STATE OF WASHINGTON

Daniel J. Evans, Governor

DEPARTMENT OF WATER RESOURCES

H. MAURICE AHLQUIST, Director

Water-Supply Bulletin No. 28

GEOLOGY AND GROUND-WATER RESOURCES OF SOUTHWESTERN KING COUNTY, WASHINGTON

By

J. E. LUZIER

Prepared in cooperation with
UNITED STATES GEOLOGICAL SURVEY
Water Resources Division
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Price $4.00, Department of Water Resources, Olympia, Washington

FOREWORD

Water Supply Bulletin No. 28 concerns itself with geologic and hydrologic conditions of a 400 square mile area lying generally south of the city of Renton and west of the foothills of the Cascade Mountain Range, and bridges a gap between areas previously studied geologically in northwest King County and western Pierce County. Bulletin 28 is a product of the State of Washington, Department of Water Resources, U. S. Geological Survey Cooperative Ground Water Inventory Program.

The report is designed to furnish data and provide an understanding of geology to assist geologists, engineers, planners and others actively involved with the development, distribution and management of the ground water resources which underlie the project area. Data are presented in a manner that will serve as a useful reference for those interested in borrow sites for sand, gravel and other construction materials or projects where sub-surface geologic conditions are a major consideration.

Wells produce up to 2,000 gallons of water per minute and have been the major souce of domestic and irrigation water for town, community and rural development and will serve as a valuable supplement to major regional water supply systems as southwest King County becomes more urbanized.

On behalf of the Department of Water Resources, I wish to take this opportunity to express our appreciation to the U. S. Geological Survey, our cooperating agency, and to well drillers, well owners and the many other individuals and agencies whose contributions have made this project possible. I wish to further express our appreciation to Joanne Larsen for her dedication and assistance in editing and typing the final manuscript for publication.

-Robert H. Russell
Chief, Basic Data Section
Division of Planning & Development
Department of Water Resources

PANORAMA OF EASTERN MARGIN OF PUGET SOUND LOWLAND NEAR ENUMCLAW

View north from Pinnacle Peak. Glaciated hills of Tertiary bedrock (background) protrude above extensive mantle of permeable outwash. In foreground and middle ground, outwash is covered by Osceola Mudflow (flat cultivated area bounded by dashed line) which flowed onto this part of the Puget Sound Lowland about 5,000 years ago. Arrows indicate approximate directions of flow. Mudflow originated on Mount Rainier volcano, 25 miles to the southeast.

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GEOLOGY AND GROUND-WATER RESOURCES OF
SOUTHWESTERN KING COUNTY, WASHINGTON

By

J. E. Luzier

ABSTRACT

Southwestern King County is an area of about 400 square miles in the southeastern part of the Puget Sound Lowland. The Lowland here is a drift plain that merges eastward with glaciated foothills of the Cascade Range. The foothills are protruding parts of a Tertiary bedrock surface that descends westward beneath Quaternary deposits more than a thousand feet thick. Rocks of Tertiary age include sedimentary and volcanic rocks of the Puget Group, intrusive rocks, an assemblage of andesitic volcanic rocks, and the Hammer Bluff Formation. Virtually all Tertiary rocks are either too fine grained or too highly altered to yield more than 50 gpm (gallons per minute).

Quaternary deposits include Pleistocene drift of the Orting and Stuck Glaciations, sediments of the Puyallup Interglaciation, drift of the Salmon Springs Glaciation, drift deposited during the Vashon Stade of the Fraser Glaciation, and postglacial deposits of Late Pleistocene and Recent age. The most productive Pleistocene aquifers are bodies of outwash in the Salmon Springs Drift, buried valley fills of Vashon advance outwash, and thick ice-contact and recessional outwash deposits also of Vashon age. Wells less than 400 feet deep commonly yield 300 to more than 2,000 gpm from these aquifers, and have specific capacities that range from 10 to more than 100 gpm per foot of drawdown. Numerous springs flowing from ice-contact and recessional outwash deposits discharge 1,000 to more than 20,000 gpm each.

Postglacial deposits include peat, the Osceola Mudflow, mass-wasting debris, and alluvial flood-plain and fan deposits of the White, Green, and Cedar Rivers. Only the alluvium is productive. The fan deposits underlie the floor of the Duwamish Valley, site of a former marine embayment, where they coalesce to form a fill about 15 miles long, 2 miles wide, and more than 400 feet thick. A buried lobe of the Osceola Mudflow (radiocarbon age about 5,000 years) was encountered 300 feet below the top of the alluvial fill near Kent, about 65 miles from the mudflow source on Mount Rainier volcano. Marine water in the embayment was probably several hundred feet deep at the time the mudflow occurred. Fan alluvium beneath the mudflow lobe was deposited by the Green and Cedar Rivers; whereas the overlying fan alluvium was deposited chiefly by the White River. The alluvial fans are coarsest and most productive within 5 miles of their apexes, which lie

at opposite ends of the fill, near Auburn and Renton. Many wells drilled near the fan apexes and in flood-plain deposits upstream yield 500 to 3,000 gpm, with specific capacities from 50 to more than 500 gpm per foot of drawdown. Most of the wells are less than 100 feet deep.

Ground water is confined or partially confined in most Pleistocene aquifers older than the Vashon till, and is unconfined in Vashon recessional outwash and most alluvial aquifers. The water-table and piezometric surfaces fluctuate less than 10 feet per year in response to a seasonal change in ground-water storage. Pumping has had no measureable effect on the regional ground-water reservoir, and the amount of ground water in storage is therefore assumed to be in approximate equilibrium with total recharge and discharge.

The chemical quality of most ground water is excellent for drinking purposes and acceptable for most industrial and irrigation uses. The ground water is generally soft or only moderately hard, and water temperatures range from 44° to 52° F (7° to 11° C). Iron-rich ground water occurs irregularly throughout the project area and apparently bears no systematic relationship to individual geologic units. Salt-water intrusion has not as yet been recognized but is a potential problem in areas near Puget Sound.

Ground-water withdrawals totaled only 36,000 acre-feet in 1962; 15,600 acre-feet of that amount was used as public supply for 124,000 people (about 55 percent of the project area's total population). Domestic use by 15,000 people (6½ percent of the total population) amounted to 2,100 acre-feet. The city of Seattle imported water to the remaining 38½ percent of the population. Irrigation and industrial use accounted for 18,000 and 300 acre-feet of ground water, respectively.

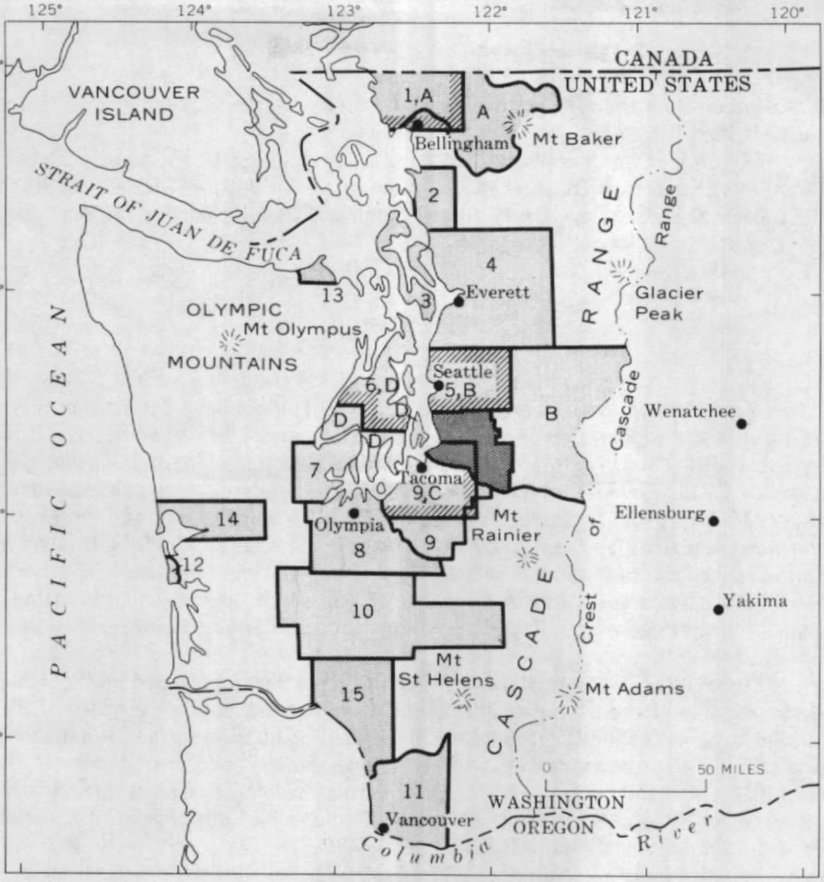
Rapid growth of industry and population in the Duwamish Valley and adjacent areas will cause increased demands on the ground-water resource--demands that can be fully met with proper planning and development.

INTRODUCTION

PURPOSE AND SCOPE

The study upon which this report is based was made to determine the extent of ground-water development in southwestern King County, and to provide an understanding of geology in sufficient detail to explain the occurrence of ground water and predict its future availability. The study serves as a starting point for management of the ground-water resource, and provides a framework for future quantitative investigations.

This study is one of a series of ground-water investigations that have been performed in western Washington under a cooperative agreement with the Washington State Department of Water Resources. Figure 1 shows the location of the ground-water investigations, as well as several water-resource studies performed under this agreement. One of the studies (area C, fig. 1) was performed in cooperation with the city of Tacoma, and one in cooperation with the King County Commissioners (area B, fig. 1). Ground-water data collected during the present study includes



EXPLANATION

GROUND-WATER STUDIES

1. Newcomb and others (1949)
2. Sceva (1950)
3. Anderson (in press)
4. Newcomb (1952)
5. Liesch and others (1963)
6. Sceva (1957)
7. Molenaar and Noble (in preparation)
8. Wallace and Molenaar (1961); Noble and Wallace (1966)
9. Walters and Kimmel (1968)
10. Weigle and Foxworthy (1962)
11. Mundorff (1964)
12. Wegner (1956)
13. Noble (1960)
14. Eddy (1966)
15. Myers (in progress)

WATER-RESOURCE STUDIES

A. Washington Division of Water Resources (1960)
B. Richardson and others (in preparation)
C. Griffin and others (1962)
D. Garling, Molenaar, and others (1965)

Figure 1 - Western Washington, showing report area (darkest shading) and areas of other ground-water and water-resource studies.

information on more than 2,000 wells, test holes, and springs (appendix; tables 9 through 13).

The project was completed under the supervision of L. B. Laird, District Chief, Water Resources Division, U.S. Geological Survey, and Robert H. Russell, Chief, Basic Data Section, Division of Planning & Development of the Washington State Department of Water Resources.

PREVIOUS STUDIES

No previous areal ground-water investigations have been made in southwestern King County, but numerous areal geologic studies have been completed, starting with the subdivision of bedrock and surficial deposits by Willis (1886, 1898a, 1898c) and Willis and Smith (1899). Bedrock and coal beds were studied by Evans (1912), and measured sections of bedrock were published by Weaver (1916, 1937). Upper Tertiary clay and sand deposits along the Green River were described by Glover (1941). Warren and others (1945) published a detailed map of the bedrock and coal fields in King County. Paulson and others (1952) published a soils map of King County, which shows the general outlines of many surficial deposits. Rigg (1958) published detailed descriptions of peat deposits in King County.

Since 1956, many articles and reports have been published on the Tertiary, Pleistocene, and Recent stratigraphy of the Puget Sound area by members of the Geologic Division of the U.S. Geological Survey. Of particular significance are those articles and reports dealing with Pleistocene and Recent deposits by D. R. Crandell, D. R. Mullineaux, and H. H. Waldron. Geologic maps resulting from their work are reproduced in whole or in part on plate 1 of this report; they include part of the Buckley quadrangle (Crandell and Gard, 1959); the Poverty Bay and Des Moines quadrangles (Waldron, 1961, 1962); the Cumberland quadrangle (Gower and Wanek, 1963); part of the Maple Valley and Hobart quadrangles (Vine, 1962); and the Renton, Auburn, and Black Diamond quadrangles (Mullineaux, 1965a, b, c). In addition, Crandell and Mullineaux supplied the writer with unpublished map and notes in 1962, concerning the extent of the Osceola Mudflow in the Enumclaw quadrangle.

FIELDWORK AND ACKNOWLEDGMENTS

Most of the ground-water data contained in this report were collected during the period 1961-63. The writer mapped the surficial geology of the Maple Valley and Cumberland quadrangles and parts of the Enumclaw, Hobart, Issaquah, and Tacoma North quadrangles during the summers of 1963 and 1964.

The writer acknowledges the aid given by D. R. Mullineaux, D. R. Crandell, and H. H. Waldron of the Geologic Division of the U.S. Geological Survey. Their revealing field trips and reports dealing with Quaternary geology in the Puget Sound Lowland have been especially helpful.

GEOGRAPHY

LOCATION, TOPOGRAPHY, AND DRAINAGE

Southwestern King County is in the southeastern part of the Puget Sound Lowland (figs. 1 and 2). The lowland consists of a broad, relatively level drift plain, whose surface is commonly about 400 to 600 feet above sea level and is cut abruptly by a network of deep marine embayments. The largest of these embayments, Puget Sound, abuts the western edge of the project area. That embayment formerly was continuous with marine embayments that occupied what are now the Duwamish and Puyallup Valleys (figs. 2 and 7). These former embayments were filled and aggraded to slightly above sea level by the Puyallup, White, Green, and Cedar Rivers.

These rivers enter the expansive floors of the Puyallup and Duwamish Valleys from relatively narrow, flat-bottomed valleys cut deeply into the drift plain. In marginal drift-plain areas near the Cascade foothills, certain rivers such as the Green have cut through the drift and formed deep gorges in the underlying bedrock. These river valleys serve as convenient boundaries for the physiographic subdivisions referred to in this report (fig. 3).

The lower courses of the major rivers in the project area have undergone considerable change within the last 60 years. This has caused some confusion regarding use of river and valley names. Figure 4 shows the terminology in use prior to 1906, and the changes that have occurred since then. The Duwamish Valley has been referred to as the "White River valley" and the "Green River valley." The name "Duwamish Valley" appears on Mullineaux's geologic map of the Auburn quadrangle (1965b), and that usage will be followed in this report (fig. 3).

The drift-plain surface is broken abruptly at the river valley margins by steep bluffs and deep gullies, where erosion has been accomplished by landsliding and gullying, especially in areas of ground-water discharge. Back from the valley margins, the drift-plain surface has changed very little since the last glaciation. It is poorly drained in places underlain by glacial till. Numerous lakes, swamps, and peat bogs occupy depressions on the till surface. Glacial fluting and lineation of the till surface controls local drainage somewhat, especially on the Covington drift plain in the vicinity of Lake Youngs (fig. 3). Here, the drainage is to the southeast, where it is intercepted by a gravel-floored melt-water channel. Permeable sand and gravel underlie many areas in the eastern part of the Covington drift plain and the northern part of the Osceola Mudflow plain; consequently, much of the precipitation enters the ground-water reservoir as recharge and only a small part enters the streams as overland runoff.

South of the Green River, a large mudflow covers much of the drift plain, forming a broad, fertile area on which a network of drainage ditches has been constructed to relieve ponding that results from the mudflow's low permeability.

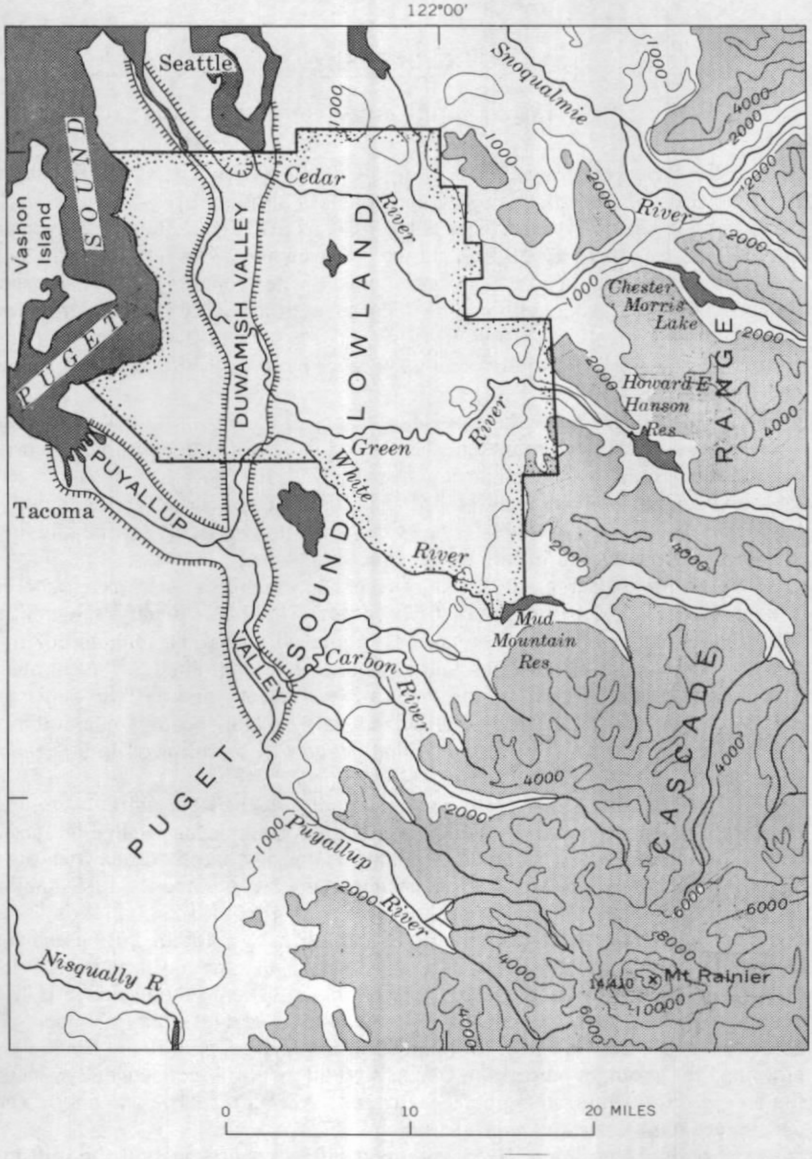


Figure 2 - Major drainage and topographic features in and adjacent to the project area (stippled outline). Contour interval is 2,000 feet, with supplementary contour at 1,000 feet; datum is sea level. Areas above 2,000 feet are shaded lightly; water areas are dark; hachures indicate major valley boundaries.

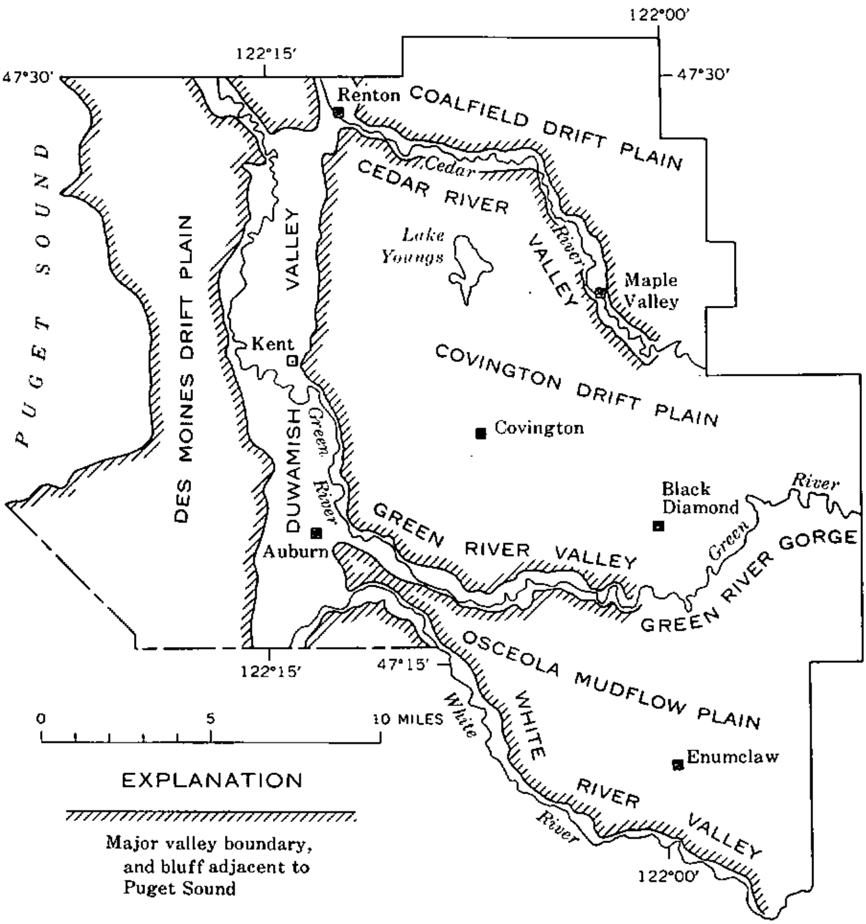


Figure 3 - Physiographic subdivisions.

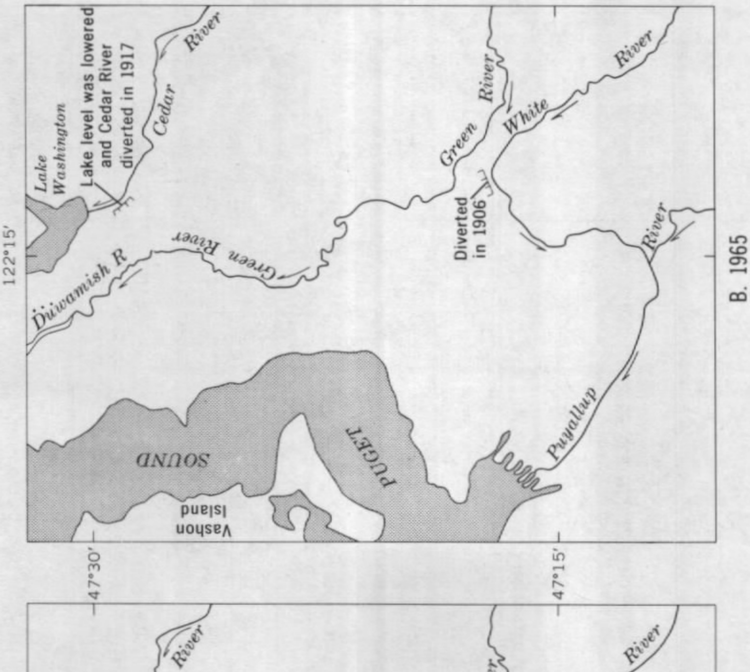


Figure 4 - River-channel diversions and changes in terminology between 1905 and 1965.

CLIMATE

The climate in the Puget Sound Lowland is characterized by cool, dry summers and mild, cloudy and rainy winters. Severe winter storms generally are prevented from moving into the Lowland by the Olympic Mountains and the Cascade Range. The wet season generally lasts from October until March; this, coupled with the mild temperatures and a relatively long growing season, is conducive to lush vegetation. Evergreen forests and thick undergrowths blanket most parts of the drift-plain surface. Average annual precipitation ranges from about 39 inches near Puget Sound to more than 70 inches at the mountain front (fig. 5).

POPULATION DISTRIBUTION

Most of the population of southwestern King County is concentrated in the western half of the project area, in and adjacent to the Duwamish Valley between Seattle (pop. 564,000) and Tacoma (pop. 151,000). The largest cities are on the broad floor of the Duwamish Valley. They include, from north to south, Renton (pop. 20,600), Kent (11,200), and Auburn (14,500). (Populations for 1964 are from Schmid and others, 1964, table 1:I.)

The total population of southwestern King County in 1962 was about 228,000. Projected estimates indicate that the total population will reach nearly 440,000 by 1985 (table 1). About 48 percent of the population increase will occur on the southern half of the Des Moines drift plain, with only 14 percent on the northern half. The remainder of the project area will absorb about 38 percent of the projected increase.

Table 1 - Population distribution in 1960, and estimates projected to 1985

Area	Population a/		
	1960	1970	1985
DES MOINES DRIFT PLAIN			
Southern half	15,230	56,100	124,000
Northern half	92,860	106,900	123,940
REMAINDER OF PROJECT AREA	105,254	b/127,980	b/190,600
TOTAL	213,344	b/290,980	b/438,540

a/ Data from King County Planning Department (1964) and King County and City of Seattle Planning Departments (1962).

b/ Estimates do not include population of Maple Valley, Black Diamond, Enumclaw, or adjacent areas, which had a total population of about 21,000 in 1960.

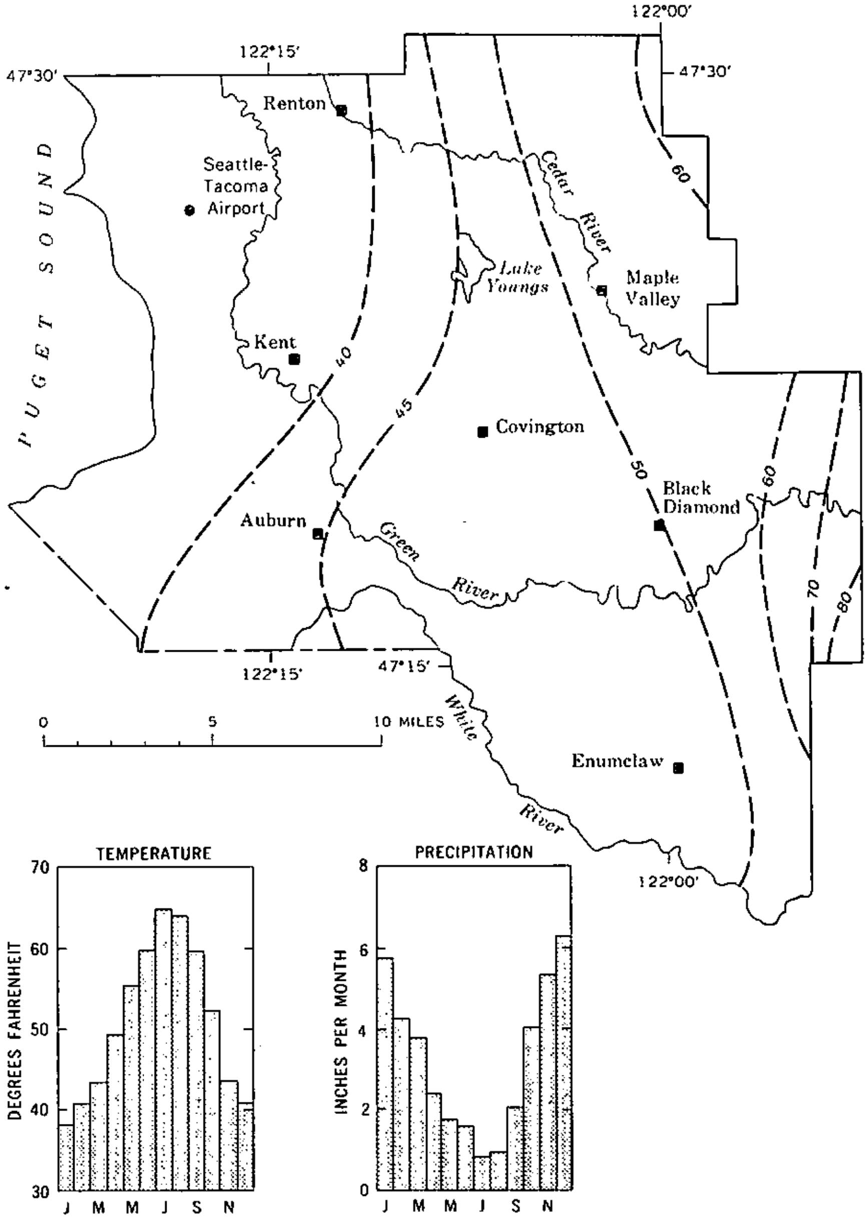


Figure 5 - Precipitation and temperatures in the study area. Map shows areal distribution of average annual precipitation, in inches, based on data from U.S. Soil Conservation Service (1965). Graphs show normal monthly distribution of precipitation and temperature at Seattle-Tacoma Airport, based on records for 1931-60 (normal annual precipitation, 38.9 inches; normal annual temperature, 51.1°F).

GEOLOGIC HISTORY

TERTIARY PERIOD

Rocks of Tertiary age include sedimentary and volcanic rocks of the Puget Group, intrusives, an assemblage of andesitic volcanic rocks, and the Hammer Bluff Formation (table 3, and pl. 1).

During middle and late Eocene time, according to Mullineaux (1961, p.175-181), a slowly subsiding broad coastal plain existed in the present position of the Cascade Range and the Puget Sound Lowland. About equal rates of subsidence and deposition permitted the accumulation of a great thickness of arkosic sediments, carried in from a source east of the coastal plain. Volcanic rocks and sediments derived from volcanoes on the coastal plain were occasionally interbedded with the arkosic sediments, along with extensive swamp deposits formed under a subtropical or temperate climate.

During the middle Eocene, a marine embayment extended from southwestern Washington as far north as Seattle and Tiger Mountain, and was a major site for the deposition of arkosic and volcanic sediments. The marine deposits thus formed were subsequently buried by continental arkosic sediments. Continued deposition of the arkosic sediments was interrupted later in the Renton-Tiger Mountain district by extensive volcanic activity to the northeast. The surface of the coastal plain here was built up rapidly by the deposition of volcanic rocks and sediment. Arkosic sediments were still being deposited in the lower parts of the coastal plain, and occasionally, during periods of little or no volcanic activity, the arkosic sediments overlapped and even covered the volcanic accumulations. Eventually, volcanic activity ceased and the Puget Sound Lowland area once again became a site for the uniform deposition of arkosic sediments on a broad coastal plain of low relief.

Toward the end of Eocene time, the source of arkosic sediments was cut off from the coastal plain, probably by volcanic activity and uplift in the present position of the Cascade Range. Subsidence of the coastal plain became more rapid and another marine embayment formed in the Renton-Tiger Mountain area. Swift-flowing streams carried volcanic detritus into the embayment and onto the rapidly subsiding coastal plain. Volcanism and mountain building in the present position of the Cascade Range persisted throughout Oligocene time, and resulted in the accumulation of great thicknesses of volcanic rocks and sediments in the Renton-Tiger Mountain and Enumclaw districts.

In middle or late Miocene time, most of the Tertiary formations of western Washington were folded and faulted, and the area of the Puget Sound Lowland was uplifted. Before the end of Miocene time, erosion had reduced the uplifted area to a surface of low relief.

QUATERNARY PERIOD

The geologic history of Quaternary deposits is summarized in table 2, and the outcrop areas of various units are shown on the geologic map (pl. 1) and geologic sections (pl. 2).

Table 2 - Quaternary geologic history of the Puget Sound Lowland south of Seattle

[Based in part on data from Mullineaux (1961, fig. 15 and 16) Crandell (1963, table 4) Mullineaux and others, 1965, and Armstrong and others, 1965]

System	Series	Radiocarbon age, in years before present	Regional geologic-climate units	Events
QUATERNARY	Recent		POSTGLACIAL EROSION AND DEPOSITION	Green River aggrades lower few miles of its valley near Auburn in response to growth of White River fan in Duwamish Valley.
				Growth of White River fan buries fan of Green River at Auburn, part of the Cedar River fan near Renton, and fills Duwamish embayment to above sea level. Des Moines drift plain is merged with mainland to east.
		5,000		Osceola Mudflow covers most of drift plain south of the Green River and forms submarine lobe on floor of Duwamish embayment. White River, diverted to the embayment from a more southerly course, is emplaced in present position.
				Growth of Cedar River fan blocks Duwamish embayment, forming Lake Washington.
				Green and Cedar Rivers cut deep valleys across drift plain, and build fans into deep water of Duwamish embayment.
	----?---			Swamps and peat bogs occupy numerous depressions on till surface.
		13,500		Marine water invades Puget Sound and Duwamish embayment. Des Moines drift plain is an island.
	Pleistocene			Shrinkage of ice lobe by melting produces sediment and large quantity of melt water. Released sediment and reworked earlier drift are deposited as ice-contact and proglacial stratified drift. Large streams in temporary positions adjacent to receding ice margin form melt-water channels. Green and Cedar Rivers are diverted to more southerly positions in foothills.
			Vashon Stade	Ice lobe restricted on the east by Cascade foothills advances across project area. At maximum stand, ice thickness about 3,000 feet at

QUATERNARY	Pleistocene		(Advance and recession of Puget lobe)	Renton, and at least 1,500 feet along mountain front near Black Diamond. Unconsolidated deposits beneath ice are compacted, and land surface mantled with Vashon till. During recession Cascade streams, diverted southward, occupy gutter position between ice lobe and mountain front east of Palmer and Enumclaw. Embayments of Puget Sound are by glacier erosion.
		15,000		Lakes, forming in front of advancing ice, and valleys become major sites for deposition of advance stratified drift.
				Puget lobe advances from the north, blocks drainage and diverts it southward.
			Evans Creek Stade (Advance and recession of alpine glaciers)	Alpine glaciers of the Cascade Range advance and retreat before advance of Puget lobe.
			OLYMPIA INTERGLACIATION (Climate cooler than present, but sources of sediment and agencies of deposition similar)	Deposition of lacustrine and fluvial sediment of Kitsap Formation (no exposures recognized in southwestern King County) possibly followed by erosion.
		>38,000	(Advances and recessions of Puget lobe near Renton)	Deposition of glacial and nonglacial sediments exposed in Cedar River valley; followed by erosion.
			------?------?------?------?------	------?------?------?------?------?------?------?------?------
			SALMON SPRINGS GLACIATION	Deposition of fluvial gravel by Cascade streams.
			(Advances and recessions of Puget lobe)	Deposition of glacial and nonglacial sediments.
				Deposition of fluvial sand and gravel by Cascade streams.
			PUYALLUP INTERGLACIATION (Climate, source of sediment, and agencies of deposition similar to present)	Deposition of alluvial and lacustrine sediments, volcanic mudflows and ash, derived chiefly from Mount Rainier. Deposition of peat.
			STUCK GLACIATION (Advances and recessions of Puget lobe)	Deposition of intermediate drift in Green River valley and Stuck Drift in west wall of Duwamish Valley.
			ALDERTON INTERGLACIATION (Climate, source of sediment, and agencies of deposition similar to present)	Deposits of this age have not been recognized in King County, but alluvial, mudflow, and volcanic ash deposits occur south of White River. Deposition was followed by erosion.
			ORTING GLACIATION (Advances and recessions of Puget lobe)	Deposition of glacial sediments, fluvial sand and gravel, and lacustrine sand; followed by erosion.

The Puget Sound Lowland underlying southwestern King County was glaciated at least four times during the Pleistocene Epoch (Mullineaux and others, 1957; Crandell and others, 1958, p. 384) by the Puget glacial lobe that advanced southward from the margin of the Cordilleran ice sheet in British Columbia. The four glaciations are separated by three non-glacial intervals (table 2). The most recent advance and retreat of ice in the project area occurred in the time interval about from 15,000 to 13,500 years ago, according to Mullineaux, and others (1965, p. 8). This time interval is part of the Vashon Stade of the Fraser Glaciation, as defined by Armstrong and others (1965, p. 326); that usage will be followed in this report.

Since the close of the Vashon Stade in this part of the Lowland, postglacial changes have been limited chiefly to the cutting of the Cedar, Green and White River valleys, the deposition of a large volcanic mudflow, the Osceola, from Mount Rainier, and the accumulation of a thick alluvial fill in the Duwamish embayment. The Osceola Mudflow caused important changes in drainage and depositional patterns within the project area. These changes are discussed in detail below because they have a direct bearing on the distribution of alluvial aquifers in the Duwamish Valley.

According to Crandell and Waldron (1956, p. 349), the Osceola Mudflow descended the northeast side of Mount Rainier volcano about 4,800 years ago, and flowed down the White River valley to the edge of the Puget Sound Lowland southeast of Enumclaw. Here, the mudflow was temporarily ponded by a constriction in the valley at Mud Mountain, a large Pleistocene morainal embankment (fig. 6). The mudflow topped the embankment and spread out as a wide digitate lobe covering at least 65 square miles of the Lowland. One lobe reached the floor of the Puyallup Valley about 10 miles south of Auburn, by way of the premudflow course of the White River, which was then a tributary to the Puyallup River (fig. 7) (Crandell, 1963, p. 47). In the project area, the bulk of the mudflow moved in a northwest direction, flowing over the south wall of the Green River valley. Mullineaux (1961, p. 133) found a small remnant of the Osceola Mudflow exposed in a terrace 5 to 10 feet above the Green River flood plain in sec. 25, T. 21 N., R. 5 E. This proves, according to Mullineaux, that the Green River valley had been cut to at least its present level by the time the mudflow occurred. Mullineaux further stated (p. 145) that "the river probably had cut the lower end of the valley nearly to sea level, for the Duwamish Valley at Auburn was an arm of Puget Sound at that time." A large mass of the Osceola Mudflow apparently reached the floor of the marine embayment, as suggested by the driller's log of well 22/4-35H2, about 4 miles northwest of Auburn. Here, between 265 and 280 feet below sea level, woody debris was encountered overlying a 22-foot bed of gravelly and bouldery clay. Samples of the wood, collected by the writer and analyzed by the Department of Chemistry, University of Washington (sample no. UW-62, A. W. Fairhall, written commun., 1964) have a radiocarbon age of 5,040 $\pm$ 150 years. Cuttings from the bouldery clay were of Mount Rainier origin. Immediately after deposition of this lobe of the Osceola Mudflow on the embayment floor, the White River assumed its new, present day course on the surface of the mudflow (Crandell, 1963, p. 68) (fig. 7), and began depositing alluvium into the Duwamish embayment near Auburn (Mullineaux, 1961, p. 185).

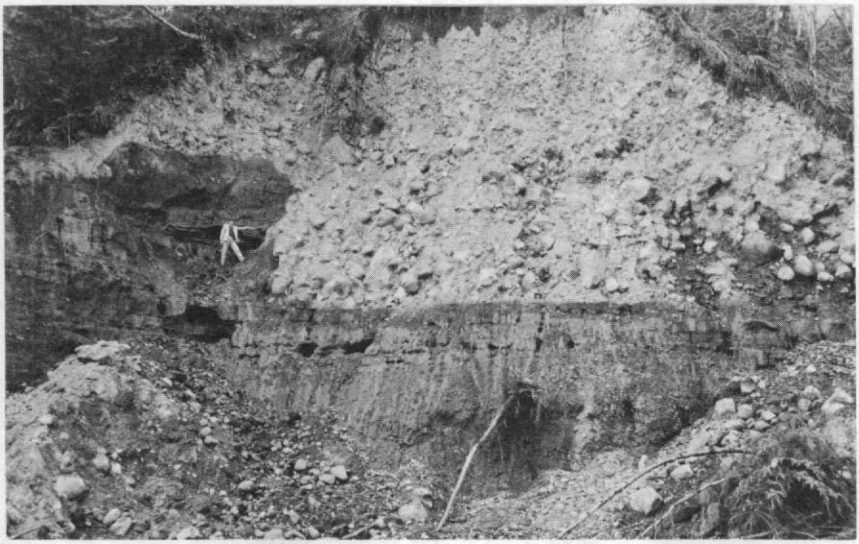


Figure 6 - Osceola Mudflow overlying eroded surface of Vashon Drift near Mud Mountain Dam (SE$\frac{1}{4}$ sec. 2, T. 19 N., R. 7 E.). Note angularity of rocks in the mudflow, and graded structure of the deposit, which ranges from cobbles near top to boulders as large as 5 feet in diameter near base. Underlying embankment consists of glaciolacustrine clay and silt.

Deposition of the White River fan near Auburn marked the first time that fluvial sediments predominantly of Mount Rainier origin were carried into this embayment (Mullineaux, 1961, p. 137-140). The Green and Cedar Rivers had already cut their valleys to the present depth, and had built fans into the embayment at Auburn and Renton. Subsequent deposition, largely by the White River, filled and aggraded the embayment above sea level, and buried the Green River fan and the southern part of the Cedar River fan (fig. 19).

STRATIGRAPHY AND GROUND-WATER OCCURRENCE

Ground water exists in nearly all rock units in southwestern King County, but the availability of water to wells depends largely on the lithologic character, topographic position, and areal extent of the several units. The important water-bearing features of all rock units are summarized in table 3 and are treated in detail in the following sections.

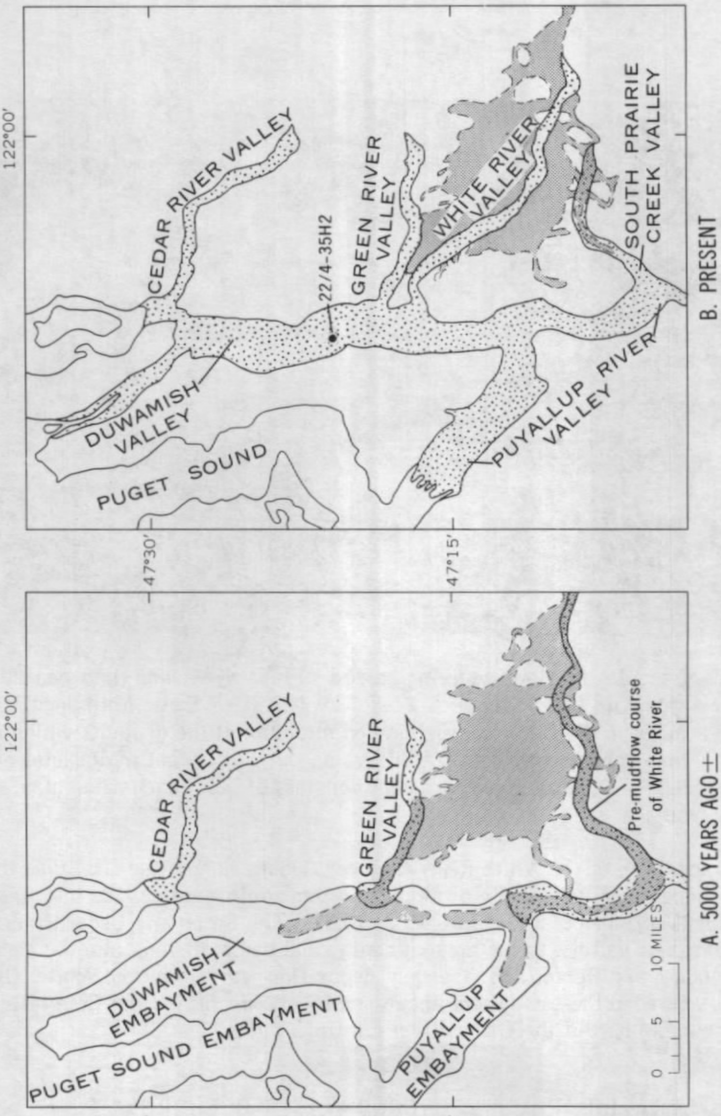


Figure 7 - Relation between marine embayments, principal alluvial deposits (stipple pattern), and Osceola Mudflow (dark shading) about 5,000 years ago and at present. A. Approximate areal extent of mudflow following deposition. B. Present-day exposures of mudflow, and location of well 22/4-35H2, which penetrates mudflow 265 feet below sea level. Note new course of White River.

Table 3 - Stratigraphy and water-bearing properties of principal geologic units

Age: System	Age: Series	Geologic units		Thickness (feet)	Description and distribution	Water-bearing properties
QUATERNARY	Late Pleistocene and Recent	Postglacial deposits	Alluvium	0- 600±	Terrace and flood-plain deposits of pebble-cobble gravel and sand in valleys of the White, Green, and Cedar Rivers. Thick fan and delta deposits of pebble-cobble gravel and sand in Duwamish Valley near Auburn and Renton. Peaty sand, silt, and clay elsewhere in Duwamish Valley and in most small stream valleys.	Flood-plain and fan deposits of the major rivers contain some of the most prolific aquifers in project area. Properly constructed wells, many less than 100 feet deep, have yielded 500 to 3,000 gpm, with specific capacities ranging from 50 to 500 gpm per ft of drawdown. Principal water supply for city of Renton.
			Osceola Mudflow and mass-wasting debris	0- 80±	Heterogeneous mixtures of silt, clay, sand, and rock and wood fragments, deposited as landslide and mudflow debris, slopewash, talus, and alluvium of small intermittent streams. Covers much of drift plain south of Green River.	Usually saturated, but not a source of ground water because of low permeability. Deposits limit recharge to underlying aquifers, especially south of the Green River, where Osceola Mudflow blankets much of drift plain. Organic debris and pyrite in mudflow may locally affect quality of the ground water.
			Peat and swamp deposits	0- 60±	Peat, muck, silt, and clay deposited chiefly in closed depressions on till surface or in kettles in stratified drift.	Saturated, but not a source of ground water to wells. Strongly acid bog drainage may indirectly contribute to the occurrence of iron-rich ground water.
	Pleistocene	Vashon Drift	Recessional outwash, lacustrine deposits, and ice-contact deposits	0- 300±	Well-sorted sand and pebble-cobble gravel deposited as valley trains, outwash deltas, eskers, kames, and kame terraces. Kames and kame terraces in Duwamish Valley are more poorly sorted and finer grained than those in eastern half of project area. Map unit includes lacustrine fine sand, silt, and clay	Recessional outwash and ice-contact de-deposits give rise to springs with discharges that range from 1,000 to more than 20,000 gpm. These springs are principal sources of water for cities of Kent, Auburn, Black Diamond, and Enumclaw. In many areas, shallow outwash deposits occupy relatively high positions on the drift plain and are well drained. Outwash in lower positions, such as in meltwater channels, usually contains perched but highly permeable water-bearing zones.
			Till	0- 80±	Compact mixture of gravel and boulders in a gray silty sand matrix. Includes sand and gravel within and on top of the till. Upper 2 to 6 feet usually noncompact. Mantles nearly all drift plain and bedrock surfaces, and probably underlies Puget Sound embayment and alluvial fill in Duwamish Valley.	Numerous shallow domestic wells obtain meager supplies of water from upper part of till; these wells usually go dry in late summer. Very low permeability restricts recharge to underlying aquifers.
			Advance outwash	0- 300±	Sand and pebble-cobble gravel beneath Des Moines drift plain. Pebble-cobble gravel predominates elsewhere. Most extensive deposits lie in buried valleys beneath Des Moines drift plain, in a southwest-trending valley beneath Covington drift plain, and in a southwest-trending valley beneath Osceola Mudflow plain.	Areally widespread but thin deposits (not shown on map) probably supply ground water to many drilled domestic wells. In thicker deposits, properly constructed wells generally less than 200 feet deep have yielded as much as 1,100 gpm, with specific capacities as high as 150 gpm per ft of drawdown.
		Undifferentiated pre-Vashon drift in Cedar River valley		0-1,000+	At least four layers of gray till separated by fluvial sand and gravel and a thick sequence of oxidized lacustrine sand, silt, clay, peat, and fluvial sand and gravel. Also includes gray stony clay and silt. Underlies drift plain on both sides of Cedar River valley.	Although numerous domestic wells obtain water from upper part of drift, only a few attempts have been made to obtain high-yield wells. Most of these have yielded less than 300 gpm, with specific capacities less than 20 gpm per ft of drawdown.
		Salmon Springs Drift		0- 300+	Oxidized sand and pebble-cobble gravel; may include till, peat, fine sand, silt, and clay. Underlies most of the Des Moines drift plain, and western parts of Covington drift plain and Osceola Mudflow plain.	Principal source of water beneath Des Moines drift plain. Properly constructed wells, generally less than 400 feet deep, have yielded 300 to 2,100 gpm; specific capacities generally are less than 20 gpm per ft of drawdown, though values as high as 150 gpm per ft of drawdown have been measured.
		Puyallup(?) Formation		0- 100+	Fine to medium gray sand, volcanic mudflows, peat, peaty silt and clay, gravel, and volcanic ash. Irregularly distributed beneath Des Moines drift plain and western parts of Covington drift plain and Osceola Mudflow plain.	Relatively impermeable; not known to be a source of ground water to wells.
		Intermediate drift (includes Stuck Drift)		0-800+ (0-1,000+)	At least two bluish-gray clayey till sheets within a thick sequence of gray lacustrine sand, silt, and clay, and occasional layers of fluvial sand and gravel. Exposed in lower valleys of Green and White Rivers, and probably underlies much of project area west of a line through Enumclaw, Black Diamond, and Maple Valley.	Nearly impermeable except for occasional thin water-bearing zones; supplies water to few successful wells. Full thickness of drift probably has not been penetrated by even the deepest wells, some of which have been drilled to about 800 feet below sea level.
		Orting Drift		0-200+ (0-1,000+)	Oxidized lacustrine sand, fluvial sand and gravel, and till. Exposed in Green River valley southwest of Black Diamond, where it lies on Tertiary formations. Probably underlies much of project area west of a line through Enumclaw, Black Diamond, and Maple Valley.	A few domestic wells near outcrop areas probably obtain water from this drift. In areas west and northwest of Enumclaw, Black Diamond, and Maple Valley, drift is deeply buried and probably has not been reached by even the deepest wells. Drift is permeable; moderate yields up to 500 gpm should be possible from properly constructed wells.
TERTIARY	Miocene	Hammer Bluff Formation		0- 80+	Brownish-green to brown clayey volcanic sand and gravel underlain by light-gray quartzose sand and kaolinitic clay derived from arkose of Puget Group; includes some highly compressed woody lignite. Entire formation is highly weathered. Exposures in Green River valley near Black Diamond probably represent only part of a thicker and more extensive sequence to the west, which is deeply buried by drift.	High degree of weathering, at least in outcrops, suggests low permeability. Formation is not known to be a source of ground water to wells.
	Oligocene	Andesitic volcanic rocks		0-5,000+	Folded and faulted sequence of volcanic breccia, conglomerate, sandstone, shale, tuff, and lava flows. Chiefly marine in Renton-Tiger Mountain district and continental in Black Diamond-Enumclaw district.	At present, only a few domestic wells obtain water from these rocks. Because continental sandstones in the Puget Group are generally fine grained, and almost all of the volcanic rocks are altered, yields exceeding 50 gpm are highly improbable.
		Intrusive rocks			Dikes, sills, and irregular masses of porphyritic andesite and basalt.	Ground-water movement is chiefly along joints, bedding planes, and faults. If
	Eocene to	Puget Group		0-7,000+	Highly folded and faulted light-gray to light-brown generally fine-grained arkosic, micaceous sandstone and interbedded shale and coal. In Renton-Tiger Mountain district, includes thick sequence of volcanic sandstone and conglomerate, tuffaceous siltstone, tuff-breccia, and lava flows.	optimum well yields are to be obtained, structural details should be considered in the selection of drilling sites. Large yields could be obtained by drilling into flooded mine workings in the Puget Group, but water-quality problems might limit the use of such water.

TERTIARY BEDROCK

Tertiary rocks are a secondary source of ground water in southwestern King County. The relatively fine-grained nature of the Puget Group sandstones, and the degree of alteration of nearly all the volcanic rocks and late Tertiary sediments precludes much possibility of obtaining well yields of 50 gpm or more. The tertiary rocks have been subdivided and described on the geologic map (pl. 1) and in table 3.

Only 10 wells, all in the Puget Group, are known to have been drilled into Tertiary rocks to obtain ground water. The wells averaged more than 200 feet in depth and had yields generally less than 15 gpm and specific capacities less than 1 gpm per foot of drawdown. The two deepest wells (22/5-3A1, 525 ft; 23/5-36E2, 395 ft) were dry.

QUATERNARY DEPOSITS

The Quaternary deposits are the chief source of ground water in the project area. They form a nearly lens-shaped mass in this part of the Puget Sound Lowland (fig. 8) that may exceed 2,000 feet in thickness, judging from deep-well records in Pierce County (Walters and Kimmel, 1968). In southwestern King County the Quaternary deposits thin abruptly from more than 1,000 feet and pinch our in places along a partially buried bedrock high near the Cedar River and along the Cascade Range (fig. 9). North of the Cedar River, the Quaternary deposits rapidly thicken again to more than 1,000 feet for several miles before pinching out against the foothills of the Cascade Range. Near Maple Valley, the deposits are continuous with the more extensive mass to the southwest through a wide bedrock valley or saddle.

According to Mullineaux (1961, p. 65-67), Quaternary deposits in the project area consist of sediment derived from three principal source areas: (1) Mount Rainier volcano; (2) the central Cascade Range east of the project area; and (3) British Columbia and the northern Cascade Range in Washington. The rock types from the three source areas are distinctively different, and can be distinguished by rock identification and panning for heavy minerals.

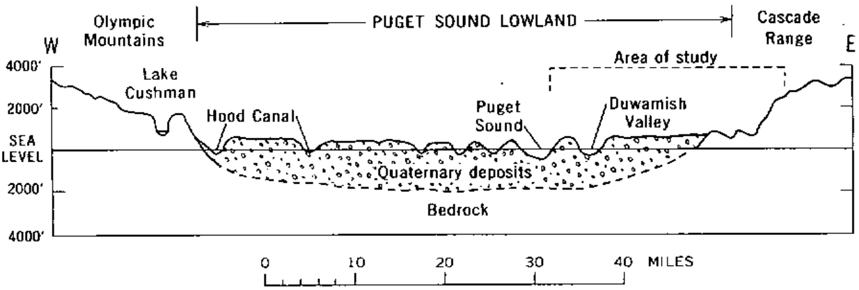


Figure 8 - Diagrammatic section through southern part of Puget Sound Lowland, looking north.

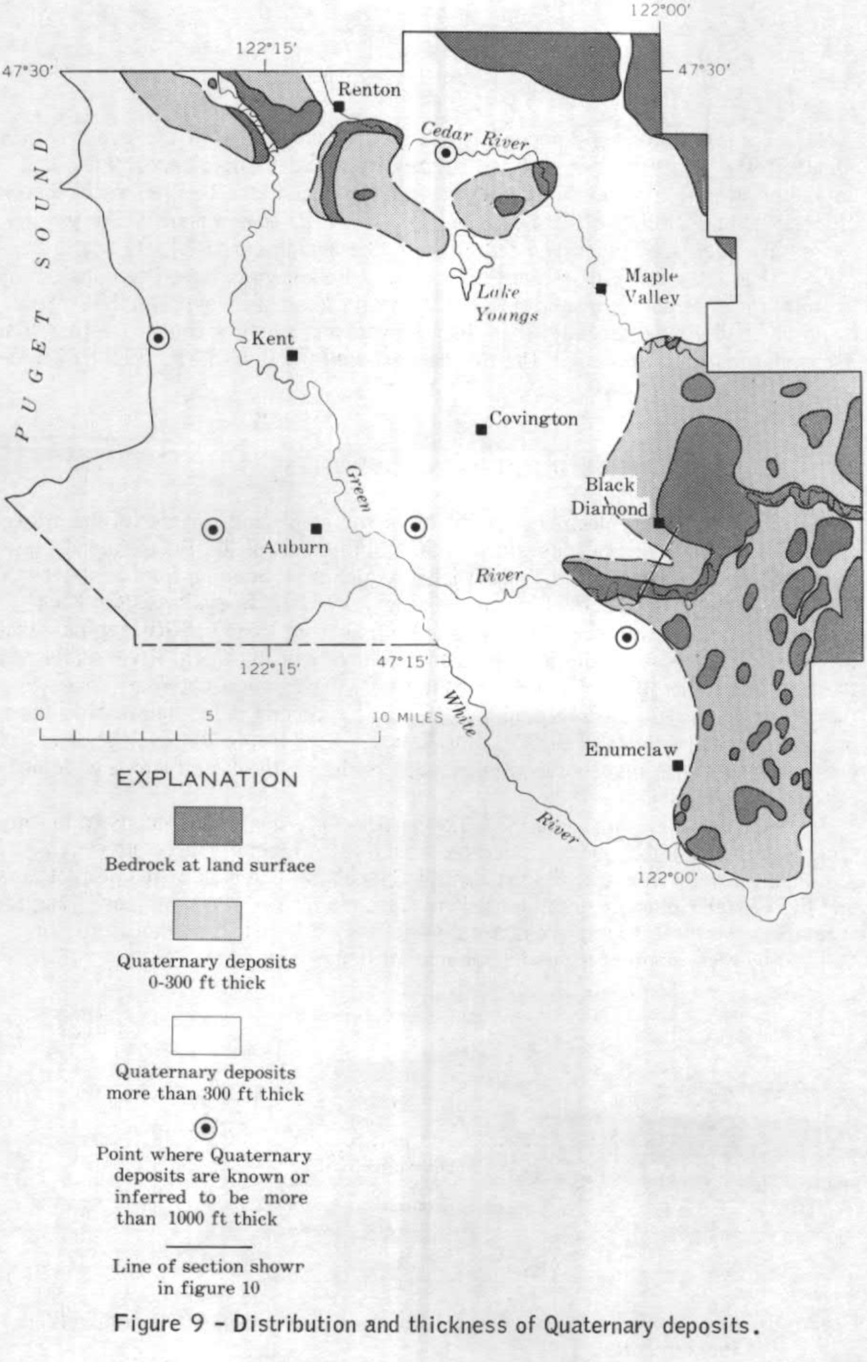


Figure 9 - Distribution and thickness of Quaternary deposits.

Mount Rainier is a Quaternary volcano about 27 miles southeast of the project area. It has been the dominant source of sediment during both the postglacial period and the Pleistocene nonglacial intervals. Modern alluvium from Mount Rainier, carried into the project area only by the White River, is characterized by red, grayish-red, and light-gray to black pyroxene andesite (Mullineaux, 1961); older deposits derived from Mount Rainier are characterized by light-gray to black and reddish-gray hypersthene-hornblende andesite (Crandell, 1963, p. 8). Heavy minerals consist chiefly of hypersthene, opaque iron minerals, hornblende, and altered grains and rock fragments.

Sediments from the central Cascade Range are characterized by green, greenish-gray, and light- to dark-gray, porphyritic and dense, andesitic and basaltic rocks, and light gray granodioritic rocks. Heavy minerals consist chiefly of hypersthene, hornblende, and opaque iron oxides. Mineral aggregates and unidentified altered grains make up 20 to 50 percent of each heavy-mineral suite.

Sediments from British Columbia and the northern Cascade Range in Washington are characterized by gneiss, schist, biotite granite, quartzite, and marble. These materials were mixed with a much greater volume of central Cascade sediments during southward transport by ice, and therefore they characteristically have a heavy mineral suite that is similar to that of the central Cascades, except for the presence of pink or orange garnet. The garnet is distinctive and very useful for mapping purposes.

Pleistocene Glacial and Interglacial Deposits

The most productive Pleistocene aquifers in southwestern King County are bodies of glacial outwash in the Salmon Springs Drift, buried valley fills of Vashon advance outwash, and thick ice-contact and recessional outwash deposits, also of Vashon age (table 3). In the following sections, these and other mapped units are discussed only to the degree of their overall importance to ground-water development in the project area.

Orting Drift

The Orting Drift is the oldest Pleistocene deposit recognized in the project area. It is deeply buried in most places west and northwest of its area of outcrop in the valley walls of the Green River (pls. 1 and 2). The formation lies on an eroded Tertiary surface and is overlain unconformably by younger Pleistocene formations. At its westernmost exposures in the Green River valley, where it is unconformably overlain by the intermediate drift, the top of the Orting slopes rather steeply westward to a level below that of the Green River flood plain. Just 3½ miles west-northwest of this sloping contact, well 21/5-15M1 was drilled to nearly 700 feet below sea level, apparently without reaching the top of the Orting Drift.

Several test holes for coal in sec. 23, T. 21 N., R. 6 E., south of Black Diamond (Warren and others, 1945) indicate that a buried northwest-trending bedrock valley more than 400 feet deep lies between Black Diamond and the Green River gorge (fig. 10). Orting Drift and sediments of the underlying Hammer Bluff Formation probably constitute part of this buried fill, which doubtless extends as far east as the gorge in the NE$\frac{1}{4}$ of sec. 25, T. 21 N., R. 6 E. The axis of the valley may extend across the river to the southeast through sections 25 and 30. Landsliding here has exposed small outcrops of oxidized drift similar to the Orting, as well as semiconsolidated sediments similar and probably equivalent in age to the Hammer Bluff Formation.

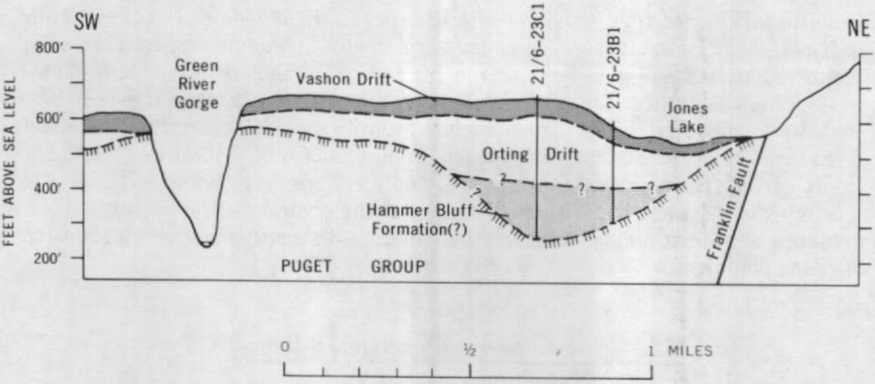


Figure 10 - Diagrammatic section across axis of northwest-trending buried bedrock valley south of Black Diamond, looking northwest (line of section is shown in fig. 9).

Immediately north and south of exposures in the Green River valley, the Orting Drift can probably be reached by wells less than 200 feet deep. All wells in secs. 20, 22, 23, and the NE$\frac{1}{4}$ sec. 33, T. 21 N., R. 6 E. (pl. 3), probably obtain ground water from the Orting Drift. West of the Duwamish Valley, several deep wells may also be obtaining water from the Orting Drift (table 5, 22/4-17Q4, 23/4-19H1 and 30E1).

Intermediate Drift

The intermediate drift is not an important source of ground water to wells in southwestern King County. Although thin water-bearing zones are present within the unit, most of the sequence is so fine grained that even small yields (less than 100 gpm) are difficult to obtain in most areas (table 3). Six wells drilled near the outcrop area east of Auburn, for example, penetrated from 200 to more than 800 feet of intermediate drift consisting chiefly of gray stony clay, silt, and some sand (pl. 2, sec. C-C′). The results are summarized as follows:

Well	Depth (feet)	Yield (gpm)	Drawdown (feet)
21/5-10N1	290	0	--
-10N2	666	20	38
-10N3	390	0	--
-14D1	718	6	--
-15M1	1,000	15	152
-22D1	326	0	--

Nearly 3,400 feet of drilling in these wells produced a total of only 41 gpm.

Puyallup (?) Formation

The Puyallup (?) Formation is not known to be a source of ground water to wells in southwestern King County. It is a thin, discontinuous, and nearly impermeable formation, which does not merit more detailed discussion than that given in the geologic map explanation (pl. 1) and in table 3.

Salmon Springs Drift

Character and distribution

The Salmon Springs Drift is a thick sequence of sand, gravel, clay, and, in places, till (fig. 11).

The drift occupies channels eroded into the underlying Puyallup (?) Formation and intermediate drift in the lower valley walls of the Green and White Rivers. The base of the Salmon Springs Drift in this area lies well above sea level. A vertical thickness of less than 100 feet of Salmon Springs Drift is exposed in the walls of the Green River valley; in the White River valley less than 50 feet is exposed.

The thickest Salmon Springs Drift apparently was deposited in a north-trending valley whose eastern margin lies a short distance east of Auburn (Mullineaux, 1961, p. 100). (See pl. 2, secs. B-B', C-C'.) The exposed thickness of the drift in bluffs along each side of the Duwamish Valley and adjacent to Puget Sound is generally more than 200 feet. Drillers' logs suggest that the formation is nearly 400 feet thick beneath the Des Moines drift plain.

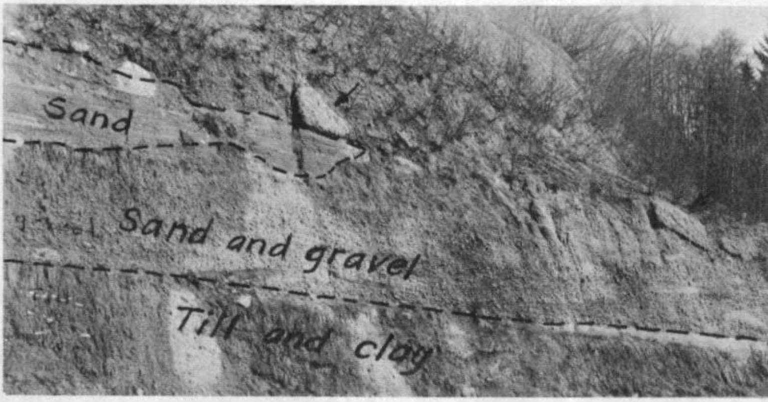


Figure 11 - Salmon Springs Drift exposed in road cut west of Auburn (SW$\frac{1}{4}$ sec. 14, T. 21 N., R. 4 E.). Note disoriented blocks of till (arrows) embedded in sand and gravel sequence.

The formation has been removed by erosion below most parts of the Duwamish Valley floor, but it underlies a large part of the Des Moines drift plain, its base being close to sea level or slightly below in many places. In some outcrops the Salmon Springs Drift may be distinguished from overlying and underlying geologic units because of its distinctive yellowish-brown color. Well cuttings indicate that the Salmon Springs Drift is not easily identified in the subsurface on the basis of color, possibly because oxidization is not as strong. The Orting, although very similar in appearance to the Salmon Springs Drift, is usually separated from it by distinctively different Pleistocene deposits.

In the Cedar River valley walls, a thick section of predominantly oxidized drift occupies a position similar to that of the Salmon Springs Drift in the Duwamish Valley. The exact relationship between the Salmon Springs Drift and the drift exposed in the Cedar River valley cannot be established firmly at this time.

Water-bearing properties

The Salmon Springs Drift is the principal source of ground water beneath the Des Moines drift plain and parts of the Covington drift plain along the Duwamish Valley east of Kent and Auburn. Many wells less than 400 feet deep have obtained yields ranging from 300 to 2,000 gpm (table 5).

The location or capacity of individual water-bearing zones within the formation is difficult to predict because of great irregularity and discontinuity, both laterally and vertically. On the Des Moines drift plain just south of Federal Way, for instance, two wells (21/4-15L2 and 21/4-20L1) were completed in more than 40 feet of sand and gravel inferred to be of Salmon Springs age (table 5). Although the aquifer lies near sea level and the wells are less than 3 miles apart, 20L1 produced more than 2,100 gpm with about 53 feet of drawdown, whereas the other well produced only 550 gpm with about the same amount of drawdown. As a further example of the highly variable nature of the Salmon Springs Drift, test well 21/4-16P1, drilled between the two wells mentioned above, failed to produce any significant quantity of water, even though it penetrated more than 50 feet of sand and gravel near sea level. On the Duwamish Valley floor north of Kent in secs. 6, 7, and 18, T. 22 N., R. 5 E., many flowing wells have been drilled into drift probably of Salmon Springs age, but possibly older, and these wells commonly produce several hundred or more gallons per minute. One well (fig. 12), completed with an open-end 6-inch casing at a depth of about 200 feet, flows approximately 1,700 gpm and has a shut-in pressure of about 39 psi (pounds per square inch), equivalent to a water level 90 feet above land surface. The specific capacity of the well cannot be less than 20 gpm per foot of drawdown as compared to specific capacities generally less than 5 for other wells in this artesian system.

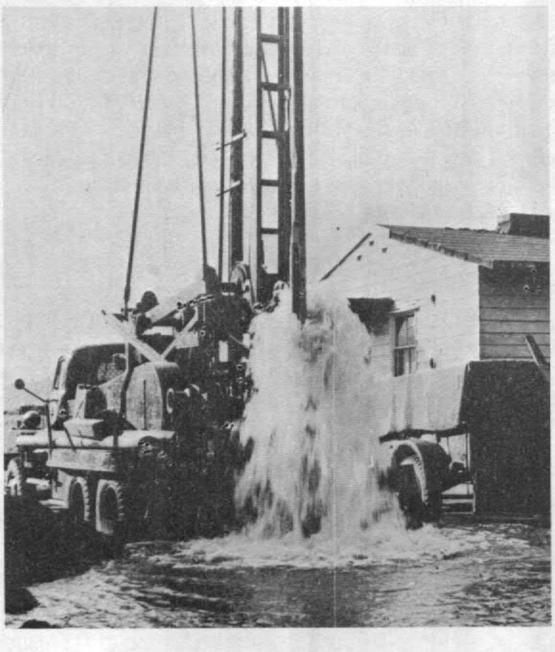


Figure 12 - Flowing well 22/5-6N1 in Duwamish Valley 2 miles north of Kent. Open flow about 1,700 gpm, from Pleistocene deposits about 200 feet below the valley floor.

Pre-Vashon Undifferentiated Drift in the Cedar River Area

Character and distribution

The undifferentiated drift exposed along the Cedar River occupies a broad valley lying between a buried bedrock high just south of the Cedar River and foothills of the Cascade Range along the north and northeast boundary of the project area (pls. 1 and 2). According to Mullineaux (1961, p. 101), the drift exposed near Renton consists of lacustrine sand, silt, clay, and peat, at least three or more till sheets, and glaciofluvial sand and gravel. The full thickness of the drift is probably more than 1,000 feet, as indicated by exposures and drilling in sec. 23, T. 23 N., R. 5 E. Well 23/5-23M1 bottomed in Pleistocene drift at a depth 665 feet below the Cedar River flood plain, which is about 300 feet below the top of nearby exposures in the valley walls. Near Renton the drift is predominately gray and unoxidized, but 4 to 5 miles upstream the coarser parts of the drift are commonly oxidized. Near Maple Valley the drift consists principally of coarse fluvial sand, grading to sand and pebble-to-cobble gravel near the project boundary. Several till sheets and fine nonglacial sediments, including thin peat beds, are exposed intermittently as far east as the project boundary. At several places in the Cedar River valley, gray stony clay and silt, similar to that in the intermediate drift of the Green River valley, is exposed near flood-plain level. On both sides of the river in secs. 19 and 20, T. 23N., R. 6 E., exposures of stony clay about 60 feet thick directly overlie bedrock and are in turn overlain by oxidized drift. About the same thickness of gray stony clay and silt is exposed farther upstream in a cut bank on the west side of the river in the SE¼ sec. 15, T. 22 N., R. 6 E., and it is exposed in the river channel about 2,000 feet to the east. On the drift plain southwest of Maple Valley, drillers' logs of several deep wells (22/6-16C1, 16Q2, and 29R1) record more than 100 feet of gray clay and silt below altitudes ranging from 300 to 390 feet. The clay and silt may be correlative with that exposed in the Cedar River valley, but its relationship to exposures of similar intermediate drift in the Green River valley has not been established.

Water-bearing properties

Many domestic wells on the drift plain adjacent to the Cedar River valley, and a smaller number of wells on the valley floor, have obtained adequate supplies of ground water from the undifferentiated pre-Vashon drift. Few attempts have been made to obtain large yields (500 gpm or more) from the drift in the Cedar River valley area, chiefly because water is available from the municipal supply systems of Renton and Seattle. Most ground-water development has been centered around Maple Valley, where a large scattered rural population depends chiefly on domestic wells. The wells are generally less than 150 feet deep and may yield as much as 50 gpm. Higher yields have been obtained for public supply purposes, and are listed in the following table.

Well number	Perforated or screened interval		Yield (gpm)	Drawdown (feet)	Specific capacity (gpm per ft drawdown)
	Depth to top (feet)	Thickness (feet)			
22/6-11M1	134	9	75	11	6.8
-11M2	135	8	160	11	15
-28F1	238	10	350	23	15
-29R1	187	8	100	30	3.3
23/5- 3D1	320	25	176	98	1.8
- 3M1	284	46	210	83	2.5
- 9E1	186 344	55 77	900	50	18

One other previously mentioned public-supply well (23/5-23M1), for which yield figures are not available, flows naturally from a depth of 665 feet and has a shut-in pressure of 49.5 psi.

Vashon Drift

Vashon Drift deposited in the project area during this interval includes advance outwash, till, and recessional stratified drift. The till appears to be a relatively continuous single layer that disconformably overlies older drift and bedrock in most places; in other places, the till mantles Vashon advance outwash that escaped erosion by the glacier. Recessional stratified drift has been subdivided and mapped as ice-contact, lacustrine, and recessional outwash deposits (pl. 1).

