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DEPARTMENT OF MINES

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BUREAU OF ECONOMIC GEOLOGY

GEOLOGICAL SURVEY

PRELIMINARY REPORT

GROUND-WATER RESOURCES OF THE RURAL MUNICIPALITY OF CANA No. 214 SASKATCHEWAN

BY

B. R. MacKay, H. N. Hainstock & P. D. Bugg

Water Supply Paper No. 159

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GROUND WATER RESOURCES OF THE RURAL MUNICIPALITY OF CANA, NO. 214, SASKATCHEWAN

INTRODUCTION

Lack of rainfall during the years 1930 to 1934 over a large part of the Prairie Provinces brought about an acute shortage both in the larger supplies of surface water used for irrigation and the smaller supplies of ground water required for domestic purposes and for stock. In an effort to relieve the serious situation the Geological Survey began an extensive study of the problem from the standpoint of domestic uses and stock raising. During the field season of 1935 an area of 80,000 square miles, comprising all that part of Saskatchewan south of the north boundary of township 32, was systematically examined, records of approximately 60,000 wells were obtained, and 720 samples of water were collected for analyses. The facts obtained have been classified and the information pertaining to any well is readily accessible. The examination of so large an area and the interpretation of the data collected were possible because the bedrock geology and the Pleistocene deposits had been studied previously by McLearn, Warren, Rose, Stansfield, Wickenden, Russell, and others of the Geological Survey. The Department of Natural Resources of Saskatchewan and local well drillers assisted considerably in supplying several hundred well records. The base maps used were supplied by the Topographical Surveys Branch of the Department of the Interior.

Publication of Results

The essential information pertaining to the ground water conditions is being published in reports, one being issued for each municipality. Copies of these reports are being sent to the secretary treasurers of the municipalities and to certain Provincial and Federal Departments, where they can be consulted by residents of the municipalities or by other persons, or they may be obtained by writing direct to the Director, Bureau of Economic Geology, Department of Mines, Ottawa. Should anyone require more detailed information than that contained in the reports such additional information as the Geological Survey possesses can be obtained on application to the director. In making such request the applicant should indicate the exact location of the area by giving the quarter section, township, range, and meridian concerning which further information is desired.

The reports are written principally for farm residents, municipal bodies, and well drillers who are either planning to sink new wells or to deepen existing wells. Technical terms used in the reports are defined in the glossary.

How to Use the Report

Anyone desiring information about ground water in any particular locality should read first the part dealing with the municipality as a whole in order to understand more fully the part of the report that deals with the place in which he is interested. At the same time he should study the two figures accompanying the report. Figure 1 shows the surface and bedrock geology as related to the ground water supply, and Figure 2 shows the relief and the location and type of water wells. Relief is shown by lines of equal elevation called "contours". The elevation above sea-level

is given on some or all of the contour lines on the figure.

If one intends to sink a well and wishes to find the approximate depth to a water-bearing horizon, he must learn: (1) the elevation of the site, and (2) the probable elevation of the water-bearing bed. The elevation of the well site is obtained by marking its position on the map, Figure 2, and estimating its elevation with respect to the two contour lines between which it lies and whose elevations are give on the figure. Where contour lines are not shown on the figure, the elevations of adjacent wells as indicated in the Table of Well Records accompanying each report can be used. The approximate elevation of the water-bearing horizon at the well-site can be obtained from the Table of Well Records by noting the elevation of the water-bearing horizon in surrounding wells and by estimating from these known elevations its elevation at the well-site.[1] If the water-bearing horizon is in bedrock the depth to water can be estimated fairly accurately in this way. If the water-bearing horizon is in unconsolidated deposits such as gravel, sand, clay, or glacial debris, however, the estimated elevation is less reliable, because the water-bearing horizon may be inclined, or may be in lenses or in sand beds which may lie at various horizons and may be of small lateral extent. In calculating the depth to water, care should be taken that the water-bearing horizons selected from the Table of Well Records be all in the same geological horizon either in the glacial drift or in the bedrock. From the data in the Table

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[1] If the well-site is near the edge of the municipality, the map and report dealing with the adjoining municipality should be consulted in order to obtain the needed information about nearby wells.

of Well Records it is also possible to form some idea of the quality and quantity of the water likely to be found in the proposed well.

GLOSSARY OF TERMS USED

Alkaline. The term "alkaline" has been applied rather loosely to some ground waters. In the Prairie Provinces a water is usually described as "alkaline" when it contains a large amount of salts, chiefly sodium sulphate and magnesium sulphate in solution. Water that tastes strongly of common salt is described as "salty". Many "alkaline" waters may be used for stock. Most of the so-called "alkaline" waters are more correctly termed "sulphate waters".

Alluvium. Deposits of earth, clay, silt, sand, gravel, and other material on the flood-plains of modern streams and in lake beds.

Aquifer or Water-bearing Horizon. A water-bearing bed, lens, or pocket in unconsolidated deposits or in bedrock.

Buried pre-Glacial Stream Channels. A channel carved into the bedrock by a stream before the advance of the continental ice-sheet, and subsequently either partly or wholly filled in by sands, gravels, and boulder clay deposited by the ice-sheet or later agencies.

Bedrock. Bedrock, as here used, refers to partly or wholly consolidated deposits of gravel, sand, silt, clay, and marl that are older than the glacial drift.

Coal Seam. The same as a coal bed. A deposit of carbonaceous material formed from the remains of plants by partial decomposition and burial.

Contour. A line on a map joining points that have the same elevation above sea-level.

Continental Ice-sheet. The great ice-sheet that covered most of the surface of Canada many thousands of years ago.

Escarpment. A cliff or a relatively steep slope separating level or gently sloping areas.

Flood-plain. A flat part in a river valley ordinarily above water but covered by water when the river is in flood.

Glacial Drift. The loose, unconsolidated surface deposits of sand, gravel, and clay, or a mixture of these, that were deposited by the continental ice-sheet. Clay containing boulders forms part of the drift and is referred to as glacial till or boulder clay. The glacial drift occurs in several forms:

(1) Ground Moraine. A boulder clay or till plain (includes areas where the glacial drift is very thin and the surface uneven).

(2) Terminal Moraine or Moraine. A hilly tract of country formed by glacial drift that was laid down at the margin of the continental ice-sheet during its retreat. The surface is characterized by irregular hills and undrained basins.

(3) Glacial Outwash. Sand and gravel plains or deltas formed by streams that issued from the continental ice-sheet.

(4) Glacial Lake Deposits. Sand and clay plains formed in glacial lakes during the retreat of the ice-sheet.

Ground Water. Sub-surface water, or water that occurs below the surface of the land.

Hydrostatic Pressure. The pressure that causes water in a well to rise above the point at which it is struck.

Impervious or Impermeable. Beds, such as fine clays or shale, are considered to be impervious or impermeable when they do not permit of the perceptible passage or movement of the ground water.

Pervious or Permeable. Beds are pervious when they permit of the perceptible passage or movement of ground water, as for example porous sands, gravel, and sandstone.

Pre-Glacial Land Surface. The surface of the land before it was covered by the continental ice-sheet.

Recent Deposits. Deposits that have been laid down by the agencies of water and wind since the disappearance of the continental ice-sheet.

Unconsolidated Deposits. The mantle or covering of alluvium and glacial drift consisting of loose sand, gravel, clay, and boulders that overlie the bedrock.

Water Table. The upper limit of the part of the ground wholly saturated with water. This may be very near the surface or many feet below it.

Wells. Holes sunk into the earth so as to reach a supply of water. When no water is obtained they are referred to as dry holes. Wells in which water is encountered are of three classes.

(1) Wells in which the water is under sufficient pressure to flow above the surface of the ground. These are called Flowing Artesian Wells.

(2) Wells in which the water is under pressure but does not rise to the surface. These wells are called Non-Flowing Artesian Wells.

(3) Wells in which the water does not rise above the water table. These wells are called Non-Artesian Wells.

NAMES AND DESCRIPTIONS OF GEOLOGICAL FORMATIONS, REFERRED TO IN THESE REPORTS

Wood Mountain Formation. The name given to a series of gravel and sand beds which have a maximum thickness of 50 feet, and which occur as isolated patches on the higher parts of Wood mountain. This is the youngest bedrock formation and, where present, overlies the Ravenscrag formation.

Cypress Hills Formation. The name given to a series of conglomerates and sand beds which occur in the southwest corner of Saskatchewan, and rest upon the Ravenscrag or older formations. The formation is 30 to 125 feet thick.

Ravenscrag Formation. The name given to a thick series of light-coloured sandstones and shales containing one or more thick lignite coal seams. This formation is 500 to 1,000 feet thick, and covers a large part of southern Saskatchewan. The principal coal deposits of the province occur in this formation.

Whitemud Formation. The name given to a series of white, grey, and buff coloured clays and sands. The formation is 10 to 75 feet thick. At its base this formation grades in places into coarse, limy sand beds having a maximum thickness of 40 feet.

Eastend Formation. The name given to a series of fine-grained sands and silts. It has been recognized at various localities over the southern part of the province, from the Alberta boundary east to the escarpment of Missouri coteau. The thickness of the formation seldom exceeds 40 feet.

Bearpaw Formation. The Bearpaw consists mostly of incoherent dark grey to dark brownish grey, partly bentonitic shales, weathering light grey, or, in places where much iron

is present, buff. Beds of sand occur in places in the lower part of the formation. It forms the uppermost bedrock formation over much of western and southwestern Saskatchewan and has a maximum thickness of 700 feet or somewhat more.

Belly River Formation. The Belly River consists mostly of non-marine sand, shale, and coal, and underlies the Bearpaw in the western part of the area. It passes eastward and northeastward into marine shale. The principal area of transition is in the western half of the area where the Belly River is mostly thinner than it is to the west and includes marine zones. In the southwestern corner of the area it has a thickness of several hundred feet.

Marine Shale Series. This series of beds consists of dark grey to dark brownish grey, plastic shales, and underlies the central and northeastern parts of Saskatchewan. It includes beds equivalent to the Bearpaw, Belly River, and older formations that underlie the western part of the area.

WATER-BEARING HORIZONS OF THE MUNICIPALITY

The rural municipality of Cana, No. 214, has an area of 324 square miles, and consists of nine full townships described as tps. 22, 23, and 24, ranges 4, 5, and 6, W. 2nd mer. The town of Melville, on the main line of the Canadian National railway lies 1 mile east of the western border and 5 miles north of the southern border of the municipality. This town is 78 miles east and 32 miles north of Regina.

Leech and Crescent lakes, situated in the northeastern corner of the municipality, are at an elevation of 1,679 feet above sea-level. From these lakes the elevation rises gradually towards the west to attain a maximum elevation of 1,880 feet. Crescent creek, a permanent stream, flows in an easterly direction through the central part of the municipality and empties into Crescent lake. Several intermittent creeks, occupying wide, shallow valleys, flow into Crescent creek. Kaposvar creek flows intermittently through the southwestern corner of the area.

The glacial drift extends to a depth of at least 300 feet. The western two-thirds of the municipality are largely overlain by moraine. Deposits of boulder clay or glacial till cover narrow areas along the lower part of Kaposvar creek and along Crescent creek, and also mantle fairly large areas to the south and to the west of Leech and Crescent lakes. The lakes mark the site of a former glacial lake basin, and glacial lake clays and sands mantle the area in the immediate vicinity. These deposits vary from less than 1 foot to at least 26 feet in thickness. Deposits of glacial outwash sands and gravels cover a fairly large area in the vicinity of Melville, and smaller areas scattered throughout the municipality. The deposits in the vicinity of Melville cover an area of approximately 12 square miles and they are from 5 to 20 feet thick. The deposits of glacial till and moraine generally consist of 1 to 4 feet of sandy top soil; 10 to 30 feet of yellow boulder clay

containing numerous scattered pockets of sand and gravel; a discontinuous bed of sand and gravel that varies from a few inches to several feet in thickness; and blue boulder clay containing thin, discontinuous beds of sand and gravel at various elevations. The blue boulder clay is known to extend, in places, to a depth of 300 feet or to an elevation of 1,550 feet above sea-level, and it probably extends to the bedrock.

Water-bearing Horizons in the Unconsolidated Deposits

Wells sunk into the glacial lake clays yield little or no water, but wells sunk into the deposits of glacial lake sands yield an abundant supply of slightly mineralized water. These wells are from 6 to 26 feet deep and the best supply is obtained in the area lying to the west of Leech and Crescent lakes. Much of the water is probably due to seepage from the lakes as the water-level in the wells is at the same elevation as Leech lake. The water is moderately hard and usable for all farming purposes.

An abundant supply of soft water is also obtained from wells sunk into the extensive deposit of glacial outwash gravels in the vicinity of Melville. Smaller deposits of these gravels in other parts of the municipality yield very small supplies of water. The residents of Melville derive their water supply from a 20-foot well sunk into the glacial outwash deposits. This well is 8 feet in diameter, and collecting galleries have been made from it to increase the water supply. The capacity of the well is estimated at 200,000 gallons a day. The water is soft and is usable for all domestic purposes, and for irrigation.

The main water-bearing horizon of the municipality occurs in the upper 10 to 30 feet of the glacial till and moraine. This water-bearing horizon is formed by the scattered pockets of sand and gravel occurring in the yellow clay and by the discontinuous beds of sand and gravel lying between the yellow and blue boulder clays. In some parts of the municipality this water-bearing horizon is continuous.

Some of the wells tapping this horizon yield intermittent supplies of water, but few dry holes have been sunk. In some localities from 2 to 5 of these shallow wells are required in order to obtain a sufficient supply of water. Small dams or dugouts are also used in some sections. Other wells, however, yield a supply sufficient for all present needs, and a few wells yield adequate supplies for 40 to 80 head of stock. When the supply is abundant the water is usually moderately soft, but the water from the wells that yield small supplies is more highly mineralized and in some instances it is unsuitable for drinking.

In the area outlined by the "B" boundary lines on the accompanying map, a number of wells obtain fairly abundant supplies of water from sand and gravel aquifers lying within the blue boulder clay at depths ranging from 45 to 165 feet. The water-bearing horizon is not continuous but it probably occurs elsewhere in the municipality. The water is generally very hard and "alkaline", but it can be used for domestic purposes. It has a laxative effect on persons not accustomed to the use of highly mineralized water. The hydrostatic pressure varies with individual wells, but in the shallower wells the pressure is generally sufficient to cause the water to rise to points 30 to 50 feet below the surface. In the deeper wells the pressure is sufficient to cause the water to rise to points 25 to 35 feet below the surface. The supply available from these aquifers is not large and many of the deeper wells can be easily pumped dry and it takes a considerable time for the wells to refill.

