TEXAS
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Report 173

GROUND-WATER RESOURCES OF KLEBERG, KENEDY, AND SOUTHERN JIM WELLS COUNTIES, TEXAS

July 1973

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By

G. H. Shafer and E. T. Baker, Jr.
United States Geological Survey

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GROUND-WATER RESOURCES OF KLEBERG, KENEDY, AND SOUTHERN JIM WELLS COUNTIES, TEXAS

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ABSTRACT

Kleberg, Kenedy, and southern Jim Wells Counties are in south Texas on the West Gulf Coastal Plain. They cover an area of about 2,540 square miles. Kingsville, county seat of Kleberg County, is the largest city in the area; it is about 35 miles southwest of Corpus Christi. The entire area is dependent upon its ground-water resources. All water used for irrigation, industrial and public supply, and most of the water used for domestic and stock supply is withdrawn from wells.

The geologic formations that underlie the report area and that are significant to the occurrence of fresh or slightly saline water are, in order of decreasing age, the Oakville Sandstone, Lagarto Clay, Goliad Sand, Beaumont Clay and Lissie Formation, undifferentiated (including barrier island and beach deposits), south Texas eolian plain deposits, barrier island deposits, and alluvium. All of these units are exposed in the report area except the Goliad Sand, Lagarto Clay, and Oakville Sandstone, which crop out in counties west of the report area.

The Goliad Sand, which is tapped by wells throughout the report area, is the principal aquifer. The water is under artesian pressure and is yielded to flowing and nonflowing wells. The Goliad supplies all the ground water for public supplies and irrigation, about 98 percent of the water used by industry, and about 95 percent of the water for rural-domestic and livestock needs. During 1968, about 18,000 acre-feet of ground water was withdrawn for all purposes.

Water levels in wells in the Goliad Sand declined significantly from 1932-33 to 1968-69. The largest declines were in wells in the vicinity of Kingsville and in southern Jim Wells County, principally as a result of large-scale withdrawals for public supplies and industrial use. During the period, the decline was as much as 200 feet in the Kingsville area.

In the report area, the quality of water from wells in the Goliad Sand deteriorates at depths greater than 1,000 feet, and the salinity of the water increases eastward. Generally, water from wells in the Goliad Sand in southern Jim Wells County and about the western one-half of Kleberg County meets the quality standards of the U.S. Public Health Service.

Moderately saline to very saline water-bearing sands overlie the fresh and slightly saline water-bearing sands of the Goliad Sand at most places throughout the report area, and have caused one of the major problems relative to maintaining a suitable water supply. Special care is needed in well construction to insure against contamination of the fresh water as a result of improperly cased wells.

Only about 7 mgd (million gallons per day) of fresh to slightly saline water can be considered continually available as recharge to the Goliad Sand in Kleberg and southern Jim Wells Counties. The 13.8 mgd of ground water that was used in 1968 in Kleberg and southern Jim Wells Counties exceeds the available recharge. This rate of ground-water usage cannot be maintained indefinitely. However, the continued availability of even 7 mgd of water depends upon no new large-scale ground-water developments in the Goliad Sand in the areas adjacent to Kleberg and southern Jim Wells Counties.

About 14 mgd of fresh to slightly saline water is still continually available for development in Kenedy County from the Goliad Sand. Because only 2.8 mgd of ground water was used in Kenedy County in 1968, almost entirely from the Goliad Sand, ground-water production could be greatly increased.

The area most favorable for the development of additional ground-water supplies from the Goliad Sand is in west-central Kenedy County, where the sands are thickest and where the present rate of development is relatively small.

GROUND-WATER RESOURCES OF KLEBERG, KENEDY, AND SOUTHERN JIM WELLS COUNTIES, TEXAS

INTRODUCTION

Location and Extent of the Area

The report area, which includes all of Kleberg and Kenedy Counties and the southern part of Jim Wells County, is in south Texas on the West Gulf Coastal Plain (Figure 1). The area covers 2,540 square miles. Kingsville, the county seat of Kleberg County, is about 35 miles southwest of Corpus Christi.

The report area is bounded on the north by Nueces and northern Jim Wells Counties, on the west by Duval, Brooks, and Hidalgo Counties, on the south by Willacy County, and on the east by the Gulf of Mexico.

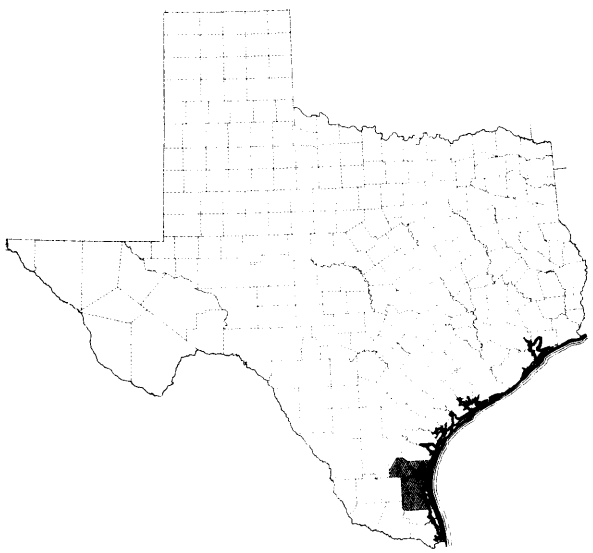


Figure 1.—Location of Kleberg, Kenedy, and Southern Jim Wells Counties

Purpose and Scope of the Investigation

The purpose of the investigation, which was made by the U.S. Geological Survey in cooperation with the Texas Water Development Board, was to determine the occurrence, availability, dependability, quality, and quantity of the ground-water resources of Kleberg, Kenedy, and southern Jim Wells Counties, with particular reference to the sources of water suitable for public supply, industrial use, and irrigation, and to identify areas of present or potential ground-water problems. The results of the study are presented as guides for developing, protecting, and obtaining maximum benefits from the available ground-water supplies.

The investigation specifically included: A delineation of the location and extent of sands containing fresh to slightly saline water, which contains less than 3,000 mg/l (milligrams per liter) dissolved solids; a determination of the chemical quality of the water; a compilation of the quantity of water being withdrawn and an assessment of the effect of these withdrawals on water levels and water quality; a determination of the hydraulic characteristics of the important water-bearing sands; an estimate of the quantity of ground water available for development; and a consideration of all significant ground-water problems in the report area.

Records of 754 water wells, six test wells, 128 electrical logs of oil tests and water wells, and 61 drillers' logs were used in the study (Table 7). Locations of the wells are shown on Figure 18. Water samples from 228 selected wells were collected and analyzed (Table 10). Water-level data were compiled (Table 8). Pumpage of ground water was inventoried, and pumping-test data were compiled to determine the hydraulic characteristics of the aquifer.

The technical terms used in discussing the ground-water resources of the area are defined in the section entitled "Definitions of Terms."

Previous Investigations

Prior to this investigation, few comprehensive studies of the ground-water resources of Kleberg, Kenedy, and southern Jim Wells Counties had been made.

Taylor (1907, p. 11) briefly described wells in Nueces and Cameron Counties, from which Kleberg and

Kenedy Counties were later created. Brief investigations of ground water in the area were made by Deussen (1914). In 1932-33, a study of the ground-water resources of Kleberg County was made by Livingston and Bridges (1936). An exploration of salt-water leaks in wells on the King Ranch was made by Livingston and Broadhurst (1942). George and Cromack (1943) described the ground-water conditions in the vicinity of Kingsville. An inventory of wells in Kenedy County was made in the spring of 1933 by Turner and Cumley (1940), and during the summer and fall of that year an inventory of wells in Jim Wells County was made by Turner, Lynch, and Cumley (1940). In a study of ground-water conditions in the Premont-La Gloria-Falfurrias District in Jim Wells and Brrooks Counties, Cromack (1944) described, in general, the source and quality of the ground water and the effects of pumping on water levels in wells.

The public-water supplies of Kingsville and Premont were described briefly by Broadhurst, Sundstrom, and Rowley (1950, p. 75 and 80). A reconnaissance of the ground-water resources of the Gulf Coast region, which includes Kleberg, Kenedy, and Jim Wells Counties, was made by Wood, Gabrysch, and Marvin (1963). In 1968, ground-water personnel from the Texas Water Development Board made an investigation of alleged contamination of some of the City of Kingsville water wells.

Detailed reports have been published on the ground-water resources of several counties adjacent to the report area, including Duval County, Sayre (1937); Brooks County, Myers and Dale (1967); and Nueces and San Patricio Counties, Shafer (1968). Mason (1963) reported on the availability of ground water from the Goliad Sand in the Alice area of Jim Wells County.

Water levels in observation wells in Kleberg and southern Jim Wells Counties were measured occasionally during the period 1932-43. Since 1942, water levels have been measured periodically as part of a state-wide observation-well program undertaken jointly by the Texas Water Development Board, formerly Texas Board of Water Engineers, and the U.S. Geological Survey. Sorne of the water-level measurements have been published in annual water-level reports of the Geological Survey, and many are included in Table 8.

Economic Development

The economy of Kleberg, Kenedy, and southern Jim Wells Counties depends mainly on oil and gas production, large-scale ranching, petrochemical industries, farming, and dairying.

The King Ranch, Texas A&I University, a U.S. Naval air station. a large petrochemical plant, and a large tourist trade contribute a great deal to the economy of Kleberg County. During 1968, the county produced more than 24 million barrels of oil. Grain sorghum and a variety of vegetables are grown locally. Terminals for the intercoastal waterway, international oceanic transportation, and commercial air service are available in nearby Corpus Christi. The Kingsville area is also served by air, rail, and bus lines; paved State and Federal highways; and secondary roads. Kingsville, the largest city in the county, had a population of about 27,800 in 1970.

The economy of Kenedy County is based mainly on 16 ranches, which average over 33,000 acres. Two of these ranches occupy most of the county. Sarita, the county seat, with a population of about 200 in 1970, is a cattle shipping center. Oil was discovered in the county in 1947; during 1968 about 2,460,000 barrels of oil was produced. The few farms in the county produced an income of about $877,000 during 1968. The county is served by the Missouri Pacific Railroad, U.S. Highway 77, and many miles of hard-surfaced roads.

The economy of southern Jim Wells County depends mainly upon the industries related to oil and gas production, large-scale ranching, and farming. Oil was discovered in the southern part of Jim Wells County in 1937. During 1968, more than 11 million barrels of oil were produced in the county-a large part being from the Premont-La Gloria District. In 1968, there were about 30 irrigation wells in the area. Irrigated crops include grain sorghum, pastures, citrus orchards, and a variety of vegetables. Premont, in southern Jim Wells County, had a population of about 3,100 in 1970. The surrounding area is served by a large number of hard-surfaced roads and highways; rail transportation is also available.

Topography and Drainage

The area studied is bordered by the Gulf of Mexico on the east. Generally, the land surface slopes to the east or southeast. The altitude ranges from sea level along the coast to about 250 feet above sea level near the west boundary line of Jim Wells County about 10 miles northwest of Premont.

Several small, intermittent, low-gradient streams and their tributaries drain the area; these include San Fernando Creek, Tranquitas Creek, Santa Gertrudis Creek, Escondido Creek, Jaboncillos Creek, and Los Olmos Creek, which is the boundary between Kleberg and Kenedy Counties. Most of the larger streams drain into the shallow bays; some of the smaller ones empty into Los Olmos Creek, which in turn drains into Baffin Bay. Generally, the stream valleys are wide and nearly flat.

The southern part of the area, which includes all of Kenedy County, is almost completely covered by a sand sheet, which has a maximum thickness of more than 60 feet. Drainage in this part of the area is

practically non-existent. Sand dunes are well developed at many places; some dunes are fairly well anchored by a vegetative cover, others are migrating. Rounded or oval-shaped depressions are fairly common and some of the larger ones contain water during rainy seasons.

Dense thickets of oak and "underbrush" are present where the terrain is sandy. Some of the "flats" are covered with sacahuista and other wild grasses. Generally, the uplands support a variety of vegetation consisting of mesquite, huisache, cenizo, cactus, and catclaw. The larger trees grow along the main streams. A large area in the eastern part of Kleberg County is grass-covered prairie.

Climate

Kleberg, Kenedy, and southern Jim Wells Counties have a semiarid climate. The average monthly temperature at Kingsville ranges from about 58°F (14.4°C) during January to about 85°F (29.4°C) in July and August (Figure 2). The average annual precipitation ranges from about 25 inches near the west boundary line of Kenedy County and the southern part of Jim Wells County to about 30 inches in the eastern part of Kleberg County (Carr, 1967).

The average annual temperature at Kingsville for the period 1951-68 was 72.8°F (22.7°C). The average annual precipitation at Kingsville for the period 1950-68 was about 25.30 inches (Figure 2), and the average annual gross lake-surface evaporation for Kleberg County for the period 1940-65 was 57.4 inches (Kane, 1967, p. 108).

Hurricanes occur frequently in this area. A study was recently completed of the effect of Hurricane Beulah in September and October 1967 on ground water in Kleberg, Kenedy, and Willacy Counties (Baker, 1971).

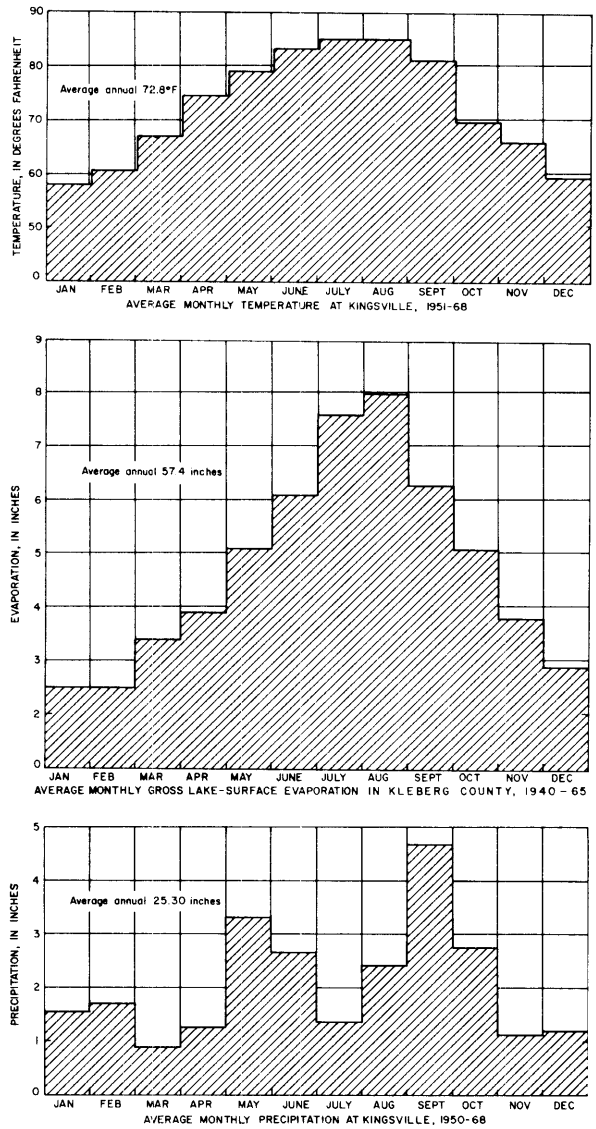


Figure 2.—Average Monthly Precipitation and Temperature at Kingsville and Average Monthly Gross Lake-Surface Evaporation in Kleberg County

Well-Numbering System

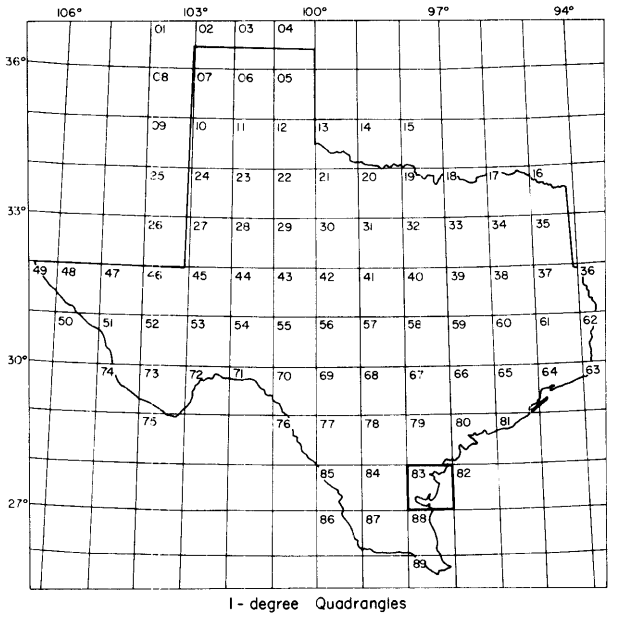
The well-numbering system used in this report is the one adopted by the Texas Water Development Board for use throughout the State (Figure 3). Under this system, which is based upon the divisions of latitude and longitude, each 1-degree quadrangle in the State is given a number consisting of two digits from 01 to 89. These are the first two digits appearing in the well number.

Each 1-degree quadrangle is divided into 7½-minute quadrangles which are given 2-digit numbers from 01 to 64. These are the third and fourth digits of the well number. Each 7½-minute quadrangle is divided into 2½-minute quadrangles which are given a single-digit number from 1 to 9. This is the fifth digit of the well number. Each well within a 2½-minute quadrangle is given a 2-digit number in the order in which it is inventoried. These are the last two digits of the well number. The 1-degree and 7½-minute quadrangles are shown on the well-location map of this report (Figure 18).

In addition to the 7-digit well number, a 2-letter prefix is used to identify the county. The prefix for Kleberg County is RR; for Kenedy County, RD; and for Jim Wells County, PW (Table 1).

Acknowledgments

The writers gratefully acknowledge the cooperation of the many landowners and industrial and city officials in Kleberg, Kenedy, and southern Jim Wells Counties in furnishing assistance and information and in



1 - degree Quadrangles

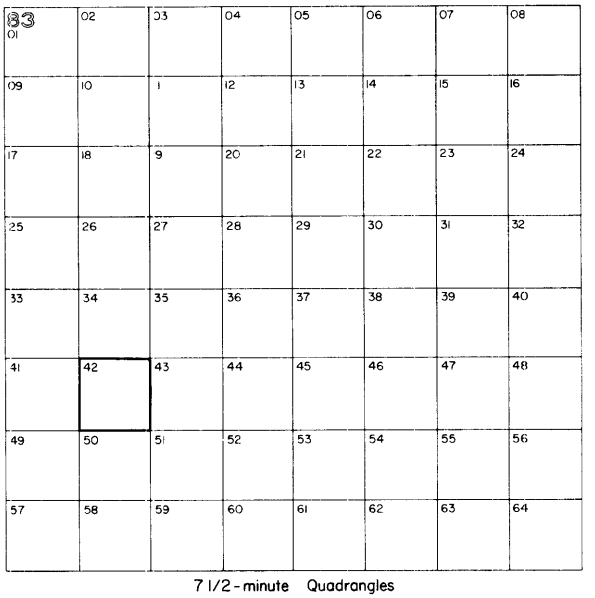
Location of Well 83-42-602

83 1 - degree quadrangle

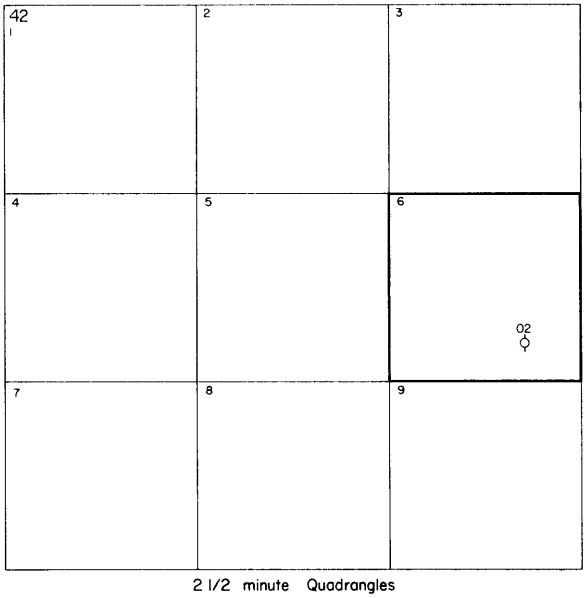
42 7 1/2 - minute quadrangle

6 2 1/2 - minute quadrangle

02 Well number within 2 1/2-minute quadrangle



7 1/2 - minute Quadrangles



2 1/2 minute Quadrangles

Figure 3

Well-Numbering System

Table 1.—Well Numbers Used in This Report and Corresponding Numbers Previously Used in Kleberg County by Livingston and Bridges (1936), in Kenedy County by Turner and Cumley (1940), in Jim Wells County by Turner, Lynch, and Cumley (1940), and in Memoranda and Areal Reports

NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER
		Kleberg County			
RR-83-25-101	4	RR-83-28-702	386a	RR-83-35-201	380
301	8a	903	405	202	381
303	8	29-404	410	203	381
401	11	603	415	204	382
501	10	701	411	301	390
504	16	803	413	302	383
701	15a	30-502	416	401	379
703	15	702	417	604	392
704	24	33-101	29	801	391
801	23a	102	30	36-101	388
802	23	201	31	202	387
803	17a	301	35a	401	389
906	83	302	35	501	402
907	83	402	38	701	395
908	32	501	37	801	400
909	33	702	41	37-101	404
26-401	372	703	40	201	423
701	75	801	39	202	412
703	91	903	259	301	421
707	73	34-102	188	401	426
708	79	103	127	601	424
709	92	104	128	701	427
710	93	204	144	801	428
713	96	205	150	901	429
723	438	206	179	38-101	419
802	435a	207	169	401	420
803	435	301	376	41-101	49
804	373	302	378a	201	55
901	374	303	378	401	51
902	374a	401	190a	402	53
27-401	436	405	190	501	56
601	385	406	217	701	52
801	375	407	219	802	54
802	437	601	243?	805	54
901	384	701	257	901	57
28-701	386	35-101	377	42-201	282

Table 1.—Well Numbers Used in This Report and Corresponding Numbers Previously Used in Kleberg County by Livingston and Bridges (1936), in Kenedy County by Turner and Cumley (1940), in Jim Wells County by Turner, Lynch, and Cumley (1940), and in Memoranda and Areal Reports—Continued

NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER
		Kleberg County—Continued			
RR-83-42-202	283	RR-83-44-402	396	RR-83-32-501	13a
507	288	45-201	431	502	13
701	64	202	430	503	14
702	63	401	433	801	25
801	65a	49-201	341b	40-208	26
803	344	301	341c	602	27
43-301	393	84-24-901	1	603	44
406	316	32-201	2	801	45
801	371	301	12	48-303	47
44-201	398	302	3	901	50
202	399				
		Kenedy County			
RD-83-43-703	67	RD-83-52-702	103	RD-83-59-801	89
901	70	901	130	903	87
49-101	1	53-101	133	60-101	105
204	3	401	135	201	137
303	4	402	132	301	138
502	2	57-201	9	501	108
701	8	401	144	502	107
702	7	501	43	601	141
801	11	601	37	801	112
50-307	32	58-101	38	802	113
501	33	201	40	901	143
601	34	302	59	61-101	140
902	35	401	39	701	142
51-102	71	504	41	88-01-301	45
201	69	701	46	401	149
301	75	702	49	501	152
401	77	703	48	502	150
501	76	801	51	601	153
601	102	803	55	801	155
801	80	901	61	901	156
901	81	59-301	83	02-103	47
52-101	101	401	84	202	56
201	128	501	85	301	65
601	131	601	109	402	159

Table 1.—Well Numbers Used in This Report and Corresponding Numbers Previously Used in Kleberg County by Livingston and Bridges (1936), in Kenedy County by Turner and Cumley (1940), in Jim Wells County by Turner, Lynch, and Cumley (1940), and in Memoranda and Areal Reports—Continued

NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER	NEW NUMBER	OLD NUMBER
		Kenedy County—Continued			
RD-88-02-501	171	RD-88-03-902	100	RD-88-11-601	221
502	170	04-201	116	701	219
503	162	702	123	12-101	124
505	160	801	117	501	125
702	161	09-201	157	17-201	182
704	164	202	158	301	186
801	163	501	178	401	191
803	165	502	179	501	192
905	175	601	183	603	193
03-101	66	903	185	902	197
301	92	10-102	167	18-101	181
401	174	201	166	401	194
402	94	401	168	501	205
501	95	502	201	19-101	216
502	96	701	187?	102	217
601	93	11-202	119	601	225
602	97	301	120	602	230
702	176	501	218	20-401	236
901	118				
		Jim Wells County			
PW-83-17-701	5	PW-84-47-106	307a	PW-84-47-806	377a
84-32-401	242	301	292	807	377a
39-401	252	303	357	905	392a
403	253	304	316	906	399
502	252a	501	346a	48-103	418b
601	269a	502	346	104	330
603	269	605	359, 359a	106	431
701	272a	606	382	108	429
703	272	801	374	109	418
40-102	244a	804	374a	110	418a
103	244	805	377	702	397

permitting access to wells. Water-well drillers in the area contributed drillers' logs and well-completion data. The following individuals gave special assistance: Mr. Richard M. Kleberg, Jr. and Mr. Cy Yeary, King Ranch, Inc., Kingsville, Texas, Dr. Frank H. Dotterweich, Texas A&I University, Kingsville, Texas; Mr. and Mrs. Tom East Linn, Texas; Mr. Lynwood Weiss, Sarita, Texas; Mr. Carl B. Peters, Humble Oil and Refining Company, Kingsville, Texas; Major Thomas R. Armstrong and Mr. Tobin Armstrong, Armstrong, Texas.

GEOLOGY AS RELATED TO THE OCCURRENCE OF GROUND WATER

General Stratigraphy and Structure

The geologic formations that contain fresh to slightly saline water are, in order of decreasing age, the Oakville Sandstone and the Lagarto Clay of Miocene age, the Goliad Sand of Pliocene age, and the Lissie Formation and Beaumont Clay (including barrier island and beach deposits) of Pleistocene age, the south Texas eolian plain deposits of Pleistocene(?) and Holocene age, and the barrier island deposits and alluvium of Holocene age. All of these units are exposed in the report area except the Goliad Sand, Lagarto Clay, and Oakville Sandstone, which crop out in counties west of the report area (Figure 4).

The geologic formations, except the alluvium and south Texas eolian plain deposits, crop out in belts that are nearly parallel to the Gulf Coast. Younger formations generally crop out close to the coast and successively older ones farther inland. Because of the different ages of the formations, the outcrops are progressively eroded and dissected inland. For example, the outcrop of the Beaumont Clay and Lissie Formation, undifferentiated, which covers most of Kleberg County, is comparatively uneroded in contrast to the uneven and dissected outcrop of the Goliad Sand farther inland. The alluvium and south Texas eolian plain deposits transgress the other geologic formations and are elongated mostly normal to the Gulf Coast.

The lithology, dip, and thickness of many of the geologic formations change in the direction of the dip; and the lithology and thickness commonly change laterally along the strike. Sand beds may grade laterally into clay or silt within short distances. These sand beds and other beds containing water are interconnected with similar beds on a different level, so that a series of water-bearing beds within a formation, or even within a group of formations, function as a single aquifer. Both dips and thicknesses of the formations increase gulfward, and the clastic sediments composing the geologic formations grade from fluviatile and deltaic sand, silt, and clay in inland areas to predominantly finer sediments that interfinger with brackish and marine sediments near the Gulf Coast and offshore.

Geologic structure of the area is relatively simple. The water-bearing formations underlying the report area form a monocline that dips gently toward the coast (Figures 19, 20, and 21). Although faults are fairly common in many of the deeply buried formations, none of the geologic formations discussed in this report are known to be displaced by significant faults.

The age, thickness, lithology, and water-bearing properties of the geologic formations are summarized in Table 2.

Physical Characteristics and Water-Bearing Properties of the Geologic Formations

Oakville Sandstone

The Oakville Sandstone of Miocene age, the oldest and deepest aquifer that yields slightly saline water in the report area, overlies tuffaceous clay, sandstone, and conglomerate of the Catahoula Tuff and underlies the Lagarto Clay and Goliad Sand. From the middle of Duval County southward to the Rio Grande, the Oakville is completely overlapped by the Goliad. Northward from the middle of Duval County, the Oakville is exposed in an irregular belt from 1 to 10 miles wide (Figure 4).

The Oakville consists chiefly of very fine to coarse, brown to gray sand and sandstone interbedded with silt and a considerable amount of clay. Sayre (1937, p. 43) described an exposure of the formation in northern Duval County—the nearest outcrop area of the Oakville—as dirty-brown fairly coarse sandstone, in part poorly and in part firmly cemented. Electrical logs show that about one-third of the Oakville in southern Jim Wells County is sand or sandstone, the remainder being mainly finer sediments.

In the subsurface, in southern Jim Wells County, the Oakville reaches a maximum thickness of about 600 feet and dips eastward at a rate of about 45 feet per mile (Figure 19). Depth to the top of the formation is about 1,600 feet near the Duval County line.

The Oakville Sandstone yields small to moderate quantities of slightly saline water to a few industrial and stock wells in southern Jim Wells County. In the Premont area, three industrial wells (PW-84-40-703, PW-84-40-709, and PW-84-40-711) produce water from depths of about 2,300 to 2,500 feet. Well PW-84-40-703 pumped a reported 282 gpm (gallons per minute) of water containing 2,320 mg/l (milligrams per liter) dissolved solids when sampled in 1968. Near the southern boundary of Jim Wells County, a stock well, PW-84-47-810, which taps the Oakville, flowed an estimated 10-15 gpm of water containing 1,890 mg/l dissolved solids.

Table 2.—Geologic Formations and Their Water-Bearing Properties

SYSTEM	SERIES	GEOLOGIC FORMATION	APPROXIMATE MAXIMUM THICKNESS (FT)	LITHOLOGY	WATER-BEARING PROPERTIES
Quaternary		Alluvium	?	Mostly very fine to fine sand, silt, and calcareous clay.	Not significant as an aquifer. Not known to be tapped by wells.
		Barrier island deposits	50	Tan to gray, fossiliferous, medium sand containing wood fragments; interbedded tan sand and gray clay, locally gypseous; and gray, fossiliferous sandy clay.	Capable of yielding small quantities of fresh water to shallow wells on Padre Island.
	Holocene and Pleistocene (?)	South Texas eolian plain deposits	60 +	Tan to white, unfossiliferous, massive, fine to very fine sand, greenish gray sandy clay, highly calcareous clay or marl, and thin-bedded clayey sand.	Yields small quantities of slightly saline water to a few stock wells in Kenedy County. In some areas in Kenedy County the sand contains brine.
	Pleistocene	Barrier island and beach deposits	1,400	Barrier island and beach deposits mostly light gray, massive, cross-bedded fine sand about 60 feet thick; contains some shell fragments.	Barrier island and beach deposits yield small quantities of fresh to probably moderately saline water to a few stock wells in eastern Kleberg County near Laguna Madre.
		Beaumont Clay and Lissie Formation, undifferentiated		Beaumont Clay and Lissie Formation mostly very calcareous, slightly carbonaceous, blue and yellow clay and a few lenticular beds of sand.	Beaumont Clay and Lissie Formation yield small quantities of slightly to moderately saline water to a few mostly stock wells in eastern part of Kleberg and Kenedy Counties.
Tertiary	Pliocene	Goliad Sand	1,100	Fine to coarse, mostly gray calcareous sand interbedded with sandstone and varicolored calcareous clay. Sand beds or sandstone compose from 40 to 60 percent of the formation.	Principal aquifer. Yields small to large quantities of fresh to slightly saline water to public supply, industrial, and irrigation wells as well as to numerous rural domestic and stock wells. Many of the wells tapping the Goliad in Kleberg and Kenedy Counties flow.
	Miocene	Lagarto Clay	1,200 +	Mostly stiff, compact, gray, calcareous clay and some thin lenticular beds of gray sand.	Not known to be tapped by wells, but capable of yielding small quantities of slightly saline water in Kenedy and Jim Wells Counties.
		Oakville Sandstone	600	Very fine to coarse, brown to gray sand and sandstone interbedded with silt and a considerable amount of clay.	Yields small to moderate quantities of slightly saline water to industrial and stock wells in southern Jim Wells County.

Development of the Oakville Sandstone as an aquifer within the report area has been restricted almost entirely to southern Jim Wells County where sands containing slightly saline water pinch out. Because the Oakville is about 1,000 feet below the Goliad Sand, which is a more productive aquifer, economics have restricted its development in areas where the Goliad is present.

Lagarto Clay

The Lagarto Clay of Miocene age overlies the Oakville Sandstone and underlies the Goliad Sand. Like the Oakville Sandstone, the Lagarto Clay is fully overlapped by the Goliad Sand from Duval County to the Rio Grande. The outcrop of the Lagarto Clay nearest to the report area is in extreme northeastern Duval County and northwestern Jim Wells County where stream erosion has exposed a reentrant of Lagarto Clay far into the western margin of the Goliad outcrop (see Figure 4).

The Lagarto Clay is chiefly stiff, compact, gray, calcareous clay and thin lenticular beds of gray sand. Electrical logs indicate that the Lagarto generally consists of 75 to 85 percent clay or predominantly clayey sediment. Accumulative thickness of sand beds is commonly 15-25 percent of the total thickness. Rarely is a sand bed more than 30 feet thick.

In southern Jim Wells County, the Lagarto is about 1,000 feet thick and is from about 700 to 1,000 feet below the land surface. In much of Kenedy and Kleberg Counties, where the formation contains mostly moderately to very saline water, the thickness exceeds 1,200 feet. Depth to the top of the Lagarto increases eastward.

The Lagarto Clay is not known to be tapped by wells in the report area. In southwestern Kenedy and southern Jim Wells Counties some sand beds in the Lagarto are capable of yielding small quantities of slightly saline water.

Goliad Sand

The Goliad Sand of Pliocene age, which occurs only in the subsurface in the report area, crops out mainly to the west of the report area in a vast region that includes parts of northern Jim Wells, Duval, Webb, Zapata, Brooks, Jim Hogg, Starr, and Hidalgo Counties. Maximum width of the outcrop is west of Falfurrias where the Goliad Sand extends for nearly 50 miles at the surface and completely overlaps the underlying Lagarto Clay and Oakville Sandstone and nearly overlaps the Catahoula Tuff (Figure 4).

The Goliad consists of fine to coarse, mostly gray calcareous sand interbedded with sandstone and varicolored calcareous clay. Sayre (1937, p. 51-52) described a 17-foot section of outcrop in northeastern Duval County as light gray to buff or grayish brown sand, sandstone, and gravel with some buff to green clay. In this section the sand and sandstone are fine to coarse-grained, crossbedded, and contain numerous caliche fragments. Nearly everywhere on the outcrop, caliche is present either at the surface or under a comparatively thin mantle of soil. Electrical logs in the report area show that the Goliad consists of 40 to 60 percent sand or sandstone, the remainder being mainly finer sediments.

In the subsurface, the Goliad Sand reaches a maximum thickness of about 1,100 feet and dips eastward at rates ranging from 20 to about 40 feet per mile (Figures 19, 20, and 21). In places along southwestern Jim Wells County, the Goliad is probably less than 100 feet below land surface, but because of the formation's eastward dip, its top lies at a depth of around 1,400 feet in the vicinity of Padre Island (Figure 5). In the Kingsville area, the Goliad is about 500 feet below land surface.

The Goliad Sand is the principal aquifer in the repot-t area. It supplies small to large quantities of fresh to slightly saline water to public supply, industrial, irrigation, rural-domestic, and stock wells. The most concentrated development of the Goliad is at Kingsville where the city pumps water for public supply from 14 wells. One of these wells, RR-83-26-721, was test pumped at 980 gpm when drilled in 1967. All of the city wells are from 700 to 900 feet deep and most of them yield water having 1,000 to 1,200 mg/l dissolved solids. West of Riviera, irrigation well RR-83-41-803 pumps a measured 616 gpm of water containing 772 mg/l dissolved solids from a depth of 512 to 638 feet. In southern Jim Wells and western Kleberg Counties, the Goliad Sand yields moderate to large quantities of fresh water to industrial and public-supply wells.

Fresh water can be obtained from the Goliad anywhere in southern Jim Wells County and generally in the western half of Kenedy and Kleberg Counties. Because mineralization increases eastward, most of the water in the Goliad in the eastern half of Kenedy and Kleberg Counties is slightly, moderately, or very saline.

In far eastern Kleberg County and in most areas of relatively low elevations in Kenedy County, artesian pressure is still sufficiently high to cause many of the Goliad wells to flow. For example, in the Armstrong area in Kenedy County, well RD-88-03-802 flows 30 gpm of water that is probably slightly saline from a depth of 1,120 feet; and in Kleberg County on Padre Island, well RR-83-46-201 originally drilled as an oil test but plugged back, flows a measured 10 gpm of moderately saline water from a depth of 1,530 to 1,560 feet. At least 56 wells tapping the Goliad Sand in Kenedy and Kleberg Counties were still flowing in 1968 and 1969; almost all of these wells are ranch wells used for stock purposes, and most are in Kenedy County.

Beaumont Clay and Lissie Formation, Undifferentiated

The Beaumont Clay and Lissie Formation of Pleistocene age overlie the Goliad Sand and are discussed as a unit.

The Beaumont Clay and Lissie Formation consist mostly of very calcareous, slightly carbonaceous, blue and yellow clay, and a few lenticular beds of sand. Many of the sand beds, especially those near the surface, are fine to very fine grained. Calcareous nodules and disseminated caliche are common in the shallow part of the section.

The Beaumont Clay and Lissie Formation in the subsurface dip eastward at about 25 feet per mile. The thickness of the unit ranges from less than 100 feet in parts of southwestern Jim Wells County where the base of the unit is nearest land surface to approximately 1,400 feet in far eastern Kleberg and Kenedy Counties.

The Beaumont Clay and Lissie Formation yield small quantities of slightly to moderately saline water to a few shallow wells used mostly for stock needs in eastern Kleberg and Kenedy Counties. On Padre Island, well RR-83-38-301, tapping the Beaumont and Lissie, yielded water containing 6,950 mg/l dissolved solids from a depth of 336 to 347 feet; this water is used for industrial purposes. Chemical-analyses of water from test wells RR-83-42-402, RR-83-42-403, and RR-83-42-404, drilled for observation purposes 1¼ miles west of Riviera, show that in this area the shallow sands of the Beaumont and Lissie usually contain very saline water.

In eastern Kleberg County just west of Laguna Madre, a small shallow supply of slightly saline water in the Beaumont and Lissie unit occurs directly below the outcrop of the Pleistocene barrier island and beach deposits; well RR-83-30-702, which taps the unit, yielded water having 2,460 mg/l dissolved solids from a depth of 146 feet. The occurrence of this supply is due to the ability of the sandy overlying barrier island and beach deposits to readily absorb and store rainfall. In the southeastern corner of Kenedy County, just west of Laguna Madre, electrical logs indicate that fresh to slightly saline water extends from near land surface to a depth of as much as 350 feet. No wells are known to tap this supply of water, which may extend considerably northward. Because of the highly mineralized water associated with the Beaumont and Lissie in most places in the report area, the casings of many wells are cemented through these formations.

Barrier Island and Beach Deposits

The barrier island and beach deposits of Pleistocene age crop out in an area from 4 to 8 miles wide bordering the landward side of Laguna Madre in Kleberg County (Figure 4). These deposits, which are analogous in origin to the present-day barrier island deposits forming Padre Island, are part of a chain of Pleistocene barrier island and beach deposits traceable from Baffin Bay northeastward into Louisiana. In Kleberg County, the deposits form a slightly elevated hummocky area of swales and elongated sand dunes that are in most places subdued by vegetation. The exact age relationship of these deposits to the Beaumont Clay is not clear although both were formed at about the same time during the late Pleistocene. Price (1933, p. 925), who first recognized the genesis of the barrier deposits, states that they seem to overlie the Beaumont Clay.

The presence of the Pleistocene barrier island and beach deposits in Kenedy County is not certain because of the extensive cover of the south Texas eolian plain deposits. However, the occurrence of shallow, fresh to slightly saline water in the Beaumont-Lissie unit in southeastern Kenedy County indicates that the unit possibly is overlain by very permeable deposits of sand such as the barrier island and beach deposits.

The barrier island and beach deposits consist mostly of light gray, massive, crossbedded, fine sand about 60 feet thick. Some shell fragments are associated with the deposit. The assigned thickness of 60 feet is based on numerous borings by Johnson (1940) at the "Live Oak" barrier island and beach deposits in Aransas County, 30 miles northeast of Kleberg County.

The barrier island and beach deposits yield small quantities of fresh to probably moderately saline water to a few stock wells in the outcrop in eastern Kleberg County. Well RR-83-38-101, near the western shore of Laguna Madre, yielded fresh water containing 978 mg/l dissolved solids from a depth of about 40 feet. Although these deposits have a limited distribution, their occurrences are important locally in an area where the principal aquifer, the Goliad Sand, contains only highly mineralized water.

South Texas Eolian Plain Deposits

In an area of about 2,800 square miles in Kenedy, Brooks, Jim Hogg, Willacy, and Hidalgo Counties, the bedrock surface is almost completely covered by windblown sediments referred to in this report as the south Texas eolian plain deposit. As shown in Figure 4, the deposits lie mostly south of Baffin Bay, Los Olmos Creek, and Falfurrias, and south and southeast of Hebbronville; the southern boundary is a few miles north of Raymondville in Willacy County. Part of the surface of this area is nearly flat, but a large part is characterized by sand dunes rising to heights of 50 feet or more above the surrounding plain. The dunes, some of which are migrating and some stabilized by vegetation, are elongated parallel to the direction of the prevailing southeasterly winds.

In Kenedy County the deposits lie mainly on the erosional surface of the Beaumont Clay, although the exact age of the eolian deposits is questionable. Fisk (1959, p. 120) assigns the age as Holocene, and Price (1958, p. 49-50) assigns the age as Holocene to possibly Pleistocene.

The south Texas eolian plain deposits consist of tan to white, unfossiliferous, massive, fine to very fine sand, greenish-gray sandy clay, highly calcareous clay, caliche marl, and thin-bedded clayey sand. Maximum thickness of the deposits is not known but is in excess of 60 feet in some places.

The eolian deposits yield small quantities of slightly saline water to a few stock wells in Kenedy County. Well RD-88-10-303 in central Kenedy County yielded water having a chloride content of 1,410 mg/l from a depth of 40 feet. Shallow test wells from 19 to 24 feet deep which were drilled for observation purposes near Armstrong, reveal that in this area the eolian deposits contain brine with chloride concentrations as high as 28,000 mg/l. Fresh water is not known to be present anywhere in the deposits.

Barrier Island Deposits

The barrier island deposits of Holocene age form Padre Island and include the associated lagoonal sediments. These deposits directly overlie the Pleistocene Beaumont Clay in some places, but in other places, beneath Padre Island and Laguna Madre, overlie the south Texas eolian-plain deposits (Fisk, 1959, p. 120-122).

The barrier island deposits consist of tan to gray, fossiliferous, medium sand containing wood fragments, interbedded tan sand, and gray clay that is locally gypseous, and gray fossiliferous sandy clay. Thickness of the deposits varies considerably, but the maximum thickness probably does not exceed 50 feet.

Because of the sandy surface of Padre Island, rainfall rapidly infiltrates the aquifer. Thin lenses of fresh water accumulate over saline water in the aquifer, particularly in the sand dunes. Consequently, any fresh-water well that taps the aquifer is shallow, penetrates only a few feet of fresh-water sand, and is capable of yielding only a few gallons of fresh water per minute.

The only wells known to tap the barrier island deposits on Padre Island are a few shallow sand-point wells driven into the dunes.

Alluvium

The alluvium of Holocene age consists mostly of very fine to fine sand, silt, and calcareous clay of fluviatile and deltaic origin. Although not everywhere shown on Figure 4, the alluvium usually occurs along the channels of some of the larger streams in Kleberg and southern Jim Wells Counties. A small reentrant of alluvium occurs in southern Kenedy County (Darton and others, 1937). The age of part of the alluvial deposits may be Pleistocene, but for the purpose of this report the deposits are considered to be Holocene.

The alluvium is relatively unimportant as an aquifer because in most places where it is exposed, it is thin and not extensive. It is not known to be tapped by wells, but probably is capable of yielding small quantities of slightly saline water.

GROUND-WATER HYDROLOGY

Source and Occurrence of Ground Water

The source of ground water in Kleberg, Kenedy, and southern Jim Wells Counties is precipitation on the outcrops of the aquifers in these counties and in adjacent counties to the west and northwest. A large part of the precipitation either runs off, is dissipated by evapotranspiration, or is stored in the soil until evaporated or transpired. A small part of the water migrates downward by gravity to the water table to become a part of the ground water in storage.

Generally, water-table conditions (unconfined) prevail at shallow depths in the outcrop areas of the aquifers, and artesian conditions (confined) prevail downdip from the outcrop where the aquifers are overlain by less permeable sediments. Water under artesian pressure will rise in wells above the top of the aquifer. Where the elevation of the land surface at a well is considerably below the general level of the area of outcrop, the pressure may be sufficient to cause the water to rise above the land surface, and the well will then flow. Most of the flowing wells in the area covered by this report are in Kenedy County. The Goliad Sand is the principal artesian aquifer, whereas water contained in eolain and barrier island deposits is under water-table conditions.

Movement of Ground Water

The ground water underlying Kleberg, Kenedy, and southern Jim Wells Counties is moving constantly. Normally, the direction of movement is from the areas of recharge in the west or northwest to the areas of discharge in the east or southeast; this sequence, however, has been interrupted in some vicinities because of large-scale pumping. In the vicinity of Kingsville, and at a few other places where pumping has caused cones of depression in the water surface, the water moves toward the centers of the cones from all directions. Pumping also has increased the hydraulic gradient and therefore

the rate of movement of the water, which normally ranges from tens to hundreds of feet per year in the report area. When not affected by pumping, the movement of ground water is directly responsive to the amount of water reaching the water table. For example, after periods of above-normal precipitation, the water table or piezometric surface rises in areas of recharge and the hydraulic gradient steepens; consequently, the rate of movement increases. Figure 8, which shows the approximate altitude of water levels in wells tapping the Goliad Sand in 1968-69, shows in a general way the direction of movement of the water. The water moves at right angles to the contours and in the direction of decreasing altitude.

Aquifer Tests

Aquifer tests in six wells tapping the Goliad Sand and in one well tapping the Oakville Sandstone were made to determine the capacity of the sands to transmit and store water. The results of the tests are shown in Table 3. Five of the wells were in Kleberg County and two were in southern Jim Wells County. No tests were made in Kenedy County because suitable wells were not available; however, a test was made in well RR-83-41-803 near the north boundary line of the county. All the test data were analyzed by the Theis nonequilibrium method (Theis, 1935) and the Theis recovery method (Wenzel, 1942, p. 95).

Only about five wells in the report area are known to produce from the Oakville Sandstone. The Oakville, at a well tested in southern Jim Wells County (PW-84-40-703), had a coefficient of transmissibility of 6,000 gpd (gallons per day) per foot. In the Alice area, Mason (1963, p. 22) reports a drawdown test on a well in the Oakville; this test indicated a coefficient of transmissibility of 7,100 gpd per foot. These tests indicate that the characteristics of the Oakville Sandstone probably are fairly constant over a considerable area.

In 1947, aquifer tests were made in four City of Kingsville wells tapping the Goliad Sand. The coefficients of transmissibility ranged frorn 24,100 to 30,500 gpd per foot and the storage coefficient determined from each test was 0.0002. The aquifer thickness averages about 150 feet in these wells; the specific capacities ranged from 9.37 to 14.2 gpm (gallons per minute) per foot (Myers, 1969, p. 326).

In 1968 an aquifer test was made in well RR-83-41-803, an irrigation well producing from the Goliad Sand. The coefficient of transmissibility determined from the recovery of the well after pumping for 3 hours was 28,600 gpd per foot. The coefficient of transmissibility determined during the drawdown was 34,400. The specific capacity of the well was 17.8 gpm per foot.

The specific capacity, an expression of the yield of a well in gallons per minute per foot of drawdown, is useful in estimating the yield of a well at various drawdowns. The specific capacities of wells penetrating the same aquifer may vary widely, depending upon the thickness of sand screened, the degree of well development, and the rate and duration of pumping.

The coefficients of transmissibility and storage determined from aquifer tests may be used to predict the drawdown of water levels caused by pumping a well or by a general increase of pumping in an area. Figure 6 shows the theoretical relation between drawdown of water levels, time, and distance from a well pumping under artesian conditions. The calculations of drawdown are based on a withdrawal of 500 gpm continuously for various periods of time from an infinite aquifer having a coefficient of storage of 0.0002 and a coefficient of transmissibility of 30,000 gpd per foot. The graphs show that the drawdown of water level after 1 year of pumping would be about 18.5 feet at a distance of 1,000 feet from the pumped well and about 10 feet at a distance of 10,000 feet.

Most of the drawdown in the well will take place in the first few days of pumping. The water level will continue to decline indefinitely but at a decreasing rate. Because drawdown is directly proportional to the pumping rate, the drawdowns for rates other than 500 gpm can be determined by multiplying the values in Figure 6 by the proper multiple or fraction of 500. A different set of curves would be required for different aquifer coefficients.

GROUND-WATER DEVELOPMENT

The well inventory in Kleberg, Kenedy, and southern Jim Wells Counties included all the municipal, industrial, and irrigation wells and a large number of domestic and livestock wells. The records of 754 wells are given in Table 7. Nearly all the ground water used in these counties is withdrawn from wells in the Goliad Sand. It supplies all of the water for public supply and irrigation, about 98 percent of the water for industrial use, and about 95 percent of the water for rural domestic and livestock use. Table 4 gives the quantities of ground water pumped for different uses from 1955 to 1968. During 1968, about 18,000 acre-feet of ground water was withdrawn for all purposes in the report area. The principal use of ground water in Kleberg County has generally been for public supply; the principal use in Kenedy County is for rural-domestic and stock use; and in southern Jim Wells County the principal use is for industrial supply.

Public Supply

The city of Kingsville in Kleberg County is the principal user of ground water for public supply in the

Table 3.—Summary of Aquifer Tests in Kleberg and Southern Jim Wells Counties

WELL	SCREENED INTERVAL (FT)	AVERAGE DISCHARGE DURING TEST (GPM)	COEFFICIENT OF TRANSMISSIBILITY (GPD/FT)	SPECIFIC CAPACITY (GPM/FT)	COEFFICIENT OF STORAGE	REMARKS
			Kleberg County			
RR-83-26-702	360- 606	740	29,500	14.2	0.0002	Recovery of observation well
703	–	740	30,500	13.5	.0002	Do.
704	580- 644 652- 719 730- 740	398	24,100	13.5	.0002	Do.
705	–	614	27,000	9.37	.0002	Drawdown of observation well.
41-803	512- 638	623	34,400	17.8	–	Drawdown at pumped well
803	do.	–	28,600	–	–	Recovery after pumping 623 gpm for 3 hours
			Southern Jim Wells County			
PW-84-40-703	2,331-2,425	145	6,000	1.0	.0007	Drawdown in observation well
48-103	427- 568	266	10,200	5.0	–	Recovery of pumped well

report area. Figure 7 shows the average daily pumpage from the city wells from 1940 to 1968. The water is pumped from 14 wells in the Goliad Sand ranging in depth from about 725 to 880 feet. Figure 7 shows a fairly steady rate of increase in the average daily pumpage, from about 0.9 mgd in 1940 to about 3.0 mgd in 1951. The pumpage fluctuated between 2 and 3 mgd from 1951 to 1962. During the period 1962-67, the pumpage was about 4 mgd. Above normal rainfall caused a decrease in pumpage to about 3 mgd in 1968.

Texas A&I University, the second largest user of ground water for public supply, used about 0.38 mgd in 1968; the U.S. Navy auxiliary air station used about 0.37 mgd, and the Ricardo and Riviera communities used about 0.01 mgd and 0.03 mgd, respectively. Water wells at oilfield camps generally are used for industrial and public-supply purposes, but the quantity of water used by residents in these camps is insignificant.

In Kenedy County, the use of ground water for public supply is insignificant. Sarita, the county seat and the only community in the county other than ranch-headquarters communities, had an estimated population of 196 in 1968. In 1968, the total use of ground water for public supply was estimated to be about 0.02 mgd. Two wells supply water for Sarita, but one is on a standby basis for emergency use only.

In southern Jim Wells County, Premont is the only city using ground water for public supply. In 1943, the estimated pumpage was 0.05 mgd (Broadhurst, Sundstrom, and Rowley, 1950, p. 75). Pumpage by the city almost doubled from about 0.34 mgd in 1955 to about 0.62 mgd in 1968; this increase probably was due to an increase in population. The city uses four wells for supplying its needs. Water wells at oilfield camps supply water for public supply, but the quantity used is relatively small.

Irrigation

In Kleberg County the use of ground water for irrigation reached its peak in 1912 when it was estimated that about 3,500 acres were irrigated from wells (Livingston and Bridges, 1936, p. 199). In about 1913, the use of ground water for irrigation was discontinued because of the low price of truck crops and other irrigated crops. During more recent years, the use of ground water for irrigation in the county has been insignificant. During 1968, less than six wells in the county were used exclusively for irrigation. Inventories (Gillett and Janca, 1965) indicated that 718 acre-feet (0.64 mgd) of water was used in 1958 and 853 acre-feet (0.76 mgd) in 1964. During 1968, the quantity of ground water used for irrigation was estimated to be about the same as for 1964. Most of the water is used to irrigate grasslands and feed crops.

Kenedy County is comprised of several large ranches; there are no irrigation wells in the county. The

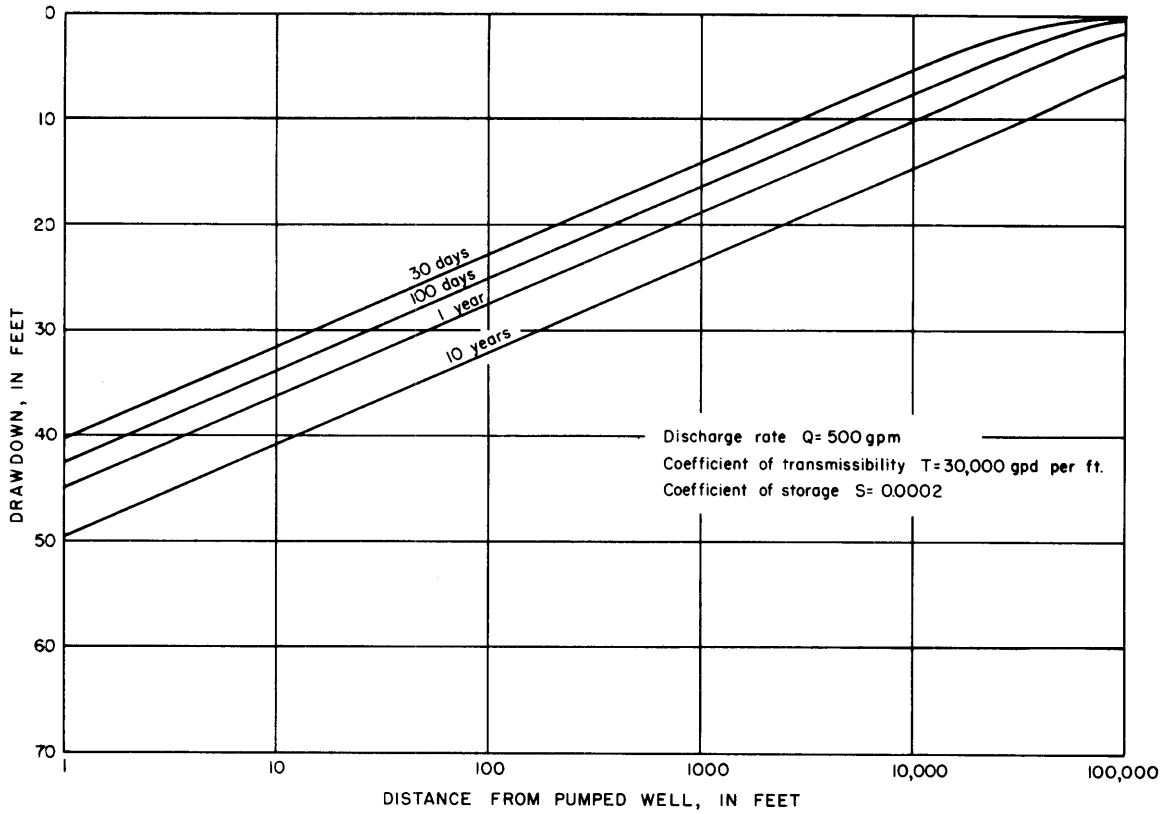


Figure 6.—Relation of Drawdown to Time and Distance as a Result of Pumping Under Artesian Conditions

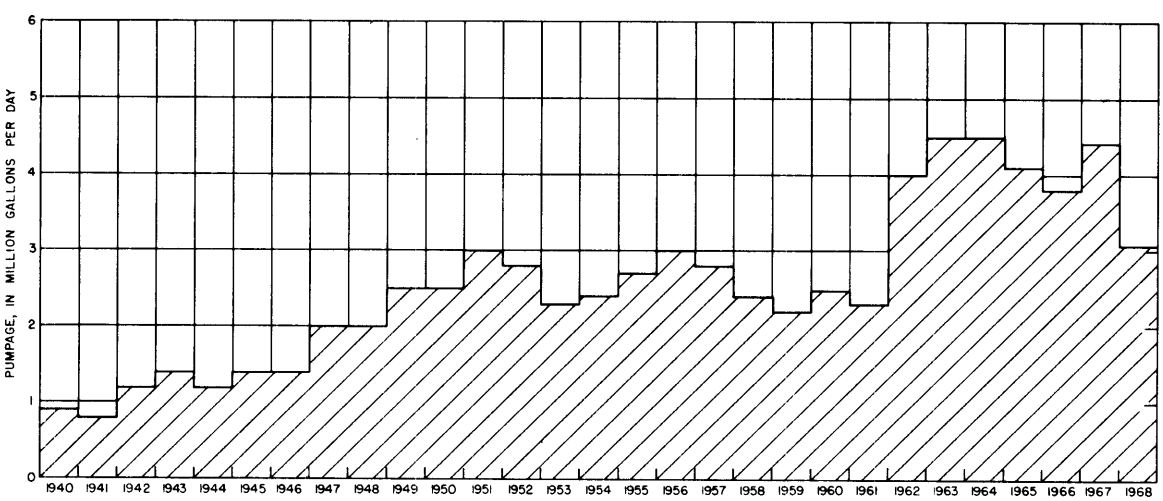


Figure 7.—Average Daily Pumpage of Ground Water for Public Supply by the City of Kingsville, 1940-68

only use of ground water for irrigation is on ranch headquarters premises where insignificant quantities of water are used for watering lawns and shrubs.