Deposits shown on the geologic map (pl. 1) as undifferentiated drift of Vashon age are most extensive near Squak Mountain and along the mountain front between Palmer and Mud Mountain Dam. Mud Mountain is in part a large Vashon morainal embankment trending across the White River valley. The undifferentiated drift there consists chiefly of bouldery cobble gravel and sand (fig. 13) that grades eastward to finer sand and gravel, and lacustrine clay (fig. 6).

Advance outwash

Character and distribution. Advance outwash underlying the Des Moines drift plain consists predominantly of sand, with some layers of pebble-to-cobble gravel. The deposits here are part of a broad outwash body that formed in front of

Figure 13 - Bouldery gravel and sand of Vashon age near top of morainal embankment on east side of U.S. Highway 410 near Mud Mountain Dam ($NE\frac{1}{4}$ sec. 4, T. 19 N., R. 7 E.). Note large boulders (scale indicated by 5 x 8 in. notebook) and poor sorting. This exposure is overlain by 40 feet of sand capped by 12 feet of Osceola Mudflow.

the advancing Puget glacial lobe, and they are correlative, at least in part, with both the Esperance Sand of Newcomb (1952, p. 49) and Mullineaux and others (1965, p. 7), and the Colvos Sand of Molenaar (1965, p. 32). Advance outwash east of the Duwamish Valley is coarser and consists of pebble-to-cobble gravel and sand in valley fills as much as 100 feet thick and up to a mile in width. The inferred position of these buried valleys as well as those beneath the Des Moines drift plain, is shown in figure 14 and plate 2. Their boundaries are based upon known exposures (pl. 1), drillers' logs, and the position of topographic lows. According to Mullineaux (1961, p. 156), the presence of a pre-Vashon valley between Auburn and Maple Valley is suggested by thick exposures of advance outwash in the Green River valley wall near Auburn and in the Cedar River valley wall near Maple Valley, together with the presence of a shallow sag in the drift plain between the exposures. Drillers' logs of wells 22/5-36M1, 22/6-16G1, and 22/6-16Q2, near Covington, seem to substantiate Mullineaux's conclusion.

West of Enumclaw, advance outwash is exposed in the northeast wall of the White River valley, sec. 15, T. 20 N., R. 6 E., at the end of a northeast-trending depression in the surface of the overlying Osceola Mudflow. These advance deposits may be continuous with exposures of advance outwash in the Green River gorge in sec. 25, T. 21 N., R. 6 E.; however, not enough drilling has been done to establish the trend of the valley fill between the gorge and the White River.

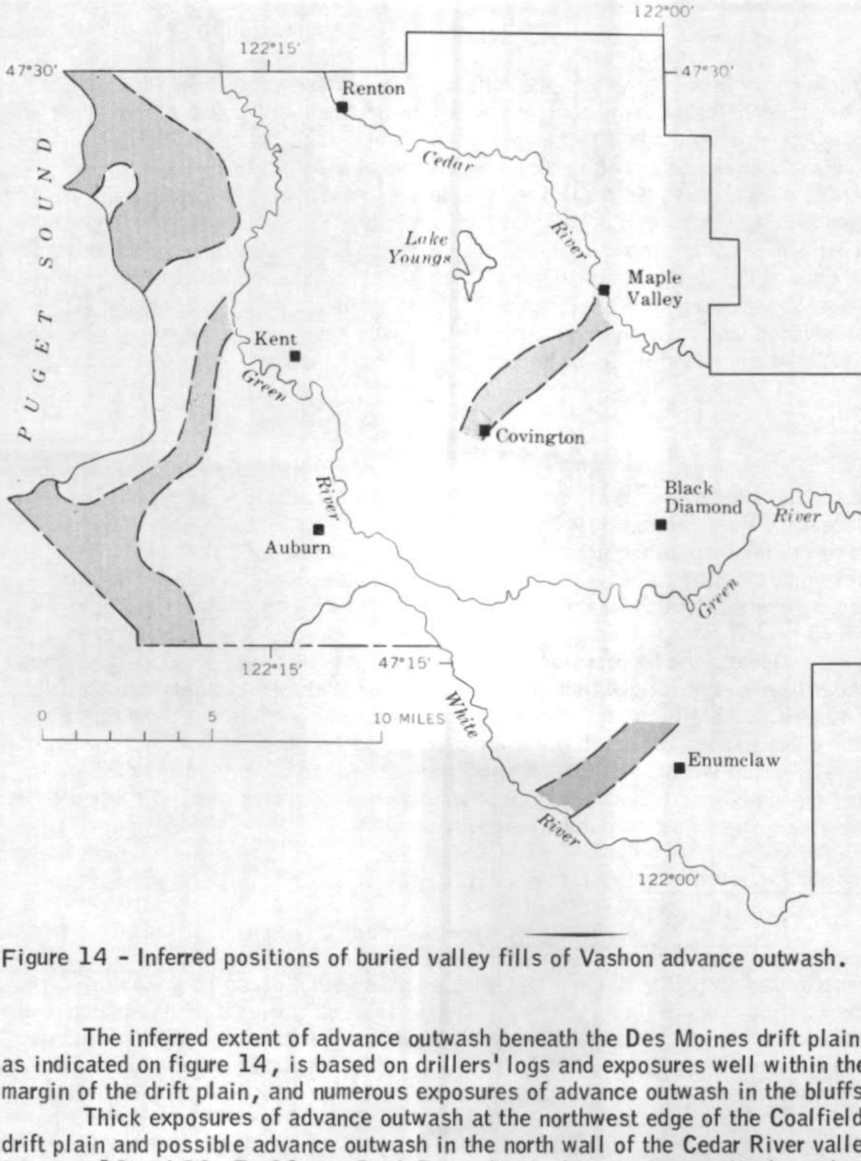


Figure 14 - Inferred positions of buried valley fills of Vashon advance outwash.

The inferred extent of advance outwash beneath the Des Moines drift plain, as indicated on figure 14, is based on drillers' logs and exposures well within the margin of the drift plain, and numerous exposures of advance outwash in the bluffs.

Thick exposures of advance outwash at the northwest edge of the Coalfield drift plain and possible advance outwash in the north wall of the Cedar River valley in secs. 19 and 20, T. 23 N., R. 6 E., indicate that a major pre-Vashon advance valley may exist in this area. Its position is not known at present.

Water-bearing properties. Many drilled domestic wells obtain ground water from areally widespread but very thin deposits of advance outwash lying below the Vashon till. These thin sand and gravel aquifers generally are not capable of producing large yields, though yields as high as 1,100 gpm have been obtained from thick valley fills of advance outwash, now buried beneath younger Pleistocene and Recent deposits. Even though advance outwash beneath the Des Moines drift plain consists chiefly of medium- to fine-grained sand, it can produce large yields if the saturated thickness penetrated by a well is great enough. Well 21/4-29C4, for example, was screened in 51 feet of saturated sand, and was pumped at 1,040 gpm with a drawdown of only 8 feet. (This is equivalent to a specific capacity of 130 gpm per ft of drawdown.) Advance outwash near the margins of the drift plain is drained by springs, resulting in a saturated thickness too small to support a large-capacity well. Well 23/3-24A1, for example, penetrated nearly 70 feet of advance sand, but only the lower 19 feet was saturated; consequently the well had to be completed in the underlying Salmon Springs Drift.

Till

Vashon till forms a relatively thin but areally widespread nearly impermeable blanket over most of the drift plain. The low permeability of the till, as evidenced by the numerous peat bogs, swamps, and lakes that dot its surface partly restricts recharge to the ground-water reservoir. Where the till is overlain by recessional outwash, perched ground-water bodies are likely to occur. In other areas, especially along mantled valley walls, the till may be important as a confining layer.

Despite the low permeability of the till, small domestic supplies of ground water have been obtained from numerous uncased shallow wells dug into the till. The wells generally are less than 30 feet deep and from 3 to 6 feet in diameter. The chief sources of ground water are perched water-bearing zones in the upper less compact part of the till. Most of the wells fill to capacity during the winter and gradually go dry or nearly dry by late summer. Because many of the wells are uncased, contamination can be a serious problem.

Ice-contact deposits

Character and distribution. Ice-contact deposits in the Duwamish Valley consist of large kames and kame terraces banked against the valley walls. They were formed along the margin of a remnant ice lobe that occupied the valley during the wasting of the main Puget lobe. The coalescent fans and deltas forming at the side of the ice lobe were built into an alternately lacustrine and sluggish fluvial environment. As a result, the deposits, in addition to being poorly sorted, are silty and only moderately permeable.

The extensive ice-contact deposits between the Green River gorge and Enumclaw were formed in a strong fluvial environment and they are therefore coarse and permeable (fig. 15). Melt water and drainage from the central Cascades occupied a gutter position between the Puget lobe and the high ridge east of the gorge and Enumclaw (frontispiece). As the glacier retreated, deposits were formed at successively lower positions along the mountain front.

Water-bearing properties. Large supplies of ground water can be obtained from ice-contact deposits lying between the Green River gorge and Enumclaw; in

Figure 15 - Recessional outwash and ice-contact deposits of Vashon age overlying sandstone (light area in foreground) of Puget Group, near Green River gorge (NW¼ sec. 30, T. 21 N., R. 7 E.). Note large boulders scattered throughout and resting atop the exposure.

most other areas, especially in the Duwamish Valley, large yields may be difficult to obtain.

A small number of domestic wells, mostly in the Duwamish Valley and the Enumclaw area, obtain ground water from ice-contact deposits. The largest known supplies are obtained from springs east of Enumclaw and in the Green River gorge (table 4 and fig. 16). Springs 20/7-19D1s, 21/7-19Q1s, and 21/7-19P1s are the principal sources of water for the cities of Enumclaw and Black Diamond. Other springs listed in table 4 receive little or no use at present, but they may become important sources of supply in the future. Few attempts have been made to construct large-yield wells in these deposits, mainly because springs and domestic wells have been sufficient for the relatively sparse population in this area. Several irrigation wells near Enumclaw (included in table 5) have obtained yields ranging from 100 to 300 gpm, but much higher yields should be possible. The deposits are thick, highly permeable, and receive abundant recharge directly from precipitation and indirectly by the downward movement of ground water from higher positions on the gravel-covered slopes of Boise Ridge (frontispiece).

Lacustrine deposits

Lacustrine deposits generally have a low permeability and are not a source of ground water to wells in southwestern King County. They consist of silt, clay, and in some places, sand, deposited as a thin veneer over older drift.

Table 4 - Large springs discharging ground water from ice-contact deposits (Qvi) and recessional outwash (Qvr) in eastern half of project area.

Spring number	Yield (gpm)	Source of ground water
20/7-17C1s	2,000	Qvi
-19D1s	800	Qvi
-29F1s	600 - 1,000	Qvr
21/7-10F1s	1,900 - 12,000	Qvr
-17L1s	900 - 2,200	Qvi and Qvr
-19K1s	2,000 - 11,000	Qvi and Qvr
-19Q1s, P1s	2,200 - 18,000	Qvi and Qvr
-30N1s	3,300 - 23,000	Qvi and Qvr
22/6-26L1s	1,800 - 22,000	Qvr
-33P1s	2,000 - 7,000	Qvr
22/7-26B1s	1,200	Qvr

Figure 16 - Discharge of spring 21/7-19K1s, 800 feet downstream from orifice. Flow (about 8,500 gpm at time of photograph, Feb. 12, 1963) issues from ice-contact and recessional outwash deposits near Green River gorge. Falls shown here are cut into sandstone of Puget Group.

The most extensive lacustrine deposit lies in the valley of Issaquah Creek. Drillers' logs show that it is at least 120 feet thick in parts of the main valley; west of Hobart, it is generally less than 30 feet thick. Near the south side of Squak and Tiger Mountains, silt and clay grade to coarse sand and granule gravel in southerly dipping foreset beds. The foreset beds probably are part of a series of coalescent fans built into a large lake at the front of an ice lobe occupying the deep bedrock notch between Squak and Tiger Mountains. The delta deposits of sand and gravel are permeable, but because of their relatively high position above Issaquah Creek they are probably too well drained to be considered a promising source of ground water.

Recessional outwash

Character and distribution. Recessional outwash consists predominantly of permeable, well sorted, stratified sand or sand and gravel deposited by melt water during wasting of the Puget glacial lobe. Deposits that mantle parts of the northern half of the Des Moines drift plain consist mostly of pebbly medium sand, and some pebble-to-cobble gravel; in the southern half, the outwash generally is coarser, and cobble gravel is more abundant. East of the Duwamish Valley, recessional outwash consists mostly of terraced pebble-to-cobble gravel and pebbly sand, which is more than 30 feet thick in most places and more than 50 feet in a few. Except for a large outwash delta southeast of Auburn, the thicker outwash deposits generally are in the eastern and southeastern part of the project area. The delta near Auburn is more than 150 feet thick, and probably extends well below the valley floor (pl. 2, sec. C-C').

Other recessional outwash deposits have been buried by the Osceola Mudflow in a broad area south of the Green River. Near the base of the mountain front north of Palmer, a large area of outwash in a melt-water channel is mantled by mass-wasting deposits. Also, outwash in a northwest-trending melt-water channel at the south side of Squak Mountain is partly covered by fine alluvial and lacustrine sediments, and peat (fig. 17). The position of this melt-water channel and others formed during the recession of the Puget lobe is shown on figure 18.

Water-bearing properties. Recessional outwash is an important source of ground water for domestic wells in most areas where it occurs. Large yields can be obtained from the more permeable deposits if the saturated thickness is great enough.

The largest supplies of ground water that have been obtained from recessional outwash in the study area are from large springs north of Lake Sawyer and along the Green River gorge (table 4 and figure 16). Only a few wells in the project area have obtained yields greater than 100 gpm from the recessional outwash. However, many of the most promising deposits are in sparsely populated areas and have not been tested for high yield. They include the buried channel deposits and undifferentiated outwash described above, and some of the thicker deposits near Covington, Black Diamond, Palmer, and Auburn.

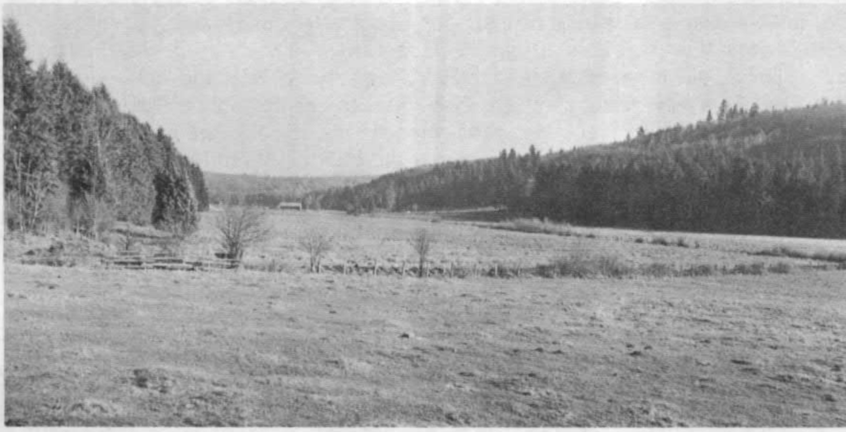


Figure 17 - Abandoned melt-water channel of Vashon age, about 2 miles southeast of Squak Mountain (NW$\frac{1}{4}$ sec. 17, T. 23 N., R. 6 E.; view southeast). Vashon outwash is exposed intermittently along sides of channel, and probably underlies Recent alluvium and peat (foreground) that cover channel floor.

Postglacial Deposits

Postglacial deposits in southwestern King County are those formed after the Puget glacial lobe had fully retreated from this part of the Puget Sound Lowland, about 13,500 years ago (table 2). The deposits include peat, mass-wasting debris, a large volcanic mudflow from Mount Rainier, and alluvium. All of the deposits have a relationship to ground-water occurrence, but only the alluvium is water bearing.

Large supplies of ground water can be obtained from flood-plain deposits in the valleys of the White, Green, and Cedar Rivers, and from coarse fan deposits in the Duwamish Valley beneath Auburn and Renton. Only small supplies can be obtained from other alluvial deposits, including the finer parts of the alluvial fill in the Duwamish Valley between Auburn and Renton.

Peat and Swamp Deposits

Peat and swamp deposits, although saturated, have a low permeability and are not a source of ground water to wells. However, the peat may indirectly influence the quality of nearby ground water. According to Rigg (1958, p. 1) most peat deposits in Washington are acidic, with pH values most commonly in the range from 4.6 to 5.0. In the Covington peat bog in the NW$\frac{1}{4}$ sec. 32, T. 22 N., R. 6 E., Rigg (p. 77) found that the peat ranged from strongly acid near the surface (pH 4.5) to weakly acid at a depth of 36 feet (pH 6.8). The pH no doubt

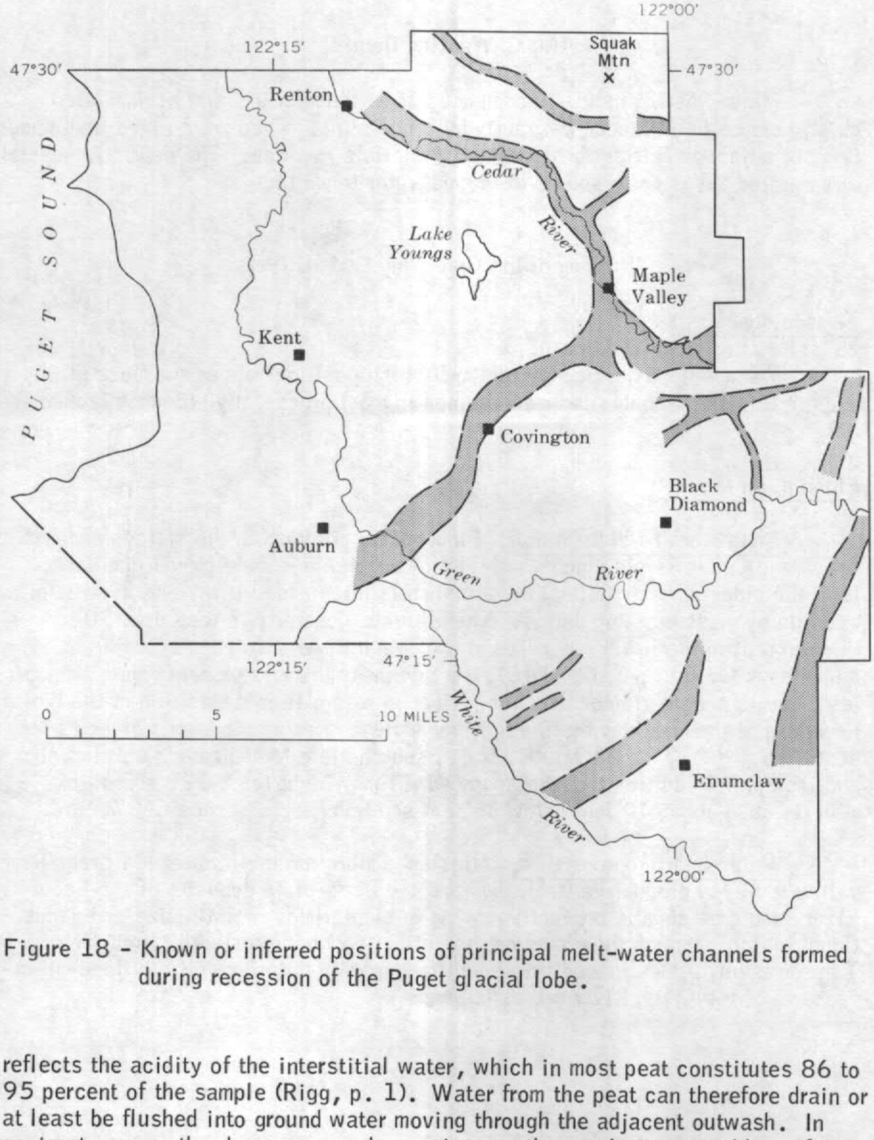


Figure 18 - Known or inferred positions of principal melt-water channels formed during recession of the Puget glacial lobe.

reflects the acidity of the interstitial water, which in most peat constitutes 86 to 95 percent of the sample (Rigg, p. 1). Water from the peat can therefore drain or at least be flushed into ground water moving through the adjacent outwash. In contrast, many other bogs occupy depressions on the nearly impermeable surface of the Vashon till, and drainage into local ground-water supplies there may be restricted.

The low pH of water associated with peat may cause at least partial dissolution of iron-rich minerals that are present in most rocks. In this way, peat bogs as well as peaty sediments in the alluvial fill of the Duwamish Valley and in older Pleistocene formations, may contribute substantially to the occurrence of iron-rich ground water in southwestern King County.

Mass-Wasting Debris

Mass-wasting debris is composed of earth materials that accumulated chiefly under the influence of gravity by landsliding. They are derived from underlying or adjacent Tertiary or Quaternary materials in place. The debris is generally saturated but is not a source of ground water to wells.

Alluvium of the Green and Cedar Rivers

Terrace deposits

Terrace deposits occupy relatively high positions above the flood plain, and are thin and probably too well drained in most places to yield much ground water.

Flood plain deposits

Character and distribution. Flood-plain alluvium in the valleys of the Green and Cedar Rivers consists chiefly of pebble-to-cobble gravel and sand. Near the sides of each valley, the alluvium is interbedded with, and in some places overlain by mass-wasting debris. The alluvium generally is less than 30 feet thick except in the lower few miles of the Green River valley. According to Mullineaux (1961, p. 143-146), the thickness there is probably more than 50 feet, due to aggradation of the Green River in response to deposition of the White River fan at the mouth of the Green River valley. Records and logs of wells in secs. 16 and 21, T. 21 N., R. 5 E., substantiate Mullineaux's conclusion, and indicate in addition that the aggraded fill may be at least 120 feet thick, with its base about 40 feet below present sea level (pl. 2, sec. C-C').

Water-bearing properties. Alluvium underlying the floor of the Green River valley is highly productive (table 5), and the flood-plain deposits of the Cedar River should be equally productive owing to similarities in grain size and depositional history, though they have not as yet (1962) been tested for high yield. Transmissibilities estimated from specific-capacity data for wells in flood-plain deposits of the Green River are as follows:

Well number	Specific capacity (gpm per ft drawdown)	Coefficient of transmissibility (gpd per ft) 1/
21/5-16N1	21	30,000
21C1	40	50,000
21G2	91	150,000
22P1	50	70,000
23N1	91	150,000
21/6-30D1	48	60,000
Average	57	85,000

1/Coefficient of transmissibility is expressed as the rate of flow of water, at the prevailing water temperature, in gallons per day, through a vertical strip of the aquifer 1 foot wide extending the full saturated height of the aquifer under a hydraulic gradient of 100 percent.

Fan deposits

Character and distribution. The Cedar River fan extends radially outward beneath the city of Renton from its apex at the mouth of the Cedar River valley (Mullineaux, 1961, p. 140-143). At the apex, the fan consists of more than 80 feet of coarse sand and gravel. Away from the apex the size range of the sand and gravel decreases, and the coarse materials are overlain by a progressively thickening sequence of medium to fine sand and silt. About 1½ miles southwest of Renton, the Cedar River fan extends beneath thin overbank deposits of the combined White and Green Rivers, and under the White River fan (Mullineaux, 1961, p. 141).

Farther south near Kent, alluvium deposited by the Green and Cedar Rivers is overlain by a lobe of the Osceola Mudflow about 40 feet thick (figs. 7 and 19), which is in turn overlain by more than 300 feet of White River alluvium (pl. 2, sec. B-B').

A fan of the Green River is inferred to exist at Auburn (Mullineaux, 1961, p. 137) where it is completely buried by White River alluvium (fig. 19). No wells are known to have been drilled into it, and its depth of burial is therefore unknown. However, as mentioned earlier, the base of the alluvium in the lower valley of the Green River east of Auburn probably is at least 40 feet below sea level (pl. 2, sec. C-C'). The premudflow surface of the Green River fan near its apex is therefore inferred to lie about 40 feet or more below present sea level. The fan should display the same characteristics as the Cedar River fan, being coarser at the apex near the mouth of the Green River valley, and grading to finer size ranges for several miles in an outward radiating direction.

Water-bearing properties. The Green and Cedar River fans probably contain the most productive aquifers in southwestern King County. Wells drilled into the Cedar River fan at Renton have yielded 1,000 to 3,000 gpm with drawdowns of less than 9 feet. No wells are known to have been drilled into the Green River

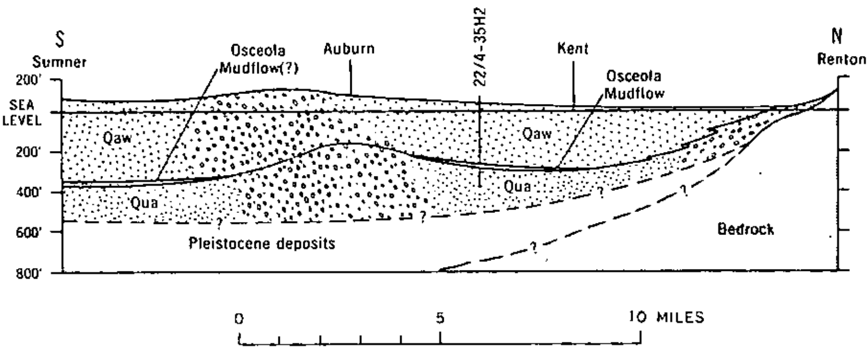


Figure 19 - Diagrammatic section along axis of Duwamish Valley, looking west. Qaw, alluvium of White River; Qua, alluvium of Green and Cedar Rivers. Coarse deposits (indicated by pattern) are located near fan apexes.

fan at Auburn, but it should also prove to be highly productive because it has a depositional history comparable to that of the Cedar River fan. Deeply buried alluvium of the Green and Cedar Rivers between Auburn and Renton is fine grained and is not a source of water to wells.

Several city of Renton wells are perforated and screened in the lower half of a thick section of pebble-cobble gravel and sand at the apex of the Cedar River fan. Two of the wells (23/5-17F1 and 17F2), are less than 100 feet from the channel of the Cedar River, which is entrenched more than 20 feet into the alluvium. The river stage and the static water level in both wells are reportedly identical. A third well, 23/5-17F3, is about 1,100 feet from the river. Estimates of aquifer transmissibility based on the specific capacities given in table 5 are 450,000, 600,000 and 900,000, for wells 17F1, 17F2, and 17F3. With increasing distance from the apex, specific capacity and transmissibility of the aquifer is likely to decrease considerably. For example, wells 23/4-18J4 and J6, about 2,500 feet southwest of the apex, had comparatively low capacities and transmissibilities, as shown below:

Well 1/	Specific capacity (gpm per ft drawdown)	Calculated transmissibility (gpd per ft)	Storage coefficient 2/
23/5-18J4	3.3	3,600	0.084
-18J6	34	36,000	.23

1/Computations are based on pumping-test data supplied by Metropolitan Engineers, Seattle, and analyzed by writer.

2/Storage coefficient of an aquifer is defined as the volume of water it releases from or takes into storage per unit surface area of the aquifer per unit change in the component of head normal to that surface.

Osceola Mudflow

The Osceola Mudflow is not a source of ground water, but it is important as a confining layer in the Enumclaw area and as a buried stratigraphic marker in the alluvial fill of the Duwamish Valley.

In the Enumclaw area, the Osceola Mudflow covered extensive recessional outwash and ice-contact deposits (pl. 1, sec. D-D'). The low permeability of the mudflow has caused confinement of ground water in the underlying aquifers; consequently, numerous wells near Enumclaw have water levels very close to land surface.

Alluvium of the White River

Terrace deposits

Terrace deposits along the White River (pl. 1) are permeable, but they occupy relatively high positions and are well drained. However, parts of the larger terraces might yield enough water for domestic supplies.

Flood-plain deposits

Flood-plain deposits in the White River valley are not a source of ground water as of 1965. The deposits are coarse and no doubt highly permeable, but because they are exposed at the surface, very little good farmland exists. This presumably has prevented any ground-water development.

Fan deposits

Character and distribution. The White River fan at its apex consists of more than a hundred feet of cobble and pebble gravel overlain by several feet of sand. As the distance from the apex increases, the gravel decreases in size and amount, and individual gravel beds taper into a sequence of sand, silt, and clay more than 250 feet thick. For example, well 21/4-36N2, about 3 miles southwest of the apex, penetrated thin beds of fine gravel totaling less than 40 feet, plus about 145 feet of sand, silt, and clay. Another well, 21/4-35R1, half a mile farther southwest, penetrated nearly 260 feet of sand; gravel apparently was not found. The gradational character of the White River fan is well developed in a northwest direction also. About 2 miles northwest of the apex, wells 21/4-24A1 and A2 penetrated about 35 feet of sand overlying at least 65 feet of sand and gravel. About 5½ miles northwest of the apex, where well 22/4-35H2 (fig. 7) penetrated the full thickness of the fan, the deposits consist entirely of sand, silt, and clay at least 305 feet thick.

Water-bearing properties. Wells in the coarser parts of the White River fan near Auburn have yielded several hundred to more than a thousand gallons per minute, whereas, only small yields have been obtained from the fan in other parts of the Duwamish Valley.

The most productive wells that obtain water from the White River fan are listed in table 5. Transmissibilities estimated from specific-capacity data generally reflect the gradual decrease in grain size away from the apex. Within a mile of the apex, transmissibilities range from 80,000 to 300,000 gpd (gallons per day) per foot, whereas at 2 to 3 miles they drop to about 30,000, and at 5 miles they are less than 10,000. The most productive well on the fan, 21/5-19A2, has a storage coefficient of 0.18 and a transmissibility of 330,000 gpd per foot.

Alluvium of Small Streams

Flood-plain alluvium of tributary streams generally is too limited in areal extent, thickness, and coarseness of grain to produce large yields to wells. Supplies sufficient for domestic use possibly can be obtained from parts of the alluvium deposited by Big Soos, Newaukum, and Issaquah Creeks.

SOURCE AND MOVEMENT OF THE GROUND WATER

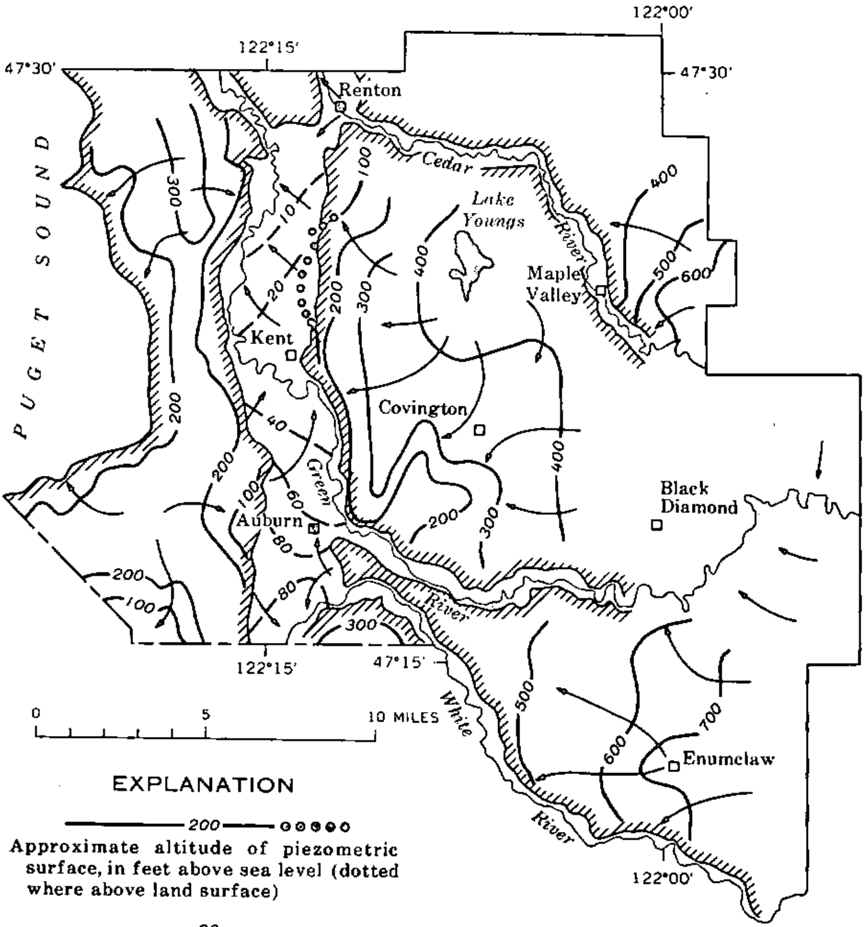
Ground water in southwestern King County is derived chiefly from precipitation within the project area. Analysis of the map in figure 5 indicates that the amount of precipitation averages about a million acre-feet per year, or about 2,500 acre-feet per square mile. A large part of this quantity enters drainage systems as storm runoff, part replenishes soil moisture, part is discharged by evapotranspiration, and part reaches the ground-water reservoir. Most ground water is eventually discharged as spring flow and direct seepage into stream channels and Puget Sound; only a small part of the ground water is discharged by wells and evapotranspiration.

WATER-TABLE AND PIEZOMETRIC SURFACES

The water table is the free upper surface of the zone of saturation. If this upper surface is confined by an overlying impermeable bed, the saturated zone is termed "artesian," and a piezometric surface exists. The piezometric surface is an imaginary pressure surface to which the static water level would rise if permitted to, as in a well. All wells completed in such a confined zone are therefore artesian, but they flow only if the piezometric surface is above the land surface.

The upper surface of the regional ground-water reservoir in southwestern King County is represented by water tables and piezometric surfaces (fig. 20). The principal areas of water-table occurrence are in the Recent fan deposits of the Duwamish Valley and flood-plain deposits in the three major river valleys. The depth to the water table in these alluvial aquifers is generally less than 10 feet, but may be as much as 20 feet in flood-plain deposits and in higher parts of the White and Cedar River fans in the Duwamish Valley. During the winter lower lying parts of the valley floor become completely saturated.

Ground water in thick recessional outwash and ice-contact deposits northeast of Enumclaw and north of the Green River gorge also occurs under water-table conditions, but not enough water-level information is available to permit the



EXPLANATION

——— 200 ——— ○○○○○

Approximate altitude of piezometric surface, in feet above sea level (dotted where above land surface)

— — — 20 — — —

Approximate altitude of water table in Duwamish Valley. Position can shift Considerably in response to seasonal changes in ground-water storage

←———

Generalized direction of ground-water movement

Figure 20 - Regional ground-water piezometric surface in Pleistocene deposits, and water table in Recent alluvium of Duwamish Valley.

preparation of a water-table map. Discontinuous water tables of perched ground-water bodies exist in Vashon till and thin recessional stratified drift that mantle other parts of the project area. These areas are not shown on figure 20, however, because they do not represent the regional ground-water reservoir.

Aquifers in Pleistocene drift older than Vashon till are predominantly artesian because of the numerous confining layers such as till and lacustrine clay and silt that are interbedded with the more permeable drift. Numerous flowing wells have been drilled into Pleistocene drift underlying the Duwamish Valley floor north of Kent (fig. 12). Here, the piezometric surface lies as much as 125 feet above the valley floor. The piezometric surface of most Pleistocene aquifers probably lies above the land surface in many other parts of the Duwamish Valley, and in parts of the Cedar River, Green River, and White River, and Big Soos Creek valleys. In most upland areas, the piezometric surface lies below the land surface, at depths ranging from 100 to 250 feet beneath most parts of the Des Moines drift plain and at depths generally less than 150 feet in most other parts of the project area.

The configuration of piezometric and water-table contours in figure 20 shows the general shape of the regional ground-water reservoir, and the directions of ground-water movement, which are downgradient, perpendicular to the contours. Near the south end of the Des Moines drift plain, the contours diverge around the drainage basin of Hylebos Creek. The creek is a perennial stream whose low flow is maintained chiefly by ground-water discharge, probably from Vashon advance outwash. Ground water is also discharged by springs and seeps along bluffs adjacent to Puget Sound, and a considerable additional quantity is no doubt discharged beneath sea level by submarine springs and seeps. This is suggested by extensive submarine exposures of drift that descent to depths as great as 800 feet below sea level along the west flank of the Des Moines drift plain. (See secs. A-A' and B-B', pl. 2). On the east side of the Des Moines drift plain, ground water is discharged into the alluvial fill of Duwamish Valley.

The water table in the Duwamish Valley is approximately parallel to and has about the same gradient as the land surface. Gradients range from about 30 feet per mile near this apex of the White River fan south of Auburn, to about 10 feet per mile north of Kent.

White Lake, which occupies a kettle in the large recessional outwash delta east of Auburn, apparently has about the same water-level altitude as that found in nearby wells on the White River fan. The lake surface no doubt is continuous with the water table in the fan. Water levels in the vicinity of the White River indicate that the river probably loses water in only a short reach along the apex of the fan, and becomes a gaining stream soon after turning south.

The Green River, which traverses the northern part of the White River fan, is a gaining stream throughout its course in the Duwamish Valley. A substantial part of the gain probably occurs just south of Kent, where the Green River cuts diagonally across the valley. North of Kent, the water-table gradient (fig. 20) is probably influenced strongly by inflow from the Covington drift plain and upward leakage from artesian aquifers beneath the valley floor.

The piezometric surface beneath the Covington drift plain indicates that a ground-water divide parallels a line connecting Lake Youngs and Auburn (fig. 20).

On the northwest side of the divide, ground water is discharged as springs and as inflow to the alluvial fill in the Duwamish Valley. On the southeast side of the divide and as far east as Black Diamond, ground water is discharged as springs and seeps into the drainage basin of Big Soos Creek. This basin receives most of the ground-water discharge from the drift plain. The regional ground-water reservoir east of Black Diamond is in thick ice-contact and recessional outwash deposits. Few wells have been drilled in this area, so water-level data is lacking. However, inferred directions of ground-water movement are shown in figure 20.

In the Enumclaw area, piezometric contours show a prominent ground-water mound extending westward from the mountain front. The Osceola Mudflow and Vashon till are the principal confining layers here. Permeable deposits that underlie each are recharged mainly by ground-water inflow from thick ice-contact and recessional outwash deposits exposed along the mountain front.

WATER-LEVEL FLUCTUATIONS

Of the several types of water-level fluctuations that can occur in a ground-water reservoir, only two, seasonal and long-term fluctuations, are considered here. Seasonal fluctuations represent the effect of annual recharge on a ground-water reservoir that may or may not have been subjected to heavy pumping during the year. Long-term fluctuations are the result of a year-to-year imbalance between recharge, natural discharges, and withdrawal. Superposed on these may be minor fluctuations such as those caused by tidal and atmospheric changes.

Seasonal water-level fluctuations measured in wells during this study ranged from less than 5 to slightly more than 10 feet (fig. 21). In general, the hydrographs — including those of surface-water bodies (fig. 21) — indicate that the total amount of ground water in storage remains constant on a long-term basis, and is therefore in equilibrium with recharge and discharge.

Figure 21 shows that a seasonal maximum in ground-water storage occurs in most aquifers as a result of recharge during the winter. Seasonal ground-water storage in alluvial aquifers and exposed recessional outwash and ice-contact deposits usually reaches a maximum in January or February, 2 to 3 months after the start of the winter wet season (fig. 21, 20/6-1F1 and 21/7-30N1s, for example). In other aquifers, where recharge is restricted by relatively impermeable overlying deposits, the maximum in ground-water storage may not occur until spring (wells 20/6-28L1, 21/4-17R1, and 23/6-35G1, for example).

The well-observation network in southwestern King County spans a period of only 4 years, and direct data on long-term water-level fluctuations therefore is meager. Indirect evidence, such as old records of static water levels and streamflow, however, suggest that long-term changes in ground-water storage generally have been insignificant.

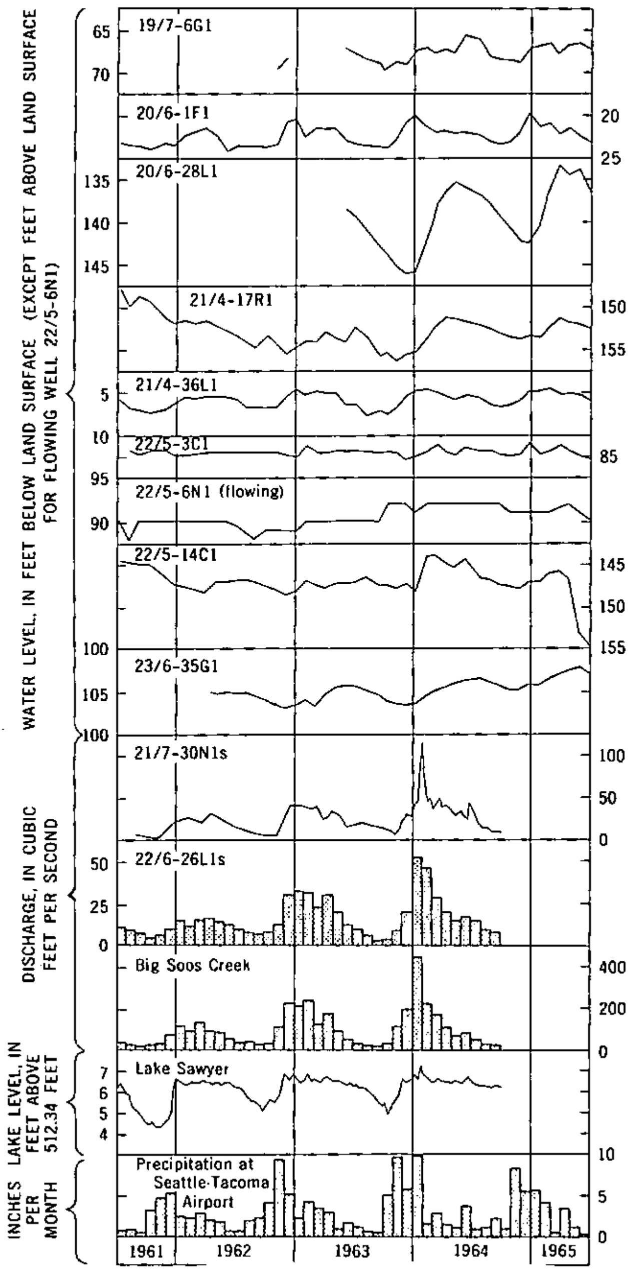


Figure 21 - Hydrographs of wells, springs, Big Soos Creek, Lake Sawyer, and monthly precipitation at Seattle-Tacoma Airport, 1961-65.

AVAILABILITY OF GROUND WATER, BY AREA

A discussion of the most promising areas for future ground-water development must be based on the degree of success of past attempts to obtain ground water (as indicated by well records), and on inferred geologic and hydrologic relationships. Fortunately, failures to obtain domestic and public ground-water supplies have been relatively few. Figure 22 and tables 5 and 6 show, by area, general ground-water availability and comparative data on the most productive wells in the area.

Boundaries for the several ranges of yield shown in figure 22 are based on specific-capacity and water-level data, drillers' logs, and known or inferred geologic relationships. Only aquifers at depths less than 500 feet are considered because few wells have been drilled to greater depths, and the outcrop areas of geologic units that occur below 500 feet are so distant that the possibility of lithologic change away from the outcrop area prevents any estimate of ground-water availability.

Table 5 lists comparative data on all wells with a known specific capacity greater than 5 gpm per foot. Depth, yield, and specific capacity for wells with a known specific capacity of less than 5 gpm are in table 6 with similar data drawn from table 5. The following sections discuss the availability of ground water for each physiographic subdivision shown in figure 3.

DES MOINES DRIFT PLAIN

The Salmon Springs Drift and Vashon advance outwash contain the most productive aquifers beneath the Des Moines drift plain (table 5). Both units occupy much of the subsurface between the overlying Vashon till and sea level.

The individual water-bearing zones are irregularly distributed, both vertically and laterally, but most of them occur in the interval from slightly below sea level to about 200 feet above. Pleistocene drift underlying the Salmon Springs Drift has been explored in a few places to depths ranging from 300 to 800 feet below sea level. This underlying drift consists chiefly of gray clay, silt, and sand. At a few places, highly productive aquifers have been found in it at widely spaced vertical intervals. Wells 22/4-4L1, 22/4-17Q4, and 23/4-30E1 (table 5), for example, are perforated or screened at depths as great as 295, 757, and 320 feet below sea level, respectively. Well 22/4-17Q4 obtains water from the greatest known depth below sea level of any water well in the project area.

DUWAMISH VALLEY

The most promising areas for ground-water development in the Duwamish Valley are the coarser parts of the White River and Cedar River fans, both of which have been proven highly productive. The Green River fan, which lies beneath alluvium of the White River near the mouth of the Green River valley, should also prove to be highly productive. The exposed White and Cedar River fans are coarsest and most productive near their apexes. With increasing distance from the apex the fans become progressively finer grained and less productive, and generally grade completely to sand, silt, and clay within a distance of 5 miles.

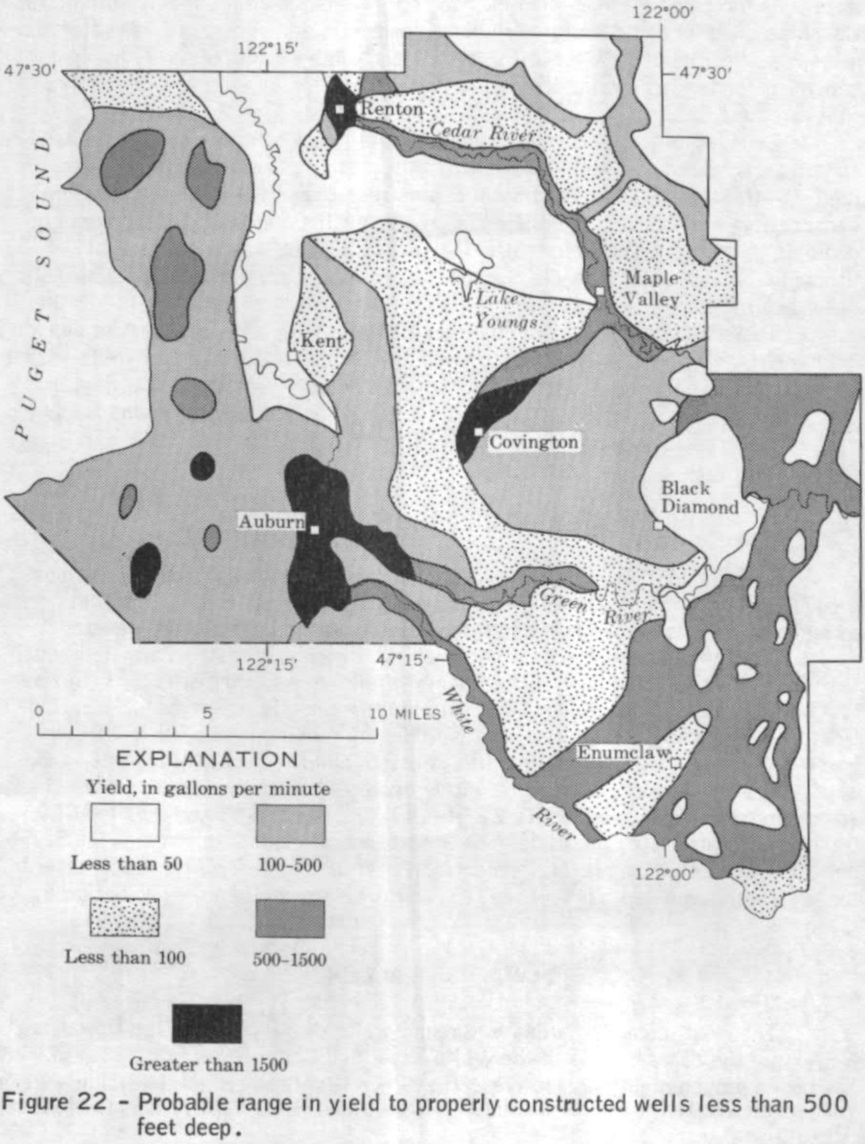


Figure 22 - Probable range in yield to properly constructed wells less than 500 feet deep.

Table 5 - Comparative geologic and hydrologic data on wells having a specific capacity greater than 5

Physiographic subdivision	Well number	Depth to bottom of deepest aquifer (feet)	Yield (gpm)	Probable source of ground water 1/	Number of feet perforated or screened (20 40 60)	Specific capacity (gpm per ft drawdown) (50 100 150)
DES MOINES DRIFT PLAIN	21/4- 4J1	375	480	Qss		
	- 4N1	315	295	Qss		
	- 5R1	324	250	Qss		
	- 7Q2	207	1,022	Qss		
	- 8P2	228	500	Qss		
	-15L2	435	545	Qss		
	-20L1	236	2,137	Qss		
	-20Q1	140	700	Qss	90	
	-22Q1	301	132	Qss		
	-29C4	135	1,040	Qva		
	-29J1	55	200	Qva		
	22/4- 4C1	314	290	Qss		
	- 4L1	543	420	Qva, Qu	170	
	- 4L2	133	1,085	Qss		
	- 4N1	261	500	Qss		
	- 4Q1	200	1,050	Qss		
	- 8A1	340	1,275	Qss		
	- 8K2	195	300	Qss		
	- 8K5	220	210	Qss		
	- 9A2	252	614	Qss		
	- 9P1	301	1,001	Qss		
	-16N1	145	725	Qss		
	-17Q4	919	425	Qid or Qor		
	-27N2	345	200	Qss		
	-27N3	366	402	Qss		
	-28G3	221	510	Qss		
	-28P1	165	875	Qss		
	23/4-19H1	324	400	Qss	79	
	-19H3	589	900	Qor (?)		
	-21H1	152	250	Qu		
	-21H4	166	350	Qu		
	-21H5	160	350	Qu		
	-21H6	415	1,000	Qu	(?)	
	-27C3	353	825	Qu		
	-27P1	295	350	Qu		
	-27P2	290	600	Qu		
	-28H2	136	320	Qu		
	-30E1	610	1,000	Qid or Qor	123	
	-34D2	189	400	Qss		
	-34H1	110	50	Qva or Qss		
	-34L2	247	460	Qss	(?)	
DUWAMISH VALLEY	21/4- 1Q1	165	250	Qaw		
	-24A1	78	600	Qaw		
	-24A2	98	600	Qaw		
	-24F1	20	200	Qaw		
	-25J1	86	360	Qaw		
	-25Q1	12	350	Qaw		
	21/5- 6F1	54	120	Qaw		
	- 6L3	54	165	Qaw		
	- 7G1	64	300	Qaw	(?)	
	-19A1	139	407	Qaw		
	-19A2	134	1,515	Qaw		
	-29F1	94	200	Qaw		
	-30D1	107	345	Qaw		
	-30H1	85	52	Qaw		
	22/4-35R1	182	80	Qaw		
	22/5- 7M1	180	40	Qss		
	23/5-17F1	82	3,000	Qua		333
	-17F2	82	1,040	Qua		260
	-17F3	80	1,645	Qua		540
	-18J6	63	300	Qua		
GREEN RIVER VALLEY	21/5-16N1	111	150	Qua		
	-21C1	86	160	Qua		
	-21G2	120	1,000	Qua		
	-22P1	14	400	Qua	(?)	
	-23N1	20	320	Qua	(?)	
	21/6-30D1	30	120	Qua		
COVINGTON AND COALFIELD DRIFT PLAINS	21/5- 4G1	192	357	Qss or Qid		
	- 4L1	80	180	Qva or Qss		
	- 9F4	97	20	Qss		
	-15J1	122	500	Qss		
	-21M1	52	40	Qu		
	-21N4	101	30	Qss	(?)	
	-27Q1	53	30	Qvr		
	21/6- 7N2	83	30	Qss	(?)	
	-18K1	23	198	Qu		
	22/5- 3B1	166	17	Qu		
	- 3Q1	70	75	Qu (?)	(?)	
	- 5Q1	205	35	Qss		
	- 7P2	170	100	Qss		
	- 8L1	162	40	Qss		
	- 8P1	205	100	Qss		
	-17R1	232	50	Qu		
	-20E2	242	200	Qss		
	-29C1	132	74	Qss		
	-35G1	18	25	Qvr		
	-35P1	23	125	Qvr		
	-36M1	106	250	Qva		
	22/6- 1G1	112	50	Qva or Qvu	(?)	
	-11M1	143	75	Qu		
	-11M2	146	160	Qu		
	-16G1	73	220	Qva		
	-28F1	248	350	Qu		
	23/5- 9E1	421	900	Qu	132	
	23/6-30R2	147	50	Qu		
OSCEOLA MUDFLOW PLAIN	20/6- 9A1	99	15	Qvi		
	-15G2	13	128	Qss or Qor		
	-24P1	112	220	Qva		
	-25Q1	39	40	Qvr or Qva		
	20/7-30F1	42	35	Qvr		
	-30K1	98	120	Qvi		
	-30P3	65	300	Qvi		
					0 20 40 60	0 50 100 150

1/ Geologic symbols: Qaw, alluvium of White River; Qua, undifferentiated alluvium; Qvr, Vashon recessional outwash; Qvi, Vashon ice-contact deposits; Qva, Vashon advance outwash; Qss, Salmon Springs Drift; Qid, intermediate drift; Qor, Orting Drift; Qu, pre-Vashon undifferentiated drift.

Table 6 - Hydrologic-data summary for wells with known specific capacities

Physiographic subdivision	Specific capacity category (gpm per ft drawdown)	Number of wells	Average depth to bottom of deepest aquifer (feet)	Average yield (gpm)	Average specific capacity (gpm per ft drawdown)
Des Moines drift plain	>5	41	286	596	21
	<5	28	255	145	2
Duwamish Valley	>5	20	93	578	102
	<5	7	231	72	2
Green River Valley	>5	6	64	358	57
	<5	0	--	--	--
Covington and Coalfield drift plains	>5	28	137	153	20
	<5	38	205	50	2
Osceola Mudflow plain	>5	7	67	123	32
	<5	17	100	15	1

Table 5 includes construction and pumping-test data for nearly all of the large-yield wells that produce ground water from alluvium in the Duwamish Valley. Specific-capacity and water-level data indicate that yields higher than those already obtained are possible from the coarse fan deposits near Auburn and Renton (fig. 22). In contrast, only small quantities of ground water are obtainable from finer grained parts of the fans from a short distance north of Auburn to the northern project boundary.

Pleistocene deposits underlie the alluvial fill in the Duwamish Valley, and they may be highly productive in places. Just north of Kent, along the east side of the valley floor, many flowing artesian wells have been completed at depths less than 300 feet in pre-Vashon drift that underlies the alluvium. Most of the wells have substantial yields but low specific capacities, possibly because very few of them were constructed or developed for optimum yield. Pumps are not generally used on these wells, because the shut-in pressures are characteristically more than 35 pounds per square inch. At present (1965), relatively small amounts of ground water, chiefly for domestic and irrigation use, are being withdrawn from the artesian system. If substantially increased rates of withdrawal become necessary, a series of pumping tests should be performed to determine to what degree other wells are affected by pressure loss, and what limits, if any, should be set on the discharge rates.

High yields can probably be obtained from buried parts of the recessional outwash delta that forms the large bluff southeast of Auburn between the valleys of the Green and White Rivers. The delta disappears beneath flood-plain level and is inferred to underlie fan deposits of the two rivers (pl. 2, sec. C-C'). Somewhat less permeable ice-contact deposits, west of Kent, are banked against the valley wall and are inferred to underlie the alluvial fill (pl. 2, sec. B-B'). Pleistocene deposits, in general, can be reached by wells less than 400 feet deep along the margins of the valley floor; near the center of the valley, such deposits are inferred to lie at depths as great as 500 to 700 feet.

WHITE, GREEN, AND CEDAR RIVER VALLEYS

Flood-plain deposits in the Green River valley are known to be highly productive (tables 5 and 6), and those in the White and Cedar River valleys are inferred to be highly productive also, because of similarities in grain size and history of development. Terrace deposits and Tertiary bedrock generally should not be considered as potential sources for large supplies of ground water. Certain Pleistocene deposits beneath the valley floors may yield large quantities of ground water, and in most instances the wells probably would flow naturally.

Flood-plain deposits of the Green River are inferred to be thickest and therefore most productive in the lower few miles of the valley near Auburn (fig. 22). Upstream, such deposits are coarser and more permeable but thinner; consequently, the saturated thickness is less and well yields are lower than those in the lower part of the valley. From the mouth of the Green River valley to sec. 30, T. 21 N., R. 6 E., the flood-plain deposits are underlain by relatively impermeable intermediate drift. East of sec. 30, the flood-plain deposits are underlain by the Orting Drift, the Hammer Bluff Formation, and sandstone of the Puget Group, in that order. Only the Orting Drift may be permeable enough to produce large quantities of ground water. It can probably be reached by wells less than 100 feet deep drilled from the valley floor near its area of outcrop. Near the mouth of the valley, the top of the Orting probably lies more than 800 feet below the valley floor.

In the nearly undeveloped White River valley, flood-plain deposits have not been a source of ground water to wells. The deposits should prove to be highly productive, however. Intermediate drift underlies most of flood-plain alluvium from the mouth of the valley to an area southwest of Enumclaw. Farther upstream, southeast of Pinnacle Peak, the flood-plain alluvium lies in channels cut into outwash and till of Vashon age, and into the Osceola Mudflow. Of these older units, only the outwash would be capable of producing large supplies of ground water.

Flood-plain deposits in the Cedar River valley, like those in the valleys of the White and Green Rivers, should prove highly productive. The pre-Vashon undifferentiated drift that underlies the flood-plain alluvium in most places is considerably finer grained, and not nearly as productive. However, one flowing artesian well (23/5-23M1) was completed in sand 665 feet below the valley floor, and its yield reportedly is substantial.

COALFIELD DRIFT PLAIN

Large supplies of ground water can probably be obtained from recessional outwash in the melt-water channel between the Cedar River and Issaquah Creek, and from buried segments of outwash in the lower valley of Issaquah Creek and in the large melt-water channel along the southwest edge of Squak Mountain. Most of the Issaquah Creek valley south of sec. 22, T. 23 N., R. 6 E., is covered by thick Vashon lacustrine deposits of very low permeability. However, coarse gravel and sand, chiefly of ice-contact origin, is exposed along the margins of the deposit in sec. 25, T. 23 N., R. 6 E. Similar materials of limited extent may underlie parts of the deposit as well. A thick section of Vashon advance outwash exposed northeast of Renton, and another exposure of Vashon outwash (probably advance) in the north wall of the Cedar River valley near Indian, indicate that a major valley fill of advance outwash probably lies beneath the Coalfield drift plain, but its exact position is unknown. Pre-Vashon undifferentiated drift is, in general, less permeable than stratified drift of Vashon age, but high yields have been obtained near Renton and Maple Valley. Elsewhere on the drift plain, exploration for large supplies of ground water has been limited.

COVINGTON DRIFT PLAIN

The largest supplies of ground water on the Covington drift plain have been obtained from prolific springs that discharge from extensive deposits of recessional outwash east of Covington (table 4), and from one large spring (22/5-6H1s) flowing from advance outwash (not differentiated from recessional outwash on geologic map) exposed along the east wall of the Duwamish Valley north of Kent. Wells yield as much as 500 gpm, chiefly from the Salmon Springs Drift and Vashon advance outwash (table 5). The high-yield areas shown on figure 22 reflect the known or inferred areal extent of the permeable outwash described above. The area of lower yield southeast of Renton reflects the presence of a bedrock high overlain by thin, generally fine-grained drift. East of Black Diamond, the low-yield areas are chiefly areas of bedrock exposure.

OSCEOLA MUDFLOW PLAIN

Stratified outwash of Vashon age is the chief source of large ground-water supplies on the Osceola Mudflow plain. Large springs along the Green River gorge and near Enumclaw flow from ice-contact and recessional outwash deposits (table 4). During the winter, these springs contribute more than 100,000 gpm to the Green River; in summer, the total spring discharge declines considerably, and may drop to 20,000 gpm or less. Near Enumclaw, where ice-contact and recessional outwash deposits are covered by the Osceola Mudflow, well yields as high as 300 gpm have been obtained (table 5). High yields have also been obtained here from Vashon advance outwash. Most of the drift older than Vashon age is fine grained. An exception is the Salmon Springs Drift near Auburn, which is coarser and should be capable of yielding large supplies of water.

CHEMICAL QUALITY OF GROUND WATER

Chemical analyses were made of water samples collected in southwestern King County to determine the general usability of the ground water and to detect any significant vertical or lateral variations in its quality. The following discussion is based on data from nearly 60 comprehensive chemical analyses and about 160 field chemical analyses which are listed in tables 12 and 13.

QUALITY IN RELATION TO USE

Ground water in southwestern King County generally is of excellent quality for drinking purposes according to water-quality standards recommended by the U.S. Public Health Service (1962, p. 7, 8), and the water is probably acceptable for most industrial and irrigation uses as well, according to approximate standards summarized by McKee and Wolf (1963, p. 92-112). According to them (p. 92), "Industries are generally willing to accept for most processes water that meets drinking-water standards." This is probably true also of irrigators. The Public Health Service standards are shown below, and are discussed with respect to ground-water quality in the project area.

Chemical constituent	Maximum recommended concentration (mg/l)
Iron (Fe)	0.3
Manganese (Mn)	.05
Sulfate (SO_4)	250
Chloride (Cl)	250
Fluoride (F)	1.7
Nitrate (NO_3)	45
Total dissolved solids	500

Except for iron and manganese, which can cause staining and an unpleasant taste, most chemical constituents of the ground water are not present in concentrations high enough to cause serious problems. Of 52 samples analyzed for iron, 20 contained more than 0.3 mg/l (milligrams per liter), and 9 of the 21 samples analyzed for manganese contained more than 0.05 mg/l. In addition, owners of more than 200 wells have reported staining and taste problems (table 9) probably caused by iron and manganese. These two constituents can generally be removed or their concentrations lowered by aeration. During this process, the water is exposed to oxygen which precipitates the iron and manganese. The precipitate is then removed by filtration. Some water districts have lowered the iron and manganese concentrations in their water simply by mixing the iron-rich ground water with iron-free water from another well.

No consistent relationship is apparent in the distribution of iron and manganese, either vertically or laterally, throughout the project area. However, peat deposits and peaty sediments are common in materials of Pleistocene and Recent Age and the peat may contribute indirectly to the presence of iron-rich ground water as indicated on page 34.

Only three wells (21/6-27R1, 22/4-12E1, and 22/4-17Q4) are known to yield water containing more than 250 mg/l of chloride. The highest concentration (5,330 mg/l) was measured in a saline water that flows from well 21/6-27R1, a 1,461-foot oil test hole in sandstone of the Puget Group near Black Diamond. Water from well 22/4-12E1, which contained about 360 mg/l of chloride when sampled, is obtained from the upper part of the Duwamish Valley alluvium. Higher-than-normal chloride concentrations are common in the finer grained parts of this alluvium, probably because of residual sea water trapped there less than 5,000 years ago as the Duwamish embayment filled with sediment. Coarser parts of the alluvial fill near Auburn and Renton are not known to contain chloride-rich water, probably because the coarser materials permit greater rates of ground-water movement and have therefore been flushed more rapidly. Well 22/4-17Q4 obtains water from Pleistocene drift at a depth about 750 feet below sea level. The chloride content of water from the well was about 300 mg/l. Although the well is located near Puget Sound (pl. 1, sec. B-B'), existing data does not indicate whether the source of chloride is salt-water intrusion from the Sound or leakage of saline water from underlying Tertiary bedrock.

Dissolved-solids contents exceeding 500 mg/l have been measured directly in water from only two wells (21/6-27R1 and 22/4-17Q4). However, water from other wells, mostly in fine alluvium of the Duwamish Valley, also contain more than 500 mg/l as indicated by specific-conductance measurements (table 13). A plot of chemical data contained in this report indicates that most ground-water samples having a specific conductance greater than 900 also have a dissolved-solids content greater than 500 mg/l, based on a nearly direct relationship between specific conductance and dissolved-solids content. The chloride content and hardness of such waters is generally high also.

Hardness is caused chiefly by the presence of calcium and magnesium in solution, and is easily recognized by the ease or difficulty with which soap forms a lather. The U.S. Geological Survey has classified the hardness of water as follows:

Hardness as $CaCO_3$ (mg/l)	Classification and suitability
0-60	Soft (suitable for most uses with further softening)
61-120	Moderately hard (usable except in some industrial applications)
121-180	Hard (softening required by laundries and some other industries)
More than 180	Very hard (softening desirable for most purposes)

Ground water is southwestern King County ranks chiefly in the soft to moderately hard range (0-120 mg/l). Only eight samples from wells in the project area ranked as "hard" (121-180 mg/l) and only three ranked as "very hard" (more than 180 mg/l).

RELATION BETWEEN GEOLOGY AND GROUND-WATER QUALITY

An attempt has been made to determine the geologic source of each water sample for which a comprehensive chemical analysis is available (table 12). Twenty-nine of the 62 samples were classified; the remainder could not be categorized because of incomplete well records or because water was withdrawn from several aquifers. Average concentrations of selected chemical constituents of the 29 analyses and of two additional analyses of water from wells just south of the project area are diagrammed in figure 23 to illustrate general similarities and contrasts in chemical quality.

Figure 23 clearly shows that chemically similar ground water occurs in shallow alluvium of the Duwamish Valley (diagram A), in Vashon advance outwash (diagram E), and in Salmon Springs Drift and pre-Vashon undifferentiated drift in the Cedar River area (diagram F). Dissolved solids contents range from about 90 to about 115 mg/l, being greatest in the waters of diagram F. Analyses in that diagram also show a somewhat higher average concentration of hardness, bicarbonate, and silica.

Ground water from aquifers near the base of the alluvial fill in the Duwamish Valley has not been sampled in the project area, but it presumably is similar to that shown in diagram B. The water samples depicted in that diagram were obtained from alluvium or possibly outwash lying 400 to 500 feet below the valley floor near Sumner. The average dissolved-solids content is about 230 mg/l.

The least mineralized ground water occurs in the Vashon recessional outwash and ice-contact deposits exposed in the eastern half of the project area (diagram C). These deposits are recharged almost entirely by precipitation, whereas most of the other important aquifers, because of their stratigraphic or topographic position, are indirectly recharged by movement of ground water from overlying, adjacent, or underlying geologic units.

Near Enumclaw, recessional outwash and ice-contact deposits have been covered by the Osceola Mudflow. The ground water there is apparently more highly mineralized (diagram D), with a dissolved-solids content of about 200 mg/l as compared to an average of about 50 mg/l for ground water in similar deposits to the north beyond the margins of the mudflow (diagram C). The chemistry of the ground water near Enumclaw may be related to the composition of the Osceola Mudflow, which according to Crandell and Waldron (1956, p. 353) contains a considerable amount of montmorillonite, pyrite, and wood, in addition to other materials.

Ground water from the intermediate drift east of Auburn (diagram G), and from drift of pre-Salmon Springs age beneath the Des Moines drift plain (diagram H), is obtained from aquifers 300 to 700 feet below sea level. Measured dissolved-solids contents range from 210 to 617 mg/l.

The patterns in figure 23 indicate that variations in chemical quality of ground water might be useful in delineating the extent of certain aquifers, but additional information is needed regarding quality variability within aquifers.

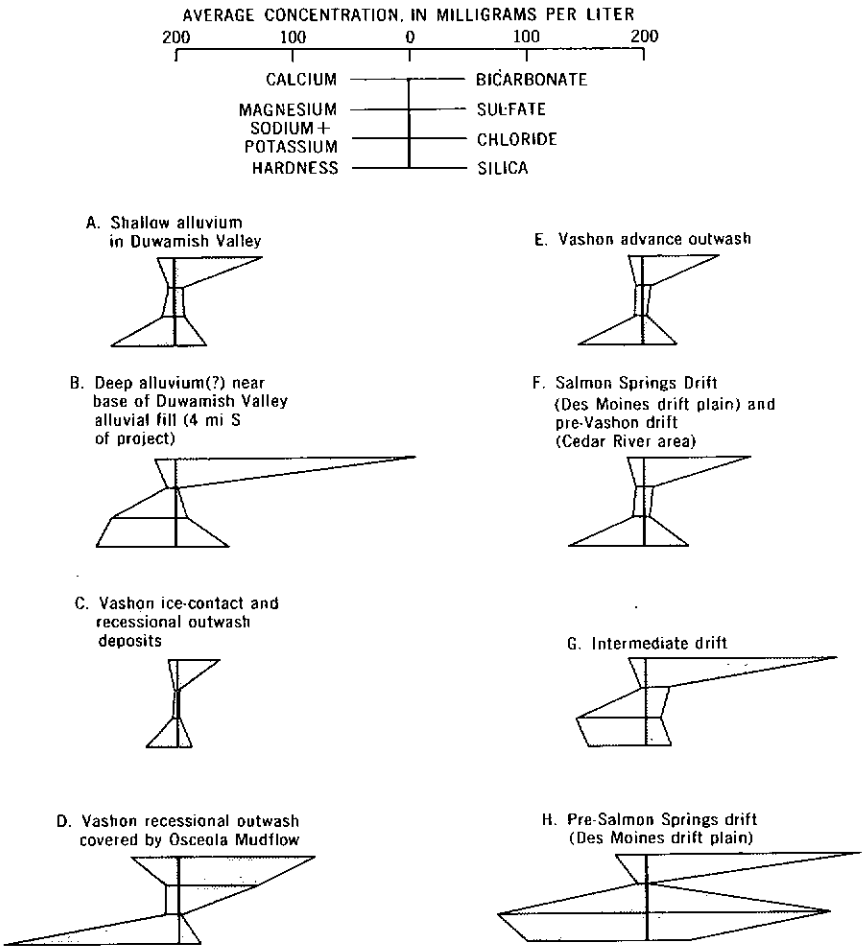


Figure 23 - Distribution of major dissolved constituents in ground water from selected stratigraphic units. Source wells and springs: (A) 21/4-1Q1, 21/5-19A1, 19A2, 23/5-17F2; (B) 20/4-24B2, 24F3; (C) 21/7-10F1s, 19Q1s, 30N1s, 22/6-26L1s; (D) 20/7-31D1; (E) 22/5-6H1s, 36M1, 22/6-13A2, 23/4-28H1, 34H1; (F) 21/4-1M1, 5R1, 22/4-4L1, 9 P1, 22/5-17R1, 23/4-27C3, 23/5-3D1, 3M1, 9E1; (G) 21/5-10N2, 14D1, 14E1; (H) 22/4-17Q4.

UTILIZATION OF GROUND WATER

Ground-water withdrawals in the project area during 1962 totaled about 36,000 acre-feet (table 7). The chief uses of ground water were for irrigation, which accounted for about 50 percent of the total, and public supply, which accounted for about 43 percent. Less than 6 percent of the total was withdrawn for rural domestic use, and less than 1 percent for industrial use.

Table 7 - Ground-water withdrawals in southwestern King County in 1962

Use	Estimated or reported population served	Estimated average yearly withdrawal	
		Millions of gallons	Acre-feet
Irrigation 1/	--	5,800	18,000
Public Supply (table 8)	124,000	5,100	15,600
Domestic (estimated)	15,000	700	2,100
Industrial 2/	--	100	300
Totals	140,000	11,700	36,000

1/ Columbia Basin Inter-Agency Committee (1964, pt. II-D, p. 4, 5). Based on irrigation of 7,000 acres in the Green River basin and 1,000 acres in the Cedar River basin modified to include water withdrawals for irrigation in other basins, and withdrawals for general agricultural purposes.

2/ Columbia Basin Inter-Agency Committee (1964, pt. II-B, table 4).

Irrigation supplies are used mainly for the production of commercial vegetable, berry, and flower crops, hay and silage crops, and pasture grass. Most water for irrigation is obtained from wells and applied by sprinkler systems during the period June through September. The principal agricultural areas are located on the Osceola Mudflow surface near Enumclaw (frontispiece), and on the alluvial floors of the Duwamish Valley and the Cedar River and Green River valleys.

In 1962, public-supply systems (table 8) supplied ground water to about 124,000 people, or about 55 percent of the total population in southwestern King County (estimated to be 228,000 in 1962). Individual domestic wells and springs accounted for only 6½ percent. The remaining 38½ percent of the population was supplied by water imported to the area from the city of Seattle Water Department. By 1964, the proportion of population supplied by Seattle increased to about 51 percent.