Within the area bounded on the east by the "A" boundary line on the accompanying map, several wells tap aquifers at depths ranging from 40 to 105 feet. The water derived from these wells is similar to that obtained from wells located in the area outlined by the "B" boundary lines. A well on the SE. $\frac{1}{4}$, sec. 29, tp. 22, range 6, is used as an auxiliary supply for the town of Melville. This well is 105 feet deep and has an estimated yield of 75,000 gallons a

day. A second 105-foot well on the same quarter section used by the local creamery yields 2,200 gallons an hour.

Several holes drilled to depths of 170 to 300 feet in some sections, have tapped small supplies of water in sand or gravel beds. The water is very highly mineralized and is not generally used for domestic purposes. The supply of water from the individual wells is sufficient only for a few head of stock.

It is not advisable to drill to depths for water over the greater part of this municipality as, although water-bearing horizons have been located at depth, the quality and quantity of water obtained do not appear to warrant the expense of drilling. In the moraine-covered areas there are many sloughs that could be deepened and converted into reservoirs for collecting run-off water. In some areas dams could be constructed across some of the ravines and a supply of water retained for stock purposes. The Canadian National Railways Company has constructed a dam across Crescent creek in sec. 6, tp. 23, range 6. Approximately 560,000,000 gallons of water are stored in this reservoir.

Water-bearing Horizons in the Bedrock

The Marine Shale series probably underlies the glacial drift throughout the municipality. The bedrock lies at a considerable depth as a well on the NW. $\frac{1}{4}$, sec. 28, tp. 23, range 6, did not encounter it even at a depth of 300 feet, or an elevation of 1,550 feet above sea-level. If in drilling these beds are encountered it is advisable to discontinue further work as they are either non-water-bearing or contain water that is too highly mineralized to be of use.

GROUND WATER CONDITIONS BY TOWNSHIPS

Township 22, Range 4

The general drainage in the township is toward the north, the elevation above sea-level decreasing from 1,750 to 1,700 feet. The southwestern part of the township and part of sections 35 and 36 are covered by moraine but the remainder of the area is mantled by boulder clay or glacial till. The ground surface in the moraine-covered area is quite rough and is characterized by knolls and undrained depressions. The deposits of moraine and boulder clay generally consist of a thin layer of sandy top soil, 2 to 30 feet of yellow boulder clay containing scattered pockets of sand and gravel, a discontinuous bed of sand or gravel varying in thickness from a few inches to 10 or 12 feet, and blue boulder clay that extends to a depth of at least 100 feet. The blue boulder clay contains isolated deposits of sand or gravel at depths of 65 to 100 feet below the surface.

In the southwestern part of the township most of the water supply is derived from wells, 10 to 30 feet deep, that tap either isolated pockets of sand and gravel in the yellow clay, or beds of sand and gravel underlying the yellow clay. The supply of water from an individual well is sufficient for only a few head of stock, but each farmer generally has from two to five wells - the combined yield being sufficient for 20 to 40 head of stock. No dry holes have been reported in this area; so that the deposits of water-bearing sands and gravel are fairly widespread. The water is moderately hard and is usable for all farm purposes.

A second water-bearing horizon, which may extend throughout the township, has been tapped by a number of wells in the east-central and northeastern sections of the township. These wells tap sand and gravel aquifers in the blue boulder clay at depths of 40 to 70 feet. Due to the proximity of the blue clay the water is very hard,

"alkaline", and contains a fairly large amount of iron. Water from several of the wells is not usable for domestic purposes and the water from others is being used although it is very unsatisfactory. The hydrostatic pressure is sufficient to cause the water to rise to points 50 to 60 feet below the surface. An individual well usually yields sufficient water for the average local needs, but the supply is not sufficient for a large herd of stock.

Five wells located in sections 2, 11, 14, and 15, tap a fine, grey sand at depths ranging from 80 to 100 feet or an average elevation of 1,650 feet above sea-level. The water from the well located on the SW. $\frac{1}{4}$, section 14, is not usable for any purpose; that from the well on the SW. $\frac{1}{4}$, section 11, is not usable for domestic purposes, and the water from the other wells is being used, although undesirable as drinking water owing to its laxative effects. The hydrostatic pressure is sufficient to cause the water to rise to a point 6 feet below the surface in the well in the NE. $\frac{1}{4}$, section 14, but in the other wells the water rises to points between 40 and 60 feet below the surface. The well on the SW. $\frac{1}{4}$, section 11, yields an abundant supply of water, but the other wells yield supplies that are barely sufficient for local needs. It is possible that this water-bearing horizon extends throughout the township, but the very poor quality of water obtained does not appear to warrant the expense of boring or drilling to this aquifer.

The supply of water in this township is adequate for the present needs, but the water is of poor quality. No information is available regarding the water-bearing properties of the lower part of the drift, as no well has been sunk to a greater depth than 100 feet. Surface water can be collected by dams or dugouts and could be used to supplement the supply obtained from wells.

Township 22, Range 5

The elevation of the surface of this township rises from 1,750 feet in the eastern part to 1,800 feet above sea-level in the western part. The township is mantled by moraine with many boulder-strewn knolls and undrained depressions. A small deposit of glacial outwash sand and gravel is included in the moraine in the southern parts of section 2 and 3.

The glacial drift in the morainic area generally consists of a thin layer of sandy top soil, 10 to 30 feet of yellow clay containing scattered pockets of sand and gravel, a discontinuous bed of sand and gravel, and blue boulder clay that extends to a depth of at least 213 feet.

The main supply of water in this township is derived from wells that tap water-bearing sands and gravels in the upper 30 feet of the glacial drift. Few dry holes have been sunk and the aquifers, whether they are formed by sand or gravel pockets in the yellow clay, or beds of sand and gravel between the yellow and blue clays, are fairly continuous. Many of the wells yield intermittent supplies of water and two or more wells are often required to obtain a sufficient supply of water. A few wells yield sufficient water for local needs, but the supply derived from this uppermost water-bearing horizon is not abundant. Two wells, 8 and 10 feet, dug in the glacial outwash gravels in the S. $\frac{1}{2}$, section 3, each yield a supply of water sufficient for at least 100 head of stock. Wells located on the SE. $\frac{1}{4}$, section 19, and SW. $\frac{1}{4}$, section 20, tap beds of sand and gravel at depths of 17 and 30 feet, respectively, and also yield an abundant supply of usable water.

A number of holes have been dug or bored to depths of 35 to 65 feet, and a few have tapped thin beds of sand in the blue clay, which yield small supplies of highly mineralized water. The others were either dry holes or obtained intermittent supplies

of seepage water. The water is very hard, "alkaline", and is not suitable for domestic use, but it is being used, as water of better quality is not obtainable. In some localities it is used only for stock, and water for domestic needs is hauled from neighbouring shallow wells.

Holes from 90 to 213 feet deep have been sunk in several sections of the township. Two of these, located on the SE.$\frac{1}{4}$, section 2, and NW.$\frac{1}{4}$, section 24, tapped fine, grey, water-bearing sands at depths of 213 and 204 feet, respectively, or at an elevation of 1,547 feet above sea-level. An abundance of water was located, but that from the first well is unfit for any use and the second well became plugged with fine sand. The water rose to points 70 and 160 feet below the surface, and in the 204-foot well, before it became plugged, the water-level could not be lowered by continuous pumping. This water-bearing horizon may occur in other sections of the township, but it is not advisable to drill to this depth as the water is of very poor quality, and difficulty is experienced in keeping the well free from sand.

If water for domestic purposes can be obtained from shallow wells the best method of increasing the supply of water for stock is by the construction of dams or the excavation of dugouts. In several sections sloughs could be deepened.

Township 22, Range 6

The average elevation of the township is 1,800 feet above sea-level. Kaposvar creek occupies a shallow valley in the southwestern corner of the township and Crescent creek, a permanent stream, occurs in sections 31 and 32. The southwestern corner and the eastern 2$\frac{1}{2}$ miles of the township are mantled by moraine, the surface being hilly and characterized by many undrained depressions.

An area, approximately $1\frac{1}{2}$ miles wide and 3 miles long, occurring along the lower part of Kaposvar creek is covered by boulder clay. A large deposit of glacial outwash sands and gravels occurs in the northwestern and north-central part of the township. These sands and gravels are from 2 to 20 feet thick and occur at or near the surface. In some localities the sand has been blown into small dunes. The glacial drift in these areas of boulder clay and moraine generally consists of 10 to 30 feet of yellow clay containing scattered pockets of sand and gravel, discontinuous beds of sand and gravel, and blue clay containing scattered deposits of sand and gravel, and extending to a depth of at least 185 feet.

The main supply of water is derived from the glacial outwash sands and gravels from the pockets of sand and gravel in the yellow clay, and from the beds of sand and gravel immediately underlying the yellow clay. Most of the water from these deposits is moderately hard, but is usable for all domestic purposes and is suitable for irrigation. An individual well will yield sufficient water for 20 to 80 head of stock.

The town of Melville derives its water supply from a well located in the NE.$\frac{1}{4}$, section 31. The well is 20 feet deep, 8 feet in diameter, and is sunk into the glacial outwash sands and gravels. Collecting galleries extend out from the well to obtain the maximum amount of seepage and the capacity of the well is estimated at 200,000 gallons a day. Many test holes have been sunk into the glacial outwash gravels in an area of about 4 square miles in the vicinity of the well in an effort to determine the approximate amount of water available. A well 185 feet deep, on the SE.$\frac{1}{4}$, section 29, drilled in 1912 to tap a gravel bed within the blue boulder clay supplied the town of Melville with water for a number of years. The yield was approximately 20,000 gallons a day, but the well is not used at the present time as larger quantities of water of a better quality are obtained from the 20-foot well.

A third well on the SE. $\frac{1}{4}$, section 29, 105 feet deep was sunk by the town of Melville. The aquifer is also a bed of gravel in the impervious blue boulder clay. The water is quite hard but of good quality and is usable for all domestic purposes. It is under sufficient hydrostatic pressure to rise to a point 14 feet below the surface and the well will yield approximately 3,000 gallons an hour. Another well 105 feet deep sunk on the same quarter section and used by the local creamery yields 2,200 gallons an hour.

No shortage of water is met with in this township and the main supply is derived from the upper part of the glacial drift. The deep wells in the SE. $\frac{1}{4}$, section 29, indicate that water-bearing horizons occur at depths of 105 and 185 feet, but their areal extent is not known, as it has not been necessary to drill for larger supplies of water in any section of the township.

Township 23, Range 4

The supply of water in this township is obtained from Crescent lake, Crescent and several intermittent creeks, sloughs, and wells. Crescent creek is a permanent stream, and Crescent lake contains water even during prolonged periods of drought.

The general drainage of the township is toward Crescent lake which has an elevation of 1,679 feet above sea-level. The highest elevation of 1,730 feet is in the southwestern sections, but the average elevation of the township is 1,700 feet above sea-level. Glacial lake clays mantle parts of sections 25, 35, and 36, and this area is marshy and uncultivated. Glacial lake sands cover an area bordering Crescent lake and extend into part of sections 14, 23, 24, 25, and 26. The deposit of lake sand varies from a few inches to 7 feet in thickness. Only one well, 6 feet deep on the SW. $\frac{1}{4}$, section 23, is obtaining water from the glacial lake sands. The water is soft and of good quality, but the supply is not abundant.

Small areas in the southwestern and east-central parts of the township and in parts of sections 1 and 2, are covered by moraine. The remainder of the township is overlain by boulder clay or glacial till. The principal supply of water is derived from wells 6 to 30 feet deep sunk into the glacial till and moraine. The wells tap pockets of sand and gravel in the yellow clay, or discontinuous beds of sand and gravel underlying the yellow clay. Two wells on the SW.$\frac{1}{4}$, section 13, and the SW.$\frac{1}{4}$, section 17, yield an abundant supply of water, but these wells derive their supply by seepage from the creeks near which they are dug. Many of the wells that tap these pockets of sand and gravel in the upper part of the drift yield barely sufficient water for local needs and in some sections it is necessary to use two or more wells in order to obtain sufficient water for stock and household purposes. The water is moderately hard, but is suitable for all household purposes. Extreme care must be taken to see that shallow wells such as these do not become polluted by surface water containing sewage and it is advisable to have the water frequently tested for bacteria content.

A second water-bearing horizon, formed by sand and gravel deposits in the blue boulder clay, is encountered by a number of wells in the northwestern part of the township at depths of 40 to 65 feet. The horizon is not continuous as holes 65 to 120 feet deep have been dug without encountering beds of water-bearing sand or gravel. A well on the NW.$\frac{1}{4}$, section 30, and one on the NE.$\frac{1}{4}$, section 32, yield abundant supplies of water, but the other wells tapping this horizon yield much smaller and often inadequate supplies. The water is very highly mineralized and is not used for drinking if better water can be obtained.

Several attempts have been made to locate water at depths ranging from 90 to 120 feet. Four of the wells, in sections 1, 3, 6, and 12, encounter thin layers of sand and gravel in the blue clay,

but other holes in sections 5, 14, 21 and 29 were dry. The water-bearing deposits at these depths are, therefore, not continuous. The water that is obtained is very hard, and generally "alkaline", but it is suitable for domestic purposes. The supply is sufficient for local needs and the hydrostatic pressure is sufficient to cause the water to rise to points 30 to 50 feet below the surface. Although some wells have encountered fairly good supplies of water at depth, it appears advisable to construct dams or excavate dugouts rather than to drill deep wells, as the slightly mineralized surface water is more suitable for stock than the highly mineralized water from the deep wells. In some parts of the township it is necessary to haul water during part of the year, but in general the water supply of the township is sufficient for all local needs.

Township 23, Range 5

Crescent creek flows in an easterly direction through the central part of this township. The elevation decreases from 1,800 feet in the southwest to 1,700 feet in the east. Boulder clay or glacial till mantles an area extending along the creek, and in sections 6 and 7 the clay is overlain by glacial outwash sands and gravels. The remainder of the township is covered by moraine, the ground surface of which is rough and contains many undrained depressions.

The main water-bearing horizon is located in the upper 30 feet of glacial drift. Wells from 8 to 30 feet deep have encountered pockets of sand and gravel in the yellow clay, or beds of sand and gravel lying between the yellow and blue boulder clays. None of these wells yields an abundant supply of water, but a few yield adequate supplies for local needs. They are readily affected by drought conditions. Usually a farmer requires two or more of these shallow wells in order to obtain adequate supplies of water. At least eighty of these shallow wells have been sunk in this township.

