9	156.0
14. Bear River ⁶	186.8	236.6	-2.7	233.9	43.0	-6.8	229.8
Subtotal	186.8	236.6	-2.7	233.9	43.0	-6.8	229.8
State Total	3,750.0	3,846.3	261.6	4,107.9	750.0	653.7	4,500.0

¹1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commission (PNRBC) designated CNP 1970 Base

²1975 Irrigated Acreages based on King, et al. "Energy and Water Consumption of Pacific Northwest Irrigation Systems," designated EWC 1975 Base.

³1985 projections of irrigated acreages based on OBERS projections obtained from PNRBC.

a. A straight line interpolation of the Increase from 1975 for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975.

⁴2000 projections of irrigated acreages based on OBERS projections obtained from the PNRBC.

a. Increase in irrigated acreages for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP Base and 4a.

⁵Irrigated acreages for the CNP Base were extrapolated from the EWC 1975 Base Acreages

⁶Acreages for this subregion were obtained from Interim State Water Plan, Preliminary Report, July, 1972, Idaho Water Resource Board, Statehouse, Boise, Idaho. Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

Table A2 Projected Irrigated Acreages - Idaho
Area in 1000's of Acres

Subregion- Subarea	CNP ¹	EWC ²	1985 Projections ³		2000 Projections ⁴		
	1970	1975	Based on		Based on		
	Base	Base	Regional Trend		Regional Trend		
				Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975
1. Kootenai	1.9	1.0	18.8	19.8	46.0	46.9	47.9
Pend Oreille	3.5	3.0	6.6	9.6	16.0	16.5	19.5
Spokane	22.6	21.1	14.2	35.3	34.0	35.5	56.6
Lower Clark	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal	28.0	25.1	39.6	64.7	96.0	98.9	124.0
4. Henrys Fork	222.3	249.5	5.9	255.4	42.0	14.8	264.3
Heise-Neeley	792.3	806.7	66.2	872.9	180.0	165.6	972.3
Neeley-Milner	486.5	521.0	70.2	591.2	210.0	175.5	696.5
No. Streams	244.4	256.4	24.8	281.2	74.0	62.0	310.4
West Side	717.2	694.0	28.1	722.1	47.0	70.2	764.2
South Fork	18.2	15.1	1.2	16.3	0.0	3.1	18.2
Subtotal	2,480.9	2,542.7	196.4	2,739.1	553.0	491.2	3,033.9
5. Bruneau	208.9	209.9	142.0	351.9	356.0	355.0	564.9
Boise	473.2	458.0	114.0	572.0	270.0	285.2	743.2
Payette	150.7	165.0	18.3	183.3	60.0	45.7	210.7
Weiser	62.5	54.3	6.9	61.2	9.0	17.2	71.5
Owyhee	16.0	15.6	0.2	15.8	0.0	0.4	16.0
Subtotal	911.3	902.8	281.4	1,184.2	695.0	703.5	1,606.3
6. Upper Salmon ⁵	123.9	120.5	3.0	123.5	4.0	7.4	127.9
Salmon ⁵	17.2	16.7	0.2	16.9	0.0	0.5	17.2
Clearwater ⁵	1.9	1.9	6.0	7.9	15.0	15.0	16.9
Subtotal	143.0	139.1	9.2	148.3	19.0	22.9	162.0
14. Bear River ⁶	106.8	336.6	9.6	246.2	74.1	23.9	260.5
Subtotal	186.8	236.6	9.6	246.2	74.1	23.9	260.5
State Total	3,750.0	3,846.3	536.2	4,382.5	1,437.1	1,340.4	5,187.1

¹ 1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commission (PNRBC) designated CNP 1970 Base.

² 1975 Irrigated Acreages based on King, et al. "Energy and Water Consumption of Pacific Northwest Irrigation Systems," designated EWC 1975 Base.

³ 1985 projections of irrigated acreages based on state projections obtained from PNRBC.

a. A straight line interpolation of the Increase from 1975 for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975.

⁴ 2000 projections of irrigated acreages based on state projections obtained from the PNRBC.

a. Increase in irrigated acreages for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP Base and 4a.

⁵ Irrigated acreages for the CNP Base were extrapolated from the EWC 1975 Base Acreages.

⁶ Acreages for this subregion were obtained from Interim State Water Plan, Preliminary Report, July 1972, Idaho Water Resource Board, Statehouse, Boise, Idaho. Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

Table A3 Projected Irrigated Acreages - Oregon
Area in 1000's of Acres

Subregion- Subarea	CNP ¹ 1970 Base	EWC ² 1975 Base	1985 Projections ³ Based on OBERS Projections		2000 Projections ⁴ Based on OBERS Projections		
			Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975	Total ^c
5. Bruneau	14.1	19.2	-2.0	17.2	0.0	-5.1	14.1
Boise	3.9	5.3	-0.6	4.7	0.0	-1.4	3.9
Owyhee	77.5	73.2	4.5	77.7	7.0	11.3	84.5
Malheur	184.9	175.5	9.8	185.3	15.0	24.4	199.9
Burnt Powder	174.9	144.5	12.2	156.7	0.0	30.4	174.9
Subtotal	455.3	417.7	23.9	441.6	22.0	59.6	477.3
6. Grande Ronde	101.0	83.0	17.2	100.2	25.0	43.0	126.0
Subtotal	101.0	83.0	17.2	100.2	25.0	43.0	126.0
7. Hood	39.9	26.8	6.8	33.6	4.0	17.1	43.9
Deschutes	261.1	186.0	35.6	221.6	14.0	89.1	275.1
John Day	65.7	56.5	5.3	61.8	4.0	13.2	69.7
Umatilla	103.7	156.8	23.2	180.0	111.0	57.9	214.7
Walla-Walla	26.7	30.1	0.2	30.3	4.0	0.6	30.7
Subtotal	497.1	456.2	71.1	527.3	137.0	177.9	634.1
8. Lower C.	2.0	1.1	0.4	1.5	0.0	0.9	2.0
Subtotal	2.0	1.1	0.4	1.5	0.0	0.9	2.0
9. Willamette	244.0	262.1	32.4	294.5	99.0	80.9	343.0
Subtotal	244.0	262.1	32.4	294.5	99.0	80.9	343.0
10. Rogue	98.7	64.1	15.4	79.5	4.0	38.6	102.7
Umpqua	20.9	18.9	3.6	22.5	7.0	9.0	27.9
Oregon Coast	39.3	26.8	6.6	33.4	4.0	16.5	43.3
Subtotal	158.9	109.8	25.6	135.4	15.0	64.1	173.9
12. Fort Rock ⁵	52.1	73.1	11.4	84.5	49.5	28.5	101.6
Alvord ⁵	78.0	77.6	1.4	79.0	3.0	3.4	81.0
Silvies ⁵	169.9	111.4	4.8	116.2	46.5	12.0	123.4
Subtotal	300.0	262.1	17.6	279.7	6.0	43.9	306.0
13. Klamath ⁶	240.4	258.6	-1.0	257.6	15.7	-2.5	256.1
Subtotal	240.4	258.6	-1.0	257.6	15.7	-2.5	256.1
State Total	1,998.7	1,850.6	187.2	2,037.8	319.7	467.8	2,318.4

¹1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commissions (PNRBC) designated CNP 1970 Base.

²1975 Irrigated Acreages based on King, et al. "Energy and Water Consumptions of Pacific Northwest Irrigation Systems," designated EWC 1975 Base.

³1985 projections of irrigated acreages based on OBERS Projections obtained from the PNRBC.

a. A straight line interpolation of the Increase from 1975 (4b) for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975 (3b).

⁴2000 projections of irrigated acreages based on OBERS Projections obtained from the PNRBC.

a. Increases in irrigated acreage for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP 1970 Base and 4a.

⁵Projections for these subareas were revised by the authors to more clearly represent the current situation.

⁶Acreages for this subregion were obtained from 1969 Census of Agriculture. Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

Table A4 Projected Irrigated Acreages - Oregon
Area in 1000's of Acres

Subregion- Subarea	CNP ¹ 1970 Base	EWC ² 1975 Base	1985 Projections ³ Based on Regional Trend		2000 Projections ⁴ Based on Regional Trend		
			Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975	Total ^c
5. Bruneau ⁵	14.1	19.2	-1.1	18.1	2.4	-2.7	16.5
Boise	3.9	5.3	-0.3	5.0	0.6	-0.8	4.5
Owyhee	77.5	73.3	5.6	78.9	10.0	14.2	87.5
Malheur	184.9	175.5	26.6	202.1	57.0	66.4	241.9
Burnt Powder	174.9	144.5	20.2	164.7	20.0	50.4	194.9
Subtotal	455.3	417.7	51.1	468.8	90.0	127.6	545.3
6. Grande Ronde	101.0	83.0	22.4	105.4	38.0	56.0	139.0
Subtotal	101.0	83.0	22.4	105.4	38.0	56.0	139.0
7. Hood	39.9	26.8	6.0	32.8	2.0	15.1	41.9
Deschutes	261.1	186.0	48.0	234.0	45.0	120.1	306.1
John Day	65.7	56.5	8.1	64.6	11.0	20.2	76.7
Umatilla	103.7	156.8	30.8	187.6	130.0	76.9	233.7
Walla Walla	26.7	30.1	6.2	36.3	19.0	15.6	45.7
Subtotal	497.1	456.2	99.1	555.3	207.0	247.9	704.1
8. Lower C.	2.0	1.1	0.4	1.5	0.0	0.9	2.0
Subtotal	2.0	1.1	0.4	1.5	0.0	0.9	2.0
9. Willamette	244.0	262.1	70.4	332.5	194.0	175.9	438.0
Subtotal	244.0	262.1	70.4	332.5	194.0	175.9	438.0
10. Rogue	98.7	64.1	15.4	79.5	4.0	38.6	102.7
Umpqua	20.9	18.9	4.0	22.9	8.0	10.0	28.9
Oregon Coast	39.3	26.8	6.6	33.4	4.0	16.5	43.3
Subtotal	158.9	109.8	26.0	135.8	16.0	65.1	174.9
12. Fort Rock ⁶	52.1	73.1	16.6	89.7	50.5	29.5	102.6
Alvord	78.0	77.6	1.8	79.4	4.0	4.4	82.0
Silvies ⁶	169.9	111.4	0.0	111.4	-46.5	12.0	123.4
Subtotal	300.0	262.1	18.4	280.5	8.0	45.9	308.0
13. Klamath ⁷	240.4	258.6	3.5	262.1	27.0	8.8	267.4
Subtotal	240.4	258.6	3.5	262.1	27.0	8.8	267.4
State Total	1,998.7	1,850.6	291.3	2,141.9	580.0	728.1	2,578.7

¹ 1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commission (PNRBC) designated CNP 1970 Base.

² 1975 Irrigated Acreages based on King, et al. "Energy and Water Consumption of Pacific Northwest Irrigation Systems," designated EWC 1975 Base.

³ 1985 projections of irrigated acreages based on state projections obtained from PNRBC.

a. A straight line interpolation of the Increase from 1975 for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975.

⁴ 2000 projections of irrigated acreages based on state projections obtained from the PNRBC.

a. Increases in irrigated acreages for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP Base and 4a

⁵ PNRBC data for the Bruneau subarea was broken into both the Bruneau and Boise subarea by the authors.

⁶ Projections for these subareas were revised by the authors to more closely represent the current situation.

⁷ Acreages for this subregion were obtained from 1969 Census of Agriculture. Projections were calculated by the authors based on unpublished information obtained from the PNRBC.

Table A5 Projected Irrigated Acreages - Washington
Area in 1000's of Acres

Subregion- Subarea	CNP ¹ 1970 Base	EWC ² 1975 Base	1985 Projections ³ Based on OBERS Projections		2000 Projections ⁴ Based on OBERS Projections		
			Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975	Total ^c
1. Pend Oreille	4.5	0.8	4.3	5.1	7.0	10.7	11.5
Spokane	22.5	27.0	1.8	28.8	9.0	4.5	31.5
Subtotal	27.0	27.8	6.1	33.9	16.0	15.2	43.0
2. Big Bend	702.0	692.4	175.8	868.2	430.0	439.6	1,132.0
Ferry-Stevens	28.0	19.0	5.2	24.2	4.0	13.0	32.0
Wenatchee ⁵	39.6	30.0	5.2	35.2	3.2	12.9	42.9
Methow-Okan ⁵	34.4	26.0	4.4	30.4	2.8	11.1	37.1
Subtotal	804.0	767.4	190.6	958.0	440.0	476.6	1,244.0
3. Yakima	509.0	526.0	4.0	530.0	27.0	10.0	536.0
Subtotal	509.0	526.0	4.0	530.0	27.0	10.0	536.0
6. Palouse, L.S.	46.0	45.2	27.1	72.3	67.0	67.8	113.0
Subtotal	46.0	45.2	27.1	72.3	67.0	67.8	113.0
7. Walla Walla ⁶	42.0	40.4	6.6	47.0	15.0	16.6	57.0
Northside C ⁶	50.0	79.0	40.8	119.8	131.0	102.0	181.0
Subtotal	92.0	119.4	47.4	166.8	146.0	118.6	238.0
8. Lower C.	16.0	11.9	4.4	16.3	7.0	11.1	23.0
Subtotal	16.0	11.9	4.4	16.3	7.0	11.1	23.0
10. Wash. Coast	13.4	4.7	4.7	9.4	3.0	11.7	16.4
Subtotal	13.4	4.7	4.7	9.4	3.0	11.7	16.4
11. Puget Sound	68.0	92.1	-2.0	90.1	19.0	-5.1	87.0
Subtotal	68.0	92.1	-2.0	90.1	19.0	-5.1	87.0
State Total	1,575.4	1,594.5	282.3	1,876.8	725.0	705.9	2,300.4

¹ 1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commission (PNRBC) designated CNP 1970 Base.

² 1975 Irrigated Acreages based on King, et al. "Energy and Water Consumption of Pacific Northwest Irrigation Systems," designated EWC 1975 Base.

³ 1985 projections of irrigated acreages based on OBERS Projections obtained from PNRBC.

a. A straight line interpolation of the Increase from 1975(4b) for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975 (3b).

⁴ 2000 projections of irrigated acreages based on OBERS Projections obtained from PNRBC.

a. Increases in irrigated acreages for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP 1970 Base and 4a.

⁵ Irrigated acreages for the CNP 1970 Base, the 1985 projections and the 2000 projections were extrapolated from the EWC 1975 Base Acreages.

⁶ Irrigated acreages for the 1985 Regional Trend and 2000 Increase from 1970 were extrapolated from the CNP 1970 Base Acreages.

Table A6 Projected Irrigated Acreages - Washington
Area in 1000's of Acres

Subregion-Subarea	CNP ¹ 1970 Base	EWC ² 1975 Base	1985 Projections ³ Based on Regional Trend		2000 Projections ⁴ Based on Regional Trend		
			Increase ^a From 1975	Total ^b	Increase ^a From 1970	Increase ^b From 1975	Total ^c
1. Pend Oreille	4.5	0.8	2.7	3.5	3.0	6.7	7.5
Spokane	22.5	27.0	2.6	29.6	11.0	6.5	33.5
Subtotal	27.0	27.8	5.3	33.1	14.0	13.2	41.0
2. Big Bend	702.0	692.4	205.8	898.2	505.0	514.6	1,207.0
Ferry-Stevens	28.0	19.0	4.8	23.8	3.0	12.0	31.0
Wenatchee ⁵	39.6	30.0	8.2	38.2	10.7	30.4	50.4
Methow-Okan ⁵	34.4	26.0	7.0	33.0	9.3	17.6	43.6
Subtotal	804.0	767.4	225.8	993.2	528.0	564.6	1,332.0
3. Yakima	509.0	526.0	10.8	536.8	44.0	27.0	553.0
Subtotal	509.0	526.0	10.8	536.8	44.0	27.0	553.0
6. Palouse L.S.	46.0	45.2	51.1	96.3	127.0	127.8	173.0
Subtotal	46.0	45.2	51.1	96.3	127.0	127.8	173.0
8. Walla Walla ⁶	42.0	40.4	8.3	48.7	19.0	20.8	61.0
Northside C ⁶	50.0	79.0	78.8	157.8	226.0	197.0	276.0
Subtotal	92.0	119.4	87.1	206.5	245.0	217.8	337.0
8. Lower C.	16.0	11.9	4.4	16.3	7.0	11.1	23.0
Subtotal	16.0	11.9	4.4	16.3	7.0	11.1	23.0
10. Wash. Coast	13.4	4.7	4.3	9.0	2.0	10.7	15.4
Subtotal	13.4	4.7	4.3	9.0	2.0	10.7	15.4
11. Puget Sound	60.0	92.1	-2.4	89.7	18.0	-6.1	86.0
Subtotal	68.0	92.1	-2.4	89.7	18.0	-6.1	86.0
State Total	1,575.4	1,594.5	386.4	1,980.9	985.0	965.9	2,560.4

¹1970 Irrigated Acreages as obtained from the Pacific Northwest River Basins Commission (PNRBC) designated CNP 1970 Base.

²1975 Irrigated Acreages based on King, et al. "Energy and Water Consumption of Pacific Northwest Irrigation Systems", designated EWC 1975 Base.

³1985 projections of irrigated acreages based on state projections obtained from PNRBC.

a. A straight line interpolation of the Increase from 1975 for the 1971-2000 period.

b. The sum of the EWC 1975 Base and Increase from 1975.

⁴2000 projections of irrigated acreages based on state projections obtained from the PNRBC.

a. Increases in irrigated acreages for the 1971-2000 period.

b. The difference between 4c and the EWC 1975 Base.

c. The sum of the CNP Base and 4a.

⁵Irrigated acreages for the CNP 1970 Base, the 1985 projections and the 2000 projections were extrapolated from the EWC 1978 Base Acreages.

⁶Irrigated acreages for the 1985 Regional Trend and 2000 Increase from 1970 were extrapolated from the CNP 1970 Base Acreages.

APPENDIX B

Mathematical Description of the Computer Model

$$Y = \sum_{k=1}^{45} \sum_{j=1}^{24} \sum_{i=1}^9 \left[(W_k \times Wa_{ijk}) + (L_k \times Lhr_{ijk}) + (E_k \times Er_{ijk}) + (K_{ijk}) \right] A_{ijk}$$

where:

Y = minimum cost of irrigation

W_k = water price, 1967 dollars per acre-foot, in subarea k

Wa_{ijk} = gross water application, acre-inch per acre, in system i, crop j and subarea k

$$= \frac{Na_{ijk}}{Iaeff_i}$$

Na_{ijk} = net water application, acre inch per acre, in i, j and k

$Iaeff_i$ = irrigation application efficiency, as a decimal, in i

L_k = labor price, 1967 dollars per man-hour, in k

Lhr_{ijk} = labor requirements, man-hours per acre, in i, j and k

$$= Labor_{ijk} \times Wa_{ijk}$$

$Labor_{ijk}$ = labor requirements, man-hours per acre-inch (gross water application), in i, j and k

Wa_{ijk} = gross water application, acre-inch per acre, in i, j and k

E_k = energy prices, 1967 dollars per kilowatt-hour, in k

Er_{ijk} = energy requirements, kilowatt-hours per acre, in i, j and k

$$= \frac{1.024 \times Wa_{ijk} \times TDH_{ik}}{12 \times Eff}$$

Wa_{ijk} = gross water application, acre-inch per acre, in i, j and k

TDH_{ik} = irrigation system total dynamic head, feet, in i and k

$$= Op_i + Lf_k$$

Op_i = irrigation system operating pressure, feet, in i

$$= Sp_i + Fl_i$$

Sp_i = sprinkler operating pressure, feet, in i

Fl_i = fraction loss, feet, in i

Lf_k = lift, feet, required to deliver water to field level, in k

Eff = pumping plant efficiency, as a decimal

K_{ijk} = annual costs of ownership, 1967 dollars per acre in k

$$= Kf_{ijk} + Kv_{ijk}$$

Kf_{ijk} = annual fixed costs of operation, 1967 dollars per acre

$$= KI_i \left(\frac{Tr_k}{1000} + R + In \right) + D_i$$

KI_i = average capital investment, 1967 dollars per acre, in i

$$= \frac{I_i \left(1 + \frac{St_k}{100} \right)}{1.85}$$

I_i = capital investment, 1967 dollars per acre, in i

St_k = sales tax rate, a decimal, in k

Tr_k = personal property tax rate, dollars per thousand dollars, in k

R = interest rate, decimal

In = insurance rate, a decimal

D_i = depreciation, 1967 dollars, in i

$$= \frac{I_i - S_i}{Uslf_i}$$

S_i = salvage value, 1967 dollars per acre, in i

$$= (2 \times KI_i) - I_i$$

KI_i = average capital investment, 1967 dollars per acre, in i

$Uslf_i$ = irrigation system useful life years, in i

$$Kv_{ijk} = (1 + Io) M_i + (W_k \times Wa_{ijk}) + (L_k \times Lhr_{ijk}) + (E_k \times EkWh_{ijk})$$

Io = interest on operating capital, a decimal

$$= 0.5 R$$

R = interest rate, a decimal

M_i = maintenance cost, 1967 dollars, in i

$$= 0.03 I_i$$

I_i = capital investment, 1967 dollars per acre, in i

W_k = water price, 1967 dollars per acre-foot applied in subarea k

Wa_{ijk} = gross water application, acre-inch per acre, in system i, crop j and subarea k

$$= \frac{Na_{ijk}}{Iaeff_i}$$

Na_{ijk} = net water application, acre-inch per acre, in i, j and k

$Iaeff_i$ = irrigation application efficiency, as a decimal, in i

L_k = labor price, 1967 dollars per man-hour, in k

Lhr_{ijk} = labor requirements, man-hours per acre, in i, j and k

$$= Labor_i \times Wa_{ijk}$$

$Labor_i$ = labor requirements, man-hours per acre-inch (gross water application) in i

Wa_{ijk} = gross water application, acre-inch per acre, in i, j and k

E_k = energy prices, 1967 dollars per kilowatt hour, in k

$EkWh_{ijk}$ = energy requirements, kilowatt-hours per acre in i, j and k

$$\frac{1.024 \times Wa_{ijk} \times TDH_{ik}}{12 \times Eff}$$

Wa_{ijk} = gross water application, acre-inch per acre, in i, j and k

TDH_{ik} = irrigation system total dynamic head, feet, in i and k

$$= Op_i + Lf_k$$

Op_i = irrigation system operating pressure, feet, in i

$$= Sp_i + Fl_i$$

Sp_i = sprinkler operating pressure, feet, in i

Fl_i = friction loss, feet, in i

Lf_k = lift, feet, required to deliver water to field level, in k

Eff = pumping plant efficiency, as a decimal

A_{ijk} = irrigated lands, acres, in i, j and k

Subject to:

$Kf_{ijk} = 0$, where technology is presently operating

$Labor_{ijk} = 2$, where $i = 2$ and $j = 6, 7$ or 11

$KI_i = 0.75KI_i$, where $i = 4$ or 5 and $j = 6, 7$ or 11

$i \neq 1$, where $j = 6, 11, 22$ or 23
 $i \neq 3$, where $j = 3, 6, 9, 11, 22, 23$
 $i \neq 4$, where $j = 4, 8, 10, 14, 17, 18$ or 21
 $i \neq 5$, where $j = 1-4, 7-10, 12-15, 17-21$ or 24
 $i \neq 6$, where $j = 6, 11, 22$ or 23
 $i \neq 7$, where $j = 22$
 $i \neq 8$, where $j = 22$
 $i \neq 9$, where $j = 1-4, 7-10, 12-15, 17-21, 23$ or 24

APPENDIX C

Projected Subregional Tables

TABLE C1

SUBREGION 1 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVELLY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	31134	0	20462	3896	0	0	200	6550	0	0
2	7714	0	5714	2000	0	0	0	0	0	0
3	444	0	0	0	0	0	444	0	0	0
4	60	0	0	0	0	0	0	60	0	0
5	2726	0	2726	0	0	0	0	0	0	0
6	536	0	436	0	0	0	0	0	0	130
7	364	0	70	294	0	0	0	0	0	0
8	9706	0	5706	4000	0	0	0	0	0	0
9	192	0	0	0	0	0	192	0	0	0
TOTALS	52850	0	35114	10190	0	0	836	6610	0	100

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	35114	26.0	1038.7	1279.2	4.4
3	10190	24.3	1001.8	1304.5	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	836	22.5	1265.9	2059.3	1.3
7	6610	44.9	538.0	693.4	9.0
8	0	0.0	0.0	0.0	0.0
9	100	20.0	501.8	1701.7	2.2
WEIGHTED AVERAGES		28.0	971.5	1223.7	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	127	157	47	101	228

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	35114	76036	36472.8	44516.6	155113	2774006
3	10190	20628	10208.8	13282.3	22278	1991126
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	836	1565	1058.3	1721.6	1127	155078
7	6610	24712	3556.2	4583.6	59308	1112463
8	0	0	0.0	0.0	0	0
9	100	167	50.2	170.2	220	47050
TOTALS	52850	123107	51346.3	64674.3	238046	6079723

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	51346.3	64674.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	9213.7	9213.7
TOTAL ENERGY CONSUMPTION (MWH)	60560.0	73888.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1145.9	1398.1

TABLE C2

SUBREGION 2 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	224396	23200	31201	88247	0	0	0	84748	0	0
2	202053	65300	11483	101983	0	0	0	24185	0	0
3	20200	20000	0	0	0	0	0	24266	0	0
4	32021	0	0	10000	0	0	0	22021	0	0
5	49763	0	14283	0	0	20000	0	14380	0	600
6	40915	25300	0	5000	5000	0	1500	4415	0	0
7	0	0	0	0	0	0	0	0	0	0
10	67	0	67	0	0	0	0	0	0	0
11	16734	0	6204	0	16000	0	200	0	0	300
12	59390	18000	4000	12890	5000	0	0	20000	0	0
13	58705	2000	4000	28705	0	0	0	24000	0	0
14	23618	0	0	10618	0	0	0	10000	0	0
15	35402	0	1000	18250	0	0	0	16152	0	0
TOTALS	767400	132200	72240	275693	20000	20000	1700	244667	0	900

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	132200	28.4	1200.9	2077.4	1.1
2	72240	50.6	1821.8	2062.3	8.6
3	275693	33.6	1428.3	1729.9	3.8
4	20000	34.1	1946.1	2090.0	4.0
5	20000	68.4	2613.8	3133.3	2.1
6	1700	43.2	2595.8	3389.0	2.7
7	244667	70.9	0.0	195.4	14.2
8	0	0.0	0.0	0.0	0.0
9	900	49.8	1152.4	2352.3	5.5
WEIGHTED AVERAGES		49.8	1022.6	1390.3	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	91	340	16	44	135

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	132200	313415	158760.8	274634.8	150439	21535380
2	72240	304580	131035.6	148981.1	621344	5706960
3	275693	908324	393759.6	476913.6	981638	53870412
4	20000	90208	38921.6	57800.0	86600	17048800
5	20000	114000	56275.6	62666.2	41340	16438000
6	1700	6406	4412.4	5761.2	4612	315350
7	244667	1445708	0.0	38027.9	3469639	41177456
8	0	0	0.0	0.0	0	0
9	900	3732	1037.1	2117.0	4927	423450
TOTALS	767400	3186974	784776.7	1066901.8	5360299	149515008

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	784776.7	1066901.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	974748.4	974748.4
TOTAL ENERGY CONSUMPTION (MWH)	1759525.1	2041650.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2292.8	2660.5

TABLE C3

SUBREGION 3 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	255727	1200	18085	19808	0	1500	0	212934	2200	0
2	77620	0	0	12000	0	0	0	65620	0	0
4	40819	600	1000	3000	0	0	400	35819	0	0
5	37442	0	2023	4000	3000	0	0	28419	0	0
6	88516	0	1000	0	0	53100	0	33416	0	1000
7	3164	600	0	0	0	0	0	2564	0	0
12	19083	0	0	3000	0	0	0	16083	0	0
14	1834	0	0	1384	0	0	0	500	0	0
19	1745	0	0	600	0	0	0	1145	0	0
TOTALS	526000	2400	22108	43792	3000	54600	400	396500	2200	1000

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2400	34.7	1128.4	2004.9	1.4
2	22108	47.6	1220.8	1461.3	8.1
3	43792	42.2	1113.6	1415.2	3.8
4	3000	41.5	1095.6	2039.5	3.3
5	54600	56.7	1495.7	1815.2	1.7
6	400	43.8	2090.7	2884.1	2.6
7	396500	64.9	133.9	289.4	13.0
8	2200	39.0	729.4	925.1	14.0
9	1000	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		61.0	417.1	615.7	10.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
49	31	250	10	14	45

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2400	6945	2708.1	4811.7	3334	390960
2	22108	87728	26989.6	32385.9	178965	1746532
3	43792	153932	48764.6	61973.1	166246	8556957
4	3000	10375	3286.7	6118.5	9960	1507200
5	54600	257782	81663.9	99116.6	92832	44875740
6	400	1460	836.3	1153.6	1051	74200
7	396500	2145409	53105.8	114732.6	5148382	66730950
8	2200	7150	1604.6	2935.2	30388	100320
9	1000	3625	419.2	1619.1	4735	470500
TOTALS	526000	2674406	219376.9	323860.4	5637012	124453359

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	219376.9	323860.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	33422.5	33422.5
TOTAL ENERGY CONSUMPTION (MWH)	252801.4	357282.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	480.6	679.2

TABLE C4

SUBREGION 4 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1126176	38200	150048	59975	954	0	0	869999	7000	0
2	775226	58943	211925	111075	522	0	0	392161	0	0
3	49322	13000	0	0	0	0	0	36322	0	0
4	4175	0	0	0	0	0	0	4175	0	0
5	1239	0	241	0	0	0	0	998	0	0
6	290125	38550	119736	71648	36950	0	0	23321	0	0
7	92321	8833	27335	13171	4524	0	0	38108	0	0
8	184390	6084	13936	6180	0	0	0	156190	3000	0
9	4914	0	0	0	0	0	0	4914	0	0
10	15112	0	0	0	0	0	0	15112	0	0
TOTALS	2542700	163660	520191	262649	42900	0	0	1543300	10000	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	163660	24.6	1078.4	1954.9	1.0
2	520191	30.9	1172.3	1412.8	2.1
3	262649	30.7	1242.2	1543.8	2.8
4	42900	36.0	1296.7	2240.7	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1543300	42.3	244.3	399.8	8.5
8	10000	27.7	321.3	517.0	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.3	609.0	856.8	6.6

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
52	51	265	9	56	107

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	163660	334835	176484.7	319933.5	160721	26660214
2	520191	1293579	609838.0	734920.3	2643102	41095689
3	262649	672584	326262.1	405431.8	726391	51321615
4	42900	128773	55630.0	96124.1	123622	21552960
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1543300	5437569	377069.3	616939.8	13048967	259737390
8	10000	23053	3212.8	5170.3	99512	456000
9	0	0	0.0	0.0	0	0
TOTALS	2542700	7894900	1548497.0	2178577.9	16808414	400823268

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1548497.0	2178577.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	107337.4	107337.4
TOTAL ENERGY CONSUMPTION (MWH)	1655834.3	2285915.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	651.2	899.0