In southern Jim Wells County ground water is used to irrigate citrus orchards, cotton, grain sorghums, pastures, and truck crops. In 1933-34, about 700 to 800 acre-feet (0.62 to 0.71 mgd) of ground water was used (Turner, Lynch, and Cumley, 1940) primarily for citrus fruits and truck crops. A partial inventory in 1940 indicated that the total irrigated acreage had declined to about 60 percent of the 1933-34 total. In 1943, the use

of ground water for irrigation in the southern part of the county was estimated to be about 1,100 acre-feet (0.98 mgd), (Cromack, 1944, p. 2)

Since about 1950, the number of irrigated citrus groves has continued to decline and in 1958 and 1964 only about 40 acres of citrus fruit was irrigated with ground water. An estimated 200 acre-feet (0.18 mgd) of ground water was used for irrigation in 1958 and about 800 acre-feet (0.71 mgd) in 1964. In 1968, a year of above-normal rainfall, the use of ground water for irrigation was negligible. Only a few of the 30 irrigation wells in the area were pumped during the entire year, and then only for short periods to maintain water in reservoirs.

Industrial Use

The pumpage of water for industrial use in Kleberg County in 1968 (Table 4) was about 3,514 acre-feet (3.13 mgd). This is about 32 percent of the total withdrawals for all purposes in that year. Since 1961, there has been a slight increase in the use of ground water by industries. Most of the ground water is used by the petroleum industry for cooling purposes.

In Kenedy County the use of ground water for industrial purposes is small. Records available indicate that the average annual use from 1963 to 1968 was about 12.6 acre-feet per year (0.01 mgd). Most of the water is used for sanitation.

In southern Jim Wells County, the use of ground water for industrial purposes in 1968 was about 1,921 acre-feet (1.71 mgd). This is about 45 percent of the total withdrawals for all purposes for that year. From 1955 to 1968, the annual use has remained fairly steady. Most of the water pumped is used by the petroleum industry, principally for cooling purposes.

Rural-Domestic and Livestock Use

The estimated withdrawal of ground water for rural-domestic and livestock needs in Kleberg County during 1968 was about 2,500 acre-feet (2.2 mgd). This is about 23 percent of the total ground water used for all purposes. The wells that supply most of the water for domestic and livestock needs in the county are equipped with windmills, small electric motors, or small gasoline engines designed to pump no more than a few gallons a minute. In some areas, small lakes or ponds provide water for livestock, and there are a few controlled and uncontrolled flowing wells that discharge about 1 to 5 gpm each that provide water for livestock.

In Kenedy County, ground water is used principally for rural-domestic and livestock purposes. In 1933, the total discharge of ground water from flowing wells and pumped wells amounted to about 6,500 to 7,000 acre-feet (5.8 to 6.2 mgd) (Turner and Cumley, 1940). About one-half of the total quantity discharged was estimated to have been wasted from the many uncontrolled flowing wells. By 1968, the artesian pressure had declined greatly, and many of the flowing wells had ceased to flow and were equipped with windmills. In 1968, the average yield from numerous flowing wells was computed to be about 10 gpm. As a result of the decline in artesian pressure and the control of flowing wells, the quantity of ground water wasted was largely reduced. In 1968, the use of ground water for rural-domestic and livestock needs was estimated to be about 3,065 acre-feet (2.7 mgd), which represents nearly all the ground water used in that year.

In southern Jim Wells County, the quantity of ground water used for rural-domestic and livestock needs during 1968 was estimated to be about 1,700 acre-feet (1.5 mgd). Most of the water used was pumped from wells equipped with small pumps. Only one flowing well (uncontrolled) was inventoried in Jim Wells County during the investigation.

The estimates of rural-domestic and livestock use as given in Table 4 are based chiefly on the census of livestock in the counties as of 1955, 1959, 1964, and 1968. The estimates may be considerably in error because of lack of data for livestock population during the intervening periods and because of variations in climate.

CHANGES IN WATER LEVELS

Water levels in a relatively small number of observation wells in southern Jim Wells and Kleberg Counties were measured intermittently from 1932 to 1943. Periodic water-level measurements have been made in selected observation wells in these counties since 1943 as a part of the statewide observation well program conducted by the U.S. Geological Survey and the Texas Water Development Board (Table 8).

Figure 8 shows the approximate altitude of the water levels in wells in the Goliad Sand in Kleberg, Kenedy, and southern Jim Wells Counties during 1968-69. This potentiometric surface is shown also in profile in Figures 19, 20, and 21. Figure 9 shows the approximate decline in water levels in Kleberg and southern Jim Wells Counties since 1932-33.

The largest withdrawals of ground water and consequently the greatest declines in water levels have been in the vicinity of Kingsville. Figure 9 shows the effect of the pumpage at Kingsville where the static water levels had declined a maximum of about 200 feet on the basis of measurements made during the period 1932-69. Also shown is a smaller cone of depression caused by industrial pumping at the King Ranch Humble Oil and Refining Company Gas plant, located near the Jim Wells-Kleberg County boundary line about 12 miles west-southwest of Kingsville.

Table 4.—Use of Ground Water, 1955-68

YEAR	PUBLIC SUPPLY		IRRIGATION		INDUSTRIAL		RURAL DOMESTIC AND LIVESTOCK		TOTAL *	
	AC-FT PER YR	MGD	AC-FT PER YR	MGD	AC-FT PER YR	MGD	AC-FT PER YR	MGD	AC-FT PER YR	MGD
					Kleberg County					
1955	4,722	4.21	700	0.62	–	–	2,300	2.1	7,700	6.9
1956	4,962	4.43	700	.62	–	–	2,300	2.1	8,000	7.1
1957	4,542	4.05	700	.62	–	–	2,300	2.1	7,500	6.7
1958	3,968	3.54	718	.64	–	–	3,000	2.7	7,700	6.9
1959	3,704	3.30	750	.67	–	–	3,500	3.1	8,000	7.1
1960	4,084	3.64	750	.67	–	–	3,500	3.1	8,300	7.4
1961	3,689	3.29	750	.67	2,025	1.81	3,500	3.1	10,000	8.9
1962	6,168	5.50	800	.71	2,032	1.81	3,600	3.2	13,000	12
1963	6,712	5.99	800	.71	2,064	1.84	3,600	3.2	13,000	12
1964	6,504	5.80	853	.76	1,922	1.71	3,700	3.3	13,000	12
1965	6,034	5.38	850	.76	2,297	2.05	3,700	3.3	13,000	12
1966	5,421	4.84	850	.76	2,362	2.11	3,700	3.3	12,000	11
1967	6,075	5.42	850	.76	2,876	2.57	3,600	3.2	13,000	12
1968	4,325	3.86	870	.78	3,514	3.13	2,500	2.2	11,000	10
					Kenedy County					
1955	12	0.01	0	–	–	–	3,065	2.7	3,100	2.8
1956	17	.02	0	–	–	–	3,065	2.7	3,100	2.8
1957	17	.02	0	–	–	–	3,065	2.7	3,100	2.8
1958	34	.03	0	0	–	–	3,065	2.7	3,100	2.8
1959	27	.02	0	–	–	–	3,065	2.7	3,100	2.8
1960	25	.02	0	–	–	–	3,065	2.7	3,100	2.8
1961	25	.02	0	–	–	–	3,065	2.7	3,100	2.8
1962	25	.02	0	–	–	–	3,065	2.7	3,100	2.8
1963	25	.02	0	–	11	0.01	3,065	2.7	3,100	2.8
1964	25	.02	0	0	11	.01	3,065	2.7	3,100	2.8
1965	25	.02	0	–	14	.01	3,065	2.7	3,100	2.8
1966	25	.02	0	–	14	.01	3,065	2.7	3,100	2.8
1967	25	.02	0	–	14	.01	3,065	2.7	3,100	2.8
1968	25	.02	0	0	12	.01	3,065	2.7	3,100	2.8
					Southern Jim Wells County					
1955	378	0.34	200	0.18	1,845	1.65	1,000	0.9	3,400	3.0
1956	506	.45	200	.18	1,845	1.65	1,000	.9	3,600	3.2
1957	535	.48	200	.18	1,845	1.65	1,000	.9	3,600	3.2
1958	454	.41	200	.18	1,912	1.71	1,000	.9	3,600	3.2
1959	542	.48	300	.27	1,831	1.63	1,300	1.2	4,000	3.6
1960	612	.55	400	.36	1,933	1.72	1,300	1.2	4,200	3.7
1961	749	.67	500	.45	1,995	1.78	1,300	1.2	4,500	4.0
1962	764	.68	600	.54	2,028	1.81	1,300	1.2	4,700	4.2
1963	853	.76	700	.62	2,049	1.83	1,300	1.2	4,900	4.4
1964	949	.85	800	.71	2,009	1.79	1,100	1.0	4,900	4.4
1965	926	.83	800	.71	2,127	1.90	1,200	1.1	5,100	4.5
1966	857	.76	800	.71	2,090	1.86	1,300	1.2	5,000	4.5
1967	800	.71	800	.71	1,925	1.72	1,400	1.2	4,900	4.4
1968	694	.62	0	0	1,921	1.71	1,700	1.5	4,300	3.8

* Figures are approximate because some of the pumpage is estimated. Public supply and industrial pumpage figures are shown to the nearest 0.01 mgd, and to the nearest acre-foot. Totals are rounded to two significant figures.

In an area in southern Jim Wells County where the Mobil Oil Corp. La Gloria plant uses water for industrial purposes, the water levels in wells in the Goliad Sand have declined at least 123 feet. Part of the decline may be related to pumpage by the city of Falfurrias in Brooks County. Figure 9 shows a fairly well defined trough-like pattern in central southern Jim Wells County that extends northward through Premont. This area of water-level decline shows the effect of industrial and municipal pumpage in the vicinity of Premont.

Figure 10 shows the fluctuations in water levels in six wells in the Goliad Sand during the 1932-69 period. Well PW-84-47-301 is in southern Jim Wells County; the rest are in various parts of Kleberg County. All are observation wells that were measured intermittently from 1932 or 1933 to 1943, and periodically after 1943. The hydrographs show that water levels declined slowly during the 1930's and more rapidly thereafter.

Historical records of water levels in wells in the Goliad Sand in Kenedy County are not available. Water levels in many nonflowing wells and the artesian pressure in a few flowing wells were measured. Some of the wells will probably be used as observation wells in the future.

Many wells in Kenedy County that formerly flowed had ceased to flow prior to 1968; most of them are now equipped with windmills. Water levels in the wells ranged from 0.0 to about 50 feet below the land surface in 1968-69. It is evident from the decreased yields of most flowing wells and the depths to water in numerous wells that formerly flowed that the water levels of wells that tap the Goliad Sand have declined substantially.

Water-level records of wells that tap the Oakville Sandstone in the report area are not available; however, Mason (1963, p. 33) states that the water level in an Oakville well used by the Magnolia Petroleum Co. (Mobil Oil Corp.) in southern Jim Wells County declined about 405 feet between 1947 and 1960.

Records for a few shallow wells that tap the south Texas eolian plain deposits indicate that the changes in water levels in these wells were insignificant from 1933 to 1969. The changes ranged from a decline of 0.9 foot in well RD-88-19-602 to a rise of 1.7 feet in well RD-88-03-501.

CONSTRUCTION OF WELLS

The methods of well construction used in Kleberg, Kenedy, and southern Jim Wells Counties have been changed significantly since about 1930. According to Livingston and Bridges (1936, p. 216), some of the wells in existence in Kleberg County during 1932-33 were "defective wells" largely as a result of improper construction. Some of these wells were completed with iron casing placed in direct contact with shallow saline water which is highly corrosive. The shallow saline water corroded the casing, entered the wells, and contaminated the usable water. Furthermore, many of the well casings had slots that were too large; thus permitting sand to enter the wells. This resulted in unnecessary wear on the pumps and also reduced the well yields. Many such wells are now abandoned, unused, or have been replaced by new wells.

New wells are being drilled or "worked over" at a fairly steady rate in Kleberg, Kenedy, and southern Jim Wells Counties; and proper well construction is becoming increasingly important because the life of a well depends almost entirely upon the manner in which it is constructed. Generally, the intended use of a well determines to a large extent how it is to be constructed.

In Kleberg, Kenedy, and southern Jim Wells Counties, some of the large-capacity wells used for municipal and industrial supplies are equipped with a single string of large-diameter (12- to 24-inch) surface casing cemented through the Beaumont Clay and Lissie Formation which contain saline water. The well bore is underreamed throughout the Goliad Sand section, from the base of the surface casing to the total depth, and a perforated liner 6 to 12 inches in diameter is installed and gravel-packed. Gravel-packing increases the effective diameter of the well, aids in preventing sand from entering the well, and protects the casing from caving of the surrounding formations.

The irrigation wells, some of which are underreamed and gravel-packed, are generally designed to pump large quantities of water. In many wells, large-diameter casing (12-24 inches) is set in the upper parts of the wells, and 6- or 8-inch casing is set in the lower parts. In most irrigation wells, slotted casing is installed opposite the water-bearing sands, but a few wells are equipped with screens. Little effort usually is made to correlate the width of the slots with the diameter of the sand particles. If the slots are too large, sand enters freely, resulting in wear of the pumps and casing. If the slots are too small, or too few, excessive losses in head may result, and the specific capacities of the wells will be excessively low.

Most of the modern rural-domestic and livestock wells are completed with about 20 to 40 feet of small-diameter (4- to 6-inch) torch-slotted or mill-slotted casing with some having stainless steel screen near the bottom. Some are straight-walled wells cased from top to bottom; others are cased and cemented through salt-water-bearing sands to the top of the Goliad Sand. Relatively few are underreamed and gravel-packed. The casings used in domestic and livestock wells are made of plastic, wrought iron, cast iron, or galvanized iron. To further resist corrosion, a heavier metal casing is sometimes used.

Some oil or gas test wells that have been properly plugged are later converted into water wells for various

uses. The well construction is based on an examination of the well logs. The most productive water-bearing sands are selected and the well casing is "shot" or gun-perforated opposite these sands, allowing the water to enter the well.

QUALITY OF GROUND WATER

The chemical constituents in the ground water in Kleberg, Kenedy, and southern Jim Wells Counties are derived principally from the materials in the soil and rocks through which the water has moved. The differences in the chemical quality of the water reflect, in a general way, the types of soil and rocks that have been in contact with the water and the length of time in contact. Usually, as the water moves deeper, its chemical content increases. The source and significance of the dissolved-mineral constituents of the water are summarized in Table 5, which is modified from Doll and others (1963, p. 39-43). The chemical analyses of water from 228 selected wells in Kleberg, Kenedy, and southern Jim Wells Counties are given in Table 10. The wells from which samples were taken are identified in Figure 18 by bars over the well numbers. Figure 11 shows the variation in chemical content of the water throughout the report area.

Suitability of Water for Use

The suitability of a water supply depends upon the chemical quality of the water and the limitations associated with the contemplated use of the water. Various requirements have been established for most categories of water quality—including bacterial content; physical characteristics such as turbidity, color, odor, and temperature; chemical substances; and radioactivity. Usually, the problems of bacteria and physical characteristics can be remedied economically, but the removal or neutralization of undesirable chemical constituents may be difficult and expensive.

The dissolved solids or "total salts" content is a major limitation on the use of water for many purposes. The classification of water based on the dissolved-solids content in mg/l as used in this report is as follows (Winslow and Kister, 1956, p. 5):

DESCRIPTION	DISSOLVED-SOLIDS CONTENT (MG/L)
Fresh	Less than 1,000
Slightly saline	1,000 to 3,000
Moderately saline	3,000 to 10,000
Very saline	10,000 to 35,000
Brine	More than 35,000

Public Supply

Water used for public supply should not contain excessive amounts of harmful chemical substances; should be free of turbidity, odor, and color to the extent that it is not objectionable to the user; and must not be excessively corrosive to the water-supply system.

The U.S. Public Health Service has established and periodically revises the standards for drinking water used on common carriers engaged in interstate commerce. The standards are designed to protect the public and are used to evaluate public water supplies. According to the standards, chemical substances should not be present in a water supply in excess of the listed concentrations whenever more suitable supplies are available or can be made available at reasonable cost. The principal chemical standards adopted by the U.S. Public Health Service (1962, p. 7-8) are as follows:

SUBSTANCE	CONCENTRATION MG/L
Chloride (Cl)	250
Fluoride (F)	.8 *
Iron (Fe)	.3
Manganese (Mn)	.05
Nitrate (NO_3)	45
Sulfate (SO_4)	250
Dissolved solids	500

* The permissible concentration of fluoride is based upon the annual average of maximum daily temperature of 84.7 °F (29 °C) measured at Kingsville over a 12-year period. The minimum desirable concentration is 0.6 mg/l.

All the ground water presently used for public supplies in the report area is obtained from wells in the Goliad Sand. Normally, most of the water from these public-supply wells meets the standards set by the U.S. Public Health Service, but some of the water has become contaminated by saline water from sands that overlie the Goliad Sand. Corrosion of casings by the saline water has caused leaks; as a result, a fairly large number of wells have been plugged and abandoned, or replaced. Generally, the older public-supply wells have given the most trouble. If these wells are not pumped for several days, saline inflow causes increases in the concentrations of chlorides and dissolved solids in the water. However, after the contaminated water is pumped from the wells, the concentrations of chloride and dissolved solids approach the ranges that were present before contamination. Thus, maintaining the chloride and dissolved-solids contents of the water within suitable ranges is one of the major water-supply problems.

The chloride content of 234 water samples from wells in the Goliad Sand in the report area ranged from

Table 5.—Source and Significance of Dissolved-Mineral Constituents and Properties of Water

CONSTITUENT OR PROPERTY	SOURCE OR CAUSE	SIGNIFICANCE
Silica (SiO_2)	Dissolved from practically all rocks and soils, commonly less than 30 mg/l. High concentrations, as much as 100 mg/l, generally occur in highly alkaline waters.	Forms hard scale in pipes and boilers. Carried over in steam of high pressure boilers to form deposits on blades of turbines. Inhibits deterioration of zeolite-type water softeners.
Iron (Fe)	Dissolved from practically all rocks and soils. May also be derived from iron pipes, pumps, and other equipment. More than 1 or 2 mg/l of iron in surface waters generally indicates acid wastes from mine drainage or other sources.	On exposure to air, iron in ground water oxidizes to reddish-brown precipitate. More than about 0.3 mg/l stains laundry and utensils reddish-brown. Objectionable for food processing, textile processing, beverages, ice manufacture, brewing, and other processes. U.S. Public Health Service (1962) drinking-water standards state that iron should not exceed 0.3 mg/l. Larger quantities cause unpleasant taste and favor growth of iron bacteria.
Calcium (Ca) and magnesium (Mg)	Dissolved from practically all soils and rocks, but especially from limestone, dolomite, and gypsum. Calcium and magnesium are found in large quantities in some brines. Magnesium is present in large quantities in sea water.	Cause most of the hardness and scale-forming properties of water; soap consuming (see hardness). Waters low in calcium and magnesium desired in electroplating, tanning, dyeing, and in textile manufacturing.
Sodium (Na) and potassium (K)	Dissolved from practically all rocks and soils. Found also in ancient brines, sea water, industrial brines, and sewage.	Large amounts, in combination with chloride, give a salty taste. Moderate quantities have little effect on the usefulness of water for most purposes. Sodium salts may cause foaming in steam boilers and a high sodium content may limit the use of water for irrigation.
Bicarbonate (HCO_3) and carbonate (CO_3)	Action of carbon dioxide in water on carbonate rocks such as limestone and dolomite.	Bicarbonate and carbonate produce alkalinity. Bicarbonates of calcium and magnesium decompose in steam boilers and hot water facilities to form scale and release corrosive carbon dioxide gas. In combination with calcium and magnesium, cause carbonate hardness.
Sulfate (SO_4)	Dissolved from rocks and soils containing gypsum, iron sulfides, and other sulfur compounds. Commonly present in mine waters and in some industrial wastes.	Sulfate in water containing calcium forms hard scale in steam boilers. In large amounts, sulfate in combination with other ions gives bitter taste to water. Some calcium sulfate is considered beneficial in the brewing process. U.S. Public Health Service (1962) drinking-water standards recommend that the sulfate content should not exceed 250 mg/l.
Chloride (Cl)	Dissolved from rocks and soils. Present in sewage and found in large amounts in ancient brines, sea water, and industrial brines.	In large amounts in combination with sodium, gives salty taste to drinking water. In large quantities, increases the corrosiveness of water. U.S. Public Health Service (1962) drinking-water standards recommend that the chloride content should not exceed 250 mg/l.
Fluoride (F)	Dissolved in small to minute quantities from most rocks and soils. Added to many waters by fluoridation of municipal supplies.	Fluoride in drinking water reduces the incidence of tooth decay when the water is consumed during the period of enamel calcification. However, it may cause mottling of the teeth, depending on the concentration of fluoride, the age of the child, amount of drinking water consumed, and susceptbility of the individual. (Maier, 1950)
Nitrate (NO_3)	Decaying organic matter, sewage, fertilizers, and nitrates in soil.	Concentration much greater than the local average may suggest pollution. U.S. Public Health Service (1962) drinking-water standards suggest a limit of 45 mg/l. Waters of high nitrate content have been reported to be the cause of methemoglobinemia (an often fatal disease in infants) and therefore should not be used in infant feeding. Nitrate has been shown to be helpful in reducing inter-crystalline cracking of boiler steel. It encourages growth of algae and other organisms which produce undesirable tastes and odors.
Dissolved solids	Chiefly mineral constituents dissolved from rocks and soils. Includes some water of crystallization.	U.S. Public Health Service (1962) drinking-water standards recommend that waters containing more than 500 mg/l dissolved solids not be used if other less mineralized supplies are available. Waters containing more than 1000 mg/l dissolved solids are unsuitable for many purposes.
Hardness as $CaCO_3$	In most waters nearly all the hardness is due to calcium and magnesium. All the metallic cations other than the alkali metals also cause hardness.	Consumes soap before a lather will form. Deposits soap curd on bathtubs. Hard water forms scale in boilers, water heaters, and pipes. Hardness equivalent to the bicarbonate and carbonate is called carbonate hardness. Any hardness in excess of this is called non-carbonate hardness. Waters of hardness as much as 60 ppm are considered soft; 61 to 120 mg/l, moderately hard; 121 to 180 mg/l, hard; more than 180 mg/l, very hard.
Specific conductance (micromhos at 25°C)	Mineral content of the water.	Indicates degree of mineralization. Specific conductance is a measure of the capacity of the water to conduct an electric current. Varies with concentration and degree of ionization of the constituents.
Hydrogen ion concentration (pH)	Acids, acid-generating salts, and free carbon dioxide lower the pH. Carbonates, bicarbonates, hydroxides, and phosphates, silicates, and borates raise the pH.	A pH of 7.0 indicates neutrality of a solution. Values higher than 7.0 denote increasing alkalinity; values lower than 7.0 indicate increasing acidity. pH is a measure of the activity of the hydrogen ions. Corrosiveness of water generally increases with decreasing pH. However, excessively alkaline waters may also attack metals.

94 to 9,100 mg/l, exceeding 250 mg/l in 149 samples. Figure 11 shows no distinct pattern of distribution of the chloride content in wells that tap the Goliad Sand; however, the lower concentrations generally are in water from the shallower wells. The higher chloride contents are in water from deeper wells in the eastern part of the report area. The unusually high chloride content of some of the water in the Goliad Sand possibly was derived from overlying saline water by the way of leaky casings. The chloride concentration in water from wells in formations or units younger than the Goliad Sand ranged from 185 mg/l to 27,500 mg/l. Water that contained the highest chloride concentration was from wells that tapped the south Texas eolian plain deposits. Samples from three wells tapping the Oakville Sandstone had chloride concentrations ranging from 370 mg/l to 560 mg/l.

Fluoride in drinking water reduces the incidence of tooth decay when the water is used by children during the period of enamel calcification. Depending upon the age of the child, the amount of drinking water consumed, and the susceptibility of the individual, excessive concentrations of fluoride may cause mottling of the teeth (Maier, 1950, p. 1120-1132). The optimum fluoride level for a given area depends upon climatic conditions because the amount of drinking water consumed is influenced by the air temperature. Based on the annual average of the maximum daily temperature at Kingsville of 94.7°F (29°C) over a 12-year period, the optimum fluoride content recommended for drinking water in the report area is 0.7 mg/l; the maximum recommended limit is 0.8 mg/l. Concentrations greater than 1.4 mg/l (twice the optimum) constitute grounds for rejection of a public-water supply by the Public Health Service. The fluoride content of 174 water samples ranged from 0.1 to 5.0 mg/l, exceeding 0.8 mg/l in 58 samples. In 32 samples (26 of which were from the Goliad Sand), the concentration exceeded 1.4 mg/l. The maximum fluoride concentration measured was 5.0 in the water from well PW-84-40-703, which produces from the Oakville Sandstone. The fluoride content of 166 samples from the Goliad Sand ranged from 0.1 mg/l to 4.6 mg/l. In 17 percent of the samples the fluoride content was below the desirable concentration of 0.6 mg/l.

Iron in excess of about 0.3 mg/l gives water an objectionable taste. Water containing iron in excess of 0.3 mg/l and manganese in excess of 0.05 mg/l may cause reddish-brown or dark-gray stains on laundry, utensils, and plumbing fixtures. The total iron content in water from 90 samples in the Goliad Sand ranged from .01 to 2.6 mg/l, exceeding 0.3 mg/l in 42 samples. Two samples from wells that tap the Beaumont Clay and Lissie Formations, undifferentiated, contained 666 mg/l and 214 mg/l of iron. The water was also very saline and had a low pH. The low pH and the high iron concentrations probably resulted from corrosion of the casings. The concentration of manganese in the ground water in the report area is generally negligible and was less than 0.05 mg/l in the wells tested.

Water having a nitrate content in excess of 45 mg/l is potentially dangerous to infants because it has been related to infant cyanosis or "blue baby" disease (Maxcy, 1950, p. 271), and the presence of nitrate may indicate contamination by sewage (Lohr and Love, 1954, p. 10), decaying organic matter, fertilizers, or nitrates in the soil. In no samples from the report area were the concentrations of nitrate in excess of 45 mg/l. Water from wells RR-83-25-203 and RR-84-32-503 tapping the Goliad Sand had the maximum of 26 mg/l each.

Water containing more than 250 mg/l of sulfate may produce a laxative effect. The sulfate content of 217 water samples from the Goliad Sand ranged from 26 to 4,630 mg/l.

In southern Jim Wells County, the sulfate content exceeded 250 mg/l in only one of the 37 Goliad samples tested (water from well PW-84-39-803 contained 269 mg/l). The two Goliad samples from public supply wells had sulfate contents less than 250 mg/l. When sampled in 1968, two wells producing from the Oakville Sandstone, wells PW-84-40-703 and PW-84-47-810, had sulfate contents of 742 mg/l and 732 mg/l respectively. The sample from well PW-84-48-116, which produces from the Beaumont Clay and Lissie Formation, undifferentiated, had a sulfate content of 630 mg/l. The well yields moderately saline water from a depth of 273 feet.

In Kleberg County, the sulfate content of water from wells in the Goliad Sand is more of a problem, especially in the deeper wells in the eastern part of the county. Thirty-three of 99 samples tested had sulfate contents that exceeded 250 mg/l. Five of the samples from wells with depths ranging from about 800 to 1,500 feet had sulfate contents in excess of 1,000 mg/l. Water from five city of Kingsville wells have had at one time or another, sulfate contents more than 250 mg/l. Figure 11 indicates an increase in the sulfate content in water from wells eastward toward the Gulf.

The sulfate content in water from five wells in the Beaumont Clay and Lissie Formation, undifferentiated, in Kleberg County, ranged from 78 mg/l in well RR-83-30-702 to 1,290 mg/l in well RR-84-40-503. Three test wells in the Beaumont Clay-Lissie Formation, with depths ranging from 31 to 52 feet, had sulfate contents ranging from 412 mg/l in May 1968 to 4,540 mg/l in June 1969; the water was slightly to very saline. Water from wells RR-83-38-101 and RR-83-38-401, which tap the barrier island and beach deposits, had sulfate contents of 53 mg/l and 72 mg/l, respectively.

In Kenedy County, about one-half of the water samples from wells in the Goliad Sand had sulfate contents in excess of 250 mg/l. No distinct pattern of distribution of the sulfate is evident from Figure 11, but generally, water from the wells in the 1,000 to 1,500 foot depth range had the highest sulfate content. Well RD-88-18-502, drilled as an oil test and completed as a

water well, produces from the Oakville Sandstone at a depth of about 2,150 feet. A water sample from this well contained 6,020 mg/l of sulfate.

A few shallow wells tap the south Texas eolian-plain deposits in Kenedy County; the deposits supply water for livestock, but at some places the water is salty. The sulfate content of water from three shallow test wells tapping the south Texas eolian plain deposits at depths of 19 to 24 feet ranged from 4,720 to 9,560 mg/l. Well RD-88-20-407, which supplies water for livestock, had a sulfate content of 156 mg/l.

Water having a dissolved-solids content in excess of 500 mg/l is not recommended for public supply if other less mineralized supplies are available or can be made available at reasonable cost. Water having less than 500 mg/l dissolved solids is not always available, and it is recognized that supplies having a dissolved-solids content in excess of the recommended limits are used in many places without any obvious adverse effects. Usually, water containing more than 1,000 mg/l dissolved solids is unsuitable for many purposes. In the report area the dissolved-solids contents of 213 water samples tested ranged from 601 to 49,900 mg/l. The dissolved solids exceeded 1,000 mg/l in 143 samples and 3,000 mg/l in 19 samples. Generally, water having the best quality for most purposes occurs in the northwestern and central parts of the report area at depths less than 1,000 feet, however, some of the fresh-water-bearing sands in these areas are overlain by sands that contain highly saline water.

The hardness of water caused principally by calcium and magnesium is important in a public water supply because excessive hardness increases soap consumption and causes formation of scale in hot water heaters and water pipes. No limits for hardness have been established by the U.S. Public Health Service, and water used for ordinary household purposes does not become particularly objectionable until it reaches the level of 100 mg/l or so (Hem, 1959, p. 147). A commonly accepted classification of water hardness is given in Table 5.

The hardness of 281 water samples ranged from 18 to 10,300 mg/l, exceeding 60 mg/l in 228 samples. In 101 samples, the hardness was more than 180 mg/l (very hard). At most places in the report area, the shallow sands contain the hardest water; whereas the deeper sands contain the softest water. Two water samples from well PW-84-40-703, producing from the Oakville Sandstone at a depth of from 2,331 to 2,425 feet had a hardness of only 18 mg/l and 38 mg/l (soft), respectively.

In summary, ground water that meets most of the quality standards of the U.S. Public Health Service is available from wells less than 1,000 feet deep in the Goliad Sand, principally in southern Jim Wells County, the western one-half of Kleberg County, and in a few other relatively small areas throughout the report area. Shallow, moderately saline to very saline water overlies the fresh to slightly saline water at most places.

Irrigation

The suitability of water for irrigation depends upon the chemical quality of the water and other factors such as soil texture and composition, types of crops, irrigation practices, and climate. The most important chemical characteristics of water used for irrigation are the sodium concentration, the concentration of soluble salts, the residual sodium carbonate, and the concentration of boron. Sodium is significant in evaluating the quality of irrigation water because of its potential deleterious effect on the soil. A high percentage of sodium in water tends to make the soil plastic, thus restricting the movement of water and giving rise to problems of drainage and cultivation.

A system of classification commonly used for judging the quality of water for irrigation was proposed by the U.S. Salinity Laboratory staff (1954, p. 69-82). The classification is based on the salinity hazard as measured by the electrical conductivity of the water and the sodium or alkali hazard as measured by the SAR (sodium adsorption ratio). Wilcox (1955, p. 15) stated that this system of classification ". . . is not directly applicable to supplemental waters used in areas of relatively high rainfall," and that with respect to salinity and sodium hazards, water generally may be used safely for supplemental irrigation if its conductivity is less than 2,250 micromhos per centimeter at 25°C, and its SAR is less than 14. The U.S. Salinity Laboratory staff's classification of irrigation water is diagrammed in Figure 12, and results of analyses of water from 44 representative wells in the Goliad Sand are plotted on the diagram.

The diagram indicates that all 44 of the water samples have a high to very high salinity hazard, and that about 70 percent have a high to very high sodium hazard. Although some of the water is being used for irrigation, it should be used with restraint, principally as a supplement to rainfall.

An excessive concentration of boron renders water unsuitable for irrigation. Scofield (1936, p. 286) indicated that boron concentrations of as much as 1 mg/l are permissible for irrigating most boron sensitive crops, and that concentrations of as much as 3 mg/l are permissible for the more boron-tolerant crops. The Goliad Sand supplies all the water for large-scale irrigation in the report area. The boron concentration in water samples from wells RR-83-41-803 and RD-83-50-203 in the Goliad Sand was 0.73 and 0.98 mg/l, respectively. Water from well PW-84-40-703, producing from the Oakville Sandstone, and used for industrial purposes, had a boron concentration of 13 mg/l, which is far in excess of the recommended limit for irrigation water supplies.

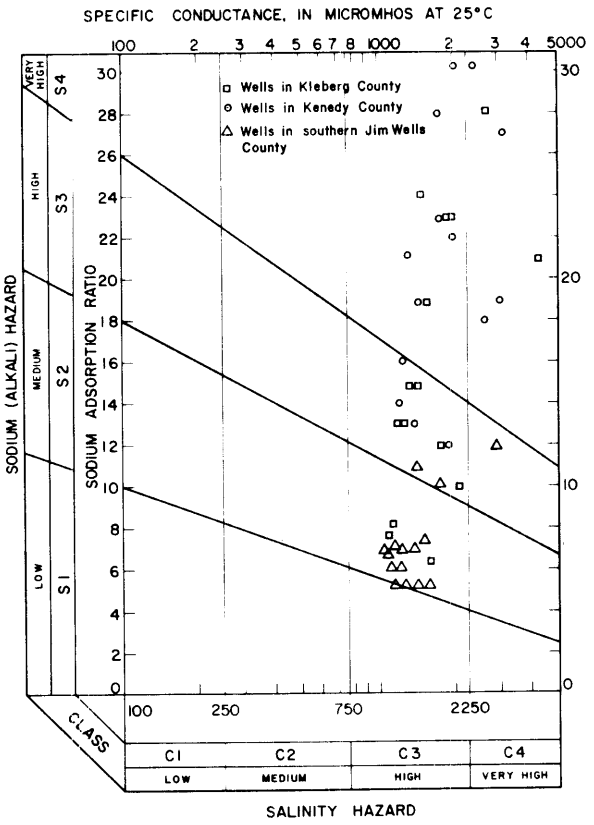


Figure 12.—Classification of Irrigation Waters

Another factor used in assessing the suitability of water for irrigation is the RSC (residual sodium carbonate). Excessive RSC will cause the water to be alkaline. The organic material of the soil is dissolved by strong alkaline solutions, and the soil takes on a grayish-black color. The soil thus affected is referred to as "black alkali." Wilcox (1955, p. 11) states that laboratory and field studies have resulted in the conclusion that water containing more than 2.5 me/l (milliequivalents per liter) RSC is not suitable for irrigation; water containing from 1.25 to 2.5 me/l is marginal, and water containing less than 1.25 me/l is probably safe. However, good irrigation practices and proper use of soil amendments might make it possible to use marginal water successfully. Furthermore, the degree of leaching will modify the permissible limit to some extent (Wilcox, Blair, and Bower, 1954, p. 265). The RSC of 169 samples from wells in the Goliad Sand ranged from 0.00 to 5.00 me/l. Sixty-nine samples contained more than 2.5 me/l, and 56 samples contained less than 1.25 me/l.

In summary, most of the water in the Goliad Sand, the principal aquifer in the report area, has a high to very high salinity hazard and medium to very high alkali hazard. The water should be used with restraint and as a supplement to rainfall.

The mineral constituents contained in water from the Oakville Sandstone in the report area are well in excess of the recommended limits for water for irrigation supplies. This factor plus the economics of drilling to the relatively great depths necessary to tap the Oakville probably would preclude its use even for supplemental irrigation supplies.

Industrial Use

Ground water used for industry is classified as cooling water, boiler water, and process water. In the report area, the quantity used for cooling far exceeds that used for all other purposes.

Cooling water generally is selected on the basis of its chemical quality and temperature. Silica, iron, and hardness may cause scale which adversely affects the heat-exchange surfaces in the cooling process; and sodium chloride, acids, oxygen, and carbon dioxide are among substances that make water corrosive.

Boiler water should be non-corrosive and should have a very low concentration of scale-forming constituents such as silica, calcium and magnesium. Silica is particularly undesirable in boiler water because its tendency to form a hard scale increases with the pressure in a boiler. The following table shows the maximum suggested concentrations of silica for water used in boilers (Moore, 1940, p. 263).

CONCENTRATION OF SILICA (MG/L)	BOILER PRESSURE (POUNDS PER SQ. INCH)
40	Less than 150
20	150 to 250
5	251 to 400
1	More than 400

In the report area, the concentration of silica in 163 water samples ranged from 2.4 to 62 mg/l, exceeding 20 mg/l in 71 samples. In southern Jim Wells County, 37 of 43 samples had silica concentrations of more than 20 mg/l.

Process water is water that is incorporated into the manufactured product. The quality requirements for this use may include physical and biological properties as well as chemical properties. Water that is low in dissolved solids and which contains little or no iron and manganese is highly desirable for use as process water.

Most of the ground water from wells in the report area is alkaline. The pH of 269 samples ranged from 2.5 in a shallow test well (RR-83-42-404), which is very acidic, to 9.2 in well RR-83-46-201, which is very alkaline. The latter well is 1,560 feet deep. The pH of 247 samples exceeded 7.0 which is the neutral point.

The odor of hydrogen sulfide gas (H_2S) was noticeable from many wells during the time they were being pumped. Although H_2S is an objectionable constituent, it can be removed by aeration.

The mineral constituents or properties, iron, manganese, dissolved solids, and hardness also should be considered in determining the suitability of water for industrial use--they were discussed in the section on suitability for public supply.

Pesticide Content of Water

To provide information on the presence of pesticidal contamination, eight samples of ground water from wells in the report area were analyzed for the insecticides and herbicides recommended by the Subcommittee on Pesticide Monitoring of the Federal Committee on Pest Control (Green and Love, 1967, p. 13-16). The wells sampled, depths of wells, and date of sample collection are as follows: September 17, 1968, from test wells RR-83-42-404 and RD-88-02-903 having depths of 38 and 20 feet, respectively; April 3, 1969, from wells PW-84-39-404 and RD-88-10-303, depths 235 and 40 feet, respectively; April 24, 1969, from wells RR-83-33-601 and RR-83-43-404, depths 640 and 833 feet, respectively; and May 8, 1969, from wells RR-83-30-702, and RR-83-37-501, depths 146 and 136 feet, respectively (Figure 18). No pesticides were found in the water samples from wells RR-83-42-404, RR-83-33-601, RR-83-43-404, RR-83-30-702, RD-88-10-303, and PW-84-39-404. Water from well RD-88-02-903 had 0.03 microgram per liter of DDT, and water from well RR-83-37-501 had 0.05 microgram per liter of DDT. The following table shows these concentrations are less than the limits permissible for public water supplies.

Concentrations of Pesticides Permissible in Public Water Supplies

(Adapted from National Technical Advisory Committee to the Secretary of the Interior, 1968.)

INSECTICIDE (MICROGRAMS PER LITER)		HERBICIDE (MICROGRAMS PER LITER)	
Aldrin	27	2, 4-D	
DDT	42	2, 4, 5-T	100
Dieldrin	17	Silvex	
Endrin	1		
Heptachlor	18		
Heptachlor epoxide	18		
Lindane	56		

Relation of Fresh Ground Water to Saline Ground Water

Some of the sediments composing the geologic formations in the report area were deposited in the Gulf of Mexico and therefore contained salt water at the time of deposition, or were deposited in fresh water and later filled with salt water at a time of higher sea level. At some time after deposition, the sea receded and the processes of flushing, recharge, and discharge began. Fresh water, originating as precipitation on the outcrop, forced the salt water downdip until the pressure exerted by the fresh water equaled the pressure exerted by the salt water. Discharge of the salt water may have been accomplished in several ways, but Winslow and others (1957, p. 387-388) concluded that in the Houston area, the discharge took place through the overlying clays. The discharge in the report area was probably accomplished in a similar manner. Before large withdrawals by wells were begun, the hydrologic system was probably in dynamic equilibrium--that is, the fresh water-salt water interface was almost stationary. The pressure head of the fresh water was balanced by the static head of the salt water.

The extent to which the salt water was flushed from the aquifers depends, at least in part, on the permeability of the individual aquifers. The Goliad Sand, the principal aquifer, is by far the most permeable in the report area. Therefore, the salt water was flushed more completely from that aquifer. This has resulted in the present situation wherein the Goliad Sand in much of the report area is overlain and underlain by aquifers containing more saline water. The extent to which the Goliad Sand was flushed is shown on Figures 14 and 16 by the lines indicating the approximate limits of fresh and slightly saline water.

Large-scale withdrawals of ground water for public supply in the vicinity of Kingsville have gradually lowered the water levels. Before these withdrawals had begun, the salt-water fresh-water interface was practically stationary. The system was in equilibrium because the hydrostatic pressure on the fresh-water side of the interface balanced the pressure on the salt-water side. The piezometric surface sloped gently toward the Gulf of Mexico, indicating that the fresh water was moving in that direction. All the water levels were above sea level in 1932-33. By 1968-69, large-scale withdrawals had created a deep cone of depression; and all water levels in the vicinity of Kingsville were below sea level. Water is moving toward the center of the cone from all directions. Lowering of water levels in the Goliad Sand has disturbed the dynamic equilibrium at the fresh-water interface so that salt water is free to move toward the areas of pumping.

In addition to the lateral movement of saline water in the Goliad Sand, moderately to very saline water is moving vertically from the overlying Beaumont Clay and Lissie Formation, undifferentiated. Fortunately, the

vertical permeability of this unit is very small, so that the movement of saline water into the Goliad Sand is very slow and diffuse.

Resampling of selected wells for chemical analyses has revealed no significant increases in mineralization as a result of lateral or vertical movement of salt water toward the areas of pumping.

Salt-Water Disposal

According to a salt-water disposal inventory made by the Texas Water Development Board and the Texas Railroad Commission for 1967 5,565,679 barrels (about 717 acre-feet) of salt water was produced in conjunction with the production of oil in Kleberg, Kenedy, and southern Jim Wells Counties in 1967. The methods of disposal and the quantity disposed are shown in Table 6.

Of the total amount disposed, 3,593,604 barrels (65 percent) was placed in unlined surface pits; 165,050 barrels (3 percent) was injected into wells; 461,346 barrels (about 8 percent) was dumped into surface-water courses; 935,849 barrels (17 percent) was disposed of by the use of disposal wells; and the means of disposing of the remaining 409,830 barrels (7 percent) was by unknown methods.

The disposal of salt water into open-surface pits is the most hazardous method with respect to contamination of shallow fresh water. A no-pit order by the Railroad Commission went into effect throughout Texas or January 1, 1969. The salt water in the pit seeps into the ground and eventually may contaminate the water in a shallow aquifer. The time required for the salt water to affect the quality of water in nearby wells may vary from a few months to several years depending upon the permeability of the soil and the consequent rate of movement of the salt water. Generally, contamination of the fresh water is indicated by a significant increase in the salinity of the water, principally in the chloride content without an accompanying increase in the sulfate content. Once a source of contamination is eliminated, flushing and dilution of the contamination may require a considerably longer time than the period of original contamination. In most oil fields throughout the state, surface pits for storing salt water are not lined with impervious materials that would prevent seepage of salt water into the fresh-water-bearing sands. The locations of the oilfields in the report area are shown in Figure 11.

In 1967, 461,346 barrels of salt water was discharged directly into surface-water courses. This method is widely used in oilfields situated near natural bodies of salt water where there is little or no danger of contamination of ground water.

The safest and best method of disposal of salt water is through the use of injection and disposal wells, whereby the salt water is pumped into subsurface sands that lie below the base of slightly saline water-bearing sands. In 1967, about 20 percent of the salt water produced in the report area was disposed of by these methods. The proper construction and operation of the injection and disposal wells are important in assuring adequate protection of the fresh or slightly saline water.

No conclusive evidence of salt-water contamination was found in the water from wells sampled during this investigation. This should not, however, be construed to mean that contamination is not occurring.

Improperly Cased Wells

At most places in Kleberg, Kenedy, and southern Jim Wells Counties, moderately saline to very saline water overlies fresh to slightly saline water. If the casing is not cemented opposite the saline water-bearing sands, the saline water may corrode the casing and enter the well. Special care should be taken in casing and cementing opposite the saline water.

The aquifers underlying the three-county area may be contaminated also by the invasion of salt water through improperly cased oil or gas wells. In recent years, the Texas Water Development Board has made recommendations to the oil operators concerning the depths to which water-bearing formations are to be protected by cemented casing; however, the Oil and Gas Division of the Railroad Commission of Texas is responsible for protection of the water-bearing formations. The Commission issues rules governing the depth of cemented surface casing required to protect such strata for many oilfields throughout the State.

An examination of the published field rules of the Railroad Commission of Texas indicates that the surface-casing requirements are inadequate in some of the oil and gas fields in the report area. In southern Jim Wells County, under the present rules, a maximum of about 600 feet of sediments containing fresh to slightly saline water is unprotected in a part of the Seeligson field; about 250 feet is unprotected in the Premont, East field; about 810 feet is unprotected in the La Gloria field; and about 525 feet is unprotected in the Haldeman, South field.

In Kleberg County, about 500 feet of sediments containing fresh to slightly saline water is unprotected in the Kingsville field. In Kenedy County, the present surface-casing requirements are indicated to be adequate in the oil and gas fields having field rules.

AVAILABILITY OF GROUND WATER

The Goliad Sand is the principal source of ground water for future development in Kleberg, Kenedy, and southern Jim Wells Counties and is the source of

Table 6.—Methods of Disposal and Amount of Salt Water Disposed in 1967

FIELD	TOTAL	BRINE DISPOSAL, IN BARRELS				
		UNLINED PITS	DISPOSAL WELLS	INJECTION WELLS	SURFACE-WATER COURSES	OTHER
			Kleberg County			
Big Caesar, SE	9,910	9,910	–	–	–	–
Big Caesar, S	12,760	12,760	–	–	–	–
Bird Island	564,814	269,164	–	–	295,650	–
Bird Island, SE	4,875	–	–	–	4,875	–
Borregos	2,285,553	2,139,553	146,000	–	–	–
Chevron	226,044	78,873	–	–	147,171	–
Kingsville	84,643	84,643	–	–	–	–
May	5,151	5,151	–	–	–	–
Ricardo	365,100	100	–	–	–	365,000
Riviera Beach	13,650	–	–	–	13,650	–
Stratton	4,400	4,400	–	–	–	–
Tijerina-Canales-Blucher, E	33	–	33	–	–	–
Yeary	54,544	54,544	–	–	–	–
Total	3,631,477	2,659,098	146,033	–	461,346	365,000
			Kenedy County			
Candelaria	36,500	36,500	–	–	–	–
El Paistle & Mifflin	5,400	5,400	–	–	–	–
Julian	45,625	45,625	–	–	–	–
May, S	11,315	11,315	–	–	–	–
Murdock Pass	8,556	8,556	–	–	–	–
Monte Pasture	608	608	–	–	–	–
Penascal	13,587	–	13,587	–	–	–
Rita	9,282	9,282	–	–	–	–
Sarita	87,821	87,821	–	–	–	–
Stillman	143,810	143,810	–	–	–	–
Total	362,504	348,917	13,587	–	–	–
			Southern Jim Wells County			
Falfurrias	5,143	–	5,143	–	–	–
Haldeman, S	936	936	–	–	–	–
La Gloria	341,386	–	341,386	–	–	–
La Gloria, N	401	–	401	–	–	–
La Gloria, E	472	–	472	–	–	–
La Gloria, S	196,351	–	196,351	–	–	–
Premont	95,806	87,630	–	8,176	–	–
Premont, E	371,005	1,500	217,384	152,121	–	–
Seeligson	147,657	96,180	1,894	4,753	–	44,830
Tijerina-Canales-Blucher	412,541	399,343	13,198	–	–	–
Total	1,571,698	585,589	776,229	165,050	–	44,830
Grand total	5,565,679	3,593,604	935,849	165,050	461,346	409,830

practically all of the ground water presently being pumped. Other sources of ground water - Oakville Sandstone, Lagarto Clay, Beaumont Clay and Lissie Formation, undifferentiated, Pleistocene barrier island and beach deposits, south Texas eolian plain deposits, and Holocene barrier island deposits - are relatively insignificant except locally.

Distribution and Quantity of Water in Storage

Fresh Water

Fresh ground water is available in most places in roughly the western half of Kenedy and Kleberg Counties and is available almost everywhere in southern Jim Wells County. Just west of Laguna Madre, in eastern Kleberg County, shallow fresh water occurs in small quantities in the form of lenses in the Pleistocene barrier island and beach deposits overlying more mineralized water. Small quantities of fresh water are probably available in shallow lenses in the sand dunes on Padre Island.

Excluding these shallow occurrences of fresh ground water on Padre Island and near Laguna Madre, the base of fresh water ranges in depth below sea level from about 200 feet in the western part of southern Jim Wells County to slightly more than 2,000 feet in the southwestern corner of Kenedy County (Figure 13). With the exception of the Oakville Sandstone, which contains fresh water in southwestern Kenedy County, the vast majority of the available fresh water is in the Goliad Sand.

The fresh water in the Goliad is both overlain and underlain by slightly saline water and moderately to very saline water. This relationship is shown in Figures 19, 20, and 21.

About 25 million acre-feet of fresh water is stored in the Goliad Sand in the report area—6, 13, and 6 millions of acre-feet in Kleberg, Kenedy, and southern Jim Wells Counties, respectively. These estimates are based on the volume of sand containing fresh water in the Goliad and on the porosity of the sand, estimated at 30 percent. Probably considerably less than half of the total fresh water in storage, however, is recoverable by wells. The greatest thickness of sand is in the central part of western Kenedy County where more than 200 feet of sand is present (Figure 14). The thickness of sand diminishes eastward.

Slightly Saline Water

Slightly saline ground water is available everywhere in the Goliad Sand in Kleberg, Kenedy, and southern Jim Wells Counties except in an area of about 160 square miles along the far eastern side of Kleberg County and in the northeastern tip of Kenedy County. In this area bordering Laguna Madre and including a part of Padre Island, slightly saline water is scarce and where found, usually at very shallow depths and in formations younger than Goliad Sand, is available only in small quantities.

With the exception of these shallow occurrences of slightly saline water, which extend to depths of less than 150 feet below sea level, the base of slightly saline water ranges in depth below sea level from about 500 feet in an area about 10 miles west of Kingsville to almost 2,700 feet near the southwest corner of Jim Wells County (Figure 15). Excluding the Oakville Sandstone and Lagarto Clay, which contain slightly saline water in southern Jim Wells and southwestern Kleberg and Kenedy Counties and the shallow occurrences previously mentioned, the base of the slightly saline water in most of the report area is confined to the Goliad Sand.

About 100 million acre-feet of slightly saline ground water is stored in the Goliad Sand in the report area—24, 72, and 4 millions of acre-feet in Kleberg, Kenedy, and southern Jim Wells Counties, respectively. This is determined from the volume of sand in the Goliad containing slightly saline water and from the porosity of the sand, estimated at 30 percent. Less than half of the slightly saline water in storage, however, is recoverable by wells. The greatest thickness of sand is in central Kenedy County where more than 400 feet of sand is present (Figure 16).

Quantity of Ground Water Available for Development

The quantity of water that can be withdrawn on a long-term basis without depleting the existing supply can be determined from the amount of recharge or replenishment that the Goliad Sand receives. Studies to determine precisely the amount of recharge were not a part of the present investigation, but estimates can be made by determining the amount of water that originally moved through the Goliad Sand. The estimate of recharge can be computed by using the equation

$$Q = T\ I\ L,$$

where Q = quantity of water in gallons per day moving through the Goliad Sand;

T = transmissibility in gallons per day per foot;

I = original hydraulic gradient of the piezometric surface in feet per mile; and

L = length of the Goliad Sand, in miles, through which the water moves.

The original hydraulic gradient of the piezometric surface of the Goliad Sand can be approximated by using water levels measured in Kleberg, Kenedy, southern Jim Wells, and Brooks Counties in 1932 and 1933, before pumping had begun to greatly affect the water levels regionally. In this way, the approximate original hydraulic gradient was determined to be about 5 feet per mile.

The average transmissibility of the fresh to slightly saline water section of the Goliad Sand in western Kenedy County is about 86,000 gpd per foot. This was derived from an average sand thickness of 400 feet near the north-south boundary of Kenedy and Brooks Counties and from an average permeability of 215 gpd per square foot.

Based on a transmissibility of 86,000 gpd per foot and an original hydraulic gradient of 5 feet per mile, the quantity of ground water as recharge that originally moved eastward from the recharge areas mainly in Jim Hogg and Brooks Counties across the 45-mile length of Goliad Sand into Kenedy County was 19 mgd.

Not all of the 19 mgd of fresh to slightly saline water that originally moved eastward through the Goliad Sand into Kenedy County is presently available for development. During 1964, 3.5 mgd of ground water was pumped from the Goliad in Brooks County (Myers and Dale, 1967, p. 22-23), and about 1.5 mgd was pumped from the Goliad in Jim Hogg County (Texas Water Development Board, 1967a, b; Gillett and Janca, 1965). It is not unreasonable to assume that at least these amounts were pumped in 1968. Thus, about 14 mgd of fresh to slightly saline water is perhaps still continually available for development in Kenedy County from the Goliad Sand. Because a total of only 2.8 mgd of ground water was used in 1968 in Kenedy County, almost entirely from the Goliad Sand, ground-water production from that aquifer in Kenedy County could be increased five times.

The average transmissibility of the fresh to slightly saline water section of the Goliad Sand in southern Jim Wells and western Kleberg Counties is about 44,000 gpd per foot. This was derived from an average sand thickness of 275 feet near the north-south boundary of southern Jim Wells and Kleberg Counties and from an average permeability of 160 gpd per square foot.

Based on a transmissibility of 44,000 gpd per foot, and an original hydraulic gradient of 5 feet per mile, the quantity of ground water that originally moved from the recharge area, mainly in Duval County, eastward through the Goliad Sand across the 26-mile length of southern Jim Wells County into Kleberg County was about 6 mgd.

As the regional pattern of ground-water flow in the Goliad Sand has changed since large-scale pumping began in the Kingsville area, and since large-scale pumping currently is taking place mostly in Duval and Nueces Counties, the 6 mgd of ground water that originally moved into southern Jim Wells and Kleberg Counties as recharge is not now the total quantity of available ground water for that area.

Because ground water moves toward the lowest altitude in the piezometric surface and at right angles to the contours (Figure 8), a significant part (one-third or about 5 mgd) of the 14 mgd of fresh to slightly saline ground water that enters Kenedy County as recharge is being diverted northward and northeastward toward the Kingsville area in Kleberg County. Similarly, an additional quantity of fresh to slightly saline ground water that originally moved mostly from Duval County east-southeastward through northern Jim Wells County into Nueces County as recharge for those areas is being diverted toward the southeast and south through southwestern Nueces County toward the Kingsville area. The amount of this water being diverted from northern Jim Wells County is probably somewhat less than the 3 mgd of natural recharge determined by Mason (1963, p. 50) to be flowing through the Goliad Sand into the Alice area.

Even though ground water is still moving into the Kingsville area from Nueces and northern Jim Wells Counties, it should not be considered to be continually available, as at least 3 mgd, or all of the natural recharge, is probably being pumped in southwestern Nueces County (Shafer, 1968, p. 19-25). Pumping of water from the Goliad Sand in Duval County is also removing some of the ground water that would otherwise be available to Kleberg and southern Jim Wells Counties. In 1968, at least 4 mgd was pumped from the Goliad in Duval County (oral communication, D. E. White, 1970).