Table 8 - Public-supply systems using ground water in 1962

Public-supply system	Service connections	Estimated population served	Source a/		Total capacity (gpm)	Estimated average yearly consumption (millions of gallons)
			Wells	Springs		
Auburn	3,957	13,900	1	2	7,600	650
Angle Lake, King County Water District 53	193	800	1	0	215	27.8
Black Diamond, King County Water District 66	330	1,030	0	1	3,000	47.5
Bryn Mawr, King County Water District 14	700	2,140	4	1	145	101
Crystal Water Association, Kent	71	231	1	0	(?)	10.2
Des Moines, King County Water District 54	800	2,400	3	0	650	115
Enumclaw	2,300	10,000	0	2	1,400-1,700	331
East Hill Community Well Company, Kent	200	700	2	0	400	28.8
East Hill Water Company, Kent	100	350	2	0	215	14.4
Ellenwood Water Company	17	52	1	0	100	2.44
Federal Way, King County Water District 64	2,000	8,000	9	0	2,000	288
Hamilton Road Water Company, Kent	24	100	2	0	55	3.46
Kent	3,300	11,750	1	2	3,800-29,000	475
Lakehaven, King County Water District 100	3,000	10,000	8	0	5,935	432
Lake Lucerne, King County Water District 94	100	250	1	0	350	14.4
Maplewood Addition Water Company, Renton	87	350	2	0	(?)	12.5
Midway, King County Water District 75 b/	6,600	25,000	12	0	8,800	950
Orillia Water Company, Orillia	85	250	0	1	350	12.2
R. P. Osborne, Auburn	31	110	1	0	90	4.46
Pacific City	520	1,900	1	1	350	74.9
Panther Lake Water, Inc., Renton	20	70	1	0	(?)	(?)
Redondo, King County Water District 56	780	2,440	0	1	1,060	112
Renton	6,330	24,500	7	1	10,000-11,400	912
Seahurst, King County Water District 85	475	1,700	1	0	200	68.4
South Auburn Water Association	53	160	1	0	50	7.6
South Seattle Water Company b/	1,650	4,500	5	0	2,500	238
Star Lake Water Cooperative, Auburn	225	700	2	0	400	32.4
Sunny Hill Water Company, Kent	30	100	2	0	40	4.32
Three Tree Point	300	1,100	1	1	330+	43.2
White River Valley Water Company, Orillia	60	200	0	1	0	8.64
Totals	34,300	124,400	72	14	50,000 92,000	5,100

a/ Wells or springs in use or on standby.

b/ Wells were abandoned after 1962 and water is now (1965) obtained from city of Seattle.

In 1962, average daily consumption per service connection in southwestern King County was about 400 gallons. Per capita consumption, based on an estimated 3.6 people per service connection, is about 110 gallons per day. However, these averages have a great seasonal range due to fluctuations in demand, as illustrated by the records of King County Water District 75 (fig. 24). Consumption per service connection, which generally increased with growth of the district, ranged from 170 to 600 gallons in 1959, and from 240 to 870 gallons in 1962.

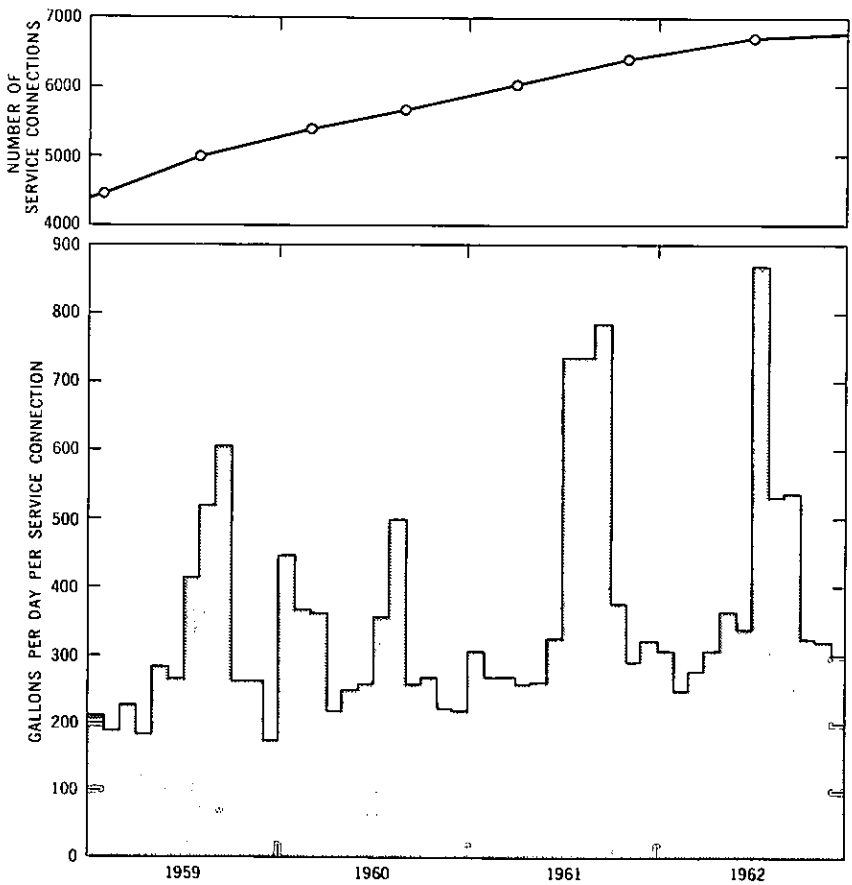


Figure 24 - Ground-water consumption in areas served by King County Water District 75, 1959-62.

FUTURE GROUND-WATER DEVELOPMENT

Further development of the ground-water resource in southwestern King County will probably be greatest in and east of the Duwamish Valley. Rapid industrial and population growth is occurring there, chiefly in response to expansion of the Boeing Airplane Co. and related industries. This growth is certain to cause an increased demand on the ground-water resources—a demand that can be fully met with proper planning and development.

The Des Moines drift plain has had the greatest amount of ground-water development to date, chiefly by county water districts. However, several large water districts (noted in table 8) on the northern half of the drift plain recently stopped all ground-water production from their wells, and have connected their distribution systems to that of the city of Seattle, which abuts the project area on the north. The abandonment of a large number of production wells in this area was not due to insufficient quantity or poor quality of ground water. Rather, the decision to import water was an economic one. Elsewhere, the city of Tacoma has started supplying water to users on the Des Moines drift plain just south of the project boundary.

SELECTED REFERENCES

Anderson, H. W., Jr., 1968, Ground-water resources of Island County, Washington: Washington Dept. Water Resources Water-Supply Bull. 25, 317 p.

Anderson, N. R., 1950, Multiple glaciation in the White River valley near Enumclaw, Washington [abs.] : Geol. Soc. America Bull., v. 61, no. 12, pt. 2, p. 1519-1520.

Armstrong, J. E., Crandell, D. R., Easterbrook, D. J., and Noble, J. B., 1965, Late Pleistocene stratigraphy and chronology of southwestern British Columbia and northwestern Washington: Geol. Soc. America Bull., v. 76, no. 3, p. 321-330.

Columbia Basin Inter-Agency Committee, 1964, Water and power resources report for North Cascade Mountains study, pts. II-B and II-D: Columbia Basin Inter-Agency Comm.

Crandell, D. R., 1963, Surficial geology and geomorphology or the Lake Tapps quadrangle, Washington: U.S. Geol. Survey Prof. Paper 388-A, 84 p.

Crandell, D. R., and Gard, L. M., Jr., 1959, Geology of the Buckley quadrangle, Washington: U.S. Geol. Survey Geol. Quad. Map GQ-125.

Crandell, D. R., Mullineaux, D. R., and Waldron, H. H., 1958, Pleistocene sequence in southeastern part of the Puget Sound Lowland, Washington: Am. Jour. Sci., v. 256, p. 384-397.

Crandell, D. R., Mullineaux, D. R., and Waldron, H. H., 1965, The age and origin of the Puget Sound trough in western Washington, in Geological Survey Research 1965: U.S. Geol. Survey Prof. Paper 525-B, p. 132-136.

Crandell, D. R., and Waldron, H. H., 1956, A Recent volcanic mudflow of exceptional dimensions from Mount Rainier, Washington: Am. Jour. Sci., v. 254, no. 6, p. 349-362.

Evans, G. W., 1912, The coal fields of King County: Washington Div. Mines and Geology Bull. 3, 247 p.

Garling, M. E., Molenaar, Dee, and others, 1965, Water resources and geology of the Kitsap Peninsula and certain adjacent islands: Washington Div. Water Resources Water Supply Bull. 18, 309 p.

Glover, S. L., 1936, Hammer Bluff Formation of western Washington [abs.] : Pan Am. Geologist, v. 65, p. 77-78.

-----1941, Clays and shales of Washington: Washington Div. Mines and Geology Bull. 24, 368 p.

Gower, H. D., and Wanek, A. A., 1963, Preliminary geologic map of the Cumberland quadrangle, King County, Washington: Washington Div. Mines and Geology Geologic Map GM-2.

Griffin, W. C., Sceva, J. E., and Mundorff, M. J., 1962, Water resources of the Tacoma area, Washington: U.S. Geol. Survey Water-Supply Paper 1499-B, 101 p.

King County Planning Department, 1964, Population projections by planning areas, King County: King County Plan. Dept. Public Inf. Ser. no 4, 27 p.

King County and City of Seattle Planning Departments, 1962, Population changes in King County and Seattle by census tracts: Inf. Bull. 2, 14 p.
Liesch, B. A., Price, C. E., and Walters, K. L., 1963, Geology and ground-water resources of northwestern King County, Washington: Washington Div. Water Resources Water Supply Bull. 20, 241 p.
Molenaar, Dee, 1965, Geology and ground-water resources, in, Garling, M. E., Molenaar, Dee, and others, Water resources and geology of the Kitsap Peninsula and certain adjacent islands: Washington Div. Water Resources Water Supply Bull. 18, p. 24-50.
Molenaar, Dee, and Noble, J. B., Ground-water resources and related geology of southeastern Mason County, Washington: Washington Dept. Water Resources Water-Supply Bull. 29, (in preparation).
McKee, J. E., and Wolf, H. W., 1963, Water Quality Criteria: California State Water Quality Control Board Pub. 3-A, 548 p.
Mullineaux, D. R., 1961, Geology of the Renton, Auburn, and Black Diamond quadrangles, Washington: U.S. Geol. Survey open-file report, 202 p.
-----1965a, Geologic map of the Renton quadrangle, King County, Washington: U.S. Geol. Survey Geol. Quad. Map GQ-405.
-----1965b, Geologic map of the Auburn quadrangle, King and Pierce Counties, Washington: U.S. Geol. Survey Geol. Quad. Map GQ-406.
-----1965c, Geologic map of the Black Diamond quadrangle, King County, Washington: U. S. Geol. Survey Geol. Quad. Map GQ-407.
Mullineaux, D. R., Crandell, D. R., and Waldron, H. H., 1957, Multiple glaciation in the Puget Sound basin, Washington [abs.] : Geol. Soc. America Bull., v. 68, no. 12, pt. 2, p. 1772.
Mullineaux, D. R., Gard, L. M., Jr., and Crandell, D. R., 1959, Continental sediments of Miocene age in Puget Sound lowland, Washington: Am. Assoc. Petroleum Geologists Bull., v. 43, p. 688-696.
Mullineaux, D. R., Nichols, T. C., and Speirer, R. A., 1964, A zone of montmorillonitic weathered clay in Pleistocene deposits at Seattle, Washington, in Geological Survey Research 1964: U.S. Geol. Survey Prof. Paper 501-D, p. 99-103.
Mullineaux, D. R., Waldron, H. H., and Meyer, Rubin, 1965, Stratigraphy and chronology of Late Interglacial and Early Vashon glacial time in the Seattle area, Washington: U.S. Geol. Survey Bull. 1194-0, 10 p.
Mundorff, M. J., 1964, Geology and ground-water resources of Clark County, Washington, with a description of a major alluvial aquifer along the Columbia River: U.S. Geol. Survey Water-Supply Paper 1600, 268 p.
Newcomb, R. C., 1952, Ground-water resources of Snohomish County, Washington: U.S. Geol. Survey Water-Supply Paper 1135, 133 p.
Newcomb, R. C., Sceva, J. E., and Stromme, Olaf, 1949, Ground-water resources of western Whatcom County, Washington: U.S. Geol. Survey open-file report, 134 p.
Noble, J. B., 1960, A preliminary report on geology and ground-water resources of the Sequim-Dungeness area, Clallam County, Washington: Washington Div. Water Resources Water Supply Bull. 11, 43 p.

Noble, J. B., and Wallace, E. F., 1966, Geology and ground-water resources of Thurston County, Washington: Washington Div. Water Resources Water Supply Bull. 10, v. 2., 141 p.

Paulson, E. N., Miller, J. T., Fowler, R. H., and Flannery, R. D., 1952, Soil survey of King County, Washington: U.S. Dept. Agriculture, Soil Survey Rept., ser. 1938, no. 31, 106 p.

Richardson, Donald, Bingham, J. W., and Madison, R. J., 1968, Water resources of King County, Washington: U.S. Geol. Survey Water-Supply Paper 1852, 74 p.

Rigg, G. B., 1958, Peat resources of Washington: Washington Div. Mines and Geology Bull. 44, 272 p.

Sceva, J. E., 1950, Preliminary report on the ground-water resources of southwestern Skagit County, Washington: U.S. Geol. Survey open-file report, 40 p.

Sceva, J. E., 1957, Geology and ground-water resources of Kitsap County, Washington: U.S. Geol. Survey Water-Supply Paper 1413, 178 p.

Schmid, C. F., and others, 1964, Population trends, cities and towns, State of Washington, 1900 to 1964: Washington State Census Board, 36 p.

U.S. Public Health Service, 1962, Drinking Water Standards: U.S. Public Health Service Pub. 956, 61 p.

U.S. Soil Conservation Service, 1965, Mean annual precipitation, 1930-1957, State of Washington: Portland Oreg. U.S. Soil Conserv. Service, map M-4430.

Vine, J. D., 1962, Preliminary geologic map of the Hobart and Maple Valley quadrangles, King County, Washington: Washington Div. Mines and Geology Geologic Map GM-1.

Waldron, H. H., 1961, Geology of the Poverty Bay quadrangle, Washington: U.S. Geol. Survey Geol. Quad. Map GQ-158.

-----1962, Geology of the Des Moines quadrangle, Washington: U.S. Geol. Survey Geol. Quad. Map GQ-159.

Waldron, H. H., Mullineaux, D. R., and Crandell, D. R., 1957, Age of the Vashon glaciation in the southern and central parts of the Puget Sound Basin, Washington [abs]: Geol. Soc. America Bull., v. 68, no. 12, pt. 2, p. 1849-1850.

Wallace, E. F., and Molenaar, Dee, 1961, Geology and ground-water resources of Thurston County, Washington: Washington Div. Water Resources Water Supply Bull. 10, v. 1, 253 p.

Walters, K. L., and Kimmel, G. E., 1968, Ground-water occurrence and stratigraphy of unconsolidated deposits, central Pierce County, Washington: Washington Dept. Water Resources Water Supply Bull. 22, 428 p.

Warren, W. C., Norbisrath, Hans, Grivetti, R. M., and Brown, S. P., 1945, Preliminary geologic map and brief description of the coal fields of King County, Washington: U.S. Geol. Survey Prelim. Map.

Washington Division of Water Resources, 1960, Water resources of the Nooksack River basin and certain adjacent streams: Washington Div. Water Resources Water Supply Bull. 12, 187 p.

Weaver, C. E., 1916, Tertiary formations of western Washington: Washington Div. Mines and Geology Bull. 13, 266 p.
-----1937, Tertiary stratigraphy of western Washington and northwestern Oregon: Washington Univ. Pub. Geology, v. 4, 266 p.
Wegner, D. E., 1956, Preliminary investigation of ground water in the Grayland Watershed, Grays Harbor and Pacific Counties, Washington: U.S. Geol. Survey open-file report, 31 p.
Weigle, J. M., and Foxworthy, B. L., 1962, Geology and ground-water resources of west-central Lewis County, Washington: Washington Div. Water Resources Water Supply Bull. 17, 248 p.
Willis, Bailey, 1886, Report on the coal fields of Washington Territory, in Mining industries: U.S. 10th Census, v. 15, p. 759-771.
-----1898a, Some coal fields of Puget Sound, in pt. 3, Economic geology: U.S. Geol. Survey 18th Ann. Rept., p. 399-436.
-----1898b, Stratigraphy and structure of the Puget Group, Washington: Geol. Soc. America Bull., v. 9, p. 2-6.
-----1898c, Drift phenomena of Puget Sound: Geol. Soc. America Bull., v. 9, p. 111-162.
Willis, Bailey, and Smith, G. O., 1899, Description of the Tacoma quadrangle [Washington]: U.S. Geol. Survey Geol. Atlas, Folio 54, 10 p.

APPENDIX

NUMBERING SYSTEM FOR WELLS, TEST HOLES, AND SPRINGS

The numbering system used by the Geological Survey in the State of Washington is based on the rectangular system for subdivision of public land, which indicates township, range, section, and 40-acre tract within the section. For example, in the well number 21/5-7G1 the part preceding the hyphen indicates the township and range (T. 21 N., R. 5 E.) north and east of the Willamette Base Line and Meridian respectively (fig. 25). The first number following the hyphen (7) indicates the section, and the letter (G) gives the 40-acre subdivision within that section.

The last number (1) is the serial number of the well in that particular 40-acre tract. In spring designations, the serial number is followed by the letter "s."

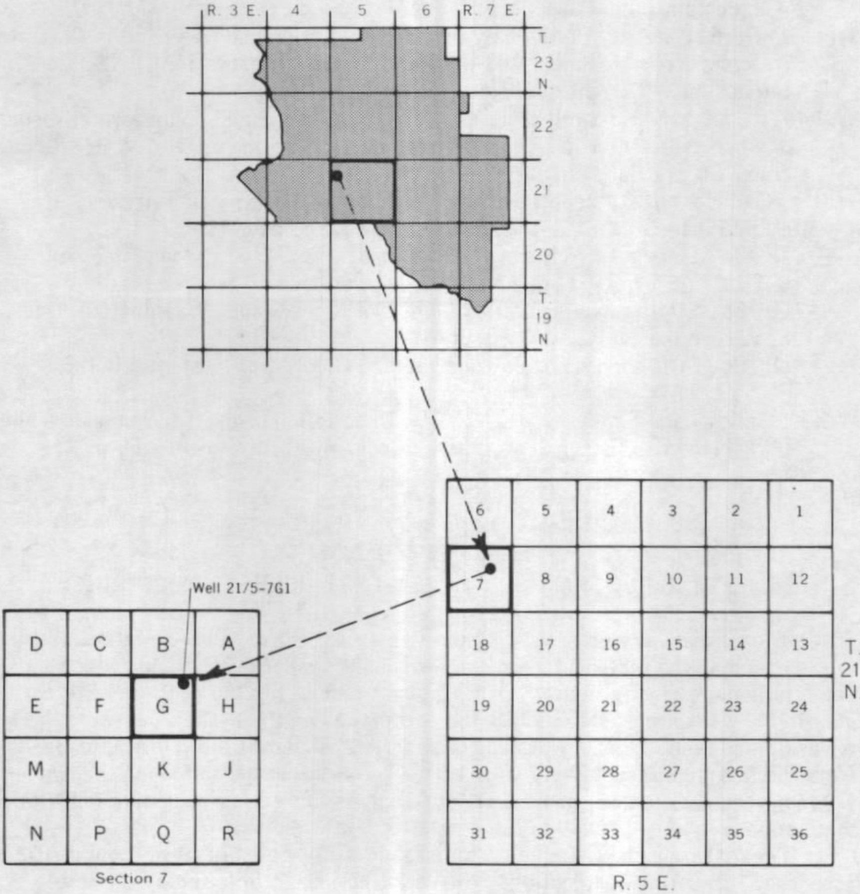


Figure 25 - Numbering system for wells, test holes, and springs.

Table 9 - Records of wells

Table 9 - Records of wells

Well number: Well-numbering system is described on p. 63.

Altitude: Land-surface altitude at well, in feet above mean sea level, estimated from topographic maps.

Type of well: Bd, bored; Dg, dug; Dn, driven; Dr, drilled.

Water level: Measurements below land surface to nearest hundredth of a foot were made by U.S. Geological Survey; those to nearest foot were reported by owner, tenant, or driller. A "+" preceding water level indicates static head, in feet above land surface.

Type of pump: A, airlift; C, centrifugal; J, jet; N, none; P, piston; S, submersible; T, turbine.

Use: D, domestic; De, destroyed; Ex, exploratory; Ind, industrial; Inst, institutional; Irr, irrigation; NU, not used; O, observation; PS, public supply; S, stock.

Remarks: Measured discharge is preceded by "Pumped", and is given in gallons per minute (gpm), with pumping time in hours (hr) and drawdown in feet (ft); reported or estimated discharge, in gallons per minute, is preceded by "Yields". Drillers' logs are given for wells that penetrate less than four lithologic units. Information pertaining to materials penetrated, water use, and quality of water were reported by owner, user, or driller. C, chemical analysis in table 12; Cp, partial field analysis in table 13; L, log in table 10.

Well	Owner or tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 19 N., R. 6 E.										
1H1	W. Kulberg	775	Dr	34	6	--	--	J	1/3	D	
1H2	V. L. Coty	755	Dg	5	48	0.89	3- 2-61	C	1/3	NU	
	T. 19 N., R. 7 E.										
4R1	Corps of Engineers, well 1	1,343	Dr	--	--	355	1959	N	--	O	
4R2	Corps of Engineers, well 2	1,350	Dr	--	--	378	1962	N	--	O	
6C1	W. Basim	795	Dr	90	--	--	--	J	1/2	D	Noticeable sulfur odor.
6E1	Martin Teeter	760	Dg	15	36	6.87	3- 2-61	J	1/3	D,S	
6F1	R. W. Darrah	800	Dr	137	7	44.38	3- 2-61	J	1	D,S	Yields 100 gpm; blue clay, 0-82; "quicksand", 82-132; gravel, 132-137 ft.
6F2	. . . do . . .	800	Dr	96	6	43.94	3- 2-61	N	--	NU	Noticeable sulfur odor.
6G1	George Gunnoe	807	Dr	90	6	69.54	11- 2-62	S	--	D	

6K1	J. Whitbeck	810	Dr	40	6	29.69	3- 2-61	J	1/2	D	
6K2	T. Robinson	815	Dr	33	6	--	--	J	1/2	D	
6L1	F. Rayner	807	Dr	48	6	29.73	3- 2-61	J	1/2	D	Supplies 2 families
6L2	L. Bruhn	790	Dr	67	6	43.11	3- 2-61	J	1/2	D	
6L3	L. Fahlencamp	800	Dr	50	6	29.70	3- 2-61	J	1/2	D	
6P1	T. Williams	770	Dg	8	48	4.07	3- 2-61	C	1/2	D	Noticeable iron content.
8J1	Corps of Engineers, well 4	1,310	Dr	--	--	338	1962	N	--	O	
8K1	Corps of Engineers, well 3	1,295	Dr	--	--	300	1962	N	--	O	
	T. 20 N., R. 5 E.										
1A1	Paul Glerum	525	Dr	220	4	195.92	7-31-62	N	--	NU	
1C1	Ann Garrison	530	Dg	42	36	15.27	7-31-62	P	1/4	D	Noticeable iron content.
1C2	. . . do . . .	530	Dr	92	6	28	1963	N	--	D	Pumped 12 gpm for 4 hr, dd 43 ft. L.
1C3	John Hungary	530	Dr	84	6	30	1963	N	--	D	Yields 8 gpm, dd 43 ft. L.
1D1	George Williams	510	Dg	30	72 by 42	10.44	7-30-62	P	--	D	
1D2	Curtis Stadstad	510	Dr	207	6	193.59	7-30-62	J	1/2	D,S	Yields 8 gpm. L.
1D3	George Williams	525	Dr	58	6	32	1963	N	--	N	Yields 20 gpm, dd 4 ft. L.
1E1	Sophie Courville	510	Dr	45	6	10	1963	N	--	D	Pumped 5½ gpm for 6 hr, dd 28 ft. L.
1F1	Allie James	508	Dr	41	6	12	1963	N	--	D	Yields 12 gpm, dd 17 ft. L.
1F2	Louie Starr	518	Dr	84	6	16	1963	N	--	D	Pumped 17 gpm for 4 hr, dd 59 ft. L.
1J1	C. J. Van Putten	515	Dr	86	6	18.58	8- 3-62	S	1/2	D	Noticeable iron content.
1P1	Clifford Wiles	480	Dg	18	36	13.16	8- 8-62	P	1/4	D	
1Q1	Maggie Barr	517	Dr	105	6	40	1963	N	--	D	Yields 15 gpm, dd 22 ft. L.
1R1	Ivan Bariel	515	Dr	63	6	--	--	J	1/2	S	Noticeable iron content. Supplies 40 head of cattle.
2J1	--Hudson	530	Dr	221	6	204	1963	N	--	D	Yields 15 gpm, dd 5 ft. L.
12H1	Lynn Garrett	510	Dr	76	6	36	1963	N	--	D	Pumped 15 gpm for 6 hr, dd 22 ft. L.
12J1	Marvin Ross	506	Dr	77	6	42	1963	N	--	D	Pumped 5 gpm for 2 hr, dd 27 ft. L.
12K1	Julius Daniels	503	Dr	48	6	36	1963	N	--	D	Yields 15 gpm, dd 2 ft. L.
12R1	Walt Pacheco	520	Dr	149	6	121	1963	N	--	D	Pumped 25 gpm for 2 hr, dd 8 ft. L.
	T. 20 N., R. 6 E.										
1B1	Ralph Shirley	705	Dg	27	30	--	--	J	--	D,S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 20 N., R. 6 E - Contd.										
1C1	Howard Stanford	690	Dr	40	6	8.54	8-16-62	J	1/4	NU	Noticeable iron content.
1F1	W. Bartschar	685	Dr	74	8	20.73	12- 6-60	J	1	D,C	Yields 50 gpm. Cp.
1J1	Frank Krashoutz	810	Dg	33	48	25.74	9- 6-61	C	1/2	D	
2K1	J. A. Wahl	740	Dr	380	10	103.37	8- 9-62	T	5	D,S	Yields 40 gpm, dd 25 ft. L.
2L1	R. J. and Walton Holmes	710	Dr	106	--	72.40	9- 6-61	J	2	S	Two water-bearing zones of fine sand reportedly cased off at 60 and 85 ft. Water-bearing gravel at bottom.
2N1	J. Nelson	659	Dr	70	6	24.52	8-15-61	J	1/2	D,S	
2P1	J. Mariotti	682	Dr	91	6	12	1950	J	1	D	Water-bearing gravel at bottom.
2Q1	J. A. Wahl	715	Dr	120	6	83.84	12- 6-60	J	1	NU	
2Q2	. . do . .	730	Dr	280	10	130	1960	J	5	D,S	Yields 40 gpm. Perforated 110-130 ft. Cp.
3B1	Donald Cassaday	665	Dr	70	6	63.08	8- 9-62	J	3/4	D,S	Drilled in large-diameter dug well.
3G1	M. L. Morris	640	Dg	15	30	5.08	8- 9-62	J	1/2	D,S	
3P1	Filomena Fantello	650	Dg	102	72 by 48	91.08	8- 9-62	J	3/4	D,S	Went dry during summer of 1960.
3Q1	-- Perelli	650	Dr	27	6	24.23	8-16-61	--	--	NU	Well goes dry late in summer.
3R2	B. R. Coucher	655	Dn	18	2	16.76	8- 9-62	--	--	NU	Noticeable iron content.
4D1	Ed Murray	565	Dr	50	6	6.67	8- 8-62	J	1	D	
4K1	C. Toast	605	Dg	65	60	20	1961	J	1/2	D,S	Hardpan extends almost to bottom where water-bearing sand and gravel was penetrated.
4K2	. . do . .	600	Dg	65	60	45	--	J	1/2	S	Log similar to 4K1.
4M1	J. A. Hallett	583	Dr	126	6	--	--	J	1	D	
4N1	Mary Perin	565	Dr	90	8	72.83	7-30-62	J	2	D	
4Q1	Alex Kessack	578	Dr	112	6	65.12	8-10-62	S	--	D,S	
5C1	Lizzie Hanson	580	Dr	238	6	--	--	--	--	De	Dry hole. L.
5C2	Robert Pratt	580	Dg	67	48	48.21	8- 7-62	J	1/3	D,S	
5D1	Ralph Dewitt	575	Dr	49	8	33.87	8- 6-62	J	1	D,S	Yields 10 gpm. Topsoil, 0-3; hardpan, 3-43; sand and gravel, 43-49 ft.

5F1	Ray Lueck	580	Dg	40	--	31.79	8- 7-62	J	1/3	D,S	
5J1	Raymond Osborn	560	Dr	106	6	77.83	7-30-62	J	--	D	
5P1	V. L. Barber	570	Dr	65	6	53	1962	J	1/2	NU	
6B1	R. A. Schmitke	550	Dr	72	6	22.88	8- 1-62	J	1/2	NU	
6C1	Leroy Adams	555	Dr	150	6	13.91	7-31-63	S	--	D,S	
6N1	N. J. Osborn	520	Dr	150	6	120	1952	S	1/2	D	Yields 10 gpm, dd 5 ft. L.
6P1	G. L. Bennatts	550	Dr	165	6	130.60	8- 9-62	S	3/4	D	
7B1	F. G. Tyler	540	Dg	31	24	26.64	8- 8-62	J	1/2	D,S	Supplies 4 families and 40 head of cattle.
7D1	Noble Osborn	525	Dg	35	48	25.09	8- 7-62	J	1/2	D,S	Supplies 2 families and 10 head of cattle.
7E1	J. J. Aves	515	Dr	150	6	35	1953	S	1	D,Irr	Yields 100 gpm. Cp.
7P1	Niles Craig	545	Dr	60	6	42.87	8- 2-62	J	1/2	S	
7Q1	. . do . .	545	Dr	126	6	--	--	J	2	NU	Yields 13 gpm.
7R1	A. Leland	590	Dr	46	6	--	--	J	1	D	Hardpan, 0-39; sand and gravel, 39-46 ft; perforated 36-46 ft.
8A1	James Scott	575	Dr	128	6	48	1960	J	3/4	D,S	
8F1	Richard Osborn	587	Dr	162	6	70.57	8- 8-62	S	1½	D,S	
8J1	H. F. Osborn	610	Dr	151	8	100.81	3- -62	J	1	D,S	Yields 10 gpm. Cp.
9A1	L. H. Moyer	590	Dr	99	6	80	1960	J	3/4	D	Yields 15 gpm, dd 1 ft. L.
9B1	Frank Van Hoof	605	Dr	130	6	103.34	8- 9-62	S	3/4	D,S	
9C1	H. O. Hanson	580	Dg	20	28	5.19	8- 7-62	N	--	NU	
9D1	Vandine Stanhope	575	Dr	113	6	87.12	7-30-62	J	1	D,S	
9H1	--Newell	585	Dr	115	6	--	--	J	1/2	D	Supplies 2 families.
9M1	Juleon Lewis	635	Dg	50	36	38.65	7-30-62	J	--	D	Well goes dry late in summer.
10C1	C. Krannick	650	Dg	18	60	14.50	8-16-61	C	7½	Irr	Yields 120 gpm. After cleaning well in 1959, it produced 500 gpm. Soil, 0-5; hardpan, 5-13; gravel, 13-18 ft.
10J1	Malneritch Bros.	660	Dg	96	48	91.94	8-14-61	J	1	D,S	Well goes dry late in summer.
10J2	. . . do . . .	660	Dg	35	48	29	1961	J	1/2	D	
10Q1	. . . do . . .	660	Dg	35	36	22	1961	J	1/2	NU	Well goes dry late in summer.
11B1	Frank Crevis	700	Dg	24	18	21	1961	C	1/2	NU	
11C1	Krain Community Hall	685	Dr	90	6	70	1961	P	3/4	D	Well formerly supplied 2 families and a school.
11D1	A. Stolz	660	Dg,Dr	18	30	16.67	8-16-61	C	3/4	D,S	Noticeable iron content. Supplies 1 family and 20 head of stock.
11N1	W. Brownlee	660	Dg	18	48	14	1961	C	1/2	D	
11P1	A. Mattson	675	Dg	21	48	17.24	8-14-61	J	3/4	D,S	Supplies 2 families and some stock.
12C1	Felix Cramer	685	Dr	36	6	--	--	J	--	NU	Noticeable iron content.
12C2	Joe Cerne	690	Dg	15	48	5.27	9- 6-61	C	1/2	NU	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horse-power	Use	Remarks
	T. 20 N., R. 6 E - Contd.										
12C3	John Kranz	690	Dg	48	48	12.25	9- 6-61	J	1/2	NU	
12F1	Mrs. J. K. Shannon	689	Dr	58	6	--	--	J	1/2	D,S	
12M1	R. E. Moergeli	690	Dg	27	60	24	1961	C	1/2	D,S	
12P1	Hugh Kinkade	695	Dg	29	30	20	1961	--	--	NU	
13C1	Rense Siesling	690	Dg	19	20	9.22	9- 6-61	C	1/2	D	
13C2	R. Chambers	695	Dg	29	6	19	1961	C	3/4	D	
13H1	C. J. Ross	740	Dr	60	6	45.44	4-10-61	J	2	D,S	
14C1	A. Mattson	677	Dg	20	48	18	1961	C	1/2	D	
14L1	E. Schreiber	670	Dg	20	36	16.10	8-15-61	C	1/2	D	Noticeable iron content.
14M1	A. Mantel	670	Dr	30	6	10	1961	J	1/2	D,S	
15B1	City of Enumclaw	650	Dr	169	8	111	1960	S	10	Irr	Pumped 97 gpm for 4 hr, dd 14 ft. L.
15F1	Brent Epersen	645	Dg	18	12	17	1961	C	1/2	D	
15G1	T. Christensen	651	Dg	10	48	7.50	8-15-61	C	5	Irr	Pumped 5 gpm for 10 hr, dd 1.8 ft. Gravelly loam, 0-3; gravel, 3-10 ft. Noticeable iron content.
15G2	E. C. Wixson	640	Dg	13	48	3	1953	C	5	Irr	Pumped 128 gpm for 4 hr, dd 7 ft. Black soil, 0-1; sandy loam, 1-5; sand (water-bearing), 5-9; sand and gravel, 9-13 ft.
15K1	E. Vanlandingham	640	Dg	19	14	6.20	9- 7-61	C	1/2	D,S	
15R1	C. S. Cutting	660	Dg	35	60	17	1961	--	--	NU	
16J1	Mrs. Minnie Klinkel	630	Dg	15	30	4.76	9-13-61	C	3/4	D,S	Noticeable iron content. Supplies 2 families.
16K1	--Stovner	630	Dr	164	8	143	1952	J	1	D,S	Cp, L.
16M1	LeRoy Huston	640	Dg	20	42	10.47	7-30-62	J	1/3	D	
16N1	M. Sulken	640	Dg	29	96-24	8.48	9- 7-61	--	--	NU	
17A1	W. D. Smith	625	Dg	19	60	7.57	8-10-62	J	1/2	NU	

17F1	William Fimon	605	Dr	96	6	56.42	7-31-62	S	1/2	D,S	
17F2	. . . do . . .	600	Dr	105	6	--	--	J	1/2	D	
17H1	A. J. Marsten	635	Dg	26	60	11.07	7-31-62	N	--	Irr	
17J1	T. H. Lundeen	635	Dg	18	48	10.73	7-31-62	J	1/2	D	
17L1	Herb Morrow	600	Dr	33	8	10.79	7-31-62	J	1/3	D,S	Pumped 30 gpm for 1 hr, dd 6 ft. Noticeable iron content. Supplies 65 head of cattle.
18A1	Lester Hopmon	569	Dr	80	6	--	--	J	1	D	
18B1	Rudolph Westerlund	545	Dr	85	6	--	--	S	1	D	Supplies 2 families.
18Q1	United Faith Church	590	Dg	18	8	16.61	8- 8-62	J	3/4	D,S Irr	
19D1	Mary Keeley	570	Dg	30	24	22.40	8- 8-62	J	--	D	Supplies 2 families.
19L1	G. L. Craig	630	Dg	36	35	7.42	8- 1-62	P	1/4	D	Noticeable iron content.
20Q1	--Felehin	645	Dr	147	6	--	--	P	--	D	Supplied 5 families but was destroyed by an earthquake.
20R1	Mrs. J. Bisick	645	Dr	142	6	120.86	8-11-61	N	--	NU	Supplies 40 head of cattle.
23D1	T. E. Raymer	680	Dg	45	18	38	1961	J	1/2	D	
23P1	Cliff Hoiland	750	Dr	60	6	17.35	8-10-62	J	3/4	Irr	
24P1	Dwight Garrett	741	Dr	112	6	--	--	T	15	NU	Pumped 220 gpm for 3 hr, dd 2 ft. L.
25B1	C. J. Younkin	740	Dr	85	8	7.66	4- 4-61	J	3	Irr	Yields 50 gpm, dd 13 ft. L.
25E1	J. Bena	740	Dr	70	8	13.30	3-16-61	J,T	1, 7½	D,S	Noticeable iron content.
25N1	E. K. Barkley	750	Dg	20	36	2.51	4- 4-61	J	1/3	D,S	
25P1	Mrs. Bosik	755	Dg	25	72	1.97	3-16-61	--	--	NU	
25Q1	K. S. Kahne	750	Dr	39	6	5.88	3-16-61	J	3	D,Irr	Pumped 40 gpm for 2 hr, dd 2 ft. Topsoil, 0-3; hardpan and gravel, 3-34; rock and sand (water-bearing), 34-39 ft.
25Q2	H. H. Akin	745	Dr	41	8	5.16	3-16-61	J	3	Irr	Pumped 48 gpm for 12 hr, dd 8 ft. Noticeable iron content. L.
26G1	Charles Berilla	750	Dr	125	6	54.77	8-14-62	N	--	NU	
27D1	Louis Boniface	710	Dr	132	6	55.71	8-10-61	J	1	NU	
27E1	R. R. Schaeffer	705	Dr	34	6	31.69	8-17-61	--	--	NU	
27F1	Ernest Child	720	Dr	109	6	46.92	8-17-61	P	1/2	D,S	Cp.
28D1	Fred Duchateau	650	Dr	126	6	95.93	8-10-61	N	--	NU	
28L1	Osceola Grange	675	Dr	160	8	126.79	9- 7-61	N	--	NU	Formerly supplied 7 farms.
28L2	Sunrise Grange	675	Dr	120	6			N	--	De	
34C1	C. Schaafsing	710	Dr	113	8	60	1961	J	2	D,S	
34D1	Ted Matson	705	Dr	123	6	96	1961	J	1½	D,S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 20 N., R. 6 E - Contd.										
35G1	George Barber	725	Dg	67	18	50.80	8-14-62	J	1½	D,S	Noticeable iron content.
35K1	Parmiro Mariotti	733	Dr	93	6	73.05	8-14-62	S	1½	D,S	Yields 25 gpm. Supplies 3 families and 37 head of cattle.
36H1	J. Hogan	760	Dg	20	48	0	1961	J	1/3	D	
	T. 20 N., R. 7 E.										
5A1	L. Siskar	800	Dg	15	14	5.65	8- 9-61	C	1/4	D	
5B1	S. S. Hudack	800	Dr	53	6	18	1954	J	1	D	Yields 20 gpm, dd 3 ft. Cp, L.
5B2	P. G. Warness	790	Dr	66	6	32	1961	J	1/4	D	Water-bearing sand, 42-66 ft.
5H1	J. L. Smith	810	Dg	13	60	8.16	8- 9-61	C	1/2	D	
5H2	Joe Toman	780	Dg	22	36	20	1961	C	1/2	D,S	
5J1	Unknown	800	Dr	85	--	--	--	S	--	NU	
6G1	Leon Smith	745	Dr	40	6	15	1961	J	1½	NU	
6G2	. . do . .	740	Dr	80	6	--	--	J	1	D	
7J1	D. A. MacKay	770	Dr	86	6	25.18	4-10-61	J	1/2	D	Noticeable iron content.
8F1	C. Lytle	805	Dr	62	--	11	1961	J	1	D	. . . . . . Do . . . . . .
8L1	A. Rofler	805	Dr	74	6	21.93	4-10-61	J	1	D	
18A1	V. Khvoroff	745	Dr	30+	6	19.82	4-10-61	J	3/4	D,S	Noticeable iron content.
18A2	H. Cable	755	Dr	32	12	23.13	4-10-61	J	1/2	D	
18A3	M. Gauthier	765	Dg	24	36	13.49	4-10-61	C	1/2	D	
18F1	H. J. Poeppel	735	Dr	44	6	8.10	4- 6-61	J	1/2	D	Noticeable iron content.
18F2	M. Lorouack	735	Dg,Dr	59	6	42	1961	N	--	NU	Noticeable iron content. Well was dug about 40 ft and drilled 19 ft.
18K1	M. R. Morris	750	Dr	64	8	14.64	4- 6-61	J	1/2	D,S	
18K2	Mrs. E. L. Branch	755	Dr	74	4	26	1961	J	1/2	D,S	
18K3	M. Branch	760	Dr	84	6	25.22	4- 6-61	S	1/2	D,S	Yields 16 gpm.
18K4	Mrs. H. Eaton	760	Dr	71	6	23.43	4- 6-61	N	--	NU	Well goes dry late in summer.
18P1	N. Farnam	765	Dr	64	6	30	1961	J	1/2	D,S	Yields 10 gpm.
18P2	A. E. Williams	755	Dr	85	6	42.07	4- 6-61	J	1/2	NU	
18P3	F. Boltsse	740	Dg	14	24	12	1961	J	1/2	D	Noticeable iron content.

18Q1	S. J. Kruse	765	Dg	34	6	28.53	4- 6-61	J	1/2	D,S	
19B1	N. Franam	765	Dr	48	6	25.57	4- 5-61	J	1/2	D	
19C1	M. Iezzi	740	Dg	11	48	8	1961	J	1	S	
19G1	R. H. Sonneson	765	Dr	52	4	8.69	4- 5-61	J	1/3	D	
19G2	A. B. Chase	770	Dr	65	6	--	--	J	1/2	D	
19Q1	O. H. Dickson	775	Dr	40	8	13.15	4- 5-61	T	7½	Irr	Yields 102 gpm. L.
20C1	R. Dyar	910	Dr	--	6	9.74	4- 5-61	J	1	D	
30F1	L. Moeller	770	Dr	42	6	21.17	4- 4-61	J	2	D,S	Pumped 35 gpm for 4 hr, dd 1.0 ft. Topsoil, 0-6; sand, 6-36; water-bearing gravel and sand, 36-42 ft.
30G1	J. McKinnon	825	Dr	147	6	59.75	4- 5-61	S	5	D	Yields 30 gpm. Cp, L.
30G2	W. Bruhn	780	Dr	54	6	27.87	4- 5-61	J	1	D,S	Cp.
30G3	A. C. Bremer	810	Dr	90	6	68.06	4- 5-61	N	--	NU	Well is intended for domestic use.
30H1	J. P. Mihelich	810	Dr	67	6	41.98	4- 5-61	S	1	D	Noticeable iron content.
30K1	D. Moore	790	Dr	98	10	29.12	4- 4-61	N	--	NU	Pumped 120 gpm for 36 hr, dd 7 ft. Hardpan, 0-42; gravel and sand, 42-98 ft; perforated 57-98 ft.
30M1	C. Twyford	765	Dr	45	6	19.87	4- 4-61	C	3/4	D	
30P2	H. V. Sorensen	765	Dg	20	48	11.63	4- 4-61	N	--	NU	
30P3	. . . do . . .	765	Dr	65	8	27	1954	T	7½	NU	Yields 300 gpm, dd 34 ft. Planned for housing development. L.
31B1	B. F. Smith	875	Dg	12	60	0	1961	N	--	D	Well goes dry in summer.
31D1	D. M. Everest	755	Dr	102	8	1.15	1-30-63	S	--	D,S	Yields 50 gpm. C, Cp, L.
31J1	C. F. Hickenbottom	900	Dr	114	6	100	1961	J	1	D,S	
31J2	S. Peters	875	Dg	8	48	.70	2- 2-61	J	1/3	D	
31L1	W. Nickels	780	Dg	24	--	0.23	4- 4-61	N	--	NU	
31Q1	Douglas Thim	795	Dr	91	6	43	1962	S	1	D	Yields 22 gpm, dd 20 ft. Sandy loam, 0-6; pyritic silty gray clay, 6-86; gray water-bearing gravel, 86-91 ft. Will supply 2 additional families.
33R1	--Wendt	1,405	Dr	347	--	325	1962	--	--	NU	Yields 14 gpm, slight dd.
	<u>T. 21 N., R. 3 E.</u>										
1J1	H. L. MacDonald	30	Dr	130	6	3	1960	J	2	D	Supplies 3 families.
1K1	Bertold Bruell	210	Dr	323	6	45.38	12-10-62	J	1	D	Noticeable iron content. Cp, L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 21 N., R. 3 E - Contd.										
1K2	Adwatco Inc.	25	Dr	300	6	120	1956	T	15	PS	Pumped 100 gpm for 450 hr, dd 30 ft. Supplies 6 families. Cp.
1Q1	C. Gartner	235	Dr	65	4	53.60	9- 6-60	J	1/2	D	
1Q2	R. D. Moore	235	Dr	113	6	94.35	9- 7-60	J	1	D	Pumped 475 gpm, slight dd. Supplies 2 families.
11P1	H. J. Jones	220	Dr	89	10	64.96	10- 5-60	J	1	D	
12A1	K. Klevjer	280	Dr	80	4	52.13	9- 7-60	J	1/4	D	
12A2	N. Mattern	280	Dr	73	6	54.17	9- 7-60	J	1/3	D,S	
12J1	King County Water Dist. 100 well 6	260	Dr	416	12-10-8	30	1961	S	35	PS	Pumped 271 gpm for 120 hr, dd 80 ft. Casing pulled to 95 ft; screened, 95-115 ft. C, L.
13H1	B. J. Ingoldsby	325	Dr	260	6	110	1960	T	2	NU	
13J1	King County Water Dist. 100 well 13	326	Dr	395	8	--	--	N	--	Ex	Test hole for water. Dry. L.
13N1	E. H. Savage	380	Dr	351	6	--	--	N	--	NU	L.
14C1	D. Veeder	240	Dg	28	24	25.41	10- 5-60	J	1/2	D	
14C2	J. B. Baxter	265	Dr	63	6	33.83	10- 5-60	J	1/2	D	Noticeable iron content.
14E1	D. Westby	260	Dg	5	36	.19	10- 5-60	J	1/3	D	
14R1	P. Moore	395	Dr	200	4	185	1960	J	1½	D	
23G1	C. Adams	380	Dg	27	36	20.83	10- 6-60	N	--	NU	Well goes dry during summer.
23H1	I. Cole	395	Dg	15	36	13.68	10- 5-60	P	1/4	D	. . . . Do . . . .
24F1	R. J. Sartell	430	Dr	130	6	83.11	10- 5-60	J	1½	D	Supplies 2 families. Reported adequate for 4 families.
24M1	G. Sims	410	Dg	12	60	5.91	10- 5-60	J	1/2	D	Well goes dry during summer.
24M2	D. L. Hemstreet	410	Dg	46	36	28.02	10- 5-60	J	1/2	D	Well goes dry late in summer. Cp.
	T. 21 N., R. 4 E.										
1B1	C. Marty	52	Dn	49	2	0	--	P	1/2	D,S	Noticeable iron content.

1D1	D. L. Poortvliet	65	Dr	450	6	Flowing	1960	S	--	D,S	Flows 1 gpm. L.
1K1	F. Schnider	55	Dn	93	2	5	1961				
1M1	R. S. McDaniel	75	Dr	236	8	Flowing	1960	T	5	D	Yields 200 gpm, dd 86 ft. Supplies 5 families. C, L.
1M2	Henry Dykstra	60	Dr	48	8	1.36	5-20-63	S	7½	D,S	Pumped 90 gpm for 4 hr, dd 11 ft. L.
1P1	J. Neft	55	Dn	100	2	Flowing	1961	C	3	D,S	
1Q1	Mrs. Frank Schnider	55	Dr	179	8	Flowing	1961	C	7½	D	Flows 20 gpm. Pumped 250 gpm for 4 hr, dd 16 ft. C,L.
1R1	J. Stewart	55	Dn	100	1½	--	--	P	1/2	D,S	Supplies 2 families.
2B1	E. Johnson	270	Dg	27	36	8.29	12-20-60	C	3/4	D	
2C1	V. M. Huston	360	Dg	44	36	32.90	12-20-60	J	1/2	D	
2G1	D. Armstrong	290	Dr	167	6	--	--	J	2	D	Supplies 2 families.
2J1	J. Caudle	270	Dr	225	6	186	1960	J	2	D	
2K1	H. W. Smith	310	Dg	89	36	23.60	12-20-60	J	3/4	D	
3A1	C. B. Bragg	426	Dr	150	6	116.84	12-20-60	S	3/4	D	Yields 15 gpm, dd 10 ft. Cp, L.
3A2	A. Kuilhaug	430	Dg	16	5	3.26	1- 4-61	C	1/3	D,S	
3G1	O. R. Hilton	470	Dg	36	14	10.62	12-20-60	J	3/4	D	
3J1	L. H. McIntire	460	Dr	60	6	45.62	12-20-60	J	1/2	D	
4A1	D. R. Johnston	405	Dg	22	4	11.58	1- 4-60	J	1/2	D,S	
4A2	. . . do . . .	405	Dg	21	36	7.11	1- 4-61	P	1/4	D,S	
4B1	G. H. Keating	415	Dg	37	48-36	15.10	9-23-60	N	--	NU	
4B2	King County Water Dist. 64, well 3	425	Dr	246	18-12-8	176.31	10- 6-60	N	--	NU	Pumped 65 gpm for 6 hr, dd 54 ft. L.
4D1	W. W. Feaster	435	Dr	309	6	--	--	P	5	NU	
4J1	King County Water Dist. 64, well 12	445	Dr	377	10	282	--	N	--	PS	Pumped 480 gpm for 5 hr, dd 3.2 ft. L.
4L1	J. Wedrosky	510	Dr	280	6	267.13	9-23-60	N	--	NU	
4M1	Jay Foote	425	Dg	55	60-36	51.03	9-29-60	P	1/3	S	
4N1	King County Water Dist. 64, well 7	440	Dr	329	12	227.21	10- 6-60	T	50	PS	Pumped 295 gpm for 24 hr, dd 48 ft. C, L.
5A1	J. J. Buckingham	230	Dr	111	6	84.84	2-23-61	S	1/2	D,S	Yields 5 gpm. Gravel, sand, clay, 0-65; hardpan, 65-110; gravel and sand, 110-111 ft.
5H1	C. L. Gove	415	Dr	250	8	181.89	9-29-60	J	3	D	Yields 20 gpm, slight dd.
5M1	S. S. Waterman	305	Dr	160	6	70	1947	P	1	D	Yields 3 gpm. L.
5M2	W. J. Rousslang	300	Dr	125	6	--	--	J	1	D	Cp.
5M3	F. Maytone	325	Dr	125	6	--	--	C	1½	D	Supplies 2 families.
5Q1	J. Shaw	430	Dr	266	6	229.17	9-22-60	N	--	NU	
5R1	King County Water Dist. 64, well 6	455	Dr	335	12	234.28	10- 6-60	T	50	PS	Yields 250 gpm, dd 49 ft. C, L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 21 N., R. 4 E - Contd.										
6J1	Mrs. M. Steiner	280	Dg	58	36	47.56	9- 8-60	J	1½	D	Supplies 2 families.
6Q1	L. M. Shaffer	360	Dr	168	6	--	--	J	1½	D,S	Supplies 3 families.
6Q2	P. B. Skansie	370	Dr	175	6	160.78	9-23-60	S	1	D	
6R1	D. Jacobs	355	Dg	142	36-30	124.58	9-22-60	J	1½	D	
7G1	Bethel Temple	350	Dr	--	8	95.70	9- 7-60	P	4	NU	
7J1	J. F. Kasko	310	Dr	210	6	--	--	J	2	D	Supplies 5 families.
7J2	Mrs. G. Flynn	310	Dr	--	6	73.99	9- 8-60	J	1	D	
7Q1	R. Hanson	325	Dr	128	6	--	--	J	1	S	Yields 8 gpm.
7Q2	King County Water Dist. 100 well 4	305	Dr	207	12	73.40	10- 4-60	T	125	PS	Pumped 1,022 gpm for 6 hr, dd 96 ft. C, L.
8F1	P. Jackman	455	Dg	18	48	7.55	9- 8-60	P	1/3	NU	Pumps dry in 1 hr.
8G1	C. Anderson	460	Dg	25	60	13.36	9- 8-60	P	--	NU	
8K1	H. H. Billings	455	Dg	15	48	10.40	9- 8-60	--	--	NU	
8P1	King County Water Dist. 100 well 7A	396	Dr	389	--	152	1962	--	--	Ex	Test hole for water. Bailed 37 gpm, 9 ft dd, at 212 ft; 35 gpm, 9 ft dd, at 218 ft. L.
8P2	King County Water Dist. 100 well 7	396	Dr	228	12	150	1962	T	50	PS	Pumped 500 gpm for 4 hr, dd 51 ft. L.
8R1	King County Water Dist. 100 well 3	445	Dr	463	12-8	258	5-12-54	N	--	Ex	Test hole for water. Yield 30 gpm, dd 65 ft. Casing pulled and hole filled. L.
9A1	King County Water Dist. 64, well 2	426	Dr	350	8	165	10- 6-60	T	10	PS	Yields 75 gpm. C.
9F1	King County Water Dist. 64, well 1	510	Dr	351	13-8	266	1941	T	15	NU	L.
10F1	King County Water Dist. 64, well 4	405	Dr	200	10-7	34.12	10- 6-60	T	25	PS	Pumped 300 gpm for 1½ hr, dd 70 ft. Despite redevelopment, the yield has decreased to about 100 gpm. C, L.
10F2	King County Water Dist. 64, well 4A	405	Dr	305	12	212	1963	S	--	PS	Pumped 100 gpm for 6 hr, dd 79 ft.

10Q1	King County Water Dist. 64, well 8	365	Dr	284	12	176	1962	T	--	PS	Yields 275 gpm, 80 ft dd. L.
11N1	King County Water Dist. 64, well 5	510	Dr	211	8	175.79	10- 6-60	T	25	PS	Yields 165 gpm. C, L.
13F1	J. A. Sumpter	70	Dn	53	1½	Flowing	2-23-61	C	1/4	D	
13L1	J. Ender	70	Dr	247	4	Flowing	2-23-61	C	1/2	Irr	Noticeable iron content.
13P1	P. Schoordyke	73	Dn	50	2	1	1961	P	1/2	D,S	. . . . . . Do . . . . .
14E1	R. Bayles	390	Dr	55	6	40.76	10-25-60	J	1/2	D	
14E2	. . do . .	390	Dg	16	60	5.48	10-25-60	N	--	S	
14E3	C. C. Coleman	455	Dg	62	48	59.61	10-25-60	N	--	NU	
15C1	W. Moore	430	Dg	22	48	14.62	10- 3-60	C	1/2	D	
15E1	E. C. Sims	430	Dr	60	6	--	--	J	3/4	D	Bailed 16 gpm. Hardpan, 0-39; cemented gravel, 39-56; water-bearing sand and gravel, 56-60 ft.
15E2	Glen Ryan	425	Dr	69	6	28.02	10- 3-60	C	3/4	D	Supplies 8 families during summer.
15F1	W. Trenary	430	Dr	83	6	62	1950	P	1	D	Yields 12½ gpm, dd 2.3 ft. L.
15G1	G. Silliamson	430	Dr	80	6	65	1955	J	3/4	D	
15K1	W. Shull	430	Dr	133	6	111	1960	J	1	D	Yields 8 gpm. Supplies 2 families. L.
15L1	King County Water Dist. 64	420	Dr	77	8	51.35	10-25-60	T	2	PS	Pumped 29 gpm continuously, dd 12 ft. Originally served 51 families when owned by the North Lake Cooperative Water System.
15L2	King County Water Dist. 64, well 10	420	Dr	1,007	16	275	1963	T	--	PS	Pumped 545 gpm for 24 hr, dd 50 ft. L.
16D1	M. W. Alexander	430	Dg	28	48	15	1960	C	1/3	D	Noticeable iron content.
16P1	King County Water Dist. 100 well 8,	365	Dr	415	8	--	--	N	--	Ex	Test hole for water. Dry hole. L.
17R1	Paul Grebe	375	Dr	178	6	152.83	10-25-60	S	1	D	Cp.
18B1	D. L. Fisher	330	Dr	300	8	72	9- 8-60	J	1	D	Cp.
19E1	C. B. Sanford	360	Dg	6	72	3.81	9- 6-60	C	1/2	D	
20L1	King County Water Dist. 100 well 10	237	Dr	237	16	11.19	1-15-63	T	350	PS	Pumped 2,137 gpm for 3½ hr, dd 53 ft. Cp. L.
20M1	A. L. Herren	245	Dg	18	24	13.37	7-27-60	P	1/3	D	
20N1	Robert Price	230	Dg	7	36	2.63	9-27-60	C	1	D	
20Q1	King County Water Dist. 100	220	Dr	242	8	7	8- 4-64	--	--	PS	Pumped 700 gpm for 12 hr, dd 13 ft. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 21 N., R. 4 E - Contd.										
20R1	American Concrete Inc.	245	Dr	71	6	30.33	10-26-60	S	5	Ind	Yields 30 gpm, slight dd. Sand, gravel, and clay, 0-27; water-bearing fine sand, heaving, 27-65; water-bearing sand, 65-71 ft. Casing: 0-67 ft; 20-slot screen, 66-71 ft.
21N1	J. H. Fields	270	Dg	50	36	44.92	1-26-61	N	--	NU	
22A1	R. E. Lee	380	Dg	53	36	Dry	10- 2-60	J	1/2	NU	
22A2	Mrs. R. Berger	375	Dg	18	48	16.81	10- 3-60	C	1/3	D	
22Q1	King County Water Dist. 100 well 5	460	Dr	385	12	239.37	10- 4-60	S	15	De	Pumped 132 gpm for 6 hr, dd 24 ft. L.
23B1	S. Murakami	100	Dr	43	12	1.10	1-26-61	T	7	Irr	Yields 200 gpm. Casing perforated 31-45 ft.
23B2	A. M. Wells	75	Dn	30	2	1.00	1-26-61	J	1	D,C	
23N1	L. C. Bogert	455	Dg	16	36	12.96	10- 4-60	J	3/4	D	
23P1	B. H. Peterson	430	Dr	215	6	210	1945	J	3	D	
24A1	Northern Pacific Ry. Co., well 2	83	Dr	78	36-12-10	18	1925	N	--	De	Yields 600 gpm, dd 25 ft. L.
24A2	. . . . . . do . . . . . . well 1	83	Dr	99	36-12-10	18	1925	N	--	De	. . . . Do . . . . . . L.
24C1	B. Maquez	76	Dr	135	6	6.59	5- 9-61	J	1/2	D	
24F1	Frank Lockridge	77	Dr	20	8	6	1951	C	95	Irr	Pumped 200 gpm for 4 hr, dd 9 ft. L.
25A1	Nichelson Mfg. Co.	95	Dr	38	6	12	1963	T	7½	Ind	
25A2	Northern Pacific Ry. Co., well 3	93	Dr	46	6	7.29	2-16-61	P	--	Ind	C, L.
25J1	. . . . . . do . . . . . . , well 4	98	Dr	86	10	21.45	2-16-61	T	25	Ind	Pumped 360 gpm for 1 hr, dd 6 ft. C, L.
25Q1	Town of Pacific	78	Dg,Dr	--	--	3	1952	T,C	15,5	PS	Pumped 350 gpm, dd 5 ft. Six 8-ft wells, 42 inches in diameter; one 12-ft well,

											72 inches in diameter; one 8-ft well, 14 ft in diameter.
26B1	C. E. Lane	80	Dn	42	1½	0	1961	C	1/2	D	Noticeable iron content.
26C1	R. Pepper	410	Dr	199	6	--	--	J	3	D	Cp.
26H1	C. D. Richards	80	Dn	40	1½	Flowing	2-16-61	N	--	Irr	Noticeable iron content.
26J1	C. E. Voss	80	Dn	61	2	Flowing	2- 1-61	J	1	D	Cp.
26K1	Mrs. E. Colby	80	Dn	35	1½	Flowing	2-16-61	N	--	NU	Noticeable iron content.
26L1	J. H. Wallace	405	Dr	190	6	16.14	10- 4-60	N	--	NU	
26L2	G. E. Green	405	Dr	101	6	81.25	10- 4-60	J	1/2	D,S	
26M1	L. Hagberg	380	Dr	65	6	50.89	10- 4-60	N	--	NU	
27H1	E. N. Eckes	415	Dg	23	48	10.73	10- 4-60	C	1/4	Irr	
28N1	G. Fiori	240	Dr	130	6	89.31	10-26-60	N	--	NU	Cp.
28R1	J. A. Kinzer	365	Dr	87	6	52.47	10- 3-60	S	3/4	D,S	Cp.
29C1	H. R. Wilson	180	Dg	12	60	1.62	9-27-60	C	1/2	D	Supplies 2 families.
29C2	King County Water Dist. 100 well 1	205	Dr	130	12	18.33	10- 4-60	T	30	NU	C.
29C3	. . . . do . . . . well 2	205	Dr	125	20-12	22.10	11- 2-62	T	40	PS	Yields 840 gpm, dd 27 ft. C, L.
29C4	. . . . do . . . . well 12	205	Dr	135	14	23	1963	N	--	PS	Pumped 1,040 gpm for 24 hr, dd 8 ft. L.
29E1	R. R. Douglas	230	Dr	95	6	39.33	9-29-60	J	3/4	D	
29H1	C. W. Caudle	260	Dr	65	4	55	1942	J	--	D	
29H2	King County Water Dist. 100 well 9	248	Dr	272	--	--	--	--	--	Ex	L.
29J1	A. M. Sterrenburg	210	Dr	151	8	16.43	1-26-61	S	1	D	Yields 200 gpm, dd 19 ft. L.
30A1	A. J. Bozung	245	Dr	95	6	63	1960	J	1	D	
30G1	S. W. Finely	360	Dr	310	6	282.29	9-27-60	S	1	NU	
30H1	R. L. Roher	225	Dg	11	48	8.17	9-27-60	C	1/3	Irr	
30J1	C. Clarey	228	Dr	82	6	48.90	9-29-60	J	1	D	
32F1	John Wahl	125	Dr	720	8	79.50	5-20-53	--	--	--	Gamma ray log by U.S. Geological Survey. L.
33A1	J. L. Hardy	355	Dg	21	48	13.95	10-25-60	J	1/4	D	
33H1	J. Spangler	310	Dg	20	48	6.09	10-25-60	N	--	NU	Noticeable iron content.
33R1	J. G. Miller	280	Dg	41	24	16.67	10-25-60	J	1/2	D,S	
34A1	A. Arndt	360	Dg	25	48	19.49	10- 4-60	J	1/3	D	
34A2	W. Heiman	345	Dr	130	6	106.26	10-26-60	J	1/2	D	Cp.
34E1	W. Manning	415	Dg	24	48	17.74	10-25-60	J	1/2	D	
34H1	M. Holm	355	Dr	42	6	--	--	J	1/2	D,S	
35A1	J. Mellor	80	Dn	127	2	Flowing	2- 1-61	N	--	S	Yields 13 gpm. Noticeable sulfur odor.
35F1	C. L. Harper	340	Dg	38	48	23.43	10-26-60	N	--	NU	
35H1	A. Hollingsworth	75	Dn	80	2	--	--	J	1	Irr	Noticeable sulfur odor.
35J1	R. J. Gius	73	Dn	28	2	3	2-16-61	C	1/3	Irr	Noticeable iron content.
35J2	B. L. Barscesky	73	Dn	100	2	1.43	2-16-61	P	1/4	D,S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 21 N., R. 4 E - Contd.										
35J3	G. E. Anderson	73	Dn	62	2	--	--	J	1/2	D	Noticeable iron content.
35R1	T. T. Shigio	69	Dr	257	6	Flowing	2- 1-61	T	--	Irr	Pumped 150 gpm for 4 hr, dd 65 ft. Sand 0-257 ft. Perforated 150-250 ft. Cp.
36L1	M. Grispino	80	Dr	60	6	5.05	12- 2-60	N	--	Irr	Yields 40 gpm. Perforated 50-60 ft.
36M1	R. E. Sample	72	Dg	20	2	5.53	2- 1-61	N	--	NU	
36M2	L. A. Yates	72	Dr	190	2	Flowing	2- 1-61	J	2	S	Well yields natural gas.
36N1	J. Hanson	72	Dg	17	48	0	2- 1-61	N	--	NU	Noticeable iron content.
36N2	R. J. Pommert	78	Dr	185	2	1.14	9-23-54	S	1/2	NU	Well yields natural gas. L.
	T. 21 N., R. 5 E.										
1C1	Clyde Lamb	458	Dr	83	6	68	1961	J	1	D	Pumped 11 gpm for 4 hr, dd 11 ft. Cp, L.
1E1	Clare E. Dally	500	Dr	130	6	94	1963	S	1/2	D	Supplies 2 families. Cp.
2A1	Larry Dole	350	Dg	12	24	1.71	1-22-63	P	1/3	D	Cp.
2A2	N. L. Guinn	361	Dg	17	48	4.83	1-22-63	J	1/2	D,S	
2B1	W. V. Sims	340	Dg	18	36	15	1962	J	1/3	D	Well reportedly bottomed on a coal bed. Noticeable iron content. Supplies 2 families.
2D1	F. Harding	457	Dr	80	6	28.99	8-24-62	J	1/2	D,S	Supplies 2 families and 22 horses.
2E1	W. O. Denney	453	Dr	91	6	58.96	8-27-62	S	--	S	Yields 15 gpm, slight dd. L.
2F1	H. S. Bigger	355	Dr	105	6	40	1954	J	--	D,S	Noticeable sulfur odor.
2H1	C. T. George	328	Dg,Dn	47	40	32	1962	C	--	D	Well was dug to 32 ft and driven to 47 ft.
2H2	J. D. Wallis	328	Dr	116	6	16.43	8-27-62	J	1/2	D	Supplies 3 families.
2H3	M. M. Hoff	330	Dr	45	6	23.92	8-27-62	J	--	D	
2H4	W. Saiger	345	Dr	35	6	30	1962	J	3/4	D	Noticeable iron content.
2H5	H. K. Whitehead	330	Dr	76	6	8.79	8-27-62	C	1/3	D	
2H6	L. E. Grube	330	Dr	70	6	8.74	8-27-62	J	--	D	Yields 18 gpm. L.

2L1	J. C. Tate	357	Dr	107	6	39.69	8-28-62	S	--	D,S	Noticeable iron content.
2M1	N. H. Rosberg	449	Dr	88	6	73	1958	J	1	D	Yields 15 gpm.
2M2	D. L. Hawley	414	Dr	67	6	46.48	8-22-62	S	--	D,S	Noticeable iron content.
2M3	Peter Straatmen	443	Dr	182	6	117.96	8-22-62	S	3/4	D,S	Yields 12 gpm. L.
2N1	G. W. Stober	369	Dr	38	6	33.38	8-22-62	J	--	D,S	Well reportedly bottomed on bedrock. Noticeable iron content.
2P1	H. R. Hipp	331	Dr	190	6	177	1959	J	1/2	D	Yields 5 gpm. Noticeable iron content. Water-bearing sand, 188-190 ft, overlying blue clay.
2P2	K. Branz	417	Dr	130	6	114	1962	J	1	D,S	Yields 18 gpm. Noticeable iron content and sulfur odor. L.
3B1	M. F. Oie	377	Dg	13	48	7.00	8-20-62	P	1/4	D,S	Bottomed on hardpan.
3D1	K. B. Peterson	431	Dr	75	6	65.39	7-27-62	J	1	D	Noticeable iron content.
3E1	L. Skagen	442	Dr	80	6	65.89	7-27-62	J	1	D	. . . . . . Do . . . . .
3E2	G. B. Walton	437	Dr	65	6	51	1962	T	1	D,S	
3E3	T. C. Thomas	411	Dr	61	6	24.54	7-30-62	J	1	D	Yields 11 gpm. Noticeable iron content. L.
3F1	H. L. Dennis	361	Dr	139	6	20.40	7-30-62	S	1	D,S	Yields 10 gpm. L.
3G1	G. F. Belmondo	312	Dr	110	6	87	1960	S	1	D	
3H1	R. L. Smith	375	Dr	70	6	58	1957	J	1	D,S	Sand, 0-70 ft. Noticeable iron content.
3J1	C. W. Svenning	395	Dg	12	36	8.17	8-22-62	P	1/4	D,S	Yields 5 gpm.
3J2	G. A. Pritchard	418	Dr	165	6	110	1958	P	1	D,S	Supplies 2 families.
3L1	H. D. McGraw	302	Dr	86	6	49.36	7-30-62	S	--	D	
3M1	J. Branchflower	357	Dr	54	6	Flowing	7-30-62	J	1	D,S	Yields 40 gpm, dd 15 ft; flows 10 gpm. Cp, L.
3R1	E. H. Ray	358	Dr	54	6	31.37	8-22-62	J	1/3	S	Noticeable iron content.
4B1	Wells Water Assoc. Inc.	508	Dr	178	6	132.28	8- 8-62	S	2	PS	Yields 20 gpm, dd 15 ft. Supplies 10 families. L.
4B2	E. C. Hill	483	Dr	100	5	93.84	8- 8-62	P	3/4	D,S	
4C1	W. L. Smith	453	Dr	185	6	59.82	8- 8-62	J	3/4	D,S	Noticeable iron content. Supplies 2 families and 30 head of cattle. L.
4F1	Harry Wilkinson	412	Dr	--	6	19.62	8- 8-62	P	3/4	D,S	Noticeable iron content.
4F2	Harley Fox	425	Dr	80	8	22.69	2- 7-63	J	1/2	NU	Yields 90 gpm, dd 10 ft. Casing: 0-80 ft; perforated 70-80 ft in gravel.
4G1	S. R. Pfaff	470	Dr	192	7	118.91	8-13-62	S	20	D, Irr	Pumped 357 gpm for 7 hr, dd 44 ft. Noticeable sulfur odor. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 21 N., R. 5 E - Contd.										
4H1	A. O. Jacobsen	461	Dr	111	6	96.50	7-30-62	P	1	D,S	Supplies 1 family and 25 head of stock.
4K1	E. I. Martinson	475	Dr	89	6	84.79	8- 9-62	S	--	D,S	
4K2	E. J. Lievense	462	Dr	125	6	84.43	8- 9-62	S	--	D,S	Yields 27 gpm, slight dd. Noticeable iron content.
4K3	J. Duprel	450	Dr	109	4	79.02	8- 9-62	S	1/2	D,S	Pumped 40 gpm for 5 min, dd 35 ft. Supplies 1 family and 216 head of stock.
4L1	Harley Fox	400	Dr	83	8	19	1952	T	7½	D,S	Pumped 180 gpm for 4 hr, dd 21 ft. L.
4M1	G. R. Chambers	454	Dr	93	6	12	1962	J	1	D,S	Noticeable iron content. Supplies 2 families.
4M2	C. G. Tobias	457	Dr	103	6	67.78	8-17-62	J	1	D	Yields 18 gpm. Noticeable iron content. Supplies 2 families. L.
4M3	H. R. Hornbuckle	465	Dr	95	6	81.45	8-16-62	J	--	D,S	Yields 15 gpm. Noticeable iron content. L.
4N1	C. F. Dodge	455	Dr	90	6	76	1962	J	3/4	D,S	Noticeable iron content. Supplies 1 family and 4,000 chickens.
4Q1	O. O. Wilson	435	Dr	90	7	75	1962	J	3/4	D	
4Q2	J. E. Wilson	432	Dr	70	4	53.74	8-10-62	J	1	D,S	
4R1	H. C. Berryman	485	Dr	180	4	150	1961	J	1	D,S	Supplies 1 family and 50 head of stock.
5B1	H. Aldrich	452	Dg	60	36	40	8- 3-62	J	1/2	D,S	Noticeable iron content. Supplies 2 families. Well goes dry during summer.
5C1	O. H. Cavness	400	Dr	270	6	261	1954	S	--	D,S	Yields 10 gpm, dd 8 ft. Noticeable iron content. L.
5H1	H. Ray	462	Dr	120	6	77.32	8- 6-51	J	--	D,S	Noticeable iron content. Supplies 3 families.

