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Rural Water Supplies in South Dakota : Edmunds County

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EDMUNDS County

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RURAL WATER SUPPLIES

IN

SOUTH DAKOTA

EDMUNDS COUNTY

BY

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AND

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PREPARED BY THE WORK PROJECTS ADMINISTRATION AS A REPORT ON THE WELL SURVEY CONDUCTED AS WORK PROJECTS ADMINISTRATION OFFICIAL PROJECT 665-74-3-126; SPONSORED BY THE EXTENSION SERVICE AND THE EXPERIMENT STATION SOUTH DAKOTA STATE COLLEGE, IN COOPERATION WITH THE STATE GEOLOGICAL SURVEY.

JANUARY 1940

FOREWORD

This study was first proposed as a project of the Mineral Resources Committee of the State Planning Board under the direction of the State Geological survey and undertaken as a Work Projects Administration project sponsored by the State Planning Board, and was continued under the Planning Board until that body was abolished July 1, 1939 by the State Legislature. At that time sponsorship was transferred to the South Dakota Agricultural Experiment Station and the State College Extension Service, South Dakota State College. Field work was begun October 1, 1938 and was practically completed by February 15, 1939. Workers were assigned in the several counties under the supervision and direction of the County Agricultural Agents and Field Supervisors who were employed by the Work Projects Administration. Questionnaires were mailed out from the offices of the County Agents and were checked and tabulated in these offices. The material was then forwarded to the central office for final tabulation and analysis under the direction of Elmer E. Meleen and Walter V. Searight.

Particular credit should be given to the individual County Agricultural Agents in the various counties of the state who arranged the contacts with the individuals from whom these data were collected, furnished a large portion of the necessary supplies for field work, and directed the workers engaged in collecting field data. Without this assistance in gathering basic data, this study could not have been conducted. The value of the report is therefore in direct proportion to the accuracy and adequacy of these basic data.

INTRODUCTION

PURPOSE

This report on rural water supplies of South Dakota has been prepared to present data recently made available on the types and the sources of water supply, exclusive of stream, lake and dam waters. The information presented is of importance to evaluate present supplies. It should also prove useful as a basis for further development of supplies where they are needed or become necessary. Further, it is hoped that the facts presented may prove of value in any program of water conservation.

SOURCES OF INFORMATION

Questionnaires were sent to all, or essentially all of the farmers of the state, asking for complete data on farm wells and supplementary supplies, with the exception of the supplies above noted. A most gratifying number returned questionnaires, actually 60.1% average for the entire state. The coverage is probably more than 60.1% since it is likely that many unanswered inquiries were those to farmers who were without wells, the type of supply emphasized in the questionnaires. The data thus obtained were supplemented with information contained in the files of the State Geological Survey, the office of the State Engineer, and reports of the United States Geological Survey. This supplementary information, together with that contained in questionnaires was used in making the well location maps included in this report.

PROCEDURE

All data from the questionnaires were tabulated and analyzed statistically by counties, which were made the areal units of study. Within the county,

Acknowledgments - The authors wish especially to acknowledge and commend the conscientious assistance of Mr. E. L. Woodburn, Supervisor, for careful and painstaking supervision of statistical work. The authors also desire to express appreciation for the constant interest and support of this project by Mr. Bob Butts, Director of Research and Records Projects, South Dakota Work Projects Administration.

supplies were allocated as to kind on county maps. Since shallow waters are the most important source of rural supply in South Dakota, wells 200 feet deep and less were plotted on county maps from which maps indicating depths of wells by 50 foot intervals were made. Springs, shown on the well location map, and cisterns were also tabulated as important supplementary supplies, although the latter do not appear on maps or in the tables in this report.

PRESENTATION OF DATA

For convenience and utility, this report has been divided into sections each covering one county, and each county section bound separately. Each county report contains the following material wherever possible.

1. Well Location Map: This map shows the location of all wells and springs within the county, so far as information is now available. These have been plotted in such a manner that artesian and shallow wells can be differentiated readily by the reader. Artesian wells, where they occur, are divided into flowing and pumped. Artesian wells showing decreased flow and those reported as controlled are also indicated by symbols. Shallow wells are differentiated as adequate and inadequate, and dry holes as of 1938 are located. Wells from other sources of information other than questionnaires collected by this survey are shown in blue.

2. Shallow Well Map: This map shows, as accurately as possible, in 50 foot intervals, the depths at which shallow supplies are commonly obtained. Where shallow wells are abundant, as indicated by the well location map, the map is as accurate as the information on which it is based, but where such wells are sparsely distributed errors are likely to occur. In many places reports of shallow wells are absent in which case the area has been left blank.

3. Table of Pumped Wells, ffom 0 to 200 feet (inclusive) in depth: This table shows minimum, maximum, and average depths of wells within the county, as reported in the questionnaires. Tabulations are by townships. The general character of the water, hard, medium, and soft, as reported by farm-

ers, and the number of wells suitable or unsuitable for drinking are shown in this table. Further, the adequacy of supply,as indicated on the questionnaires, and use for irrigation are shown here.

4. Table of Wells greater in depth than 200 feet: Minimum, maximum, and average depths are indicated. Character, reported as hard, medium or soft is tabulated. Adequacy and use for irrigation are shown as in the preceding table.

5. Table of Flowing Wells: Minimum, maximum, and average depths are shown together with general character and use for irrigation. The volume of flow as reported, and the number of flowing wells reported as equipped with control valves is also included in this table.

