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BUREAU OF ECONOMIC GEOLOGY

GEOLOGICAL SURVEY

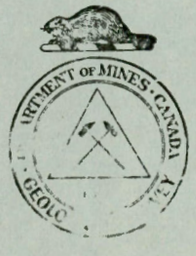
PRELIMINARY REPORT

GROUND-WATER RESOURCES OF THE RURAL MUNICIPALITY OF INSINGER No. 275 SASKATCHEWAN

BY

B. R. MacKay, H. N. Hainstock & G. L. Scott

Water Supply Paper No. 195



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GROUND WATER RESOURCES OF THE RURAL MUNICIPALITY OF INSINGER, NO. 275 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 fine the approximate depth to a water-bearing horizon, be 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 given 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-boaring 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 rests 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 Insinger is an area of 324 square miles in southeastern Saskatchewan. It consists of tps. 28, 29, and 30, ranges 7, 8, and 9, W. 2nd mer. The Winnipeg-Edmonton line of the Canadian Pacific railway runs diagonally across the municipality in a southeast to northwest direction. On this railway line are located the villages of Theodore, Insinger, and Sheho. Insinger, near the centre of the municipality, is 34 miles northwest of the town of Yorkton.

The municipality is mainly covered by moraine and glacial till, but smaller areas of glacial outwash sands and gravels and glacial lake sands occur. The moraine-covered areas are in the southern 6 miles of the municipality. Glacial lake sand-covered areas occur in the eastern parts of townships 29 and 30, range 7, and in the northeastern part of township 30, range 9. Eleven small glacial outwash-covered areas, the largest being approximately 700 acres, are scattered throughout the municipality. The land surface in the glacial lake sand-covered areas is flat to slightly undulating, whereas in the remainder of the township it is rolling.

Whitesand river, a tributary of Assiniboine river, flows in a southeasterly direction across township 30, range 8, township 29, range 7, and through secs. 35 and 36, tp. 28, range 7. During the summer of 1935 the river was about 30 feet wide and 1 to 3 feet deep, and the flow of water was very slow and sluggish. It is reported that the river was dry in the late summer months of 1933 and 1934. The floor of the valley through which the river flows is about 100 feet wide and is strewn with stones and boulders. In this municipality the banks of the valley slope gently upward to the plain level that lies 40 to 75 feet above the valley floor. For a distance of

1 to 2 miles on either side of the valley the ground surface is very stony, especially on the north side of the river, in township 30, range 8, where the glacial till has been modified by water action. Numerous, small, intermittent creeks, the largest of which are Lawrie an Cussed, drain that part of the municipality west of Whitesand river, and form part of the Whitesand River drainage system. A number of small lakes, less than 300 acres in area, including Ebel and Sheho lakes, are located in township 30, range 9. Small, shallow sloughs are common, but large, flat, marshy areas are confined to the northern townships of the municipality. Most of the land surface is covered with small poplar bush which becomes more dense in the southwestern part of the municipality.

Water-bearing Horizons in the Unconsolidated Deposits

The surface water from the lakes in township 30, range 9, and from sloughs, creeks, and Whitesand river, is used by many farmers for watering stock. In years of drought the lakes and Whitesand river are sources from which water is tanked by farmers to augment t supply of water from wells.

Three flowing springs were reported, one in township 28, range 9, and two in township 30, range 9. The spring in the SW.$\frac{1}{4}$, sec. 20, tp. 30, range 9, situated on the south slope of a ravine, yields an abundant supply of soft water, and several farmers in the township haul water from it.

All the producing wells in the municipality derive water from aquifers in the glacial drift. Most of the wells are dug by hand to depths of 4 to 35 feet. In townships 30, ranges 7 and 8, there is not one well deeper than 30 feet. When possible and convenient, shallow wells are dug in ravines in the three southern townships, where beds of water-bearing sand and gravel are easily struck at shallow depths. It is quite difficult,

however, to locate beds or pockets of water-bearing sand and gravel in the upper 30 feet of the drift on the uplands in the southern townships. The supply of water obtained from shallow wells on the uplands is not so abundant as, and is more easily influenced by precipitation than, the supply of water in wells dug in ravines.

In the northern 6 miles of the municipality most of the shallow wells that yield a permanent supply of water are dug in thick beds of sand and gravel that extend from the ground surface to the base of the well. Other shallow producing wells strike the sand and gravel beneath a covering of weathered, yellow or brown clay. The sand and gravel in the upper 35 feet of the glacial drift have been deposited in the form of pockets. Some farmers experience very little or no difficulty in striking beds of water-bearing sand and gravel, whereas others living a short distance away have dug many dry holes through yellow clay to blue clay and still have no reliable source of well water. Water-bearing sand and gravel is almost certain to be found at depths of less than 10 feet in the floors of ravines. The supply of water from the shallow wells in the municipality is exceedingly variable, and in most of them the supply is influenced by seasonal precipitation. Generally, a producing well will water from 10 to 25 head of stock, but occasionally a well is found that yields sufficient water for 40 to 60 head of stock. One well, 12 feet deep, in township 30, range 8, waters 100 head of stock. The quality of the water from shallow wells is considered good, seldom "alkaline", and is sometimes soft. Very few shallow wells that obtain water from a sand or gravel aquifer cannot be used as sources of water for drinking.

The only district wherein boring or drilling for water has been consistently successful is in an area outlined by the "A" boundary line in township 28, range 7. Within this area,

thirty-one wells, 65 to 170 feet deep, have established the presence of two water-bearing horizons of sand and gravel in the glacial drift between elevations of 1,600 and 1,662 feet above sea-level. These two water-bearing horizons extend southwards into the municipality of Garry. The water usually rises from the aquifers under pressure, and the supply is abundant and not easily affected by drought conditions. The water is hard, some of it is "alkaline", and three wells yield water that has a soda taste, but generally the water from both water-bearing horizons can be used for drinking. In township 28, range 8, townships 29, ranges 8 and 9, and townships 30, range 9, at least seventeen wells, 36 to 170 feet deep, obtain water under pressure from sand and gravel aquifers in the glacial drift. These wells have tapped pockets of sand and gravel rather than a fairly continuous water-bearing horizon, as is present in township 28, range 7.

It is estimated that approximately 40 per cent of the farmers in the municipality have an unsatisfactory supply of well water. Except in township 28, range 7, the well water conditions of the townships of the municipality are quite similar. The village of Theodore obtains an abundant supply of water from two wells bored and drilled to each of the two water-bearing horizons of sand and gravel within the outlined area in township 28, range 7. The village of Insinger owns a 100-foot well that yields an abundant supply of unusable, highly mineralized water. All the water for the village is hauled from a shallow well, located one mile northeast of the settlement. Sheho derives its water supply from a number of shallow wells 16 to 20 feet deep, each yielding a small supply of water. The supply of water in this village during drought periods is unsatisfactory.

The glacial drift is believed to be very thick in the municipality, and it possibly extends to an elevation of 1,400 feet. The deepest wells in the municipality are 170 feet, and the base of one of these wells reaches an elevation of 1,600 feet. Pockets, and perhaps horizons, of water-bearing sand and gravel probably occur in the lower part of the glacial drift, but boring or drilling operations for water are reasonably assured of success only within the area outlined by the "A" boundary line on the accompanying map. Farmers who are short of well water are advised to excavate dugouts as a means of collecting and conserving surface water for stock use. These dugouts will prove a satisfactory standby to wells if the location is carefully chosen and the dugout is excavated at least 12 feet deep. Since much of the subsoil in the municipality is of a sandy character, test holes should be bored by a hand auger on the proposed site of the dugout to make certain that no pervious bed or layer of sand and gravel will be encountered during excavation. Slough basins are suggested as possible locations for a dugout, especially those that are bordered by poplar bush where snow will drift. Test augers should also be used prior to digging wells. The small creeks west of Whitesand river offer suitable locations for the construction of small dams.

Water-bearing Horizons in the Bedrock

The Marine Shale series underlies the glacial drift throughout the municipality. No wells in the municipality have been drilled to this bedrock formation. Water-bearing horizons of sand and gravel are rarely found in the Marine Shale series in this part of Saskatchewan, and well drillers are advised to refrain from drilling to it in a search for water. Any search for water by wells in this municipality should be confined to the overlying glacial drift.

GROUND WATER CONDITIONS BY TOWNSHIPS

Township 2[illegible], Range 7

The greater part of the southern 4 miles of the township is covered by moraine, and small moraine-covered areas occur in parts of section 32, 33, and 34. An area of approximately 125 acres in sections 18 and 19 is covered by glacial outwash sands and gravels, whereas the remainder of the township is overlain by glacial till. Whitesand river flows in a southeasterly direction through sections 35 and 36. The bottom of Whitesand valley is at an elevation of 1,590 feet, and the ground surface rises to the southwest, attaining an elevation of approximately 1,825 feet in the southwestern corner of the township. Three intermittent tributaries of Whitesand river, the largest of which is Lawrie creek, break the slightly undulating ground surface and meander across the township in an easterly direction. Parts of the township are wooded with poplar.

The wells in the township range in depth from 5 to 170 feet. Many farmers depend on hand-dug wells for a water supply, and where possible and convenient these wells are situated in or near ravines or creek valleys. Little difficulty is experienced in striking thick beds of water-bearing sand and gravel in the ravines, and the supply is usually quite abundant although the water-level varies with the amount of seasonal precipitation. Adequate quantities of water are difficult to locate in the upper 50 feet of the glacial drift on the uplands, and many dry holes have been dug in search of a water supply. Water from shallow wells is not highly mineralized and is suitable for drinking. Eleven farmers in the township have not an adequate supply of water, and ten of these farmers use shallow, hand-dug wells.

Thirty-one reported wells, 65 to 170 feet deep, have established the presence of tw. water-bearing horizons of sand

and gravel in the glacial drift between elevations of 1,662 and 1,600 feet above sea-level. The lower water-bearing horizon lies at an approximate elevation of 1,600 to 1,635 feet. The presence of the two distinct water-bearing horizons is clearly indicated by two wells in the village of Theodore. One well, bored 125 feet deep, struck the lower water-bearing horizon at an elevation of 1,602 feet above sea-level. The water rose under hydrostatic pressure to a point 80 feet below the surface, and this level has remained constant since 1923, the year the well was bored. The second well, drilled 65 feet deep, struck the upper water-bearing horizon in gravel at an elevation of 1,662 feet above sea-level. The water rose under pressure to a point 25 feet below the surface and the supply is abundant and constant. The water from both wells is hard and suitable for drinking, but that in the shallower well contains iron and has a slight odour. All the wells that strike the lower horizon yield water under pressure, but seven wells, 68 to 149 feet deep, in sections 9, 11, 13, and 14, that strike the upper water-bearing horizon do not yield water under pressure. In these seven wells, although the water does not rise above the aquifer, the supply is abundant and constant. Water from wells tapping either water-bearing horizon in the southern part of the township is hard but seldom "alkaline". Three wells that strike the lower water-bearing horizon in sections 3 and 4, at depths of 147, 150, and 170 feet, yield hard water that has a "soda" taste. In the northern part of the township water from either water-bearing horizon is hard and is often described as "alkaline", but is not too highly mineralized to prevent its use for drinking. Only one well of the thirty-one wells reported yields an unreliable supply of water. This well, 105 feet deep, bored in the SE.$\frac{1}{4}$,

section 29, yields an insufficient supply of water, but this may be due to the well casings being partly clogged. The area within which the thirty-one wells are located is outlined by a boundary line "A" on the accompanying map. The only unsuccessful attempts to strike either water-bearing horizon within the outlined area were made in the SE.¼, section 28. On this quarter section several dry holes have been bored and drilled to a maximum depth of 164 feet. The elevation of this farm is 1,710 feet, so that the lower water-bearing horizon, if continuous throughout the outlined area, should be struck between depths of 100 and 120 feet at the most. Dry holes, 105 and 90 feet deep, have been made outside the outlined area in the SE.¼, section 34, and the SW.¼, section 36.

Township 28, Range 8

The northeastern and southern parts of the township are mantled by glacial till, whereas the remainder is covered by moraine. The elevation of the ground surface increases from 1,750 feet in the northeastern corner of the township to 2,050 feet at the southwestern corner. The undulating land surface is drained by several, small, intermittent streams, the largest being Cussed creek which flows through sections 7, 6, and 5. One of the creeks is tributary to Lawrie creek, and the remaining streams flow into Whitesand river to the east of the municipality. The streams flow through small ravines less than 50 feet deep. The township is thickly wooded with poplar bush, particularly in the western part.

The wells vary in depth from 6 to 136 feet and most of them are dug by hand to depths of less than 25 feet. Of the fifty-eight farmers interviewed, eighteen reported a shortage of well water. In the producing wells dug by hand, the sand and

gravel is usually struck beneath yellow boulder clay, but in at least thirteen wells the sand and gravel extend from the top soil to the base of the well, less than 20 feet below the surface. Generally those wells dug entirely in sand and gravel are located in ravines or near creeks. The supply of water obtained from the shallow wells is extremely variable, and depends to a large extent on the size of the sand and gravel pocket tapped. Some wells yield an abundant and fairly constant supply of water, whereas that from others is easily affected by seasonal variation in precipitation. Several wells become intermittent in winter, and snow is melted or water is hauled to meet stock requirements. Some farmers use more than one well in order to obtain sufficient water for local needs. The water from the shallow wells is usually hard, but seldom highly mineralized, and is suitable for drinking.