5G1	E. Babcock	460	Dg	70	36	58	1962	J	1/2	D,S	
5G2	Eastridge Water Co. Inc.	463	Dr	127	8	75.45	8- 6-62	S	5	PS	Yields 60 gpm, dd 15 ft. Supplies 8 families, intended to supply 150 additional families. L.
5J1	H. A. Johnson	460	Dr	146	6	98.33	2- 7-63	J	1	D,S	Pumped 30 gpm for 4 hr, dd 25 ft. L.
5K1	J. J. Johnson	285	Dg	15	36	1.13	8- 8-62	J	1/3	D	Noticeable iron content.
5R1	M. J. Stockinger	450	Dg	24	60	18.09	8-17-62	P	1/4	D,S	
5R2	R. D. Heskett	438	Dr	171	6	153.88	8-20-62	J	3	D,S	Yields 20 gpm. Noticeable sulfur odor. L.
6A1	L. Redington	52	Dn	45	1½	8.14	4-12-61	N	--	Irr	Noticeable iron content.
6C1	H. M. Nirschl	50	Dn	--	1½	--	--	P	1	D	Supplies 7 families.
6F1	Joe Nishimoto	53	Dr	54	6	4	1951	C	5	Irr	Pumped 120 gpm for 4 hr, dd 16 ft. Sand and clay 0-30, gravel 30-54 ft. Casing: 6-inch, 0-54 ft.
6J1	S. L. Erbin	58	Dn	25	2	22	1962	C	1/4	D	Noticeable iron content.
6L1	T. Chihara	55	Dr	20	4	4.89	4-12-61	N	--	NU	
6L2	U.S. Geological Survey	55	Dn	17	1½	5.37	1-15-52	N	--	NU	L.
6L3	J. Q. Vicente	48	Dr	54	6	8	1953	C	5	Irr	Pumped 165 gpm for 4 hr, dd 16 ft. Sand and clay, 0-48; water-bearing gravel, 48-54 ft. Casing: 6-inch, 0-54 ft. No perforations.
6P1	S. Iwai	56	Dn	35	2	15	1961	C	7½	Irr	Noticeable iron content.
7B1	T. Nishimura	58	Dr	92	6	8.42	4-13-61	--	--	Irr	Yields 5 gpm. Noticeable iron content.
7E1	S. F. Lane	60	Dr	170	8	Flowing	4-13-61	C	40	Irr	Casing: 8-inch, 0-160 ft; screened 160-170 ft.
7G1	Swanson Bros.	60	Dr	64	8	2.93	4-13-61	C	20	Irr	Pumped 300 gpm for 24 hr, dd 3 ft. Noticeable iron content.
8A1	R. F. Williams	441	Dr	200	6	156.51	8-17-62	S	--	D,S	Pumped 18 gpm, slight dd. Cp, L.
8B1	L. Baerny	418	Dr	155	6	122.56	8- 6-62	S	1	D	Noticeable iron content.
8B2	A. Forsberg	406	Dr	145	6	120	--	P	1	D	. . . . . Do . . . . . .
8B3	R. J. Fallis	408	Dr	138	6	78.77	8- 7-62	J	1	D	Yields 12 gpm. Original depth was 114 ft. Redrilled later. No log for the first 114 ft. Blue clay, 114-130; water-bearing sand, 130-138 ft.
8B4	R. G. Creson	321	Dg,Dr	75	6	42.51	8-17-62	J	1/2	D	Dug well, 0-50 ft; drilled 50-75 ft.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 21 N., R. 5 E - Contd.										
8B5	Jay Griffin	326	Dr	160	6	86.39	8-17-62	J	3/4	D	Noticeable iron content. L.
8F1	F. Hurson	100	Dr	156	6	Flowing	4-13-61	J	1	D,S	Noticeable sulfur odor.
8F2	. . do . .	65	Dn	25	2	--	--	N	--	NU	Noticeable iron content.
8G1	G. A. Tillman	391	Dr	51	6	40.82	8- 7-62	S	1	D	Yields 20 gpm. L.
8H1	E. W. Heller	406	Dr	168	6	110.28	8- 7-62	J	1½	D,S	Noticeable iron content.
8J1	P. Nielsen	458	Dr	385	8	167.63	8-13-62	P	1/2	D,S	Noticeable iron content.
8J2	J. S. Fitch	453	Dr	156	6	143.06	8-13-62	S	--	D	
8J3	R. F. Titus	435	Dr	247	6	109.82	8-13-62	S	--	D	Noticeable iron content and sulfur odor. Supplies 2 families.
8M1	D. Severson	57	Dg	16	36	8.68	4-13-61	J	1/3	D	Noticeable iron content.
8N1	G. Skinner	57	Dg	12	48	--	--	J	1/2	D,S	
8N2	P. M. Alger	55	Dn	20	1½	6	4-13-61	J	1/2	D	
8N3	H. L. Larson	57	Dg	12	4	7.08	4-13-61	P	1/4	D	
8N4	D. Severson	57	Dr	17	6	6.00	4-13-61	J	1/4	D	
8N5	A. Giezler	58	Dg	14	12	7.18	4-13-61	J	3/4	D	
8N6	C. Ledoux	65	Dr	48	4	8.78	4-13-61	J	1/2	D	Noticeable iron content.
8P1	L. G. Dana	352	Dr	175	6	57.85	8-15-62	J	1	D,S	Noticeable iron content. Supplies 3 families.
8Q1	B. L. Graff	366	Dr	85	6	70	1960	J	1	D,S	Yields 12 gpm. L.
8Q2	C. E. Scarff	353	Dr	93	6	54	1959	S	1½	D,S	Yield during drilling: 12 gpm, 58 ft; 18 gpm, 60 ft; 24 gpm, 62 ft. Noticeable iron content. Cp.
8R1	B. O. Graff	395	Dr	89	6	59	1953	J	1	D,S	Noticeable iron content.
8R2	W. T. Harris	395	Dr	97	6	62	1960	J	1	D,S	
8R3	W. J. Wharton	356	Dr	67	--	62.94	8-14-62	J	1	D	Noticeable iron content.
8R4	A. H. Englund	367	Dr	74	6	64.49	8-14-62	J	1	D,S	Supplies 2 families. L.
8R5	P. N. Schilz	379	Dr	87	6	74	1961	S	1/2	S	Yields 15 gpm. L.
8R6	Mrs. D. V. Haugen	403	Dr	250	6	90	1959	J	2	D	Perforated at 108 and 250 ft. Supplies 2 families. Noticeable iron content.

9A1	F. C. Rafferty	481	Dr	141	6	108	1962	S	1½	D,S	Noticeable iron content.
9A2	T. J. Hagadorn	493	Dr	167	6	135	1960	S	1	D,S	Yields 10 gpm. L.
9B1	L. E. Koskovich	417	Dr	65	6	37.84	8-10-62	J	1/2	D,S	
9B2	J. R. Eberlin	428	Dr	97	6	62.33	8-10-62	S	3	D,S	Supplies 2 families.
9C1	Mrs. J. Hautala	450	Dr	100	6	65	1952	J	--	D	Supplies 2 families. Noticeable iron content.
9C2	B. W. Sawyer	430	Dr	96	6	69.26	8-10-62	S	--	D	
9E1	J. L. Thompson	402	Dr	154	6	132	1960	S	--	D,S	Yields 30 gpm. L.
9F1	J. E. Lena	447	Dr	97	6	50	1956	J	1	D,S	Well reportedly bottomed in bedrock.
9F2	P. L. Gilseth	448	Dr	98	6	53	1950	J	1/2	D,S	Topsoil, 0-4; hardpan, 4-64; sand and gravel, 64-98 ft. Supplies 2 families.
9F3	R. L. Menzies	448	Dr	98	6	79	1962	J	1	D	Yields 20 gpm, dd 3 ft.
9F4	. . . do . . .	448	Dr	97	6	79	1954	J	1	D	Yields 20 gpm, dd 3 ft. Well will be destroyed for a roadway. L.
9G1	B. L. Linell	447	Dr	106	6	76.11	8-13-62	S	3/4	D,S	Supplies 1 family and 600 hogs.
9H1	R. Warner	470	Dr	134	6	120.22	8-16-62	S	--	D,S	Yields 10 gpm. Noticeable iron content. L.
9K1	M. C. Teter	431	Dr	95	6	73.52	8-16-62	S	1½	D,S	Yields 35 gpm, slight dd. L.
9L1	Floyd Jones	437	Dr	91	6	27	1961	P	1/2	D,S	Well reportedly bottomed in sandstone.
9M1	R. E. Gaenz	446	Dr	122	6	104.60	8-13-62	S	--	D	
9M2	Carl Fletten	454	Dr	130	6	114	1952	J	1	D,S	
9N1	W. G. Peters	440	Dr	45	6	11	1947	J	3/4	D,S	Well reportedly bottomed in bedrock.
9N2	G. A. Heath	451	Dr	180	6	90	--	J	1½	D	
9P1	P. O. Minicke	432	Dg	103	48	99	1955	J	--	D,S	Noticeable iron content.
9P2	R. H. Martin	437	Dr	127	6	96.08	8-13-62	J	2	D,S	. . . . . Do . . . . . .
9P3	F. S. Garbanat	430	Dr	135	6	40	1957	J	1	D,S	. . . . . Do . . . . . .
10A1	I. H. Johnson	362	Dr	83	6	50.54	8-22-62	J	3/4	D,S	Pumped 18 gpm for 2 hr, slight dd. Noticeable iron content. L.
10D1	H. R. Larson	502	Dr	160	6	40.61	8-16-62	P	1	D	Supplies 4 families.
10N1	K. D. Luke	310	Dr	290	6	--	--	--	--	Ex	Test hole for water. Dry hole. L.
10N2	. . do . .	314	Dr	666	8-6	200.20	2- 8-63	S	3	D,S	Pumped 20 gpm for 1 hr, dd 38 ft. Supplies 1 family and 1,400 chickens. C, L.
10N3	. . do . .	314	Dr	390	6	--	--	--	--	Ex	Test hole for water. Dry hole. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 21 N., R. 5 E - Contd.										
10R1	R. E. Dawson	115	Dr	207	6	Flowing	1961	C	1	D	Flows 25 gpm. Supplies 5 families. Cp, L.
10R2	F. Marsh	117	Dr	82	6	Flowing	1961	J	1/2	D	Flows 25 gpm from thin sand layers in blue clay. Topsoil, 0-5; cemented sand, 5-35; blue clay, 47-82 ft. Cp.
11D2	E. L. Murphy	363	Dr	46	6	40	1958	J	1/3	D	Yields 12 gpm, slight dd. Supplies 4 families.
11L1	Pacific Raceways Inc.	310	Dr	50	8	45.24	8-23-62	S	3	C, Irr	
11L2	. . . . . do	301	Dr	96	8	49.24	8-23-62	S	5	C, Irr	Pumped during water-level measurement.
11M1	. . . . . do	311	Dr	42	6	31.18	8-23-62	J	1½	NU	
12C1	Unknown	458	Dg	23	48	14.63	1-22-63	J	1/3	NU	
12D1	James Dick	430	Dr	43	6	27.61	1-22-63	J	1/2	D	Cp.
12F1	Arnold C. Evert	435	Dr	57	6	--	--	J	1/2	D, S	Cp.
12F2	Archie L. Fredrick	396	Dr	64	6	19.61	1-22-63	J	3/4	D	Cp.
12P1	Robert Castan	335	Dr	72	6	9	1963	S	3/4	PS	
12P2	C. L. Tankersley	421	Dr	120	6	109.32	1-22-63	J	1	D	Yields 12 gpm, dd 5 ft. Cp, L.
13A1	R. J. Dudley	360	Dg	20	48-3	5.82	1-10-62	J	3/4	D, S	
13A2	B. W. King	345	Dg	8	48	0	1962	J	--	D	
13G1	Ruby Woodward	360	Dr	62	6	0	1962	J	7½	D	Yields 7½ gpm.
13N1	S. Wallace	405	Dr	60	6	37.59	6- 9-61	J	1/2	D	
13P1	R. Timblaw	400	Dr	32	6	11.44	6-14-61	N	--	NU	Noticeable iron content.
13P2	. . do . .	398	Dg	18	24	8.15	6-14-61	J	1/2	D	. . . . . Do . . . . . .
13Q1	G. A. Johnson	400	Dg	14	32	6	1961	J	1	D	
14C1	Martin Marietta Corp., well 2	410	Dr	210	8	--	--	--	--	Ex	Test hole for water. Dry hole. L.
14C2	. . . . . do . . . . . . , well 6	390	Dr	90	10-6	33	1963	N	--	NU	Pumped 15 gpm for 3 hr, dd 18.7 ft. L.
14C3	. . . . . do . . . . . . , well 5	385	Dr	80	8	35	1963	N	--	De	Test hole for water. Dry hole. L.
14D1	. . . . . do . . . . . . , well 1	375	Dr	718	8	114	1962	S	--	Ind	Yields 6 gpm. C. L.

14D2	. . . . . do . . . . . , well 4	378	Dr	135	8	--	--	--	--	De	Test hole for water. Dry hole. L.
14E1	. . . . . do . . . . . , well 3	380	Dr	100	8-6	63	1963	J	--	Ind	Yields 15 gpm. C, L.
14E2	H. Cooper	370	Dg	19	48	15.06	6- 9-61	P	1/3	D,S	
14J1	A. Merideth	408	Dr	196	6	183	1961	J	1/2	D	
14J2	J. Bacoka	408	Dr	91	6	46	1959	J	1/2	D	Noticeable iron content.
14J3	R. Huytable	408	Dg	13	48 by 72	8.09	6- 9-61	P	1/4	D	
14N1	H. Stanton	428	Dg	14	72	1.18	6- 7-61	J	1/4	D,S	
14Q1	G. R. Van Ness	452	Dr	105	8	54.09	6- 7-61	J	1	D,S	Cp.
14R1	P. F. O'Brien	450	Dr	65	6	54.80	6- 8-61	J	3/4	D	Yields 15 gpm. L.
14R2	A. Van Dillon	448	Dr	108	6	83.78	6- 8-61	J	1	D	
14R3	R. F. Walker	435	Dr	85	6	54.50	6- 7-61	J	1	D	Topsoil, 0-3; hardpan, 3-20; gravel and sand, 20-85 ft.
14R4	Bettie Roberts	420	Dr	60	6	47.19	6- 8-61	S	1½	D	Yields 11 gpm. L.
14R5	K. Wade	412	Dr	100	6	--	6- 9-61	J	1/2	D	
14R6	F. Vinton	408	Dr	86	6	45.19	6- 9-61	J	1/2	D	
15D1	D. Martin	95	Dr	41	6	20	1960	J	3/4	D	Yields 18 gpm. Noticeable sulfur odor. Topsoil, 0-8; clay, 8-22; gravel, 30-41 ft.
15E1	L. Satterthwaite	280	Dr	308	6	--	--	P	1½	D	
15J1	Weyerhaeuser Properties, Inc.	370	Dr	124	8	65	5- 7-64	--	--	--	Pumped 500 gpm for 12 hr, dd 11 ft. L.
15M1	Mountain Development Co.	320	Dr	1000	12-8-6	410	3-19-64	--	--	--	Yields 15 gpm, dd 152 ft. L.
15Q1	--Kinkad	445	Dr	175	--	--	--	--	--	Ex	Dry hole. L.
15R1	H. Tuller	440	Dr	56	6	31.14	6- 7-61	P	1/2	D	Yields 6 gpm.
15R2	P. Deusen	440	Dr	50	6	25.97	6- 7-61	J	1/2	D	Yields 15 gpm. Topsoil, 0-5; hardpan, 5-40; black sand and gravel, 40-50 ft. Casing: 6-inch, 0-48 ft; perforated 40-48 ft.
15R3	O. Hollenbach	455	Dg	12	48	8.03	6- 7-61	J	1/3	D	Noticeable iron content.
16A1	O. W. Rogers	115	Dr	64	6	16.58	6-16-61	J	1/2	D	. . . . . Do . . . . .
16N1	A. C. Mueller	80	Dr	111	8	8	1950	--	5	D	Pumped 150 gpm for 15 hr, dd 7 ft. Noticeable iron content. L.
17A1	L. R. Johnson	355	Dr	60	8	13.94	8-14-62	J	1½	D,S	Yields 5 gpm.
17C1	J. E. Eby	353	Dr	325	6	294.09	8-15-62	S	1½	D,S	Noticeable iron content. Supplies 2 families.
17C2	L. A. Westbo, Jr.	258	Dr	73	6	--	--	C	1/3	D	Noticeable iron content.
17G1	B. A. Burns	338	Dr	107	6	53.29	8-15-62	J	3/4	D,S	Casing perforated 90-107 ft.
17G2	R. W. Patton	347	Dr	258	6	228	1960	S	--	D	Pumped 15 gpm for 8 hr, slight dd. Noticeable iron content.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse-power		
	T. 21 N., R. 5 E - Contd.										
17G3	F. B. Norman	342	Dr	323	6	273	1948	J	5	D,S	Supplies 2 families, and a 55,000 gallon swimming pool.
17L1	E. Ray	73	Dr	40	6	13.27	5-12-61	J	1/2	D	Noticeable iron content. Cp.
17L2	R. Race	75	Dr	42	6	12.18	5-12-61	C	1/3	D	
17R1	W. Bales	77	Dn	110	1½	7.15	5-12-61	C	1/2	Irr	Noticeable iron content.
19A1	City of Auburn, well 1	105	Dr	298	8	37	1957	N	--	Ex	Yields 407 gpm, dd 4.5 ft. Test hole for water. C, L.
19A2	. . . . do . . . , well 2	105	Dr	134	16-8	40x	1958	T	150	PS	Pumped 1,515 gpm for 24 hr, dd 11.75 ft. C, L.
19M1	A. Rakos	97	Dr	45	--	--	--	J	3/4	D	
19M2	G. R. Holt	95	Dn	63	3	28.45	5-10-61	T	3	PS	Pumped 66 gpm for 14 hr, slight dd. Noticeable iron content. Supplies 6 families.
19M3	F. Tragar	93	Dn	100	3	30	--	J	1	D	Supplies 3 families.
20K1	Auburn Airport	277	Dr	130	4	22.66	5-17-61	J	3/4	C	
21C1	P. Acost	80	Dr	86	6	10	1952	J	1/3	D	Yields 160 gpm, dd 4½ ft. L.
21C2	. . do . .	80	Dr	56	8	7.66	5-12-61	N	--	Irr	
21F1	L. Dolan	80	Dn	100	3	11.81	5-12-61	N	--	NU	Yields 125 gpm. Noticeable iron content.
21G1	Auburn Packing Co, well 1	77	Dr	120	8	12	--	T	30	NU	Yields 1,000 gpm.
21G2	. . . . do . . . . ., well 2	77	Dr	120	10	--	--	T	10	Ind	Yields 1,000 gpm, dd 11 ft. Casing: 10-inch 0-120 ft; perforated 117-120 ft.
21K1	R. Sentrup	72	Dr	70	6	6	1957	J	1/2	D	Yields 400 gpm, slight dd. Noticeable iron content. Cp.
21M1	E. Ryan	285	Dr	52	8	38	1958	J	1½	NU	Pumped 40 gpm for 4 hr, dd 6 ft. Topsoil, 0-3; blue hard-pan, 3-42; compact, water-bearing sand and gravel, 42-52 ft.

21M2	E. W. Grosgebauer	285	Dg	34	36-12	--	--	J	1/2	D	
21M3	W. Churchill	285	Dr	42	6	0	5-17-61	J	1	D	Supplies 3 families.
21M4	M. B. Taylor	285	Dg	35	36	22.65	5-17-61	J	1/2	D	
21N1	Mrs. F. Morrison	290	Dr	50	6	36.75	5-17-61	J	1/2	PS	Supplies 3 families.
21N2	G. Kitchall	280	Dr	116	6	76	1955	J	1	D	Supplies 2 families.
21N3	J. L. Daniel	275	Dr	104	4	65	1960	J	1	D	Yields 16 gpm. Supplies 6 families.
21N4	R. B. DeRemer	275	Dr	101	6	60	1958	J	1	D	Pumped 30 gpm for 2 hr, dd 5 ft. Cp, L.
21N5	W. Langton	278	Dr	80(?)	6	--	--	J	1	D	Supplies 5 families.
21N6	H. Kihn	295	Dr	83	3	52.79	5-18-61	J	1	D	Supplies 2 families.
21P1	I. Loizer	323	Dr	112	6	83.93	5-18-61	S	1/2	D	Yields 8 gpm. L.
21P2	C. H. Dougherty	325	Dg	35	36	--	--	J	1/4	D	Supplies 3 families.
21P3	J. Stucker	323	Dr	96	6	43.86	5-18-61	J	1	D	Goes dry late in summer.
21P4	A. Kimball	304	Dr	92	6	65	1961	J	1	D	
21P5	R. H. Runland	305	Dr	102	6	65	1961	C	1/3	--	
21P6	. . . do . . .	302	Dr	137	6	65	1961	C,C	1,3/4	D	
22A1	K. Hellberg	450	Dg	30	72	6.19	6- 7-61	N	--	D,S	
22A2	C. L. Berg	438	Dr	155	6	127.86	6- 7-61	S	3/4	D	
22B1	D. Keegan	455	Dr	258	6	214.23	6- 7-61	J	2	D,S	Topsoil, 0-5; blue hardpan, 5-244; gravel, 244-258 ft. Casing: 6-inch, 0-253 ft; screen, 253-258 ft.
22B2	E. Kline	448	Dr	436	6	--	--	P	1/2	D	Noticeable iron content.
22B3	. . do . .	448	Dg	20	72	7.93	6- 7-61	P	1/4	S	
22C1	J. W. Kluckner	437	Dg	70	72	7.19	6- 6-61	N	--	NU	
22D1	Bud Chase	375	Dr	326	10	--	1963	N	--	Ex	Test hole for water. Dry hole. L.
22H1	T. McCoy	430	Dg	15	48	2.53	6- 7-61	P	1/4	D,S	Well goes dry during summer.
22P1	J. Kaech	95	Dg	14	12	1.79	6- 5-61	N	--	Irr	Pumped 400 gpm for 4 hr, dd 8 ft.
22R1	B. Sargeant	100	Dg	40	48	6.53	6- 6-61	C	1	D	Noticeable iron content and sulfur odor.
23B1	S. Berg	456	Dg	20	72	2.09	6- 7-61	P	1/3	D,S	
23D1	B. McCue	435	Dg	65	72 by 108	4.39	6- 7-61	N	--	--	
23E1	W. R. Johnson	437	Dg	23	48	11.81	6- 9-61	J	1/4	D,S	
23F1	W. Whiting	455	Dg	30	72	--	--	J	3/4	D,S	
23G1	J. Partdrige	455	Dr	215	6	175	1955	J	1	D,S	Noticeable iron content.
23G2	L. Heath	460	Dr	165	6	115.29	6- 9-61	S	1	D,S	
23H1	Walter Marble	455	Dr	357	8	60	1959	T	3	D	Yields 60 gpm, dd 16 ft. L.
23J1	G. Steel	460	Dr	330	6	--	--	J	2	D	Noticeable iron content. Supplies 2 families.
23J2	J. Dennis	460	Dr	150	6	84.16	6- 9-61	J	1	D,S	Noticeable iron content.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 21 N., R. 5 E - Contd.										
23N1	J. Santilli	105	Dg	20	84 by 120	6.96	6- 6-61	N	--	Irr	Yields 320 gpm, dd 3½ ft. Noticeable iron content.
23N2	. . do . .	123	Dr	110	6	--	--	J	1½	D,S	Noticeable iron content.
23P1	E. J. Ray	117	Dr	30	8	3	1960	N	--	NU	Pumped 125 gpm for 4 hr, dd 20 ft. Noticeable iron content. Topsoil, 0-3; brown clay, 3-8; water-bearing gravel, 8-30 ft. Screen, 60-slot, 25-30 ft.
23Q1	Eric Peterson	235	Dr	78	6	41.34	7-13-62	J	1	D,S	Yields 15 gpm. L.
24A1	W. Gmahl	401	Dg	15	36	9.44	6-14-61	N	--	NU	
24A2	. . do . .	402	Dg	25	36	9.44	6-14-61	J	1/2	D	
24A3	. . do . .	402	Dg	15	24	7.89	6-14-61	N	--	NU	
24B1	B. J. Schwab	465	Dr	121	6	73.35	6-14-61	N	--	NU	
24B2	. . . do . . .	455	Dg	28	72	4.76	6-14-61	J	1/2	D	
24F1	T. Susner, Jr.	470	Dr	83	6	12	1960	J	1	D	
24G1	T. Susner, Sr.	470	Dg	50	72	10.34	6-14-61	J	1/2	D	
24H1	J. Singer	400	Dg	7	84	.29	6-14-61	J	1/2	D	
24L1	G. R. Wallace	425	Dg	9	36	6.34	6-14-61	J	1/2	D	
24L2	R. Jacob	455	Dr	75	6	60.69	6-14-61	J	1/2	D	
24L3	Unknown	460	Dg	18	62	4.75	6-14-61	N	--	NU	
24M1	L. Fasig	420	Dg	8	96	5.86	6-14-61	P	1/4	D	Well goes dry late in summer. Supplies 2 families.
25A1	G. R. Smith	150	Dr	80	6	12.43	8-10-62	J	3/4	D	Yields 25 gpm, dd 3 ft. Noticeable iron content. L.
25D1	W. Kelly	460	Dr	400	6	--	--	J	1½	D	Yields 250 gpm.
25D2	E. Armitage	470	Dg	20	62	8.08	6-14-61	J	1/2	D	Well goes dry during summer.
26B1	R. C. Bertsch	115	Dr	44	8	9.75	6- 6-61	P	1/4	D	Noticeable iron content.
26C1	T. O'Brien	112	Dr	31	6	7.17	6- 6-61	C	1/3	D,S	. . . . . . Do . . . . .
26C2	R. Latham	112	Dg,Dn	12	6-2	5.25	6- 6-61	J	1/2	D	. . . . . . Do . . . . .
26G1	R. C. Bertsch	113	Dn	22	1½	--	--	J	1½	D	. . . . . . Do . . . . .

26G2	. . . do . . .	112	Dr	64	8	31.21	6- 6-61	--	--	Irr	Yields 200 gpm. Noticeable iron content. Pumping during water-level measurement.
26M1	C. Johnson	435	Dr	109	6	72	1961	C	1/2	D,S	Pumped 550 gpm for 24 hr, slight dd.
26N1	M. Lund	445	Dr	80	6	71	1962	J	1	D	Yields 10 gpm, dd 9 ft. Topsoil, 0-2; blue hardpan, 2-87; compact sand and gravel, 87-90 ft. Perforated 87-90 ft.
26N2	. . do . .	445	Dg	30	60	17.89	5-19-61	N	--	NU	
27A1	J. Hamakami	100	Dn	42	1½	7	1961	J	1/3	D	Noticeable iron content.
27B1	Auburn Academy	100	Dr	79	8	4.97	5-15-61	T	7	D	Yield 50 gpm. Noticeable iron content. L.
27B2	. . . do . . .	98	Dr	36	8	5.41	5-15-61	T	15	D,PS	Yields 100 gpm. Topsoil, 0-2; clay, 2-27; water-bearing sand and gravel, 27-36 ft. Casing: 8-inch, 0-27 ft; screen, 26-36 ft. Noticeable iron content.
27K1	B. Cameron	408	Dg,Dr	194	8	42.09	5-15-61	J	1½	PS	Noticeable iron content. Supplies 13 families. L.
27L1	J. Belden and -- Baker	400	Dr	65	6	60	5-18-61	J	1	D	Supplies 3 families.
27P1	G. Brown	412	Dg	74	36	25	1961	J	1½	PS	Noticeable iron content. Supplies 7 families.
27Q1	. . do . .	412	Dr	53	6	35	5-15-61	J	1/2	PS	Yields 30 gpm, dd 3 ft. L.
27Q2	O. Raymond	450	Dg	43	36 by 60	30.60	5-18-61	J	1/3	D	
27R1	F. Grotheer	425	Dg	17	--	3.85	--	J	1	D	
27R2	K. Eldridge	445	Dg	19	60	.82	5-19-61	J	1/4	D,S	
27R3	E. Struve	455	Dg	43	36	4.14	5-19-61	J	1/2	D	
29F1	Auburn Game Farm	130	Dr	94	8	24.07	5- 9-61	S	3	D,S	Pumped 200 gpm for 8 hr, dd 3 ft. Topsoil and gravel, 0-12; boulders, 12-32; coarse gravel and sand, 32-94 ft. Cp.
30B1	J. Sorweide	112	Dr	60	6	--	--	J	1/3	D	
30D1	United Concrete Pipe Corp.	100	Dr	107	8	26	1952	T	25	Ind	Pumped 345 gpm for 6 hr, dd 2 ft. L.
30E1	So. Auburn Water Assoc., Inc.	102	Dr	410	6	20	1960	J	5	PS	Yields 50 gpm. Supplies 54 families.
30E2	C. Peterson	100	Dn	90	1½	--	--	J	1/2	D	
30F1	Rohr Aircraft Corp	110	Dr	--	--	24.98	5- 9-61	N	--	NU	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 21 N., R. 5 E - Contd.										
30G1	C. Tuffe	115	Dr	85	6	--	--	J	1/2	D	
30G2	H. E. Watkins	120	Dr	64	8	44	--	J	3/4	D	
30H1	Mario Manfredi	122	Dr	85	8	46	--	S	4	D,Irr	Pumped 52 gpm for 4 hr, slight dd. Sand and gravel, 0-80; water-bearing gravel, 80-85 ft.
30J1	J. H. McMullen	125	Dr	65	8	47	--	J	1¼	D	Noticeable iron content.
30J2	Elmer Nearing	125	Dr	79	6	--	--	J	1	D	
30K1	Mary Geiszler	108	Dr	60	6	40	--	J	3/4	D	Supplies 3 families.
30L1	G. J. Baer	100	Dr	55	6	32	--	J	1/2	D,S	
30M1	H. E. Harkness	102	Dr	59	6	--	--	T	2	D	
30N1	Allen Geiszler	100	Dr	50	6	24	1944	J	1	D	Pumped 12 gpm for 3 hr, slight dd. Supplies 2 families.
30P1	C. Burnett	102	Dr	55	6	30	1960	J	1/2	D	Water-bearing gravel, 49-55 ft.
31B1	H. Dickenson	173	Dg	20	36 by 72	1.24	5-10-61	N	--	NU	
31F1	W. Barnett	152	Dr	120	6	48.71	5-10-61	J	1/2	D	
31F2	O. H. Bode	165	Dg	13	36 by 48	4.31	5-10-61	N	--	NU	
32D1	K. Oravetz	175	Dg	13	62	4.08	5-11-61	C	3/4	D	
32R1	R. Beavins	418	Dr	100	6	84.29	5-11-61	S	1/2	D	Noticeable iron content.
32R2	F. W. Tanner	420	Dr	110	--	--	--	J	1½	D	Yields 8 gpm.
33E1	H. Bedell	425	Dr	162	6	124.82	5-11-61	S	3/4	D,S	
33K1	D. D. Tyner	470	Dg	56	36	8.52	5-11-61	J	1	D	
33L1	Nels Grestgon	447	Dg	12	30	3.45	5-11-61	J	1/3	D	
33L2	R. C. Richardson	462	Dr	175	6	153	1960	S	3/4	D	Yields 20 gpm, dd 2 ft. Topsoil, 0-3; brown hardpan, 3-168; water-bearing blue sand and gravel, 168-175 ft. Cp.
33N1	W. Worley	421	Dg	28	62-36	17.12	5-11-61	J	1/3	D	Well goes dry during summer.
33N2	V. Venn	422	Dr	128	6	110.75	5-11-61	S	3/4	D	Yields 10 gpm.
33P1	L. Cartwright	460	Dg	19	36	12.70	5-11-61	J	1/2	D	Well goes dry during summer.

33P2	Unknown	460	Dr	172	6	161	1960	N	--	NU	
33P3	K. Beireis	455	Dr	165	6	148.68	5-11-61	T	3/4	D,S	Noticeable iron content.
34A1	E. Markwel	452	Dr	163	6	--	--	J	1	D	
34B1	White Eagle	446	Dr	253	6	228	1963	N	--	D	L.
34H1	O. Sam	460	Dg	20	72	10.61	6- 5-61	N	--	D	
35B1	W. P. Vout	500	Dr	141	6	103	1960	S	1/2	D,S	
35C1	A. Ray	475	Dr	130	6	96.42	5-19-61	J	1	D,S	Yields 6 gpm.
35D1	J. J. Rice	450	Dg	60	36	5.89	5-19-61	N	--	NU	Goes dry late in summer.
35D2	. . do . .	450	Dr	90	6	--	--	C	1½	D,S	
35G1	J. Jones	470	Dr	97	6	53.36	5-19-61	J	1	D,S	Yields 20 gpm.
35H1	J. Van Trojen, Sr.	465	Dr	46	6	22.35	5-19-61	J	3/4	D,S	
35J1	R. Cooper	470	Dr	97	8	16.92	6- 5-61	S	1/2	D,S	
35J2	Ray Cooper	470	Dg	25	60-18	13	1961	P	1/4	Irr	
35L1	C. H. Jones	460	Dg	37	43	28.14	6- 2-61	J	1/2	D,S	
35M1	C. L. Martin	460	Dg	43	3	20.48	6- 2-61	J	1/3	D	Supplies 3 families.
35M2	Chester Edwards	460	Dg	22	36	8.66	6- 5-61	J	1/3	D	
35Q1	J. J. Noonan	500	Dg	60	36	50.72	5-19-61	C	1/3	D	
35Q2	C. H. Cooper	487	Dg	67	60	42.63	6- 2-61	J	1/3	C,D	Supplies a store and 3 families.
35Q3	D. H. Schmiedt	475	Dg	35	72-36	26.34	6- 5-61	P	1/2	D,S	
36G1	Ralph Sleeman	525	Dg	78	--	8.23	1- 9-62	S	1/2	D	Cp.
36H1	L. R. Schnieder	525	Dr	225	6	208	--	--	--	D	Pumped 50 gpm continuously, slight dd. L.
36K1	Gene Jones	523	Dr	100	6	19	1962	S	--	D,S	
36L1	Chester Baker	506	Dg	54	72	30	--	J	1/3	D	Cp.
36N1	Dave Cedargreen	528	Dg	64	48	45.57	7-30-62	S	3/4	D,S	Supplies 1 family and 55 head of cattle.
36N2	Elmer Peterson	500	Dg	43	60	30.66	7-30-62	J	1/2	D,S	Noticeable iron content.
36P1	R. M. Brandt	529	Dg	65	36	38.19	7-30-62	J	1/2	D	
36P2	C. A. Reynolds	525	Dr	60	6	26.69	7-30-62	S	1/2	D	Yields 12 gpm, dd 12 ft. L.
	T. 21 N., R. 6 E.										
3E1	H. Nickel	500	Dr	51	6	12	1962	J	3/4	D	Noticeable iron content.
3E2	John Sellend	495	Dn	16	4	--	--	P	1/4	D	. . . . . Do . . . . . .
3E3	E. D. Morris	505	Dr	50	6	30.34	8-16-62	J	1	D	Cp.
3P1	S. D. Stusser	505	Dr	53	6	16.63	8-16-62	J	3/4	D	
4B1	J. M. Blessing	500	Dr	50	6	32.61	8-16-62	J	1/2	D	Noticeable iron content.
4B2	Carl Halgren	500	Dr	50	6	33.87	8-15-62	J	1	D	. . . . . Do . . . . . .
4B3	N. A. Ladderud	500	Dr	54	6	27.47	8-16-62	J	1/2	D	. . . . . Do . . . . . .
4C1	Jim Horan	495	Dr	67	6	35.47	8-15-62	S	1	D	Noticeable iron content.
4F1	W. Tulip	515	Dr	47	7	31.43	8-15-62	J	3/4	D	
4G1	J. H. Sassetti	498	Dr	48	6	19	1962	J	1/2	D	Supplies 3 families.
4R1	Jack Lochow	500	Dg	27	--	15.17	8-14-62	J	1/3	D	Noticeable iron content.
6C1	Norman Anderson	457	Dr	72	6	48.92	1-12-62	J	--	Irr	Yields 12 gpm. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse-power		
	T. 21 N., R. 6 E - Contd.										
6C2	Phillip Nelson	456	Dr	90	6	58.67	1-14-63	J	--	D	Cp.
6F1	Edward Hall	456	Dr	90	6	60	1962	J	3/4	D	Supplies 2 families. Cp.
6K1	Robert Blume	468	Dg	15	48	4.43	1-14-62	J	1/2	D	
6P1	Bernice Stark	530	Dg	30	48	15	--	C	1/2	D,S	Cp.
6Q1	G. A. Rogers	547	Dr	170	8	95	--	S	2	D,S	Cp.
7D1	Richard Buchwitz	400	Dr	40	6	21	--	J	--	D	Cp.
7H1	F. B. Tilley	525	Dr	58	6	38	1963	J	1	D	Perforated 50-58 ft. Cp.
7J1	Robert Smith	525	Dr	36	6	21	1963	J	3/4	D	Noticeable sulfur odor. Cp.
7N1	E. C. Bolton	375	Dn	18	1½	--	--	J	1/2	D	Cp.
7N2	Erickson Water Cooperative	430	Dr	83	8	68	1961	S	3	PS	Pumped 30 gpm for 4 hr, dd 5 ft. Supplies 14 families. Cp, L.
8E1	Weiss-Mattson	530	Dr	65	6	8	1963	J	1/2	D	Noticeable iron content. Cp.
9A1	D. Greenwood	500	Dr	27	6	14.69	8-14-62	P	1/4	D	. . . . . . Do . . . .
9A2	C. M. Farley	525	Dr	39	6	28.02	8-16-62	J	1/3	D	
9H1	Peter Olson	515	Dr	48	6	25	1962	J	1/2	D,S	Noticeable iron content.
10E1	Gordon Schimmel	500	Dr	45	6	26	1962	J	1	D	. . . . . . Do . . . . .
10E2	M. Polson	510	Dr	42	6	30.67	8-14-62	J	1/3	D	Noticeable iron content.
10E3	Ben Mayer	510	Dr	42	6	27.43	8-14-62	J	1/2	D	
10F1	R. B. Eaton	500	Dn	22	2	20	1962	P	3/4	D	Noticeable iron content.
10J1	Unknown	573	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 46 ft.
10K1	. . do . .	556	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 75 ft.
10K2	. . do . .	520	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 94 ft.
11M1	. . do . .	598	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 30 ft.
18K1	Robert Martin	380	Dr	24	8	7.43	1-10-62	C	5	D,S	Yields 198 gpm, 11 ft dd. Topsoil, 0-2½; gravel, 2½-24 ft; perforated 12-23 ft.

19Q1	F. B. Metzler	165	Dr	37	6	6.01	8-10-62	T	5	Irr	Pumped 40 gpm for 4 hr, dd 7 ft. Topsoil, 0-2; clay, sand and gravel, 2-32; water-bearing sand and gravel, 32-37 ft.
19R1	Arnold Jensen	165	Dr	60	6	7.98	8-10-62	J	1	D,S	Noticeable iron content.
20A1	Basil Blondell	465	Dr	103	6	15	1953	--	--	D,S	
20E1	Leroy Branham	472	Dr	80	6	74	1963	J	1	D	
20F1	Morton Mann	465	Dr	94	6	80	1946	P	1/2	D,S	Pumped 17 gpm for 7 hr, slight dd. Gravel and sand, 0-22; hardpan, 22-70; gravel, 70-94 ft.
22A1	F. A. Green	555	Dg	65	48	13.99	8-16-62	P	1/4	D	
22R1	Bert Gibbons	585	Dr	102	7	73.97	8- 9-62	J	1/2	D	
22R2	Allan Thompson	655	Dr	60	6	50.28	8- 9-62	J	1	D,S	
23B1	Unknown	591	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 278 ft.
23C1	. . do . .	680	Dr	--	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 412 ft.
23R1	Evan Johnson	675	Dr	50	6	20.53	8-16-62	J	1	D,S	
23R2	Mike Hannon	670	Dr	54	6	25.36	8-16-62	H	1/3	D,S	Driller reportedly struck "rock" 52-54 ft.
27E1	A. E. Gust	225	Dr	61	6	26.84	8-10-62	J	1/2	S	Noticeable iron content.
27R1	William Lenhart	275	Dr	1,461	8	Flowing	1963	N	--	Ex	Test hole for petroleum. Flows brine and natural gas. C, Cp, L.
28E1	A. A. Tibeau	199	Dr	39	6	17.54	8- 9-62	J	1	D,S	Noticeable iron content.
29M1	N. R. Lee	530	Dr	100	6	8	--	P	1/4	D	
29N1	Oscar Leonard	542	Dg	65	84	39.47	8- 7-62	J	1	D,S	
29N2	Rosemary Spillar	565	Dr	98	6	54	--	J	1	D	Cp.
29P1	Darrell Blake	527	Dg	70	30	3.23	8- 6-62	J	1	D,S	Noticeable iron content.
30D1	Davidson-Young	140	Dr	30	8	8.54	8-10-62	C	7½	Irr	Yields 120 gpm, dd 2½ ft. Sandy loam, 0-3; medium to coarse gravel, 3-30 ft.
31F1	R. L. Doyle	525	Dg	30	72	18.84	8- 1-62	J	1/2	D	
31F2	C. E. Zink	527	Dr	92	6	87.89	8- 1-62	J	1/2	D	Yields 14 gpm. L.
31G1	Frank Thun	510	Dr	80	6	56	--	J	1/2	D	Yields 7 gpm. Topsoil, 0-3; cemented gravel, 3-62; unreported, 62-80 ft. Water enters well from a small fracture at 62 ft. Casing: 6-inch 0-62 ft, open hole, 62-80 ft.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 21 N., R. 6 E - Contd.										
31P1	Louis Alcorn	553	Dg	76	48	69.81	7-31-62	P	--	D,S	
31P2	W. E. Noah	550	Dg	87	48	74.46	7-31-62	S	--	D,S	
31Q1	E. A. Berg	530	Dg	14	60	7.53	8- 1-62	J	1/2	D	
31R1	G. F. Anderson	552	Dr	72	6	17.49	8- 1-62	J	1/2	D,S	
31R2	T. A. Garrett	559	Dr	65	6	18.07	8- 1-62	J	1/2	D,S	
31R3	R. S. Schmitke	550	Dr	126	6	109.77	8- 1-62	S	1	D,S	Yields 15 gpm. L.
32M1	Ray Bolle	540	Dg	24	30	18.93	8- 7-62	J	3/4	D,S	
32R1	Howard Collins	585	Dr	50	6	30.12	8- 8-62	J	1	D,S	
33A1	Agnes Suhoversnick	560	Dr	238	6	220	--	P	5	D,S	
33B1	John Suhoversnick	555	Dr	80	6	--	--	J	1	D,S	
33M1	W. A. Payne	604	Dr	127	8	97.82	8- 8-62	S	1/2	D,S	Yields 20 gpm. L.
34A1	Unknown	565	Dr	--	--	--	--	--	--	--	Test hole for coal. Depth to bedrock, 310 ft.
34F1	Albert Versheave	596	Dr	50	6	43.23	8- 8-62	J	1/2	D,S	
34K1	Unknown	605	Dr	--	--	--	--	--	--	--	Test hole for coal. Depth to bedrock, 1,010 ft.
34M1	Fred Silvestri	570	Dr	227	6	190	1962	S	1	D	Yields 16 gpm, dd 5 ft. L.
35Q1	Bertha Wigton	702	Dr	52	6	36.17	8- 9-62	J	--	D,S	Yields 20 gpm. Noticeable iron content.
36N1	Rudolph Kuhar	715	Dr	200	6	Flowing	--	--	--	--	Flows less than 1 gpm.
	T. 21 N., R. 7 E.										
4P1	Joe Markus	825	Dr	115	6	55	1949	P	1/2	D	Supplies 4 families and 5,000 turkeys.
28C1	Mike Raikovich	850	Dr	85	8	--	--	S	--	D	Open hole in bedrock, 10-85 ft. Casing: 8-inch, 0-10 ft.
28M1	J. D. Pike	885	Dr	103	6	81.03	8-21-60	J	1	D	Yields 12 gpm, dd 6 ft. L.
32N1	Frank Basteyns	757	Dg	22	6	--	--	C	1/2	D	
33A1	Unknown	895	Dg	8	36	4.22	8-21-62	P	1/3	D	

34F1	Marvin Tracy	1,222	Dr	106	6	98.65	8-20-62	S	--	D	Cp
	T. 22 N., R. 4 E.										
1A1	Lambath Sill & Co.	20	Dr	260	30	+66	1961	--	--	NU	Flows 55 gpm. Casing: 3-inch, 0-255 ft; screen, 255-260 ft.
1H1	Kent Farm Dairy	22	Dr	209	6	+69	4-20-61	S	10	Ind	Flows 19 gpm; pumps 40 gpm.
2D1	F. Gunter	40	Dr	123	8	Flowing	1960	S	1	S	Flows 5 gpm; pumps 60 gpm, dd 30 ft. L.
2H1	The Boeing Company, boring 6	21	Dr	80	--	8.0	11-19-63	--	--	Ex	Topsoil 2 ft, fine brown and gray sand, 2-80 ft.
2P1	The Boeing Company, boring 4	21	Dr	72	--	11.0	11-15-63	--	--	Ex	L.
2P2	The Boeing Company, boring 5	22	Dr	100	--	5.0	11-15-63	--	--	Ex	L.
2R1	The Boeing Company, boring 1	21	Dr	158	--	1.0	11-18-63	--	--	Ex	L.
3G1	State Highway Dept.	250	Dr	128	6	--	--	--	--	Ex	Test hole for bridge piling. L.
3L1	King County Water Dist. 53, well 1	410	Dr	270	8	90	1955	T	10	PS	Yields 90 gpm.
3M1	S. A. Tombs	397	Dg	73	24	64.34	9- 5-62	J	2	D	Yields 20 gpm.
3N1	Andy Matelich	365	Dg	25	30	14.30	9- 5-62	N	--	NU	
4B1	Highline Public School Dist. 401	395	Dr	190	8-6	143	1945	T	3	Irr	Pumped 20 gpm for 4 hr, dd 37 ft. L.
4B2	A. H. Heidenreich	378	Dr	90	5½	50	--	J	1	D,S	Noticeable iron content.
4C1	King County Water Dist. 75, well 3	315	Dr	314	16-8	44	1955	--	--	De	Pumped 290 gpm for 22 hr, dd 29 ft. Destroyed for extension of Sea-Tac Airport runway. L.
4D1	Mrs. R. Mazo	265	Dr	78	4	5.67	9-24-62	C	1	D	Well flows occasionally.
4J1	Harry Johnson	390	Dg	35	48	16.44	9- 5-62	N	--	NU	Formerly supplied 5 families.
4L1	King County Water Dist. 75, well 1	248	Dr	593	18-12-8	0	1952	--	--	De	Yields 420 gpm, dd 41 ft. Destroyed for extension of Sea-Tac Airport runway. C, L.
4L2	King County Water Dist. 75, well 2	248	Dr	133	16	0	1954	--	--	De	Pumped 1,085 gpm for 5½ hr, dd 92 ft. Destroyed for extension of Sea-Tac Airport runway. L.
4N1	King County Water Dist. 75, well 7	248	Dr	270	12	73	1958	T	75	PS	Yields 500 gpm, dd 47 ft. Cp, L.
4Q1	King County Water Dist. 75, well 4	295	Dr	202	20	54	1956	T	--	PS	Pumped 1,050 gpm for 6 hr, dd 49 ft. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 4 E - Contd.										
4Q2	Dick Price	347	Dr	60	6	--	--	P	1	D	
5A1	King County Water Dist. 75, well 15	270	Dr	260	--	--	--	--	--	Ex	Test hole for water. Dry hole. L.
5A2	G. S. Childes	270	Dr	65	6	14.38	9- 4-62	J	3/4	D	
5B1	E. E. Hendrix	280	Dr	45	6	4	1960	J	1	D,Irr	Noticeable iron content.
5H1	E. S. Stuessi	320	Bd	81	24	44.09	9-24-62	P	--	Irr	
5K1	B. C. Carlson	335	Dg	120	36	84	1957	J	1½	D	Noticeable iron content. Cp.
6A1	Highline Public School Dist. 401	270	Dr	144	6-4	39	1962	J	--	Inst	Pumped 50 gpm for 4 hr, dd 11 ft. Cp, L.
8A1	King County Water Dist. 75, well 9	200	Dr	395	12	69	1959	T	300	PS	Pumped 1,275 gpm for 36 hr, dd 140 ft. C, L.
8J1	King County Water Dist. 75, well 11	148	Dr	600	12	31	1960	T	100	PS	Pumped 402 gpm for 68 hr, dd 199 ft. L.
8K1	King County Water Dist. 54, well 1	155	Dr	167	8	40	1945	T	10	NU	Yields 140 gpm, dd 75 ft.
8K2	King County Water Dist. 54, well 2	150	Dr	195	10	38	1946	T	30	PS	Pumped 300 for 4 hr, dd 40 ft. L.
8K3	Wesley Gardens, well 1	125	Dg,Dr	163	6	29	1953	T	2	NU	Yields 75 gpm. Dug to 48 ft, drilled 48-163 ft. L.
8K4	. . . do . . ., well 2	135	Dr	106	10	22.93	9-26-62	T	5	D,Irr	Yields 250 gpm. Noticeable sulfur odor. L.
8K5	King County Water Dist. 54, well 3	155	Dr	245	12	48	1961	T	--	PS	Yields 210 gpm, dd 15 ft. Cp, L.
9A1	N. T. Hulbert	334	Dg	14	36	5.88	9- 4-62	P	1/3	Irr	
9A2	King County Water Dist. 75, well 10	345	Dr	253	16-10	114	1960	T	125	PS	Pumped 614 gpm for 6 hr, dd 99 ft. C, L.
9B1	Andy Matelich	358	Dr	90	6	61.11	9- 5-62	N	--	NU	
9F1	C. C. Ivey	353	Dr	118+	6	95.90	9-25-62	S	1/2	D	Noticeable iron content. Formerly supplied 5 families.
9G1	Andy Matelich	363	Dg	59	18	47.85	9- 5-62	J	1/2	D	
9J1	Bob Snow	440	Dg	21	48	11.85	9- 4-62	N	--	NU	

9J2	Albert Madland	460	Dg	35	48-36	10.62	9-4-62	P	1/3	Irr	
9P1	King County Water Dist. 75, well 12	285	Dr	318	12-8	127	1961	T	150	PS	Pumped 1,001 gpm for 120 hr, dd 103 ft. Originally drilled to 302 ft and tapped a water-bearing zone (273-301 ft) which produced a yield of 570 gpm with 111 ft of drawdown. C, L.
10E1	Teka Palmer	450	Dr	255	8-4	--	--	N	--	De	Formerly supplied 37 families.
10P1	Kenneth Logan	125	Dr	247	6	80	10-10-50	--	--	De	Pumped 25 gpm for 4 hr, dd 20 ft. L.
10Q1	--Shumate	73	Dr	56	6	36.97	8-24-62	J	3/4	D	
11B1	The Boeing Company, boring 2	21	Dr	101	--	3.0	11-12-63	--	--	Ex	L.
11C1	The Boeing Company, boring 3	26	Dr	101	--	7.0	11-13-63	--	--	Ex	L.
12E1	James Onchi	27	Dr	200	6	5.53	7-16-62	C	9	Irr	Cp.
12H1	George Komoto	30	Dr	321	6-4	+91	1961	--	--	D	Flows 75 gpm. Noticeable sulfur odor. Cp, L.
12Q1	Pohl's Mink Ranch	30	Dr	380	4	4.31	7-17-62	J	3/4	D,S	Water-bearing zones reported at 65, 85, and 380 ft. Noticeable iron and natural gas content.
12Q2	. . . . do	30	Dn	65	2	1.00	7-17-62	N	--	S	
13B1	F. M. Johnson	33	Dn	68	1¼	--	--	J,P	1/3,½	D	Noticeable iron and natural gas content.
13C1	R. W. Bigelow	32	Dn	87	2	--	--	C	1/2	D,S	Noticeable iron content. Supplies 1 family and 55 head of cattle. Cp.
13D1	George Horath	32	Dn	68	2	--	--	P	3/4	S	Noticeable iron and natural gas content. Casing perforated and screened 64-68 ft.
13F1	Mario Bevilacqua	34	Dn	60	3	--	--	P	1/4	D,S	Noticeable iron and natural gas content.
13H1	John Reano	34	Dr	135	6	--	--	C	--	D	
15B1	Clarence O'Neal	85	Dg	37	--	32.35	8-24-62	J	--	D	
15E1	W. J. Davidson	401	Dg	24	30	19.58	8-24-62	C	1	Irr	
15G1	H. L. Nickerson	40	Dg	6	65	3.26	8-24-62	P	1/4	D	Cp.
15M1	L. Shaw	320	Dr	68	6	54.64	8-24-62	J	--	D	
16B1	M. Schuehle	351	Dr	152	6	49	1941	J	1	D	
16G1	R. Bartlett	337	Dr	101	6	20	1942	P	2½	D	Formerly supplied 7 families. Cp.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 4 E - Contd.										
16L1	G. Erickson	195	Dr	93	6	--	--	--	--	D	Yields 5 gpm. L.
16N1	King County Water Dist. 75, well 5	146	Dr	146	12	+5	1957	T	--	PS	Pumped 725 gpm for 30 hr, dd 96 ft. Flows 75 gpm. L.
16R1	Frank Roland	400	Dr	275	6	131.45	9- 4-62	N	--	NU	
17E1	--Scheper	47	Dr	385	8	1	1962	T	--	D	
17G1	C. Wyckoff	102	Dr	200+	6	38.92	9-20-62	J	2½	PS	Supplies 7 families.
17K1	A. A. Hoffman	88	Dr	115	6	32	1958	J	1	D	Noticeable iron content.
17L1	D. R. Fisher	100	Dr	630	6	20	--	T	5	NU	Perforated at 90, 300, and 600 ft. Cp.
17L2	O. D. Fisher	34	Dr	242	12	Flowing	1962	T	7½	D,Irr	Yields 60 gpm. Noticeable sulfur odor. Cp.
17L3	R. R. Kluth	45	Dr	360	8	7	1961	N	--	NU	Cp, L.
17Q1	Zenith Masonic Home, well 2	148	Dr	240	8-6	65	1952	T	15	Inst	Yields 139 gpm, dd 33 ft. Cp, C.
17Q2	. . . . . do . . . . . , well 4	150	Dr	95	8	81	1953	N	--	NU	Yields 30 gpm.
17Q3	. . . . . do . . . . . , well 3	160	Dr	99	8	87	1953	N	--	--	. . . Do . . .
17Q4	. . . . . do . . . . . , well 1	162	Dr	1,001	8-12-10-8-6	134.54	3-15-63	T	15	Inst	Pumped 425 gpm for 7 hr, dd 70 ft. C, Cp, L.
20B1	J. H. Stowe	123	Dg	100+	48	84.50	9-14-62	N	--	NU	
20C1	Mrs. F. Phillips	127	Bd	86	4	--	--	P	1½	NU	Formerly supplied 3 families.
20L1	H. O. Nelson	176	Bd	164	4	--	--	P	2	Irr	
20Q1	Saltwater State Park	75	Dr	165	8	--	--	N	--	De	L.
21B1	E. C. Shuck	312	Dr	65	6	24.75	9-17-62	J	3/4	D	Noticeable iron content. Cp.
21B2	M. Johnson	318	Dr	210	4	--	--	P	1/2	D,S	Yields 12 gpm.
21C1	H. M. Stoner	225	Dg	36	48	8.72	9-17-62	N	--	D	
21G1	--Maynard	296	Dr	65	6	9.51	9-17-62	N	--	NU	
21N1	M. Sasta	226	Dg	125	41	2.45	1-20-61	H	--	D	Cp.
22Q1	Henry Riefschnider	240	Dr	246	6	166	1952	T	5	Irr	Pumped 30 gpm for 5 hr, dd 59 ft. Noticeable iron content. Cp, L.
22Q2	C. E. Kraft	247	Dr	180	6	--	--	J	1	D,S	

22R1	N. Pierce	190	Dr	110	6	95	1-18-61	J	1½	D	
23Q1	E. Standard	25	Dn	100	1½	6	1961	P	3/4	D	
24C1	H. C. Minute Maid Co.	32	Dr	650	--	--	--	--	--	De	Had small yield and had trouble with fine sand and natural gas.
24G1	Stokely Van Kamp	35	Dr	428	10-6	Flowing	1963	T	15	Ind	Yields 175 gpm, dd 38 ft. Noticeable iron content. Cp, L.
25M1	G. Lopriore	34	Dr	86	6	5.73	4-11-61	T	7½	Irr	Yields 60 gpm. Noticeable iron content. Cp, L.
25Q1	H. Heath	28	Dr	67	6	--	--	J	1	Irr	Noticeable iron content.
26B1	Thousand and One Club	25	Dr	185	6	0	1961	P	3/4	D	Yields 10 gpm. Supplies 2 families.
27A1	C. Flowers	125	Dr	42	50-8	16.78	1-18-61	C	1/4	D	Noticeable iron content.
27A2	Lyle Sandelius	175	Dr	153	6	121.15	1-18-61	S	1/2	D,Irr	Yields 10 gpm.
27A3	C. Dolman	205	Dg	54	36	52.19	1-18-61	J	1/2	D	Well goes dry late in summer.
27D1	J. Moore	378	Dg	40	3	10.86	1-18-61	P	3/4	Irr	
27E1	E. Brannan	300	Dg	32	--	--	--	J	1/2	D	Supplies 3 families.
27G1	J. F. Dehnert	295	Dr	129	6	119	1-18-61	J	1	Irr	
27N1	Star Lake Water Coop, well 1	375	Dr	142	10	60	8-14-47	T	3	NU	Pumped 30 gpm for 4 hr, dd 79 ft. L.
27N2	. . . . . . do . . . . . , well 2	375	Dr	345	10-8	235	1950	T	--	De	Pumped 200 gpm for 4 hr, dd 35 ft. L.
27N3	. . . . . . do . . . . . , well 3	375	Dr	366	10	229	1960	T	30	PS	Yields 402 gpm, dd 49.5 ft. Cp, L.
27R1	L. A. Paul	175	Dr	45+	6	44.03	1- 4-61	J	3/4	D	
28D1	G. Molitar	237	Dg	27	48	3.17	1-20-61	J	1/2	Irr	
28E1	Leon Jacobs	280	Dr	265	8-6	56.89	1-20-61	J	1/2	NU	
28F1	W. W. Sides	260	Dr	80	8	21.71	1-20-61	C	1/2	D	Yields 5 gpm. Noticeable iron content. Water-bearing gravel 70-80 ft.
28G1	Mrs. Rost	280	Dg	27	42	8.69	1-20-61	N	--	NU	
28G2	W. Beattie	270	Dg	50	36	3.40	1-20-61	J	1/2	Irr	
28G3	King County Water Dist. 75, well 8	260	Dr	242	12	39.25	10-26-62	N	--	NU	Pumped 510 gpm for 24 hr, dd 86.1 ft. Noticeable iron content. L.
28H1	H. L. Walker	280	Dg	52	36	51	1961	J	1/3	D,S	
28L1	D. V. Brown	275	Dr	96	8	35	--	J	1	D	
28L2	L. J. Brown	275	Dr	250	6	49.16	1-20-61	J	1	D	
28L3	F. Howard	265	Dg	11	36	3.79	1-23-61	C	1/2	NU	Noticeable iron content.
28L4	H. Quhn	265	Dg	14	36	7.14	1-23-61	P	1/4	D	. . . . . . Do . . . . .
28M1	C. V. Varo	280	Dg	58	54-36	53.35	1-26-60	J	1/2	D	Supplies 2 families.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horse-power	Use	Remarks
	T. 22 N., R. 4 E - Contd.										
28N1	Lynn Hubbard	300	Dr	120	6	16.79	1-23-61	J	3/4	D	Blue hardpan, 0-70; hardpan with layers of gravel, 70-99; blue clay, 99-120 ft. Casing 6-inch, 0-120 ft; perforated 70-90 ft.
28P1	King County Water Dist. 75, well 14	272	Dr	342	12	15.0	5-24-61	T	125	PS	Pumped 875 gpm for 120 hr, dd 110 ft. C, L.
28R1	J. R. Diorio	410	Dg	26	72	0.99	1-18-61	N	--	NU	
29A1	L. B. Larson	225	Dg	96	36	Dry	1-20-61	J	1	NU	
29J1	S. Halmo	250	Dg	45	36	31.72	1-26-61	P	1/2	NU	
32R1	Methodist Church Camp Grounds	280	Dr	226	12	193.43	1-26-61	S	3	NU	
33A1	R. Carlson	390	Dr	193	6	--	--	P	1½	D	
33C1	J. E. Osborn	270	Dg	14	24	4.98	1-23-61	J	1/2	D	
33C2	. . . do . . .	270	Dg	40	36	21.13	1-23-61	J	1/2	D	
33C3	A. G. Stokes	275	Dg	34	48	25	1961	C	1/2	S	
33C4	T. V. LaVanway	273	Dr	182	6	14.52	1-23-61	J	1/2	D	Noticeable iron content. Supplies 3 families. L.
33D1	Mrs. F. E. Estergrem	300	Dr	65	8	--	--	J	1/2	Irr	
33D2	. . . . . do	300	Dg	25	60	2.89	1-23-60	P	1/3	NU	
33D3	D. Pascoe	302	Dr	167	7	117	1961	J	3/4	D,C	Noticeable iron content. Supplies a house, service station, and a store.
33D4	Betty Stall	302	Dg	37	6	7.31	1-23-61	J	1/2	D,C	Supplies a house and a cafe.
33H1	C. Krohn	355	Dg	71	55	69.48	1- 3-61	N	--	NU	
33H2	. . do . .	355	Dg	25	3½	9.63	1- 3-61	P	1/4	--	
33J1	Ellenwood Water Co.	412	Dr	290	8	175	2-23-61	T	7½	PS	Yields 100 gpm, dd 85 ft. Supplies 17 families. L.
33N1	N. Hubner	440	Dr	200+	6	--	--	N	--	NU	
33P1	J. A. Nelson	473	Dg	14	72	6	1960	C	1/4	D	
33Q1	H. Dickman	460	Dg	46	72	35.26	9-23-60	P	1/2	D	
33R1	E. L. Enticknap	410	Dg	20	48	13.46	9-23-60	C	1/4	--	

33R2	E. L. Enticknap	410	Dr	200	6	173	1960	J	2	D	
34B1	J. H. Brown	320	Dr	317	4	16.09	1- 4-61	N	--	NU	
34D2	Mrs. Knoll	380	Dg	29	60	7.97	1- 4-61	C	1/4	D	Well goes dry late in summer.
34E1	O. C. Hanemann	350	Dr	137	6	97	1960	J	3	Irr	Noticeable iron content and sulfur odor.
34F1	L. H. McCulan	335	Dr	80	6	52	1960	P	1½	NU	Yields 13 gpm.
34F2	E. L. Fahlgren	382	Dg	19	66	8.12	1- 3-61	P	1/4	D,S	Well goes dry late in summer. Cp.
34J1	E. Englund	325	Dg,Dr	100	6-4	85	--	J	1	D	Supplies 3 families.
34J2	F. L. Olson	330	Dg	68	36	62.5	1- 4-61	J	1	D	Cp.
34J3	F. McNary	395	Dg	137	36	123.13	1- 3-61	P	1	D,S	
34J4	O. L. Ramsey	375	Dr	110	6	94.31	12-20-60	P	1/2	D	
34K1	R. J. Schmidt	343	Dg	30	42	12.88	1- 3-61	C	1/4	Irr	
34K2	H. A. Palmer	362	Dg	54	36	22.27	1- 3-61	J	1/3	D	
34K3	V. A. Jordan	331	Dg	41	36	23.13	1- 3-61	N	--	NU	
34L1	H. Hoover	300	Dg	13	48	6.03	1- 3-61	P	1/4	D	
34L2	N. W. Pedigo	345	Dr	168	6	75	1959	S	1/2	D	Yields 15 gpm. L.
34L3	Oscar Cruse	375	Dg	19	48	8.09	1- 3-61	N	--	NU	
34M1	O. R. Lamb	395	Dg	14	48	1.74	1- 3-61	J	1/2	D	
34M2	R. Harris	405	Dr	127	6	115	1961	S	1/2	D,S	Yields 10 gpm. Cemented gravel, 0-121; water-bearing gravel and sand, 121-127 ft. Supplies 2 families.
34Q1	J. R. Tuft	435	Dg	75	--	71.08	1- 4-61	J	1	D,S	
34R1	B. Martinell	430	Dr	125	6	--	--	J	1½	D	
35A1	Smith Bros. Farm	40	Dr	110	8-6	0	2-23-61	T	25	D,S	Yields 350 gpm, slight dd. Supplies 2 farms.
35C1	King County Water Dist. 64, well 11	45	Dr	310	10	--	--	N	--	Ex	Test hole for water. Dry. L.
35F1	B. Pati	45	Dr,Dn	50	3	--	--	J	1/4	D	Noticeable iron content.
35H1	Lee Oien	40	Dr	114	3	20	1961	J	1	S	Yield 18 gpm, no drawdown.
35H2	Washington Natural Gas. Co., anode well	40	Dr	430	8	0	1963		--	Ind	L.
35L1	King County Water Dist. 64, well 9	60	Dr	458	8	+10	1963	--	--	Ex	Flows 10 gpm, yields 60 gpm, dd 100 ft. Test hole for water. Casing has not been pulled. L.
35R1	Logandale Water Assoc., Inc.	53	Dr	182	8	4	1958	S	3	PS	Yields 80 gpm, dd 12 ft. L.
35R2	L. D. Casper	53	Dn	125	3	--	--	C	1/2	D	
36B1	F. S. Nelson	38	Dr	127	4	6	1961	C	1	Irr	Noticeable iron content.
36B2	J. E. Morrison	37	Dn	105	2	4.16	4-11-61	N	--	NU	. . . . . Do . . . . . .
36P1	Unknown	47	Dr	88	4	+1.06	4-11-61	N	--	NU	
36P2	. . do . .	47	Dr	88	4	0.13	4-11-61	N	--	NU	
36Q1	Walt Hurbert	47	Dn	60	2	--	--	C	1/2	S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 5 E.										
1A1	E. C. Johnson	525	Dr	117	6	25.93	5- 1-62	J	3/4	D	Cp.
1A2	W. Macauley	550	Dr	62	6	26.05	5- 1-62	J	3/4	D	Cp.
1B1	M. C. Wagner	523	Dg	33	48	20.50	5- 1-62	J	1/3	D	
1B2	Edna Eley	525	Dg	45	36	10.75	5- 2-62	J	1/2	D	
3A1	U.S. Army, Lake Youngs Control, well 1	627	Dr	525	8-6	--	--	--	--	Ex	Yields less than 1 gpm, 68-78 ft; 1 gpm, 253-258 ft. Depth to bedrock, 78 ft. Test hole for water. L.
3B1	U.S. Army, Lake Youngs Control, well 2	550	Dr	167	6	146	1955	S	--	NU	Pumped 17 gpm for 24 hr, dd 1 ft. L.
3B2	J. F. Feaster	555	Dr	151	6	131.59	5-17-62	S	1½	PS	Pumped 17 gpm for 24 hr, slight dd. Supplies 9 families.
3B3	William Lamb	545	Dr	156	6	28	1962	S	--	D	Supplies 2 families.
3C1	E. O. Hoover	510	Dr	135	6	84.88	1-27-61	J	1	D	
3C2	I. Meyst	499	Dr	126	6	103.31	6-18-62	J	--	D	Yields 10 gpm. Supplies 2 families. L.
3H1	D. La Plant	576	Dr	164	6	145.94	5-21-62	J	--	D	Yields 9 gpm. Sand and clay with some gravel, 0-150; hardpan, 150-157; water-bearing gravel and sand, 157-164 ft. Casing: 6-inch, 0-158; open hole, 158-164 ft.
3H2	Dan Bean	530	Dr	102	6	90.96	5-21-62	J	--	D	Supplies 2 families.
3H3	F. C. Cragg	510	Dr	70	6	50.95	6-29-62	J	1/4	D	
3J1	Don Richards	476	Dr	72	6	42.73	12-31-62	J	1	D	Cp.
3Q1	A. G. Fowler	425	Dr	70	6	14.29	5-21-62	S	--	PS	Pumped 75 gpm for 36 hr, dd 10 ft. Noticeable iron content.
4A1	John Torlai	382	Dr	117	6	7.10	6-18-62	J	--	D,S	

4K1	M. Whalen	385	Dr	39	6	7.05	6-18-62	J	--	D,S	
5E1	Mrs. M. S. Wheaton	422	Dr	198	6	185	1951	J	3	D,S	Yields 7 gpm. L.
5L1	Panther Lake Water Inc.	460	Dr	246	6	33.81	7-23-62	J	3	PS	
5L2	Wilson Road Community Well	423	Dr	247	6	--	--	T	5	NU	Formerly supplied 6 families. L.
5M1	Clyde Hess	407	Dr	116	6	107.06	7-20-62	J	1	D	
5M2	T. J. McCann	380	Dr	200	6	--	--	P	3/4	NU	
5N1	Winston Water System	410	Dr	215	6	151.48	7-20-62	S	5	PS	
5P1	Earl Ell	452	Dg	35	6	12.67	7-20-62	P	1/2	D,S	
5Q1	George Anderson	435	Dr	206	6	187	1948	P	--	D	Yields 35 gpm, dd 3 ft. Cp, L.
5R1	R. W. Watson	453	Dg	32	48	12.66	7-24-62	J	1/2	Irr	
6C1	Edward Upper	98	Dr	30	6	3	1961	J	1/2	D,S	Yields 10 gpm. Topsoil, 0-2; clay and rocks, 2-28; pea gravel, 28-30 ft. Supplies 2 families and 30 head of stock.
6D1	F. Liesinger, (estate), well 1	20	Dr	196	2	+35	1961	--	--	D,S	Flows 15 gpm.
6D2	. . . . . Do . . . . . , well 2	20	Dr	220	6	+35	1961	N	--	D,S	Flows 30 gpm. The combined yield of 6D2 and 6D1 supplies 8 families and a dairy farm.
6E1	A. Carlson	23	Dr	185	4	Flowing	1960	C	1/3	D	Flows 25 gpm.
6E2	Robert Bridges	20	Dr	200	6	+43	1961	N	--	D	Flows 90 gpm. Casing: 6-inch, 0-198 ft. Open hole in gravel, 198-200 ft.
6G1	Canyon Home Builders	170	Dr	200	6	61.34	7-23-63	J	5	D	Pumping during water-level measurement. Supplies 3 families.
6H1	R. J. Wixon	275	Dg	28	35	21.72	7-23-62	P	1/4	D	Supplies 3 families.
6J1	G. E. Wimer	304	Dg	26	36	21.05	7-23-62	J	1/3	Irr	
6K1	Wynn Hess	162	Dr	100+	6	95.19	7-23-62	S	1/4	D	
6K2	Mary Anderson	172	Dr	100+	6	85.41	7-23-62	J	1	D	Supplies 3 families.
6K3	Willard DeWitt	183	Dr	161	5	131.30	7-23-62	S	3/4	D	Yields 12 gpm. L.
6L1	J. A. Minshull	23	Dr	200	2	+43	1961	N	--	NU	Well will be destroyed for road.
6L2	. . . do . . .	82	Dr	178	6	Flowing	1962	S	1½	D,S	Noticeable sulfur odor. Cp, L.
6M1	Henry Brewer	23	Dr	300	4	+71	1961	--	--	D,S	. . . . . Do . . . . . . Supplies 3 families.
6N1	J. W. Wilson	29	Dr	210	6	+91	1960	N	--	D	Flows 1,730 gpm. Noticeable sulfur odor. Supplies 6 families. C, L.
6N2	L. W. Wilson	29	Dn	155	3	+88	1950	N	--	D	Flows 55 gpm. Noticeable sulfur odor. Supplies 3 families.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 22 N., R. 5 E - Contd.										
6N3	Martin Nowotny	27	Dr	210	3	+72	1961	N	--	D,S	Supplies 2 families. Cp.
6N4	Fiore Sainati	28	Dr	187	3	+97	1934	N	--	D,S	Flows 150 gpm. Noticeable sulfur odor. Supplies 2 families, and 8,000 chickens. L.
6P1	Clifford Johnson	25	Dr	148	2½	+70	1961	N	--	D,S	Noticeable sulfur odor. Supplies 3 families.
6P2	Glen Warehime	23	Dr	132	2	+85	1961	N	--	D	
6P3	J. M. Engle	125	Dr	150	6	50	1961	S	3/4	D	Noticeable iron content.
6P4	G. E. Taylor	80	Dr	210	4	+55	1961	N	--	D	Noticeable sulfur odor. Supplies 5 families.
6Q1	Loren McComb	314	Dg	45	60	44.58	7-24-62	P	1/2	Irr	Noticeable iron content.
6Q2	N. H. Bunkowski	304	Dr	90	8	--	--	T	2	D,Irr	
6R1	L. A. Westendorf	351	Dr	131	6	108.81	7- 6-62	J	--	D	
6R2	Edgar Proso	330	Dg	40+	36	37.79	7-24-62	J	1/2	D,S	
7A1	Wally Savage	325	Dr	114	7	78	1960	J	1½	D	
7A2	R. Bjorkland	352	Dr	142	6	106.20	7- 5-62	S	5	NU	Pumped 45 gpm for 4 hr, dd 12 ft. Formerly served 8 families. L.
7A3	D. C. Dobson	353	Dr	126	6	100.87	7- 6-62	S	--	D	
7A4	S. A. Robinson	380	Dr	96	6	82.35	7- 9-62	J	--	D	Yields 18 gpm. Noticeable iron content.
7E1	N. E. Nash	30	Dr	92	2	+12	1961	C	1/2	D,S	Supplies 2 families and 85 head of stock.
7H1	R. L. McCann	330	Dr	156	--	75	--	J	1	D	Yields 20 gpm. Cp, L.
7J1	Unknown	290	Dr	56	6	20.00	7- 9-62	S	--	D	
7K1	F. W. Ferguson	55	Dr	26	6	+6	7- 6-62	--	--	D	
7K2	C. A. Griffen	175	Dr	97	6	53.66	7- 9-62	S	--	D	Yields 20 gpm, slight dd. Noticeable sulfur odor. Supplies 6 families. L.
7L1	Mrs. Fisker	50	Dr	--	--	+56	1961	N	--	D	
7L2	Kent Nursery	33	Dr	260	3½	+88	1961	N	--	Irr	Flows more than 100 gpm. Noticeable iron content.