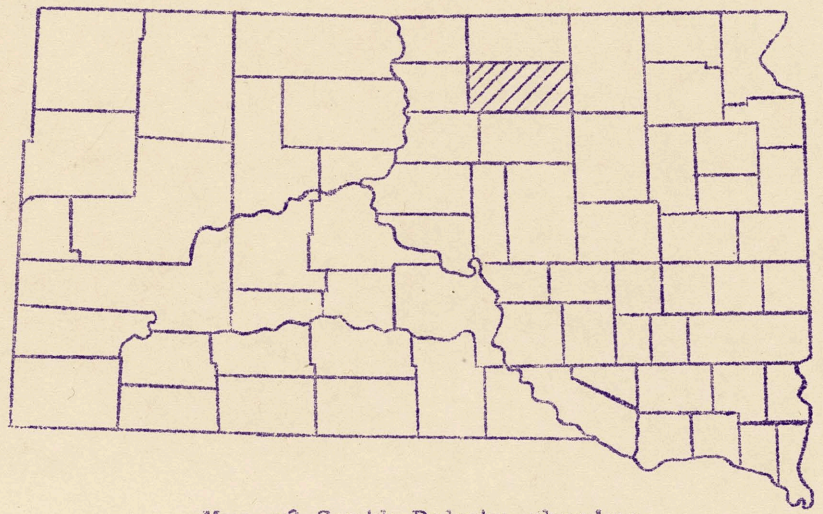
SUMMARY OF STATE SUPPLIES

In the entire state, a total of 48,479 wells were reported in response to questionnaires, returned by 60.1% of the recipients. If those who did not respond have a number of wells in proportion to those who reported, there are approximately 80,000 wells in South Dakota. There are possibly many less than this number since several counties with large numbers of wells returned over 75% of the questionnaires and since many farmers without wells did not reply because they were not requested to do so in the formal questionnaire. Of the wells reported, 16.2% are artesian, including both pumped and flowing wells. Shallow wells are 83.8% of the wells reported. Wells from shallow sources are thus obviously by far the most important means for obtaining water in rural South Dakota.

Important supplementary supplies are cisterns and springs. Roughly, there is more than one cistern to each 40 wells. Many springs are reported, however, in counties with very few wells, so that in some localities they are of considerable importance.

EDMUNDS COUNTY

Edmunds county lies in the north central part of South Dakota. It is bounded on the north by McPherson county, on the east by Brown county, on the south by Faulk county and the extreme northeast corner of Potter county, and on the west by Walworth county.



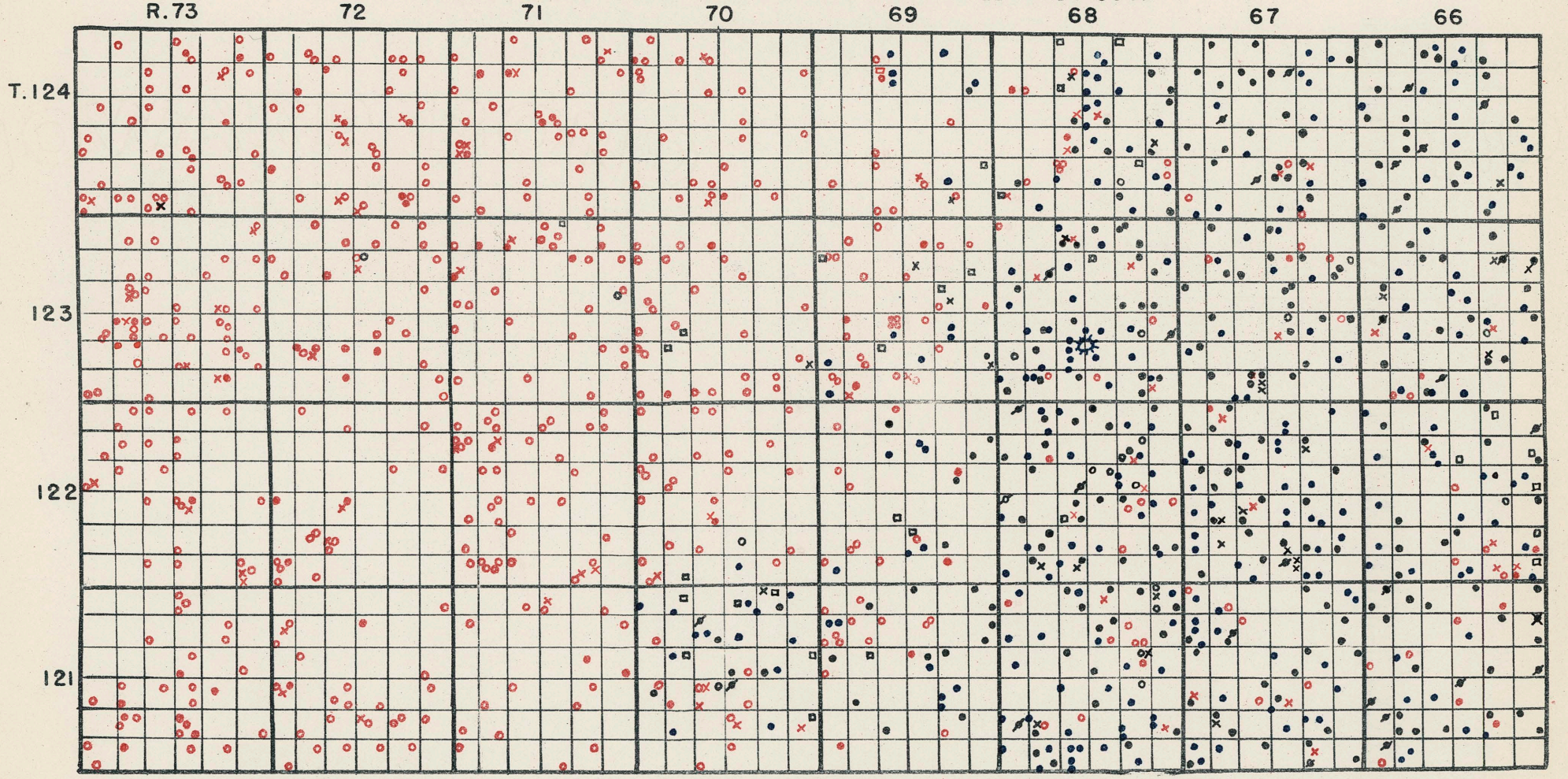
Map of South Dakota showing
location of Edmunds county.