Many residents use water from a shallow well for household purposes and water their stock from a slough, dugout, or from Crescent creek. The water from practically all the wells that tap this water-bearing horizon is usable for domestic purposes. It is moderately hard, but is often locally termed soft in comparison with the water from deep wells.

Several wells ranging in depth from 35 to 75 feet have encountered thin layers of sand or gravel within the impervious, blue clay. Small supplies of very highly mineralized water, which is under some hydrostatic pressure, is obtained. Although the water seeps into the wells slowly it will rise to points 24 to 50 feet below the surface. The water is very hard "alkaline", and cannot be used for domestic purposes as it is laxative. This water-bearing horizon is principally encountered in the northeastern sections of the township, but it may extend into other sections. It is not continuous, however, as twenty or more dry holes, 47 to 107 feet deep, have been sunk in sections 12 and 13.

A well in the SW.$\frac{1}{4}$, section 2, encountered a bed of water-bearing sand at a depth of 170 feet or at an elevation of 1,580 feet above sea-level. The water rises to a point 30 feet below the surface and is used for all farm purposes. The well yields sufficient water for all local needs. It is possible that similar water-bearing deposits may occur at this depth in other parts of the township, but the horizons may be of very local distribution.

The supply of water in this township is usually sufficient for the present needs, but it would not be sufficient for larger herds of stock. Reservoirs to retain and store surface water are excellent means of increasing the supply of water for stock. There are many suitable locations for the construction of dams and the excavation of deep dugouts.

Township 23, Range 6

Parts of sections 1, 2, 3, 4, and 12 of this township are mantled by glacial outwash sands and gravels. A narrow area paralleling Crescent creek on the north is covered by boulder clay or till and the remainder of the area is overlain by moraine. The moraine-covered area is quite rough and undrained depressions are common.

Crescent creek, a permanent stream, flows through the southern sections of the township and is joined from the north by an intermittent creek in section 2. The creeks, sloughs, dams, and dugouts are used by many residents of this township. The Canadian National Railways Company constructed a dam across Crescent creek in the SW.$\frac{1}{4}$, section 6, and the quantity of water held back by this dam is estimated to be 56,000,000 gallons. It is used for steam locomotives.

The uppermost water-bearing horizon occurs in the upper 30 feet of moraine and glacial till, and the upper 20 feet of glacial outwash sands and gravels. In the glacial till and moraine-covered areas water is derived from scattered pockets of sand and gravel in the yellow clay and from a discontinuous layer of sand and gravel located between the oxidized yellow clay and the blue boulder clay. Water from the glacial outwash deposits and from the larger pockets of sand and gravel is soft or moderately hard. The quantity from the individual wells varies, but there is generally sufficient water to supply 30 to 60 head of stock. The water is suitable for household purposes. Wells that tap sand and gravel pockets of small areal extent or the beds of sand and gravel between the yellow and blue clays, are either intermittent in their yield or furnish a supply of water sufficient for only a few head of stock. The water from these wells is more highly mineralized than that from wells tapping large water-bearing deposits, but it is usable for all domestic purposes. A number of these wells are often used to obtain sufficient water for local needs.

A number of wells bored or drilled to depths ranging from 40 to 300 feet obtain variable amounts of water, but no continuous water-bearing horizons were encountered. Two wells on the SE. $\frac{1}{4}$, section 19, and the SE. $\frac{1}{4}$, section 30, encounter sand aquifers at depths of 60 and 40 feet, respectively. The water is very highly mineralized and is not used for domestic purposes when water of better quality is obtainable. The supply from one of the wells is insufficient for local needs and that from the other is sufficient only for 20 head of stock. Deeper wells nearby indicate the small areal extent of these sand beds.

Six wells, 80 to 150 feet deep, tap sand aquifers within the blue boulder clay. The water is very hard, "alkaline", and has a high iron content. Water from most of these wells is usable for household purposes, but it is very unsatisfactory. The water is under pressure, rising to points 30 to 50 feet below the surface. The 150-foot well on the SW. $\frac{1}{4}$, section 28, and the 80-foot well on the SW. $\frac{1}{4}$, section 24, yield sufficient water to supply 150 and 70 head of stock, respectively; but the supply from the others is only sufficient for 20 to 30 head of stock. A dry hole, 212 feet deep on the NW. $\frac{1}{4}$, section 22, and the 300-foot well on the NW. $\frac{1}{4}$, section 28, indicate the discontinuity of the water-bearing beds. The 300-foot well tapped an abundant supply of water, but it is unfit for any use. It is not advisable to drill to this depth in this township. Within the area bounded on the east by the "A" line on the accompanying map, however, it is quite possible that water-bearing beds of sand or gravel will be encountered at depths ranging from 40 to 105 feet, as wells in the adjoining township in the Rural Municipality of Stanley, No. 215, obtain abundant supplies of water at these depths. Wells outside the outlined area may locate good supplies of water, but the uncertainty of obtaining water does not appear to warrant drilling to any great depth. In many sections the supply of water could be increased by the use of dams or dugouts.

Township 24, Range 4

Approximately one-third of this township is occupied by Leech lake. This lake did not go dry during the drought of 1930 to 1934 and although the water from the lake is usable for stock it is seldom used for this purpose, as in most sections adequate supplies can be obtained from wells. The elevation of Leech lake is 1,679 feet; the ground surface of the township rises to 1,700 feet along its western border. The surface is very flat, particularly near Leech lake where it is mantled by glacial lake sands. An area in the northeastern corner and parts of sections 12 and 13 are covered by glacial lake clays. The extreme western part is mantled by boulder clay or glacial till.

Wells, 8 to 26 feet deep, derive large amounts of water from the glacial lake sands. The water is moderately hard and can be used for all farm purposes. The water rises to the level of Leech lake and it is probable that water could be located at almost any place in the lake-sand, covered area, but due to the sandy nature of the top soil the area is but sparsely settled.

Two wells on the NE. $\frac{1}{4}$, section 26, and the NW. $\frac{1}{4}$, section 36, tap beds of sand at depths of 60 and 75 feet, respectively. These wells are located in an area that is mantled by glacial lake clays, but the water is derived from sand deposits at the base of the lake clays or within the upper part of the underlying glacial drift. They yield an abundant supply of hard, "alkaline" water and it is used for all farming purposes. The water from the well on section 36 has a laxative effect upon those not accustomed to the use of highly mineralized water.

Most of the farms are located in the glacial till-covered areas. No shortage of water is experienced in this area as wells, 12 to 25 feet deep, have encountered water-bearing sand or gravel. The aquifers are formed by pockets of sand or gravel that occur either within the yellow boulder clay or between the yellow and blue boulder

clays. The deposits are numerous and the horizon is fairly continuous. The water is moderately hard and is suitable for all farm needs. An individual well will water from 5 to 40 head of stock. In some areas two or more wells are used in order to obtain adequate supplies for local needs.

No attempts have been made to locate water-bearing horizons at depth, as sufficient water is obtained from shallower wells. Water-bearing deposits doubtless exist within the lower part of the drift, but the water will probably be too highly mineralized to be used for domestic purposes. Dugouts could be excavated in the glacial till and lake clay-covered areas to retain a supply of surface water for stock use.

Township 24, Range 5

The ground surface in this township is very rolling and the elevation decreases from 1,750 feet in the southwestern corner to 1,700 feet above sea-level in the eastern and northern sections. The western two-thirds of the township are mantled by moraine, and small knolls and undrained depressions or sloughs are common. With the exception of a small deposit of glacial outwash sands and gravels in sections 3 and 10, the remainder of the township is covered by glacial till or boulder clay.

The supply of water in this township is derived from sloughs, a few dams, and dugouts, and from wells. The uppermost source of ground water in this area is formed by scattered pockets of sand and gravel that occur in the yellow boulder clay, and by discontinuous beds of sand and gravel that immediately underlie the yellow clay. In the northeastern and southwestern parts of the area these pockets and beds of sand and gravel are so numerous that an almost continuous water-bearing horizon is formed, but the water-bearing deposits are small and most of the wells tapping them do not yield an abundant supply of water. Two or more wells of this type are generally used in order to obtain

sufficient water for local needs. The water contains a considerable amount of mineral salts in solution, but it is often termed soft when compared with water from deeper wells. It is suitable for all farm purposes.

Deposits of sand and gravel that occur in the blue boulder clay at depths of 39 to 60 feet, or at an average elevation of 1,680 feet, have been encountered by a number of wells in the central and southeastern sections of the township or within the area outlined by the "B" boundary line. The supply from the individual wells is sufficient for local needs and will water approximately 25 head of stock. The water is hard and generally "alkaline". The water from most of the wells is being used for drinking and other household purposes, but it would act as a laxative on those not accustomed to the use of highly mineralized water. It is possible that the deposits that form the aquifer for these wells are continuous within the outlined area, but they are not continuous throughout the township as deeper wells have failed to encounter sand or gravel beds at that depth.

Two wells, one on the SW. $\frac{1}{4}$, section 16, and one on the SW. $\frac{1}{4}$, section 29, drilled to depths of 160 and 165 feet, respectively, tap beds of water-bearing sand. The hydrostatic pressure is sufficient to cause the water to rise to points 26 and 35 feet below the surface. The supply from the well on section 16 is inadequate for local needs as the water seeps into the well very slowly. The well on section 29 yields a sufficient supply of water for local needs. The water is hard and "alkaline", but it is being used for household purposes although it is unsatisfactory for such use. It is possible that drilled wells may locate abundant supplies of water, but the uncertainty of encountering an aquifer, the poor quality of water that is usually obtained, and the expense involved, do not appear to warrant deep drilling in this township. Dugouts or dams, to collect and store surface water for stock, are the best methods for increasing the water supply in this township.

Township 24, Range 6

With the exception of a small deposit of glacial outwash sands and gravel in parts of sections 8, 9, 16, and 17, the entire township is mantled by moraine. The ground surface is characterized by numerous knolls and undrained depressions. The surface elevation varies from 1,750 feet to 1,880 feet above sea-level, rising gradually towards the west. The glacial drift in the morainic area consists of 1 to 4 feet of sandy top soil; 20 to 30 feet of yellow boulder clay containing scattered pockets of sand and gravel; a discontinuous layer of sand or gravel; and at least 100 feet of blue clay that also contains scattered deposits of sand or gravel.

The principal water-bearing horizon in this township is encountered in the upper 30 feet of the glacial drift. The pockets of sand and gravel in the yellow clay and the layer of sand and gravel underlying the yellow clay, form an almost continuous water-bearing horizon and only five dry holes have been sunk in this township. In many sections the pockets of sand and gravel occur at or near the surface and wells only 6 feet deep yield good supplies of water. The amount of water varies with the individual well and depends upon the size of the pocket tapped and upon the amount of annual precipitation. A few wells yield a supply of water sufficient for 40 to 75 head of stock. The water has a low total dissolved solid content and can be used for all farm purposes, including irrigation. Other wells yield either small or intermittent supplies, and in such cases from two to five wells are used to obtain an adequate supply for local needs. In some sections dams or dugouts are used as auxiliary supplies for stock, and a few farmers haul water from wells yielding abundant supplies of water. The water from the wells yielding small supplies is more highly mineralized, and that from a few wells is not usable for domestic purposes. Care should be taken to see that these shallow wells do not become polluted by surface water containing sewage.

Several wells within the area outlined by the "B" boundary line have encountered beds of sand and gravel at depths of 78 to 112 feet. The aquifers are very thin and occur within the impervious, blue boulder clay. The supply of water from the individual wells is not sufficient for more than 25 head of stock, and a few wells yield intermittent and inadequate supplies. The water is under slight hydrostatic pressure although the water seeps into the wells very slowly. These deeper wells are very poor sources of supply, and, therefore, it seems inadvisable to drill to depth in this township in an effort to obtain an abundant supply of water. It is possible that deeper drilled wells may encounter water-bearing horizons, but the uncertainty of locating water and the poor quality of water already obtained at depth do not appear to warrant deep drilling. The best method to increase the water supply is by constructing dams or excavating dugouts to store the surface water.

STATISTICAL SUMMARY OF WELL INFORMATION IN RURAL MUNICIPALITY OF CANA, NO. 214, SASKATCHEWAN.

West of 2nd meridian — Township / Range	22 / 4	22 / 5	22 / 6	23 / 4	23 / 5	23 / 6	24 / 4	24 / 5	24 / 6	Total No. in municipality
Total No. of Wells in Township	62	72	47	64	141	48	39	106	78	657
No. of wells in bedrock	0	0	0	0	0	0	0	0	0	0
No. of wells in glacial drift	62	72	47	64	141	48	39	106	78	657
No. of wells in alluvium	0	0	0	0	0	0	0	0	0	0
Permanency of Water Supply										
No. with permanent supply	60	52	32	40	89	41	37	89	61	510
No. with intermittent supply	2	9	0	4	8	4	2	12	12	53
No. dry holes	0	11	15	11	44	3	0	5	5	94
Types of Wells										
No. of flowing artesian wells	0	0	0	0	0	0	0	0	0	0
No. of non-flowing artesian wells	21	8	6	9	8	7	2	6	4	71
No. of non-artesian wells	41	53	26	44	89	38	37	95	69	492
Quality of Water										
No. with hard water	55	47	20	40	84	30	26	86	56	444
No. with soft water	7	14	12	13	13	15	13	15	17	119
No. with salty water	0	0	0	0	0	0	0	0	0	0
No. with "alkaline" water	15	14	2	7	23	12	7	17	14	111
Depths of Wells										
No. from 0 to 50 feet deep	45	65	42	53	118	37	36	100	72	558
No. from 51 to 100 feet deep	17	6	2	17	21	8	3	4	4	82
No. from 101 to 150 feet deep	0	1	2	2	1	1	0	0	2	9
No. from 151 to 200 feet deep	0	0	1	0	1	0	0	2	0	4
No. from 201 to 500 feet deep	0	2	0	0	0	2	0	0	0	4
No. from 501 to 1,000 feet deep	0	0	0	0	0	0	0	0	0	0
No. over 1,000 feet deep	0	0	0	0	0	0	0	0	0	0
How the Water is Used										
No. usable for domestic purposes	48	50	28	44	73	32	32	82	62	451
No. not usable for domestic purposes	14	11	4	9	24	13	7	19	11	112
No. usable for stock	57	58	30	51	90	44	38	97	68	533
No. not usable for stock	5	3	2	2	7	1	1	4	5	30
Sufficiency of Water Supply										
No. sufficient for domestic needs	60	52	31	46	86	41	37	86	61	500
No. insufficient for domestic needs	2	9	1	7	11	4	2	15	12	63
No. sufficient for stock needs	49	40	26	34	69	28	36	83	53	418
No. insufficient for stock needs	13	21	6	19	28	17	3	18	20	145

ANALYSES AND QUALITY OF WATER

General Statement

Samples of water from representative wells in surface deposits and bedrock were taken for analyses. Except as otherwise stated in the table of analyses the samples were analysed in the laboratory of the Borings Division of the Geological Survey by the usual standard methods. The quantities of the following constituents were determined; total dissolved mineral solids, calcium oxide, magnesium oxide, sodium oxide by difference, sulphate, chloride, and alkalinity. The alkalinity referred to here is the calcium carbonate equivalent of all acid used in neutralizing the carbonates of sodium, calcium, and magnesium. The results of the analyses are given in parts per million--that is, parts by weight of the constituents in 1,000,000 parts of water; for example, 1 ounce of material dissolved in 10 gallons of water is equal to 625 parts per million. The samples were not examined for bacteria, and thus a water that may be termed suitable for use on the basis of its mineral salt content might be condemned on account of its bacteria content. Waters that are high in bacteria content have usually been polluted by surface waters.