Six wells, 43 to 90 feet deep, in sections 12, 13, 28, and 32, have struck large pockets of sand and gravel in the blue clay which yield water under hydrostatic pressure. The highest pressure occurs in an 80-foot well in the SW.$\frac{1}{4}$, section 32, where the water rises to a point 15 feet below the surface. The supply of water from these six wells is abundant and not noticeably affected by drought conditions. The water is hard and more highly mineralized than that from shallow wells, but it is generally used for drinking. The pocket formation of the sand and gravel is indicated in the SE.$\frac{1}{4}$, section 13. On this quarter section several dry holes were made to a depth of 110 feet before a well, 88 feet deep, struck fine sand that yields an abundant supply of water under pressure. Numerous dry holes have been dug and bored in the glacial drift throughout the township to a maximum depth of 136 feet.

One farmer, in the SE.$\frac{1}{4}$, section 12, after boring two dry holes, 65 and 98 feet deep, has excavated a dugout and uses

it to conserve surface water for stock. Dugouts rather than bored or drilled wells are recommended in this township, and are the least costly and most certain method of obtaining a permanent supply of water. The dugouts should be at least 12 feet deep to be satisfactory. The creek ravines offer locations for the construction of small dams.

Township 28, Range 9

The elevation of the land surface increases gradually from 1,900 feet in the northeastern corner to 2,115 feet in the southwestern corner. The undulating ground surface is broken by three small ravines that contain intermittent creeks which flow in an easterly direction. Cussed creek, the largest of these streams, flows across the southern part of the township. Glacial till occurs in parts of sections 31, 32, 33, 34, and 35, and in a plain, 1½ to 2 miles wide, along the course of Cussed creek. A small area that is covered by glacial outwash sands and gravels is located south of Cussed creek in sections 8, 9, 16, and 17. The remainder of the township is overlain by moraine. A growth of poplar bush covers the greater part of the township.

A flowing spring of soft water was reported in one of the creek ravines in the SE.¼, section 24. All the producing wells have been dug by hand to depths of 6 to 35 feet, but dry holes have been dug and bored to a maximum depth of 80 feet in the glacial drift. The producing wells either strike deposits of sand and gravel directly beneath the top soil or beneath a covering of yellow clay. Those wells that yield a permanent supply of water are almost invariably dug in ravines, draws, or shallow depressions. The amount of rainfall affects the supply of water in most wells, and many of them become intermittent in drought years and winters. Fourteen farmers

in the township have either an unreliable supply of water or no producing wells. Creeks are used when possible by some farmers as sources of water for stock, and water is hauled in the late summer months and in winter. Water is very difficult to locate in the upper 50 feet of the glacial drift on the uplands, and no wells in the township have struck water in the pockets of sand and gravel in the blue clay. The quality of the water is very good and only one well was reported that yields "alkaline" water.

Dugouts and small dams on creeks are recommended as the least costly and most certain methods of conserving surface water. The glacial drift is very thick and water-bearing beds of sand and gravel probably exist in it at depths greater than 50 feet, but unless finances permit the risk of failure, boring or drilling operations are not advisable.

Township 29, Range 7

A flat to slightly undulating area in the northeastern part of the township is covered by glacial lake sands. The remainder of the township, except for small areas of moraine in parts of sections 3, 4, 5, and 6, and glacial outwash sands and gravels in parts of sections 18, 19, 30, and 31, is mantled by glacial till and the land surface is slightly rolling. Whitesand river flows across the township in a northwest to southeast direction. The valley through which the river flows is shallow with gently sloping banks. The floor of the valley is strewn with stones and boulders, and the flow of the river was intermittent in 1933 and 1934. In the summer of 1935 the flow of water was 1 to 3 feet deep and very slow and sluggish. Lawrie creek, a tributary of Whitesand river, flows in a southeasterly direction through sections 6, 5, and 4, and a small, intermittent stream flows through section 30 and joins Whitesand river near a

ford in section 29. The top soil is sandy throughout the township and it is very stony in the vicinity of Whitesand valley, especially on the north side. The township is partly wooded with small poplar bush.

The producing wells range in depth from 5 to 60 feet, but most of them are less than 35 feet deep. Of the forty-seven farmers interviewed, twenty-seven obtain a sufficient supply of water from wells; three have an unreliable water supply; two own wells that yield water that is too highly mineralized for use; and fifteen have no well water supply. All wells, except four, yield a permanent and usable supply of water and are dug entirely in sand and gravel. The supply of water obtained from wells in the township is extremely variable. Some wells yield sufficient water for only 10 to 20 head of stock, but wells in the SE.$\frac{1}{4}$, section 3, NE.$\frac{1}{4}$, section 4, and SW.$\frac{1}{4}$, section 30, water 45, 50, and 40 head of stock, respectively. No wells in the township yield water under pressure. The 60-foot well in the SW.$\frac{1}{4}$, section 13, tapped a gravel bed, 56 feet below the surface, and although the water does not rise above the aquifer the supply has been sufficient for 25 head of stock and constant since 1915, the year it was dug. The deepest dry hole, 80 feet, is in the NW.$\frac{1}{4}$, section 22.

Those farmers who do not own producing wells, or have an insufficient supply of water, haul from Whitesand river. When the flow of water is very small, as in drought years, wells dug 4 or 5 feet deep in the river bed yield adequate supplies of water. Since most of the wells are dug in sand and gravel that outcrops at the surface, the quality of the water is very good. It is usually hard, but not highly mineralized, and is suitable for drinking.

The glacial drift is probably not more than 300 to 350 feet thick in this township, and water-bearing pockets of sand

and gravel that would yield water under pressure may exist in the lower part of it. The Marine Shale series underlies the glacial drift and it seldom contains usable water. If deeper drilling is contemplated, it should be confined entirely to the glacial drift.

Township 29, Range 8

The elevation increases from approximately 1,640 feet at Whitesand river, in the northeastern corner of the township, to 1,900 feet at the southwestern corner of the township. The greater part of the township is mantled by glacial till. A small morain , approximately one mile wide, traverses the central part of the township. Moraine also covers the southern parts of sections 3, 4, 5, and 6. The ground surface is rolling, and, with the exception of the northeastern corner, is wooded with poplar. Lawrie creek and two tributary streams, and a small intermittent tributary of Whitesand river, drain the township, the course of the streams being to the east and southeast. The township is very thickly settled.

The producing wells in the township are dug or bored to depths of 6 to 100 feet, but dry holes have been bored as deep as 115 feet. Most of the wells are dug less than 31 feet deep. Generally, deposits of water-bearing sand and gravel are not difficult to strike in the upper 30 feet of the glacial drift, and at least thirty-eight wells in the township were dug in sand and gravel that exter from the surface to the base of the well. These wells range in depth from 6 to 20 feet, and except in one or two instances the supply of water from them is adequate for local requirements. In other shallow producing wells, less than 30 feet deep, the sand and gravel are struck beneath a thin covering of yellow or brown boulder clay. The

sand and gravel usually separates the weathered clay from the blue clay. The supply of water from shallow wells is extremely variable. Some wells can water only 10 to 15 head of stock, whereas occasional wells, such as a 16-foot well in the NE.$\frac{1}{4}$, section 6, an 8-foot well in the NW.$\frac{1}{4}$, section 22, a 7-foot well in the NW.$\frac{1}{4}$, section 24, and an 8-foot well in the NW.$\frac{1}{4}$, section 30, water 35, 50, 60, and 45 head of stock, respectively. Although the quantity of water from wells less than 30 feet deep is quite variable, the quality of the water is good. The water is usually hard and suitable for drinking, and that from only a few wells is "alkaline".

Four wells, 90, 50, 60, and 100 feet deep, located in the NW.$\frac{1}{4}$, section 8, SW.$\frac{1}{4}$, section 9, SE.$\frac{1}{4}$, section 13, and in the village of Insinger, obtain water under pressure from pockets of sand in the glacial blue clay. In the 50-foot well the water rises to a point 42 feet below the surface, but in the other three wells it rises to points 20 feet below the surface. The aquifers are sand and the supply of water is abundant and constant. The water is hard and more highly mineralized than the water from shallow wells, and the water from the 100-foot well in Insinger is too "alkaline" for use. All the drinking water for the village is tanked from the 8-foot well in the NW.$\frac{1}{4}$, section 22.

Of the eighty-three farmers in the township interviewed, seventeen have no well water supply and fourteen obtain an unreliable or unusable supply of water from wells.

The elevation of Insinger is 1,765 feet above sea-level, and the glacial drift is believed to be approximately 350 feet thick at this point. Although difficulty is experienced in obtaining water between depths of 30 and 115 feet below the surface, it is quite possible that pockets of water-bearing sand and gravel, or even discontinuous water-bearing horizons, exist at depths

greater than 115 feet in the glacial drift. Farmers who are short of water are advised to refrain from deep drilling unless finances permit the risk of not striking water. Dugout excavation is recommended as the cheapest and most certain method of obtaining a permanent supply of water for stock. A dugout must be at least 12 feet deep to be satisfactory, and test holes should be sunk prior to excavation to make certain no porvious bed of sand and gravel will be encountered. If deep drilling is contemplated, it should be confined to the glacial drift. The underlying Marine Shale series seldom contains water in this part of Saskatchewan.

Township 29, Range 9

An area approximately $3\frac{1}{2}$ miles long and 1 mile wide in the northeastern part of the township, and the southern parts of sections 1 and 2, are covered by moraine, whereas the remainder of the township is overlain by glacial till. The elevation of the ground surface rises towards the west, and eight intermittent creeks have their headwaters in the western row of sections. The land surface is undulating, and is wooded with poplar bush.

The wells in the township are less than 100 feet deep. Nineteen of the twenty-eight wells that yield a permanent and sufficient supply of water are less than 17 feet deep, and are dug in sand or gravel that extends from the ground surface to the base of the well. These wells usually water from 10 to 30 head of stock, but a 12-foot well in the NE.$\frac{1}{4}$, section 28, waters 50 head of stock, and a 14-foot well in the NW.$\frac{1}{4}$, section 25, waters 60 head of stock. Six wells yielding a permanent and sufficient supply of water tap sand and gravel pockets that lie beneath yellow clay. Only two wells, 36 and 75 feet deep, yield water under pressure. The 75-foot well was bored in the NW.$\frac{1}{4}$, section 22, and the water rises under

hydrostatic pressure to a point 30 feet below the surface. The supply is abundant and constant. The second well that yields water under pressure was dug in the SE.$\frac{1}{4}$, section 32. The well was dug through 30 feet of clay and 6 feet of sand, and the water rises from the sand under pressure to the ground surface. Twenty-seven of the fifty-five farmers interviewed have either an unreliable or insufficient supply of water, and dry holes have been dug and bored in the glacial drift to a maximum depth of 90 feet.

Dugout excavation is advised as the cheapest and most certain method of obtaining a permanent supply of water for stock use. Drilling to depths greater than 90 feet in the glacial drift may strike pockets or discontinuous layers of water-bearing sand and gravel.

Township 30, Range 7

The shore-line of a glacial lake passes through sections 2, 12, 13, 24, 25, 35, and 36. That part of the township to the east of this shore-line is covered by glacial lake sands which in some places attain a thickness of 16 feet. That part of the township to the west of the shore-line is mantled by boulder clay or glacial till. Two small areas in the northern part of the township are overlain by glacial outwash sands and gravels. The land surface is flat to slightly undulating, and is wooded with small poplar bush. Large, flat, marshy areas are particularly numerous in the western and southern parts of the township. Whitesand river passes through the southwestern part of section 6.

The producing wells in the township are dug by hand to depths less than 25 feet, and the deepest dry hole is 30 feet deep. These shallow wells do not usually yield an abundant supply of water and it is estimated that one-half the farmers have an inadequate supply of well water.

Most of the wells that yield a permanent supply of water are dug in pockets of sand and gravel that extend from the ground surface to the base of the well. The best shallow well in the township is located in the SE.¼, section 27. This 8-foot well, dug in 1910, yields a constant supply of water sufficient for 44 head of stock, and the water-level stands 1 foot below the surface.

Dugouts are advised for those farmers who have an inadequate supply of water. To be satisfactory the dugout should be excavated in a depression, where a maximum amount of surface water will be collected during the spring thaw. The dugout should be at least 12 feet deep, and prior to excavation test holes should be sunk on the site to ascertain the character of the material to be excavated.

Township 30, Range 8

Except for parts of sections 3 and 4, which are covered by glacial outwash sands and gravels, and a small part of section 19 and 30, which are covered by glacial lake sands, this township is mantled by glacial till. Whitesand river flows across the township in a northwest to southeast direction. The valley through which it flows is less than 50 feet deep, but is fairly wide for the size of the present stream, and the banks slope gently upward to plain level. The floor of the valley and the ground surface for a distance of 1 mile to 1½ miles on each side of the valley is very stony. The till plain on the north side of the river, in sections 21, 22, 26, 27, 28, 32, 33, and 34, has been slightly modified by stream action and numerous boulders are exposed on the ground surface. The land is slightly rolling, and in some parts of the township it is wooded with small poplar trees. A large, flat, swampy area extends through sections 25 and 27. A small, intermittent

creek flows from Ebel lake in township 30, range 9, through sections 30 and 31, into Whitesand river in the NW.¼, section 32. A flowing spring on the bank of the creek in this quarter section yields sufficient hard water for 30 head of stock.