TABLE C5

SUBREGION 5 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	792+07	3409	97084	41745	1283	0	126	643760	5000	0
2	205751	5222	40224	19343	533	0	203	139726	0	0
3	63537	1125	1045	350	0	0	0	58017	0	0
4	15160	0	36	223	0	0	0	15701	0	0
5	25185	0	677	0	0	0	0	24508	0	0
6	10724	0	5027	0	0	558	0	5122	0	17
7	44375	3125	2340	4913	22629	0	0	11368	0	0
8	2434	0	812	1622	0	0	0	0	0	0
12	78936	2929	7495	6064	3400	0	0	58928	0	0
13	23335	0	7554	1413	0	0	0	14528	0	0
14	40106	0	1945	632	0	0	0	37229	0	0
15	20342	0	2544	3378	0	0	0	14420	0	0
17	400	0	430	0	0	0	0	0	0	0
TOTALS	1320462	15810	167213	83383	27845	558	329	1023307	5000	17

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15810	26.7	986.0	1862.5	1.1
2	167213	34.5	1042.2	1802.6	5.9
3	80383	30.7	915.4	1217.0	2.8
4	27845	38.7	1215.1	2159.3	3.1
5	558	36.9	1229.9	1549.4	1.1
6	329	22.7	1109.0	1902.4	1.4
7	1023307	50.1	14.7	170.1	10.0
8	5000	30.9	70.6	268.4	11.1
9	17	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.4	237.6	438.3	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
48	25	268	14	8	34

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15810	35234	15589.0	29446.5	16912	2575449
2	167213	481031	174264.1	214473.8	981303	13209827
3	80383	235562	73581.3	97826.3	222007	15706838
4	27845	89915	33834.9	60118.3	86318	13989328
5	558	1716	686.3	864.6	618	458620
6	329	622	364.9	625.9	448	61030
7	1023307	4273365	15033.6	174083.2	10256375	172222568
8	5000	12875	353.1	1331.9	55620	228000
9	17	15	1.9	22.3	20	7939
TOTALS	1320462	5100336	313739.1	578792.7	11619323	218459658

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	313739.1	578792.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	13752.6	13752.6
TOTAL ENERGY CONSUMPTION (MWH)	450861.6	715945.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	341.4	542.2

TABLE C6

SUBREGION 6 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIZE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	HIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DROP (9)
1	192312	1000	17350	27303	538	500	1000	145241	0	0
2	50219	5532	6195	32257	0	0	297	5958	0	0
3	145	0	145	0	0	0	0	0	0	0
4	3046	0	888	2000	0	0	0	158	0	0
5	2105	0	623	0	0	1500	0	39	0	23
6	9005	7125	31	725	1182	0	0	0	0	0
7	3566	0	1188	2378	0	0	0	95	0	0
8	95	0	0	250	0	0	0	0	0	0
9	2750	2000	0	0	500	0	0	0	0	0
10	2675	0	1338	1337	0	0	0	0	0	0
11	572	0	0	572	0	0	0	0	0	0
TOTALS	267270	15657	27758	66822	2220	2000	1297	151493	0	23

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15657	26.4	1069.8	1946.3	1.1
2	27758	30.2	901.3	1141.8	5.1
3	66822	28.0	835.9	1137.6	2.5
4	2220	44.1	1484.0	2427.9	3.5
5	2000	51.9	1001.9	2121.5	1.6
6	1297	39.7	2188.6	2932.0	2.4
7	151493	39.0	1.0	152.4	7.8
8	0	0.0	0.0	0.0	0.0
9	23	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.7	402.3	656.3	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	60	128	27	16	76

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15657	34393	16749.7	30473.1	16519	2550525
2	27758	69874	25016.6	31693.6	142544	2152882
3	66822	155309	55852.8	76013.5	168274	13057019
4	2220	8157	3294.4	5389.9	7831	1115328
5	2000	8654	3603.9	4242.9	3115	1643800
6	1297	4287	2838.6	3867.7	3987	240594
7	151493	492454	152.8	23698.9	1181889	25496272
8	0	0	0.0	0.0	0	0
9	23	48	6.2	33.8	64	10822
TOTALS	267270	773677	107522.9	175413.4	1523312	46307241

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	107522.9	175413.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	30650.7	30650.7
TOTAL ENERGY CONSUMPTION (MWH)	138173.6	206064.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	517.0	771.0

TABLE C7

SUBREGION 7 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	277264	19642	65166	98327	1438	0	454	81917	9820	0
2	137210	56120	7510	56634	0	0	761	12445	3746	0
3	10258	9020	0	0	0	0	0	1238	0	0
4	20712	0	1213	12675	0	0	18	6806	0	0
5	13285	1360	2378	4948	0	0	0	4599	0	0
6	20943	0	17702	0	431	2378	0	426	0	46
7	52357	11267	786	5716	3473	0	0	1615	0	0
8	10990	760	447	2568	0	0	0	7275	0	0
11	458	0	108	0	0	150	0	0	0	200
12	6030	5100	0	506	0	0	0	0	0	0
13	3630	1650	0	1950	0	0	0	0	0	0
14	2306	0	44	2228	0	0	0	34	0	0
15	10938	0	2566	3254	0	0	29	5089	0	0
17	24	0	0	24	0	0	0	0	0	0
18	7751	0	2414	5192	0	0	0	145	0	0
19	780	780	0	0	0	0	0	0	0	0
20	158	0	39	79	0	0	0	40	0	0
TOTALS	575574	135639	100373	194995	5342	2528	1262	121629	13560	246

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	135639	29.5	1946.2	2822.7	1.2
2	100373	36.2	1284.1	1504.6	6.2
3	194995	37.6	1691.1	1992.8	3.4
4	5342	39.0	1967.0	2911.0	3.1
5	2528	28.8	1063.9	1383.6	3.9
6	1262	26.8	1411.5	2204.9	1.6
7	121629	48.1	0.0	155.4	9.6
8	13560	26.7	61.0	256.8	9.8
9	246	45.8	2232.8	3432.7	5.0
WEIGHTED AVERAGES		37.4	1280.4	1681.0	4.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
63	121	129	122	104	225

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	135639	333897	263990.3	382868.6	160271	22095593
2	100373	302661	128833.0	151819.7	617428	7929467
3	194995	611413	329763.4	388577.4	660326	38102023
4	5342	17363	15507.9	15550.3	16668	2663821
5	2528	6061	2639.4	3497.2	2162	2077763
6	1262	2823	1781.4	2732.6	2032	234101
7	121629	487854	0.0	18904.4	1170851	20473161
8	13560	30179	827.8	3482.1	133375	618336
9	246	938	549.3	844.5	1238	115743
TOTALS	575574	1793190	736982.4	967526.8	2761371	94327008

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	736982.4	967526.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	21703.6	21709.6
TOTAL ENERGY CONSUMPTION (MWH)	758686.0	989236.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1318.1	1718.7

TABLE C8

SUBREGION 8

1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	8014	0	7317	460	0	0	237	0	0	0
2	573	0	73	506	0	0	0	0	0	0
4	126	0	126	0	0	0	0	0	0	0
5	2651	0	2651	0	0	0	0	0	0	0
6	1429	0	1219	0	0	0	0	0	0	202
7	61	0	61	0	0	0	0	0	0	0
15	185	0	175	0	0	0	10	0	0	0
TOTALS	13039	0	11622	960	8	0	247	0	0	202

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	11622	25.0	817.9	1058.3	4.4
3	960	16.1	524.5	826.1	1.3
4	8	20.9	678.9	1622.8	1.7
5	0	0.0	0.0	0.0	0.0
6	247	28.8	1552.3	2345.7	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	202	17.4	273.5	1473.4	1.9
WEIGHTED AVERAGES		25.0	801.7	1072.4	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	11622	24972	9505.2	12299.9	50944	918138
3	960	1292	503.5	793.1	1395	187584
4	8	14	5.4	13.0	13	4019
5	0	0	0.0	0.0	0	0
6	247	594	383.4	579.4	427	45819
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	202	293	55.2	1297.6	387	95041
TOTALS	13039	27165	10452.8	13903.0	53166	1260601

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	10452.8	13983.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	10452.8	13983.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	801.7	1072.4

TABLE C9

SUBREGION 9 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	67488	0	58120	8173	0	0	1195	0	0	0
2	15904	0	10325	4297	0	0	782	0	0	0
3	13253	0	11249	0	0	0	1701	300	0	0
4	23869	0	16639	6549	0	0	581	0	0	0
5	83576	0	54545	12435	1045	0	15571	0	0	0
6	11277	0	10384	275	372	316	114	0	0	117
7	2411	0	2126	0	0	0	10	0	0	0
8	5448	0	3510	1907	0	0	31	0	0	0
10	3300	0	2981	0	0	0	319	0	0	0
15	17100	0	11802	3458	46	15	613	1166	0	0
21	9535	0	8656	432	0	0	247	0	0	0
22	8905	0	2296	0	1236	5373	0	0	0	0
TOTALS	262063	0	193363	37576	2679	5698	21164	1466	0	117

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	193363	19.2	561.1	821.5	3.3
3	37576	17.6	546.9	848.5	1.6
4	2679	25.2	780.3	1724.3	2.0
5	5698	34.4	1067.2	1386.7	1.0
6	21164	16.2	847.0	1640.4	1.0
7	1466	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	117	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.8	909.6	2.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	193363	309703	112358.7	154856.7	631805	15275677
3	37576	55256	20551.3	31884.9	59676	7342350
4	2679	5621	2091.5	4819.3	5396	1345930
5	5698	16349	6086.7	7901.4	5886	4683186
6	21164	28546	17925.0	34716.8	20553	3925922
7	1466	3537	0.0	227.9	8489	246728
8	0	0	0.0	0.0	0	0
9	117	149	25.5	165.9	197	55049
TOTALS	262063	419166	159031.7	238372.9	732001	32874841

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	159031.7	238372.9
DIVERSIFIED PUMPING ENERGY CONSUMPTION (MWH)	512.9	512.9
TOTAL ENERGY CONSUMPTION (MWH)	159544.6	238885.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	608.8	911.6

TABLE C10

SUBREGION 10

1979

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	91533	0	51585	9960	0	0	3889	26099	0	0
2	940	0	340	400	0	0	0	200	0	0
3	2610	0	820	0	0	0	1793	0	0	0
4	1200	0	750	100	0	0	0	350	0	0
5	1620	0	1191	35	0	0	0	334	0	0
6	12378	0	859	0	46	2526	0	8888	0	57
7	93	0	93	0	0	0	0	700	0	0
8	700	0	0	0	0	0	0	0	0	0
12	20	0	20	0	0	0	0	0	0	0
15	962	0	962	0	0	0	0	130	0	0
21	100	0	0	0	0	10	0	41	0	10
22	206	0	145	0	0	665	0	0	0	0
23	2030	0	200	0	1165	0	0	80	0	0
24	80	0	0	0	0	0	0	0	0	0
TOTALS	114472	0	56965	10495	1211	3203	5679	36852	0	67

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	56965	25.8	724.0	964.5	4.4
3	10495	29.8	817.6	1113.2	2.7
4	1211	22.0	615.8	1559.7	1.8
5	3203	25.4	757.6	1077.2	.8
6	5679	26.9	1329.2	2122.6	1.6
7	36852	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	67	24.0	262.1	1462.0	2.6
WEIGHTED AVERAGES		33.5	529.1	785.4	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	89	20	33	15	104

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	56965	1223.3	4124.3	5494.1	249518	4560235
3	10495	2987.3	8236.2	11745.9	28159	2090723
4	1211	222.2	745.7	1888.8	2133	618436
5	3203	6789	2426.7	3450.4	2444	2632546
6	5679	12740	7548.5	12554.3	3173	1051455
7	36852	149509	0.0	5727.8	358821	6202192
8	0	0	0.0	0.0	0	0
9	67	134	17.6	98.0	177	31524
TOTALS	114472	319780	60562.5	89906.9	650426	17079080

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	60562.5	89906.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1236.2	1236.2
TOTAL ENERGY CONSUMPTION (MWH)	61798.7	91143.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	539.9	796.2

TABLE C11

SUBREGION: 11

1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	SIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	64072	0	41072	18000	0	0	5300	0	0	0
2	4374	0	4374	0	0	0	0	0	0	0
3	20420	0	11428	0	4000	0	5000	0	0	0
4	3250	0	1750	0	1000	0	0	0	0	500
TOTALS	92132	0	58632	18000	5000	0	10000	0	0	500

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	58632	27.3	776.7	1017.2	4.6
3	18000	30.7	897.3	1198.3	2.9
4	5000	24.1	704.9	1648.9	1.9
5	0	0.0	0.0	0.0	0.0
6	10000	27.8	1405.6	2199.0	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	500	15.4	192.0	1391.9	1.7
WEIGHTED AVERAGES		27.8	861.4	1217.3	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	50	25	32	204

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	58632	133322	45539.9	59639.1	271378	4631928
3	18000	48050	16150.7	21579.8	49736	3517200
4	5000	10050	3524.7	8244.3	9648	2512000
5	0	0	0.0	0.0	0	0
6	10000	23167	14055.7	21999.8	16680	1855000
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	500	642	96.0	695.9	847	235250
TOTALS	92132	213231	79366.9	112149.0	343887	12751378

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	79366.9	112149.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	79366.9	112149.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	861.4	1217.3

TABLE C12

SUBREGION 12 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	232550	5067	7258	15929	0	0	0	204296	0	0
2	7578	1079	2174	2724	0	0	0	1601	0	0
15	22020	2823	1488	3345	0	0	0	14364	0	0
TOTALS	262148	8969	10920	21990	0	0	0	220261	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	8969	23.3	760.0	1636.5	.9
2	10920	28.6	742.7	983.1	4.9
3	21998	29.4	779.3	1080.9	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	220261	44.1	.3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	122.6	318.5	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
47	18	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	8969	17414	6816.7	14678.0	8359	1461050
2	10920	26062	8109.9	10735.4	53167	862680
3	21998	53852	17143.3	23778.3	58160	4298409
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	220261	888596	62.9	34297.4	1940631	37069926
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	262148	935924	32132.7	83489.5	2060317	43692066

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	32132.7	83489.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	32132.7	83489.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	122.6	318.5

TABLE C13

SUBREGION 13

1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	146480	2315	12228	16787	0	0	325	114965	0	0
2	62480	375	2320	3170	0	0	60	56375	0	0
7	8300	0	0	2075	6225	0	0	0	0	0
15	41812	540	4304	3804	0	0	250	32134	0	0
TOTALS	258612	3230	18852	25756	6225	0	635	203914	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3230	23.3	771.7	1648.2	5.9
2	18852	29.2	764.4	1004.8	5.0
3	25756	29.0	782.7	1084.3	2.6
4	6225	26.3	769.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	635	28.3	1366.0	2159.4	1.7
7	203914	35.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
48	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3230	6283	2492.5	5323.6	3016	526167
2	18852	45829	14410.0	18943.3	93492	1489308
3	25756	62302	23159.0	27927.5	67286	5032722
4	6225	13643	4414.5	10290.4	13097	3127440
5	0	0	0.0	0.0	0	0
6	635	1497	867.4	1371.2	1378	117793
7	203914	676529	0.0	31693.7	1623669	34318726
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	258612	806062	42343.4	95549.7	1801637	44612155

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42343.4	95549.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	16202.1	16202.1
TOTAL ENERGY CONSUMPTION (MWH)	58545.4	111751.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	226.4	432.1

TABLE C14

SUBREGION 14 1975

(BASE DATA)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	163683	0	77268	28224	0	0	0	58191	0	0
2	55035	3029	27115	10820	0	0	0	14915	0	0
3	8489	0	0	0	0	0	0	6489	0	0
4	2140	0	0	0	0	0	0	2140	0	0
5	19	0	0	0	0	0	0	19	0	0
6	3810	0	1676	620	1514	0	0	0	0	0
7	2782	0	1462	541	0	0	0	779	0	0
8	2572	0	0	0	0	0	0	2572	0	0
TOTALS	236580	3029	107521	39411	1514	0	0	85105	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3029	19.0	760.2	1636.7	4.8
2	107521	26.3	871.6	1112.0	4.5
3	39411	26.3	891.4	1193.0	2.4
4	1514	21.2	719.0	1662.9	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	85105	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	558.9	791.6	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
56	86	250	10	34	121

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3029	4796	2302.6	4957.5	2302	493424
2	107521	235562	93712.3	119567.8	488547	8494159
3	39411	86320	35129.5	47016.5	93226	7700909
4	1514	2075	1088.5	2517.6	3568	760634
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	85105	268783	0.0	13227.6	645078	14323172
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	236580	598136	132232.8	187287.1	1223721	31772298

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	132232.8	187287.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	132232.8	187287.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	558.9	791.6

TABLE C15 SUBREGION 1 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	31108	0	20462	3896	0	0	200	0	6550	0
2	7714	0	5714	2360	0	0	0	0	0	0
3	444	0	0	0	0	0	444	0	0	0
4	60	0	0	0	0	0	0	0	0	0
5	2726	0	2726	0	0	0	0	0	60	0
6	536	0	436	0	0	0	0	0	0	100
7	364	0	70	294	0	0	0	0	0	0
8	9736	0	5706	4000	0	0	0	0	0	0
9	132	0	0	0	0	0	192	0	0	0
TOTALS	52850	0	35114	10190	0	0	836	0	6610	100

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	35114	26.0	1038.7	1274.3	4.4
3	10190	24.3	1061.8	1303.9	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	836	22.5	1265.9	2059.3	1.3
7	0	0.0	0.0	0.0	0.0
8	6610	25.2	57.7	253.4	9.1
9	190	20.0	501.8	1701.7	2.2
WEIGHTED AVERAGES		25.5	911.5	1168.7	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
67	140	157	47	94	235

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	35114	76036	36472.8	44916.6	155113	0
3	10190	20628	10208.8	13282.3	22278	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	836	1565	1058.3	1721.6	1127	0
7	0	0	0.0	0.0	0	0
8	6610	13900	381.3	1675.2	60050	301416
9	190	167	50.2	170.2	220	0
TOTALS	52850	112296	48171.4	61765.9	238787	301416

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

ON-FARM ENERGY CONSUMPTION (MWH)	PUMPING ENERGY	TOTAL ENERGY
48171.4	48171.4	61765.9
9213.7	9213.7	9213.7
57385.0	57385.0	70979.6
1085.8	1085.8	1343.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-60.1	-55.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-6610	-24712	-3556.2	-4583.6	-59308
8	6610	13900	381.3	1675.2	60050
9	0	0	0.0	0.0	0
TOTALS	0	-10811	-3174.9	-2908.4	741

TABLE C16 SUBREGION 2 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIZE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	224336	20200	31201	86247	0	0	3	0	84748	0
2	202653	65000	11485	101903	0	0	0	0	24185	0
3	26266	2330	0	0	0	0	0	0	24266	0
5	32021	0	0	10300	0	0	0	22021	0	0
6	49763	0	14283	0	0	20000	0	0	14380	600
7	40915	25000	0	5000	5000	0	1500	0	4415	0
10	67	0	67	0	0	0	0	0	0	0
11	16734	0	6204	0	10000	0	200	0	0	300
12	59690	18000	4000	12690	5000	0	0	0	20000	0
13	58705	2000	4000	28705	0	0	0	0	24000	0
14	20618	0	0	10618	0	0	0	0	10000	0
15	35402	0	1000	18250	0	0	0	0	16152	0
TOTALS	767400	132200	72240	275693	20000	20000	1700	22021	222646	900

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	132200	28.4	1200.9	2077.4	1.1
2	72240	50.6	1821.8	2062.3	8.6
3	275693	39.6	1428.3	1729.9	3.6
4	20000	54.1	1946.1	2890.0	4.3
5	26000	63.4	2813.8	3133.3	2.1
6	1700	45.2	2595.5	3389.0	2.7
7	22021	62.2	0.0	155.4	12.4
8	222646	40.4	92.3	288.0	14.5
9	900	49.8	1152.4	2352.3	5.5
WEIGHTED AVERAGES		40.7	1049.4	1428.8	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	116	340	19	53	169

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	132200	313415	158760.8	274634.8	150439	0
2	72240	304580	131609.6	148931.1	621344	0
3	275693	908624	337759.6	476913.6	981838	0
4	20000	90208	38921.6	57800.0	83600	0
5	26000	114000	56273.5	62800.2	41040	0
6	1700	6400	4412.4	5761.2	4612	0
7	22021	114142	0.0	3422.7	273941	0
8	222646	749006	20544.2	64126.9	3235705	10152658
9	900	3732	1037.1	2117.0	4927	0
TOTALS	767400	2604414	805320.8	1096423.5	5403246	10152658

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	805320.8	1096423.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	974740.4	974740.4
TOTAL ENERGY CONSUMPTION (MWH)	1780065.2	2071171.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2319.6	2698.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	26.8	38.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-222646	-1331566	0.0	-34605.2	-3195758
8	222646	749006	20544.2	64126.9	3235705
9	0	0	0.0	0.0	0
TOTALS	0	-582560	20544.2	29521.7	39947

TABLE C17

SUBREGION 3

1975 (MODEL PREDICTIONS)

SECTION 11 CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	255727	1200	19585	19808	0	0	0	0	215134	0
2	77620	0	0	12000	0	0	0	0	0	0
4	40819	600	1000	3000	0	0	400	0	0	0
5	37442	0	2023	4000	3000	0	0	28419	0	0
6	88516	0	1000	0	0	53100	0	0	33416	1000
7	3164	600	0	0	0	0	0	0	2564	0
12	19083	0	0	3000	0	0	0	0	16033	0
14	1884	0	0	1384	0	0	0	0	500	0
19	1745	0	0	600	0	0	0	0	1145	0
TOTALS	526000	2400	23608	43792	3000	53100	400	28419	370281	1000

SECTION 21 IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2400	34.7	1128.4	2034.9	1.4
2	23608	47.6	1221.4	1461.9	8.1
3	43792	42.2	1113.6	1415.2	3.8
4	3000	41.5	1095.6	2035.5	3.3
5	53100	56.9	1502.1	1821.7	1.7
6	400	43.8	2090.7	2884.1	2.6
7	28419	60.0	0	155.4	12.0
8	370281	36.8	8.7	204.4	13.2
9	1000	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	319.1	545.7	10.9

SECTION 31 SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
73	46	250	10	5	51

SECTION 41 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2400	6945	2738.1	4811.7	3334	0
2	23608	93728	28835.5	34512.5	191205	118500
3	43792	153932	48764.6	61973.1	166246	0
4	3000	10375	3236.7	6118.5	9960	0
5	53100	251782	79763.1	96730.5	90642	0
6	400	1460	836.3	1153.6	1051	0
7	28419	12395	0	4417.1	341328	0
8	370281	1134014	3210.7	75692.8	4898941	16784494
9	1000	3625	419.2	1619.1	4785	0
TOTALS	526000	1797956	167824.3	287029.0	5707192	16902994

SECTION 51 SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	167824.3	287029.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	33422.5	33422.5
TOTAL ENERGY CONSUMPTION (MWH)	201246.8	320451.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	382.6	609.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-98.0	-70.0

SECTION 61 CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	1500	6000	1845.9	2206.6	12240
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-1500	-6000	-1900.8	-2380.1	-2160
6	0	0	0.0	0.0	0
7	-36081	-2093314	-53105.4	-110315.6	-4807354
8	36081	1126864	1606.1	73657.6	4868053
9	0	0	0.0	0.0	0
TOTALS	0	-876450	-51554.6	-36831.4	70179

TABLE C18 SUBREGION 4 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1126176	38200	153048	59375	954	0	0	869999	7000	0
2	775226	58943	212447	111675	0	0	0	392101	0	0
3	49322	13006	0	0	0	0	0	36322	0	0
4	4175	0	0	0	0	0	0	4175	0	0
5	1249	0	241	0	0	0	0	998	0	0
6	290125	38550	119706	71643	36960	0	0	23321	0	0
7	92021	8883	27335	13171	4524	0	0	38108	0	0
12	184390	6084	10936	6180	0	0	0	158190	3000	0
13	4914	0	0	0	0	0	0	4914	0	0
14	15112	0	0	0	0	0	0	15112	0	0
16	0	0	0	0	0	0	0	0	0	0
TOTALS	2542700	163660	520713	262649	42378	0	0	1543300	10000	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	163660	24.6	1078.4	1954.9	1.0
2	520713	30.0	1172.2	1412.7	2.1
3	262649	30.7	1242.2	1543.8	2.8
4	42378	36.2	1259.6	2243.4	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1543300	42.3	244.3	399.8	8.5
8	10000	27.7	321.3	517.0	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.3	609.0	856.6	6.6

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
52	51	265	9	56	107

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	163660	334835	176484.7	319933.5	160721	0
2	520713	1299623	610388.1	735603.9	2651231	41238
3	262649	672584	326262.1	405481.8	726391	0
4	42378	127729	55070.4	95071.8	122620	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1543300	5437064	377064.3	616939.8	13048987	0
8	10000	23358	3212.8	5170.3	99612	0
9	0	0	0.0	0.0	0	0
TOTALS	2542700	7894900	1548487.4	2178201.1	16809542	41238

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1548487.4	2178201.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	117337.4	117337.4
TOTAL ENERGY CONSUMPTION (MWH)	1665824.8	2295538.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	651.2	898.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	522	1044	556.1	675.6	2130
3	0	0	0.0	0.0	0
4	-522	-1044	-559.7	-1052.4	-1002
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-9.5	-376.7	1128

TABLE C19 SUBREGION 5 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMANENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	792407	3409	97084	41745	1283	0	126	643760	5600	0
2	205751	5222	40757	19843	0	0	203	139726	0	0
3	60537	1125	1045	350	0	0	0	58017	0	0
4	15960	0	36	223	0	0	0	15701	0	0
5	25135	0	677	0	0	0	0	24508	0	0
6	10724	0	5027	0	0	558	0	5122	0	17
7	44375	3125	2340	4913	22629	0	0	11368	0	0
8	2434	0	812	1622	0	0	0	0	0	0
12	78806	2929	7465	6064	340	0	0	58928	0	0
13	23535	0	7594	1413	0	0	0	14528	0	0
14	43006	0	1945	632	0	0	0	37229	0	0
15	20342	0	2544	3378	0	0	0	14420	0	0
17	400	0	460	0	0	0	0	0	0	0
TOTALS	1320462	15810	167746	80383	27312	558	329	1023307	5600	17

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15810	26.7	966.0	1862.5	1.1
2	167746	34.5	1046.0	1230.4	5.9
3	80333	30.7	1215.4	1217.3	2.8
4	27312	39.2	1231.9	2175.8	3.1
5	558	36.9	1229.9	1543.4	1.1
6	329	22.1	1109.0	1903.4	1.4
7	1023337	50.9	119.7	173.1	10.0
8	5000	30.9	76.6	266.4	11.1
9	17	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.4	237.6	438.0	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
48	25	268	14	8	34

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15810	35234	15589.0	29446.5	16912	0
2	167746	481613	174447.8	214795.7	982490	42107
3	80333	205562	73581.3	97826.3	222907	0
4	27312	89333	33645.8	59426.1	85760	0
5	558	1716	686.3	864.6	618	0
6	329	622	364.9	625.9	448	0
7	1023337	4273365	15033.6	174083.2	10256075	0
8	5000	12875	353.1	1331.9	55620	0
9	17	15	1.9	22.3	20	0
TOTALS	1320462	5100336	313703.7	578412.4	11619951	42107

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	313703.7	578412.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	137152.6	137152.6
TOTAL ENERGY CONSUMPTION (MWH)	450856.3	715565.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	341.4	541.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	533	582	103.7	311.9	1187
3	0	0	0.0	0.0	0
4	-533	-582	-189.0	-692.2	-559
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-5.3	-380.3	628

TABLE C20 SUBREGION 6 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	192932	1000	17850	27303	538	0	1000	145241	0	0
2	50239	5532	6195	32257	0	0	297	5958	0	0
3	145	0	145	0	0	0	0	0	0	0
5	3346	0	888	2000	0	0	0	158	0	0
6	2185	0	623	0	0	150	0	39	0	23
7	9065	7125	31	725	1182	0	0	2	0	0
8	3266	0	1188	2378	0	0	0	95	0	0
9	95	0	0	0	0	0	0	0	0	0
12	2750	2000	0	250	500	0	0	0	0	0
13	2675	0	1338	1337	0	0	0	0	0	0
18	572	0	0	572	0	0	0	0	0	0
TOTALS	267270	19657	28258	66822	2220	1500	1297	151493	0	23

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15657	26.4	1069.8	1946.3	1.1
2	28258	30.5	913.2	1153.6	0.2
3	66822	28.0	835.9	1137.6	0.3
4	2220	44.1	1484.0	2427.9	3.3
5	1500	53.8	1867.0	2186.5	1.6
6	1297	39.7	2186.6	2982.0	2.4
7	151493	39.0	1.0	156.4	0.8
8	0	0.0	0.0	0.0	0.0
9	23	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.7	402.2	656.1	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM PRESSURE (FT)	GROSS WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	60	128	27	16	76

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15657	34393	16749.7	30473.1	15509	0
2	28258	71804	25804.3	32599.5	146479	39500
3	66822	156809	66858.8	76013.5	168274	0
4	2220	8157	3294.4	5339.9	7831	0
5	1500	8725	2800.5	3279.8	2471	0
6	1297	4287	2838.6	3867.7	3087	0
7	151493	492464	152.8	23698.9	1181889	0
8	0	0	0.0	0.0	0	0
9	23	48	6.2	33.8	64	0
TOTALS	267270	773677	107505.3	175356.2	1526553	39500

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	167505.3	175356.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	33650.7	33650.7
TOTAL ENERGY CONSUMPTION (MWH)	139156.0	206006.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	516.9	770.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-.1	-.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	500	1929	785.7	906.0	3935
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-500	-1929	-803.4	-963.1	-6935
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-17.6	-57.2	3241

TABLE C21

SUBREGION 7

1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	277264	19642	65166	98827	1438	0	454	64256	27481	0
2	137210	56120	7510	56634	0	0	761	12445	3740	0
3	10258	9020	0	0	0	0	0	1238	0	0
4	20712	0	1213	12675	0	0	18	6806	0	0
5	13285	1360	2378	4948	0	0	0	4599	0	0
6	20983	0	17702	0	431	2378	0	426	0	46
7	52857	41267	786	5716	3473	0	0	16155	0	0
8	10930	700	447	2568	0	0	0	7275	0	0
11	458	0	0	0	0	150	0	108	0	200
12	6000	5100	0	900	0	0	0	0	0	0
13	3600	1650	0	1950	0	0	0	0	0	0
14	2306	0	44	2228	0	0	0	0	0	0
15	10938	0	2566	3254	0	0	29	5083	0	0
17	24	0	0	24	0	0	0	0	0	0
18	7751	0	2414	5192	0	0	0	145	0	0
19	780	780	0	0	0	0	0	0	0	0
20	158	0	39	79	0	0	0	40	0	0
TOTALS	575574	135639	100265	194995	5342	2528	1262	104076	31221	246

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	135639	29.5	1946.2	2822.7	1.2
2	100265	36.2	1260.5	1531.0	6.1
3	194995	37.6	1691.1	1992.8	3.4
4	5342	39.0	1927.0	2911.0	3.1
5	2528	28.8	1063.9	1383.4	.9
6	1262	26.8	1411.5	2204.9	1.6
7	104076	43.5	0.0	155.4	8.7
8	31221	35.7	81.6	277.4	12.9
9	246	45.8	2232.8	3432.7	5.0
WEIGHTED AVERAGES		36.4	1282.6	1684.3	4.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
65	125	130	119	107	231