Total Dissolved Mineral Solids

The term "total dissolved mineral solids" as here used refers to the residue remaining when a sample of water is evaporated to dryness. It is generally considered that waters that have less than 1,000 parts per million of dissolved solids are suitable for ordinary uses, but in the Prairie Provinces this figure is often exceeded. Nearly all waters that contain more than 1,000 parts per million of total solids have a taste due to the dissolved mineral matter. Residents

accustomed to the waters may use those that have much more than 1,000 parts per million of dissolved solids without any marked inconvenience, although most persons not used to highly mineralized water would find such waters highly objectionable.

Mineral Substances Present

Calcium and Magnesium

The calcium (Ca) and magnesium (Mg) content of water is dissolved from rocks and soils, but mostly from limestone, dolomite, and gypsum. The calcium and magnesium salts impart hardness to water. The magnesium salts are laxative, especially magnesium sulphate (Epsom salts, $MgSO_4$), and they are more detrimental to health than the lime or calcium salts. The calcium salts have no laxative or other deleterious effects. The scale found on the inside of steam boilers and tea-kettles is formed from these mineral salts.

Sodium

The salts of sodium are next in importance to those of calcium and magnesium. Of these, sodium sulphate (Glauber's salt, Na_2SO_4) is usually in excess of sodium chloride (common salt, NaCl). These sodium salts are dissolved from rocks and soils. When there is a large amount of sodium sulphate present the water is laxative and unfit for domestic use. Sodium carbonate (Na_2CO_3) "black alkali", sodium sulphate "white alkali", and sodium chloride are injurious to vegetation.

Sulphates

Sulphates (SO_4) are one of the common constituents of natural water. The sulphate salts most commonly found are sodium sulphate, magnesium sulphate, and calcium sulphate ($CaSO_4$). When the water contains large quantities of the sulphate of sodium it is injurious to vegetation.

Chlorides

Chlorides are common constituents of all natural water and are dissolved in small quantities from rocks. They usually occur as sodium chloride and if the quantity of salt is much over 400 parts per million the water has a brackish taste.

Iron

Iron (Fe) is dissolved from many rocks and the surface deposits derived from them, and also from well casings, water pipes, and other fixtures. More than 0.1 part per million of iron in solution will settle as a red precipitate upon exposure to the air. A water that contains a considerable amount of iron will stain porcelain, enamelled ware, and clothing that is washed in it, and when used for drinking purposes has a tendency to cause constipation, but the iron can be almost completely removed by aeration and filtration of the water.

Hardness

Calcium and magnesium salts impart hardness to water. Hardness of water is commonly recognized by its soap-destroying powers as shown by the difficulty of obtaining lather with soap. The total hardness of a water is the hardness of the water in its original state. Total hardness is divided into "permanent hardness" and "temporary hardness". Permanent hardness is the hardness of the water remaining after the sample has been boiled and ~~it represents the~~ amount of mineral salts that cannot be removed by boiling. Temporary hardness is the difference between the total hardness and the permanent hardness and represents the amount of mineral salts that can be removed by boiling. Temporary hardness is due mainly to the bicarbonates of calcium and magnesium and iron, and permanent harness to the sulphates and chlorides of calcium and magnesium. The permanent hardness

can be partly eliminated by adding simple chemical softeners such as ammonia or sodium carbonate, or many prepared softeners. Water that contains a large amount of sodium carbonate and small amounts of calcium and magnesium salts is soft, but if the calcium and magnesium salts are present in large amounts the water is hard. Water that has a total hardness of 300 parts per million or more is usually classed as excessively hard. Many of the Saskatchewan water samples have a total hardness greatly in excess of 300 parts per million; when the total hardness exceeded 3,000 parts per million no exact hardness determination was made. Also no determination for temporary hardness was made on waters having a total hardness less than 50 parts per million. As the determinations of the soap hardness in some cases were made after the samples had been stored for some time, the temporary hardness of some of the waters as they come from the wells probably is higher than that given in the table of analyses.

Analyses of Water Samples from the Municipality of Cana, No. 214, Saskatchewan

LOCATION						Depth of well, Ft.	Total dis'vd solids	HARDNESS			CONSTITUENTS AS ANALYSED					CONSTITUENTS AS CALCULATED IN ASSUMED COMBINATIONS									Source of water
No.	Qtr.	Sec.	Tp.	Rge.	Mer.			Total	Perm.	Temp.	Cl. Alkalinity	CaO	MgO	SO_4	Na_2O	Solids	$CaCO_3$	$CaSO_4$	$MgCO_3$	$MgSO_4$	Na_2CO_3	Na_2SO_4	NaCl	$CaCl_2$	
1	NW.	25	24	5	2	18	361									361	(1)	(4)	(2)					(3)	*1

Water samples indicated thus, * 1, are from glacial drift.
Analyses are reported in parts per million; where numbers (1), (2), (3), and (4), are used instead of parts per million, they represent the relative amounts in which the five main constituents are present in the water.
Hardness is the soap hardness expressed as calcium carbonate ($CaCO_3$).
Analysis No. 1 by Provincial Analyst, Regina.
For interpretation of this table read the section on Analyses and Quality of Water.

Water from the Unconsolidated Deposits

An analysis of one sample of water from the glacial drift, as made by the Provincial Analyst, is shown in the accompanying table. This sample was taken from an 18-foot well that taps a pocket of sand and gravel in the yellow boulder clay. The pocket is thought to be of considerable areal extent. The total dissolved solid content is quite low, being only 361 parts per million and the chief constituents in solution are calcium and magnesium carbonates. The water is moderately hard and is suitable for all farm purposes. The water from the wells that have tapped large deposits of sand or gravel at shallow depths is probably similar to the water analysed; that from the wells tapping small deposits of sand or gravel will likely be found to contain more mineral salts in solution. The sulphate salts are probably in higher concentration in these waters. Care should be taken to see that these shallow wells are not contaminated by surface water containing sewage. The water from a few shallow wells, however, is unsuitable for domestic use, but in general the water obtained from the upper 30 feet of the drift is usable for all farm purposes.

The water that is obtained from wells that tap deposits of sand or gravel in the unweathered part of the drift in this municipality is highly mineralized and in many instances is not suitable for drinking. It usually has a laxative effect on those not accustomed to its use, as it contains a relatively large amount of magnesium sulphate and sodium sulphate. The striking of water, either within the upper part of the drift or at depth, that is unfit for use in one locality, does not necessarily indicate a widespread condition; usable water may be obtained a short distance away.

Water from the Bedrock

No water is derived from the Marine Shale series in this municipality. In this part of Saskatchewan any water that has been obtained from the Marine Shale is likely to be too highly mineralized to be used for any farm purpose.