Most of the county is in farms, with 628,336 acres (84.8 per cent) of the total land area of 741,120 acres in the county devoted to 1,271 farms. The approximate size of each farm unit is 494 acres. There are 381,313 acres in crop land; 99,410 devoted to plowable pastures, 332 acres to woodland pasture acreage, and 108,227 acres for all other pasture use. Woodland acres not pastured total 2,315 with 36,739 acres for all other land in farm use. Livestock is important; cattle, sheep and lambs, and horses and mules being raised in the order named.*

Farm areas devoted to livestock and dairy cattle require generally distributed sources of water supplies. The supplies required are not great, but adequate and constant supplies of suitable water at relatively low cost are necessary to operate farms of these sizes and organization profitably. The well location map of Edmunds county shows that, in general, such supplies are available and widely distributed.

*South Dakota Agricultural Statistics, Annual Report, 1937

LOCATION OF ARTESIAN AND SHALLOW WELLS IN EDMUNDS COUNTY



ARTESIAN WELLS
- O FLOWING WELLS—STEADY OR INCREASING
- ● FLOWING WELLS—DECREASED FLOW
- X CEASED FLOWING
- □ PUMPED
- / CONTROLLED WELLS ⌀ ●

SHALLOW WELLS
- O ADEQUATE SUPPLY
- ● INADEQUATE SUPPLY
- X DRY WELLS
- □ SPRINGS

- ● WELLS FROM OTHER SOURCES
- ☼ CITY WELLS

On the well location map of Edmunds county, all flowing and all deep pumped wells obtaining water from the Dakota-Lakota sandstones are shown in black as artesian wells. All other wells are shown in red and are called shallow wells regardless of depth. On all other maps and in tables and text of this report, the term shallow well applies to all wells of 200 feet depth or less, and those greater than 200 feet are treated as deep wells, including all artesian wells except those flowing wells 200 feet or less in depth. Returns on questionnaires for Edmunds county indicated a 76.7 per cent coverage with information on 852 wells, or 26.6 wells per township.