The wells in the township are dug by hand to depths of 6 to 30 feet. Thick beds of sand and gravel are usually struck at depths of less than 15 feet, and in many wells the sand and gravel underlie the top soil. The supply of water obtained is exceedingly variable. One well, 12 feet deep, dug entirely in gravel, in the SE.¼, section 10, yields sufficient water for 100 head of stock, whereas other wells dug to the same depth and in the same material water only 10 or 15 head of stock.

Nineteen farmers in the township obtain unsatisfactory supplies of water from wells, and must haul water. The usual source from which water is tanked is Whitesand river. Some farmers use more than one well in order to secure sufficient water to meet stock requirements. The quality of the water from the wells of the township is generally good, and only a few of the wells yield "alkaline" water that is unfit for drinking. Seven wells are reported to yield soft water.

No attempts have been made to secure water at depths greater than 30 feet in the glacial drift, and unless finances permit the risk of failure, deep boring or drilling operations are inadvisable. In several farms the proximity of the river makes hauling operations quite convenient, and no serious attempt to obtain water from wells has been made. Those farmers residing some distance from the river are advised to excavate dugouts to collect surface water for stock use. The use of test augers to prospect the upper 30 feet of the glacial drift is recommended. If deep drilling is contemplated it should be confined to the glacial drift as the Marine Shale series that underlies the drift seldom contains usable water in this part of Saskatchewan.

Township 30, Range 9

A small area in the northeastern part of the township is mantled by glacial lake sands. Ebel lake, Sheho lake, and a lake in sections 33 and 34, are located on this glacial lake basin. The ground surface in this district is quite flat and in sections 23 and 24 it is marshy. Ebel creek, a small, intermittent stream, flows into this marsh, and another small creek flows into Sheho lake from the west. The two lakes are joined by a small creek, and in wet years the overflow from Sheho lake, which lies at an elevation of 1,740 feet, flows into Ebel lake, at an elevation of 1,724 feet. Ebel lake is connected to Whitesand river by a small creek that flows in a northwesterly direction through section 25.

Two small areas to the northwest of the village of Sheho are covered by glacial outwash sands and gravels, and the remainder of the township is mantled by glacial till or boulder clay. The land surface in the till- and outwash-covered areas is undulating, and wooded with poplar. Shallow sloughs are common.

The lakes in the northern part of the township are used by several farmers as sources from which water is tanked for stock purposes. A flowing spring in the SW.$\frac{1}{4}$, section 20, yields an abundant supply of soft water from a gravel aquifer. Several farmers in the neighbourhood haul water from this spring. Another spring near a lake in the NW.$\frac{1}{4}$, section 33, yields hard, salty water. Most of the wells in the township have been dug by hand to depths usually less than 35 feet. Where possible and convenient, farmers dig their wells in ravines, since in these localities sand and gravel are struck near the surface, and the supply of water obtained is usually more abundant and constant than that from wells on the uplands.

Abundant supplies of water from sand and gravel in the upper 35 feet of the glacial drift on the uplands are very difficult to obtain. Farmers who depend on shallow wells usually own more than one well, and in drought years and winters the supply of water from a number of wells often must be augmented by hauling. The village of Sheho depends on a number of wells 16 to 20 feet deep, and in drought years the supply of water obtained is inadequate.

Five wells, 52 to 170 feet deep, have struck pockets of sand and gravel in the blue clay and yield water under pressure. The supply in four of the wells, 52, 60, 60, and 85 feet deep, is abundant and not easily affected by prolonged drought conditions, but the 170-foot well, drilled in the NW.$\frac{1}{4}$, section 3, yields a supply sufficient only for household needs. The water in this well rises from a sand aquifer to a point 140 feet below the surface. It is possible that the base of the well casing has become partly clogged with sand particles. The water is hard and "alkaline".

Three wells, 75, 95, and 100 feet deep, in section 30, yield water that is not under pressure, but the supply is sufficient for local requirements. The 100-foot well in the NE.$\frac{1}{4}$, section 30, was bored through 10 feet of yellow clay, 70 feet of blue clay, and 20 feet of white clay. The village of Sheho owns a well, 80 feet deep, that is bored in blue clay. The water supply is small, and it is too highly mineralized for drinking.

At least fifteen farmers in the township have an unsatisfactory supply of well water, and must haul some water from springs, lakes, or sloughs to meet stock requirements. Small, deep dugouts are recommended as an economical method of

obtaining a supply of water for stock use. In order that sufficient water can be collected and stored for winter, when the supply of water decreases in shallow wells, the dugout must be made at least 12 feet deep. Slough basins are considered favourable locations for dugouts.

STATISTICAL SUMMARY OF WELL INFORMATION IN RURAL MUNICIPALITY OF INSINGER, NO. 275, SASKATCHEWAN

Township	28	28	28	29	29	29	30	30	30	Total No. in municipality
West of 2nd mer. Range	7	8	9	7	8	9	7	8	9	
Total No. of Wells in Township	75	84	46	47	86	56	63	45	67	569
No. of wells in bedrock	0	0	0	0	0	0	0	0	0	0
No. of wells in glacial drift	75	84	46	47	86	56	63	45	67	569
No. of wells in alluvium	0	0	0	0	0	0	0	0	0	0
Permanency of Water Supply										
No. with permanent supply	53	46	26	30	64	39	36	27	56	377
No. with intermittent supply	9	13	7	2	5	5	16	14	4	75
No. dry holes	13	25	13	15	17	12	11	4	7	117
Types of Wells										
No. of flowing artesian wells	0	0	0	0	0	1	0	0	0	1
No. of non-flowing artesian wells	24	6	0	0	4	1	0	0	5	40
No. of non-artesian wells	38	53	33	32	65	42	52	41	55	411
Quality of Water										
No. with hard water	53	50	22	32	68	44	45	34	56	404
No. with soft water	9	9	11	0	1	0	7	7	4	48
No. with salty water	0	0	0	0	0	0	0	0	1	1
No. with "alkaline" water	8	3	1	3	13	2	13	8	19	70
Depths of Wells										
No. from 0 to 50 feet deep	39	73	43	45	82	51	63	45	54	495
No. from 51 to 100 feet deep	14	9	3	2	3	5	0	0	12	48
No. from 101 to 150 feet deep	18	2	0	0	1	0	0	0	0	21
No. from 151 to 200 feet deep	4	0	0	0	0	0	0	0	1	5
No. from 201 to 500 feet deep	0	0	0	0	0	0	0	0	0	0
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	53	47	31	29	63	44	51	39	50	407
No.not usable for domestic purposes	9	12	2	3	6	0	1	2	10	45
No. usable for stock	58	57	32	30	65	44	51	40	57	434
No. not usable for stock	4	2	1	2	4	0	1	1	3	18
Sufficiency of Water Supply										
No. sufficient for domestic needs	53	46	24	30	64	39	35	26	51	368
No.insufficient for domestic needs	9	13	9	2	5	5	17	15	9	84
No. sufficient for stock needs	47	43	24	28	56	28	31	24	35	316
No. insufficient for stock needs	15	16	9	4	13	16	21	17	25	136

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.

Water from the Unconsolidated Deposits

No samples of water from wells or springs in the glacial drift of this municipality were analysed.

Water from wells that tap thick beds of sand and gravel at depths less than 30 feet is seldom highly mineralized. The water from nearly all these wells is used for drinking without producing any laxative effect. In many of the shallow wells the bed of sand and gravel from which water is obtained extends from the surface to the base of the well. In such wells the water is easily polluted by surface seepage water containing animal refuse. Samples of water from these wells should be analysed periodically.

The water from wells that tap pockets or horizons of sand and gravel within the blue clay is usually more highly mineralized than water from shallow, hand-dug wells. It is frequently termed "alkaline", and in some cases cannot be used for drinking. Water from these wells probably contains a high content of magnesium sulphate and sodium sulphate, with smaller quantities of calcium carbonate, magnesium carbonate, and sodium chloride. Three wells, 147, 150, and 170 feet deep, in secs. 3 and 4, tp. 28, range 7, yield water that was described as having a soda taste. The "soda" is probably sodium carbonate, which is seldom found in water from the glacial drift. This salt imparts no injurious effects to the human system, although it imparts an unpleasant taste to the water when it becomes warm. Sodium carbonate, or "black alkali", is very injurious to vegetation. Even very small amounts of this salt in water will prove detrimental if the water is used continually for irrigation.

Water from the Bedrock

On the rare occasion when water has been obtained from the Marine Shale series in this part of Saskatchewan; it was generally found to be too highly mineralized for any farm purpose. The water is heavily charged with sodium sulphate, magnesium sulphate, and sodium chloride, the three most undesirable salts in drinking water.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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	SE.	1	28	7	2	Drilled	110	1,710	- 20	1,690	110	1,600	Glacial gravel	Hard		D, S	Abundant and constant supply.
2	NE.	1	"	"	"	Drilled	100	1,705	- 30	1,675	100	1,605	Glacial gravel	Hard		N	Well is not in use at present; good supply.
3	SW.	2	"	"	"	Dug	12	1,720	- 11	1,709			Glacial sand	Hard		D, S	Intermittent supply; several dry holes less than 15 feet deep.
4	SE.	3	"	"	"	Drilled	147	1,730	- 57	1,673	127	1,603	Glacial sand	Hard,soda		D, S	Abundant supply.
5	NE.	3	"	"	"	Bored	90	1,730	- 45	1,685	90	1,640	Glacial gravel	Hard		N	Well not in use at present.
6	NW.	3	"	"	"	Drilled	150	1,735	- 70	1,665	125	1,610	Glacial sand	Hard,soda		D, S	Abundant supply.
7	NE.	4	"	"	"	Drilled	170	1,740	- 80	1,660	140	1,600	Glacial sand	Hard,soda		D, S	Abundant supply.
8	NE.	6	"	"	"	Dug	12	1,745	- 8	1,737	6	1,739	Glacial sand	Hard		D, S	Sufficient and constant supply.
9	NW.	6	"	"	"	Drilled	165	1,810	-135	1,675	165	1,645	Glacial sand	Hard		D, S	Abundant supply.
10	NW.	8	"	"	"	Drilled	164	1,765	-110	1,655	164	1,601	Glacial sand	Hard		D, S	Abundant suppply.
11	SE.	9	"	"	"	Dug	30	1,740	- 15	1,725	19	1,721	Glacial sand	Hard,		D, S	Sufficient supply.
12	NE.	9	"	"	"	Bored	90	1,730	- 79	1,651	78	1,652	Glacial sand and gravel	Hard		D, S	Abundant and constant supply; a 20-foot well is not in use.
13	NE.	10	"	"	"	Drilled	115	1,725	- 75	1,650	115	1,610	Glacial sand	Hard		D, S	Abundant supply.
14	NW.	11	"	"	"	Drilled	87	1,725	- 67	1,658	67	1,658	Glacial sand	Hard		D, S	Abundant supply.
15	NE.	11	"	"	"	Bored	86	1,730	- 83	1,647	83	1,647	Glacial sand and gravel	Hard		D, S	Abundant and constant supply.
16	SW.	12	"	"	"	Drilled	121	1,725	- 41	1,684	100	1,625	Glacial sand	Hard		D, S	Abundant supply.
17	NE.	12	"	"	"	Bored	95	1,710	- 20	1,690	90	1,620	Glacial gravel	Hard		D, S	Abundant supply.
18	SW.	13	"	"	"	Bored	68	1,715	- 60	1,655	53	1,662	Glacial sand	Hard		D, S	Sufficient and constant supply.
19	NW.	13	"	"	"	Drilled	87	1,715	- 76	1,639	70	1,645	Glacial sand	Hard		D, S	Sufficient and constant supply.
20	SE.	14	"	"	"	Dug	75	1,720	- 72	1,648			Glacial sand	Hard		D, S	Sufficient and constant supply.
21	SW.	14	"	"	"	Drilled	149	1,725	- 89	1,636			Glacial sand	Hard		D, S	Sufficient supply.
22	NW.	14	"	"	"	Dug	18	1,725	- 12	1,713			Glacial sand	Hard		D, S	Supply varies with rainfall; insufficient supply.
23	NW.	15	"	"	"	Bored	125	1,727	- 80	1,647	125	1,602	Glacial gravel	Hard		D, S	Village well of Theodore; abundant supply.
24	NW.	15	"	"	"	Drilled	65	1,727	- 25	1,702	65	1,662	Glacial gravel	Hard,iron, odour		D, S	Village well in Theodore.
25	SE.	16	"	"	"	Drilled	140	1,725	- 50	1,675	119	1,606	Glacial sand	Hard,iron		D, S	Abundant supply.
26	SW.	16	"	"	"	Dug	20	1,730	- 14	1,716	14	1,716	Glacial sand	Soft		D, S	Sufficient supply.
27	NW.	16	"	"	"	Dug	18	1,720	- 6	1,714	6	1,714	Glacial sand and gravel	Soft		D, S	Sufficient supply; two 28-foot wells yield an intermittent supply of water.