7M1	Phil Jones	32	Dr	180	6-4	+29	1962	C	1	PS	Flows 30 gpm. Pumped 40 gpm, dd 2 ft below land surface. Noticeable iron content. Supplies 34 families. Cp, L.
7N1	D. D. Lewis	39	Dr	149	6	+43		N	--	NU	Flowed 10 gpm for 10 minutes, dd 5 ft. Casing: 6-inch, 0-149 ft. No perforations.
7P1	R. Pohl	37	Dr	130	6	+27	1962	N	--	NU	Flowed 35 gpm. Will be destroyed for road.
7P2	City of Kent, well 2	72	Dr	170	8	+38	4-14-51	N	--	NU	Flows 60 gpm. Pumped 100 gpm for 4 hr, dd 18 ft below land surface. Formerly owned by the O'Brien Water Users Assoc. L.
7P3	Willa Nordyke	37	Dr	130	6	+48	7-10-62	N	--	NU	Noticeable sulfur odor. Water-bearing coarse sand and gravel containing clam and oyster shells, 115-130 ft. Previously supplied 78 families and a dairy. Well will be destroyed for a road.
7P4	. . . do . . .	72	Dr	91	6	Flowing	7-12-62	S	1½	D	Flows 7½ gpm. Pumped 30 gpm, dd 31 ft below land surface. Noticeable sulfur odor. L.
7P5	R. Pohl	75	Dr	167	6	+10	7- 9-62	S	3/4	D	Noticeable sulfur odor. Overflow supplies small trout pond. L.
7Q1	F. M. Johnson	162	Dr	106	6	66.28	7- 6-62	N	--	NU	Yields 12 gpm. Will supply 3 families.
8B1	Panther Lake Community well	437	Dr	194	6	186.68	7- 6-62	S	--	PS	Supplies 12 families. Well was pumping during water-level measurement.
8C1	Kent School Dist 415, Panther Lake School	425	Dr	196	7	178	1963	S	3	NU	
8C2	Valley View Water Assoc.	462	Dr	220	8	--	--	T	5	PS	Supplies 32 families.
8E1	Roy Raffensberger	375	Dg	89	--	82	1960	J	1/2	D	
8F1	D. L. Kalb	437	Dr	168	6	130	1962	P	--	D,Irr	
8H1	E. J. Black	480	Dr	114	6	82.63	6-28-62	J	1/4	D,S	
8L1	Sunny Hill Water Co.	430	Dr	167	8	145	1952	T	5	PS	Pumped 40 gpm for 5 hr, dd 2 ft. L.
8L2	. . . . do	430	Dr	168	6	148	1962	--	--	PS	Yields 30 gpm.
8P1	Crystal Water Assoc.	400	Dr	205	8	174	--	T	--	PS	Yields 100 gpm, dd 10 ft. L.
9A1	E. A. Hershberger	430	Dr	156	6	53.55	6-15-62	J	--	D,S	Supplies 2 families. Cp.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 5 E - Contd.										
9A2	K. Meyers	435	Dr	120	6	68.79	6-28-62	J	--	D	Yields 20 gpm. L.
9A3	J. L. Gatsos	430	Dr	150	6	63.52	6-28-62	J	--	D	
9B1	F. D. Wilson	510	Dr	160	6	132.53	6-28-62	J	--	D	
9J1	D. E. Duncan	451	Dr	90	6	71.19	6-15-62	J	1/2	D	Well bottomed in fine sand. Noticeable iron content.
9M1	J. B. Airington	451	Dr	74	6	60.73	6-21-62	J	1/2	D,S	Water-bearing sand, 64-74 ft.
9N1	Jack Mihalcik	435	Dg	68	48	58.45	6-21-62	J	--	D,S	Cp.
10A1	Unknown	455	Dr	90	--	--	--	J	--	D,S	Sand, 0-90 ft.
10E1	James Day	348	Dr	90	8	Flowing	1961	J	1/2	D,S	Flows 4 gpm, pumped 20 gpm. Water carries silt. L.
10H1	T. G. Delano	515	Dr	105	6	91.57	6- 7-62	J	--	D,S	
10J1	Robert Vert	540	Dr	133	6	118	1962	S	--	D,S	Yields 15 gpm, slight dd. Supplies 2 families.
11N1	Wayne Parker	528	Dr	106	6	74.55	6- 7-62	J	--	D,S	Yields 24 gpm. Noticeable iron content.
12P1	J. P. Jones	575	Dr	85	6	--	--	P	--	D,S	
12R1	K. D. Friend	553	Dr	128	--	107.20	3-29-62	S	--	D	Yields 12 gpm. L.
13A1	K. D. Routh	553	Dr	140	6	119	1962	--	--	D	Yields 20 gpm, slight dd. L.
13A2	W. H. Wise	560	Dr	145	6	120	1962	J	1/2	D	Yields 15 gpm.
13B1	L. Felter	555	Dr	75	6	31.4	3-29-62	J	--	D,S	
13C1	W. L. Veale	555	Dr	65	6	--	--	J	1/2	D	Water-bearing zone penetrated at 56 ft.
13H1	C. McComb	555	Dr	126	6	101.15	4- 3-62	J	1/2	D,S	Noticeable iron content. L.
13N1	E. Brunett	510	Dr	58	4	39.67	4- 3-62	J	1/2	D,S	
13P1	Gordon Budd, well 1	535	Dr	130	6	123.90	4- 3-62	S	3/4	D,S	Supplies large chicken farm. Cp.
13P2	. . . do . . ., well 2	535	Dr	137	6	122.20	4- 2-62	S	3/4	D,S	Depth to bedrock, 134 ft (?) L.
13Q1	C. Scott	510	Dr	100+	6	--	--	J	--	D,S	
13R1	David Peterson	490	Dr	80	6	54.65	4- 2-62	J	1/2	D	
13R2	G. Heintz	490	Dr	90	6	--	--	J	--	D,S	

14A1	J. R. Iddings	490	Dr	75	6	41.89	4- 3-62	S	1/2	D	
14C1	A. Palo	605	Dr	176	6	147.79	12- 6-60	S	1	D	Cp.
14C2	H. L. Fancher	585	Dr	144	6	122.50	5-31-62	N	--	NU	
14F1	Richard Smith	560	Dr	144	6	118.69	5-27-62	S	--	D	Yields 12 gpm. Noticeable iron content. L.
14G1	Howard Hill	575	Dr	137	6	103.47	5-31-62	J	--	D,S	Yields 10 gpm. L.
14M1	G. E. Brakel	450	Dr	62	6	24.34	5-31-62	J	--	D,S	Pumped 19 gpm for 1 hr, slight dd. Noticeable iron content. Supplies 2 families.
14P1	H. L. Imlay	502	Dr	71	6	56.57	5-27-62	S	--	D,S	Yields 20 gpm. Noticeable iron content. Supplies 2 families. L.
14P2	Thomas Hess	510	Dr	184	7	--	--	P	--	D,S	Cp.
14P3	Robert Eddy	510	Dr	136	6	--	--	S	1/2	D,S	Yields 9 gpm. Cp.
15A1	D. Gould	400	Dr	70	6	--	--	--	--	D,S	Flows 6 gpm. Pumped 18 gpm for 5 hr, dd 10 ft. L.
15E1	W. B. Brandon	510	Dr	160	8	139.22	6-15-62	S	--	D	Yields 60 gpm. Supplies 9 families. Cp, L.
15E2	R. D. and I. R. Burnett	510	Dr	64	6	39	1956	J	3/4	D	Pumped 20 gpm for 4 hr, dd 5 ft. L.
15H1	Carl Norkool	435	Dr	66	6	20	--	--	1½	--	Pumped 200 gpm for 1 hr, slight dd. Supplies 2 families, 7,000 chickens and 100 head of stock.
15M1	K. Broden	430	Dr	160	6	66.27	6-15-62	J	--	D	Yields 50 gpm. Supplies 4 families. L.
16D1	Roy Mourer	475	Dr	145	6	118.57	6-20-62	S	3/4	D,S	
16L1	Kent School Dist. 415	485	Dr	470	12	230	1959	--	--	Inst	Pumped 108 gpm for 3 hr, dd 70 ft. Cp, L.
16M1	H. P. Clark	455	Dr	232	6	88	1962	N	--	D	Yields 6 gpm. L.
16M2	D. Alfarone	465	Dr	170	6	151.77	6-20-62	S	1	D	
16M3	A. F. Doerflinger	475	Dr	159	6	145.87	6-20-62	J	--	D	Yield 18 gpm. L.
16P1	F. Franks	455	Dr	150	6	117.23	6-19-62	J	--	D,S	Yields 7 gpm. Noticeable iron content. L.
16P2	R. B. Brown	475	Dr	58	6	34	1962	--	--	--	Yields 40 gpm. L.
16Q1	Elmer Mergenthal	425	Dr	58	6	34.23	6-19-62	J	--	D	Yields 15 gpm. L.
17C1	Unknown	405	Dg	19	36	10.78	7- 2-62	C	1/3	NU	
17C2	Unknown	433	Dr	300+	6	194.30	7- 5-62	N	--	De	
17E1	G. C. Hunter	395	Dr	166	8	140	--	S	1	D,S	Cp.
17K1	LeBlanc Gardens	465	Dr	224	6	213.0	6-21-62	S	1½	D	Yields 12 gpm. L.
17R1	North Road Water Co.	485	Dr	380	8	186.50	7- 2-62	T	5	PS	Pumped 50 gpm for 4 hr, dd 10 ft. C, L.
18B1	Harry Burns	310	Dg	30	36	21.51	7-24-62	J	1/3	D	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 5 E - Contd.										
18C1	August Tonelli	40	Dr	112	4	+18	1961	--	--	D,S	Noticeable iron content. Well will be destroyed for road.
18D1	. . . do	33	Dr	410	6	Flowing	1962	--	--	D	Yields 20 gpm. Cp, L.
18D2	. . . do	35	Dr	354	6	--	--	--	--	Ex	Test hole for water. Dry hole. L.
18E1	Charlie Waller	34	Dr	390	8-4	+42	1961	N	--	D	Flows 5 gpm. Noticeable sulfur odor. Casing: 8-inch, 0-240; 4-inch, 0-380 ft; 20-slot screen, 380-390 ft.
18K1	Hamilton Road Community Water Co., well 1	380	Dr	367	8	170	1947	T	5	PS	Pumped 40 gpm for 4 hr, dd 40 ft. Noticeable sulfur odor. Cp, L.
18K2	Hamilton Road Community Water Co., well 2	375	Dr	235	8	150	1962	S	5	PS	Pumped 15 gpm for 4 hr, dd 40 ft. L.
18Q1	W. F. Rawdont	335	Dg	36	36	30.18	7-25-62	P	1/2	--	
19B1	City of Kent, well 1	340	Dr	598	12	81.7	11- 8-50	--	--	PS	Pumped 88 gpm for 3 hr, dd 51 ft. L.
19B2	L. Vormsberg	313	Dg	22	60	13.27	7-25-62	C	1/4	S,Irr	
19B3	O. K. Neumann	325	Dg	24	36	10	1962	P	1/4	D	
19G1	J. Watson	275	Dr	124	4	106	1926	P	3/4	D	Cp.
19G2	O. L. Decker	290	Dr	100+	6	72.22	7-26-62	N	--	NU	Formerly supplied 8 families.
19G3	Eckland Realty	275	Dr	150	6	70.48	7-26-62	J	1	NU	
19G4	Dr. J. A. Philips	305	Dr	90	6	75.81	7-25-62	N	--	NU	
20B1	Keogh Mutual Water Co.	450	Dr	450	--	--	--	T	5	PS	
20E1	East Hill Community Well Co., well 2	420	Dr	236	8	220	--	T	10	PS	Yields 160 gpm. L.
20E2	East Hill Community Well Co., well 3	415	--	250	10-8	182	--	T	15		Pumped 200 gpm for 24 hr, dd 2 ft. L.
20F1	East Hill Community Well Co., well 1	420	Dr	236	6	200	1961	N	--	De	L.

20H1	W. J. Eggert	465	Dr	115	8	--	--	S	--	D	Yields 6 gpm. L.
20H2	R. L. Coutora	480	Dg	23	60	12.95	10- 2-61	N	--	NU	
20J1	Mrs. Eleanor Willis	470	Dg	21	42	10.65	10- 2-61	N	--	NU	
20K1	--Brainard	430	Dg	19	42	10.81	10- 2-61	P	3/4	D	
20K2	C. F. Mawdsley	420	Dg	25	40	17.02	10- 3-61	P	--	NU	
21A1	Stanley Fleming	415	Dr	52	6	11.29	10-13-61	C	1	D,S	
21B1	C. Loyer	485	Dr	76	6	--	--	P	1/2	D	Supplies 2 families.
21B2	R. Miller	485	Dg	30	42	10.62	10- 3-61	N	--	NU	
21D1	Karl Granlund	480	Dr	232	6	--	--	S	--	D,Irr	
21E1	R. D. Baird	485	Dr	201	6	198	--	P	1	D,S	Yield very small.
21E2	James McCann	480	Dr	285	6	65	--	S	3	D	L.
21F1	D. W. Mordhorst	435	Dr	170	6	--	--	S	1	D,S	Supplies 1 family and 40 head of stock.
21G1	L. A. Rockwell	480	Dr	97	6	80	1959	S	--	D,S	
21G2	J. C. Wagner	470	Dr	82	6	60	--	P	1/2	D,S	
21J1	D. W. Snow	465	Dr	165	6	--	--	S	1	D,S	Yields 15 gpm. L.
21J2	. . do . . .	460	Dg	61	36	54.53	10- 8-61	P	--	NU	
21K1	S. L. Kent	515	Dr	225	8	174.9	10- 4-61	J	1½	D,S	Cp.
21K2	. . do . . .	520	Dg	27	48	9.85	10- 4-61	N	--	NU	Cp.
21L2	William Griffiths	500	Dr	160	6	--	--	J	2½	D,S	
21L3	. . . . do	500	Dg	112	42	100	--	P	2	Irr	Water-bearing sand, 110-112 ft.
21L4	J. Weatherson	475	Dr	264	8	--	--	S	--	--	
21M1	Mrs. Abe Olivers	475	Dr	290	6-3	230	--	S	--	D,S	Supplies 10 families. Cp.
21P1	R. M. Isham	455	Dg	54	38	45.29	7- 3-62	J	3/4	D	
21P2	M. C. Johnson	460	Dr	135	7	116.1	10- 4-61	S	1	D,S	L.
21P3	H. A. Buetow	465	Dg	15	36	10.89	10- 4-61	J	1/3	S	
21Q1	A. A. Matson	487	Dr	220	6	Flowing	--	P	.2	--	Flows 2 gpm.
21R1	S. T. Stanley	483	Dr	100	6	90.78	7- 3-62	J	1	D	
21R2	P. A. Ellis	475	Dr	90	6	77.07	7- 5-62	S	--	D,S	
21R3	D. S. Swanson	448	Dr	63	6	41.93	7- 5-62	S	3/4	D,S	
21R4	Zion Lutheran Church	452	Dr	180	6	63.5	10-13-61	J	1/2	D	
22A1	--Kelly	480	Dr	187	6	--	--	S	1/2	D,S	Supplies 2 families and 11 head of stock.
22A2	R. D. Soelter	505	Dg	19	24	15.53	10-13-61	C	1/3	D	
22A3	. . do	480	Dg	19	36 by 48	16.21	10-13-61	P	--	S	
22C1	K. G. Johnson	470	Dr	200	6	18	1951	S	1	D,S	Pumped 60 gpm for 4 hr, dd 70 ft. Supplies 3 families and 85 head of stock. L.
22D1	Tom Mathena	410	Dr	117	6	30	--	S	3/4	D	Supplies 2 families.
22D2	--Karpen	400	Dr	120	6	18.0	10-10-61	P	1	D	
22D3	R. L. Barrie	405	Dr	81	6	18.0	10-13-61	J	1/2	D,S	
22D5	N. A. Schortgen	420	Dr	69	6	25.56	10-13-61	J	1/2	D,S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 5 E - Contd.										
22E1	R. A. Haag	400	Dr	40	8	--	--	C	1/2	D,S	
22H1	A. W. Loe	505	Dg	26	24	13.28	10-13-61	N	--	NU	
22J1	M. B. Barker	350	Dr	48	6	16.60	5-31-62	J	--	D,S	Noticeable iron content.
22M1	--Fleming	470	Dg	40	48	21.79	10- 8-61	N	--	NU	
22N1	O. S. Peterson	427	Dr	143	6	41.57	7- 5-62	J	1	D	Noticeable iron content. Cp.
22N2	C. Giles	445	Dr	75	6	14.59	7- 5-62	J	1/2	D,S	Yields 15 gpm. Cp, L.
22P1	Alvin Nesland	450	Dg	65	48	31.53	7- 9-62	J	1	D,S	
22P2	Elmer Jacobsen	447	Dg	67	48	34.16	7- 9-62	J	3/4	D,S	Noticeable iron content.
23A1	Arnold Herbst	535	Dr	165	6	137.84	4- 5-62	S	1	D,S	
23A2	Dr. O. V. Anderson	537	Dr	140	6	--	--	P	1	S	
23B1	R. K. Hiatt	500	Dr	147	6	56.80	5-27-62	S	--	D	Noticeable iron content.
23C1	M. W. Huff	520	Dr	90	6	79	1962	J	--	D	. . . . . Do . . . . . .
23G1	Miss L. Olson	535	Dr	144	6	138.18	6- 1-62	J	--	D,S	
23H1	T. Rintala	530	Dr	141	6	134.53	4- 5-62	P	--	--	Yields 17 gpm.
23L1	Alvin Wirag	485	Dr	104	6	97.15	6- 1-62	J	--	D,S	Supplies 2 families.
23L2	John Fournier, Jr.	505	Dr	118	8	107.60	6- 1-62	J	--	D	Yields 50 gpm. Cp.
23P1	P. Stearns	456	Dr	87	6	75	1962	J	1	D,S	Yields 7½ gpm. Noticeable iron content.
23R1	A. G. Scribner	473	Dr	86	6	77.9	4- 5-62	J	1	D,S	Yields 9½ gpm.
24B1	J. P. Schlaegel	510	Dr	119	6	107.20	4- 2-62	S	1/2	D,S	Yields 18 gpm. L.
24C1	C. Peterson	427	Dr	126	6	--	--	J	1/2	D,S	Supplies 6 families.
24D1	Gordon Frink	505	Dr	111	6	97.27	4- 3-62	S	--	D,S	Yields 18 gpm. L.
24D2	R. J. Manny	530	Dr	150	6	135.05	4- 9-62	S	--	D	Yields 10 gpm. C, L.
24D3	M. N. Doherty	530	Dr	150	6	135.44	4- 9-62	S	--	D	Yields 20 gpm. Supplies 2 families. L.
24E1	R. Stinnett	527	Dr	140	6	132	1962	J	1	D,S	L.
24E2	. . . do . .	527	Dg	42	48	4.99	4- 5-62	N	--	NU	
24E3	J. E. Nelson	530	Dr	137	4½	129.83	4- 5-62	S	--	D,S	Pumped 33 gpm for 5 hr, slight dd.
24J1	E. Crocker	445	Dr	87	6	38	1962	--	--	D	
24J2	Frank Julian	445	Dr	82	6	56.73	4-10-62	J	--	D	Yields 9 gpm.

24M1	Ham Water Co.	500	Dr	109	6	92	1962	T	2	PS	Yields 10 gpm. Supplies 8 families. L.
24Q1	Cecil Smithson	430	Dr	85	6	61	1963	J	--	D	Cp.
25C1	Karol Sowinsky	448	Dr	125	6	--	--	S	1/2	D	Cp.
25E1	H. T. Bock	455	Dr	114	6	72	1963	J	1	D	Yields 15 gpm. Cp.
25H1	Statewide Development Co.	410	Dr	72	8	40	8- 2-63	--	--	PS	Yields 60 gpm. L.
25J1	Roger Cergeen	382	Dr	55	6	33	1963	J	1/2	D	Cp.
25K1	Statewide Development Co.	400	Dr	80	8	40	2-18-63	--	--	PS	Pumped 100 gpm for 4 hr, dd 32 ft. L.
25R1	Charles Webster	380	Dg	17	24	4.12	1-23-63	J	1/2	D	
26A1	-- Burns	437	Dr	88	6	--	--	J	1	D	Supplies 2 families.
26B1	W. Dayton	439	Dr	--	6	22.26	7-13-62	J	1	D	
26D1	-- Schwartz	350	Dr	67	6	38.23	7-11-62	S	3/4	D,S	Yields 18 gpm. Noticeable iron content. L.
26D2	K. W. Woodruff	375	Dr	65	6	43.89	7-11-62	J	3/4	D,S	
26G1	J. Reidt	402	Dr	66	8	35.69	7-12-62	T	1½	D,S	
26H1	Cobean Model Farm	405	Dr	73	6	32.00	5-24-55	J	1½	D,S	Noticeable iron content.
26J1	Jay Neighbors	432	Dr	104	6	--	--	J	1/2	D	Cp.
26K1	A. Johnston	350	Dg	19	36	6.62	7-12-62	J	1/2	D	
26K2	F. Steale	346	Dg	25	40	9.44	7-12-62	P	1/2	D	
26M1	R. Sisson	360	Dr	84	6	52.64	7-11-62	S	3/4	D	Yields 10 gpm.
26Q1	Gordon Auckland	346	Dg	16	72	5.64	7-12-62	J	1	D	
27B1	I. E. Kay	433	Dg	72	48	55	--	J	3/4	D,S	
27B2	George Wahl	433	Dg	50	48	34.14	7- 9-62	J	1/2	D	
27B3	L. B. Cone	437	Dg	70	30	63.27	7-10-62	J	3/4	D	
27B4	Frank Wham	428	Dg	80	48	50.06	7-11-62	P	3/4	D	Well was pumping during water-level measurement. Supplies 2 families.
27C1	Adolph Carter	420	Dg	26	36	5.23	7-10-62	P	1/3	D	
27C2	C. C. Peterson	420	Dr	80	6	50	1962	J	1/2	D	Pumped 5 gpm for 24 hr, dd 7 ft.
27C3	Jack Burrell	427	Dg	56	60	24.07	7- 7-62	J	1/2	D	
27D1	D. Wilson	380	Dr	118	8	60	--	J	--	PS	
27E1	Mrs. Espeseth	430	Dg	104	36	77.07	7- 5-62	P	3/4	D	
27F1	P. C. Spowart	378	Dr	83	6	74.35	7-10-62	J	3/4	D	Yields 9 gpm. L.
27G1	I. R. Robertson	425	Dr	93	6	66	--	J	1½	D	
27G2	C. D. Richardson	414	Dr	85	6	47.88	7-10-62	J	1	D,S	Supplies 2 families.
27H1	John Keck	425	Dr	76	6	37.29	7-10-62	J	--	D	Yields 5 gpm. Noticeable iron content.
27H2	G. E. Michelsen	425	Dr	150	6	70.61	7-10-62	S	3/4	D	Yields 18 gpm. Noticeable sulfur odor. L.
27M1	Big Five Water Co.	437	Dr	94	6	53	1947	J	2	PS	Pumped 15 gpm for 4 hr, dd 30 ft. Noticeable iron content. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horse-power	Use	Remarks
	T. 22 N., R. 5 E - Contd.										
27M2	H. O. Sortun	415	Dr	95	6	39.89	7- 7-62	S	3/4	D,S	Yields 12 gpm. Supplies 3 families. L.
27N1	H. T. Moody	388	Dg	26	60	14.19	7- 7-62	J	3/4	D	
28A1	J. Waxdal	475	Dg	20	36	26.15	7- 3-62	P	1/4	D,S	Well goes dry late in summer.
28A2	M. McKinney	443	Dr	153	6	--	--	P	3/4	D	
28A3	E. C. Hougardy	418	Dr	156	6	62.00	7- 5-62	T	1	D	Noticeable iron content.
28A4	W. G. Crosby	452	Dr	189	6	114	1962	S	1½	D,S	Yields 30 gpm. Cp, L.
28B1	P. I. Berg	480	Dg	90	28	36.38	7- 3-62	P	1/2	D	
28D1	J. C. Hill	452	Dr	132	6	106.21	7- 2-62	S	3/4	D	Yields 120gpm. Supplies 3 families.
28D2	Charles Becvar	455	Dr	142	6	124.82	7- 2-62	S	1	D	Supplies 2 families.
28D3	D. K. Myers	428	Dr	130	8	109	1962	C	1½	D	
28D4	A. A. Seim	428	Dr	163	6	--	--	P	1	D	
28E1	F. M. Jackson	395	Dr	181	6	135.72	7-13-62	J	2	D,S	
28F1	Mrs. Einer Hansen	435	Dr	185	6	170	--	P	3/4	D,S	Supplies 4 families.
28G1	Maurice Anderson	411	Dg	38	36	11.61	7- 3-62	J	1	D,S	
28G2	M. S. Boliach	425	Dr	82	6	70	1961	J	1	D	
28H1	D. H. Salter	450	Dr	127	6	92	1962	J	2½	D,S	Yields 18 gpm. L.
28H2	M. L. Torstenson	450	Dr	80	6	61.32	7- 5-62	J	1/2	D,S	Yields 10 gpm. Noticeable iron content. L.
28H3	M. L. Ragen	440	Dg	32	36	5.51	7- 5-62	C	1/2	D,S	Noticeable iron content.
28J1	H. Wick	412	Dg	26	72	4.71	7- 7-62	J	1/2	D,S	
28J2	C. E. Trainer	428	Dr	108	6	54	1962	J	1	D	Yields 20 gpm.
28K1	T. C. Stredicke	405	Dr	75	6	37	1958	J	2	D	Pumped 35 gpm for 4 hr, dd 12 ft. Cp, L.
29B1	East Hill Water Co., Inc., well 2	413	Dr	286	12	170	1953	S	20	PS	Pumped 170 gpm for 4 hr, dd 50 ft. L.
29B2	East Hill Water Co., Inc., well 1	413	Dr	268	6	188	1948	T	7½	NU	Pumped 45 gpm for 4 hr, dd 25 ft. L.
29C1	Myrl Johnson	370	Dr	133	8	118.71	7-25-62	S	5	PS	Pumped 74 gpm for 4 hr, dd 4 ft. L.
29F1	J. J. Wezenski	365	Dg	14	40	5.53	7-25-62	J	1	Irr	

29F2	George Blair	362	Dg	20	30	9.13	7-27-62	J	1/2	D,S	
29L1	Elma Willson	345	Dr	120	6	46.83	7-25-62	S	1/2	D	Yields 60 gpm. L.
29N1	K. H. Marshall	412	Dr	156	6	141.47	7-26-62	S	1	D,S	Yields 10 gpm. L.
29N2	W. D. Moloney	427	Dr	186	6	--	--	S	1½	D	Yields 10 gpm. Topsoil, 0-2; hardpan, clay, and blue gravel, 2-119; hardpan and gravel, 119-186 ft.
29N3	C. E. Guptil	426	Dg,Dr	177	6	158.07	7-26-62	S	1	D	Noticeable iron content. L.
29N4	E. W. Jennings	425	Dr	175	6	150	--	J	5	D	Supplies 2 families.
29P1	W. H. Marsh	395	Dr	142	6	115.28	7-26-62	S	3/4	D	Yields 9 gpm. L.
29P2	Leo Richter	400	Dr	130	6	--	--	J	1	D	
29P3	H. M. Doolittle	380	Dr	174	6	142	--	C	1	D	Noticeable iron content. Supplies 2 families. L.
29Q1	R. E. Johansson	380	Dr	125	6	75	1962	S	1½	D	Cp.
31N1	Mrs. Lihou	47	Dg	9	48	2.75	4-12-61	N	--	NU	Noticeable iron content.
31P1	Jefferson School	52	Dr	--	4	4.09	4-12-61	N	--	NU	
31P2	Niro Nakai	52	Dr	50	6	6	1962	C	7½	Irr	Pumped 80 gpm for 4 hr, slight dd. Noticeable iron content. L.
31R1	L. Redington	52	Dn	45	1½	1.78	4-12-61	N	--	Irr	Noticeable iron content.
32A1	V. Maier	407	Dr	60	6	27.95	7-26-62	J	1/2	D,S	Supplies 3 families.
32B1	A. Monstad	382	Dr	155	8	7.50	7-26-62	T	7½	D,S Irr	Pumped 85 gpm for 4 hr, dd 34 ft. L.
32B2	J. A. Nelson	378	Dr	80	6	16.29	7-26-62	P	1	D,S	L.
32B3	P. M. Eckblad	370	Dg	16	40	5.35	7-27-62	P	1/3	D	
32B4	Charles Remick	405	Dr	164	8	140.08	7-27-62	S	3/4	D,S	Cp.
32C1	M. A. Bowerman	414	Dr	145	6	103.42	7-27-62	S	--	D	Noticeable iron content.
32D1	R. J. Gould	427	Dr	190	6	161.36	7-26-62	J	2	D	. . . . . Do . . . . . .
32G1	L. H. Louis	427	Dr	235	6	137.05	8- 2-62	S	1	D,S	. . . . . Do . . . . . .
32G2	Jack Ziegler	411	Dr	165	6	135.81	8- 2-62	S	1	D,S	Supplies 2 families.
32G3	R. L. Sears	427	Dr	160	6	80	1962	S	1	D,S	. . . . . Do . . . .
32J1	R. P. Osborne, well 2	380	Dr	160	8	14.02	5-20-63	S	2	PS	Pumped 40 gpm for 4 hr, dd 30 ft. L.
32K1	G. S. Estabrook	395	Dr	83	6	48.79	8- 6-62	J	3/4	D,S	Yields 7 gpm. Noticeable iron content. L.
32Q1	R. P. Osborne, well 1	327	Dr	186	8	141	1960	S	7½	PS	Yields 90 gpm.
33C1	J. H. Reuter	435	Dr	109	6	59.98	8- 8-62	S	1	D,S	Supplies 3 families. Cp.
33F1	John Stendal	437	Dr	98	5	70.68	8- 8-62	P	3/4	D,S	Supplies family and 55 head of cattle.
33G1	S. R. Pfaff	427	Dr	97	6	87.06	8-13-62	P	1	D,S	
33L1	Floyd Jones	406	Dr	60	6	48.29	7-27-62	J	1/2	D,S	
33L2	H. C. Baker	398	Dr	90	6	55	1960	J	1	D,S	Yields 18 gpm. Noticeable iron content. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 5 E - Contd.										
33L3	D. E. Osness	426	Dr	75	6	60	1961	S	1½	D	Yields 12 gpm. L.
33M1	C. M. Derbyshire	458	Dr	255	8	99	1958	*	5	PS	Pumped 60 gpm for 8 hr, dd 101 ft. Supplies 32 families. *screw-type pump. L.
34B1	John Isaacson	390	Dr	70	6	29.39	1-10-62	J	1	D	Yields 25 gpm. Cp.
34B2	A. Lind	388	Dr	56	6	30	1962	T	1	D	Yields 33 gpm, dd 10 ft. Perforated in water-bearing gravel 44-56 ft. Serves 3 families. Cp.
34E1	R. B. Jones	370	Dr	60	6	22.55	1-10-62	S	1/2	D	Pumping during water-level measurement. Cp.
34J1	R. H. Mellick	435	Dr	65	6	26.79	8-20-62	J	1/3	D	Yields 15 gpm. Noticeable iron content. L.
34K1	B. H. Howard	434	Dr	70	6	24.82	8-20-62	J	--	D,S	Noticeable iron content.
34K2	G. Meng	433	Dr	60	6	30	1960	J	3/4	D	. . . . . Do . . . . . .
34L1	Howard Schocko	360	Dr	55	6	18.99	7-27-62	J	1/2	D,S	
34L2	R. G. Christofferson	395	Dr	78	6	23.67	7-27-62	J	1/2	D,S	Yields 10 gpm. Noticeable iron content and sulfur odor. Supplies 3 families.
34L3	G. A. Turnbaugh	360	Dr	65	6	14.06	7-27-62	T	1	D,S	Yields 20 gpm. Supplies 2 families. L.
34M1	J. W. Burks	370	Dr	60	6	37.54	7-27-62	J	1/2	D	Noticeable iron content.
34Q1	R. M. Hawkins	430	Dr	70	6	23.78	8-20-62	J	--	D,S	. . . . . Do . . . . . .
34Q2	C. J. Adamson	431	Dr	87	6	31.68	8-20-62	S	3/4	D,S	. . . . . Do . . . . . .
35B1	H. L. Blake	350	Dg	32	63	6.81	7-12-62	J	1/2	D,S	
35F1	H. E. Peters	354	Dr	56	6	17.64	8-23-62	J	1	D	
35F2	A. L. Mason	360	Dr	53	6	6.71	8-24-62	J	1/2	D	Yields 10 gpm. Noticeable iron content.
35F3	F. S. Rockwood	355	Dr	40	6	14.74	8-24-62	J	1/2	D	
35F4	W. E. Borchers	360	Dr	70	6	12	1962	J	1	D,S	Yields 25 gpm.
35G1	J. W. Standish	352	Dr	28	6	10	1962	J	3/4	D,S	Yields 25 gpm, dd 5 ft. L.
35L1	T. R. Bishop	361	Dr	53	6	11.99	8-23-62	J	1/2	D	Noticeable iron content.

35L2	R. D. Lovell	353	Dr	35	6	14.19	8-24-62	J	1	D	Noticeable iron content.
35L3	D. R. Morris	364	Dr	32	6	16.79	8-24-62	J	1/2	D,S	. . . . . Do . . . . . .
35N1	R. V. Carter	372	Dr	30	6	11	1960	J	1/2	D	
35P1	D. A. Welch	358	Dr	24	8	12.30	8-24-62	S	5	PS	Pumped 125 gpm for 4 hr, dd 5 ft. L.
35P2	R. L. Schuck	329	Dr	50	6	15	1957	J	1/2	D,S	Noticeable iron content and sulfur odor.
35Q1	C. W. Carrick	350	Dr	98	6	29.93	8-24-62	S	1	D	
35Q2	M. Cunningham	358	Dr	102	6	18.81	8-24-62	S	--	D	Yields 15 gpm, dd 58 ft. Noticeable iron content and sulfur odor. L.
36F1	Hurley Wiles	355	Dr	32	6	19.61	1-23-62	J	1	D	Cp.
36M1	Bonneville Power Administration, Covington Substation	355	Dr	106	10	10	1962	T	--	Ind	Yields 250 gpm, dd 4 ft. C, L.
36R1	E. O. Stever	423	Dr	48	6	31	1963	J	1/2	D	Cp.
	T. 22 N., R. 6 E.										
1B1	A. K. Korkalo	522	Dg	50	30	1.60	3- 6-62	J	1/2	D	
1C1	-- King	490	Dr	52	6	--	--	--	--	D	Noticeable iron content.
1D1	Mel Turner	520	Dr	51	6	--	--	S	1/2	D	
1F1	A. Blichfeldt	515	Dr	65	6	21.8	2- 5-62	S	1	D,S	Yields 20 gpm.
1G1	H. N. Miller	524	Dg,Dr	112	10	19.7	3- 7-62	N	--	NU	Yields 50 gpm, dd 1 ft. Dug well, 0-32; boulders and soil, 32-85; cemented gravel, 85-112 ft.
1H1	Wayne Collins	540	Dr	76	6	--	--	J	--	D	Yields 10 gpm. Noticeable iron content.
1H2	Hobart Community Church	560	Dr	76	6	35	1963	--	--	D	Pumped 20 gpm for 2 hr, slight dd. L.
1J1	Hobart Community Water Co.	561	Dr	202	6	--	--	J	3	D	Cp.
1J2	Emily Peterson	545	Dr	62	6	30	1962	J	1/2	D	Cp.
1J3	J. R. Bingham	545	Dr	--	6	--	--	J	1/2	D	
1K1	D. W. Gee	510	Dr	34	6	10.00	3- 5-62	J	1/2	D,S	
1K2	C. R. Carver	515	Dr	49	6	8	--	S	1/2	D	Supplies 2 families.
1M1	Verna Boles	520	Dr	45	6	--	--	J	1/2	D	
1M2	E. S. Ulmer	500	Dr	55	6	28	--	J	1/2	D	
1Q1	J. J. Lahtinen	600	Dr	42	6	34	1962	J	1/2	D	
1R1	H. A. Touby	580	Dr	89	6	49	1962	S	1/2	D	Yields 25 gpm.
1R2	W. J. Dougherty	560	Dr	55	6	--	--	J	1/2	D,S	Bedrock reported 37-55 ft.
2E1	John Locke	455	Dg	21	24	2	--	P	1/4	D,S	
2F1	Helen Hyatt	502	Dr	32	6	29	3-12-62	J	1/2	D,S	

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 22 N., R. 6 E - Contd.										
2G1	L. O. Laxton	515	Dr	85	6	15.4	3- 6-62	J	1/2	D	
2H1	R. P. Walsh	498	Dg	15	--	6	--	P	1/2	D	Noticeable iron content.
2H2	J. W. Rohweder	495	Dg	24	2½	9.3	3- 6-62	C	1/2	D	
2K1	H. G. Burgh	515	Dr	55	6	--	--	J	3/4	D	
2L1	James Satterlee	475	Dr	78	6	49.85	3-12-62	J	1/2	D,S	
2L2	H. V. Rice	478	Dr	30	6	11.00	3-12-62	J	1/4	D	
2L3	D. Hasten	485	Dg	21	--	14.56	3-12-62	J	1/2	D,S	
2M1	T. J. Hines	445	Dr	63	6	21.24	3-13-62	J	1/2	D	
2N1	Unknown	460	Dr	74	6	50.0	5- 1-62	N	--	D	Yields 33 gpm.
3A1	K. D. Greenleaf	503	Dr	110	6	--	--	S	1/2	D,S	Cp.
3B1	G. Schuster	505	Dr	95	6	--	--	J	1/2	D,S	
3D1	W. J. Bunce	505	Dr	103	6	89.00	3-14-62	J	1/2	D	Yields 10 gpm. Hardpan and boulders, 0-90; yellow-brown clay and sand, 90-103 ft.
3F1	Joe Gauthier	450	Dg	10	36	4	--	P	1/2	D,S	Supplies 3 families.
3H1	L. C. Hetland	470	Dg	15	48	7.7	3-12-62	P	1/3	D	Well goes dry late in summer.
3K1	A. W. Gronemyer	435	Dr	58	6	38	--	J	1/2	D,S	
3L1	D. W. Names	430	Dr	52	6	49	--	J	1/2	D	Yields 10 gpm. Topsoil, 0-2; gravel and boulders, 2-42; sand and gravel, 42-52 ft.
3P1	Ada Gillespie	423	Dg	10	48	00	3- 9-62	N	--	D	
3R1	George Yaba	450	Dr	40	--	12.91	3-12-62	J	1/2	D,S	Yields 10 gpm. Clay and loam, 0-5; clay, sand, and boulders, 5-30; sand and gravel, 30-40 ft.
4C1	Duane Skiff	245	Dr	28	6	--	--	J	1/2	D	Noticeable iron content.
4C2	Joe Lux	245	Dr	33	6	21	--	C	1/2	D	
4D1	W. R. Osborn	255	Dr	35	6	25	--	J	1/2	D	Noticeable iron content.
4F1	C. B. Clifton	275	Dr	18	12	11.80	3-16-62	J	1/2	D	

4G1	F. V. Niemeal	260	Dr	22	6	3	1962	J	1/2	D	
4G2	Tom Legg	265	Dg	12	30	7.5	3-15-62	J	1/2	S	
4H1	A. C. Landin	275	Dg	7	--	1.7	3-15-62	J	1/2	D	Noticeable iron content.
4J1	John Girten	305	Dr	130	6	--	--	J	1/2	D,S	
4J2	Roy Ellerhoff	270	Dn	18	6	--	--	J	1/2	D,S	
4K1	E. C. Grierson	265	Dg	7	24	2.6	3-16-62	P	1/4	D	
4K2	C. E. Robinson	268	Dg	8	24	3.4	4-24-62	J	1/2	D	
4L1	G. E. Newell	270	Dr	--	6	--	--	J	1/2	D	
4Q1	G. M. Conklin	270	Dg	6	48	1.5	--	P	1/2	D,S	
4Q2	C. E. McCoy	268	Dg	15	30	--	--	J	1/4	D,S	
4R1	N. G. Ward	268	Dr	33	6	14.17	3-15-62	J	1/2	D	
4R2	C. E. Lancaster	270	Dg	15	30	13	1962	P	1/2	D,S	
5A1	E. H. Miller	705	Dg	49	30	40.00	4-30-62	J	1	D,S	
5A2	C. E. Loomas	655	Dg	45	36	--	--	J	1/2	D	
5B1	Marie Sittaro	702	Dg	70	48	--	--	P	1	D	
5D1	A. L. Kepler	630	Dr	150	6	103.50	4-30-62	J	1/2	D,S	
5N1	J. Sweet	612	Dr	111	6	--	--	J	1/2	D,S	L.
5N2	D. E. Frank	606	Dr	85	6	--	--	J	--	D	
5N3	H. Woodard	630	Dr	128	6	106.56	4-20-62	S	--	D,S	L.
5P1	C. Thomas	570	Dr	155	7	134.54	4-20-62	S	--	D	
6A1	Richard Martin	600	Dr	155	6	117.25	4-30-62	S	3/4	D	
6A2	Guy Schwartz	472	Dg	12	36	7.00	4-30-62	J	1/2	D	
6B1	G. E. Lobdell	476	Dg	34	36	23.5	4-30-62	P	1/2	D,S	
6E1	A. Martineau	520	Dr	111	6	30	1960	J	--	D	Yields 13 gpm.
6F1	T. W. Webber	545	Dr	105	6	36.35	5- 1-62	S	1/2	D,S	L.
6G1	Joseph Whitman	520	Dr	78	6	--	--	J	3/4	D,S	
6H1	S. Schwartz	480	Dg	22	36	16.70	5- 1-62	J	1/4	D	
6H2	Paul Bean	502	Dr	76	6	23.25	5- 1-62	J	1/3	D	
6H3	S. D. Bennett	475	Dr	150	6	129.05	5- 2-62	J	1/2	D	
6J1	D. G. Eggerman	520	Dr	80	6	--	--	S	1/2	D	
7A1	V. Simone	587	Dr	86	7	--	--	S	--	D	Yields 17 gpm.
7A2	J. McSorley	580	Dr	104	7	73.02	4-13-62	J	--	D	
7A3	--Judd	615	Dr	200+	--	--	--	--	--	--	
7E2	G. R. Dunbar	580	Dr	135	6	--	--	S	--	D	
7N1	S. S. Richardson	520	Dr	77	6	52.6	3-29-62	N	--	D	Yields 20 gpm. L.
7N2	H. W. Burlingame	560	Dr	101	6	--	--	J	1	D	L.
8F1	Mr. Dubigk	595	Dr	158	6	152	--	P	--	D,S	Noticeable iron content.
8F2	. . . do . .	580	Dr	176	6	--	--	J	--	D,S	Yields 9 gpm. Supplies family and 19 head of stock. L.
8F3	Ruth Knadle	605	Dg	30	48	--	--	--	--	--	
8K1	R. J. Healey	600	Dr	296	6	--	--	J	1/2	D	
8R1	Harold Sutter	602	Dr	350	6	159.94	4-17-62	N	--	--	Casing pulled back to 275 ft and perforated 224-229 ft in very fine gray sand.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 22 N., R. 6 E - Contd.										
9A1	T. W. Elliott	280	Dg	10	36	6.5	3-16-62	J	1/2	D	
9B1	Carolyn Griner	270	Dg	10	24	6	--	J	1/4	D	Supplies 2 families.
9G1	D. C. Crosson	300	Dg	18	48	10	--	J	1/2	D	
9H1	C. Ploegman	301	Dr	33	6	--	--	J	1/2	D,S	
9H2	C. Lowery	315	Dg	11	30	6.80	3-20-62	J	1/2	D	
9K1	H. W. Smith	315	Dr	29	6	12	3-20-62	J	--	D	Topsoil and rocks, 0-9; hardpan and rocks, 9-18; sand and gravel, 18-29 ft.
9L1	K. A. McDonald	553	Dr	120	7	--	--	J	--	D,S	Yields 14 gpm.
10B1	Loren Peirce	430	Dg	27	--	--	--	P	1/4	D,S	
10G1	M. C. Honeysuckle	425	Dr	22	6	1.3	3-12-62	J	1/2	D,S	Supplies 2 families.
10J1	Paul McComb	565	Dr	--	6	--	--	--	--	PS	Supplies 8 families.
10M1	L. Gerard	365	Dr	41	6	18	3-13-62	J	1/2	D	Yields 50 gpm. Supplies 3 families and post office.
10M2	Maple Valley School	410	Dr	87	6	--	--	C	3	Inst	Noticeable iron content.
10N1	N. Jenson	320	Dr	21	6	--	--	--	--	D	
10N2	R. C. Hennike	320	Dr	27	6	3.00	3-13-62	J	1/2	D	
10N3	Joe Mezzavilla	475	Dr	202	8	177	--	S	3	D	Pumped 25 gpm for 4 hr, slight dd. L.
11B1	Oren Wilson	535	Dg	44	36	38.55	3- 1-62	J	1/2	D,S	
11E1	Howard Glenn	635	Dr	148	6	65.73	3-12-62	S	--	D,S	Supplies 3 families.
11E2	K. E. Weller	502	Dr	120	6	--	--	P	--	D	
11H1	R. B. Ford	602	Dr	36	6	6.18	2-21-62	J	1/2	D	Topsoil, 0-8; sandy clay, some gravel, 8-30; sand and gravel, 30-36 ft.
11H2	F. Shelhammer	585	Dr	51	6	9	--	--	--	D	Pumped 30 gpm for 2 hr, slight dd.
11H3	W. Avirett	605	Dr	70	6	21.24	3-12-62	J	--	D	Yields 30 gpm.
11K1	A. L. Jones	620	Dr	29	6	23	1962	J	1/2	D	Rocks, 0-12; hardpan, 12-23; sand and gravel, 23-29 ft.
11K2	Lloyd Wright	625	Dr	119	8	109	--	J	--	D	Yields 14 gpm.

11L1	D. A. Pankow	580	Dr	124	6	109	1961	S	--	D,S	Yields 5 gpm.
11M1	Tahoma School District 409, well 1	575	Dr	145	6	122.10	3-13-62	--	--	Inst	Pumped 75 gpm for 4 hr, dd 11 ft. L.
11M2	Tahoma School District 409, well 2	575	Dr	146	8	120.83	3-13-62	--	--	Inst	Pumped 160 gpm for 4 hr, dd 11 ft. L.
11M3	Vi Codiga	580	Dr	97	6	79	1959	J	1	D,S	Yields 8 gpm. C, L.
11M4	Otto Moore	580	Dr	136	--	--	--	--	--	D,S	Yields 6 gpm. L.
11P1	Noble Huse	622	Dg	68	36	--	--	J	1/2	D	
11P2	. . . do . .	622	Dr	68	6	9.19	3- 9-62	N	1/2	NU	
11P3	H. M. Holmberg	630	Dr	150	6	--	--	--	--	D,S	Cp.
11R1	Henry Moffatt	680	Dr	62	6	35	--	--	--	D	
11R2	D. Sahlin	662	Dr	66	6	28.88	2-21-62	J	1	D	
12E1	Tahoma Assembly of God Church	650	Dg	38	36	24.49	2-21-62	J	--	D	
12E2	. . . . do	650	Dr	46	6	--	--	--	--	D	Yields 18 gpm, dd 3½ ft. Noticeable iron content. L.
12F1	B. G. Roberts	650	Dr	175	6	--	--	J	1/2	D	Supplies 2 families.
12F2	J. E. Lorenz	645	Dr	75	6	37.2	2-28-62	J	1/2	D	Yields 12 gpm. Noticeable sulfur odor.
12G1	Cliff Johnson	665	Dr	72	--	--	--	--	--	D	
12G2	W. D. Vanderbilt	670	Dr	194	8	180	2-28-62	J	1/2	D	Yields 6 gpm.
12H1	C. H. Anderson	690	Dr	187	6	177	--	P	--	D	
12H2	D. W. Guy	680	Dr	180	6	--	--	P	3/4	D,S	
12K1	John Dennis	670	Dr	54	7	29	--	J	1/2	D	Supplies 3 families.
12L1	S. A. Boehm	660	Dr	73	6	--	--	P	1/2	D	
12M1	M. Q. Hadley	625	Dr	32	6	14.18	2-21-62	J	1/2	D	Yields 8 gpm.
12N1	Henry Ross	712	Dr	70	6	36.12	2-21-62	J	1/2	D	
12N2	William Roberts	695	Dr	67	6	--	--	J	1/2	D	Noticeable iron content.
12N3	Adam Axt	692	Dr	63	6	--	--	J	1/2	D	Yields 8 gpm.
12N4	T. C. Bakke	685	Dr	54	8	24.49	2-21-62	J	1/2	D	
12P1	J. Hodgson	700	Dg	20	36	4	1962	C	1/2	D	
12R1	Ed Chapman	708	Dr	20	24	18.52	2-20-62	P	1	D	Cp.
12R2	--Stoker	717	Dr	134	8	86	--	S	1/2	D,S	Yields 10 gpm. Cp.
13A1	W. D. Albright	675	Dg	16	48	--	--	--	--	D	
13A2	R. D. Martin	708	Dr	118	4	65	--	S	1/2	D	Yields 4 gpm. C, L.
13B1	W. C. Saviers	698	Dr	79	6	--	--	--	3/4	D	
13C1	--Ridley	708	Dr	70	6	22.55	2-21-62	J	1/2	D	
13H1	W. M. Buxton	705	Dg	27	36	3.14	2-20-62	P	--	D,S	
13Q1	Vince Johnson	630	Dg	22	--	20.22	2-20-62	P	1/2	--	
14A1	J. Burnett	695	Dr	97	6	36	1962	J	1½	D	Yields 12 gpm. Noticeable iron content. L.
14A2	Fritz Larsen	662	Dr	78	6	--	--	--	--	D	L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 22 N., R. 6 E - Contd.										
14B1	C. Goodwin	640	Dr	80	6	--	--	--	--	D,S	
14C1	James Parise	635	Dr	78	6	14.93	3- 9-62	J	1/2	D,S	
14C2	G. W. Graham	630	Dr	83	6	--	--	--	--	D	
14C3	Emil Hofferber	630	Dr	65	6	11.2	3- 9-62	J	1/2	D	Noticeable iron content.
14D1	J. Mcvey	585	Dr	125	6	80	1952	J	1/2	D	Yields 15 gpm.
14D2	Sam Nation	625	Dr	138	6	8	--	J	1/2	D,S	Yields 14 gpm. Supplies 2 families. L.
14E1	J. Riffey	620	Dr	75	6	--	--	J	--	D,S	
14M1	V. O. Edwards	635	Dr	75	6	58.2	3- 8-62	J	1/2	D,S	Noticeable iron content. Cp.
14P1	L. S. Anderson	620	Dr	248	6	--	--	J	1½	D	
15H1	R. V. Belanger	625	Dr	160	6	--	--	--	--	D	
15H2	Ladd Community Well	600	Dr	273	7	191.69	5-21-63	S	7	D	Pumped 11.5 gpm for 24 hr, dd 2 ft. Water-bearing gravel, 270-273 ft. Supplies 5 families.
15K1	W. M. Steward	385	Dr	100	6	+28	1962	N	--	--	Flows 30 gpm.
16A1	Howard McKittrick	330	Dr	36	6	9.95	3-20-62	--	--	D	Noticeable iron content.
16C1	Tahoma School District 409	525	Dr	288	--	--	--	--	--	Ex	Test hole for water. Dry hole. L.
16D1	M. M. Hildebrand	521	Dr	105	6	93.28	4-17-62	J	--	D,S	
16E1	Vernon Smith	560	Dr	155	7	--	--	S	1/2	D,S	
16G1	Tahoma School District 409	430	Dr	73	8	27	--	T	--	Inst	Yields 220 gpm, dd 13 ft. L.
16H1	Western Sand & Gravel Co.	500	Dr	66	10	35.85	5- 7-62	T	25	D,S	Yields 300 gpm.
16Q1	L. R. Smith	505	Dr	146	--	142	--	J	2	D	
16Q2	Joe Flynn	425	Dr	250	8	45	--	J	1	D	Yields 16 gpm. L.
17H1	L. Markham	537	Dr	161	8	150.14	4-13-62	S	1/2	D,S	Cp.
17J1	H. Swartwood	535	Dr	250	7	--	--	P	--	D,S	Cp.
17K1	L. Lay	530	Dr	115	6	--	--	J	1/2	--	
17M1	Unknown	515	Dr	96	6	30	--	--	--	--	
17Q1	G. T. Gould	470	Dr	130	6	106	--	--	--	--	Yields 16 gpm. L.
17Q2	W. A. Goebel	490	Dg	12	48	00	1962	J	1/2	D,S	

17R1	A. Thompson	470	Dr	98	6	64.20	4-12-62	J	1/2	D,S	Noticeable iron content.
17R2	Walter Patterson	472	Dr	99	6	73.70	4-12-62	J	--	D,S	
18C1	C. A. Buster	605	Dr	180	6	139.1	3-29-62	S	--	D	
18G1	K. Sams	528	Dr	85	6	64.41	4-11-62	J	--	D	
18H1	H. Jackson	552	Dr	100	6	89.80	4-11-62	J	1/2	D	Yields 12 gpm. L.
18K1	T. Fortier	496	Dr	76	6	40.57	4-11-62	S	1/2	D,S	Yields 20 gpm. L.
18Q1	J. F. Watkins	510	Dr	75	6	44.05	4- 2-62	J	1/2	D	Yields 8 gpm. Noticeable iron content.
18Q2	. . . do . . .	510	Dr	90	6	44.3	4- 2-62	J	--	D	Yields 8 gpm.
18Q3	A. J. DeMan	510	Dr	87	6	--	--	J	--	D	Supplies 4 families.
18R1	C. Struble	470	Dr	51	6	--	--	--	--	D	Yields 12 gpm. Coarse sand and gravel, 0-31; brown hardpan, 31-40; medium gravel, 40-51 ft.
19A1	J. Hilton	460	Dr	53	6	19	--	J	1/2	D	Yields 14 gpm. L.
19A2	C. D. Turk	460	Dr	83	8	--	--	S	--	D	
19C1	H. L. Pierce	480	Dr	65	6	--	--	J	--	D	Noticeable iron content.
19D1	Earl McCluskey	510	Dg	35	48	4.2	4- 2-62	C	--	D	
19D2	Clifford Shortridge	510	Dr	--	--	--	--	--	--	D	Supplies 8 families.
19E1	R. W. Whitters	440	Dr	80	6	--	--	J	--	D	Yields 20 gpm. L.
19E2	Carl Nelson	480	Dr	115	6	55	--	J	--	--	
19G1	T. Shoemaker	450	Dr	80	6	61	--	J	1/2	D	L.
19G2	Evergreen Plateau Water Assoc.	458	Dr	68	6	29.22	4-11-62	J	3	D	Supplies 6 families.
19M1	John Twohig	435	Dr	65	8	28.71	4-10-62	J	1/2	D	
20D1	O. G. Olsen	465	Dr	196	6	--	--	J	1/2	D	Yields 27 gpm. Noticeable iron content.
20D2	John Watkins	465	Dr	85	7	31.38	4-11-62	S	3	D,S	Supplies 10 families.
20D3	C. Olsen	465	Dr	118	6	66	1962	S	--	D	Yields 17 gpm. L.
20H1	T. F. Thornton	390	Dr	33	6	4.55	5- 8-62	J	1	D,S	
20H2	Bob Smith	390	Dr	35	6	6.95	5- 8-62	J	1/2	D	
21B1	Tahoma School Dist. 409	465	Dr	199	10-8	81.33	5-21-63	T	--	Inst	Pumped 40 gpm for 4 hr, dd 32 ft. L.
21J1	T. E. Gaffney	470	Dg	10	36	7.75	5- 8-62	J	2	D	
21K1	R. H. Coleman	470	Dg	12	30	9.75	5- 8-62	C	1	D	
24A1	Harry Lavelle	625	Dr	39	5	7.13	2-20-62	S	1	--	Noticeable iron content.
25A1	Vern Habenicht	660	Dr	210	6	29.39	8-18-62	S	--	D	. . . . . Do . . . . . .
25B1	Floyd Stone	765	Dg	18	--	4.63	8-18-62	J	1/3	D	. . . . . Do . . . . . .
25M1	Joseph Blessing	595	Dr	30	6	--	--	J	1/2	D,S	Supplies 2 families.
25M2	Clayton Donnelly	590	Dg	16	24	11.44	8-16-62	J	1/3	D	Noticeable iron content. Goes dry late in summer.
25R1	A. I. Smith	605	Dr	40	6	--	--	S	1/2	D	Cp.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 22 N., R. 6 E - Contd.										
25R2	R. M. Miller	605	Dr	35	6	24.53	8-16-62	J	1/2	D,S	
25R3	Mathew Riechart	605	Dr	35	6	24.36	8-17-62	J	1/2	D	Yields 18 gpm. L.
27N1	Art Sontag	532	Dr	67	6	57	--	J	1/2	D	
27R1	Ken Marshall	545	Dr	90	6	53	--	S	1	D	Yields 15 gpm.
28F1	King County Water Dist. 94, well 1	590	Dr	248	10	171	1954	T	7½	PS	Pumped 350 gpm for 20 hr, dd 23 ft. L.
29G1	Clinton Graham	558	Dr	128	6	107.31	1-25-63	S	1	D,S	Pumped 18 gpm for 4 hr, dd 5 ft. Cp, L.
29H1	John Driscoll	545	Dr	180	6	98	--	S	--	D	Cp.
29R1	C. M. Derbyshire and Ted Morris	555	Dr	355	8-6	160	1963	T	7½	PS	Pumped 100 gpm for 8 hr, dd 30 ft. Cp, L.
30D1	Ray Zander	405	Dr	72	6	--	--	J	1/2	D	Cp.
30E1	L. W. Reith	373	Dg	10	48	5.11	1-24-63	J	1/2	D,S	Supplies one family and a mink farm. Cp.
32D1	Charles Baker	420	Dr	36	6	21	--	J	1/2	--	Cp.
33D1	Harding Mahany	558	Dr	175	6	--	--	J	1/2	D,S	
33G1	Frank Vokacek	480	Dg	32	48	9.91	1-28-63	J	1/2	D,S	
	T. 22 N., R. 7 E.										
6E1	C. H. Martin	570	Dr	67	6	17.70	3- 6-62	J	1/2	D	
6E2	W. F. Duncalf	565	Dr	68	6	48	--	S	1/2	--	Sand and clay, 0-30; brown hardpan, 30-55; sand and gravel, 55-69 ft.
6E3	Albert Downing	540	Dr	76	6	--	--	S	1/2	D	
6M1	Bill Neimi	570	Dg	30	24	--	--	--	--	D	Noticeable iron content.
6M2	D. Youngblood	565	Dr	90	6	43.9	2- 5-62	J	1/2	D,S	
6N1	A. Tantaro	585	Dr	75	6	--	--	J	3/4	D,S	
6P1	John Sandstrom	640	Dg	18	48	9.3	2-26-62	P	1/4	D,S	Yields 7 gpm. Goes dry late in summer.
6Q1	R. L. Davis	655	Dg	25	36	15	2-26-62	P	1/3	D	
6R1	J. W. Kandlor	670	Dr	82	6	40	1962	J	1/2	D	
7A1	J. A. Stenger	714	Dr	70	6	35	1962	C	1/2	--	

7B1	D. E. Goodraw	680	Dr	77	7	55.0	2-26-62	J	1/2	--	
7B2	Ed Meyers	650	Dg	22	24	18.30	2-26-62	J	1/2	D	
7D1	Hobart Grange	575	Dr	58	6	40.00	3- 5-62	J	--	D	
7D2	W. F. Loso	580	Dg	12	24	9.5	2-26-62	--	--	D	
7E1	Tony Junevitch	650	Dr	130	6	--	--	P	1	D	
7E2	W. A. Siphila	650	Dr	147	6	135.60	2-26-62	S	1/2	D	Supplies 2 families.
7H1	John Lewis	710	Dg	14	--	1	--	--	--	D	Goes dry late in summer.
7K1	Bill Noll	720	Dg	12	48	1	1962	--	--	D,S	
7L1	V. M. Scott	622	Dr	94	6	--	--	J	1/2	D	
7M1	Anna Conover	620	Dr	134	6	113	--	J	1½	D	Yields 8 gpm. Reportedly bottomed on sandstone.
7N1	L. E. Baker	717	Dr	220	8	190	--	S	2	D,S	
7P1	H. Vork	710	Dg	18	24	2.49	2-23-62	--	--	D	
7Q1	Rudy Petchnick	722	Dr	163	6	120.00	2-23-62	S	--	D	
28R1	Evergreen Water Improvement Assoc.	815	Dr	100	8	--	--	T	7½	PS	Yields 75 gpm.
30C1	Herndon Willis	615	Dr	27	6	--	--	C	3/4	D,S	
30F1	Leonard Markus	630	Dr	19	6	6.80	8-18-62	J	3/4	D	Yields 18 gpm. Topsoil, 0-2; rocks, 2-9; sand, gravel and rocks, 9-19 ft. Noticeable iron content.
32L1	Church of God	720	Dr	150	8	36.01	8-16-62	S	3/4	D	Casing pulled back to 58 ft and perforated.
	<u>T. 23 N., R. 3 E.</u>										
24A1	King County Water Dist. 85, well 2	365	Dr	140	12	98	1951	T	15	PS	Pumped 155 gpm for 1½ hr, dd 22.7 ft. L.
24A2	King County Water Dist. 85, well 1	365	Dr	140	8	98	--	N	--	NU	
36A1	King County Water Dist. 4, well 1	25	Dr	228	12	0	10-22-62	N	--	NU	Yields 225 gpm, slight dd.
	<u>T. 23 N., R. 4 E.</u>										
12G1	King County Water Dist. 14, well 1	330	Dr	160	6	90	--	T	2	PS	Yields 50 gpm.
12G2	King County Water Dist. 14, well 2	320	Dr	155	6	--	--	T	3	PS	Yields 80 gpm.
12G3	King County Water Dist. 14, well 3	345	Dr	150	6	100	1947	T	2	PS	Pumped 15 gpm for 4 hr, dd 25 ft.
12G4	King County Water Dist. 14, well 4	235	Dr	280	18-6	169.00	11-28-62	T	10	NU	Pumped 100 gpm for 4 hr, dd 50 ft. Depth to bedrock, 188 ft. Casing has collapsed. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horsepower		
	T. 23 N., R. 4 E - Contd.										
12G5	King County Water Dist. 14, well 5	300	Dr	307	18-12	--	--	--	--	PS	
12G6	King County Water Dist. 14, well 6	335	Dr	200	6	--	--	--	--	Ex	Test hole for water. Dry hole.
19H1	King County Water Dist. 49, well 1	350	Dr	353	8	115	1940	N	--	De	Pumped 400 gpm for 4 hr, dd 8 ft. L.
19H2	King County Water Dist. 49, well 2	370	Dr	533	10-8	--	--	N	--	De	Yielded 400 gpm. L.
19H3	King County Water Dist. 49, well 3	375	Dr	621	24-12	334	8-16-48	N	--	De	Pumped 900 gpm for 4 hr, dd 134 ft. Depth to bedrock, 590 ft. L.
21D1	Joe Kleitsch	338	Dr	81	6	29.24	10-29-62	J	3	D	Pumped 55 gpm for 2 hr, dd 6 ft. Cp.
21H1	King County Water Dist. 43, well 1	405	Dr	152	10	99.94	3-14-56	N	--	De	Yields 250 gpm, dd 30 ft. Casing: 10-inch 0-132 ft; screen, 132-152 ft.
21H2	King County Water Dist. 43, well 2	400	Dr	156	8	108	1953	--	--	De	Yielded 200 gpm. Casing: 8-inch, 0-136 ft; screen, 136-156 ft.
21H3	King County Water Dist. 43, well 4	405	Dr	153	10	104.93	3-14-56	T	25	NU	Yields 250 gpm.
21H4	King County Water Dist. 43, well 5	405	Dr	166	12	99.26	10-19-62	--	--	NU	Yields 350 gpm, dd 30 ft. Casing: 12-inch, 0-146 ft; 10-slot screen, 146-166 ft.
21H5	King County Water Dist. 43, well 3	400	Dr	160	18	96	7- 3-53	--	--	De	Yields 350 gpm, dd 22 ft. Topsoil, 0-2; hardpan and boulders, 2-96; sand and gravel, 96-160 ft. Casing: 18-inch, 0-160 ft; perforated 96-160 ft.
21H6	King County Water Dist. 43, well 6	405	Dr	415	18-10	100	1953	N	--	NU	Yields 1,000 gpm, dd 30 ft. Casing: 18-inch 0-184; 10-inch 167-415 ft. Gravel-

											packed.
22N1	D. R. Finch	335	Dr	252	8	80	1946	--	--	De	Yields 150 gpm, dd 90 ft. L.
23M1	Charles Fox	90	Dr	182	6	6	1952	--	--	D	Pumped 6 gpm for 18 hr, dd 24 ft. Water-bearing coarse sand, 177-182 ft. Well will be destroyed for road. Cp.
23M2	A. D. Watkins	60	Dr	42	6	Flowing	--	C	1/4	D	Flows 10 gpm. Will be destroyed for road. Cp.
23R1	Puget Western, Inc., boring MM4	23	Dr	168	--	9.2	11- 9-61	--	--	Ex	L.
23R2	Puget Western, Inc., boring 62-1	24	Dr	102	--	16	2-12-62	--	--	Ex	L.
24B1	METRO, boring B 13	12	Dr	51	--	4	8-16-60	--	--	Ex	L.
24C1	METRO, boring B 1	89	Dr	71	--	--	--	--	--	Ex	L.
24E1	METRO, boring B 10	0	Dr	62	--	--	--	--	--	Ex	L.
24E2	METRO, boring B 6	23	Dr	53	--	20	--	--	--	Ex	L.
24E3	METRO, boring B 7	20	Dr	28	--	15	--	--	--	Ex	L.
24E4	METRO, boring B 8	26	Dr	40	--	--	--	--	--	Ex	Depth to bedrock, 27 ft. L.
24F1	METRO, boring B 34	23	Dr	37	--	--	--	--	--	Ex	L.
24F2	METRO, boring B 11	21	Dr	39	--	12	8-11-60	--	--	Ex	Depth to bedrock, 38 ft. L.
24F3	METRO, boring B 25	15	Dr	38	--	6.8	8-31-60	--	--	Ex	Depth to bedrock, 34 ft. L.
24F4	METRO, boring B 24	14	Dr	34	--	5.5	8-30-60	--	--	Ex	Depth to bedrock, 32 ft. L.
24F5	METRO, boring B 21	19	Dr	67	--	11.1	8-29-60	--	--	Ex	L.
24F6	METRO, boring B 16	15	Dr	61	--	6.6	9-22-60	--	--	Ex	Depth to bedrock, 60 ft. L.
24F7	METRO, boring B 14	14	Dr	67	--	7.3	8-29-60	--	--	Ex	Depth to bedrock, 59 ft. L.
24F8	METRO, boring B 27	15	Dr	51	--	8	9- 1-60	--	--	Ex	L.
24F9	METRO, boring B 2	13	Dr	56	--	4.1	11-16-59	--	--	Ex	L.
24F10	METRO, boring B 18	13	Dr	50	--	5.7	8-23-60	--	--	Ex	L.
24F11	METRO, boring B 4	12	Dr	63	--	2.5	11-20-59	--	--	Ex	L.
24F12	METRO, boring B 5	14	Dr	58	--	--	--		--	Ex	L.
24F13	METRO, boring B 9	14	Dr	114	--	7.7	8- 9-60	--	--	Ex	L.
24F14	METRO, boring B 19	15	Dr	69	--	6.8	8-25-60	--	--	Ex	L.
24F15	METRO, boring B 29	11	Dr	39	--	4.0	9-29-60	--	--	Ex	L.
24F16	METRO, boring B 30	16	Dr	38	--	--	--	--	--	Ex	L.
24F17	METRO, boring B 3	17	Dr	70	--	7.8	11-18-59	--	--	Ex	L.
24G1	METRO, boring B 4	16	Dr	31	--	6.4	9- 2-60	--	--	Ex	L.
24G2	METRO, boring B 12	10	Dr	52	--	2.6	8-12-60	--	--	Ex	L.
24H1	METRO, boring B 6	15	Dr	32	--	3.7	11- 9-60	--	--	Ex	L.
24H2	METRO, boring B 11	16	Dr	70	--	6.3	9-14-60	--	--	Ex	L.
25A1	Unknown, boring 63-2	23	Dr	96	--	14.6	1-10-63	--	--	Ex	L.
25Q1	Great Northern Ry. Co.	14	Dr	130	8	13.30	7-18-62	J	2	S	Supplies 500 head of cattle.
26A1	Puget Western, Inc., boring 62-12	25	Dr	137	--	11.1	2-17-62	--	--	Ex	L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 23 N., R. 4 E - Contd.										
26A2	Puget Western, Inc., boring 62-5	14	Dr	101	--	3.8	2-23-62	--	--	Ex	L.
27C1	South Seattle Water Co., well 1	490	Dr	327	10	199	1949	T	15	PS	Yields 160 gpm, dd 101 ft. C, L.
27C2	South Seattle Water Co., well 2	490	Dr	485	12	222	1944	T	40	PS	Yields 360 gpm, dd 130 ft. C, Cp, L.
27C3	South Seattle Water Co., well 5	490	Dr	356	16-10	222	1962	S	100	PS	Yields 825 gpm, dd 23 ft. from 308 ft. C, Cp, L.
27P1	South Seattle Water Co., well 3	455	Dr	336	12	175	1947	T	40	PS	Pumped 350 gpm for 4 hr, dd 25 ft. L.
27P2	South Seattle Water Co., well 4	455	Dr	300	12	170	1954	T	75	PS	Pumped 600 gpm for 8 hr, dd 20 ft. Cp, L.
28B1	R. G. Howe	460	Dr	196	4	154	1950	N	--	NU	
28H1	Washington Memorial Park Cemetery, well 1	385	Dr	185	10-8	67.65	10-17-62	T	10	Irr	Yields 120 gpm. Casing was filled with gravel, 125-185 ft, to prevent sand pumping. However, the well continued to pump sand. C.
28H2	Washington Memorial Park Cemetery, well 2	382	Dr	136	12	68	1962	S	--	Irr	Yields 320 gpm, dd 15 ft. L.
29F1	J. R. Johnson	210	Dg	22	18	5.56	12- 1-60	C	1/4	Irr	
29J1	D. Alexander	375	Dr	132	6	88.42	10-17-62	J	--	--	
29N1	King County Water Dist. 4, well 2	240	Dr	156	12	12	1962	T	--	PS	Yields 330 gpm, dd 113 ft. L.
30E1	King County Water Dist. 49, well 4	290	Dr	780	16-12-10	215	1952	T	150	NU	Pumped 1,000 gpm for 4 hr, dd 50 ft. L.
30J1	Normandy Park Water Co., well 1	160	Dr	425	8	106.72	10-22-62	N	--	NU	Pumped 250 gpm for 24 hr, dd 58 ft. L.
31H1	B. G. Roberts	325	Dr	164	6	104.30	5-13-54	P	3/4	NU	
31J1	T. R. Wood	330	Dr	195	10	--	--	P	--	D	
31R1	Mrs. Bruning	348	Dr	170	6	137.00	5-14-54	N	--	NU	