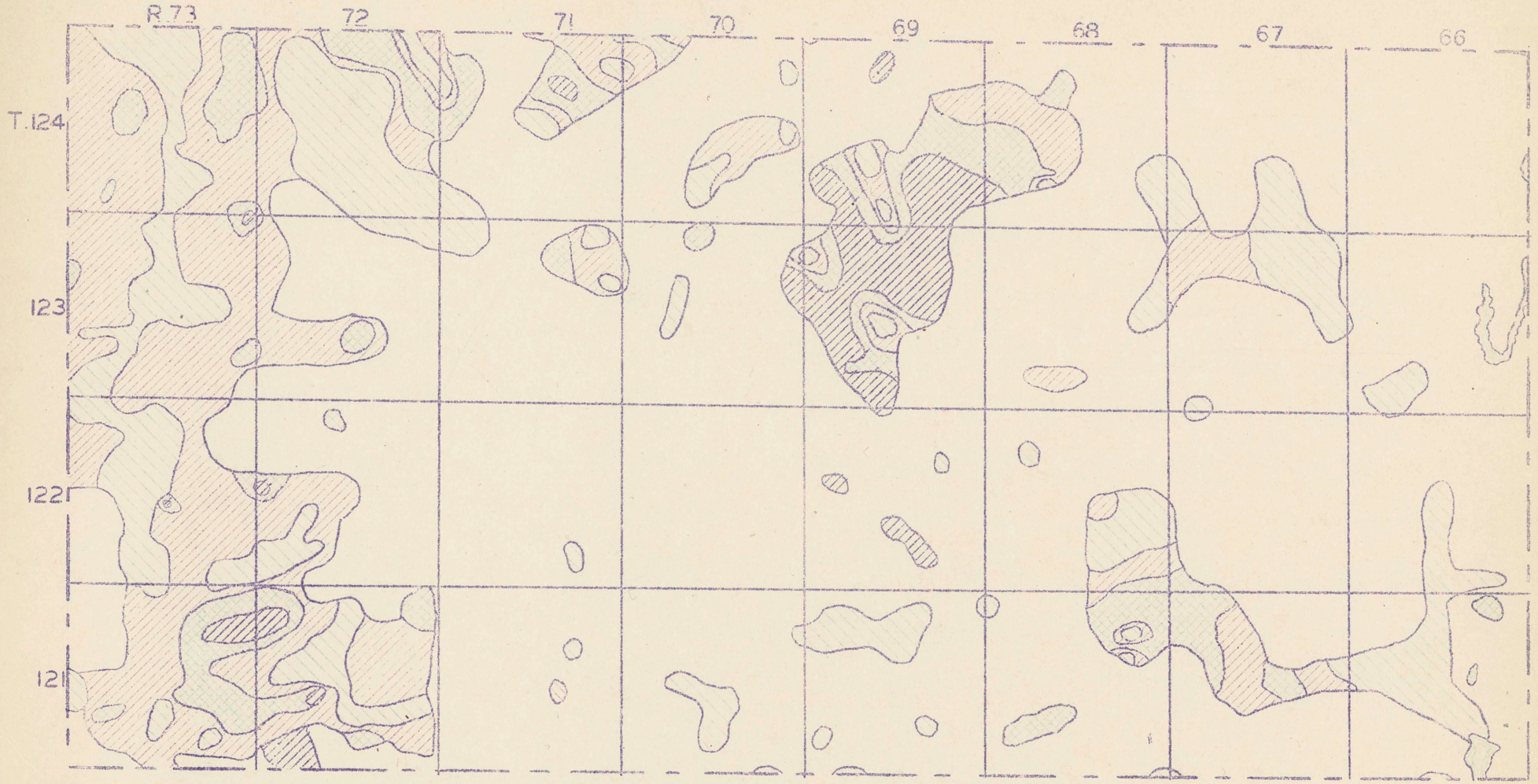
DEPTH AND DISTRIBUTION

Shallow wells: Approximately 35 per cent of all wells reported in Edmunds county were classified as shallow wells. Nearly 57 per cent (56.7) of shallow wells occurred in the extreme western part of the county, townships 121, 122, 123, 124, ranges 73 and 72. The remaining 43 per cent were widely scattered throughout the remaining area. No shallow flowing wells were reported. The average depth of the shallow wells is from 18 to 152 feet and, with the exception of 3 wells, most of these are from 29 to 95 feet in depth.

Only one township, T.123N., R.73W. reported all wells shallow. Shallow wells are found in all but two townships. In only 9 townships did shallow wells exceed the number of deep wells, and in only 7 of these did they appear notably greater in number. Because of the importance of these scattered areas where shallow wells exceeded deep, a table has been drawn to show these percentages as follows:

Twp.	Rge.	Shallow	Deep
124N	73W	85.3	14.7
124	72	79.3	20.7
123	73	100.	-
122	73	95.6	4.4
122	72	62.5	37.5
121	73	79.3	20.7
121	72	87.5	12.5

EDMUNDS COUNTY



SHALLOW WELLS (0-200 FT.)

DEPTHS AT WHICH SUPPLIES ARE COMONLY OBTAINED

0-50 FT. 50-100 FT. 100-150 FT. 150-200 FT.

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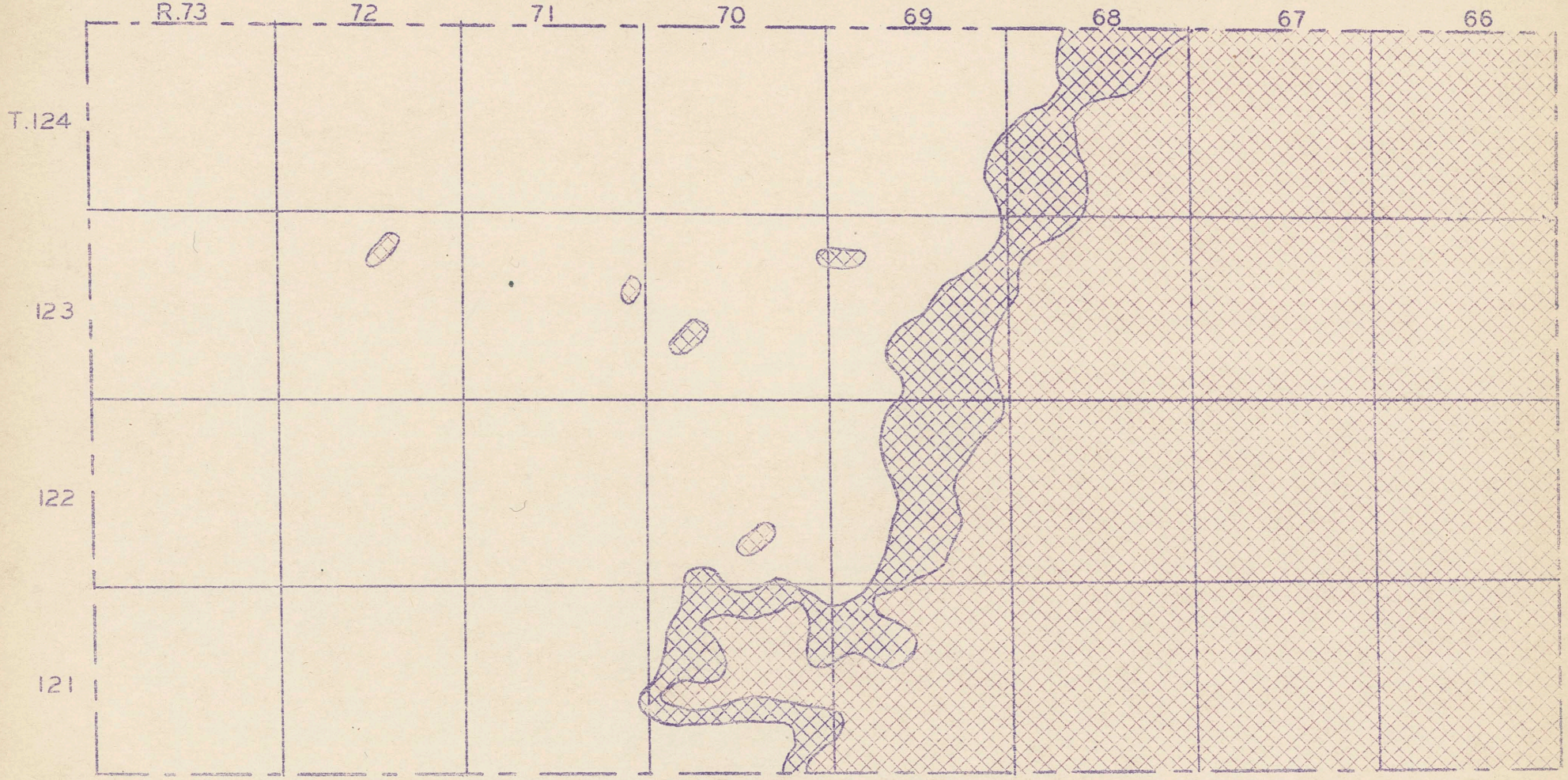
Deep wells: Approximately 32 per cent (272) of the 852 wells reported were deep pumped wells and 33 per cent (280) deep flowing wells. Depths of deep pumped wells ranged from 208 to 1615 feet, and deep flowing from 800 to 1700 feet. The average depth of pumped wells is from 287 to 1313 feet, and of flowing wells from 1130 to 1600 feet. Deep pumped wells were reported in all but two townships. Two townships (T.124N., R.66W. and T.122N., R.70W.) reported all wells deep. Deep wells (pumped and flowing) constituted from 4.4 per cent to 100 per cent of wells in townships in the county, the greatest number including those two in which all wells were deep wells, being found in the townships tabulated below. This tabulation shows that with the exception of the western area, the main source of supply of Edmunds county is more than 200 feet in depth:

Twp.	Rge.	Deep	Shallow
122N	70W	100	-
124	66	100	-
123	71	79.3	20.7
122	71	97.1	2.9
121	71	87.5	12.5
123	70	82.1	17.9
121	70	82.6	17.4
123	68	90.3	9.7
122	68	85.7	14.3
124	67	87.5	12.5
123	67	84.4	15.6
122	67	96.7	3.3
121	67	82.1	17.9
123	66	88.5	11.5
122	66	82.6	17.4
121	66	80.	20.

Flowing wells: Only two townships in the western part of the county reported flowing wells and these reported only one each, (T.123N., R.72W. and T. 123N., R.71W.). Deep flowing wells comprised the largest percentage of wells in the eastern area, but occur more sparsely in the central portion. Edmunds county lies in the artesian basin and the importance of these deep flowing artesian wells is shown on the artesian well map which shows the distribution of these wells and their relation to deep pumped wells. The relation of this artesian area to those of the surrounding counties and state is shown on the

ARTESIAN AREAS 1938



EDMUNDS COUNTY

FLOWING WELLS PUMPED WELLS

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MILES
0 2 4 6

artesian well map of South Dakota. Of the flowing wells reported, 25 were reported as controlled, averaging from .5 to 15.3 gallons per minute.

CHARACTER OF WELL WATER

To determine character of water in the county, users were asked to indicate whether they considered their supplies to be hard, moderately hard, or soft. In the absence of accurate chemical analysis, use must be accepted as a criterion, which is probably fairly satisfactory for general purposes.

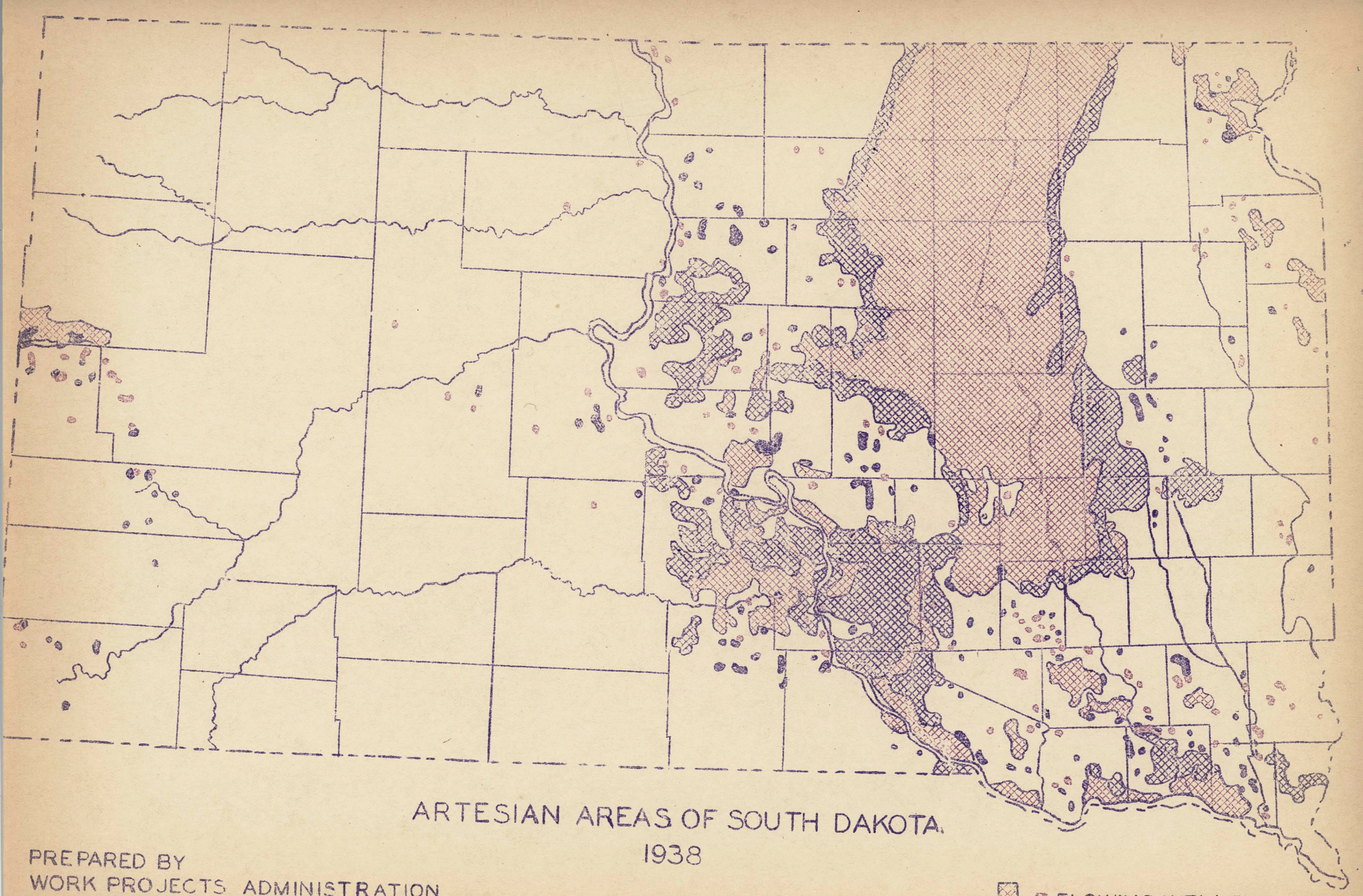
Shallow wells: Of the shallow wells reported, 51.5 per cent were described as hard, 38.1 per cent as moderately hard, and 10.4 per cent as soft. Thus, almost 90 per cent of water from shallow wells was hard or moderately hard. Forty five wells (15 per cent) were reported as unsuitable for drinking.