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 INSINGER NO. 275, 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
28	NW.	17	28	7	2	Dug	20	1,750	- 10	1,740	10	1,740	Glacial sand	Hard		D, S	Intermittent supply.
29	SE.	18	"	"	"	Dug	40	1,760	- 32	1,728	38	1,722	Glacial sand	Hard		S	A 30-foot well is used for domestic purposes. Sufficient supply.
30	NW.	18	"	"	"	Dug	10	1,775	- 7	1,768			Glacial drift	Soft		D, S	Intermittent supply; a10-foot well also is used, insufficient supply.
31	NW.	19	"	"	"	Dug	40	1,770	- 38	1,732			Glacial drift	Hard		D	Intermittent supply.
32	NE.	20	"	"	"	Drilled	110	1,735	- 60	1,675	110	1,625	Glacial sand	Hard, "alkaline"		D, S	Abundant supply.
33	NW.	20	"	"	"	Dug	50	1,740	- 45	1,695			Glacial drift	Hard		D, S	Poor and insufficient supply.
34	SE.	20	"	"	"	Bored	70	1,730	- 38	1,692	70	1,660	Glacial sand	Hard		D, S	Abundant supply.
35	SW.	21	"	"	"	Dug	12	1,720	- 9	1,711	8	1,712	Glacial sand	Hard		D, S	Sufficient supply.
36	SE.	21	"	"	"	Bored	104	1,730	- 54	1,676	104	1,626	Glacial sand	Hard, "alkaline"		D	Waters stock in a slough fed by springs. Plenty of water.
37	SE.	21	"	"	"	Bored	22	1,725	- 20	1,705			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply.
38	NW.	21	"	"	"	Dug	10	1,720	- 7	1,713	7	1,713	Glacial sand	Soft		D, S	Sufficient supply.
39	SE.	22	"	"	"	Dug	25	1,725	- 10	1,715			Glacial drift	Hard		D, S	Insufficient supply.
40	SE.	23	"	"	"	Dug	35	1,715	- 24	1,691	24	1,691	Glacial sand	Hard		S	Sufficient supply.
41	SW.	24	"	"	"	Drilled	108	1,715	- 60	1,655	108	1,607	Glacial sand and gravel	Hard, "alkaline"		D, S	Abundant supply.
42	NW.	24	"	"	"	Dug	18	1,710	- 11	1,699	11	1,699	Glacial fine sand	Hard		D, S	Sufficient supply.
43	NW.	25	"	"	"	Dug	6	1,705	- 4	1,701	4	1,701	Glacial gravel	Soft		D, S	Sufficient supply.
44	SW.	26	"	"	"	Dug	5	1,680	- 2	1,678	2	1,678	Glacial sand	Hard		D, S	Sufficient supply.
45	SE.	28	"	"	"	Dug	11	1,710	- 8	1,702			Glacial gravel	Soft		D, S	Intermittent supply; several bored and drilled dry holes to a maximum depth of 164 feet.
46	NE.	28	"	"	"	Dug	18	1,690	- 14	1,676	14	1,676	Glacial sand	Hard		D, S	Sufficient and constant supply.
47	SW.	28	"	"	"	Drilled	70	1,725	- 35	1,690	70	1,655	Glacial sand	Hard, "alkaline"		D, S	Abundant supply.
48	NW.	28	"	"	"	Bored	108	1,720	- 56	1,664	108	1,612	Glacial sand	Hard, "alkaline"		D, S	Abundant supply.
49	SW.	29	"	"	"	Dug	6	1,730	- 3	1,727	3	1,727	Glacial gravel	Soft		D, S	Good supply.
50	SE.	29	"	"	"	Bored	105	1,740	- 60	1,680	105	1,635	Glacial sand	Hard, "alkaline"		D	Insufficient supply.
51	SE.	30	"	"	"	Bored	120	1,750	- 65	1,685	120	1,630	Glacial fine sand	Hard, iron		D, S	Abundant supply.
52	SE.	32	"	"	"	Bored	120	1,755	- 60	1,695	120	1,635	Glacial sand	Hard, "alkaline"		D, S	Abundant supply.
53	SW.	33	"	"	"	Bored	112	1,740	- 50	1,690	112	1,628	Glacial sand	Hard		N	Well is not in use at present.
54	NW.	33	"	"	"	Dug	10	1,700	- 6	1,694	6	1,694	Glacial sand and gravel	Soft		D, S	Sufficient supply.

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

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
55	SE.	33	28	7	2	Dug	10	1,715	- 5	1,710	5	1,710	Glacial sand	Soft		D, S	Sufficient supply.
56	SW.	34	"	"	"	Dug	50	1,705									One of several dry holes in glacial drift.
57	NW.	34	"	"	"	Dug	40	1,710									Dry hole in glacial drift.
58	SE.	34	"	"	"	Bored	105	1,690									Dry hole in glacial drift.
59	SW.	35	"	"	"	Dug	24	1,700	- 21	1,679	22	1,678	Glacial sand	Hard		S	A 22-foot well near this well is used for the house. Sufficient supply.
60	SE.	35	"	"	"	Dug	16	1,695	- 6	1,689			Glacial sand	Hard		S	Sufficient supply.
61	SW.	36	"	"	"	Bored	90	1,700									Dry hole in glacial drift.
1	NE.	1	28	8	2	Dug	14	1,825	- 10	1,815	10	1,815	Glacial gravel	Soft		D, S	Sufficient supply.
2	SW.	1	"	"	"	Dug	9	1,840	- 5	1,835	5	1,835	Glacial gravel	Soft		D, S	Sufficient supply.
3	NW.	1	"	"	"	Dug	24	1,840	- 16	1,824	16	1,824	Glacial gravel	Hard		D, S	Sufficient supply.
4	SE.	2	"	"	"	Dug	15	1,840	0	1,840			Glacial sand	Hard		D, S	Well is dry in winter; another 6-foot well is used for stock also.
5	NW.	2	"	"	"	Dug	20	1,860	- 15	1,845			Glacial sand and gravel	Hard		D	A 30-foot well in pasture used for stock.
6	NE.	3	"	"	"	Dug	17	1,875	- 10	1,865	10	1,865	Glacial sand	Hard		D, S	Intermittent supply; hauls water from another well on section 3.
7	SE.	4	"	"	"	Dug	36	1,910	- 30	1,880			Glacial fine sand	Hard		D, S	Sufficient supply.
8	SW.	4	"	"	"	Dug	14	1,935	- 6	1,929			Glacial drift	Hard		N	Several dry holes dug by hand on this quarter section.
9	NW.	4	"	"	"	Dug	10	1,940	- 4	1,936			Glacial drift	Hard		D, S	Well is dry during the winter.
10	SW.	10	"	"	"	Dug	12	1,880	- 7	1,873	7	1,873	Glacial gravel	Hard		D, S	Sufficient supply.
11	NE.	10	"	"	"	Dug	18	1,860	- 13	1,847	13	1,847	Glacial sand	Hard		D, S	Sufficient supply.
12	NW.	11	"	"	"	Dug	12	1,850	- 11	1,839	11	1,839	Glacial sand	Hard		D, S	Intermittent supply.
13	NE.	11	"	"	"	Dug	22	1,840	- 18	1,822			Glacial drift	Hard		S	Intermittent supply; hauls water.
14	SE.	12	"	"	"	Dug	18	1,825	- 15	1,810			Glacial sand	Hard		D	Intermittent supply; a dugout used for stock. Two dry holes 65 and 98 feet deep in glacial drift.
15	SW.	12	"	"	"	Dug	18	1,830	- 8	1,822			Glacial sand	Hard		D, S	Sufficient supply.
16	NW.	12	"	"	"	Bored	75	1,825	- 25	1,800	75	1,750	Glacial sand	Hard; "alkaline"		D, S	Abundant supply.
17	NE.	12	"	"	"	Dug	50	1,820									Dry hole in glacial drift.
18	SE.	13	"	"	"	Bored	88	1,815	- 48	1,767	88	1,727	Glacial fine sand	Hard		D, S	Abundant supply; several dry holes as deep as 110 feet in glacial drift.
19	SW.	13	"	"	"	Dug	22	1,805	- 12	1,793	12	1,793	Glacial sand and gravel	Soft		D, S	Sufficient supply.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
20	NW.	13	28	8	2	Dug	20	1,805	- 16	1,789	16	1,789	Glacial gravel	Hard		D, S	Sufficient supply.
21	SE.	14	"	"	"	Dug	16	1,850	- 8	1,842	8	1,842	Glacial sand	Soft		D, S	Sufficient supply.
22	SW.	14	"	"	"	Dug	16	1,855	- 12	1,843	12	1,843	Glacial gravel	Hard		D, S	Sufficient supply.
23	NW.	14	"	"	"	Dug	8	1,845	- 4	1,841	4	1,841	Glacial sand	Soft		D, S	Sufficient and constant supply.
24	NW.	14	"	"	"	Dug	7	1,840	- 5	1,835	5	1,835	Glacial sand	Soft		D, S	Sufficient supply.
25	SE.	16	"	"	"	Dug	20	1,890									Dry hole in glacial drift.
26	SE.	18	"	"	"	Dug	14	1,960	- 8	1,952			Glacial sand	Hard		D, S	Poor supply; seven dry holes dug in glacial drift.
27	NE.	18	"	"	"	Dug	36	1,950	- 25	1,925			Glacial sand	Hard		D	Stock are watered at a 36-foot well.
28	NW.	18	"	"	"	Dug	12	1,960	- 8	1,952			Glacial sand	Hard		D, S	Intermittent supply; creek is used for stock.
29	NW.	19	"	"	"	Dug	6	1,930	0	1,930	0	1,930	Glacial fine sand	Soft		S	Good supply of water.
30	NW.	20	"	"	"	Dug	20	1,905	- 16	1,889			Glacial drift	Hard		D, S	Sufficient supply.
31	SW.	22	"	"	"	Dug	16	1,860	- 6	1,854			Glacial sand	Hard		D, S	Intermittent and insufficient water supply.
32	NW.	22	"	"	"	Dug	10	1,840	- 5	1,835	5	1,835	Glacial sand	Hard		D, S	Sufficient and constant supply.
33	SE.	22	"	"	"	Dug	12	1,850	- 2	1,848	2	1,848	Glacial sand	Hard		D, S	Sufficient supply.
34	NE.	22	"	"	"	Dug	8	1,840	- 3	1,837	3	1,837	Glacial gravel	Hard		N	Well is not in use.
35	SW.	23	"	"	"	Dug	10	1,835	- 6	1,829	6	1,829	Glacial sand	Hard		D, S	Sufficient supply.
36	NW.	23	"	"	"	Dug	6	1,835	- 2	1,833	2	1,833	Glacial gravel	Hard		D, S	Sufficient supply.
37	SW.	24	"	"	"	Dug	10	1,800	- 6	1,794	8	1,792	Glacial gravel	Hard		D, S	Sufficient supply.
38	NE.	24	"	"	"	Dug	32	1,775	- 16	1,759			Glacial gravel	Hard		D, S	Sufficient supply.
39	SE.	25	"	"	"	Dug	42	1,775									Dry hole in glacial drift.
40	SW.	25	"	"	"	Dug	9	1,785	- 6	1,779	6	1,779	Glacial gravel	Soft		D, S	Sufficient supply.
41	NW.	25	"	"	"	Dug	12	1,750	- 8	1,742	8	1,742	Glacial gravel	Hard		D, S	Sufficient supply.
42	SE.	26	"	"	"	Dug	50	1,800									Dry hole in glacial drift, hauls water from section 24.
43	NE.	28	"	"	"	Dug	7	1,860	0	1,860			Glacial sand	Soft		D, S	Sufficient supply.
44	SW.	28	"	"	"	Dug	20	1,845	- 5	1,840			Glacial gravel	Hard		D, S	Sufficient supply.
45	NW.	28	"	"	"	Bored	90	1,860	- 60	1,800	90	1,770	Glacial fine sand	Hard, iron.		S	Good supply; a 25-foot well is also used.
46	SE.	30	"	"	"	Dug	15	1,900	- 13	1,887			Glacial drift	Hard		D, S	Intermittent supply.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER N .275, 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
47	NE.	30	28	8	2	Dug	15	1,900									Dry hole in glacial drift.
48	SW.	30	"	"	"	Dug	16	1,925	- 10	1,915			Glacial sand	Hard		D, S	Sufficient supply.
49	SW.	32	"	"	"	Bored	80	1,890	- 15	1,875	80	1,810	Glacial gravel	Hard		D, S	Abundant supply.
50	SE.	32	"	"	"	Bored	43	1,860	- 22	1,838	43	1,817	Glacial gravel	Hard,iron		D, S	Constant and sufficient supply.
51	NE.	32	"	"	"	Bored	45	1,860	- 33	1,827	45	1,812	Glacial gravel	Hard,iron		S	Abundant supply; a 23-foot well is used for domestic purposes.
52	NW.	34	"	"	"	Dug	18	1,825	- 15	1,810			Glacial gravel	Hard		D, S	Intermittent supply; one dry hole 130 feet deep in glacial drift.
53	NE.	34	"	"	"	Dug	25	1,795	- 18	1,777	18	1,777	Glacial gravel	Hard		D, S	Sufficient supply.
54	SW.	35	"	"	"	Dug	8	1,780	- 4	1,776	4	1,776	Glacial sand	Hard,"alkaline"		D, S	Sufficient supply.
55	NE.	35	"	"	"	Dug	18	1,775	- 16	1,759			Glacial sand	Hard		D	An 8-foot well in the barn used for stock.
56	SW.	36	"	"	"	Dug	75	1,760									One of several dry holes in glacial drift.
57	SE.	36	"	"	"	Dug	12	1,745	- 4	1,741	4	1,741	Glacial gravel	Hard		D, S	Sufficient supply.
58	NE.	36	"	"	"	Bored	50	1,770	- 30	1,740			Glacial drift	Hard,"alkaline"		S	Intermittent supply; hauls water.
1	NE.	4	28	9	2	Dug	7	2,070	- 4	2,066	4	2,066	Glacial gravel	Soft		D, S	Sufficient supply.
2	SW.	4	"	"	"	Dug	10	2,090	- 6	2,084	6	2,084	Glacial sand	Hard		D, S	Sufficient supply.
3	SE.	6	"	"	"	Dug	10	2,100	- 3	2,097	3	2,097	Glacial sand and gravel	Hard		D, S	Sufficient supply.
4	NW.	6	"	"	"	Dug	14	2,115	- 10	2,105	10	2,105	Glacial sand	Soft		D, S	Sufficient supply.
5	NW.	7	"	"	"	Dug	12	2,090	- 8	2,082	8	2,082	Glacial gravel	Hard		D, S	Insufficient supply in drought years. Several shallow dry holes.
6	SW.	8	"	"	"	Dug	22	2,090	- 10	2,080			Glacial sand	Hard		D, S	Sufficient supply, but it varies seasonally.
7	SE.	9	"	"	"	Dug	9	2,070	- 6	2,064			Glacial gravel	Hard		D, S	Insufficient supply in winter, well requires cleaning.
8	NW.	10	"	"	"	Dug	17	2,050	- 6	2,044	12	2,038	Glacial gravel	Hard		D, S	Insufficient supply in winter.
9	NE.	10	"	"	"	Dug	14	2,025	- 11	2,014	11	2,014	Glacial sand	Hard		D, S	Sufficient supply.
10	SW.	12	"	"	"	Dug	30	2,035									Dry hole in glacial drift.
11	NW.	12	"	"	"	Dug	14	2,015	- 8	2,007	8	2,007	Glacial gravel	Hard		N	Cribbing has caved in; creek is used for stock.
12	SE.	12	"	"	"	Dug	25	2,010	- 18	1,992			Glacial drift	Hard		D, S	Insufficient supply in winter.
13	NE.	12	"	"	"	Dug	6	2,010	- 3	2,007			Glacial drift	Soft		D, S	Slough seepage well; intermittent supply.
14	SW.	15	"	"	"	Dug	22	2,040					Glacial drift	Hard		D	Sufficient supply.
15	NE.	16	"	"	"	Dug	17	2,030	- 13	2,017	13	2,017	Glacial fine sand	Hard		D, S	Sufficient and constant supply.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
16	NE.	18	28	9	2	Dug	10	2,060	- 4	2,056	4	2,056	Glacial sand	Soft		D, S	Good supply of water.
17	SW.	18	"	"	"	Dug	10	2,060	- 4	2,056	4	2,056	Glacial sand	Soft		D, S	Sufficient supply.
18	NW.	19	"	"	"	Dug	10	2,060	- 5	2,055	5	2,055	Glacial sand and gravel	Hard		D, S	Sufficient supply.
19	SW.	20	"	"	"	Dug	12	2,050	0	2,050			Glacial drift	Hard		D, S	Slough seepage well; insufficient supply in winter.
20	NW.	20	"	"	"	Bored	80	2,040									The deepest of several dry holes in glacial drift.
21	NW.	22	"	"	"	Dug	20	2,010	- 10	2,000	18	1,992	Glacial sand	Hard		D, S	Sufficient supply.
22	SE.	22	"	"	"	Dug	27	2,010	- 10	2,000			Glacial drift	Hard		D, S	Sufficient supply.
23	NE.	22	"	"	"	Bored	53	1,995									Dry hole in glacial drift.
24	SW.	24	"	"	"	Dug	12	1,950	- 8	1,942	8	1,942	Glacial gravel	Hard		D, S	Sufficient supply.
25	NW.	24	"	"	"	Dug	12	1,960	- 8	1,952			Glacial gravel	Hard		D, S	Sufficient supply.
26	SE.	24	"	"	"	Spring		1,950	0	1,950			Glacial drift	Soft		S	Good supply.
27	NE.	24	"	"	"	Dug	6	1,940	- 1	1,939	1	1,939	Glacial gravel	Soft		D	Sloughs are used for stock.
28	NE.	26	"	"	"	Dug	8	1,950	- 4	1,946			Glacial drift	Hard		D	Intermittent supply; creek is used for watering stock.
29	SE.	28	"	"	"	Dug	6	2,000	- 2	1,998	2	1,998	Glacial gravel	Soft		D, S	Sufficient supply.
30	NE.	28	"	"	"	Dug	30	2,000	- 10	1,990			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; hauls water a distance of 1 mile.
31	NW.	28	"	"	"	Dug	35	2,010									Dry hole in glacial drift.
32	NE.	30	"	"	"	Dug	10	2,025	- 5	2,020	5	2,020	Glacial sand	Hard		D, S	Sufficient supply; several dry holes less than 30 feet deep.
33	SW.	30	"	"	"	Dug	28	2,050									Dry hole in glacial drift.
34	SE.	32	"	"	"	Dug	8	2,000	- 4	1,996	4	1,996	Glacial sand	Hard		D, S	Sufficient supply.
35	NE.	32	"	"	"	Dug	9	1,985	- 4	1,981	4	1,981	Glacial sand	Soft		D, S	Sufficient supply.
36	NW.	34	"	"	"	Dug	24	1,945	- 9	1,936			Glacial sand	Soft		D, S	Sufficient supply.
37	SE.	34	"	"	"	Dug	6	1,975	0	1,975	0	1,975	Glacial gravel	Soft		D, S	Sufficient supply.
38	SE.	36	"	"	"	Dug	14	1,920	- 6	1,914			Glacial drift	Hard		D, S	Intermittent supply.
1	SE.	3	29	7	2	Dug	10	1,700	- 3	1,697	3	1,697	Glacial sand	Hard		D, S	Sufficient for 45 head stock.
2	NE.	3	"	"	"	Dug	8	1,700	- 2	1,698	2	1,698	Glacial sand	Hard		D, S	Sufficient for 12 head stock.
3	NW.	3	"	"	"	Dug	10	1,710	- 4	1,706	4	1,706	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
4	SE.	4	"	"	"	Dug	35	1,715	- 32	1,683			Glacial drift	Hard, "alkaline"		N	Well is not in use.