WELL RECORDS—Rural Municipality of GANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
1	NW.	1	22	4	2	Dug	28	1,755	- 10	1,745	28	1,727	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another similar well 20 feet deep.
2	NE.	2	"	"	"	Dug	24	1,750	- 18	1,732			Glacial sand	Hard, clear		D, S	Insufficient for local needs; two other similar wells.
3	NW.	2	"	"	"	Bored	100	1,740	- 40	1,700	100	1,640	Glacial gravel	Hard, iron, cloudy		D, S	Sufficient for local needs.
4	SW.	3	"	"	"	Bored	50	1,725	- 45	1,680			Glacial sand	Hard, clear, "alkaline"		D	Sufficient for household needs; use lake for stock.
5	NE.	7	"	"	"	Dug	8	1,730	- 4	1,726	4	1,726	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
6	SW.	9	"	"	"	Dug	14	1,725	- 9	1,716	9	1,716	Glacial sand	Soft, clear		D, S	Sufficient for local needs; another similar well 14 feet deep.
7	NW.	10	"	"	"	Dug	12	1,720	- 7	1,713	7	1,713	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 24 feet deep, with small supply.
8	SW.	10	"	"	"	Dug	14	1,720	- 2	1,718	2	1,718	Glacial sand	Hard, clear, bad odour		S	Sufficient for local needs.
9	SE.	10	"	"	"	Dug	20	1,750	- 16	1,734	16	1,734	Glacial sand	Hard, clear		D	Intermittent supply; uses well on SW.¼, section 11.
10	SW.	11	"	"	"	Bored	100	1,745	- 60	1,685	100	1,645	Glacial sand	Hard, clear, iron		S	Sufficient for local needs; hauls drinking water.
11	SE.	11	"	"	"	Dug	16	1,750	- 11	1,739	11	1,739	Glacial sand	Hard, clear		S	Sufficient for 40 head stock.
12	SW.	12	"	"	"	Bored	20	1,750	- 15	1,735	20	1,730	Glacial gravel	Hard, clear		D, S	Sufficient for 35 head stock.
13	NW.	12	"	"	"	Dug	24	1,745	- 20	1,725	20	1,725	Glacial gravel	Hard, red iron		N	Sufficient supply; but not used.
14	SW.	13	"	"	"	Dug	20	1,730					Glacial drift	Hard, clear		S	Sufficient for 60 head stock.
15	SE.	14	"	"	"	Dug	22	1,740	- 10	1,730	22	1,718	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well 10 feet deep used for domestic needs.
16	NE.	14	"	"	"	Bored	92	1,730	- 6	1,724	90	1,640	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
17	SW.	14	"	"	"	Bored	80	1,730	- 60	1,670	80	1,650	Glacial sand	Hard, iron, "alkaline"		N	Not fit for use; gas comes from well.
18	SE.	15	"	"	"	Bored	80	1,740	- 68	1,672	80	1,660	Glacial gravel	Hard, clear, iron		D, S	Sufficient for local needs; another well 40 feet deep, with mineralized water.
19	SE.	16	"	"	"	Drilled	60	1,710	- 36	1,674	60	1,650	Glacial gravel	Hard, clear, iron		S	Sufficient for local needs; another well 12 feet deep is used for domestic needs.
20	NE.	16	"	"	"	Bored	70	1,720	- 30	1,690	70	1,650	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
21	SE.	18	"	"	"	Dug	8	1,735	- 2	1,733	2	1,733	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another similar well is not used.
22	SW.	18	"	"	"	Dug	9	1,745	- 4	1,741	4	1,741	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
23	NW.	20	"	"	"	Dug	10	1,730	- 6	1,724	6	1,724	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
24	NW.	22	"	"	"	Bored	60	1,720	- 52	1,668	60	1,660	Glacial sand	Hard, clear, "alkaline"		S	Sufficient for local needs.
25	NE.	22	"	"	"	Bored	63	1,730	- 55	1,675	63	1,667	Glacial sand	Hard, clear, "alkaline"		S	Sufficient for local needs; another well 12 feet deep is used for domestic needs; also a similar 62-foot well at school.
26	SE.	22	"	"	"	Bored	63	1,720			63	1,657	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
27	SE.	23	22	4	2	Bored	50	1,720	- 40	1,680	40	1,680	Glacial sand	Hard, clear,		D	Sufficient for household needs; an 18-foot well is sufficient for 75 head stock.
28	NE.	24	"	"	"	Bored	72	1,720	- 66	1,654	66	1,654	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs.
29	SW.	25	"	"	"	Dug	24	1,730	- 17	1,713	24	1,706	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another similar well 20 feet deep.
30	NE.	27	"	"	"	Bored	66	1,730	- 60	1,670	66	1,664	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
31	NW.	27	"	"	"	Dug	13	1,720	- 10	1,710			Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for 20 head stock; three other similar wells.
32	SE.	28	"	"	"	Dug	10	1,710	- 6	1,704	6	1,704	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
33	NW.	28	"	"	"	Dug	10	1,710	- 6	1,704	6	1,704	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
34	NW.	28	"	"	"	Dug	10	1,730	- 7	1,723	7	1,723	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
35	SE.	30	"	"	"	Dug	16	1,730	- 13	1,717	13	1,717	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another similar well 10 feet deep.
36	SW.	32	"	"	"	Bored	32	1,730	- 14	1,716	32	1,698	Glacial sand	Hard, clear, iron		S	Sufficient for 25 head stock; another well 10 feet deep is used for domestic needs.
37	SE.	33	"	"	"	Dug	10	1,720	- 4	1,716	4	1,716	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
38	SE.	34	"	"	"	Drilled	65	1,720	- 60	1,660	60	1,660	Glacial sand	Hard, clear, iron		S	Sufficient for local needs.
39	SW.	35	"	"	"	Bored	69	1,720	- 60	1,660	65	1,655	Glacial sand	Hard, clear, iron		D, S	Insufficient for local needs.
40	NE.	35	"	"	"	Drilled	85	1,710	- 65	1,645	85	1,625	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs.
41	NW.	36	"	"	"	Bored	40	1,710					Glacial sand	Hard, iron, bad odour		D, S	Sufficient for local needs.
42	NE.	36	"	"	"	Dug	55	1,720					Glacial clay	Hard, clear			Intermittent supply; another well 50 feet deep, water too mineralized for use.
43	SE.	36	"	"	"	Dug	40	1,710	- 34	1,676	40	1,670	Glacial gravel	Hard, dark, iron, bad odour		D, S	Sufficient for local needs.
1	SE.	2	22	5	2	Bored	213	1,760	- 70	1,690	213	1,547	Glacial sand	Hard, clear, "alkaline"		N	Not fit for use; two other wells; 120 and 13 feet deep with sufficient supply.
3	NE.	2	"	"	"	Dug	20	1,760	0	1,760			Glacial clay	Soft, clear		S	Intermittent supply.
3	NW.	2	"	"	"	Dug	8	1,750	- 4	1,746	4	1,746	Glacial sand	Soft, clear		D, S	Intermittent supply.
4	SE.	3	"	"	"	Dug	10	1,750	- 4	1,746	4	1,746	Glacial sand and gravel	Hard, clear		S	Sufficient for 100 head stock.
5	SW.	3	"	"	"	Dug	8	1,760	- 2	1,758	2	1,758	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; three neighbours obtain water from this well.
6	SE.	4	"	"	"	Dug	12	1,770	- 5	1,765	5	1,765	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 17 feet deep, is not used.
7	NW.	4	"	"	"	Dug	17	1,770	- 11	1,759			Glacial clay	Hard, clear		S	Intermittent supply.
8	SE.	5	"	"	"	Dug	10	1,770	- 5	1,765	5	1,765	Glacial sand	Hard, clear, "alkaline"		D, S	Insufficient for local needs; another similar well.
9	NE.	6	"	"	"	Bored	26	1,780	- 20	1,760			Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 8 feet deep is used for stock; several dry holes 18 to 65 feet deep.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
10	NW.	7	22	5	2	Bored	33	1,800	- 17	1,783	33	1,767	Glacial gravel	Hard, clear		D	Sufficient for local needs.
11	SE.	7	"	"	"	Dug	30	1,790	- 10	1,780			Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply.
12	SE.	8	"	"	"	Dug	35	1,779	- 15	1,755	33	1,737	Glacial grey sand	Hard, clear		D	Intermittent supply; another well 32 feet deep.
13	NE.	9	"	"	"	Dug	34	1,780					Glacial gravel	Hard, clear		D, S	This well supplies the town of Cana.
14	NE.	10	"	"	"	Dug	10	1,775	- 2	1,773	2	1,773	Glacial sand	Soft, clear		D, S	Insufficient for local needs in winters; another well 35 feet deep.
15	NW.	14	"	"	"	Dug	8	1,760	- 6	1,754	6	1,754	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
16	SW.	14	"	"	"	Dug	10	1,750	0	1,750	0	1,750	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
17	SE.	14	"	"	"	Bored	42	1,750	- 27	1,723			Glacial clay	Hard, clear, iron, "alkaline"		S	Intermittent supply.
18	SE.	16	"	"	"	Bored	40	1,780					Glacial clay	Hard, clear, lime		D, S	Intermittent supply.
19	SW.	17	"	"	"	Dug	28	1,780	- 18	1,762			Glacial clay	Hard, clear, "alkaline"		D, S	Insufficient for local needs during dry seasons.
20	NE.	18	"	"	"	Dug	22	1,800	- 14	1,786	22	1,778	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
21	SE.	19	"	"	"	Dug	17	1,790	- 7	1,783	17	1,773	Glacial sand and gravel	Hard, clear		D, S	Abundant supply.
22	SW.	20	"	"	"	Dug	30	1,770	- 15	1,755	30	1,740	Glacial gravel	Hard, clear, "alkaline"		D, S	Abundant supply; another well 18 feet deep.
23	SE.	20	"	"	"	Dug	8	1,790	- 5	1,785	5	1,785	Glacial sand	Hard, clear, "alkaline"		D, S	Insufficient for local needs; another well 10 feet deep has an intermittent supply.
24	NE.	20	"	"	"	Dug	8	1,770	- 2	1,768	2	1,768	Glacial sand	Soft, clear		D	Sufficient for local needs; another well 30 feet deep used for stock.
25	NW.	21	"	"	"	Dug	15	1,770	- 10	1,760	14	1,756	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
26	NE.	22	"	"	"	Dug	5	1,750	0	1,750	0	1,750	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
27	NW.	24	"	"	"	Dug	15	1,760					Glacial sand	Soft, clear		D, S	Insufficient for local needs during winter; also another well.
28	SE.	24	"	"	"	Dug	10	1,755	- 4	1,751	4	1,751	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
29	NE.	24	"	"	"	Drilled	204	1,750	-160	1,590	160	1,590	Glacial sand	Hard, clear, iron		D, S	Was sufficient for local needs, but plugged with sand; therefore not used.
30	SE.	25	"	"	"	Dug	10	1,750	- 4	1,746	4	1,746	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
31	NW.	25	"	"	"	Dug	8	1,750	- 4	1,746	4	1,746	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
32	NE.	26	"	"	"	Dug	24	1,760	- 18	1,742			Glacial clay	Hard, clear, "alkaline"		S	Insufficient for local needs during dry seasons; another well 8 feet deep has good supply of good water.
33	SW.	26	"	"	"	Dug	90	1,750									Several dry holes, base in glacial blue clay.
34	SW.	27	"	"	"	Dug	25	1,760	- 10	1,750			Glacial drift	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
35	NE.	28	"	"	"	Dug	27	1,770					Glacial gravel	Hard, clear		D, S	Sufficient for local needs; also another well 10 feet deep.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
36	NW.	28	22	5	2	Dug	28	1,770	- 25	1,745	25	1,745	Glacial sand	Hard, clear		M	
37	SW.	28	"	"	"	Dug	15	1,770	- 5	1,765	13	1,757	Glacial gravel	Soft, clear		D, S	Sufficient for local needs; another well 45 feet deep caved in.
38	NE.	30	"	"	"	Dug	8	1,780	- 5	1,775	5	1,775	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
39	SE.	31	"	"	"	Dug	8	1,780	- 4	1,776	4	1,776	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
40	SW.	32	"	"	"	Dug	8	1,770	- 4	1,766	4	1,766	Glacial sand	Soft, clear		D, S	Sufficient for local needs; another similar well.
41	SE.	32	"	"	"	Dug	24	1,770	- 19	1,751	22	1,748	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
42	SW.	34	"	"	"	Dug	8	1,760	- 4	1,756	4	1,756	Glacial sand	Hard, clear		D, S	Insufficient for local needs during winter; another well 40 feet deep with small supply.
43	NE.	34	"	"	"	Dug	57	1,770	- 45	1,725	57	1,713	Glacial sand	Hard, clear, iron, "alkaline"		S	Sufficient for stock needs; hauls water for domestic needs.
44	SE.	35	"	"	"	Dug	8	1,750	- 4	1,746	4	1,746	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
45	SW.	36	"	"	"	Dug	8	1,760	- 4	1,756	4	1,756	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 17 feet deep.
46	SE.	36	"	"	"	Dug	10	1,750	- 6	1,744	6	1,744	Glacial sand and gravel	Hard, clear		D, S	Sufficient for local needs.
1	NW.	2	22	6	2	Dug	66	1,765	- 63	1,702	63	1,702	Glacial sand	Hard, clear		D	Sufficient for local needs; also another well, which is sufficient for 40 head stock.
2	SE.	6	"	"	"	Dug	22	1,810	- 15	1,795	22	1,788	Glacial sand	Hard, clear		D, S	Sufficient for 80 head stock.
3	SW.	6	"	"	"	Dug	38	1,815	- 28	1,787	28	1,787	Glacial sand	Hard, cloudy, "alkaline"		D, S	Sufficient for local needs.
4	NE.	8	"	"	"	Dug	10	1,800	- 5	1,795	5	1,795	Glacial sand	Soft, clear		D	Sufficient for local needs; another well is sufficient for 30 head stock.
5	NW.	9	"	"	"	Dug	9	1,800	- 4	1,796	4	1,796	Glacial sand	Soft, clear		D, S	Sufficient for 20 head stock.
6	SE.	9	"	"	"	Dug	7	1,800	- 2	1,798			Glacial gravel	Soft, rusty, iron		D, S	Sufficient for local needs.
7	NW.	13	"	"	"	Dug	7	1,800	- 5	1,795	5	1,795	Glacial sand	Soft, clear		D, S	Sufficient for 40 head stock.
8	NW.	15	"	"	"	Dug	51	1,820	- 36	1,784	51	1,769	Glacial drift	Hard, clear, "alkaline"		S	Sufficient for 20 head stock; another well 12 feet deep is used for domestic needs.
9	SE.	18	"	"	"	Dug	8	1,800	- 4	1,796	4	1,796	Glacial sand	Hard, clear		D, S	Sufficient for 40 head stock; another well 32 feet deep, with poor supply.
10	NE.	18	"	"	"	Dug	12	1,810	- 8	1,802	8	1,802	Glacial sand	Soft, clear		D, S	Sufficient for 10 head stock.
11	NE.	20	"	"	"	Dug	8	1,815	0	1,815	0	1,815	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well with poor supply.
12	SW.	22	"	"	"	Dug	10	1,820	- 5	1,815	5	1,815	Glacial gravel	Soft, clear		D, S	Oversufficient for 20 head stock.
13	NE.	22	"	"	"	Dug	12	1,820	- 9	1,811	9	1,811	Glacial sand	Soft, clear		D, S	Sufficient for 60 head stock; also three other wells.
14	NE.	23	"	"	"	Dug	8	1,800	- 4	1,796	4	1,796	Glacial sand	Hard, clear		D	Sufficient for local needs; another well is sufficient for 15 head stock.
15	SW.	23	"	"	"	Dug	13	1,815	- 4	1,811	13	1,802	Glacial sand	Hard, clear		D, S, I	Sufficient for local needs.
16	NW.	24	"	"	"	Dug	7	1,800	- 1	1,799	1	1,799	Glacial sand	Hard, clear		D, S	Oversufficient for 50 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
17	SE.	29	22	6	2	Drilled	104	1,812	- 15	1,797	90	1,722	Glacial gravel	Hard, clear		D, S	2,200 gallons an hour.
18	SE.	29	"	"	"		105	1,812	- 14	1,798	90	1,722	Glacial gravel	Hard, clear		D, S	3,000 gallons an hour; used only in cases of emergency.
19	SE.	29	"	"	"		185	1,812					Glacial drift			N	This well used to supply 20,000 gallons a day, it is now abandoned.
20	SW.	30	"	"	"	Dug	8	1,820	- 2	1,818	6	1,814	Glacial sand and gravel	Hard, clear		D, S	Sufficient for 50 head stock; also 15 dry holes on farm.
21	NE.	31	"	"	"	Dug	20	1,810	- 15	1,795	15	1,795	Glacial gravel	Soft, clear		D, S	15,000,000 gallons a year.
22	SE.	34	"	"	"	Dug	8	1,820	- 3	1,817	3	1,817	Glacial sand	Soft, clear		D, S	Sufficient for 30 head stock; also another well that is not fit for use.
1	SW.	1	23	4	2	Bored	90	1,700	- 40	1,660	80	1,620	Glacial sand	Hard, clear		D, S	Sufficient for local needs; an old well 20 feet deep is not used.
2	SE.	2	"	"	"	Dug	20	1,710	- 16	1,694	16	1,694	Glacial sand	Hard, clear		S	Sufficient for local needs; also use lake for stock.
3	NE.	2	"	"	"	Dug	20	1,710	- 16	1,694	16	1,694	Glacial sand	Hard, clear		D	Sufficient only for household needs.
4	NW.	3	"	"	"	Bored	90	1,720					Glacial clay	Hard, clear, iron		D, S	Sufficient for local needs.
5	NE.	4	"	"	"	Dug	30	1,730					Glacial drift	Hard, clear		D, S	Now caved in; was poor supply.
6	SE.	4	"	"	"	Dug	10	1,720	- 5	1,715	5	1,715	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
7	SW.	5	"	"	"	Dug	18	1,720	- 12	1,708			Glacial clay	Soft, clear		D, S	Intermittent supply; also six dry holes to depth of 100 feet.
8	NW.	5	"	"	"	Bored	65	1,720	- 20	1,700	62	1,658	Glacial sand	Hard, clear, iron			This well went dry two weeks after being bored.
9	NE.	6	"	"	"	Bored	100	1,730	- 50	1,680	100	1,630	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
10	SE.	7	"	"	"	Dug	28	1,740	- 18	1,722			Glacial drift	Hard, clear, "alkaline"		D, S	Intermittent supply; another well in pasture 10 feet deep, with good supply.
11	NW.	8	"	"	"	Dug	12	1,720	- 7	1,713	7	1,713	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
12	NE.	8	"	"	"	Dug	8	1,720	- 5	1,715	5	1,715	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 22 feet deep is not used.
13	NW.	10	"	"	"	Dug	6	1,700	- 3	1,697	3	1,697	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
14	NE.	10	"	"	"	Dug	6	1,700	- 3	1,697	3	1,697	Glacial sand	Soft, clear		D, S	Sufficient for local needs; another similar well.
15	SW.	12	"	"	"	Bored	120	1,690	- 30	1,660	120	1,570	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
16	NW.	12	"	"	"	Dug	10	1,690	- 7	1,683	7	1,683	Glacial sand	Soft, clear		D, S	Sufficient for household and 4 head stock.
17	SW.	13	"	"	"	Dug	16	1,690	- 12	1,678	12	1,678	Glacial sand	Soft, clear		D, S	Abundant supply.
18	SE.	14	"	"	"	Dug	20	1,700	- 18	1,682			Glacial sand	Soft, clear		D, S	Insufficient for local needs.
19	SW.	14	"	"	"	Dug	25	1,700					Glacial sand	Hard, clear		D, S	Sufficient for household needs only; another well 9 feet deep with poor supply.
20	NW.	14	"	"	"	Dug	17	1,695	- 12	1,683			Glacial clay	Hard, clear		D	Sufficient for household needs only; also a 90-foot dry hole.
21	NE.	16	"	"	"	Dug	30	1,700	- 22	1,678	30	1,670	Glacial gravel	Hard, clear, iron		D, S	Sufficient for local needs; another well 14 feet deep, with a small supply.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
22	SW.	17	23	4	2	Dug	7	1,700	- 2	1,698	3	1,697	Glacial sand	Soft, clear		D, S	Abundant supply; three other farmers obtain water from this well.
23	NE.	16	"	"	"	Dug	60	1,730	- 56	1,674	56	1,674	Glacial sand	Hard, clear iron		D, S	Sufficient for local needs.
24	SW.	20	"	"	"	Dug	47	1,710	- 39	1,671			Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 13 feet deep.
25	SE.	20	"	"	"	Dug	45	1,710	- 40	1,670	40	1,670	Glacial sand	Hard, clear		D, S	Sufficient for local needs; two dry holes 120 and 95 feet ; base in glacial blue clay clay.
26	NW.	21	"	"	"	Bored	120	1,690									A 36-foot well has strong mineralized water.
27	SE.	21	"	"	"	Dug	15	1,690	- 11	1,679	11	1,679	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
28	NW.	22	"	"	"	Dug	12	1,685	- 6	1,679	6	1,679	Glacial sand	Hard, clear		D, S	Insufficient for local needs during dry seasons.
29	NE.	22	"	"	"	Dug	60	1,690	- 30	1,660	60	1,630	Glacial sand	Hard, clear		D, S	Sufficient for local needs; also use lake for stock.
30	SW.	23	"	"	"	Dug	6	1,690	0	1,690	0	1,690	Glacial sand	Soft, clear		S	Sufficient for local needs.
31	SE.	23	"	"	"	Dug	30	1,700	- 14	1,686			Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 25 feet deep, with poor supply.
32	NE.	23	"	"	"	Dug	18	1,700	- 13	1,687	13	1,687	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
33	SW.	24	"	"	"	Dug	21	1,690	- 16	1,674	19	1,671	Glacial sand	Hard, clear		D, S	Insufficient supply; enough for only 15 head stock.
34	SE.	24	"	"	"	Dug	23	1,725	- 20	1,705	20	1,705	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
35	NE.	26	"	"	"	Dug	27	1,690	- 20	1,670	27	1,663	Glacial sand	Hard, red, iron, "alkaline"		S	Sufficient for local needs; haul drinking water.
36	SW.	29	"	"	"	Bored	26	1,720	- 18	1,702	20	1,700	Glacial sand	Hard, clear		S	Sufficient for 4 head stock; a 10-foot well supplies domestic needs; another 10-foot well is sufficient for 25 head stock; also two dry holes 95 and 65 feet deep.
37	SE.	30	"	"	"	Bored	65	1,710	- 40	1,670	65	1,645	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs; another similar well.
38	NW.	30	"	"	"	Bored	40	1,730	- 20	1,710	40	1,690	Glacial sand	Hard, clear, "alkaline"		D, S	Abundant supply.
39	SE.	31	"	"	"	Dug	32	1,710	- 5	1,705			Glacial drift	Hard, clear, bitter, "alkaline"		S	Sufficient for local stock needs hauls drinking water.
40	SW.	32	"	"	"	Dug	10	1,710	- 8	1,702	8	1,702	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
41	NE.	32	"	"	"	Bored	50	1,700	- 45	1,655	45	1,655	Glacial gravel	Hard, iron		S	Abundant supply; a 14-foot well is used for domestic needs.
1	NW.	1	23	5	2	Dug	11	1,750	0	1,750	0	1,750	Glacial gravel	Soft, clear		D, S	Intermittent supply.
2	SE.	2	"	"	"	Bored	32	1,750	- 25	1,725			Glacial drift	Hard, clear		D	Insufficient supply during the winter.
3	SW.	2	"	"	"	Drilled	170	1,750	- 30	1,720	170	1,580	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs.
4	NW.	3	"	"	"	Dug	17	1,780	- 13	1,767	13	1,767	Glacial drift	Hard, clear		S	Sufficient for local needs.
5	NE.	4	"	"	"	Dug	24	1,780	- 20	1,760	20	1,760	Glacial drift	Hard, clear		D, S	Sufficient for local needs.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
6	NW.	4	23	5	2	Dug	18	1,780	- 9	1,771			Glacial clay	Hard, clear, "alkaline"		D, S	Sufficient for local needs; two other wells 46 and 11 feet deep.
7	SW.	4	"	"	"	Dug	24	1,780	- 6	1,774	24	1,756	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs; another well 6 feet deep.
8	SE.	5	"	"	"	Dug	8	1,780	0	1,780	0	1,780	Glacial gravel	Hard, clear		D, S	Intermittent supply.
9	SE.	6	"	"	"	Dug	22	1,790	- 14	1,776			Glacial clay	Hard, clear, "alkaline"		D, S	Sufficient for local needs with aid of another well 8 feet deep.
10	NE.	6	"	"	"	Dug	30	1,780	- 24	1,756			Glacial clay	Hard, clear, "alkaline"		S	Insufficient for local needs, two other wells 10 and 30 feet deep.
11	NW.	6	"	"	"	Dug	12	1,780	- 9	1,771	9	1,771	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
12	SW.	7	"	"	"	Dug	8	1,770	0	1,770	0	1,770	Glacial sand	Hard, clear		S	Sufficient for local needs; cattle were sick from this water last year. #
13	SE.	7	"	"	"	Dug	30	1,785	- 22	1,763			Glacial sand	Hard, clear		S	Sufficient for local needs; another well 18 feet deep is used for domestic needs.
14	NE.	7	"	"	"	Dug	8	1,790	- 4	1,786	4	1,786	Glacial sand	Soft, clear		S	Sufficient for local needs; another well 7 feet deep is used for domestic needs.
15	NW.	8	"	"	"	Dug	9	1,780	- 5	1,775	5	1,775	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
16	SW.	9	"	"	"	Dug	18	1,770	- 9	1,761			Glacial drift	Soft, clear		D, S	Sufficient for local needs; another well 22 feet deep is used only for stock.
17	NW.	10	"	"	"	Dug	20	1,770	- 10	1,760	19	1,751	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 12 feet deep used for stock.
18	NE.	10	"	"	"	Dug	20	1,760	- 12	1,748			Glacial drift	Hard, clear		D, S	Intermittent supply; two other wells 18 and 20 feet deep; good water.
19	SE.	10	"	"	"	Dug	18	1,760	- 15	1,745	15	1,745	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 15 feet deep used for stock, also 16-foot well not used.
20	NW.	12	"	"	"	Bored	85	1,760									Dry hole; base in glacial blue clay; another dry hole 45 feet deep.
21	NE.	12	"	"	"	Bored	100	1,745					Glacial drift	Hard, "alkaline"		N	Not fit for use; also several dry holes.
22	NE.	13	"	"	"	Dug	107	1,750									12 dry holes 46 to 107 feet deep, base in glacial blue clay. haul water from SE. ¼, section 24.
23	SW.	13	"	"	"	Dug	46	1,750	- 24	1,726	46	1,704	Glacial gravel	Hard, clear, iron, "alkaline"		N	Not fit for use.
24	SE.	14	"	"	"	Bored	60	1,760					Glacial sand	Hard, clear		D	Intermittent supply, another well 30 feet deep.
25	SW.	14	"	"	"	Dug	30	1,770									Dry hole; base in glacial drift.
26	NE.	15	"	"	"	Dug	21	1,770					Glacial drift	Hard, clear, "alkaline"		D, S	Insufficient for local needs in dry seasons; another well 20 feet deep; gives plentiful supply.
27	NW.	16	"	"	"	Dug	9	1,760	0	1,760	2	1,758	Glacial gravel	Soft, clear		D, S	Sufficient for local needs; 2 other similar wells.
28	SW.	16	"	"	"	Dug	30	1,760	- 25	1,735			Glacial clay	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 33 feet deep is used for stock.
29	SW.	17	"	"	"	Dug	6	1,780	- 4	1,776	4	1,776	Glacial sand	Hard, clear, "alkaline"		S	Sufficient for local needs.
30	SE.	18	"	"	"	Dug	28	1,780	- 18	1,762			Glacial clay	Hard, clear, "alkaline"		S	Sufficient for local needs; another well is 8 feet deep is used for domestic needs.