Deep wells: Deep sources supply water which is mostly soft in Edmunds county. A total of 272 deep pumped wells were reported,with 45 (18.4 per cent) described as hard, 93 (38 per cent) as moderately hard,and 107 (43.7 per cent) as soft. Thus,82 per cent (81.6) of all deep wells reported soft or moderately soft water.

Flowing wells likewise furnish soft water. Data were furnished for 280 flowing wells, all of which were deep flowing.Of these, 15 or 5.4 per cent had hard water; 48 or 17.2 per cent moderately hard, and 216, or 77.4 per cent as soft. The largest percentage of soft water was furnished by flowing wells, indicating the pronounced tendency for soft water to occur at greater depths in Edmunds county.

A study of the total water supply of deep and shallow wells shows that 43 per cent of all wells produced soft water, 31 per cent moderately hard, and 26 per cent as hard. Approximately 74 per cent of all wells may be characterized as soft, or only moderately hard,with shallow wells showing the most pronounced tendecy toward hardness.

Only 28, or 10 per cent of flowing wells were reported as unsuitable for


ARTESIAN AREAS OF SOUTH DAKOTA.
1938
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WP 3636
FLOWING WELLS
PUMPED ARTESIAN WELLS.

drinking. Of all wells reported, 12 per cent of the total were considered unsuitable for drinking.

ADEQUACY OF SUPPLY

Supplies in Edmunds county were reported adequate for current needs, with 667 wells (78.3 per cent) reporting adequate supplies, and the remaining 185 (21 per cent) reported inadequate. However, changes in land use and farm management together with dry cycles in this or surrounding land areas could increase inadequacy.

The inadequate shallow wells reported occured throughout the 32 townships of the county and in each township were outnumbered by the number of adequate wells. There were 244 (81 per cent) shallow wells reported as adequate.

This is not true of deep pumped wells, 214 or 78.7 per cent of which were considered adequate and 58 (21.3 per cent) inadequate. Indeed, in 10 townships, the adequate wells were exceeded by the inadequate, T.122N., R.67W. reporting all deep pumped wells inadequate (7). The townships listed in the following table are in the eastern part of the county and report many inadequate deep pumped wells:

Twp.	Rge.	Adequate	Inadequate
124N	68W	3	4
124	66	0	1
123	66	0	4
123	67	0	2
123	68	1	2
122	68	0	3
122	67	0	7
121	66	0	1
121	67	0	1
121	68	0	1

Of the flowing wells reported, 209, or 74.6 per cent, were considered adequate. In two townships the number of inadequate wells exceeded the adequate. These were T.123N., R.66W. and T.124N., R.68W., the first reporting 11 inadequate to 8 adequate; the second had 7 inadequate to 5 adequate. Both of these townships are in the eastern part of the county. In T.123N., R.66W., 26 wells were reported and only 10 of these considered adequate. Township 122N.,

R 67W. reported 30 wells of which none were reported as adequate shallow or deep pumped, with 6 inadequate flowing and 16 adequate flowing. In this area, flowing wells seem to be the main source of water supply. The same is true of T.124N., R.66W. where 22 wells were reported, only one being reported as deep pumped and inadequate, with 12 flowing considered adequate.

Generally speaking, the largest percentage of inadequacy occurred in the following townships:

Twp.	Rge.	Total No. Wells	Inadequate	Adequate
124N	66W	22	10	12
123	67	32	11	21
123	66	26	16	10
122	68	35	10	25
122	67	30	14	16
122	66	23	7	16
121	70	23	8	15
121	69	27	7	20

IRRIGATION

Of the 272 deep pumped wells reported, 39 were used for irrigating approximately 11 1/8 acres.

Only 5 flowing wells were reported as used for the irrigation of approximately 1 7/8 acres.