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 INSINGER NO.275, 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
5	NE.	4	29	7	2	Dug	8	1,720	0	1,720	0	1,720	Glacial sand	Hard		D, S	Sufficient for 50 head stock.
6	SW.	4	"	"	"	Dug	20	1,720									Dry hole in glacial drift.
7	NW.	4	"	"	"	Dug	8	1,715	- 4	1,711	4	1,711	Glacial sand	Hard		D, S	Sufficient for 16 head stock.
8	SE.	5	"	"	"	Dug	12	1,720	- 6	1,714	6	1,714	Glacial sand	Hard		D, S	Sufficient for 25 head stock.
9	SW.	7	"	"	"	Dug	5	1,740	- 2	1,738	2	1,738	Glacial gravel	Hard		D, S	Sufficient for 7 head stock.
10	NW.	7	"	"	"	Dug	20	1,755									Dry hole in glacial drift.
11	SW.	8	"	"	"	Bored	32	1,735	- 17	1,718			Glacial sand	Hard		D, S	Sufficient for 13 head stock.
12	NE.	8	"	"	"	Dug	9	1,735	0	1,735	0	1,735	Glacial sand	Hard		D, S	Sufficient for 27 head stock.
13	NE.	9	"	"	"	Dug	10	1,715	- 2	1,713	4	1,711	Glacial gravel	Hard		D, S	Sufficient for 32 head stock.
14	SW.	10	"	"	"	Dug	20	1,715	- 15	1,700	15	1,700	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
15	NW.	10	"	"	"	Dug	10	1,705	- 5	1.700	5	1,700	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
16	SE.	10	"	"	"	Dug	8	1,700	- 3	1,697	3	1,697	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
17	NW.	12	"	"	"	Dug	40	1,660	- 37	1,623	37	1,623	Glacial sand	Hard		D, S	Sufficient for 10 head stock.
18	SW.	13	"	"	"	Dug	60	1,665	- 56	1,609	56	1,609	Glacial sand	Hard		D, S	Sufficient for 25 head stock.
19	NW.	13	"	"	"	Dug	10	1,670	- 6	1,664	6	1,664	Glacial gravel	Hard		D, S	Intermittent supply; insufficient for 20 head stock.
20	NE.	14	"	"	"	Dug	10	1,680	- 2	1,678	2	1,678	Glacial gravel	Hard		D, S	Sufficient for 28 head stock.
21	SE.	16	"	"	"	Dug	20	1,710									Dry hole in glacial drift.
22	SE.	17	"	"	"	Dug	12	1,720									Dry hole in glacial drift.
23	SW.	17	"	"	"	Dug	9	1,730	0	1,730	0	1,730	Glacial sand	Hard		D, S	Intermittent supply; insufficient for 20 head stock.
24	NW.	17	"	"	"	Dug	8	1,735	- 2	1,733	2	1,733	Glacial gravel	Hard		D, S	Sufficient for 8 head stock.
25	SW.	19	"	"	"	Dug	12	1,740	- 5	1,735	5	1,735	Glacial gravel	Hard		D, S	Sufficient for 6 head stock.
26	NW.	19	"	"	"	Bored	40	1,725	- 20	1,705			Glacial drift	Hard, "alkaline"		N	Well is not in use.
27	NE.	19	"	"	"	Dug	20	1,720									Dry hole in glacial drift.
28	NW.	22	"	"	"	Bored	80	1,710									Dry hole in glacial drift.
29	NE.	22	"	"	"	Dug	24	1,710	- 20	1,690			Glacial drift	Hard, "alkaline"		S	Insufficient for 21 head stock; water has a laxative effect on man.
30	NW.	23	"	"	"	Dug	30	1,710									Dry hole in glacial drift.
31	SE.	23	"	"	"	Dug	7	1,690	- 3	1,687	3	1,687	Glacial gravel	Hard		D, S	Sufficient for 9 head stock.