Thus, perhaps only as much as 7 mgd of fresh to slightly saline water can be considered recharge that is continually available for development in Kleberg and southern Jim Wells Counties from the Goliad Sand. The 13.8 mgd of ground water that was used in 1968 almost entirely from the Goliad Sand for all purposes in Kleberg and southern Jim Wells Counties exceeds the maximum available recharge. Therefore, this rate of ground-water usage cannot be maintained indefinitely. Even the continual availability of as much as 7 mgd of water depends upon no new large-scale ground-water developments from the Goliad Sand in the region adjacent to Kleberg and southern Jim Wells Counties.

Also, the full development of 14 mgd available in Kenedy County would alter the regional pattern of ground-water flow, would intercept the estimated 5 mgd of ground water being diverted into the heavily pumped Kingsville area, and would substantially lower the water levels not only in Kenedy County but in Kleberg County as well.

Possibilities of Artificial Recharge

The King Ranch, Inc., conducted a recharge project from 1952 to 1961 (Kleberg and Kleberg, 1962). Well No. RR-83-25-502, just below Tranquitas Reservoir (Figure 18) was used for this experiment. A large cone of depression had developed in the Goliad Sand in this area. Water levels had been drawn down from the land surface to as much as 200 feet below the surface. The purpose of the recharge was to reduce pumping lifts and to combat salt-water intrusion.

Tranquitas Lake was used as the source of recharge water. A floating intake and strainer were used. The

water was chlorinated and passed through sand and gravel filter beds. It was then passed through three diatomaceous-earth vertical-pressure-type filters. The water was recirculated through the filters and a storage tank until it met the requirements for recharge, at which time it was diverted to the well. The lake water normally had a suspended sediment concentration of 180 to 400 mg/l. Water with a concentration of 5 to 10 mg/l was considered satisfactory for recharge.

To avoid air entrainment the recharge water was conveyed through the pump column to below the static water level. Recharge was done at a rate of from 300 to 450 gpm. After recharging 2.8 acre-feet, the water level in an observation well 300 feet away rose 16 feet. During the three-month period from May 1 to July 31, 1961, 24 acre-feet of water were recharged. During the winter the ducks and geese made the shallow lake water too muddy to filter.

The project was terminated because not enough water was available from the lake. The King Ranch officials recognized that the water must be highly purified of sediment before being recharged into the underground reservoir. Their foresight was rewarded in that no trouble due to clogging of the aquifer occurred. The cost of the recharge, including filter materials, chlorine, and labor, was $78 per acre-foot.

This cost is probably too high to be justified where the water is to be used for agriculture only. It would probably be reasonable if the recharged water were for municipal or industrial uses. However, in most years there is a shortage of surface water available in the area for recharge. Importation of water from outside the area would be necessary to provide sufficient recharge water.

Areas Most Favorable for Future Development of Ground-Water Supplies

Areas in Kleberg, Kenedy, and southern Jim Wells Counties that have the greatest potential and are the most favorable for future development of fresh to slightly saline ground-water supplies from the Goliad Sand may be determined from Figure 17. The figure is a map showing the thickness of sand containing fresh to slightly saline water in the Goliad and the amount of water-level declines caused by withdrawals of water from the Goliad during a 37-year period from 1931-32 to 1968-69. The map was based on an analysis of more than 100 electrical logs of oil tests and water wells to determine the sand thickness, which is a principal factor affecting the relative availability of ground-water supplies, and on long-term water-level records of 65 water wells in Kleberg and southern Jim Wells Counties (Figure 9).

The 11 areas showing relative degrees of favorability of potential for future development of fresh to slightly saline ground-water supplies are based on increments of 100 feet of sand thickness and of 50 to 100 feet of water-level decline. Values of the increments are arbitrary, but serve to establish areas of relative favorability.

The area least favorable for development of ground-water supplies is in far eastern Kleberg and Kenedy Counties where sand thickness is less than 100 feet. To the east of this area lies a 160-square-mile area mostly in Kleberg County that includes a large part of Laguna Madre and all of Padre Island, where the Goliad Sand contains no fresh to slightly saline water. In the Kingsville area, favorability for future development of ground water is decreased, even though sand thickness ranges from 100 to 200 feet, due to the fact that heavy ground-water pumpage has caused large water-level declines.

The most favorable area is in west central Kenedy County from the Brooks County line to a few miles east of Armstrong. This area of 400 to less than 500 feet of sand can most easily support the development of large additional supplies of fresh to slightly saline ground water.

NEEDS FOR FUTURE STUDIES

The collection of basic data such as an inventory of pumpage, observation of water levels, and collection of water samples should be continued periodically in Kleberg, Kenedy, and southern Jim Wells Counties. Collection of water samples from selected wells for chemical analysis will provide up-to-date information on the status of possible salt-water encroachment.

Sampling should be principally in the eastern part of Kleberg County on the eastern flank of the regional cone of depression where salt-water encroachment is to be expected. The interpretation of all these basic data will aid ultimately in monitoring future changes in ground-water conditions.

A network of wells for observation of water levels has already been established in some areas of Kleberg and southern Jim Wells Counties and water levels in these wells are measured and recorded periodically by the Texas Water Development Board.

DEFINITIONS OF TERMS

Acre-foot.—The volume of water required to cover one acre to a depth of 1 foot (43,560 cubic feet), or 325,829 gallons.

Acre-foot per year.—One acre-foot per year equals 892.13 gallons per day.

Alluvial deposits.—Sediments deposited by streams; includes flood-plain deposits and stream-terrace deposits.

Aquifer.—A formation, group of formations, or part of a formation that is water-bearing.

Aquifer test, pumping test.—The test consists of the measurement at specific intervals of the discharge and water level of the well being pumped and the water levels in nearby observation wells. Formulas have been developed to show the relationships of the yield of a well, the shape and extent of the cone of depressions, and the properties of the aquifer such as the specific yield, porosity, and coefficients of permeability, transmissibility, and storage.

Artesian aquifer, confined aquifer.—Artesian (confined) water occurs where an aquifer is overlain by rock of lower permeability (e.g., clay) that confines the water under pressure greater than atmospheric. The water level in an artesian well will rise above the top of the aquifer. The well may or may not flow.

Artesian well.—One in which the water level rises above the top of the aquifer, whether or not the water flows at the land surface.

Brine.—Water containing more than 35,000 mg/l dissolved solids (Winslow and Kister, 1956, p. 5).

Cone of depression.—Depression of the water table or piezometric surface surrounding a discharging well or group of wells more or less the shape of an inverted cone.

Dip of rocks, altitude of beds.—The angle or amount of slope at which a bed is inclined from the horizontal; direction is also expressed (e.g., 1 degree southeast; or 90 feet per mile southeast).

Drawdown.—The lowering of the water table or piezometric surface caused by pumping (or artesian flow). In most instances, it is the difference, in feet, between the static level and the pumping level.

Electric log.—A graph log showing the relation of the electrical properties of the rocks and their fluid contents penetrated in a well. The electrical properties are natural potentials and resistivities to induced electrical currents, some of which are modified by the presence of the drilling mud.

Evapotranspiration.—Water withdrawn by evaporation from a land area, a water surface, moist soil, or the water table, and the water consumed by transpiration of plants.

Fresh water.—Water containing less than 1,000 mg/l (milligrams per liter) dissolved solids (Winslow and Kister, 1956, p. 5).

Ground water.—Water in the ground that is in the zone of saturation from which wells, springs, and seeps are supplied.

Head, or hydrostatic pressure.—Artesian pressure measured at the land surface, reported in pounds per square inch or feet of water.

Hydraulic gradient.—The slope of the water table or piezometric surface, usually given in feet per mile.

Moderately saline water.—Water containing 3,000 to 10,000 mg/l dissolved solids (Winslow and Kister, 1956, p. 5).

Permeability, coefficient of.—The rate of flow of water in gallons per day through a cross sectional area of 1 square foot under a unit hydraulic gradient.

Piezometric surface.—An imaginary surface that everywhere coincides with the static level of the water in an aquifer. The surface to which the water from a given aquifer will rise under its full head.

Resistivity.—That property of a material that characterizes its opposition to the flow of electricity. The resistivity of a water-saturated material is a function of both the texture of the material and the contained fluid and is recorded in ohms per square meter per meter (ohms m^2/m) in electric logs of wells.

Slightly saline water.—Water containing 1,000 to 3,000 mg/l dissolved solids (Winslow and Kister, 1956, p. 5).

Specific capacity.—The discharge of a well expressed as the rate of yield per unit of drawdown, generally in gallons per minute per foot of drawdown.

Storage coefficient.—The volume of water an aquifer releases from or takes into storage per unit of surface area of the aquifer per unit change in the component of head normal to that surface.

Transmission capacity.—The quantity of water that can be transmitted through a given width of an aquifer at a given hydraulic gradient.

Transmissibility, coefficient of.—The number of gallons of water which will move in one day through a vertical strip of the aquifer one foot wide extending through the thickness of the aquifer under a hydraulic gradient of 1 foot per foot at the prevailing temperature of the water. The coefficient of transmissibility is equal to the field coefficient of permeability times the saturated thickness of the aquifer.

Very saline water.—Water containing 10,000 to 35,000 mg/l dissolved solids (Winslow and Kister, 1956, p. 5).

Water level; static level; or hydrostatic level.—In an unconfined aquifer, the distance from the land surface to the water table. In a confined (artesian) aquifer, the level to which the water will rise either above or below

land surface. It may also be expressed as height above or below sea level.

Water table.—The upper surface of a saturated zone except where that surface is formed by impermeable material.

Water-table aquifer (unconfined aquifer).—An aquifer in which the water in unconfined; the upper surface of the zone of saturation is under atmospheric pressure only and the water is free to rise or fall in response to the changes in the volume of water in storage. A well penetrating an aquifer under water-table conditions becomes filled with water to the level of the water table.

Yield.—The rate of dishcarge, commonly expressed as gallons per minute, gallons per day, or gallons per hour. In this report, yields are classified as small, less than 50 gpm (gallons per minute); moderate, 50 to 500 gpm; and large, more than 500 gpm.

REFERENCES CITED

Baker, E. T., Jr., 1971, Relation of ponded water from Hurricane Beulah to ground water in Kleberg, Kenedy, and Willacy Counties, Texas: Texas Water Devel. Board Rept. 138, 33 p.

Broadhurst, W. L., Sundstrom, R. W., and Rowley, J. H., 1950, Public water supplies in southern Texas: U.S. Geol. Survey Water-Supply Paper 1070, 114 p., 1 pl.

Carr, J. T., 1967, The climate and physiography of Texas: Texas Water Development Board Rept. 53, 27 p.

Cromack, G. H., 1944, Ground-water conditions in the Premont-La Gloria-Falfurrias district, Texas: U.S. Geol. Survey open-file rept., 13 p.

Darton, N. H., Stephenson, L. W., and Gardner, Julia, 1937, compilers, Geologic map of Texas: U.S. Geol. Survey map.

Deussen, A., 1914, Geology and underground waters of the southeastern part of the Texas Coastal Plain: U.S. Geol. Survey Water-Supply Paper 335.

Doll, W. L., and others, 1963, Water resources of West Virginia: West Virginia Dept. of Natural Resources, Div. of Water Resources, 134. p.

Fisk, H. N., 1959, Padre Island and the Laguna Madre flats, coastal south Texas, *in* second geography conference held on April 6-9, 1959, at Coastal Studies Institute, Louisiana State University: Office of Naval Research and National Academy of Sciences, Wash., D. C., p. 103-151.

George, W. O., and Cromack, G. H., 1943, Recent observations of ground-water conditions in the vicinity of Kingsville, Texas: U.S. Geol. Survey open-file rept., 10 p.

Gillett, P. T., and Janca, I. G., 1965, Inventory of Texas irrigation, 1958 and 1964: Texas Water Comm. Bull. 6515, 317 p.

Green, R. S., and Love, S. K., 1967, Network to monitor hydrologic environment covers major drainage rivers: Pesticides Monitoring Journal, v. 1, no. 1, p. 13-16.

Hem, J. D., 1959, Study and interpretation of the chemical characteristics of natural water: U.S. Geol. Survey Water-Supply Paper 1473, 269 p., 40 figs., 2 pls.

Johnson, C. E., 1940, Records of wells, drillers' logs, water analyses, cross sections, and map showing locations of wells in Aransas County, Texas: Texas Board Water Engineers dupl. rept., 45 p.

Kane, John W., 1967, Monthly reservoir evaporation rates for Texas, 1940 through 1965: Texas Water Devel. Board Rept. 64, 111 p., 7 pls.

Kleberg, R. J., Jr., and Kleberg, R. M., Jr., 1962, Conserving and conditioning lake water for repressuring and storage: Unpublished report, King Ranch, Inc., Kingsville, Texas 78363.

Livingston, Penn, and Bridges, T. W., 1936, Ground-water resources of Kleberg County, Texas: U.S. Geol. Survey Water-Supply Paper 773-D, 232 p.

Livingston, Penn, and Broadhurst, W. L., 1942, Exploration of salty wells on the King Ranch, Kleberg County, Texas: U.S. Geol. Survey open-file rept., 10 p.

Lohr, E. W., and Love, S. K., 1954, The industrial utility of public water supplies in the United States, 1952, pt. 2, States west of the Mississippi River: U.S. Geol. Survey Water-Supply Paper 1300, 462 p.

Maier, F. J., 1950, Fluoridation of public water supplies: Am. Water Works Assoc. Jour., v. 42, pt. 1, p. 1120-1132.

Mason, C. C., 1963, Availability of ground water from the Goliad Sand in the Alice area, Texas: Texas Water Comm. Bull. 6301, 107 p.

Maxcy, K. F., 1950, Report on the relation of nitrate concentrations in well waters to the occurrence of methemoglobinemia in infants: Natl. Research Council Bull. Sanitary Eng. and Environment, p. 265-271, App. D.

Moore, E. W., 1940, Progress report of the committee on quality tolerances of water for industrial uses: New England Water Works Assoc. Jour., v. 54, p. 263.

Myers, B. N., 1969, Compilation of results of aquifer tests in Texas: Texas Water Devel. Board Rept. 98, 532 p.

Myers, B. N., and Dale, O. C., 1967, Ground-water resources of Brooks County, Texas: Texas Water Devel. Board Rept. 61, 87 p.

National Technical Advisory Committee to the Secretary of the Interior, 1968, Water quality criteria: Fed. Water Pollut. Control Admin., Wash., D. C., p. 20-83.

Price, W. A., 1933, Role of diastrophism in topography of Corpus Christi area, south Texas: Am. Assoc. Petroleum Geologists Bull., v. 17, no. 8, p. 907-962.

Price, W. A., 1958, Sedimentology and Quaternary geomorphology of south Texas: Gulf Coast Assoc. Geol. Soc. Trans., v. 8, p. 41-75.

Sayre, A. N., 1937, Geology and ground-water resources of Duval County, Texas: U.S. Geol. Survey Water-Supply Paper 776.

Scofield, C. S., 1936, The salinity of irrigation water: Smithsonian Inst., Ann. Rept., 1934-35, p. 286.

Shafer, G. H., 1968, Ground-water resources of Nueces and San Patricio Counties, Texas: Texas Water Devel. Board Rept. 73, 129 p.

Taylor, T. U., 1907, Underground waters of the Coastal Plain of Texas: U.S. Geol. Survey Water-Supply Paper 190, 73 p.

Texas Water Development Board, 1967a, Industrial ground-water use for calendar years 1955-66, Harris County-Lynn County: Texas Water Devel. Board open-file rept.

_____1967b, Municipal ground-water use for calendar years 1955-66, Harris County-Lynn County: Texas Water Devel. Board open-file rept.

Theis, C. V., 1935, The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground-water storage: Am. Geophys. Union Trans., pt. 2, p. 519-524.

Turner, S. F., and Cumley, J. C., 1940, Records of wells, drillers' logs, water analyses, and map showing location of wells in Kenedy County, Texas: Texas Board of Water Engineers dupl. rept., 56 p.

Turner, S. F., Lynch, W. A., and Cumley, J. C., 1940, Records of wells and springs in Jim Wells County, Texas: Texas Board of Water Engineers dupl. rept., 55 p.

U.S. Public Health Service, 1962, Drinking water standards: Public Health Service Pub. 956, 61 p., 1 fig.

U.S. Salinity Laboratory Staff, 1954, p. 69-82, Diagnosis and improvement of saline and alkali soils: U.S. Dept. Agriculture Handb. 60, 160 p.

Wenzel, L. K., 1942, Methods for determining permeability of water-bearing materials with special reference to discharging-well methods: U.S. Geol. Survey Water-Supply Paper 887, 192 p.

Wilcox, L. V., 1955, Classification and use of irrigation waters: U.S. Dept. Agriculture Circ. 969, 19 p., 4 figs.

Wilcox, L. V., Blair, G. Y., and Bower, C. A., 1954, Effect of bicarbonate on suitability of water for irrigation: Soil Science, v. 77, no. 4, p. 259-266.

Winslow, A. G., and Kister, L. R., 1956, The saline water resources of Texas: U.S. Geol. Survey Water-Supply Paper 1365, 105 p.

Winslow, A. G., and others, 1957, Salt water and its relation to fresh ground water in Harris County, Texas: U.S. Geol. Survey Water-Supply Paper 1360-F, p. 375-407.

Wood, L. A., Gabrysch, R. K., and Marvin, Richard, 1963, Reconnaissance investigation of the ground-water resources of the Gulf Coast Region, Texas: Texas Water Comm. Bull. 6305, 123 p., 18 figs., 15 pls.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties

Water level : Measured water levels given in feet and tenths; reported and estimated water levels given in feet.
Method of lift and type of power : A, air. B, bucket; C, cylinder (includes piston); J, jet; S, submergible; T, turbine; N, none. E, electric; G, gas (includes gasoline, butane, and diesel); H, hand; W, wind. "Flows" indicates a naturally flowing well with no pump necessary. Some flowing wells are assisted by pumps to increase yield.
Use of water : D, domestic; Ind, industrial; Irr, irrigation; P, public supply; S, stock; U, unused.
Water-bearing unit : Qbb, barrier island and beach deposits; Qep, south Texas eolian plain deposits; Qbl, Beaumont Clay and Lissie Formation, undifferentiated; Tg, Goliad Sand; To, Oakville Sandstone.