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(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of GANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
31	SW.	18	23	5	2	Dug	28	1,800	- 12	1,788	28	1,772	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
32	NW.	18	"	"	"	Bored	79	1,790	- 73	1,717	73	1,717	Glacial sand	Hard, clear, iron, bitter, "alkaline"		D, S	Sufficient for local needs.
33	SW.	19	"	"	"	Dug	10	1,780	- 8	1,772	8	1,772	Glacial gravel	Soft, clear		D	Sufficient for local needs.
34	NE.	20	"	"	"	Dug	8	1,780	- 4	1,776	4	1,776	Glacial sand	Hard, clear		S	Sufficient for local needs; another well 25 feet deep is used for household needs.
35	SW.	22	"	"	"	Dug	20	1,765	- 8	1,757	17	1,748	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs; another well 12 feet deep is used for stock.
36	NE.	22	"	"	"	Dug	10	1,745					Glacial sand and gravel	Soft, clear		D, S	Sufficient for local needs.
37	NE.	23	"	"	"	Bored	65	1,750	- 59	1,691			Glacial clay	Hard, clear, iron, "alkaline"		D, S	Insufficient supply during dry seasons.
38	NW.	24	"	"	"	Bored	75	1,750	- 50	1,700			Glacial drift	Hard, clear		S	Sufficient for local needs; another well 26 feet deep is used for domestic needs.
39	SE.	24	"	"	"	Dug	20	1,730	- 17	1,713	17	1,713	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; neighbours haul water from this well.
40	NE.	24	"	"	"	Dug	12	1,735	- 6	1,729	10	1,725	Glacial gravel	Hard, clear		D	Insufficient for local needs; hauls water from SE.¼, section 24.
41	SW.	25	"	"	"	Dug	55	1,750					Glacial drift	Hard, clear, iron, "alkaline"		D, S	Sufficient for local needs.
42	NW.	25	"	"	"	Dug	12	1,750	- 4	1,746	6	1,744	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
43	NW.	26	"	"	"	Bored	60	1,760					Glacial gravel	Hard, clear, iron, "alkaline"		D, S	Sufficient for local needs.
44	SE.	27	"	"	"	Dug	35	1,760	- 5	1,755	35	1,725	Glacial sand	Hard, clear		D, S	Intermittent supply.
45	SW.	27	"	"	"	Dug	12	1,750	- 2	1,748	2	1,748	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
46	NW.	27	"	"	"	Dug	20	1,760	- 18	1,742			Glacial clay	Hard, clear, "alkaline"		S	Intermittent supply; 3 dry holes 15 feet deep; use well on NE.¼, section 28.
47	NE.	28	"	"	"	Dug	16	1,780	- 12	1,768	13	1,767	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well 16 feet deep is not used.
48	SW.	28	"	"	"	Dug	12	1,770	- 6	1,764	10	1,760	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
49	NW.	29	"	"	"	Dug	11	1,780	- 6	1,774	10	1,770	Glacial sand	Hard, clear		D	Sufficient for local needs; another well 16 feet deep used for stock.
50	SE.	30	"	"	"	Dug	26	1,780	- 16	1,764	18	1,762	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
51	NE.	30	"	"	"	Dug	10	1,785	- 6	1,779	6	1,779	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well is used for stock.
52	NW.	30	"	"	"	Dug	20	1,790	- 14	1,776	17	1,773	Glacial sand	Hard, clear, "alkaline"		S	Sufficient for local needs; use neighbours well for domestic needs.
53	NE.	31	"	"	"	Dug	12	1,780	- 8	1,772	8	1,772	Glacial gravel	Soft, clear		D, S	Sufficient for 12 head stock; another similar well 9 feet deep.
54	NW.	32	"	"	"	Dug	12	1,770	- 4	1,766	12	1,758	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well 25 feet deep is used for domestic needs.
55	NE.	32	"	"	"	Dug	8	1,780	- 2	1,778	2	1,778	Glacial sand	Soft, clear		D, S	Sufficient for local needs; two other wells 20 feet deep.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
56	SE.	32	23	5	2	Dug	18	1,780	- 10	1,770	15	1,765	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
57	SW.	33	"	"	"	Dug	9	1,775	- 5	1,770	8	1,767	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
58	NE.	33	"	"	"	Dug	20	1,760	- 15	1,745	19	1,741	Glacial sand	Hard, clear, "alkaline"		D	Sufficient only for domestic needs; another well 12 feet deep is used for stock.
59	NW.	34	"	"	"	Dug	8	1,750	- 4	1,746	4	1,746	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 18 feet deep is not used.
60	SW.	34	"	"	"	Dug	10	1,770	- 5	1,765	5	1,765	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 12 feet deep is not used.
61	NE.	34	"	"	"	Dug	9	1,750	- 3	1,747	3	1,747	Glacial sand	Hard, clear		S	Sufficient for local needs.
62	NW.	35	"	"	"	Dug	11	1,750	- 8	1,742	8	1,742	Glacial sand and gravel	Hard, clear		D, S	Sufficient for local needs.
63	SW.	35	"	"	"	Dug	45	1,760	- 30	1,730			Glacial drift	Hard, clear, "alkaline"		N	Not fit for use, haul water from NE.¼, section 34; 20 dry holes from 20 to 30 feet deep.
64	NW.	36	"	"	"	Dug	20	1,740	- 10	1,730			Glacial drift	Hard, clear, iron, "alkaline"		D, S	Insufficient for local needs during dry seasons.
65	NE.	36	"	"	"	Dug	25	1,740	- 17	1,723			Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply.
66	SE.	36	"	"	"	Bored	60	1,730					Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 20 feet deep, has a small supply.
1	SW.	1	23	6	2	Dug	9	1,800	- 5	1,795	5	1,795	Glacial sand	Soft, clear		D, S	Sufficient for 57 head stock.
2	SW.	2	"	"	"	Dug	9	1,800	- 6	1,794	6	1,794	Glacial sand	Hard, clear, "alkaline"		D	Sufficient for local needs; another similar well is used for stock needs.
3	SW.	4	"	"	"	Dug	16	1,800	- 10	1,790	10	1,790	Glacial sand	Soft, clear		D, S	Sufficient for 30 head stock; another similar well.
4	SE.	8	"	"	"	Dug	14	1,835	- 4	1,831	4	1,831	Glacial gravel	Hard, clear		D	Intermittent supply.
5	SW.	9	"	"	"	Dug	14	1,835	- 10	1,825	10	1,825	Glacial gravel	Hard, clear		D, S	Sufficient for 42 head stock.
6	NW.	10	"	"	"	Dug	10	1,825	- 7	1,818	7	1,818	Glacial sand	Soft, clear		D, S	Sufficient for 30 head stock; also a 60-foot dry hole.
7	SE.	10	"	"	"	Dug	20	1,830									Dry hole; base in glacial blue clay.
8	NW.	14	"	"	"	Dug	10	1,800	- 7	1,793	7	1,793	Glacial sand	Soft, clear		D, S	Sufficient for 25 head stock.
9	SE.	17	"	"	"	Dug	20	1,840	- 5	1,835	5	1,835	Glacial sand and gravel	Soft, clear		S	Insufficient for 20 head stock; another similar well.
10	NE.	17	"	"	"	Bored	100	1,850	- 50	1,800	50	1,800	Glacial sand	Hard, clear, "alkaline"		D, S	Insufficient for 47 head stock; another well 12 feet deep.
11	SW.	17	"	"	"	Dug	12	1,840	- 6	1,834	6	1,834	Glacial sand and gravel	Soft, clear		S	Sufficient for 30 head stock.
12	SE.	19	"	"	"	Bored	60	1,860	- 30	1,830	56	1,804	Glacial sand	Hard, clear		D, S	Sufficient for 20 head stock; also a shallow well on farm.
13	SE.	20	"	"	"	Dug	12	1,845	- 1	1,844	1	1,844	Glacial sand	Hard, clear, "alkaline"		D	Sufficient for household needs only; another well 12 feet deep is used for 18 head stock.
14	SW.	21	"	"	"	Dug	7	1,845	- 4	1,841	4	1,841	Glacial gravel	Soft, clear		D, S	Intermittent supply.
15	SW.	22	"	"	"	Dug	8	1,810	- 5	1,805	5	1,805	Glacial gravel	Soft, clear		D, S	Oversufficient for 12 head stock.
16	NW.	22	"	"	"	Drilled	212	1,815									Dry hole; base in glacial blue clay.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
17	SW.	24	23	6	2	Bored	80	1,800	- 30	1,770	80	1,720	Glacial sand	Hard, iron red sediment, "alkaline"		S	Oversufficient for 70 head stock.
18	NW.	24	"	"	"	Dug	12	1,800	0	1,800	3	1,797	Glacial gravel	Soft, clear		D, S	Sufficient for 7 head stock.
19	NW.	25	"	"	"	Dug	20	1,790	- 15	1,775			Glacial sand	Hard, clear		D	Sufficient only for domestic needs; another well 15 feet deep is used for stock.
20	NE.	26	"	"	"	Dug	8	1,800	- 3	1,797	3	1,797	Glacial gravel	Soft, clear		D, S	Intermittent supply.
21	SE.	27	"	"	"	Dug	10	1,820	0	1,820	2	1,818	Glacial sand	Soft, clear		D, S	Sufficient for 19 head stock; another similar well 6 feet deep.
22	SW.	28	"	"	"	Drilled	150	1,855	- 50	1,805	150	1,705	Glacial sand	Hard, clear, "alkaline"		S	Sufficient for 150 head stock; another well 65 feet deep is also used for stock.
23	NW.	28	"	"	"	Drilled	300	1,850	-150	1,700	300	1,550	Glacial sand	Hard, red iron, "alkaline"		N	Not fit for use; also another well with intermittent supply.
24	SW.	30	"	"	"	Drilled	100	1,870	- 50	1,820	100	1,770	Glacial sand and gravel	Hard, iron, red		S	Sufficient for 20 head stock.
25	SE.	30	"	"	"	Bored	40	1,860	- 30	1,830			Glacial sand	Hard, clear, "alkaline"		S	Insufficient for local needs; a 12-foot well is used for domestic needs.
26	NE.	31	"	"	"	Dug	19	1,850	- 9	1,841	9	1,841	Glacial sand	Hard, clear		D, S	Sufficient for 9 head stock.
27	SW.	32	"	"	"	Bored	87	1,850	- 33	1,817	87	1,763	Glacial sand	Hard, cloudy, iron, "alkaline" red sediment		D, S	Sufficient for 30 head stock; another similar well 102 feet deep.
28	NE.	33	"	"	"	Dug	10	1,860	- 5	1,855			Glacial gravel	Hard, clear	40	D, S	Sufficient for local needs.
29	NW.	34	"	"	"	Dug	7	1,850	- 3	1,847	3	1,847	Glacial gravel	Hard, clear		S	Sufficient for 30 head stock; another well is used for domestic needs.
30	NE.	34	"	"	"	Dug	20	1,850	- 13	1,837	18	1,832	Glacial sand	Hard, clear, "alkaline"		D	Sufficient for domestic needs only; also another well with small supply.
31	SW.	36	"	"	"	Dug	12	1,800	- 10	1,790	10	1,790	Glacial sand	Soft, clear		D	Sufficient for local needs.
32	NW.	36	"	"	"	Dug	16	1,800	- 6	1,794	6	1,794	Glacial sand and gravel	Hard, clear, "alkaline"		D, S	Sufficient for domestic needs; another well 14 feet deep is used for stock.
1	SE.	6	24	4	2	Dug	14	1,700	- 7	1,693	7	1,693	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
2	SW.	6	"	"	"	Dug	25	1,725	- 18	1,707			Glacial drift	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
3	NW.	6	"	"	"	Dug	20	1,705	- 16	1,689	17	1,688	Glacial sand	Soft, clear		D, S	Sufficient for 11 head stock.
4	NE.	6	"	"	"	Dug	12	1,710	- 9	1,701	10	1,700	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
5	SE.	7	"	"	"	Dug	9	1,690	- 2	1,688	3	1,687	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
6	NE.	7	"	"	"	Dug	20	1,695	- 12	1,683	17	1,678	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well 12 feet deep.
7	SW.	8	"	"	"	Dug	10	1,690					Glacial gravel	Hard, clear		S	Sufficient for local needs.
8	NW.	9	"	"	"	Dug	18	1,690	- 14	1,676	14	1,676	Glacial sand	Soft, clear		S	Sufficient for local needs.
9	SE.	16	"	"	"	Dug	16	1,685	- 11	1,674	12	1,673	Glacial sand	Hard, clear		D, S	Sufficient for local needs.