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	135639	333897	263980.3	382868.6	160271	0
2	100265	302052	126337.8	150498.5	616187	0
3	194995	611413	329753.4	388577.4	660326	0
4	5342	17363	10507.9	15550.3	16668	0
5	2528	6961	2689.4	3497.2	2182	0
6	1262	2823	1781.4	2782.6	2032	0
7	104076	377161	0.0	16176.2	905187	18176
8	31221	92939	2549.2	8680.7	401494	805342
9	246	938	549.3	844.5	1238	0
TOTALS	575574	1744647	738208.6	969455.9	2765586	823518

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	738208.6	969455.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	21709.6	21739.6
TOTAL ENERGY CONSUMPTION (MWH)	759918.1	991165.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1320.3	1722.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	2.1	3.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	-108	-608	-495.2	-521.2	-1241
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-17553	-110693	0.0	-2728.2	-265563
8	17661	62759	1721.4	5178.5	271120
9	0	0	0.0	0.0	0
TOTALS	0	-48542	1226.2	1929.1	4215

TABLE C22 SUBREGION 8 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	8014	0	7317	460	0	0	237	0	0	0
2	573	0	73	500	0	0	0	0	0	0
3	126	0	126	0	0	0	0	0	0	0
4	2651	0	2651	0	0	0	0	0	0	0
5	1429	0	1215	0	0	0	0	0	0	202
6	61	0	61	0	0	0	0	0	0	0
7	185	0	175	0	0	0	10	0	0	0
15										
TOTALS	13039	0	11622	960	8	0	247	0	0	202

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	11622	25.8	817.9	1058.3	4.4
3	960	16.1	524.5	826.1	1.5
4	6	20.9	678.9	1622.8	1.7
5	0	0.0	0.0	0.0	0.0
6	247	28.8	1552.3	2345.7	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	202	17.4	273.5	1473.4	1.9
WEIGHTED AVERAGES		25.0	801.7	1072.4	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	11622	24972	9505.2	12299.9	50944	0
3	960	1292	503.5	793.1	1395	0
4	6	14	5.4	13.0	13	0
5	0	0	0.0	0.0	0	0
6	247	594	303.4	579.4	427	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	202	293	55.2	297.6	387	0
TOTALS	13039	27165	10452.8	13983.0	53166	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	10452.8	13983.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	10452.8	13983.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	801.7	1072.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C23

SUBREGION 9

1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	SIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	67488	0	58120	8173	0	0	1195	0	0	0
2	15934	0	10825	4297	0	0	782	0	0	0
3	13250	0	11243	0	0	0	1731	300	0	0
4	23859	0	16833	6599	0	0	581	0	0	0
5	83576	0	94545	12435	1025	0	15571	0	0	0
6	11277	0	10674	0	372	0	114	0	0	117
7	2411	0	2126	275	0	0	10	0	0	0
8	5448	0	3160	1907	0	0	31	0	0	0
9	3300	0	2981	0	0	0	319	0	0	0
10	17100	0	11863	3458	0	0	613	1166	0	0
11	9535	0	8859	432	0	0	247	0	0	0
12	8935	0	7653	0	1236	0	0	0	0	0
TOTALS	262063	0	199107	37576	2633	0	21164	1466	0	117

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	195107	19.7	594.2	834.7	3.3
3	37576	17.6	546.9	848.5	1.6
4	2633	25.3	763.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	21164	16.2	847.0	1640.4	1.0
7	1466	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	117	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	666.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	199107	328129	118315.9	166195.2	665303	453776
3	37576	55256	20551.3	31284.9	59676	0
4	2633	5549	2080.9	4549.2	5327	0
5	0	0	0.0	0.0	0	0
6	21164	28546	17925.0	34716.8	20553	0
7	1466	3537	0.0	227.9	8489	0
8	0	0	0.0	0.0	0	0
9	117	149	25.5	165.9	197	0
TOTALS	262063	419166	158881.6	237739.8	759545	453776

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	158881.6	237739.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	512.9	512.9
TOTAL ENERGY CONSUMPTION (MWH)	159394.5	238252.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	608.2	909.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.6	-2.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	5744	16421	5957.3	7338.5	33498
3	0	0	0.0	0.0	0
4	-46	-72	-26.7	-70.1	-69
5	-5698	-16349	-6086.7	-7901.4	-5886
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-150.1	-633.0	27544

TABLE C24

SUBREGION 10

1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG CUM (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	91533	0	51535	9960	0	0	3889	26099	0	0
2	940	0	340	400	0	0	0	200	0	0
3	2610	0	820	0	0	0	1793	0	0	0
4	1200	0	750	100	0	0	0	350	0	0
5	1620	0	1131	35	0	0	0	394	0	0
6	12378	0	3433	0	0	0	0	8888	0	57
7	93	0	93	0	0	0	0	0	0	0
8	700	0	0	0	0	0	0	700	0	0
9	20	0	20	0	0	0	0	0	0	0
10	962	0	962	0	0	0	0	0	0	0
11	100	0	0	0	0	0	0	100	0	0
12	206	0	156	0	0	0	0	41	0	10
13	2030	0	2030	0	0	0	0	0	0	0
14	80	0	0	0	0	0	0	80	0	0
TOTALS	114472	0	61379	10495	0	0	5679	36852	0	67

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	61379	25.7	722.3	962.8	4.4
3	10495	23.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	5679	26.9	1329.2	2122.6	1.6
7	36852	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	67	24.0	262.1	1462.0	2.6
WEIGHTED AVERAGES		33.5	526.3	775.0	5.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	89	20	33	15	103

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	61379	131324	44333.5	59093.3	267901	348706
3	10495	26073	8580.5	11745.9	26199	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	5679	12740	7548.5	12054.3	9173	0
7	36852	149569	0.0	5727.8	358821	0
8	0	0	0.0	0.0	0	0
9	67	134	17.6	98.0	177	0
TOTALS	114472	319786	60486.1	88719.3	664232	348706

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	60486.1	88719.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1236.2	1236.2
TOTAL ENERGY CONSUMPTION (MWH)	61722.3	89955.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	539.1	785.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.7	-10.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	4414	9911	3090.1	4151.5	18383
3	0	0	0.0	0.0	0
4	-1211	-2222	-740.7	-1888.8	-2133
5	-3203	-6729	-2426.7	-3450.2	-2444
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-82.4	-1187.5	13806

TABLE C25 SUBREGION 11 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLIO SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	64072	0	41072	18000	0	0	5000	0	0	0
2	4374	0	4374	0	0	0	0	0	0	0
3	20428	0	11428	0	4000	0	5000	0	0	0
4	3259	0	1758	0	1000	0	0	0	0	500
TOTALS	92132	0	58632	18000	5000	0	10000	0	0	500

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	58632	27.3	776.7	1017.2	4.6
3	18000	30.7	897.3	1198.9	2.8
4	5000	24.1	704.9	1648.9	1.9
5	0	0.0	0.0	0.0	0.0
6	10000	27.8	1405.6	2199.0	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	500	15.4	192.0	1391.9	1.7
WEIGHTED AVERAGES		27.8	861.4	1217.3	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	50	25	32	204

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	58632	133322	45539.9	59639.1	271978	0
3	18000	46050	16150.7	21579.4	49734	0
4	5000	10053	3524.7	8244.3	9648	0
5	0	0	0.0	0.0	0	0
6	10000	23167	14055.7	21989.8	16680	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	500	642	96.0	695.9	847	0
TOTALS	92132	213231	79366.9	112149.0	348887	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	79366.9	112149.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	79366.9	112149.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	861.4	1217.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C26

SUBREGION 12

1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PI/OT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	232550	5067	7258	15929	0	0	0	204296	0	0
2	7570	1079	2174	2724	0	0	0	1601	0	0
15	22020	2823	1488	3345	0	0	0	14364	0	0
TOTALS	262148	8969	10920	21948	0	0	0	220261	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	8969	23.3	760.0	1636.5	.9
2	10920	28.6	742.7	983.1	4.9
3	21948	29.4	779.1	1000.9	2.8
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	220261	44.1	0.3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	122.6	318.5	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROSS WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
47	18	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	8969	17414	6816.7	14678.0	8359	0
2	10920	26062	8109.9	10735.8	53167	0
3	21948	53852	17143.3	23778.3	58160	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	220261	808596	62.9	34297.4	1940631	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	262148	905924	32132.7	83489.5	2060317	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	32132.7	83489.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	32132.7	83489.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	122.6	318.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C27

SUBREGION 13

1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	146480	2315	12223	16707	0	0	325	114905	0	0
2	62800	375	2320	3170	0	0	0	56875	0	0
7	8300	0	0	2075	6225	0	0	0	0	0
15	41032	540	4304	3834	0	0	250	32134	0	0
TOTALS	258612	3230	18852	25756	6225	0	635	203914	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3230	23.3	771.7	1648.2	.9
2	18852	29.2	754.4	1004.8	5.0
3	25756	29.0	722.7	1004.3	2.6
4	6225	26.3	719.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	635	28.3	1366.0	2159.4	1.7
7	203914	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
48	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3230	6283	2492.5	5323.6	3916	0
2	18852	45829	14410.0	18943.3	93492	0
3	25756	62302	20159.0	27327.5	67286	0
4	6225	13643	4414.5	10290.4	13397	0
5	0	0	0.0	0.0	0	0
6	635	1497	867.4	1371.2	1078	0
7	203914	676529	0.0	31693.7	1623669	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	258612	806082	42343.4	95549.7	1801637	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42343.4	95549.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	16202.1	16202.1
TOTAL ENERGY CONSUMPTION (MWH)	58545.4	111751.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	226.4	432.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C28 SUBREGION 14 1975 (MODEL PREDICTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	163693	0	77268	28324	0	0	0	58191	0	0
2	55085	3029	27115	10026	0	0	0	14915	0	0
3	6489	0	0	0	0	0	0	6489	0	0
5	2140	0	0	0	0	0	0	2140	0	0
6	19	0	0	0	0	0	0	19	0	0
7	3810	0	1676	620	1514	0	0	0	0	0
12	2782	0	1462	541	0	0	0	779	0	0
14	2572	0	0	0	0	0	0	2572	0	0
TOTALS	236580	3029	107521	39411	1514	0	0	85105	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3029	19.0	760.2	1636.7	.8
2	107521	26.3	871.6	1112.0	4.5
3	39411	26.3	891.4	1193.0	2.4
4	1514	21.2	719.0	1662.9	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	85105	37.9	0.0	153.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	558.9	791.6	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
56	86	250	10	34	121

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3029	4796	2302.6	4657.5	2302	0
2	107521	235562	93712.3	119567.8	480547	0
3	39411	86320	35128.5	47116.5	93226	0
4	1514	2675	1088.5	2517.6	2568	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	85105	268783	0.0	13227.6	645078	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	236580	598136	132232.8	187287.1	1223721	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	132232.8	187287.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	132232.8	187287.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	558.9	791.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C29

SUBREGION 1 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA-NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	31108	0	20462	3896	0	0	200	0	6550	0
2	7714	0	5714	2000	0	0	0	0	0	0
3	444	0	0	0	0	0	444	0	0	0
4	60	0	0	0	0	0	0	0	60	0
5	2726	0	2726	0	0	0	0	0	0	0
6	536	0	436	0	0	0	0	0	0	100
7	364	0	70	294	0	0	0	0	0	0
8	9706	0	5706	4000	0	0	192	0	0	0
9	192	0	0	0	0	0	0	0	0	0
TOTALS	52850	0	35114	10190	0	0	836	0	6610	100

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	35114	26.0	1036.7	1279.2	4.4
3	10190	24.3	1001.8	1303.5	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	836	22.5	1265.9	2059.3	1.3
7	0	0.0	0.0	0.0	0.0
8	6610	25.2	57.7	253.4	9.1
9	100	20.0	501.8	1701.7	2.2
WEIGHTED AVERAGES		25.5	911.5	1168.7	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	140	157	47	94	235

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	35114	76036	36472.8	44916.6	155113	0
3	10190	20628	10208.8	13282.3	22278	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	836	1565	1058.3	1721.6	1127	0
7	0	0	0.0	0.0	0	0
8	6610	13899	381.2	1675.1	60045	0
9	100	167	50.2	170.2	220	0
TOTALS	52850	112294	48171.3	61765.9	238783	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	48171.3	61765.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	9213.7	3213.7
TOTAL ENERGY CONSUMPTION (MWH)	57385.0	70979.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1085.8	1343.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-60.1	-55.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-6610	-24712	-3556.2	-4583.6	-59308
8	6610	13899	381.2	1675.1	60045
9	0	0	0.0	0.0	0
TOTALS	0	-10812	-3175.0	-2908.4	737

TABLE C30

SUBREGION 2 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	224336	123677	12472	88247	0	0	0	0	0	0
2	202653	65000	11485	101983	0	0	0	0	24185	0
3	26266	26266	0	0	0	0	0	0	0	0
5	32121	0	0	10000	0	0	0	22021	0	0
6	49763	0	14283	0	0	20000	0	0	14880	600
7	40915	29415	0	5000	5000	0	1500	0	0	0
10	67	0	67	0	0	0	0	0	0	0
11	16734	0	6204	0	10000	0	200	0	0	300
12	59330	47000	0	12690	0	0	0	0	0	0
13	58705	2000	4000	28705	0	0	0	0	24000	0
14	20618	10000	0	13618	0	0	0	0	0	0
15	35402	16152	1000	18250	0	0	0	0	0	0
TOTALS	767400	319510	49511	275693	15000	20000	1700	22021	63065	900

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	319510	36.9	1557.1	2433.6	1.5
2	49511	47.1	1713.9	1954.4	8.0
3	275653	39.6	1428.3	1729.9	3.6
4	15000	52.7	1890.5	2834.4	4.2
5	20000	68.4	2813.8	3133.3	2.1
6	1730	45.2	2095.0	3389.3	2.7
7	22021	62.6	0.0	155.4	12.4
8	63065	29.7	88.0	263.7	10.7
9	930	49.8	1152.4	2392.3	5.5
WEIGHTED AVERAGES		39.8	1394.9	1934.2	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	155	340	19	71	230

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	319510	982217	497496.7	777548.8	471464	30512799
2	49511	194240	84358.7	96764.6	398249	0
3	275693	538924	393759.6	476913.6	981638	0
4	15000	65833	28357.1	42515.9	63200	0
5	20000	114000	56275.5	62666.2	41040	0
6	1730	6436	4412.4	5761.2	4612	0
7	22021	114142	0.0	3422.7	273941	0
8	63065	156308	4287.3	16632.2	675252	0
9	930	3732	1037.1	2117.0	4927	0
TOTALS	767400	2545803	1070484.4	1484342.2	2912323	30512799

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1070484.4	1484342.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	974748.4	974748.4
TOTAL ENERGY CONSUMPTION (MWH)	2045232.8	2459090.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2665.1	3204.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	372.3	544.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	187310	668802	336735.9	502914.1	321025
2	-22729	-110341	-46750.9	-52216.6	-225095
3	0	0	0.0	0.0	0
4	-5000	-24375	-10564.5	-15284.1	-23400
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-222646	-1331566	0.0	-34605.2	-3195758
8	63065	156308	4287.3	16632.2	675252
9	0	0	0.0	0.0	0
TOTALS	0	-641171	285707.8	417440.4	-2447976

TABLE C31

SUBREGION 3 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	HIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	255727	1200	19585	19308	0	0	0	0	215134	0
2	77620	0	0	12300	0	0	0	0	65620	0
4	40819	600	1000	3000	0	0	400	0	35819	0
5	37442	0	2023	4000	3000	0	0	28419	0	0
6	88516	0	1000	0	0	53100	0	0	33416	1000
7	3184	600	0	0	0	0	0	0	2584	0
12	19083	0	0	3000	0	0	0	0	16083	0
14	1884	0	0	1384	0	0	0	0	584	0
19	1745	0	0	600	0	0	0	0	1145	0
TOTALS	526000	2400	23606	43792	3000	53100	400	28419	370281	1000

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2400	34.7	1128.4	2004.9	1.4
2	23608	47.6	1221.4	1461.9	8.1
3	43792	42.2	1113.6	1415.2	3.8
4	3000	41.5	1095.6	2039.5	3.3
5	53100	56.9	1582.1	1821.7	1.7
6	400	43.8	2090.7	2884.1	2.6
7	28419	60.0	0.0	155.4	12.0
8	370281	36.7	4.3	200.1	13.2
9	1000	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	316.0	542.6	10.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	46	250	10	4	51

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2400	6945	2708.1	4811.7	3334	0
2	23608	93728	25835.5	34512.5	191205	0
3	43792	133932	48764.6	61973.1	162246	0
4	3000	10375	3286.7	6118.5	9960	0
5	53100	251782	79763.1	96730.5	90642	0
6	400	1460	836.3	1153.6	1051	0
7	28419	142095	0.0	4417.1	341028	0
8	370281	1133360	1604.6	74086.7	4896114	0
9	1000	3625	419.2	1619.1	4785	0
TOTALS	526000	1797302	166218.2	285422.8	5704364	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	166218.2	285422.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	33422.5	33422.5
TOTAL ENERGY CONSUMPTION (MWH)	199640.7	318845.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	379.5	606.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-101.1	-73.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	1500	6000	1845.9	2206.6	12240
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-1500	-6000	-1900.8	-2380.1	-2160
6	0	0	0.0	0.0	0
7	-36081	-2003314	-53105.8	-110315.6	-4807954
8	36081	1126210	0.0	72051.5	4865226
9	0	0	0.0	0.0	0
TOTALS	0	-877104	-53160.7	-38437.5	67352

TABLE C32

SUBREGION 4 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1126176	38230	150048	55975	954	0	0	869999	7050	0
2	775226	58943	212447	111675	0	0	0	392161	0	0
3	49322	13000	0	0	0	0	0	36322	0	0
4	4175	0	0	0	0	0	0	4175	0	0
5	1239	0	241	0	0	0	0	998	0	0
6	290125	132317	25939	71646	3690	0	0	23321	0	0
7	92021	8883	27335	13171	4524	0	0	38108	0	0
12	184390	6084	10936	6186	0	0	0	158190	3000	0
13	4914	0	0	0	0	0	0	4914	0	0
14	15112	0	0	0	0	0	0	15112	0	0
16	0	0	0	0	0	0	0	0	0	0
TOTALS	2542700	257427	426946	262649	42378	0	0	1543300	10050	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	257427	25.3	1178.4	2054.9	1.0
2	426946	29.0	1120.1	1360.6	4.9
3	262649	30.7	1242.2	1543.8	2.8
4	42378	36.2	1259.5	2243.4	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1543300	42.3	244.3	399.8	8.5
8	10000	27.7	321.3	517.0	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.0	606.9	878.0	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	51	265	9	56	108

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	257427	554215	303361.9	528997.9	266023	15274644
2	426946	1033234	476243.0	580910.7	2107798	0
3	262649	672584	326262.1	405481.8	726391	0
4	42378	127729	55070.4	95371.8	122620	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1543300	5437063	377069.3	616939.8	13048967	0
8	10000	23053	3212.8	5170.3	99612	0
9	0	0	0.0	0.0	0	0
TOTALS	2542700	7847890	1543219.5	2232572.3	16371410	15274644

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1543219.5	2232572.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	167337.4	107337.4
TOTAL ENERGY CONSUMPTION (MWH)	1650556.8	2339909.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	649.1	920.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-2.1	21.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	93767	219373	126077.1	209064.4	105302
2	-93245	-265345	-131594.9	-154017.6	-541364
3	0	0	0.0	0.0	0
4	-522	-1044	-559.7	-1352.4	-1002
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-47010	-5277.5	53994.4	-437004

TABLE C33

SUBREGION 5 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP JACK (8)	DRIP (9)
1	792407	3409	97084	41745	1283	0	126	643760	5000	0
2	205751	5232	40757	19343	0	0	233	139726	0	0
3	60537	1125	1045	350	0	0	0	58017	0	0
4	15960	0	36	223	0	0	0	15701	0	0
5	25165	0	677	0	0	0	0	24508	0	0
6	10724	0	5027	0	0	558	0	5122	0	17
7	44375	5356	109	4913	22629	0	0	11368	0	0
8	2434	0	812	1622	0	0	0	0	0	0
12	78836	2929	7485	6064	3400	0	0	58928	0	0
13	23535	0	7594	1413	0	0	0	14528	0	0
14	40036	0	1945	832	0	0	0	37229	0	0
15	20342	0	2544	3378	0	0	0	14420	0	0
17	400	0	400	0	0	0	0	0	0	0
TOTALS	1320462	18041	165515	80383	27312	558	329	1023307	5000	17

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	18041	27.4	1012.2	1888.7	1.1
2	165515	34.4	1038.0	1278.4	2.8
3	80383	39.7	915.4	1217.0	2.8
4	27312	39.2	1231.9	2175.8	3.1
5	558	36.9	1229.9	1549.4	1.4
6	329	22.7	1119.0	1902.4	1.4
7	1023307	50.1	14.7	170.1	10.0
8	5000	30.9	70.6	266.4	11.1
9	17	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.3	237.6	439.1	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	25	268	14	8	34

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	18041	41190	18261.5	34074.5	19771	363430
2	165515	474381	171797.7	211599.1	967736	0
3	80383	205562	73581.3	97826.3	222007	0
4	27312	89333	33645.8	59426.1	85760	0
5	558	1716	686.3	864.6	618	0
6	329	622	364.9	625.9	448	0
7	1023307	4273365	15033.6	174083.2	10256075	0
8	5000	12875	353.1	1331.9	55620	0
9	17	15	1.9	22.3	20	0
TOTALS	1320462	5099059	313726.2	579853.9	11608056	363430

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	313726.2	579853.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	137152.6	137152.6
TOTAL ENERGY CONSUMPTION (MWH)	450878.7	717006.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	341.5	543.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	2231	5956	2672.5	4628.0	2859
2	-1658	-6653	-2466.4	-2874.7	-13567
3	0	0	0.0	0.0	0
4	-533	-582	-189.0	-692.2	-559
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-1276	17.1	1061.2	-11266

TABLE C34

SUBREGION 6 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIZE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	192432	1000	17650	27303	538	0	1000	145241	0	0
2	50239	5532	6195	32257	0	0	297	5958	0	0
3	145	0	145	0	0	0	0	0	0	0
4	3346	0	888	2000	0	0	0	158	0	0
5	2185	0	323	0	0	1500	0	339	0	23
6	9065	7156	0	725	1162	0	0	2	0	0
7	3566	0	1188	2378	0	0	0	0	0	0
8	95	0	0	0	0	0	0	95	0	0
9	2750	2000	0	250	500	0	0	0	0	0
12	2675	0	1338	1337	0	0	0	0	0	0
13	572	0	0	572	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0
TOTALS	267270	15688	27927	66822	2220	1500	1297	151793	0	23

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15688	26.4	1069.8	1946.3	1.1
2	27927	33.2	913.2	1143.7	5.1
3	66822	28.0	835.9	1137.6	2.5
4	2220	44.1	1484.0	2427.9	3.9
5	1500	53.8	1867.0	2186.5	1.6
6	1297	39.7	2188.6	2982.0	2.4
7	151793	39.1	1.0	156.4	7.8
8	0	0.0	0.0	0.0	0.0
9	23	25.1	269.3	1463.2	2.8
WEIGHTED AVERAGES		34.8	400.2	654.6	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	60	129	27	16	76

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MMH)	TOTAL ENERGY (MMH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15688	34470	16783.1	30533.7	16546	5050
2	27927	70364	25223.8	31939.4	143543	0
3	66822	155803	55858.8	76013.5	168274	0
4	2220	8157	3294.4	5309.9	7831	0
5	1500	6725	2800.5	3279.8	2421	0
6	1297	4287	2836.6	3867.7	3087	0
7	151793	494337	152.8	23745.5	1186409	50490
8	0	0	0.0	0.0	0	0
9	23	48	6.2	33.8	64	0
TOTALS	267270	774158	106958.1	174803.2	1528173	55540

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MMH)	106958.1	174803.2
DIVERSION PUMPING ENERGY CONSUMPTION (MMH)	30653.7	30650.7
TOTAL ENERGY CONSUMPTION (MMH)	137611.8	205453.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	514.9	768.7
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-2.1	-2.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MMH)	TOTAL ENERGY (MMH)	LABOR REQUIREMENTS (MAN-HOURS)
1	31	78	33.4	60.5	37
2	169	490	205.2	245.8	999
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-500	-1929	-803.4	-963.1	-695
6	0	0	0.0	0.0	0
7	330	1883	0.0	46.6	4519
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	521	-564.8	-610.2	4861

TABLE C35

SUBREGION 7 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	277264	22366	96847	98827	1438	0	454	32575	24757	0
2	137210	56120	7510	56634	0	0	761	12445	3740	0
3	10253	4020	0	0	0	0	0	1238	0	0
4	20712	0	1213	12675	0	0	18	6806	0	0
5	13235	1360	2373	4948	0	0	0	4599	0	0
6	20993	0	17702	0	431	2378	0	426	0	46
7	52857	41267	786	5716	3473	0	0	1615	0	0
8	10990	700	447	2568	0	0	0	7275	0	200
11	456	0	0	0	0	150	0	108	0	0
12	6000	5100	0	900	0	0	0	0	0	0
13	3630	1650	0	1910	0	0	0	0	0	0
14	2306	0	44	2228	0	0	0	34	0	0
15	10938	0	2566	3254	0	0	29	5089	0	0
17	24	0	0	24	0	0	0	0	0	0
18	7751	0	2414	5192	0	0	0	145	0	0
19	780	780	0	0	0	0	0	0	0	0
20	158	0	39	79	0	0	0	40	0	0
TOTALS	575574	138363	131946	194995	5342	2528	1262	72395	28497	246

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	138363	29.8	1938.6	2815.1	1.2
2	131946	35.6	1182.7	1423.2	6.1
3	194995	37.0	1891.1	1992.8	6.4
4	5342	39.6	1967.0	2911.0	3.1
5	2528	28.8	1063.9	1381.4	3.9
6	20993	26.8	1411.5	2204.3	1.6
7	72357	41.8	0	155.4	8.3
8	28497	34.9	74.8	275.5	12.6
9	246	45.8	2232.8	3432.7	5.0
WEIGHTED AVERAGES		35.6	1341.0	1750.7	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	137	132	121	111	247

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	138363	343343	268226.4	389502.2	164305	443740
2	131946	393513	156052.3	187781.4	802766	2502799
3	194995	611413	329763.4	388577.4	663326	0
4	5342	17363	10507.9	15550.3	16568	0
5	2528	6061	2689.4	3497.2	2182	0
6	1262	2823	1781.4	2782.6	2032	0
7	72357	249117	0.0	11252.1	597882	0
8	28497	82907	2274.0	7352.3	358158	0
9	246	933	549.3	844.5	1238	0
TOTALS	575574	1707477	771844.0	1007640.0	2606056	2946539

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	771844.0	1007640.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	21703.6	21703.6
TOTAL ENERGY CONSUMPTION (MWH)	793553.6	1029343.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1373.7	1788.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	60.6	69.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	2724	9445	4246.0	6633.6	4534
2	31573	90452	29169.3	36761.7	185337
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-49234	-238737	0.0	-7652.3	-572969
8	14937	52728	1446.2	4370.1	227783
9	0	0	0.0	0.0	0
TOTALS	0	-85713	34861.6	40113.2	-155315

TABLE C36

SUBREGION 8 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	8014	0	7317	460	0	0	237	0	0	0
2	573	0	73	500	0	0	0	0	0	0
3	126	0	126	0	0	0	0	0	0	0
4	2651	0	2651	0	0	0	0	0	0	0
5	1429	0	1219	0	0	0	0	0	0	202
6	61	0	61	0	0	0	0	0	0	0
7	185	0	175	0	0	0	10	0	0	0
15	---	---	---	---	---	---	---	---	---	---
TOTALS	13039	0	11622	960	8	0	247	0	0	202

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	11622	25.8	817.9	1058.3	4.6
3	960	16.1	524.5	826.1	1.5
4	8	23.9	678.9	1622.3	1.7
5	0	0.0	0.0	0.0	0.0
6	247	28.8	1552.3	2345.7	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	202	17.4	273.5	1473.4	1.9
WEIGHTED AVERAGES	---	29.0	861.7	1072.4	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	11622	24972	9505.2	12299.9	53944	0
3	960	1292	503.5	793.1	1395	0
4	8	14	6.4	13.0	13	0
5	0	0	0.0	0.0	0	0
6	247	594	383.4	579.4	427	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	202	203	56.2	297.5	337	0
TOTALS	13039	27165	10452.8	13983.0	53166	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	10452.8	13983.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	10452.8	13983.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	801.7	1072.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C37

SUBREGION 9 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	67488	0	58120	8173	0	0	1195	0	0	0
2	15904	0	10825	4297	0	0	782	0	0	0
3	11250	0	11249	0	0	0	1701	300	0	0
4	23859	0	16649	6559	0	0	581	0	0	0
5	83576	0	54545	12435	1025	0	15571	0	0	0
6	11277	0	10674	0	372	0	114	0	0	117
7	2411	0	2126	275	0	0	10	0	0	0
8	5448	0	3610	1907	0	0	31	0	0	0
12	3300	0	2931	0	0	0	319	0	0	0
15	17100	0	11863	3458	0	0	613	1166	0	0
21	9535	0	8856	432	0	0	247	0	0	0
22	8905	0	7669	0	1236	0	0	0	0	0
TOTALS	262063	0	199107	37576	2633	0	21164	1466	0	117

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	199107	19.7	594.2	834.7	3.3
3	37576	17.6	546.9	848.5	1.6
4	2633	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	21164	16.2	847.0	1640.4	0.3
7	1466	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	117	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	199107	326129	118315.9	166195.2	665303	0
3	37576	55256	20551.3	31884.9	59676	0
4	2633	5549	2063.9	4549.2	5327	0
5	0	0	0.0	0.0	0	0
6	21164	28546	17925.0	34716.8	20553	0
7	1466	3537	0.0	227.9	8489	0
8	0	0	0.0	0.0	0	0
9	117	149	25.5	165.9	197	0
TOTALS	262063	419166	158881.6	237739.8	759545	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	158881.6	237739.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	512.9	512.9
TOTAL ENERGY CONSUMPTION (MWH)	159394.5	238252.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	608.2	909.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.6	-2.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	5744	16421	5957.3	7338.5	33498
3	0	0	0.0	0.0	0
4	-46	-72	-26.7	-70.1	-69
5	-5698	-16349	-6080.7	-7901.4	-5886
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-150.1	-633.0	27544

TABLE C38

SUBREGION 10

1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	9IG GUN (6)	GRAVITY SYSTEMS (7)	PUMP- BACK (8)	ORIP (9)
1	91533	0	51585	9960	0	0	3889	26499	0	0
2	940	0	340	400	0	0	0	200	0	0
3	2610	0	820	0	0	0	1790	0	0	0
4	1200	0	750	100	0	0	0	350	0	0
5	1620	0	1191	35	0	0	0	394	0	0
6	12378	0	3433	0	0	0	0	8888	0	57
7	93	0	93	0	0	0	0	0	0	0
8	700	0	0	0	0	0	0	700	0	0
9	20	0	20	0	0	0	0	0	0	0
10	962	0	962	0	0	0	0	100	0	0
11	100	0	0	0	0	0	0	41	0	10
12	206	0	155	0	0	0	0	0	0	0
13	2030	0	2030	0	0	0	0	0	0	0
14	80	0	0	0	0	0	0	80	0	0
TOTALS	114472	0	61379	10495	0	0	5679	36852	0	67