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
* RR-83-25-101	King Ranch, Inc.	Elmer Rupp	1954	515	6 4	Tg	134	62.1 192.4	Dec. 9, 1932 Mar. 21, 1969	C,W	S	Palo Lobo Well. Perforated casing from 480 to 515 ft. Observation well. 1/
102	do.	--	1952?	--	6	--	124	154.6 188.4	Mar. 16, 1961 Mar. 27, 1968	C,W	S	Upper Little Mill.
103	do.	Humble Oil & Ref. Co.	1948	8,404	--	--	130	--	--	--	--	Morgan Well PB-2. Oil test. 2/
201	--Wardner	The Chicago Corp.	--	8,012	--	--	107	--	--	--	--	Oil test. 2/
202	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1946	570	6 5/8 4	Tg	--	98.2	Mar. 27, 1968	C,W	S	Paso Ancho Well #4. 66 ft of perforated casing.
* 203	King Ranch, Inc.	do.	1962	503	6 5/8 4 1/2	Tg	125	184.4	do.	C,W	S	Mota Huisache well. 43 ft of perforated casing.
301	do.	Elmer Rupp	1950	570	6	Tg	88	97.4 180.7	Feb. 21, 1947 Mar. 21, 1969	C,W	S	New Cola Blanca Well. Perforated casing 550 to 570 ft. Observation well. 1/
302	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1948	671	10 8	Tg	--	150	1959	T,E 10	U	Destroyed. Compressor Station.
303	King Ranch, Inc.	H.C. McGavitt	--	--	6 3/4	Tg	88	31.1 82.9	Dec. 8, 1932 Mar. 14, 1946	N	U	Old Cola Blanca Well. Destroyed. Formerly used as observation well. 1/
* 304	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1966	671	10 3/4	Tg	93	190.5	Aug. 28, 1968	T,E 25	Ind	Cased from 0 to 530 ft. Screen from 530 to 671 ft. Casing cemented. Reported drawdown, 73 ft pumping 385 gpm for 8 hrs. Compressor Station.
401	King Ranch, Inc.	A.H. Masiran	1941	503	6 4	Tg	106	42.6 145.6 182.4	Feb. 7, 1933 Mar. 16, 1961 Mar. 27, 1968	C,W	S	Los Cerritos Well. 23 ft perforated casing. Packer set.
402	do.	Humble Oil & Ref. Co.	--	7,300	--	--	--	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-25-501	King Ranch, Inc.	Elmer Rupp	1952	485	6	Tg	106	47.1 195.2	Dec. 8, 1932 Mar. 21, 1969	C,W	S	Little Mill. Perforated casing from 441 to 485 ft. Observation well. 1/
502	do.	Layne-Texas Co.	1952	645	20 12 3/4	Tg	93±	148.0 189.4	Mar. 16, 1961 Mar. 21, 1969	T,G	Ind	Formerly used as experimental recharge well. 20 in. casing 0 to 359 ft. 12 3/4 casing 259 to 645 ft. Screened from 476 to 615 and 635 to 645 ft. Gravel-packed 460 to 645 ft. Reported 135 ft drawdown after pumping 24 hrs. at 770 gpm. Observation well. 1/
503	do.	--	Old	--	4	--	93±	168.3 181.3	Mar. 27, 1964 Mar. 21, 1969	N	U	Formerly used as observation well for recharge project. Observation well. 1/
504	do.	Elmer Rupp	1950	553	6 4	Tg	90±	42 207.5	1933 Aug. 28, 1968	C,W	S	Muerto Well. 502 ft of 6 in. casing; 65 ft of 4 in. casing
505	do.	Humble Oil & Ref. Co.	1948	7,601	--	--	110±	--	--	--	--	Stratton T-3. Oil test. 2/
601	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1941	691	8 6	Tg	85	190.8 215.0	Mar. 27, 1964 Mar. 21, 1969	T,E 25	U	Stratton Camp Well #2. Formerly used for public supply. Screen 540-562 and 646-690 ft. Observation well. 1/
603	King Ranch, Inc.	Elmer Rupp	1953	614	6 4	Tg	78±	-- 208.4	-- Apr. 11, 1968	C,W	S	La Curva Well. 45 ft slotted pipe. 3/
604	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1967	620	4 1/2 2 1/2	Tg	76	203.9	Aug. 28, 1968	T,E	D	Casing cemented from 0 to 570 ft. Perforated casing from 580 to 620 ft.
605	R.D. Perry	R.C. Custer Water Well Service	1966	694	7	Tg	70	208.8	Apr. 11, 1968	S,E 3	D	7 in. casing 0 to 654 ft. Perforated from 636 to 654 ft.
606	King Ranch. Inc.	Humble Oil & Ref. Co.	1946	7,800	--	--	94	--	--	--	--	Paso Ancho Well #79. Oil test. 2/ 4/
701	do.	Elmer Rupp	1953	498	6 4	Tg	114	122.4 186.8	Nov. 4, 1953 Mar. 21, 1969	C,W	S	Puertas Well #3. Observation well. Perforated casing from 388 to 498 ft. 1/
702	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1950	495	6 4	Tg	--	125	1959	J,E 1 1/2	P,D	Perforated casing from 415 to 495 ft.
703	King Ranch, Inc.	--	--	567	7 5/16	Tg	113.8	39.8 119.1	Dec. 9, 1932 Oct. 7, 1953	N	U	Old Puertas Well. Formerly used as observation well. Filled and abandoned. 1/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-25-704	King Ranch, Inc.	--	--	--	--	Tg	100	179.6	Aug. 22, 1968	C,W	S	Tulosa Well. Pump set at 200 ft in 1967.
705	do.	Humble Oil & Ref. Co.	1951	8,000	--	--	108 4/	--	--	--	--	Barregas Well #79. Oil test. 2/
801	do.	Carl Vickers Well Service	1946	645	9 5 1/2	Tg	100	97.9 205.0	Feb. 17, 1947 Mar. 24, 1969	C,W	S	Calero Well #2. 42 ft perforated casing. 1/
802	do.	Dick Mills	1915	652	5 3/16	Tg	100	45.4 87.0	Jan. 5, 1933 Mar. 14, 1946	N	U	Old Calero Well. Formerly used as observation well. Destroyed. 1/
803	do.	Humble Oil & Ref. Co.	1946	554	7	Tg	100	94.5 101.7 192.5	Feb. 11, 1948 Feb. 17, 1949 Oct. 26, 1968	C,W	S,D	Borregas Well #2. Formerly used as observation well.
804	do.	Layne-Texas Co.	1963	660	16 8 5/8	Tg	--	--	--	--	Irr	16 in. casing from 0 to 505 ft. 8 5/8 in. screen, 515 to 640 ft. Reported discharge 517 gpm. Temperature 85°F (29°C).
901	do.	do.	1956	790	16 8	Tg	--	--	--	T,E 75	P	Headquarters Well. Reported discharge 536 gpm. Screen 541 to 675 ft.
* 902	Texas A.&I. University	Layne-Texas Co.	1954	799	16 8	Tg	76±	226.6 242.2	Mar. 27, 1964 Mar. 26, 1969	T,E 50	P	Well #3. Observation well. Screen: 609-647; 679-719; 704-714; 729-739; 749-759; and 779-799 ft. 1/
906	do.	T.L. Herring	1926	600±	6	Tg	72±	40.8 45.3	Dec. 7, 1932 Feb. 6, 1941	N	U	Formerly used as observation well. Abandoned. 1/ Historical well.
907	do.	--	--	--	--	Tg	70±	64.0 112.7	Nov. 16, 1943 Mar. 13, 1946	N	U	Formerly used as observation well. Abandoned. Historical well.
908	King Ranch, Inc.	Carl Vickers Water Well Service	1966	677	9 6 5/8	Tg	--	201	1966	T,E 20	D,S	Rancho Plomo Well #3. Pump set at 378 ft in 1966. Reported drawdown 68 ft after pumping for 8 hrs. at 270 gpm.
909	do.	Elmer J. Rupp	1952	605?	8	Tg	75	215.0	Sept. 13, 1968	C,W	S	Rancho Plomo Well.
910	J.B. Armstrong	--	--	--	--	Tg	72	229.8	Oct. 26, 1968	S,E 1 1/2	D,S	
* 911	Texas A.&I. University	Layne-Texas Co.	1953	750	16 8 5/8	Tg	76±	221.3	Mar. 27, 1968	S,E 100	P	Well #2. 16 in. casing cemented from 0 to 590 ft. Casing perforated from 559 to 634 and 637 to 676 ft. 8 5/8 in. liner from 490 to 750 ft. Pump set at 450 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT		USE OF WATER	REMARKS
Kleberg County												
* RR-83-25-912	City of Kingsville	Layne-Texas Co.	1951	764	16 8	Tg	--	151	1951	T,E 125	P	City Well #10. Drilled to 777 ft 16 in. casing from 0 to 590 ft, 8 5/8 in. from 486 to 777 ft. Screen from 597 to 719, and 746 to 764 ft. Pump set at 450 ft. Reported discharge 767 gpm. 2/
* 913	do.	Carl Vickers Water Well Service	1951	740	12 3/4 8 5/8	Tg	--	92 246	1963 1966	T,E 60	P	City Well #11. 12 3/4 in. casing from 0 to 580 ft. 8 5/8 casing from 580 to 745 ft. Screen 580-644; 652-719; 730-740 ft. Pump set at 330 ft in 1951.
* 914	do.	do.	1962	777	16 8 5/8	Tg	--	255	1962	S,E 125	P	City Well #14 16 in. casing from 0 to 600 ft screen: 599-637; 644-706; and 740 to 777 ft. Reported discharge 800 gpm. Reported level 390 ft in 1962.
26-401	King Ranch, Inc.	George Holliman	1927	750	5 3/16 4 1/2	Tg	54	22.4 205.4	Dec. 15, 1932 Mar. 21, 1969	C,W	S	Caesar Pens Well. Observation well. 1/
* 404	Alice Specialty Warehouse	W.J. Calaway	1962	700	4 1/2	Tg	--	235	1968	S,E 2	D	Casing cemented from 0 to 601 ft; perforated from 628 to 684 ft. Pump set at 294 ft in 1968.
701	King Ranch, Inc.	Elmer Rupp	1953	623	6 4	Qbl	60	32.5 210.3	Dec. 15, 1932 Mar. 21, 1969	C,W	S	Rancho Verde Well. Observation well. 1/
* 702	City of Kingsville	Carl Vickers Well Service	1945	737	10 3/4 8 5/8	Tg	55	114.9 234.7	Feb. 19, 1949 May 20, 1965	N	U	City Well #6. Formerly used as observation well. 1/
* 703	do.	A.H. Masirar	1932	725	11 9 5 3/16	Tg	--	44.9 171.2	Oct. 26, 1932 Feb. 6, 1953	N	U	City Well #4. Destroyed. Formerly used as observation well. 1/
* 704	do.	Layne-Texas Co.	1945	784	16 8 5/8	Tg	57	105.5 239.9	Mar. 13, 1946 Mar. 21, 1969	T,E 100	P	City Well #7. Reported 90 ft drawdown after pumping 15 hrs. at 754 gpm. Reported discharge 620 gpm in 1963. 16 in. casing from 0 to 604 ft. Screen: 609 to 780 ft. Observation well. 1/
* 705	do.	Carl Vickers Water Well Service	1946	745	16 8	Tg	57	112.9 216.7	Jan. 23, 1947 Mar. 21, 1969	T,E 75	P	City Well #8. Screen: 580-644; 652-719; 730-740 ft. Pump set at 280 ft. in 1951. Observation well. 1/
707	Joe Stelzig	George Hollimon	--	--	6 5/8	Tg	63	31.8 64.5	Dec. 15, 1932 Nov. 16, 1943	N	U	Destroyed. Formerly used as observation well. 1/
708	W.H. Young	J.P. Morris	--	630	8 1/4	Tg	65	39.6 62.5	Dec. 15, 1932 Feb. 3, 1943	N	U	Destroyed. Formerly used as observation well. 1/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-26-709	City of Kingsville	Layne-Texas Co.	1926	734?	16 8 5/8	Tg	67	45.1 76.5	Oct. 26, 1932 Mar. 7, 1944	N	U	City Well #3. Destroyed. Formerly used as observation well. 1/
710	do.	George Hollimon	--	810	6	Tg	65	47.7 175.1	Dec. 5, 1932 Feb. 10, 1956	N	U	City Well #1. Destroyed. Formerly observation well. 1/
* 712	do.	Layne-Texas Co.	1948	765	16 8 5/8	Tg	60	109 160.4	1948 Feb. 4, 1953	S,E 100	P	City Well #9. 16 in. casing from 0 to 576 ft. Pump set at 420 ft in 1967. 8 5/8 in. perforated casing from 580 to 752 ft. Reported drawdown, 125 ft after pumping 748 gpm for several hrs.
713	Missouri-Pacific RR Co.	--	1918±	650	8	Tg	65	22.6 3.3	Dec. 7, 1932 Feb. 6, 1941	N	U	Destroyed. Formerly used as observation well. 1/
718	George Myers Texaco Station	R.C. Custer Water Well Service	1967	753	4 1/2	Tg	53±	208.5	Apr. 29, 1968	S,E 1 1/2	D	4 1/2 in. casing from 0 to 711 ft; perforated from 711 to 732 ft. Pump set at 273 ft in 1967.
719	A.E. Jesse	Carl Vickers Water Well Service	1965	710	--	Tg	--	214	1965	S,E 2	D	Casing cemented from 0 to 687 ft; perforated casing from 687 to 710 ft.
* 720	City of Kingsville	Layne-Texas Co.	1954	800	16 8	Tg	60±	163 210.8	1954 Mar. 25, 1968	S,E 100	P	City Well #12. Screen: 599-649; 659-719; and 739-799 ft. 16 in. casing 0 to 589 ft. 8 5/8 in., 489 to 800 ft. Reported discharge 780 gpm. Pump set at 485 ft. 2/
* 721	do.	Carl Vickers Water Well Service	1967	840	16 10 3/4	Tg	--	257	Oct. 8, 1967	S,E 125	P	City Well #19. 16 in. casing, 0 to 585 ft, 10 3/4 in. casing, 550 to 810 ft; perforated from 590 to 780 ft. Reported drawdown 84 ft after pumping 12 hrs. at 980 gpm. Pump set at 500 ft.
* 722	do.	do.	1967	774	16 10 3/4	Tg	--	261	1967	S,E 100	P	City Well #18. 16 in. casing cemented from 0-585 ft. Screen: 585 to 690, and 700 to 770 ft. Pump set at 420 ft.
* 723	do.	Layne-Texas Co.	1943	740	16 14 8 5/8	Tg	60±	84.3 159.6	Mar. 7, 1944 Feb. 6, 1952	S,E 60	P	City Well #5. 16 in. casing to 200 ft. 14 in., 200 to 581; 8 5/8 in. from 492 to 738 ft. Perforated casing from 606 to 735 ft. Reported discharge 850 gpm. Pump set 320 ft. Formerly used as observation well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (FT.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
* RR-83-26-724	City of Kingsville	Carl Vickers Water Well Service	1965	782	16 10 3/4	Tg	54±	226	1965	T,E 125	P	City Well #17. 16 in. casing from 0 to 600 ft. 10 3/4 in. from 503 to 782 ft. Pump set 420 ft. Reported discharge 850 gpm. 2/
802	King Ranch, Inc.	do.	1948	788	5	Tg	44	82.6 158.0	Feb. 16, 1949 Feb. 26, 1965	C,W	S	Noria Nicha Well #2. Perforated casing from 746 to 788 ft. Observation well. 1/
803	do.	Otto Custer	1937	788	6 4	Tg	44	44.7 43.4 53.0 30.2	Nov. 12, 1943 Mar. 5, 1944 Mar. 16, 1945 Feb. 11, 1948	N	U	Old Noria Nicha. Destroyed. Formerly used as observation well.
804	do.	Dick Mills	--	--	5 5/8	Tg	46	19.2 56.8	Jan. 1, 1933 Mar. 15, 1945	N	U	Los Quatros Equinos Well #1. Destroyed.
805	Marshall Pond	R.C. Custer Water Well Service	1968	668	7	Tg	--	--	--	S,E 2	D	Perforated casing from 637 to 668 ft.
806	U.S. Govt. Naval Auxiliary Station	Katy Drilling Co.	1966	829	--	Tg	--	--	--	N	U	Plugged and abandoned.
807	King Ranch, Inc.	Elmer Rupp	1948	775	6	Tg	--	--	--	C,W	S	Los Quatros Equinos Well #2. 21 ft perforated section.
901	do.	R.J. Mills	--	852	10 1/2	Tg	52	30.6 153.4	Jan. 12, 1933 Mar. 20, 1969	--	--	Palo Marcado Well #1. Destroyed. Observation well. 1/
* 902	do.	Carl Vickers Water Well Service	1966	582	6 5/8	Tg	52	--	--	C,W	S	Palo Marcado Well #3. Perforated casing from 808 to 852 ft.
27-401	do.	do.	1949	750	5	Qbl	43	27.9 124.7	Nov. 14, 1943 Mar. 20, 1969	C,W	S	New Noria Nina Well, replaces old well. Perforated casing from 708 to 750 ft. 1/
501	do.	do.	1946	1,029	--	Tg	38	--	--	C,W	S	Mota Redondo Well. Reworked in 1965; perforated screem with 38 shots.
601	do.	R.J. Mills	1917	909	6 5/8 5 3/16	Qbl	34	2.0 68.8	Jan. 19, 1933 Mar. 1969	C,W	S	Palacios Well. Has been worked over. Observation well. 1/
701	do.	Carl Vickers Water Well Service	1948	988	6 5/8 5 1/2	Tg	45	128.0	Aug. 1, 1968	C,W	S	Noria Bee Well. 22 ft perforated casing
801	do.	T.L. Herring	--	1,035	7	Tg	36	5.3 194.1	Jan. 12, 1933 Mar. 20, 1969	C,W	S	Noria Honda Well. Reworked in 1946. Observation well. 1/
* 802	do.	Carl Vickers Water Well Service	1951	948	6 5	Tg	39	15.3 80.9	Nov. 14, 1943 Mar. 20, 1969	C,W	S	New Las Palmas Well; replaces old well. Perforated casing, 885 to 948 ft. Observation well. 1/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-27-803	King Ranch, Inc.	Carl Vickers Water Well Service	1947	1,024	5 1/2	Tg	34	--	--	C,W	S	La Taza Well. Perforated casing from 1,003 to 1,024 ft.
901	do.	do.	1957	915	6 5/8 5 1/2	Qb1	34	17.5 68.7	Jan. 19, 1933 Mar. 20, 1969	C,W	S	Aljivares Well #2; replaces old well. Perforated casing 878 to 915 ft. Observation well. 1/
28-401	do.	do.	1954		5 1/2	Tg	28	--	--	C,W	S	Falcon Well.
501	Humble Oil & Ref. Co.	do.	1963	1,014	6 5/8 4 1/2	Tg	--	--	--	C,W	S	Lobo #2 Well.
502	King Ranch, Inc.	Oil & Ref. Co.	1958	5,968	--	--	38±	--	--	--	--	Lobo Pasture Well #2. Oil test. 2/
701	do.	R.J. Mills	--	945	7 1/4	Qb1	35	15.5 20.9	Jan. 19, 1933 Mar. 7, 1964	C,W	U	Old Chiltipin Well. Formerly used as observation well. 1/
702	do.	Carl Vickers Water Well Service	1957	945	6 5/8 5 1/2 3 1/4	Tg	35	59.5 65.5	Feb. 26, 1965 Mar. 20, 1969	C,W	S	Chiltipin Well #2; replaces old well. Observation well. 1/
703	do.	do.	1948	914	6 5/8 5 1/2	Tg	37	65.4	Oct. 25, 1968	C,W	S	Field #25 well. 22 ft perforated casing.
704	do.	do.	1947	889	6 5/8 4 1/2	Tg	31	--	--	C,W	S	Noria Dan Well. 21 ft 4 1/2 in. screen.
801	do.	do.	1954	958	5 1/2	Tg	--	--	--	C,W	S	Don Roberto Well. Top liner at 847 ft. 3/4 in. liner from 847 ft.
* 902	do.	do.	1957	945	6	Qb1	30	31.4 56.7	Feb. 23, 1966 Mar. 20, 1969	J,E	D,S	Headquarters Well. Laureles Ranch. Perforated casing 903 to 945 ft. Observation well. 1/
903	do.	do.	1963	1,086	6 5/8 4 1/2	Tg	23	--	--	C,W	S	Mujeres Well #2.
29-404	do.	do.	1948	1,075	5 1/2 3 1/2	Tg	25	--	--	C,W	S	Noria del Bordo Well #2.
502	do.	do.	1949	234	--	Qb1	--	--	--	C,W	S	Noria Tomas Well #3.
* 603	do.	--	--	140±	5	Qb1	--	38.0	July 17, 1968	C,W	S	Coyote Well.
604	do.	Humble Oil & Ref. Co.	1950	8,988	--	--	20±	--	--	--	--	E. Laureles Well #G-4. Oil test. 2/ 4/
* 701	do.	Carl Vickers Water Well Service	1962	1,251	6 5/8	Tg	25±	+ 2.5	May 8, 1969	C,W	S	Tacoache Well #3. Casing cemented 0 to 1,216 ft. Reported discharge 10 gpm in 1962. Perforated casing 1,216 to 1,251 ft. Equipped with 2indmill to provide larger quantity. 3/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
					Kleberg County							
RR-83-29-801	King Ranch, Inc.	Carl Vickers Water Well Service	1949	131	--	Qb1	20	9.9	July 17, 1968	C,W	S	Field D-1, Well #1.
802	do.	do.	1955	1,178	6 5/8 5 1/2	Tg	--	--	--	--	S	Aqua Gorda Well. Top liner 1,061 ft.
803	do.	do.	1953	1,245	6 5/8 5 1/2	Tg	23	--	--	C,W	S	Gracios Well #2. 104 ft 3 1/4 in. bank and perforated liner.
804	do.	Humble Oil & Ref. Co.	1949	9,992	--	--	27	--	--	--	--	E. Laureles Well #G-3. Oil test. 2/
901	do.	Carl Vickers Water Well Service	1948	147	6 5 9/16	Qb1	13	--	--	C,W	S	Alta Vista Well #2. Packer set. 1 joint perforated casing at bottom.
30-402	do.	--	1955	152	6 5/8	Qb1	22	16.8 18.3	Aug. 2, 1968 May 8, 1969	C,W	S	La Hacha Well #3.
* 502	do.	Carl Vickers Water Well Service	1967	55	6 5/8	Qbb	15	3.4 0.0	July 17, 1968 May 8, 1969	C,W	S	Cedros Well. Replacement for old well.
701	do.	--	--	67	5	Qbb	12±	21.9	Aug. 2, 1968	C,W	S	Yerba Anis Well. Test hole drilled here in 1951, encountered salt water 192 ft.
* 702	do.	--	1939	146	6 4 1/2	Qb1	17	13.1	May 8, 1969	C,W	S	Los Patos Well. 21 ft water sand.
703	do.	A.H. Masiran	--	101	6	Qb1	17	11.7	do.	C,W	S	Toro Well. Gravel-walled.
33-101	do.	Elmer Rupp	--	654	6	Tg	105	32 196.1	1933 Aug. 20, 1968	C,W	S	Anagua Well. Sand reported from 632 to 654 ft. Deepened from 559 to 654 ft in 1951.
102	do.	do.	1952	550	6	Tg	96	30 182.3	1933 Aug. 20, 1968	C,W	S	Caldwell Well. Pump set at 200 ft in 1967. 45 ft perforated casing.
103	do.	Humble Oil & Ref. Co.	1950	8,000	--	--	108	--	--	--	--	Barregas Well #66. Oil test. 2/
201	do.	R.J. Mills	--	508	4 1/2	Tg	79	29.0 190.1	Jan. 10, 1933 Mar. 24, 1969	C,W	S	Libertad Well. Observation well. 1/
202	do.	Carl Vickers Water Well Service	1962	581	6 5/8 4 1/2	Tg	--	--	--	C,W	S	Pita Well #3. Old well plugged with cement. 1 ft perforated casing. Top of liner at 514 ft.
301	do.	A.J. Masiran	1943	612	6 4	Tg	75	144.5 206.2	Feb. 19, 1954 Mar. 24, 1969	C,W	S	New silo well; replaces old well. Perforated casing from 592 to 612 ft. Observation well. 1/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-33-302	King Ranch, Inc.	Dick Mills	--	--	7	Tg	75	30.5 126.1	Jan. 10, 1933 Feb. 6, 1953	--	--	Old silo well. Destroyed; replaced by 83-33-301. Formerly used for observation well. 1/
303	Yeary Dairy	--	1914±	700±	5	Tg	60±	145 199.0	1955 Aug. 7, 1968	P,E 1	D,S	
* 401	King Ranch, Inc.	Elmer Rupp	1956	556	6	Tg	90±	142.6	Aug. 20, 1968	C,W	S	Burney Well. Pump set at 180 ft in 1967. 6 in. casing demented to surface. 31 ft 4 in. perforated pipe.
402	do.	Carl Vickers Water Well Service	1968	574	6 5/8	Tg	95	160	1968	C,W	S	Escondido Well #3. 514 ft 6 5/8 in. casing, 4 1/2 in. slotted casing. Replaces old well. 3/
501	do.	Elmer Rupp	1955	610	7 5	Tg	80±	139.4	Aug. 22, 1968	C,W	S	Mesquite Well. Casing cemented 0 to 610 ft. Pump set at 160 ft in 1967.
601	Jerry Gibson	Ace Water Well Drilling Co.	--	640	4 1/2	Tg	70	138.2	May 18, 1968	S,E 1	D	Perforated casing from 580 to 600 ft.
602	L.D. Yeary	--	1940±	700±	4 3	Tg	73±	110 140 151.5	1955 1962 Aug. 7, 1968	C,W	D	Reworked in 1955.
702	King Ranch, Inc.	Elmer Rupp	1951	534	6	Tg	90	127.5	Apr. 26, 1968	C,W	S	Alazan Well. 504 ft 6 in. casing; 30 ft perforated, 4 1/4 in. estimated.
703	do.	do.	1950	651	6	Tg	87	127.8	Aug. 20, 1968	C,W	S	Monte Verde Well. 30 ft perforated casing.
801	do.	do.	1949	611	6	Tg	74	120.0	Aug. 22, 1968	C,W	S	Media Luna Well. Cemented top to bottom. 579 ft at 6 in. casing; 40 ft, 5 3/16 in. screen.
901	Dr. Lee E. Blackwood	Bowen Water Well Drilling Co.	1962	620	4 1/2	Tg	65±	114.4	Apr. 4, 1968	S,E 1	D,S	Screen from 600 to 620 ft. Pump set at 121 ft in 1962. 3/
902	A.J. Klare	R.C. Custer Water Well Service	1966	608	4 1/2	Tg	60±	102.5	Apr. 5, 1968	S,E 1	D	4 1/2 in. casing from 0 to 608 ft; perforated from 587 to 608 ft. Pump set at 147 ft in 1966.
* 903	A.M. White, Jr.	--	--	700±	5	Tg	65	116.1	Aug. 7, 1968	S,E 1/2	D,S	
* 34-101	City of Kingsville	Carl Vickers Water Well Service	1957	884	16 8 5/8	Tg	--	--	--	S,E 125	P	City Well #13. 16 in. casing from 0 to 590 ft; 8 5/8 in. casing, 490 to 884 ft. Pump set at 500 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
RR-83-34-102	J.R. Trussell	Frank Honse	Old	600±	4 1/2	Tg	58	18.9 119.8	Dec. 8, 1932 Jan. 27, 1960	N	U	Abandoned. Formerly used as observation well. 1/
103	R.F. Preait	R.J. Mills	1932	661	4	Tg	57	23.5 46.1	Nov. 30, 1932 Mar. 5, 1944	C,W	D,S	Formerly used as observation well. 1/
104	Dr. J.V. Chandler Est.	W.J. Honse	Old	--	6	Tg	60	36.1 24.9	Dec. 15, 1932 Apr. 13, 1939	--	--	Do.
* 106	Edward Schubert	Ace Water Well Service	1965	576	4 1/2	Tg	55±	184.7	Apr. 3, 1968	S,E 2	D	Casing perforated from 556 to 576 ft. Pump set at 273 ft in 1965. 3/
* 107	City of Kingsville	Carl Vickers Water Well Service	1956	1,074	12 8 5/8	Tg	--	--	--	S,E 100	P	Park Well. 12 in. casing, 0 to 590 ft; 8 5/8 in. casing, 490 to 1,074 ft.
108	Ben Smith	Ace Water Well Service	1965	660	4 1/2	Tg	--	190	1965	S,E 1 1/2	D	Casing perforated from 640 to 660 ft. Pump set at 273 ft in 1965.
109	--Hollowitz	do.	1949	695±	4 1/2	Tg	62	212.3	Oct. 9, 1968	C,W	D,S	Pump set at 220 ft.
110	Stanolind Oil & Gas Co.	--	1946	8,598	--	--	53	--	--	--	--	Johnson #1. Oil test. 2/
201	Naval Auxiliary Air Sta.	Carl Vickers Water Well Service	1942	791	10 8	Tg	--	158	1960	T,E 50	P	89 ft screen section.
202	do.	do.	1942	795	10 7	Tg	--	165	1960	T,E 50	P	205 ft screen section.
203	do.	do.	1954	725	16 8 5/8	Tg	--	166	1960	T,E 75	P	225 ft screen section. Pump set at 350 ft in 1960.
204	Joe Elsik	Frank Honse	Old	786±	--	Tg	52	22.8 51.0	Dec. 16, 1932 Feb. 3, 1943	P,W	--	Formerly used as observation well. 1/
205	A. Robinson	Andy Ferguson	--	--	5 5/8	Tg	50	6.3 11.6	Jan. 6, 1933 Feb. 6, 1941	N	U	Destroyed. Formerly used as observation well. 1/
206	N.E. Selstad	do.	--	600±	7 3/4	Tg	45	13.4 17.0	Feb. 4, 1933 Oct. 6, 1941	N	U	Do.
207	Alfred Plough	Martin Water Well Service	1963	519	7	Tg	50	156.4	May 18, 1968	S,E 1 1/2	D	14 ft screen section. Replaces old well. 1933 water level was 28.4 ft in old well.
208	Robert Cannon	Buck Page & Co.	1963	664	4 1/2	Tg	50±	146.3	do.	J,E	D	Screen from 640 to 664 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
* RR-83-34-209	Naval Auxiliary Air Sta.	Katy Drilling Co.	1966	675	--	Tg	--	--	--	T,E 100	P	Test hole drilled to 811 ft. Reported drawdown, 155 ft after pumping 2 hrs. at 500 gpm. Screen setting 540 to 598; 604 to 628; and 646 to 670 ft. Pump set at 400 ft in 1966. 3/
* 301	King Ranch, Inc.	--	Old	1,050	--	Tg	47	19.8 153.4	Jan. 12, 1933 Mar. 20, 1969	C,W	S,D	Leoncitos Well. Observation well. 1/
302	do.	Carl Vickers Water Well Service	1947	608	6	Qbl, Tg	42	44.1 101.4	Feb. 20, 1947 Mar. 20, 1969	C,W	S	New Vinatero Well. Casing perforated from 587 to 608 ft. Observation well. 1/
303	do.	R.J. Mills	--	--	6 5/8	Qbl	42	11.9 34.9	Jan. 13, 1933 Feb. 20, 1947	N	U	Old Vinatero Well. Replaced by 83-34-302. Formerly used as observation well. 1/
304	Willard Bareis	R.C. Custer Water Well Service	1967	634	7	Tg	--	130	1967	C,E 1	D,S	Casing perforated from 614 to 634 ft. Reported sands from 29 to 392 ft contain salt water.
305	King Ranch, Inc.	Carl Vickers Water Well Service	1967	609	6 5/8	Tg	--	151	1967	S,E 2	S	Leoncitor Well #3. Test hole drilled to 860 ft. Casing cemented from 0 to 548 ft. Perforated from 578 to 600 ft. 3/
401	Al Kleberg	--	1954	600±	--	Tg	56	94.7 128.5	Feb. 11, 1955 Mar. 24, 1969	C,W	S,D	Observation well. 1/
402	Presbyterian Pan-American School	Carl Vickers Water Well Service	1954	625	12	Tg	--	--	--	T,E	P	Originally drilled for irrigating. Screen from 583 to 675 ft.
403	do.	do.	1946	613	6 5/8	Tg	--	--	--	T,E 10	P,S	Screen from 571 to 613 ft.
404	do.	do.	1949	625	6 5/8	Tg	--	--	--	N	U	Screen from 583 to 625 ft.
405	L.E. Plato Estate	Pete Christianson	Old	--	--	--	55	14.5 60.2	Feb. 25, 1933 Feb. 17, 1949	N	U	Destroyed. Formerly used as observation well. 1/
406	J.R. Trussell	Frank Honse	Old	812±	6	Tg	53	2.0 30.8	Mar. 1913 Mar. 16, 1945	B,H	U	Do.
407	A.J. Williams	George Hollimon	1910?	700±	5 1/2	Tg	52	4.0 14.6	Mar. 1913 Feb. 16, 1940	N	U	Do.
408	G.R. Dietert	Ace Water Well Service, G.R. Dietert	1949	620	8	Tg	55	109.3	May 17, 1968	S,E	D,P	
409	Alfred Plough, Jr.	Martin Water Well Service	1962	610	4 1/2	Tg	60±	118.3	May 18, 1968	S,E 1 1/2	D	Screen from 595 to 610 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
* RR-83-34-410	Ricardo Water Supply Co.	Carl Vickers Water Well Service	1965	680	--	Tg	--	140	1965	T,E 7 1/2	P	Supplies water for Ricardo. Screen from 600 to 680 ft.
411	Valdemar Perez	Buck Page & Co.	1965	635	4 1/2	Tg	--	60	1965	S,E	D,S	4 1/2 in. casing from 0 to 595 ft. Casing perforated from 595 to 635 ft.
* 501	Heberto Garcia	R.C. Custer Water Well Service	1967	631	7	Tg	--	119	1967	S,E 2	D	Perforated casing from 610 to 631 ft. Pump set at 168 ft in 1967.
* 502	Gerald A. Cumberland	do.	1967	656	4 1/2	Tg	52±	106.0	Apr. 3, 1968	S,E 1	D	Perforated casing from 635 to 656 ft. Pump set at 168 ft in 1967.
503	--Sellers	John B. Hawley	1958	6,131	--	--	40 4/	--	--	--	--	Oil test. 2/
* 601	M.E. Burris	--	Old	760±	4 1/2	Tg	34	71.4	Aug. 8, 1968	C,W	D,S	
602	Kleberg and Rosse	Sohio Petroleum Co.	1945	7,485	--	--	49	--	--	--	--	Oil test. 2/ 4/
701	Mrs. J.Talty	--	--	800±	--	Tg	52	9.8 17.1	Dec. 17, 1932 Mar. 24, 1969	N	S	Observation well. 1/
703	David Van Fleet	R.C. Custer Water Well Service	1966	752	4 1/2	Tg	50±	92.7	Apr. 5, 1968	T,E 1 1/2	D	Perforated casing from 731 to 752 ft. Reported all sand sections from 25 to 473 ft contain salty water. 3/
* 704	Olan Patillo	Welty Water Well Service	1963	708	--	Tg	60±	115.4	Apr. 4, 1968	S,E 1	D	Perforated casing from 654 to 694 ft. Pump set at 129 ft in 1963.
* 706	Dr. J.K. Northway	R.C. Custer Water Well Service	1966	781	6 5/8 4 1/2	Tg	45	87.4	Apr. 5, 1968	C,W	S	6 5/8 in. casing from 0 to 751 ft; 4 1/2 in. from 718 to 781 ft. Perforated from 757 to 781 ft. Reported sands from 26 to 418 ft contain salt water.
707	Fernando Peña	do.	1968	674	6	Tg	--	--	--	C,W	D	Perforated casing from 648 to 674 ft. Reported sands from 18 to 487 ft contain salt water.
* 801	M.H. Cash	do.	1966	777	5	Tg	30±	69.8	Apr. 2, 1968	S,E 1	D	Perforated casing from 759 to 777 ft. Pump set at 126 ft in 1966. Reported sands from 21 to 422 ft contain salt water.
802	Ysabel Camarillo	Bowen Water Well Service	1962	602	--	Tg	68±	111.5	Apr. 10, 1968	S,E	D	
803	Homer F. Bars	R.C. Custer Water Well Service	1966	743	4 1/2	Tg	--	--	--	S,E 1	D	4 1/2 in. casing from 0 to 722 ft; perforated from 722 to 743 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
RR-83-34-902	John S. Gillett	R.C. Custer Water Well Service	1966	866	8 5/8 6 5/8	Tg	35	62	1966	S,E	Irr	Casing cemented from 0 to 724 ft. Perforated casing 764 to 792, 798 to 828, and 842 to 866 ft.
* 903	Mrs. R.S. Muil	Carl Vickers Water Well Service	1967	720	6 1/2	Tg	27	63.3	Apr. 30, 1968	J,E 1	D	6 5/8 in. casing from 0 to 690 ft; 4 1/2 in., 656 to 699 ft. Screen from 699 to 720 ft. Pump set at 100 ft in 1967. 3/
35-101	King Ranch, Inc.	Elmer Rupp	1947	905	6	Tg	46	19.0 104.5	Jan. 13, 1933 Mar. 20, 1969	C,W	S	Mesquite Well #2. Perforated casing from 863 to 905 ft. Observation well. 1/
201	do.	do.	1951	964	6 4 1/2	Tg	46	12.3 83.2	Jan. 13, 1933 Mar. 20, 1969	C,W	S	Telephone Well #1. Perforated from 934 to 964 ft. Observation well. 1/
202	do.	R.D. Mills	1913	945	8 3/4	Tg	41	18.3 16.2	Jan. 13, 1933 Feb. 1, 1938	--	--	Telephone Well #2. Formerly used as observation well. Destroyed. 1/
203	do.	do.	--	945	6 5/8	Tg	41	42.2	Feb. 16, 1949	--	--	New Telephone Well. Destroyed.
204	do.	Dick Mills	--	--	8 3/4 5	Tg	32	3.4 .4	Jan. 13, 1933 Feb. 4, 1953	N	U	Tres Esquinas Well 1. Formerly used as observation well. 1/
301	do.	R.J. Mills	Old	913	6	Tg	36	8.5 68.5	Nov. 11, 1934 Mar. 20, 1969	C,W	S	Gallito Well. Observation well. 1/
302	do.	Carl Vickers Water Well Service	1952	760	6	Qbl	30	1.7 64.3	Jan. 27, 1933 Mar. 20, 1969	C,W	S	New Quantitos Well, replaces old well. Perforated casing from 718 to 760 ft. Observation well. 1/
401	do.	do.	1958	1,017	6 5/8 5 1/2	Tg	27	64.1	Oct. 25, 1968	C,W	S	Pinto Well #2, replaces old well. Top of liner at 938 ft. Casing cemented.
402	do.	do.	1947	736	6 5/8	Tg	--	--	--	C,W	S	Ramos Well. Perforated casing from 715 to 736 ft. Canvas and wire packer installed.
403	do.	Humble Oil & Ref. Co.	1948	10,045	--	--	52±	--	--	--	--	Oil test. W. Laureles Well P-1. 2/ 4/
* 603	do.	Carl Vickers Water Well Service	1947	935	6 5/8	Tg	30±	55.5	July 15, 1968	C.W	S	Javelina Well.
* 604	do.	do.	1961	900±	6 5/8	Tg	20	16.4	July 31, 1968	C,W	S	Madera Well #1. 40 ft perforated casing. Top of liner at 803 ft.
701	Heep Field Gas Unit	Humble Oil & Ref. Co.	1960	9,523	--	--	28	--	--	--	--	Oil test. 2/ 4/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
RR-83-35-801	King Ranch, Inc.	Carl Vickers Water Well Service	1954	981	6 5/8 5 1/2	Tg	16	--	--	C,W	S	Paso Los Flacos Well. Top liner at 836 ft.
802	do.	do.	1960	925	5 1/2	Tg	--	21	1960	C,W	S	Grullo Well. 63 ft perforated casing. Top liner at 719 ft.
803	do.	do.	1947	900	6 5/8 4 1/2	Tg	--	--	--	C,W	S	El Sancudero Well. Perforated casing from 878 to 900 ft. Casing cemented, canvas and wire packer installed.
901	do.	--	--	--	--	--	17±	36.6	July 31, 1968	C,W	S	Miss Mamie Well. Not in use at present, mill broken.
902	do.	Carl Vickers Water Well Service	1954	895	6 5/8 5 1/2 3 1/4	Tg	--	8	1954	C,W	S	Berrenda Well. Casing cemented. Top of liner at 787 ft.
36-101	do.	do.	1955	963	6 5/8 5 1/2	Tg	--	20	1955	C,W	S	Huisache Well #2. Casing cemented. Top of liner 3 1/4 in.; liner at 792 ft.
102	do.	Humble Oil & Ref. Co.	1958	2,254	--	--	30±	--	--	--	--	Oil test. 2/ 4/
201	do.	Carl Vickers Water Well Service	1961	955	6 5/8 5 1/2	Tg	15	--	--	C,W	S	Noria Maria Well. Pumping level, 32.6 on July 15, 1968.
202	do.	Elmer Rupp	1950	947	6 4 1/4	Tg	20±	--	--	C,W	S	El Burro Well. 66 ft 4 1/4 in. perforated casing at bottom.
401	do.	Carl Vickers Water Well Service	1955	945	6 5/8 5 1/2 3 1/4	Tg	30	--	--	C,W	S	Guayacan Well #3. 80 ft perforated 3 1/4 in. pipe.
501	do.	do.	1952	1,121	6 5/8 5 1/2	Tg	20	+ 5.0 27.3	Jan. 20, 1933 July 15, 1968	C,W	S	Zacahuistle Well #2. Top liner at 1,027 ft, casing cemented.
502	do.	Humble Oil & Ref. Co.	1959	9,002	--	--	42	--	--	--	--	Oil test. Alazon Well #9. 2/ 4/
701	do.	Carl Vickers Water Well Service	1954	1,005	6 5/8 5 1/2 3 1/4	Tg	28	43.7	July 31, 1968	C,W	S	Papalote Enfuente Well. 40 ft perforated, 3 1/4 in. pipe. Top liner at 904 ft.
801	do.	--	--	--	--	Tg	26±	28.0	Aug. 2, 1968	C,W	S	Portales Verde Well.
802	do.	Carl Vickers Water Well Service	1950	1,032	6 5/8	Tg	--	--	--	C,W	S	Barranco Blanco Well. Top of 5 3/16 in. liner at 957 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-36-803	King Ranch, Inc.	Humble Oil & Ref. Co.	1962	8,997	--	--	20±	--	--	--	--	Oil test. 2/
804	do.	do.	1954	6,461	--	--	32 4/	--	--	--	--	Do.
901	do.	Carl Vickers Water Well Service	1955	1,284	6 5/8 5 1/2	Tg	--	--	--	C,W	S	La Presa Well. Top of 4 1/4 in. liner at 1,160 ft.
37-101	do.	do.	1964	1,129	6 5/8 4 1/2	Tg	25±	68	1964	C,W	S	Cecera Well #2. 1,098 ft of 6 5/8 in. casing; 42 ft 4 1/2 in. perforated pipe.
* 201	do.	do.	1967	1,450	5 3/16 3 1/4	Tg	--	--	--	C,W	S	Ojo del Aqua Well #1.
202	do.	A.H. Masiran	1941	1,184	6 5/8 4 1/2	Tg	26	--	--	--	S	Palomas Well #2. Originally drilled 0 to 1,412 ft, backed up and set screen at 1,184 ft.
301	do.	Elmer Rupp	1951	324	8	--	--	6.7	May 8, 1969	C,W	S	Estrella Well. 8 in. casing set in cement from 0 to 324 ft, gun perforated 175 to 324 ft. Salt water reported at 246 ft.
302	do.	R.J. Mills	1935	1,280	6 5/8 5 1/8 5 2/16 4 1/4	Tg	--	+	1968	Flows	S	Esperanza Well. Estimated discharge 5-10 gpm. Reported water in brown sand 1258-1280 ft.
401	do.	Carl Vickers Water Well Service	1962	1,213	6 5/8 4 1/2	Tg	--	+ 13.9 11.1	Jan. 28, 1933 Aug. 1, 1968	C,W	S	Perra Well #2. Well 1 plugged. 1,173 ft. 6 5/8 in. casing. Top liner at 1,107 ft.
* 501	do.	do.	1948	135	5 9/16	Qbl	10±	29.4	May 8, 1969	C,W	S	Las Auras Well. 5 joints of 5 9/16 in. casing; 2 joints 4 1/2 in. perforated casing.
601	do.	--	--	79	--	Qbl	30	14.1	Aug. 1, 1968	C,W	S	Sordo Well.
* 602	do.	--	--	74	6	Qbl	16±	13.3	Aug. 2, 1968	C,W	S	Calixtro Well.
701	do.	R.J. Mills	1929	1,331	8 1/4 5 3/16	Tg	10±	+ 15.3 +	Jan. 25, 1933 1960	Flows	S	Mota Mesquite Well. Sand reported, 1,300 to 1,331 ft.
801	do.	Carl Vickers Water Well Service	1952	1,340	6 5/8 4 1/2	Tg	--	--	--	--	S	Patricio Well #3.
802	do.	--	--	--	--	--	15	15.8	Aug. 1, 1968	C,W	S	Noche Bueno Well.
* 901	do.	--	--	1,435	--	Tg	26	10.6	do.	C,W	S	Altos Prietos Well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
RR-83-37-902	King Ranch, Inc.	Carl Vickers Water Well Service	1966	85	6 5/8	Qb1	25	19.5	Aug. 1, 1968	C,W	S	Tangues de Luis Well. 6 5/8 in. casing 0 to 94 ft; perforated 94 to 110 ft.
* 38-101	do.	do.	--	40	--	Qbb	10	1.0	Aug. 2, 1968	C,W	S	Lobo Well.
* 301	Standard Oil Co. of Texas	--	1955	355	4	Qb1	8±	+ 1.4	June 19, 1969	T,E 1	Ind	Supplies water for radiators, etc. Salt water reported from 244 to 263 ft. Perforated casing from 336 to 347 ft.
* 401	King Ranch, Inc.	--	--	27	6	Qbb	10	6.6	do.	C,W	S	Novilla Well.
41-101	do.	--	--	--	--	Tg	99	125.9	Apr. 26, 1968	C,W	S	Balancin Well.
102	do.	Carl Vickers Water Well Service	1947	556	5 1/2 4 1/2	Tg	--	--	--	C,W	S	Lidios Well. 528 ft 5 1/2 in. casing; 4 1/2 in. casing perforated from 528 to 556 ft.
201	do.	Elmer Rupp	1951	548	6 4 1/4	Tg	75	12.3 109.9	Jan. 10, 1933 Aug. 21, 1968	C,W	S	Lampasosa Well. 502 ft 6 in. casing; 62 ft 4 1/4 in. casing; perforated casing 503 to 548 ft.
401	do.	do.	1950	600	2 1/2 6	Tg	89	105.9	Apr. 25, 1968	C,W	S	Laguna Larga Well. Deepened to 600 ft in 1950. Slotted casing from 566 to 600 ft.
402	do.	do.	1948	569	6 5 3/16	Tg	82	97.5	do.	C,W	S	Canelo Well. 539 ft 6 in. casing; 30 ft 5 3/16 in. casing, 21 ft perforated.
501	do.	Carl Vickers Water Well Service	1965	606	6 5/8	Tg	71	100.6	Aug. 21, 1968	C,W	S	La Chanza Well #3. 549 ft 6 5/8 in. casing; 42 ft perforated; 4 1/4 in. liner.
601	do.	Elmer Rupp	1942	596	5	Tg	63	84.1	Apr. 25, 1968	C,W	S	Alta La Pita Well. 5 in. casing cemented 0 to 572 ft. Open hole from 572 to 596 ft.
701	do.	Carl Vickers Water Well Service	1946	592	7 6 5/8	Tg	82	97.0	Apr. 26, 1968	C,W	S	Sarampion Well.
702	do.	do.	1962	553	6 5/8 4 1/2	Tg	--	70	1962	C,W	S	Coyote Well. 21 ft 4 1/2 in. perforated casing. 3/
801	do.	--	--	--	--	Tg	70	79.5	Apr. 25, 1968	C,W	S	Humble Well #2 in Canelo Pasture.
802	do.	--	1950	602	6 5/8	Tg	76	183.1	Apr. 26, 1968	C,W	U	Sauces Well. Deepened from 570 to 602 ft in 1950. Abandoned.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
* RR-83-41-803	Sullivan Cattle Co.	A. Porter	1964	638	12 3/4	Tg	70±	75.4	Aug. 29, 1968	T,G	Irr	Used to irrigate grass seed. Measured drawdown 35 ft after pumping 3 hrs. at 616 gpm. 8 in. discharge. Perforated from 512 to 638 ft.
804	do.	Sun Oil Co.	1961	830	13 3/8	Tg	70±	73.5	do.	T,E	Irr	Originally drilled as oil test in 1942; converted to water well in 1961; gun perforated from 740 to 780 ft and 810 to 830 ft. Plugged at 900 ft and cemented back to 830 ft.
805	King Ranch, Inc.	Carl Vickers Water Well Service	1968	549	6 5/8 4 1/2	Tg	76	60	1968	C,W	S	Sauces Well #3, replaces old well. Top 4 1/2 in. liner at 428 ft, 60 ft 4 1/2 in. slotted. 3/
806	do.	Humble Oil & Ref. Co.	1950	8,507	--	--	89	--	--	--	--	Oil test. 2/
901	do.	Elmer Rupp	1955	586	6	Tg	58	70.7	Aug. 21, 1968	C,W	S	Noria Charro. 6 in. casing cemented from 0 to 530 ft, 64 ft slotted pipe.
902	do.	Carl Vickers Water Well Service	1947	645	5 1/2	Tg	--	--	--	C,W	S	Noria Richie. 618 ft of 5 1/2 in. casing; 20 ft screen at bottom.
42-101	do.	Elmer Rupp	1948	633	6 4	Tg	48	74.0	Sept. 13, 1968	C,W	S	Africana Well. 257 ft of 6 in. casing; 354 ft of 4 in.; strainer at bottom. Well reworked in 1948.
102	do.	do.	1955	672	6 4	Tg	48	--	--	C,W	S	Palanco Well. 35 joints 6 in. casing cemented; 42 ft slotted 4 in. casing at bottom.
201	Dan Christensen	Pete Christensen	--	520	7	Tg	39	.8 65.3	Jan. 11, 1933 Feb. 26, 1966	T,E	S	Formerly used as observation well. 1/
202	--	do.	--	688±	4 3/4	Tg	40	1.3 29.0	Jan. 11, 1933 Feb. 21, 1951	--	--	Destroyed. Formerly owned by W.H. Bensman. Formerly used as observation well. 1/
203	Dan Christensen	M.R. Custer	1966	690	4	Tg	39	66.4 67.2 66.5	Feb. 25, 1967 Feb. 9, 1968 Mar. 24, 1969	T,E	D	4 in. casing from 0 to 690 ft, perforated 670 to 690 ft. Packer set at 650 ft. Observation well. 1/
204	Cecil Burney	R.C. Custer Water Well Service	1966	793	6 5/8	Tg	40±	75.1	Aug. 10, 1968	C,W	D	Originally drilled to 805 ft. Perforated casing from 771 to 793 ft. Reported all sands from 26 to 416 ft. Yield salt water. 3/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-42-205	T.M. Brookshire	Bowen Water Well Service	1962	717	5 1/2	Tg	30	71.9	Apr. 30, 1968	C,W	S	Perforated casing from 675 to 717 ft.
301	Vernie Hubert	R.C. Custer Water Well Service	1967	822	5 1/2	Tg	30	54.5	May 17, 1968	C,W	S	Perforated casing from 798 to 822 ft. Reported all sands from 18 to 359 ft. Yield salt water.
401	King Ranch, Inc.	Elmer Rupp	1948	628	6 5 3/16	Tg	45	66.3	Sept. 13, 1968	C,W	S	Santa Cruz Well. 606 ft of 6 in. casing; 25 ft of perforated casing.
* 402	do.	U.S.G.S.	1968	31	1 1/2	Qbl	41±	15.8 22.9	Apr. 24, 1968 June 12, 1969	N	--	Observation Well. 1/ U.S.G.S. #1. Destroyed.
* 403	do.	do.	1968	52	1 1/2	Qbl	44±	22.4 26.5	Apr. 24, 1968 June 12, 1969	N	--	Observation well. 1/ U.S.G.S. #2. Destroyed.
* 404	do.	do.	1968	38	1 1/2	Qbl	46±	29.7 29.6	Apr. 24, 1968 June 12, 1969	N	--	Observation well. 1/ U.S.G.S. #3. Destroyed.
501	M.A. Whitcomb Water Well Works	E.C. Rupp	1937	762	10 6 5/8	Tg	--	33	1960	N	U	Destroyed. Formerly supplied town of Riviera. Pump set at 55 ft in 1960.
* 502	do.	Layne-Texas Co.	1960	737	8 1/2 4 1/2	Tg	40±	48.8 56.2	Mar. 27, 1964 Mar. 24, 1969	T,E 15	P	Supplies water for Riviera. Screen setting: 619 to 629; 649 to 684; 699 to 730 ft. Observation well. 1/
* 504	John A. Aregood	R.C. Custer Water Well Service	1966	736	6 5/8	Tg	41±	62.7	Apr. 23, 1968	C,W	S	Perforated casing from 711 to 736 ft. Reported all sands from 18 to 462 ft yield salt water. 3/
505	H.J. Steadman	do.	1966	759	6 5/8	Tg	40±	70.9	Apr. 10. 1968	S,E 1	D	6 5/8 in. casing from 0 to 734 ft; perforated from 734 to 759 ft. Reported all sands from 10 to 481 ft yield salt water.
506	A.M. Reed	do.	1967	728	6 5/8	Tg	--	--	--	S,E 1	D	Perforated casing from 718 to 728 ft. Reported all sands from 21 to 468 ft yield salt water.
* 507	C.L. Hutsell	Stoops Bros.	1914	750	5	Tg	37	+ 54.2	1933 Aug. 6, 1968	C,W	D,S	Formerly flowed.
601	Nicholas Garza	R.C. Custer Water Well Service	1967	773	7	Tg	30±	47.7	May 17, 1968	J,E 1/2	D	Perforated casing from 757 to 773 ft. Reported all sands from 17 to 514 ft yield salt water.
602	Harry Riskir	Disbro Water Well Service	1963	754	8 5/8 6 5/8	Tg	--	--	--	N	U	Abandoned. Casing cemented from 0 to 400 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-42-701	King Ranch, Inc.	--	Old	500±	5 1/2	Tg	47	.9 51.7	Jan. 11, 1933 Mar. 24, 1969	C,W	S	Rincon de Caesar Well. Has been reworked. Observation well. 1/
* 702	do.	--	--	--	--	Tg	50±	3.9 64.4	Jan. 10, 1933 Aug. 21, 1968	C,W	S	Rincon de Tio Pancho Well.
703	King Ranch Rincon	Humble Oil & Ref. Co.	1962	9,998	--	--	51± 4/	--	--	--	--	Oil test. 2/
801	King Ranch, Inc.	Carl Vickers Water Well Service	--	583	6 4	Tg	31	+ 10.0 42.6	Jan. 11, 1933 Mar. 24, 1969	C,W	S	Charro Well. Replaced by a new well. Observation well. 1/
* 803	John Dickinson	--	Old	700±	5	Tg	--	37	1968	S,E 1/2	D,S	Formerly flowed.
901	Leo Kaufer	R.C. Custer Water Well Service	1966	789	4 1/2	Tg	14	40.7	Apr. 30, 1968	C,W	D	Perforated casing from 731 to 752 ft. Pump set at 63 ft in 1966. 3/
43-101	Orville J. Schonefeld	G.R. Dietert Water Service	1964	856	5 1/2 4 1/2	Tg	12±	35.4	Apr. 9, 1968	S,E 1 1/2	D	325 ft of 5 1/2 in. casing; 531 ft of 4 1/2 in. casing; perforated from 823 to 856 ft. Pump set at 186 ft in 1964.
* 102	Mrs. J.H. Schonenfeld	R.C. Custer Water Well Service	1967	866	4 1/2	Qbl	20±	39.6	do.	C,W	D	Perforated casing from 843 to 866 ft. Packer set at 782 ft.
104	Frank Kuntscher	Ace Water Well Drilling Co.	1964	865	4 1/2	Qbl	--	45	1964	S,E 1 1/2	D	Perforated casing from 844 to 865 ft. Pump set at 186 ft in 1964.
* 201	O.A. and M.L. Kriegel & H.H. Ohlenbusch	R.C. Custer Water Well Service	1967	883	7 4 1/2	Qbl	11±	29.2	Apr. 9, 1968	S,E 1/2	D	Supplies water for several families. 7 in. casing, 0 to 851 ft; perforated 4 1/2 in. casing, 845 to 883 ft. Pump set at 105 ft in 1967. 3/
202	State of Texas	Texaco, Inc.	1953	13,022	--	--	34 4/	--	--	--	--	Oil test. 2/
* 301	King Ranch, Inc.	Carl Vickers Water Well Service	1957	935	6 5/8 5 1/2 3 1/5	Tg	22	1.0 40.2	Jan. 20, 1933 July 31, 1968	C,W	S	Visnaga Well #2. 894 ft of 6 5/8 in. casing.
402	C.F. Riskin	--	Old	800±	8	Tg	22±	45.3	Apr. 10, 1968	S,E 1	D	Formerly used as irrigation well.
* 403	Cities Service Map Gas Plant	--	1959	800±	4	Tg	--	--	--	T,E 2	Ind	Used by owner for cooling purposes.
404	Marcelo Jiminez	Martin Water Well Service	1963	833	7	Tg	17	29.0	May 23, 1968	T,E 1	D,S	Perforated casing from 821 to 833 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kleberg County												
RR-83-43-405	May and Schonefeld	Ace Water Well Service	--	--	8 4 1/2	Tg	17	34.4	Oct. 8, 1968	S,E 1	D	Supplies water for 3 families.
* 406	Anton Dietz	--	1916	850	8 5 1/2	Qbl	10	+ 1	Apr. 11, 1968	Flows	S	8 in. casing reduced to 5 1/2; estimated discharge, 3/4 gpm.
407	--Dietz	Katz Oil Co.	1959	10,519	--	--	27 4/	--	--	--	--	Oil test. 2/
408	Cities Service Oil Co.	Cities Service Oil Co.	1964	3,005	--	--	46 4/	--	--	--	--	Do.
501	R.Q. Naylor	Bob Dietert	1960	848	--	Tg		27.8	Oct. 8, 1968	S,E 7 1/2	D, Irr	48 ft perforated casing.
502	Koch Bros.	George W. Graham	1949	8,532	--	--	20	--	--	--	--	Oil test. 2/
601	E. Neubauer	--	1930	887	5	Qbl	--	--	--	C,H	S	30 ft. Perforated casing.
602	King Ranch, Inc.	Carl Vickers Water Well Service	1951	1,012	5 1/2 3 1/2	Tg	10+	--	--	C,W	S	Las Puertas Well. Top liner 926 ft.
* 701	L.C. Nanny	Pete Christensen	1929	900	--	Tg	--	5	1960	T,E 5	D, Irr	Used to irrigate small garden. Reported flowed until 1945.
* 801	Koch Land Co.	Andy Ferguson	1909	950	5	Qbl	25	33.2	May 23, 1968	J,E 1	P	Supplies water for 10 families. Reported flowed until 1920.
44-101	King Ranch, Inc.	Carl Vickers Water Well Service	1966	--	--	--	11±	57.1	July 31, 1968	C,W	S	La Estaca Well #1, replacement for old well.
102	do.	do.	1952	1,120	6 5/8 4 1/2	Tg	--	--	--	N	U	La Estaca Well #2. Replaced by well 83-44-101.
* 201	do.	--	--	1,051	--	Tg	21	+ 4.1	Jan. 26, 1933	C,W	S	Viboras Well. Pumping level 14.9 on Aug. 2, 1968.
202	do.	Carl Vickers Water Well Service	1954	1,090	6 5/8 5 1/2	Tg	--	--	--	C,W	S	Aceitero Well #2. Top of 3/4 in. liner at 958 ft. 3 joints perforated 3/4 in. liner.
203	do.	do.	1950	1,075	6 5/8 5 1/2	Tg	--	--	--	C,W	S	Santa Elena Well. Top of 3 1/2 in. liner at 983 ft. 4 joints 3 1/2 in. liner.
204	do.	Humble Oil & Ref. Co.	1952	7,000	--	--	28 4/	--	--	--	--	Oil test. 2/
401	do.	Carl Vickers Water Well Service	1955	1,001	5 1/2 4 1/2	Tg	--	--	--	C,W	S	Quemado Well. Top of liner 4 1/2 in. liner at 906 ft. 95 ft of 4 1/2 in. liner.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-83-44-402	King Ranch, Inc.	Carl Vickers Water Well Service	1958	1,010	6 5/8 5 1/2	Tg	--	--	--	C,W	S	Camiseta Well #2. Top of 3 1/4 in. liner at 939 ft. 62 ft of 3 1/4 in. perforated and blank liner.
901	State of Texas	Humble Oil & Ref. Co.	1954	9,912	--	--	30±	--	--	--	--	Oil test. 2/
45-101	King Ranch, Inc.	Carl Vickers Water Well Service	1951	1,292	5 1/2	Tg	--	--	--	--	S	Los Coralles Well. Top of liner at 1,205 ft. 4 joints 3 1/4 in. liner.
* 201	do.	do.	1965	1,322	6 5/8 4 1/2	Tg	3±	2.2	Aug. 1, 1968	--	S	El Martillo Well. Measured while pumping. Reported flow 20 gpm in 1965. Well would probably still flow small quantity if shut down long enough. Replacement for old well that flowed 13.6 above LSD in Jan. 1933.
* 202	do.	R.J. Mills	1930	1,475	6 5/8 5 3/16 4 1/4 3 1/4	Tg	15	+ 9.1	Jan. 25, 1933	Flows	S	Devisadero Well. Measured discharge 17 gpm Jan. 25, 1933.
203	do.	Humble Oil & Ref. Co.	1961	10,991	--	--	27 4/	--	--	--	--	Oil test. 2/
401	do.	R.J. Mills	1929	1,295	8 1/4 5 3/16	Tg	5	+	1960	Flows	S	Tule Well. Water sand reported from 1,260 to 1,295 ft. Temperature 94°F (34°C).
* 46-201	Sun Oil Co.	Sun Oil Co.	1954	1,650	10 16 24	Tg	4	--	--	Flows	U	Drilled as oil test and plugged back to 1,650 ft. 24 in. casing from +2 to -10 ft; 16 in. casing from +4 to -132 ft and 10 3/4 in. casing from +8 to 1,725 ft. Perforated casing from 1,530 to 1,560 ft. Measured flow 10 gpm June 19, 1969.
201	Dan Sullivan	--	Old	650	5 3/16	Tg	58	--	--	C,W	S	
301	Frank McGill	--	1926	652	5 3/4	Tg	--	25	1960	C,W	S	Known as Creek Well.
* 84-24-901	King Ranch, Inc.	--	--	490±	7	Tg	115±	182.3	Mar. 26, 1968	C,W	S	Alto del Burro Well.
32-201	do.	Carl Vickers Water Well Service	1961	478	6 5/8 4 1/2	Tg	151	140 170.6	1961 Mar. 26, 1968	C,W	S	Chivos Well. 44 ft 4 1/2 in. perforated casing.
* 301	do.	Elmer Rupp	1950	450	6	Tg	139	171.5	Mar. 26, 1968	C,W	S	Papalote Blanco Well. 418 ft of 6 in. casing; 43 ft of 4 in casing; 32 ft perforated.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-84-32-302	King Ranch, Inc.	Carl Vickers Water Well Service	1946	660	6 5/8 7	Tg	141	170.5	May. 26, 1968	C,W	S	Presa del Rayo Well. 27 joints 7 in. casing; 1 joint 6 5/8 in. screen.
501	do.	Elmer Rupp	1955	487	6 4	Tg	134	83.9 187.2	Feb. 21, 1947 Mar. 21, 1969	C,W	S	Tamales Well. Replacement for old well; 423 ft 6 in. casing; 66 ft 4 in. casing; 60 ft slotted. Observation well. 1/
502	do.	King Machinery	Old	427	7 5/16	Tg	134	44.7 78.5	Dec. 9, 1932 Mar. 14, 1946	N	U	Old Tamales Well. Destroyed; replaced by 84-32-501. Formerly used as observation well. 1/
* 503	do.	Carl Vickers Water Well Service	1945	534	7 6 5/8 4	Tg	137	171.9	Mar. 26, 1968	C,W	S	Matas Negras Well #2. 469 ft 7 in. casing; 64 ft 6 5/8 in. perforated casing.
505	do.	Humble Oil & Ref. Co.	1948	6,800	--	--	153 4/	--	--	--	--	Oil test. 2/
601	do.	Elmer Rupp	1942	533	6 5/8 4	Tg	126	196.3	Mar. 26, 1968	C,W	S	Packer set. 164 ft of 6 5/8 in. casing; 343 ft 4 in. casing; 21 ft slotted.
801	do.	Carl Vickers Water Well Service	1961	608	6 5/8	Tg	125	34.80 187.4	Dec. 9, 1933 Aug. 20, 1968	C,W	S	Marrano Well. Reported did not yield adequate supply. Pulled liner and shot from 495 to 511 ft.
902	do.	do.	1948	9,489	--	--	130 4/	--	--	--	--	Oil test. 2/
40-201	Humble Oil & Ref. Co.	do.	1956	529	12 3/4 8 5/8	Tg	--	--	--	T,E	Ind	Well #5. Perforated casing from 445 to 529 ft.
* 203	do.	do.	1959	669	--	Tg	--	--	--	T,E 100	Ind	Well #7. Pump set at 310 ft in 1959. Screen setting: 425 to 470; 480 to 510; 540 to 580; and 620 to 665 ft.
* 204	do.	do.	1959	714	--	Tg	131±	--	--	T,E 100	Ind	Well #6. Pump set at 320 ft in 1959. Screen setting: 420 to 450; 465 to 510; 530 to 564; 570 to 660 ft.
* 205	do.	--	--	600±	--	Tg	--	--	--	--	--	Well #3.
* 206	do.	Carl Vickers Water Well Service	1959	651	--	Tg	--	--	--	T,E 100	Ind	Well #9. 10 3/4 in. screen set; 415 to 520; 530 to 570; 600 to 640 ft. 2/
* 207	King Ranch, Inc.	Elmer Rupp	1954	535	6 4	Tg	125	198.7	Apr. 29, 1968	C,W	S	La Voz Well. 485 ft 6 in. casing; 65 ft 4 in. casing; 45 ft perforated. Pump set at 180 ft in 1967.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
RR-84-40-208	King Ranch, Inc.	Elmer Rupp	1955	468	6 4	Tg	124	31 228.0	1933 Aug. 20, 1968	C,W	S	Cabeza Chica Well. Pump set at 240 ft in 1967. 419 ft of 6 in. casing; 58 ft of 4 in. casing; 25 ft slotted.
301	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1959	681	--	Tg	--	--	--	N	U	Well #8. Drilled for industrial use but supply reported inadequate. Screen: 488 to 535; 545 to 590; 615 to 678 ft. 2/
302	do.	Disbro Water Well Service	1963	253	7	Qbl	--	--	--	T,E 7 1/2	Ind	Casing cemented, 0 to 210 ft. Used for repressuring oil wells.
303	King Ranch, Inc.	Humble Oil & Ref. Co.	1946	7,501	--	--	127 4/	--	--	--	--	Oil test. 2/
* 502	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1965	655	--	Tg	--	--	--	T,E 100	P	Well #10. Pump set at 340 ft in 1965.
* 503	do.	Disbro Water Well Service	1964	282	7	Qbl	--	79	1964	T,E 7 1/2	Ind	Pump set at 190 ft in 1964. Casing cemented, 0 to 190 ft. Used for repressuring oil wells.
504	do.	do.	1963	260	7	Qbl	--	77	1963	T,E 7 1/2	Ind	Casing cemented, 0 to 185 ft. Used for repressuring oil wells.
505	do.	do.	1963	263	7	Qbl	--	67	1963	T,E 7 1/2	Ind	Used for repressuring oil wells. Salt water reported in sands from 238 to 263 ft.
506	do.	do.	1963	256	7	Qbl	--	50	1963	T,E 7 1/2	Ind	Used for repressuring oil wells. Salt water reported in sands from 236 to 256 ft.
601	do.	do.	1963	256	7	Qbl	--	59	1963	--	Ind	Used for repressuring oil wells. Casing cemented 0 to 218 ft; 7 in. casing 0 to 256 ft.
602	King Ranch, Inc.	--	--	600	--	Tg	116±	34 179.7	1933 Aug. 22, 1968	C,W	S	Cabeza Well. Well not in use when visited.
603	do.	Carl Vickers Water Well Service	1946	500	7	Tg	--	--	--	C,W	S	Papalote de en Medio. 29 joints 7 in. casing; 1 joint 6 5/8 in. screen.
604	do.	Humble Oil & Ref. Co.	1948	7,800	--	--	118 4/	--	--	--	--	Oil test. 2/
801	do.	Carl Vickers Water Well Service	1962	481	6 5/8 4 1/2	Tg	120	28 150.0	1933 Apr. 25, 1968	C,W	S	Big Cabeza Well #2. 458 ft 6 5/8 in. casing. 1 joint 4 1/2 in. perforated casing.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kleberg County												
* RR-84-48-301	King Ranch, Inc.	--	--	500±	7 5	Tg	110	132.5	Apr. 25, 1968	C,W	S	Fina dos Well.
302	do.	Elmer Rupp	1955	550	6 4 1/4	Tg	106	126.5	do.	C,W	S	Las Comas Well. 494 ft 6 in. casing; 68 ft 4 1/4 in. slotted casing.
303	do.	do.	1952	520	6	Tg	110	26.30 138.9	Jan. 7, 1933 Apr. 26, 1968	C,W	S	Jensen Well. 488 ft 6 in. casing; perforated to 488 ft. 3/
* 503	Charley Hornsby	Disbro Water Well Service	1963	539	5 1/2	Tg	--	125	1963	S,E 3	D,S	
601	Mrs. A.C. Canales	do.	1967	560	7	Tg	100±	110.5	Jan. 30, 1968	--	D,S	New Huisache Well.
602	E.G. Canales	do.	1964	430±	4	Tg	100±	117.9	do.	N	U	30 ft perforated casing.
603	do.	--	1946	1,524	--	--	120± 4/	--	--	--	--	Oil test. 2/
806	M.W. Butler	Richardson, Kelley & Lahmeyer, Inc.	1961	9,500	--	--	109 4/	--	--	--	--	Do.
* 901	King Ranch, Inc.	Elmer Rupp	1950	632	6	Tg	96	13.0 99.7	Jan. 9, 1933 Apr. 26, 1968	C,W	S	El Paisano Well. Deepened from 488 to 632 ft in 1950. 3/
Kenedy County												
RD-83-42-802	Mrs. S.K. East	Carl Vickers Water Well Service	1958	686	5 3/16	Tg	--	15	1958	J,E 1/2	D,S	
902	W. Mueller, Jr.	Humble Oil & Ref. Co.	1949	9,604	--	--	36 4/	--	--	--	--	Oil test. 2/
43-702	Mrs. S.K. East	Carl Vickers Water Well Service	1958	769	6 5/8	Tg	--	15	1958	--	Ind	Supplies water for oil well drilling rigs.
* 703	Kenedy Ranch	--	Old	700±	4 1/4	Tg	20	26.3	Nov. 20, 1968	C,W	S	Chalio Well. Measured flow 18 gpm in 1933.
* 901	do.	Wm. Turcotte	Old	700±	--	Tg	5±	11.5	Nov. 18, 1968	C,W	S	Loma Prieta. Measured flow 58 gpm in 1933.
902	State of Texas	Humble Oil & Ref. Co.	1958	2,044	--	--	60 4/	--	--	--	--	Oil test. 2/
49-101	La Paloma Ranch	R.C. Custer Water Well Service	1967	540	5 1/2 4 1/2	Tg	--	57	1967	C,W	S	Saltos Well #2. 5 1/2 in. casing, 0 to 215 ft; 4 1/2 in. perforated casing, 519 to 540. Reported sands from 21 to 497 ft. Yield salt water. 3/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
* RD-83-49-202	La Paloma Ranch	Porter Drilling Co.	1954	577	--	Tg	--	34	1954	--	D,S	Headquarters Well #1. 3/
203	do.	M. & E. Drilling Co.	1946	700	--	Tg	59	56.5	Feb. 24, 1969	C,W	S	Arpones Well.
204	Santa Rosa Ranch	Porter Drilling Co.	1953	550	6 5/8	Tg	56	55.0	Feb. 5, 1969	C,W	S	Capitan Well #2. Replacement for Well #1 with a measured flow of 9.5 gpm Apr. 14, 1933.
205	H.F. McGill	Atlantic Ref. Co.	1949	8,500	--	--	72 4/	--	--	--	--	Oil test. 2/
302	Scott McGill	A. Porter	1957	660	7	Tg	--	25	1957	C,W	S	Casing perforated from 639 to 660 ft.
303	Santa Rosa Ranch	do.	--	655	8 5 3/16	Tg	57	47.2	Feb. 24, 1969	C,W	S	Zorillo Well. Originally flowed. Measured flow 8.8 gpm Apr. 14, 1933. Temperature 83 1/2°F (28°C).
401	La Paloma Ranch	--	--	600±	--	Tg	71	55.7	Feb. 21, 1969	C,W	S	Muchos Hombres Well.
501	Scott McGill	A. Porter	1956	666	7	Tg	--	--	--	C,W	S	Sand reported 513 to 538 and 631 to 666 ft.
502	La Paloma Ranch	--	1907	600±	6	Tg	68	44.7	Feb. 24, 1969	C,W	S	Sugar Well. Reported flow 6.3 gpm Apr. 14, 1933.
503	do.	--	--	600±	--	Tg	64	53.8	Feb. 21, 1969	C,W	S	Dormindo Well.
504	do.	A. Porter & Sons	1962	550	--	Tg	64	41 49.5	1962 Feb. 24, 1969	C,W	S	Hingerto Well. Water sand reported 516 to 550 ft.
601	Scott McGill Estate	--	--	650±	--	Tg	50±	38.3	Feb. 24, 1969	C,W	S	Tienda Well.
602	Scott McGill	Sunray-Mid-Continental Oil Co.	1955	10,008	--	--	45 4/	--	--	--	--	Oil test. 2/
* 701	Santa Rosa Ranch	A. Porter & Son	1953	753	5 6/8	Tg	70	28 54.3	1953 Feb. 21, 1969	C,W	S	Encino Mucho Well #2. 3/
* 702	La Paloma Ranch	R.C. Custer Water Well Service	1969	597	6 1/2 4 1/2	Tg	65	45.0	Feb. 21, 1969	C,W	S	Mota Negra Well #2. 598 ft of 4 1/2 in. casing; perforated from 567 to 588 ft. Packer set at 546 ft.
801	Santa Rosa Ranch	Porter Bros. Drilling Co.	1952	585	5 3/16 4 1/4	Tg	63	39.8	do.	C,W	S	Condado Well #2. 190 ft of 4 1/2 in. casing; perforated from 563 to 585 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
					Kenedy County							
RD-83-49-802	Scott McGill Estate	O.M. Boone	1927	660	7 5	Tg	51	37.0	Feb. 24, 1969	C,W	S	Candilid Well. Originially flowed. Measured flow 6.2 gpm Apr. 14, 1933. Temperature 84°F (29°C).
901	Santa Rosa Ranch	C.E. Bowen Water Well Service	1960	702	7 4 1/2	Tg	55	31.8	do.	C,W	S	Brush Well #2. 215 ft of 7 in. casing; 702 ft of 4 1/2 in. casing; 25 ft casing perforated.
50-101	McGill Ranch	A. Porter & Son	1954	650	--	Tg	--	25	1954	S,E 3/4	D,S	Aqui Paso Well #1. Salt water reported from 21 to 47 ft. 3/
102	do.	do.	1956	636	7	Tg	--	29	1956	C,W	U	El Gallo Well. 7 in. casing, 21 ft perforated. Destroyed.
103	H.F. McGill	Atlantic Oil Ref. Co.	1948	10,012	--	--	56 4/	--	--	--	--	Oil test. 2/
201	Kenedy Ranch	Carl Vickers Water Well Service	1959	687	5 3/16 3 1/2	Tg	36±	--	--	C,W	D,S	Perforated casing 666 to 687 ft.
202	do.	do.	1959	692	5 3/16 3 1/2	Tg	40±	--	--	C,W	D,S	
* 203	do.	do.	1951	640	8 5/8 5 3/16	Tg	--	--	--	S,E	P	Supplies Sarita community.
204	Ed Turcotte	do.	1959	755	5 3/16	Tg	--	--	--	C,W	D,S	
301	Andy Turcotte, Jr.	do.	1956	728	6 5/8	Tg	--	--	--	C,W	S	
302	Ed Turcotte	Elmer Rupp	1941	675	5 3/16	Tg	--	--	--	C,W	S,D	Reported water slightly salty.
303	Francis French	Carl Vickers Water Well Service	1957	670	--	Tg	--	--	--	C,W	S	
304	John G. Kenedy	Humble Oil & Ref. Co.	1948	7,000	--	--	29 4/	--	--	--	--	Oil test. 2/
305	do.	do.	1947	8,041	--	--	25± 4/	--	--	--	--	Do.
306	do.	do.	1947	11,560	--	--	41±	--	--	--	--	Do.
* 307	Kenedy Ranch	--	Old	--	6 3/4	Tg	29	24.3	Nov. 15, 1968	C,W	S	Palomas Well. Originally flowed. Measured flow 32 gpm Apr. 1, 1933.
401	Santa Rosa Ranch	C.E. Bowen Water Well Service	1961	665	5 1/2 4 1/2	Tg	--	32	1961	S,E	S	22 ft 5 1/2 in. casing; 439 ft 4 1/2 in. casing.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
					Kenedy County							
RD-83-50-501	Kenedy Ranch	--	Old	--	5 3/16	--	36	4.0	Nov. 15, 1968	C,W	S	Medano Well. Originally flowed. Measured flow 4.3 gpm Apr. 1, 1933. Temperature 86°F (30°C°).
502	Santa Rosa Ranch	C.E. Bowen Water Well Service	1958	693	7	Tg	38	17 19.7	1958 Feb. 26, 1969	C,W	S	Shipping Trap Well. 20 ft perforated pipe. Not in use when visited Feb. 26, 1969.
601	Kenedy Ranch	--	--	710±	t 3/16	--	25	23.7	Nov. 15, 1968	C,W	S	Paistle Well. Replacement for old well. Measured flow 41 gpm in 1933.
602	do.	--	--	816±	6	--	30	22.4	do.	C,W	S	Tulitos Well.
701	Frank McGill	C.E. Bowen Water Well Service	1958	700	7	Tg	--	23	1958	C,W	S	
* 801	Kenedy Ranch	Carl Vickers Water Well Service	1952	737	6	Tg	39	32.3	Nov. 15, 1968	C,W	S	Dos Emes Well. 3/
* 802	do.	--	--	700	--	Tg	40±	22.2	do.	C,W	S	Cucharita Well.
* 902	do.	--	Old	--	--	Tg	36	24.4	do.	C,W	S	La Prieta Well. Originially flowed. Measured flow 9 gpm Apr. 1, 1933.
51-101	do.	Carl Vickers Water Well Service	1944	978	6	Tg	15	12.9	Nov. 20, 1968	C,W	S	Tomas Well. Not in use when visited Nov. 20, 1968. 3/
* 102	do.	Wm. Turcotte	Old	737	3	Tg	22±	20.5	do.	C,W	S	Cobas Well. Reported flow 1913, 50 gpm; measured flow 7.5 gpm in 1933.
* 201	do.	do.	Old	920	5 3/16	Tg	5±	21.2	Nov. 18, 1968	C,W	S	Erevia Well. Reported flow (prior to 1907) 350 gpm. Measured flow 30 gpm Apr. 8, 1933.
* 202	do.	Carl Vickers Water Well Service	1953	863	6 5/8 4 1/2	Tg	--	2.0	1953	T,E 5	P,S	Headquarters Well. 830 ft 6 5/8 in. casing, 40 ft screen. Supplies several families and irrigates shrubs and grass.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
* RD-83-51-301	Kenedy Ranch	Carl Vickers Water Well Service	1964	853	4 1/2	Tg	15±	5.5	Nov. 11, 1968	C,W	S	Mitaljos Well #3. Replacement for old well. 21 ft perforated 4 1/2 in. casing.
* 401	do.	do.	1959	816	6 5/8	Tg	20	13.9	Nov. 15, 1968	C,W	S	New Atravesada Well. 42 ft perforated casing. Replacement for old well with measured flow at 39 gpm Apr. 1, 1933.
* 402	do.	do.	1963	844	4 1/2	Tg	20±	10.8	Nov. 18, 1968	C,W	S	Las Tunds Well #2.
403	John G. Kenedy, Jr.	Humble Oil & Ref. Co.	1952	10,480	--	--	48 4/	--	--	--	--	Oil test. 2/
* 501	Kenedy Ranch	Wm. Turcotte	Old	862	4 1/4	Tg	20±	7.8	Nov. 18, 1968	C,W	S	Bordas Well. Orginally flowed. Reported flow prior to 1907, 160 gpm. Measured flow, 23 gpm, Apr. 8, 1933.
* 601	do.	Carl Vickers Water Well Service	1963	1,008	5 3/16 4 1/2	Tg	9±	+ 1	do.	C,W	S	Tecolote Well #2.
701	John G. Kenedy Jr.	Humble Oil & Ref. Co.	1963	13,224	--	--	52 4/	--	--	--	--	Oil test. 2/
702	do.	do.	1952	10,505	--	--	50 4/	--	--	--	--	Do.
801	Kenedy Ranch	P. Christensen	--	860	5 3/16	Tg	15	1.1	Oct. 28, 1968	C,W	S	Pete Well. Originally flowed. Measured flow 36 gpm Apr. 6, 1933. Temperature 87 1/2°F (31°C). 1/
* 901	do.	N.G. Allen	--	865	5 3/16	Tg	--	+ 1	do.	C,W	S	Padre Alejos Well. Estimated flow 2-3 gpm. Measured flow 53 gpm Apr. 8, 1933. Reported flow, prior to 1907, 450 gpm.
902	do.	Carl Vickers Water Well Service	1966	1,052	6 5/8 4 1/2	Tg	30	17.6	do.	C,W	S	Mesquite Well. 630 ft of 4 1/2 in. casing.
52-101	do.	do.	1962	795	5 1/2 4 1/2	Tg	5	12.8	do.	C,W	S	Pasadizo Well #2. 30 gpm Apr. 8, 1933; reported flow, prior to 1907, 200 gpm. Perforated casing, 773 to 795 ft. Cylinder above ground.
102	John G. Kenedy, Jr.	--	1953	8,002	--	--	15 4/	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
RD-83-52-201	Kenedy Ranch	--	Old	1,000	5 3/16	Tg	--	--	--	C,W	S	Santiago Well. Measured flow 56 gpm Apr. 7, 1933. Reported quit flowing in 1967. Temperature 88 1/2°F (31°C).
* 202	do.	--	--	--	7	Tg	8±	8.0	Oct. 28, 1968	C,W	S	Tio Chon Well.
401	John G. Kenedy, Jr.	Humble Oil & Ref. Co.	1953	10,093	--	--	21 4/	--	--	--	--	Oil test. 2/
* 601	Kenedy Ranch	Carl Vickers Water Well Service	1954	1,162	5 3/16	Tg	7±	+	1968	Flows	S	Caso Well. Estimated flow 5 gpm. 2 in. discharge pipe. Reported flow 500 gpm (prior to 1907); measured flow 24 gpm Apr. 7, 1933.
602	do.	North Central Oil Corp.	1957	7,710	--	--	14 4/	--	--	--	--	Oil test. 2/
* 701	do.	--	Old	--	2 1/2 2	Tg	15±	+	1968	Flows	S	Pamoramas Well.
702	do.	Wm. Turcotte	Old	1,019	4 1/4	Tg	--	+	1968	Flows	S	Diablo Well. Estimated flow 10 gpm. Reported flow 500 gpm (prior to 1907). Measured flow 43 gpm Apr. 6, 1933. Temperature 88 1/2°F (31°C).
901	do.	White Bros.	--	--	4 1/2	Tg	15±	+	1968	Flows	S	Huero Well. Measured flow 28 gpm Apr. 6, 1933. 2 in. discharge pipe. Temperature 90 1/2°F (32°C).
53-101	do.	Tom Leary	Old	1,403	5 3/16	Tg	--	+	1933	Flows	S	Picacho Nuevo Well. Measured flow 64 gpm Apr. 7, 1933. 2 in. discharge pipe. Temperature 92°F (33°C).
* 401	do.	do.	Old	1,360	5 3/16	Tg	5	+	1968	Flows	S	Perez Well. Estimated flow 20 gpm. Reported flow prior to 1907, 600 gpm. Measured flow 64 gpm Apr. 7, 1933.
402	do.	--	Old	--	6 1/4	--	--	+	1968	Flows	S	Maria Petra Well. Estimated flow 15 gpm. 2 in. discharge pipe. Measured flow 44 gpm Apr. 7, 1933. Temperature 90°F (32°C).
403	John G. Kenedy	Pan American Petroleum Corp.	1962	1,679	--	--	21 4/	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
RD-83-53-501	Kenedy Ranch	Carl Vickers Water Well Service	1958	1,410	10 4 1/2 1 1/2	Tg	--	+	1968	Flows	S	Estimated flow 20 gpm. Temperature 92°F (33°C).
701	do.	--	Old	--	--	Tg	--	+	1968	Flows	S	Carnestolendas Well. 2 in. discharge pipe. Estimated flow 20-30 gpm. Temperature 90°F (32°C).
* 703	do.	Carl Vickers Water Well Service	--	1,100±	--	Tg	10±	6.9	Oct. 29, 1968	C,W	S	Cylinder above ground.
801	do.	do.	1957	1,344	5 3/16	Tg	--	+	1969	Flows	S	Originally drilled to supply water for oil well drilling rigs. Estimated flow 30 gpm in 1960.
57-101	La Paloma Ranch	A. Porter & Sons	1955	664	7	Tg	70±	30 45.8	1955 Feb. 21, 1969	C,W	S	Aqua Nueva Well. 7 in. casing 0 to 664 ft; 29 ft of perforated casing.
201	do.	--	--	680±	5 3/16	Tg	55	35.9	Feb. 21, 1969	C,W	S	Disputas Well. Replacement for old well with estimated flow at 5 gpm Apr. 1933.
401	King Ranch, Inc.	Carl Vickers Water Well Service	1963	577	6 5/8 4 1/2	Tg	--	--	--	C,W	S	Patricio Well #2. 30 joints 6 5/8 in. casing; 4 joints 4 1/2 in casing; 22 ft perforated; top of liner at 494 ft.
402	Daniel J. Sullivan IV	Humble Oil & Ref. Co.	1960	9,600	--	--	83± 4/	--	--	--	--	Oil test. 2/
403	do.	Sun Oil Co.	1948	2,026	--	--	75 4/	--	--	--	--	Do.
* 501	Kenedy Ranch	Carl Vickers Water Well Service	1960	610	5 3/16	Tg	45	25.5	Dec. 5, 1968	C,W	S	Sierpe Well #2. Replacement for old well with measured flow of 3.8 gpm Apr. 3, 1933; reported 598 ft of 5 3/16 in. casing. Flow prior to 1907, 315 gpm.
601	do.	O.M. Boone	1927	932	6 5/8 4 1/2 3 1/4	Tg	39	--	--	C,W	S	Tresquilla Well. Formerly flowed; estimated flow 6 gpm Apr. 3, 1933.
602	do.	Carl Vickers Water Well Service	1954	685	5 3/16	Tg	44	21.4	Dec. 5, 1968	C,W	S	Golondrina Well. Replacement for old well. 685 ft casing.
701	Robert J. Kleberg, Jr.	Humble Oil & Ref. Co.	1950	11,020	--	--	75± 4/	--	--	--	--	Oil test. 2/
801	Kenedy Ranch	Carl Vicker Water Well Service	1963	721	6 5/8 4 1/2	Tg	51	18.6	Dec. 4, 1968	C,W	S	Ramita Corner Well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
RD-83-57-901	Mrs. S.K. East	Humble Oil & Ref. Co.	1950	9,000	--	--	48	--	--	--	--	Oil test. 2/
902	do.	do.	1949	9,707	--	--	78 4/	--	--	--	--	Do.
58-101	Kenedy Ranch	--	--	700±	6	Tg	40	26.3	Oct. 30, 1968	C,W	S	Tio Juan Allen well.
* 201	do.	Carl Vickers Water Well Service	1965	740	6 5/8 4 1/2	Tg	37	21.5	do.	C,W	S	Rana Well. Replacement for old well. Casing to 718 ft; 22 ft of 4 1/2 in. perforation at bottom. 3/
202	do.	do.	1961	718	4 1/2	Tg	35	--	--	C,W	D,S	Mifflin Camp Well #3.
* 301	do.	do.	1949	655±	5 1/2	Tg	33±	13.8 18.4	Aug. 18, 1960 Oct. 30, 1968	C,W	S	Chivas Well. Casing perforated from 634 to 655 ft.
302	do.	do.	1968	688	4 1/2	Tg	35	17.0	Oct. 30, 1968	C,W	S	Corta Sacate Well #2. Replacement for old well. Casing slotted from 658 to 685 ft.
303	John G. Kenedy, Jr.	Humble Oil & Ref. Co.	1950	9,898	--	--	40±	--	--	--	--	Oil test. 2/
304	do.	do.	1949	11,549	--	--	55	--	--	--	--	Do.
* 401	Kenedy Ranch	Wm. Turcotte	Old	747	5 3/16	Tg	45	25.9	Oct. 30, 1968	C,W	S	Esperanza Well. Formerly flowed; reported flow 600 gpm prior to 1907; measured flow 6.7 gpm Apr. 3, 1933.
501	do.	Carl Vickers Water Well Service	1956	732	5 1/2	Tg	--	--	--	C,W	S	Perforated casing from 690 to 732 ft.
502	do.	--	--	--	6	--	37	17.0	Dec. 5, 1968	C,W	S	
503	do.	Carl Vickers Water Well Service	1958	777	--	--	35	14.4	do.	C,W	S	Majados Well. 3/
504	do.	P. Christiansen	Old	1,110	5 3/16 4 1/4	Tg	47	25.1	Oct. 30, 1968	N	U	Carmen Loba Well. Formerly flowed; 35 ft perforated casing at bottom.
601	John G. Kenedy	Humble Oil & Ref. Co.	1949	10,541	--	--	40 4/	--	--	--	--	Oil test. 2/
* 701	Kenedy Ranch	Wm. Turcotte	Old	652	10	Tg	45	16.8	Dec. 5, 1968	C,W	S	Zaragates Well. Formerly flowed. Reported flow 450 gpm prior to 1907; measured flow 10 gpm Apr. 3, 1933.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
RD-83-58-702	Kenedy Ranch	Guffey and Galey	Old	720	5 3/16	Tg	33	13.5	Dec. 5, 1968	C,W	S	Atravasa Well. Formerly flowed. Measured flow 24 gpm Apr. 3, 1933. Not in use when visited. Reported flow 500 gpm prior to 1907.
* 703	do.	--	Old	860	5 3/16	Tg	50±	33.4	do.	C,W	S	160 ft of perforated casing.
801	do.	Chester Downs	1930	852	5 3/16 4 1/2	Tg	40±	8.3	Dec. 4, 1968	C,W	S	Mujeres Pens Well. Formerly flowed; reported flow 400 gpm prior to 1907; measured flow 22 gpm Apr. 3, 1933. Temperature 85°F (30°C).
* 802	do.	Carl Vickers Water Well Service	--	732	5 3/16	Tg	35	--	--	C,W	S	Reported water became "salty" from leak in casing.
* 803	do.	O.M. Boone	--	850	6 5 3/16	Tg	--	+	1969	C,W	D,S	El Muerto Well (old Yescosas flowing well). Estimated flow 1 gpm Jan. 13, 1969. Supplies water for small camp.
901	do.	--	--	--	5 3/16	Tg	33±	8.9	Jan. 9, 1969	C,W	S	Mieriendo Well
59-201	do.	Carl Vickers Water Well Service	1966	1,052	6 5/8 4 1/2	Tg	--	18	1966	C,W	S	Mata Redonda Well #2. 6 5/8 in. casing to 134 ft; 4 1/2 in. 134 to 996 ft; 4 1/2 in. slotted casing 996 to 1,042 ft.
301	do.	Wm. Turcotte	Old	892	5 3/16 4 1/4	Tg	18	--	--	Flows	S	Tio Colas Well. Reported flow prior to 1907, 250 gpm. Measured flow 3.8 gpm Apr. 6, 1933. Temperature 84°F (29°C).
401	do.	Carl Vickers Water Well Service	1962	--	--	--	25±	+ 1	Oct. 30, 1968	C,W	S	New Padre Juanito Well. Replacement for old flowing well.
* 501	do.	Wm. Turcotte	Old	860	5 3/16	Tg	19	2.9	do.	C,W	S	Tio Martin Well. Formerly flowed. Reported flow 350 gpm prior to 1907; measured flow 15 gpm Apr. 6, 1933.
502	do.	--	--	--	--	--	32±	19.6	Jan. 8, 1969	C,W	S	Motaralla Well.
601	do.	Chester Downs	1931	870	5 3/16	Tg	--	+	1969	Flows	S	Los Indios or Tractor Well. 2 in. discharge pipe. Measured flow 8 gpm Apr. 5, 1933.
602	John G. Kenedy	Humble Oil & Ref. Co.	1949	11,965	--	--	30± 4/	--	--	--	--	Oil test. 2/
* 701	Kenedy Ranch	--	--	--	5 3/16	Tg	30±	5.6	Jan. 9, 1969	C,W	S	Mesquite Well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
* RD-83-59-801	Kenedy Ranch	--	Old	--	5 3/16	Tg	25±	0.6	Jan. 8, 1969	C,W	S	Marana Well.
901	do.	Carl Vickers Water Well Service	1959	868	5 3/16	Tg	25±	1.7	do.	C,W	S	Marana Camp North Well.
902	do.	do.	1963	895	4 1/2	Tg	20±	1.8	do.	C,W	S	Marana Camp South Well. 42 ft perforated casing.
903	do.	Wm. Turcotte	Old	951	5 3/16	Tg	--	--	--	C,W	S	Telefone Well. Formerly flowed. Reported flow 350 gpm prior to 1907; measured flow 26 gpm Apr. 5, 1933. Temperature 85°F (29°C).
904	do.	Carl Vickers Water Well Service	1950	1,090	5 1/2	Tg	--	+	1969	Flows	S	Lola Well. Packer set.
60-101	do.	W.P. Gano	Old	1,035	--	Tg	--	+	1933	Flows	S	Palmito Well. Reported flow 600 gpm prior to 1907. Measured flow 8.6 gpm Apr. 8, 1933.
201	do.	Wm. Turcotte	Old	1,130	--	Tg	--	+	1968	Flows	S	El Reparo Well. Estimated flow 10 gpm Nov. 6, 1968. Reported flow 300 gpm prior to 1907. Measured flow 20 gpm Apr. 7, 1933. Temperature 89°F (32°C).
301	do.	Elmer Rupp	--	1,200±	5 3/4	Tg	--	+	1969	Flows	S	New Sarita Well. Estimated flow 15-20 gpm. Estimated flow 100 gpm 1931; measured flow 53 gpm Apr. 6, 1933. Temperature 92°F (33°C).
501	do.	P. Christensen	1931	1,375	5 3/16 4 1/4 3 1/4	Tg	--	+	1960	--	S	Santa Elena Well. Estimated discharge 20-30 gpm in 1960. Reported well covered by sand dunes in 1968.
502	do.	W.P. Gano	Old	1,123	5 3/16	Tg	--	+	1969	Flows	S	Ramirez Well. 2 in. discharge pipe. Estimated discharge 8-10 gpm. Temperature 85°F (29°C).
* 601	do.	P. Christensen	1930	1,285	5 3/16 4 1/4	Tg	--	+	1968	Flows	S	Mesteña Well. 2 in. discharge pipe. Estimated flow 10 gpm. Measured flow 11 gpm Apr. 6,1933
* 701	do.	--	Old	48	5 3/16	Tg	25±	14.4	Jan. 8, 1969	C,W	S	Los Indios Ranch Well.
702	do.	Carl Vickers Water Well Service	1953	1,047	4 1/2	Tg	--	+	1969	Flows	S	Nopal Well #2. Estimated flow 10-15 gpm. 2 in. discharge pipe with 1 in. reducer. Temperature 83°F (28°C).