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(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
10	SW.	16	24	4	2	Dug	18	1,690	- 14	1,676	14	1,676	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
11	NW.	16	"	"	"	Dug	15	1,685					Glacial drift	Hard, clear		D, S	Sufficient for local needs; another well is used for domestic needs.
12	SE.	17	"	"	"	Dug	18	1,690	- 8	1,682	15	1,675	Glacial sand	Hard, clear, "alkaline"		S	Intermittent supply.
13	SW.	17	"	"	"	Dug	14	1,690	- 11	1,679	11	1,679	Glacial clay	Soft, clear		D, S	Intermittent supply.
14	SW.	18	"	"	"	Dug	20	1,695	0	1,695			Glacial sand	Hard, clear		D, S	Sufficient for 40 head stock.
15	NE.	18	"	"	"	Dug	20	1,700	- 12	1,688			Glacial drift	Hard, clear		D, S	Sufficient for local needs.
16	NW.	18	"	"	"	Dug	16	1,695	- 10	1,685			Glacial sand	Hard, clear		D, S	Sufficient for local needs.
17	SW.	19	"	"	"	Dug	12	1,695	- 8	1,687	10	1,685	Glacial sand	Hard, clear		D, S	Sufficient for 15 head stock.
18	NW.	19	"	"	"	Dug	16	1,695	- 13	1,682	13	1,682	Glacial gravel	Hard, clear		D, S	Sufficient for 15 head stock.
19	NE.	19	"	"	"	Dug	16	1,695	- 13	1,682	13	1,682	Glacial sand	Soft, clear		D, S	Sufficient for local needs. another well 20 feet deep is used for domestic needs.
20	NW.	20	"	"	"	Dug	8	1,690	- 3	1,687	3	1,687	Glacial sand	Hard, clear		S	Sufficient for local needs.
21	SW.	20	"	"	"	Dug	16	1,690	- 11	1,679	11	1,679	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
22	SE.	20	"	"	"	Dug	12	1,690	- 9	1,681	9	1,681	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
23	NE.	20	"	"	"	Dug	16	1,690	- 10	1,680	10	1,680	Glacial sand	Hard, clear		D, S	
24	NW.	21	"	"	"	Dug	12	1,690	- 9	1,681	9	1,681	Glacial silt	Hard, clear		D, S	Sufficient for local needs.
25	SE.	25	"	"	"	Dug	22	1,690	- 10	1,680	10	1,680	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
26	SE.	26	"	"	"	Dug	26	1,690	- 20	1,670	20	1,670	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
27	NE.	26	"	"	"	Bored	60	1,690	- 20	1,670	50	1,640	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
28	SE.	30	"	"	"	Dug	17	1,695	- 13	1,682	13	1,682	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
29	SW.	30	"	"	"	Dug	14	1,695					Glacial drift	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
30	SW.	31	"	"	"	Dug	7	1,690	- 5	1,685			Glacial clay	Hard, clear, "alkaline"		S	Sufficient for local needs.
31	NW.	31	"	"	"	Dug	7	1,690	- 5	1,685			Glacial clay	Hard, clear, "alkaline"		S	Hardly sufficient for local needs.
32	SW.	34	"	"	"	Dug	22	1,685	- 18	1,667	18	1,667	Glacial sand	Soft, clear		D, S	Sufficient for local needs; two other similar wells.
33	NW.	36	"	"	"	Bored	75	1,690	- 6	1,684	75	1,615	Glacial blue sand	Hard, clear		D, S	Sufficient for local needs; another well 56 feet deep is not used.
1	NE.	1	24	5	2	Dug	18	1,720	- 15	1,705			Glacial clay	Hard, clear, "alkaline"		S	Intermittent supply.
2	NE.	2	"	"	"	Dug	60	1,740	- 50	1,690	50	1,690	Glacial sand	Hard, clear, iron, "alkaline"		D, S	Sufficient for local needs; another well 27 feet deep.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
3	SE.	2	24	5	2	Dug		1,750					Glacial drift	Hard, clear		D, S	Sufficient for local needs.
4	SW.	2	"	"	"	Dug	16	1,750	- 12	1,738	12	1,738	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 16 feet deep.
5	NW.	2	"	"	"	Dug	50	1,745					Glacial drift	Hard, black colour		S	Small yield; filled in.
6	NE.	3	"	"	"	Dug	16	1,750	- 13	1,737	14	1,736	Glacial sand	Hard, clear		S	Sufficient for local needs.
7	NW.	3	"	"	"	Dug	35	1,770	- 15	1,755			Glacial clay	Hard, clear		D, S	Intermittent supply.
8	SE.	4	"	"	"	Dug	14	1,770	- 8	1,762	10	1,760	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another well 12 feet deep.
9	NW.	4	"	"	"	Dug	25	1,770	- 5	1,765			Glacial clay	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 9 feet deep.
10	SW.	6	"	"	"	Dug	16	1,780					Glacial drift	Hard, clear, "alkaline"		D, S	Insufficient for local needs.
11	NW.	7	"	"	"	Dug	8	1,780	- 4	1,776	4	1,776	Glacial gravel	Hard, clear		S	Sufficient for local needs.
12	SE.	7	"	"	"	Dug	9	1,770	- 5	1,765	5	1,765	Glacial gravel	Soft, clear		S	Sufficient for local needs.
13	NE.	8	"	"	"	Dug	16	1,770	- 11	1,759	11	1,759	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
14	NW.	9	"	"	"	Dug	36	1,770	- 15	1,755	15	1,755	Glacial sand	Hard, clear, "alkaline"		S	Intermittent supply; use well on NE.¼, section 8.
15	SW.	9	"	"	"	Dug	25	1,770	- 17	1,753			Glacial clay	Hard, clear		D, S	Sufficient for domestic needs and 4 head stock; another well 7 feet deep with good supply, 2 other wells 20 feet deep with small supply.
16	SE.	9	"	"	"	Bored	32	1,770	- 15	1,755	32	1,738	Glacial drift	Hard, clear, "alkaline"		N	Not fit for use.
17	SE.	9	"	"	"	Dug	16	1,770	- 10	1,760	10	1,760	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; the village of McKim obtains its water from this well.
18	SW.	10	"	"	"	Dug	12	1,760	- 10	1,750			Glacial drift	Hard, clear		D, S	Sufficient for local needs.
19	NE.	10	"	"	"	Dug	52	1,750	- 50	1,700			Glacial drift	Hard, clear		D, S	Sufficient for local needs.
20	NE.	11	"	"	"	Dug	48	1,720					Glacial sand	Hard, clear, "alkaline"		S	Sufficient for local needs; haul drinking water.
21	SW.	12	"	"	"	Dug	55	1,720	- 49	1,671	49	1,671	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
22	SE.	12	"	"	"	Dug	32	1,710	- 20	1,690	20	1,690	Glacial gravel	Hard, clear		D, S	Sufficient for local needs; another similar well 24 feet deep.
23	NE.	13	"	"	"	Dug	30	1,695	- 10	1,685	30	1,665	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well not used.
24	NE.	14	"	"	"	Dug	27	1,720	- 12	1,708	15	1,705	Glacial sand	Hard, clear		D, S, I	Sufficient for 20 to 30 head stock.
25	SE.	14	"	"	"	Dug	45	1,730	- 25	1,705	45	1,685	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
26	SW.	15	"	"	"	Dug	52	1,760	- 49	1,711	50	1,710	Glacial sand	Hard, clear		S	Sufficient for 25 head stock; another well 45 feet deep is used for domestic needs.
27	NE.	16	"	"	"	Dug	46	1,750	- 44	1,706	44	1,706	Glacial sand	Hard, clear		D, S	Sufficient for local needs; two other wells 23 and 16 feet deep are used for stock.
28	SW.	16	"	"	"	Bored	160	1,760	- 26	1,734			Glacial drift	Hard, clear, "alkaline"		D, S	Intermittent supply; use well on NE.¼, section 17.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
29	NE.	17	24	5	2	Dug	11	1,750	- 6	1,744	6	1,744	Glacial sand and gravel	Hard, clear		D, S	Sufficient for local needs.
30	SW.	17	"	"	"	Dug	15	1,740					Glacial clay	Hard, clear		D, S	Sufficient for local needs; two other wells 5 feet deep are also used for stock.
31	SW.	18	"	"	"	Dug	12	1,760	- 10	1,750			Glacial drift	Hard, clear		D	Sufficient for domestic needs only; use well on NW.¼ section 7, for stock.
32	NW.	19	"	"	"	Dug	12	1,750	- 7	1,743	7	1,743	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 12 feet deep; also springs.
33	NW.	20	"	"	"	Dug	7	1,730	- 5	1,725	6	1,724	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
34	SW.	20	"	"	"	Dug	12	1,730	- 8	1,722	8	1,722	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
35	SE.	20	"	"	"	Dug	18	1,730	- 10	1,720	10	1,720	Glacial sand	Soft, clear		D, S	Intermittent supply; 4 other wells 12 to 30 feet deep with small supply.
36	NE.	20	"	"	"	Dug	30	1,730					Glacial drift	Hard, clear, "alkaline"		D, S	Sufficient for local needs.
37	NW.	21	"	"	"	Dug	39	1,735	- 35	1,700	35	1,700	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
38	SE.	21	"	"	"	Dug	20	1,740	- 6	1,734	18	1,722	Glacial gravel	Hard, clear		D, S	Intermittent supply; another well 16 feet deep is not used.
39	SW.	22	"	"	"	Dug	22	1,740	- 20	1,720	20	1,720	Glacial drift	Hard, clear		D, S	Sufficient for local needs.
40	NW.	22	"	"	"	Dug	43	1,735	- 32	1,703	37	1,698	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 12 feet deep.
41	NE.	22	"	"	"	Dug	16	1,705	- 10	1,695	10	1,695	Glacial sand	Soft, clear		D, S	Sufficient for local needs; another similar well.
42	NW.	23	"	"	"	Dug	12	1,710	- 7	1,703	9	1,701	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
43	SE.	23	"	"	"	Dug	8	1,720	- 4	1,716	4	1,716	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
44	NE.	23	"	"	"	Dug	11	1,710	- 10	1,700	10	1,700	Glacial sand	Hard, clear		N	Buildings not occupied.
45	NE.	23	"	"	"	Dug	19	1,710	- 16	1,694	16	1,694	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 10 feet deep has an intermittent supply.
46	NW.	24	"	"	"	Dug	18	1,710					Glacial sand	Soft, clear "alkaline"		D, S	Sufficient for local needs; another well 20 feet deep with good supply.
47	SE.	25	"	"	"	Dug	19	1,700	- 14	1,686	16	1,684	Glacial sand	Soft, clear		D, S	Sufficient for local needs; another well 20 feet deep with good supply.
48	NE.	25	"	"	"	Dug	19	1,700	- 16	1,684	16	1,684	Glacial sand	Hard, clear		D, S	Sufficient for local needs.
49	NW.	25	"	"	"	Dug	18	1,700	- 8	1,692	16	1,684	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another similar well 12 feet deep. #
50	SW.	25	"	"	"	Dug	13	1,705	- 8	1,697	10	1,695	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
51	SE.	26	"	"	"	Dug	16	1,710	- 12	1,698	12	1,698	Glacial sand	Hard, clear		D, M	Sufficient for local needs; town well, 2 other similar wells.
52	NE.	26	"	"	"	Dug	20	1,710					Glacial drift	Hard, clear		D, S	Sufficient for local needs.
53	SE.	27	"	"	"	Dug	24	1,720	- 18	1,702	20	1,700	Glacial sand	Hard, clear		D, S, I	Sufficient for local needs.
54	SE.	28	"	"	"	Dug	24	1,730	- 20	1,710	22	1,708	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
55	NE.	28	"	"	"	Dug	30	1,730					Glacial drift	Hard, clear		D, S	Sufficient for local needs; another well 15 feet deep.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
56	SE.	29	24	5	2	Dug	45	1,740	- 30	1,710	45	1,695	Glacial sand	Hard, clear, iron		D, S	Sufficient for local needs.
57	SW.	29	"	"	"	Drilled	165	1,755	- 35	1,720	165	1,590	Glacial drift	Hard, rusty, iron		D, S	Sufficient for local needs.
58	NE.	30	"	"	"	Bored	36	1,740	- 32	1,708			Glacial drift	Hard, clear		D, S	Sufficient for local needs; also another well for stock.
59	NW.	30	"	"	"	Dug	20	1,740	- 14	1,726	18	1,722	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for local needs; another well 10 feet deep.
60	SE.	32	"	"	"	Dug	25	1,740	- 21	1,719	21	1,719	Glacial drift	Hard, clear		N	Well not in use.
61	NW.	32	"	"	"	Dug	30	1,740	- 25	1,715	25	1,715	Glacial sand	Hard		D, S	Sufficient for local needs.
62	NW.	33	"	"	"	Dug	22	1,730	- 17	1,713	17	1,713	Glacial sand	Hard, clear		D, S	Sufficient for local needs; another well 11 feet deep.
63	SW.	34	"	"	"	Dug	45	1,735	- 42	1,693			Glacial clay	Hard, clear, iron		S	Intermittent supply; another well 10 feet deep gives good supply; several dry holes.
64	SE.	35	"	"	"	Dug	19	1,710	- 13	1,697	15	1,695	Glacial sand	Soft, clear		D, S	Sufficient for local needs.
65	NW.	36	"	"	"	Dug	24	1,700					Glacial clay	Hard, clear		D, S	Sufficient supply; but has not been used in the last 4 years.
66	SW.	36	"	"	"	Dug	14	1,690	- 10	1,680	10	1,680	Glacial sand	Hard, clear		D, S	Sufficient for 20 head stock.
67	SE.	36	"	"	"	Dug	18	1,690	- 7	1,683	14	1,676	Glacial gravel	Soft, clear		D, S	Sufficient for local needs.
1	NE.	1	24	6	2	Dug	8	1,800	- 4	1,796	4	1,796	Glacial gravel	Hard, clear		D, S	Sufficient for 40 head stock.
2	NE.	2	"	"	"	Dug	30	1,800	- 27	1,773	23	1,777	Glacial sand	Hard, clear, "alkaline"		D	Intermittent supply; another well 9 feet is sufficient for 34 head stock.
3	SW.	2	"	"	"	Dug	15	1,800	- 12	1,788			Glacial brown clay	Hard, clear		D, S	Insufficient for 35 head stock.
4	SE.	2	"	"	"	Dug	18	1,800	- 14	1,786			Glacial sand	Hard, clear		D, S	
5	SW.	4	"	"	"	Dug	10	1,850	- 7	1,843	7	1,843	Glacial sand	Hard, clear		D	Sufficient only for domestic needs; another well 10 feet deep is sufficient for 25 head stock.
6	NW.	4	"	"	"	Dug	7	1,840	- 2	1,838	2	1,838	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for 15 head stock; another well 8 feet deep was condemned.
7	NE.	5	"	"	"	Dug	12	1,850	- 4	1,846	4	1,846	Glacial sand	Hard, clear, "alkaline"		D, S	Sufficient for 14 head stock; also a dry hole 14 feet deep.
8	SW.	5	"	"	"	Dug	33	1,850	- 13	1,837	13	1,837	Glacial sand	Hard, clear		D, S	Sufficient for 34 head stock.
9	NW.	5	"	"	"	Dug	14	1,855	- 5	1,850	8	1,847	Glacial gravel	Hard, clear		D, S	Sufficient for 20 head stock.
10	NE.	6	"	"	"	Dug	12	1,860	- 7	1,853	7	1,853	Glacial gravel	Soft, clear		D, S	Sufficient for 12 head stock; 2 other similar wells.
11	SW.	6	"	"	"	Dug	20	1,870									Dry hole; base in glacial blue clay.
12	NW.	6	"	"	"	Dug	14	1,855	- 6	1,849	6	1,849	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for 30 head stock.
13	SE.	6	"	"	"	Dug	9	1,875					Glacial drift	Soft, cloudy		D, S	Three intermittent wells.
14	NE.	7	"	"	"	Dug	16	1,850	- 10	1,840	10	1,840	Glacial gravel	Hard, clear, "alkaline"		D, S	Sufficient for 32 head stock; another well 8 feet deep.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO.214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
15	NW.	8	24	6	2	Dug	8	1,845	- 5	1,840	5	1,840	Glacial sand	Soft, clear		D, S	Sufficient for 30 head stock.
16	SW.	9	"	"	"	Dug	13	1,840	- 8	1,832	8	1,832	Glacial sand	Soft, clear		D, S	Sufficient for 20 head stock.
17	SW.	11	"	"	"	Dug	8	1,800	- 5	1,795	5	1,795	Glacial sand	Soft, clear		D, S	Sufficient for 20 head stock.
18	NW.	11	"	"	"	Dug	6	1,805	- 3	1,802	3	1,802	Glacial sand	Soft, clear		D, S	Sufficient for 14 head stock.
19	SW.	12	"	"	"	Dug	4	1,800	- 2	1,798	2	1,798	Glacial sand	Soft, clear		D, S	Insufficient for 9 head stock.
20	NE.	12	"	"	"	Dug	12	1,800	- 8	1,792	8	1,792	Glacial sand	Soft, clear		D, S	Sufficient for 40 head stock.
21	SW.	13	"	"	"	Dug	9	1,820	- 7	1,813	7	1,813	Glacial gravel	Hard, clear, "alkaline"		D	Sufficient only for domestic needs.
22	SE.	14	"	"	"	Dug	7	1,810					Glacial gravel	Hard		S	Sufficient for 75 head stock.
23	SW.	14	"	"	"	Dug	14	1,800	- 6	1,794			Glacial sand	Hard, clear, "alkaline"		D, S, I	Sufficient for local needs.
24	NE.	16	"	"	"	Dug	18	1,805	- 9	1,796	9	1,796	Glacial sand and gravel	Hard, clear		D, S	Sufficient for 15 head stock.
25	SW.	16	"	"	"	Dug	6	1,800	- 1	1,799	1	1,799	Glacial gravel	Soft, clear		D, S	Sufficient for 8 head stock; two other wells 17 and 6 feet deep.
26	SE.	16	"	"	"	Dug	12	1,775	- 6	1,769	6	1,769	Glacial gravel	Hard, clear		D, S	Sufficient for local needs.
27	NW.	17	"	"	"	Dug	14	1,850	- 2	1,848	2	1,848	Glacial sand	Hard, clear		D, S	Sufficient for 40 head stock.
28	SW.	19	"	"	"	Dug	8	1,890	- 2	1,888	2	1,888	Glacial gravel	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 20 feet deep.
29	SE.	20	"	"	"	Bored	60	1,825	- 45	1,780	60	1,765	Glacial sand	Hard, clear, "alkaline"		D, S	Intermittent supply; also a 20-foot dry hole.
30	NE.	21	"	"	"	Dug	12	1,810	- 9	1,801	11	1,799	Glacial sand	Hard, clear, "alkaline"		D, S	Intermittent supply.
31	SE.	22	"	"	"	Dug	6	1,800	- 4	1,796	4	1,796	Glacial sand	Soft, clear		D, S	Intermittent supply.
32	NE.	22	"	"	"	Dug	17	1,810	- 9	1,801	16	1,794	Glacial sand	Hard, clear		D	Intermittent supply; another well 16 feet deep is sufficient for 14 head stock.
33	SE.	23	"	"	"	Dug	7	1,800	- 3	1,797	3	1,797	Glacial sand	Hard, clear		D, S	Sufficient for 12 head stock; another well 16 feet deep is not used.
34	NE.	23	"	"	"	Dug	25	1,800									Dry hole; base in glacial blue clay.
35	NE.	24	"	"	"	Dug	9	1,800	- 3	1,797	3	1,797	Glacial coarse gravel	Soft, clear		D, S	Sufficient for 60 head stock.
36	SE.	27	"	"	"	Dug	25	1,810	- 21	1,789	18	1,792	Glacial sand and gravel	Hard, clear, "alkaline"		S	Sufficient for 16 head stock; also an intermittent well 20 feet deep, that is not fit for use.
37	NW.	27	"	"	"	Bored	90	1,800	- 60	1,740	60	1,740	Glacial gravel	Hard, clear		D, S	Sufficient for 25 head stock.
38	SE.	28	"	"	"	Dug	15	1,805	- 5	1,800	10	1,795	Glacial sand	Hard, clear		D, S	Sufficient for 19 head stock.
39	NE.	28	"	"	"	Dug	22	1,805	- 10	1,795	22	1,783	Glacial sand	Hard, clear, "alkaline"		N	Not fit for use; two other wells 12 and 16 feet deep with good water.
40	NE.	29	"	"	"	Bored	103	1,840	- 73	1,767			Glacial clay	Hard, clear		S	Intermittent supply.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of CANA NO. 214, SASKATCHEWAN