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	61379	25.7	722.1	962.6	4.4
3	10495	29.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	5679	26.9	1329.2	2122.6	1.6
7	36852	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	67	24.0	262.1	1462.0	2.6
WEIGHTED AVERAGES		33.5	528.2	774.9	5.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
63	89	20	33	15	103

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	61379	131289	44322.0	59081.0	267030	0
3	10495	26373	8500.5	11745.9	28159	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	5679	12740	7548.5	12054.3	9173	0
7	36852	149509	0.0	5727.8	358821	0
8	0	0	0.0	0.0	0	0
9	67	134	17.6	98.0	177	0
TOTALS	114472	319745	60468.5	88707.8	664160	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	60468.5	88707.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1236.2	1236.2
TOTAL ENERGY CONSUMPTION (MWH)	61704.7	89944.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	539.0	785.7
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.8	-10.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	4414	8576	3078.6	4140.0	18312
3	0	0	0.0	0.0	0
4	-1211	-2222	-745.7	-1888.8	-2133
5	-3203	-6783	-2426.7	-3458.2	-2444
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-35	-93.9	-1199.0	13734

TABLE C39

SUBREGION 11 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	64072	0	41072	18000	0	0	5000	0	0	0
2	4374	0	4374	0	0	0	0	0	0	0
5	20428	0	11428	0	4000	0	5000	0	0	0
6	3258	0	1758	0	1000	0	0	0	0	500
TOTALS	92132	0	58632	18000	5000	0	10000	0	0	500

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	58632	27.3	776.7	1017.2	4.6
3	18000	30.7	897.3	1198.9	2.8
4	5000	24.1	704.9	1648.9	1.9
5	0	0.0	0.0	0.0	0.0
6	10000	27.8	1405.6	2199.6	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	500	15.4	192.0	1391.9	1.7
WEIGHTED AVERAGES		27.8	861.4	1217.3	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	50	25	32	204

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	58632	133322	45539.9	59639.1	271978	0
3	18000	46050	16150.7	21579.8	49734	0
4	5000	10050	3524.7	8244.3	9548	0
5	0	0	0.0	0.0	0	0
6	10000	23167	14055.7	21989.4	16680	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	500	642	96.0	695.9	847	0
TOTALS	92132	213231	79366.9	112149.0	348887	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	79366.9	112149.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	79366.9	112149.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	861.4	1217.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C40

SUBREGION 12

1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	HIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	232550	5067	7258	15929	0	0	0	204296	0	0
2	7578	1079	2174	2724	0	0	0	1091	0	0
15	22020	2823	1488	3345	0	0	0	14304	0	0
TOTALS	262148	8969	10920	21998	0	0	0	220261	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	8969	23.3	760.0	1636.5	4.9
2	10920	28.6	742.7	983.1	4.9
3	21998	29.4	779.3	1630.9	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	220261	44.1	3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	122.6	318.5	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
52	18	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	8969	17414	6816.7	14678.0	8359	0
2	10920	26062	8109.9	10735.8	53167	0
3	21998	53852	17143.3	23778.3	58160	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	220261	80856	62.9	34297.4	194063	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	262148	905924	32132.7	83489.5	2060317	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	32132.7	83489.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	32132.7	83489.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	122.6	318.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C41

SUBREGION 13 1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	146480	2315	12228	16707	0	0	325	114905	0	0
2	62300	375	2320	3170	0	0	60	56875	0	0
7	8300	0	0	2075	6225	0	0	0	0	0
15	41032	540	4304	3864	0	0	250	32134	0	0
TOTALS	258612	3230	18852	25756	6225	0	635	203914	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3230	23.3	771.7	1648.2	.9
2	18852	23.2	764.4	1004.8	5.0
3	25756	23.0	782.7	1084.3	2.6
4	6225	28.3	709.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	635	28.3	1366.0	2153.4	1.7
7	203914	38.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3230	6283	2492.5	5323.6	3016	0
2	18852	45829	14410.0	15943.3	93492	0
3	25756	62302	20159.0	27927.5	67286	0
4	6225	13643	4414.5	10290.4	13097	0
5	0	0	0.0	0.0	0	0
6	635	1497	867.4	1371.2	1078	0
7	203914	676529	0.0	31693.7	1623669	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	258612	806062	42343.4	95549.7	1801637	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42343.4	95549.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	16202.1	16202.1
TOTAL ENERGY CONSUMPTION (MWH)	58545.4	111751.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	226.4	432.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C42

SUBREGION 14

1985

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	163683	0	77268	28224	0	0	0	58191	0	0
2	55035	3029	27115	10626	0	0	0	14915	0	0
3	6489	0	0	0	0	0	0	6489	0	0
5	2140	0	0	0	0	0	0	2140	0	0
6	19	0	0	0	0	0	0	19	0	0
7	3810	0	1676	620	1514	0	0	779	0	0
12	2782	0	1462	541	0	0	0	2572	0	0
14	2572	0	0	0	0	0	0	2572	0	0
TOTALS	236580	3029	107521	39411	1514	0	0	85105	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENLKG/AC (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3029	19.0	760.2	1636.7	1.8
2	107521	26.3	871.6	1112.0	4.5
3	39411	26.3	891.4	1193.0	2.4
4	1514	21.2	719.0	1602.9	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	85105	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	598.9	791.6	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	86	250	10	34	121

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3029	4796	2302.6	4957.5	2302	0
2	107521	235562	93712.3	119567.8	480547	0
3	39411	10320	35129.5	47016.5	93226	0
4	1514	2675	1088.5	2517.6	2568	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	85105	268783	0.0	13227.6	645078	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	236580	599136	132232.8	187287.1	1223721	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	132232.8	187287.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	132232.8	187287.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	558.9	791.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C-43

SUBREGION 1 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP JACK (8)	DRIP (9)
1	31108	0	20462	3896	0	0	200	0	6558	0
2	7714	0	5714	2000	0	0	0	0	0	0
3	444	0	0	0	0	0	444	0	0	0
4	60	0	0	0	0	0	0	0	60	0
5	2726	0	2726	0	0	0	0	0	0	100
6	536	0	436	0	0	0	0	0	0	0
7	304	0	70	294	0	0	0	0	0	0
8	9706	0	5706	4000	0	0	0	0	0	0
9	192	0	9	0	0	0	192	0	0	0
TOTALS	52950	0	35114	10190	0	0	836	0	6610	100

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	35114	20.0	1038.7	1279.2	4.4
3	10190	24.3	1001.8	1303.5	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	836	22.5	1265.9	2059.3	1.3
7	0	0.0	0.0	0.0	0.0
8	6610	25.2	57.7	253.4	9.1
9	100	20.0	501.8	1701.7	2.2
WEIGHTED AVERAGES		25.5	911.5	1168.7	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	140	157	47	94	235

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	35114	76036	36472.8	44916.6	155113	0
3	10190	20628	10208.8	13282.3	22278	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	836	1565	1058.3	1721.6	1127	0
7	0	0	0.0	0.0	0	0
8	6610	13899	381.2	1675.1	60045	0
9	100	167	50.2	170.2	220	0
TOTALS	52850	112294	48171.3	61765.9	238783	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	48171.3	61765.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	9213.7	9213.7
TOTAL ENERGY CONSUMPTION (MWH)	57385.0	70979.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1085.8	1343.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-60.1	-55.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-6610	-24712	-3556.2	-4583.6	-59308
8	6610	13899	381.2	1675.1	60045
9	0	0	0.0	0.0	0
TOTALS	0	-10812	-3175.0	-2908.4	737

TABLE C44

SUBREGION 2 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	224396	124157	11992	88247	0	0	0	0	0	0
2	202653	65000	11435	101903	0	0	0	0	24185	0
3	26266	26266	0	0	0	0	0	0	0	0
5	32321	0	0	10000	0	0	0	22021	0	0
6	49753	0	9283	0	0	20000	0	0	14880	5600
7	40915	29415	0	5000	5000	0	1500	0	0	0
10	67	0	67	0	0	0	0	0	0	0
11	16734	0	6204	0	10000	0	200	0	0	300
12	59490	47000	0	12890	0	0	0	0	0	0
13	53705	2000	4000	28705	0	0	0	0	24000	0
14	20618	16000	0	10618	0	0	0	0	0	0
15	35402	17152	0	18250	0	0	0	0	0	0
TOTALS	767400	320990	43031	275693	15000	20000	1700	22021	63065	5900

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	320990	36.4	1534.6	2411.1	1.5
2	43031	43.9	1605.3	1845.8	7.5
3	275653	39.6	1428.3	1729.9	3.6
4	15000	52.7	1890.5	2034.4	4.2
5	20000	68.4	2813.8	3133.3	2.1
6	1700	45.2	2595.5	3389.0	2.7
7	22021	62.2	0.0	155.4	12.4
8	63065	29.7	68.0	263.7	10.7
9	5900	63.4	1257.0	2458.9	7.0
WEIGHTED AVERAGES		39.5	1376.3	1923.1	3.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
79	158	340	19	71	229

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	320990	972341	492601.5	773950.8	466724	241092
2	43031	157336	69079.3	79426.9	325965	0
3	275653	908424	393759.6	476913.6	981638	0
4	15000	65233	28357.1	42515.9	63200	0
5	20000	114000	56275.5	62665.2	41040	0
6	1700	6400	4412.4	5761.2	4512	0
7	22021	114142	0.0	3422.7	27341	0
8	63065	156308	4287.3	16632.2	675252	0
9	5900	31196	7416.1	14495.5	41178	2352500
TOTALS	767400	2526486	1056188.8	1475785.0	2866550	2593592

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1056188.8	1475785.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	97474.9	97474.9
TOTAL ENERGY CONSUMPTION (MWH)	2030933.7	2453533.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2646.5	3193.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	353.7	532.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	188790	658526	333840.7	499316.0	316285
2	-29209	-147245	-62530.3	-69554.2	-300379
3	0	0	0.0	0.0	0
4	-5000	-24375	-10504.5	-15284.1	-23400
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-222646	-1331566	0.0	-34605.2	-3193758
8	63065	156308	4287.3	16632.2	675252
9	5000	27463	6379.0	12378.5	36251
TOTALS	0	-660488	271412.1	408883.2	-2491749

TABLE C45

SUBREGION 3 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	255727	216334	19585	19868	0	0	0	0	0	0
2	77620	0	0	12000	0	0	0	0	65620	0
4	40819	36419	1000	3000	0	0	400	0	0	0
5	37442	0	2023	4000	3000	0	0	28419	0	0
6	88516	0	1000	0	0	53100	0	0	33416	1000
7	3104	630	0	0	0	0	0	0	2564	0
12	19083	16083	0	3000	0	0	0	0	0	0
14	1834	500	0	1304	0	0	0	0	0	0
19	1745	0	0	600	0	0	0	0	1145	0
TOTALS	526000	269936	23608	43792	3000	53100	400	28419	102745	1000

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	269936	38.5	1250.8	2127.3	1.5
2	23608	47.6	1221.4	1461.9	8.1
3	43792	42.2	1113.6	1415.0	3.8
4	3000	41.5	1099.6	2039.9	3.3
5	53100	56.9	1512.1	1821.7	1.7
6	400	43.8	2090.7	2884.1	2.6
7	28419	60.0	0.0	195.7	12.0
8	102745	32.0	0.0	195.7	11.5
9	1000	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	949.7	1522.6	4.6

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
80	142	250	10	10	152

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	269936	865904	337647.6	574247.8	415634	43581614
2	23608	93728	28835.5	34512.5	191205	0
3	43792	153932	48764.6	61973.1	166246	0
4	3000	10375	3286.7	6118.5	9960	0
5	53100	251762	79763.1	96730.5	90642	0
6	400	1463	836.3	1153.6	1051	0
7	28419	142095	0.0	4417.1	341028	0
8	102745	274401	0.0	20112.2	1185413	0
9	1000	3625	419.2	1619.1	4785	0
TOTALS	526000	1797302	499553.0	800884.4	2405963	43581614

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	499553.0	800884.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	33422.5	33422.5
TOTAL ENERGY CONSUMPTION (MWH)	532975.6	834307.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1013.3	1586.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	532.7	906.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	267536	858959	334939.4	569436.1	412300
2	1500	6000	1845.9	2208.6	12240
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-1500	-6000	-1908.8	-2380.1	-2160
6	0	0	0.0	0.0	0
7	-368081	-2003314	-53105.8	-110315.6	-4807954
8	100745	267251	-1604.6	15077.0	1154525
9	0	0	0.0	0.0	0
TOTALS	0	-877104	286174.2	477024.1	-3231049

TABLE C46 SUBREGION 4 2400 (NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1126176	38200	150048	59975	954	0	0	869399	7000	0
2	775226	58943	212447	111675	0	0	0	332161	0	0
3	43322	13000	0	0	0	0	0	36322	0	0
4	4175	0	0	0	0	0	0	4175	0	0
5	1239	0	241	0	0	0	0	998	0	0
6	290125	155256	0	71648	36900	0	0	23321	0	0
7	92021	8833	27335	13171	4524	0	0	36108	0	0
12	184390	6084	10936	6180	0	0	0	158190	3000	0
13	4914	0	0	0	0	0	0	4314	0	0
14	15112	0	0	0	0	0	0	15112	0	0
16	0	0	0	0	0	0	0	0	0	0
TOTALS	2542700	283366	401007	262649	42378	0	0	1543300	10000	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	283366	25.6	1159.5	2036.0	1.0
2	401007	29.3	1136.9	1377.3	5.0
3	262649	30.7	1242.2	1543.3	2.8
4	42378	36.2	1299.5	2243.4	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1543300	42.3	244.3	399.8	8.5
8	10000	27.7	321.3	517.0	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.0	608.0	885.6	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
62	52	265	9	56	108

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	283366	604004	328554.0	576929.7	289922	4225463
2	401007	980059	455893.8	552323.9	199321	0
3	262649	672584	326262.1	405481.8	726391	0
4	42378	127729	55070.4	95071.8	122620	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1543300	5437009	377669.3	610939.0	1304896	0
8	10000	23053	3212.8	5170.3	99012	0
9	0	0	0.0	0.0	0	0
TOTALS	2542700	7844504	1546062.3	2251913.2	16286832	4225463

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1546062.3	2251913.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	107337.4	107337.4
TOTAL ENERGY CONSUMPTION (MWH)	1653399.7	2359250.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	650.3	927.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.0	28.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	119706	269169	152069.2	256992.1	123201
2	-119184	-318520	-153944.2	-182604.4	-649781
3	0	0	0.0	0.0	0
4	-522	-1044	-559.7	-1052.4	-1002
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-50395	-2434.7	73335.3	-521582

TABLE C47

SUBREGION 5 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	792407	3409	97384	41745	1203	0	126	643760	5000	0
2	205751	5222	40757	19843	0	0	253	139726	0	0
3	60537	1125	1045	356	0	0	0	58017	0	0
4	15960	0	36	223	0	0	0	15701	0	0
5	25185	0	677	0	0	0	0	24508	0	0
6	10724	0	184	0	0	558	0	9965	0	17
7	44375	5465	0	4913	22629	0	0	11368	0	0
8	2434	0	812	1622	0	0	0	0	0	0
9	73306	2929	7485	6064	3460	0	0	58928	0	0
10	23535	0	7544	1413	0	0	0	14528	0	0
11	40006	0	1545	832	0	0	0	37229	0	0
12	20342	0	2544	3378	0	0	0	14420	0	0
13	400	0	400	0	0	0	0	0	0	0
TOTALS	1320462	18150	160563	80383	27312	558	329	1026150	5000	17

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	18150	27.6	1016.5	1895.0	1.1
2	160563	34.3	1033.7	1274.2	5.8
3	80383	30.7	915.4	1217.0	2.8
4	27312	39.2	1231.9	2175.8	3.1
5	558	36.9	1229.9	1549.4	1.1
6	329	22.7	1109.0	1902.4	1.4
7	1028150	50.1	14.6	170.0	10.0
8	5000	30.9	70.6	266.4	11.1
9	17	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.4	233.4	434.6	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	25	268	14	8	33

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	18150	41722	13486.5	34395.0	20027	17756
2	160563	459210	165980.7	204591.3	936787	0
3	80383	205562	73581.3	97326.3	222007	0
4	27312	89333	33645.8	59426.1	85760	0
5	558	1716	686.3	864.6	618	0
6	329	622	364.9	625.9	448	0
7	1028150	4293672	15033.6	174835.9	10304814	815077
8	5000	12875	353.1	1331.9	55626	0
9	17	15	1.9	22.3	20	0
TOTALS	1320462	5104728	308134.1	573919.3	11626161	832833

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	368134.1	573919.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	137152.6	137152.6
TOTAL ENERGY CONSUMPTION (MWH)	445286.6	711071.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	337.2	538.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-4.2	-3.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	2340	6488	2897.5	4948.5	3114
2	-6650	-21821	-8283.4	-9882.5	-44516
3	0	0	0.0	0.0	0
4	-533	-582	-189.0	-692.2	-559
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	4843	20308	6.0	752.7	48738
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	4392	-5575.0	-4873.5	6778

TABLE C48

SUBREGION 6

2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	192332	1000	17850	27303	538	0	1300	145241	0	0
2	50239	5532	6195	32257	0	0	297	5958	0	0
3	145	0	145	0	0	0	0	0	0	0
5	3046	0	888	2000	0	1500	0	158	0	23
6	2185	0	85	0	1182	0	0	577	0	0
7	9365	7156	0	725	0	0	0	0	0	0
8	3506	0	1188	2378	0	0	0	95	0	0
9	95	0	0	250	500	0	0	0	0	0
12	2750	2000	0	1337	0	0	0	0	0	0
13	2675	0	0	572	0	0	0	0	0	0
18	572	0	0	0	0	0	0	0	0	0
TOTALS	267270	15688	27689	66822	2220	1500	1297	152031	0	23

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	15688	26.4	1069.8	1946.3	1.1
2	27689	30.2	903.4	1143.9	5.1
3	66822	28.0	835.9	1137.6	2.5
4	2220	44.1	1484.0	2427.9	3.5
5	1500	53.8	1867.0	2186.5	1.6
6	1297	39.7	2188.6	2982.0	2.4
7	152031	39.1	1.0	156.4	7.8
8	0	0.0	0.0	0.0	0.0
9	23	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.8	399.4	653.2	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
63	60	129	27	16	75

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	15688	34470	16783.1	30533.7	16546	0
2	27689	69714	25015.1	31673.5	142216	0
3	66822	155800	55858.8	76313.5	163274	0
4	2220	8137	3230.4	5353.9	7831	0
5	1500	8725	2880.5	3753.8	2421	0
6	1297	4287	2838.6	3867.7	3087	0
7	152031	495224	152.8	23781.5	1148538	40059
8	0	0	0.0	0.0	0	0
9	23	48	0.2	33.8	64	0
TOTALS	267270	774434	106749.5	174574.3	1928975	40055

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	106749.5	174574.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	30653.7	30653.7
TOTAL ENERGY CONSUMPTION (MWH)	137403.1	205228.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	514.1	767.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-2.9	-3.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	31	78	33.4	60.5	37
2	-69	-161	-3.5	-20.1	-328
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	-500	-1929	-803.4	-963.1	-695
6	0	0	0.0	0.0	0
7	538	2770	0.0	83.6	6648
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	758	-773.5	-839.1	5663

TABLE C49

SUBREGION 7 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	277264	54388	79762	98827	1438	0	454	32575	9820	0
2	137210	56120	7510	56634	0	0	761	12445	3740	0
3	10258	9020	0	0	0	0	0	1238	0	0
4	20712	0	1213	12675	0	0	13	6806	0	0
5	13285	1360	2370	4948	0	0	0	4599	0	0
6	20933	0	17381	0	431	2378	0	747	0	46
7	52857	42053	0	5716	3473	0	0	1615	0	0
8	10930	700	447	2568	0	0	0	7275	0	0
11	458	0	0	0	0	150	0	108	0	200
12	6030	5100	0	900	0	0	0	0	0	0
13	3600	1650	0	1950	0	0	0	34	0	0
14	2336	0	44	2228	0	0	0	3652	0	0
15	10938	0	4003	3254	0	0	29	0	0	0
17	24	0	0	24	0	0	0	145	0	0
18	7751	2403	11	5192	0	0	0	40	0	0
19	780	780	0	0	0	0	0	0	0	0
20	158	0	39	79	0	0	0	0	0	0
TOTALS	575574	173574	112788	194995	5342	2528	1262	71279	13560	246

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	173574	32.8	2079.6	2956.1	1.3
2	112788	32.7	934.6	1175.1	5.6
3	194995	37.6	1691.1	1992.8	3.4
4	5342	39.0	1967.0	2911.0	3.1
5	2528	28.8	1063.9	1333.4	.9
6	1262	26.8	1411.5	2204.9	1.6
7	71279	41.3	0.0	155.4	8.3
8	13560	26.7	61.0	256.8	9.6
9	246	45.8	2232.8	3432.7	5.0
WEIGHTED AVERAGES		35.4	1411.6	1861.5	3.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	145	132	121	117	262

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	173574	474416	360961.7	513100.2	227720	5735872
2	112788	307756	105415.7	132537.9	627323	113523
3	194995	611413	329763.4	388577.4	660326	0
4	5342	17363	10507.9	15550.3	16968	0
5	2528	6061	2689.4	3497.2	2182	0
6	1262	2823	1781.4	2732.6	2332	0
7	71279	245105	0.0	11078.7	588253	54026
8	13560	30179	827.8	3482.1	130375	0
9	246	938	549.3	844.5	1238	0
TOTALS	575574	1696054	812496.5	1071450.9	2256617	5903419

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	812496.5	1071450.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	21769.6	21769.6
TOTAL ENERGY CONSUMPTION (MWH)	834266.1	1093160.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1449.3	1899.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	131.2	180.6

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	37935	140518	96981.4	130231.0	67449
2	12415	5095	-21467.3	-18481.8	10394
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-50350	-242749	0.0	-7825.7	-582598
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-97135	75514.1	103924.0	-504755

TABLE C50

SUBREGION 8 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	8014	0	7317	460	0	0	237	0	0	0
2	573	0	73	500	0	0	0	0	0	0
3	126	0	126	0	0	0	0	0	0	0
4	2651	0	2651	0	0	0	0	0	0	0
5	1429	0	1219	0	8	0	0	0	0	202
6	61	0	61	0	0	0	0	0	0	0
7	185	0	175	0	0	0	10	0	0	0
15	185	0	175	0	0	0	10	0	0	0
TOTALS	13039	0	11622	960	8	0	247	0	0	202

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	11622	25.8	817.9	1058.3	4.4
3	960	16.1	524.5	826.1	1.5
4	6	20.9	678.9	1622.8	1.7
5	0	0.0	0.0	0.0	0.0
6	247	28.8	1552.3	2345.7	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	202	17.4	273.5	1473.4	1.9
WEIGHTED AVERAGES		25.0	861.7	1072.4	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROSS WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	11622	24972	9535.2	12299.9	50944	0
3	960	1292	503.5	793.1	1395	0
4	6	14	5.4	13.0	13	0
5	0	0	0.0	0.0	0	0
6	247	594	383.4	579.4	427	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	202	293	55.2	297.6	387	0
TOTALS	13039	27165	10452.8	13983.0	53186	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	10452.8	13983.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	10452.8	13983.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	861.7	1072.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	67488	0	58120	8173	0	0	1195	0	0	0
2	15904	0	10825	4297	0	0	782	0	0	0
3	13250	0	11249	0	0	0	1701	300	0	0
4	23869	0	16689	6599	0	0	581	0	0	0
5	83976	0	54545	12435	1025	0	15571	0	0	0
6	11277	0	10674	0	372	0	114	0	0	117
7	2411	0	2126	275	0	0	10	0	0	0
8	3448	0	3510	1907	0	0	31	0	0	0
9	3300	0	2981	0	0	0	319	0	0	0
10	17100	0	11863	3458	0	0	613	1166	0	0
21	9535	0	8856	432	0	0	247	0	0	0
22	8905	0	7669	0	1236	0	0	0	0	0
TOTALS	262063	0	199107	37576	2633	0	21164	1466	0	117

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	199107	19.7	594.2	834.7	3.3
3	37576	17.6	546.9	848.5	1.6
4	2633	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	21164	16.2	847.0	1640.4	1.0
7	1466	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	117	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	26	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	199107	326129	118315.9	166195.2	665303	0
3	37576	52256	20551.3	31384.9	59676	0
4	2633	5549	2063.9	4549.2	5327	0
5	0	0	0.0	0.0	0	0
6	21164	28546	17925.0	34716.8	20553	0
7	1466	3537	0.0	227.9	8489	0
8	0	0	0.0	0.0	0	0
9	117	149	25.5	165.9	197	0
TOTALS	262063	419166	158881.6	237739.8	759545	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	158881.6	237739.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	512.9	512.9
TOTAL ENERGY CONSUMPTION (MWH)	159394.5	238252.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	608.2	909.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.6	-2.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	5744	16421	5957.3	7338.5	33498
3	0	0	0.0	0.0	0
4	-46	-72	-26.7	-70.1	-69
5	-5698	-16349	-6080.7	-7901.4	-5888
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	-156.1	-633.0	27544

TABLE C52

SUBREGION 10 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	91533	0	51535	9960	0	0	3883	26095	0	0
2	940	0	340	466	0	0	0	200	0	0
3	2610	0	820	100	0	0	1793	0	0	0
4	1200	0	750	35	0	0	0	350	0	0
5	1600	0	1191	0	0	0	0	394	0	0
6	12373	0	3433	0	0	0	0	8388	0	57
7	93	0	93	0	0	0	0	0	0	0
8	700	0	0	0	0	0	0	700	0	0
9	20	0	20	0	0	0	0	0	0	0
10	962	0	962	0	0	0	0	0	0	0
11	100	0	0	0	0	0	0	106	0	0
12	236	0	155	0	0	0	0	41	0	10
13	2030	0	2030	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	80	0	0
TOTALS	114472	0	61379	10495	0	0	5679	36852	0	67

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	61379	25.7	722.1	962.6	4.4
3	10495	29.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	5679	26.9	1329.2	2122.6	1.6
7	36852	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	67	24.0	262.1	1462.0	2.6
WEIGHTED AVERAGES		33.5	528.2	774.9	5.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	89	20	33	15	103

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	61379	131289	44322.0	59081.8	267330	0
3	10495	26073	8586.5	11745.9	28159	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	5679	12740	7548.5	12054.3	9173	0
7	36852	149509	0.0	5727.8	358821	0
8	0	0	0.0	0.0	0	0
9	67	134	17.6	98.0	177	0
TOTALS	114472	319745	60468.5	88707.8	664160	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	60468.5	88707.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1236.2	1236.2
TOTAL ENERGY CONSUMPTION (MWH)	61704.7	89944.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	539.0	735.7
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.8	-10.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	4414	8976	3078.6	4140.0	18312
3	0	0	0.0	0.0	0
4	-1211	-2222	-745.7	-1888.8	-2133
5	-3203	-6789	-2426.7	-3450.2	-2444
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-35	-93.9	-1199.0	13734

TABLE C53

SUBREGION 11 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	64072	0	41072	18000	0	0	5000	0	0	0
2	4374	0	4374	0	0	0	0	0	0	0
3	20428	0	11428	0	4000	0	5000	0	0	0
4	3258	0	1758	0	1000	0	0	0	0	500
TOTALS	92132	0	58632	18000	5000	0	10000	0	0	500

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	58632	27.3	776.7	1017.2	4.6
3	18000	33.7	897.3	1198.9	2.8
4	5030	24.1	704.9	1648.9	1.9
5	0	0.0	0.0	0.0	0.0
6	10000	27.8	1405.6	2199.0	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	500	15.4	192.0	1391.9	1.7
WEIGHTED AVERAGES		27.8	861.4	1217.3	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	50	25	32	204

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	58632	133322	45539.9	59639.1	271978	0
3	18000	46050	16150.7	21579.8	49734	0
4	5030	10050	3524.7	8244.3	9548	0
5	0	0	0.0	0.0	0	0
6	10000	23167	14055.7	21989.8	16680	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	500	642	96.0	695.9	847	0
TOTALS	92132	213231	79366.9	112149.0	348887	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	79366.9	112149.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	79366.9	112149.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	861.4	1217.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C54

SUBREGION 12

2600

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	232550	5067	7258	15929	0	0	0	264296	0	0
2	7570	1079	2174	2724	0	0	0	1801	0	0
15	22020	2623	1438	3345	0	0	0	14364	0	0
TOTALS	262148	8969	10920	21998	0	0	0	220261	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	8969	23.3	766.0	1636.5	4.9
2	10920	28.6	742.7	983.1	4.9
3	21998	29.4	779.3	1080.9	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	220261	44.1	0.3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	122.6	318.5	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	18	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	8969	17414	6816.7	14678.0	8359	0
2	10920	26062	8109.9	10735.8	53167	0
3	21998	53952	17143.3	23775.3	58160	0
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	220261	808596	62.9	34297.4	1940631	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	262148	905924	32132.7	83489.5	2060317	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	32132.7	83489.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	32132.7	83489.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	122.6	318.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C55

SUBREGION 13 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	146480	2315	12228	16707	0	0	325	114905	0	0
2	62800	375	2320	3170	0	0	53	56875	0	0
3	8300	0	0	2075	6225	0	0	0	0	0
15	41032	546	4304	3804	0	0	250	32134	0	0
TOTALS	258612	3230	18952	25756	6225	0	635	203914	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3230	23.3	771.7	1643.2	.9
2	18952	29.2	764.4	1004.8	5.0
3	25756	29.0	782.7	1004.3	2.6
4	6225	26.3	709.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	635	28.3	1366.0	2159.4	1.7
7	203914	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3230	6283	2492.5	5323.6	3016	0
2	18952	45929	14416.0	13943.3	93992	0
3	25756	62302	20159.0	27927.5	67286	0
4	6225	13643	4414.5	10290.4	13097	0
5	0	0	0.0	0.0	0	0
6	635	1497	867.4	1371.2	1078	0
7	203914	676529	0.0	31693.7	1623669	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	258612	806062	42343.4	95549.7	1801637	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42343.4	95549.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	16202.1	16202.1
TOTAL ENERGY CONSUMPTION (MWH)	58545.4	111751.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	226.4	432.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	0.0	-0.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	0	0	0.0	0.0	0
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	0	0.0	0.0	0

TABLE C56

SUBREGION 14 2000

(NO GROWTH)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLLO SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	163643	0	77268	28224	0	0	0	58191	0	0
2	55045	3029	27115	10020	0	0	0	14915	0	0
3	6489	0	0	0	0	0	0	6489	0	0
4	2140	0	0	0	0	0	0	2140	0	0
5	19	0	0	0	0	0	0	19	0	0
6	3910	1676	0	620	1514	0	0	0	0	0
7	2732	0	1462	541	0	0	0	779	0	0
8	2572	0	0	0	0	0	0	2572	0	0
9	0	0	0	0	0	0	0	0	0	0
TOTALS	236580	4705	105845	39411	1514	0	0	85105	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	4705	18.9	756.0	1632.5	0.8
2	105845	26.4	874.2	1114.7	4.5
3	39411	26.3	891.4	1193.0	2.4
4	1514	21.2	719.0	1662.9	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	85105	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	559.3	796.5	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	87	250	10	34	121