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

	WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
						Kenedy County							
	RD-83-60-703	Mrs. S.K. East	Humble Oil & Ref Co.	1954	12,029	--	--	20 4/	--	--	--	--	Oil test. 2/
	801	Kenedy Ranch	Wm. Turcotte	Old	1,000	--	Tg	15	+	1969	Flows	S	San Juan Well. Estimated flow 6-8 gpm. Reported flow 250 gpm prior to 1907. Measured flow 65 gpm in 1933.
*	802	do.	--	Old	--	5 3/16	Tg	--	+	1969	Flows	S	Escribano Well. 2 in. discharge pipe reduced to 3/4 in. Measured flow 65 gpm Apr. 5, 1933.
	901	do.	P. Christensen	1931	1,410	5 5/8 5 3/16 4 1/4 3 1/4	Tg	--	+	1969	Flows	S	Agua Negra Well. Measured flow 39 gpm Apr. 6, 1933. Temperature 9 1/2°F (33°C).
	61-101	Kenedy Ranch	W.P. Gano	Old	1,315	4 1/4	Tg	--	+	1968	Flows	S	Medanito Well. 2 in. discharge pipe. Estimated flow 25 gpm. Reported flow 400 gpm prior to 1907; measured flow 68 gpm Apr. 6, 1933. Temperature 91°F (33°C).
	201	State of Texas	Humble Oil & Ref Co.	1952	8,038	--	--	24 4/	--	--	--	--	Oil test. 2/
	701	Kenedy Ranch	P. Christensen	1931	1,368	5 3/16 4 1/4 3 1/4	Tg	--	--	--	Flows	S	Lopeña Well. 2 in. discharge pipe. Measured flow 53 gpm Apr. 6, 1933. Temperature 90°F (32°C).
*	88-01-101	King Ranch, Inc.	Elmer Rupp	1951	765	5	Tg	54	15.6	Jan. 16, 1969	C,W	S	Patron Well. 744 ft of 5 in. casing, cemented; 21 ft perforated. 3/
	201	Kenedy Ranch	--	--	--	--	Tg	39	13.9	Dec. 4, 1968	C,W	S	Crystal (Golondrina) Well.
	202	King Ranch, Inc.	--	--	--	6	Tg	44	10.8	Jan. 29, 1969	C,W	S	Jim Well.
*	301	Kenedy Ranch	O.M. Boone	1927	834	6 3/8 4 1/4	Tg	--	+ 4	Dec. 4, 1968	C,W	S	Rita Well. Formerly flowed. Measured flow 6.7 gpm Apr. 3, 1933.
	302	King Ranch, Inc.	Elmer Rupp	1947	1,035	5	Tg	43	12.8	Jan. 29, 1969	C,W	S	Los Pobres Well. 1,035 ft of 5 in. casing; perforated from 965 to 1,035 ft. 3/
*	401	do.	Carl Vickers Water Well Service	1967	835	6 5/8 4 1/2	Tg	44	3.9	Jan. 15, 1969	C,W	S	Llanito Well #2. 770 ft 6 5/8 in. casing; 42 ft 4 1/2 in. slotted pipe.
	402	do.	Elmer Rupp	1948	770	5	Tg	47	--	--	C,W	S	Puerta Bajita. Set 748 ft of 5 in. casing; 22 ft perforated.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
RD-88-01-403	King Ranch, Inc.	Elmer Rupp	1944	779	6 4	Tg	53	19.7	Jan. 15, 1969	C,W	S	Well #3. 200 ft of 6 in. casing swedged to 530 ft of 4 in. casing, cemented at bottom. 3/
501	do.	Perry Downs	Old	--	--	Tg	36±	7.6	Feb. 3, 1969	C,W	S	Pita Camp Well. Formerly flowed. Measured flow 12 gpm Mar. 1, 1933.
502	do.	--	Old	438	5 3/16	Tg	37	12.5	do.	C,W	S	Well #4. Formerly flowed. Estimated flow 5 gpm 1933.
601	do.	Carl Vickers Water Well Service	1965	695	6 5/8 4 1/2	Tg	30±	3 30.3	1965 Jan. 29, 1969	--	S	Ball Ranch Well #2. 42 ft perforated casing. Reported flow from original well 50 gpm in 1921. Measured flow 15 gpm 1933.
602	do.	Elmer Rupp	1951	854	5 3/16	Tg	30±	3.5	Jan. 29, 1969	C,W	S	Lindero Well. 559 ft of 5 3/16 in. casing.
801	do.	D. McGinnis	--	--	6 1/2	Tg	36	.0	Feb. 3, 1969	C,W	S	Senorita Well. Formerly flowed. Measured flow 2 gpm Mar. 1, 1933. Temperature 85°F (29°C).
901	do.	Perry Downs	--	752	5 3/16 4 1/2	Tg	30±	+ 1	do.	C,W	S	El Toro Well. Measured flow 15 gpm Mar. 1, 1933.
02-101	Kenedy Ranch	Carl Vickers Water Well Service	1964	784	6 5/8 4 1/2	Tg	--	--	--	C,W	S	Maleta Well. 36 joints 6 5/8 in. casing; 42 ft of 4 1/2 in. perforated casing.
* 102	do.	do.	1953	820	5 3/16 4 1/4	Tg	38	13.5	Dec. 4, 1968	C,W	S	Tecolote Well #2. 17 joints 5 3/16 casing; 24 joints of 4 1/4 in., 21 ft perforated.
* 103	do.	do.	1964	732	6 5/8 4 1/2	Tg	41	16.4	do.	C,W	S	Eneinitos Well #2. Well #1 plugged with cement. Measured flow at 12 gpm Apr. 3, 1933.
104	Mrs. S.K. East	Humble Oil & Ref. Co.	1949	9,298	--	--	60± 4/	--	--	--	--	Oil test. 2/
202	Kenedy Ranch	O.M. Boone	1927	798	5 3/16 4 1/4	Tg	29	6.6	Dec. 5, 1968	C,W	S	Mestena Well. Formerly flowed; measured flow 6.0 gpm Apr. 4, 1933.
301	do.	Wm. Turcotte	1927	868	5 3/16 4 1/4	Tg	--	--	--	C,W	S	Potrillo Well. Measured flow 22 gpm Apr. 4, 1933. Reported quit flowing several years ago.
302	Armstrong Ranch	Humble Oil & Ref. Co.	1954	7,759	--	--	36 4/	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
* RD-88-02-401	Armstrong Ranch	Carl Vickers Water Well Service	--	--	4 1/2	Tg	28	+ 1	May 14, 1969	Flows	S	Lucita Well. Measured flow 1.5 gpm.
402	do.	do.	1946	871	5 4 1/4	Tg	29	3.9	do.	N	U	Comal Well. Perforated casing from 826 to 871 ft.
* 403	do.	do.	1955	1,099	4 1/2	Tg	29±	2.4	do.	S,E	Ind	Enriquieta Well. Perforated casing from 1,054 to 1,097 ft. Supplies water for cooling at compressor station.
404	do.	do.	1955	--	4	Tg	27±	+ .3	do.	N	U	Julia Well.
405	Chas. M. Armstrong	--	--	11,504	--	--	45± 4/	--	--	--	--	Oil test. 2/
* 501	Armstrong Ranch	R. Robertson	Old	900±	6	Tg	26±	--	--	C,E 1	D	Old "M.P. R.R. Well". Measured flow 24 gpm Apr. 18, 1933.
502	do.	do.	1904	900	5 1/2 7	Tg	27±	.0	May 14, 1969	N	U	Do.
* 503	do.	Sanders & Allen	1901	490	4 1/4 2 1/2	Tg	23	.3	do.	C,E 3/4	S	Marina Well. Reported flow, 20 gpm prior to 1907. Measured flow 2.2 gpm Apr. 18, 1933.
504	do.	Carl Vickers Water Well Service	1963	870	4 1/4	Tg	24±	+ .4	do.	Flows	U	864 ft of 4 1/2 in. casing, perforated from 822 to 864 ft.
* 505	do.	do.	1950's	--	--	Tg	29	--	--	C,W	S	Juan Perez Well; replacement for original Juan Perez well.
601	do.	W.P. Gano	--	817	3 5 3/16	Tg	26	.2	May 15, 1969	N	U	Zorilla Well. Worked over in 1969. 2 1/2 in. tubing to 567 ft; 441 of 1 1/2 in. broken off in bottom. Well ceased to flow and was abandoned.
* 602	do.	Carl Vickers Water Well Service	1944	925	5	Tg	21	--	--	C,W	S	Josefina Well. Perforated casing from 857 to 902 ft. Drilled to supply water for oil well drilling rig.
603	do.	do.	1954	400	6 3/4	Tg	24±	3.6	June 17, 1969	T,E	D	Pump removed for repairs when visited.
* 604	do.	Elmer Rupp	1947	910	5 1/2	Tg	--	--	--	C,E	D	Headquarters well.
605	Chas. M. Armstrong	Humble Oil & Ref. Co.	1944	8,510	--	--	36 4/	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
* RD-88-02-701	Armstrong Ranch	--	--	--	3-5 1/2	Tg	27	+ 3.3	May 8, 1969	Flows	S	Guadalupe Well. Measured flow 1.8 gpm May 8, 1969.
* 702	do.	--	1906	900	4 1/4 2 1/2	Tg	29±	--	--	C,W	S	Tokyo Well. Worked over in 1969. 2 1/2 in. pipe from 0 to 567 ft. Reported flow 50 gpm March 1913; measured flow 8.6 gpm Apr. 18, 1969.
703	do.	Carl Vickers Water Well Service	1954	787	4 1/2	Tg	31	.0	May 8, 1969	Flows	U	Anita Well. Perforated casing 723 to 787 ft.
* 704	do.	J.C. Curry	1906	857	4 1/4 2 1/2 1 1/4	Tg	26	+ 6.0	do.	Flows	S	Harbin Well. Worked over in 1969; 1 in. tubing from 0 to 262 ft. Reported flow prior to 1907, 150 gpm. Measured flow 3 gpm in 1969.
705	Chas. M. Armstrong	--	--	12,002	--	--	46 4/	--	--	--	--	Oil test. 2/
706	do.	Humble Oil & Ref. Co.	1954	2,115	--	--	45±	--	--	--	--	Do.
* 801	Armstrong Ranch	W.P. Gano	Old	900	5 3/16	Tg	24	--	--	N	U	Tim Well. Now destroyed. Reported flow 280 gpm in 1922; measured flow 44 gpm Apr. 18, 1933.
* 802	do.	Carl Vickers Water Well Service	1955	1,002	4 1/4 6 5/8	Tg	23	+ 4.0	May 7, 1969	Flows	S	Titi Well. Originally drilled to supply water for oil well drilling rig. 6 5/8 casing gun perforated from 761 to 813 ft. Measured flow 2 gpm on May 7, 1969.
* 803	do.	Sanders & Allen	1901	567	3 1/2 2 3/8	Tg	22	+ 3.5	do.	Flows	S	San Tomas Well. Reported flow 20 gpm prior to 1907; reported flow 5 gpm Mar. 1913; measured flow 0.5 gpm, Apr. 18, 1933; measured flow 1.4 gpm, May 7, 1969. Worked over in 1969. 1 1/2 in. pipe from 0 to 567 ft.
804	Chas. M. Armstrong	Humble Oil & Ref. Co.	1945	3,200	--	--	42 4/	--	--	--	--	Oil test. 2/
* 901	Armstrong Ranch	U.S.G.S.	1968	19	1 1/2	Qep	23±	3.3 3.1	Apr. 24, 1968 May 15, 1969	N	U	Observation well.
* 902	do.	do.	1968	24	1 1/2	Qep	26±	6.3 6.9	Apr. 24, 1968 May 15, 1969	N	U	Do.
* 903	do.	do.	1968	20	1 1/2	Qep	28±	8.3 10.6	Apr. 24, 1968 May 15, 1969	N	U	Do.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
					Kenedy County							
* RD-88-02-904	Armstrong Ranch	--	1940's	--	--	Tg	21	+ 7.6	June 17, 1969	Flows	S	La Blanca Well. Measured flow 5.4 gpm June 17, 1969. Measured drawdown 1.8 ft after flowing continuously.
* 905	do.	Thomas Fowler	1905	800±	4 1/4 2 1/2	Tg	24	--	--	Flows	U	San Carlos Well. Flows small quantity from 3 in. discharge pipe. Measured flow 1.4 gpm Apr. 9, 1933. Worked over in 1969. Set 2 1/2 in. tubing from 0 to 630 ft. Packer set at 620 ft.
* 906	do.	Carl Vickers Water Well Service	1963	912	4 1/2	Tg	20	+ 5.5	June 17, 1969	Flows	S	Well #20. Measured flow 15 gpm June 17, 1969. Originally drilled to supply water for oil well drilling rig.
03-101	Kenedy Ranch	--	--	--	4 1/4	Tg	--	+ 3.0	Jan. 9, 1969	C,W	S	Potrillo Viejo Well. Formerly flowed. Measured discharge 10 gpm in 1933. Pumping level 7 ft below LSD Jan. 9, 1969. Temperature 84°F (29°C).
201	do.	Carl Vickers Water Well Service	1950	1,038	5 3/16	Tg	21	+	1969	Flows	S	El Sordo Well. 1,000 ft 5 3/16 in. casing. Set packer. 3/
301	do.	--	--	--	--	Tg	--	+	1969	Flows	S	Agua Dulce Well. 2 in. discharge pipe reduced to 1 in. Estimated discharge 5 gpm. Measured flow 28 gpm Apr. 6, 1933. Temperature 81 1/2°F (27°C).
* 401	Armstrong Ranch	W.P. Gano	1906	800±	3 4 1/4	Tg	23	--	--	C,W	S	Alazan Well. Reported flow 30 gpm March 1913. Measured flow 5 gpm Apr. 19, 1933. Worked over in 1969.
402	Kenedy Ranch	--	--	36	4 1/4	Qep	--	15.0 15.4	Apr. 4, 1933 Jan. 10, 1969	C,W	S	Huisache Well. Temperature 73°F (23°C).
403	do.	Carl Vickers Water Well Service	1950	948	5 3/16	Tg	--	+	1969	Flows	S	Piedra Trap Well. 2 in. discharge pipe reduced to 1 in. Estimated flow 5 gpm. Temperature 80°F (27°C).
501	do.	--	--	40	8	Qep	26	14.0 12.3	Apr. 4, 1933 Jan. 10, 1969	C,W	S	Rodeo Well. Temperature 73°F (23°C).
* 502	do.	O.M. Boone	1926	1,163	5 3/16 4 1/2	Tg	--	+	1969	Flows	S	Nido Well. Estimated flow 5 gpm. Measured flow 26 gpm Apr. 4, 1933. Perforated casing 1,100 to 1,163.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
					Kenedy County							
* RD-88-03-601	Kenedy Ranch	Carl Vickers Water Well Service	1960	951	5 3/16	Tg	18	--	--	C,W	S	San Pedro Ranch Well. Drilled to replace old well.
602	do.	--	Old	--	5	--	20±	10.5	Jan. 9, 1969	C,W	S	San Antonio Well.
701	do.	--	--	--	--	--	19	+ 1.0	Jan. 10, 1969	Flows	S	Huisache Flowing Well. Temperature 82°F (28°C).
* 702	Armstrong Ranch	J.C. Curry	Old	845	3 4 1/4	Tg	19	+ 7.0	June 12, 1969	Flows	S	John Well. Worked over in 1969. Set 2 1/2 in. pipe from 0 to 567 ft. Set packer and cemented between old casing and 2 1/2 in. Measured flow 60 gpm Apr. 19, 1933. Measured flow 4 gpm June 12, 1969.
801	Kenedy Ranch	--	--	--	--	--	16	11.6	Jan. 10, 1969	C,W	U	Emes Well.
* 802	do.	Carl Vickers Water Well Service	1968	1,120	4 1/2	Tg	16	+	1969	Flows	S	New Trampas Seca. Measured flow 30 gpm Jan. 10, 1969. 3 in. discharge pipe.
901	do.	O.M. Boone	1926	1,239	6 5 3/16 4 1/2	Tg	14	.4	Jan. 10, 1969	C,W	S	San Francisco Well. Estimated flow 30-40 gpm when completed. Measured flow 4.3 gpm Apr. 4, 1933. Temperature 92°F (33°C).
902	do.	--	--	--	5 3/16	Tg	--	+	1969	Flows	S	Barreta Well. Estimated flow 10 gpm; measured flow 45 gpm Apr. 5, 1933. Temperature 85°F (29°C).
* 04-201	do.	--	--	1,000±	5 3/16	Tg	11	+	1969	Flows	S	Magueyal Well. 2 in. discharge pipe reduced to 1 in. Estimated flow 8 gpm; measured flow 80 gpm Apr. 5, 1933.
301	Mrs. S.K. East	Humble Oil & Ref. Co.	1960	10,498	--	--	18	--	--	--	--	Oil test. 2/
701	Kenedy Ranch	Carl Vickers Water Well Service	1950	1,195	5 1/2	Tg	15±	1.2	Jan. 10, 1969	C,W	S	Conchas Well.
702	do.	--	--	--	5 3/16	Tg	--	+	1969	Flows	S	Tajos Well. Estimated flow 5 gpm; measured flow 140 gpm Apr. 4, 1933. Temperature 85°F (29°C).
* 801	do.	--	Old	900±	5 3/16	Tg	11	+	1969	Flows	S	Maria Estella. 2 in. discharge pipe reduced to 1 in. Estimated flow 10 gpm; measured flow 110 gpm Apr. 5, 1933.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
					Kenedy County							
RD-88-04-901	State of Texas	Humble Oil & Ref. Co.	1952	8,273	--	--	20 4/	--	--	--	--	Oil test. 2/
05-801	do.	do.	1952	8,528	--	--	22± 4/	--	--	--	--	Do.
09-101	Clark and Sain	do.	1953	11,998	--	--	57 4/	--	--	--	--	Do.
* 201	King Ranch, Inc.	D. McGinnis	Old	730	5 3/16 4 1/4	Tg	32	--	--	C,W	S	Alazan Well. Measured flow 21 gpm Mar. 1, 1933.
202	do.	--	--	562	5 3/16	Tg	39	3.7	Feb. 3, 1969	C,W	S	Alto Benito. Formerly flowed. Measured flow 21 gpm in 1933.
401	Santa Fe Ranch	Humble Oil & Ref. Co.	1950	12,455	--	--	60± 4/	--	--	--	--	Oil test. 2/
501	do.	Henry Curry	1927	640	6 5/8 5 3/16	Tg	35	.5	Jan. 30, 1969	C,W	S	Caesar Well. Flows small quantity when mill is shut down for several hours. Reported mill installed in 1966 in order to provide larger supply. Temperature 84°F (29°C).
502	do.	Chester Downs	--	877	4 1/4 3 1/4	Tg	--	+	1969	Flows	S	Julian Well. Estimated flow 2 gpm. Measured flow 47 gpm Apr. 23, 1933. Temperature 88°F (31°C).
601	do.	do.	1921	671	5 3/16	Tg	31	+	1969	Flows	S	Richard Well. 2 in. discharge pipe. Estimated flow 5-10 gpm. Reported flow 60 gpm in 1921; measured flow 29 gpm Apr. 25, 1933. Temperature 85°F (29°C).
701	do.	Carl Vickers Water Well Service	1946	1,412	5 1/2 3 1/2	Tg	45	+	1969	Flows	S	Gallo Well. 1,174 ft 5 1/2 in. casing; 350 ft of 3 1/2 in. casing. Estimated flow 8-10 gpm, 22 ft perforated casing.
801	do.	do.	1946	1,536	5 1/2 3	Tg	40	+	1969	Flows	S	New Coyote Well. 2 in. discharge pipe reduced to 1/2 in. Replacement for old Coyote. Measured flow of 8.6 gpm Apr. 3, 1933. Estimated flow 5 gpm. Temperature 84°F (29°C).
802	do.	do.	1946	1,120	5 1/2 3 1/2	Tg	36	2.0	Jan. 30, 1969	C,W	S	Samuel Well #2. Temperature 85.5°F (29°C).
* 901	do.	--	--	--	--	Tg	53	15.8	do.	C,W	S	

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
* RD-88-09-902	Santa Fe Ranch	Carl Vickers Water Well Service	1964	967	4 1/2 2 1/2	Tg	--	--	--	C,W	S	Chaparrosa Camp West Well. 953 ft of 4 1/2 in. casing; 105 ft of 2 1/2 in. casing; 2 joints perforated.
903	do.	Henry Curry	--	638	5 3/16 4 1/4 3 1/4	Tg	--	+	1969	Flows	S	Comanche Well. Estimated flow 5-10 gpm. Measured flow 10 gpm Apr. 23, 1933.
* 10-101	Armstrong Ranch	Carl Vickers Water Well Service	1945	864	5	Tg	27	--	--	C,W	S	Lorenzo Well. Originally drilled to supply water for oil well drilling rig. 4 in. liner perforated from 820 to 864 ft.
102	do.	J.C. Curry	--	805	4 1/2 2	Tg	25	--	--	N	U	Rodeo Well. Destroyed in 1969 after unsuccessful workover. Reported flow 100 gpm prior to 1907. Measured flow 8.2 gpm Apr. 18, 1933.
201	do.	do.	Old	780	2 3/8 4 1/4	Tg	21	+	1969	Flows	S	Boton Well. Reported flow 160 gpm prior to 1907; measured flow 9 gpm Apr. 18, 1938.
* 202	do.	Carl Vickers Water Well Service	1965	828	4 1/2	Tg	27±	+ 2.5	May 7, 1969	Flows	U	Well #22. Originally drilled to supply water for oil well drilling rig. Measured flow 5.4 gpm May 7, 1969.
301	Humble Oil & Ref. Co.	do.	1962	935	4 1/2	Tg	--	--	--	T,E 3	D,S	North Noria's Gate Well. 21 ft perforated pipe. 3/
302	King Ranch, Inc.	--	--	--	--	--	18	+	1969	Flows	S	Lopez Well. 2 in. discharge pipe reduced to 1/2 in. Estimated flow 5-10 gpm.
* 303	do.	Dave Deer	1908	40	7	Qep	--	19.5 19.6	Apr. 25, 1933 Feb. 21, 1960	C,W	S	Tullidos Well.
401	Armstrong Ranch	Curry & Sons	Old	816±	5 2 1/2	Tg	31	--	--	N	U	Lola Well. Worked over in 1969 and abandoned after well failed to flow. Reported flow 75 gpm prior to 1907. Measured flow 3.6 gpm Apr. 18, 1933.
501	King Ranch, Ind.	Elmer Rupp	1950	1,178	5	Tg	--	+	1969	C,W	S	Cantu Well. 5 in. casing 0 to 1,133 ft. Measured discharge 6 gpm. Temperature 88°F (31°C).
502	do.	--	--	801	5 3/16	Tg	32	3.1 3.6	Apr. 25, 1933 Mar. 13, 1969	C,W	S	La Grulla Well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
					Kenedy County							
* RD-88-10-601	King Ranch, Inc.	Carl Vickers Water Well Service	1965	897	6 5/8 3 1/2	Tg	--	--	--	J,E	D,S	
701	do.	Curry	1918	846	7 1/2	Tg	--	+ 3.0	Mar. 13, 1969	C,W	S	La Grulla Well. Estimated flow 5-10 gpm. Temperature 87°F (31°C).
801	do.	Elmer Rupp	1950	1,160	5 3 1/4	Tg	27	+	1969	C,W	S	Uvence Well. Originally drilled to 974 ft; did not flow so deepened to 1,160 ft. Reported flow 50 gpm in 1950. Perforated casing 1,127 to 1,160 ft.
802	do.	--	--	--	--	--	28	7.0	Feb. 5, 1969	C,W	S	Calaveras Well.
* 901	do.	Carl Vickers Water Well Service	1959	885	5 1/2 3 1/2	Tg	--	+	1969	S,E	S	Stock pens well. Perforated casing 843 to 885 ft. Reported will flow when not pumped for several hours.
902	do.	Elmer Rupp	1950	944	5	Tg	19	+	1969	C,W	S	La Grava Well. 5 in. casing 0 to 920 ft, perforated 920 to 944 ft. 3/
903	do.	Carl Vickers Water Well Service	1961	--	--	Tg	--	+	1969	C,W	S	La Curva Well. Temperature 85°F (29°C).
11-201	do.	do.	1959	1,113	5 1/2 3 1/2	Tg	15	+	1969	Flows	S	Chicago Well. 42 ft perforated casing.
202	Kenedy Ranch	Chester Downs	1931	1,140	8 5 3/16 4 1/2	Tg	--	+	1969	Flows	S	Salvador flowing well. 2 in. pipe reduced to 3/4 in. Estimated discharge 5 gpm. Measured flow 95 gpm Apr. 4, 1933. Temperature 87°F (31°C).
301	do.	Carl Vickers Water Well Service	1959	1,190	5 3/16	Tg	--	+	1969	Flows	S	Borregos Well. 54 joints 5 3/16 in. casing. 3 packer set. Perforated casing from 1,169 to 1,190 ft.
* 302	do.	do.	1963	1,231	6 5/8 4 1/2	Tg	--	+	1969	Flows	S	Soledad Well. 2 in. discharge pipe. Estimated discharge 5 gpm.
303	do.	do.	1960	1,165	5 3/16	Tg	--	+	1969	Flows	S	Salvador Well #2. 2 in. discharge with faucet. Estimated discharge 5-10 gpm.
401	King Ranch, Inc.	do.	1964	994	5 1/2 3 1/2	Tg	--	+	1964	Flows	S	Relas Well #2. 43 ft perforated casing.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
* RD-88-11-501	King Ranch, Inc.	H.L. Curry	1930	1,234	5 5/8 4 1/4	Tg	--	+	1969	Flows	S	Escondido Well. Measured flow 26 gpm Apr. 26, 1933.
601	do.	do.	1910	1,068	5 3/16 4 1/4	Tg	--	+	1969	Flows	S	San Francisco Well. Measured flow 39 gpm Apr. 26, 1933. Temperature 89°F (32°C).
701	do.	--	Old	960	--	Tg	20	4.5	May 6, 1969	C,W	S	Saltillo Well. Measured flow 9.7 gpm Apr. 26, 1933.
* 801	do.	Carl Vickers Water Well Service	1960	1,123	--	Tg	--	--	--	S,E	D,S	Headquarters Well #2. Perforated casing from 1,066 to 1,123 ft.
901	do.	do.	1962	1,192	4 1/2	Tg	--	+	1969	Flows	S	Saltillo Well #2. Reported flow 18 gpm in 1962.
902	do.	Humble Oil & Ref. Co.	1962	12,000	--	--	21 4/	--	--	--	--	Oil test. 2/
12-101	Kenedy Ranch	Chester Downs	1931	1,278	8 5 3/16	Tg	--	+	--	Flows	S	Agujas Well. Estimated flow 15-20 gpm. Temperature 89°F (32°C).
401	King Ranch, Inc.	H.L. Curry	1938	1,311	6 4 3 1/4	Tg	--	+	1969	Flows	S	El Topo Well.
402	Mrs. S.K. East	Humble Oil & Ref. Co.	1964	2,099	--	--	20 4/	--	--	--	--	Oil test. 2/
* 501	Kenedy Ranch	Chester Downs	1931	1,208	5 3/16 4 1/2 4 1/4	Tg	--	+	1969	Flows	S	Encino de la Cruz Well. Measured flow 24 gpm Apr. 4, 1933. 2 in. casing reduced to 1/2 in.
502	King Ranch, Inc.	Elmer Rupp	1950	1,130	5	Tg	17	+	1969	C,W	S	Santa Cruz Well. 1,095 ft of 5 in. casing.
701	do.	Carl Vickers Water Well Service	1945	1,448	7 5	Tg	30	--	--	C,W	S	Bano Well. 1,099 ft of 5 in. casing. 323 ft of 7 in. casing; 21 ft 4 1/2 in. screen.
901	do.	Elmer Rupp	1956	1,388	10 5 3 1/2	Tg	13	+	1960	C,W	S	Rodeo Well. Originally drilled to 1,286 ft. Well did not flow until deepened to 1,388 ft. Perforated casing 1,358-1,388 ft. 3/
13-501	State of Texas	Standard Oil Co. of Texas	1955	3,007	--	--	21	--	--	--	--	Oil test. 2/
502	do.	--	--	10,031	--	--	24 4/	--	--	--	--	Do.
801	do.	Humble Oil & Ref. Co.	1951	10,507	--	--	18 4/	--	--	--	--	Do.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
RD-88-17-201	Santa Fe Ranch	--	--	726	6 5/8 4 1/4 3 1/2	Tg	48	.9 9.0	Apr. 24, 1933 Jan. 30, 1969	C,W	S	Buenos Aires Well. Formerly flowed. Supplies water for King Ranch also.
301	do.	Howard Curry	Old	--	--	Tg	31	+	1969	Flows	S	Finnegan Well. 2 in. discharge pipe. Estimated discharge 5 gpm. Supplies water for King Ranch also. Temperature 88°F (31°C).
302	do.	--	--	--	--	Tg	32	1	1969	C,W	S	San Patricio Well. Reported quit flowing in 1966.
* 401	do.	--	--	730±	--	Tg	44	1.1	Jan. 30, 1969	C,W	S	Riqueza Well. Measured flow 8.2 gpm Apr. 24, 1933.
402	do.	--	--	--	--	Tg	44	1.0	do.	C,W	S	Calcetin Well. Well will flow a small quantity but windmill installed to provide adequate supply.
501	King Ranch, Inc.	Carl Vickers Water Well Service	1963	1,053	5 1/2 3 1/2	Tg	43	+	1969	C,W	S	Martillo Well. Replacement for old well; measured flow 15 gpm Apr. 24, 1933. Temperature 90°F (32°C).
502	do.	Elmer Rupp	1949	1,135	5	Tg	--	+	1969	Flows	S	Tres Chivos Well. 25 ft perforated casing. 1,095 ft of 5 in. casing.
503	Santa Fe Ranch	Humble Oil & Ref. Co.	1961	10,975	--	--	50±	--	--	--	--	Oil test. 2/
504	do.	do.	1962	13,455	--	--	62± 4/	--	--	--	--	Do.
505	Robt. J. Kleberg, Jr.	do.	1961	13,204	--	--	57 4/	--	--	--	--	Do.
506	do.	do.	1953	11,600	--	--	53 4/	--	--	--	--	Do.
601	King Ranch, Inc.	Elmer Rupp	1957	1,209	5	Tg	--	+	1969	Flows	S	Guantes Well. Perforated casing from 1,167 to 1,209 ft; 1,155 ft of 5 in. casing.
602	do.	--	--	--	5	Tg	39	4.8	Mar. 14, 1969	C,W	S	Stillman loading pens well.
603	do.	George Curry	1918	--	--	Tg	37	4.8	do.	C,W	S	San Pedro Well. Formerly flowed. Measured flow 8.2 gpm Apr. 24, 1933.
701	H.D. Hanshaw	Harold Pursley	1958	1,149	7 4 1/2	Tg	--	--	--	C,W	S	Perforated casing from 1,047 to 1,149 ft.
702	Ramon Cantu Est	--	1958	9,501	--	--	45± 4/	--	--	--	--	Oil test. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
* RD-88-17-801	King Ranch, Inc.	Elmer Rupp	1950	1,015	5	Tg	38	3.2	Feb. 6, 1969	C,W	S	San Juan Well. 960 ft of 5 in. casing.
902	do.	A.H. Masiran	1942	1,053	6 4	Tg	40	10.5	do.	C,W	S	Capita Well #2. 103 ft of 6 in. casing; 928 ft of 8 in. casing; 21 ft of 4 in. perforated casing. Packer set.
18-101	Santa Fe Ranch	Carl Vickers Water Well Service	1965	800	4 1/2	Tg	--	+	1969	Flows	S	New Marillas Well. 777 ft of 4 1/2 in. casing. 2 joints of perforated casing. Replacement for old well with measured flow of 8 gpm Apr. 24, 1933. Temperature 85°F (29°C). 3/
* 201	King Ranch, Inc.	Elmer Rupp	1950	1,060	5	Tg	25	+	1969	Flows	S	Las Auras Well. Set 1,022 ft 5 in. casing; 22 ft perforated pipe.
202	do.	do.	1950	1,324	5	Tg	22	+	1969	C,W	S	Chaleco Well. Estimated discharge 5 gpm. 2 in. discharge hose. Reported small flow 916 to 930 ft. Temperature 83°F (28°C).
203	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1963	752	4 1/2	Tg	22	+	1969	Flows	Ind	Loma Prieto Well #2. Equipped with mill to provide larger quantity. 689 ft 4 1/2 in. casing; 63 ft perforated casing.
204	King Ranch, Inc.	--	--	--	5	Tg	--	--	--	C,W	S	Peño Well.
401	do.	Carl Vickers Water Well Service	1966	1,260	5 1/2 3 1/2	Tg	29	+	1969	Flows	S	La Concha Well #2. Replacement for old well with measured flow at 22 gpm Apr. 25, 1933.
* 402	Martin Garcia Ranch	Howard Curry	1936	1,698	6	--	--	+	1969	Flows	S	Las Cuatas flowing well. measured flow 10 gpm Apr. 17, 1969.
403	do.	Elmer Rupp	1935	1,380	5	Tg	31	4.8	Apr. 17, 1969	S,E 1 1/2	S	Maria Estella Well.
501	King Ranch, Inc.	--	--	--	6 5/8 2 1/2	Tg	25	+	1969	Flows	S	Pitosa Well. Measured discharge 17 gpm in 1933. Temperature 91°F (33°C).
* 502	Martin Garcia Ranch	--	--	2,150	6	To	--	+	1969	Flows	S	
503	do.	Elmer Rupp	1940	1,040	--	Tg	--	--	--	--	S	
504	do.	do.	1941	900	6	Tg	33	5.0	Apr. 17, 1969	S,E 1 1/2	S	Miguel Well.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Kenedy County												
RD-88-18-601	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1962	952	--	Tg	--	--	--	T,E	D,S	Rudolph Gate Well. 3/
* 701	Martin Garcia Ranch	Elmer Rupp	1938	698	6	Tg	35	3.4	Apr. 17, 1969	C,W	S	Cecelia Well.
702	do.	do.	1939	1,260	6	Tg	--	--	--	C,W	S	Ysabelle Well.
* 703	Martin Garcia Ranch	Carl Vickers Water Well Service	1950	1,160	6	Tg	30	4.5	Apr. 17, 1969	C,W	S	Christmas Well.
704	do.	Elmer Rupp	1937	1,495	6	Tg	--	--	--	C,W	S	El Susto Well.
705	do.	do.	1960	1,490	6	Tg	31	--	--	C,W	S	Alejandro Well.
* 801	do.	Howard Curry	1900	980	--	Tg	--	--	--	C,E 1 1/2	S	Pumping level, 11 ft below LSD. West well at Ranch Headquarters.
* 802	do.	Elmer Rupp	1940±	875	6	Tg	--	--	--	J,E 1 1/2	D	Headquarters well nearest house.
803	do.	do.	1940	1,340	6	Tg	30	8.9	Apr. 18, 1969	C,W	S	Martin Well.
* 804	J.A. Garcia	--	--	850±	6	Tg	31	8.0	do.	C,W, E	S	
805	M.F. Garcia	--	--	11,500	--	--	52 4/	--	--	--	--	Oil test. 2/
* 901	Canelo Ranch	Elmer Rupp	--	850±	--	Tg	25	9.6	Apr. 23, 1969	C,W	S	Headquarters Well.
19-101	King Ranch, Inc.	H. Curry	1917	925	--	Tg	18	+ 3.4	Apr. 19, 1969	C,W	S	Mack Well. Measured discharge 19 gpm Apr. 26, 1933. Temperature 85°F (29°C).
* 102	do.	do.	1923	965	4	Tg	21	+	1969	C,W	S	Chiltipin Well. Estimated discharge 2-3 gpm; measured flow 9.5 gpm Apr. 26, 1933. Mill installed to provide more water.
103	do.	Carl Vickers Water Well Service	1964	1,048	5 1/2 3 1/2	Tg	--	6	1964	C,W	S	Portales Well. 988 ft 5 1/2 in. casing; 42 ft 3 1/2 in. perforated casing.
501	do.	do.	1944	1,100	7 4	Tg	17	+	1969	Flows	S	La Tasa Well. Estimated discharge 3-5 gpm. Was worked over in 1960. Reported discharge 8 gpm in 1960.
601	do.	do.	1944	1,747	7 4	Tg	--	+	1969	Flows	S	Rosita Well #3. 10 joints of 7 in. casing; 76 joints of 4 in.; 21 ft of perforated casing.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
					Kenedy County							
* RD-88-19-602	King Ranch, Inc.	--	--	70	5 3/16	Qep	26	44.0 44.9	Apr. 26, 1933 Mar. 17, 1969	C,W	S	Tate Well.
701	Yturria Land & Cattle Co.	The Texas Co.	1955	10,007	--	--	36 4/	--	--	--	--	Oil test. 2/
802	do.	Texaco	1950	8,515	--	--	29 4/	--	--	--	--	Do.
* 901	King Ranch, Inc.	Humble Oil & Ref. Co.	1962	95	5	Qbl	19	47.0	Mar. 19, 1969	C,W	S	Badeno Well. 72 ft 5 in. casing; 21 ft 4 in. perforated casing at bottom.
20-101	do.	Elmer Rupp	1957	1,451	5	Tg	28	--	--	C,W	S	Colorado Well. Reported shot at 1,242 ft and produced large quantity of water. 3/
201	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1957	1,466	--	Tg	--	--	--	--	S	San Jose de la Parra Well #5.
202	King Ranch, Inc.	do.	1944	1,406	6 4	Tg	--	--	--	C,W	S	Frijol Well. 78 joints 4 in. casing; 7 joints 6 in. casing, 22 ft screen.
401	do.	do.	1963	1,256	5 1/2 3 1/2	Tg	18	+	1969	C,W	S	Tecolote Well. Replacement for old well. Measured flow of 12 gpm Apr. 28, 1933.
403	do.	--	1962	9,500	--	--	38 4/	--	--	--	--	Oil test. 2/
* 501	do.	Carl Vickers Water Well Service	1964	1,313	5 1/2 3 1/2	Tg	27	3.8	Mar. 18, 1969	C,W	S	Horatio Well #2. 42 ft of 3 1/2 in. perforated casing.
502	do.	Elmer Rupp	1957	1,401	3 1/2 5	Tg	27	--	--	C,W	S	Charco Blanco Well. Perforated casing from 1,359 to 1,400 ft. 3/
601	Humble Oil & Ref. Co.	Carl Vickers	1963	1,117	4 1/2	Tg	26	--	--	C,W	S	Saltillo Well #7.
701	King Ranch, Inc.	--	--	52±	7 1/2	Qep	21	40.6	Apr. 16, 1969	C,W	S	Campo Verde Well.
801	do.	Carl Vickers Water Well Service	1962	1,332	--	Tg	18	50.0	do.	C,W	S	Tia Moya Well #2.
* 803	do.	--	1938	1,421	6 4	Tg	19	2.0	do.	C,W	S	Tocache Well.
901	do.	Humble Oil & Ref. Co.	1953	12,001	--	--	23 4/	--	--	--	--	Oil test. 2/
21-701	do.	Elmer Rupp	1951	1,267	5	Tg	10	--	--	C,W	S	El Mescal Well. 5 in. casing 0 to 1,237 ft; perforated 1,237 to 1,267 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
RD-88-21-702	King Ranch, Inc.	Elmer Rupp	1951	1,337	5	Tg	15	--	--	C,W	S	En Medio Well. 5 in. casing 0 to 1,209 ft.
703	do.	Humble Oil & Ref. Co.	1952	10,002	--	--	25± 4/	--	--	--	--	Oil test. 2/
901	State of Texas	Gulf Oil Corp.	1958	11,946	--	--	21	--	--	--	--	Do.
25-101	King Ranch, Inc.	Carl Vickers Water Well Service	1966	860	5 1/2 3 1/2	Tg	--	10	1966	C,W	S	Perforated casing from 800 to 860 ft.
201	Robt. J. Kleberg	Humble Oil & Ref. Co.	1963	12,000	--	--	63± 4/	--	--	--	--	Oil test. 2/
301	King Ranch, Inc.	Carl Vickers Water Well Service	1960	1,080	5 1/2 3 1/2	Tg	40	10.4	Feb. 6, 1969	C,W	S	San Salvador Well #2. 5 1/2 in. casing 0 to 1,025 ft; casing gun perforated 992 to 1,011 ft.
* 26-101	J.A. Carcia Ranch	Sinclair Oil Co.	--	--	2	Tg	34	+ 1.5	Apr. 18, 1969	Flows	S	Originally drilled as oil test well and later converted to water well.
* 102	do.	--	--	--	5	Tg	36	5.9	do.	C,W	S	Toro Melon Well.
103	do.	--	--	--	6	Tg	--	+	1969	Flows	S	Los Cedros Well. Temperature 82°F (28°C).
104	J.A. Garcia Ranch	--	--	--	--	Tg	38	13.1	Apr. 18, 1969	C,W	S	Ano Nuevo Well.
105	M.F. Garcia et al	Flournoy Drilling Co.	1958	7,010	--	--	51 4/	--	--	--	--	Oil test. 2/
106	do.	Sinclair Oil & Gas Co.	1955	12,000	--	--	39±	--	--	--	--	Do.
* 201	Harl R. Thomas	Elmer Rupp	1940	780	5,4	Tg	25±	7.3	May 7, 1969	C,W,E	S	Headquarters well nearest house. Perforated casing 760 to 780 ft.
* 202	do.	Pursley Drilling Co.	1962	955	5 1/2 4 1/2	Tg	--	8±	1962	J,E 2	D,S	New Headquarters Well. 941 ft casing; perforated casing 710 to 780 ft and 941 to 955 ft.
203	do.	Elmer Rupp	1953	954	5,4	Tg	29	4.1	May 13, 1969	C,W	S	Tanque Well. 3/
204	do.	do.	Old	950±	7	Tg	34	9.5	May 7, 1969	C,W	S	Mesquites Well.
205	do.	do.	1941	950±	--	Tg	27	1.8	May 13, 1969	C,W	S	Espejo Well. Formerly flowed. Temperature 83°F (28.5°C).

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Kenedy County												
* RD-88-26-301	Harl R. Thomas	Elmer Rupp	1954	830	--	Tg	31	6.2	May 13, 1969	C,W-J,E	S,D	Cadioso Well. Perforated casing 800 to 830 ft.
302	do.	do.	--	950±	--	Tg	33	8.7	do.	C,W	S	Encantado Well.
27-201	Yturria Land & Cattle	Texaco, Inc.	1966	8,312	--	--	29 4/	--	--	--	--	Oil test. 2/
28-101	King Ranch, Inc.	Elmer Rupp	1957	1,335	5	Tg	18	--	--	C,W	S	Buena Vista well. 30 ft perforated casing. 3/
301	Sauz Ranch	Humble Oil & Ref. Co.	1948	3,041	--	--	25± 4/	--	--	--	--	Oil test. 2/
Southern Jim Wells County												
PW-83-17-701	King Ranch, Inc.	Elmer Rupp	1944	589	7	Tg	116	--	--	C,W	S	Temperature 80°F (27°C).
84-32-101	do.	Carl Vickers Water Well Service	1968	442	6 5/8	Tg	--	--	--	C,W	S	El Parr Well #2. Replacement for old well. 2 joints 4 1/2 in. liner slotted.
401	do.	Elmer Rupp	1955	503	7 5	Tg	161	55.4 174.6	June 13, 1933 Mar. 28, 1968	C,W	S	Hormigas Well. 443 ft 7 in. casing; 68 ft 5 8n. casing; 60 ft slotted.
504	do.	Carl Vickers Water Well Service	1960	481	6 5/8 4 1/2	Tg	--	--	--	C,W	S	Patricio Well. 423 ft 6 5/8 in. casing; 66 ft of 4 1/2 in. casing; 43 ft slotted.
* 802	do.	--	--	500±	--	Tg	143	181.7	Aug. 20, 1968	C,W	S	Olmos Grande Well.
803	do.	Elmer Rupp	1954	495	4 6	Tg	149	--	--	C,W	S	Los Ebanos Well. Pump set at 180 ft in 1967. 440 ft 6 in. casing. 56 ft 4 in. casing; 45 ft slotted.
39-101	Conley-Premont Gas	Southern Petroleum Exploration Co.	1966	6,001	--	--	218	--	--	--	--	Oil test. 2/
201	Clara Driscoll	H.B. Smith	1956	6,508	--	--	224 4/	--	--	--	--	Do.
* 202	Burton Dunn	--	1950	480±	4 1/2	Tg	205	106.3 153.1	Mar. 7, 1961 Feb. 7, 1968	C,W	S	Moos Mill.
203	do.	--	1950	480±	5	Tg	210	124.8 160.5	Mar. 7, 1961 Feb. 7, 1968	C,W	S	Ladder Mill.
204	do.	--	1950	480±	5	Tg	199	114.5	Mar. 7, 1961	C,W	S	
* 301	do.	--	1950	480±	5	Tg	176	101.2 144.4	Mar. 7, 1961 Feb. 7, 1968	C,W	S	Llano Ancho Mill.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
					Southern Jim Wells County							
* PW-84-39-302	Mrs. E.J. Roe	Carl Vickers Water Well Service	1964	635	20 8	Tg	149± 4/	--	--	T,G	D, Irr	Casing cemented. Screen from 410 to 470 ft, 485 to 520 ft, and 530 to 600 ft. 2/
401	Maria Hinojosa	--	1915	60	48	Qbl	--	51.1 55.8	June 19, 1933 Apr. 20, 1960	C,E	S	Stone curb, 0-60 ft. Formerly used as observation well. 1/
* 402	A.M. Engelking	Herb Freison	1957	350	10	Qbl	--	106.4 128.3	Mar. 12, 1963 Mar. 11, 1969	N	U	Originally supplied water for irrigation. Casing perforated 210 to 240 ft and 300 to 350 ft. Observation well. 1/
403	San Juan Hinojosa	--	Old	125	72	Qbl	--	53.2 97.5	June 19, 1933 Mar. 20, 1962	--	S	Dug and bored well. Formerly used as observation well. 1/
* 404	Ray Chapa	Disbro Water Well Service	1964	235	4 1/2	Tg	225	142.0	Feb. 5, 1968	S,E 1 1/2	D	3/
405	Ramon Martinez	--	--	230	4	Qbl	230±	112.7	Feb. 20, 1968	C,G	D,S	Water reported slightly "salty".
502	--Hinojosa	--	--	300±	4 1/2	Tg	186	48.3 136.6	Feb. 10, 1948 Mar. 11, 1969	J,G	Ind	Supplies water for drilling rigs. Formerly used for irrigation. Observation well. 1/
503	A.A. Seeligson	Magnolia Petroleum Co.	1952	6,401	--	--	199 4/	--	--	--	--	Oil test. 2/
504	N. San Miguel	Henshaw and Mosser	1940	3,759	--	--	193 4/	--	--	--	--	Do.
601	Seeligson & Storm	--	Old	325	4 1/2	Tg	172	64.5 147.6	Feb. 10, 1948 Mar. 11, 1969	C,W	S	Observation well. 1/
603	do.	--	--	500±	5 3/16	Tg	157±	35.6 63.2	Apr. 25, 1933 Feb. 19, 1951	N	U	Destroyed. Formerly used as observation well. 1/
604	Mrs. E.J. Roe	Disbro Water Well Service	1967	361	5	Tg	184	151.2	Feb. 22, 1968	C,W	S	Rincon Well #3.
* 605	do.	--	Old	360±	5	Tg	176	150.1	do.	C,W	S	Edwardo Mill.
606	do.	Disbro Water Well Service	1966	405	5	Tg	--	160	1966	C,W	S	Narciso Well #4. 3/
607	do.	A. Porter & Son	1964	425	7	Tg	--	--	--	--	D,S	
608	do.	Carl Vickers Water Well Service	--	604	20 12 3/4	Tg	--	--	--	T,G	Irr	191 ft 20 in. casing; 550 ft 12 3/4 in. casing. Reported 160 ft perforated casing opp.
609	A.A. Seeligson	Magnolia Petroleum Co.	1955	7,006	--	--	165 4/	--	--	--	--	Oil test.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
PW-84-39-701	Fidencio de los Santos	Gus Canales	1949	289	4 1/2	Tg	220±	78.9 148.0	Feb. 15, 1947 Mar. 11, 1969	C,W	D,S	Screen from 245 to 289 ft. Observation well. 1/
702	A.F. Stoltzfus	Elmer Rupp	1955	381	10	Tg	--	150	1960	T,G 77	Irr	Reported discharge, 500 gpm in 1960; pump set at 200 ft. Screen from 200 to 245 ft.
703	Miguel Santos	--	--	400±	4 1/2	Tg	220±	57.3 82.9	June 7, 1933 Feb. 16, 1954	N	U	Destroyed. Formerly used as observation well. 1/
* 704	Abelardo Gonzalez	Disbro Water Well Service	1965	263	5	Tg	230	151.7	Feb. 3, 1968	S,E 3/4	D,S	Pump set at 185 ft in 1965. 3/
705	Crisoforo De Los Santos	do.	1965	266	7	Tg	220±	151.1	Feb. 5, 1968	T,E 1	D,S	Pump set at 200 ft in 1965. 3/
706	Charles E. Maderer	Herb Frieson	--	357	--	Tg	--	167	1966	T,G	Irr	Perforated casing from 297 to 351 ft.
707	R.R. Kibbe	Union Oil Products Co.	1949	6,006	--	--	225 4/	--	--	--	--	Oil test. 2/
801	Seeligson & Storm	--	1950	590	10 3/4	Tg	191	143.2 157.2	Feb. 16, 1965 Mar. 11, 1969	T,G	Irr	Observation well. Reported discharge 500 gpm. 10 3/4 in. casing perforated from 520 to 590 ft. 1/
802	Clyde Schuchert	A. Porter	1952	373	10	Tg	--	--	--	T,G 60±	Irr	Pump set at 220 ft in 1952. Reported discharge 550 gpm.
* 803	Seeligson & Storm	Disbro Water Well Service	--	380	4 1/2	Tg	205	160.3	Feb. 6, 1968	C,W	S	
804	Frank Bennett	--	1917	260	6 5/8	Tg	--	--	--	N	U	Abandoned.
805	Roy Campbell et al	James G. Freeman	1953	5,665	--	--	198 4/	--	--	--	--	Oil test. 2/
901	Seeligson & Storm	A. Porter	1951	621	10 3/4 9 5/8	Tg	165	166.1 156.7 154.4	Mar. 26, 1964 Feb. 16, 1965 Feb. 22, 1966	T,G	Irr	Perforated casing from 430 to 480 and 598 to 621 ft. Reported discharge 550 gpm. Observation well.
* 902	Clyde Schuchert	Disbro Water Well Service	1955	500	--	Tg	--	--	--	S,E 1	D,S, Irr	Perforated casing from 408 to 500 ft.
903	do.	do.	1955	500	10	Tg	185±	163.5	Feb. 5, 1968	T,E	Irr	
904	Seeligson & Storm	--	--	498	10	Tg	185±	161.2	do.	T,G	Irr	Originally drilled as oil test, later converted to water well. Perforated casing from 432 to 466 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
PW-84-39-905	Seeligson & Storm	Disbro Water Well Service	--	580	4	Tg	--	--	--	C,W	S	
906	Wash Storm, Jr.	H. & S. Water Well Service, Inc.	1967	560	24 12 3/4	Tg	160±	162.5	Feb. 8, 1968	N	U	Pump not installed when visited. Owner plans to use for irrigating. 3/
907	C.W. Laughlin	--	--	--	--	--	--	--	--	T,E 15	Irr	
908	do.	--	--	--	--	--	--	--	--	T,E	Irr	
909	Sun Oil Co.	Disbro Water Well Service	1964	270	7	Qbl	--	81	1964	N	--	Not in use at present. Formerly used for "water flooding."
910	do.	do.	1964	264	7	Qbl	--	80	1964	--	--	Not in use at present. Formerly used for "water flooding." 3/
40-101	Burton Dunn	--	1950	480±	--	Tg	166	--	--	C,W	S	
102	King Ranch, Inc.	--	Old	500±	5 3/16	Tg	--	86.6 131.7	Feb. 21, 1949 Mar. 20, 1962	C,W	S	Formerly used as observation well. 1/
103	do.	--	Old	550	6 6/8	Tg	166	30 110.9	1930 Mar. 11, 1969	C,W	S	Ella Well. Formerly used as observation well. 1/
105	A.A. Seeligson	Magnolia Petroleum Co.	1952	6,500	--	--	149 4/	--	--	--	--	Oil test. 2/
202	Humble Oil & Ref. Co.	Carl Vickers Water Well Service	1967	722	16	Tg	--	199	1967	T,E 100	Ind	Well pump set at 340 ft in 1967. 16 in. casing 0 to 435 ft. 30 in. screen 435 to 650 ft. Reported salty water from 650 to 722 ft. 3/
209	King Ranch, Inc.	Elmer Rupp	1956	475	6 4	Qbl, Tg	--	--	--	C,W	S	Retamosa Well. Pump set at 200 ft in 1967. 441 ft 6 in. casing; 44 ft 4 in.; 35 ft perforated.
402	Mrs. E.J. Roe	--	Old	500±	5	Tg	150	162.4	Feb. 22, 1968	C,W	S	Narcita Well #8.
403	do.	--	--	480±	5	Tg	150	168.4	do.	C,W	S	Lamar Well #9.
501	Sun Oil Co.	Disbro Water Well Service	1962	260	4 1/2	Qbl	--	--	--	N	Ind	Used for "water flooding." 3/
701	Mobil Oil Corp.	Layne-Texas Co.	1948	2,466	12 3/4 7	To	150	159 118	July 13, 1967 Jan. 25, 1968	T,E 50	Ind	Pump set at 598 ft in 1968. Temperature 114°F (46°C). Perforated casing from 2,356 to 2,460 ft. Reported discharge 150 gpm in 1955. 2/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Southern Jim Wells County												
PW-84-40-702	Mobil Oil Corp.	Layne-Texas Co.	1951	582	20 10 3/4	Tg	150±	121	Aug. 18, 1967	T,E	Ind	Pump set at 258 ft in 1968. Perforated casing from 410 to 460, 480 to 500, and 520 to 570 ft. 2/
* 703	do.	do.	1948	2,454	12 3/4 7	To	147±	104	Jan. 25, 1968	T,E 50	Ind	Reported discharge 282 gpm. Perforated casing from 2,331 to 2,425 ft. 2/
* 704	do.	do.	1951	687	20 10 3/4 7	Tg	146±	220 195	July 13, 1967 Jan. 25, 1968	T,E 50	Ind	20 in. casing 0 to 400 ft. Pump set at 258 ft in 1968. Perforated casing from 409 to 459, 480 to 500, and 520 to 570 ft. 2/
705	Sun Oil Corp.	do.	1949	467	6 5/8	Tg	--	--	--	T,E	P	Supplied 20 families in 1960. Perforated casing from 391 to 467 ft.
706	do.	--	1951	461	5 1/2	Tg	153	121.5 157.2	Aug. 8, 1952 Mar. 10, 1969	A,E	P	Supplies water for recreation. Perforated casing from 403 to 461 ft. Observation well. 1/
708	Suntide Pipeline Co.	Disbro Water Well Service	1963	622	5 1/2	Tg	--	176	1963	S,E 3	Ind	1/ 3/
709	Mobil Oil Corp.	Layne-Texas Co.	1948	2,470	10 3/4 6 5/8	To	--	--	--	T,E 50	Ind	Pump set at 598 ft in 1968. Reported discharge 103 gpm. Perforated casing from 2,333 to 2,435 ft. 2/
710	do.	do.	1951	642	6 5/8	Tg	149±	--	--	N	U	Used by owner as observation well. 2/
* 711	do.	do.	1947	2,504	13 5/8 7	Qbl, Tg	146±	149 124 114	1967 1967 1968	T,E 50	Ind	Pump set at 598 ft in 1967. Reported discharge 302 gpm. Water sands from 200 to 275, 425 to 500, and 524 to 610 ft while being drilled. Perforated casing 2,345 to 2,406 ft. 2/
712	Sun Oil Co.	Disbro Water Well Service	1963	268	--	Qbl	--	78.0	Mar. 7, 1968	--	Ind	Used for "water flooding." 2/ 3/
713	Jack Storm	do.	1963	564	4 1/2	Tg	145±	154.1	Feb. 21, 1968	S,E 3/4	S	Pump set at 168 ft in 1968.
714	A.A. Seeligson	Magnolia Petroleum Co.	1949	5,904	--	--	162 4/	--	--	--	--	Oil test. 2/
* 47-102	E.L. Rice	Disbro Water Well Service	1966	407	7	Tg	219±	157.3	Jan. 15, 1968	S,E 1	D,S	Pump set at 190 ft, 28 ft perforated casing from 379 to 407 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
PW-84-47-103	Richard Nagel	Richardson Bros. Water Well Service	1965	600	6 5/8	Tg	--	110	1965	N	U	3/
104	E.V. Howell	Disbro Water Well Service	1963	486	5 1/2	Tg	--	116	1963	S,E 2	D,S	Originally drilled to 376 ft. Deepened when water became salty. 5 1/2 in. casing 330-786 ft. Pump set at 168 ft.
* 105	Ben Lopez	Calaway Drilling Co.	1965	410	4 1/2	Tg	194±	137.7	Jan. 16, 1968	S,E 3/4	D	Perforated casing from 370 to 410 ft; casing cemented 0 to 370 ft. Pump set at 189 ft.
106	Red Clarke	Disbro Water Well Service	1954	387	4 1/2	Tg	--	98.9	Feb. 9, 1955	S,E	D,S	Perforated casing from 364 to 387 ft.
201	M.D. Nicholson	do.	1962	487	4 1/2	Tg	--	138	1962	C,W	S	Pump set at 147 ft.
202	Jose Vargas	do.	1966	460	4 1/2	Tg	--	--	--	S,E 1	S,D	Pump set at 168 ft.
* 203	Russel Pierce	do.	1963	550	7	Tg	175	155.7	Jan. 16, 1968	T,E 10	Irr	Screen from 507 to 550 ft. 3 in. discharge pipe. Pump set at 210 ft. 3/
* 204	Al Newberry	Herb Frieson	1950	440	--	Tg	--	90	1950	S,E	D,S	Originally drilled to 490 ft. Casing to 440 ft. Casing gun-perforated at 366 ft.
205	Paul Wohlgemuth	Disbro Water Well Service	1965	537	8 5/8	Tg	--	159	1965	T,G 55	Irr	Perforated casing from 360 to 441 ft. 3/
206	do.	--	Old	--	--	--	205	149.4	Jan. 18, 1968	S,E 1	D,S	
207	A.H. Henderson	Eddy & Messer	1962	6,266	--	--	193 4/	--	--	--	--	Oil test. 2/
301	Premont School District	--	1925	524	10	Tg	--	42.0 135.6	Jan. 27, 1933 Feb. 12, 1957	N	U	Plugged and abandoned. Formerly used as observation well. 1/
* 302	Jess Raglin	Disbro Water Well Service	1965	436	5	Tg	--	190	1965	S,E 1/2	D	Casing cemented.
* 303	Mrs. Nelson English	Benito Tomez	--	532	10	Tg	143±	35.2 156.2	Dec. 26, 1932 Mar. 10, 1967	C,E	D,S	Formerly used as observation well. 1/
304	C.T. Hewitt	--	--	700	5 3/16	Tg	--	49.9 118.7	Dec. 26, 1932 Apr. 20, 1960	N	U	Reported water became salty. Filled and abandoned. 1/
305	Ignacio V. Hernandez	Disbro Water Well Service	1967	422	4 1/2	Tg	--	152	1967	T,E 1/2	D	Pump set at 168 ft. Casing cemented.
306	Dr. H.R. Buck	do.	1962	638	5 1/2	Tg	--	138	1962	S,E 1 1/2	D	