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 INSINGER NO. 275, 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
32	SW.	24	29	7	2	Dug	6	1,685	- 3	1,682	3	1,682	Glacial gravel	Hard		D, S	Sufficient for 9 head stock.
33	NW.	24	"	"	"	Dug	16	1,690	- 9	1,681	11	1,679	Glacial gravel	Hard		D, S	Sufficient for 16 head stock.
34	SE.	24	"	"	"	Dug	9	1,680	- 5	1,675	5	1,675	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
35	NE.	25	"	"	"	Dug	40	1,690									Dry hole in glacial drift.
36	NE.	26	"	"	"	Dug	16	1,700	- 8	1,692	8	1,692	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
37	NE.	27	"	"	"	Dug	10	1,715									Dry hole in glacial drift.
38	NE.	28	"	"	"	Dug	30	1,710									Dry hole in glacial drift.
39	SE.	30	"	"	"	Dug	30	1,705									Dry hole in glacial drift.
40	SW.	30	"	"	"	Dug	6	1,705	- 2	1,703	2	1,703	Glacial gravel	Hard		D, S	Sufficient for 40 head stock.
41	NW.	30	"	"	"	Dug	6	1,710	- 2	1,708	2	1,708	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
42	SE.	32	"	"	"	Dug	30	1,705									Dry hole in glacial drift.
43	NE.	32	"	"	"	Dug	25	1,705									Dry hole in glacial drift.
44	SE.	33	"	"	"	Dug	8	1,720	0	1,720	0	1,720	Glacial sand	Hard		D, S	Sufficient for 5 head stock.
45	SW.	35	"	"	"	Dug	16	1,700									Dry hole in glacial drift.
46	NW.	35	"	"	"	Dug	30	1,705									Dry hole in glacial drift.
47	NW.	36	"	"	"	Dug	5	1,700	- 2	1,698	2	1,698	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
1	SE.	1	29	8	2	Dug	20	1,750	- 8	1,742			Glacial sand	Hard		D, S	Sufficient for 15 head stock.
2	NE.	1	"	"	"	Dug	12	1,740									Dry hole in glacial drift.
3	SW.	1	"	"	"	Dug	30	1,755	- 15	1,740			Glacial drift	Hard, "alkaline"		D, S	Sufficient for 16 head stock; water has a laxative effect on man.
4	NE.	2	"	"	"	Dug	12	1,750	- 6	1,744			Glacial sand	Hard		D, S	Sufficient supply.
5	SW.	2	"	"	"	Dug	12	1,780	- 7	1,773	7	1,773	Glacial gravel	Hard		D, S	Sufficient for 4 head stock.
6	NW.	2	"	"	"	Dug	10	1,775									Dry hole in glacial drift.
7	SE.	3	"	"	"	Dug	8	1,790	0	1,790	0	1,790	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
8	NW.	3	"	"	"	Dug	12	1,800	- 4	1,796	4	1,796	Glacial sand	Hard		D, S	Sufficient for 24 head stock.
9	SE.	4	"	"	"	Dug	20	1,800									Dry hole in glacial drift.
10	NE.	4	"	"	"	Dug	12	1,790	0	1,790			Glacial drift	Hard, "alkaline"		D, S	Sufficient for 6 head stock.
11	SW.	4	"	"	"	Dug	15	1,800	- 10	1,790			Glacial drift	Hard, "alkaline"		D, S	Insufficient for 25 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
12	NW.	4	29	8	2	Dug	8	1,805	- 5	1,800	5	1,800	Glacial sand	Hard		D, S	Sufficient for 20 head stock.
13	SE.	5	"	"	"	Dug	14	1,825	- 6	1,819	6	1,819	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
14	NE.	5	"	"	"	Dug	8	1,815	- 2	1,813	2	1,813	Glacial gravel	Hard		D, S	Sufficient for 16 head stock.
15	SW.	5	"	"	"	Dug	10	1,850	- 4	1,846	4	1,846	Glacial gravel	Hard		D, S	Sufficient for 7 head stock.
16	NE.	6	"	"	"	Dug	16	1,855	- 6	1,849	6	1,849	Glacial gravel	Hard		D, S	Sufficient for 35 head stock.
17	SW.	6	"	"	"	Dug	15	1,865	- 5	1,860			Glacial drift	Hard		D	Sufficient for house use.
18	NW.	6	"	"	"	Dug	10	1,850	- 4	1,846	4	1,846	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
19	SE.	7	"	"	"	Dug	8	1,850	- 2	1,848	2	1,848	Glacial sand	Hard		D, S	Insufficient for 30 head stock.
20	SW.	8	"	"	"	Bored	50	1,840	- 10	1,830			Glacial sand	Hard		D, S	Sufficient for 10 head stock.
21	NW.	8	"	"	"	Bored	90	1,800	- 20	1,780	90	1,710	Glacial gravel	Hard, "alkaline"		D, S	Sufficient and constant supply for 20 head stock.
22	NE.	8	"	"	"	Dug	10	1,790	- 4	1,786	4	1,786	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
23	SW.	9	"	"	"	Bored	50	1,810	- 42	1,768	50	1,760	Glacial sand	Hard, "alkaline"		S	Good supply for 25 head stock; water is highly mineralized.
24	NW.	9	"	"	"	Dug	14	1,790	- 4	1,786	4	1,786	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
25	SE.	9	"	"	"	Dug	14	1,785	- 4	1,781	4	1,781	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
26	SW.	10	"	"	"	Dug	6	1,765	- 1	1,764	1	1,764	Glacial gravel	Hard		D, S	Sufficient supply.
27	SE.	10	"	"	"	Dug	8	1,755	- 3	1,752	3	1,752	Glacial sand	Hard		D, S	Sufficient for 20 head stock.
28	NE.	10	"	"	"	Dug	30	1,770	- 28	1,742			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 25 head stock.
29	SE.	11	"	"	"	Dug	12	1,760									Dry hole in glacial drift.
30	NW.	12	"	"	"	Dug	12	1,745	- 9	1,736			Glacial drift	Hard		D, S	Intermittent supply; insufficient for 25 head stock.
31	SE.	12	"	"	"	Dug	15	1,750	- 11	1,739			Glacial drift	Hard, "alkaline"		N	Well is not in use.
32	SE.	13	"	"	"	Bored	60	1,750	- 20	1,730	30	1,720	Glacial sand	Hard		D, S	Sufficient for 20 head stock.
33	NE.	13	"	"	"	Dug	15	1,745	- 5	1,740	5	1,740	Glacial sand	Hard		D, S	Sufficient for 30 head stock.
34	SW.	13	"	"	"	Dug	6	1,750	- 2	1,748	2	1,748	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
35	NE.	14	"	"	"	Dug	10	1,750	- 5	1,745	5	1,745	Glacial gravel	Hard		D, S	Sufficient for 23 head stock.
36	NW.	14	"	"	"	Dug	10	1,750	- 5	1,745	5	1,745	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
37	NE.	15	"	"	"	Dug	30	1,760									Dry hole in glacial drift.
38	NW.	15	"	"	"	Bored	115	1,760									Dry hole in glacial drift.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO.275, 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
39	NE.	16	29	8	2	Dug	34	1,765	- 20	1,745			Glacial drift	Hard		D, S	Also uses a 33-foot well; sufficient for 13 head stock.
40	SW.	16	"	"	"	Bored	50	1,790	- 40	1,750			Glacial drift	Hard, "alkaline"		N	Well is not used; water is hauled a distance of ½ mile.
41	NW.	16	"	"	"	Dug	30	1,775	- 16	1,759			Glacial drift	Hard, "alkaline"		N	Well is not used; water is hauled a distance of 1½ miles.
42	SE.	17	"	"	"	Dug	30	1,800									Dry hole in glacial drift.
43	NE.	17	"	"	"	Dug	30	1,770									Dry hole in glacial drift.
44	SE.	18	"	"	"	Dug	10	1,810	0	1,810	0	1,810	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
45	SW.	18	"	"	"	Dug	10	1,805	0	1,805	0	1,805	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
46	NW.	18	"	"	"	Dug	40	1,820	- 36	1,784			Glacial sand	Hard		D, S	Intermittent supply; insufficient for 17 head stock.
47	NW.	19	"	"	"	Dug	30	1,795									Dry hole in glacial drift.
48	SW.	20	"	"	"	Dug	30	1,780									Dry hole in glacial drift.
49	NW.	20	"	"	"	Dug	10	1,760	- 5	1,755	5	1,755	Glacial gravel			D, S	Sufficient for 20 head stock.
50	SE.	20	"	"	"	Dug	20	1,770									Dry hole in glacial drift.
51	SW.	21	"	"	"	Dug	25	1,765									Dry hole in glacial drift.
52	SE.	21	"	"	"	Bored	100	1,765	- 20	1,745	90	1,675	Glacial sand	Hard, "alkaline"		N	Village well of Insinger; water is unfit for use. Water is hauled into the village.
53	SW.	22	"	"	"	Dug	12	1,760	- 8	1,752	8	1,752	Glacial gravel	Hard, "alkaline"		S	Sufficient for 13 head stock.
54	NW.	22	"	"	"	Dug	8	1,745	- 2	1,743	2	1,743	Glacial gravel	Soft		D, S	Sufficient for 50 head stock.
55	SE.	22	"	"	"	Dug	8	1,755	- 2	1,753	2	1,753	Glacial gravel	Hard		D, S	Sufficient for house use.
56	SE.	23	"	"	"	Dug	7	1,755	- 4	1,751	4	1,751	Glacial sand	Hard		D, S	Sufficient for 50 head stock.
57	SW.	24	"	"	"	Dug	12	1,745	- 6	1,739	6	1,739	Glacial sand	Hard		D, S	Sufficient for domestic purposes.
58	NW.	24	"	"	"	Dug	7	1,740	- 2	1,738	2	1,738	Glacial sand	Hard		D, S	Sufficient for 60 head stock.
59	SE.	24	"	"	"	Dug	25	1,740									Dry hole in glacial drift.
60	NE.	24	"	"	"	Dug	10	1,735									Dry hole in glacial drift.
61	SE.	25	"	"	"	Dug	12	1,720	- 8	1,712			Glacial drift	Hard		D, S	Sufficient for 8 head stock.
62	NE.	25	"	"	"	Dug	8	1,715	- 4	1,711	4	1,711	Glacial sand	Hard		D, S	Sufficient for 13 head stock.
63	SW.	25	"	"	"	Dug	6	1,730	- 2	1,728			Glacial drift	Hard		D, S	Sufficient for 5 head stock.
64	NW.	25	"	"	"	Dug	6	1,720	- 2	1,718	2	1,718	Glacial sand	Hard		D, S	Sufficient for 20 head stock.
65	SW.	26	"	"	"	Dug	7	1,740	0	1,740	0	1,740	Glacial sand	Hard		D, S	Sufficient for 20 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
66	N.W.	26	29	8	2	Dug	12	1,725	- 8	1,717	8	1717	Glacial sand	Hard		D, S	Sufficient for 12 head stock.
67	N.W.	27	"	"	"	Dug	8	1,740	- 4	1,736			Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
68	SE.	28	"	"	"	Dug	12	1,750	- 8	1,742	8	1,742	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
69	NE.	29	"	"	"	Dug	10	1,760									Dry hole in glacial drift.
70	NW.	29	"	"	"	Dug	10	1,775	- 4	1,771	4	1,771	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
71	SE.	30	"	"	"	Dug	8	1,790	- 4	1,786	4	1,786	Glacial sand	Hard		D, S	Sufficient for 30 head stock.
72	N.W.	30	"	"	"	Dug	8	1,800	- 4	1,796	4	1,796	Glacial gravel	Hard		D, S	Sufficient for 45 head stock.
73	S.W.	31	"	"	"	Dug	10	1,795	0	1,795	0	1,795	Glacial gravel	Hard		D, S	Sufficient for house use.
74	S.W.	32	"	"	"	Dug	15	1,770	- 10	1,760			Glacial drift	Hard,"alka-line"		D, S	Intermittent supply; insufficient for 15 head stock.
75	N.W.	32	"	"	"	Dug	8	1,760	- 5	1,755	5	1,755	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
76	SE.	32	"	"	"	Dug	15	1,755									Dry hole in glacial drift.
77	NE.	32	"	"	"	Dug	8	1,745	- 3	1,742	3	1,742	Glacial sand	Hard		D, S	Sufficient for 8 head stock.
78	S.W.	34	"	"	"	Dug	7	1,740	- 2	1,738	2	1,738	Glacial sand	Hard		D, S	Sufficient for 14 head stock.
79	N.W.	34	"	"	"	Dug	14	1,740	- 8	1,732	8	1,732	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
80	SE.	34	"	"	"	Dug	10	1,735	- 5	1,730			Glacial drift	Hard,"alka-line"		D, S	Intermittent supply; insufficient for 15 head stock.
81	S.W.	35	"	"	"	Dug	20	1,730	- 18	1,712			Glacial drift	Hard		D, S	An 8-foot well in sand is also used; sufficient for 11 head stock.
82	N.W.	35	"	"	"	Dug	16	1,725	- 14	1,711			Glacial drift	Hard		D, S	Sufficient for 8 head stock.
83	SE.	35	"	"	"	Dug	20	1,720	- 10	1,710	10	1,710	Glacial sand	Hard		D, S	Sufficient for 25 head stock.
84	NW.	36	"	"	"	Dug	20	1,710									Dry hole in glacial drift.
1	SE.	2	29	9	2	Bored	25	1,945	- 10	1,935			Glacial sand	Hard,"alka-line"		D, S	Sufficient for 15 head stock; water has a laxative effect on man.
2	NE.	2	"	"	"	Dug	12	1,900	- 4	1,896	4	1,896	Glacial sand	Hard		D, S	Sufficient for 12 head stock.
3	SW.	2	"	"	"	Dug	20	1,950	- 16	1,934			Glacial drift	Hard		D, S	Insufficient for 30 head stock.
4	NW.	2	"	"	"	Dug	12	1,900	- 6	1,894	6	1,894	Glacial gravel	Hard		D, S	Insufficient for 16 head stock.
5	SE.	4	"	"	"	Dug	16	1,950	- 10	1,940	10	1,940	Glacial sand	Hard		D, S	Sufficient for 12 head stock.
6	NE.	4	"	"	"	Dug	25	1,960	- 20	1,940			Glacial drift	Hard		D, S	Intermittent supply; insufficient for 22 head stock.
7	SE.	6	"	"	"	Dug	12	1,990	0	1,990			Glacial drift	Hard		D, S	Insufficient supply in winter.
8	NE.	6	"	"	"	Dug	10	1,985									Dry hole in glacial drift.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
9	SW.	6	29	9	2	Dug	12	2,000	- 8	1,992	8	1,992	Glacial sand	Hard		D, S	Sufficient for domestic purposes.
10	NW.	6	"	"	"	Dug	23	1,995	- 13	1,982			Glacial sand	Hard		D, S	Sufficient for 18 head stock.
11	SW.	10	"	"	"	Dug	18	1,950	- 11	1,939			Glacial drift	Hard		D, S	Intermittent supply; insufficient for 38 head stock.
12	SW.	12	"	"	"	Dug	12	1,870	0	1,870	0	1,870	Glacial gravel	Hard		D, S	Sufficient for 11 head stock.
13	SE.	12	"	"	"	Dug	8	1,845	- 5	1,840	5	1,840	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
14	NE.	12	"	"	"	Bored	30	1,860	- 15	1,845			Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
15	SE.	14	"	"	"	Dug	12	1,900	- 6	1,894	6	1,894	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
16	NE.	14	"	"	"	Dug	15	1,860									Dry hole in glacial drift.
17	SW.	14	"	"	"	Dug	10	1,910	- 5	1,905			Glacial drift	Hard		D, S	Insufficient for 8 head stock.
18	NW.	14	"	"	"	Dug	10	1,870	- 5	1,865	5	1,865	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
19	SE.	16	"	"	"	Dug	20	1,925	- 17	1,908			Glacial sand	Hard		D, S	Insufficient for 15 head stock.
20	NE.	16	"	"	"	Bored	25	1,925	- 15	1,910			Glacial drift	Hard		D, S	Intermittent supply; a 12-foot well yields sufficient for 20 head stock.
21	NE.	18	"	"	"	Dug	14	1,960	- 4	1,956	4	1,956	Glacial sand	Hard		D, S	Sufficient for 14 head stock.
22	SW.	18	"	"	"	Bored	35	2,000	- 27	1,973	30	1,970	Glacial sand	Hard		D, S	Sufficient for 33 head stock.
23	NW.	18	"	"	"	Dug	12	1,970	- 6	1,964	6	1,964	Glacial sand	Hard		D, S	Sufficient for 12 head stock.
24	SW.	19	"	"	"	Dug	16	1,970	- 11	1,959	11	1,959	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
25	SE.	19	"	"	"	Dug	12	1,950	- 8	1,942	8	1,942	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
26	NE.	20	"	"	"	Dug	12	1,900	- 8	1,892	8	1,892	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
27	SW.	22	"	"	"	Dug	12	1,895	- 6	1,889	6	1,889	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
28	NW.	22	"	"	"	Bored	75	1,880	- 30	1,850	75	1,805	Glacial sand	Hard		D, S	Sufficient and constant supply for 35 head stock.
29	SE.	22	"	"	"	Dug	12	1,890	- 7	1,883	7	1,883	Glacial gravel	Hard		D, S	Insufficient for 35 head stock.
30	NE.	22	"	"	"	Bored	35	1,865									Dry hole in glacial drift.
31	SW.	23	"	"	"	Bored	25	1,860									Dry hole in glacial drift.
32	NW.	23	"	"	"	Bored	85	1,850	- 70	1,780			Glacial drift	Hard		D, S	Insufficient for 12 head stock.
33	NE.	23	"	"	"	Bored	90	1,040									Dry hole in glacial drift.
34	SW.	24	"	"	"	Dug	15	1,850									Dry hole in glacial drift.
35	NW.	24	"	"	"	Dug	14	1,830	- 11	1,819			Glacial drift	Hard		D, S	Insufficient for 10 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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	NE.	24	29	9	2	Dug	18	1,825									Dry hole in glacial drift.
37	SW.	25	"	"	"	Bored	25	1,825									Dry hole in glacial drift.
38	NW.	25	"	"	"	Dug	14	1,800	- 11	1,789	11	1,789	Glacial sand	Hard		D, S	Sufficient for 60 head stock.
39	NE.	26	"	"	"	Dug	8	1,800	- 6	1,794	6	1,794	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
40	NW.	26	"	"	"	Dug	10	1,800	- 6	1,794	6	1,794	Glacial gravel	Hard		D, S	Sufficient for 16 head stock.
41	SE.	27	"	"	"	Dug	16	1,870									Dry hole in glacial drift.
42	NE.	27	"	"	"	Dug	8	1,815	- 4	1,811	4	1,811	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
43	SW.	27	"	"	"	Dug	16	1,875									Dry hole in glacial drift.
44	NE.	28	"	"	"	Dug	12	1,850	- 8	1,842	8	1,842	Glacial gravel	Hard		D, S	Sufficient for 50 head stock.
45	SW.	28	"	"	"	Dug	14	1,890									Dry hole in glacial drift.
46	NW.	28	"	"	"	Bored	60	1,895	- 57	1,838			Glacial drift	Hard		D, S	Insufficient for 50 head stock.
47	SE.	30	"	"	"	Dug	16	1,950	- 12	1,938	12	1,938	Glacial gravel				Sufficient for 30 head stock.
48	SW.	32	"	"	"	Dug	8	1,900	- 5	1,895	5	1,895	Glacial gravel	Hard		D, S	Sufficient for 5 head stock.
49	SE.	32	"	"	"	Dug	36	1,850	0	1,850	30	1,820	Glacial sand	Hard		D, S	Good supply for 20 head stock.
50	NE.	32	"	"	"	Dug	15	1,845	- 11	1,834	11	1,834	Glacial sand	Hard		D, S	Sufficient for 30 head stock.
51	SE.	33	"	"	"	Dug	8	1,830	- 2	1,828	2	1,828	Glacial gravel	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 25 head stock.
52	SW.	34	"	"	"	Bored	84	1,840	- 20	1,820			Glacial drift	Hard		D, S	Insufficient for 5 head stock.
53	SE.	34	"	"	"	Dug	12	1,825	- 8	1,817	8	1,817	Glacial gravel	Hard		D, S	Insufficient for 20 head stock.
54	NW.	35	"	"	"	Dug	15	1,800	- 7	1,793	11	1,789	Glacial sand	Hard		D, S	Sufficient for 50 head stock.
55	NW.	36	"	"	"	Dug	8	1,790									Dry hole in glacial drift.
1	SE.	1	30	7	2	Dug	6	1,705	- 3	1,702	3	1,702	Glacial gravel	Hard		D, S	Sufficient for 32 head stock.
2	SE.	2	"	"	"	Dug	20	1,710	- 10	1,700			Glacial sand	Hard		D, S	Sufficient supply in summer, but well is dry in winter.
3	NE.	2	"	"	"	Dug	10	1,715									Dry hole in glacial drift.
4	NW.	2	"	"	"	Dug	10	1,710	- 5	1,705			Glacial drift	Hard		D, S	Insufficient for 20 head stock.
5	NE.	3	"	"	"	Dug	12	1,715	- 7	1,708	7	1,708	Glacial sand	Hard		D, S	Insufficient for 10 head stock.
6	SW.	5	"	"	"	Dug	18	1,705	0	1,705			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 11 head stock.
7	SW.	6	"	"	"	Dug	6	1,700	- 3	1,697	3	1,697	Glacial gravel	Soft		D, S	Sufficient for 6 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
8	NW.	6	30	7	2	Dug	24	1,700									Dry hole in glacial drift.
9	NE.	7	"	"	"	Dug	8	1,710	- 5	1,705	5	1,705	Glacial sand	Hard, "alkaline"		D, S	Sufficient for 9 head stock.
10	SW.	9	"	"	"	Dug	15	1,715	0	1,715	0	1,715	Glacial gravel	Hard		D, S	Insufficient for 35 head stock.
11	SE.	9	"	"	"	Dug	20	1,715									Dry hole in glacial drift.
12	NE.	10	"	"	"	Dug	18	1,715									Dry hole in glacial drift; hauls water 2 miles.
13	NE.	11	"	"	"	Dug	14	1,710	- 12	1,698	12	1,698	Glacial sand	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 100 head stock.
14	SW.	12	"	"	"	Dug	12	1,710	- 2	1,708	2	1,708	Glacial gravel	Hard		D, S	Sufficient for 8 head stock.
15	NW.	12	"	"	"	Dug	14	1,715	- 13	1,702	13	1,702	Glacial sand	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 100 head stock.
16	NE.	12	"	"	"	Dug	18	1,715									Dry hole in glacial drift.
17	SE.	13	"	"	"	Dug	12	1,710	- 7	1,703	7	1,703	Glacial gravel	Hard		D, S	Sufficient for 9 head stock.
18	NE.	13	"	"	"	Dug	10	1,715	0	1,715	0	1,715	Glacial sand	Hard		D, S	Intermittent supply.
19	SE.	14	"	"	"	Dug	15	1,720	- 11	1,709	11	1,709	Glacial gravel	Hard		D, S	Sufficient for 4 head stock.
20	NE.	14	"	"	"	Dug	16	1,700	0	1,700			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 8 head stock.
21	SW.	14	"	"	"	Dug	18	1,715									Dry hole in glacial drift; hauls water 2 miles.
22	SW.	16	"	"	"	Dug	8	1,720	0	1,720	0	1,720	Glacial gravel	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 20 head stock.
23	SW.	18	"	"	"	Dug	15	1,710	- 12	1,698	12	1,698	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
24	SW.	19	"	"	"	Dug	14	1,725	- 4	1,721	4	1,721	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
25	NE.	19	"	"	"	Dug	16	1,730	0	1,730			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 25 head stock.
26	NW.	20	"	"	"	Dug	16	1,730	- 9	1,721	9	1,721	Glacial gravel	Hard		D, S	Intermittent supply; insufficient for 15 head stock.
27	NE.	20	"	"	"	Dug	14	1,730	- 7	1,723			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 10 head stock.
28	NW.	22	"	"	"	Dug	6	1,735									Dry hole in glacial drift.
29	SE.	22	"	"	"	Dug	14	1,725	0	1,725	0	1,725	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
30	NE.	22	"	"	"	Dug	5	1,720	- 2	1,718	2	1,718	Glacial gravel	Soft		D	Another shallow well waters 8 head stock.
31	SW.	23	"	"	"	Dug	12	1,720	0	1,720	0	1,720	Glacial gravel	Hard		D, S	Sufficient for 6 head stock.
32	NW.	23	"	"	"	Dug	12	1,715	- 8	1,707			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 19 head stock.
33	SE.	23	"	"	"	Dug	15	1,705	- 8	1,697	8	1,697	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
34	NE.	23	"	"	"	Dug	5	1,710	- 4	1,706	4	1,706	Glacial sand	Hard		D, S	Insufficient for 10 head stock.