32F1	R. J. Geraghty	282	Dg	55	48	43.11	12- 1-60	J	1/3	Ind	
32F2	P. Rhuf	282	Dr	86	6	41.72	12- 1-60	S	1/2	D	Yields 30 gpm. Cp.
33B1	Port of Seattle Commission	360	Dr	396	18-12-8	55	1964	T	40	NU	Pumped 250 gpm for 4 hr, dd 220 ft. Drilled with rotary. L.
33H1	Fred Boysen	347	Dr	154	8	--	--	T	3	D	Noticeable iron content. Supplies 3 families.
33R1	E. R. Bookwalter	350	Dg	39	24	27.81	9- 6-62	J	1/2	NU	
33R2	Maple Tree Motel	350	Dr	105	6-3	25.06	9- 6-62	N	--	NU	Noticeable iron content. Casing: 6-inch, 0-70; 3-inch, 70-105 ft.
34D1	Joe Huseby	445	Dg	49	30	35.06	9- 7-62	J	1/3	D	
34D2	King County Water Dist. 75, well 13	425	Dr	388	12	112	1960	T	50	PS	Pumped 400 gpm for 24 hr, dd 47 ft. C, L.
34F1	J. H. Williams	380	Dg	39	24	33.49	9- 7-62	J	1/2	Irr	
34F2	. . . . do . . .	380	Dg	45	33	35.31	9-11-62	J	1/2	Irr	
34G1	Jack Christophersen	390	Dg	15	48	5.01	9- 7-62	P	1/4	Irr	
34H1	R. M. Schader	410	Dr	115	8	85	1952	T	5	Irr	Pumped 50 gpm for 4 hr, dd 10 ft. C, L.
34L1	D. R. Adams	395	Dr	75	6	55	1963	J	1/2	NU	Yields 12 gpm. L.
34L2	King County Water Dist. 75, well 6	397	Dr	247	12-8	109.6	8- 6-58	--	--	--	Pumped 460 gpm for 3 hr, dd 69 ft. C, L.
34M1	Bill Colarcurcio	360	Dg	131	44	38.40	9-11-62	J	1/2	NU	
34N1	Louise Hamre	382	Dr	68	6	60.17	9- 6-62	J	1/3	D	Cp.
34N2	D. N. Theayer	395	Dr	110	6	--	--	P	--	Irr	
34N3	King County Water Dist. 53, well 2	410	Dr	210	10	65	1947	T	7½	PS	Pumped 125 gpm for 4 hr, dd 50 ft. L.
35A1	Puget Western, Inc. boring 62-15	13	Dr	91	--	--	--	--	--	Ex	L.
35C1	H. Schoenbachler	23	Dr	200	2	+6	12- 2-60	P	1½	D	Cp.
36H1	William Kozak	17	Dr	210	6	Flowing	--	C	1/2	D	Pumped 20 gpm, dd 40 ft below land surface. L.
36H2	Frank Donoforio	15	Dr	495	2	Flowing	--	N	--	D	Flows 4 gpm.
36H3	. . . do	15	Dr	800	2	--	--	--	--	--	Flows slightly.
36R1	Emon Ikuta	20	Dr	370	2	+10	--	--	--	D	Supplies 3 families.
	T. 23 N., R. 5 E.										
3D1	City of Renton, well 7	438	Dr	353	12-10	154	1960	N	--	NU	Yields 176 gpm, dd 98 ft. C, L.
3M1	. . . do . . . . , well 6	432	Dr	380	12-10	156	1960	S	30	PS	Yields 210 gpm, dd 83 ft. C, L.
8D1	METRO, boring B 19	24	Dr	60	--	8.9	8-16-61	--	--	Ex	L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 23 N., R. 5 E - Contd.										
8E1	METRO, boring B 31	28	Dr	56	--	--	--	--	--	Ex	L.
8E2	METRO, boring B 20	29	Dr	57	--	11.9	8-17-61	--	--	Ex	L.
8E3	METRO, boring B 32	27	Dr	59	--	--	--	--	--	Ex	L.
8E4	The Boeing Company, boring J	30	Dr	129	--	2.4	2-13-56	--	--	Ex	L.
8F1	The Boeing Company, boring H	34	Dr	131	--	9.0	1- 9-62	--	--	Ex	L.
8M1	METRO, boring B 29	29	Dr	70	--	14.2	1-16-62	--	--	Ex	L.
8M2	METRO, boring B 21	28	Dr	65	--	11.6	8-21-61	--	--	Ex	L.
8M3	METRO, boring B 30	29	Dr	68	--	10.6	1-18-62	--	--	Ex	L.
8N1	METRO, boring 10	26	Dr	33	--	10.8	9-12-60	--	--	Ex	L.
9E1	City of Renton, well 3	285	Dr	424	24-12-10	85	1943	T	100	De	Yields 900 gpm, dd 50 ft. C, L.
10N1	C. H. Rucker	383	Dr	108	4	100.77	7-25-62	--	--	NU	Noticeable iron content.
11C1	G. C. Gilleland	542	Dg	20	60	6.42	7-25-62	P	1/4	D	
11C2	E. J. Claibourn	532	Dg	30	48	24.38	7-25-62	J	1/2	D	
11D1	Harry Tubb	503	Dr	95	6	72.57	7-25-62	P	1/2	NU	Noticeable iron content.
12B1	Ben Serra	365	Dg	30	36	9.78	5-13-62	J	1/2	D	
12C1	David Pene	325	Dg	15	30	4.40	5-13-62	C	1/2	D	
12D1	R. E. Moffat	360	Dr	120	6	62.27	5-13-62	J	1	D	Yields 18 gpm.
12D2	D. M. Kirkpatrick	325	Dg	15	36	6	--	C	--	D	
12D3	R. O. Morgan	325	Dr	150	6	--	--	N	--	NU	Dry hole.
12E1	H. Altenfelder	340	Dr	25	6	--	--	P	1/2	D	Cp.
12F1	Fred Warden	350	Dg	30	36	29.0	5-14-62	--	--	D	
12F2	H. L. Faast	325	Dg	16	36	14.90	5-14-62	P	1/4	D	
12G1	Carl Woolley	335	Dg	22	36	16.30	5-14-62	C	1/4	--	
12G2	M. J. Bundy	350	Dr	21	6	Flowing	1962	J	1/2	D	
14L1	A. R. Reynolds	421	Dr	68	6	60	1952	J	3/4	D	Yields 10 gpm.
14L2	A. P. Thomas	418	Dr	70	6	30	--	J	1/2	D	Yields 5 gpm.
14L3	F. A. Henry	423	Dr	70	6	57	1938	J	1	NU	
14L4	W. J. Henry	432	Dr	90	6	80	1936	J	1	D	
14L5	W. J. Henry, Jr.	442	Dr	92	6	52	1957	J	3/4	D	

14P1	Will Rohden	350	Dg	50	60	4	7-23-62	J	2½	D,S	Noticeable iron content.
14P2	James Bourasa	400	Dr	50	6	37	1942	J	3/4	NU	
14Q1	George Ouimet	390	Dg	32	24	20.57	7-23-62	J	1/2	S	
15A1	F. V. Recktenwald	422	Dr	82	6	20	7-24-62	J	1	D	Noticeable iron content. Supplies 2 families.
15B1	A. A. See	421	Dr	90	4	20	1939	J	1	D,S	Supplies 2 families.
15G1	C. L. Bentley	391	Dr	68	6	56	1945	J	1	D	L.
15Q1	S. K. Ramberg	362	Dr	140	6	119.82	7-24-62	J	1	D	Yields 15 gpm. L.
15Q2	Joe Fontaine	358	Dr	140	6	120	1951	J	1	D,S	L.
16B1	Greenwood Memorial Park	326	Dr	113	8	56.82	7-24-62	N	--	NU	Yields 20 gpm. L.
17D1	METRO, boring 3	30	Dr	42	--	9.6	12- 8-59	--	--	Ex	L.
17D2	METRO, boring 15	32	Dr	48	--	--	--	--	--	Ex	L.
17F1	City of Renton, well 1	30	Dr	82	26-16	24	1942	--	--	--	Yields 3,000 gpm, dd 9 ft. C, L.
17F2	. . . do . . . , well 2	30	Dr	82	26-16	24	1960	T	75	PS	Yields 1,040 gpm, dd 4 ft. C, L.
17F3	. . . do . . . , well 8	30	Dr	105	12	20	1962	T	100	PS	Pumped 1,645 gpm for 3 hr, dd, 3 ft. L.
18H1	METRO, boring 12	33	Dr	40	--	--	9-21-60	--	--	Ex	L.
18J1	City of Renton, well 12	40	Dr	65	--	23	--	--	--	--	L.
18J2	. . . do . . . , well 13	40	Dr	56	--	25	5-22-62	--	--	PS	L.
18J3	METRO, boring 1	33	Dr	42	--	8.0	12- 1-59	--	--	Ex	L.
18J4	METRO, boring 13	35	Dr	44	8-6	17.8	9-27-60	--	--	Ex	Pumped 40 gpm for 5 hr, dd 12 ft. L.
18J5	METRO, boring 2	35	Dr	48	--	12	12- 1-59	--	--	Ex	L.
18J6	METRO, boring 14	35	Dr	63	10	15.3	2-16-61	--	--	Ex	Pumped 300 gpm for 6 hr, dd 8.7 ft. L.
18R1	METRO, boring 9	27	Dr	40	--	7	9-12-60	--	--	Ex	L.
19A1	METRO, boring 8	21	Dr	45	--	1.9	9- 9-60	--	--	Ex	L.
19A2	Puget Western, Inc., boring A	20	Dr	59	--	10.1	9-12-62	--	--	Ex	Depth to bedrock, 48 ft. L.
19B1	METRO, boring 7	22	Dr	33	--	--	--	--	--	Ex	L.
19B2	City of Renton	25	Dr	63	--	14	5-22-63	--	--	--	L.
19B3	. . . do . . .	25	Dr	68	--	--	--	--	--	--	L.
19C1	METRO, boring 5	19	Dr	30	--	7.8	9-27-60	--	--	Ex	L.
19K1	Homer Creager	118	Dg	26	36	10.20	7-18-62	P	1/4	Irr	
19M1	J. Caracciolo	18	Dr	600	6	450	--	J	1½	S	Casing: 6-inch, 0-450; perforated near bottom.
19P1	Clinton Sanders	18	Dr	65	6	6.89	7-18-62	P	1/3	D,S	Noticeable iron content. Supplies 2 families.
21A1	Brodell & Brodell Builders	65	Dr	30	10	9.84	7-23-62	C	3	PS	Well was pumping during water-level measurement. Supplies 12 families.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 23 N., R. 5 E - Contd.										
22A1	W. S. Birdwell	377	Dr	130	7	80	1959	S	1	D,S	C, Cp.
22E1	Maplewood Addition Water Coop.	50	Dr	35	8	10.71	7-20-62	T	--	PS	Well was pumping during water-level measurement.
22F2	. . . . do	50	Dr	22	8	16.87	7-20-62	C	5	PS	. . . . . . Do . . . .
22Q1	F. Burlotte	440	Dr	74	6	55.70	6-17-62	J	--	D,S	Supplies 1 family and 20,000 chickens.
23M1	S. J. Kolcsey	103	Dr	665	6-5	+114	1962	--	--	PS	C.
24E1	F. Lussier	150	Dr	39	6	Flowing	--	--	--	D	Yields 15 gpm.
24G1	W. A. Shaw	150	Dn	21	1½	--	--	P	1/3	D	
24H1	S. W. Hamer	155	Dr	25	6	15.85	4-23-62	P	1/3	D,S	Yields 18 gpm.
24J1	M. C. Granahan	150	Dr	28	8	21.85	4-23-62	J	1/2	D,S	
24J2	F. D. Petersen	150	Dg	35	36	15.40	4-24-62	P	1/3	D	
24P1	Unknown	370	Dr	354+	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 354 ft.
25K1	U.S. Army, Youngs Lake Launcher area, well 1	656	Dr	203	6	26	1954	--	--	D	Pumped 15 gpm for 8 hr, dd 15 ft. Depth to bedrock, 18 ft. L.
25N1	Unknown	529	Dr	157+	--	--	--	--	--	--	Test hole for coal. Depth to bedrock, 157 ft.
25Q1	D. B. Sifkin	515	Dr	198	6	34.00	5- 4-62	S	1/2	D	
25Q2	A. E. Taylor	505	Dg	41	38	5.0	5- 4-62	J	1/2	D	Well bottomed in sandstone.
25R1	S. M. Schreiner	527	Dg	35	24	--	--	C	1/2	D	
25R2	E. C. Holden	550	Dr	255	6	91.5	5- 4-62	S	1/2	D	Depth to bedrock, 68 ft. L.
29N1	H. L. Herrick	150	Dr	50	6	--	--	J	1/4	D,S	Noticeable iron content.
29N2	J. L. Frederickson	155	Dg	10	42	2.81	7-19-62	--	--	D,S	
30P1	Unknown	20	Dr	62	--	0.0	1-25-63	--	--	Ex	Depth to bedrock, 50 ft. L.
31B1	Unknown	23	Dr	68	5	5.49	7-18-62	N	--	NU	Well will be destroyed for road.
31E1	M. Virgillo	18	Dr	123	--	+81	--	C	1/2	D	
31F1	F. Bergsma	18	Dr	175	6	Flowing	--	N	--	D	Supplies 3 families.
31H1	D. L. Morell	175	Dr	167	6	83.54	4-17-61	S	1	D	Noticeable iron content.
31M1	Bob Carroll	17	Dr	60	6	--	--	C	1	D	Supplies 2 families.

31M2	W. S. Hickson	17	Dr	116	6	Flowing	--	C	1/2	D	Yields 4 gpm.
31M3	Harry Dickison	17	Dr	385	4	Flowing	--	C	1/2	D	Cp.
31N1	F. Liesinger (estate)	20	Dr	200	2	Flowing	--	--	--	D,S	Yields 25 gpm. Supplies 8 families and a dairy.
32L1	King County Water Dist. 58, well 2	480	Dr	510	8-6	200	1952	N	--	Ex	Test hole for water. Dry hole. Depth to bedrock, 449 ft. L.
32R1	D. T. Cadwallader	512	Dg	45	72	21.15	7-24-62	N	--	Irr	
33L1	King County Water Dist. 58, well 1	400	Dr	196	8	49	1949	T	10	NU	Pumped 100 gpm for 24 hr, dd 27 ft. Depth to bedrock, 98 ft. L.
34B1	Mrs. Mabel Hansen	495	Dr	350	6	119.87	5-17-62	N	--	NU	L.
34C1	Mrs. Thomas	475	Dr	117	6	--	--	--	--	NU	
34F1	Charles Joiner	460	Dr	70	6	22.15	5-20-62	J	--	D	Supplies 2 houses.
34L1	Mrs. H. Carney	515	Dr	105	6	69.88	5-18-62	S	--	D	
34N1	G. H. Titus	440	Dr	168	6	98	1962	J	--	D,S	Supplies 5 families.
34P1	G. Okitsu	427	Dr	170	6	23	1962	J	--	D,S	
34R1	Ingvald Starren	624	Dr	90	6	--	--	N	--	NU	
34R2	Mrs. Benoit	622	Dr	210	6	158.70	5-18-62	N	--	NU	Depth to bedrock, 73 ft.
35A1	Unknown	537	Dr	55+	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 55 ft.
35C1	Unknown	474	Dr	195+	--	--	--	--	--	Ex	Test hole for coal. Depth to bedrock, 195 ft.
35D1	Unknown	505	Dr	646	--	--	--	--	--	Ex	Test hole for coal. Bedrock not encountered.
35F1	Unknown	513	Dr	444	--	--	--	--	--	Ex	. . . . Do . . . .
36A1	Fred Wardell	530	Dg	42	30	2.50	5- 4-62	J	1/2	D	
36B1	Ethel Roberts	505	Dg	17	36	10	--	J	1/4	D	
36B2	A. H. Rohling	500	Dr	150	6	150	--	--	1/2	D	Depth to bedrock, 50 ft.
36E1	Unknown	565	Dr	91+	--	--	--	--	--	Ex	Depth to bedrock, 91 ft.
36E2	U.S. Army, Youngs Lake Control, well 2	588	Dr	395	6	--	--	--	--	Ex	Test hole for water. Dry hole. Depth to bedrock, 54 ft. L.
36G1	Wayne Long	535	Dr	28	6	Flowing	--	P	1/4	D	
36G2	R. J. Williamson	550	Dg	35	24	17.15	5- 3-62	P	1/4	D	Well goes dry late in summer.
36H1	C. H. Clifford	575	Dg	76	40	2.83	5- 4-62	J	1	D	Well bottomed in sandstone. Supplies 4 families.
36J1	D. A. Wirick	550	Dr	99	6	21.10	5- 3-62	J	1/2	D	Yields 2 gpm. Topsoil, 0-2; sandstone, 2-99 ft. Casing: 6-inch, 0-18 ft.
36J2	R. M. Houchins	525	Dr	165	6	43	1962	P	1/2	D	Topsoil, 0-2; sandstone, 2-165 ft. Casing: 6-inch, 0-24 ft.
36J3	Emil Wolf	525	Dr	110	6	7.65	5- 3-62	J	3/4	D	Yields 1½ gpm. Depth to bedrock, 3 ft. L.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level: Below land surface (feet)	Water level: Date	Pump: Type	Pump: Horsepower	Use	Remarks
	T. 23 N., R. 5 E - Contd.										
36R1	F. C. Bogdonowicz	555	Dr	120	6	27.65	5- 1-62	J	1/2	D	
36R2	R. LaBossier	540	Dr	50	6	22.85	5- 1-62	J	1/2	--	L.
36R3	G. E. Parker	547	Dr	125	6	4.17	5- 1-62	J	1/2	D	
	T. 23 N., R. 6 E.										
3B1	G. B. Donnelly	135	Dr	65	7	6.70	5- 9-62	J	3/4	D,S	Pumped 6 gpm for 4 hr, dd 16 ft. Topsoil, 0-2; hardpan, 2-56; gravel, 55-65 ft. Casing perforated 60-65 ft.
3B2	E. F. Erickson	123	Dg	8	48	1.85	5-10-62	J	1/2	D,S	Supplies 3 families.
3G1	R. D. Petett	120	Dg	4	36	00	1962	C	1/2	D,S	
3H1	A. J. Baker	250	Dr	148	6	--	--	S	1/2	D	Cp.
3H2	W. J. Weishaupt	270	Dr	134	6	119.51	5-13-62	J	1/2	D	
3P1	G. E. Leslie	135	Dg	6	36	00	--	J	1/2	D	Supplies 2 families.
3P2	Don Hall	130	Dg	12	24	3.5	5- 9-62	P	3/4	D,S	
3Q1	Delmar Linden	180	Dr	92	6	38.40	5- 9-62	J	1	D	
3Q2	L. B. Anderson	165	Dr	80	6	53.40	5- 9-62	J	3/4	D,S	
7D1	I. K. Converse	375	Dr	87	6	14.90	5-14-62	J	1	D	
7D2	L. W. Munz	400	Dr	92	6	14.70	5-14-62	J	1	--	Yields 20 gpm. Noticeable iron content. L.
7E1	C. B. Crone	320	Dg	14	24	9.50	5-11-62	C	1/2	D	
7F1	John Bandrette	330	Dr	62	6	23.10	5-14-62	J	1/2	D,S	Pumped 20 gpm for 4 hr, dd 22 ft. L.
7G1	Don Petzoldt	325	Dr	80	6	17.30	5-11-62	J	3/4	D	Yields 10 gpm. L.
7G2	J. D. Benton	325	Dr	58	6	14.45	5-11-62	J	1	D	
7K1	Hanas Davison	345	Dr	111	6	18.05	5-11-62	J	3/4	D,S	
7L1	E. J. Brearcliff	335	Dr	32	6	7.00	5-11-62	P	1/2	D	
7Q1	H. E. Wolfe	350	Dr	31	6	12.35	5-11-62	J	3/4	D,S	Yields 18 gpm.
8P1	Eastgate Realty	530	Dr	35	6	10.00	4-20-62	N	--	NU	
10B1	R. M. Stranack	130	Dr	170	6	35.90	5-10-62	N	--	--	
10P1	Fish Edwards	170	Dr	35	6	26.95	4-20-62	S	3/4	D,S	

10Q1	J. P. Moore	170	Dr	50	6	39.50	4-20-62	N	--	NU	
14E1	C. E. Saxton	525	Dr	102	--	46.5	4- 2-62	J	1	D	
14F1	E. L. Barber	760	Dr	158	7	--	--	S	1/2	D	
15B1	W. G. Grotheer	290	Dr	197	6	100	1962	S	1/2	D	
15B2	S. I. Arnot	310	Dr	182	6	115	--	S	3/4	D	Yields 8 gpm.
15C1	C. K. Zion	190	Dr	42	6	9.5	3-27-62	J	1/2	D	
15C2	A. G. Snodderly	190	Dg	11	36	--	--	J	1/2	D	
15E1	Einar Carlson	210	Dg	8	36	4.23	3-27-62	J	1/2	D	
15E2	Claudia Miller	240	Dg	17	48	1.80	3-27-62	J	1/2	D,S	
15E3	R. E. Barker	195	Dg	11	36	4	--	J	1/2	D	
15F1	R. W. Hunter	265	Dr	70	6	53.2.	3-27-62	J	1/2	D,S	
15G1	D. P. Gregg	325	Dg	16	36	1.70	4- 2-62	J	1	D	
15P1	Anton Kaszuba	320	Dg	9	36	2.00	3-27-62	J	1/2	D	
15Q1	I. A. Risdon	320	Dg	9	36	3.00	3-27-62	P	1/2	D	
15R1	F. J. Bentler	385	Dr	90	6	41.5	3-23-62	J	--	D	
16F1	Mrs. Davis	385	Dr	200	6	123	--	J	1/2	D	
16L1	Ernest Hanni	325	Dr	64	6	--	--	S	3/4	--	Noticeable iron content.
16M1	H. N. Verschaeve	320	Dr	52	6	37.3	4- 2-62	J	1/2	D,S	Yields 50 gpm. Cp.
17H1	Tom Mason	355	Dr	209	6	134	--	S	1	D,S	
18A1	R. P. Ridgley	320	Dr	65	7	28.5	4-20-62	J	1/2	D	Supplies 2 families.
18H1	Earl Gallagher	510	Dr	187	6	--	--	S	1	D	Yields 13 gpm.
18Q1	W. H. Sweeny	530	Dr	265	6	--	--	N	--	NU	Dry hole.
19C1	R. E. Kresge	485	Dg	34	--	17.40	4-24-62	J	1/4	D,S	
19H1	W. J. Bethune	175	Dr	32	6	--	--	T	1/3	D	Yields 30 gpm. Topsoil, 0-2; sand and gravel, 2-32 ft.
19J1	G. W. Fairburn	175	Dr	36	6	--	--	T	1/2	D	Yields 14 gpm. Topsoil, 0-5; gravel and clay, 5-30; gravel and sand, 30-36 ft.
19J2	E. E. Bernauer	200	Dr	28	7	--	--	J	1/2	D	
22B1	A. J. Peterson	320	Dg	15	30	3.71	3-23-62	--	1/2	D	
22B2	Mike Kacir	335	Dg	16	39	7.5	3-23-62	J	1/2	D	
22B3	Norman Peery	320	Dr	125	--	118	--	J	--	D	
22F1	Paul Wordem	307	Dr	181	6	171	--	J	1/2	D	Yields 15 gpm.
22G1	R. D. Mathers	320	Dg	20	24	2.30	3-23-62	P	1/3	D,S	Noticeable iron content.
22G2	Mary Maranakos	280	Dr	102	6	19.1	7-16-51	J	1/2	D,S	Yields 20 gpm, dd 10 ft. L.
22Q1	W. H. Haviland	290	Dr	250	8	Flowing	--	J	2	--	Yields 30 gpm, dd 105 ft below land surface. L.
24D1	Tom Glancy	870	Dr	196	8	--	--	J	1/2	D	Yields 20 gpm.
24D2	Mrs. N. Lee	870	Dr	192	8	--	--	S	--	--	Yields 15 gpm.
24F1	-- Yeisley, well 3	883	Dr	75	6	--	--	--	--	D	Encountered boulders, pulled back to 25 ft. L.
24F2	. . do . . . , well 1	880	Dr	210	--	--	--	--	--	Ex	Test hole for water. Dry hole. Difficult drilling through large boulders.

Table 9 - Records of wells - Continued

Well	Owner or Tenant	Altitude (feet)	Type of well	Depth of well (feet)	Diameter of well (inches)	Water level		Pump		Use	Remarks
						Below land surface (feet)	Date	Type	Horse-power		
	T. 23 N., R. 6 E - Contd.										
24F3	-- Yeisley, well 2	886	Dr	221	6-5	206	--	--	--	Ex	Large boulders, difficult drilling, 0-206; coarse gravel, 206-221 ft. Yielded 15 gpm for short time. Dry hole.
27M1	C. F. Pewtt	340	Dr	325	8	--	--	J	1/2	D	Pulled casing back and developed at 35 ft. Noticeable iron content.
28P1	W. H. Jaltalin	375	Dr	186	--	--	--	T	15	--	
29D1	L. J. Gooden	200	Dr	280	6	--	--	S	3/4	D	
29M1	R. W. Hanson	225	Dr	40	6	--	--	J	1/2	D	
30A1	Mrs. Cavanaugh	220	Dg	12	36	00	5- 8-62	C	1	D	Noticeable iron content.
30M1	Unknown	522	Dr	51+	--	--	--	--	--	--	Test hole for coal. Depth to bedrock, 51 ft.
30R1	J. J. Betz	605	Dr	74	6	44.55	5- 2-62	J	1	D	Noticeable sulfur odor.
30R2	Charles Johnson	600	Dr	158	8	114.85	5- 2-62	N	--	PS	Pumped 50 gpm for 4 hr, dd 2 ft. L.
31A1	E. W. Heindel	605	Dr	220	7	184.5	5-25-62	J	1/2	D	Yields 10 gpm. Cp.
31A2	L. A. Hart	605	Dr	200	6	185	--	J	2	D	L.
31A3	Robert Calhoun	552	Dr	100	8	--	--	S	1/2	D	
31F1	H. A. Waldron	495	Dr	124	6	80.60	4-26-62	J	1	D	
31G1	A. E. Hennesey	525	Dg	25	36	14.50	4-26-62	J	1/2	D	
31G2	W. A. Hardisty	520	Dr	94	6	89.75	4-26-62	J	1/2	D	
31G3	Opal Culliton	500	Dr	93	6	87.85	4-26-62	J	1/2	D	
31J1	A. D. Sorenson	630	Dg	50	36	--	--	J	--	D	
31R1	Clay Hamilton	560	Dr	167	6	122.65	4-30-62	J	1	D	
32C1	Anton Seppi	220	Dr	26	6	8	--	J	1/2	D	
32D1	M. Virgillo	631	Dr	67	6	20.50	4-25-62	J	1/2	D,S	
32E1	George Pritchard	625	Dg	33	48	9.5	4-26-62	J	1/2	D,S	
32J1	G. W. Wolfe	235	Dr	35	6	7.4	3-19-62	J	1/2	D	
32J2	J. C. Willaford	230	Dg	14	40	8	--	J	1/3	D	Noticeable iron content.
32L1	William Boyd	602	Dr	156	6	125.50	4-26-62	J	1	D	Yields 9 gpm.

32M1	E. L. Wright	640	Dr	206	8	192.10	4-30-62	P	3/4	D,S	
32M2	M. Bauman	645	Dr	195	6	7.30	4-30-62	S	3/4	--	
32N1	R. F. Puckett	655	Dg	40	36	2.50	4-30-62	J	1/2	D	
32N2	Ben Harwood	660	Dr	200	6	192.75	4-30-62	S	3/4	D	
32P1	L. B. Lund	610	Dg	15	36	00	4-30-62	P	1/2	D	
33C1	L. G. Torre	351	Dr	18	8	7.5	3-22-62	J	3	D	Noticeable iron content.
33N1	F. Martinez	245	Dg	12	30	6.5	3-19-62	J	1/2	D	. . . . . . Do . . . . .
33P1	Q. C. Melton	245	Dg	11	36	3.59	3-19-62	J	1/2	D	
34C1	R. G. Harris	540	Dr	115	8	21.0	3-19-62	J	1/2	D	
34N1	E. S. Mahoney	505	Dg	12	48	0.58	3-14-62	C	1/2	D	
34N2	D. B. Whiting	500	Dr	126	6	115.50	3-14-62	J	1	D	Yields 10 gpm. Noticeable iron content. L.
34P1	Herb Short	475	Dr	126	6	100	1960	S	1/2	D,S	Yields 10 gpm. L.
34Q1	H. E. Keys	532	Dr	132	6	--	--	J	1/2	D,S	
34Q2	W. J. Robertson	525	Dr	117	6	37	--	J	1/2	D	
34E1	B. E. Teige	748	Dg	39	--	26.16	3- 8-62	J	1/2	D	
35E2	Lee Case	665	Dr	112	6	--	--	S	1/2	D	
35G1	C. J. Sheldon	730	Dr	121	6	105.20	3- 8-62	N	--	D	
35G2	. . . do . . .	725	Dg	14	50	--	--	P	1/4	D	
35H1	G. Greenleaf	620	Dr	200	6	--	--	J	2	D,S	
35M1	R. A. Wulf	610	Dg	20	48-36	4.00	3- 8-62	C	1/2	D	
35N1	Fred Voris	535	Dr	127	6	--	--	J	1/2	D,S	L.
35N2	G. S. Evans	535	Dr	122	6	104	1962	S	1/2	D	
35R1	J. W. Brady	535	Dr	31	6	11.23	3- 8-62	J	1/4	D	
36G1	John Ulrich	460	Dg	15	24	8	--	J	1/2	D	
36L1	L. Malmassarry	484	Dr	150	6	35.2	3- 6-62	J	1/2	D,S	Brown sandy clay, 0-40; gray sandy clay, 40-130; fine sand, water-bearing, 130-150 ft.
36R1	W. V. Johnson	528	Dr	135	6	--	--	J	1/2	D,S	Noticeable iron content.
36R2	I. H. Thew	500	Dr	94	6	20.8	3- 6-62	J	1/2	D	. . . . . Do . . . . . .

Table 10 - Drillers' logs

Table 10 - Drillers' logs

[Wells for which a log is available are indicated on plates 1 and 3 as black dots. Short logs (those including less than four lithologic units) appear in "remarks" column of table 9.]

Materials	Thickness (feet)	Depth (feet)
20/5-1C2. Ann Garrison. Drilled by J. C. Maxwell, 1963. Altitude 530 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan, brown	26	28
Hardpan, gray	26	54
Gravel, cemented	11	65
Sand and gravel, water-bearing, yields 4 gpm	4	69
Clay, sand, and gravel	1	70
Sand and gravel, water-bearing, yields 4 gpm	4	74
Clay, brown, sand, and gravel	4	78
Clay, sand, and gravel	6	84
Hardpan, gray	7	91
Sand and gravel, blue, water-bearing	1	92
20/5-1C3. John Hungary. Drilled by J. C. Maxwell, 1963. Altitude 530 ft. Casing: 6-inch.		
Topsoil	1	1
Hardpan, brown to gray	48	49
Gravel, cemented	4	53
Hardpan, gray	6	59
Gravel, cemented, gray	16	75
Clay, brown, sand and gravel, water-bearing	7	82
Sand and gravel, brown, water-bearing	2	84
20/5-1D2. Curtis Stadstad. Drilled by J. C. Maxwell. Altitude 510 ft. Casing: 6-inch.		
Topsoil, hardpan	21	21
Gravel	7	28
Hardpan	72	100
Gravel, dirty	3	103
Sand, gravel, bailed 5 gpm	9	112
Clay, sandy, blue	49	161
Hardpan	36	197
Gravel, dirty	2	199
Gravel, layers of clay, water-bearing	6	205
Gravel, water-bearing	2	207
20/5-1D3. George Williams. Drilled by J. C. Maxwell, 1963. Altitude 525 ft. Casing: 6-inch.		
Topsoil	1	1
Hardpan and rocks	31	32
Gravel, cemented	11	43
Clay, sand, and gravel	5	48
Sand and gravel, fine to coarse, water-bearing	10	58

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
20/5-1E1. Sophie Courville. Drilled by J. C. Maxwell, 1963. Altitude 510 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, brown, gravel, and boulders	9	12
Clay, charcoal color, sand, and gravel	9	21
Hardpan, water-bearing zone at 37 ft	23	44
-----, water-bearing	1	45
20/5-1F1. Allie James. Drilled by J. C. Maxwell, 1963. Altitude 508 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, sand, and gravel	18	21
Clay, sand, and gravel, water-bearing	7	28
Gravel, cemented	7	35
Hardpan, gray	5	40
-----, water-bearing	1	41
20/5-1F2. Louie Starr. Drilled by J. C. Maxwell, 1963. Altitude 518 ft. Casing: 6-inch.		
Topsoil	4	4
Clay, sand, and gravel, water-bearing zone at 23 ft	19	23
Clay, sand, gravel, and boulders	10	33
-----, water-bearing	7	40
Hardpan, gray, and boulders	7	47
Clay, blue	8	55
Hardpan, blue	6	61
Hardpan, brown	9	70
Hardpan, gray	14	84
20/5-1Q1. Maggie Barr. Drilled by J. C. Maxwell, 1963. Altitude 517 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, sand, and gravel, brown to gray	31	34
-----, very silty, water-bearing	1	35
Gravel, cemented	4	39
Hardpan, brown	12	51
Hardpan	8	59
-----, silty, water-bearing	2	61
Hardpan	3	64
Clay, sand, and gravel	19	83
Sand, fine to medium, water-bearing	22	105
20/5-2J1. --Hudson. Drilled by J. C. Maxwell, 1963. Altitude 530 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan	9	12
Clay, yellow, sand, and gravel	15	27
Hardpan	31	58

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
20/5-2J1 - Continued		
Gravel, cemented, water-bearing zone at 95 ft	11	69
Clay, dark gray, sand, and gravel	30	99
Sand and gravel, black with lenses of clay, water-bearing	7	106
Sand and gravel, water-bearing, yields 3 to 4 gpm	15	121
Peat, gray clay	3	124
Clay, gray, sand and gravel	43	167
Gravel, cemented, brown	15	182
Clay, brown	5	187
Clay, brown, sand and gravel	25	212
-----, water-bearing	9	221
Clay, sand, and gravel	--	--
20/5-12H1. Lynn Garrett. Drilled by J. C. Maxwell, 1963. Altitude 510 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, sand, and gravel	21	24
Boulders	4	28
Gravel, cemented	12	40
Clay, gray, sand and gravel, water-bearing zone at 69 ft	35	75
-----, water-bearing	1	76
20/5-12J1. Marvin Ross. Drilled by J. C. Maxwell, 1963. Altitude 506 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, brown, sand, gravel, and boulders	20	23
Clay, brown, sand and gravel	32	55
Clay, sandy, brown	3	58
Hardpan, gray, sand, and gravel	9	67
-----, water-bearing, and lenses of clay	4	71
-----, water-bearing	6	77
20/5-12K1. Julius Daniels. Drilled by J. C. Maxwell, 1963. Altitude 503 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan and boulders	13	15
Gravel, cemented	11	26
Gravel, hard, cemented	1	27
Gravel, cemented, and lenses of clay at top, water-bearing	21	48
20/5-12R1. Walt Pacheco. Drilled by J. C. Maxwell, 1963. Altitude 520 ft. Casing: 6-inch.		
Topsoil	3	3
Clay and boulders	7	10
Clay and boulders, gray	20	30
Gravel, cemented, brown	18	48
Clay, gray, and gravel, water-bearing zone at 72 ft	24	72
Clay, gray, sand, and gravel	6	78

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
20/5-12R1 - Continued		
Sand and gravel, water-bearing, yields 1 to 2 gpm	6	84
Clay, gray, sand, and gravel	9	93
Clay, sandy, blue	23	116
Clay, very sandy, blue	23	139
Clay, blue-green-yellow	5	144
Sand and gravel, water-bearing	5	149
20/6-2K1. J. A. Wahl. Drilled by L. B. Richardson, 1957. Altitude 740 ft. Casing: 10-inch; perforated 110-139 ft.		
Clay, gravel, and boulders	17	17
Clay, sand, and gravel	12	29
Clay, blue	4	33
Clay, blue, and gravel	50	83
Hardpan, yellow, contains water-bearing layers of sand, 110-139 ft	56	139
Clay, blue, and gravel	10	149
Clay, sticky, blue	40	189
Clay, yellow	5	194
Clay, blue	22	216
Clay, gray	7	223
Clay, sandy, blue	3	226
Clay, blue	7	233
Clay, gray	6	239
Clay, blue	26	265
Clay, sand, and gravel	7	272
Clay, blue	11	283
Clay, sand, and gravel	29	312
Clay, blue	68	380
20/6-5C1. Lizzie Hanson. Drilled by J. C. Maxwell, 1955. Altitude 580 ft. Casing: 6-inch.		
Soil and boulders	12	12
Clay, sand, and gravel, compact	58	70
Clay, brown	10	80
Clay, sticky	100	180
Conglomerate and shale	58	238
20/6-6N1. N. J. Osborn. Drilled by Service Hardware & Implement Co., 1952. Altitude 520 ft. Casing: 6-inch.		
Hardpan and boulders, water-bearing zone at 37 ft	42	42
Gravel, cemented, and boulders	17	59
Gravel, cemented	11	70
Hardpan, gravel, and clay	12	82
Clay	40	122
Clay and sand	17	139
Clay, sand, and gravel	11	150

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
20/6-9A1. L. H. Moyer. Drilled by Northwest Well Drilling Co., 1960. Altitude 590 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	21	24
Hardpan, blue	73	97
Hardpan, blue, sand and gravel	2	99
20/6-15B1. City of Enumclaw. Drilled by Northwest Well Drilling Co., 1960. Altitude 650 ft. Casing: 8-inch; perforated 125-168 ft.		
Sand, brown	24	24
Sand, brown, and gravel, water-bearing	11	35
Hardpan	60	95
Sand and gravel, compact, water-bearing	35	130
Sand and gravel, water-bearing	39	169
20/6-16K1. --Stovner. Drilled in 1962. Altitude 630 ft. Casing: 8-inch; not perforated.		
Hardpan and gravel	15	15
Sand, water-bearing	2	17
Gravel, water-bearing	8	25
Clay and gravel	10	35
Clay and hardpan	17	52
Hardpan, blue	1	53
Gravel, water-bearing	5	58
Hardpan, blue	86	144
Hardpan, yellow	8	152
Clay and gravel	9	161
Gravel, water-bearing	3	164
20/6-24P1. Dwight Garrett. Drilled by N. C. Jannsen, 1930. Altitude 741 ft. Casing: 6-inch.		
Boulders	40	40
Boulders and gravel, water-bearing	12	52
Gravel, water-bearing zone 65-78 ft	26	78
Gravel and coarse sand, water-bearing	4	82
Gravel, water-bearing	4	86
Gravel, clay, and boulders	15	101
Gravel, coarse	6	107
Gravel, water-bearing	2	109
Gravel, clayey	3	112
20/6-25B1. C. J. Younkin. Drilled by R. A. Lueck, 1953. Altitude 740 ft. Casing: 8-inch; not perforated.		
Topsoil	1	1
Lava ash	16	17
Clay, soft, blue, sandy	65	82
Sand and gravel, water-bearing	3	85

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
20/6-25Q2. H. H. Akin. Drilled by R. A. Lueck, 1952. Altitude 745 ft. Casing: 8-inch.		
Topsoil	2	2
Hardpan, yellow	6	8
Hardpan, blue	29	37
Hardpan and boulders	2	39
Sand and gravel, water-bearing	2	41
20/7-5B1. S. S. Hudack. Drilled by Tacoma Pump & Drilling Co. Altitude 800 ft. Casing: 6-inch.		
Topsoil	5	5
Clay and gravel	16	21
Hardpan	22	43
Gravel and sand	10	53
20/7-19Q1. O. H. Dickson. Drilled in 1953. Altitude 775 ft. Casing: 8-inch; not perforated.		
Topsoil	6	6
Hardpan	2	8
Gravel	24	32
Sand and mud	8	40
20/7-30G1. J. McKinnon. Drilled by Tacoma Pump & Drilling Co., 1954. Altitude 825 ft. Casing: 6-inch.		
Topsoil, rocks	5	5
Sand, gravel	28	33
Sand, gravel and clay	50	83
Gravel, water-bearing, sand	2	85
Sand, gravel	5	90
Muck	39	129
Hardpan	7	136
Sand, gravel, coarse	2	138
Hardpan, sand, gravel	9	147
20/7-30P3. H. V. Sorensen. Drilled by R. M. Wade, 1954. Altitude 765 ft. Casing: 8-inch; not perforated.		
Topsoil	2	2
Hardpan, rocky, blue	48	50
Sand and gravel, water-bearing	13	63
Gravel	2	65
20/7-31D1. D. M. Everest. Drilled by Johnson Drilling Co., 1959. Altitude 755 ft. Casing: 8-inch; perforated 86 to 99 ft.		
Topsoil, blue clay and gravel	72	72
Hardpan, blue clay	10	82
Gravel, water-bearing, yields 10 gpm	1	83
Clay	2	85
Gravel, water-bearing	17	102

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/3-1K1. Bertold Bruell. Drilled by L. R. Gaudio. Altitude 210 ft. Casing: 6-inch.		
Hardpan	20	20
Clay, sandy	10	30
Hardpan	21	51
Clay, sandy	39	90
Sand, clay, fine, brown	65	155
Sand, fine, brown	9	164
Sand, contains stringers of blue clay	26	190
Sand, fine	25	215
Sand, fine, contains stringers of blue clay	50	265
Sand, fine	28	293
Clay, blue	10	303
No record	20	323
21/3-12J1. King County Water Dist. 100, well 6. Drilled by Richardson, 1961. Altitude 260 ft. Casing: 12-inch to 95 ft; 10-inch liner 0 to 95 ft; 8-inch 30-slot screen, 95-115 ft.		
Topsoil	7	7
Hardpan, yellow	31	38
Hardpan, blue	12	50
Sand, gravel, water-bearing	97	147
Clay, sticky, blue, and shale	269	416
21/3-13J1. King County Water Dist. 100, well 13. Drilled by L. B. Richardson. Altitude 326 ft. Casing: 8-inch.		
Fill	3	3
Topsoil	4	7
Hardpan, gray	94	101
Sand, fine, coarse, some coarse gravel	11	112
Sand, fine	10	122
Sand, fine coarse gravel	17	139
Sand, fine	23	162
Sand, fine, heaving	58	220
Sand, fine, heaving, some coarse sand and gravel	10	230
Sand, fine, heaving	65	295
Sand, fine, clay, blue	2	297
Sand, clay, fine	12	309
Clay, blue, some fine sand	62	371
Clay, blue	24	395
21/3-13N1. E. H. Savage. Drilled by Johnson Drilling Co., 1935. Altitude 380 ft. Casing: 6-inch; perforated 312-351 ft.		
No record	75	75
Sand	37	112
Sand, fine	10	122
Hardpan	12	134
Sand, fine, compact	11	145
Sand	10	155

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/3-13N1 - Continued		
Clay, blue	28	183
Clay, blue, contains water-bearing stringers of sand	129	312
Sand	6	318
Sand and gravel	30	348
Sand, fine	3	351
21/4-1D1. D. L. Poortvliet. Drilled by J. C. Maxwell, 1960. Altitude 65 ft. Casing: 6-inch.		
Topsoil	1	1
Sand, black	49	50
Sand, clay	50	100
Gravel and clay	40	140
Clay, gravel, light brown	30	170
Clay, sand, water-bearing	20	190
Silt, clay, sandy	29	219
Clay, compact	16	235
Sand, gravel, clay	18	253
Sand, clay	57	310
Sand, water-bearing	45	355
Clay, silty	47	402
Clay, compact, sticky, green, black	28	430
Sand, clayey	20	450
21/4-1M1. R. S. McDaniel. Drilled by R. B. DeRemer. Altitude 75 ft. Casing: 8-inch; perforated 90-100 ft.		
Topsoil	2	2
Sand, gravel, and boulders	20	22
Hardpan	31	53
Sand and gravel, cemented	37	90
Sand and gravel, compact, water-bearing	11	101
Clay, silty	15	116
Silt, sand, and gravel	23	139
Gravel, water	10	149
Sand, fine	16	165
Sand and gravel	5	170
Silt and gravel	8	178
Sand and silt	11	189
Sand, water	22	211
Sand, silt, and gravel	23	234
Sand, water, and gravel	2	236
21/4-1M2. Henry Dykstra. Drilled by J. C. Maxwell, 1962. Altitude 60 ft. Casing: 8-inch; 40-slot screen, 43 to 48 ft.		
Topsoil	3	3
Sand, black	12	15
Clay, sand, and gravel	6	21
Sand, water-bearing, and gravel	1	22
Hardpan, yellow clay and gravel	7	29
Sand and gravel, water-bearing	4	33
Clay, yellow	6	39

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-1M2 - Continued		
Sand and gravel, water-bearing	9	48
21/4-1Q1. Mrs. Frank Schnider. Drilled by J. C. Maxwell, 1953. Altitude 55 ft. Casing 8-inch; perforated 160-165 ft.		
Clay, sandy clay	87	87
Clay, wood, rock	19	106
Clay, some gravel	20	126
Sand, dark, water-bearing	20	146
Sand, water-bearing	12	158
Gravel	7	165
Clay, coarse sand	5	170
Clay, sandy	9	179
21/4-3A1. C. B. Bragg. Drilled by Northwest Well Drilling Co. Altitude 426 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan, blue	57	59
Clay, blue	90	149
Sand and gravel, blue	1	150
21/4-4B2. King County Water Dist. 64, well 3. Drilled by L. B. Richardson, 1950. Altitude 425 ft. Casing: 18-inch, to 85 ft; 12-inch, 0-147 ft; 8-inch, 0-236 ft; screened 236-246 ft.		
Topsoil	2	2
Clay and gravel	71	73
Sand, brown	30	103
Hardpan	8	111
Sand, brown	10	121
Hardpan	11	132
Clay and gravel	14	146
Sand	1	147
Hardpan	24	171
Clay, gravel, and sand	4	175
Clay, brown and sand	4	179
Clay, brown, sand, some gravel	8	187
Clay, brown, sand	25	212
Gravel and clay	21	233
Clay, sand, and gravel	3	236
Sand, gray, and gravel, water-bearing	10	246
21/4-4J1. King County Water Dist. 64, well 12. Drilled by L. R. Gaudio, 1963. Altitude 445 ft. Casing: 10-inch, to 357 ft; 10-inch 30-slot screen, 357-375 ft.		
Hardpan, rocks, large	7	7
Hardpan	88	95
Sand, dry, brown	9	104
Sand, blue	8	112
Clay, sandy, blue	17	129

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-4J1 - Continued		
Sand, blue	2	131
Gravel, cemented	27	158
Hardpan	28	186
Clay, gravelly	9	195
Hardpan	25	220
Clay, sandy	31	251
Sand, blue	4	255
Sand, gravel	5	260
Sand, blue	30	290
Hardpan	11	301
Clay, blue, gravelly	9	310
Hardpan	25	335
Sand, gravel, water-bearing	41	376
Sand, gravel, finer, and blue silt	1	377
21/4-4N1. King County Water Dist. 64, well 7. Drilled by L. R. Gaudio, 1958. Altitude 440 ft. Casing: 12-inch; screened 294-315 ft.		
Hardpan and boulders	11	11
Boulders	5	16
Gravel, cemented	30	46
Hardpan	19	65
Sand and gravel	7	72
Gravel, cemented	38	110
Hardpan	29	139
Clay and gravel	4	143
Gravel, cemented	7	150
Sand and gravel, compact	4	154
Sand and gravel, layers of clay	11	165
Sand, compact	12	177
Sand and layers of clay	15	192
Gravel, cemented	8	200
Hardpan	10	210
Clay, sandy	20	230
Gravel, cemented	5	235
Sand and gravel	8	243
Gravel, cemented	10	253
Clay, gritty	10	263
Hardpan	8	271
Sand and gravel, compact	5	276
Gravel, cemented	19	295
Sand and gravel, layer of clay	19	314
Sand and gravel	1	315
Clay, blue	14	329
21/4-5M1. S. S. Waterman. Drilled by L. R. Gaudio, 1947. Altitude 305 ft. Casing: 6-inch.		
Topsoil and gravel	2	2
Gravel and clay, sand streaks	61	63
Sand, yellow, streaks of sand	33	96
Gravel and clay, sand streaks	19	115

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-5M1 - Continued		
Clay, blue	20	135
Gravel	21	156
Gravel, water-bearing	4	160
21/4-5R1. King County Water Dist. 64, well 6. Drilled by L. R. Gaudio, 1956. Altitude 455 ft. Casing: 12-inch, to 314 ft; 8-inch perforated casing, 314-324 ft.		
Hardpan	22	22
Hardpan, cemented gravel, and boulders	48	70
Gravel, cemented, and hardpan	15	85
Sand and gravel	40	125
Sand and gravel, loose	45	170
Sand and gravel	38	208
Clay, blue, sandy	40	248
Sand, fine, muddy	17	265
Sand, muddy	14	279
Sand and gravel	33	312
Gravel, with clay and hardpan	2	314
Gravel, loose	11	325
Clay, blue	10	335
21/4-7Q2. King County Water Dist. 100, well 4. Drilled by R. G. Kempe. Altitude 305 ft. Casing: 12-inch to 200 ft; 12-inch 50-slot screen, 200-207 ft.		
Topsoil	3	3
Clay, sand, and gravel	75	78
Sand and gravel, loose, water-bearing, yields 75 gpm	8	86
Sand	2	88
Sand and gravel	7	95
Sand, dirty	4	99
Sand, gravel, and clay	2	101
Sand and clay	92	193
Sand, gravel, and clay	8	201
Sand and gravel, coarse, water-bearing	6	207
21/4-8P1. King County Water Dist. 100, well 7A. Drilled by L. B. Richardson. Altitude 396 ft.		
Topsoil	3	3
Hardpan	62	65
Gravel, sand, clay	3	68
Hardpan	6	74
Sand, gravel	6	80
Clay, sand, gravel, boulder 117-120	125	205
Hardpan	2	207
Sand and gravel, water-bearing	6	213
Sand and gravel with streak of clay	6	219
Hardpan	90	309
Clay, sand, and gravel	31	340
Clay, sand, small gravel	34	374
Clay, gravel	15	389

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-8P2. King County Water Dist. 100, well 7. Drilled by L. B. Richardson. Altitude 396 ft. Casing: 12-inch; 80-slot screen, 205-228 ft.		
Sand, gravel, dry	4	4
Hardpan	50	54
Clay, gravel, blue	3	57
Hardpan	22	79
Clay, sand, gravel, gray, water-bearing at 83 ft	5	84
Hardpan	11	95
Clay, sand, gravel, gray	11	106
Hardpan	58	164
Sand, gravel, clay, gray	8	172
Hardpan	13	185
Sand, gravel, clay, gray	6	191
Hardpan	4	195
Sand, gravel, clay, blue	3	198
Hardpan	4	202
Sand, fine, clay, blue gravel	13	215
Sand, gravel, fine to coarse, bits of clay, harder	6	221
Sand, fine to coarse, gravel, loose, water-bearing	3	224
Clay, gravel, sand fine to coarse	4	228
21/4-8R1. King County Water Dist. 100, well 3. Drilled by L. B. Richardson, 1954. Altitude 445 ft. Casing: 8-inch to 463 ft; not perforated.		
Hardpan	9	9
Clay, sand and gravel	5	14
Hardpan	30	44
Sand and gravel, water-bearing	3	47
Hardpan	5	52
Clay, yellow, and gravel	42	94
Sand, clay, gravel	7	101
Hardpan	64	165
Clay, brown, and gravel	4	169
Clay, yellow, sand, and gravel	16	185
Clay, brown, and gravel	65	250
Clay, sand, and gravel, water-bearing	11	261
Clay, brown, and peat	2	263
Clay, sand, and gravel	12	275
Clay, blue	21	296
Clay, blue, and gravel	2	298
Sand, contains stringers of gravel and clay	23	321
Hardpan	17	338
Gravel, dirty	5	343
Hardpan	18	361
Clay, blue	8	369
Sand, dirty	11	380
Clay, blue	1	381
Sand, dirty	5	386
Clay	1	387
Sand, some gravel	7	394
Sand, dirty	26	420

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-8R1 - Continued		
Gravel, dirty	4	424
Sand, dirty	29	453
Sand, cemented, and gravel	6	459
Sand, dirty	4	463
21/4-9F1. King County Water Dist. 64, well 1. Drilled by N. C. Jannsen, 1941. Altitude 510 ft. Casing: 13-inch to 100 ft; 8-inch, 100-351 ft.		
Sand and gravel	18	18
Hardpan	96	114
Clay, sand, blue	6	120
Hardpan	8	128
Gravel	3	131
Gravel, cement	31	162
Clay, sandy, yellow	107	269
Clay and gravel	60	329
Gravel	22	351
21/4-10F1. King County Water Dist. 64, well 4. Drilled by J. C. Maxwell, 1952. Altitude 405 ft. Casing: 10-inch to 149 ft; 7-inch, 144-169 ft; 40-slot screen, 169-179 ft; 60-slot, 179-185 ft.		
Sand, gravel and rocks	20	20
Sand, gray	3	23
Gravel, large	9	32
Sand, blue, and gravel	8	40
Sand, gray, with gravel	4	44
Gravel, dark	20	64
Hardpan, blue	20	84
Clay, blue, hardpan	3	87
Gravel	3	90
Sand	10	100
Sand and gravel	6	106
Sand and clay	2	108
Sand and gravel	41	149
Hardpan	6	155
Clay, sandy	7	162
Sand and gravel	14	176
Hardpan	2	178
Gravel and sand	5	183
Hardpan	17	200
21/4-10Q1. King County Water Dist. 64, well 8. Drilled in 1962. Altitude 365 ft. Casing: 12-inch to 266 ft; screened 266-278 ft; bottom 7 ft of hole filled with pea gravel.		
Hardpan	10	10
Clay, sandy, blue	10	20
Hardpan, blue	5	25
Gravel	7	32
Sand and gravel	18	50

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-10Q1 - Continued		
Hardpan, brown	22	72
Clay and gravel	30	102
Hardpan	4	106
Sand and gravel, coarse	2	108
Hardpan, brown	45	153
Hardpan, blue	17	170
Gravel, cemented	16	186
Hardpan, blue	51	237
Sand, coarse, water-bearing	8	245
Hardpan, rocky	20	265
Sand, coarse	13	278
Clay, blue	6	284
21/4-11N1. King County Water Dist. 64, well 5. Drilled by L. R. Gaudio, 1947. Altitude 510 ft. Casing: 8-inch to 210 ft; perforated 179-209 ft.		
Topsoil and boulders	8	8
Rocks, cemented, gray	30	38
Gravel, cemented, sand	62	100
Clay, thin layers of sand and gravel	35	135
Gravel and sand, medium fine	15	150
Sand, fine, thin layers of gravel	27	177
Gravel, cemented	2	179
Gravel, coarse	30	209
Clay, yellow, and boulders	2	211
21/4-15F1. W. Trenary. Drilled in 1950. Altitude 430 ft. Casing: 6-inch to 80 ft.		
Loam, sandy	5	5
Hardpan	40	45
Sand	5	50
Hardpan	20	70
Clay, sandy, with gravel	8	78
Gravel and sand, water-bearing	5	83
21/4-15K1. W. Shull. Drilled by Tacoma Pump and Drilling Co., 1955. Altitude 430 ft. Casing: 6-inch.		
Hardpan, gravelly	12	12
Hardpan	64	76
Hardpan, gravel (water-bearing)	21	97
Hardpan	11	108
Gravel, cemented (water-bearing)	4	112
Hardpan	8	120
Gravel, cemented	4	124
Gravel, cemented (water-bearing)	3	127
Gravel, cemented	6	133

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-15L2. King County Water Dist. 64, well 10. Drilled by H. O. Meyers. Altitude 420 ft. Casing: 16-inch to 407 ft; 12-inch, 407-726 ft; 10-inch, 726-1007 ft; perforated 385-407 ft and 415-435 ft; sand packed 382-455 ft; 35-slot screen 385-435 ft.		
No record	7	7
Hardpan, light brown, and cobbles	29	36
Sand and gravel, loose	22	58
Sand and gravel, cemented	6	64
Clay, sand, and gravel	36	100
Gravel, cemented	39	139
Hardpan	9	148
Gravel, cemented	22	170
Hardpan, gray	85	255
Clay, silty, sandy, gray, and gravel	39	294
Hardpan, gray	91	385
Gravel, sandy	22	407
Clay, gray	8	415
Sand and gravel	19	434
Sand, fine, green-blue clay	81	515
Silt, gray, and clay	40	555
Sand, gray, with wood, pumice and red rock	45	600
Silt and clay	16	616
Sand, fine, and gravel	24	640
Sand, gravel, and blue-green clay	50	690
Hardpan, gray	40	730
Hardpan, gray, and clay mixed with sand and gravel	41	771
Clay, very hard, blue, and gravel	11	782
Sand and gravel	25	807
Hardpan, gray	15	822
Clay, gray-blue	9	831
Sand, coarse, loose to cemented	14	845
Clay, blue-green	13	858
Clay, silty, gray	22	880
Clay, peat and wood	2	882
Clay, blue-green to gray, and fine sand	59	941
Sand and silt, gray	11	952
Clay, gray	55	1,007
21/4-16P1. King County Water Dist. 100, well 8. Drilled by L. B. Richardson. Altitude 365 ft. Casing: 8-inch to 415 ft.		
Topsoil	2	2
Hardpan, gray	78	80
Clay, sand, rusty color	30	110
Hardpan, gray	72	182
Sand, coarse	4	186
Hardpan, rock, gray	14	200
Clay, gray	19	219
Sand and gravel	26	245
Clay, gray	15	260
Sand, gravel (water-bearing)	30	290
Gravel, clay, gray	13	303

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-16P1 - Continued		
Sand, clay (water-bearing)	14	317
Sand, heaving	18	335
Clay, sand, fine, gray	8	343
Clay, gray, brown	2	345
Clay, sand, fine, gray	5	350
Sand, heaving	8	358
Sand, gravel (water-bearing)	57	415
21/4-20L1. King County Water Dist. 100, well 10. Drilled by L. B. Richardson, 1962. Altitude 237 ft. Casing: 16-inch to 191 ft; 16-inch 80-slot screen, 191-236 ft.		
Topsoil	2	2
Hardpan, gray	66	68
Gravel, rock	2	70
Hardpan, gray	26	96
Gravel, rock	9	105
Gravel, rock, coarse	8	113
Sand, gravel, rock (water-bearing)	30	143
Clay, blue	1	144
Sand, gravel, rock, coarse (water-bearing)	5	149
Sand, gravel, coarse (water-bearing)	88	237
21/4-20Q1. King County Water Dist. 100. Drilled by L. B. Richardson. Altitude 220 ft. Casing: 8-inch to 242 ft.		
Topsoil	2	2
Hardpan and boulders	8	10
Hardpan	26	36
Rock and gravel with seepage	17	53
Sand and gravel, coarse, water-bearing	13	66
Sand and gravel, heaving	44	110
Sand, fine and coarse, heaving	8	118
Sand and gravel, heaving	14	132
Sand, fine, heaving	2	134
Sand, fine and coarse, heaving	1	135
Sand, fine, heaving and coarse gravel	5	140
Sand, fine and coarse, heaving	6	146
Sand, fine, heaving	26	172
Clay, blue	15	187
Clay, blue with fine sand	25	212
Clay, blue and some fine sand	30	242
21/4-22Q1. King County Water Dist. 100, well 5. Drilled by L. B. Richardson. Altitude 460 ft. Casing: 12-inch to 295 ft; screened 295-301 ft.		
Topsoil	3	3
Gravel and clay	15	18
Hardpan	62	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-22Q1 - Continued		
Clay, sand, and gravel	7	87
Hardpan	35	122
Clay, yellow, sand, and gravel	6	128
Hardpan, yellow	3	131
Hardpan, blue	6	137
Hardpan, yellow	35	172
Clay, sand, and gravel, water-bearing 180-185 ft	21	193
Gravel, sand and clay	17	210
Hardpan	34	244
Gravel, sand, and clay, blue	27	271
Clay, gritty, blue	5	276
Gravel, sand, and clay	11	287
Hardpan	10	297
Sand and gravel (bailed 50 gpm)	2	299
Hardpan	4	303
Gravel, sand, and clay	23	326
Sand, dirty, heaving	15	341
Gravel, sand, and clay	44	385
21/4-24A1. Northern Pacific Railway Co., well 2. Drilled, 1924. Altitude 83 ft. Casing: 36-inch to 13 ft; 12-inch, 12-67 ft; 10-inch, 60-78 ft; perforated 67-78 ft.		
Sand	12	12
Clay	2	14
Sand, some clay	12	26
Sand	6	32
Clay	3	35
Sand and gravel, some clay	21	56
Clay, some sand and gravel	10	66
Sand and gravel (water-bearing)	12	78
21/4-24A2. Northern Pacific Railway Co., well 1. Altitude 83 ft. Casing: 36-inch to 13 ft; 12-inch, 13-87 ft; 10-inch, 81-98 ft; perforated 65-78 ft and 87-98 ft.		
Loam	1	1
Clay	2	3
Sand, gray	4	7
Sand, clay	13	20
Sand, contains stringer of clay at bottom	10	30
Sand, coarse	7	37
Sand and gravel, clay, stinger of clay near top	14	51
Clay, sand	5	56
Sand and gravel, some clay	9	65
Sand and gravel, some large gravel, water-bearing	14	79
Clay, red, some sand	1	80
Sand and gravel	11	91
Gravel and fine sand	8	99

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-24F1. Frank Lockridge. Drilled by J. J. Bell, 1951. Altitude 77 ft. Casing: 8-inch to 19 ft.		
Topsoil	3	3
Sand	3	6
Wood, decayed	4	10
Sand, hard	5	15
Rock, coarse, sand, and gravel	5	20
21/4-25A2. Northern Pacific Railway Co., well 3. Drilled in 1942. Altitude 93 ft. Casing: 6-inch.		
Sand, fine	10	10
Gravel and rock	18	28
Hardpan	11	39
Gravel	7	46
21/4-25J1. Northern Pacific Railway Co., well 4. Drilled by E. A. Bodin, 1957. Altitude 98 ft. Casing: 10-inch.		
Fill	4	4
Clay, gray	6	10
Gravel and boulders	17	27
Wood, logs	4	31
Gravel	8	39
Gravel, coarse and rock	14	53
Shale, hard	7	60
Shale, hard, and rock	10	70
Sand and gravel, water-bearing	6	76
Sand, fine, and gravel, water-bearing	6	82
Hardpan	2	84
Sand, coarse, and gravel, water-bearing	2	86
21/4-29C3. King County Water Dist. 100, well 2. Drilled by N. C. Jannsen. Altitude 205 ft. Casing: 20-inch to 15 ft; 12-inch, 0-125 ft; perforated 40-120 ft; gravel packed.		
Sand and gravel	27	27
Sand and gravel, hard-packed	20	47
Sand, coarse, water-bearing	17	64
Gravel, coarse, water-bearing	8	72
Sand, coarse, water-bearing	53	125
21/4-29C4. King County Water Dist. 100, well 12. Drilled by L. B. Richardson, 1963. Altitude 205 ft. Casing: 14-inch to 90 ft; 25-slot screen, 84-135 ft.		
Topsoil	1	1
Sand, gravel, brown	42	43
Sand, gravel, coarse	22	65
Sand, gravel, coarse, heaving	17	82
Sand, gravel, coarse	18	100
Sand, fine, heaving	35	135

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-29H2. King County Water Dist. 100, well 9. Drilled by L. B. Richardson. Altitude 248 ft.		
Topsoil	2	2
Hardpan, gray	47	49
Sand, gravel	18	67
Sand, fine	87	154
Sand, clay, blue	118	272
21/4-29J1. A. M. Sterrenburg. Drilled by Northwest Well Drilling Co., 1953. Altitude 210 ft. Casing: 8-inch to 151 ft; perforated 40-55 ft.		
Topsoil	4	4
Sand and gravel	8	12
Hardpan	18	30
Sand and gravel	2	32
Sand, fine, water-bearing	8	40
Gravel, water-bearing	15	55
Sand, fine, water-bearing	89	144
Clay, blue	7	151
21/4-32F1. John Wahl. Drilled by Service Hardware & Implement Co., 1953. Altitude 125 ft. Casing: 8-inch to 399 ft; 6-inch, 0-620 ft.		
Topsoil	2	2
Hardpan	16	18
Hardpan and gravel	11	29
Sand	5	34
Hardpan and gravel	10	44
Sand and gravel	41	85
Sand	18	103
Sand, medium to coarse	20	123
Sand, hard-packed, and clay	2	125
Sand	12	137
Sand and clay	18	155
Clay, gravel	17	172
Clay, sand	10	182
Clay	56	238
Clay and sand, heaving	14	252
Clay, sand	31	283
Clay, hard	57	340
Sand and silt, heaving	2	342
Clay, hard	103	445
Clay and silt	55	500
Clay, gray	210	710
Sandstone	10	720
21/4-36N2. R. J. Pommert. Drilled by Fred Jensen, 1935. Altitude 78 ft. Casing: 2-inch to 171 ft; screened 168-185 ft.		
Silt and sand	12	12
Clay	3	15
Sand	2	17
Gravel, fine	3	20

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/4-36N2 - Continued		
Gravel	20	40
Silt	2	42
Clay, red to gray	6	48
Silt, sand, wood particles, and dark clay	19	67
Clay, green	11	78
Gravel, fine, and clay	1	79
Sand, coarse, gravel, fine, silt, clay, wood particles	3	82
Clay, silt, coarse sand	16	98
Sand, coarse, gravel, wood particles	10	108
Gravel, fine	6	114
Sand, coarse, silt, soft clay	4	118
Sand, coarse, and fine gravel	4	122
Silt and clay	3	125
Clay	3	128
Sand and gray clay	5	133
Sand and clay, dark brown	10	143
Clay, gray	5	148
Sand, medium to fine	7	155
Clay	3	158
Clay and sand	7	165
Sand, coarse, water-bearing	8	173
Gravel, fine	10	183
Sand, fine, and silt	2	185
21/5-1C1. Clyde Lamb. Drilled by Myrl Johnson, 1961. Altitude 458 ft. Casing: 6-inch.		
Topsoil, rocks	17	17
Hardpan	13	30
Sand, reddish brown	10	40
Sand, brown	16	56
Sand, gray, water-bearing	4	60
Sand, red	10	70
Sand, gravel, water-bearing	4	74
Hardpan	9	83
21/5-2E1. W. O. Denney. Drilled by Johnson Drilling Co., 1962. Altitude 453 ft. Casing: 6-inch.		
Clay	5	5
Hardpan, rocks, large	10	15
Hardpan, gray	28	43
Sand, gray	1	44
Hardpan, gray	17	61
Clay, brown	3	64
Sand, gravel, fine, gray	4	68
Hardpan, gray	7	75
Silt, gray	5	80
Gravel, silt, fine	11	91

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-2H6. L. E. Grube. Drilled by Johnson Drilling Co., 1961. Altitude 330 ft. Casing: 6-inch.		
Topsoil, rocks	19	19
Clay, sand, brown	11	30
Clay	30	60
Sand, gray, water-bearing	2	62
Sand, brown	6	68
Clay	2	70
21/5-2M3. Peter Straatmen. Drilled by J. C. Maxwell, 1962. Altitude 443 ft. Casing: 6-inch.		
Topsoil	2	2
Sand and gravel	48	50
Clay and sand	30	80
Clay, gray	15	95
Clay, sand, and gravel	30	125
Sand, silty	5	130
Clay, sand, silty	30	160
Sand, coarse	5	165
Sand and gravel, heaving	12	177
Sand and gravel, coarse	5	182
21/5-2P2. K. Branz. Drilled by Johnson Drilling Co., 1956. Altitude 417 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	28	32
Hardpan, gray	18	50
Clay, gray	10	60
Clay, brown	25	85
Sand, gravel, loose	35	120
Sand, water-bearing	10	130
21/5-3E3. T. C. Thomas. Drilled by Johnson Drilling Co., 1959. Altitude 411 ft. Casing: 6-inch.		
Topsoil	5	5
Hardpan, brown	13	18
Hardpan, gray	25	43
Hardpan, brown	7	50
Sand, fine, water-bearing	11	61
21/5-3F1. H. L. Dennis. Drilled by Johnson Drilling Co., 1960. Altitude 361 ft. Casing: 6-inch.		
Clay, sand, brown	22	22
Hardpan, gray, sand, gravel	16	38
Hardpan, gray	40	78
Clay, silty, fine, water-bearing	49	127
Sand, gravel, hardpan	12	139

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-3M1. J. Branchflower. Drilled by Johnson Drilling Co., 1960. Altitude 357 ft. Casing: 6-inch.		
Topsoil	8	8
Sand, gravel, brown	7	15
Sand, clay	13	28
Clay, gravel	10	38
Sand, gravel	6	44
Sand, gravel, water-bearing	10	54
21/5-4B1. Wells Water Assoc. Inc. Drilled by Johnson Drilling Co., 1960. Altitude 508 ft. Casing: 6-inch.		
Topsoil	7	7
Hardpan, rocks, brown	43	50
Hardpan, gray	25	75
Hardpan, brown	20	95
Hardpan, gray	10	105
Clay, gravel, gray	28	133
Clay, brown	22	155
Clay, gray	10	165
Sand, water-bearing	10	175
Clay	3	178
21/5-4C1. W. L. Smith. Drilled by James Bell, 1950. Altitude 453 ft. Casing: 6-inch.		
Topsoil	10	10
Sand, clay, yellow	4	14
Clay, blue	101	115
Shale, laminated	15	130
Clay, sand, silty, gray	39	169
Sand, fine	11	180
Sand, coarse	5	185
21/5-4G1. S. R. Pfaff. Drilled by Johnson Drilling Co., 1962. Altitude 470 ft. Casing: 8-inch to 177 ft; 7-inch, 177-187 ft; 15-slot screen, 177-187 ft; 20-slot, 187-192 ft.		
Topsoil	3	3
Hardpan, gray, yellow	15	18
Hardpan, gray, gravel	28	46
Clay, sandy, gray, and gravel	11	57
Hardpan, gray	30	87
Clay, blue	3	90
Clay, brown	9	99
Sand, gray and gravel, water-bearing	16	115
Clay, gray	20	135
Clay, sandy, gray, and gravel	15	150
Sand, fine, gray, water-bearing	11	161
Sand, gray, water-bearing	31	192
Silt	--	192