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
PW-84-47-307	John Carroll	Disbro Water Well Service	1963	542	10 3/4	Tg	--	--	--	T,G	Irr	10 3/4 in. casing from 0 to 542 ft. 3/
308	Gary Carroll	H. & S. Water Well Service	1965	658	12 3/4	Tg	165	159.0	Jan. 15, 1968	T,G	Irr	Perforated casing from 417 to 654 ft. Casing cemented from 0 to 75 ft.
309	Jack L. Smith	--	1964	539	7	Tg	163	157.5	Jan. 17, 1968	--	--	New well. Pump not installed when visited. Reported drilled for irrigation, but supply not adequate.
310	C.T. Hewitt	Disbro Water Well Service	1967	450	6	Tg	--	190	1967	S,E	D	Pump set at 231 ft. Casing cemented.
* 311	City of Premont	Carl Vickers Water Well Service	1962	560	12 3/4 7	Tg	--	150	1962	S,E	P	Casing gravel-packed; perforated from 425 to 460 ft. Reported drawdown 89 ft after pumping 24 hrs. at 760 gpm. Pump set at about 300 ft. 3/
312	E.A. Ranz	Bridwell Oil Co.	1944	7,220	--	--	169 4/	--	--	--	--	Oil test. 2/
402	John K. Disbro, Jr.	H. & S. Water Well Service	1965	412	6 5/8	Tg	--	--	--	S,E	D	Perforated casing from 371 to 412 ft.
403	John K. Disbro, Sr.	do.	1965	814	12 3/4	Tg	185±	119.7	Jan. 16, 1968	T,G	Irr	Casing cemented 0 to 286 ft; perforated from 453 to 492, 502 to 574, 608 to 655, 720 to 766, and 773 to 812 ft. 3/
405	John Disbro	Disbro Water Well Service	1963	434	5 1/2	Tg	184	115.1	do.	S,E 1/2	D,S	Pump set at 128 ft. 3/
501	Charlie Lofland	--	1925	585	4 1/2	Tg	162	82.1 61.2	Feb. 8, 1955 Feb. 11, 1968	N	U	Observation well. 1/
502	Kibbe Ranch	--	--	482	--	Tg	--	27.1 94.4	Dec. 6, 1932 Feb. 3, 1953	--	--	Formerly used as observation well. Destroyed. 1/
503	Rohrey Unit	Bridwell Oil Co.	1948	--	--	--	183	--	--	--	--	Oil test. 2/
601	Harold Fleming	Herb Frieson	1952	550	8	Tg	151±	110.0 131.5	Mar. 13, 1963 Mar. 10, 1969	T,G	D, Irr	Perforated casing from 475 to 495 and 525 to 550 ft. Observation well. 1/
603	L.A. Weigle	do.	1953	480	7	Tg	--	100	1960	T,G 75	Irr	Perforated casing from 455 to 480 ft. Reported discharge 250 gpm.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Southern Jim Wells County												
PW-84-47-604	John Frieson	Herb Frieson	--	557	8,7	Tg	--	--	--	S,E 1	D,S	Formerly used for irrigating. Reported discharge 200 gpm. Casing perforated from 488 to 512 and 535 to 557 ft.
605	E.J. Corrigan	Chester Downs	1915	488	5 3/16	--	140	22.7 112.2	Mar. 2, 1928 Mar. 20, 1962	N	U	Abandoned. Temperature 75°F (24°C). Formerly used as observation well. 1/
606	J.H. Patzakowsky	--	--	700±	6	Tg	148±	20.8 78.2	Aug. 30, 1933 Feb. 19, 1949	N	U	Abandoned. Temperature 83°F (28°C). Formerly used as observation well. 1/
607	Pedro Tamez	Disbro Water Well Service	1966	603	4 1/2	Tg	146	80.7	Jan. 15, 1968	S,E 3/4	D	Well not in use at present.
608	Pedro Peña	do.	1967	505	5	Tg	--	172	1967	S,E 1	D	Casing cemented from 0 to 450 ft. Pump set at 210 ft.
609	A.O. Hellums	do.	1963	617	7 5/8	Tg	--	126	1963	T,E 10	P	Pump set at 200 ft.
* 610	Horatio Villareal	Richardson Water Well Drilling Co.	1965	608	12	Tg	156±	152.3	Jan. 15, 1968	T,G	D, Irr	Perforated casing from 427 to 545 ft.
611	John Carroll	H. & S. Water Well Service	1965	561	12 3/4	Qbl, Tg	163	144.5	do.	T,G	Irr	Casing perforated from 282 to 317, 372 to 383, 449 to 481, and 508 to 557 ft. Casing cemented from 8 to 270 ft.
* 612	do.	Elmer Rupp	1935	575	10 6	Tg	148	155.3	Jan. 17, 1968	S,E 1	D,S	Perforated casing from 554 to 575 ft.
* 613	John P. Frieson	H. & S. Water Well Service	1968	680±	24 10 8	Tg	150	139.3	Aug. 23, 1968	T,G	Irr	Reported not used in 1968.
614	L.H. Horsting Estate	John F. Camp	1945	6,281	--	--	156	--	--	--	--	Oil test. 2/
615	J.H. Britt	La Gloria Corp.	1948	8,010	--	--	154	--	--	--	--	Do.
701	Ralph Mallett	Doc Hudson	1947	600	10 7	Tg	163	88.7 107.7	Mar. 13, 1963 Mar. 10, 1969	T,E 20	Irr	Observation well. 1/
703	C.R. Burdett	A. Porter & Son	1963	504	12 3/4	Tg	170	106.0	Mar. 13, 1968	T,E 60	Irr	Perforated casing from 452 to 504 ft. Casing cemented from 0 to 452 ft.
707	Clyde Burdett	do.	1965	502	12 3/4	Tg	--	--	--	T,G	Irr	Perforated casing from 472 to 502 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL: ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL: DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Southern Jim Wells County												
PW-84-47-708	Clyde Burdett	A. Porter & Son	1965	500	10	Tg	182	109.0	Mar. 13, 1968	T,E	Irr	Perforated casing from 472 to 502 ft.
709	--Garcia	--	--	--	--	--	166	110.5	Feb. 8, 1968	T,G	Irr	
* 801	E.G. Maun	W. Zimmermann	--	475	6 5/8	Tg	158	14.3 101.0	Oct. 23, 1932 Mar. 10, 1969	C,W	S	Observation well. 1/
802	Ralph Mallett	Doc Hudson	1947	530	8 5	Tg	--	100	1960	T,G 50	Irr	Perforated casing from 510 to 530 ft. Reported discharge 150 gpm.
* 803	do.	Elmer Rupp	1946	527	8 5 3/8	Tg	158	109.9	Jan. 18, 1968	C,W	D,S	Perforated casing from 507 to 527 ft.
804	Jesse Jackson	--	--	690±	10 3/4	Tg	158	71.4 75.2 75.6 115.1	Feb. 18, 1958 Apr. 20, 1960 Mar. 16, 1961 Jan. 15, 1968	C,W	S	Originally drilled as oil test, later converted to water well. Gun-perforated at 525 ft.
805	Dale Maun	--	1925	495	10	Tg	138	6.4 30.7	Dec. 6, 1932 Feb. 19, 1951	N	U	Filled and abandoned. Formerly used as observation well. 1/
806	do.	--	--	--	--	--	138	58.8 70.6 71.3 75.9	Feb. 15, 1947 Feb. 9, 1948 Feb. 18, 1949 Feb. 19, 1951	N	U	Formerly used as observation well.
807	Mobil Oil Corp.	--	--	300±	4	Tg	--	72.9 72.3 71.2	Feb. 12, 1957 Feb. 18, 1958 Apr. 20, 1960	N	U	Do.
809	--Sullivan	Elmer Rupp	--	500±	4	Tg	138	104.1	Mar. 8, 1968	C,E	D,S	
* 810	Will Paul Wright, Jr.	--	1958±	2,200±	10 2	To	--	+	1968	Flows	S	Originally drilled as oil test, later gun-perforated and converted to water well. Temperature 103°F (39°C).
811	E.H. Stolze	Magnolia Petroleum Co.	1948	7,793	--	--	150±	--	--	--	--	Oil test. 2/
812	Eureka College	Blanco Oil Co.	1944	6,869	--	--	160±	--	--	--	--	Do.
902	Mobil Oil Corp.	Carl Vickers Water Well Service	1958	754	13 7	Tg	--	--	--	T,E 100	Ind	Perforated casing from 674 to 754.
903	do.	Layne-Texas Co.	1953	755	13 7	Tg	--	122	1960	T,G 77	Ind	100 ft screen section.
* 904	do.	do.	1946	764	12 7	Tg	138	122	1960	T,E 40	Ind	Perforated casing from 704 to 764 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
* PW-84-47-905	Henry Engelking	--	--	600±	--	Tg	136	76.5 140.2	Feb. 17, 1947 Mar. 10, 1969	T,E	D	Observation well. 1/
906	P.J. Boerjan	O.M. Boone	1928	600	12 8	Tg	134	20.4 142.5	Dec. 5, 1932 Jan. 17, 1968	T,G 25	Irr	Reported discharge, 500 gpm. Formerly used as observation well. 1/
* 907	Marcelo Menchaca	A. Porter & Son	1963	495	7	Tg	128	128.7	Jan. 17, 1968	T,E 5	D	Perforated casing from 460 to 495 ft. Pump set at 160 ft.
910	C.W. Hornsby	Disbro Water Well Service	1964	714	10 3/4	Tg	142	148.7	do.	T,E	Irr	Casing cemented from 0 to 440 ft. 3/
* 911	Fred Hornsby	do.	1965	565	6	Tg	140	144.3	do.	S,E 1	D	3/
912	Stolz Estate	do.	1965	497	4 1/2	Tg	--	--	--	C,W	D,S	Casing cemented from 0 to 450 ft.
913	Premont Ind. School Dist.	A. Porter & Son	1956	574	6	Tg	--	--	--	T,E 5	P	Perforated casing from 532 to 574 ft.
914	Coastal States Gas Plant	Martin Water Well Service	1964	530	7	Tg	--	--	--	S,E 15	Ind	Reported discharge 150 gpm.
48-101	City of Premont	Carl Vickers Water Well Service	1959	556	20 12 3/4	Tg	--	121	1960	S,E 75	P	Perforated casing from 500 to 556 ft. Pump set at 260 ft in 1960.
* 102	do.	do.	1951	543	12 3/4 8 5/8	Tg	--	189	1967	T,E 60	P	Perforated casing from 396 to 543 ft.
103	do.	Layne-Texas Co.	1950	578	12 3/4 6 5/8	Tg	157	94.5 161.7	Feb. 17, 1948 Mar. 10, 1969	T,E 40	P	Perforated casing from 427 to 487 and 507 to 567 ft. Observation well. 1/ 2/
104	Andy Disbro	Perry Downs	--	540	12	Tg	153	41.5 117.3	July 31, 1933 Mar. 15, 1961	N	--	Not in use at present. Formerly used as observation well. 1/
105	do.	Herb Frieson	1957	478	8	Tg	--	--	--	T,G	Irr	Perforated casing from 445 to 478 ft. Reported discharge 200 gpm.
106	S.J. Pennington	--	--	515	10	Tg	--	62.8 112.9	Oct. 23, 1943 Apr. 20, 1960	T	U	Destroyed. Formerly used as observation well. 1/
107	--Wilkinson	Herb Frieson	1953	480	12	Tg	140	132.6 157.2	Mar. 13, 1963 Mar. 10, 1969	T,G	Irr	Perforated casing from 455 to 480 ft. Observation well. 1/
108	Clyde Wright Co.	--	--	480	4 1/2	Tg	--	57.6 102.4	Oct. 23, 1943 Mar. 20, 1962	J,E 1	U	Formerly used as observation well. 1/

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	WATER LEVEL DATE OF MEASUREMENT	METHOD OF LIFT	USE OF WATER	REMARKS
Southern Jim Wells County												
* PW-84-48-109	City of Premont	Peurifoy & Patterson	--	520	8 6	Tg	--	63.6 98.4	Mar. 1, 1943 Feb. 17, 1947	N	U	Originally drilled to supply water for public use. Formerly used as observation well. Abandoned. 1/
* 110	do.	Shively Bros.	1944	506	8 5	Tg	--	77.6 96.1	Apr. 18, 1944 Feb. 11, 1950	N	U	Originally drilled to supply water for public use. Abandoned. Formerly used as observation well. 1/
111	Clyde Wright, Jr.	Disbro Water Well Service	1965	547	7	Tg	--	154	1965	S,E 1	D	7 in. casing to 547 ft. 3/
* 112	Clyde Wright, Sr.	do.	1962	552	5 1/2	Tg	--	134	1962	S,E 1	D,S	5 1/2 in. casing to 552 ft.
113	S.J. Pennington	do.	1962	460	7	Tg	--	145	1962	T,G 27	D,S	7 in. casing to 460 ft.
114	Sun Oil Co.	do.	1964	269	7	Qbl	--	76	1964	T,E 7 1/2	Ind	Perforated casing from 239 to 267 ft. Used for repressuring oil wells.
115	do.	do.	1964	268	7	Tg	--	67	1964	T,E 7 1/2	Ind	Perforated casing from 238 to 268 ft. Used for repressuring oil wells.
* 116	do.	do.	1963	273	7	Qbl	--	73	1963	S,E 7 1/2	Ind	Casing cemented from 0 to 192 ft. Used for repressuring oil wells. 3/
201	Gus Canales	--	Old	500±	5	Tg	126±	142.7	Feb. 6, 1968	C,W	S	
202	Texaco, Inc.	Martin Water Well Service	1967	616	4	Tg	--	--	--	S,E 1	D	
* 501	Sun Oil Corp.	--	1955	502	4 1/2	Tg	--	--	--	C,E	D	Perforated casing from 439 to 502 ft.
* 502	Mrs. A.C. Canales	Disbro Water Well Service	1934±	450±	--	Tg	115	127.9	Feb. 2, 1968	S,E 1/2	D,S	
701	John Minten	--	Old	540	--	Tg	--	134.1	Feb. 16, 1965	N	--	Plugged and replaced by well 84-48-708. Formerly used as observation well.
702	do.	Chester Downs	1914	540	--	Tg	--	24.2 36.6	Apr. 12, 1933 Feb. 8, 1950	N	U	Destroyed. Formerly used as observation well. 1/
* 706	Enselmo Garcia	A. Porter & Sons	1963	461	4 1/2	Tg	--	--	--	S,E 1/2	D	Perforated casing from 434 to 461 ft. Canvas packer set above water sand. 4 1/2 in. casing from 0 to 434 ft.

See footnotes at end of table.

Table 7.--Records of Wells in Kleberg, Kenedy, and Southern Jim Wells Counties--Continued

WELL	OWNER	DRILLER	DATE COMPLETED	DEPTH OF WELL (FT)	CASING DIAMETER (IN.)	WATER-BEARING UNITS	ALTITUDE OF LAND SURFACE (FT)	WATER LEVEL		METHOD OF LIFT	USE OF WATER	REMARKS
								ABOVE (+) OR BELOW LAND SURFACE DATUM (FT)	DATE OF MEASUREMENT			
Southern Jim Wells County												
* PW-84-48-707	Alfredo Saenz	Jose Tamez	1961	500	4	Tg	--	--	--	C,E 1	D,S	
708	John Minton	Richardson Bros.	1967	--	--	Tg	120	126.5	Jan. 31, 1968	S,E	Irr	Drilled to replace well 84-48-701.
* 709	do.	Elmer Rupp	--	540±	4	Tg	120	127.6	do.	--	D	
710	Frank Siemonsma	Ed Shively	1948	492	7	Tg	--	--	--	C,E 1	D,S	Perforated casing from 465 to 492 ft. Pump set at 155 ft.
711	Charles Boerjan	--	1948±	500±	7	Tg	126	127.5	Mar. 13, 1968	C,W	S	
712	Cecelia Saenz de Lopez	Union Prod. Co.	1948	8,008	--	--	132 4/	--	--	--	--	Oil test. 2/
802	W.P. Wright	Disbro Water Well Service	1965	473	7	--	106±	108	1965	T,E 10	Irr	4 in. discharge pipe. Pump set at 160 ft in 1965.
803	do.	do.	1968	470±	7	Tg	106±	106.2	Jan. 30, 1968	S,E 3/4	D,S	
804	W.G. Schuetz Estate	--	1940	--	4	Tg	110	122.9	Jan. 31, 1968	C,W	D,S	
805	N.L. Russell	Magnolia Petroleum Co.	1947	4,531	--	--	121	--	--	--	--	Oil test. 2/

* Chemical analysis available; see Table 10.
1/ Additional water level measurements available; see Table 8.
2/ Electric log available in U.S. Geological Survey or Texas Water Development Board files.
3/ Driller's log available; see Table 9.
4/ Altitude of Kelly bushing, derrick floor, or drive bushing.

Table 8.—Water Levels in Wells

Kleberg County

Well RR-83-25-101, Palo Lobo

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Dec. 9, 1932	62.08
Jan. 27, 1960	131
Mar. 16, 1961	154.6
Mar. 27, 1964	176.45
Feb. 27, 1965	187.43
Feb. 24, 1966	187.90
Feb. 25, 1967	191.62
Feb. 10, 1968	191.16
Mar. 21, 1969	192.37

Well RR-83-25-301, Cola Blanca

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Feb. 21, 1947	97.43
Mar. 11, 1948	100.53
Feb. 16, 1949	103.60
Feb. 2, 1950	102.09
Feb. 20, 1951	112.18
Feb. 8, 1952	135.89
Feb. 6, 1953	128.64
Feb. 19, 1954	130.00
Feb. 9, 1955	137.33
Feb. 9, 1956	138.02
Feb. 13, 1957	145.87
Mar. 3, 1958	140.92
Jan. 27, 1960	151.17
Mar. 17, 1961	147.32
Mar. 22, 1962	154.84
Feb. 15, 1963	161.61
Mar. 27, 1964	166.73
Feb. 26, 1965	175.55
Feb. 24, 1966	174.43
Feb. 25, 1967	177.90
Feb. 10, 1968	179.62
Mar. 21, 1969	180.74

Well RR-83-25-303, Old Cola Blanca

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Dec. 8, 1932	31.06

Well RR-83-25-303—Continued

DATE	WATER LEVEL
Feb. 5, 1934	30.17
Nov. 22, 1934	32.4
Mar. 25, 1935	32.2
Nov. 16, 1943	58.53
Mar. 15, 1945	67.26
Mar. 14, 1946	82.86

Well RR-83-25-501, Little Mill

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Dec. 8, 1932	47.08
Feb. 5, 1934	46.00
Nov. 22, 1934	48.15
Mar. 25, 1935	48.10
Feb. 16, 1949	114.86
Feb. 6, 1953	133.82
Feb. 17, 1954	136.10
Feb. 9, 1955	141.79
Feb. 9, 1956	145.06
Feb. 13, 1957	154.05
Mar. 3, 1958	148.17
Jan. 27, 1960	155.37
Mar. 17, 1961	153.88
Feb. 15, 1963	174.45
Mar. 27, 1964	179.88
Feb. 27, 1965	188.89
Feb. 24, 1966	187.19
Feb. 25, 1967	190.92
Feb. 10, 1968	193.12
Mar. 21, 1969	195.20

Well RR-83-25-502

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Mar. 16, 1961	148.02
Mar. 27, 1964	178.47
Feb. 27, 1965	186.58
Feb. 24, 1966	184.85
Feb. 25, 1967	188.77
Feb. 10, 1968	188.17
Mar. 21, 1969	189.44

Well RR-83-25-503

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Mar. 27, 1964	168.34
Feb. 27, 1965	181.03
Feb. 24, 1966	182.63
Feb. 25, 1967	181.45
Feb. 10, 1968	181.88
Mar. 21, 1969	181.34

Well RR-83-25-601

Owner: Humble Oil & Refg. Co.

DATE	WATER LEVEL
Mar. 27, 1964	190.82
July 21, 1964	207.99
Oct. 3, 1964	206.36
Nov. 20, 1964	209.42
Feb. 26, 1965	203.09
May 20, 1965	203.45
July 24, 1965	214.21
Sept. 24, 1965	219.02
Nov. 20, 1965	200.32
Jan. 26, 1966	193.47
Feb. 26, 1966	192.61
Mar. 28, 1966	195.15
May 23, 1966	193.30
July 28, 1966	208.03
Sept. 23, 1966	206.02
Nov. 16, 1966	208.52
Jan. 23, 1967	200.81
Feb. 25, 1967	200.14
Mar. 10, 1967	198.50
Feb. 10, 1968	220.74
Mar. 21, 1969	215.04

Well RR-83-25-701, Puertas

Owner: King Ranch, Inc.

DATE	WATER LEVEL
Nov. 4, 1953	122.40
Dec. 3, 1953	124.64
Jan. 6, 1954	124.05
Feb. 4, 1954	122.89
Feb. 19, 1954	123.60
Mar. 8, 1954	123.71

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-25-701—Continued	
Apr. 7, 1954	125.26
May 5, 1954	97.76
June 3, 1954	124.80
Aug. 10, 1954	126.05
Oct. 1, 1954	126.17
Dec. 3, 1954	125.93
Jan. 7, 1955	125.51
Feb. 10, 1955	125.72
Mar. 7, 1955	124.84
Apr. 4, 1955	125.22
May 5, 1955	124.58
June 6, 1955	125.16
Aug. 22, 1955	128.40
Jan. 3, 1956	128.62
Feb. 9, 1956	129.86
Apr. 5, 1956	124.00
May 23, 1956	125.46
June 27, 1956	125.59
Aug. 24, 1956	131.39
Oct. 16, 1956	130.45
Feb. 13, 1957	127.40
July 26, 1957	133.15
Mar. 5, 1958	125.86
Jan. 27, 1960	133.26
Mar. 16, 1961	139.65
Mar. 22, 1962	152.61
Mar. 27, 1964	174.90
Feb. 27, 1965	178.43
Feb. 23, 1966	178.30
Feb. 25, 1967	180.20
Feb. 10, 1968	188.18
Mar. 21, 1969	186.80
Well RR-83-25-703, Old Puertas	
Owner: King Ranch, Inc.	
Dec. 9, 1932	39.77
Dec. 13, 1933	39.98
Feb. 6, 1934	39.59
Nov. 9, 1934	41.5

DATE	WATER LEVEL
Well RR-83-25-703—Continued	
Mar. 24, 1935	42.0
Jan. 31, 1938	42.95
Oct. 24, 1938	43.39
Apr. 11, 1939	42.75
Oct. 10, 1939	43.21
Feb. 15, 1940	43.45
Feb. 15, 1941	45.58
Feb. 3, 1943	52.40
Nov. 13, 1943	58.99
Mar. 6, 1944	59.29
Mar. 15, 1945	66.79
Mar. 16, 1946	78.39
Feb. 21, 1947	86.18
Feb. 8, 1948	91.68
Sept. 28, 1948	97.08
Dec. 11, 1948	97.02
Feb. 17, 1949	99.58
Apr. 25, 1949	98.36
July 20, 1949	99.40
Oct. 6, 1949	100.70
Nov. 17, 1949	100.80
Jan. 10, 1950	39.97
Feb. 10, 1950	46.21
May 16, 1950	44.98
Nov. 16, 1950	92.12
Feb. 20, 1951	95.03
Oct. 1, 1951	107.10
Nov. 22, 1951	93.40
Feb. 8, 1952	101.66
Mar. 28, 1952	102.16
July 29, 1952	103.70
Aug. 26, 1952	111.63
Sept. 26, 1952	111.90
Oct. 28, 1952	111.62
Nov. 26, 1952	111.75
Feb. 27, 1953	111.90
Mar. 26, 1953	110.92
Apr. 29, 1953	112.80

DATE	WATER LEVEL
Well RR-83-25-703—Continued	
May 27, 1953	114.25
Aug. 6, 1953	116.62
Oct. 7, 1953	119.08
Well RR-83-25-801, Calero	
Owner: King Ranch, Inc.	
Feb. 17, 1947	97.92
Feb. 11, 1948	102.83
Feb. 17, 1949	108.82
Feb. 2, 1950	109.00
Feb. 20, 1951	119.44
Feb. 8, 1952	133.66
Feb. 4, 1953	134.09
Feb. 19, 1954	137.93
Feb. 9, 1956	141.57
Feb. 13, 1957	158.75
Mar. 3, 1958	150.86
Jan. 27, 1960	159.37
Mar. 16, 1961	155.14
Mar. 22, 1962	174.80
Feb. 15, 1963	185.65
Feb. 27, 1965	197.16
Feb. 24, 1966	192.68
Feb. 25, 1967	201.36
Mar. 24, 1969	204.99
Well RR-83-25-802, Old Calero	
Owner: King Ranch, Inc.	
Jan. 5, 1933	45.44
Feb. 5, 1934	43.90
Nov. 22, 1934	46.53
Mar. 25, 1935	46.15
Jan. 31, 1938	48.31
Apr. 14, 1939	48.55
Oct. 12, 1939	50.60
Feb. 15, 1940	49.48
Feb. 5, 1941	50.53
Feb. 2, 1943	59.22
Dec. 17, 1943	66.89
Mar. 6, 1944	66.13
Mar. 14, 1946	86.97

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-25-902	
Owner: Texas A.&I. University	
Mar. 27, 1964	226.59
Feb. 23, 1966	219.23
Feb. 25, 1967	234.40
Mar. 21, 1969	242.20
Well RR-83-25-906 (Old)	
Owner: Texas A.&I. University	
Dec. 7, 1932	40.81
Nov. 15, 1934	43.65
Mar. 19, 1935	42.53
Oct. 22, 1938	45.71
Apr. 13, 1939	48.41
Oct. 11, 1939	49.57
Feb. 16, 1940	46.34
Feb. 6, 1941	45.29
Well RR-83-26-401, Caesar Pens	
Owner: King Ranch, Inc.	
Dec. 15, 1932	22.37
Dec. 13, 1933	20.15
Feb. 2, 1934	19.33
Nov. 15, 1934	22.16
Mar. 19, 1935	20.95
Nov. 16, 1943	49.96
Mar. 15, 1945	57.88
Mar. 16, 1946	100.40
Feb. 11, 1948	102.97
Feb. 17, 1949	107.92
Feb. 10, 1950	103.40
Feb. 20, 1951	130.69
Feb. 6, 1952	133.80
Feb. 4, 1953	129.53
Feb. 17, 1954	141.10
Feb. 9, 1955	145.71
Feb. 13, 1957	165.24
Mar. 5, 1958	159.07
Jan. 27, 1960	182.59
Mar. 17, 1961	161.18
Mar. 22, 1962	185.10

DATE	WATER LEVEL
Well RR-83-26-401—Continued	
Feb. 14, 1963	177.25
Mar. 27, 1964	181.77
Feb. 26, 1965	193.08
Feb. 23, 1966	204.25
Feb. 25, 1967	214.76
Feb. 9, 1968	218.11
Mar. 21, 1969	205.40
Well RR-83-26-701, Rancho Verde	
Owner: King Ranch, Inc.	
Dec. 15, 1932	32.50
Dec. 16, 1943	62.43
Mar. 6, 1944	59.84
Mar. 15, 1945	71.06
Feb. 17, 1949	114.80
Feb. 10, 1950	111.77
Feb. 20, 1951	136.46
Feb. 6, 1952	146.54
Feb. 4, 1953	147.35
Feb. 19, 1954	149.90
Feb. 9, 1955	154.63
Feb. 10, 1956	157.17
Feb. 13, 1957	176.75
Mar. 5, 1958	161.83
Jan. 27, 1960	167.51
Mar. 17, 1961	167.75
Mar. 22, 1962	188.94
Feb. 14, 1963	189.24
Mar. 27, 1964	193.15
Feb. 26, 1965	198.20
Feb. 23, 1966	193.30
Feb. 25, 1967	217.95
Feb. 9, 1968	212.95
Mar. 21, 1969	210.30
Well RR-83-26-702	
Owner: City of Kingsville, No. 6	
Feb. 19, 1949	114.86
Feb. 10, 1950	117.26
Feb. 6, 1952	155.00

DATE	WATER LEVEL
Well RR-83-26-702—Continued	
Feb. 4, 1953	153.35
Feb. 17, 1954	177.50
Mar. 5, 1958	157.81
Jan. 27, 1960	171.63
Mar. 17, 1961	166.19
Mar. 23, 1962	213.36
Feb. 15, 1963	199.52
Mar. 27, 1964	201.60
May 27, 1964	222.63
July 21, 1964	232.28
Oct. 3, 1964	230.59
Nov. 20, 1964	233.46
Feb. 26, 1965	199.79
May 20, 1965	234.74
Well RR-83-26-703	
Owner: City of Kingsville, No. 4	
Oct. 26, 1932	44.9
Dec. 14, 1933	40.95
Feb. 10, 1934	39.15
Nov. 17, 1934	43.96
Feb. 11, 1939	55.91
Oct. 11, 1939	48.80
Feb. 6, 1941	46.90
Mar. 3, 1943	65.75
Mar. 16, 1945	89.84
Feb. 21, 1947	125.0
Feb. 6, 1953	171.24
Well RR-83-26-704	
Owner: City of Kingsville, No. 7	
Mar. 13, 1946	105.45
May 8, 1946	105.75
Feb. 11, 1948	115.84
Feb. 19, 1949	124.03
Feb. 10, 1950	127.24
Feb. 21, 1951	167.72
Feb. 6, 1952	165.11
Feb. 4, 1953	165.71
Feb. 17, 1954	171.20

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-26-704—Continued	
Feb. 11, 1955	158.35
Feb. 10, 1956	166.65
Mar. 5, 1958	162.68
Jan. 27, 1960	173.27
Mar. 17, 1961	170.52
Mar. 23, 1962	—
Feb. 15, 1963	—
Mar. 27, 1964	205.53
Feb. 26, 1965	207.57
Mar. 21, 1969	239.90
Well RR-83-26-705	
Owner: City of Kingsville, No. 8	
Jan. 23, 1947	112.9
Feb. 11, 1948	115.51
Feb. 19, 1949	123.44
Feb. 10, 1950	128.03
Feb. 6, 1952	169.74
Feb. 4, 1953	167.65
Feb. 17, 1954	170.48
Feb. 11, 1955	158.96
Feb. 10, 1956	166.79
Feb. 13, 1957	214.96
Mar. 5, 1958	162.96
Jan. 27, 1960	183.15
Mar. 17, 1961	171.48
Feb. 15, 1963	191.13
Mar. 27, 1964	206.06
Feb. 26, 1965	202.93
Feb. 9, 1968	211.61
Mar. 21, 1969	216.66
Well RR-83-26-707	
Owner: Joe Stelzig	
Dec. 15, 1932	31.76
Dec. 13, 1933	30.80
Feb. 2, 1934	30.72
Nov. 15, 1934	34.12
Mar. 19, 1935	34.58
Jan. 31, 1938	33.78

DATE	WATER LEVEL
Well RR-83-26-707—Continued	
Apr. 13, 1939	35.84
Oct. 12, 1939	37.32
Feb. 16, 1940	35.71
Feb. 6, 1941	36.06
Feb. 3, 1943	52.63
Nov. 16, 1943	64.46
Well RR-83-26-708	
Owner: W. H. Young	
Dec. 15, 1932	39.62
Feb. 2, 1934	37.42
Feb. 15, 1934	43.12
Mar. 19, 1935	42.88
Jan. 31, 1938	42.20
Oct. 22, 1938	45.32
Apr. 13, 1939	48.01
Oct. 11, 1939	48.72
Feb. 16, 1940	46.36
Feb. 6, 1941	45.31
Feb. 3, 1943	62.50
Well RR-83-26-709	
Owner: City of Kingsville, No. 3	
Oct. 26, 1932	45.1
Dec. 14, 1933	40.49
Feb. 10, 1934	39.12
Nov. 17, 1934	43.38
Feb. 4, 1943	85.7
Mar. 3, 1943	66.1
Mar. 7, 1944	76.5
Well RR-83-26-710	
Owner: City of Kingsville, No. 1	
Dec. 5, 1932	47.72
Dec. 14, 1933	40.84
Feb. 10, 1934	39.90
Nov. 17, 1934	46.6
Mar. 19, 1935	55.80
Mar. 7, 1944	89.70
Mar. 16, 1945	95.77
Feb. 21, 1947	132.85

DATE	WATER LEVEL
Well RR-83-26-710—Continued	
Feb. 11, 1948	125.14
Feb. 19, 1949	129.14
Feb. 10, 1950	129.65
Feb. 20, 1951	156.90
Feb. 6, 1952	163.58
Feb. 4, 1953	165.60
Feb. 17, 1954	168.50
Feb. 11, 1955	167.05
Feb. 10, 1956	175.12
Well RR-83-26-713 (old)	
Owner: Missouri-Pacific Ry. Co.	
Dec. 7, 1932	22.61
Feb. 1933	22.6
Nov. 22, 1934	22.92
Mar. 24, 1935	21.78
Apr. 12, 1939	14.59
Feb. 6, 1941	3.29
Well RR-83-26-802, Noria Nicha, No. 2	
Owner: King Ranch, Inc.	
Feb. 16, 1949	82.60
Feb. 11, 1950	81.42
Feb. 17, 1953	107.10
Feb. 4, 1954	110.16
Mar. 5, 1958	109.26
Jan. 27, 1960	135.08
Mar. 27, 1964	153.26
Feb. 26, 1965	158.00
Well RR-83-26-901, Palo Marcado, No. 1	
Owner: King Ranch, Inc.	
Jan. 12, 1933	30.6
Dec. 14, 1933	29.5
Feb. 10, 1934	28.6
Nov. 10, 1934	25.62
Nov. 14, 1943	46.43
Mar. 6, 1944	46.09
Mar. 16, 1945	54.38
Mar. 15, 1946	65.32

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-26-901—Continued	
Feb. 20, 1947	73.71
Feb. 11, 1948	77.82
Feb. 16, 1949	83.76
Feb. 2, 1950	83.37
Feb. 20, 1951	94.76
Feb. 6, 1952	126.83
Feb. 4, 1953	102.50
Feb. 17, 1954	106.74
Feb. 9, 1955	110.80
Feb. 10, 1956	116.60
Feb. 13, 1957	134.60
Mar. 5, 1958	122.66
Jan. 27, 1960	133.09
Mar. 16, 1961	132.19
Mar. 22, 1962	147.10
Mar. 27, 1964	143.24
Feb. 26, 1965	150.96
Feb. 23, 1966	147.11
Feb. 25, 1967	151.82
Feb. 8, 1968	157.00
Mar. 20, 1969	153.44
Well RR-83-27-401, Noria Nina	
Owner: King Ranch, Inc.	
Nov. 14, 1943	27.88
Mar. 6, 1944	27.72
Mar. 16, 1945	35.25
Mar. 15, 1946	44.66
Feb. 20, 1947	54.87
Feb. 16, 1949	62.04
Feb. 11, 1950	59.28
Feb. 20, 1951	73.89
Feb. 6, 1952	73.87
Feb. 4, 1953	83.20
Feb. 17, 1954	81.17
Feb. 9, 1955	84.49
Feb. 9, 1956	88.45
Feb. 13, 1957	98.98
Jan. 27, 1960	115.03

DATE	WATER LEVEL
Well RR-83-27-401—Continued	
Mar. 16, 1961	100.54
Mar. 22, 1962	106.95
Feb. 15, 1963	110.60
Mar. 27, 1964	112.25
Feb. 26, 1965	118.22
Mar. 28, 1966	118.79
Feb. 25, 1967	123.14
Feb. 8, 1968	128.03
Mar. 20, 1969	124.73
Well RR-83-27-601, Palacios	
Owner: King Ranch, Inc.	
Jan. 19, 1933	1.96
Feb. 4, 1934	1.70
Nov. 10, 1934	2.00
Mar. 23, 1935	2.17
Feb. 1, 1938	1.78
Oct. 21, 1938	2.05
Feb. 15, 1940	4.82
Feb. 5, 1941	3.81
Feb. 5, 1943	5.39
Nov. 14, 1943	7.69
Mar. 16, 1945	10.46
Feb. 20, 1947	21.18
Feb. 16, 1949	28.31
Feb. 11, 1950	30.10
Feb. 20, 1951	33.14
Feb. 6, 1952	31.50
Feb. 4, 1953	36.18
Feb. 17, 1954	38.34
Feb. 9, 1955	40.34
Feb. 10, 1956	42.25
Feb. 13, 1957	46.24
Jan. 27, 1960	58.83
Mar. 16, 1961	50.85
Mar. 22, 1962	54.72
Feb. 15, 1963	59.38
Mar. 27, 1964	60.14
Feb. 26, 1965	62.12

DATE	WATER LEVEL
Well RR-83-27-601—Continued	
Mar. 28, 1966	63.59
Feb. 25, 1967	65.12
Feb. 8, 1968	67.85
Mar. 20, 1969	68.84
Well RR-83-27-801, Noria Honda	
Owner: King Ranch, Inc.	
Jan. 12, 1933	5.32
Nov. 10, 1934	5.76
Mar. 23, 1935	5.65
Feb. 1, 1938	5.67
Oct. 21, 1938	5.94
Feb. 15, 1940	7.26
Feb. 5, 1941	6.82
Feb. 2, 1943	11.37
Nov. 14, 1943	17.02
Mar. 6, 1944	17.57
Mar. 16, 1945	21.26
Mar. 15, 1946	26.39
Feb. 20, 1947	32.60
Feb. 11, 1948	37.16
Feb. 16, 1949	41.07
Feb. 2, 1950	41.63
Feb. 20, 1951	52.73
Feb. 6, 1952	50.66
Feb. 4, 1953	54.53
Feb. 17, 1954	59.50
Feb. 9, 1956	65.89
Feb. 13, 1957	71.70
Mar. 5, 1958	70.96
Jan. 27, 1960	86.15
Mar. 16, 1961	74.04
Mar. 22, 1962	82.01
Feb. 15, 1963	89.03
Mar. 27, 1964	118.70
Feb. 26, 1965	115.50
Feb. 23, 1966	91.24
Feb. 25, 1967	93.23

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-33-201—Continued	
Feb. 8, 1952	116.20
Feb. 6, 1953	121.82
Feb. 19, 1954	126.54
Feb. 9, 1955	130.19
Feb. 9, 1956	135.50
Feb. 13, 1957	154.70
Mar. 3, 1958	137.74
Jan. 27, 1960	151.79
Mar. 16, 1961	141.72
Mar. 20, 1962	163.46
Feb. 15, 1963	173.45
Mar. 27, 1964	180.61
Feb. 27, 1965	184.6
Feb. 24, 1966	181.47
Feb. 25, 1967	190.90
Feb. 10, 1968	189.56
Mar. 24, 1969	190.11
Well RR-83-33-301, New Silo	
Owner: King Ranch, Inc.	
Feb. 19, 1954	144.46
Feb. 9, 1955	141.74
Feb. 9, 1956	146.47
Feb. 13, 1957	164.23
Mar. 3, 1958	149.22
Jan. 27, 1960	162.44
Mar. 16, 1961	151.46
Mar. 22, 1962	179.68
Feb. 15, 1963	183.70
Mar. 27, 1964	200.25
Feb. 25, 1967	210.07
Feb. 10, 1968	205.10
Mar. 24, 1969	206.19
Well RR-83-33-302, Old Silo	
Owner: King Ranch, Inc.	
Jan. 10, 1933	30.53
Feb. 5, 1934	28.78
Nov. 11, 1934	33.60
Mar. 25, 1935	32.82

DATE	WATER LEVEL
Well RR-83-33-302—Continued	
Jan. 31, 1938	35.25
Apr. 14, 1939	35.48
Oct. 12, 1939	37.75
Feb. 15, 1940	38.50
Feb. 5, 1941	38.16
Feb. 2, 1943	48.63
Nov. 17, 1943	58.08
Mar. 6, 1944	55.68
Mar, 15, 1945	64.97
Mar. 14, 1946	80.03
Feb. 21, 1947	90.17
Feb. 17, 1949	97.92
Feb. 2, 1950	99.08
Feb. 20, 1951	122.22
Feb. 8, 1952	125.71
Feb. 6, 1953	126.07
Well RR-83-34-102	
Owner: J. R. Trussell	
Dec. 8, 1932	18.92
Dec. 13, 1933	18.6
Feb. 2, 1934	18.40
Nov. 17, 1934	21.36
Mar. 19, 1935	20.2
Feb. 2, 1938	21.43
May 10, 1938	24.12
Oct. 22, 1938	22.84
Apr. 12, 1939	23.48
Oct. 12, 1939	23.63
Feb. 16, 1940	24.29
Feb. 6, 1941	24.40
Feb. 4, 1943	34.36
Mar. 5, 1944	38.79
Mar. 17, 1945	46.17
Mar. 15, 1946	58.94
Feb. 21, 1947	64.64
Feb. 12, 1948	64.83
Feb. 17, 1949	78.82
Feb. 10, 1950	84.84

DATE	WATER LEVEL
Well RR-83-34-102—Continued	
Feb. 21, 1951	126.65
Feb. 8, 1952	128.70
Feb. 6, 1953	103.70
Feb. 19, 1954	106.27
Feb. 10, 1956	113.26
Feb. 13, 1957	118.52
Mar. 5, 1958	114.24
Jan. 27, 1960	119.84
Well RR-83-34-103	
Owner: R. F. Preait	
Nov. 30, 1932	23.45
Dec. 13, 1933	21.85
Feb. 2, 1934	21.70
Nov. 9, 1934	25.30
Mar. 19, 1935	24.1
Feb. 2, 1938	24.98
May 10, 1938	27.77
Oct. 22, 1938	26.97
Apr. 12, 1939	27.97
Oct. 12, 1939	29.30
Feb. 16, 1940	28.40
Feb. 5, 1941	28.25
Feb. 4, 1943	39.53
Mar. 5, 1944	46.08
Well RR-83-34-104	
Owner: Dr. J. V. Chandler Estate	
Dec. 15, 1932	36.10
Feb. 2, 1934	34.95
Nov. 15, 1934	40.84
Mar. 19, 1935	37.74
Feb. 2, 1938	36.36
May 10, 1938	26.14
Oct. 22, 1938	24.87
Apr. 12, 1939	24.31
Apr. 13, 1939	24.92
Well RR-83-34-204	
Owner: Joe Elsik	
Dec. 16, 1932	22.77

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-34-204—Continued	
Feb. 2, 1934	20.87
Nov. 16, 1934	24.61
Mar. 15, 1935	23.53
Feb. 2, 1938.	24.62
Oct. 22, 1938	26.64
Apr. 12, 1939	27.81
Oct. 12, 1939	27.89
Feb. 14, 1940	28.33
Feb. 6, 1941	28.08
Feb. 3, 1943	51.05
Well RR-83-34-205	
Owner: A. Robinson	
Jan. 6, 1933	6.32
Feb. 1934	5.96
Nov. 16, 1934	7.28
Mar. 19, 1935	6.43
Feb. 2, 1938	9.50
Oct. 22, 1938	10.54
Apr. 12, 1939	10.74
Oct. 12, 1939	10.98
Feb. 16, 1940	11.44
Feb. 6, 1941	11.63
Well RR-83-34-206	
Owner: N. E. Selstad	
Feb. 4, 1933	13.35
Feb. 3, 1934	12.82
Nov. 16, 1934	14.44
Mar. 19, 1935	14.00
Feb. 2, 1938	15.03
Oct. 22, 1938	21.50
Apr. 12, 1939	15.20
Oct. 12, 1939	16.83
Feb. 16, 1940	17.17
Oct. 6, 1941	16.98
Well RR-83-34-301, Leoncitis	
Owner: King Ranch, Inc.	
Jan. 12, 1933	19.84
Nov. 11, 1934	19.24

DATE	WATER LEVEL
Well RR-83-34-301—Continued	
Nov. 13, 1943	42.78
Mar. 6, 1944	42.77
Mar. 16, 1945	49.21
Mar. 15, 1946	61.97
Feb. 20, 1947	67.42
Feb. 16, 1949	75.21
Feb. 11, 1950	74.70
Feb. 20, 1951	88.66
Feb. 6, 1952	92.39
Feb. 4, 1953	94.82
Feb. 17, 1954	98.70
Feb. 9, 1955	107.16
Feb. 9, 1956	114.27
Feb. 13, 1957	121.15
Jan. 27, 1960	119.83
Mar. 16, 1961	118.68
Mar. 22, 1962	126.33
Feb. 15, 1963	129.24
Mar. 27, 1964	133.40
Feb. 26, 1965	141.63
Feb. 23, 1966	143.25
Feb. 25, 1967	148.12
Feb. 8, 1968	156.63
Mar. 20, 1969	153.38
Well RR-83-34-302, New Vinatero	
Owner: King Ranch, Inc.	
Feb. 20, 1947	44.10
Feb. 16, 1949	45.32
Feb. 11, 1950	42.48
Feb. 16, 1952	50.36
Feb. 4, 1953	54.05
Feb. 17, 1954	57.62
Feb. 10, 1956	67.17
Feb. 13, 1957	72.58
Jan. 27, 1960	72.03
Mar. 16, 1961	71.80
Mar. 22, 1962	77.70
Feb. 15, 1963	81.37

DATE	WATER LEVEL
Well RR-83-34-302—Continued	
Mar. 27, 1964	84.96
Feb. 26, 1965	88.60
Mar. 28, 1966	91.30
Feb. 25, 1967	93.22
Feb. 8, 1968	95.44
Mar. 20, 1969	101.38
Well RR-83-34-303, Old Vinatero	
Owner: King Ranch, Inc.	
Jan. 13, 1933	11.87
Feb. 9, 1934	11.97
Nov. 13, 1943	21.38
Mar. 16, 1945	24.54
Mar. 15, 1946	32.45
Feb. 20, 1947	34.89
Well RR-83-34-401	
Owner: Al Kleberg	
Feb. 11, 1955	94.68
Feb. 10, 1956	96.42
Feb. 13, 1957	101.53
Mar. 5, 1958	99.81
Jan. 27, 1960	100.58
Mar. 17, 1961	102.10
Mar. 23, 1962	114.28
Feb. 14, 1963	118.41
Mar. 27, 1964	126.79
Feb. 26, 1965	132.79
Feb. 23, 1966	127.77
Feb. 25, 1967	137.53
Feb. 9, 1968	131.23
Mar. 24, 1969	128.50
Well RR-83-34-405	
Owner: L. E. Flato Estate	
Feb. 25, 1933	14.50
Feb. 2, 1934	13.98
Nov. 16, 1934	16.20
Mar. 19, 1935	15.70
Feb. 2, 1938	16.74

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-34-405—Continued	
May 10, 1938	18.73
Oct. 22, 1938	18.23
Apr. 12, 1939	19.25
Oct. 12, 1939	20.20
Feb. 16, 1940	19.29
Feb. 5, 1941	19.79
Feb. 4, 1943	26.34
Nov. 5, 1944	30.68
Feb. 21, 1947	52.28
Feb. 12, 1948	55.7
Feb. 17, 1949	60.19
Well RR-83-34-406	
Owner: J. R. Trussell	
Mar. 1913	2.0
Mar. 1928	10.8
Jan. 5, 1933	12.50
Dec. 13, 1933	11.5
Nov. 17, 1934	13.3
Mar. 20, 1935	13.3
Feb. 3, 1938	13.60
May 10, 1938	18.27
Oct. 22, 1938	14.88
May 12, 1939	15.95
Oct. 12, 1939	17.21
Feb. 16, 1940	16.48
Feb. 5, 1941	17.44
Feb. 4, 1943	21.23
Mar. 16, 1945	30.81
Well RR-83-34-407	
Owner: A. J. Williams	
Mar. 1913	4.0
Mar. 1928	9.0
Jan. 5, 1933	10.34
Dec. 13, 1933	10.07
Feb. 3, 1934	9.83
Nov. 17, 1934	11.18
Mar. 20, 1935	11.06
Feb. 3, 1938	12.45

DATE	WATER LEVEL
Well RR-83-34-407—Continued	
May 10, 1938	13.58
Oct. 22, 1938	13.47
Apr. 12, 1939	14.02
Oct. 12, 1939	14.32
Feb. 16, 1940	14.64
Well RR-83-34-701	
Owner: Mrs. J. Talty	
Dec. 17, 1932	9.80
Feb. 3, 1934	9.00
Nov. 16, 1934	10.07
Mar. 20, 1935	9.92
Feb. 3, 1938	11.29
Oct. 22, 1938	12.05
Apr. 12, 1939	13.50
Oct. 12, 1939	14.08
Feb. 16, 1940	12.93
Feb. 5, 1941	13.70
Feb. 4, 1943	15.48
Mar. 5, 1944	16.12
Mar. 17, 1945	18.28
Feb. 21, 1947	36.61
Feb. 12, 1948	36.62
Feb. 17, 1949	24.85
Feb. 10, 1950	18.45
Feb. 21, 1951	20.63
Feb. 8, 1952	37.40
Feb. 6, 1953	35.50
Feb. 19, 1954	26.05
Feb. 11, 1955	33.60
Feb. 10, 1956	26.53
Feb. 13, 1957	28.20
Mar. 5, 1958	30.45
Jan. 27, 1960	32.96
Mar. 17, 1961	33.13
Mar. 23, 1962	35.21
Feb. 14, 1963	37.21
Mar. 27, 1964	38.28
Feb. 26, 1965	31.08

DATE	WATER LEVEL
Well RR-83-34-701—Continued	
Feb. 23, 1966	23.96
Feb. 25, 1967	16.98
Feb. 9, 1968	17.47
Mar. 24, 1969	17.14
Well RR-83-35-101, Mesquite, No. 2	
Owner: King Ranch, Inc.	
Jan. 13, 1933	19.00
Nov. 11, 1934	16.82
Nov. 14, 1943	27.23
Mar. 6, 1944	29.21
Mar. 15, 1946	38.24
Feb. 20, 1947	46.38
Feb. 16, 1949	52.38
Feb. 11, 1950	52.71
Feb. 20, 1951	62.84
Feb. 6, 1952	68.05
Feb. 4, 1953	63.46
Feb. 17, 1954	67.73
Feb. 9, 1956	77.09
Feb. 13, 1957	82.68
Jan. 27, 1960	84.01
Mar. 16, 1961	85.78
Mar. 22, 1962	92.83
Feb. 15, 1963	97.00
Mar. 27, 1964	97.83
Feb. 26, 1965	105.08
Mar. 28, 1966	101.81
Feb. 25, 1967	105.15
Feb. 8, 1968	105.01
Mar. 20, 1969	104.54
Well RR-83-35-201, Telephone, No. 1	
Owner: King Ranch, Inc.	
Jan. 13, 1933	12.34
Feb. 9, 1934	11.87
Feb. 1, 1938	11.83
Feb. 15, 1940	15.50
Feb. 5, 1941	17.32

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-35-201—Continued	
Feb. 2, 1943	19.73
Nov. 14, 1943	21.03
Feb. 16, 1944	21.78
Feb. 16, 1945	21.97
Feb. 15, 1946	28.39
Feb. 20, 1947	31.24
Feb. 16, 1949	38.38
Feb. 11, 1950	37.48
Feb. 20, 1951	55.12
Feb. 6, 1952	57.14
Feb. 4, 1953	46.30
Feb. 17, 1954	48.79
Feb. 9, 1955	50.55
Feb. 10, 1956	54.39
Feb. 13, 1957	61.40
Jan. 27, 1960	65.71
Mar. 16, 1961	64.11
Mar. 22, 1962	67.60
Feb. 15, 1963	72.66
Mar. 27, 1964	74.67
Feb. 26, 1965	78.90
Feb. 23, 1966	76.89
Feb. 25, 1967	83.12
Feb. 8, 1968	84.05
Mar. 20, 1969	83.2C
Well RR-83-35-202, Telephone, No. 2	
Owner: King Ranch, Inc.	
Jan. 13, 1933	18.34
Feb. 9, 1934	15.94
Nov. 1934	16.4
Mar. 1935	12.4
Feb. 1, 1938	16.15
Well RR-83-35-204, Tres Esquinas, No. 1	
Owner: King Ranch, Inc.	
Jan. 13, 1933	3.42
Feb. 9, 1934	3.03
Nov. 11, 1934	3.56
Well RR-83-35-204—Continued	
Feb. 1, 1938	3.52
Feb. 15, 1940	4.03
Feb. 5, 1941	4.32
Feb. 2, 1943	6.55
Mar. 16, 1945	11.55
Feb. 16, 1949	27.54
Feb. 4, 1953	0.45
Well RR-83-35-301, Gallito	
Owner: King Ranch, Inc.	
Nov. 11, 1934	8.45
Mar. 23, 1935	8.34
Feb. 16, 1949	25.73
Feb. 20, 1951	32.00
Feb. 6, 1952	29.37
Feb. 17, 1954	34.39
Feb. 9, 1955	42.45
Feb. 9, 1956	46.08
Feb. 13, 1957	43.45
Jan. 27, 1960	52.74
Mar. 16, 1961	61.27
Mar. 22, 1962	53.71
Feb. 15, 1963	61.65
Feb. 27, 1964	63.20
Feb. 26, 1965	67.01
Mar. 28, 1966	67.49
Feb. 25, 1967	64.05
Feb. 8, 1968	68.95
Mar. 20, 1969	68.54
Well RR-83-35-302, Quantitos	
Owner: King Ranch, Inc.	
Jan. 27, 1933	1.74
Feb. 9, 1934	1.02
Nov. 11, 1934	1.15
Mar. 23, 1935	1.15
Feb. 1, 1938	0.11
Feb. 15, 1940	1.77
Feb. 5, 1941	2.16
Well RR-83-35-302—Continued	
Feb. 2, 1943	2.68
Feb. 6, 1944	4.89
Mar. 16, 1945	6.77
Mar. 15, 1946	1.12
Feb. 20, 1947	14.78
Feb. 16, 1949	20.27
Feb. 20, 1951	21.82
Feb. 6, 1952	8.37
Feb. 4, 1953	28.85
Feb. 17, 1954	33.99
Feb. 9, 1955	35.05
Feb. 9, 1956	38.83
Feb. 13, 1957	40.65
Jan. 27, 1960	47.87
Mar. 16, 1961	46.97
Feb. 15, 1963	57.09
Mar. 27, 1964	58.12
Feb. 26, 1965	60.81
Mar. 28, 1966	61.76
Feb. 25, 1967	64.38
Mar. 20, 1969	64.30
Well RR-83-42-201	
Owner: Dan Christiansen	
Jan. 11, 1933	0.85
Feb. 3, 1934	0.76
Oct. 22, 1938	3.48
Oct. 12, 1939	4.00
Feb. 16, 1940	23.4
Feb. 4, 1943	5.45
Mar. 5, 1944	7.29
Mar. 17, 1945	10.48
Mar. 21, 1947	15.60
Feb. 12, 1948	32.97
Feb. 17, 1949	37.84
Feb. 10, 1950	61.72
Feb. 21, 1951	28.46
Feb. 8, 1952	31.66
Feb. 6, 1953	33.77