WELL No.	LOCATION ¼	Sec.	Tp.	Rge.	Mer.	TYPE OF WELL	DEPTH OF WELL	ALTITUDE WELL (above sea level)	HEIGHT TO WHICH WATER WILL RISE Above (+) Below (−) Surface	Elev.	PRINCIPAL WATER-BEARING BED Depth	Elev.	Geological Horizon	CHARACTER OF WATER	TEMP. OF WATER (in °F.)	USE TO WHICH WATER IS PUT	YIELD AND REMARKS
41	SE.	30	24	6	2	Dug	32	1,845	- 17	1,828	17	1,828	Glacial sand	Hard, clear		D, S	Sufficient for domestic needs and 13 head horses; another well 12 feet deep is sufficient for 50 head stock.
42	SW.	30	"	"	"	Dug	12	1,875	- 6	1,869	6	1,869	Glacial gravel	Hard, clear		D, S	Sufficient for 45 head stock; another well 3 feet deep.
43	NW.	31	"	"	"	Bored	20	1,880	- 17	1,863	17	1,863	Glacial sand	Hard, clear, "alkaline"		D, S	Intermittent supply; another well 7 feet deep.
44	SW.	32	"	"	"	Dug	35	1,850	- 30	1,820	33	1,817	Glacial sand	Hard, clear		D	Sufficient for domestic needs; another well 8 feet deep is sufficient for 33 head stock.
45	NE.	32	"	"	"	Dug	23	1,825	- 21	1,840			Glacial clay	Hard, clear		D, S	Insufficient for 6 head stock; another well 13 feet deep is used for stock.
46	SW.	33	"	"	"	Dug	24	1,810	- 16	1,794	24	1,786	Glacial gravel	Hard, clear, "alkaline"		D	Sufficient for local needs; another well 7 feet deep is sufficient for 26 head stock; another well 12 feet deep is not used.
47	NW.	34	"	"	"	Bored	78	1,800	- 58	1,742	78	1,722	Glacial sand	Hard, clear		D, S	Sufficient for 22 head stock; another well 12 feet deep.
48	NE.	34	"	"	"	Dug	52	1,780									Dry hole; base in glacial clay.
49	NE.	36	"	"	"	Drilled	112	1,750	- 92	1,698	112	1,638	Glacial gravel	Hard, clear		D	Sufficient for local needs; another well 12 feet deep is sufficient for 12 head stock.
50	SE.	36	"	"	"	Dug	12	1,750	- 9	1,741	9	1,741	Glacial sandy clay	Hard, cloudy, iron	45	D, S	Sufficient for local needs.

NOTE—All depths, altitudes, heights and elevations given above are in feet.

(D) Domestic; (S) Stock; (I) Irrigation; (M) Municipality; (N) Not used.
(#) Sample taken for analysis.