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	4705	7409	3556.9	7680.9	3556	273020
2	105845	232601	92534.3	117985.9	474506	0
3	39411	86320	35129.5	47016.5	93226	0
4	1514	2675	1088.5	2517.6	2568	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	85105	268783	0.0	13227.6	645978	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	236580	597787	132309.2	188429.5	1218934	273020

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	132309.2	188429.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	132309.2	188429.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	559.3	796.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	.3	4.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	1676	2614	1254.3	2723.4	1254
2	-1676	-2961	-1177.9	-1531.0	-6040
3	0	0	0.0	0.0	0
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	0	-348	76.4	1142.4	-4786

TABLE C57 SUBREGION 1 1985 (OBER'S PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER FLOOD (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	45615	0	32117	4898	0	0	232	0	8368	0
2	9097	0	6779	2318	0	0	0	0	0	0
3	1017	0	0	0	0	0	1017	0	0	0
4	163	0	0	0	0	0	0	0	163	0
5	3231	0	3231	0	0	0	0	0	0	0
6	662	0	546	0	0	0	0	0	0	116
7	1265	0	546	719	0	0	0	0	0	0
8	11251	0	6614	4637	0	0	0	0	0	0
9	1498	0	0	0	0	0	1498	0	0	0
TOTALS	73800	0	49834	12572	0	0	2747	0	8531	116

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	49834	25.7	1026.7	1269.2	4.4
3	12572	24.3	1044.6	1346.2	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	2747	19.8	1054.8	1848.2	1.2
7	0	0.0	0.0	0.0	0.0
8	8531	24.7	56.4	252.1	8.9
9	116	20.0	556.1	1756.0	2.2
WEIGHTED AVERAGES		25.1	919.2	1187.0	4.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION SYSTEM EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	144	168	41	96	240

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	49834	106786	51263.3	63246.8	217844	1162858
3	12572	25426	13133.4	16925.5	27460	465538
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	2747	4537	2897.3	5076.6	3267	354446
7	0	0	0.0	0.0	0	0
8	8531	17527	480.7	2150.7	75717	87603
9	116	193	64.5	203.6	255	7491
TOTALS	73800	154470	67839.2	87603.2	324543	2077935

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	67839.2	87603.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	8349.0	8349.0
TOTAL ENERGY CONSUMPTION (MWH)	76188.3	95952.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1032.4	1300.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-113.5	-97.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	14720	30751	14790.5	18330.2	62731
3	2382	4798	2924.6	3643.2	5182
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	1911	2972	1839.0	3355.0	2140
7	-6610	-24712	-3556.2	-4583.6	-59308
8	8531	17527	480.7	2150.7	75717
9	16	27	14.3	33.4	35
TOTALS	20950	31363	16492.9	22928.9	86497

TABLE C58

SUBREGION 2

1985 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	280793	154746	15837	110210	0	0	0	0	0	0
2	254136	81503	14411	127806	0	0	0	0	30326	0
3	32935	32935	0	0	0	0	0	0	0	0
5	40151	0	0	12539	0	0	0	27612	0	0
6	60154	0	17164	0	0	23628	0	0	18658	704
7	51303	36883	0	6269	6269	0	1831	0	0	0
10	78	0	78	0	0	0	0	0	0	0
11	19531	0	7254	0	11692	0	234	0	0	351
12	75096	58933	0	16163	0	0	0	0	0	0
13	73610	2508	5016	35943	0	0	0	0	30094	0
14	25853	12539	0	13314	0	0	0	0	0	0
15	44391	20253	1254	22884	0	0	0	0	0	0
TOTALS	958000	400301	61013	345237	17962	23628	2115	27612	79077	1055

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	400301	36.9	1459.2	2335.7	1.5
2	61013	40.7	1685.2	1625.7	7.9
3	345237	39.5	1328.7	1630.3	3.6
4	17962	63.5	1670.1	2811.2	4.2
5	23628	68.4	2846.9	3166.5	2.1
6	2115	45.1	2490.1	3283.5	2.7
7	27612	62.2	0.0	155.4	12.4
8	79077	29.7	68.0	263.7	10.7
9	1055	49.8	1195.9	2395.8	5.5
WEIGHTED AVERAGES		39.7	1313.6	1653.1	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	159	359	19	58	217

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	400301	1230339	584104.9	934970.5	530563	43673614
2	61013	237297	102821.2	117493.2	484385	908694
3	345237	1137609	458711.2	562441.0	1224618	13588481
4	17962	78520	33534.2	50564.7	73379	1488011
5	23628	134763	67267.0	74816.9	43515	2981608
6	2115	7944	5265.8	6343.7	5720	76926
7	27612	143123	0.0	4291.7	343495	940986
8	79077	195495	5375.9	20855.1	845598	730195
9	1055	4375	1261.4	2527.0	5775	72819
TOTALS	958000	3169964	1258401.6	1775237.8	3628946	64461873

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1258401.6	1775237.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1172862.9	1172862.9
TOTAL ENERGY CONSUMPTION (MWH)	2431264.5	294790.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2537.6	3077.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	244.8	416.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	268181	916924	425344.1	660335.7	443124
2	-11227	-67284	-26788.3	-31489.0	-137259
3	69544	228535	64951.6	85927.5	246390
4	-2038	-11689	-5327.4	-7251.3	-11221
5	3628	20763	10991.5	12153.7	7475
6	415	1538	833.4	1132.4	1137
7	-217055	-1302585	0.0	-33736.2	-3126205
8	75077	195495	5375.9	20855.1	846598
9	155	642	224.2	409.9	548
TOTALS	190600	-17010	473625.0	708386.0	-1731453

TABLE C59

SUBREGION 3

1985 (OBER'S PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA-NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	257672	1209	19734	19959	0	0	0	0	216770	0
2	78210	0	0	12091	0	0	0	0	66119	0
4	41129	605	1038	3823	0	0	403	0	36091	0
5	37727	0	2032	4030	3623	0	0	28635	0	0
6	89189	0	1003	0	0	53504	0	0	33670	1008
7	3188	605	0	0	0	0	0	0	2183	0
12	19228	0	0	3023	0	0	0	0	16235	0
14	1838	0	0	1395	0	0	0	0	594	0
19	1758	0	0	665	0	0	0	0	1154	0
TOTALS	530000	2418	23783	44125	3023	53504	403	28635	373097	1008

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2418	34.7	1128.4	2004.9	1.4
2	23788	47.6	1221.4	1461.9	8.1
3	44125	42.2	1113.6	1415.2	3.3
4	3023	41.5	1095.6	2015.9	1.7
5	53504	56.9	1822.1	1822.1	4.6
6	403	43.8	2096.7	2884.1	12.0
7	28635	60.0	0.0	155.4	12.0
8	373097	36.7	4.3	200.0	13.2
9	1008	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	316.0	542.6	10.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	46	250	10	4	51

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2418	6998	2728.7	4843.3	3359	2973
2	23788	94441	29054.8	34774.9	192659	14183
3	44125	155102	45135.5	62444.4	167511	65072
4	3023	10454	3311.7	6165.0	10036	11462
5	53504	253697	80369.7	97466.1	91331	331885
6	403	1471	842.6	1162.4	1059	564
7	28635	143176	0.0	4450.7	343621	36372
8	373097	1141978	1694.6	74637.9	4933346	128402
9	1008	3653	422.4	1631.4	4821	3578
TOTALS	530000	1910969	167470.0	287581.2	5747743	594490

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	167470.0	287581.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	31992.8	31992.8
TOTAL ENERGY CONSUMPTION (MWH)	199462.7	319573.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	376.3	603.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-104.3	-76.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	18	53	20.6	36.6	25
2	1680	6713	2055.2	2469.1	13694
3	333	1171	376.6	471.3	1264
4	23	79	25.0	46.5	76
5	-1096	-4085	-1294.2	-1644.5	-1471
6	3	11	6.4	8.8	8
7	-367865	-2002233	-53105.8	-110282.0	-4805360
8	370837	1134020	0.0	72602.7	4902458
9	6	28	3.2	12.3	36
TOTALS	4000	-863437	-51908.9	-36279.2	110731

TABLE C60

SUBREGION 4

1985 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	HIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	1188797	39639	156136	62424	1012	0	0	982370	7216	0
2	865427	61214	220215	116239	0	0	0	467759	0	0
3	51078	13444	0	0	0	0	0	37634	0	0
5	4426	0	0	0	0	0	0	4426	0	0
6	1230	0	247	0	0	0	0	1043	0	0
7	300947	138049	26012	74568	30419	0	0	23359	0	0
12	96419	4327	29767	13793	4730	0	0	39303	0	0
13	190910	6286	11355	6392	0	0	0	163904	3078	0
14	5093	0	0	0	0	0	0	5093	0	0
16	15506	0	0	0	0	0	0	15506	0	0
TOTALS	2639900	267959	442732	273356	44161	0	0	1601397	10294	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	267959	25.9	1234.9	2111.4	1.0
2	442732	29.1	1183.8	1424.2	4.9
3	273356	30.7	1314.1	1615.7	2.8
4	44161	36.2	1361.6	2304.5	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1601397	42.3	241.4	396.8	8.5
8	10294	27.7	312.7	508.4	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.1	630.4	901.7	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	51	269	9	60	112

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	267959	577309	330913.1	565780.1	277108	16990229
2	442732	1072706	524096.5	630560.0	2188320	1247131
3	273356	790194	359225.5	441674.0	756209	2092135
4	44161	133123	60084.3	101769.0	127798	895910
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1601397	5645665	386579.2	635479.6	13549597	9777791
8	10294	23743	3218.6	5233.7	102568	13426
9	0	0	0.0	0.0	0	0
TOTALS	2639900	8152740	1664116.8	2380496.9	17001601	31016622

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1664116.8	2380496.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	99234.1	99234.1
TOTAL ENERGY CONSUMPTION (MWH)	1763350.9	2479731.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	668.0	939.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	16.8	40.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	104299	242474	154424.3	245446.5	116387
2	-77453	-225874	-85741.9	-104368.3	-406702
3	10707	27610	32963.4	36192.8	23819
4	1261	4350	4454.3	5644.8	4176
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	58097	208596	9509.9	18539.8	500630
8	294	684	5.0	63.4	2956
9	0	0	0.0	0.0	0
TOTALS	97200	257840	115619.8	201919.0	193186

TABLE C61 SUBREGION 5 1985 (OOERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	891068	4233	113190	46132	1425	0	133	726317	5638	0
2	231979	5964	47702	21726	0	0	220	156184	0	0
3	68707	1434	1103	380	0	0	0	65791	0	0
4	17864	0	38	235	0	0	0	17531	0	0
5	27731	0	715	0	0	0	0	26386	0	0
6	11626	0	5436	0	0	595	0	5576	0	18
7	51985	6509	115	5832	27105	0	0	12423	0	0
8	2640	0	831	1759	0	0	0	0	0	0
12	89362	3434	8682	7176	3804	0	0	66756	0	0
13	28265	0	9253	1544	0	0	0	17458	0	0
14	45772	0	2215	900	0	0	0	42659	0	0
15	21997	0	2753	3664	0	0	0	15579	0	0
17	434	0	434	0	0	0	0	0	0	0
TOTALS	1489900	21573	192520	89358	32334	595	353	1147510	5638	18

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	21573	27.7	1110.6	1987.1	1.1
2	192520	34.6	1145.1	1385.6	2.9
3	89358	30.9	968.8	1202.4	2.8
4	32334	39.2	1372.9	2316.8	3.1
5	595	36.9	1331.5	1691.0	1.1
6	353	22.5	1160.8	1894.2	1.4
7	1147510	50.2	13.1	168.5	10.0
8	5638	30.9	176.6	266.4	11.1
9	18	13.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.4	263.8	466.9	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	26	256	14	11	37

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	21573	49778	23958.8	42868.0	23893	938873
2	192520	555138	220460.5	266755.7	1132482	2133362
3	89358	230378	87644.6	114596.7	248309	1753788
4	32334	105713	44390.0	74910.8	101484	2523117
5	595	1830	792.5	982.6	659	30537
6	353	663	388.7	668.9	477	4473
7	1147510	4799705	15633.6	193387.6	11519292	20903311
8	5638	14518	398.2	1501.8	62717	29094
9	18	17	2.1	24.2	22	678
TOTALS	1489900	5757740	393068.9	695696.4	13089836	28317233

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	393068.9	695696.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	387231.4	387231.4
TOTAL ENERGY CONSUMPTION (MWH)	780300.3	1082927.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	523.7	726.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	182.3	184.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	5763	14544	8369.8	13421.5	6981
2	25307	74107	46136.4	52281.9	151179
3	8975	24016	14063.3	16770.4	26901
4	4489	15798	10558.1	14792.5	15166
5	37	114	106.2	118.1	41
6	24	41	23.8	42.9	29
7	124203	526340	15.0	19304.4	1263217
8	638	1643	45.1	170.0	7997
9	1	1	2	1.9	2
TOTALS	169438	657405	79359.9	116903.6	1470514

TABLE C62 SUBREGION 6 1965 (OBSERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	216002	1618	24298	35259	871	0	1618	152337	0	0
2	65940	6730	7168	43201	0	0	357	6464	0	0
3	452	0	0	0	0	0	0	0	0	0
4	5355	0	1659	3237	0	0	0	221	0	0
5	3405	0	418	0	0	2428	0	532	0	28
6	14242	11575	0	842	1823	0	0	2	0	0
7	4281	0	1426	2855	0	0	0	0	0	0
8	96	0	0	0	0	0	0	96	0	0
9	4450	3237	0	405	819	0	0	0	0	0
10	3211	0	1636	1605	0	0	0	0	0	0
11	926	0	0	926	0	0	0	0	0	0
TOTALS	318400	25161	37267	88388	3563	2428	1975	159651	0	28

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	25161	26.5	1074.7	1951.2	1.1
2	37267	31.2	944.3	1184.7	5.3
3	88388	28.3	859.3	1161.0	2.5
4	3503	43.5	1475.5	2419.4	3.9
5	2428	53.8	1867.0	2186.5	1.6
6	1975	40.9	2262.6	3056.7	5.0
7	159651	39.4	1.0	156.4	0.0
8	0	0.0	0.0	0.0	0.0
9	28	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.5	479.0	755.9	5.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
59	71	130	28	20	91

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	25161	55477	27039.6	49093.1	26629	1548156
2	37267	96972	35189.3	44150.8	197822	737626
3	88388	238366	75956.5	102616.0	225035	4214065
4	3503	12707	9108.9	8475.0	12198	644534
5	2428	10883	4532.2	5307.9	3918	762339
6	1975	6724	4468.4	6035.3	4842	125751
7	159651	524292	152.8	24965.9	1258300	1373058
8	0	0	0.0	0.0	0	0
9	28	58	7.4	40.6	76	2170
TOTALS	318400	915478	152514.8	240685.6	1728821	9407899

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	152514.8	240685.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	46976.2	46976.2
TOTAL ENERGY CONSUMPTION (MWH)	199491.0	287661.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	625.3	902.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	108.3	131.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	9584	21084	10289.9	18620.0	13120
2	9509	27057	10170.7	12457.2	55278
3	21566	52557	20097.7	26602.5	56762
4	1283	4550	1874.1	3085.1	4168
5	428	2229	928.3	1064.9	803
6	678	2437	1629.8	2167.7	1755
7	8158	31838	0.0	1268.0	76411
8	0	0	0.0	0.0	0
9	5	10	1.2	6.8	13
TOTALS	51130	141801	44991.9	65272.2	205509

TABLE C63 SUBREGION 7 1985 (UBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DROP (9)
1	328071	25494	113055	119659	1642	0	516	38860	28844	0
2	168907	74100	8657	65904	0	0	903	14787	4455	0
3	11722	10301	0	0	0	0	0	1421	0	0
4	24588	0	1434	15044	0	0	21	8089	0	0
5	15072	1538	2869	5609	0	0	0	5056	0	0
6	26199	0	22143	0	539	2978	0	481	0	58
7	67385	53841	936	6661	4023	0	0	1924	0	0
8	13055	834	532	3353	0	0	0	8666	0	0
11	695	0	0	0	0	227	0	164	0	303
12	8601	7581	0	1020	0	0	0	0	0	0
13	4128	1894	0	2234	0	0	0	0	0	0
14	2651	0	52	2558	0	0	0	41	0	0
15	12822	0	3033	3332	0	0	35	5922	0	0
16	36	0	0	36	0	0	0	0	0	0
17	8906	0	2648	6100	0	0	0	159	0	0
18	1183	1183	0	0	0	0	0	0	0	0
19	180	0	46	90	0	0	0	44	0	0
20	180	0	46	90	0	0	0	44	0	0
TOTALS	694100	176735	155407	231800	6205	3205	1475	85613	33299	361

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	176735	29.6	1911.9	2788.4	1.2
2	155407	35.9	1248.3	1488.7	6.1
3	231800	38.0	1713.9	2015.5	3.4
4	6205	38.8	1856.9	2800.8	3.1
5	3205	29.2	1328.7	1648.2	1.9
6	3205	26.7	1407.5	2200.9	1.6
7	85613	41.2	0	155.4	8.2
8	33299	34.8	79.5	275.2	12.5
9	361	46.6	2359.2	3559.1	5.1
WEIGHTED AVERAGES		35.6	1369.4	1788.0	4.5

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	138	138	124	115	253

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	176735	436656	337899.8	492809.1	203595	6694568
2	155407	464394	193986.7	231357.4	947364	4356206
3	231800	733556	392788.3	467133.5	792283	7191768
4	6205	20047	11521.3	17377.9	19245	433344
5	3205	7808	4258.8	5283.0	2811	556603
6	1475	3275	2075.6	3245.6	2358	39458
7	85613	294255	0	13305.6	706211	2224575
8	33299	96477	2646.2	9154.5	416782	218982
9	361	1402	851.7	1284.8	1851	54105
TOTALS	694100	2057910	950518.5	1241022.4	3098501	21769608

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	950518.5	1241022.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	93052.4	93052.4
TOTAL ENERGY CONSUMPTION (MWH)	1043570.8	1334074.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1503.5	1922.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	105.3	203.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	41096	102758	73919.5	109940.5	49324
2	55034	161733	67103.7	80337.7	329936
3	36805	122183	67515.0	78610.1	131957
4	863	2684	1013.4	1827.6	2577
5	677	1747	1569.3	1785.7	629
6	213	453	294.2	463.0	326
7	-36016	-193603	0	-5597.9	-464639
8	19739	66298	1818.5	5682.4	286407
9	115	464	302.4	440.4	613
TOTALS	118526	284721	213536.0	273495.6	337129

TABLE C64

SUBREGION 8 1985 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	10940	0	9989	628	0	0	324	0	0	0
2	782	0	100	683	0	0	0	0	0	0
3	172	0	172	0	0	0	0	0	0	0
4	3619	0	3619	0	0	0	0	0	0	0
5	1951	0	1664	0	11	0	0	0	0	276
6	83	0	83	0	0	0	0	0	0	0
7	253	0	239	0	0	0	14	0	0	0
15										
TOTALS	17800	0	15866	1311	11	0	337	0	0	276

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	15866	25.8	817.7	1058.2	4.4
3	1311	16.1	524.4	826.0	1.5
4	11	20.9	676.7	1622.6	1.7
5	0	0.0	0.0	0.0	0.0
6	337	28.8	1552.1	2345.6	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	276	17.4	273.4	1473.3	1.9
WEIGHTED AVERAGES		25.0	801.5	1072.2	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	15866	34041	12973.2	16788.4	69545	335245
3	1311	1764	687.2	1082.5	1905	68494
4	11	19	7.4	17.7	18	1468
5	0	0	0.0	0.0	0	0
6	337	811	523.4	790.9	584	16730
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	276	400	75.4	406.3	528	34703
TOTALS	17800	37084	14266.6	19085.8	72579	456639

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	14266.6	19085.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	14266.6	19085.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	801.5	1072.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.2	-0.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	4244	9118	3468.0	4488.5	18601
3	351	472	183.7	289.4	509
4	3	5	2.0	4.7	5
5	0	0	0.0	0.0	0
6	90	217	139.9	211.5	156
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	74	107	20.1	108.6	141
TOTALS	4761	9919	3813.8	5102.8	19413

TABLE C65

SUBREGION 9

1985 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	75841	0	65314	9185	0	0	1343	0	0	0
2	17873	0	12165	4829	0	0	879	0	0	0
3	14890	0	12641	0	0	0	1912	337	0	0
4	26823	0	19755	7416	0	0	653	0	0	0
5	93921	0	61236	13974	1152	0	17498	0	0	0
6	12673	0	11995	0	418	0	128	0	0	131
7	2709	0	2399	309	0	0	11	0	0	0
8	6122	0	3944	2143	0	0	35	0	0	0
9	3708	0	3350	0	0	0	358	0	0	0
10	19217	0	13311	3886	0	0	689	1310	0	0
11	10715	0	9952	485	0	0	278	0	0	0
12	10007	0	8618	0	1389	0	0	0	0	0
TOTALS	294500	0	223752	42227	2959	0	23784	1647	0	131

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	223752	19.7	594.2	834.7	3.3
3	42227	17.6	546.9	848.5	1.6
4	2959	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	23784	16.2	847.0	1640.4	1.0
7	1647	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	131	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	223752	366496	132960.5	186766.1	747652	1946922
3	42227	62095	23095.1	35831.5	67003	908804
4	2959	6236	2319.3	5112.3	5987	163733
5	0	0	0.0	0.0	0	0
6	23784	32079	20143.7	39913.9	23097	485933
7	1647	3975	0.0	256.1	9539	30539
8	0	0	0.0	0.0	0	0
9	131	168	28.6	186.4	221	6814
TOTALS	294500	471049	178547.3	267166.2	853558	3542744

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	178547.3	267166.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	8255.8	8255.8
TOTAL ENERGY CONSUMPTION (MWH)	186803.1	275422.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	634.3	935.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	25.5	23.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	36389	56788	20601.9	27909.4	115847
3	4651	6839	2543.7	3940.6	7386
4	280	615	228.8	493.0	591
5	-5698	-16349	-6080.7	-7901.4	-5886
6	2620	3533	2218.7	4297.1	2544
7	181	438	0.0	28.2	1051
8	0	0	0.0	0.0	0
9	14	18	3.2	20.5	24
TOTALS	32437	51863	19515.5	28793.4	121557

TABLE C66

SUBREGION 10

1985 (OBER'S PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	115540	0	66646	11850	0	0	4681	32363	0	0
2	1129	0	405	476	0	0	0	248	0	0
3	3223	0	1014	0	0	0	2209	0	0	0
4	1484	0	931	119	0	0	0	434	0	0
5	2047	0	1517	42	0	0	0	489	0	0
6	15315	0	4220	0	0	0	0	11027	0	68
7	116	0	116	0	0	0	0	0	0	0
8	868	0	0	0	0	0	0	868	0	0
12	24	0	24	0	0	0	0	0	0	0
15	1201	0	1201	0	0	0	0	0	0	0
21	124	0	0	0	0	0	0	124	0	0
22	257	0	193	0	0	0	0	51	0	12
23	3374	0	3374	0	0	0	0	0	0	0
24	99	0	0	0	0	0	0	99	0	0
TOTALS	144800	0	79639	12487	0	0	6890	45704	0	81

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	79639	23.3	714.5	954.9	4.3
3	12487	23.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	6890	20.8	1320.5	2119.9	1.6
7	45704	48.7	0.0	156.4	9.7
8	0	0.0	0.0	0.0	0.0
9	81	24.0	262.9	1462.8	2.6
WEIGHTED AVERAGES		33.2	526.7	772.5	5.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
63	89	20	34	15	104

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	79639	168050	56900.0	76050.9	347821	1442549
3	12487	31021	10208.9	13975.1	33503	389194
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	6890	15407	9139.6	14606.2	11093	224620
7	45704	185417	0.0	7103.6	445000	1489717
8	0	0	0.0	0.0	0	0
9	81	161	21.2	118.0	213	6424
TOTALS	144800	400056	76269.8	111853.7	832630	3552505

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	76269.8	111853.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1443.5	1440.5
TOTAL ENERGY CONSUMPTION (MWH)	77710.3	113294.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	536.7	782.4
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-3.2	-13.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	22674	45737	15656.6	21109.1	93303
3	1992	4948	1628.4	2229.2	5344
4	-1211	-2222	-748.7	-1088.8	-2103
5	-3203	-6789	-2420.7	-3453.2	-2444
6	1211	2667	1591.1	2551.8	1920
7	8852	35908	0.0	1375.8	86179
8	0	0	0.0	0.0	0
9	14	27	3.6	20.0	36
TOTALS	30328	80275	15707.3	21946.8	182204

TABLE C67

SUBREGION 11

1985 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	62659	0	40166	17603	0	0	4890	0	0	0
2	4278	0	4278	0	0	0	0	0	0	0
5	19977	0	11176	0	3912	0	4890	0	0	0
6	3186	0	1715	0	978	0	0	0	0	489
TOTALS	90100	0	57339	17603	4890	0	9779	0	0	489

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	57339	27.3	768.0	1026.5	4.6
3	17603	30.7	910.0	1211.6	2.8
4	4890	24.1	714.9	1658.9	1.9
5	0	0.0	0.0	0.0	0.0
6	9779	27.8	1417.1	2210.5	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	489	15.4	198.3	1398.2	1.7
WEIGHTED AVERAGES		27.8	873.0	1228.8	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	60	25	35	206

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	57339	130382	45184.0	58372.2	265979	0
3	17603	45334	16018.4	21327.8	48637	0
4	4890	9828	3495.9	8111.4	9435	0
5	0	0	0.0	0.0	0	0
6	9779	22656	13858.4	21617.5	16312	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	489	628	97.0	683.7	828	0
TOTALS	90100	208528	78653.6	110712.6	341192	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	78653.6	110712.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	78653.6	110712.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	873.0	1228.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	11.5	11.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	-1293	-2940	-355.9	-666.9	-5999
3	-397	-1016	-132.2	-252.0	-1097
4	-110	-222	-28.9	-132.9	-213
5	0	0	0.0	0.0	0
6	-221	-511	-197.3	-372.3	-368
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	-11	-14	1.0	-12.2	-19
TOTALS	-2032	-4703	-713.3	-1436.3	-7655

TABLE C68

SUBREGION 12

1985 (OOEAS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	248402	5541	7540	17136	0	0	0	218185	0	0
2	7907	1136	2266	2802	0	0	0	1643	0	0
15	23391	2880	1531	3423	0	0	0	15556	0	0
TOTALS	279700	9558	11337	23421	0	0	0	235384	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	9558	23.3	768.1	1644.6	0.9
2	11337	28.6	745.4	985.9	4.9
3	23421	29.4	769.4	1091.0	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	235384	44.1	0.3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	122.8	318.6	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
52	18	35	12	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	9558	18571	7341.7	15719.1	8914	95915
2	11337	27052	8435.5	11176.8	55186	32454
3	23421	57387	18486.4	25552.5	61978	277983
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	235384	864408	65.0	36650.1	2074579	2545273
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	279700	967417	34345.7	89098.6	2200657	2952125

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	34345.7	89098.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	34345.7	89098.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	122.8	318.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	.2	.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	589	1157	525.0	1041.1	555
2	417	990	340.7	441.0	2019
3	1423	3535	1345.1	1774.2	3818
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	15123	55812	2.2	2392.8	133948
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	17552	61493	2213.0	5609.0	140340

TABLE C69

SUBREGION 13

1985 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	SIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	145907	2306	12180	16642	0	0	324	114455	0	0
2	62554	374	2311	3158	0	0	60	56652	0	0
7	8268	0	0	2087	6201	0	0	0	0	0
15	40871	538	4287	3789	0	0	249	32008	0	0
TOTALS	257600	3217	18778	25655	6201	0	633	203116	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3217	23.3	771.7	1648.2	9.9
2	18778	29.2	764.4	1004.8	5.0
3	25655	29.0	782.7	1084.3	2.6
4	6201	26.3	789.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	633	28.3	1366.0	2159.4	1.7
7	203116	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUNDED WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	26	89	10	3	23

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3217	6258	2482.7	5332.7	3004	0
2	18778	45650	14353.6	18869.2	93126	0
3	25655	62058	20086.1	27818.2	67323	0
4	6201	13590	4397.2	10250.1	13046	0
5	0	0	0.0	0.0	0	0
6	633	1491	864.0	1382.9	1073	0
7	203116	673881	0.0	31569.7	1617315	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	257600	802928	42177.7	95175.8	1794587	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42177.7	95175.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	15332.4	15332.4
TOTAL ENERGY CONSUMPTION (MWH)	57510.1	110508.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	223.3	429.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-3.1	-3.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	-13	-25	-9.8	-20.8	-12
2	-74	-179	-56.4	-74.1	-366
3	-101	-244	-78.9	-109.3	-263
4	-24	-53	-17.3	-40.3	-51
5	0	0	0.0	0.0	0
6	-2	-6	-3.4	-5.4	-4
7	-798	-2647	0.0	-124.0	-6354
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	-1012	-3154	-165.7	-373.9	-7050

TABLE C70

SUBREGION 14

1985 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	161823	0	76393	27904	0	0	0	57532	0	0
2	54461	2995	26808	9912	0	0	0	14746	0	0
3	6415	0	0	0	0	0	0	6415	0	0
5	2116	0	0	0	0	0	0	2116	0	0
6	19	0	0	0	0	0	0	19	0	0
7	3767	0	1657	613	1497	0	0	0	0	0
12	2750	0	1445	535	0	0	0	770	0	0
14	2543	0	0	0	0	0	0	2543	0	0
TOTALS	233900	2995	106303	38965	1497	0	0	84141	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2995	19.0	749.8	1626.3	4.8
2	106303	26.3	857.1	1097.6	4.5
3	38965	26.3	876.9	1178.6	2.4
4	1497	21.2	707.3	1651.3	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	84141	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	549.8	782.5	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	86	250	10	32	119

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2995	4742	2245.3	4870.1	2276	0
2	106303	232894	91117.6	116680.3	475103	0
3	38965	85342	34169.7	45922.1	92170	0
4	1497	2644	1058.8	2471.7	2539	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	84141	265738	0.0	13077.8	637771	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	233900	591360	128591.3	183022.0	1209858	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	128591.3	183022.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	128591.3	183022.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	549.8	782.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-9.2	-9.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	-34	-54	-57.3	-87.4	-26
2	-1216	-2614	-2494.7	-2887.6	-9444
3	-446	-978	-959.7	-1094.4	-1056
4	-17	-30	-29.7	-45.9	-29
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-964	-3045	0.0	-149.8	-7308
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	-2680	-6776	-3641.5	-4265.1	-13862

TABLE C71 SUBREGION 1 2000 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	67221	0	49470	6392	0	0	279	0	11080	0
2	11159	0	8366	2793	0	0	0	0	0	0
3	1873	0	0	0	0	0	1373	0	0	0
4	316	0	0	0	0	0	0	0	316	0
5	3983	0	3983	0	0	0	0	0	0	0
6	850	0	711	0	0	0	0	0	0	1400
7	2607	0	1253	1354	0	0	0	0	0	0
8	13554	0	7968	5586	0	0	0	0	0	0
9	3437	0	0	0	0	0	3437	0	0	0
TOTALS	105000	0	71751	16125	0	0	5589	0	11396	140

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	71751	25.2	1065.6	1246.1	4.3
3	16125	24.2	1065.1	1368.7	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	5589	19.2	1065.2	1798.6	1.2
7	0	0.0	0.0	0.0	0.0
8	11396	24.2	50.2	251.0	8.7
9	140	20.0	595.1	1795.3	2.2
WEIGHTED AVERAGES		24.8	911.0	1186.8	4.3