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-42-201—Continued	
Feb. 11, 1955	39.48
Feb. 10, 1956	40.72
Feb. 13, 1957	40.16
Mar. 5, 1958	39.50
Jan. 27, 1960	37.12
Mar. 17, 1961	48.22
Mar. 23, 1962	50.66
Feb. 14, 1963	54.31
Mar. 27, 1964	59.95
Feb. 26, 1965	66.78
Feb. 26, 1966	65.29
Well RR-83-42-202	
Owner: W. H. Bensman	
Jan. 11, 1933	1.27
Feb. 2, 1934	1.22
Feb. 3, 1938	4.57
Feb. 16, 1940	6.04
Feb. 6, 1941	5.98
Feb. 4, 1943	6.12
Mar. 5, 1944	7.96
Mar. 17, 1945	10.88
Feb. 21, 1947	16.52
Feb. 21, 1951	29.04
Well RR-83-42-402	
Owner: U.S.G.S. No. 1 King Ranch:	
Apr. 24, 1968	15.79
May 21, 1968	15.23
July 2, 1968	15.29
Aug. 5, 1968	17.21
Sept. 10, 1968	18.96
Oct. 7, 1968	19.52
Nov. 13, 1968	19.72
Dec. 10, 1968	20.27
Jan. 14, 1969	20.75
Feb. 4, 1969	21.19
Mar. 11, 1969	21.59
Apr. 1, 1969	21.78
May 6, 1969	22.39

DATE	WATER LEVEL
Well RR-83-42-402—Continued	
June 12, 1969	22.88
Well RR-83-42-403	
Owner: U.S.G.S. No. 2 King Ranch	
Apr. 24, 1968	22.42
May 21, 1968	21.85
July 2, 1968	21.93
Aug. 5, 1968	22.30
Sept. 10, 1968	23.28
Oct. 7, 1968	23.97
Nov. 13, 1968	24.19
Dec. 10, 1968	24.63
Jan. 14, 1969	25.00
Feb. 4, 1969	25.25
Mar. 11, 1969	25.56
Apr. 1, 1969	25.72
May 6, 1969	26.13
June 12, 1969	26.52
Well RR-83-42-404	
Owner: U.S.G.S. No. 3 King Ranch	
Apr. 24, 1968	29.73
May 21, 1968	29.04
July 2, 1968	28.56
Aug. 5, 1968	28.34
Sept. 10, 1968	28.49
Oct. 7, 1968	28.60
Nov. 13, 1968	28.68
Dec. 10, 1968	28.91
Jan. 14, 1969	28.98
Feb. 4, 1969	29.10
Mar. 11, 1969	29.17
Apr. 1, 1969	29.19
May 6, 1969	29.34
June 12, 1969	29.56
Well RR-83-42-502	
Owner: M. A. Whitcomb Water Well Works	
Mar. 27, 1964	48.84
Feb. 26, 1965	54.42

DATE	WATER LEVEL
Well RR-83-42-502—Continued	
Feb. 23, 1966	54.32
Feb. 25, 1967	55.30
Feb. 9, 1968	54.87
Mar. 24, 1969	56.15
Well RR-83-42-701, Rincon de Caesar	
Owner: King Ranch, Inc.	
Jan. 11, 1933	0.9
Feb. 1934	1.3
Nov. 17, 1934	0.9
Mar. 24, 1935	0.7
Feb. 2, 1938	2.17
Oct. 22, 1938	0.39
Mar. 12, 1939	3.85
Oct. 12, 1939	1.25
Feb. 16, 1940	1.43
Feb. 5, 1941	1.75
Feb. 4, 1943	2.08
Nov. 10, 1943	3.25
Mar. 7, 1944	3.48
Mar. 17, 1945	5.08
Feb. 21, 1947	10.08
Feb. 12, 1948	11.99
Feb. 17, 1949	13.11
Feb. 21, 1951	19.26
Feb. 8, 1952	23.60
Feb. 19, 1954	26.53
Feb. 11, 1955	23.0
Feb. 10, 1956	31.12
Feb. 13, 1957	32.63
Mar. 5, 1958	34.27
Jan. 27, 1960	34.76
Mar. 16, 1961	38.84
Mar. 23, 1962	38.01
Feb. 14, 1963	41.65
Mar. 27, 1964	46.60
Feb. 26, 1965	51.45
Feb. 23, 1966	51.82

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-83-42-701—Continued	
Feb. 25, 1967	51.92
Feb. 9, 1968	52.22
Mar. 24, 1969	51.70
Well RR-83-42-801, Charro	
Owner: King Ranch, Inc.	
Jan. 11, 1933	+10.0
Feb. 12, 1948	4.15
Feb. 16, 1949	4.60
Feb. 21, 1951	21.39
Feb. 8, 1952	29.03
Feb. 6, 1953	15.25
Feb. 19, 1954	26.19
Feb. 11, 1955	20.70
Feb. 10, 1956	19.54
Feb. 11, 1957	18.0
Mar. 5, 1958	24.63
Jan. 27, 1960	28.12
Mar. 17, 1961	26.15
Mar. 23, 1962	28.84
Feb. 14, 1963	32.82
Mar. 27, 1964	37.63
Feb. 26, 1965	42.57
Feb. 23, 1966	52.21
Feb. 25, 1967	43.79
Feb. 9, 1968	45.91
Mar. 24, 1969	42.62
Well RR-84-32-501, Tamales	
Owner: King Ranch, Inc.	
Feb. 21, 1947	83.91
Feb. 8, 1948	89.26
Sept. 28, 1948	94.65
Dec. 11, 1948	93.75
Feb. 17, 1949	94.44
Apr. 25, 1949	93.87
July 20, 1949	94.93
Oct. 6, 1949	96.20
Well RR-84-32-501—Continued	
Nov. 17, 1949	96.36
Jan. 10, 1950	95.65
Feb. 10, 1950	94.88
May 16, 1950	94.95
Nov. 16, 1950	100.65
Feb. 20, 1951	111.46
Oct. 17, 1951	109.15
Nov. 22, 1951	109.57
Feb. 8, 1952	116.07
Mar. 28, 1952	108.60
July 29, 1952	109.98
Aug. 26, 1952	110.82
Sept. 25, 1952	111.75
Oct. 28, 1952	111.76
Nov. 26, 1952	112.30
Jan. 26, 1953	112.71
Feb. 6, 1953	113.10
Feb. 27, 1953	113.10
Mar. 26, 1953	113.40
Apr. 29, 1953	114.22
May 27, 1953	115.31
Aug. 6, 1953	120.90
Sept. 3, 1953	120.26
Oct. 7, 1953	119.55
Nov. 4, 1953	119.84
Dec. 3, 1953	119.39
Jan. 6, 1954	118.76
Feb. 4, 1954	118.38
Feb. 19, 1954	118.60
Mar. 8, 1954	118.36
Apr. 7, 1954	119.29
May 5, 1954	119.50
June 3, 1954	119.83
Aug. 10, 1954	121.14
Oct. 1, 1954	121.45
Nov. 1, 1954	122.10
Dec. 3, 1954	120.94
Jan. 7, 1955	120.56
Well RR-84-32-501—Continued	
Feb. 9, 1955	121.25
Mar. 7, 1955	120.86
Apr. 4, 1955	120.07
May 5, 1955	122.71
June 6, 1955	123.00
Aug. 22, 1955	126.73
Jan. 3, 1956	124.48
Feb. 9, 1956	125.13
Apr. 5, 1956	123.74
May 23, 1956	124.06
June 27, 1956	123.95
Aug. 24, 1956	125.85
Oct. 16, 1956	126.60
Feb. 13, 1957	128.45
July 26, 1957	129.22
Mar. 5, 1958	129.54
Jan. 27, 1960	127.68
Mar. 16, 1961	135.05
Mar. 22, 1962	148.75
Feb. 15, 1963	160.96
Sept. 25, 1963	168.05
Nov. 13, 1963	168.70
Mar. 27, 1964	166.75
May 27, 1964	169.84
July 22, 1964	172.98
Oct. 3, 1964	173.28
Nov. 20, 1964	176.87
Feb. 27, 1965	171.68
May 20, 1965	172.45
July 24, 1965	174.59
Sept. 24, 1965	178.36
Jan. 26, 1966	176.33
Feb. 23, 1966	175.65
Mar. 28, 1966	177.60
May 23, 1966	174.32
July 28, 1966	173.95
Nov. 16, 1966	176.05
Jan. 23, 1967	177.20

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well RR-84-32-501—Continued	
Feb. 25, 1967	176.70
Mar. 10, 1967	181.08
Feb. 8, 1968	182.31
Mar. 21, 1969	187.20
Well RR-84-32-502, Old Tamales	
Owner: King Ranch, Inc.	
Dec. 9, 1932	44.66
Dec. 13, 1933	44.50
Feb. 6, 1934	44.23
Nov. 9, 1934	45.80
Mar. 23, 1935	46.68
Jan. 31, 1938	46.87
Oct. 24, 1938	47.49
Mar. 11, 1939	47.95
Oct. 10, 1939	48.12
Feb. 15, 1940	49.15
Feb. 5, 1941	51.37
Feb. 3, 1943	55.86
Nov. 13, 1943	62.48
Mar. 6, 1944	61.99
Mar. 15, 1945	69.85
Mar. 14, 1946	78.53
Kenedy County	
Well RD-88-02-901	
Owner: U.S.G.S. No. 1 Armstrong	
Apr. 24, 1968	3.27
May 22, 1968	2.98
July 1, 1968	3.54
Aug. 5, 1968	3.81
Sept. 10, 1968	5.33
Oct. 8, 1968	4.68
Nov. 13, 1968	5.28
Dec. 10, 1968	5.71
Jan. 14, 1969	5.95
Feb. 4, 1969	6.03
Mar. 11, 1969	5.67
Apr. 15, 1969	6.37

DATE	WATER LEVEL
Well RD-88-02-901—Continued	
May 15, 1969	3.14
Well RD-88-02-902	
Owner: U.S.G.S. No. 2 Armstrong	
Apr. 24, 1968	6.26
May 22, 1968	6.11
July 1, 1968	6.58
Aug. 5, 1968	7.11
Sept. 10, 1968	8.25
Oct. 8, 1968	8.02
Nov. 13, 1968	8.02
Dec. 10, 1968	8.64
Jan. 14, 1969	8.81
Feb. 4, 1969	8.90
Mar. 11, 1969	8.56
Apr. 15, 1969	9.08
May 15, 1969	6.95
Well RD-88-02-903	
Owner: U.S.G.S. No. 3 Armstrong	
Apr. 24, 1968	8.28
May 22, 1968	8.33
July 1, 1968	8.71
Aug. 5, 1968	9.17
Sept. 10, 1968	10.14
Oct. 8, 1968	10.11
Nov. 13, 1968	10.17
Dec. 10, 1968	10.29
Jan. 14, 1969	10.75
Feb. 4, 1969	10.88
Mar. 11, 1969	10.58
Apr. 15, 1969	11.00
May 15, 1969	10.61
Southern Jim Wells County	
Well PW-84-39-401	
Owner: Maria Hinojosa	
June 19, 1933	51.06
Oct. 5, 1933	46.35
Oct. 23, 1933	46.33
Feb. 6, 1935	48.85

DATE	WATER LEVEL
Well PW-84-39-401—Continued	
Feb. 5, 1936	42.42
July 20, 1937	46.92
Jan. 28, 1938	47.62
May 9, 1938	43.38
Oct. 24, 1938	49.61
Apr. 11, 1939	50.15
Feb. 17, 1940	51.99
Feb. 6, 1941	54.13
Feb. 8, 1943	52.80
Mar. 17, 1945	53.56
Feb. 18, 1947	56.00
Feb. 10, 1948	55.28
Feb. 19, 1949	56.96
Feb. 8, 1950	61.75
Feb. 19, 1951	76.36
Feb. 3, 1953	69.33
Feb. 16, 1954	54.16
Feb. 8, 1955	57.71
Feb. 7, 1956	56.53
Feb. 12, 1957	60.35
Feb. 18, 1958	58.26
Apr. 20, 1960	55.77
Well PW-84-39-402	
Owner: A. M. Engelking	
Mar. 12, 1963	106.4
Mar. 26, 1964	116.23
Mar. 11, 1965	125.30
Feb. 25, 1967	125.70
Feb. 11, 1968	128.60
Mar. 11, 1969	128.31
Well PW-84-39-403	
Owner: San Juan Hinojosa	
June 19, 1933	53.20
Oct. 5, 1933	47.86
Oct. 23, 1933	47.67
Feb. 6, 1935	50.76
Feb. 5, 1936	43.06
July 20, 1937	49.97

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well PW-84-39-403—Continued	
May 9, 1938	51.83
Oct. 24, 1938	51.84
Apr. 11, 1939	52.65
Feb. 17, 1940	63.10
Feb. 6, 1941	56.79
Feb. 8, 1943	54.74
Mar. 17, 1945	56.92
Feb. 18, 1947	56.41
Feb. 10, 1948	56.87
Feb. 19, 1949	58.35
Feb. 8, 1950	65.60
Feb. 3, 1953	60.97
Feb. 16, 1954	59.87
Feb. 8, 1955	59.43
Feb. 7, 1956	58.15
Feb. 12, 1957	61.82
Feb. 18, 1958	60.60
Apr. 20, 1960	58.67
Mar. 16, 1961	72.33
Mar. 20, 1962	97 50
Well PW-84-39-502	
Owner: Hinojosa	
Feb. 10, 1948	48.28
Feb. 19, 1949	72.44
Feb. 3, 1953	98.40
Feb. 16, 1954	98.80
Feb. 8, 1955	100.39
Feb. 7, 1956	100.06
Feb. 12, 1957	108.40
Feb. 18, 1958	107.57
Mar. 30, 1960	106.14
Mar. 16, 1961	104.55
Mar. 20, 1962	115.75
Mar. 12, 1963	120.90
Mar. 26, 1964	128.16
Feb. 16, 1965	130.52
Feb. 22, 1966	137.38
Feb. 25, 1967	135.52

DATE	WATER LEVEL
Well PW-84-39-502—Continued	
Feb. 11, 1968	136.12
Mar. 11, 1969	136.61
Well PW-84-39-601	
Owner: Seeligson & Storm	
Feb. 10, 1948	64.46
Feb. 19, 1949	75.66
Feb. 8, 1950	74.11
Feb. 19, 1951	83.98
Feb. 5, 1952	101.95
Feb. 3, 1953	98.95
Feb. 16, 1954	110.32
Feb. 8, 1955	108.68
Feb. 7, 1956	104.93
Feb. 12, 1957	109.19
Feb. 18, 1958	110.05
Mar. 30, 1960	108.27
Mar. 15, 1961	106.13
Mar. 20, 1962	128.48
Mar. 12, 1963	132.08
Mar. 26, 1964	140.46
Feb. 16, 1965	144.60
Feb. 11, 1968	148.13
Mar. 11, 1969	147.59
Well PW-84-39-603	
Owner: Seeligson & Storm	
Apr. 25, 1933	35.6
Sept. 22, 1943	62.59
Mar. 6, 1944	63.26
Mar. 14, 1945	69.57
Mar. 13, 1946	76.43
Feb. 15, 1947	77.84
Feb. 10, 1948	80.81
Feb. 19, 1949	84.70
Feb. 8, 1950	88.08
Feb. 19, 1951	63.19
Well PW-84-39-701	
Owner: Fidencio de los Santos	
Feb. 15, 1947	78.91

DATE	WATER LEVEL
Well PW-84-39-701—Continued	
Feb. 10, 1948	82.24
Feb. 19, 1949	88.71
Feb. 8, 1950	86.81
Feb. 19, 1951	93.16
Feb. 5, 1952	92.23
Feb. 3, 1953	109.35
Feb. 16, 1954	112.64
Feb. 8, 1955	111.77
Feb. 7, 1956	113.70
Feb. 12, 1957	116.76
Feb. 18, 1958	111.06
Apr. 20, 1960	111.57
Mar. 15, 1961	115.43
Mar. 20, 1962	130.86
Mar. 12, 1963	133.81
Mar. 26, 1964	136.28
Mar. 11, 1965	146.42
Feb. 22, 1966	147.99
Feb. 25, 1967	148.80
Feb. 11, 1968	148.21
Mar. 11, 1969	148.03
Well PW-84-39-703	
Owner: Miguel Santos	
June 7, 1933	57.3
Mar. 14, 1945	69.62
Feb. 15, 1947	78.78
Feb. 10, 1948	81.74
Feb. 19, 1949	85.76
Feb. 8, 1950	83.94
Feb. 19, 1951	84.35
Feb. 5, 1952	84.21
Feb. 3, 1953	83.53
Feb. 16, 1954	82.92
Well PW-84-39-801	
Owner: Seeligson & Storm	
Feb. 16, 1965	143.20
Feb. 22, 1966	158.65
Feb. 25, 1967	155.29

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well PW-84-39-801—Continued	
Feb. 11, 1968	156.31
Mar. 11, 1969	157.23
Well PW-84-40-102	
Owner: King Ranch, Inc.	
Feb. 21, 1949	86.55
Feb. 11, 1950	88.07
Feb. 19, 1951	102.88
Feb. 5, 1952	105.10
Feb. 3, 1953	116.90
Feb. 16, 1954	116.70
Feb. 8, 1955	118.14
Feb. 7, 1956	118.04
Feb. 12, 1957	122.43
Mar. 3, 1958	122.49
Dec. 9, 1960	115.92
Mar. 15, 1961	126.13
Mar. 20, 1962	131.70
Well PW-84-40-103	
Owner: King Ranch, Inc.	
— — 1930	30
Feb. 7, 1933	56.70
Sept. 22, 1943	73.59
Mar. 7, 1944	75.10
Mar. 15, 1945	81.25
Mar. 13, 1946	87.20
Feb. 19, 1951	121.02
May 5, 1952	119.68
Feb. 3, 1953	121.45
Feb. 16, 1954	112.86
Feb. 8, 1955	116.77
Feb. 7, 1956	111.46
Feb. 12, 1957	115.76
Mar. 3, 1958	114.15
Mar. 30, 1960	97.87
Mar. 16, 1961	97.20
Mar. 20, 1962	106.0
Mar. 12, 1963	104.63
Mar. 26, 1964	103.48
Mar. 11, 1965	107.14
Well PW-84-40-103—Continued	
Feb. 25, 1967	111.25
Feb. 12, 1968	114.8
Mar. 11, 1969	110.9
Well PW-84-40-706	
Owner: Sun Oil Corporation	
Aug. 8, 1952	121.5
Aug. 7, 1957	136.54
May 22, 1962	148.0
Mar. 13, 1963	149.4
Feb. 16, 1965	161.40
Feb. 25, 1967	160.82
Feb. 11, 1968	159.9
Mar. 10, 1969	157.17
Well PW-84-47-301	
Owner: Premont School District	
Jan. 27, 1933	42.00
Sept. 22, 1943	69.01
Mar. 14, 1945	73.88
Feb. 19, 1949	92.83
Feb. 11, 1950	93.31
Feb. 19, 1951	101.55
Feb. 5, 1952	98.42
Feb. 3, 1953	117.67
Feb. 16, 1954	120.68
Feb. 8, 1955	121.17
Feb. 7, 1956	117.88
Feb. 12, 1957	135.60
Well PW-84-47-303	
Owner: Mrs. Nelson English	
Dec. 26, 1932	35.2
Nov. 19, 1943	57.44
Mar. 5, 1944	58.06
Mar. 13, 1945	65.46
Feb. 17, 1947	77.68
Feb. 10, 1948	83.86
Feb. 19, 1949	85.22
Feb. 9, 1950	84.27
Well PW-84-47-303—Continued	
Feb. 5, 1952	96.28
Feb. 3, 1953	107.17
Feb. 16, 1954	107.50
Feb. 8, 1955	108.00
Feb. 7, 1956	107.13
Feb. 12, 1957	113.53
Mar. 3, 1958	108.82
Apr. 20, 1960	106.47
Mar. 16, 1961	109.45
Mar. 20, 1962	125.20
Mar. 13, 1963	135.10
Mar. 26, 1964	142.53
May 27, 1964	156.89
July 22, 1964	157.10
Oct. 3, 1964	157.24
Nov. 19, 1964	161.22
Feb. 16, 1965	150.60
Mar. 25, 1965	147.00
May 20, 1965	161.41
July 24, 1965	170.49
Sept. 24, 1965	179.04
Nov. 20, 1965	160.79
Jan. 26, 1966	149.09
Feb. 22, 1966	146.47
Mar. 28, 1966	148.30
May 23, 1966	146.26
July 29, 1966	153.49
Sept. 23, 1966	153.82
Nov. 16, 1966	157.34
Feb. 25, 1967	154.56
Mar. 10, 1967	156.21
Well PW-84-47-304	
Owner: C. T. Hewitt	
Dec. 26, 1932	49.9
Nov. 11, 1943	69.67
Mar. 5, 1944	69.84
Mar. 14, 1945	74.45

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well PW-84-47-304—Continued	
Feb. 15, 1947	86.30
Feb. 10, 1948	92.25
Feb. 19, 1951	108.14
Feb. 3, 1953	114.20
Feb. 8, 1955	119.12
Feb. 7, 1956	120.57
Feb. 12, 1957	126.90
Mar. 3, 1958	121.07
Apr. 20, 1960	118.73
Well PW-84-47-501	
Owner: Charlie Lofland	
Feb. 8, 1955	82.07
Feb. 7, 1956	80.60
Feb. 12, 1957	83.67
Feb. 18, 1958	81.88
Apr. 20, 1960	80.42
Mar. 16, 1961	62.66
Mar. 20, 1962	70.30
Mar. 13, 1963	55.22
Feb. 16, 1965	58.02
Feb. 22, 1966	57.70
Feb. 25, 1967	58.35
Feb. 11, 1968	61.21
Well PW-84-47-502	
Owner: Kibbe Ranch	
Dec. 6, 1932	27.1
Oct. 22, 1943	45.73
Mar. 6, 1944	46.65
Feb. 15, 1947	60.48
Feb. 9, 1948	72.00
Feb. 19, 1949	65.82
Feb. 8, 1950	63.58
Feb. 19, 1951	77.82
Feb. 5, 1952	89.07
Feb. 3, 1953	94.40
Well PW-84-47-601	
Owner: Harold Fleming	
Mar. 13, 1963	111.00

DATE	WATER LEVEL
Well PW-84-47-601—Continued	
Aug. 28, 1964	130.35
Feb. 16, 1965	133.04
Feb. 22, 1966	128.95
Feb. 25, 1967	134.40
Feb. 11, 1968	131.16
Mar. 10, 1969	131.47
Well PW-84-47-605	
Owner: E. J. Corrigan	
Mar. 2, 1928	22.7
Dec. 26, 1932	27.5
Nov. 19, 1943	49.69
Mar. 6, 1944	49.53
Mar. 13, 1945	56.36
Feb. 17, 1947	68.91
Feb. 10, 1948	77.25
Feb. 19, 1949	79.49
Feb. 8, 1950	77.85
Feb. 3, 1953	96.67
Feb. 16, 1954	95.79
Feb. 2, 1955	101.13
Feb. 7, 1956	98.25
Feb. 12, 1957	108.32
Mar. 3, 1958	99.48
Apr. 20, 1960	97.62
Mar. 16, 1961	97.61
Mar. 20, 1962	112.20
Well PW-84-47-606	
Owner: J. H. Patzokowsky	
Aug. 30, 1933	20.8
Nov. 19, 1943	44.94
Mar. 9, 1945	48.06
Feb. 18, 1947	63.08
Feb. 10, 1948	76.2
Feb. 19, 1949	78.22
Well PW-84-47-701	
Owner: Ralph Mallett	
Mar. 13, 1963	88.72
Aug. 28, 1964	111.63

DATE	WATER LEVEL
Well PW-84-47-701—Continued	
Feb. 16, 1965	108.20
Feb. 22, 1966	105.10
Feb. 25, 1967	109.70
Feb. 11, 1968	108.68
Mar. 10, 1969	107.72
Well PW-84-47-801	
Owner: E. G. Maun	
Oct. 23, 1932	14.30
Dec. 6, 1932	14.30
Jan. 5, 1933	13.99
Feb. 22, 1933	13.72
May 26, 1933	15.58
June 27, 1933	14.87
July 25, 1933	14.94
Sept. 1, 1933	13.50
July 19, 1937	16.25
Jan. 27, 1938	19.95
May 5, 1938	28.44
Oct. 24, 1938	25.76
Feb. 6, 1943	29.07
Oct. 14, 1943	29.54
Nov. 9, 1943	29.54
Mar. 3, 1944	28.76
Mar. 8, 1945	33.16
Mar. 13, 1946	39.21
Feb. 15, 1947	43.99
Feb. 6, 1948	54.53
Feb. 19, 1949	61.91
Feb. 8, 1950	55.08
Feb. 3, 1953	68.32
Feb. 16, 1954	68.98
Feb. 8, 1955	72.88
Feb. 7, 1956	71.59
Feb. 12, 1957	75.46
Feb. 18, 1958	72.01
Apr. 20, 1960	72.12
Mar. 16, 1961	72.67
Mar. 20, 1962	84.46

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well PW-84-47-801—Continued	
Mar. 13, 1963	87.58
Aug. 28, 1964	106.24
Feb. 16, 1965	108.30
Feb. 22, 1966	104.76
Feb. 25, 1967	105.10
Feb. 11, 1968	104.44
Mar. 10, 1969	101.01
Well PW-84-47-805	
Owner: Dale Maun	
Dec. 6, 1932	6.4
Apr. 10, 1939	10.00
Oct. 9, 1939	14.55
Feb. 18, 1940	10.59
Feb. 8, 1941	15.58
Oct. 14, 1943	27.39
Nov. 11, 1943	27.39
Mar. 3, 1944	22.78
Mar. 8, 1945	25.30
Mar. 12, 1946	25.60
Feb. 15, 1947	26.10
Feb. 9, 1948	26.61
Feb. 18, 1949	25.81
Feb. 8, 1950	26.16
Feb. 19, 1951	30.66
Well PW-84-47-905	
Owner: Henry Engelking	
Feb. 17, 1947	76.53
Feb. 18, 1947	76.89
Feb. 10, 1948	91.22
Feb. 19, 1949	90.95
Feb. 8, 1950	87.61
Feb. 19, 1951	92.54
Feb. 5, 1952	95.80
Feb. 3, 1953	102.99
Feb. 16, 1954	106.67
Feb. 8, 1955	108.70
Feb. 7, 1956	106.95
Feb. 12, 1957	118.63

DATE	WATER LEVEL
Well PW-84-47-905—Continued	
Mar. 3, 1958	104.37
Apr. 20, 1960	99.82
Mar. 16, 1961	103.42
Mar. 20, 1962	116.54
Mar. 13, 1963	122.59
Aug. 28, 1964	147.36
Feb. 16, 1965	141.78
Feb. 11, 1968	141.20
Mar. 10, 1969	140.18
Well PW-84-47-906	
Owner: P. J. Boerjan	
Dec. 5, 1932	20.4
Nov. 11, 1943	46.16
Mar. 5, 1944	44.47
Mar. 13, 1945	48.89
Mar. 13, 1946	62.67
Mar. 14, 1946	62.52
Feb. 17, 1947	71.75
Feb. 10, 1948	87.14
Feb. 19, 1949	86.91
Feb. 8, 1950	81.47
Feb. 19, 1951	87.41
Feb. 14, 1955	111.30
Mar. 3, 1958	100.62
Jan. 17, 1968	142.5
Well PW-84-48-103	
Owner: City of Premont, Well 3	
Feb. 17, 1948	94.48
Feb. 21, 1949	95.55
Feb. 21, 1951	125.13
Feb. 15, 1952	118.26
Feb. 3, 1953	124.58
Feb. 16, 1954	123.26
Feb. 8, 1955	126.29
Feb. 7, 1956	127.04
Feb. 12, 1957	136.44
Feb. 18, 1958	126.39
Feb. 25, 1960	120.82

DATE	WATER LEVEL
Well PW-84-48-103—Continued	
Mar. 13, 1963	152.00
Feb. 25, 1967	167.67
Feb. 11, 1968	152.18
Mar. 10, 1969	161.68
Well PW-84-48-104	
Owner: Andy Disbro	
July 31, 1933	41.50
Nov. 19, 1943	62.33
Feb. 17, 1947	82.63
Feb. 19, 1949	90.11
Feb. 8, 1950	89.85
Feb. 19, 1951	102.94
Feb. 5, 1952	103.72
Feb. 3, 1953	114.32
Feb. 8, 1955	113.52
Feb. 7, 1956	112.66
Feb. 12, 1957	116.22
Mar. 3, 1958	111.60
Apr. 20, 1960	106.76
Mar. 15, 1961	117.28
Well PW-84-48-106	
Owner: S. J. Pennington	
Oct. 23, 1943	62.84
Mar. 13, 1945	72.65
Feb. 18, 1947	83.23
Feb. 10, 1948	89.35
Feb. 19, 1949	88.96
Feb. 8, 1950	89.00
Feb. 19, 1951	96.57
Feb. 3, 1953	114.50
Feb. 16, 1954	115.39
Feb. 8, 1955	116.07
Feb. 7, 1956	116.46
Feb. 12, 1957	129.54
Mar. 3, 1958	117.77
Apr. 20, 1960	112.92

Table 8.—Water Levels in Wells—Continued

DATE	WATER LEVEL
Well PW-84-48-107	
Owner: Wilkinson	
Mar. 13, 1963	132.61
Mar. 26, 1964	139.87
Feb. 16, 1965	147.08
Feb. 22, 1966	148.59
Feb. 25, 1967	151.05
Feb. 11, 1968	149.89
Mar. 10, 1969	157.19
Well PW-84-48-108	
Owner: Clyde Wright Company	
Oct. 23, 1943	57.59
Mar. 13, 1945	65.17
Mar. 14, 1946	73.50
Feb. 18, 1947	75.90
Feb. 10, 1948	82.46
Feb. 19, 1949	83.34
Feb. 8, 1950	82.27
Feb. 19, 1951	91.71
Feb. 5, 1952	98.52
Feb. 3, 1953	103.91
Feb. 16, 1954	106.15

DATE	WATER LEVEL
Well PW-84-48-108—Continued	
Feb. 8, 1955	92.43
Feb. 7, 1956	91.96
Mar. 3, 1958	89.62
Mar. 20, 1962	102.40
Well PW-84-48-109	
Owner: City of Premont, Well 1	
Mar. 1, 1943	63.6
July 20, 1943	68.2
Oct. 15, 1943	67.4
Nov. 4, 1943	69.08
Mar. 10, 1944	76.6
May 10, 1944	78.8
June 16, 1944	76.5
July 7, 1944	74.2
July 24, 1944	79.1
Aug. 2, 1944	79.1
Aug. 29, 1944	79.1
Sept. 8, 1944	80.6
Nov. 22, 1944	78.8
Jan. 2, 1945	77.7
Mar. 14, 1945	76.5

DATE	WATER LEVEL
Well PW-84-48-109—Continued	
Feb. 17, 1947	98.40
Well PW-84-48-110	
Owner: City of Premont, Well 2	
Apr. 18, 1944	77.6
Mar. 14, 1945	77.1
Feb. 17, 1947	104.2 d/
Feb. 18, 1947	89.2 b/
Feb. 21, 1949	98.6 b/
Feb. 11, 1950	96.1 b/
Well PW-84-48-702	
Owner: John Minten	
Apr. 12, 1933	24.2
Nov. 19, 1943	42.08
Mar. 6, 1944	41.80
Mar. 12, 1945	52.52
Mar. 13, 1946	44.92
Feb. 17, 1947	36.14
Feb. 10, 1948	37.09
Feb. 19, 1949	36.67
Feb. 8, 1950	36.56

d/ pumping
b/ pumped recently

Table 9.—Drillers' Logs of Wells

Kleberg County

Well RR-83-25-603

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	6	6
Shale	13	19
Sand	3	22
Caliche	16	38
Shale	57	95
Shale, sandy	25	120
Shale	25	145
Sand	23	168
Shale	52	220
Sand	37	257
Shale	38	295
Sand	15	310
Shale	40	350
Sand	22	372
Shale and rock	18	390
Sand and shale	25	415
Shale	5	420
Sand	8	428
Shale	7	435
Sand	20	455
Shale and sand	25	480
Shale	45	525
Shale, sandy	20	545
Shale	25	570
Sand	44	614

Well RR-83-29-701

Owner: King Ranch, Inc.
Driller: Carl Vickers Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	4	4
Clay	59	63
Shale	22	85
Sand	32	117
Shale	108	225
Sand strip	12	237
Shale	9	246

Well RR-83-29-701—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Sand	22	268
Shale	197	465
Sand	29	494
Shale	111	605
Sand	28	633
Shale	186	819
Sand	15	834
Shale	175	1,009
Sand	13	1,022
Shale	128	1,150
Sand	8	1,158
Shale	58	1,216
Sand	34	1,250
Shale	1	1,251

Well RR-83-33-402

Owner: King Ranch, Inc.
Driller: Carl Vickers Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Sand	3	3
Shale	133	136
Sand	65	201
Shale	49	250
Sand	40	290
Shale	77	367
Sand	10	377
Shale	58	435
Sand	16	451
Shale	59	510
Sand	63	573
Shale	1	574

Well RR-83-33-901

Owner: Lee E. Blackwood, D.D.S.
Driller: Bowen Water Well Drilling Co.

	THICKNESS (FEET)	DEPTH (FEET)
Clay	40	40
Sand	20	60
Clay	180	240
Sand	50	290
Clay	15	305

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RR-83-33-901—Continued		
Sand	30	335
Clay	15	350
Sand	35	385
Clay	45	430
Sand	20	450
Clay	20	470
Sand	20	490
Clay	95	585
Sand	35	620
Well RR-83-34-106		
Owner: Edward Schubert Driller: Ace Water Well Drilling Co.		
Soil, surface	4	4
Caliche	16	120
Sand, salty water	10	130
Caliche, sandy	95	225
Shale	305	530
Sand, red	46	576
Well RR-83-34-209		
Owner: U.S. Naval Auxiliary Air Station Driller: Katy Drilling Co.		
Soil, surface, and clay	40	40
Clay, soft	128	168
Lime rock	2	170
Clay, hard, and rocks	93	263
Sand, rocks	15	278
Clay, sand strips, and rock	48	326
Sand, rocky	20	346
Clay, hard	38	384
Sand	8	392
Clay and sand strips	25	417
Sand	11	428
Clay	7	435
Shale, sandy	9	444
Clay	43	487
Clay, soft	23	510
Sand, rocky	17	527
Well RR-83-34-209—Continued		
Clay and sand breaks	10	537
Sand	23	560
Clay	6	566
Sand	30	596
Clay	8	604
Clay, sand, and rocks	23	627
Shale and clay, hard	13	640
Sand	30	670
Shale, hard, and strips	21	691
Sand	13	704
Shale, hard	17	721
Sand and shale strips	33	754
Shale and sand strips	18	772
Sand and shale strips	31	803
Shale, hard	8	811
Well RR-83-34-305		
Owner: King Ranch, Inc. Driller: Carl Vickers Water Well Service		
Soil, surface	5	5
Sand	10	15
Clay	83	98
Sand	18	116
Shale	13	129
Sand	59	188
Shale	59	247
Sand	28	275
Shale	38	313
Sand	14	327
Shale	21	348
Sand	41	389
Shale	40	429
Sand	12	441
Shale	15	456
Sand	18	474
Shale	49	523
Sand	15	538
Shale	6	544
Sand	65	609

Table 9.—Drillers' Logs of Wells—Continued

Well RR-83-34-305—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Shale	10	619
Sand, hard	51	670
Shale	10	680
Sand	36	716
Shale	5	721
Sand	17	738
Shale	2	740
Sand	28	768
Shale	32	800
Sand	21	821
Shale	39	860

Well RR-83-34-703

Owner: David Van Fleet
Driller: R. C. Custer Water Well Service

Clay	25	25
Sand, fine	8	33
Clay	56	89
Sand	10	99
Clay	58	157
Sand, fine	8	165
Clay	57	222
Sand, fine	19	241
Clay	11	252
Sand, fine	11	263
Clay	119	382
Sand, fine	25	407
Clay	35	442
Sand	31	473
Clay	28	501
Sand, fine, red	16	517
Clay	14	531
Sand	15	546
Clay	72	618
Sand	11	629
Clay	18	647
Sand	34	681
Clay	40	721
Sand, red, and black grains	31	752

Well RR-83-34-903

Owner: Mrs. R. S. Muil
Driller: Carl Vickers Water Well Service

Soil, surface	3	3
Clay	11	14
Caliche and clay	26	40
Clay and sand	10	50
Clay and caliche	28	78
Caliche	13	91
Clay	18	109
Sand	9	118
Shale	17	135
Sand	8	143
Shale, sandy	49	192
Sand	19	211
Shale	6	217
Sand	13	230
Shale	44	274
Sand	24	298
Shale	121	419
Sand, hard	23	442
Shale	44	486
Sand	41	527
Shale	27	554
Sand	31	585
Shale	9	594
Sand	15	609
Shale	81	690
Sand	30	720

Well RR-83-41-702

Owner: King Ranch, Inc.
Driller: Carl Vickers Water Well Service

Sand	1	1
Shale	13	14
Sand	17	31
Shale	347	378
Sand	36	414
Shale	107	521
Sand	32	553

Table 9.—Drillers' Logs of Wells—Continued

Well RR-83-41-805

Owner: King Ranch, Inc.
Driller: Carl Vickers Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	6	6
Clay	143	149
Sand	23	172
Shale	55	227
Sand	28	255
Shale	36	291
Sand	24	325
Shale	170	495
Sand and shale streaks	11	506
Sand	43	549

Well RR-83-42-204

Owner: Cecil E. Burney
Driller: R. C. Custer Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
No record	26	26
Sand	12	38
Clay	16	54
Sand	9	63
Clay	24	87
Sand	9	96
Clay	22	118
Sand	5	123
Clay	14	137
Sand	11	148
Clay	18	166
Sand	30	196
Clay	10	206
Sand	25	231
Clay	51	282
Sand	19	301
Clay	60	361
Sand	27	388
Clay	10	398
Sand	3	401
Clay	15	416
Shale	237	653
Sand, red	33	686

Well RR-83-42-204—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Shale, red	45	731
Sand, red, and streaks of red shale	16	747
Shale, red	4	751
Sand, red	54	805

Well RR-83-42-504

Owner: John A. Aregood
Driller: R. C. Custer Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Clay, surface	18	18
Sand	13	31
Clay	32	63
Sand	16	79
Clay	28	107
Sand	9	116
Clay	17	133
Sand	16	149
Clay	50	199
Sand	28	227
Clay	34	261
Sand	22	283
Clay	19	302
Sand	25	327
Clay	4	331
Sand	25	356
Clay	30	386
Sand	26	412
Clay	37	449
Sand	12	461
Clay	26	487
Clay and shale, red	28	515
Sand, streaks, and clay	23	538
Shale, red	21	559
Shale, fine, red	14	573
Shale, red	43	616
Sand, fine, red	15	631
Shale, red	22	653
Sand, fine, red and clay streaks	12	665

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RR-83-42-504—Continued		
Shale, red	14	679
Sand, red	8	687
Shale, red	25	712
Sand, coarse, red and black	24	736
Well RR-83-42-901		
Owner: Leo Kaufer Driller: R. C. Custer Water Well Service		
Sand and clay	14	14
Caliche	7	21
Sand	15	36
Clay	25	61
Sand	26	87
Clay	25	112
Sand	12	124
Clay	45	169
Sand	8	177
Clay	37	214
Sand	14	228
Clay	35	263
Sand	18	281
Clay	28	309
Sand	12	321
Clay	51	372
Sand	19	391
Clay	43	434
Sand	15	449
Clay	34	483
Sand	8	491
Clay	15	506
Sand	27	533
Shale	30	563
Sand	18	581
Shale	50	631
Sand, fine, red	26	657
Shale, red	12	669
Sand and shale	29	698
Shale, red	5	703
Sand, coarse red and black	55	758
Shale, red	31	789
Well RR-83-43-201		
Owners: O. A. and M. L. Kriegel and H. H. Ohlenbusch Driller: R. C. Custer Water Well Service		
Sand and soil, surface	23	23
Sand	18	41
Clay	25	66
Sand	13	79
Clay	72	151
Sand	17	168
Clay	74	242
Sand	19	261
Clay	9	270
Sand	32	302
Clay	20	322
Sand	10	332
Gypsum, streaks	5	337
Sand	14	351
Clay	72	423
Sand	28	451
Clay	98	549
Sand	14	563
Clay	4	667
Sand	24	691
Shale, red	107	798
Sand	85	883
Well RR-84-40-207		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Soil, surface	6	6
Shale	32	38
Sand	10	48
Shale	15	63
Sand	7	70
Shale	48	118
Sand	22	140

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RR-84-40-207—Continued		
Shale, sandy	45	185
Shale	25	210
Sand	20	230
Shale	15	245
Sand	25	270
Shale	95	365
Sand and shale	10	375
Shale	37	412
Sand	44	456
Shale	29	485
Sand	50	535
Well RR-84-48-303		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Soil, surface	6	6
Shale	22	28
Caliche	21	49
Sand	11	60
Shale	45	105
Sand	10	115
Shale	47	162
Sand and shale	73	235
Shale	45	280
Sand	25	305
Sand, hard, and rocks	8	313
Shale	6	320
Sand	12	332
Shale	20	352
Sand	64	416
Shale	6	422
Sand	27	449
Shale	39	488
Sand	32	520
Well RR-84-48-901		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Sand, surface	7	7
Caliche	9	16
Sand	7	23
Caliche	13	36
Clay	115	151
Sand	12	163
Shale	8	171
Sand	99	270
Shale	5	275
Sand	4	279
Shale	35	314
Sand	15	329
Shale	11	340
Sand	7	347
Shale, pink	66	413
Sand and boulders	85	498
Shale, pink	2	500
Partial Log		
Well RD-83-49-101		
Owner: La Paloma Ranch Driller: R. C. Custer Water Well Service		
Sand, surface, and clay	21	21
Sand	13	34
Clay	63	97
Sand	10	107
Clay	140	247
Sand and clay, sticky	16	263
Clay	38	301
Sand and gypsum streaks	21	322
Clay	16	338
Sand	24	362
Clay	41	403
Sand	16	419
Clay and red shale	78	497
Sand, gravel, and streaks of red shale	43	540

Table 9.—Drillers' Logs of Wells—Continued

Well RD-83-49-202

Owner: La Paloma Ranch
Driller: Porter Drilling Company

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	8	8
Caliche and rock	37	45
Sand, salt water	10	55
Shale, white	75	130
Shale, blue and sand streaks	100	230
Shale, colored	20	250
Sand, hard	15	265
Shale, blue, and sand streaks	20	285
Shale, blue	20	305
Sand, hard	10	315
Shale and sand, hard	35	350
Shale	68	418
Sand	12	430
Shale	23	453
Sand	21	474
Shale	24	498
Sand	10	508
Shale	12	520
Sand	57	577

Well RD-83-49-701

Owner: Santa Rosa Ranch
Driller: A. Porter & Son

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	7	7
Caliche and rock	25	32
Sand, salt water	4	36
Shale, colored, and rock	22	58
Shale, blue	34	92
Shale, white	113	205
Shale, blue	95	300
Sand, streaks, and shale	50	350
Shale, blue	47	397
Shale, red	91	488
Sand	8	496
Shale	4	500

Well RD-83-49-701—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Sand	4	504
Shale, red	14	518
Sand, water	77	595
Shale, red	17	612
Sand	16	628
Shale, red	73	701
Sand	9	710
Shale	6	716
Sand	37	753

Well RD-83-50-101

Owner: McGill Ranch
Driller: A. Porter & Son

	THICKNESS (FEET)	DEPTH (FEET)
Soil, surface	9	9
Caliche and clay	12	21
Clay, streaks, and sand, salt water	26	47
Rock, streaks, and shale	36	83
Shale, blue	64	147
Sand, blue	13	160
Shale, blue and hard sand	25	185
Shale, white and rock	195	380
Shale, blue	80	460
Sand and shale	46	506
Shale, blue	58	564
Sand	7	571
Shale, red	36	607
Sand, water	43	650

Well RD-83-50-801

Owner: Kenedy Ranch
Driller: Carl Vickers Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Sand	10	10
Shale, sandy	15	25
Sand	45	70
Shale	245	315
Sand	17	332
Shale	78	410
Sand	13	423

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RD-83-50-801—Continued		
Shale and shell	136	559
Shale, pink	20	579
Sand	18	597
Shale	67	664
Sand	73	737
Well RD-83-51-101		
Owner: Kenedy Ranch Driller: Carl Vickers Water Well Service		
Sand	5	5
Sand and clay	5	10
Sand	10	20
Caliche	15	35
Shale	11	46
Sand	21	67
Shale and sand streaks	83	150
Shale, streaks	83	233
Sand	50	283
Shale	41	324
Sand	31	355
Shale	35	390
Sand, hard streaks	35	425
Shale	50	475
Sand	28	503
Shale	71	574
Sand	5	579
Shale, hard	61	640
Sand	19	659
Shale, pink	81	740
Sand	60	800
Shale, hard	22	822
Sand	26	828
Shale	108	936
Sand	37	973
Shale	5	978
Well RD-83-51-601		
Owner: Kenedy Ranch Driller: Carl Vickers Water Well Service		
Sand	2	2
Shale	90	92
Sand	10	102
Shale	228	330
Sand	43	373
Shale	41	414
Sand	64	478
Shale	36	514
Sand	16	530
Sand and shale streaks	27	557
Shale	85	642
Sand	9	651
Shale	295	946
Sand	10	956
Shale	10	966
Sand	38	1,004
Shale	4	1,008
Well RD-83-58-201		
Owner: Kenedy Ranch Driller: Carl Vickers Water Well Service		
Sand, surface	5	5
Clay	33	38
Sand, broken, and clay	33	71
Sand	52	123
Shale	26	249
Sand	72	321
Shale	89	410
Sand	24	434
Shale	60	494
Sand	19	513
Shale	12	525
Sand	8	533
Shale	9	542
Sand	19	561
Shale	103	664
Sand	72	736
Shale	4	740

Table 9.—Drillers' Logs of Wells—Continued

Well RD-83-58-503

Owner: Kenedy Ranch
Driller: Carl Vickers Water Well Service

	THICKNESS (FEET)	DEPTH (FEET)
Sand	20	20
Shale	5	25
Sand	97	122
Shale and sand	113	235
Shale	443	678
Sand	99	777

Well RD-88-01-101

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

Soil, surface	6	6
Shale, sandy	32	38
Sand	20	58
Shale	12	70
Shale, sandy	50	120
Sand	10	130
Shale	128	258
Shale, sandy	46	304
Shale	81	385
Sand	40	425
Shale	30	455
Sand, sulfur	60	515
Shale	28	543
Sand	22	565
Shale	30	595
Sand	20	615
Shale	15	630
Sand	30	660
Shale	37	697
Sand	7	704
Shale	10	714
Sand	10	724
Shale	10	744
Sand	21	765

Well RD-88-01-302

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

Soil, surface	27	27
Sand	23	50
Sand and shale	230	280
Shale and shell	230	510
Shale	20	530
Sand and shell	45	575
Shale	90	665
Sand	25	690
Shale	17	707
Sand	20	727
Shale	49	776
Sand	103	879
Shale	11	888
Sand	42	930
Shale	35	965
Sand	70	1,035

Well RD-88-01-403

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

Soil, surface	22	22
Sand and rock	28	50
Clay	93	143
Sand and rock	57	200
Clay and rock	28	228
Sand and shell	69	297
Clay and rock	113	410
Sand and clay	44	454
Clay and rock	17	471
Sand, water	44	515
Clay	65	580
Clay and rock	120	700
Clay	30	730
Sand, water	49	779

Well RD-88-03-201

Owner: Kenedy Ranch
Driller: Carl Vickers Water Well Service

Sand	13	13
Caliche	9	22
Sand	23	45

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RD-88-03-201—Continued		
Shale	47	92
Sand	71	163
Shale	106	269
Sand	9	278
Shale	68	346
Sand and boulders	147	493
Shale	45	538
Sand	34	572
Shale	104	676
Sand	6	682
Shale	34	716
Sand	132	848
Shale, pink	86	934
Sand	70	1,004
Shale	34	1,038
Well RD-88-10-902		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Soil, surface	4	4
Shale, sandy	8	12
Shale	6	18
Sand	20	38
Shale	27	65
Shale, sandy	81	146
Sand	22	168
Shale	127	295
Sand	85	380
Shale and gypsum	40	420
Sand and shale	80	500
Shale and gypsum	108	608
Sand	30	638
Shale and sand	27	665
Shale and rock	120	785
Sand, good	19	804
Shale	10	814
Sand, good	10	824
Shale	20	844
Sand, good	12	856
Well RD-88-10-902—Continued		
Shale and rock	8	864
Sand	24	888
Shale and rock	7	895
Sand	16	911
Shale	9	920
Sand	24	944
Well RD-88-12-901		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Soil, surface	6	6
Sand	14	20
Shale	14	34
Sand	56	90
Shale	65	155
Shale, sandy	165	320
Sand	20	340
Shale, sandy	385	725
Sand	5	730
Sand and shale	185	915
Shale, sandy	163	1,078
Sand	22	1,100
Rock, hard	35	1,135
Sand	20	1,155
Shale and rock	5	1,260
Sand	25	1,285
Shale and rock	45	1,330
Sand	15	1,345
Shale	13	1,358
Sand	30	1,388
Well RD-88-18-101		
Owner: Santa Fe Ranch Driller: Carl Vickers Water Well Service		
Sand, surface	2	2
Clay, broken	34	36
Sand	13	49
Shale and sand streaks	247	296
Sand	101	397
Shale	73	470

Table 9.—Drillers' Logs of Wells—Continued

Well RD-88-18-101—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Sand	27	497
Shale	108	605
Sand	12	617
Shale	26	643
Sand	79	722
Shale	12	734
Sand	64	798
Shale	2	800

Well RD-88-18-601

Owner: Humble Oil & Refining Co.
Driller: Carl Vickers Water Well Service

Sand, surface	6	6
Clay	43	49
Sand	67	116
Shale and sand streaks	375	491
Shale	52	543
Sand and shale streaks	177	720
Sand	27	747
Shale	76	823
Shale, pink	81	904
Sand	47	951
Shale	1	952

Well RD-88-20-101

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

Soil, surface	6	6
Shale	29	35
Shale and caliche	142	177
Shale	6	183
Shale, sandy	57	240
Rock and shale	40	280
Shale, sandy	315	595
Shale	128	623
Sand	22	645
Shale and rock	65	710
Shell	30	740
Shale	40	770
Sand	15	785

Well RD-88-20-101—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Shale and rock	172	957
Rock and shale	38	995
Shale	29	1,024
Shell and shale	16	1,040
Shale, sandy, and shale	99	1,139
Sand	1	1,140
Shale	12	1,152
Sand	28	1,180
Shale	5	1,185
Sand	11	1,196
Shale	11	1,207
Sand	23	1,230
Shale	10	1,240
Sand	30	1,270
Shale	5	1,275
Sand	55	1,320
Shale	32	1,352
Sand	10	1,362
Shale, sandy	89	1,451

Well RD-88-20-502

Owner: King Ranch, Inc.
Driller: Elmer J. Rupp

Soil, surface	12	12
Caliche	15	27
Shale, sandy	38	65
Sand	10	75
Shale	20	95
Shale and rock	55	150
Shale, sandy	45	195
Shale and rock	75	270
Shell	60	330
Shale and rock	48	378
Shale, sandy	47	425
Shale	72	497
Rock	13	510
Shell	35	545
Sand	145	690

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well RD-88-20-502—Continued		
Shale and rock	40	730
Shale	110	840
Sand and shale	50	890
Shale	105	995
Shale and rock	23	1,018
Shale	21	1,039
Shell	26	1,065
Shale	15	1,080
Sand	34	1,114
Shale	74	1,188
Sand	16	1,204
Shale	61	1,265
Sand	10	1,275
Shale and rock	99	1,374
Sand	27	1,401
Well RD-88-26-203		
Owner: Harl R. Thomas Driller: Elmer J. Rupp		
Soil, surface	14	14
Shale	14	28
Sand	7	35
Shale	40	75
Shale, sandy	17	92
Shale	53	145
Sand	33	178
Shale	86	264
Sand	8	272
Shale and sand	163	435
Sand	25	460
Shale, sandy	65	525
Shale and rock	90	615
Shale and gypsum	55	670
Sand	22	692
Shale	32	724
Sand	14	738
Shale	83	821
Sand	13	834
Shale and rock	86	920
Well RD-88-26-203—Continued		
Shale	11	931
Sand	23	954
Well RD-88-28-101		
Owner: King Ranch, Inc. Driller: Elmer J. Rupp		
Soil, surface	12	12
Shale	20	32
Sand	70	102
Shale and caliche	108	210
Shale	28	238
Shale, sandy	36	374
Shale	67	441
Sand and shale	75	516
Sand	20	536
Shale and rock	102	638
Sand	22	660
Shale and rock	45	705
Shale	77	782
Rock	23	805
Shale and rock	105	910
Shale	61	971
Sand	18	989
Sand and rock	12	1,001
Shale and rock	14	1,015
Shale	74	1,089
Sand	13	1,102
Shale and rock	43	1,145
Sand	19	1,164
Shale	21	1,185
Sand	8	1,193
Shale	33	1,226
Sand	30	1,256
Shale	48	1,304
Sand	31	1,335
Well PW-84-39-404		
Owner: Ray Chapa Driller: Disbro Water Well Service		
Soil, surface	6	6

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well PW-84-39-404—Continued		
Caliche	88	94
Shale, hard	22	116
Shale, soft	88	204
Sand	31	235
Well PW-84-39-606		
Owner: Mrs. E. J. Roe Driller: Disbro Water Well Service		
Soil, surface	6	6
Caliche and sandstone	90	96
Sand, salt	6	102
Shale, hard, red	80	182
Shale, sandy	44	226
Sand, salt	4	230
Shale, hard, red	150	380
Sand	25	405
Well PW-84-39-704		
Owner: Abelardo Gonzalez Driller: Disbro Water Well Service		
Soil, surface	10	10
Caliche and lime rock	40	50
Caliche and gravel	22	72
Caliche, streaks, and lime rock	66	138
Shale, hard, red	66	204
Shale, red, sticky	32	236
Sand	27	263
Well PW-84-39-705		
Owner: Crisoforo De Los Santos Driller: Disbro Water Well Service		
Soil, surface	10	10
Sand	10	20
Caliche and lime rock	96	116
Caliche and gravel	22	138
Shale, hard, red	22	160
Shale, soft, red	44	204
Shale, hard, red	32	236
Sand	22	258
Shale, hard	8	266
Well PW-84-39-906		
Owner: Wash Storm, Jr. Driller: H. & S. Water Well Service, Inc.		
Soil, surface	2	2
Clay	3	5
Caliche, streaks, and hard clay	49	54
Caliche, hard	9	63
Shale, sandy	12	75
Shale	97	172
Sand and shale streaks	14	186
Shale, hard streaks	21	207
Sand, fine	28	235
Rock	2	237
Sand and hard streaks	23	260
Shale	15	275
Sand	6	281
Shale	21	302
Sand	6	308
Shale and hard streaks	91	399
Sand and gravel	61	460
Shale and hard streaks	6	466
Sand, hard	12	478
Shale and hard streaks	20	498
Sand and gravel	60	558
Clay	2	560
Well PW-84-39-910		
Owner: Sun Oil Co. Driller: Disbro Water Well Service		
Soil, surface	6	6
Sand	8	14
Caliche	58	72
Shale, hard, red	66	138
Shale and gravel, hard, red	22	160
Lime rock and shale, red	22	182
Shale, hard, gray	22	204
Shale, hard, red	35	239
Sand	23	262

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well PW-84-39-910—Continued		
Shale	2	264
Well PW-84-40-501		
Owner: Sun Oil Co. Driller: Disbro Water Well Service		
Soil, surface	6	6
Caliche	42	48
Caliche and gravel	13	61
Sand, salt	6	67
Shale, hard, red	60	127
Shale, soft, red	53	180
Limestone	15	195
Sand, salt	15	210
Shale, sandy, white	50	260
Well PW-84-40-708		
Owner: Suntide Pipeline Co. Driller: Disbro Water Well Service		
Soil, surface	8	8
Caliche	72	80
Shale, hard, red	40	120
Sand, salt	7	127
Shale, hard, red	77	204
Shale, sandy	32	236
Sand, salt	14	250
Shale, hard, red	58	408
Sand, fresh water	30	438
Shale, soft, red	74	512
Shale, sandy	80	592
Sand	30	622
Well PW-84-40-712		
Owner: Sun Oil Co. Driller: Disbro Water Well Service		
Soil, surface	8	8
Caliche	62	70
Shale, hard, red	68	138
Shale, soft, red	44	182
Shale, hard, red, and lime streaks	18	200
Sand	16	216
Well PW-84-40-712—Continued		
Shale, hard	26	242
Sand	26	268
Well PW-84-47-103		
Owner: Richard Nagel Driller: Richardson Bros. Water Well Service		
Soil and caliche	10	10
Caliche	30	40
Caliche and clay	50	90
Clay, red and brown	30	120
Shale, hard, and caliche	72	192
Sand	16	208
Shale	57	265
Sand	10	275
Shale, sticky	24	299
Sand, broken	103	402
Sand	16	418
Sand, broken	6	424
Sand	22	446
Sand, broken	26	472
Shale	62	534
Sand, broken	22	556
Shale	28	584
Sand	14	598
Shale	2	600
Well PW-84-47-203		
Owner: Russell Pierce Driller: Disbro Water Well Service		
Soil, surface	10	10
Caliche	63	73
Shale, sticky, white	44	117
Shale, hard, red	43	160
Shale and limestone	22	182
Shale, sticky, red	88	270
Sand	18	208
Shale, hard, and limestone	26	314
Shale, hard, red	22	336

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well PW-84-47-203—Continued		
Shale, sandy	22	358
Shale, soft, red	22	380
Shale, hard	66	446
Shale, sandy	22	468
Shale, hard, red	38	506
Sand and gravel	44	550
Well PW-84-47-205		
Owner: Paul Wohlgemuth Driller: Disbro Water Well Service		
Soil, surface, and clay	18	18
Caliche and lime rock	74	92
Sand	6	98
Caliche	40	138
Shale, red, and gravel	22	160
Shale	44	204
Shale, soft, gray	44	248
Shale, soft, red	22	270
Shale, hard, red	44	314
Shale, sandy	22	336
Shale, hard, red	24	360
Sand	32	392
Shale	10	402
Sand	14	416
Shale, red	6	422
Sand	19	441
Shale, red	96	537
Well PW-84-47-307		
Owner: John Carroll Driller: Disbro Water Well Service		
Soil, surface	6	6
Caliche	64	70
Shale, red	35	105
Sand	5	110
Shale and limestone	23	133
Shale, hard, red	67	200
Shale, hard, red, and limestone	30	230
Well PW-84-47-307—Continued		
Sand, salt	10	240
Shale, sticky	14	254
Shale, sandy	144	398
Shale, sticky, red	55	453
Sand and gravel	33	486
Shale, hard, red	18	504
Sand and gravel	38	542
Well PW-84-47-311		
Owner: City of Premont Driller: Carl Vickers Water Well Service		
Soil, surface	2	2
Clay	58	60
Shale	198	258
Sand	8	266
Shale	159	425
Sand	135	560
Well PW-84-47-403		
Owner: John K. Disbro, Sr. Driller: H. & S. Water Well Service, Inc.		
Soil, surface	8	8
Sand and clay	18	26
Caliche	9	35
Clay and sand streaks	33	68
Caliche	7	75
Clay	23	98
Sand	6	104
Clay	8	112
Sand	4	116
Clay and caliche streaks	40	156
Shale, sandy	18	174
Sand	6	180
Clay, caliche streaks, and sand	35	215
Clay, hard streaks	15	230
Sand and clay streaks	50	280
Clay, hard streaks	13	293
Sand, fine	25	318

Table 9.—Drillers' Logs of Wells—Continued

Well PW-84-47-403—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Clay	29	347
Sand, fine	44	391
Clay	9	400
Sand	7	407
Clay and sand streaks	46	453
Sand	24	477
Clay	2	479
Sand	13	492
Clay	10	502
Sand	46	548
Clay	4	552
Sand	22	574
Clay	18	592
Shale	16	608
Sand	30	638
Shale	3	641
Sand	14	655
Clay, gumbo	65	720
Sand	27	747
Hard streak	1	748
Sand	18	766
Shale	7	773
Sand and shale	17	790
Sand and gravel	22	812
Shale	2	814

Well PW-84-47-405

Owner: John Disbro
Driller: Disbro Water Well Service

Sand, surface	6	6
Caliche	66	72
Shale, hard, red	66	138
Shale and lime, hard	44	182
Shale, sandy	22	204
Limestone	12	216
Shale, hard, red	76	292
Shale, sticky, red	46	338
Sand	20	358

Well PW-84-47-405—Continued

Shale, lime, and gravel	49	407
Sand	27	434

Well PW-84-47-910

Owner: C. W. Hornsby
Driller: Disbro Water Well Service

Soil, surface	5	5
Shale, sticky, gray	89	94
Sand	10	104
Shale, hard, gray	100	204
Shale, hard, red	44	248
Sand	22	270
Shale, hard, red	44	314
Shale, soft, red	110	424
Shale, hard, red	22	446
Shale, hard, red, streaks, and lime	69	515
Sand	33	548
Shale	8	556
Sand	39	595
Shale, hard, red	55	650
Shale, hard, red, and lime rock	64	714

Well PW-84-47-911

Owner: Fred Hornsby
Driller: Disbro Water Well Service

Soil, surface	6	6
Sand	6	12
Caliche	53	65
Sand, salt	10	75
Shale, soft, gray	37	112
Sand	6	118
Shale, gray	64	182
Shale, hard, gray	22	204
Gravel and lime rock	22	226
Shale, gray	14	240
Sand	30	270
Shale, sticky, red	176	446

Table 9.—Drillers' Logs of Wells—Continued

	THICKNESS (FEET)	DEPTH (FEET)
Well PW-84-47-911—Continued		
Shale, sandy	44	490
Shale, hard, red	22	512
Shale, sandy	22	534
Sand, water	31	565
Well PW-84-48-111		
Owner: Clyde Wright, Jr. Driller: Disbro Water Well Service		
Soil, surface	10	10
Caliche	40	50
Shale, hard, gray	58	108
Sand, salty	8	116
Shale, gray	44	160
Shale, red	22	182
Shale, hard, red	66	248
Sand, salt	14	262
Shale, sandy	30	292
Shale, hard, red	66	358
Well PW-84-48-111—Continued		
Shale, gray	44	402
Shale, red	28	430
Sand, water	30	460
Shale, hard, red	60	520
Sand	27	547
Well PW-84-48-116		
Owner: Sun Oil Co. Driller: Disbro Water Well Service		
Soil, surface	8	8
Caliche	86	94
Shale, hard, red	66	160
Shale, hard, red, and lime rock	22	182
Shale, hard, red	20	202
Sand	14	216
Shale, hard, and lime rock	32	248
Sand	25	273

Table 10.--Chemical Analyses of Water from Wells

(Analyses given are in milligrams per liter except percent sodium, sodium adsorption ratio, residual sodium carbonate, specific conductance, pH, and temperature)
Water-bearing units: Qbb, barrier island and beach deposits; Qep, south Texas eolian plain deposits; Qbl, Beaumont Clay and Lissie Formation, undifferentiated; Tg, Goliad Sand; To, Oakville Sandstone.