SUPPLEMENTARY SUPPLIES

Springs are not an important source of supply, since only one is reported and located in T.124N., R.69W., classified as moderately hard, and suitable for drinking. It was used for both stock and domestic purposes.

There were 87 cisterns reported in the county, of which 75 were supplied by rain. These were distributed throughout the county with the largest number (50 per cent) found in the western area. It is this area in which shallow wells exceeded the percentage of deep wells, thus suggesting the use of cisterns to replace regular hard water supplies in these areas. Approximately 25 per cent (22) of these cisterns were used for cooking and drinking, and 80 for laundry purposes. Cisterns average about one to every 10 (9.8) wells in the county.

EDMUNDS COUNTY
Table 1.
DATA ON PUMPED WELLS FROM 0 TO 200 FEET (INCL.) IN DEPTH

LOCATION			DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY			
Twp.	Rge.	Number of Wells	Min.	Max.	Ave.	Hard	Med	Soft	Corrode Casing	Unsuitable for Drinking	Adequate	Inade-quate	Number used for Irrigation	Approximate Acres Irrigated
121	66	6	20	122	46	3	3	-	1	-	3	3	-	-
121	67	5	60	150	108	1	3	1	-	-	5	-	1	1/2
121	68	7	9	130	74	3	3	1	1	-	6	1	-	-
121	69	10	12	30	18	10	-	-	-	3	8	2	-	-
121	70	4	12	24	19	4	-	-	-	2	3	1	-	-
121	71	2	14	180	97	-	1	1	-	-	1	1	-	-
121	72	21	20	200	95	9	10	2	-	1	19	2	1	1/4
121	73	23	7	180	76	13	9	1	3	7	16	7	6	1/2
122	66	4	14	50	35	3	1	-	-	1	3	1	-	-
122	67	1	-	-	20	-	1	-	-	-	-	1	-	-
122	68	5	10	61	25	3	2	-	-	1	5	-	-	-
122	69	5	25	180	152	2	2	1	-	-	3	2	-	-
122	70	none	-	-	-	-	-	-	-	-	-	-	-	-
122	71	1	-	-	16	-	-	1	-	-	1	-	-	-
122	72	10	16	180	68	4	5	1	2	1	7	3	-	-
122	73	22	14	200	58	9	9	3	4	3	21	1	5	1/2
123	66	3	15	22	18	1	1	1	-	-	2	1	-	-
123	67	5	14	75	34	3	1	1	-	-	4	1	-	-
123	68	3	40	80	62	3	-	-	-	-	3	-	-	-
123	69	15	14	180	137	3	9	3	3	4	12	3	-	-
123	70	5	16	170	88	3	2	-	1	2	4	1	-	-
123	71	6	15	128	53	1	4	1	-	-	3	3	-	-
123	72	7	12	150	78	6	1	-	2	-	5	2	1	-
123	73	35	10	180	57	14	17	4	4	6	30	5	6	1/2
124	66	none	-	-	-	-	-	-	-	-	-	-	-	-
124	67	3	15	45	29	2	1	-	-	1	3	-	-	-
124	68	10	12	170	83	3	5	2	-	1	8	2	-	-
124	69	7	12	185	92	5	2	-	1	1	7	-	-	-
124	70	12	9	104	42	6	3	3	1	1	11	1	2	1/2
124	71	11	11	151	58	8	3	-	3	5	9	2	-	-
124	72	23	8	137	44	14	6	3	4	3	18	5	-	-
124	73	29	8	150	69	18	10	1	6	2	24	5	8	1 1/2
Total		300				154	114	31	36	45	244	56	30	4 1/4

EDMUNDS COUNTY

Table 2.

DATA ON PUMPED WELLS OVER 200 FEET IN DEPTH

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY			
Twp.	Rge.		Min.	Max.	Ave.	Hard	Med.	Soft	Corrode Casing	Unsuitable for Drinking	Adequate	Inadequate	Number used for Irrigation	Approximate Acres Irrigated
121	66	1	-	-	900	-	-	1	1	-	-	1	-	-
121	67	1	-	-	-	-	-	-	-	-	-	1	-	-
121	68	3	1100	1200	1150	-	-	1	1	1	-	3	-	-
121	69	5	240	1200	446	2	2	1	2	1	5	-	-	-
121	70	11	259	1600	946	2	4	5	2	1	7	4	1	1/4
121	71	14	268	380	320	3	6	5	1	-	13	1	4	3/8
121	72	3	275	330	300	-	1	2	4	-	3	-	-	-
121	73	6	240	308	287	-	4	2	-	1	6	-	2	1/2
122	66	6	208	1240	849	2	-	4	4	2	3	3	-	-
122	67	7	1180	1400	1219	-	-	-	-	-	-	7	-	-
122	68	3	1200	1300	1233	-	1	-	-	1	-	3	-	-
122	69	9	212	1385	579	2	4	1	1	-	8	1	-	-
122	70	24	215	1400	371	1	11	12	2	1	22	2	1	1/2
122	71	34	290	450	361	4	13	17	3	2	33	1	4	1
122	72	6	280	360	322	2	3	1	1	2	6	-	-	-
122	73	1	-	-	400	-	1	-	-	-	1	-	-	-
123	66	4	1160	1280	1202	-	-	-	-	-	-	4	-	-
123	67	2	1100	1200	1150	-	-	-	-	-	-	2	-	-
123	68	3	340	1300	980	1	1	-	1	-	1	2	-	-
123	69	15	210	1600	496	6	5	4	3	5	10	5	1	1/4
123	70	23	220	1615	499	5	8	9	2	2	20	3	3	2 1/2
123	71	22	315	1496	452	7	8	7	4	3	20	2	6	2 1/8
123	72	16	240	500	363	2	4	9	3	1	15	1	2	-
123	73	None	-	-	-	-	-	-	-	-	-	-	-	-
124	66	1	-	-	1170	-	-	-	-	-	-	1	-	-
124	67	None	-	-	-	-	-	-	-	-	-	-	-	-
124	68	7	1180	1480	1313	-	1	4	2	2	3	4	-	-
124	69	4	300	1300	777	1	1	1	1	1	3	1	-	-
124	70	11	270	425	363	-	7	4	2	3	10	1	4	7/8
124	71	19	240	470	375	2	6	11	3	1	16	3	8	2 3/4
124	72	6	285	426	356	2	1	3	-	1	4	2	-	-
124	73	5	290	400	341	1	1	3	1	-	5	-	3	-
Total		272				45	93	107	44	31	214	58	39	11 1/8