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	147	173	37	94	241

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	71751	152572	72155.3	89409.2	311247	1731451
3	16125	32579	17174.1	22037.6	35186	694089
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	5589	8959	5618.1	10052.5	6450	527223
7	0	0	0.0	0.0	0	0
8	11396	22936	629.1	2859.9	99086	130637
9	140	233	83.1	250.7	307	11163
TOTALS	105000	217279	95659.8	124609.8	452275	3094563

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	95659.8	124609.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	7899.3	7899.3
TOTAL ENERGY CONSUMPTION (MWH)	103559.1	132508.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	986.3	1262.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-159.6	-136.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	36637	76536	35682.5	44492.6	156134
3	5935	11952	6965.3	8755.3	12908
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	4753	7353	4559.8	8330.9	5323
7	-6610	-24712	-3556.2	-4583.6	-54308
8	11396	22936	629.1	2859.9	99086
9	40	66	32.9	80.5	87
TOTALS	52150	94172	44313.5	59935.5	214230

TABLE C72 SUBREGION 2 2000 (OJERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	365444	202068	20197	143179	0	0	0	0	0	0
2	331314	106268	18831	160705	0	0	0	0	39540	0
3	42942	42942	0	0	0	0	0	0	0	0
5	52351	0	0	16349	0	0	0	36002	0	0
6	75650	0	13281	0	0	29010	0	0	24327	9032
7	66892	48090	0	8174	8174	0	2452	0	0	0
10	96	0	96	0	0	0	0	0	0	0
11	23835	0	8653	0	14269	0	285	0	0	428
12	97914	76840	0	21074	0	0	0	0	0	0
13	95976	3270	6540	46930	0	0	0	0	39237	0
14	33708	16349	0	17359	0	0	0	0	0	0
15	57878	28642	0	29837	0	0	0	0	0	0
TOTALS	1244000	523869	67766	449607	22444	29010	2738	36002	103105	9461

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	523869	36.3	1473.3	2349.9	1.5
2	67766	42.8	1581.7	1822.2	7.3
3	449607	39.5	1364.9	1666.9	3.6
4	22444	52.3	1876.9	2029.9	4.2
5	29010	68.5	2852.7	3172.5	2.7
6	2738	45.6	2920.4	3131.5	2.7
7	36092	62.2	6.0	133.4	12.4
8	103105	29.7	1167.8	2367.7	10.7
9	9461	63.7	1167.8	2367.7	7.0
WEIGHTED AVERAGES		39.3	1320.4	1867.7	3.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
79	158	369	18	63	220

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	523869	1586241	771842.0	1231015.6	761396	20129247
2	67766	241872	107188.3	123134.0	493418	1172297
3	449607	1430832	613660.1	749269.6	1593299	20393773
4	22444	97735	42118.6	63313.6	33825	2231703
5	29010	165571	82756.3	92025.9	53606	4423456
6	2738	10256	6899.3	9071.4	7184	115572
7	36092	166610	0.0	5535.7	447865	1412014
8	103105	255547	7009.3	27191.9	1103965	1095648
9	9461	50233	11647.9	22399.6	66368	3954918
TOTALS	1244000	4074897	1642521.7	2323357.5	4633065	54548627

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1642521.7	2323357.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1446309.0	1446309.0
TOTAL ENERGY CONSUMPTION (MWH)	3088826.8	3769662.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2463.0	3030.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	190.1	369.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	391669	1272826	613081.2	956380.9	613957
2	-4474	-62769	-24421.3	-25437.1	-127326
3	173914	571908	219930.5	272156.0	617661
4	2444	7526	3137.0	5533.6	7225
5	9010	51571	26486.8	29359.7	18866
6	1038	3850	2486.8	3310.2	2772
7	-206665	-1259098	0.0	-32432.2	-3021835
8	103105	255547	7009.3	27191.9	1103965
9	8561	40501	18016.8	20292.6	61181
TOTALS	476600	887924	857745.1	1256455.7	-727234

TABLE C73 SUBREGION 3 2000 (30ERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVL (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	RIC GUN (6)	GRAVITY SYSTEMS (7)	PUMP-BACK (8)	GRIP (9)
1	260589	220447	19957	20185	0	0	0	0	0	0
2	73096	0	0	12228	0	0	0	0	66868	0
3	41595	37111	1019	3057	0	0	403	0	0	0
4	38194	0	2061	4076	3057	0	0	28959	0	0
5	90139	0	1019	0	0	54110	0	0	34051	1019
6	3224	611	0	0	0	0	0	0	2613	0
7	19446	16389	0	3057	0	0	0	0	0	0
8	1926	510	0	1410	0	0	0	0	0	0
9	1778	0	0	611	0	0	0	0	1167	0
TOTALS	536000	275068	24057	44625	3057	54110	408	28959	104698	1019

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	275068	38.5	1250.8	2127.3	1.5
2	24057	47.6	1221.4	1461.9	8.1
3	44625	42.2	1113.6	1415.2	3.8
4	3057	41.5	1095.6	2039.5	3.3
5	54110	56.9	1522.1	1821.7	1.7
6	408	43.8	2096.7	2884.1	2.6
7	28959	60.0	6.0	155.4	12.0
8	104698	32.0	6.0	195.7	11.5
9	1019	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	949.7	1522.6	4.6

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
80	142	250	10	10	152

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	275068	892366	344066.7	585165.1	423535	44414621
2	24057	95510	29383.7	35168.6	194340	21274
3	44625	156858	49691.7	63151.2	169407	97608
4	3057	10572	3349.2	6234.8	13149	17192
5	54110	256569	81279.5	98569.5	92365	497828
6	408	1488	852.2	1175.6	1071	846
7	28959	144796	6.0	4501.1	347511	54558
8	104698	279618	6.0	20494.6	1207949	53443
9	1019	3694	427.2	1649.9	4876	5367
TOTALS	536000	1831471	509050.2	816110.3	2451704	45162737

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	509050.2	816110.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	30652.1	30652.1
TOTAL ENERGY CONSUMPTION (MWH)	539702.3	846762.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1006.9	1579.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	526.3	900.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	272668	875421	341358.6	580353.3	420202
2	1949	7782	2394.1	2862.7	15875
3	833	2926	927.1	1178.2	3161
4	57	197	62.5	116.3	109
5	-490	-1213	-384.4	-541.1	-437
6	8	28	15.9	21.9	20
7	-367541	-2000613	-53105.6	-110231.6	-4801470
8	102498	272468	-1604.6	18459.4	1177061
9	13	69	0.0	30.8	91
TOTALS	10000	-842935	285671.3	492249.9	-3185369

TABLE C74

SUBREGION 4

2000 (10YRS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOIL SLT (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	1232842	41797	165304	66113	1100	0	0	950988	7540	0
2	853902	64625	231299	123099	0	0	0	431179	0	0
3	53711	14109	0	0	0	0	0	39602	0	0
4	4803	0	0	0	0	0	0	4803	0	0
5	1386	0	257	0	0	0	0	1109	0	0
6	317203	172783	0	78806	48696	0	0	24910	0	0
7	103017	5593	30915	14726	5039	0	0	42344	0	0
8	200696	6588	11984	6711	0	0	0	172217	3195	0
9	5362	0	0	0	0	0	0	5362	0	0
10	16096	0	0	0	0	0	0	16096	0	0
TOTALS	2785900	309895	440359	289455	46835	0	0	1688621	10736	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	309895	25.7	1253.8	2130.3	1.0
2	440359	29.4	1250.2	1490.6	5.0
3	289455	30.7	1383.3	1684.9	2.8
4	46835	36.2	1350.5	2294.4	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	0	0.0	0.0	0.0	0.0
8	1688621	42.3	237.1	392.6	8.5
9	10736	27.7	300.6	496.4	10.0
10	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.1	648.4	926.1	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
62	52	281	10	63	115

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACFE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	309895	662424	388535.8	660160.0	317964	6831396
2	440359	1078493	550526.8	656419.8	2200126	1867398
3	289455	741891	400391.9	487696.7	801326	3145758
4	46835	141209	63247.8	107455.8	135561	1343062
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	0	0	0.0	0.0	0	0
8	1688621	5958776	400411.7	662869.1	14301063	14679802
9	10736	24763	3227.3	5328.8	106999	26124
10	0	0	0.0	0.0	0	0
TOTALS	2785900	8607362	1806341.2	2579930.2	17862740	27887539

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1806341.2	2579930.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	271788.4	271788.4
TOTAL ENERGY CONSUMPTION (MWH)	2078129.6	2851718.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	745.9	1023.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	94.7	124.6

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACFE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	146235	327549	212051.1	340226.5	157242
2	-75832	-220086	-59311.2	-78508.5	-448975
3	26806	69107	74129.7	82214.9	74636
4	3935	12436	7617.7	11331.6	11938
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	0	0	0.0	0.0	0
8	145321	521707	23342.4	45929.3	1252097
9	736	1710	14.5	150.5	7387
10	0	0	0.0	0.0	0
TOTALS	243200	712463	257844.3	401352.4	1054326

TABLE C75

SUBREGION 5

2000 (ORERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1038760	5467	137319	52667	1639	0	143	834909	6595	0
2	271254	7074	58117	24537	0	0	246	181281	0	0
3	80350	1856	1188	424	0	0	0	77442	0	0
4	20718	0	41	254	0	0	0	20423	0	0
5	31465	0	770	0	0	0	0	30694	0	0
6	12977	0	196	0	0	651	0	12110	0	21
7	63389	8362	0	7210	33816	0	0	14900	0	0
8	2947	0	983	1924	0	0	0	0	0	0
12	106430	4191	10477	8842	4410	0	0	78509	0	0
13	35356	0	11739	1765	0	0	0	21852	0	0
14	34411	0	2819	1061	0	0	0	50792	0	0
15	24459	0	3065	4090	0	0	0	17304	0	0
17	484	0	484	0	0	0	0	0	0	0
TOTALS	1743600	26990	226999	102773	39865	651	389	1339317	6595	21

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	26990	28.2	1155.9	2032.4	1.1
2	226999	34.8	1102.8	1423.3	5.9
3	102773	31.2	1014.2	1315.8	2.8
4	39865	39.2	1422.2	2366.1	3.1
5	651	36.9	1370.7	1690.2	1.1
6	389	22.3	1090.4	1883.8	1.3
7	1339317	50.3	11.2	166.7	10.1
8	6595	30.9	76.6	266.4	11.1
9	21	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.5	273.8	478.5	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	27	254	15	12	39

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	26990	63348	31198.4	54855.7	30407	882427
2	226999	657829	268499.4	323035.8	1341971	3148497
3	102773	267498	104230.7	135228.8	288497	2621179
4	39865	130275	56695.3	94324.7	125984	3783555
5	651	2001	892.1	1100.1	720	45761
6	389	724	424.1	730.7	521	6651
7	1339317	5612344	15033.6	223199.7	13469825	32281179
8	6595	16983	465.8	1756.8	73366	43653
9	21	13	2.3	27.0	25	1008
TOTALS	1743600	6751020	477441.8	834311.4	15330537	42813909

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	477441.8	834311.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	913253.6	913253.6
TOTAL ENERGY CONSUMPTION (MWH)	1390695.4	1747565.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	797.6	1002.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	456.2	460.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	11180	28113	15609.4	25409.2	13494
2	59786	176798	94235.3	108612.1	360668
3	22390	61935	38049.4	37432.6	65390
4	12020	40360	22860.5	34266.5	33746
5	93	285	205.8	235.5	103
6	60	101	59.2	106.8	73
7	316010	1338979	0.0	49116.5	3213549
8	1595	4108	112.7	425.0	17746
9	4	3	.4	4.7	4
TOTALS	423138	1650684	163732.8	255518.7	3711274

TABLE C76

SUBREGION 6

2000 (ORDERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOIL SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	250733	2529	33910	47269	1361	0	2529	163135	0	0
2	89570	13450	8667	59766	0	0	448	7239	0	0
3	912	0	912	0	0	0	0	0	0	0
4	8772	0	3400	5059	0	0	0	313	0	0
5	5208	0	203	0	0	3794	0	1172	0	35
6	21883	18089	0	1021	2770	0	0	0	0	0
7	5383	0	1793	3590	0	0	0	98	0	0
8	98	0	0	0	0	0	0	0	0	0
9	6956	5059	0	632	1265	0	0	0	0	0
10	4038	0	2020	2018	0	0	0	0	0	0
11	1447	0	0	1447	0	0	0	0	0	0
TOTALS	395000	39127	50905	120802	5396	3794	2978	171962	0	35

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	39127	26.5	1077.5	1954.0	1.1
2	50935	27.0	976.4	1216.9	5.4
3	120802	28.5	877.7	1179.4	2.6
4	5396	43.2	1470.5	2414.5	3.5
5	3794	53.8	1867.0	2186.5	1.6
6	2978	41.6	2308.4	3101.8	2.5
7	171962	39.9	9	156.3	8.0
8	0	0.0	0.0	0.0	0.0
9	35	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.3	556.8	856.6	5.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	83	132	28	24	107

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	39127	86443	42157.9	76453.3	41493	2275183
2	50935	135712	49703.8	61945.1	276852	1100647
3	120802	287217	106032.9	142469.1	310195	6333722
4	5396	19426	7935.0	13028.4	13649	951074
5	3794	17010	7083.5	8295.8	6124	1123155
6	2978	10322	6873.8	9235.3	7432	1866250
7	171962	571270	152.8	26880.3	137104	2071883
8	0	0	0.0	0.0	0	0
9	35	73	9.4	51.0	96	3345
TOTALS	395000	1127472	219949.0	338359.4	2031886	14044434

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	219949.0	338359.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	68964.0	68964.0
TOTAL ENERGY CONSUMPTION (MWH)	288913.1	407323.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	731.4	1031.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	214.4	260.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	23470	52050	25408.2	45380.2	24984
2	21147	65837	24685.2	30251.5	134308
3	53980	131408	50174.1	66455.6	141921
4	3176	11269	4640.6	7638.5	10818
5	1794	8356	3479.6	4052.9	3008
6	1681	6034	4035.2	5368.7	4345
7	20469	78816	0.0	3181.4	189158
8	0	0	0.0	0.0	0
9	12	25	3.2	17.2	32
TOTALS	127730	353795	112426.1	162946.0	508574

TABLE C77

SUBREGION 7

2000 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	404358	78172	109847	158944	1947	0	609	48316	14522	0
2	216236	101044	10380	79835	0	0	1117	18339	5531	0
3	13915	12219	0	0	0	0	0	1096	0	0
4	30417	0	1766	18607	0	0	25	10019	0	0
5	17765	1805	3639	6602	0	0	0	5750	0	0
6	34080	0	228	8080	703	3884	0	29189	0	75
7	89171	73854	0	3782	4849	0	0	2388	0	0
8	16159	958	661	0	0	0	0	10758	0	0
11	1049	0	0	1201	0	344	0	247	0	458
12	12503	11302	0	2659	0	0	0	0	0	0
13	4919	2259	0	3051	0	0	0	50	0	0
14	3167	0	65	4700	0	0	43	5400	0	0
15	15652	0	5509	55	0	0	0	179	0	0
17	55	0	0	7469	0	0	0	0	0	0
18	10653	2931	14	0	0	0	0	49	0	0
19	1787	1787	58	107	0	0	0	0	0	0
20	214	0	0	0	0	0	0	0	0	0
TOTALS	872100	286412	132136	287093	7499	4228	1794	132352	20052	534

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	286412	32.3	2023.8	2900.3	1.3
2	132136	34.0	978.7	1219.2	5.8
3	287093	38.3	1742.3	2043.9	3.5
4	7499	38.5	1717.8	2661.7	3.1
5	4228	29.6	1371.5	1631.1	.9
6	1704	26.4	1385.7	2179.1	1.6
7	132352	40.0	0.0	159.4	8.0
8	20052	26.7	61.0	256.8	9.6
9	534	47.2	2468.5	3668.4	5.2
WEIGHTED AVERAGES		35.6	1413.7	1877.4	3.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	142	147	126	119	260

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	286412	771739	579643.1	830684.5	370435	17866335
2	132136	373863	129327.5	161132.3	762675	1856734
3	287093	917122	500192.2	586784.7	990491	10804178
4	7499	24072	12332.2	19960.9	23110	650443
5	4228	10443	5798.5	7149.5	3759	840459
6	1794	3955	2486.3	3909.9	2848	59284
7	132352	441010	0.0	20571.1	1058424	8133743
8	20052	44628	1224.1	5149.3	192794	177823
9	534	2099	1317.2	1957.5	2771	81220
TOTALS	872100	2586928	1232071.2	1637269.5	3407306	40467220

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1232871.2	1637269.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	200505.8	200505.8
TOTAL ENERGY CONSUMPTION (MWH)	1433376.9	1837775.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1643.6	2107.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	325.4	388.6

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	150773	437842	315662.7	447815.9	210164
2	31763	71199	2444.5	10032.6	145246
3	92098	305709	170428.9	190207.3	330165
4	2157	6709	2374.3	4410.6	6441
5	1700	4382	3109.1	3652.2	1577
6	532	1132	735.0	1127.3	815
7	10723	-46844	0.0	1666.6	-112427
8	6492	14449	390.3	1667.1	62419
9	248	1161	768.0	1113.1	1533
TOTALS	296528	795739	495888.7	669742.7	645935

TABLE C78

SUBREGION . 8

2000 (OBERG PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	15365	0	14029	882	0	0	454	0	0	0
2	1039	0	140	929	0	0	0	0	0	0
4	242	0	242	0	0	0	0	0	0	0
5	5083	0	5083	0	0	0	0	0	0	0
6	2740	0	2337	0	15	0	0	0	0	387
7	117	0	117	0	0	0	0	0	0	0
15	355	0	336	0	0	0	19	0	0	0
TOTALS	25000	0	22283	1841	15	0	474	0	0	387

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	22283	25.8	816.5	1057.0	4.4
3	1841	16.1	523.7	825.3	1.5
4	15	20.9	677.8	1621.7	1.7
5	0	0.0	0.0	0.0	0.0
6	474	28.8	1550.8	2344.2	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	387	17.4	272.6	1472.5	1.9
WEIGHTED AVERAGES		25.0	800.3	1071.1	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROSS WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	167	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	22283	47880	18194.4	23552.8	97676	506986
3	1841	2477	963.8	1519.0	2675	103582
4	15	27	10.4	24.9	26	2219
5	0	0	0.0	0.0	0	0
6	474	1138	734.4	1110.2	820	25301
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	387	562	105.0	570.3	741	52481
TOTALS	25000	52084	20000.7	26777.2	101937	690569

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	20008.7	26777.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	20008.7	26777.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	800.3	1071.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.3	-1.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	10661	22908	8689.2	11252.9	46732
3	881	1185	460.3	725.9	1200
4	7	13	5.0	11.9	12
5	0	0	0.0	0.0	0
6	227	545	351.0	530.8	392
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	185	269	50.3	272.7	355
TOTALS	11961	24919	9555.9	12794.2	48771

TABLE C79

SUBREGION 9

2000 (DBRS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	88331	0	76070	10697	0	0	1564	0	0	0
2	20916	0	14168	5624	0	0	1024	0	0	0
3	17342	0	14723	0	0	0	2226	393	0	0
4	31241	0	21643	8637	0	0	760	0	0	0
5	109388	0	71391	16275	1342	0	20380	0	0	153
6	14760	0	13971	0	467	0	149	0	0	0
7	3156	0	2783	360	0	0	13	0	0	0
8	7131	0	4594	2496	0	0	41	0	0	0
9	4319	0	3902	0	0	0	418	0	0	0
10	22381	0	15527	4526	0	0	802	1926	0	0
11	12480	0	11531	565	0	0	323	0	0	0
12	11655	0	10038	0	1618	0	0	0	0	0
TOTALS	343000	0	260600	49181	3446	0	27700	1919	0	153

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	260600	19.7	594.2	834.7	3.3
3	49181	17.6	546.9	848.5	1.6
4	3446	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	27700	16.2	847.0	1640.4	1.0
7	1919	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	153	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	260600	426853	154857.3	217523.8	870779	2911050
3	49181	72321	26898.5	41732.4	78107	1358849
4	3446	7263	2731.3	5954.2	6972	244814
5	0	0	0.0	0.0	0	0
6	27700	37362	23461.1	45438.9	26901	726570
7	1919	4629	0.0	298.2	11110	45662
8	0	0	0.0	0.0	0	0
9	153	195	33.3	217.1	258	10188
TOTALS	343000	548624	207951.5	311164.7	994127	5297132

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	207951.5	311164.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	16729.2	16729.2
TOTAL ENERGY CONSUMPTION (MWH)	224680.7	327893.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	655.0	956.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	46.2	44.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	67237	117144	42498.6	58667.2	238974
3	11605	17065	6347.7	9847.5	18431
4	767	1642	610.8	1334.9	1576
5	-5698	-16349	-6080.7	-7991.4	-5886
6	6536	8816	5538.0	10722.1	6348
7	453	1092	0.0	70.4	2622
8	0	0	0.0	0.0	0
9	36	46	7.9	51.2	61
TOTALS	80937	129458	42919.7	72791.9	262126

TABLE C80

SUBREGION 10

2000 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	151549	0	89231	14694	0	0	5369	41785	0	0
2	1412	0	502	590	0	0	0	321	0	0
3	4145	0	1305	0	0	0	2840	0	0	0
4	1911	0	1202	148	0	0	0	561	0	0
5	2639	0	2066	52	0	0	0	631	0	0
6	19734	0	5404	0	0	0	0	14245	0	85
7	149	0	149	0	0	0	0	0	0	0
8	1122	0	0	0	0	0	0	1122	0	0
9	30	0	0	0	0	0	0	0	0	0
10	1556	0	1556	0	0	0	0	0	0	0
11	160	0	0	0	0	0	0	160	0	0
12	333	0	251	0	0	0	0	66	0	16
13	5382	0	5382	0	0	0	0	0	0	0
14	128	0	0	0	0	0	0	128	0	0
TOTALS	190300	0	106987	15484	0	0	8708	59019	0	101

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	106987	25.0	702.6	943.1	4.3
3	15484	29.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	8708	26.8	1321.4	2114.8	1.6
7	59019	48.7	0.0	155.4	0.0
8	0	0.0	0.0	0.0	0.0
9	101	23.9	261.7	1461.6	2.6
WEIGHTED AVERAGES		32.8	522.2	767.0	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	89	20	30	15	104

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	106987	223140	75174.5	100901.8	455205	2160517
3	15484	38467	12659.0	17329.2	41344	965980
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	8708	19413	11507.3	18416.6	13977	337339
7	59019	239434	0.0	9173.2	574642	2241051
8	0	0	0.0	0.0	0	0
9	101	202	26.5	147.9	266	9650
TOTALS	190300	526655	99367.3	145968.7	1085635	5334136

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	99367.3	145968.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1762.9	1762.9
TOTAL ENERGY CONSUMPTION (MWH)	101130.3	147731.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	531.4	776.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-8.4	-19.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	50322	100327	33931.1	45960.0	205647
3	4989	12393	4078.6	5593.2	13385
4	-1211	-2222	-745.7	-1888.8	-2133
5	-3203	-6783	-2426.7	-3450.2	-2444
6	3029	6673	3958.7	6362.3	4804
7	22167	84925	0.0	3445.4	215821
8	0	0	0.0	0.0	0
9	34	68	8.9	49.9	90
TOTALS	75828	200875	38804.8	56061.8	435209

TABLE C81

SUBREGION 11

2000 (OTHERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	60503	0	38784	16997	0	0	4721	0	0	0
2	4130	0	4130	0	0	0	0	0	0	0
5	19290	0	18791	0	3777	0	4721	0	0	0
6	3077	0	1660	0	944	0	0	0	0	472
TOTALS	87000	0	55366	16997	4721	0	9443	0	0	472

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	55366	27.3	788.0	1028.5	4.6
3	16997	30.7	910.0	1211.5	2.8
4	4721	24.1	714.9	1658.3	1.9
5	0	0.0	0.0	0.0	0.0
6	9443	27.8	1417.1	2210.5	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	472	15.4	198.3	1398.2	1.7
WEIGHTED AVERAGES		27.8	873.0	1228.8	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	60	25	35	206

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	55366	125896	43629.3	56943.2	256828	0
3	16997	43485	15467.3	20594.0	46964	0
4	4721	9490	3375.6	7832.3	9111	0
5	0	0	0.0	0.0	0	0
6	9443	21876	13381.5	20873.7	15751	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	472	606	93.6	660.2	800	0
TOTALS	87000	201353	75947.4	106903.4	329453	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	75947.4	106903.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	75947.4	106903.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	873.0	1228.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	11.5	11.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	-3266	-7426	-1910.5	-2695.9	-15150
3	-1003	-2585	-683.4	-985.8	-2770
4	-279	-560	-149.1	-412.0	-537
5	0	0	0.0	0.0	0
6	-557	-1290	-674.1	-1116.1	-929
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	-28	-36	-2.3	-35.8	-47
TOTALS	-5132	-11878	-3419.5	-5245.6	-19434

TABLE C82

SUBREGION 12 2000 (OBSERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	272150	6252	7966	18945	0	0	0	238987	0	0
2	8404	1223	2436	3069	0	0	0	1706	0	0
15	25446	2965	1556	3540	0	0	0	17345	0	0
TOTALS	306000	10440	11968	25553	0	0	0	258038	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	10440	23.3	767.1	1643.6	.9
2	11968	28.6	742.4	982.8	4.9
3	25553	29.4	768.1	1064.7	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	258038	44.1	0.2	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.6	121.2	316.8	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	17	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	10440	20305	8009.0	17160.1	9746	143776
2	11968	26548	8884.4	11762.3	58239	49825
3	25553	62685	20138.3	27845.7	67699	416741
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	258038	948012	62.9	40169.0	2275228	3812658
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	306000	1059550	37094.7	96937.2	2410912	4423000

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	37094.7	96937.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	37094.7	96937.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	121.2	316.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.4	-1.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	1471	2891	1192.4	2482.1	1388
2	1048	2486	774.6	1026.5	5072
3	3555	8833	2995.0	4087.4	9540
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	87777	134415	0.0	5871.6	334597
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	43852	153625	4962.0	13447.6	350596

TABLE C93

SUBREGION 13

2000 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA-NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP- BACK (8)	DRIP (9)
1	145057	2293	12139	16545	0	0	322	113789	0	0
2	62190	371	2297	3139	0	0	59	56323	0	0
7	8219	0	0	2055	6165	0	0	0	0	0
15	40633	535	4262	3767	0	0	248	31822	0	0
TOTALS	256100	3199	18669	25506	6165	0	629	201933	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3199	23.3	771.7	1648.2	.9
2	18669	29.2	764.4	1004.8	5.0
3	25506	29.0	782.7	1084.3	2.6
4	6165	26.3	749.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	629	28.3	1366.0	2159.4	1.7
7	201933	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3199	6222	2468.3	5271.9	2986	0
2	18669	45334	14270.0	18759.3	92564	0
3	25506	61697	19953.2	27656.2	66632	0
4	6165	13511	4371.6	10190.4	12970	0
5	0	0	0.0	0.0	0	0
6	629	1462	859.0	1357.9	1067	0
7	201933	669957	0.0	31385.9	1607897	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	256100	798253	41932.1	94621.6	1784137	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	41932.1	94621.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	14440.9	14440.9
TOTAL ENERGY CONSUMPTION (MWH)	56372.9	139062.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	220.1	425.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-6.3	-6.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	-31	-61	-24.2	-51.7	-29
2	-183	-445	-140.0	-184.0	-308
3	-250	-605	-195.8	-271.3	-654
4	-60	-133	-42.9	-100.0	-127
5	0	0	0.0	0.0	0
6	-6	-15	-8.4	-13.3	-10
7	-1961	-6571	0.0	-307.9	-15771
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	-2512	-7830	-411.3	-928.1	-17500

TABLE C84

SUBREGION 14 2000 (OBERS PROJECTIONS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	158992	0	75054	27415	0	0	0	56523	0	0
2	53536	2942	26338	9739	0	0	0	14488	0	0
3	8333	0	0	0	0	0	0	6303	0	0
4	2079	0	0	0	0	0	0	2079	0	0
5	18	0	0	0	0	0	0	18	0	0
6	3701	1628	0	602	1471	0	0	0	0	0
7	2702	0	1420	525	0	0	0	757	0	0
8	2498	0	0	0	0	0	0	2498	0	0
9	0	0	0	0	0	0	0	0	0	0
TOTALS	229800	4570	102812	38282	1471	0	0	82666	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	4570	18.9	800.2	1676.7	4.8
2	102812	26.4	936.0	1170.4	4.5
3	38282	26.3	952.9	1254.5	2.4
4	1471	21.2	760.6	1712.5	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	82666	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	598.3	835.5	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	87	250	11	43	129

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	4570	7156	3657.1	7662.8	3454	265195
2	102812	225535	36228.3	120951.4	460908	0
3	38282	83846	36477.7	48024.1	93554	0
4	1471	2593	1130.3	2510.4	2494	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	82666	261080	0.0	12848.5	626591	0
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	229800	580656	137493.3	192005.3	1184002	265195

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	137493.3	192005.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	137493.3	192005.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	598.3	835.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	39.4	43.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	1541	2400	1354.5	2705.3	1152
2	-4789	-9627	2516.0	1383.5	-13639
3	-1129	-2474	1348.2	1007.6	-2672
4	-43	-77	41.8	0.8	-74
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	-2439	-7703	0.0	-379.1	-18487
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	-6780	-17480	5260.5	4718.2	-39719

TABLE C65

SUBREGION 1

1985

(REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	PIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	61818	0	45875	5778	0	0	270	0	9895	0
2	10620	0	7927	2701	0	0	0	0	0	0
3	1279	0	0	0	0	0	1279	0	0	0
4	207	0	0	0	0	0	0	0	207	0
5	3815	0	3835	0	0	0	0	0	0	0
6	8227	0	602	0	0	0	0	0	0	135
7	2295	0	1386	900	0	0	0	0	0	0
8	13110	0	7707	5403	0	0	0	0	0	0
9	3802	0	0	0	0	0	3802	0	0	0
TOTALS	97800	0	67421	14791	0	0	5351	0	10102	135

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	67421	25.6	921.2	1221.7	4.4
3	14791	24.3	1041.5	1343.1	2.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	5351	19.1	989.2	1782.6	1.1
7	0	0.0	0.0	0.0	0.0
8	10102	24.6	56.2	251.9	8.8
9	135	20.0	556.1	1756.0	2.2
WEIGHTED AVERAGES		24.9	894.6	1171.3	4.3

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	147	168	38	88	235

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	67421	143953	66154.4	82367.2	293460	2552275
3	14791	29907	19404.0	19265.2	32300	898991
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	5351	4508	5293.2	9538.5	6125	837480
7	0	0	0.0	0.0	0	0
8	10102	20686	567.4	2544.9	89363	159241
9	135	225	75.1	237.2	297	16499
TOTALS	97800	203179	87494.1	114553.0	421545	4464494

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	87494.1	114553.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	9727.9	9727.9
TOTAL ENERGY CONSUMPTION (MWH)	97222.0	124280.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	994.1	1270.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-151.8	-127.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	32307	67817	29681.6	37450.6	138347
3	4601	5280	5195.2	6562.9	10022
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	4515	4047	4234.9	7816.9	4998
7	-6610	-24712	-3556.2	-4573.6	-59308
8	10102	20686	567.4	2544.9	89363
9	135	225	75.1	237.2	297
TOTALS	44950	80072	36147.8	49878.7	183499