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kleberg County																								
* RR-83-25-101	480-515	Mar. 27, 1968	Tg	21	0.64	54	30	587	12	358	336	640	1.0	24	--	1,880	258	82	16	0.71	3,090	7.5	--	--
203	503	do.	Tg	21	--	50	25	504	10	354	242	555	1.0	26	--	1,610	228	82	15	1.24	2,730	7.4	27	81
304	530-671	Aug. 28, 1968	Tg	19	--	23	12	362	7.4	324	205	305	.7	9.5	--	1,100	107	87	15	3.17	1,830	7.9	--	--
2/ 902	609-799	Mar. 29, 1965	Tg	--	< .02	21	9	301		310	163	234	.3	12	--	1,050	89	--	--	--	1,738	8.0	--	--
2/ 902	609-799	Feb. 26, 1968	Tg	--	1.86	22	8	305		314	147	245	.7	10.5	--	1,050	88	--	--	--	1,710	8.0	--	--
2/ 902	609-799	Mar. 11, 1968	Tg	--	.08	21	9	313		314	159	240	.7	12	--	1,070	90	--	--	--	1,749	8.0	--	--
2/ 911	559-676	Mar. 29, 1965	Tg	--	< .02	22	9	310		314	164	239	.1	11	--	1,070	91	--	--	--	1,782	8.1	--	--
2/ 911	559-676	Feb. 26, 1968	Tg	--	.64	50	23	530		187	630	389	.8	5.0	--	1,820	220	--	--	--	3,276	8.0	--	--
2/ 911	559-676	Mar. 11, 1968	Tg	--	2.45	56	22	550		178	690	394	.9	2.0	--	1,900	230	--	--	--	3,360	8.1	--	--
2/ 911	559-676	Mar. 27, 1968	Tg	18	--	24	9	333		301	208	253	.8	8.5	--	1,000	97	--	--	--	1,630	8.0	--	--
2/ 912	597-764	Mar. 29, 1965	Tg	--	.46	29	11	310		305	170	256	.1	7.0	--	1,090	120	--	--	--	1,826	7.8	--	--
2/ 912	597-764	Feb. 26, 1968	Tg	--	.24	31	23	349		283	242	289	.7	7.0	--	1,210	133	--	--	--	2,080	8.0	--	--
2/ 912	597-764	Mar. 11, 1968	Tg	--	.52	46	16	404		245	398	320	.8	5.5	--	1,440	180	--	--	--	2,480	8.1	--	--
2/ 913	580-740	Mar. 29, 1965	Tg	--	1.48	20	9	309		310	143	259	.8	< .4	--	1,050	85	--	--	--	1,782	8.2	--	--
2/ 914	599-777	do.	Tg	--	< .02	22	9	299		307	132	243	.4	11	--	1,020	92	--	--	--	1,727	7.9	--	--
2/ 914	599-777	Feb. 26, 1968	Tg	--	.36	22	9	296		312	124	253	.7	9.0	--	1,030	93	--	--	--	1,683	8.1	--	--
2/ 914	599-777	Mar. 11, 1968	Tg	--	.22	22	10	305		307	154	248	.8	9.0	--	1,060	96	--	--	--	1,705	7.9	--	--
26-404	628-684	Apr. 11, 1968	Tg	17	--	19	7.5	312	7.3	316	160	240	.5	14	--	932	78	89	15	3.61	1,550	7.7	--	--
2/ 702	737	Mar. 29, 1965	Tg	--	.56	18	7	311		305	152	247	.7	< .4	--	1,040	72	--	--	--	1,771	8.2	--	--
703	725	Feb. 5, 1943	Tg	11	.02	24	9.6	317		304	163	255	.4	12	--	959	100	--	--	--	--	8.2	--	--
2/ 704	609-780	Mar. 29, 1965	Tg	--	< .02	28	11	323		295	172	272	.6	8.0	--	1,110	116	--	--	--	1,914	7.8	--	--
2/ 704	609-780	Feb. 26, 1968	Tg	--	.30	27	14	365		279	258	308	.7	7.0	--	1,260	124	--	--	--	2,106	7.9	--	--
2/ 704	609-780	Mar. 11, 1968	Tg	--	.20	34	12	386		270	283	317	.7	7.0	--	1,310	135	--	--	--	2,255	7.8	--	--
2/ 705	580-740	Mar. 29, 1965	Tg	--	< .02	34	11	339		285	203	298	.6	8.0	--	1,180	130	--	--	--	2,024	7.9	--	--
2/ 705	580-740	Feb. 26, 1968	Tg	--	1.00	32	15	416		250	293	391	.7	4.0	--	1,400	143	--	--	--	2,480	7.9	--	--
2/ 705	580-740	Mar. 11, 1968	Tg	--	1.66	39	15	458		243	347	415	.8	5.0	--	1,520	158	--	--	--	2,730	7.9	--	--
2/ 712	580-752	Mar. 29, 1965	Tg	--	< .05	21	7	304		311	160	235	.7	11	--	1,050	82	--	--	--	1,738	8.0	--	--
2/ 712	580-752	Feb. 26, 1968	Tg	--	< .05	18	9	307		315	155	243	.8	10.0	--	1,060	83	--	--	--	1,710	8.0	--	--
2/ 712	580-752	Mar. 11, 1968	Tg	--	< .05	21	8	318		315	159	242	.7	10.5	--	1,070	86	--	--	--	1,804	8.0	--	--
720	599-779	Mar. 29, 1965	Tg	--	.36	30	12	344		282	265	264	.8	7.0	--	1,210	125	--	--	--	2,046	7.9	--	--
2/ 720	599-779	Feb. 26, 1968	Tg	--	.64	84	26	730		128	1,060	530	1.1	.5	--	2,560	315	--	--	--	4,619	8.0	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
										Kleberg County														
2/ RR-83-25-720	599-779	Mar. 11, 1968	Tg	--	1.60	90	30	750		124	1,100	520	1.1	< 0.4	--	2,610	348	--	--	--	4,712	7.8	--	--
2/ 720	599-779	Mar. 25, 1968	Tg	19	--	34	11	351		281	264	269	.8	7.5	--	1,100	132	--	--	--	1,800	7.8	--	--
2/ 721	590-780	Feb. 26, 1968	Tg	--	.16	21	9	317		312	140	272	.6	.5	--	1,070	88	--	--	--	1,782	7.9	--	--
2/ 721	590-780	Mar. 11, 1968	Tg	--	.87	21	8	321		316	138	269	.8	7.0	--	1,080	88	--	--	--	1,804	8.1	--	--
2/ 722	585-770	do.	Tg	--	1.11	21	8	333		304	184	250	.7	7.5	--	1,110	83	--	--	--	1,815	8.1	--	--
723	606-735	Mar. 16, 1945	Tg	17	.03	21	7.5	308	12	315	162	235	.5	9.2	--	951	84	--	--	--	--	7.9	--	--
2/ 723	606-735	Mar. 29, 1965	Tg	--	< .02	21	8	310		307	146	246	.3	11	--	1,050	84	--	--	--	1,782	7.9	--	--
2/ 723	606-735	Feb. 26, 1968	Tg	--	1.62	20	7	306		307	147	244	.7	10.0	--	1,040	80	--	--	--	1,710	8.1	--	--
2/ 723	606-735	Mar. 11, 1968	Tg	--	.55	19	8	313		311	146	242	.7	10.0	--	1,050	80	--	--	--	1,705	8.2	--	--
2/ 724	782	Feb. 26, 1968	Tg	--	.36	18	9	316		304	157	258	.8	10.0	--	1,070	83	--	--	--	1,755	8.0	--	--
2/ 724	782	Mar. 11, 1968	Tg	--	.22	20	8	323		307	164	255	.8	10.0	--	1,090	82	--	--	--	1,760	7.9	--	--
902	808-852	July 12, 1968	Tg	16	--	19	6.0	371	6.4	276	205	308	.6	3.2	--	1,080	72	91	19	3.41	1,820	8.3	--	--
27-802	885-948	July 17, 1968	Tg	14	--	22	2.8	476	2.7	218	366	385	1.5	.9	--	1,380	66	94	25	2.24	2,270	8.0	--	--
901	878-915	July 12, 1968	Qbl	16	--	38	4.5	544	2.9	190	546	412	1.3	.9	--	1,660	114	91	22	.84	2,660	7.9	--	--
28-902	903-945	do.	Qbl	9.9	--	14	2.3	628	2.3	244	384	592	1.8	1.1	--	1,760	44	97	41	3.11	2,970	8.2	--	--
29-603	140±	July 17, 1968	Qbl	24	--	31	18	976	10	704	364	960	--	.6	--	2,730	152	93	34	8.51	4,540	8.0	--	--
701	1,216-1,251	May 8, 1969	Tg	19	2.0	44	11	1,630		268	1,210	1,580	--	3.4	--	4,630	155	96	57	1.29	7,370	7.9	--	--
30-502	55	Oct. 2, 1969	Qbb	--	--	--	--	--		270	--	2,700	--	--	--	--	1,380	--	--	.00	8,570	7.2	--	--
702	146	May 8, 1969	Qbl	30	.34	67	37	831		392	78	1,220	--	4.2	--	2,460	319	85	20	.04	4,510	8.0	--	--
33-401	556	Aug. 20, 1968	Tg	23	--	32	13	220	9.2	308	136	165	.6	9.0	--	759	134	77	8.3	2.38	1,250	8.1	--	--
903	700±	Aug. 7, 1968	Tg	3.2	--	19	10	326	10	211	129	358	.5	2.0	--	962	88	87	15	1.69	1,730	8.1	--	--
2/ 34-101	884	Mar. 29, 1965	Tg	--	< .02	33	12	339		283	247	269	.8	11	--	1,200	133	--	--	--	2,046	7.9	--	--
2/ 101	884	Feb. 26, 1968	Tg	--	.06	33	11	340		288	243	272	.8	8.5	--	1,200	128	--	--	--	1,991	8.0	--	--
2/ 101	884	Mar. 11, 1968	Tg	--	.17	34	11	340		288	250	264	.7	8.5	--	1,200	128	--	--	--	2,000	7.8	--	--
106	556-576	Apr. 3, 1968	Tg	20	--	45	11	343	8.0	238	325	250	.6	13	--	1,130	158	82	12	.75	1,830	7.4	--	--
2/ 107	894	Mar. 29, 1965	Tg	--	< .02	66	21	560		192	720	376	.8	7.0	--	1,940	251	--	--	--	3,472	8.0	--	--
2/ 107	1,074	Feb. 27, 1968	Tg	--	.06	68	21	570		189	750	399	.8	5.0	--	2,000	258	--	--	--	3,614	8.0	--	--
209	540-670	May 17, 1968	Tg	19	--	35	11	360	7.6	276	264	292	.6	12	--	1,140	132	85	14	1.87	1,920	7.6	--	--
301	1,050	July 12, 1968	Tg	17	--	23	7.8	380	6.7	288	243	310	.6	8.6	--	1,140	90	89	17	2.93	1,890	8.2	--	--
410	600-680	Apr. 8, 1968	Tg	19	--	25	8.9	275	8.3	318	142	210	.4	13	--	858	99	85	12	3.23	1,420	7.7	--	--
501	610-631	Apr. 3, 1968	Tg	16	--	20	6.8	341	7.1	284	262	235	.6	7.4	--	1,040	78	89	17	3.09	1,710	7.6	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kleberg County																								
RR-83-34-502	635-656	Apr. 3, 1968	Tg	18	--	21	7.1	296	7.8	302	144	238	0.4	13	--	894	82	88	14	3.32	1,500	7.6	--	--
601	760±	Aug. 8, 1968	Tg	13	--	10	3.3	346	3.2	352	137	265	1.2	.9	--	953	38	95	24	5.00	1,640	8.0	--	--
704	654-694	Apr. 4, 1968	Tg	19	--	27	10	283	8.8	304	174	214	.4	6.5	--	892	108	84	12	2.81	1,480	7.8	--	--
706	757-781	Apr. 5, 1968	Tg	20	--	32	10	274	8.7	306	227	175	.3	6.0	--	903	121	82	11	2.60	1,450	7.7	--	--
801	759-777	Apr. 2, 1968	Tg	16	--	31	11	323	9.3	264	307	200	.6	2.4	--	1,030	122	84	13	1.88	1,650	7.7	--	--
903	699-720	Apr. 30, 1968	Tg	6.3	--	14	5.5	400	6.4	306	176	360	.7	.5	--	1,120	58	93	23	3.87	1,970	8.3	--	--
35-603	935	July 15, 1968	Tg	17	--	28	4.4	498	3.0	216	490	342	1.5	.9	--	1,490	88	92	23	1.78	2,380	8.2	--	--
604	900±	July 31, 1968	Tg	21	--	1,460	850	3,860	110	200	2,800	9,100	--	--	--	18,300	7,140	54	--	--	25,800	6.9	--	--
37-201	1,450	July 15, 1968	Tg	19	--	58	7.7	1,080	4.2	184	1,140	880	--	1.0	--	3,280	176	93	35	.00	4,960	8.1	--	--
501	135	May 8, 1969	Qbl	19	0.22	59	61	1,430		580	416	1,840	--	4.6	--	4,110	398	89	31	1.55	7,090	7.6	--	--
602	74	Oct. 2, 1969	Qbl	--	--	--	--	--		236	--	2,500	--	--	--	--	1,600	--	--	.00	8,060	6.8	--	--
901	1,435	Aug. 1, 1968	Tg	16	--	81	21	1,370	6.3	168	1,620	1,040	--	6.2	--	4,240	288	91	35	.00	6,240	7.5	--	--
38-101	40	July 17, 1968	Qbb	31	--	103	23	227	6.7	260	53	405	.3	1.5	--	978	352	58	5.3	.00	1,750	8.1	--	--
301	336-347	June 19, 1969	Qbl	14	.10	146	130	2,320		426	612	3,520	--	--	--	6,950	899	85	--	.00	11,700	7.8	--	--
401	27	Aug. 2, 1968	Qbb	31	--	320	60	352	9.7	190	72	1,150	--	9.1	--	2,100	1,050	42	4.7	.00	3,820	7.7	--	--
41-201	503-548	Aug. 21, 1968	Tg	25	--	36	14	195	8.5	312	100	155	.6	7.1	--	694	148	73	7.0	2.16	1,160	7.9	--	--
803	512-638	Aug. 27, 1968	Tg	25	--	37	14	217	9.7	312	154	155	.7	6.8	0.73	772	150	74	7.7	2.11	1,270	7.8	29	84
42-402	31	May 14, 1968	Qbl	5.3	--	540	252	2,780	27	77	1,290	5,020	--	.0 3/	--	9,950	2,380	71	--	.00	18,500	5.8	25	77
402	31	Sept. 16, 1968	Qbl	13	51	428	240	2,960	25	376	2,300	4,450	1.6	.0	--	10,600	2,060	76	--	.00	16,300	6.4	--	--
402	31	Dec. 10, 1968	Qbl	--	--	308	222	--		574	--	3,950	--	--	--	--	1,680	--	--	--	15,000	6.7	24	75
402	31	Mar. 25, 1969	Qbl	--	--	355	195	--		256	2,410	3,700	--	--	--	--	1,690	--	--	--	14,000	5.9	24	75
402	31	June 17, 1969	Qbl	--	--	310	178	--		220	2,000	3,400	--	--	--	--	1,510	--	--	.00	13,100	5.9	24	75
403	52	May 14, 1968	Qbl	4.9	--	226	14	828	15	22	412	1,430	--	2.0 4/	--	2,950	622	73	14	.00	5,110	5.9	26	79
403	52	Sept. 16, 1968	Qbl	--	666	900	235	2,160	24	0 5/	1,050	5,780	.8	5.4	--	10,200	3,210	51	--	.00	18,200	3.3	--	--
403	52	Dec. 10, 1968	Qbl	--	--	1,050	620	--		5	--	9,800	--	--	--	--	5,170	--	--	--	31,000	5.0	24	75
403	52	Mar. 25, 1969	Qbl	--	--	950	665	--		32	4,290	9,600	--	--	--	--	5,100	--	--	--	31,500	5.6	24	75
403	52	June 17, 1969	Qbl	--	--	900	732	--		14	4,540	9,600	--	--	--	--	5,160	--	--	.00	31,600	5.2	25	77
404	38	May 14, 1968	Qbl	--	--	775	308	2,800	29	0 6/	2,230	6,320	--	.0 7/	--	--	3,200	65	--	.00	23,000	2.5	25	77
404	38	Sept. 16, 1968	Qbl	--	214	930	670	5,520	42	24	4,310	9,700	1.9	2.2	--	21,200	5,080	70	--	.00	30,300	5.6	--	--
404	38	Dec. 10, 1968	Qbl	--	--	940	675	--		46	--	9,900	--	--	--	--	5,120	--	--	.00	31,800	5.5	24	75
404	38	Mar. 25, 1969	Qbl	--	--	915	685	--		52	4,350	9,800	--	--	--	--	5,100	--	--	--	31,700	5.4	24	75
404	38	June 17, 1969	Qbl	--	--	905	695	--		23	4,380	9,700	--	--	--	--	5,120	--	--	--	31,700	5.1	24	75

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kleberg County																								
RR-83-42-502	619-730	Apr. 5, 1968	Tg	20	--	26	7.5	296	7.8	332	182	205	0.5	3.6	--	911	96	86	13	3.52	1,520	7.6	--	--
504	711-736	Apr. 23, 1968	Tg	22	--	30	10	268	9.3	332	171	183	.7	1.8	--	859	116	82	11	3.12	1,450	7.7	--	--
507	750	Aug. 6, 1968	Tg	20	--	31	9.4	296	9.4	328	176	228	.7	2.2	--	934	116	83	12	3.06	1,560	8.0	--	--
702	--	Aug. 21, 1968	Tg	26	--	35	12	257	9.0	320	194	175	.6	7.0	--	873	137	79	9.5	2.50	1,410	7.9	--	--
803	700±	Apr. 30, 1968	Tg	17	--	20	7.9	304	7.1	348	179	197	.6	.0	--	904	82	88	15	4.05	1,530	8.2	--	--
43-102	843-866	Apr. 9, 1968	Qb1	19	--	28	7.9	324	7.9	296	200	268	.6	2.8	--	1,000	102	86	14	2.80	1,690	7.5	--	--
201	845-883	do.	Qb1	17	--	24	6.4	361	6.8	284	219	302	.5	3.3	--	1,080	86	89	17	2.92	1,810	8.2	--	--
301	935	July 31, 1968	Tg	7.9	--	6.5	1.4	388	4.4	224	205	342	.6	1.6	--	1,070	22	97	36	3.23	1,870	8.2	--	--
403	800±	Apr. 11, 1968	Tg	20	0.66	24	6.8	321	7.4	308	189	252	.4	3.5	--	975	88	88	15	3.29	1,630	7.8	--	--
406	859	do.	Qb1	16	--	114	31	965	12	140	796	1,120	--	7.0	--	3,130	412	83	21	.00	5,000	7.5	24	75
701	900	Apr. 10, 1968	Tg	18	--	86	21	836	12	126	954	750	--	3.6	--	2,740	301	85	21	.00	4,160	7.8	--	--
801	950	May 23, 1968	Qb1	15	--	18	4.7	402	4.8	278	228	335	.8	.9	--	1,150	64	93	22	3.27	1,960	7.8	--	--
44-201	1,051	Aug. 2, 1968	Tg	16	--	22	4.0	538	4.0	198	404	482	1.0	3.1	--	1,570	72	94	28	1.82	2,620	7.7	--	--
45-201	1,322	Aug. 1, 1968	Tg	5.4	--	14	3.2	844	4.3	204	604	780	--	5.2	--	2,360	48	97	53	2.38	3,850	8.3	--	--
202	1,475	do.	Tg	16	--	19	4.6	916	3.1	270	691	900	3.0	.1	--	2,690	66	97	49	3.10	4,640	8.1	26	79
46-201	1,530-1,560	June 19, 1969	Tg	2.4	.07	14	9.2	1,850		128	1,760	1,530	--	3.9	--	5,230	73	98	94	.66	8,060	9.2	--	--
84-24-901	490±	Mar. 26, 1968	Tg	19	--	23	13	344	8.0	432	150	245	1.9	24	--	1,040	111	86	14	4.86	1,730	7.6	--	--
32-301	450	do.	Tg	23	--	45	14	428	10	396	245	410	.6	21	--	1,400	211	81	13	2.27	2,320	7.8	--	--
503	534	do.	Tg	30	--	58	24	336	10	360	227	358	1.2	26	--	1,280	243	76	10	1.04	2,090	7.4	27	80
8/ 40-203	425-665	Sept. 26, 1959	Tg	26	.4	30	13	217		283	130	164	--	--	--	768	127	--	--	--	--	7.7	--	--
8/ 204	420-660	--	Tg	27	.5	31	14	226		283	155	163	--	--	--	--	--	--	--	--	--	--	--	--
205	600±	Mar. 11, 1968	Tg	28	.26	29	11	184	7.4	308	75	135	1.0	7.1	--	628	118	76	7.4	2.70	1,070	8.0	--	--
8/ 206	415-640	Oct. 4, 1959	Tg	25	.1	30	15	232		283	130	194	--	--	--	801	--	--	--	--	--	7.5	--	--
207	535	Apr. 29, 1968	Tg	23	--	30	13	252	8.8	304	144	198	.9	13	--	832	128	80	9.7	2.41	1,420	7.6	--	--
502	655	Mar. 11, 1968	Tg	25	--	38	14	237	8.0	292	205	160	.8	5.9	--	838	152	76	8.4	1.74	1,370	7.6	--	--
503	282	do.	Qb1	16	--	148	138	1,560	31	424	872	2,250	2.9	13	--	5,240	937	78	22	.00	8,380	7.4	--	--
48-301	500±	Apr. 25, 1968	Tg	26	--	48	18	197	9.5	284	152	172	.6	9.6	--	773	194	68	6.1	.77	1,300	7.9	--	--
503	539	Feb. 6, 1968	Tg	28	--	48	16	196	9.0	284	103	190	.5	15	--	746	186	68	6.3	.93	1,260	7.8	--	--
901	632	Apr. 26, 1968	Tg	25	--	67	23	243	10	272	358	144	.5	4.4	--	1,010	262	66	6.5	.00	1,580	7.5	--	--
Kenedy County																								
RD-83-43-703	700±	Nov. 20, 1968	Tg	--	--	--	--	--		288	246	265	--	--	--	--	102	--	--	2.68	1,750	7.8	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kenedy County																								
RD-83-43-901	700±	Nov. 18, 1968	Tg	--	--	--	--	--		196	780	440	--	--	--	--	348	--	--	0.00	3,100	7.7	--	--
49-202	577	Feb. 21, 1969	Tg	--	--	26	10	--		344	--	112	--	--	--	--	106	--	--	3.52	1,140	8.0	27	81
701	753	Feb. 24, 1969	Tg	--	--	120	44	--		316	--	950	--	--	--	--	480	--	--	.00	3,890	7.7	--	--
702	567-588	Feb. 21, 1969	Tg	--	--	22	8.8	--		344	--	94	--	--	--	--	91	--	--	3.82	954	8.2	--	--
50-203	640	Apr. 22, 1969	Tg	23	0.08	26	6.7	284	8.1	348	197	158	0.6	1.8	0.98	877	92	86	13	3.85	1,420	7.8	--	--
307	--	Nov. 15, 1968	Tg?	21	.23	26	6.6	359	7.2	260	312	255	.5	1.9	--	1,120	92	89	16	2.42	1,820	8.0	31	88
801	737	do.	Tg	19	.01	14	4.4	320	8.7	336	178	225	.7	1.1	--	936	53	92	19	4.45	1,570	8.1	--	--
802	700	do.	Tg	--	--	--	--	--		312	142	195	--	--	--	--	80	--	--	3.33	1,360	7.9	--	--
902	--	do.	Tg	19	.25	13	3.7	337	6.2	336	160	255	.8	1.0	--	961	48	93	21	4.56	1,620	8.1	29	84
51-102	737	do.	Tg	--	--	--	--	350		293	238	232	--	--	--	1,000	114	--	--	--	--	--	30	86
201	920	Nov. 18, 1968	Tg	--	--	--	--	--		109	824	740	--	--	--	--	252	--	--	.00	3,920	7.8	31	88
202	863	do.	Tg	17	.23	18	4.8	376	5.4	282	266	282	.7	1.1	--	1,110	64	92	20	3.33	1,830	8.1	--	--
301	853	do.	Tg	24	.01	52	12	396	5.7	240	392	315	.7	1.2	--	1,320	179	82	13	.35	2,100	7.8	29	84
401	816	Nov. 15, 1968	Tg	--	--	--	--	--		188	90	100	--	--	--	--	80	--	--	1.48	795	7.8	28	82
402	844	Nov. 18, 1968	Tg	--	--	--	--	--		304	204	215	--	--	--	--	89	--	--	3.20	1,550	8.0	--	--
501	862	do.	Tg	--	--	--	--	--		236	408	305	--	--	--	--	177	--	--	.33	2,110	7.8	31	88
601	1,008	do.	Tg	--	--	--	--	--		238	292	318	--	--	--	--	79	--	--	2.32	1,950	7.8	32	90
901	865	Oct. 28, 1968	Tg	19	--	22	6.0	369	6.1	252	210	322	.6	1.0	--	1,080	80	90	18	2.54	1,850	8.0	27	81
52-202	--	do.	Tg	39	--	223	73	655	29	216	150	1,420	3.0	5.0	--	2,700	856	61	9.8	.00	4,770	7.3	--	--
601	1,162	Oct. 29, 1968	Tg	17	--	26	5.8	612	3.7	164	458	585	1.2	1.4	--	1,790	89	93	28	.91	3,000	7.8	29	84
701	--	Oct. 28, 1968	Tg	18	--	18	4.0	405	4.3	222	271	352	.8	1.6	--	1,180	62	93	22	2.41	2,010	7.8	28	82
53-401	1,360	Oct. 29, 1968	Tg	18	--	20	5.1	666	3.3	184	522	600	1.2	.8	--	1,930	71	95	34	1.60	3,160	8.0	33	91
703	1,100±	do.	Tg	31	--	215	44	294	18	284	139	710	.3	17	--	1,610	718	46	4.8	.00	2,840	7.5	--	--
57-501	610	Dec. 5, 1968	Tg	--	--	16	5.0	--		242	228	235	--	--	--	--	60	--	--	2.76	1,610	8.2	27	81
58-201	740	Oct. 30, 1968	Tg	18	--	16	3.9	276	6.4	300	100	215	.7	1.0	--	785	56	90	16	3.80	1,370	7.8	--	--
301	655±	do.	Tg	17	--	14	3.5	335	5.7	292	168	262	.7	.2	--	950	50	93	21	3.80	1,540	7.8	--	--
401	747	do.	Tg	18	--	23	6.9	295	8.5	250	180	250	.5	1.0	--	906	86	87	14	2.38	1,540	7.5	--	--
701	652	Dec. 5, 1968	Tg	--	--	23	3.9	--		248	198	270	--	--	--	--	74	--	--	2.59	1,650	8.0	29	85
703	700-860	do.	Tg	18	.23	9.5	3.0	486	8.0	234	358	375	.9	4.3	--	1,380	36	96	35	3.12	2,260	8.3	--	--
802	732	do.	Tg	--	--	46	33	--		244	588	1,950	--	--	--	--	250	--	--	--	7,340	8.0	--	--
803	850	Jan. 13, 1969	Tg	--	--	9.8	2.4	--		258	--	312	--	--	--	--	34	--	--	3.54	1,920	7.9	27	81
59-501	860	Oct. 30, 1968	Tg	17	--	13	3.6	385	4.3	262	198	342	1.1	.8	--	1,090	48	94	24	3.34	1,890	7.7	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kenedy County																								
RD-83-59-701	--	Jan. 9, 1969	Tg	--	--	98	26	--		242	--	410	--	--	--	--	352	--	--	0.00	2,170	7.6	--	--
801	--	Jan. 8, 1969	Tg	--	--	5.0	1.1	--		266	--	260	--	--	--	--	17	--	--	4.02	1,530	8.2	29	84
60-601	1,285	Oct. 29, 1968	Tg	17	--	34	12	728	5.5	196	417	800	3.0	0.8	--	2,110	134	92	27	.52	3,610	7.8	31	88
701	48	Jan. 8, 1969	Tg	--	--	214	59	--		408	--	860	--	--	--	--	776	--	--	--	3,620	7.2	24	75
802	--	do.	Tg	--	--	17	4.6	--		222	270	518	--	--	--	--	62	--	--	2.41	2,480	7.9	31	88
88-01-101	765	Jan. 15, 1969	Tg	18	1.1	40	11	344	5.5	220	317	280	.5	1.9	--	1,130	145	83	12	.71	1,860	7.6	--	--
301	834	Dec. 4, 1968	Tg	--	--	9.2	1.8	--		262	216	245	--	--	--	--	30	--	--	3.69	1,630	8.3	28	82
401	835	Jan. 16, 1969	Tg	--	--	13	3.6	--		204	--	262	--	--	--	--	48	--	--	2.39	1,700	7.9	--	--
02-102	820	Dec. 4, 1968	Tg	18	.25	9.8	2.7	390	5.5	232	309	260	1.1	4.6	--	1,110	36	95	28	3.09	1,810	8.1	--	--
103	732	do.	Tg	--	--	12	3.4	--		218	340	275	--	--	--	--	44	--	--	2.69	1,920	8.1	--	--
401	--	May 14, 1969	Tg	16	.80	30	5.9	546		102	664	360	.9	1.6	--	1,670	100	92	24	.00	2,650	7.8	26	79
403	1,099	do.	Tg	17	.05	18	4.1	427		168	380	322	.9	2.3	--	1,250	62	94	24	1.51	2,060	7.9	--	--
501	900±	Apr. 18, 1933	Tg	30	.26	12	4.4	373	12	244	279	275	--	.25	--	1,110	48	--	--	--	--	8.0	--	--
		May 14, 1969		18	.58	12	2.8	390		252	280	275	1.3	1.1	--	1,100	42	95	26	3.30	1,820			
503	490	May 14, 1969	Tg	18	1.7	46	19	614		216	688	445	2.3	2.4	--	1,940	193	87	19	--	3,030	7.7	--	--
505	--	June 11, 1969	Tg	17	.04	44	8.8	711		128	1,020	368	1.7	1.0	--	2,230	146	91	26	--	3,250	7.1	--	--
602	925	June 12, 1969	Tg	17	.11	60	1.3	389		292	232	270	1.8	.9	--	1,060	20	98	38	4.38	1,750	8.6	30	86
604	910	June 17, 1969	Tg	17	--	7.2	1.4	430		300	278	295	2.4	1.4	--	1,180	24	97	38	4.44	1,910	8.4	--	--
701	--	May 8, 1969	Tg	17	.41	8.5	1.3	451		230	346	320	1.9	1.6	--	1,260	26	97	38	3.24	2,130	8.3	--	--
702	900	Mar. 3, 1913	Tg	--	--	--	--	430		183	344	300	--	--	--	1,200	76	--	--	--	--	--	29	84
		May 14, 1969		17	.79	18	4.0	414		200	356	300	1.5	1.1	--	1,210	62	94	23	2.05	2,000	7.8		
704	857	Mar. 3, 1913	Tg	--	--	--	--	470		212	362	312	--	--	--	1,300	50	--	--	--	--	--	27	81
		May 8, 1969		17	.35	9.5	1.5	448		228	358	315	1.8	1.7	--	1,260	30	97	36	3.01	2,060	8.2		
801	900	Mar. 3, 1913	Tg	--	--	--	--	430		232	328	272	--	--	--	1,200	54	--	--	--	--	--	--	--
802	1,002	May 7, 1969	Tg	17	.16	13	3.1	432		216	380	290	1.3	.8	--	1,240	46	95	28	2.63	2,030	8.2	26	79
803	567	Mar. 3, 1913	Tg	--	1.4	--	--	240		106	810	376	--	--	--	1,900	990	--	--	--	--	--	26	79
		May 7, 1969	Tg	12	.52	19	4.5	426		214	388	290	1.4	1.6	--	1,250	66	93	23	2.19	2,020	8.3		
901	19	Apr. 6, 1968	Qep	62	--	875	1,490	15,600	142	462	6,340	25,200	--	.0 9/	--	49,900	8,310	80	--	.00	75,600	7.4	--	--
901	19	May 15, 1968	Qep	--	--	975	1,110	--		42	--	21,500	--	.0 10/	--	--	7,000	--	--	--	65,300	5.8	24	75
901	19	June 18, 1969	Qep	--	--	810	1,750	--		452	7,930	27,500	--	--	--	--	9,220	--	--	.00	75,500	7.1	24	75
902	24	Apr. 7, 1968	Qep	30	--	950	1,230	12,600	113	266	7,010	20,000	--	--	--	42,100	7,430	78	--	.00	62,500	7.1	27	81
902	24	May 15, 1968	Qep	--	--	875	1,140	--		.0 11/	--	19,200	--	.0	--	--	6,870	--	--	.00	61,100	3.3	--	--
902	24	June 18, 1969	Qep	--	--	880	1,960	--		344	9,560	26,000	--	--	--	--	10,300	--	--	.00	71,900	6.9	24	75
903	20	Apr. 7, 1968	Qep	--	--	475	660	--		284	--	11,600	--	12	--	--	3,900	--	--	--	37,100	7.3	26	79

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
										Kenedy County														
RD-88-02-903	20	May 15, 1968	Qep	26	--	925	1,140	12,200	100	174	4,720	20,800	--	-- 12/	--	40,000	7,000	79	--	0.00	64,300	6.1	26	79
903	20	June 18, 1969	Qep	--	--	765	1,280	--		310	6,410	20,400	--	--	--	--	7,170	--	--	.00	59,000	7.3	24	75
904	--	June 17, 1969	Tg	17	0.99	16	2.9	566		148	653	338	1.6	1.1	--	1,670	52	96	34	1.39	2,560	7.7	--	--
905	800±	Mar. 3, 1913	Tg	--	--	--	--	560		280	431	340	--	--	--	1,500	40	--	--	--	--	--	--	--
906	912	June 17, 1969	Tg	17	.05	14	3.7	434		250	363	288	1.9	1.5	--	1,250	50	95	27	3.10	2,010	8.1	30	86
03-401	800±	Mar. 3, 1913	Tg	--	--	--	--	470		261	328	320	--	--	--	1,300	64	--	--	--	--	8.1	--	--
		May 15, 1969	Tg	17	.66	12	2.9	444		276	296	332	1.6	1.7	--	1,240	42	96	30	3.68	2,060			
502	1,100-1,163	Jan. 10, 1969	Tg	--	--	15	3.4	--		282	306	332	--	--	--	--	52	--	--	3.59	2,090	8.1	31	88
601	951	Jan. 9, 1969	Tg	--	--	60	9.0	--		158	--	455	--	--	--	--	186	--	--	.00	2,810	7.8	--	--
702	845	Mar. 19, 1933	Tg	22	.20	12	4.2	286	11	264	413	335	--	.2	--	1,410	47	--	--	--	--	--	25	77
		June 12, 1969	Tg	16	.45	8.8	1.8	504		282	411	325	2.2	1.8	--	1,410	30	97	40	4.03	2,270	8.2	25	77
802	1,120	Jan. 10, 1969	Tg	--	--	7.2	2.2	--		332	--	358	--	--	--	--	27	--	--	4.90	2,220	8.1	32	90
04-201	1,000±	Jan. 8, 1969	Tg	--	--	12	2.0	--		248	218	355	--	--	--	--	38	--	--	3.30	1,920	8.0	24	75
801	900±	Apr. 5, 1933	Tg	--	--	9.0	3.1	389		234	208	335	--	.6	--	1,060	35	--	--	--	--	--	29	29
09-201	730	Feb. 3, 1969	Tg	--	--	8.8	1.7	--		204	--	272	--	--	--	--	29	--	--	2.77	1,680	8.3	--	--
901	--	Jan. 30, 1969	Tg	--	--	8.5	1.9	--		206	--	275	--	--	--	--	29	--	--	2.80	1,780	8.3	--	--
902	967	do.	Tg	--	--	58	15	--		101	--	249	--	--	--	--	206	--	--	.00	3,550	7.9	--	--
10-101	864	June 11, 1969	Tg	16	.13	10	2.2	471		262	364	322	3.3	1.7	--	1,320	34	97	35	3.61	2,120	8.2	30	86
202	828	May 7, 1969	Tg	10	.11	8.2	3.6	476		208	422	322	1.8	2.5	--	1,350	36	97	35	2.71	2,220	8.5	25	77
303	40	Feb. 21, 1969	Qep	--	--	123	83	--		316	--	1,410	--	--	--	--	648	--	--	.00	5,010	7.6	23	73
601	897	May 6, 1969	Tg	--	--	31	9.0	--		204	468	320	--	--	--	--	114	--	--	1.05	2,250	8.0	--	--
901	843-885	do.	Tg	15	.92	47	13	536		164	702	330	1.7	2.2	--	1,730	171	87	18	--	2,660	7.8	--	--
11-302	1,231	Jan. 13, 1969	Tg	--	--	47	13	--		206	1,130	465	--	--	--	--	171	--	--	--	3,870	7.8	28	82
501	1,234	Apr. 26, 1933	Tg	22	.21	12	4.4	542	10	262	527	340	--	.4	--	1,590	48	--	--	--	--	--	32	90
801	1,066-1,123	May 6, 1969	Tg	17	.46	9.0	4.0	541		294	440	360	2.8	2.1	--	1,520	39	97	38	4.04	2,460	8.0	--	--
12-501	1,208	Jan. 10, 1969	Tg	--	--	19	6.0	--		248	--	538	--	--	--	--	72	--	--	2.62	3,160	7.9	--	--
17-401	730±	Jan. 30, 1969	Tg	--	--	44	13	--		130	--	542	--	--	--	--	164	--	--	--	2,880	7.4	--	--
801	1,015	Feb. 6, 1969	Tg	--	--	25	6.5	--		190	--	650	--	--	--	--	89	--	--	1.33	3,340	8.1	--	--
18-201	1,060	do.	Tg	--	--	18	5.2	--		224	--	340	--	--	--	--	66	--	--	2.34	3,030	8.2	28	82
402	1,698	Apr. 17, 1969	--	17	--	20	6.4	686		172	452	678	--	1.5	--	1,950	76	95	34	1.29	3,290	7.8	31	88
502	2,150	do.	To	--	3.0	505	144	--		84	6,020	550	--	--	--	--	1,850	--	--	.00	11,000	8.1	28	82
701	698	do.	Tg	--	.11	9.2	2.1	--		304	162	472	--	--	--	--	32	--	--	4.35	2,260	8.1	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Kenedy County																								
RD-88-18-703	1,160	Apr. 17, 1969	Tg	--	0.66	16	4.4	--		266	242	460	--	--	--	--	58	--	--	3.20	2,290	8.0	--	--
801	980	do.	Tg	--	--	16	3.8	--		264	228	445	--	--	--	--	56	--	--	3.22	2,240	7.8	--	--
802	875	Apr. 18, 1969	Tg	18	.54	14	4.2	523		264	300	465	1.8	1.8	--	1,460	52	96	32	3.28	2,470	7.9	--	--
804	850±	do.	Tg	--	.60	22	6.6	--		244	442	515	--	--	--	--	82	--	--	2.36	2,860	7.6	--	--
901	850±	Apr. 23, 1969	Tg	--	--	38	6.2	--		184	516	395	--	--	--	--	120	--	--	.61	2,550	7.7	--	--
19-102	965	Mar. 19, 1969	Tg	--	--	116	37	--		130	--	450	--	--	--	--	442	--	--	.00	3,560	7.7	29	84
602	70	do.	Qep	--	--	430	276	--		400	--	2,320	--	--	--	--	2,210	--	--	.00	7,570	7.0	24	75
901	95	do.	Qbl	--	--	176	117	--		348	--	1,780	--	--	--	--	920	--	--	.00	6,300	7.2	24	75
20-501	1,313	Mar. 18, 1969	Tg	--	--	191	61	--		96	--	440	--	--	--	--	728	--	--	.00	5,090	7.7	--	--
803	1,421	Apr. 16, 1969	Tg	16	1.5	368	101	1,520		74	3,850	410	--	1.8	--	6,300	1,330	71	18	.00	7,700	7.5	29	84
26-101	--	Apr. 18, 1969	Tg	--	--	425	50	--		84	4,630	322	--	--	--	--	1,270	--	--	.00	8,690	8.6	24	75
102	--	do.	Tg	--	--	32	13	--		216	--	575	--	--	--	--	134	--	--	.87	3,390	7.7	--	--
201	760-780	May 7, 1969	Tg	--	--	14	4.2	--		260	224	468	--	--	--	--	52	--	--	3.21	2,310	8.1	--	--
202	710-955	do.	Tg	17	.12	12	3.1	461		270	236	405	2.6	1.3	--	1,270	43	96	31	3.57	2,150	8.0	--	--
301	800-830	May 13, 1969	Tg	--	--	11	3.1	--		212	186	520	--	--	--	--	40	--	--	2.40	2,330	8.5	--	--
Southern Jim Wells County																								
PW-84-32-802	500±	Aug. 20, 1968	Tg	21	--	39	21	320	10	332	168	310	.9	25	--	1,080	184	78	10	1.76	1,800	8.1	--	--
39-202	480±	Feb. 1, 1968	Tg	34	--	43	16	196	8.7	308	83	186	.5	8.2	--	726	174	70	6.5	1.58	1,220	7.8	--	--
301	480±	do.	Tg	21	--	46	22	378	11	332	242	368	.8	22	--	1,270	206	79	11	1.33	2,150	8.0	--	--
302	410-600	Feb. 22, 1968	Tg	33	--	50	15	192	8.7	306	132	152	.7	11	--	744	186	68	6.1	1.29	1,220	7.6	--	--
402	210-350	Feb. 3, 1968	Qbl	16	--	142	88	480	25	280	131	1,020	2.4	.5	--	2,040	716	58	7.8	.00	3,710	7.5	--	--
404	235	Feb. 5, 1968	Tg	37	--	50	16	178	8.3	292	66	189	.7	11	--	700	191	66	5.6	.97	1,200	7.6	--	--
605	360±	Feb. 22, 1968	Tg	29	--	46	18	199	9.1	328	67	207	1.0	13	--	750	189	68	6.3	1.60	1,280	7.9	--	--
704	263	Feb. 3, 1968	Tg	42	--	59	19	185	8.8	274	98	210	.6	18	--	775	225	63	5.4	.00	1,290	7.8	--	--
803	380	Feb. 6, 1968	Tg	29	--	56	19	246	8.3	288	269	175	.5	16	--	961	218	70	7.2	.37	1,540	7.7	--	--
902	408-500	Feb. 5, 1968	Tg	32	--	43	15	199	8.5	296	110	169	.5	13	--	736	169	71	6.6	1.47	1,220	7.9	--	--
40-703	2,331-	--	To	27	.08	6.6	.2	646	2.9	390	414	462	5.0	.2	13	1,770	18	--	67	--	2,880	8.3	--	--
	2,425	July 18, 1968		21	--	14	.8	814	2.8	334	742	560	--	1.0	--	2,320	38	98	57	4.70	3,650	8.2	46	115
704	409-570	do.	Tg	28	--	42	15	209	8.9	292	130	172	.8	12	--	762	166	72	7.0	1.46	1,270	7.7	--	--
13/ 711	200-275	Sept. 19, 1947	Qbl	14.0	.2	145.1	207.2	2,065	--	776	1,415	2,550	--	--	--	7,168	1,214	--	--	--	--	7.75	--	--
	425-500	Sept. 22, 1947	Qbl	30.6	.3	38.7	15.0	210.3	--	273	125.5	185	--	--	--	910	1,580	--	--	--	--	8.08	--	--
	524-610	do.	Qbl	22.2	.1	52.7	19.0	250	--	235	275.7	194	--	--	--	1,085	210	--	--	--	--	8.08	--	--
47-102	379-407	Jan. 15, 1968	Tg	34	--	54	16	189	8.6	290	108	185	.8	13	--	751	200	66	5.8	.74	1,250	7.8	--	--

See footnotes at end of table.

Table 10.--Chemical Analyses of Water from Wells--Continued

WELL	DEPTH OR PRODUCING INTERVAL (FT)	DATE OF COLLECTION	WATER BEARING UNIT	SILICA (SiO_2)	IRON (Fe)	CALCIUM (Ca)	MAGNESIUM (Mg)	SODIUM AND POTASSIUM		BICARBONATE (HCO_3) 1/	SULFATE (SO_4)	CHLORIDE (Cl)	FLUORIDE (F)	NITRATE (NO_3)	BORON (B)	DISSOLVED SOLIDS	HARDNESS AS $CaCO_3$	PERCENT SODIUM	SODIUM ADSORPTION RATIO (SAR)	RESIDUAL SODIUM CARBONATE (RSC)	SPECIFIC CONDUCTANCE (MICROMHOS AT 25° C)	pH	WATER TEMPERATURE	
								Na	K														°C	°F
Southern Jim Wells County																								
PW-84-47-105	370-410	Jan. 16, 1968	Tg	38	--	46	16	192	9.5	300	99	180	0.7	20	--	749	181	68	6.2	1.30	1,240	7.4	--	--
203	507-550	do.	Tg	17	--	28	15	193	9.3	278	93	175	.7	.2	--	668	132	75	7.3	1.93	1,140	7.9	--	--
204	366-440	Jan. 18, 1968	Tg	38	--	52	17	194	9.2	290	98	192	.8	12	--	756	200	67	6.0	.76	1,260	7.4	--	--
302	436	Jan. 17, 1968	Tg	33	--	50	17	195	9.6	300	85	195	.8	16	--	749	195	67	6.1	1.02	1,260	7.5	--	--
303	532	Jan. 15, 1968	Tg	15	--	44	18	216	11	340	82	205	1.0	17	--	776	184	70	6.9	1.89	1,330	8.2	--	--
311	425-460	Feb. 21, 1968	Tg	35	--	52	17	188	8.9	294	83	199	.9	20	--	749	200	66	5.8	.83	1,260	8.0	--	--
610	427-545	Jan. 15, 1968	Tg	29	--	44	17	203	10	312	80	190	.8	17	--	744	180	70	6.6	1.51	1,260	7.6	--	--
612	554-575	Jan. 17, 1968	Tg	22	--	48	19	187	9.0	304	86	192	.7	12	--	725	198	66	5.8	1.02	1,240	7.7	--	--
613	680±	Aug. 23, 1968	Tg	26	--	68	42	490	16	324	220	662	1.2	18	--	1,700	342	75	12	.00	2,900	7.7	--	--
801	475	Apr. 7, 1933	Tg	--	2.6	40	18		1.72	278	26	208	--	.5	--	601	174	--	--	--	--	7.3	--	--
		Jan. 18, 1968		29	--	40	16	173	9.0	284	29	207	.7	.5	--	644	166	68	5.8	1.33	1,130			
803	507-527	Jan. 18, 1968	Tg	25	--	39	17	178	8.7	292	33	210	.7	.5	--	656	168	68	6.0	1.44	1,160	7.6	--	--
810	2,200±	Mar. 8, 1968	To	23	--	18	.4	648	3.2	184	732	370	3.4	.2	--	1,890	46	97	42	2.09	2,940	7.9	39	103
904	704-764	Feb. 20, 1968	Tg	30	--	54	19	194	8.8	284	126	201	.6	.5	--	774	212	65	5.8	.40	1,290	7.5	--	--
905	600±	Jan. 17, 1968	Tg	32	--	48	18	184	9.3	284	88	195	.7	10	--	725	194	66	5.7	.77	1,230	7.6	--	--
907	460-495	do.	Tg	25	--	34	16	192	9.8	296	44	210	.7	.5	--	678	151	72	6.8	1.83	1,180	7.6	--	--
911	565	do.	Tg	25	--	46	18	182	9.6	280	60	222	.7	.2	--	702	189	66	5.8	.81	1,230	7.6	--	--
48-102	396-543	Feb. 21, 1968	Tg	32	--	34	18	204	13	256	72	242	.7	1.2	--	743	159	72	7.0	1.02	1,290	7.9	--	--
109	520	Oct. 14, 1943	Tg	14	.08	52	19	181	25	284	67	224	.5	17	--	764	208	--	--	--	--	7.5	--	--
110	506	June 1945	Tg	41	.10	58	21	184	9.0	289	69	222	1.0	21	--	783	231	--	--	--	--	7.4	--	--
112	552	Jan. 31, 1968	Tg	26	--	44	18	191	9.0	290	93	188	.5	7.5	--	720	184	68	6.1	1.07	1,230	7.8	--	--
116	273	Mar. 7, 1968	Qbl	18	--	137	138	1,050	27	460	630	1,530	3.1	4.5	--	3,760	910	71	15	.00	6,100	7.4	--	--
501	439-502	Feb. 2, 1968	Tg	29	--	45	17	194	9.3	284	80	198	.6	22	--	735	182	68	6.2	1.00	1,240	7.9	--	--
502	450±	do.	Tg	30	--	53	20	227	9.6	268	150	242	.5	16	--	880	214	68	6.7	.10	1,490	7.7	--	--
706	434-461	Jan. 31, 1968	Tg	29	--	45	18	212	10	284	64	248	.6	4.2	--	771	186	70	6.8	.92	1,360	7.7	--	--
707	500	do.	Tg	24	--	44	20	228	11	294	52	290	.5	.2	--	815	192	71	7.2	.97	1,460	7.9	--	--
709	540±	do.	Tg	28	--	43	18	232	10	288	80	265	.6	9.2	--	828	182	72	7.5	1.09	1,440	8.1	--	--

1/ Includes any carbonate present.
2/ Analyzed by State Health Department.
3/ Includes 1.8 mg/l ammonia as NH_4^+.
4/ Includes 5.2 mg/l ammonia as NH_4^+.
5/ Sample contains 26 mg/l total acidity as H^+.
6/ Sample contains 24 mg/l total acidity as H^+.
7/ Sample contains 3.1 mg/l ammonia as NH_4^+.
8/ Analyzed by Humble Oil and Refining Company.
9/ Includes 0.07 mg/l ammonia as NH_4^+.
10/ Sample contains 1.6 mg/l ammonia as NH_4^+.
11/ Sample contains 3.8 mg/l total acidity as H^+.
12/ Includes 2.6 mg/l ammonia as NH_4^+.
13/ Analyzed by Curtis Laboratories.