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-4L1. Harley Fox. Drilled by H. O. Meyer, 1952. Altitude 400 ft. Casing: 8-inch to 83 ft; perforated 70-80 ft.		
Topsoil	3	3
Hardpan	12	15
Peat	5	20
Sand, clay	10	30
Sand and gravel	5	35
Hardpan with coarse gravel	5	40
Gravel, coarse, some sand	14	54
Gravel, coarse, loose, and sand	2	56
Hardpan and gravel, water-bearing	2	58
Gravel, coarse, and sand	7	65
Gravel, loose, sand, water-bearing	12	77
Hardpan, coarse gravel, water-bearing	3	80
Gravel, coarse, loose and sand, water-bearing	3	83
21/5-4M2. C. G. Tobias. Drilled by Johnson Drilling Co., 1957. Altitude 457 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, gravel, yellow	16	20
Rocks, large	5	25
Hardpan, gray	11	36
Clay, gray	14	50
Hardpan, gravel, rocks, gray	30	80
Mud, brown	10	90
Sand, water-bearing	13	103
21/5-4M3. H. R. Hornbuckle. Drilled by Johnson Drilling Co., 1958. Altitude 465 ft. Casing: 6-inch.		
Dug well	9	9
Hardpan, gray	24	33
Clay, rocks, gray	27	60
Hardpan, gray	12	72
Hardpan, brown	15	87
Gravel, water-bearing	8	95
21/5-5C1. O. H. Cavness. Drilled by J. L. Bell, 1954. Altitude 400 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan	23	25
Sand, brown, and gravel	70	95
Clay, blue, and gravel	30	125
Sand, blue, and gravel, clay, silty	55	180
Sand, brown, gravel and clay	51	231
Clay, brown	2	233
Sand, brown, gravel, and clay	28	261
Gravel, cemented, gray	9	270

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-5G2. Eastridge Water Co., Inc. Drilled by Johnson Drilling Co., 1961. Altitude 463 ft. Casing: 8-inch.		
Topsoil	4	4
Hardpan, brown, and rocks	26	30
Hardpan, gray	22	52
Hardpan, brown, and gravel 9 gpm at 80 ft	28	80
Clay, brown, and gravel	4	84
Clay, gray	31	115
Sand and gravel, water-bearing, 60 gpm at 127 ft	12	127
21/5-5J1. H. A. Johnson. Drilled by Johnson Drilling Co., 1956. Altitude 460 ft. Casing: 6-inch to 146 ft; perforated 136-146 ft.		
Topsoil	3	3
Hardpan, brown	27	30
Hardpan, gray and gravel	82	112
Clay, gray, and rocks	23	135
Sand and small gravel	10	145
Clay, gray	1	146
21/5-5R2. R. D. Heskett. Drilled by Johnson Drilling Co., 1955. Altitude 438 ft. Casing: 6-inch.		
Topsoil	6	6
Hardpan, rocks	4	10
Hardpan, gravel, yellow	30	40
Hardpan, gray	65	105
Clay, sandy	50	155
Sand, water-bearing	16	171
21/5-6L2. U. S. Geological Survey. Altitude 55 ft. Casing: 2-inch to 14 ft; screened drive point, 14-17 ft.		
Soil, sandy loam	2	2
Sand, fine, silty, brown	5	7
Clay, sandy, brown	1	8
Clay, sandy, blue-gray	9	17
21/5-8A1. R. F. Williams. Drilled by Johnson Drilling Co., 1958. Altitude 441 ft. Casing: 6-inch.		
Dug well	22	22
Hardpan, brown	48	70
Hardpan, gray	25	95
Clay, rocks, gray	70	165
Quicksand, silt, water-bearing	10	175
Clay, gray	10	185
Sand, gravel, water-bearing	15	200

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-8B5. Mrs. Jay Griffin. Drilled by Johnson Drilling Co., 1955. Altitude 326 ft. Casing: 6-inch.		
Topsoil	10	10
Hardpan, gravel, gray	60	70
Rock	2	72
Hardpan, yields 3 gpm	58	130
Clay, blue	30	160
21/5-8G1. G. A. Tillman. Drilled by Johnson Drilling Co., 1959. Altitude 391 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan and rocks, brown	17	20
Sand, gravel, brown	20	40
Gravel, sandy, brown, water-bearing	10	50
Clay, blue	1	51
21/5-8Q1. B. L. Graff. Drilled by Johnson Drilling Co., 1960. Altitude 366 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, rocks	9	12
Sand, gravel	11	23
Sand, gravel, loose	11	34
Sand	16	50
Gravel	18	68
Sand, water-bearing	10	78
Gravel	7	85
21/5-8R4. A. H. Englund. Drilled by Johnson Drilling Co., 1961. Altitude 367 ft. Casing: 6-inch.		
Topsoil and rocks	13	13
Hardpan	19	32
Sand, gravel	33	65
Sand, gravel, water-bearing	2	67
Hardpan	5	72
Sand, red	2	74
21/5-8R5. P. N. Schilz. Drilled by Johnson Drilling Co., 1961. Altitude 379 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	34	38
Gravel, loose	17	55
Clay, sandy, brown	5	60
Gravel, loose	10	70
Clay, brown	2	72
Sand and gravel, hardpan, water-bearing	15	87
21/5-9A2. T. J. Hagadorn. Drilled by J. C. Maxwell, 1959. Altitude 493 ft. Casing: 6-inch.		
Old well	81	81

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-9A2 - Continued		
Mud fill	4	85
Concrete	2	87
Sand, brown	37	124
Hardpan	36	160
Sand and gravel, water-bearing	7	167
21/5-9E1. J. L. Thompson. Drilled by Johnson Drilling Co. Altitude 402 ft. Casing: 6-inch.		
Topsoil	10	10
Hardpan, gray	25	35
Clay, sandy, brown	23	58
Clay, gray	14	72
Clay and gravel, sandy, brown	12	84
Clay, gray	36	120
Silt, gray	20	140
Gravel, water-bearing	10	150
Sand and gravel, brown	4	154
21/5-9F4. R. L. Menzies. Drilled by Northwest Well Drilling Co. Altitude 448 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan, brown	24	26
Hardpan, blue	70	96
Sand and gravel, blue	1	97
21/5-9H1. R. Warner. Drilled by Johnson Drilling Co., 1961. Altitude 470 ft. Casing: 6-inch.		
Hardpan, rocks, brown	12	12
Hardpan, brown	23	35
Hardpan, gray	40	75
Clay, gray	10	85
Clay, gravel, sandy, brown	20	105
Gravel	7	112
Hardpan, brown	15	127
Sand, water-bearing	1	128
Hardpan	2	130
Gravel, water-bearing	4	134
21/5-9K1. M. C. Teter. Drilled by Johnson Drilling Co., 1962. Altitude 431 ft. Casing: 6-inch.		
Topsoil	4	4
Clay, gravel, brown	6	10
Hardpan, brown	10	20
Hardpan, gray	25	45
Clay, blue	7	52
Hardpan, gray	33	85
Sand, gray	2	87
Sand and gravel, coarse	8	95

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-10A1. I. H. Johnson. Drilled by Johnson Drilling Co., 1962. Altitude 362 ft. Casing: 6-inch.		
Topsoil	10	10
Hardpan	9	19
Sand and rocks, brown	20	39
Sand, water-bearing	2	41
Sand	10	51
Sand, brown	19	70
Sand, hardpan, water-bearing	10	80
Hardpan	3	83
21/5-10N1. K. D. Luke. Drilled by J. C. Maxwell, 1962. Altitude 310 ft. Casing: 6-inch.		
Topsoil	1	1
Boulders	11	12
Loam, sandy, brown	5	17
Clay, blue	45	62
Sand, brown	61	123
Silt, sandy, gray	19	142
Clay, gray, rocks at 192 ft	60	202
Clay and gravel	18	220
Clay, sticky	10	230
Clay, gravel	12	242
Clay, sandy	13	255
Clay, brittle, blue	35	290
21/5-10N2. K. D. Luke. Drilled by J. C. Maxwell, 1963. Altitude 314 ft. Casing: 8-inch to ?; 6-inch, 0-656 ft; uncased and gravel filled, 656-666 ft.		
Rocks	17	17
Sand, gravel	3	20
Clay, sticky, blue	7	27
Clay, sandy	20	47
Clay, blue	20	67
Loam, sandy	6	73
Clay, gravel, sandy and silty	10	83
Clay, gravel, sandy	7	90
Sand	10	100
Sand, clay, chocolate color	30	130
Clay, sandy, brown	20	150
Clay, sticky	40	190
Clay, rocks, gravel	20	210
Clay, sandy	14	224
Clay, rocks	20	244
Clay and gravel	2	246
Clay, sand lenses	14	260
Silt	7	267
Clay, gray	33	300
Clay, gravel	200	500
Clay, blue	150	650
Clay, soft	7	657
Clay, spongey, soft	6	666

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-10N2 - Continued		
Sand, pea gravel	6	666
21/5-10N3. K. D. Luke. Drilled by J. C. Maxwell, 1962. Altitude 314 ft. Casing: 6-inch.		
Gravel, boulders, cemented	24	24
Sand, clay, brown	16	40
Clay, blue	40	80
Sand, clay, brown	25	105
Sand, brown	30	135
Clay, blue	50	185
Clay	60	245
Clay, gravel	10	255
Clay, rock	50	305
Clay, chunky, caving	20	325
Clay, water-bearing	65	390
21/5-10R1. R. E. Dawson. Drilled by Johnson Drilling Co., 1961. Altitude 115 ft. Casing: 6-inch.		
Topsoil, rocks	24	24
Clay	5	29
Sand, gravel, silty, water-bearing	9	38
Clay	72	110
Sand, silty, water-bearing	13	123
Silt	13	136
Clay, silty	10	146
Unknown	61	207
21/5-12P2. C. L. Tankersley. Drilled by Johnson Drilling Co. Altitude 421 ft. Casing: 6-inch.		
Topsoil, rocks	14	14
Hardpan	90	104
Sand, water-bearing	2	106
Hardpan, sand streaks, water-bearing	14	120
21/5-14C1. Martin Marietta Corp., well 2. Drilled by Johnson Drilling Co. Altitude 410 ft. Casing: 8-inch.		
Clay	3	3
Gravel	6	9
Rocks	1	10
Hardpan	36	46
Gravel, gray	11	57
Gravel, brown	7	64
Sand, brown	26	90
Sand, dark gray	8	98
Silt	16	114
Clay, blue	1	115
Silt	11	126
Clay, sandy	47	173
Clay	37	210

Table 10 -Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-14C2. Martin Marietta Corp., well 6. Drilled in 1962. Altitude 390 ft. Casing: 10-inch to 59 ft; 6-inch, 0-64 ft; 12-slot screen, 64-69 ft; 15-slot, 70-80 ft; 18-slot, 80-85 ft.		
Sand and gravel, brown	5	5
Hardpan, gray	16	21
Clay, brown, sand and gravel	9	30
Hardpan, brown	5	35
Hardpan, gray	19	54
Sand, fine, few thin silty layers	32	86
Silt, sand, fine, and clay	4	90
21/5-14C3. Martin Marietta Corp., well 5. Drilled in 1962. Altitude 385 ft. Casing: 8-inch.		
Sand and gravel	15	15
Hardpan	11	26
Clay	6	32
Hardpan	23	55
Sand	25	80
21/5-14D1. Martin Marietta Corp, well 1. Drilled by M. Johnson and H. Lyster, 1962. Altitude 375 ft. Casing: 8-inch to 450 ft; 4-inch, 280-718 ft; perforated 670-718 ft; gravel packed 280-718 ft.		
Topsoil	14	14
Sand and gravel	15	29
Sand, gray, clay, and gravel	10	39
Hardpan, brown	59	98
Sand, gray, contains clay	12	110
Hardpan	6	116
Silt, gray, sand	154	270
Clay, sandy	10	280
Clay, blue	60	340
Sand, gray, and clay	1	341
Clay, blue	19	360
Clay, sandy	10	370
Clay, blue	15	385
Clay, sticky, blue	3	388
Clay, gravel, and sand	4	392
Rock and clay, water-bearing	10	402
Clay, blue	112	514
Clay, pebbly, blue	9	523
Sand and pea gravel, water-bearing	8	531
Clay, pebbly, blue	22	553
Sand, medium-coarse, water-bearing	6	559
Clay, silty, blue	7	566
Clay, sandy, blue, with boulders	36	602
Clay, pebbly, blue	40	642
Clay, compact, pebbly, blue	27	669
Sand, fine to coarse, gravelly, water-bearing	49	718

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-14D2. Martin Marietta Corp, well 4. Drilled in 1962. Altitude 378 ft. Casing: 8-inch.		
Sand and gravel	9	9
Hardpan	8	17
Sand and gravel	26	43
Hardpan	45	88
Sand, fine	18	106
Sand and clay	6	112
Clay, gray	23	135
21/5-14E1. Martin Marietta Corp., well 3. Drilled in 1962. Altitude 380 ft. Casing: 8- and 6-inch; 25-slot screen, 84-89 ft.		
Gravel and sand	12	12
Hardpan	5	17
Gravel and sand	3	20
Hardpan	8	28
Gravel and sand	6	34
Hardpan	22	56
Hardpan, more sand	10	66
Clay, sand, and fine gravel, brown	6	72
Sand, fine, brown	10	82
Sand, silt, and gravel, blue	2	84
Sand and gravel, blue	2	86
Sand, coarse, blue	3	89
Silt and some gravel, blue	4	93
Clay, sticky, blue	7	100
21/5-14R1. P. F. O'Brien. Drilled by J. C. Maxwell, 1960. Altitude 450 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan, rocks	28	30
Hardpan, clay, sand, and gravel	18	48
Sand, gravel, clay	14	62
Sand, gravel, water-bearing	3	65
21/5-14R4. Bettie Roberts. Drilled by J. C. Maxwell, 1960. Altitude 420 ft. Casing: 6-inch.		
Topsoil	1	1
Hardpan and rocks	34	35
Clay, sand and gravel	17	52
Sand, gravel, water-bearing	8	60
21/5-15J1. Weyerhaeuser Properties, Inc. Drilled by L. B. Richardson, 1964. Altitude 370 ft. Casing: 8-inch to 124 ft; 80-slot screen, 79 to 122 ft.		
Rock and gravel with yellow sand	7	7
Hardpan	38	45
Clay, yellow; fine sand with some gravel	20	65
Sand, brown, with some brown clay	3	68
Sand and gravel, coarse and fine, water-bearing	4	72

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-15J1 - Continued		
Sand, fine and coarse, and coarse gravel	51	123
Sand, fine, and blue clay	1	124
21/5-15M1. Mountain Development Co. Drilled by King Drilling Co., and Jannsen Drilling Co., 1964. Altitude 320 ft. Casing: 12-inch to 223 ft; 8-inch 0 to 524 ft; 6-inch 521 to 573 ft; screened 573 to 582 ft.		
Soil and dirt	4	4
Gravel, lightly cemented	14	18
Gravel, clean and sand, water-bearing	1	19
Sand, brown and clay, water-bearing	35	54
Sand, blue and small rocks, water-bearing	2	56
Clay, sandy, blue, trace of water	20	76
Clay, blue	10	86
Clay, sandy, blue, silt-like	1	87
Sand, brown and blue, trace of water	5	92
Sand, muddy, brown; clean small rocks, water-bearing	26	118
Sand, blue (cleaner) and wood, water-bearing	2	120
Sand, brown; muddy wood and coal, water-bearing	9	129
Sand, blue, water-bearing	1	130
Gravel, small, water-bearing	1	131
Sand, blue, heaving, water-bearing	54	185
Clay, hard, blue	14	199
Clay, sandy, blue; small rocks	4	203
Sand, blue and clay, sand heaves, water-bearing	3	206
Clay, blue and sand, coal, water-bearing	27	233
Sand, muddy and clayey, blue	55	288
Clay, hard, blue; small rocks	63	351
Sand, blue	1	352
Clay, blue	22	374
Sand, very fine, blue; layers of clay, small rocks wood and coal	21	395
Sand, soft, fine-grained	13	408
Clay, hard, gummy, blue; small rocks	37	445
Sand, hard, and clay, water-bearing	3	448
Clay, blue, with rocks	85	537
Sand, blue; water-bearing	1	538
Clay, blue	12	550
Sand, blue, small rocks; water-bearing	?	?
Mud and clay, blue	17	567
Rock, gray-green	5	572
Rock, broken and coarse sand	10	582
Clay, blue	13	595
Sand, fine, with clay streaks	25	720
Sand, fine, with clay	59	779
Rocks and clay, soft	4	783
Clay, blue-gray	4	787
Clay, with clusters of rock	11	798
Shale, blue-gray	140	938
Clay, blue, and sand	23	961
Shale, with rock streaks	39	1,000

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-15Q1. --Kinkad. Drilled by J. C. Maxwell, 1961. Altitude 445 ft.		
Topsoil	7	7
Hardpan and rocks	63	70
Sand, water-bearing	1	71
Sand and gravel, loose	9	80
Hardpan	20	100
Sand, water-bearing	1	101
Gravel, loose	7	108
Hardpan	67	175
21/5-16N1. A. C. Mueller. Drilled by J. B. Johnson, 1950. Altitude 80 ft. Casing: 8-inch.		
Peat, sandy	50	50
Clay	5	55
Sand and gravel, water-bearing	10	65
Hardpan, blue	10	75
Sand	20	95
Gravel, water-bearing	16	111
21/5-19A1. City of Auburn, well 1. Drilled by Northwest Drilling Co. Altitude 105 ft. Casing: 8-inch to 298 ft; perforated 85-103 ft and 131-139 ft.		
Loam, sandy	8	8
Sand and gravel, cemented, brown	30	38
Sand and gravel, coarse, water-bearing	7	45
Sand and cobbles, water-bearing	6	51
Sand, coarse and gravel, some fine material, water-bearing	6	57
Gravel, sand, and clay, water-bearing	23	80
Sand, clayey, water-bearing	4	84
Sand, coarse, and pea gravel, water-bearing	20	104
Sand, clayey, and gravel, medium size	3	107
Sand, coarse, and pea gravel, hard-packed	4	111
Sand, some clayey gravel	20	131
Gravel, coarse, and cobbles	8	139
Sand, coarse	6	145
Sand, cemented, medium-grained, contains gravel lenses and some cobbles, water-bearing	69	214
Sand, fine, and medium gravel	9	223
Sand, coarse, water-bearing	25	248
Sand and gravel, cemented	50	298
21/5-19A2. City of Auburn, well 2. Drilled by Northwest Drilling Co. Altitude 105 ft. Casing: 30-inch to 50 ft; 18-inch 0-103 ft; 125-slot screen, 103 to 134 ft.		
Sand, gravel, and cobbles	102	102
Sand and gravel, clayey	10	112
Cobbles, compact, water-bearing	12	124
Sand and gravel, cobbly, water-bearing	4	128
Sand and gravel, fine	1	129
Sand and gravel, coarse	2	131

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-19A2 - Continued		
Sandy, clayey	3	134
21/5-21C1. P. Acost. Drilled by Northwest Drilling Co., 1957. Altitude 80 ft. Casing: 8-inch to 56 ft; 6-inch to 86 ft.		
Topsoil	18	18
Clay	32	50
Gravel, narrow layer of clay, water-bearing	36	86
21/5-21N4. R. B. DeRemer. Drilled by owner, 1958. Altitude 275 ft. Casing: 6-inch.		
Topsoil	1	59
Sand and gravel, cemented	59	60
Hardpan, blue	30	90
Sand and gravel, cemented	9	99
Sand and gravel, water-bearing	2	101
21/5-21P1. I. Loizer. Drilled by J. C. Maxwell, 1960. Altitude 323 ft. Altitude 323 ft. Casing: 6-inch; perforated 97-112 ft.		
Clay and gravel	27	27
Sand, brown	3	30
Sand, gray	3	33
Gravel, cemented	50	83
Sand, gray	8	91
Sand, gravel, and clay	6	97
Sand and gravel, water-bearing	15	112
21/5-22D1. Bud Chase. Drilled by L. R. Gaudio, 1963. Altitude 375 ft. Casing: 10-inch.		
Gravel, clay, boulders	9	9
Gravel, cemented	21	30
Clay, gravel, blue	10	40
Clay and sand	30	70
Sand, water-bearing	9	79
Sand, fine, contains some layers of clay	46	125
Clay, sticky, blue	23	148
Sand, fine, hard-packed	2	150
Sand, fine	30	180
Sand	12	192
Clay, blue	30	222
Clay, blue, contains some layers of sand or gravel	68	290
Clay	8	298
Sand, fine, silty	12	310
Sand, fine, contains some layers of clay	16	326
21/5-23H1. Walter Marble. Drilled by R. B. DeRemer, 1959. Altitude 455 ft. Casing: 8-inch; perforated 91-104 ft.		
Topsoil	2	2
Hardpan	89	91

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-23H1 - Continued		
Sand and gravel, water-bearing	23	114
Clay, blue	33	147
Sand, fine, laminated, and silt	210	357
21/5-23Q1. Eric Peterson. Drilled by Johnson Drilling Co., 1957. Altitude 235 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	31	35
Hardpan, gray	15	50
Gravel, hardpan, brown	18	68
Clay, gravel, water-bearing	10	78
21/5-25A1. G. R. Smith. Drilled by Northwest Drilling Co., 1961. Altitude 150 ft. Casing: 6-inch.		
Topsoil	4	4
Sand, brown	33	37
Sand and gravel, brown, water-bearing	1	38
Sand and gravel, layers of silt	42	80
21/5-27B1. Auburn Academy. Drilled by J. C. Maxwell, 1957. Altitude 100 ft. Casing: 8-inch to 39 ft; 60-slot screen, 39-44 ft.		
Topsoil	12	12
Clay	3	15
Gravel, water-bearing	20	35
Sand and gravel, coarse, red	13	48
Gravel	4	52
Clay, sandy, gray, contains gravel	4	56
Clay, gray, sand and gravel	22	78
Clay, blue	1	79
21/5-27K1. B. Cameron. Drilled by Service Hardware & Implement Co., 1952. Altitude 408 ft. Casing: 8-inch to 170 ft.		
Old well	53	53
Sand and gravel	15	68
Clay, blue	2	70
Hardpan and gravel	20	90
Clay, blue	15	105
Sand and clay	66	171
Clay and sand	6	177
Sand and clay	17	194
21/5-27Q1. G. Brown. Drilled by Northwest Drilling Co., 1956. Altitude 412 ft. Casing: 6-inch.		
Topsoil	4	4
Loam, sandy	20	24
Hardpan	28	52
Sand and gravel, water-bearing	1	53

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/5-30D1. United Concrete Pipe Corp. Drilled by Ed Evans, 1952. Altitude 100 ft. Casing: 8-inch to 85 ft; screened 85-107 ft.		
Topsoil	3	3
Gravel and boulders	42	45
Sand and coarse gravel, water-bearing	55	100
Sand and fine gravel, water-bearing	7	107
21/5-34B1. White Eagle. Drilled by J. C. Maxwell, 1963. Altitude 446 ft. Casing: 6-inch.		
Boulders	10	10
Till, gray	18	28
Till, brown	17	45
Clay, gray	7	52
Till, gray	22	74
Till, brown	6	80
Loam, brown	5	85
Clay, blue	7	92
Clay, brown	9	101
Clay, blue	3	104
Clay, brown	8	112
Clay, sandy	48	160
Sand and gravel, yields 1 gpm	4	164
Till, brown	2	166
Sand, silty	14	180
Sand, coarse, 1 gpm	2	182
Clay, gray	39	221
Sand, silty, water-bearing	8	229
Sand, clean	4	233
Clay, sandy	20	253
21/5-36H1. L. R. Schnieder. Drilled by J. B. Johnson, 1950. Altitude 525 ft. Casing: 6-inch; not perforated.		
Hardpan	30	30
Sand and gravel	3	33
Hardpan	40	73
Sand and gravel	2	75
Hardpan	10	85
Sand and gravel	2	87
Hardpan	13	100
Clay, blue	110	210
Sand	5	215
Clay, blue	5	220
Gravel, water-bearing	5	225
21/5-36P2. C. A. Reynolds. Drilled by Johnson Drilling Co., 1963. Altitude 525 ft. Casing: 6-inch.		
Topsoil	8	8
Hardpan, rocks	42	50
Sand, gravel, water-bearing	3	53
Hardpan	7	60

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/6-6C1. Norman Anderson. Drilled by Myrl Johnson. Altitude 457 ft. Casing: 6-inch.		
Topsoil	6	6
Hardpan, brown	9	15
Hardpan, gray	40	55
Hardpan, brown	6	61
Sand, gravel, clay, brown	11	72
21/6-7N2. Erickson Water Cooperative. Drilled by Myrl Johnson, 1961. Altitude 430 ft. Casing: 8-inch.		
Topsoil	12	12
Hardpan, rocks, gray	13	25
Hardpan, brown	20	45
Clay, gravel, gray	5	50
Hardpan, gravel, brown	15	65
Clay, gravel, brown	7	72
Sand, gravel, water-bearing	8	80
Gravel, hardpan	3	83
21/6-27R1. William Lenhart. Drilled by Eugene Lawson, 1911. Altitude 275 ft. Casing: 8-inch.		
Clay	45	44
Sandstone and shale, alternating layers	192	237
Coal	4	241
Sandstone and shale, alternating layers	270	511
Coal and bone	6	517
Sandstone and shale, alternating layers	169	686
Coal	1	687
Shale	44	731
Coal, bone, and slate	2	733
Coal	2	735
Shale, white, and bone	2	737
Coal	1	738
Sandstone and shale, alternating layers	338	1,076
Bone and coal	2	1,078
Shale, dark gray	3	1,081
Bone and coal	1	1,082
Coal	5	1,087
Shale, dark	6	1,093
Coal	1	1,094
Sandstone, coarse-grained	129	1,223
Shale	139	1,362
Coal	3	1,365
Shale, hard	4	1,369
Coal	6	1,375
Sandstone, white	38	1,413
Bone and coal	3	1,416
Sand and bone	2	1,418
Bone, coal, and shale	3	1,421
Shale	40	1,461

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
21/6-31F2. C. E. Zink. Drilled by J. C. Maxwell, 1960. Altitude 527 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan and rocks	34	36
Clay, gray, contains sand and gravel	52	88
Sand, gravel	4	92
21/6-31R3. R. S. Schmitke. Drilled by J. C. Maxwell, 1961. Altitude 550 ft. Casing: 6-inch.		
Topsoil	1	1
Hardpan, rocks	44	45
Sand, gravel, clay	33	78
Sand, water-bearing	1	79
Clay, blue, contains sand and gravel	36	115
Sand, gravel, contains clay lenses	11	126
21/6-33M1. W. A. Payne. Drilled by J. C. Maxwell, 1961. Altitude 604 ft. Casing: 8-inch.		
Topsoil	3	3
Hardpan and rocks	75	78
Gravel, cemented, brown to blue	28	106
Sand and gravel, water-bearing	2	108
Clay, blue, and sand and gravel	16	124
Sand and gravel, water-bearing	3	127
21/6-34M1. Fred Silvestri. Drilled by Northwest Drilling Co. Altitude 570 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	30	33
Hardpan, blue	131	164
Clay, blue	62	226
Sand, and gravel, blue, water-bearing	1	227
21/7-28M1. J. D. Pike. Drilled by J. L. Bell, 1959. Altitude 885 ft. Casing: 6-inch.		
Topsoil, gravel	4	4
Sand, gravel, brown	61	65
Sand, gravel, clay, red, brown	33	98
Sand, gravel, water-bearing	5	103
22/4-2D1. F. Gunter. Drilled by Johnson Drilling Co., 1960. Altitude 40 ft. Casing: 8-inch.		
Topsoil	10	10
Sand, wood, water-bearing	20	30
Clay, gravel	50	80
Hardpan, gray	16	96
Clay, rock, gray	9	105
Hardpan, gray	15	120
Sand, gravel, gray	2	122
Hardpan, gray	1	123

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-2P1. The Boeing Company, boring 4. Drilled by Dames & Moore, 1963. Altitude 21 ft.		
Topsoil	1	1
Silt, brown, and fine gray sand	2	3
Loam, silty, gray, contains occasional lenses and layers of fine sand, occasional organic matter	21	24
Sand, fine, dark gray	48	72
22/4-2P2. The Boeing Company, boring 5. Drilled by Dames & Moore, 1963. Altitude 22 ft.		
Loam with roots, silty, brown	4	4
Sand, fine, brown and gray	4	8
Loam, silty, gray, contains organic matter	9	17
Loam, sandy, gray, and fine gray sand	5	22
Sand, fine, gray and layers of silty loam and lenses of peat	20	42
Sand, fine, gray, contains layers of silty loam with organic matter	58	100
22/4-2R1. The Boeing Company, boring 1. Drilled by Dames & Moore, 1963. Altitude 21 ft.		
Loam, silty, brown and lenses of fine, brown sand	5	5
Loam, sandy, fine, gray	6	11
Loam, silty, gray	6	17
Sand, fine, gray	4	21
Loam, silty, gray, contains layers of sand	25	46
Sand, fine to medium, gray	45	91
Loam, silty, dark gray	18	109
Loam, sandy, gray	4	113
Sand, fine to medium, gray	12	125
Loam, silty, dark gray	23	148
Sand, fine, gray, contains lenses of silty loam	10	158
22/4-3G1. State Highway Dept. Drilled by J. C. Maxwell. Altitude 250 ft. Casing: 6-inch.		
Topsoil, gravel to clay	6	6
Clay, sand and gravel	4	10
Sand, clay and gravel	44	54
Sand, dirty	28	82
Sand, fine, dirty	4	86
Sand, water-bearing	26	112
Sand, gravel, water-bearing	16	128
22/4-4B1. Highline Public School Dist. 401. Drilled by J. J. Bell, 1945. Altitude 395 ft. Casing: 8-inch to 20 ft; 6-inch, 0-190 ft; not perforated.		
Clay, hard, brown	2	2
Clay, sandy, brown	28	30
Sand and gravel, dirty, brown	8	38
Gravel, cemented, layers of clay	42	80
Sand and gravel, loose, brown, layers of clay	18	98
Sand, brown, full of clay	13	111

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-4B1 - Continued		
Sand and gravel	6	117
Hardpan, loose, brown	18	135
Hardpan, loose, blue, layers of silt, water-bearing	13	148
Clay, blue, and gravel	10	158
Sand and gravel, brown, water-bearing, yields 15 gpm	7	165
Sand and gravel, brown, water-bearing, yields 20 gpm	25	190
22/4-4C1. King County Water Dist. 75, well 3. Drilled by N. C. Jannsen, 1955. Altitude 315 ft. Casing: 16-inch to 235 ft; 8-inch, 195-241 ft; 20-slot screen, 241-279 ft; 50-slot screen, 279-314 ft.		
Gravel and sand	68	68
Boulders and sand	20	88
Boulder, hard	2	90
Gravel, boulders, and sand	37	127
Clay, sandy	49	176
Sand	71	247
Sand, coarse, contains boulders	13	260
Gravel, boulders, and sand	10	270
Gravel and sand	28	298
Sand	11	309
Clay, contains sand	5	314
22/4-4L1. King County Water Dist. 75, well 1. Drilled by N. C. Jannsen. Altitude 248 ft. Rotary drilled well: 24-inch to 60 ft; 18-inch, 60-485 ft; 8-inch, 485-593 ft. Casing: 12-inch to 246 ft; 8-inch to 246 ft; 8-inch, 246-512 ft; perforated 70-156 ft and 187-240 ft; screened 512-543 ft. Concrete grout to 60 ft; gravel pack, 60-485 ft.		
Sand and clay	10	10
Sand	20	30
Gravel, coarse	53	83
Sand and gravel	67	150
Sand and clay	10	160
Clay, blue	30	190
Clay, contains gravel	20	210
Sand and gravel	33	243
Sand, clay, and gravel	27	270
Sand and clay	30	300
Sand, fine	50	350
Sand and clay	100	450
Sand, fine	60	510
Sand, coarse	20	530
Sand, medium	63	593
22/4-4L2. King County Water Dist. 75, well 2. Drilled by L. R. Gaudio, 1952. Altitude 248 ft. Casing: 16-inch to 110 ft; 12-inch, 100-slot screen, 107-133 ft.		
Topsoil, black	1	1

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-4L2 - Continued		
Clay, gray	3	4
Sand and gravel	5	9
Sand, with layers of clay	18	27
Sand and gravel	24	51
Sand, brown, contains gravel	54	105
Sand and gravel	26	131
Clay, blue	2	133
22/4-4N1. King County Water Dist. 75, well 7. Drilled by L. R. Gaudio, 1958. Altitude 248 ft. Casing: 12-inch to 238 ft; 12-inch, 30-slot screen, 237-241 ft; 60-slot, 241-261 ft.		
Sand	15	15
Sand and gravel	3	18
Sand and gravel, cemented	12	30
Clay, sandy	15	45
Sand and gravel, dirty	22	67
Hardpan, blue	13	80
Clay, sandy, blue	4	84
Sand and gravel, some sand layers	16	100
Hardpan, blue	8	108
Clay, silty to 125 ft	29	137
Hardpan, blue	10	147
Gravel and sand, cemented	25	172
Sand, contains gravel	4	176
Clay with peat lenses	9	185
Sand, fine	4	189
Clay	3	192
Gravel and sand, cemented	4	196
Sand and gravel	4	200
Clay, contains small gravel	15	215
Sand and gravel, cemented, dirty	22	237
Sand and gravel, loose	18	255
Hardpan	2	257
Sand and gravel, loose	4	261
Sand and gravel, cemented	3	264
Clay, gray	6	270
22/4-4Q1. King County Water Dist. 75, well 4. Drilled in 1956. Altitude 295 ft. Casing: 20-inch to 58 ft; 18-inch 58-138 ft; 13-inch 117-141 ft; 10-inch 156-185 ft; 100-slot screen 141-156 ft and 185-200 ft; gravel packed 116-200 ft.		
Sand, brown	25	25
Clay, sandy	7	32
Hardpan and boulders	35	67
Sand, cemented, and gravel	10	77
Sand, gravel, and boulders	11	88
Clay, sandy	46	134
Hardpan, gray	6	140
Gravel and sand	18	158
Clay, sandy, blue	21	179

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-4Q1 - Continued		
Sand	3	182
Sand and gravel	20	202
22/4-5A1. King County Water Dist. 75, well 15. Drilled by L. B. Richardson, 1954. Altitude 270 ft.		
Topsoil	5	5
Clay, sand, and gravel, blue	25	30
Hardpan	6	36
Sand and gravel, gray	8	44
Clay, sand, and gravel	19	63
Sand, blue-gray	8	71
Clay, sand and gravel, blue	5	76
Clay, sandy	45	121
Clay, blue	8	129
Sand and clay, blue	68	197
Clay, sand, and gravel, hard, blue	13	210
Clay, sandy, blue	50	260
22/4-6A1. Highline Public School Dist. 401. Drilled by W. L. Petersen, 1948. Altitude 270 ft. Casing: 6-inch to 124 ft; 4-inch, 124-144 ft; perforated 124-144 ft.		
Topsoil and yellow clay	4	4
Till, gray	21	25
Gravel, water-bearing	2	27
Till, blue	38	65
Sand, fine	19	84
Sand, gray, gravel, water-bearing	40	124
Sand, coarse, blue, pea gravel, water-bearing	20	144
22/4-8A1. King County Water Dist. 75, well 9. Drilled, 1959. Altitude 200 ft. Casing: 12-inch to 311 ft; 80-slot screen, 310-330 ft; 40-slot, 330-340 ft.		
Sand	16	16
Clay, blue	101	117
Hardpan	3	120
Clay, sand, and gravel	54	174
Sand and gravel, cemented	27	201
Sand and gravel	5	206
Clay, multi-colored	109	315
Sand, gravel, water-bearing	19	334
Hardpan	15	349
Clay, blue, and sand	46	395
22/4-8J1. King County Water Dist. 75, well 11. Drilled, 1960. Altitude 148 ft. Casing: 12-inch to 252 ft; 60-slot screen, 251-261 ft; 80-slot screen, 261-271 ft.		
Sand and clay	22	22
Clay, blue	77	99
Sand, fine, and clay, water-bearing	25	124

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-8J1 - Continued		
Clay and gravel	9	133
Sand, silty, clay and pieces of wood	42	175
Sand, fine, heaving	44	219
Clay, sand, and gravel, heaving	35	254
Sand and gravel, clay streaks, water-bearing	16	270
Clay, sticky, gray, and gravel	54	324
Clay, green, sand, and gravel	35	359
Clay, multi-colored, streaks of hardpan	241	600
22/4-8K2. King County Water Dist. 54, well 2. Drilled by R. A. Bennett, 1946. Altitude 150 ft. Casing: 10-inch to 168 ft; 8-inch, 166-195 ft; perforated 170-195 ft.		
Hardpan	10	10
Clay, blue	48	58
Quicksand	2	60
Hardpan	20	80
Clay, sand, water-bearing	7	87
Sand and gravel	10	97
Clay, blue	4	101
Hardpan	6	107
Clay	8	115
Clay	15	130
Hardpan	17	147
Sand, gravel, and clay	7	154
Sand	11	165
Sand, gravel, and clay	5	170
Clay	3	173
Sand and gravel, water-bearing	22	195
22/4-8K3. Wesley Gardens, well 1. Drilled, 1905. Altitude 125 ft. Casing: 6-inch.		
Dug well	48	48
Sand, loose	12	60
Shale	12	72
Gravel, cemented	12	84
Shale, sandy	10	94
Gravel, water-bearing	10	104
Clay, sandy	8	112
Gravel, cemented	8	120
Sand and gravel, water-bearing	15	135
Sand	3	138
Gravel, water-bearing	13	151
Sand	5	156
Gravel, water-bearing	7	163
22/4-8K4. Wesley Gardens, well 2. Drilled by Nicholson Drilling Co., 1952. Altitude 135 ft. Casing: 10-inch.		
Topsoil	1	1
Clay, yellow	4	5
Gravel and sand	7	12

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-8K4 - Continued		
Hardpan	20	32
Shale, blue	43	75
Sand, blue, shale	20	95
Gravel, water-bearing	11	106
22/4-8K5. King County Water Dist. 54, well 3. Drilled by J. L. Bell, 1955. Altitude 155 ft. Casing: 12-inch to 220 ft; perforated 170-220 ft.		
Topsoil	2	2
Clay, sandy	1	3
Hardpan, loose	10	13
Blue clay, silt at bottom	65	78
Silt, blue, clay	16	94
Sand, fine, blue, water-bearing	4	98
Silt, blue	4	102
Silt, sand, and gravel, water-bearing	5	107
Hardpan, loose, blue	10	117
Hardpan, blue	33	150
Sand, hard, and clay	3	153
Sand, blue, gravel, water-bearing	8	161
Gravel, cemented, water-bearing	13	174
Sand and gravel, water-bearing	4	178
Gravel, cemented, blue	41	219
Sand, blue, water-bearing	1	220
Hardpan, blue	5	225
Clay, blue	20	245
22/4-9A2. King County Water Dist. 75, well 10. Drilled, 1960. Altitude 345 ft. Casing: 16-inch to 231 ft; 10-inch, 213-232 ft; 40-slot screen, 232-252 ft.		
Peat	13	13
Sand and gravel	33	46
Hardpan	38	84
Clay, sand and gravel	18	102
Hardpan	83	185
Clay, blue	29	214
Sand, fine, layers of clay	16	230
Sand and gravel, water-bearing	23	253
22/4-9P1. King County Water Dist. 75, well 12. Drilled, 1961. Altitude 285 ft. Casing: 12-inch to 259 ft, 8-inch, 245-273 ft; 60-slot screen, 273-284 ft; 20-slot screen, 284-293 ft; 60-slot 293-301 ft.		
Topsoil	7	7
Clay, yellow, gravel	11	18
Clay, blue, gravel	6	24
Clay, yellow, boulders	41	65
Sand, gravel, water-bearing	16	81
Hardpan	4	85
Clay, blue	125	210

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-9P1 - Continued		
Sand, heaving	50	260
Sand and clay	11	271
Sand and gravel	20	291
Sand, gravel, water-bearing	24	315
Clay, blue	3	318
22/4-10P1. Kenneth Logan. Drilled by J. J. Bell, 1950. Altitude 125 ft. Casing: 6-inch to 124 ft; 60-slot screen, 125-130 ft; 100-slot, 130-145 ft.		
Topsoil	3	3
Hardpan, brown	41	44
Sand, brown, gravel, clay	24	68
Clay, brown	12	80
Shale, layers of sand and pebbles	43	123
Gravel, cemented, brown	31	154
Sand, brown, clay, hard	14	168
Sand, gray, clay, some rocks	11	179
Silt, blue, sand, rocks, water-bearing	5	184
Sand, brown, gravel, clay	21	205
Silt, blue	42	247
22/4-11B1. The Boeing Company, boring 2. Drilled by Dames & Moore, 1963. Altitude 21 ft.		
Loam, silty, brown	3	3
Loam, sandy, fine, gray	8	11
Sand, fine to medium, dark gray	20	31
Loam, sandy, fine, dark gray	13	44
Sand, fine to medium, dark gray	8	52
Loam, silty, gray, contains layers of sand	5	57
Sand, fine to medium, gray, contains layers of loam	11	68
Loam, silty, dark gray	7	75
Sand, fine, dark gray, layers of silty loam	26	101
22/4-11C1. The Boeing Company, boring 3. Drilled by Dames & Moore, 1963. Altitude 26 ft.		
Loam, silty, brown and sandy loam	8	8
Loam, silty, gray and layers of fine to medium sand	35	43
Sand, fine to medium, dark gray, with occasional gravel to 64 ft	58	101
22/4-12H1. George Komoto. Drilled by J. C. Maxwell. Altitude 30 ft. Casing: 6-inch to 315 ft, 4-inch, 315-321 ft; perforated 313-321 ft.		
Clay, topsoil	4	4
Clay, sandy, gravel	135	139
Debris, wood, bark, and coal	9	148
Hardpan	62	210
Sand and gravel, water-bearing	8	218
Gravel	8	226
Clay, brown, and fine gravel	21	247

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-12H1 - Continued		
Clay, sandy, and small gravel	47	294
Sand and gravel	27	321
22/4-16L1. G. Erickson. Drilled by N. C. Jannsen, 1936. Casing: 6-inch. Altitude 195 ft.		
Gravel, cemented, and boulders	35	35
Boulder, large	2	37
Gravel, cemented, water-bearing at 65 ft	28	65
Shale and gravel	17	82
Sand and gravel	11	93
22/4-16N1. King County Water Dist. 75, well 5. Drilled by L. R. Gaudio, 1957. Altitude 146 ft. Casing: 12-inch to 124 ft; 60-slot screen 124 to 130 ft; 100-slot screen 130-145 ft.		
Clay, brown, and hardpan	16	16
Hardpan	52	68
Clay and gravel	9	77
Clay, blue	24	101
Sand, coarse and some gravel	11	112
Gravel, coarse, and sand	33	145
Clay, hard	1	146
22/4-17L3. R. R. Kluth. Drilled by N. C. Jannsen, 1930. Altitude 45 ft. Casing: 8-inch.		
Hardpan	5	5
Clay and shale, red	15	20
Gravel	4	24
Clay and shale, red, water-bearing at 22 ft	14	38
Sand, hard	45	83
Sand and gravel, cemented	72	155
Shale and hard sand		224
Clay and shale	46	270
Sand, hard	2	272
Sand, hard, and gravel	3	275
Sand, hard, and sandy shale	10	285
Sand, hard, and gravel	5	290
Boulders	5	295
Sand and gravel	65	360
22/4-17Q4. Zenith Masonic Home, well 1. Drilled by L. B. Richardson, 1962. Altitude 162 ft. Casing: 18-inch to 81½ ft; 12-inch, 0-328 ft; 10-inch, 140-654 ft; 8-inch; 565-720 ft; 6-inch, 570-952 ft; perforated 896-919 ft.		
Topsoil	2	2
Clay, yellow, sand and gravel	17	19
Sand, clayey, yellowish	7	26
Clay, blue, some gravel	23	49
Clay, yellow, little sand	6	55
Clay, sandy, yellow	15	70
Clay, brown, sand and gravel	8	78

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-17Q4 - Continued		
Clay and gravel, some sand	10	88
Sand, fine grained, clean	10	98
Sand and gravel, clean, water-bearing	5	103
Clay, sandy	8	111
Clay, sand and gravel	12	123
Clay, blue, and fine sand	29	152
Clay, blue, traces of peat	6	158
Clay, blue and brown, bedded	28	186
Clay, sandy, gray to brown, some gravel from 203-240 ft	54	240
Sand and gravel	15	255
Sand to 1/8-inch, coarse, cemented	6	261
Sand, clayey, fine, blue	12	273
Clay, blue, sticky	6	279
Clay, sandy, blue	36	315
Clay, blue	4	319
Clay, sandy, blue, containing thin layers of hard shale	20	339
Shale	4	343
Clay, blue	45	388
Hardpan	2	390
Gravel, cemented	23	413
Clay, yellow and blue, some sand and gravel	38	451
Sand and gravel, water-bearing	2	453
Clay, blue, some sand and gravel	53	506
Sand, water-bearing	2	508
Sand and gravel, hardpan	2	510
Sand, fine, clayey, water-bearing	7	517
Sand, hard, clay and a few pebbles	14	531
Sand, hard, sandy clay streaks from 540 to 554 ft	23	554
Sand, fine, clayey, contains wood chips and a few pebbles	97	651
Clay, blue	12	663
Sand, clayey	4	667
Clay, brown	7	674
Sand, fine, and blue clay, water-bearing	31	705
Sand and clay	7	712
Sand, fine, clayey	8	720
Shale, hard, green	15	735
Clay, blue	2	737
Shale, hard	36	773
Clay, plastic, blue	32	805
Shale, hard	1	806
Clay, plastic, blue	35	841
Clay, blue, sand layers	10	851
Clay, sandy	25	876
Clay, greenish	11	887
Clay, sandy, blue	13	900
Sand, water-bearing	1	901
Sand and gravel, cemented	13	914
Sand, bailed 25 gpm, drawdown 12 ft	5	919
Gravel, cemented	13	932
Sand, coarse	1	933
Clay, plastic, blue	12	945
Sand, water-bearing	1	946
Gravel, cemented	10	956

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-17Q4 - Continued		
Clay, blue	3	959
Sand, clay, shale chips	27	986
Shale, hard, green, sandy clay	15	1,001
22/4-20Q1. Saltwater State Park. Drilled by N. C. Jannsen, 1933. Altitude 75 ft. Casing: 8-inch; perforated 105-145 ft.		
Clay	2	2
Gravel	2	4
Gravel, cemented	21	25
Gravel, loose	5	30
Gravel, cemented	29	59
Gravel, cemented and boulders	22	81
Gravel, fine, and sand	14	95
Sand and gravel	5	100
Clay, blue	5	105
Gravel, water-bearing	20	125
Clay, blue	3	128
Gravel, fine	17	145
Clay, blue	20	165
22/4-22Q1. Henry Riefschnider. Drilled by G. C. Gillis, 1948. Altitude 240 ft. Casing: 6-inch.		
Hardpan	90	90
Sand, fine	60	150
Hardpan	10	160
Sand, fine, water-bearing	10	170
Gravel, fine, sand, fine, water-bearing	30	200
Sand, fine, water-bearing	13	213
Hardpan	9	222
Sand, fine, water-bearing	12	234
Sand and gravel, water-bearing	12	246
22/4-24G1. Stokely Van Camp. Drilled by Fred Jensen, 1938. Altitude 35 ft. Casing: 10-inch to 287 ft; 8-inch screen, 230-284 ft.		
Sand, fine black, reddish clay	20	20
Sand, fine	2	22
Wood, rotten	4	26
Clay, sandy, gray	4	30
Clay, gray, sand and wood fibers	6	36
Sand, fine, silty, and wood fibers	4	40
Clay, sandy	5	45
Sand, silty, gray clay	18	63
Hardpan	9	72
Silt, fine and coarse sand	2	74
Hardpan	1	75
Gravel, fine, coarse sand	5	80
Sand, fine	5	85
Sand, fine, contains gray clay	16	101
Sand, coarse	42	143

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-24G1 - Continued		
Hardpan	2	145
Clay, silty, gray	10	155
Clay, coarse sand	5	160
Silt, grayish clay, fine sand	22	182
Clay, silty	34	216
Clay and sand	7	223
Sand, hard packed, water-bearing	2	225
Sand, very hard, boulders	12	237
Sand, hard packed	33	270
Boulders, hard packed	14	284
Clay, silty, sandy, dark	51	335
Clay, soft blue, streaks of sand	42	377
Sand, coarse, tightly packed with clay	20	397
Hardpan	1	398
Clay, blue, and sand	11	409
Clay, blue, quite hard	8	417
Clay, greenish, sticky	11	428
22/4-25M1. G. Lopriore. Drilled by J. C. Maxwell, 1959. Altitude 34 ft. Casing: 6-inch.		
Topsoil	15	15
Sand, black, water-bearing	38	53
Clay, soft	23	76
Clay, very hard	2	78
Sand, gravel, water-bearing	8	86
22/4-27N1. Star Lake Water Coop., well 1. Drilled by J. J. Bell, 1947. Altitude 375 ft. Casing: 10-inch; perforated 122-135 ft.		
Topsoil	8	8
Hardpan, gray	27	35
Gravel, some sand, water-bearing	1	36
Hardpan, gray	19	55
Sand, brown, and gravel, yields 10 gpm	9	64
Clay, sandy, blue, few pebbles	11	75
Gravel, cemented, blue, yields 20 gpm	21	96
Sand, hard, contains clay	22	118
Sand, gray, black	4	122
Sand, gravel, loose formation	3	125
Gravel, cemented	12	137
Hardpan	5	142
22/4-27N2. Star Lake Water Coop., well 2. Drilled by J. J. Bell, 1950. Altitude 375 ft. Casing: 10-inch to 239 ft; 8-inch, 20 slot screen, 335-345 ft.		
Topsoil	2	2
Gravel	6	8
Hardpan	56	64
Clay, sandy, blue	11	75
Gravel, cemented, water-bearing	21	96
Clay, varicolored, hard sand	22	118

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-27N2 - Continued		
Sand, fine to coarse, black	4	122
Sand, loose and gravel	3	125
Gravel, cemented	12	137
Hardpan	69	206
Gravel, cemented	10	216
Hardpan	29	245
Clay, brown	20	265
Shale	60	325
Sand and gravel, water-bearing	20	345
22/4-27N3. Star Lake Water Coop., well 3. Drilled by L. B. Richardson, 1960. Altitude 375 ft. Casing: 10-inch to 343 ft; 10-inch, 40-slot screen, 343 to 366 ft.		
Hardpan	20	20
Clay and gravel	41	61
Hardpan, blue	23	84
Clay, sand, and gravel	35	119
Hardpan	56	175
Sand, and gravel, water-bearing	6	181
Sand, gravel, and clay, cemented	76	257
Wood, clay, gravel	15	272
Clay, sand, gravel, shale	27	299
Sand, water-bearing	3	302
Shale, clay, sand, and gravel	30	332
Sand and gravel, water-bearing	2	334
Clay, sand, and gravel	9	343
Sand and gravel, water-bearing	23	366
22/4-28G3. King County Water Dist. 75, well 8. Drilled by L. R. Gaudio, 1958. Altitude 260 ft. Casing: 12-inch to 213 ft; 40-slot screen, 204-209 ft; 30-slot screen, 209-218 ft; 20-slot screen 218-221 ft.		
Mud and clay	6	6
Sand and gravel, cemented	14	20
Sand, cemented	9	29
Gravel, sand, and clay	15	44
Gravel, and sand, water-bearing	3	47
Sand, gravel, and clay	6	53
Gravel, cemented, and boulders	11	64
Gravel, cemented and sand	6	70
Sand, fine and rocks, water-bearing	20	90
Sand and clay	6	96
Sand, gravel, and clay binder	8	104
Sand and gravel, cemented	29	133
Gravel	17	150
Clay, silty and gravel	9	159
Sand, layers of clay, water-bearing	8	167
Sand, coarse	6	173
Sand, compact	11	184
Sand, compact and clay	5	189
Gravel, cemented	6	195

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-28G3 - Continued		
Sand, compact and clay	5	200
Sand and gravel	3	203
Sand, loose and gravel, layers of sand and clay	18	221
Clay, blue	21	242
22/4-28P1. King County Water Dist. 75, well 14. Drilled by P. M. Botch, 1961. Altitude 272 ft. Casing: 12-inch to 145 ft; 80-slot screen, 145-155 ft; 30-slot screen, 155-160 ft; 20-slot screen 160-165 ft.		
Topsoil	2	2
Clay, yellow and gravel	15	17
Clay, blue and gravel	44	61
Sand and gravel, water-bearing	8	69
Clay, blue	76	145
Sand and gravel, water-bearing	22	167
Sand and gravel, cemented	13	180
Clay, multi-colored, and shale	119	299
Sand and gravel, water-bearing	16	315
Clay, sand, gravel, and shale	27	342
22/4-33C4. T. V. LaVanway. Drilled, 1952. Altitude 273 ft. Casing: 6-inch.		
Clay	82	82
Sand	4	86
Clay	93	179
Gravel, rock	3	182
22/4-33J1. Ellenwood Water Co. Drilled by J. L. Bell, 1961. Altitude 412 ft. Casing: 8-inch to 285 ft; perforated 230-233 ft and 261-271 ft.		
Topsoil	1	1
Hardpan, brown	4	5
Hardpan, blue	74	79
Clay, blue	9	88
Sand, brown and gravel, some clay	17	105
Sand, brown and gravel	35	140
Sand, fine, brown	16	156
Gravel, cemented, brown	18	174
Clay, blue	8	182
Clay, blue and sand, water-bearing	13	195
Clay, brown, sand, and gravel	24	219
Gravel, cemented, brown	11	230
Gravel, water-bearing	3	233
Gravel, cemented, brown	5	238
Gravel, cemented, blue	22	260
Sand, blue and gravel	18	278
Clay, blue	12	290

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-34L2. N. W. Pedigo. Drilled by J. C. Maxwell, 1959. Altitude 345. Casing: 6-inch.		
Gravel, cemented	85	85
Sand and clay, pea gravel	20	105
Clay	57	162
Sand and gravel	6	168
22/4-35C1. King County Water Dist. 64, well 11. Drilled by L. R. Gaudio, 1962. Altitude 45 ft. Casing: 10-inch.		
Sand and gravel	3	3
Sand and gravel, cemented, large rocks	7	10
Gravel, cemented	44	54
Gravel, large, and sand	10	64
Sand, tight, layers of loose gravel	15	79
Sand, gravel, and clay, tight	21	100
Clay, brown and blue	4	104
Sand, tight, streaks of clay	25	129
Sand, tight	21	150
Sand and gravel, cemented	45	195
Sand and gravel, water-bearing	1	196
Clay and gravel	9	205
Sand and gravel, cemented	79	284
Clay, blue	26	310
22/4-35H2. Washington Natural Gas Co., Anode well. Drilled by Evergreen Drilling Co., 1963. Altitude 40 ft. Casing 8-inch.		
Topsoil	8	8
Soil, black, water-bearing	55	63
Silt	27	90
Silt, with gravel	40	130
Sand, silty, water-bearing, heaves	40	170
Sand, black, water-bearing	27	197
Clay, sandy	8	205
Gravel, silty, heaves	45	250
Sand, black	55	305
Wood, slight flow of water	15	320
Gravel and clay	10	330
Boulders in clay	12	342
Lenses of clay and sand	10	352
Sand, silty	43	395
Sand, fine	7	402
Sand, chocolate-colored	6	408
Clay, gray	4	412
Sand, silty, gray, heaving	18	430
22/4-35L1. King County Water Dist. 64, well 9. Drilled, 1962. Altitude 40 ft. Casing: 8-inch.		
Sand, silty, gravel, wood, rocks, layers of peat	38	38
Sand, silty, gravel, layers of peat	9	47
Gravel, large, sand, water-bearing	23	70
Gravel, large, sand, interspersed with layers of cemented gravel, water-bearing	16	86

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/4-35L1 - Continued		
Hardpan	12	98
Sand, silty, and gravel	29	127
Clay, silty, fine sand and gravel layers	13	140
Sand, fine	3	143
Sand, fine, layers of shale	17	160
Shale, contains gravel	13	173
Sand, fine	6	179
Shale	8	187
Sand	1	188
Hardpan	25	213
Hardpan, layers of sand	7	220
Gravel and sand, dark gray, pyritic, angular, well indurated	23	243
Gravel, cemented, large rocks	24	267
Gravel, cemented	9	276
Clay, silty	36	312
Clay with gravel, thin layers of silty sand	36	348
Clay, blue, contains gravel	50	388
Sand and gravel	1	389
Sand, tight, and gravel	2	391
Sand, silty, compact gravel	7	398
Peat, burnt wood	5	403
Clay, green	6	409
Sand	2	411
Sand and gravel, cemented	4	415
Sand	1	416
Clay, green	19	435
Sand, silty, gravel	23	458
22/4-35R1. Logandale Water Assoc., Inc. Drilled by Johnson Drilling Co., 1958. Altitude 53 ft. Casing: 8-inch; perforated 172-182 ft.		
Topsoil	10	10
Sand, silty, water-bearing	34	44
Sand, coarser	6	50
Mud, fine silty	28	78
Clay, solid packed, sandy	13	91
Sand, coarser, water-bearing	5	96
Sand, fine silty, and gray clay	36	132
Rocks, coarse and packed clay	12	144
Clay, fine, solid packed	2	146
Sand, fine, black, water-bearing	9	155
Clay and gravel	5	160
Sand, fine, black	5	165
Sand, coarser, black, small gravel, water-bearing	17	182
22/5-3A1. U.S. Army, Lake Youngs Control, well 1. Drilled by Service Hardware & Implement Co., 1954. Altitude 627 ft. Casing: 8-inch.		
Sand, silty, gravelly (compact)	78	78
Sandstone, yellow, medium	47	125
Shale and clay	128	253

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-3A1 - Continued		
Coal	5	258
Shale and clay, contains coal	144	402
Sandstone	35	437
Shale and clay	88	525
22/5-3B1. U.S. Army, Lake Youngs Control, well 2. Drilled by Pete Sylte, 1955. Altitude 550 ft. Casing: 6-inch; perforated 157-166 ft.		
Sand, silty	3	3
Sand and gravel, cemented	37	40
Clay, blue, sand, and gravel	5	45
Clay, cemented, blue, sand, and gravel	17	62
Clay, blue, sand, and gravel	2	64
Sand, packed	10	74
Sand, gravel, clay, brown	83	157
Gravel and sand	2	159
Gravel, sand and clay	2	161
Gravel and sand	6	167
22/5-3C2. I. Meyst. Drilled by Johnson Drilling Co., 1956. Altitude 499 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, rocks, brown	66	70
Gravel, loose	22	92
Clay, rocks, gray, water-bearing	28	120
Hardpan	6	126
22/5-5E1. Mrs. M. S. Wheaton. Drilled by J. J. Bell, 1945. Altitude 422 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	30	34
Sand, gravel, clay	16	50
Sand and gravel	52	102
Sand and gravel, clean	26	128
Sand and gravel, dirty, water-bearing	2	130
Hardpan, brown	8	138
Clay, blue	14	152
Sand, cemented, gravel	37	189
Gravel, cemented, brown, water-bearing	9	198
22/5-5L2. Wilson Road Community Well. Drilled by J. J. Bell, 1945. Altitude 423 ft. Casing: 6-inch.		
Topsoil	4	4
Clay, brown	16	20
Hardpan, gray	50	70
Sand, gravel, hardpan, brown	76	146
Sand and gravel, brown, water-bearing	7	153
Gravel, cemented, brown	36	189
Gravel, cemented, brown, water-bearing	3	192

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-5L2 - Continued		
Sand, clay, brown	18	210
Silt and sand, blue, water-bearing	37	247
22/5-5Q1. George Anderson. Drilled by J. J. Bell, 1948. Altitude 435 ft. Casing: 6-inch to 195 ft; 14-slot screen, 195-205 ft.		
Soil	2	2
Hardpan	20	22
Sand and gravel	108	130
Clay, brown	2	132
Sand and gravel, brown, water-bearing	5	137
Sand, fine, brown, water-bearing	5	142
Clay, silty, blue	15	157
Gravel, brown, cemented	33	190
Gravel, water-bearing	5	195
Sand and gravel, water-bearing	11	206
22/5-6K3. Willard DeWitt. Drilled by Johnson Drilling Co., 1959. Altitude 183 ft. Casing: 5-inch.		
Topsoil	4	4
Hardpan, brown	6	10
Gravel, loose	15	25
Hardpan	15	40
Clay, brown, yields 3 gpm between 40 and 44 ft	10	50
Clay, gray	43	93
Clay, gravel, sandy, brown, yields 1 gpm	27	120
Clay, blue	35	155
Sand, water	1	156
Clay, blue	5	161
22/5-6L2. J. A. Minshull. Drilled by J. C. Maxwell, 1962. Altitude 82 ft. Casing: 6-inch; perforated 165-175 ft.		
Topsoil	2	2
Clay, sandy, yellow, brown	38	40
Sand, clay lense	22	62
Clay, sand, blue, gray, water-bearing	40	102
Clay, sand	10	112
Clay, green	18	130
Sand, muddy	5	135
Sand, and gravel	20	155
Sand and gravel, water-bearing	22	177
Sand, clay, compact	1	178
22/5-6N1. J. W. Wilson. Drilled by J. C. Maxwell, 1955. Altitude 29 ft. Casing: 6-inch; not perforated.		
Soil	4	4
Clay, sandy, brown	28	32
Sand, coarse, black	30	62
Clay, sandy	35	97

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-6N1 - Continued		
Sand, hard	6	103
Clay, blue, contains hardpan layers	63	166
Sand, water-bearing	3	169
Clay, blue, contains hardpan layers	33	202
Sand and gravel	8	210
22/5-6N4. Fiore Sainati. Drilled by Fred Jensen, 1934. Altitude 28 ft. Casing: 3-inch; screened 178-186 ft.		
Topsoil	10	10
Muck, silty	10	20
Sand, black	15	35
Clay	5	40
Clay and fine gravel	5	45
Clay	5	50
Silt, very slight flow at 58 ft, penetrated lot at 65 ft	15	65
Clay, tight, yellow to dark yellow, and gravel, slight flow at 77 ft and from 95 to 102 ft, static water level 6.5 ft above land surface	47	112
Hardpan, clayey	10	122
"Open material," flows about 4 gpm from 139 ft, static level 12 ft above land surface	27	149
Clay, hard, greenish, with some fine gravel, water-bearing at intervals from 150 to 155 ft.	6	155
Clay, tight, gray, and fine sand	6	161
Sand, gray, and clay, flows 6 gpm at 168 ft	7	168
Clay, green to gray, vegetable matter	4	172
Clay, hard, green	6	178
Gravel, small amount of clay, flows 62 gpm	9	187
22/5-7A2. R. Bjorkland. Drilled by J. C. Maxwell, 1959. Altitude 352 ft. Casing: 6-inch; 40-slot screen, 132-142 ft.		
Topsoil	4	4
Clay, small gravel	36	40
Hardpan	30	70
Clay and gravel	45	115
Sand, washed	15	130
Sand and pea gravel	12	142
22/5-7H1. R. L. McCann. Drilled by J. C. Maxwell. Altitude 330 ft. Casing: 6-inch.		
Clay, sandy, streaks of gravel	88	88
Clay, gravel, water-bearing	28	116
Clay, gravel	10	126
Gravel, cemented	17	143
Sand and gravel, water-bearing	13	156
22/5-7K2. C. A. Griffen. Drilled by Johnson Drilling Co., 1961. Altitude 175 ft. Casing: 6-inch.		
Topsoil	2	2
Clay, gravel, sandy	7	9

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-7K2 - Continued		
Sand and gravel, water-bearing	3	12
Hardpan, gray	14	26
Clay, gravel, gray	10	36
Clay, green	15	51
Clay, blue, yields 3 gpm between 51 and 76 ft	38	89
Sand and gravel, water-bearing	6	95
Clay, blue	2	97
22/5-7M1. Phil Jones. Drilled by T. M. Stimson, 1959. Altitude 32 ft. Casing: 6-inch to 170 ft; perforated 170-180 ft.		
Topsoil, sand, and soft clay	55	55
Sand, black	75	130
Clay, sandy, blue	8	138
Clay, soft, and sand	32	170
Sand and gravel, water-bearing	10	180
22/5-7P2. City of Kent, well 2. Drilled by Tacoma Pump & Drilling Co. Altitude 72 ft. Casing: 8-inch to 150 ft. Open-hole 150 to 170 ft.		
Clay, blue	10	10
Sand and clay, brown	25	35
Sand and gravel, some clay	11	46
Clay, sandy, water-bearing	5	51
Sand and gravel, compacted	4	55
Sand and clay, brown	5	60
Sand, blue, some gravel	9	69
Sand and clay, water-bearing	11	80
Sand, coarse, heaving	1	81
Clay, sandy, hard, blue	39	120
Sand, coarse, water flows at land surface, yield 60 gpm with 5-ft draw-down, water contains iron, has undesirable taste and odor	1	121
Clay, sandy	5	126
Clay, hard, green	24	150
Sand, water-bearing	2	152
Clay, green	11	163
Sand and gravel, water-bearing	1	164
Clay, green	6	170
22/5-7P4. Willa Nordyke. Drilled by J. C. Maxwell, 1961. Altitude 72 ft. Casing: 6-inch.		
Topsoil	6	6
Clay, brown, sand, and gravel	36	42
Sand, silty, brown	8	50
Clay, blue	6	56
Sand, silty, brown	6	62
Clay, blue, brown	5	67
Sand, brown	2	69
Sand, and gravel, brown, water-bearing	9	78
Sand, black, clay	13	91

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-7P5. R. Pohl. Drilled by J. C. Maxwell, 1961. Altitude 75 ft. Casing: 6-inch.		
Topsoil	38	38
Clay, sand, and gravel	9	47
Sand, silty, brown	4	51
Sand and gravel, silty, water-bearing	17	68
Clay, sandy, brown	11	79
Clay, sandy, blue	6	85
Clay, blue, sand, and gravel	37	122
Sand, water-bearing	4	126
Clay, blue	39	165
Sand, water-bearing	2	167
22/5-8L1. Sunny Hill Water Co. Drilled by J. J. Bell, 1950. Altitude 430 ft. Casing: 8-inch to 154 ft; 8-inch, 20 slot screen, 152-162 ft.		
Topsoil	3	3
Clay, sandy	3	6
Sand, brown, gravel, and clay	18	24
Hardpan, blue	2	26
Sand, brown, gravel, some clay	44	70
Hardpan	30	100
Sand and gravel	47	147
Sand, brown, and gravel	4	151
Sand and gravel, full of clay	2	153
Sand, brown, and gravel, water-bearing	9	162
Gravel, cemented, dirty	5	167
22/5-8P1. Crystal Water Assoc. Drilled by J. J. Bell. Altitude 400 ft. Casing: 8-inch.		
Topsoil	3	3
Sand and gravel	26	29
Sand, gravel, and clay	56	85
Gravel, cemented, water-bearing from 174 to 177 ft	92	177
Sand and gravel, coarse	5	182
Sand and clay, brown	2	184
Sand and clay, water-bearing	7	191
Gravel, medium	4	195
Sand, fine	10	205
22/5-9A2. K. Meyers. Drilled by Johnson Drilling Co., 1959. Altitude 435 ft. Casing: 6-inch.		
Topsoil	1	1
Hardpan, brown	2	3
Hardpan, gray	13	16
Sand, water-bearing	92	108
Gravel	12	120
22/5-10E1. James Day. Drilled by Johnson Drilling Co., 1957. Altitude 348 ft. Casing: 8-inch.		
Topsoil	2	2

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-10E1 - Continued		
Silt, brown	28	30
Clay, sandy, gray	20	50
Clay, blue	37	87
Gravel	3	90
22/5-12R1. K. D. Friend. Drilled by Johnson Drilling Co., 1961. Altitude 553 ft. Casing: 6-inch.		
Gravel and clay	26	26
Hardpan, gray	35	61
Clay, blue	12	73
Gravel, loose	41	114
Hardpan, brown	6	120
Sand, gravel, water-bearing	8	128
22/5-13A1. K. D. Routh. Drilled by Johnson Drilling Co., 1962. Altitude 553 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown to gray	58	61
Clay, gray, rocks	17	78
Hardpan, brown, and gravel	26	104
Hardpan, gray	8	112
Clay and sand, brown	8	120
Hardpan, brown	15	135
Sand and gravel, water-bearing	3	138
Hardpan, brown	2	140
22/5-13H1. C. McComb. Drilled by Johnson Drilling Co., 1957. Altitude 555 ft. Casing: 6-inch.		
Hardpan, rocks	25	25
Hardpan, gray	15	40
Boulder	3	43
Sand, clay, and gravel, brown, water-bearing	35	78
Hardpan, gravel	27	105
Sand and gravel, water-bearing	20	125
Hardpan, brown	1	126
22/5-13P2. Gordon Budd, well 2. Drilled by Johnson Drilling Co., 1957. Altitude 535 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, gray, rocky from 7 to 10 feet	62	65
Hardpan, sand, and gravel	15	80
Sand and gravel, brown	45	125
Gravel, water-bearing	2	127
Hardpan, brown	7	134
Coal	3	137

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-14F1. Richard Smith. Drilled by Johnson Drilling Co., 1961. Altitude 560 ft. Casing: 6-inch; perforated 136-143 ft.		
Gravel, clay	26	26
Hardpan, gray	22	48
Hardpan, gravel streaks	28	76
Gravel, boulder (one)	12	88
Clay, blue	22	110
Gravel, brown, hardpan, water-bearing	26	136
Gravel, water	7	143
Hardpan, gray	1	144
22/5-14G1. Howard Hill. Drilled by Johnson Drilling Co., 1961. Altitude 575 ft. Casing: 6-inch.		
Gravel, rocks, brown	10	10
Hardpan, gray	70	80
Hardpan, gravel, gray, yields 7 gpm	38	118
Hardpan, gray	19	137
22/5-14P1. H. L. Imlay. Drilled by Johnson Drilling Co., 1961. Altitude 502 ft. Casing: 6-inch.		
Topsoil	6	6
Hardpan	21	27
Clay, rock, gray	17	44
Gravel, loose, water seam at 62 ft.	18	62
Hardpan, gray	9	71
22/5-15A1. D. Gould. Drilled by Johnson Drilling Co., 1960. Altitude 400 ft. Casing: 6-inch.		
Topsoil	10	10
Clay	20	30
Hardpan, gray	30	60
Sand, gravel, water-bearing	10	70
22/5-15E1. W. B. Brandon. Drilled by Johnson Drilling Co., 1958. Altitude 510 ft. Casing: 8-inch; perforated 149-159 ft.		
Surface	4	4
Hardpan, brown	12	16
Clay, blue	31	47
Clay, blue, and gravel	7	54
Clay, gray	11	65
Clay, gray (sticky) a few pieces of gravel	51	116
Shale, fractured, gray	10	126
Clay, brownish, and gravel	16	142
Sand and gravel, water-bearing	18	160
22/5-15E2. R. D. and I. R. Burnett. Drilled by Johnson Drilling Co., 1956. Altitude 510 ft. Casing: 6-inch; perforated 54-64 ft.		
Hardpan	18	18
Sand, grayish, and clay	17	35
Clay, gray	15	50