TABLE C-6 SUBREGION 2 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND FLOW (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NEENT (5)	RIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	290078	160327	15633	114078	0	0	0	0	0	0
2	262706	64320	14777	132215	0	0	0	0	31373	0
3	34072	34073	0	0	0	0	0	0	0	0
4	41518	0	0	12972	0	0	0	28566	0	0
5	63887	0	18306	0	0	25514	0	0	19303	764
6	53076	38158	0	6486	6486	0	1946	0	0	0
7	85	0	0	0	0	0	0	0	0	0
10	21201	0	7874	0	12692	0	254	0	0	381
11	77691	60970	0	16721	0	0	0	0	0	0
12	76164	2664	5189	37237	0	0	0	0	31133	0
13	26746	12672	0	13774	0	0	0	0	0	0
14	45924	20553	1297	23614	0	0	0	0	0	0
TOTALS	993200	414367	63261	357158	19178	25514	2200	28566	81810	1145

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	414367	36.9	1459.4	2335.9	1.5
2	63261	47.0	1701.8	1942.3	8.0
3	357158	39.6	1329.4	1631.0	3.6
4	19178	52.6	1877.1	2821.0	4.2
5	25514	68.4	2848.7	3164.2	2.1
6	2200	45.2	2495.3	3289.7	2.7
7	28566	62.2	0.0	155.4	12.4
8	81810	29.7	68.0	263.7	10.7
9	1145	49.8	1195.8	2395.7	5.5
WEIGHTED AVERAGES		39.8	1317.3	1856.9	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	159	359	19	58	217

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	414367	1273741	604743.1	967937.9	611396	45965006
2	63261	247847	107656.8	122869.3	505603	1086272
3	357158	1177386	474810.4	582535.8	1271577	15618359
4	19178	84069	35999.6	54102.5	80706	2099250
5	25514	145457	72642.7	80835.5	52365	4532330
6	2200	8281	5491.0	7230.3	5962	92692
7	28566	148068	0.0	4440.0	355364	1101563
8	81810	202767	5561.6	21575.2	875955	854755
9	1145	4748	1369.0	2742.6	6267	115164
TOTALS	993200	3292365	1308314.2	1844275.5	3765200	71765390

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1308314.2	1844275.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1214557.9	1214557.9
TOTAL ENERGY CONSUMPTION (MWH)	2522872.1	3058833.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2540.1	3079.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	247.3	419.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	282167	980326	445942.3	693303.1	460957
2	-8879	-56733	-23952.3	-26111.9	-119736
3	81466	268463	81050.8	105622.3	289840
4	-822	-6140	-2622.7	-3697.5	-5804
5	5514	31457	16407.2	18169.3	11325
6	500	1875	1079.6	1475.0	1350
7	-216101	-1297640	0.0	-33587.9	-3114335
8	81810	202767	5561.6	21575.8	875955
9	245	1015	331.8	625.5	1340
TOTALS	225800	105391	523517.6	777373.7	-1595099

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVED (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NEENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	CRIP (9)
1	260978	1225	19987	20215	0	0	0	0	219551	0
2	79214	0	0	12246	0	0	0	0	66967	0
4	41657	612	1021	3062	0	0	408	0	36554	0
5	39211	0	2065	4082	3062	0	0	29003	0	0
6	90332	0	1021	0	0	54190	0	0	34102	1021
7	3229	612	0	0	0	0	0	0	2617	0
12	19475	0	0	3062	0	0	0	0	16413	0
14	1923	0	0	1412	0	0	0	0	510	0
19	1781	0	0	612	0	0	0	0	1169	0
TOTALS	536800	2449	24093	44691	3062	54190	408	29003	377884	1021

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	2449	34.7	1128.4	2004.9	1.4
2	24093	47.6	1221.4	1461.6	8.1
4	44691	42.2	1113.6	1415.2	3.8
5	3062	41.5	1095.6	2039.5	3.3
6	54190	56.9	1502.1	1821.7	1.7
7	408	43.8	2090.7	2084.1	2.6
12	29003	60.0	0.0	155.4	12.0
14	377884	36.7	4.2	200.0	13.2
19	1021	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	315.9	542.6	10.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	46	250	10	4	51

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	2449	7068	2763.7	4910.5	3402	8027
2	24093	55652	25427.5	35221.1	195131	38293
4	44691	157092	46765.9	63245.5	169660	175694
5	3062	10588	3354.2	6244.1	10165	30546
6	54190	256652	81400.9	98716.6	92503	896090
7	408	1490	853.4	1177.3	1073	1523
12	29003	145013	0.0	4507.8	348030	98204
14	377884	1156630	1604.6	75574.9	4996642	346684
19	1021	3699	427.8	1652.4	4883	9660
TOTALS	536800	1834205	169598.1	291250.3	5821488	1605124

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	169598.1	291250.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	32403.3	32403.3
TOTAL ENERGY CONSUMPTION (MWH)	202001.3	323653.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	376.3	602.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-104.3	-76.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	40	143	55.6	98.8	68
2	1985	7024	2438.0	2915.2	16166
3	896	3161	1001.3	1272.5	3413
4	62	213	67.5	125.6	205
5	-410	-830	-263.0	-394.0	-299
6	8	30	17.2	27.7	22
7	-367497	-2000297	-53105.8	-110224.9	-4800952
8	375684	1145440	0.0	73510.7	4865754
9	21	74	8.6	33.2	98
TOTALS	10800	-840202	-49780.8	-32610.1	184476

TABLE C88 SUBREGION 4 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVED (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	PIC GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1212617	40879	162592	64587	1083	0	0	936011	7367	0
2	826452	61233	228786	120555	0	0	0	423937	0	0
3	52607	13809	0	0	0	0	0	38794	0	0
4	4727	0	0	0	0	0	0	4727	0	0
5	1326	0	0	0	0	0	0	1086	0	0
6	31247	143896	26122	71345	39893	0	0	24782	0	0
7	101053	6107	30347	14428	4945	0	0	41526	0	0
8	196473	6445	11735	6564	0	0	0	168608	3121	0
9	5246	0	0	0	0	0	0	5246	0	0
10	15724	0	0	0	0	0	0	15724	0	0
TOTALS	2739100	278469	460263	283518	45921	0	0	1660441	10488	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	278469	25.9	1238.3	2114.8	1.0
2	460263	28.1	1187.4	1427.9	4.9
3	283518	30.7	1316.5	1618.1	2.8
4	45921	36.2	1369.2	2313.1	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1660441	42.3	232.8	388.2	8.5
8	10488	27.7	307.4	503.1	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.1	626.9	898.5	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	52	269	9	59	111

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	278469	600266	344818.5	588957.7	289127	18702338
2	460263	1118217	548512.2	857141.7	2277883	2632058
3	283518	726423	373247.2	458761.4	784537	4077866
4	45921	138459	62872.8	106218.2	132920	1779847
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1660441	5855314	386579.2	646656.5	14052755	19714837
8	10488	24197	3223.9	5276.9	104531	22255
9	0	0	0.0	0.0	0	0
TOTALS	2739100	8460876	1717253.8	2461002.5	17839954	46929202

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1717253.8	2461002.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	101970.4	101970.4
TOTAL ENERGY CONSUMPTION (MWH)	1819224.2	2562972.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	664.7	934.7
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	13.0	36.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	114406	285430	168333.8	268964.2	127406
2	-59926	-182262	-63325.7	-77736.6	-372018
3	20866	53839	46985.0	53279.6	58146
4	3021	9685	7242.8	10094.1	9298
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	117141	418245	9509.9	27716.7	1003788
8	488	1139	11.1	106.6	4919
9	0	0	0.0	0.0	0
TOTALS	196400	565976	168756.8	282424.7	831540

TABLE C-9 SUBREGION 5 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROW (3)	SOLID SET (4)	PEOMA-RENT (5)	PIE GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	986229	5118	128832	50166	1560	0	141	794184	6227	0
2	250748	6640	64473	23333	0	0	231	172070	0	0
3	76615	1748	1175	360	0	0	0	73292	0	0
4	19733	0	39	253	0	0	0	19441	0	0
5	30154	0	770	0	0	0	0	29384	0	0
6	12519	0	5837	0	0	634	0	6029	0	19
7	59666	7665	116	6754	31575	0	0	13586	0	0
8	2775	0	626	1849	0	0	0	0	0	0
12	100626	3533	5864	8321	4181	0	0	74387	0	0
13	32944	0	10907	1664	0	0	0	20374	0	0
14	51285	0	2466	978	0	0	0	47842	0	0
15	23219	0	2963	3451	0	0	0	16465	0	0
17	456	0	456	0	0	0	0	0	0	0
TOTALS	1653000	25105	218703	97569	37316	634	373	1267053	6227	19

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	25105	28.0	1122.5	1999.0	1.1
2	218703	34.8	1153.2	1394.0	5.9
3	97569	34.2	964.5	1296.1	2.8
4	37316	34.2	1371.2	2315.2	3.1
5	634	36.9	1331.3	1650.8	1.1
6	372	22.6	1104.8	1898.2	1.4
7	1267053	50.3	11.6	167.3	10.1
8	6227	30.9	70.6	266.4	11.1
9	19	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.4	269.5	473.9	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
54	27	255	14	11	38

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	25105	58484	28180.9	50185.5	28072	1514144
2	218703	634202	252291.4	304823.0	1293773	4201884
3	97569	254075	97029.8	126458.5	274491	3358185
4	37316	121954	51169.1	85392.4	117076	5025997
5	634	1949	843.9	1046.3	702	62316
6	372	702	411.6	707.2	505	8076
7	1267053	5305154	15033.6	211968.0	12741370	41022523
8	6227	16035	439.8	1659.8	65273	55665
9	19	18	2.2	25.4	23	1121
TOTALS	1653000	6356574	445402.2	783325.0	14525795	55250216

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	445402.2	783325.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	453295.0	453295.0
TOTAL ENERGY CONSUMPTION (MWH)	898697.2	1236620.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	543.7	748.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	202.2	205.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	9295	23250	12591.9	20738.9	11160
2	51490	153172	78027.3	96409.2	312470
3	17106	48613	23448.5	28632.2	52394
4	5471	32039	17334.3	26274.1	30758
5	76	213	157.5	181.7	84
6	44	79	46.7	81.3	57
7	243746	1035789	0.0	27884.8	2485835
8	1227	3160	86.7	326.9	13653
9	2	2	.3	3.1	3
TOTALS	332538	1296238	131693.2	204532.3	2906473

TABLE C90 SUBREGION 6 1995 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

COOP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND POVOT (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUA (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	227777	2156	28365	30915	1160	0	2156	154135	0	0
2	76325	11450	7466	50426	0	0	375	6608	0	0
3	605	0	605	0	0	0	0	0	0	0
4	7120	0	2534	4311	0	0	0	274	0	0
5	4414	0	456	0	0	3233	0	695	0	29
6	18612	15376	0	477	2356	0	0	2	0	0
7	4503	0	1500	3003	0	0	0	0	0	0
8	06	0	0	0	0	0	0	96	0	0
9	5920	4211	0	539	1078	0	0	0	0	0
10	3376	0	1600	1600	0	0	0	0	0	0
11	1233	0	0	1233	0	0	0	0	0	0
TOTALS	350000	33293	42617	101893	4593	3233	2531	161811	0	29

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	33293	26.5	1077.7	1954.2	1.1
2	42617	32.0	975.2	1215.7	5.4
3	101893	28.6	879.2	1180.8	2.6
4	4503	43.2	1470.2	2414.1	3.5
5	3233	53.8	1867.0	2186.5	1.6
6	2531	41.7	2312.0	3105.4	2.5
7	161811	39.5	9.9	156.4	7.9
8	0	0.0	0.0	0.0	0.0
9	29	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.4	530.9	824.4	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
60	79	138	28	23	101

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	33293	73551	35878.2	65059.4	35305	2872843
2	42617	113654	41559.8	51407.8	231854	1160491
3	101893	242435	85595.9	120318.7	261870	6852696
4	4503	16527	6753.1	11088.9	15865	1192405
5	3233	14406	6036.7	7069.8	5219	1424642
6	2531	17744	5850.8	7558.6	6325	228837
7	161811	533091	152.8	25302.6	1279417	1736529
8	0	0	0.0	0.0	0	0
9	29	61	7.8	42.7	80	2844
TOTALS	350000	1002599	185825.0	288548.5	1835895	15471489

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	185425.0	288548.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	62037.1	62037.1
TOTAL ENERGY CONSUMPTION (MWH)	247462.1	350585.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	708.2	1001.7
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	191.2	230.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FOOT)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	17636	39159	19124.5	34546.3	18796
2	14850	43779	16541.1	20114.2	89310
3	35071	86826	33727.1	44505.1	93556
4	2373	8770	3458.7	4569.0	6036
5	1233	5842	2432.8	2826.0	2103
6	1234	4497	3012.2	3991.0	3239
7	10317	40637	0.0	1603.7	97528
8	0	0	0.0	0.0	0
9	0	13	1.6	8.4	17
TOTALS	82730	228922	78392.0	113135.1	312583

TABLE C91 SUBREGION 7 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	HIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	ORIP (9)
1	354745	26865	120896	133595	1720	0	542	40944	30223	0
2	190639	88731	9094	71564	0	0	935	15018	4704	0
3	12305	10802	0	0	0	0	0	1333	0	0
4	25959	0	1514	15863	0	0	22	6541	0	0
5	16412	1632	3301	5934	0	0	0	5546	0	0
6	25666	0	21660	0	527	2911	0	511	0	56
7	77919	63653	989	7018	4228	0	0	2031	0	0
8	13772	837	562	3221	0	0	0	9151	0	0
11	915	0	0	0	0	300	0	216	0	399
12	10747	9868	0	1079	0	0	0	60	0	0
13	4308	1974	0	2334	0	0	0	0	0	0
14	2764	0	55	2666	0	0	0	43	0	0
15	13514	0	3200	4041	0	0	36	6237	0	0
17	48	0	0	48	0	0	0	166	0	0
18	10099	0	2911	7021	0	0	0	0	0	0
19	1558	1558	0	0	0	0	0	0	0	0
20	190	0	49	95	0	0	0	46	0	0
TOTALS	761800	205921	164233	254499	6475	3211	1535	90543	34927	456

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	205921	23.5	1933.7	2810.2	1.2
2	164233	36.3	1285.4	1525.9	6.2
3	254499	38.4	1772.4	2074.0	3.5
4	6475	38.8	1856.2	2800.1	3.1
5	3211	30.2	1410.4	1729.9	.9
6	1535	26.8	1411.9	2205.3	1.6
7	90543	41.3	0.0	155.4	8.3
8	34927	34.7	79.4	275.1	12.5
9	456	47.8	2440.6	3640.5	5.3
WEIGHTED AVERAGES		35.7	1421.6	1850.3	4.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUNDED WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
71	140	140	132	122	261

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	205921	506928	398189.2	578679.7	243325	11448888
2	164233	496241	211111.6	250604.7	1012331	5033452
3	254499	815317	451075.8	527837.4	883543	11627167
4	6475	20949	12019.4	18131.6	20111	569385
5	3211	8172	4528.0	5553.8	2906	560962
6	1535	3425	2167.6	3395.7	2466	50691
7	90543	311587	0.0	14072.8	747810	3054332
8	34927	101044	2771.5	9603.4	436512	293210
9	456	1815	1112.5	1659.4	2395	98722
TOTALS	761800	2265378	1082975.6	1409533.7	3348399	32756809

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1062975.6	1409533.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	96719.9	96719.9
TOTAL ENERGY CONSUMPTION (MWH)	1176995.5	1506253.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1548.6	1977.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	230.4	258.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	70282	173030	134208.9	195311.1	83355
2	63860	193500	84228.6	99585.0	394403
3	55594	203905	121312.4	137260.0	223217
4	1133	3586	1511.5	2581.3	3443
5	683	2011	1838.5	2058.6	724
6	273	602	386.3	633.1	434
7	-31086	-176267	0.0	-4831.6	-423041
8	21367	70865	1943.7	6126.3	306137
9	210	877	563.2	815.0	1157
TOTALS	161226	472188	345933.2	442006.8	587028

TABLE C92 SUBREGION 0 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP JACK (8)	DRIP (9)
1	10940	0	9989	628	0	0	324	0	0	0
2	782	0	100	683	0	0	0	0	0	0
4	172	0	172	0	0	0	0	0	0	0
5	3619	0	3619	0	0	0	0	0	0	0
6	1951	0	1664	0	11	0	0	0	0	276
7	83	0	83	0	0	0	0	0	0	0
15	253	0	239	0	0	0	14	0	0	0
TOTALS	17800	0	15866	1311	11	0	337	0	0	276

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	15866	25.8	817.7	1058.2	4.4
3	1311	16.1	524.4	826.0	1.5
4	11	20.9	678.7	1622.6	1.7
5	0	0.0	0.0	0.0	0.0
6	337	28.8	1552.1	2345.6	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	276	17.4	273.4	1473.3	1.9
WEIGHTED AVERAGES		25.0	801.5	1072.2	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	15866	34011	12973.2	16788.4	69545	335245
3	1311	1764	687.2	1082.5	1905	68494
4	11	19	7.4	17.7	18	1468
5	0	0	0.0	0.0	0	0
6	337	811	523.4	790.9	584	16730
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	276	400	75.4	406.3	528	34703
TOTALS	17800	37084	14266.6	19085.8	72579	456639

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	14266.6	19085.8
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	14266.6	19085.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	801.5	1072.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-0.2	-0.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	4244	9118	3468.0	4488.5	18601
3	161	472	183.7	289.4	909
4	3	5	2.0	4.7	5
5	0	0	0.0	0.0	0
6	90	217	139.9	211.5	156
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	74	107	20.1	108.6	141
TOTALS	4761	9919	3813.8	5102.8	19413

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GON (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	85627	0	73741	10370	0	0	1516	0	0	0
2	20179	0	13735	5452	0	0	992	0	0	0
3	16811	0	14272	0	0	0	2159	381	0	0
4	33284	0	21175	8373	0	0	737	0	0	0
5	106339	0	69206	15777	1300	0	19756	0	0	148
6	14308	0	13543	0	472	0	143	0	0	0
7	3059	0	2637	349	0	0	19	0	0	0
8	6912	0	4493	2420	0	0	39	0	0	0
12	4187	0	3742	0	0	0	405	0	0	0
15	21636	0	15052	4387	0	0	778	1479	0	0
21	12098	0	11236	548	0	0	313	0	0	0
22	11298	0	9730	0	1568	0	0	0	0	0
TOTALS	332500	0	252623	47676	3341	0	26852	1860	0	148

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	252623	19.7	594.2	834.7	3.3
3	47676	17.6	546.9	848.5	1.6
4	3341	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	26852	16.2	847.0	1640.4	1.0
7	1860	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	148	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	666.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	252623	413786	150116.7	210864.9	844123	4227745
3	47676	70107	26075.1	40454.9	73716	1973469
4	3341	7041	2618.6	5772.0	6759	355546
5	0	0	0.0	0.0	0	0
6	26852	36219	22742.9	44048.0	26078	1055205
7	1860	4488	0.0	289.1	10770	66315
8	0	0	0.0	0.0	0	0
9	148	189	32.3	210.4	250	14796
TOTALS	332500	531829	201585.6	301639.3	963695	7693075

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	201585.6	301639.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	9421.1	9421.1
TOTAL ENERGY CONSUMPTION (MWH)	210906.7	310960.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	634.3	935.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	25.5	23.7

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	59260	104077	37758.1	52008.3	212318
3	10100	14852	5523.8	8579.0	16040
4	662	1420	588.1	1162.7	1363
5	-5698	-16349	-6080.7	-7901.4	-5886
6	5688	7673	4817.9	9331.1	5524
7	394	951	0.0	61.2	2202
8	0	0	0.0	0.0	0
9	31	40	6.8	44.6	53
TOTALS	70437	112663	42553.9	63266.4	231694

TABLE C94 SUBREGION 10 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	115584	0	66410	12061	0	0	4743	32170	0	0
2	1144	0	412	484	0	0	0	248	0	0
3	3231	0	1017	0	0	0	2214	0	0	0
4	1486	0	931	121	0	0	0	434	0	0
5	2055	0	1523	42	0	0	0	489	0	0
6	15333	0	4237	0	0	0	0	11027	0	69
7	116	0	116	0	0	0	0	0	0	0
8	868	0	0	0	0	0	0	868	0	0
9	24	0	24	0	0	0	0	0	0	0
10	1201	0	1201	0	0	0	0	0	0	0
11	124	0	0	0	0	0	0	124	0	0
12	257	0	193	0	0	0	0	51	0	12
13	3278	0	3278	0	0	0	0	0	0	0
14	99	0	0	0	0	0	0	99	0	0
TOTALS	144800	0	79341	12709	0	0	6958	45711	0	82

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	79341	25.4	715.5	956.0	4.3
3	12709	29.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	6958	26.9	1328.0	2121.4	1.6
7	45711	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	82	24.0	262.9	1462.8	2.6
WEIGHTED AVERAGES		33.2	527.8	773.9	5.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
63	89	20	34	15	104

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MMH)	TOTAL ENERGY (MMH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	79341	167667	56772.1	75851.2	342041	1418980
3	12709	31573	10396.4	14223.6	34099	432570
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	6958	15578	9240.1	14760.5	11216	237215
7	45711	185448	0.0	7104.7	445075	1490963
8	0	0	0.0	0.0	0	0
9	82	163	21.5	119.5	216	6922
TOTALS	144800	400430	76424.1	112059.5	832647	3586650

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MMH)	76424.1	112059.5
DIVERSION PUMPING ENERGY CONSUMPTION (MMH)	1440.5	1440.5
TOTAL ENERGY CONSUMPTION (MMH)	77864.6	113500.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	537.7	783.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-2.1	-12.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MMH)	TOTAL ENERGY (MMH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	22376	45354	15526.7	20909.4	92523
3	2214	5509	1809.9	2477.6	3940
4	-1211	-2222	-745.7	-1888.8	-2133
5	-3203	-6709	-2426.7	-3450.2	-2444
6	1279	2838	1691.6	2730.3	2044
7	8859	35939	0.0	1376.3	86254
8	0	0	0.0	0.0	0
9	15	29	3.9	21.6	39
TOTALS	30328	80649	15861.6	22152.6	182221

TABLE C95 SUBREGION 11 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	62381	0	39988	17525	0	0	4868	0	0	0
2	4259	0	4259	0	0	0	0	0	0	0
5	19839	0	11126	0	3854	0	4868	0	0	0
6	3172	0	1712	0	974	0	0	0	0	487
TOTALS	89700	0	57084	17525	4868	0	9736	0	0	487

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	57084	27.3	788.0	1028.5	4.6
3	17525	30.7	910.0	1211.6	2.9
4	4868	24.1	714.9	1658.9	1.9
5	0	0.0	0.0	0.0	0.0
6	9736	27.8	1417.1	2210.5	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	487	15.4	198.3	1398.2	1.7
WEIGHTED AVERAGES		27.8	873.0	1228.8	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	60	25	35	206

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	57084	129803	44983.4	58710.4	264798	0
3	17525	44934	15947.3	21233.1	43421	0
4	4868	9785	3486.4	8075.4	9393	0
5	0	0	0.0	0.0	0	0
6	9736	22555	13798.8	21521.5	16240	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	487	625	96.6	680.7	825	0
TOTALS	89700	207602	78304.4	110221.1	339677	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	78304.4	110221.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	78304.4	110221.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	873.0	1228.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	11.5	11.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	-1548	-3519	-556.5	-928.7	-7179
3	-475	-1216	-203.3	-346.6	-1313
4	-132	-265	-44.4	-169.0	-255
5	0	0	0.0	0.0	0
6	-264	-612	-258.8	-468.3	-440
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	-13	-17	.6	-15.3	-22
TOTALS	-2432	-5629	-1062.5	-1927.8	-9210

TABLE C96

SUBREGION 12 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	GRIP (9)
1	249505	5583	7283	17242	0	0	0	219398	0	0
2	7707	1102	2175	2773	0	0	0	1008	0	0
3	23335	2380	1506	3403	0	0	0	15946	0	0
TOTALS	280547	9564	10963	23417	0	0	0	236602	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	9564	23.3	769.1	1645.7	4.9
2	10963	28.6	745.7	986.2	4.9
3	23417	29.4	790.6	1092.2	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	236602	44.1	0.3	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.5	121.6	317.1	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
52	17	35	12	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	9564	18607	7356.4	15739.5	2931	96976
2	10963	26171	8175.5	10811.9	53389	3431
3	23417	57455	18512.5	25575.4	62051	277257
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	236602	868901	65.0	36839.4	2085361	2750247
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	280547	971133	34109.4	88966.3	2209732	3127911

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	34109.4	88966.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	34109.4	88966.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	121.6	317.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.0	-1.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	595	1192	539.7	1061.5	572
2	43	109	65.6	76.1	222
3	1419	3603	1369.1	1797.1	3892
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	16341	60304	2.2	2543.1	144730
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	18399	65209	1976.6	5476.7	149416

TABLE C97 SUBREGION 13 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	148456	2346	12393	16932	0	0	329	116455	0	0
2	63647	380	2351	3213	0	0	61	57642	0	0
7	8412	0	0	2103	6309	0	0	0	0	0
15	41585	547	4362	3885	0	0	253	32567	0	0
TOTALS	262100	3274	19106	26103	6309	0	644	206664	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3274	23.3	771.7	1648.2	0.9
2	19106	29.2	764.4	1004.8	5.0
3	26103	29.0	782.7	1084.3	2.6
4	6309	26.3	769.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	644	28.3	1366.0	2159.4	1.7
7	206664	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
53	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3274	6368	2526.1	5395.4	3056	7097
2	19106	46448	14604.3	19198.8	94753	20087
3	26103	63142	20430.9	28304.1	68194	67878
4	6309	13827	4474.0	10429.2	13274	42181
5	0	0	0.0	0.0	0	0
6	644	1517	879.1	1389.7	1692	1589
7	206664	685653	0.0	32121.2	1645568	462870
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	262100	816954	42914.5	96838.4	1825937	601701

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	42914.5	96838.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	15600.3	15600.3
TOTAL ENERGY CONSUMPTION (MWH)	58514.7	112438.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	223.3	429.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-3.1	-3.1

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	44	85	33.6	71.8	41
2	254	618	194.4	255.5	1261
3	347	840	271.9	376.7	968
4	84	184	59.5	138.8	177
5	0	0	0.0	0.0	0
6	9	20	11.7	18.5	15
7	2750	9125	0.0	427.5	21899
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	3486	10872	571.1	1283.7	24299

TABLE C98 SUBREGION 14 1985 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	170339	0	86410	29372	0	0	0	60557	0	0
2	57325	3152	28218	10434	0	0	0	15521	0	0
3	6753	0	0	0	0	0	0	6753	0	0
4	2227	0	0	0	0	0	0	2227	0	0
5	20	0	0	0	0	0	0	20	0	0
6	3965	0	1744	645	1576	0	0	0	0	0
7	2835	0	1521	563	0	0	0	811	0	0
12	2677	0	0	0	0	0	0	2677	0	0
14	0	0	0	0	0	0	0	0	0	0
TOTALS	246200	3152	111893	41014	1576	0	0	88566	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3152	19.0	749.8	1626.3	4.8
2	111893	26.3	857.1	1097.6	4.5
3	41014	26.3	876.9	1179.6	2.4
4	1576	21.2	707.3	1651.3	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	88566	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	549.8	782.5	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
61	06	250	10	32	119

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3152	4991	2363.3	5126.2	2396	20064
2	111893	245141	95939.1	122816.1	500387	345396
3	41014	89830	35966.6	49337.0	97317	313140
4	1576	2783	1114.5	2601.7	2672	30929
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	88566	279712	0.0	13765.5	671309	582420
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	246200	622457	135353.5	192646.5	1273480	1291950

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	135353.5	192646.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	135353.5	192646.5
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	549.8	782.5
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-9.2	-9.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	121	199	60.8	188.7	94
2	4372	9579	2196.9	3243.2	19540
3	1603	3510	837.1	1320.5	3791
4	62	109	25.9	84.1	104
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	3461	10923	0.0	537.9	26231
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	9620	24322	3120.7	5359.4	49760

TABLE C99 SUBREGION 1 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	167728	0	83864	8592	0	0	375	0	14897	0
2	14938	0	11238	3750	0	0	0	0	0	0
3	2527	0	0	0	0	0	2527	0	0	0
4	426	0	0	0	0	0	0	0	426	0
5	5492	0	5492	0	0	0	0	0	0	0
6	1261	0	1074	0	0	0	0	0	0	188
7	5130	0	3353	1827	0	0	0	0	0	0
8	18200	0	10699	7501	0	0	0	0	0	0
9	9197	0	0	0	0	0	9197	0	0	0
TOTALS	165000	0	115720	21670	0	0	12099	0	15323	188

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	115720	25.4	952.1	1192.6	4.3
3	21670	24.2	1684.8	1366.4	4.2
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	12099	18.7	960.3	1753.7	1.1
7	0	0.0	0.0	0.0	0.0
8	15323	24.1	55.2	250.9	8.7
9	188	20.0	595.1	1795.0	2.2
WEIGHTED AVERAGES		24.7	883.8	1169.8	4.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROSS WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
76	151	173	34	84	235

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	115720	245238	110179.6	138006.7	500287	3815577
3	21670	43784	23074.3	29619.5	47286	1344268
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	12099	18884	11618.1	21217.6	13597	1251789
7	0	0	0.0	0.0	0	0
8	15323	30833	845.7	3845.3	133199	238694
9	188	313	111.6	336.6	413	24676
TOTALS	165000	339052	145829.3	193016.6	694781	6674403

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	145829.3	193016.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	10008.9	10008.9
TOTAL ENERGY CONSUMPTION (MWH)	156436.2	203623.6
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	948.1	1234.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-197.8	-164.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	80606	169203	73780.8	93090.1	345174
3	11490	23156	12869.5	16328.2	25009
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	11263	17319	10559.8	19496.0	12470
7	-6610	-24712	-3596.2	-4533.6	-59368
8	15323	30833	845.7	3845.3	133199
9	80	146	61.4	166.4	193
TOTALS	112150	215945	94483.0	128342.3	456736

TABLE C100 SUBREGION 2 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMANENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	388557	216141	13566	152350	0	0	0	0	0	0
2	353114	113329	19967	177579	0	0	0	0	42160	0
3	45787	45787	0	0	0	0	0	0	0	0
4	55319	0	0	17432	0	0	0	38387	0	0
5	84984	0	15594	0	0	33726	0	0	25939	9724
6	71324	51277	0	8716	8716	0	2613	0	0	0
7	112	0	112	0	0	0	0	0	0	0
10	28011	0	10404	0	16769	0	335	0	0	503
11	104401	81931	0	22470	0	0	0	0	0	0
12	102335	3466	6973	50039	0	0	0	0	41837	0
13	35942	17432	0	18509	0	0	0	0	0	0
14	61713	29900	0	31314	0	0	0	0	0	0
TOTALS	1332000	559263	72616	479409	25485	33726	2950	38387	109936	10227