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(#) Sample taken for analysis.

WELL RECORDS—Rural Municipality of INSINGER NO.275, 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
35	NE.	25	30	7	2	Dug	10	1,710	- 4	1,706	4	1,706	Glacial sand	Hard		D, S	An 11-foot well yields soft water; sufficient for 22 head stock.
36	SW.	25	"	"	"	Dug	12	1,715	- 4	1,711	4	1,711	Glacial sand	Hard		D, S	Sufficient for 9 head stock.
37	NW.	25	"	"	"	Dug	10	1,715	- 8	1,707	8	1,707	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
38	SE.	27	"	"	"	Dug	8	1,720	- 1	1,719	1	1,719	Glacial gravel	Hard		D, S	Sufficient for 44 head stock.
39	SW.	27	"	"	"	Dug	5	1,720									Dry hole in glacial drift.
40	SE.	28	"	"	"	Dug	12	1,725									Dry hole in glacial drift.
41	NE.	28	"	"	"	Dug	15	1,730	- 12	1,718			Glacial drift	Hard, "alkaline"		N	Intermittent supply; well is not in use.
42	SE.	30	"	"	"	Dug	6	1,730	0	1,730	0	1,730	Glacial gravel	Soft		D, S	Intermittent supply. insufficient for 8 head stock.
43	NE.	30	"	"	"	Dug	12	1,735	- 4	1,731	4	1,731	Glacial gravel	Hard		D, S	Intermittent supply; insufficient for 20 head stock.
44	NW.	31	"	"	"	Dug	12	1,740	- 4	1,736	4	1,736	Glacial gravel	Hard		D, S	Sufficient for 25 head stock.
45	SE.	31	"	"	"	Dug	16	1,735	- 8	1,727			Glacial drift	Hard		D, S	Intermittent supply; insufficient for 15 head stock.
46	SW.	32	"	"	"	Dug	7	1,740	0	1,740	0	1,740	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
47	NW.	32	"	"	"	Dug	16	1,740	- 8	1,732			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 25 head stock.
48	NE.	32	"	"	"	Dug	20	1,740									Dry hole in glacial drift.
49	SW.	33	"	"	"	Dug	6	1,745	- 3	1,742	3	1,742	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
50	SE.	33	"	"	"	Dug	10	1,740	- 3	1,737	3	1,737	Glacial gravel	Hard, "alkaline"		D, S	Sufficient for 8 head stock.
51	SW.	34	"	"	"	Dug	16	1,735	- 8	1,727	8	1,727	Glacial gravel	Hard, "alkaline"		D, S	Sufficient for 26 head stock.
52	SE.	34	"	"	"	Dug	15	1,740	- 5	1,735	5	1,735	Glacial sand	Hard		D, S	Sufficient for 9 head stock.
53	NE.	34	"	"	"	Dug	15	1,750	- 10	1,740	10	1,740	Glacial sand	Hard		D, S	Sufficient for 15 head stock.
54	SW.	35	"	"	"	Dug	10	1,740	- 4	1,736	4	1,736	Glacial sand	Hard		D, S	Sufficient for 5 head stock.
55	NW.	35	"	"	"	Dug	10	1,750	- 6	1,744	6	1,744	Glacial sand	Soft		D, S	Another 8-foot well is also used; sufficient for 17 head stock.
56	NE.	35	"	"	"	Dug	10	1,725	- 4	1,721	4	1,721	Glacial sand	Hard		D, S	Sufficient for 10 head stock.
57	NW.	36	"	"	"	Dug	30	1,725									Dry hole in glacial drift; a 10-foot well well yields plenty of water for 8 head stock.
58	SE.	36	"	"	"	Dug	10	1,710	- 4	1,706	4	1,706	Glacial sand	Hard		D, S	Sufficient for 15 head stock.
59	NE.	36	"	"	"	Dug	6	1,715	- 3	1,712	3	1,712	Glacial gravel	Hard		D, S	Sufficient for 8 head stock.
1	SE.	2	30	8	2	Dug	14	1,710	- 8	1,702	8	1,702	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
2	NW.	2	"	"	"	Dug	12	1,710	- 4	1,706	4	1,706	Glacial gravel	Hard		D, S	Sufficient for 40 head stock.