EDMUNDS COUNTY

Table 3.

DATA ON FLOWING WELLS

LOCATION		Number of Wells	DEPTH OF WELLS			CHARACTER OF WATER					ADEQUACY OF SUPPLY					
Twp.	Rge		Min.	Max.	Ave.	Hard	Med.	Soft	Corrode Casing	Unsuitable for Drinking	Adequate	Inade-quate	Number used for Irrigation	Approx. Acres Irrigated	Ave. Gallon Per Min	Number Con-trolled
121	66	23	900	1650	1130	1	11	11	5	1	21	2	-	-	4.33	6
121	67	22	1045	1407	1181	2	6	14	6	2	19	3	-	-	10.25	2
121	68	20	900	1358	1175	-	1	19	5	4	18	2	-	-	3.58	1
121	69	12	1150	1700	1346	2	1	9	2	3	7	5	-	-	6.25	-
121	70	8	800	1400	1300	-	1	7	4	2	5	3	-	-	4.30	1
122	66	13	1000	1480	1207	1	2	9	5	-	10	3	-	-	3.0	1
122	67	22	1050	1360	1199	1	5	16	10	1	16	6	1	1/4	2.44	1
122	68	27	900	1586	1209	-	5	22	6	3	20	7	2	1 1/8	2.93	1
122	69	5	1200	1400	1273	-	-	5	1	1	4	1	-	-	1.50	-
122	70	1	-	-	1300	1	-	-	-	-	1	-	-	-	6.0	-
123	66	19	1020	1400	1259	5	4	10	4	4	8	11	-	-	7.33	3
123	67	25	1100	1480	1215	-	3	22	7	2	17	8	-	-	3.81	-
123	68	25	1158	1600	1252	1	1	23	5	-	22	3	-	-	6.5	2
123	69	1	-	-	1200	-	-	1	-	-	1	-	-	-	7.0	-
123	71	1	-	-	1500	-	-	1	-	-	1	-	-	-	.5	-
123	72	1	-	-	1600	-	1	-	-	1	1	-	-	-	-	-
124	66	21	1060	1350	1247	-	5	16	5	1	12	9	-	-	2.66	4
124	67	21	1100	1300	1223	-	2	19	2	1	20	1	2	1/2	15.28	3
124	68	12	1200	1350	1283	-	-	12	4	1	5	7	-	-	6.5	-
124	69	1	-	-	1400	1	-	-	-	1	1	-	-	-	7.0	-
Total		280				15	48	216	71	28	209	71	5	1 7/8	-	25

Note: No wells reported from the following townships and ranges for this group: T.121N.,R.71,72,73W - T.122N.,R.71, 72,73W - T.123N.,R.70,73W - T.124N.,R.70,71,72,73W.

EDMUNDS COUNTY WELL NOTES

The following are pertinent remarks quoted from questionnaires returned by farmers and are included opinions of the water situation as expressed by the individual farmers and must be so applied.

T.121N., R.68W. NE¼ Sec. 14	(artesian) "Water is bitter and cannot be used."
T.121N., R.68W. SW¼ Sec. 29	1320 feet: (artesian) "Water is salt. Not satisfactory for drinking."
T.121N., R.70W. NE¼ Sec. 13	1600 feet: (artesian) "Water too salty for people to drink. It is alright for stock."
T.121N., R.71W. SW¼ Sec. 20	303 feet: "This well can be pumped continuously without lowering water
T.121N., R.73W. NE¼ Sec. 11	142 feet: "Difficulty in locating water. A drilled well was constructed which kept plugging up with fine sand. This difficulty was overcome by making a two foot hole."
T.121N., R.73W. SW¼ Sec. 20	60 feet: "Difficulty in construction account of rocks."
T.122N., R.72W. NW¼ Sec. 14	326 feet: "Water is clear when pumped. But if stands over night in pail it turns yellow. Looks like beer but tastes tuff."
T.122N., R.72W. NW¼ Sec. 19	180 feet: "If well were deeper there would be sufficient water but it would be salt water."
T.123N., R.70W. SE¼ Sec. 4	104 feet: "Quick sand in water. If pumped long water is so dirty and does not settle and cannot only for stock. Need drinking water badly."
T.123N., R.72W. NW¼ Sec. 10	1600 feet: "Much difficulty in getting water. Drilled five times and unsuccessful. Then drilled this well and used four years and then stock would not drink it any more. It has an oily odor. Since that time another ordinary well was drilled; this is 345 ft. deep."
124N., R.73W. ¼ Sec. 18	94 feet: "When windmill pumps fast for 1/2 day, water gets so black it is not fit to drink."

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