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	559263	36.3	1473.9	2350.4	1.5
2	72616	43.6	1619.5	1853.9	7.4
3	479409	39.6	1366.3	1667.9	3.6
4	25485	52.6	1869.5	2833.5	4.2
5	33726	68.4	2866.7	3175.2	2.1
6	2950	45.1	2531.7	3325.1	2.7
7	38387	62.2	0.0	155.4	12.4
8	109936	29.7	68.0	263.7	10.7
9	10227	63.5	1168.2	2368.1	7.0
WEIGHTED AVERAGES		39.4	1327.5	1875.0	3.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
79	158	369	19	63	221

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	559263	1693906	824313.4	1314510.1	813075	23603531
2	72616	263995	117598.2	135060.1	538550	1442171
3	479409	1580275	655013.9	799612.5	1705697	23887840
4	25485	111607	48155.5	72211.6	107143	3168562
5	33726	192307	96311.5	107388.3	69231	6746417
6	2950	11094	7469.1	9309.8	7990	139221
7	38387	198974	0.0	5966.4	477538	1652880
8	109936	272479	7473.7	28993.5	1177107	1282548
9	10227	54141	11947.0	24218.5	71467	4273257
TOTALS	1332000	4378782	1768282.4	2497470.9	4966798	66159426

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1768282.4	2497470.9
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1545546.4	1545546.4
TOTAL ENERGY CONSUMPTION (MWH)	3313828.8	4043017.3
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	2467.9	3035.3
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	195.0	374.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	427063	1380491	665552.7	1039875.4	662636
2	376	-40585	-14011.4	-13921.1	-82794
3	203716	671352	261254.4	322688.9	725060
4	5485	21399	9233.9	14111.5	25543
5	13726	78307	40036.0	44422.1	28191
6	1250	4692	3056.7	4048.6	3378
7	-206280	*1246734	0.0	-32061.4	-2992162
8	109936	272479	7473.7	28993.5	1177107
9	9327	50409	10909.9	22101.5	66540
TOTALS	564600	1191809	983505.7	1430569.1	-391501

TABLE C101 SUBREGION 3 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	MANJ MOVE (2)	SIOL ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG CON (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	268854	227439	20590	20825	0	0	0	0	0	0
2	81604	0	0	12016	0	0	0	0	68588	0
4	42914	38288	1051	3154	0	0	421	0	0	0
5	39364	0	2127	4205	3154	0	0	29878	0	0
6	93060	0	1051	0	0	55826	0	0	35131	1051
7	3326	631	0	0	0	0	0	0	2696	0
12	20063	16939	0	3154	0	0	0	0	0	0
14	1931	526	0	1455	0	0	0	0	0	0
19	1835	0	0	631	0	0	0	0	1204	0
TOTALS	553000	283792	24820	46040	3154	55826	421	29878	108019	1051

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	283792	33.5	1250.8	2127.3	1.5
2	24820	47.6	1221.4	1461.9	8.1
3	46040	42.2	1113.6	1415.6	3.8
4	3154	41.5	1095.5	2039.7	3.3
5	55826	56.9	1502.1	1824.1	1.7
6	421	43.8	2090.7	2884.1	2.6
7	29878	60.0	0.0	155.4	12.0
8	108019	32.0	0.0	195.7	11.5
9	1051	43.5	419.2	1619.1	4.8
WEIGHTED AVERAGES		41.0	949.7	1522.6	4.6

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
80	142	250	10	10	152

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	283792	910351	354979.3	603724.4	436969	45830735
2	24820	98539	30315.6	36284.0	261020	57440
3	46040	161933	51267.8	62154.2	174780	263541
4	3154	10903	3455.5	6432.6	10471	46420
5	55826	264707	83627.5	101695.8	95294	1344135
6	421	1535	879.2	1212.9	1105	2285
7	29878	149389	0.0	4643.8	353533	147307
8	108019	288486	0.0	21144.6	1246261	144296
9	1051	3811	440.8	1702.2	5031	14491
TOTALS	553000	1889559	525195.5	841994.5	2529463	47850650

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	525195.5	841994.5
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	31024.2	31024.2
TOTAL ENERGY CONSUMPTION (MWH)	556819.7	873818.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1006.9	1579.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	526.3	900.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	281392	903406	352271.2	598912.7	433635
2	2712	10811	3326.1	3978.2	22055
3	2248	7901	2533.1	3181.1	8534
4	134	533	100.7	314.1	511
5	1226	6924	2193.5	2585.2	2493
6	21	75	47.9	59.2	54
7	-366622	-1996020	-53105.8	-110088.6	-4793448
8	105819	281336	-1604.6	14109.4	1215373
9	51	186	21.5	83.1	246
TOTALS	27000	-784847	305816.7	518134.2	-3107549

TABLE C102 SUBREGION 4 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-RENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	1342394	45146	181444	71521	1275	0	0	1035091	7916	0
2	923365	70422	253326	133991	0	0	0	471626	0	0
3	57524	15022	0	0	0	0	0	42902	0	0
4	5554	0	0	0	0	0	0	5554	0	0
5	1483	0	265	0	0	0	0	1217	0	0
6	346005	188752	0	85997	44381	0	0	26375	0	0
7	114601	11192	34866	16313	5577	0	0	46553	0	0
12	214589	6937	12933	7139	0	0	0	184227	3303	0
13	5745	0	0	0	0	0	0	5745	0	0
14	16641	0	0	0	0	0	0	16641	0	0
16	0	0	0	0	0	0	0	0	0	0
TOTALS	3033900	337522	482834	314861	51233	0	0	1636230	11220	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	337522	25.7	1260.2	2136.7	1.0
2	482034	29.4	1256.6	1497.1	5.0
3	314861	30.8	1387.8	1689.5	2.8
4	51233	36.2	1366.0	2309.9	2.9
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	1836230	42.4	218.1	373.5	8.5
8	11220	27.7	208.8	484.6	10.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.1	640.3	918.2	6.4

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
62	52	281	10	61	113

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	337522	722279	425358.7	721198.1	346838	9619725
2	482034	1184502	606753.1	722860.2	2416384	3880726
3	314861	807264	436977.6	531945.3	871345	6124356
4	51233	154548	69982.5	118342.4	148366	2668968
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	1036230	6482899	400411.7	685811.5	15558958	29585371
8	11220	25904	3240.6	5436.8	11197	33387
9	0	0	0.0	0.0	0	0
TOTALS	3033900	9377696	1942724.1	2785594.4	19454298	51912513

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1942724.1	2785594.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	300628.5	300628.5
TOTAL ENERGY CONSUMPTION (MWH)	2243352.6	3086222.8
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	739.4	1017.2
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	88.2	118.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	173862	387744	248873.9	401264.5	186117
2	-37357	-114377	-3084.8	-12068.1	-232718
3	92212	134610	110715.5	126463.5	145454
4	8333	25775	14352.4	22218.2	24744
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	292930	1945830	23342.4	68871.7	2509991
8	1220	2846	27.8	266.6	12295
9	0	0	0.0	0.0	0
TOTALS	491200	1482797	394227.2	607016.5	2645883

TABLE C103 SUBREGION 5 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	SIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	12768J2	7682	176451	62778	1975	0	164	1017682	8070	0
2	333216	8767	75048	28957	0	0	274	220571	0	0
3	103732	2683	1370	472	0	0	0	90397	0	0
4	25352	0	42	259	0	0	0	25351	0	0
5	376J2	0	909	0	0	0	0	36693	0	0
6	15212	0	219	0	0	748	0	14223	0	23
7	82681	11257	0	9515	45062	0	0	16908	0	0
8	3234	0	1095	2188	0	0	0	0	0	0
12	133359	5446	13244	11768	5352	0	0	97575	0	0
13	47062	0	15877	2339	0	0	0	29147	0	0
14	60204	0	3247	1197	0	0	0	63760	0	0
15	27513	0	3438	4557	0	0	0	19518	0	0
17	540	0	546	0	0	0	0	0	0	0
TOTALS	2151600	35829	291520	123310	52329	748	438	1639334	8070	23

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	35829	28.6	1172.7	2049.2	1.1
2	291520	35.1	1195.9	1436.3	6.0
3	123310	31.8	1039.4	1341.0	2.9
4	52329	39.2	1417.2	2361.1	3.1
5	748	36.9	1370.9	1690.4	1.1
6	438	22.5	1106.1	1893.5	1.4
7	1639334	50.4	9.2	164.6	10.1
8	8070	30.9	70.6	266.4	11.1
9	23	10.9	112.4	1312.3	1.2
WEIGHTED AVERAGES		46.6	283.5	490.4	8.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
59	28	252	14	12	40

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	35829	85269	42615.7	73420.4	43929	1747026
2	291520	852606	348622.6	418724.4	1739317	6208249
3	123310	326772	128171.8	165364.2	352913	5029675
4	52329	170910	74166.3	123555.1	164074	7542756
5	748	2299	1024.8	1263.6	828	93452
6	438	820	481.4	820.5	591	12160
7	1639334	6890841	15033.6	269839.4	16538018	62654794
8	8070	20773	569.9	2149.6	89766	84608
9	23	21	2.6	30.1	27	1672
TOTALS	2151600	8350318	610082.8	1055166.3	18926464	83373693

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	610082.8	1055166.3
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1221212.7	1221212.7
TOTAL ENERGY CONSUMPTION (MWH)	1831295.5	2276379.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	851.1	1058.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	509.7	515.8

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	20019	50035	26426.7	43973.9	24017
2	124307	371575	174358.5	204250.6	756014
3	42927	121209	54590.6	67538.0	133986
4	24484	80595	49325.5	63430.8	77756
5	190	583	338.5	393.1	210
6	109	199	116.5	202.6	143
7	616027	2617476	0.0	95747.2	6281943
8	3070	7904	216.8	817.7	34146
9	6	5	.7	7.8	7
TOTALS	831138	3249982	236373.7	476373.6	7307141

TABLE C104 SUBREGION 6 2060 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	280196	3872	44078	58559	2083	0	3872	167630	0	0
2	115432	20248	9410	77679	0	0	495	7600	0	0
3	1295	0	1295	0	0	0	0	0	0	0
5	13184	0	4992	7745	0	0	0	447	0	0
6	7730	0	261	0	0	5809	0	1621	0	38
7	32807	27592	0	1111	4103	0	0	2	0	0
8	5939	0	1978	3960	0	0	0	0	0	0
9	98	0	0	0	0	0	0	98	0	0
12	10649	7745	0	968	1936	0	0	0	0	0
13	4455	0	2228	2227	0	0	0	0	0	0
18	2215	0	2215	2215	0	0	0	0	0	0
TOTALS	474000	59457	64244	154564	8122	5809	4367	177398	0	38

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENRGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	59457	26.6	1080.7	1957.2	1.1
2	64244	33.0	1021.1	1261.6	5.6
3	154564	28.9	966.5	1208.1	2.6
4	8122	42.8	1466.7	2408.6	3.4
5	5809	53.6	1867.0	2186.5	1.6
6	4367	42.5	2365.4	3158.8	2.6
7	177398	40.1	40.1	156.3	8.0
8	0	0.0	0.0	0.0	0.0
9	38	25.1	269.3	1469.2	2.8
WEIGHTED AVERAGES		34.1	639.6	966.2	4.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
67	94	143	29	29	123

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	59457	131630	64254.5	116369.1	63183	4262215
2	64244	177316	65596.6	81047.4	361724	1732286
3	154564	372399	140106.3	186725.7	402181	10291972
4	8122	23977	11896.4	19563.1	27318	1772879
5	5809	26042	10844.7	12700.7	9375	2116610
6	4367	18472	16329.7	13794.6	11140	340653
7	177398	593405	152.8	27727.2	1424172	2623328
8	0	0	0.0	0.0	0	0
9	38	80	10.3	56.3	106	4356
TOTALS	474000	1345311	303193.3	457962.1	2293697	23144299

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	363193.3	457962.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	105582.0	105582.0
TOTAL ENERGY CONSUMPTION (MWH)	468775.3	563564.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	862.4	1189.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	345.4	418.0

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	43800	97238	47504.8	85896.0	46674
2	36486	107441	40580.0	49353.8	219180
3	87742	216591	84247.5	110712.2	233907
4	5902	20820	8601.9	14173.2	19987
5	3809	17388	7240.8	8457.8	6260
6	3070	11184	7491.1	9926.9	4053
7	25905	100951	0.0	4026.4	242282
8	0	0	0.0	0.0	0
9	15	32	4.1	22.5	42
TOTALS	206730	571634	195670.4	282568.7	776385

TABLE C105 SUBREGION 7 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	471337	92177	120642	185717	2143	0	674	53525	16158	0
2	273741	137628	11470	93925	0	0	1197	20386	6154	0
3	15368	13469	0	0	0	0	0	1899	0	0
4	33344	0	1967	20703	0	0	27	11147	0	0
5	21088	2038	4883	7438	0	0	0	6959	0	0
6	32749	0	268	0	673	3717	0	28318	0	72
7	115490	98510	0	8972	5359	0	0	2657	0	0
8	17952	1043	736	4203	0	0	0	11970	0	0
11	1500	0	0	0	0	524	0	377	0	699
12	18357	17019	0	1347	0	0	0	0	0	0
13	5367	2459	0	2968	0	0	0	0	0	0
14	3450	0	72	3321	0	0	0	56	0	0
15	17384	0	6104	5223	0	0	48	6009	0	0
17	84	0	0	34	0	0	0	0	0	0
18	13610	3639	15	9759	0	0	0	197	0	0
19	2725	2725	0	0	0	0	0	0	0	0
20	237	0	64	118	0	0	0	54	0	0
TOTALS	1041100	370708	146021	343691	8175	4241	1946	143237	22312	771

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	370708	32.1	2066.5	2943.0	1.3
2	146021	34.0	982.4	1222.9	5.8
3	343691	39.1	1848.8	2150.5	3.5
4	8175	38.6	1718.0	2661.9	3.1
5	4241	31.4	1530.1	1849.7	1.9
6	1946	26.7	1395.1	2138.5	1.6
7	143237	40.2	0	155.4	8.0
8	22312	26.7	61.0	256.8	5.6
9	771	48.7	2579.8	3779.7	5.4
WEIGHTED AVERAGES		35.7	1509.5	1991.6	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	145	151	139	132	277

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	370708	391671	766049.0	1090976.0	476002	26843773
2	146021	413414	143455.5	178569.2	843365	2520258
3	343691	1120911	635428.9	733092.1	1216584	17427926
4	8175	26323	14644.4	21760.8	25270	853828
5	4241	11102	8489.3	7844.5	3997	846562
6	1946	4329	2714.5	4258.2	3117	76135
7	143237	479553	0.0	22262.9	1151888	9144940
8	22312	49657	1362.0	5729.5	214519	239646
9	771	3133	1988.2	2913.0	4131	148144
TOTALS	1041100	3100491	1571531.8	2073406.2	3932874	58161613

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	1571531.8	2073406.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	218629.7	218629.7
TOTAL ENERGY CONSUMPTION (MWH)	1790161.5	2292035.9
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	1719.5	2201.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	461.3	482.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	235069	657773	502068.7	708107.4	315731
2	45643	110781	10572.5	27349.5	225337
3	148596	509493	305659.5	350514.7	550358
4	2833	8509	3536.5	6210.5	3682
5	1713	5047	3739.9	4347.3	1819
6	684	1501	933.1	1475.6	1085
7	21638	-7501	0.0	1358.5	-18963
8	8752	19473	534.3	2247.4	84145
9	525	2192	1439.0	2068.5	2893
TOTALS	465526	1107302	834549.4	1105879.4	1171503

TABLE C106 SUBREGION 8 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	15365	0	14029	882	0	0	454	0	0	0
2	1039	0	140	959	0	0	0	0	0	0
4	242	0	242	0	0	0	0	0	0	0
5	5083	0	5083	0	0	0	0	0	0	0
6	2740	0	2337	0	15	0	0	0	0	387
7	117	0	117	0	0	0	0	0	0	0
15	355	0	336	0	0	0	19	0	0	0
TOTALS	25000	0	22283	1841	15	0	474	0	0	387

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	22283	25.8	816.5	1057.0	4.4
3	1841	16.1	523.7	825.3	1.5
4	15	20.9	677.8	1621.7	1.7
5	0	0.0	0.0	0.0	0.0
6	474	28.8	1551.8	2344.2	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	387	17.4	272.6	1472.5	1.9
WEIGHTED AVERAGES		25.0	860.3	1071.1	4.1

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	157	75	32	53	210

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	22283	47883	16194.4	23552.8	97676	506986
3	1841	2477	963.8	1519.0	2675	103582
4	15	27	10.4	24.9	26	2219
5	0	0	0.0	0.0	0	0
6	474	1138	734.4	1110.2	820	25301
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	387	562	105.6	570.3	741	52481
TOTALS	25000	52084	20006.7	26777.2	101937	690569

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	20008.7	26777.2
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	20008.7	26777.2
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	860.3	1071.1
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.3	-1.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-FEET)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	10661	22908	8689.2	11252.9	46732
3	881	1185	460.3	725.9	1280
4	7	11	5.0	11.9	12
5	0	0	0.0	0.0	0
6	227	545	351.0	530.8	392
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	185	269	50.3	272.7	355
TOTALS	11961	24919	9555.9	12794.2	48771

TABLE C107 SUBREGION 9 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	GIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	112756	0	97139	13660	0	0	1997	0	0	0
2	26581	0	18092	7182	0	0	1307	0	0	0
3	22145	0	18801	0	0	0	2843	501	0	0
4	39894	0	27393	11029	0	0	371	0	0	0
5	139085	0	91164	20783	17.3	0	26025	0	0	0
6	18848	0	17840	0	622	0	131	0	0	196
7	4030	0	3553	460	0	0	17	0	0	0
8	9106	0	5866	3187	0	0	533	0	0	0
12	5515	0	4932	0	0	0	0	0	0	0
15	28580	0	19827	5780	0	0	1022	1949	0	0
21	15936	0	14802	722	0	0	413	0	0	0
22	14883	0	12818	0	2066	0	0	0	0	0
TOTALS	438000	0	332778	62863	4401	0	35373	2450	0	196

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	332778	19.7	594.2	634.7	3.3
3	62833	17.6	546.9	843.5	1.6
4	4401	25.3	783.9	1727.8	2.0
5	0	0.0	0.0	0.0	0.0
6	35373	16.2	847.0	1640.4	1.0
7	2450	29.0	0.0	155.4	5.8
8	0	0.0	0.0	0.0	0.0
9	196	15.3	217.8	1417.7	1.7
WEIGHTED AVERAGES		19.2	606.3	907.2	2.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	164	72	20	43	207

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	332778	545077	197747.8	277771.0	1111957	6332284
3	62833	92352	34348.5	53290.9	93740	2955846
4	4401	9275	3449.5	7603.4	8904	532535
5	0	0	0.0	0.0	0	0
6	35373	47711	29959.1	58024.1	34352	1560478
7	2450	5911	0.0	350.8	14187	99326
8	0	0	0.0	0.0	0	0
9	196	249	42.6	277.2	329	22162
TOTALS	438000	700575	265547.4	397347.4	1269469	11522630

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	265547.4	397347.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	21362.7	21362.7
TOTAL ENERGY CONSUMPTION (MWH)	286910.1	418710.1
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	655.0	956.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	46.2	44.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	139415	235363	85389.1	110914.3	480152
3	25227	37096	13797.2	21400.0	40364
4	1722	3654	1358.9	2484.1	3508
5	-5698	-16349	-6081.7	-7901.4	-5386
6	14209	19165	12034.0	23307.3	13798
7	984	2375	0.0	153.0	5699
8	0	0	0.0	0.0	0
9	79	100	17.1	111.4	132
TOTALS	175937	281409	106515.7	158974.6	537468

TABLE C108 SUBREGION 10 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLIT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	151661	0	38611	15221	0	0	6026	41804	0	0
2	1491	0	520	611	0	0	0	321	0	0
3	4164	0	1311	153	0	0	2853	0	0	0
4	1916	0	1232	0	0	0	0	561	0	0
5	2737	0	2022	53	0	0	0	631	0	0
6	19778	0	5445	0	0	0	0	14245	0	88
7	150	0	150	0	0	0	0	0	0	0
8	1122	0	31	0	0	0	0	1122	0	0
12	31	0	31	0	0	0	0	0	0	0
15	1556	0	1556	0	0	0	0	0	0	0
21	160	0	6	0	0	0	0	160	0	0
22	333	0	251	0	0	0	0	66	0	16
23	5143	0	5143	0	0	0	0	0	0	0
24	128	0	0	0	0	0	0	128	0	0
TOTALS	190300	0	106242	16039	0	0	8878	59038	0	104

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	106242	25.1	764.6	945.0	4.3
3	16039	29.8	817.6	1119.2	2.7
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	8878	26.8	1324.4	2117.8	1.6
7	59036	48.7	0.0	155.4	9.7
8	0	0.0	0.0	0.0	0.0
9	104	24.0	261.8	1461.7	2.6
WEIGHTED AVERAGES		32.9	524.2	769.8	5.7

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	90	20	30	15	105

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	106242	222183	74855.5	100403.4	453254	2125163
3	16039	39045	13112.8	17950.3	43033	650644
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	8878	19842	11758.5	18802.5	14286	356231
7	59036	239513	0.0	9176.1	574830	2242920
8	0	0	0.0	0.0	0	0
9	104	207	27.2	151.7	274	10397
TOTALS	190300	521591	99753.9	146484.0	1085677	5385355

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	99753.9	146484.0
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	1762.9	1762.9
TOTAL ENERGY CONSUMPTION (MWH)	101516.9	148247.0
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	533.5	779.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-6.4	-17.2

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	49277	99871	33612.1	45461.6	203736
3	5544	13772	4532.3	6204.3	14874
4	-1211	-2222	-745.7	-1888.8	-2133
5	-3203	-6783	-2426.7	-3450.2	-2444
6	3199	7102	4210.0	6748.2	5113
7	22186	90304	0.0	3448.3	216909
8	0	0	0.0	0.0	0
9	37	73	9.6	53.8	97
TOTALS	75820	201810	39191.4	56577.2	435251

TABLE C109 SUBREGION 11 2060 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SLT (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	59808	0	33338	16802	0	0	4667	0	0	0
2	4303	0	4043	0	0	0	0	0	0	0
3	19068	0	10667	0	3734	0	4667	0	0	0
6	3041	0	1641	0	933	0	0	0	0	467
TOTALS	85000	0	54730	16802	4667	0	9334	0	0	467

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	0	0.0	0.0	0.0	0.0
2	54730	27.3	768.0	1028.5	4.6
3	16802	30.7	910.0	1211.6	2.8
4	4667	24.1	714.9	1658.9	1.9
5	0	0.0	0.0	0.0	0.0
6	9334	27.8	1417.1	2210.5	1.7
7	0	0.0	0.0	0.0	0.0
8	0	0.0	0.0	0.0	0.0
9	467	15.4	198.3	1398.2	1.7
WEIGHTED AVERAGES		27.8	873.0	1228.8	3.8

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
75	172	60	25	35	206

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	0	0	0.0	0.0	0	0
2	54730	124449	43127.9	56283.7	253376	0
3	16802	42985	15289.5	20357.3	46424	0
4	4667	9381	3336.8	7742.3	9006	0
5	0	0	0.0	0.0	0	0
6	9334	21625	13227.7	20633.8	15570	0
7	0	0	0.0	0.0	0	0
8	0	0	0.0	0.0	0	0
9	467	599	92.6	652.6	791	0
TOTALS	86000	199039	75074.5	105674.7	325666	0

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	75074.5	105674.7
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	75074.5	105674.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	873.0	1228.8
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	11.5	11.5

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	0	0	0.0	0.0	0
2	-3902	-8873	-2412.0	-3353.4	-18102
3	-1198	-3065	-861.1	-1222.5	-3310
4	-333	-669	-197.9	-502.1	-642
5	0	0	0.0	0.0	0
6	-666	-1542	-827.9	-1356.0	-1110
7	0	0	0.0	0.0	0
8	0	0	0.0	0.0	0
9	-33	-43	-3.4	-43.3	-56
TOTALS	-6132	-14192	-4292.4	-6474.3	-23221

TABLE C110 SUBREGION. 12 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	FAN MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA-NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	273973	6283	7930	19064	0	0	3	240645	0	0
2	8430	1224	2436	3073	0	0	0	1727	0	0
15	25597	2997	1637	3573	0	0	0	17420	0	0
TOTALS	308000	10505	11993	25710	0	0	3	259792	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	10505	23.3	767.2	1643.8	4.9
2	11993	28.6	742.4	982.9	4.9
3	25710	29.4	788.2	1089.8	2.6
4	0	0.0	0.0	0.0	0.0
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	259792	44.1	.2	155.7	8.8
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		41.6	121.1	316.6	7.9

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
57	17	33	11	2	19

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	10505	20434	8060.0	17267.7	9308	153251
2	11993	28610	8903.6	11787.4	58365	81306
3	25710	63179	20265.1	28019.6	68126	448033
4	0	0	0.0	0.0	0	0
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	259792	954427	62.9	40441.6	2296626	3902900
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	308000	1066551	37291.5	97516.4	2426925	4585490

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	37291.5	97516.4
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	0.0	0.0
TOTAL ENERGY CONSUMPTION (MWH)	37291.5	97516.4
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	121.1	316.6
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-1.5	-1.9

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	1636	3020	1243.3	2589.7	1450
2	1073	2548	783.7	1351.6	5139
3	3712	9220	3121.8	4241.3	9966
4	0	0	0.0	0.0	0
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	39531	145831	0.0	6144.3	349994
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	45852	160627	5158.8	14026.9	366608

TABLE C111 SUBREGION 13 2060 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	DIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	151458	2394	12644	17275	0	0	336	118810	0	0
2	64334	388	2399	3278	0	0	62	58805	0	0
7	8582	0	0	2140	6437	0	0	0	0	0
15	42426	558	4450	3933	0	0	258	33226	0	0
TOTALS	267400	3340	19493	26631	6437	0	657	210443	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	3340	23.3	771.7	1648.2	5.9
2	19493	29.2	764.4	1604.8	5.0
3	26631	29.0	782.7	1834.3	2.6
4	6437	26.3	709.2	1653.1	2.1
5	0	0.0	0.0	0.0	0.0
6	657	28.3	1366.0	2159.4	1.7
7	210443	39.8	0.0	155.4	8.0
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		37.4	163.7	369.5	7.0

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
58	26	89	10	3	29

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	3340	6496	2577.2	5504.5	3118	10783
2	19493	47367	14899.7	19587.0	96669	30522
3	26631	64419	20844.0	28876.5	69573	183141
4	6437	14107	4564.5	10640.1	13542	64094
5	0	0	0.0	0.0	0	0
6	657	1548	896.9	1417.8	1114	2414
7	210443	699518	0.0	32770.7	1678843	703329
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	267400	833474	43782.2	98796.6	1862860	914283

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	43782.2	98796.6
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	15078.1	15078.1
TOTAL ENERGY CONSUMPTION (MWH)	58860.3	113874.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	220.1	425.9
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	-6.3	-6.3

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	110	213	84.7	180.9	102
2	641	1557	489.7	643.7	3177
3	875	2117	685.0	949.0	2286
4	212	464	150.0	349.7	445
5	0	0	0.0	0.0	0
6	22	51	29.5	46.6	37
7	6929	22989	0.0	1077.0	55175
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	8768	27392	1438.9	3246.9	61222

TABLE C112 SUBREGION 14 2000 (REGIONAL TRENDS)

SECTION 1: CROP AND METHOD OF IRRIGATION

CROP NUMBER	ACRES IRRIGATED	CENTER PIVOT (1)	HAND MOVE (2)	SIDE ROLL (3)	SOLID SET (4)	PERMA- NENT (5)	BIG GUN (6)	GRAVITY SYSTEMS (7)	PUMP BACK (8)	DRIP (9)
1	180233	0	85080	31378	0	0	0	64075	0	0
2	60655	3335	29857	11040	0	0	0	16423	0	0
3	7145	0	0	0	0	0	0	7145	0	0
5	2356	0	0	0	0	0	0	2356	0	0
6	21	0	0	0	0	0	0	21	0	0
7	4195	1845	0	683	1667	0	0	0	0	0
12	3063	0	1610	590	0	0	0	858	0	0
14	2832	0	0	0	0	0	0	2832	0	0
TOTALS	260500	5181	116547	43396	1667	0	0	93710	0	0

SECTION 2: IRRIGATION SYSTEM WEIGHTED AVERAGES

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLICATION (ACRE-IN/ACRE)	PUMPING ENERGY (KWH/AC)	TOTAL ENERGY (KWH/AC)	LABOR REQUIREMENTS (MAN-HRS/ACRE)
1	5181	18.9	800.2	1676.7	0.8
2	116547	26.4	936.0	1170.4	4.5
3	43396	26.3	952.9	1254.5	2.4
4	1667	21.2	768.6	1712.5	1.7
5	0	0.0	0.0	0.0	0.0
6	0	0.0	0.0	0.0	0.0
7	93710	37.9	0.0	155.4	7.6
8	0	0.0	0.0	0.0	0.0
9	0	0.0	0.0	0.0	0.0
WEIGHTED AVERAGES		30.3	598.3	835.5	5.2

SECTION 3: SUBREGIONAL ON-FARM WEIGHTED AVERAGES

IRRIGATION APPLICATION EFFICIENCY (%)	SYSTEM OPERATING PRESSURE (FT)	GROUND WATER LIFT (FT)	SURFACE WATER LIFT (FT)	COMBINATION LIFT (FT)	TOTAL DYNAMIC HEAD (FT)
66	87	250	11	43	129

SECTION 4: IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)	CAPITAL INVESTMENT (DOLLARS)
1	5181	8158	4145.6	8686.6	3916	330450
2	116547	256119	109083.8	137109.8	522483	505424
3	43396	95048	41350.9	54439.8	102652	465479
4	1667	2945	1281.3	2054.9	2827	45976
5	0	0	0.0	0.0	0	0
6	0	0	0.0	0.0	0	0
7	93710	295959	0.0	14565.0	-710300	865759
8	0	0	0.0	0.0	0	0
9	0	0	0.0	0.0	0	0
TOTALS	260500	658228	155861.7	217656.1	1342178	2213000

SECTION 5: SUBREGIONAL ENERGY CONSUMPTION

	PUMPING ENERGY	TOTAL ENERGY
ON-FARM ENERGY CONSUMPTION (MWH)	155861.7	217656.1
DIVERSION PUMPING ENERGY CONSUMPTION (MWH)	2205.5	2205.5
TOTAL ENERGY CONSUMPTION (MWH)	158067.2	219861.7
AVERAGE ENERGY CONSUMPTION (KWH/ACRE)	606.8	844.0
AVERAGE ENERGY CHANGE FROM 1975 (KWH/ACRE)	47.8	52.4

SECTION 6: CHANGES FROM 1975 IRRIGATION SYSTEM ON-FARM TOTALS

IRRIGATION SYSTEM NUMBER	AREA IRRIGATED (ACRES)	GROSS WATER APPLIED (ACRE-Feet)	PUMPING ENERGY (MWH)	TOTAL ENERGY (MWH)	LABOR REQUIREMENTS (MAN-HOURS)
1	2152	3362	1843.1	3729.1	1614
2	9626	20557	15371.6	17542.0	41936
3	3985	8788	6221.5	7403.3	9426
4	153	270	192.8	337.3	260
5	0	0	0.0	0.0	0
6	0	0	0.0	0.0	0
7	8605	27176	0.0	1337.4	65222
8	0	0	0.0	0.0	0
9	0	0	0.0	0.0	0
TOTALS	23920	60452	23628.9	30369.0	118457

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