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WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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	NW.	3	20	8	2	Dug	15	1,725	- 10	1,715	13	1,712	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
4	SE.	4	"	"	"	Dug	15	1,740	- 10	1,730	10	1,730	Glacial sand	Hard		D, S	Sufficient for 10 head stock.
5	SW.	4	"	"	"	Dug	15	1,745	- 10	1,735	10	1,735	Glacial sand	Hard		D, S	Sufficient for 18 head stock.
6	NW.	4	"	"	"	Dug	10	1,745	0	1,745			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 30 head stock.
7	SE.	5	"	"	"	Dug	25	1,755	- 12	1,743	12	1,743	Glacial sand	Hard		D, S	Sufficient for 30 head stock.
8	NE.	5	"	"	"	Dug	9	1,750	- 5	1,745	7	1,743	Glacial sand	Soft		D, S	Sufficient for 30 head stock.
9	SE.	6	"	"	"	Dug	10	1,740	0	1,740	8	1,732	Glacial gravel	Hard		D, S	Sufficient for 20 head stock.
10	NE.	6	"	"	"	Dug	12	1,760	0	1,760	10	1,750	Glacial gravel	Hard		D, S	Sufficient for 10 head stock.
11	NW.	6	"	"	"	Dug	12	1,750	- 6	1,744	6	1,744	Glacial gravel	Hard		D, S	Sufficient for 8 head stock.
12	SW.	7	"	"	"	Dug	12	1,755	- 7	1,748	7	1,748	Glacial gravel	Soft		D, S	Sufficient for 12 head stock.
13	NW.	7	"	"	"	Dug	14	1,750	- 7	1,743	7	1,743	Glacial gravel	Soft		D, S	Sufficient for 40 head stock.
14	SE.	7	"	"	"	Dug	10	1,755	- 5	1,750	5	1,750	Glacial sand	Soft		D, S	Sufficient for 25 head stock.
15	NE.	7	"	"	"	Dug	14	1,750	- 7	1,743	7	1,743	Glacial sand	Soft		D, S	Sufficient for 40 head stock.
16	NW.	9	"	"	"	Dug	7	1,730	- 5	1,725			Glacial drift	Hard		D, S	Intermittent supply; insufficient for 16 head stock.
17	NE.	9	"	"	"	Dug	8	1,720	- 4	1,716	4	1,716	Glacial sand	Hard		D, S	Insufficient for 12 head stock.
18	SW.	10	"	"	"	Dug	12	1,720									Dry hole in glacial drift.
19	NW.	10	"	"	"	Dug	14	1,715	- 9	1,706	12	1,703	Glacial gravel	Hard		D, S	Intermittent supply; insufficient for 9 head stock.
20	SE.	10	"	"	"	Dug	12	1,710	- 2	1,708	2	1,708	Glacial gravel	Hard		D, S	Sufficient for 100 head stock.
21	NE.	11	"	"	"	Dug	10	1,690	- 5	1,685	5	1,685	Glacial gravel	Hard		D, S	Sufficient for 4 head stock.
22	SW.	12	"	"	"	Dug	20	1,685	- 16	1,669			Glacial drift	Hard, "alkaline"		N	Water is too highly mineralized for use.
23	NW.	12	"	"	"	Dug	24	1,700	- 21	1,679			Glacial drift	Hard, "alka-		D, S	Sufficient for 15 head stock.
24	SE.	12	"	"	"	Dug	30	1,705	- 26	1,679			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 20 head stock.
25	NW.	13	"	"	"	Dug	10	1,710	0	1,710			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 8 head stock.
26	SE.	14	"	"	"	Dug	10	1,700	0	1,700			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 12 head stock.
27	NE.	14	"	"	"	Dug	10	1,705	- 5	1,700	5	1,700	Glacial gravel	Hard		D, S	Sufficient for 15 head stock.
28	SW.	14	"	"	"	Dug	15	1,690	- 7	1,683	7	1,683	Glacial gravel	Hard		D, S	Sufficient for 5 head stock.
29	SW.	16	"	"	"	Dug	14	1,725	- 12	1,713			Glacial drift	Soft		D, S	Insufficient for 12 head stock.

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WELL RECORDS—Rural Municipality of INSINGER NO. 275, 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
30	NE.	16	30	8	2	Dug	4	1,729	- 1	1,719	1	1,719	Glacial gravel	Hard		D, S	Sufficient for 12 head stock.
31	SE.	17	"	"	"	Dug	8	1,730	0	1,730	0	1,730	Glacial sand	Hard		D, S	Intermittent supply; insufficient for 32 head stock.
32	SE.	18	"	"	"	Dug	20	1,740	- 12	1,728	12	1,728	Glacial sand	Soft		D, S	Sufficient for 44 head stock.
33	SE.	19	"	"	"	Dug	10	1,745									Dry hole in glacial drift.
34	NE.	22	"	"	"	Dug	8	1,710	0	1,710	0	1,710	Glacial sand	Hard		D, S	Sufficient for 6 head stock.
35	NW.	23	"	"	"	Dug	6	1,710	0	1,710	0	1,710	Glacial gravel	Hard		D, S	Sufficient for 23 head stock.
36	NW.	27	"	"	"	Dug	20	1,715									Dry hole in glacial drift.
37	SW.	32	"	"	"	Dug	10	1,700	- 5	1,695	5	1,695	Glacial gravel	Hard, "alkaline"		S	Intermittent supply; water is too mineralized for drinking.
38	NW.	32	"	"	"	Spring		1,695	0	1,695	0	1,695	Glacial gravel	Hard		D, S	Sufficient for 30 head stock.
39	NW.	33	"	"	"	Dug	11	1,710	- 9	1,701	9	1,701	Glacial sand	Hard		D, S	Intermittent supply.
40	SW.	34	"	"	"	Dug	17	1,715	- 11	1,704	11	1,704	Glacial gravel	Hard		D, S	Intermittent supply; insufficient for 15 head stock.
41	SE.	34	"	"	"	Dug	16	1,720	- 10	1,710	10	1,710	Glacial sand	Hard		D, S	One of three intermittent wells.
42	NW.	36	"	"	"	Dug	8	1,735									Dry hole in glacial drift.
43	NE.	36	"	"	"	Dug	10	1,740	0	1,740			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; insufficient for 20 head stock.
1	NW.	3	30	9	2	Drilled	170	1,800	-140	1,660	170	1,630	Glacial sand	Hard, "alkaline"		D, S	Sufficient for house use; several shallow wells used, a 7-foot well yielding the best supply of water.
2	NW.	4	"	"	"	Dug	14	1,825									Dry hole in glacial drift; hauls water from a small lake.
3	NE.	6	"	"	"	Dug	30	1,855	- 28	1,827			Glacial drift	Hard, "alkaline"		D, S	Intermittent supply; hauls water from a lake and a well on SW.¼, section 6.
4	SW.	6	"	"	"	Dug	6	1,890	0	1,890			Glacial gravel	Hard		D, S	Good supply of water.
5	SW.	7	"	"	"	Dug	22	1,860	- 18	1,842			Glacial gravelly clay	Hard, "alkaline"		D, S	Sufficient supply; one dry hole bored 98 feet deep in glacial drift.
6	NW.	7	"	"	"	Dug	16	1,840	- 12	1,828	12	1,828	Glacial sand	Hard		D, S	Sufficient supply.
7	SE.	7	"	"	"	Dug	10	1,840	- 4	1,836	4	1,836	Glacial sand	Hard		D, S	Sufficient supply.
8	SW.	8	"	"	"	Dug	6	1,820	0	1,820	0	1,820	Glacial gravel	Hard		D, S	Sufficient water, but supply decreases in drought years.
9	SE.	8	"	"	"	Dug	14	1,830	- 10	1,820			Glacial drift	Hard, "alkaline		D, S	Intermittent supply.
10	NE.	8	"	"	"	Dug	32	1,825	- 16	1,809			Glacial gravelly clay	Hard		D, S	Sufficient supply.
11	NW.	9	"	"	"	Dug	18	1,815	- 12	1,803			Glacial drift	Hard		N	Uses two wells dug near a creek; sufficient supply.
12	NE.	9	"	"	"	Dug	20	1,805					Glacial sand	Hard		D, S	One of several wells 16 to 20 feet deep in village of Sheho; an 80-foot well yields "alkaline" water.

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 INSINGER NO.275, 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
13	NW.	10	30	9	2	Dug	12	1,805	- 9	1,796			Glacial sand	Hard		D, S	Insufficient supply; hauls water from Sheho.
14	NE.	10	"	"	"	Bored	34	1,775	- 11	1,764			Glacial sand	Hard		D, S	Water supply has always been satisfactory.
15	NW.	12	"	"	"	Bored	50	1,760	- 45	1,715			Glacial drift	Hard,"alka-line"		D	Sufficient for house use only; hauls water for stock.
16	SW.	14	"	"	"	Dug	7	1,745	- 5	1,740	5	1,740	Glacial gravel	Hard,"alka-line"		S	Sufficient supply.
17	SE.	15	"	"	"	Dug	15	1,760	- 6	1,754			Glacial gravel	Hard		D, S	Insufficient for 40 head stock in winter; uses a well on section 14, also.
18	SW.	15	"	"	"	Dug	20	1,790	- 15	1,775			Glacial sand	Hard		D, S	Sufficient for 6 head stock.
19	NE.	16	"	"	"	Dug	24	1,790	- 4	1,786			Glacial sand	Hard,"alka-line"		D, S	Poor and insufficient supply; dry holes 25, 32, and 60 feet deep.
20	SW.	16	"	"	"	Dug	40	1,805	- 30	1,775			Glacial drift	Hard		D, S	Intermittent supply; a 6-foot well in a creek yields a good supply.
21	SE.	17	"	"	"	Dug	85	1,820	- 24	1,796	85	1,735	Glacial gravel	Hard,iron		D, S	Plenty of water; one dry hole 6 feet deep.
22	SW.	17	"	"	"	Dug	8	1,825	- 3	1,822	3	1,822	Glacial fine sand	Hard,iron		D, S	Sufficient and constant supply.
23	SW.	2	"	"	"	Spring		1,785	0	1,785	0	1,785	lacial gravel	Soft		D, S	Abundant supply; several farmers tank from this spring. An 8-foot well yields water unfit for use.
24	NW.	20	"	"	"		60	1,795	- 10	1,785	60	1,735	Glacial yellow sand	Hard		D, S	Abundant supply.
25	SW.	21	"	"	"	Dug	12	1,790	- 4	1,786			Glacial gravel	Hard		D, S	Sufficient supply.
26	NW.	22	"	"	"	Dug	12	1,750	- 2	1,748	2	1,748	Gladial sand and gravel	Hard		D	Also uses a 24-foot well and a lake for watering stock.
27	NE.	22	"	"	"	Dug	12	1,745	- 6	1,739	6	1,739	Glacial sand and gravel	Hard		D, S	Sufficient supply.
28	NE.	22	"	"	"	Dug	12	1,750	0	1,750	10	1,740	Glacial sand	Hard,"alka-line"		D	Sufficient for house use; a lake is used for stock.
29	SE.	25	"	"	"	Dug	12	1,725	- 9	1,716			Glacial drift	Hard,iron		S	Poor supply; hauls water from a lake.
30	NE.	25	"	"	"	Dug	16	1,720	- 13	1,707			Glacial sand	Hard		D, S	Sufficient supply.
31	NW.	25	"	"	"	Dug	12	1,730	- 7	1,723	7	1,723	Glacial sand	Hard		D, S	Sufficient supply.
32	NE.	27	"	"	"	Dug	25	1,750	- 21	1,729	21	1,729	Glacial sand	Soft		D, S	
33	SW.	28	"	"	"	Dug	24	1,750	- 18	1,732			Glacial drift	Soft		D	Intermittent supply; a 10-foot well yields bitter water.
34	SE.	30	"	"	"	Bored	75	1,800	- 45	1,755	35	1,765	Glacial yellow sand	Hard		D, S	Sufficient water, but supply decreases in drought years.
35	SW.	30	"	"	"	Bored	95	1,810	- 75	1,735			Glacial drift	Hard		D, S	Sufficient supply.
36	NW.	30	"	"	"	Bored	60	1,800			60	1,740	Glacial gravel	Hard		D, S	Sufficient supply.
37	NE.	30	"	"	"	Bored	100	1,800	- 60	1,740			Glacial drift	Hard		D, S	Sufficient supply.
38	SE.	31	"	"	"	Dug	72	1,795	0	1,795			Glacial sand	Hard		D, S	Poor and insufficient supply; several wells 15 to 62 feet deep, yields a very poor 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.

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WELL RECORDS—Rural Municipality of INSINGER NO.275, 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
39	NW.	32	30	9	2	Bored	52	1,775	- 37	1,738	52	1,723	Glacial fine sand	Hard, iron		S	Sufficient for stock; hauls drinking water.
40	SE.	32	"	"	"	Dug	14	1,750	- 8	1,742			Glacial sand	Hard, "alkaline"		D, S	Poor supply; hauls water from a spring on NW.¼, section 33.
41	NW.	33	"	"	"	Spring		1,740	0	1,740	0	1,740	Glacial gravel	Hard, salty		S	Sufficient supply.
42	SE.	34	"	"	"	Dug	12	1,750	- 8	1,742	8	1,742	Glacial sand	Soft		D, S	Sufficient supply.
43	SE.	35	"	"	"	Dug	14	1,735	- 2	1,733			Glacial sand	Hard, "alkaline"		D, S	Hauls water from a lake in winter.
44	SW.	36	"	"	"	Dug	25	1,730									Dry hole in glacial drift.
45	SE.	36	"	"	"	Dug	18	1,725					Glacial drift	Hard		D, S	Sufficient 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.