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-15E2 - Continued		
Clay, gray, and rocks	5	55
Sand and gravel, water	5	60
Hardpan, gray	4	64
22/5-15M1. K. Broden. Drilled by Johnson Drilling Co., 1958. Altitude 430 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan	12	16
Clay, blue	31	47
Clay, gravel, blue	7	54
Clay, gray	11	65
Clay, sticky, gray	51	116
Shale, fractured, gray	10	126
Clay, gravel, brown	16	142
Sand and gravel, water-bearing	18	160
22/5-16L1. Kent School Dist. 415. Drilled by L. R. Gaudio, 1959. Altitude 485 ft. Casing: 12-inch; perforated 344-355 ft, 443-448 ft, and 457-463 ft.		
Topsoil	12	12
Clay, with gravel	32	44
Hardpan	20	64
Sand and gravel, dirty	14	78
Hardpan and boulders	66	144
Sand and gravel, layers of hardpan	23	167
Clay, blue hardpan layers	18	185
Hardpan, blue	13	198
Sand and gravel, loose	1	199
Hardpan, clay, and gravel	16	215
Sand, sand and gravel, silty, clay in layers	29	244
Clay, blue	19	263
Sand and gravel, loose, dirty	16	279
Clay, blue	14	293
Hardpan, sand and gravel layers	14	307
Sand and large gravel, loose	4	311
Sand and gravel, tight	10	321
Sand and large gravel	3	324
Clay	15	339
Clay, silty	5	344
Sand and gravel	11	355
Clay, blue	5	360
Hardpan	31	391
Clay with gravel	25	416
Clay, sandy	9	425
Sand, dirty, some gravel	18	443
Sand, large gravel	5	448
Clay, blue	6	454
Sand and gravel	9	463
Clay, blue	7	470

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-16M1. H. P. Clark. Drilled by H. O. Meyer, 1962. Altitude 455 ft. Casing: 6-inch.		
Topsoil	3	3
Clay, sand, and gravel	17	20
Clay and sand	5	25
Hardpan	21	46
Gravel, water-bearing	9	55
Hardpan and cemented gravel	36	91
Gravel and sand, brown	15	106
Gravel, hard, gray, water-bearing	20	126
Gravel and sand	21	147
Clay, blue	8	155
Gravel, sand, and clay, water-bearing	31	186
Gravel, gray	40	226
Sand and gravel, fine, black	6	232
22/5-16M3. A. F. Doerflinger. Drilled by Johnson Drilling Co., 1960. Altitude 475 ft. Casing: 6-inch.		
Topsoil	3	3
Gravel	4	7
Clay, gravel, sandy, brown	17	24
Gravel, clay, brown	16	40
Clay, gravel, gray	15	55
Sand, gravel, brown	39	94
Clay, gravel, brown	32	126
Clay, brown	26	152
Gravel, water-bearing	1	153
Hardpan, brown	6	159
22/5-16P1. F. Franks. Drilled by J. J. Bell, 1953. Altitude 455 ft. Casing: 6-inch.		
Dug well	30	30
Hardpan, blue	48	78
Hardpan, brown, heavy, sand and gravel	29	107
Hardpan, brown	36	143
Gravel, cemented, blue, water-bearing	7	150
22/5-16P2. R. B. Brown. Drilled by Johnson Drilling Co., 1960. Altitude 475 ft. Casing: 6-inch.		
Topsoil	6	6
Sand, silty, water-bearing	6	12
Clay, silty	12	24
Hardpan, gravel	7	31
Clay, gravel, yellow	16	47
Sand, gravel, water-bearing	10	57
Clay, blue	1	58
22/5-16Q1. Elmer Mergenthal. Drilled by Johnson Drilling Co. Altitude 425 ft. Casing: 6-inch.		
Topsoil	10	10

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-16Q1 - Continued		
Hardpan, rocks, brown	5	15
Hardpan, gray	25	40
Boulders	3	43
Hardpan, gray	5	48
Gravel, water-bearing	1	49
Hardpan, gray	9	58
22/5-17K1. LeBlanc Gardens. Drilled by Johnson Drilling Co. Altitude 465 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown and gray	57	60
Sand and gravel, loose, brown	110	170
Clay, sandy, loose, brown	20	190
Gravel, loose, brown, water-bearing	24	214
Hardpan	10	224
22/5-17R1. North Road Water Co. Drilled by J. J. Bell, 1952. Altitude 485 ft. Casing: 8-inch to 258 ft; perforated 226-232 ft.		
Topsoil, sandy clay	8	8
Hardpan	21	29
Hardpan, blue	31	60
Sand and clay, brown	42	102
Sand and gravel, brown	15	117
Silt and clay, brown	9	126
Silt, blue, wood fragments, water-bearing	24	150
Silt and clay, blue	14	164
Silt, heaving sand, and gravel	12	176
Gravel, loose, water-bearing	10	186
Gravel, cemented, clayey	74	260
Silt, blue	65	325
Sand and gravel, hard, and clay; clay content increases below 375 ft	55	380
22/5-18D1. August Tonelli. Drilled by J. C. Maxwell, 1962. Altitude 33 ft. Casing: 6-inch to 354 ft.		
Sand, dark to black	120	120
Clay and sand, silty	50	170
Clay, silty, sticky	50	220
Clay, silty to sandy, blue	45	265
Clay, porous, possibly volcanic	25	290
Sand, black	40	330
Volcanic ash (?), black	30	360
Sand and clay, wood particles	10	370
Clay, blue	40	410
22/5-18D2. August Tonelli. Drilled by J. C. Maxwell. Altitude 35 ft. Casing: 6-inch.		
Clay topsoil	4	4
Clay, sandy	76	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-18D2 - Continued		
Sand, black	10	90
Clay, fine, sandy	158	248
Hardpan	30	278
Clay and gravel, compact, sandy	5	283
Gravel and clay	38	321
Gravel, clean	6	327
Clay and gravel	16	343
Sand, coarse, water-bearing	4	347
Hardpan	7	354
22/5-18K1. Hamilton Road Community Water Co., well 1. Drilled by J. J. Bell, 1947. Altitude 380 ft. Casing: 8-inch to 290 ft; perforated 199-208 ft, 215-227 ft.		
Topsoil	3	3
Hardpan, brown	18	21
Hardpan, blue	42	63
Sand, brown, and hard gravel	26	89
Sand, fine, brown, water-bearing	1	90
Sand and clay, fine, brown, water-bearing	19	109
Gravel, cemented, brown	3	112
Clay, sandy, brown	17	129
Clay, blue	19	148
Hardpan, blue	2	150
Clay, blue, and rocks	25	175
Gravel, cemented, blue, gray, water-bearing	40	215
Sand, heavy with clay, gray blue	7	222
Clay and silt, blue	32	254
Clay, green	113	367
22/5-18K2. Hamilton Road Community Water Co., well 2. Drilled by J. J. Bell. Altitude 375 ft. Casing: 8-inch to 225 ft; perforated 178-192 ft.		
Topsoil	2	2
Hardpan, brown and blue	59	61
Sand, clay, brown	22	83
Gravel, cemented, brown	6	89
Clay, blue	36	125
Clay, sand, and rocks	15	140
Hardpan, brown	37	177
Clay, gravel, brown	5	182
Gravel, water-bearing	8	190
Gravel, rocks, sand, brown	45	235
22/5-19B1. City of Kent, well 1. Drilled by N. C. Jannsen, 1950. Altitude 340 ft. Casing: 12-inch to 252 ft; 8-inch, 242-494 ft; perforated 416-426 ft.		
Hardpan, clay, sand, and gravel	187	187
Clay, blue, gravel streak, 202-203 ft	40	227
Gravel, cemented	73	300
Clay, blue	46	346

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-19B1 - Continued		
Gravel, cemented	15	361
Clay, sandy, blue	19	380
Clay, sandy, blue, some gravel	20	400
Clay, hard	10	410
Sand, water-bearing	2	412
Sand and gravel, loose, water-bearing	10	422
Clay, some sand and gravel	13	435
Clay and sand	13	448
Sand and gravel, some clay, water-bearing	10	458
Clay, sandy, blue	64	522
Clay, with gravel	8	530
Clay, blue	15	545
Clay, sandy, brown	20	565
Gravel and clay	5	570
Clay, sandy, green	10	580
Sand and gravel	2	582
Clay, hard, green	16	598
22/5-20E1. East Hill Community Well Co., well 2. Drilled by J. J. Bell, 1945. Altitude 420 ft. Casing: 8-inch.		
Hardpan, boulders	35	35
Sand and gravel, brown	116	151
Sand, brown, water-bearing	24	175
Clay, sandy, brown	8	183
Clay, blue	23	206
Hardpan	17	223
Sand, brown and gravel, water-bearing	2	225
Gravel, cemented, brown, water-bearing	11	236
22/5-20E2. East Hill Community Well Co., well 3. Drilled by J. L. Bell, 1957. Altitude 415 ft. Casing: 10-inch to 11 ft; 8-inch, 0-248 ft; perforated 228-242 ft.		
Topsoil	11	2
Hardpan, blue and brown	36	38
Sand and gravel, brown	137	175
Clay, sandy, brown	5	180
Clay, blue	15	195
Gravel, cemented, brown	14	209
Sand and gravel, water-bearing	2	211
Gravel, cemented	36	247
Hardpan	3	250
22/5-20F1. East Hill Community Well Co., well 1. Drilled by J. L. Bell, 1923. Altitude 420 ft. Casing: 6-inch; perforated 212-220 ft.		
Hardpan, boulders	35	35
Sand, brown, and gravel	116	151
Sand, brown, and clay	32	183
Clay, blue	23	206
Hardpan	17	223

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-20F1 - Continued		
Sand and gravel, brown, water-bearing	2	225
Gravel, brown, cemented, water-bearing	11	236
22/5-20H1. W. J. Eggert. Drilled by J. C. Maxwell. Altitude 465 ft. Casing: 8-inch.		
Topsoil, hardpan	41	41
Hardpan, gray	54	95
Hardpan, black	19	114
Sand and gravel, water-bearing	1	115
22/5-21E2. James McCann. Drilled by J. J. Bell, 1953. Altitude 480 ft. Casing: 6-inch.		
Topsoil	1	1
Clay, sandy, yellow	9	10
Hardpan, brown	7	17
Hardpan, gray	97	114
Clay, blue	9	123
Clay and gravel, blue	12	135
Sand and gravel, clay, brown	101	236
Sand and gravel, blue, gray	8	244
Sand and gravel, brown	9	253
Sand and gravel, hard, blue	32	285
22/5-21J1. D. W. Snow. Drilled by J. C. Maxwell, 1961. Altitude 465 ft. Casing: 6-inch.		
Hardpan	14	14
Sand, gravel, and clay, seepage at 70 ft	90	104
Sand and gravel	2	106
Sand and gravel, water-bearing	11	117
Clay, sand, and gravel, water-bearing	29	146
Sand and gravel	4	150
Clay	6	156
Sand	2	158
Unknown	7	165
22/5-21P2. M. C. Johnson. Drilled by Clyde Dorsten, 1959. Altitude 460 ft. Casing: 7-inch.		
Gravel and sand	10	10
Hardpan	20	30
Hardpan, blue	5	35
Hardpan, blue and sand	54	89
Clay, blue	28	117
Sand and blue clay	8	125
Gravel, hardpan	3	128
Gravel, sand, and water-bearing	7	135

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-21R3. D. S. Swanson. Drilled by Johnson Drilling Co., 1962. Altitude 448 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan, brown	10	12
Hardpan, gray	29	41
Gravel, loose	11	52
Sand, water-bearing	11	63
22/5-22C1. K. G. Johnson. Drilled by Shilling, 1928. Altitude 470 ft. Casing: 6-inch; perforated 80-110 ft.		
Clay	94	94
Sand, coarse, water-bearing	7	101
Clay	99	200
22/5-22N2. C. Giles. Drilled by Johnson Drilling Co., 1954. Altitude 445 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, rocks, brown	12	15
Hardpan, gray	7	22
Clay, sandy, water-bearing	4	26
Clay, rocks, gray	19	45
Sand and gravel, loose, brown	20	65
Sand and gravel, water-bearing	10	75
22/5-24B1. J. P. Schlaegel. Drilled by Johnson Drilling Co. Altitude 510 ft. Casing: 6-inch; perforated 102-115 ft.		
Topsoil	3	3
Gravel, loose	3	6
Hardpan, gravel, brown	46	52
Sand and gravel, loose	50	102
Gravel, water-bearing	13	115
Hardpan	4	119
22/5-24D1. Gordon Frink. Drilled by Johnson Drilling Co., 1960. Altitude 505 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, rocks, gray	28	32
Hardpan, brown	16	48
Hardpan, gray	5	53
Sand, clay, and gravel, brown	12	65
Clay, sandy, brown	30	95
Gravel	6	101
Sand and gravel, water-bearing	10	111
22/5-24D2. R. J. Manny. Drilled by Johnson Drilling Co., 1961. Altitude 530 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, gray	67	70
Clay and gravel, gray	10	80
Hardpan, gray	4	84

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-24D2 - Continued		
Sand and gravel, brown	27	111
Gravel, brown	27	138
Sand and gravel, water-bearing	8	146
Hardpan	4	150
22/5-24D3. M. N. Doherty. Johnson Drilling Co., 1958. Altitude 530 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	13	16
Hardpan, gray	54	70
Hardpan, brown	5	75
Sand and gravel, loose, brown	46	121
Gravel, loose	19	140
Sand and gravel, water-bearing	10	150
22/5-24E1. R. Stinnett. Drilled by Johnson Drilling Co., 1956. Altitude 527 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	72	75
Clay, sandy, brown	40	115
Gravel, loose	15	130
Sand and gravel, water-bearing	1	131
Hardpan	9	140
22/5-24M1. Ham Water Co. Drilled in 1932. Altitude 500 ft. Casing: 6-inch.		
Loam, topsoil, sandy	4	4
Hardpan	36	40
Gravel	69	109
22/5-25H1. Statewide Development Co. Drilled by Johnson Drilling Co., 1964. Altitude 410 ft. Casing: 8-inch to 72 ft; perforated 62-72 ft.		
Gravel and rock, loose	28	28
Hardpan, brown, and gravel	18	46
Clay, gray	3	49
Hardpan and gravel	9	58
Clay, gray	2	60
Hardpan	4	64
Gravel, water-bearing	4	68
Hardpan	4	72
22/5-25K1. Statewide Development Co. Drilled by Johnson Drilling Co., 1964. Altitude 400 ft. Casing: 8-inch to 80 ft; perforated 70-80 ft.		
Gravel, coarse, and rock	24	24
Hardpan	47	71
Gravel and sand, water-bearing	9	80
Hardpan	--	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-26D1. --Schwartz. Drilled by Johnson Drilling Co. Altitude 350 ft. Casing: 6-inch.		
Sand, loose	8	8
Sand and gravel, loose	24	32
Clay, gravel, brown, water-bearing	8	40
Hardpan, gray	5	45
Clay, gray	8	53
Hardpan, gray	9	62
Sand and gravel, water-bearing	1	63
Hardpan, gray	4	67
22/5-27F1. P. C. Spowart. Drilled by Johnson Drilling Co., 1959. Altitude 378 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, gravel, brown	14	18
Clay and gravel, sandy, gray	27	45
Clay and gravel, gray, water-bearing	33	78
Hardpan, gray	5	83
22/5-27H2. G. E. Michelsen. Drilled by Johnson Drilling Co. Altitude 425 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	9	12
Hardpan, gray	24	36
Hardpan, brown	14	50
Gravel, loose	30	80
Clay and gravel, brown	7	87
Clay, gray, and boulders	16	103
Clay, gray	20	123
Silt	27	150
22/5-27M1. Big Five Water Co. Drilled by J. C. Maxwell, 1947. Altitude 437 ft. Casing: 6-inch.		
Loam, brown, and small rock	4	4
Clay, brown, and gravel	16	20
Clay, sandy, and gravel	9	29
Clay and gravel	21	50
Sand, coarse, and gravel	2	52
Clay and gravel	22	74
Sand and gravel, contains clay, water-bearing	14	88
Sand and gravel	6	94
22/5-27M2. H. O. Sortun. Drilled by Johnson Drilling Co, 1960. Altitude 415 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	12	15
Clay, rocks, sandy, gray, yields 2 gpm	9	24
Clay, gravel, sandy, gray	23	47
Hardpan, gray	15	62
Hardpan, rocks, gray, water-bearing	6	68

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-27M2 - Continued		
Clay, gravel, hardpan, sandy	22	90
Sand and gravel, water-bearing	5	95
22/5-28A4. W. G. Crosby. Drilled by Johnson Drilling Co., 1961. Altitude 452 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	12	15
Hardpan, gray	15	30
Hardpan, sand, and gravel	25	55
Clay, blue	29	84
Sand, water-bearing, yields 10 gpm	1	85
Clay and gravel, sandy	7	92
Clay and gravel, yields 8 gpm	46	138
Hardpan, gravel, gray	32	170
Sand and gravel, water-bearing	19	189
22/5-28H1. D. H. Salter. Drilled by Johnson Drilling Co. Altitude 450 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	15	18
Hardpan, gray	27	45
Hardpan, brown	15	60
Clay and gravel, brown	35	95
Hardpan, brown	22	117
Sand, water-bearing	10	127
22/5-28H2. M. L. Torstenson. Drilled by Johnson Drilling Co. Altitude 450 ft. Casing: 6-inch.		
Topsoil	5	5
Hardpan, boulders, gray	16	21
Hardpan, gray	49	70
Sand and gravel, water-bearing	10	80
22/5-28K1. T. C. Stredicke. Drilled by Johnson Drilling Co. Altitude 405 ft. Casing: 6-inch; perforated 65-75 ft.		
Topsoil	5	5
Hardpan, brown and gravel	4	9
Hardpan, gray and gravel	52	61
Gravel and coarse sand, water-bearing	14	75
22/5-29B1. East Hill Water Co., Inc., well 2. Drilled by J. J. Bell. Altitude 413 ft. Casing: 12-inch to 270 ft; 20-slot screen, 270-280 ft.		
Topsoil	2	2
Hardpan, brown	18	20
Hardpan, blue and boulders	70	90
Gravel, brown, cemented	15	105
Sand and gravel, loose, brown	11	116

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-29B1 - Continued		
Sand, hard, cemented, brown, and gravel	36	152
Gravel, cemented, water-bearing	2	154
Sand, brown, some clay and gravel	18	172
Sand and gravel, brown, water-bearing	8	180
Hardpan, blue	3	183
Sand, blue	12	195
Gravel, cemented, brown, water-bearing 200-231 ft	36	231
Clay, sandy, blue	22	253
Sand, brown and gravel, water-bearing	5	258
Gravel, cemented, brown and layers of sand, water-bearing	22	280
Hardpan, blue	6	286
22/5-29B2. East Hill Water Co., Inc., well 1. Drilled by J. J. Bell. Altitude 413 ft. Casing: 6-inch to 258 ft; 16-slot screen, 258-268 ft.		
Topsoil	2	2
Hardpan, boulders	21	23
Hardpan, blue, boulders	67	90
Gravel, cemented, brown	16	106
Sand and gravel, brown	10	116
Sand and gravel, cemented, brown	36	152
Gravel, cemented, water-bearing	2	154
Sand, hard, brown, some clay and gravel	18	172
Sand and gravel, brown	6	178
Hardpan, blue	5	183
Sand, blue	3	186
Sand, blue-gray	9	195
Gravel, cemented, brown	5	200
Gravel, brown, water-bearing	31	231
Sand and gravel, blue, heavy clay	11	242
Sand, brown, and gravel	7	249
Sand, brown, some gravel, water-bearing	8	257
Sand, brown, and gravel, water-bearing	11	268
22/5-29C1. Myrl Johnson. Drilled by Johnson Drilling Co., 1961. Altitude 370 ft. Casing: 8-inch; perforated 122-132 ft.		
Topsoil	3	3
Hardpan, brown	12	15
Hardpan, gray	50	65
Sand and gravel, brown, hard-packed	25	90
Clay, brown	3	93
Clay, gray	5	98
Gravel, loose	8	106
Hardpan, brown	5	111
Gravel, coarse, water-bearing	21	132
Hardpan, brown	1	133
22/5-29L1. Elma Willson. Drilled by Johnson Drilling Co. Altitude 345 ft. Casing: 6-inch; perforated 102-112 ft.		
Topsoil	7	7
Hardpan and gravel, brown	13	20

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-29L1 - Continued		
Hardpan, gray	40	60
Gravel and clay, gray	42	102
Gravel and sand, water-bearing	10	112
Clay, gray	8	120
22/5-29N1. K. H. Marshall. Drilled by Johnson Drilling Co., 1959. Altitude 412 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown, water-bearing	34	38
Clay, rocks, sandy, brown	8	46
Gravel	4	50
Hardpan, gray	18	68
Hardpan, yellow-brown, rocks	52	120
Hardpan, yellow	23	143
Hardpan, gray	13	156
22/5-29N3. C. E. Guptil. Drilled by Johnson Drilling Co., 1957. Altitude 426 ft. Casing: 6-inch.		
Dug well	29	29
Hardpan, gray	16	45
Clay, rocks, gray	4	49
Clay, gravel, brown	9	58
Sand and gravel	2	60
Gravel	52	112
Hardpan, brown	45	157
Hardpan, gray	3	160
Hardpan, brown	10	170
Gravel, water-bearing	2	172
Hardpan	5	177
22/5-29P1. W. H. Marsh. Drilled by Johnson Drilling Co., 1962. Altitude 395 ft. Casing: 6-inch.		
Soil and rocks	10	10
Hardpan, gray	60	70
Gravel, brown	32	102
Hardpan, gray	6	108
Gravel, rock	34	142
22/5-29P3. H. M. Doolittle. Drilled by J. J. Bell, 1951. Altitude 380 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, gray, water-bearing	16	20
Hardpan, blue	61	81
Clay, blue	61	142
Sand, hard, gravel and clay	4	146
Unknown	28	174

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-31P2. Hiro Nakai. Drilled by G. W. Rings, 1962. Altitude 52 ft. Casing: 6-inch.		
Topsoil	6	6
Sand, fine	9	15
Sand, coarse, gravel	8	23
Gravel, coarse	27	50
22/5-32B1. A. Monstad. Drilled by J. C. Maxwell, 1953. Altitude 382 ft. Casing: 8-inch; perforated 138-154 ft.		
Mixed clay and gravel	34	34
Sand and gravel	5	39
Clay and gravel	8	47
Clay, sandy, brown, gravel	39	86
Sand, coarse, water-bearing	3	89
Sand, gravel, and clay	38	127
Sand and gravel, water-bearing	3	130
Clay and gravel	5	135
Sand, clay and gravel	20	155
22/5-32B2. J. A. Nelson. Drilled by J. J. Bell, 1956. Altitude 378 ft. Casing: 6-inch.		
Topsoil	3	3
Sand and gravel	3	6
Hardpan	25	31
Sand and gravel, water-bearing	1	32
Clay and gravel, sandy, blue	28	60
Clay, sandy, brown, some pebbles	5	65
Gravel, cemented, brown, water-bearing	15	80
22/5-32J1. R. P. Osborne, well 2. Drilled by Johnson Drilling Co., 1962. Altitude 380 ft. Casing: 8-inch to 100 ft; perforated 35-48 ft and 90-100 ft.		
Topsoil	8	8
Hardpan, brown, and gravel	27	35
Gravel, coarse, water-bearing	5	40
Hardpan, brown	6	46
Gravel and hardpan	7	53
Hardpan, brown	24	77
Clay, brown	13	90
Hardpan, brown	10	100
Clay, brown	4	104
Clay, blue	56	160
22/5-32K1. G. S. Estabrook. Drilled by Johnson Drilling Co., 1958. Altitude 395 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan and gravel, brown	31	35
Sand and gravel, gray, water-bearing	25	60
Hardpan, gray	23	83

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-33L2. H. C. Baker. Drilled by Johnson Drilling Co., 1960. Altitude 398 ft. Casing: 6-inch.		
Hardpan, gravel	55	55
Hardpan, gray	6	61
Clay and gravel, sandy, brown	9	70
Sand, gravel	20	90
22/5-33L3. D. E. Osness. Drilled by Johnson Drilling Co., 1961. Altitude 426 ft. Casing: 6-inch; perforated 64-66 ft.		
Topsoil	4	4
Hardpan and gravel, brown	51	55
Sand, brown	7	62
Hardpan	2	64
Sand and gravel, water-bearing	2	66
Hardpan	7	73
Hardpan, boulders	2	75
22/5-33M1. C. M. Derbyshire. Drilled by J. J. Bell, 1958. Altitude 458 ft. Casing: 8-inch; perforated 101-106 ft, 175-182 ft, and 204-207 ft.		
Topsoil	1	1
Hardpan, brown	17	18
Hardpan, blue	32	50
Gravel, cemented, blue	11	61
Gravel, cemented, brown	40	101
Gravel, cemented, brown, water-bearing	7	108
Sand and gravel, hard, brown	39	147
Sand and gravel, hard, brown, 40 percent clay	32	179
Gravel, cemented, gray, water-bearing	3	182
Clay, blue, brown, gray, mixed with silt	19	201
Gravel, cemented, blue	6	207
Clay, blue	48	255
22/5-34J1. R. H. Mellick. Drilled by Johnson Drilling Co., 1955. Altitude 435 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	32	35
Clay and gravel, sandy	25	60
Gravel, water-bearing	5	65
22/5-34L3. G. A. Turnbaugh. Drilled by J. C. Maxwell, 1958. Altitude 360 ft. Casing: 6-inch.		
Topsoil	2	2
Gravel	33	35
Sand, dirty	6	41
Sand and gravel	24	65

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/5-35G1. J. W. Standish. Drilled by Johnson Drilling Co. Altitude 352 ft. Casing: 6-inch.		
Topsoil and rocks	12	12
Hardpan	4	16
Sand and gravel, water-bearing	2	18
Hardpan, gray	10	28
22/5-35P1. D. A. Welch. Drilled by Johnson Drilling Co., 1961. Altitude 358 ft. Casing: 8-inch to 24 ft; perforated 14-24 ft.		
Topsoil	3	3
Hardpan, brown	10	13
Gravel, coarse, water-bearing	10	23
Hardpan, gray	1	24
22/5-35Q2. M. Cunningham. Drilled by J. C. Maxwell, 1961. Altitude 358 ft. Casing: 6-inch.		
Topsoil	2	2
Hardpan	8	10
Sand and gravel, cemented	78	88
Sand	14	102
22/5-36M1. Bonneville Power Administration, Covington Substation. Drilled by R. J. Strasser. Altitude 355 ft. Casing: 10-inch: perforated 101-106 ft.		
Topsoil	3	3
Gravel, cemented	15	18
Gravel, water-bearing	5	23
Clay, blue and gravel	7	30
Logs and cemented gravel	6	36
Gravel, cemented	39	75
Sand	2	77
Gravel, cemented	16	93
Gravel, coarse, water-bearing	8	101
Sand, coarse	5	106
22/6-1H2. Hobart Community Church. Drilled by John Malcolm. Altitude 560 ft. Casing: 6-inch.		
Clay, loam, yellow	14	14
Sand, soft	3	17
Sand and clay, brown	13	30
Boulders	10	40
Gravel and boulders	17	57
Hardpan and boulders	15	72
Sand and gravel, water-bearing	4	76
22/6-5N1. J. Sweet. Drilled by Johnson Drilling Co., 1961. Altitude 612 ft. Casing: 6-inch.		
Dug well	36	36
Clay	44	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-5N1 - Continued		
Clay, silty	10	90
Rocky, water-bearing	10	100
Hardpan	11	111
22/6-5N3. H. Woodard. Drilled by Johnson Drilling Co., 1960. Altitude 630 ft. Casing: 6-inch.		
Hardpan and clay	52	52
Clay	64	116
Sand, water-bearing	5	121
Hardpan	7	128
22/6-6F1. T. W. Webber. Drilled by Johnson Drilling Co., 1961. Altitude 545 ft. Casing: 6-inch.		
Sand and gravel	28	28
Hardpan, brown	19	47
Hardpan, gray	18	65
Clay, blue	11	76
Hardpan, gray	18	94
Sand and gravel	11	105
22/6-7N1. S. S. Richardson. Drilled by Johnson Drilling Co. Altitude 520 ft. Casing: 6-inch.		
Topsoil	10	10
Hardpan, gray	13	23
Hardpan, brown	42	65
Sand, gravel, water-bearing	12	77
22/6-7N2. H. W. Burlingame. Drilled by Johnson Drilling Co. Altitude 560 ft. Casing: 6-inch.		
Topsoil	12	12
Hardpan, sandy, brown	14	26
Hardpan, gravel, gray	44	70
Hardpan, gravel, green	20	90
Sand and gravel, water-bearing	11	101
22/6-8F2. Mr. Dubigk. Drilled by James Bell, 1956. Altitude 580 ft. Casing: 6-inch.		
Topsoil	1	1
Sand, clay, brown	3	4
Sand, brown	1	5
Clay, sand, and gravel, brown	10	15
Clay, blue, some gravel	35	50
Hardpan, semi, blue, blue clay	28	78
Sand and gravel, brown, water-bearing	2	80
Hardpan, semi, brown	9	89
Gravel, cemented, brown	6	95
Clay, blue, small sand and gravel	65	160
Sand and gravel, water-bearing	16	176

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-10N3. Joe Mezzavilla. Drilled by Johnson Drilling Co., 1960. Altitude 475 ft. Casing: 8-inch.		
Topsoil	3	3
Hardpan, brown	24	27
Gravel, medium size	19	46
Hardpan, gray	12	58
Hardpan, brown	28	86
Gravel, loose	32	118
Clay, sandy	25	143
Sand and gravel, fine, yields 12 gpm	17	160
Hardpan, gray	20	180
Sand and gravel, fine, water-bearing	10	190
Gravel, medium-size	12	202
22/6-11M1. Tahoma School Dist. 409, well 1. Drilled by Johnson Drilling Co., 1960. Altitude 575 ft. Casing: 6-inch to 134 ft; 40-slot screen, 134-143 ft.		
Gravel, medium-size and sandy hardpan	18	18
Gravel, coarse, contains clay	13	31
Hardpan, gray	12	43
Hardpan, brown	14	57
Gravel, medium size, and clay	8	65
Gravel, fine, and sandy clay	13	78
Sand and clay	10	88
Sand and fine gravel	18	106
Hardpan, brown	24	130
Gravel, medium size, water-bearing	4	134
Gravel, fine, and coarse sand	6	140
Sand, coarse	3	143
Hardpan	2	145
22/6-11M2. Tahoma School Dist. 409, well 2. Drilled by Johnson Drilling Co., 1960. Altitude 575 ft. Casing: 8-inch to 135 ft; 40-slot screen, 135-143 ft.		
Gravel, medium size, and sand	18	18
Gravel, coarse, and clay	13	31
Hardpan, gray	12	43
Hardpan, brown	14	57
Gravel, medium-size, and clay	8	65
Clay, fine, sandy	13	78
Sand and clay	10	88
Sand and fine gravel	18	106
Hardpan, brown	10	116
Hardpan, brown, and gravel	14	130
Gravel, medium size, water-bearing	4	134
Gravel, fine, and coarse sand	6	140
Gravel, coarse	3	143
Hardpan	3	146

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-11M3. Vi Codiga. Drilled by J. C. Maxwell, 1957. Altitude 580 ft. Casing: 6-inch.		
Topsoil to hardpan	30	30
Gravel	16	46
Sand, gravel, and clay	30	76
Hardpan, water-bearing	21	97
22/6-11M4. Otto Moore. Drilled by J. C. Maxwell, 1957. Altitude 580 ft. Casing: 6-inch.		
Hardpan	26	26
Gravel	4	30
Clay and sand	8	38
Gravel	15	53
Clay and gravel	22	75
Gravel with clay	13	88
Gravel, water-bearing	4	92
Sand and gravel, dirty	32	124
Unknown	12	136
22/6-12E2. Tahoma Assembly of God Church. Drilled by Johnson Drilling Co. Altitude 650 ft. Casing: 6-inch.		
Clay, sandy	20	20
Hardpan	16	36
Sand and gravel, water-bearing	4	40
Hardpan	6	46
22/6-13A2. R. D. Martin. Drilled by Johnson Drilling Co., 1961. Altitude 708 ft. Casing: 4-inch.		
Topsoil, rocks	13	13
Hardpan and rocks	43	56
Sand, yields 2 gpm	1	57
Hardpan, gray, yields 2 gpm	27	84
Hardpan, brown	34	118
22/6-14A1. J. Burnett. Drilled by J. C. Maxwell. Altitude 695 ft. Casing: 6-inch.		
Topsoil	38	38
Clay, brown	32	70
Sand, water-bearing	5	75
Clay, yellow	1	76
Sand, yellow and green	10	86
Sand and gravel, alternating beds, yields 12 gpm	11	97
22/6-14A2. Fritz Larsen. Drilled by Johnson Drilling Co., 1956. Altitude 662 ft. Casing: 6-inch.		
Topsoil	7	7
Clay, gray, rocks	14	21
Gravel, loose	29	50
Hardpan, gray	10	60
Clay, gray, sand, water-bearing	18	78

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-14D2. Sam Nation. Drilled by J. Bell, 1957. Altitude 625 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, boulders	51	54
Gravel, cemented, water-bearing	2	56
Hardpan	40	96
Clay, sandy, blue	6	102
Gravel and clay, blue	21	123
Gravel, cemented, brown	12	135
Sand and gravel, brown, water-bearing	1	136
Gravel, cemented	2	138
22/6-16C1. Tacoma School Dist. 409. Drilled by M. M. Johnson, 1961. Altitude 525 ft.		
Hardpan, brown, and rocks	15	15
Hardpan, gray, and rocks	23	38
Hardpan, brown, and rocks	12	50
Hardpan, gray	15	65
Hardpan, brown	10	75
Gravel, loose	9	84
Hardpan, brown	16	100
Sand, loose, and gravel	25	125
Hardpan, gray, and gravel	11	136
Silt and clay	18	154
Silt	76	230
Rocks	2	232
Silt	32	264
Silt, coarser sand and some gravel	16	280
Silt	8	288
22/6-16G1. Tahoma School Dist. 409. Drilled by M. M. Johnson, 1960. Altitude 430 ft. Casing: 8-inch; perforated 35-40 ft; 30-slot screen, 63-73 ft.		
Topsoil	3	3
Hardpan, brown, and gravel	32	35
Gravel, water-bearing	3	38
Hardpan, gray, and boulders	22	60
Sand, gray, and gravel	11	71
Clay, blue	2	73
22/6-16Q2. Joe Flynn. Drilled by J. C. Maxwell. Altitude 425 ft. Casing: 8-inch.		
Topsoil	3	3
Gravel and boulders	15	18
Clay and rock	15	33
Sand, gravel, and clay, yields 16 gpm at 45 ft	16	49
Clay	18	67
Clay and gravel	23	90
Clay, cemented, and gravel	8	98
Clay and gravel, water-bearing	12	110
Gravel, coarse, and clay, water-bearing	13	123
Clay, blue	127	250

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-17Q1. G. T. Gould. Drilled well. Altitude 470 ft. Casing: 6-inch.		
Sand, gravel, and boulders	32	32
Hardpan	66	98
No record, water-bearing	32	130
22/6-18H1. H. Jackson. Drilled by J. C. Maxwell, 1956. Altitude 552 ft. Casing: 6-inch.		
Topsoil to hardpan	74	74
Gravel and clay	5	79
Gravel, water-bearing	18	97
No record, water-bearing	3	100
22/6-18K1. T. Fortier. Drilled by Johnson Drilling Co. Altitude 496 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan, brown	15	18
Hardpan, gray	18	36
Hardpan, brown	24	60
Clay, gray	8	68
Gravel, water-bearing	8	76
22/6-19A1. J. Hilton. Drilled by Johnson Drilling Co., 1959. Altitude 460 ft. Casing: 6-inch.		
Gravel	12	12
Hardpan	16	28
Gravel and hardpan	22	50
Hardpan, water-bearing	3	53
22/6-19E1. R. W. Whitters. Drilled by J. C. Maxwell, 1958. Altitude 440 ft. Casing: 6-inch.		
Topsoil and gravel	20	20
Clay, sand and gravel	13	33
Clay	4	37
Clay and sand, yields 3 to 4 gpm	1	38
Hardpan	15	53
Gravel	1	54
Hardpan, layer of gravel	12	66
Gravel and hardpan	11	76
Gravel, water-bearing	4	80
22/6-19G1. T. Shoemaker. Drilled by Johnson Drilling Co., 1958. Altitude 450 ft. Casing: 6-inch.		
Topsoil	7	7
Gravel and large boulders	5	12
Gravel	6	18
Hardpan, brown	7	25
Hardpan, gray	25	50
Hardpan, brown	18	68
Gravel, water-bearing	12	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-20D3. C. Olsen. Drilled by Johnson Drilling Co., 1962. Altitude 465 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	8	12
Hardpan, gray	31	43
Gravel, water-bearing	10	53
Gravel and hardpan, brown	32	85
Clay, gravel, sandy, yellow	5	90
Clay, blue, and fine gravel	28	118
22/6-21B1. Tahoma School Dist. 409. Drilled by Western Drilling & Equipment Co. Altitude 465 ft. Casing: 10-inch to 20 ft, 8-inch, 0-190 ft, 60-slot screen, 189-199 ft.		
Gravel and boulders	25	25
Gravel, cemented	32	57
Gravel, fine, contains clay	7	64
Gravel, sandy, water-bearing	12	76
Gravel, coarse	1	77
Sand and gravel, water-bearing	19	96
Sand, heaving, contains rocks	5	101
Clay, blue	1	102
Rocks, coarse, and sand	3	105
Clay, with silt	61	166
Sand, fine, heaving	22	188
Sand, coarse, water-bearing	11	199
22/6-25R3. Mathew Riechart. Drilled by Johnson Drilling Co., 1961. Altitude 605 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan	2	5
Sand, gravel and rocks	9	14
Hardpan	11	25
Sand and gravel, water-bearing	10	35
22/6-28F1. King County Water Dist. 94, well 1. Drilled by Service Hardware & Implement Co., 1954. Altitude 590 ft. Casing: 10-inch; 30-slot screen, 238-248 ft.		
Hardpan	20	20
Sand and clay	13	33
Hardpan	10	43
Gravel, cemented	71	114
Clay and sand	12	126
Gravel, cemented	52	178
Gravel, hardpacked, water-bearing	48	226
Clay	5	231
Gravel, hardpacked, water-bearing	17	248
22/6-29G1. Clinton Graham. Drilled by Myrl Johnson. Altitude 558 ft. Casing: 6-inch.		
Topsoil and rocks	13	13

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
22/6-29G1 - Continued		
Hardpan	9	22
Clay	30	52
Hardpan	10	62
Clay	18	80
Hardpan	39	119
Sand and gravel, water-bearing	3	122
Hardpan	6	128
22/6-29R1. C. M. Derbyshire and Ted Morris. Drilled by J. L. Bell, 1959. Altitude 555 ft. Casing: 8-inch to 120 ft, 6-inch 0-345 ft; perforated 187-195 ft.		
Topsoil	4	4
Hardpan, brown	14	18
Hardpan, blue	45	63
Gravel, cemented, brown	102	165
Gravel, cemented, brown, water-bearing	9	174
Hardpan, brown	6	180
Hardpan, blue	4	184
Sand, blue, and gravel, water-bearing	3	187
Gravel, cemented, blue	22	209
Clay, blue	4	213
Gravel, cemented, hard, blue	19	232
Clay, blue	22	254
Clay, blue, contains silt and small gravel	101	355
23/3-24A1. King County Water Dist. 85, well 2. Drilled by L. R. Gaudio, 1951. Altitude 365 ft. Casing: 12-inch to 127 ft; 50-slot screen, 125 to 140 ft.		
Sand and gravel	6	6
Hardpan	42	48
Gravel and sand	12	60
Sand, medium	51	111
Sand and gravel	6	117
Hardpan	1	118
Sand and gravel, water-bearing	22	140
23/4-12G4. Bryn Mawr Water Dist. 14, well 4. Drilled by N. C. Jannsen, 1945. Altitude 235 ft. Casing: 18-inch to 100 ft; 6-inch from 100 to 280 ft; perforated 270-280 ft.		
Rocks and shale	15	15
Clay, hard	10	25
Clay, soft	13	38
Hardpan, gray	20	58
Clay	7	65
Gravel and sand	2	67
Clay	23	90
Wood	1	91
Hardpan	14	105
Clay, sandy	58	163
Clay, blue	25	188

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-12G4 - Continued		
Shale, hard	7	195
Sandstone	75	270
Gravel, fine and sand, water-bearing	10	280
23/4-19H1. King County Water Dist. 49, well 1. Drilled in 1940. Altitude 350 ft. Casing: 8-inch; perforated 245-324 ft.		
Hardpan	18	18
Sand, dry	48	66
Sand and clay	14	80
Sand, hard	30	110
Clay	61	171
Sand and gravel	17	188
Sand, fine	22	210
Sand and gravel	9	219
Clay, gray, contains rocks	12	231
Sand, fine	5	236
Clay, gray, white, and brown	2	238
Sand, black, and gravel	7	245
Sand, fine, and coarse gravel	7	252
Sand, hard, and gravel	12	264
Sand, coarse, black, and large gravel	61	325
Clay, gray	20	345
Clay and sand	8	353
23/4-19H2. King County Water Dist. 49, well 2. Drilled in 1944. Altitude 370 ft. Casing: 10-inch to 210 ft; 8-inch, 200-462 ft; perforated 265-326 ft.		
Hardpan with a few rocks	18	18
Sand, fine	48	66
Sand and yellow clay	14	80
Sand, hard	30	110
Clay, blue, contains layers of sand	61	171
Sand, and gravel, water-bearing	17	188
Sand, fine, gray, water-bearing	22	210
Hardpan	52	262
Gravel, cemented, very hard, water-bearing	58	320
Hardpan, gray, and gravel	6	326
Clay, blue, contains gravel and silt	207	533
23/4-19H3. King County Water Dist. 49, well 3. Drilled by N. C. Jannsen, 1948. Altitude 375 ft. Casing: 24-inch to 347 ft; 12-inch 0-589 ft; perforated 559-589 ft.		
Hardpan and sand	50	50
Gravel	40	90
Gravel and sand	50	140
Sand, contains streaks of clay	80	220
Sand, coarse, and small gravel	30	250
Gravel	80	330
Clay, sandy	230	560
Gravel and boulders	30	590
Rock	31	621

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-22N1. D. R. Finch. Drilled by R. Bennett. Altitude 335 ft. Casing: 8-inch to 244 ft; screened 244-252 ft.		
No record	30	30
Hardpan	90	120
Sand, fine, water-bearing	15	135
Clay, hard	105	240
Sand, coarse, and gravel	12	252
23/4-23R1. Puget Western Inc., boring MM4. Drilled by Dames & Moore, 1961. Altitude 23 ft.		
Loam, silty to clayey, gray, and fine brown sand with gravel	10	10
Loam, silty, brown, with roots and organic matter and occasional soft gravel, turns gray at 16 ft	21	31
Loam, fine, sandy, gray with lenses of gray silty loam near bottom	12	43
Sand, fine to medium, dark gray, contains occasional organic matter, water-bearing, moderately loose, and lenses of gray silty and sandy loam	20	63
Loam, silty, gray, soft to moderately soft, contains occasional thin lenses of gray fine sand to 72 ft	47	110
Loam, sandy, clay, greenish-gray	5	115
Sand, fine to coarse, greenish gray, with lenses of greenish gray fine sandy loam, moderately compact	10	125
Sand fine to medium, gray, with lenses of brown silty loam and organic matter, moderately compact	6	131
Loam, silty, mottled brown and gray, with organic matter, moderately firm	4	135
Sand, fine to medium, gray, with occasional organic matter, compact	10	145
Loam, silty, brownish-gray, with organic matter, moderately firm	5	150
Sand, fine to coarse, gray, compact, grades to gravel, becomes partially cemented at base	18	168
23/4-23R2. Puget Western, Inc., boring 62-1. Drilled by Dames and Moore, 1962. Altitud 24 ft.		
Clay, silty, mottled gray and brown, moderately firm	2	2
Sand, fine, brown, with organic matter, moderately compact	3	5
Loam, silty, mottled gray and brown, soft	8	13
Sand, fine, brown, occasional lenses of brown silty loam (moderately loose)	11	24
Sand, fine to coarse, gray, moderately compact	17	41
Loam, sandy, gray, with layers of fine gray sand and silty loam	20	61
Loam, silty, dark gray, with lenses of fine sandy gray loam, moderately soft	20	81
Clay, silty, gray, moderately soft	18	99
Sand, fine to medium, gray, with shells, gravel, and occasional organic matter	3	102
23/4-24B1. METRO, boring B 13. Drilled by Metropolitan Engineers, 1960. Altitude 12 ft.		
Silt, fine, sandy, brown	3	3
Sand, very fine, gray, with occasional wood	8	11
Sand, medium, dark gray	14	23

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24B1 - Continued		
Sand, gray, and gravel, with some silt	10	33
Sand, gray, with some silt and occasional small gravel	6	39
Sand and gravel, gray, with some silt	12	51
23/4-24C1. METRO, boring B 1. Drilled by Metropolitan Engineers, 1959. Altitude 89 ft.		
Sand, friable, silty, dark brown, contains roots	4	4
Sand, silty, light gray, very firm, well decomposed andesite becomes light brown, soft, and pliable at 12 ft	15	19
Sand, silty, blue-gray, very firm, partly weathered slightly firable andesite	14	33
Breccia, partly weathered green-gray, contains fragments of porphyritic basalt	9	42
Andesite, fresh, light gray	20	62
Breccia, partly weathered, dark gray, tuffaceous, with fragments of reddish andesite and black porphyritic basalt	7	69
Andesite, slightly altered	2	71
23/4-24E1. METRO, boring B 10. Drilled by Metropolitan Engineers, 1960. Altitude 0 at sea level.		
Sand, fine to medium, gray, with coal fragments, contains gravel, silt, decayed wood 14-34	34	34
Sand, fine, medium, coarse, contains small gravel and decayed wood, gravel increases toward base	21	55
Sand, fine and medium, gray	7	62
23/4-24E2. METRO, boring B 6. Drilled by Metropolitan Engineers, 1960. Altitude 23 ft.		
Sand, silty, fine, brown, contains coal fragments and fine roots	10	10
Sand, fine, brown-gray, becoming gray and coarser and containing wood fragments with depth	22	32
Sand, dark gray and small clean gravel	6	38
Sand, fine, medium, silty, gray	15	53
23/4-24E3. METRO, boring B 7. Drilled by Metropolitan Engineers, 1960. Altitude 20 ft.		
Sand and gravel, silty, gray	2	2
Artificial fill	16	18
Mud	5	23
Sand and gravel	2	25
Rock (boulders?), weathered, green to gray	3	28
23/4-24E4. METRO, boring B 8. Drilled by Metropolitan Engineers, 1960. Altitude 26 ft.		
Silt, sandy, fill	2	2
Sand, fine, brown-gray, silt	23	25
Rock, weathered and decomposed	2	27
Sandstone and shale	13	40

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24F1. METRO, boring B 34. Drilled by Metropolitan Engineers, 1960. Altitude 23 ft.		
Silt, brown, contains fine roots	2	2
Sand, silty, fine, brown	4	6
Silt, clayey, brown, (fill?)	4	10
Sand, fine, brown-gray	2	12
Silt, clayey, gray, contains thin brown peat layers	7	19
Sand, fine-medium, dark gray, contains sandy, gray silt laminations	9	28
Silt, gravelly, sandy, gray, contains shells	3	31
Sandstone, decomposed, gray, firm layers are vertical, becomes firmer with depth	6	37
23/4-24F2. METRO, boring B 11. Drilled by Metropolitan Engineers, 1960. Altitude 21 ft.		
Sand, silty, very fine, brown, contains roots	3	3
Sand, fine, brown	1	4
Silt, clayey, mottled brown-gray	4	8
Sand, fine, mottled brown-gray	5	13
Sand, very fine, silty, gray	1	14
Sand, fine, gray, clean	2	16
Silt, very fine, sandy, gray	2	18
Silt, clayey, gray-brown, contains considerable organic matter and peat layers	2	20
Peat, brown	2	22
Sand, peaty, gray contains some sand layers	5	27
Sand, medium, coarse, clean, dark gray, water-bearing, contains some shells, small gravel, clean sand lenses 31-38 ft.	11	38
Rock, decomposed, very firm	1	39
23/4-24F3. METRO, boring B 25. Drilled by Metropolitan Engineers, 1960. Altitude 15 ft.		
Silt, mottled brown-gray	6	6
Sand, fine, gray, contains fine sandy silt laminations	2	8
Sand, fine, medium, dark gray	2	10
Peat, brown	8	18
Silt, very fine, sandy, gray, soft, contains silty fine to medium sand layers	11	29
Sand, gray, contains some shells and occasional peaty silt laminations, some small gravel at base	5	34
Sandstone, decomposed, firm	4	38
23/4-24F4. METRO, boring B 24. Drilled by Metropolitan Engineers, 1960. Altitude 14.		
Silt, clayey, brown	5	5
Sand, silty, fine, brown-gray	4	9
Silt, very fine, sandy, gray, contains soft organic material	3	12
Peat, brown	2	14
Sand, fine, dark gray, clean	2	16
Silt, gray, contains soft organic matter, pink clay laminations near base	5	21
Silt, fine, sandy, gray	3	24

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24F4 - Continued		
Sand, silty, fine, gray, contains some decayed wood, changes to brown-gray, silty, fine-medium sand with some small gravel at 28 ft	8	32
Sandstone, decomposed, firm	2	34
23/4-24F5. METRO, boring B 21. Drilled by Metropolitan Engineers. Altitude 19 ft.		
Silt, clayey, brown	5	5
Sand, silty, fine, brown, contains very fine sandy silty layers	8	13
Sand, silty, very fine, gray, contains some organic matter	4	17
Peat, gray, contains peaty silt and very fine sand lenses	7	24
Sand, fine-medium, dark gray, clean	12	36
Sand, gravelly, gray, fairly clean	4	40
Sand, fine-medium, silty, gray, contains shells	5	45
Sand, fine-medium, gray, contains shells, clean, some small gravel near bottom	8	53
Sand, silty, gray, contains shells and small gravel, dense	5	58
Sand, gravelly, gray, contains silt	9	67
23/4-24F6. METRO, boring B 16. Drilled by Metropolitan Engineers. Altitude 15 ft.		
Silt, mottled brown and gray	8	8
Sand, silty, very fine, gray	4	12
Silt, peaty, brownish-gray, contains soft, peat	5	17
Sand, silty, very fine, gray	7	24
Sand, fine-medium, clean, gray	2	26
Sand and gravel, gray, contains some silty sand layers	6	32
Sand, gray, contains some small gravel	4	36
Sand, silty, gray, contains some shells and occasional wood fragments	11	47
Sand and gravel, gray	13	60
Rock, decomposed	1	61
23/4-24F7. METRO, boring B 14. Drilled by Metropolitan Engineers. Altitude 14 ft.		
Silt, fine, light brown, contains roots	9	9
Peat, brown, and layers of brown-gray peaty silt, contains decayed roots	5	14
Sand, fine, dark gray	4	18
Silt, gray, contains shells	4	22
Sand, fine, gray, contains some silt	3	25
Sand, gray, contains small gravel and silt	8	33
Sand, fine-medium, becomes coarser and less silty, with decayed wood and sand lenses	15	48
Gravel, silty, sandy, gray, contains coarse sand, shells, and wood fragments	8	56
Gravel and decomposed rock flour, very firm	3	59
Sandstone, decomposed, very firm	8	67
23/4-24F8. METRO, boring B 27. Drilled by Metropolitan Engineers, 1960. Altitude 15 ft.		
Silt, clayey, brown, firm	5	5

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23-4-24F8 - Continued		
Silt, fine, sandy, mottled brown, gray	4	9
Silt, very fine, sandy, gray with soft fine, dark gray sand layers	4	13
Silt, peaty, gray, and brown peat in layers	6	19
Sand, fine-medium dark gray, contains thin gray silt lenses	3	22
Silt, gray, soft	3	25
Sand, fine, gray, and fine sandy silt laminations	3	28
Sand and gravel, gray and clean	5	33
Sand, silty, fine, gray, contains shells and occasional coal fragments	11	44
Sand, fine-medium, gray, contains silt and small gravel, occasional decayed wood fragments	3	47
Sand and gravel, gray	4	51
23/4-24F9. METRO, boring B 2. Drilled by Metropolitan Engineers, 1959. Altitude 13 ft.		
Silt, clayey, mottled brownish-gray, contains fine roots, becoming sandy at bottom	8	8
Sand, fine-medium, gray	2	10
Peat, brown	1	11
Sand, fine-medium, and fine sandy silt, contains wood fragments	11	22
Sand, fine, gray, contains some silt and gravel	7	29
Sand and gravel, silty, gray, contains shells and coal fragments near base	9	38
Sand, silty, gray, contains small gravel, shells and organic matter	9	47
Sand, silty, gray, and gravel	9	56
23/4-24F10. METRO, boring B 18. Drilled by Metropolitan Engineers, 1960. Altitude 13 ft.		
Silt, clayey, mottled brown-gray	7	7
Silt, layered, peaty, gray, and brown peat	4	11
Sand, very fine, clean, dark gray	6	17
Silt, very fine, gray, contains layers of pink clay	3	20
Sand, clean gray, grades to gravelly sand at 26 ft	12	32
Sand, silty, fine and medium, gray, contains shells and small gravel and occasional coal fragments near base	9	41
Sand, gray, contains small gravel and silt, becomes more gravelly at base	9	50
23/4-24F11. METRO, boring B 4. Drilled by Metropolitan Engineers, 1959. Altitude 12 ft.		
Silt, mottled brownish-gray, contains fine roots	7	7
Clay, silty, gray with brown spots, soft, very fine, sandy, gray silt	6	13
Sand, fine-medium, clean, black, with occasional small gravel	4	17
Silt, gray, contains organic matter and shells	4	21
Sand, gray, contains silt and gravel and occasional peat laminations near base	11	32
Sand, fine-medium, silty, gray, contains shells and small gravel, slight cementation	9	41
Sand, gray and gravel with silt	22	63

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24F12. METRO, boring B 5. Drilled by Metropolitan Engineers, 1959. Altitude 14 ft.		
Silt, clayey, mottled brown and gray	9	9
Silt, very fine, sandy, bluish-gray	6	15
Sand, fine-medium, clean, dark-gray	1	16
Sand, gray, contains silt and small gravel and occasional wood fragments	17	33
Sand, fine, silty, gray, contains shells and small gravel	11	44
Sandy, gravelly, gray, contains silt	14	58
23/4-24F13. METRO, boring B 9. Drilled by Metropolitan Engineers, 1960. Altitude 14 ft.		
Silt, clayey, mottled brown-gray	6	6
Sand, silty, very fine, gray	4	10
Peat, brown	2	12
Sand, fine, gray, contains silt and occasional organic matter	6	18
Sand, fine-medium, clean, dark gray, water-bearing	9	27
Sand, medium-coarse, silty, gray, contains small gravel, cleaner at base	11	38
Sand, silty, gray, contains gravel and shells	9	47
Sand, gravelly, gray, contains silt, cleaner towards middle	15	62
Sand, fine-medium, gray, contains small gravel	7	69
Sand, medium-coarse, gray, contains small gravel	3	72
Silt, sandy, very fine, gray, contains layers of fine, gray sand and silty peat, occasional small shells	7	79
Sand and gravel, silty, gray, contains occasional clean sand and gravel layers	35	114
23/4-24F14. METRO, boring B 19. Drilled by Metropolitan Engineers, 1960. Altitude 15 ft.		
Silt, clayey, mottled brown-gray	6	6
Peat, brown, and peaty, brown-gray silty, contains clayey silt and very fine sand lenses	9	15
Sand, fine, dark gray, grades coarser with small gravel at base	15	30
Sand, gravelly, gray, contains dense silt	5	35
Sand, clean, gray, contains small, silty gravel and shells	5	40
Sand, silty, fine, gray, contains organic matter and shells	4	44
Sand, gray, contains silt, peat and occasional small gravel	5	49
Sand, gray, and gravel, contains silt	20	69
23/24F15. METRO, boring B 29. Drilled by Metropolitan Engineers, 1960. Altitude 11 ft.		
Silt, brown-gray, contains roots	2	2
Sand, fine, gray, contains silt and roots	12	14
Sand, fine-medium, dark gray, contains gravel and thin layers of organic material	9	23
Sand, gravelly, gray, contains silt binder, becomes cleaner and less gravelly near base	13	36
Sand, medium, gray, contains occasional gravel and shells	3	39

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24F16. METRO, boring B 30. Drilled by Metropolitan Engineers, 1960. Altitude 16 ft.		
Silt, brown, contains sandy silt layers	4	4
Sand, fine, brown-gray mottled	2	6
Sand, fine, gray, some silt	12	18
Sand, fine-medium, dark gray, contains occasional thin silt layers	10	28
Sand, gravelly, gray, contains silt binder	7	35
Sand, medium, gray, contains gravel and occasional thin silt layers	3	38
23/4-24F17. METRO, boring B 3. Drilled by Metropolitan Engineers, 1959. Altitude 17 ft.		
Silt, sandy, brown, contains fine roots	2	2
Sand, fine, brown	6	8
Sand, very fine, gray, contains sandy silt laminations	6	14
Silt, clayey, gray, contains organic matter	2	16
Peat, brown, contains clayey silt laminations	4	20
Silt, layers of gray, sandy, and silty sand	9	29
Sand, gray, contains silt and small gravel	3	32
Sand, silty, gran and gravel, contains occasional shells	6	38
Sand, fine-medium, gray, contains shells	11	49
Sand and gravel, silty, gray, contains shells	21	70
23/4-24G1. METRO, boring B 4. Drilled by Metropolitan Engineers, 1960. Altitude 16 ft.		
Silt, clayey, brown	3	3
Sand, fine, silty, mottled brown-gray	5	8
Silt, gray, contains occasional organic material, becoming brownish and peaty near base	7	15
Silt, sandy, clayey, brown	3	18
Sand, fine, gray, and medium coarse, gray sand, contains streaks of peat	5	23
Sand, fine-medium, dark gray, clean	5	28
Sand, gray, contains some fairly clean gravel	3	31
23/4-24G2. METRO, boring B 12. Drilled by Metropolitan Engineers, 1960. Altitude 10 ft.		
Sand, silty, mottled brown-gray	4	4
Sand, fine, gray, contains silty sand layers and streaks of fine white pumice, lot at 19 ft	20	24
Sand and gravel, gray, contains silt	10	34
Sand, fine-medium, gray, contains silt and occasional wood fragments	5	39
Sand, gravelly, silty, gray, contains occasional shells	13	52
23/4-24H1. METRO, boring B 6. Drilled by Metropolitan Engineers, 1960. Altitude 15 ft.		
Gravel surfacing	1	1
Silt, clayey, mottled reddish-brown and gray	4	5
Sand, fine, silty, gray	2	7
Silt, gray, contains silty sand and peaty silt layers	8	15
Sand, fine, brown-gray, contains peaty fine sand and peaty silt layers	6	21
Sand, gravelly, gray, contains layers of silty, gravelly, dense sand	11	32

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-24H2. METRO, boring B 11. Drilled by Metropolitan Engineers, 1960. Altitude 16 ft.		
Silt, very fine, sandy, mottled brown-gray	6	6
Sand, silty, fine, loose, mottled brown-gray	3	9
Sand, silty, dark gray, contains occasional loose wood, becoming fine to medium sand, moderately dense, towards bottom	17	26
Sand, gravelly, gray, contains silt laminations	10	36
Sand, gravelly, gray, contains silt binder	2	38
Sand, gravelly, gray	6	44
Sand, fine-medium, dirty, gray, contains layers of gravelly, silty sand and occasional peat and shells, medium dense	7	51
Sand and gravel, gray, contains silty binder, dense, gravel size increasing towards bottom	19	70
23/4-25A1. Unknown, boring 63-2. Drilled by Metropolitan Engineers, 1963. Altitude 23 ft.		
Loam, silty, brown, contains roots and occasional layers of fine, brown, moderately firm sand	5	5
Sand, fine to medium, gray, contains layers of silty loam and organic matter	3	8
Loam, silty, gray, and organic matter	8	16
Sand, fine to medium, gray, contains layers of silty loam and occasional layers of sandy, loose, sandy loam, contains shell fragments 41-72 ft	56	72
Fine to coarse sand and gravel	7	79
Sand, fine to medium, greenish, contains occasional gravel grades finer with occasional organic matter towards base	8	87
Sand, fine to coarse, greenish-gray, and moderately compact gravel, water-bearing	9	96
23/4-26A1. Puget Western, Inc., boring 62-12. Drilled by Dames & Moore, 1962. Altitude 25 ft.		
Loam, mixed, silty, clay and brownish-gray, sandy loam, contains silty gray clay with gravel and cobbles	10	10
Sand, fine, mottled brownish-gray, contains roots	3	13
Loam, fine, sandy, gray, contains organic matter and layers of gray silty loam and occasional streaks of gravel toward base	9	22
Loam, silty, gray, contains pockets and layers of organic matter	16	38
Sand, fine, gray, and gray silty loam with organic matter	9	47
Sand, fine to medium, moderately compact, gray	5	52
Sand, fine to medium, gray, and gray silty loam, contains fine gray sandy loam, organic matter	20	72
Loam, silty, gray, and gray sandy loam	24	96
Clay, silty, gray, organic matter, shell fragments	11	107
Loam, silty, gray, contains shell fragments and lenses of fine, gray, sand, soft	6	113
Sand, fine to medium, greenish-gray, shell fragments	7	120
Loam, silty, brownish-gray, contains organic matter	11	131
Sand, fine to medium, gray	6	137

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-26A2. Puget Western, Inc., boring 62-5. Drilled by Metropolitan Engineers, 1962. Altitude 14 ft.		
Loam, silty, brown, contains roots	3	3
Sand, fine to medium, brownish-gray, becomes coarse and compact 10-18 ft	15	18
Loam, silty, brownish-gray, contains organic matter	3	21
Sand, fine to medium, gray, contains organic matter	17	38
Loam, fine, sandy, gray and silty, gray loam	19	57
Loam, silty, gray, contains organic matter	11	68
Clay, silty, gray, with occasional lenses of fine to medium, gray sand and occasional shell fragments	20	88
Loam, sandy, greenish-gray, layers of fine to medium greenish-gray sand	10	98
Sand, fine to medium, greenish gray, with shell fragments	3	101
23/4-27C1. South Seattle Water Co., well 1. Drilled in 1937. Altitude 490 ft. Casing: 10-inch to 199 ft; 6-inch, 199-327 ft; perforated 278-327 ft.		
Hardpan, loose	25	25
Sand, yellow	114	139
Clay, blue-green and peat	20	159
Clay, sandy, yellow	36	195
Sand and gravel, brown	26	221
Clay, blue	17	238
Sand, brown, and clay	12	250
Hardpan, blue	42	292
Gravel, cemented, water-bearing	21	313
Clay and sandstone	4	317
Gravel, cemented, water-bearing	10	327
23/4-27C2. South Seattle Water Co., well 2. Drilled by J. J. Bell, 1943. Altitude 490 ft. Casing: 12-inch.		
Hardpan, loose	25	25
Sand, yellow	114	139
Clay, blue-green, and peat	20	159
Clay, sandy, yellow	36	195
Sand, fine, water-bearing	11	206
Silt, bluish	13	219
Clay, wet	36	255
Clay, wet, mixed with gravel	22	277
Sand, loose, and coarse gravel	13	290
Clay, hard, and gravel	7	297
Sand, loose, and gravel	5	302
Gravel, hard, cemented	12	314
Sand, hard, and boulders	41	355
Sand, hard, boulders and clay	35	390
Sand and gravel, looser, water-bearing	10	400
Clay, hard, sand and gravel	21	421
Sand and clay, silty, blue	64	485

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-27C3. South Seattle Water Co., well 5. Drilled by L. R. Gaudio, 1962. Altitude 490 ft. Casing: 16-inch to 316 ft; 60-slot screen, 316-319 ft; 100-slot, 319-353 ft.		
Clay and gravel	7	7
Sand and gravel	43	50
Sand	35	85
Sand and gravel	58	143
Sand	42	185
Sand and gravel	3	188
Sand	3	191
Sand, layers of silt	12	203
Clay, blue	6	209
Sand, silty	21	230
Hardpan	3	233
Sand and gravel, tight	27	260
Gravel and sand	23	283
Gravel and sand, silty	7	290
Gravel and sand	9	299
Gravel, sand and wood	8	307
Peat, clay, silt, and wood	4	311
Gravel and sand	19	330
Gravel and sand, dirty	7	337
Gravel and sand	4	341
Gravel and sand, dirty	3	344
Gravel and sand	8	352
Gravel and sand, dirty	4	356
23/4-27P1. South Seattle Water Co., well 3. Drilled by J. J. Bell, 1947. Altitude 455 ft. Casing: 12-inch to 314 ft; perforated 240-295 ft.		
Topsoil	2	2
Hardpan, loose, brown	29	31
Sand, dry and gravel	27	58
Sand and gravel, full of clay, brown	45	103
Clay, blue, and silt	18	121
Sand, clay, and gravel, brownish yellow	33	154
Sand and gravel, brown, yields 10 gpm	2	156
Clay, yellow	6	162
Hardpan, heavy with clay, blue	36	198
Sand and clay, dirty, blue	4	202
Hardpan, blue	33	235
Gravel, cemented, water-bearing	60	295
Sand, water-bearing, changing to clay	41	336
23/4-27P2. South Seattle Water Co., well 4. Drilled by J. J. Bell, 1954. Altitude 455 ft. Casing: 12-inch; perforated 242-290 ft.		
Topsoil	2	2
Hardpan, brown	20	22
Sand, brown	48	70
Sand, brown, some gravel and clay, water-bearing	30	100
Clay, brown	10	110
Gravel, cemented, brown	16	126

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-27P2 - Continued		
Sand, brown, and some rocks	30	156
Clay, blue and brown	4	160
Gravel, cemented, blue	15	175
Gravel, cemented, blue, water-bearing	5	180
Gravel, cemented, blue	7	187
Sand and gravel	9	196
Clay, blue	2	198
Sand and gravel	14	212
Gravel, cemented, blue, water-bearing	2	214
Sand, blue, many rocks	8	222
Gravel, cemented, blue, very hard	2	224
Sand and gravel, blue, water-bearing	19	243
Gravel, cemented	4	247
Sand and gravel, dirty, water-bearing	18	265
Gravel, dry	7	272
Sand and rocks, water-bearing	4	276
Gravel, cemented	4	280
Sand and rocks, water-bearing	6	286
Gravel, cemented, turning to clay	14	300
23/4-28H2. Washington Memorial Park Cemetery, well 2. Drilled by J. C. Maxwell, 1960. Altitude 382 ft. Casing: 12-inch; screened 127-136 ft.		
Clay, sand, and gravel	18	18
Sand, brown	38	56
Gravel, cemented	14	70
Sand, gray, water-bearing	51	121
Sand and gravel, water-bearing	15	136
23/4-29N1. King County Water Dist. 4, well 2. Drilled by J. C. Maxwell, 1962. Altitude 240 ft. Casing: 12-inch to 146 ft; 25-slot screen, 145-150 ft; 35-slot 150-155 ft.		
Clay	8	8
Clay, sandy, water-bearing	22	30
Clay and sand	20	50
Sand, silty	90	140
Sand	8	148
Sand, coarse	8	156
23/4-30E1. King County Water Dist. 49, well 4. Drilled by Service Hardware & Implement Co., 1953. Altitude 290 ft. Casing: 16-inch to 242 ft; 12-inch, 242-517 ft; 10-inch, 517-780 ft; perforated 460-503 ft and 530-610 ft.		
Sand and clay	113	113
Clay, gray	30	143
Sand, gray, and clay	13	156
Sand, fine to coarse	39	195
Sand, brown, and clay	10	205
Sand, brown	5	210
Sand, brown to gray, and clay	31	241

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-30E1 - Continued		
Clay, hard, blue, small rocks from 250 to 268 ft and from 290 to 308 ft	81	322
Gravel, fine, and clay	8	330
Clay, blue, some gravel from 400 to 412 ft	90	420
Sand and gravel	5	425
Clay, blue	5	430
Gravel and clay, hardpan at 435 ft	15	445
No record	25	470
Hardpan and rocks	5	475
Sand, hard, coarse, some gravel	5	480
Sand, coarse	3	483
Sand and gravel, water level 215 ft	7	490
Hardpan, layer of gravel at 515 ft	28	518
Hardpan and sand	42	560
Sand and gravel, cemented	10	570
Sand, gravel, and clay	20	590
Sand and gravel	5	595
Clay and gravel	5	600
Sand and gravel	10	610
Clay	135	745
Clay, decomposed vegetation	10	755
Sand, fine, and clay	5	760
Hardpan	20	780
23/4-30J1. Normandy Park Water Co., well 1. Drilled by N. C. Jannsen, 1952. Altitude 160 ft. Casing: 16-inch to 53 ft; 8-inch 0-425 ft; perforated 175-185 ft, 215-225 ft, 290-300 ft, 312-320 ft, 385-415 ft.		
Gravel, loose	35	35
Clay, brown, and sand	14	49
Clay, blue and sand	8	57
Clay, blue	113	170
Gravel, pea, and sand	17	187
Gravel and sand, with streaks of clay	22	209
Gravel, loose, with rock streaks	16	225
Gravel, hardpacked, and rock	62	287
Gravel	13	300
Rock, hard	12	312
Gravel	8	320
Clay	17	337
Clay, sandy	18	355
Sand	18	373
Clay	7	380
Gravel, some sand	35	415
Clay, blue	10	425
23/4-33B1. Port of Seattle Commission. Drilled by N. C. Jannsen, 1943. Altitude 360 ft. Casing: 18-inch to 83 ft; 12-inch, 83-123 ft; 8-inch, 123-324 ft; perforated 85-120 ft, 290-321 ft; gravel packed 0-324 ft.		
Gravel and boulders	32	32
Sand	13	45

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-33B1 - Continued		
Sand and gravel	14	59
Sand	5	64
Sand and gravel, water-bearing	41	105
Boulders	6	111
Hardpan	2	113
Clay	24	137
Clay and gravel	6	143
Gravel, sand, and clay	81	224
Clay, blue	23	247
Clay and gravel	43	290
Gravel, water-bearing	31	321
Clay, blue	75	396
23/4-34D2. King County Water Dist. 75, well 13. Drilled 1961. Altitude 425 ft. Casing 12-inch; perforated 152-189 ft.		
Topsoil	3	3
Clay and gravel	12	15
Hardpan	48	63
Sand and gravel, yields 40 gpm	4	67
Clay, sand, and gravel	66	133
Clay, multi-colored, and peat	6	139
Clay, green, some sand and gravel	12	151
Sand and gravel, specks of clay, water-bearing	39	190
Sand and gravel, cemented	48	238
Clay, sand and gravel	9	247
Clay, blue, some shale	141	388
23/4-34H1. R. M. Schader. Drilled by J. J. Bell, 1952. Altitude 410 ft. Casing: 8-inch to 105 ft; 8-inch, 16-slot screen, 100-110 ft.		
Dug well	48	48
Sand and gravel, clay	37	85
Sand, brown and gravel, water-bearing	25	110
Clay, brown, and gravel	5	115
23/4-34L1. D. R. Adams. Drilled by J. J. Bell, 1959. Altitude 395 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan	37	40
Sand and gravel, dirty, brown	23	63
Sand, gravel, and clay	8	71
Sand and gravel, water-bearing	4	75
23/4-34L2. King County Water Dist. 75, well 6. Drilled by L. R. Gaudio, 1961. Altitude 397 ft. Casing: 12- and 8-inch.		
Topsoil and clay	12	12
Clay, sandy	20	32
Hardpan	21	53
Sand, tight, brown	15	68
Sand and gravel, water-bearing	12	80

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/4-34L2 - Continued		
Sand, medium to fine, water-bearing	27	107
Gravel, cemented	13	120
Sand and gravel	2	122
Hardpan, blue	21	143
Gravel and sand, cemented	34	177
Gravel, coarse and sand, dirty	6	183
Sand and gravel	22	205
Sand and clay	3	208
Sand, medium to coarse	16	224
Sand and gravel	2	226
Sand, medium to coarse	14	240
Sand and some gravel	6	246
Gravel, cemented	1	247
23/4-34N3. King County Water Dist. 53, well 2. Drilled 1947. Altitude 410 ft. Casing: 10-inch to 210 ft; perforated 93-105 ft, 180-210 ft.		
Topsoil	4	4
Clay and gravel	16	20
Rock	20	40
Gravel	35	75
Sand and gravel	15	90
Gravel, pea	16	106
Shale	10	116
Gravel	11	127
Clay	23	150
Rock	7	157
Clay and gravel	18	175
Gravel and sand, water-bearing	17	192
Gravel, water-bearing	10	202
Gravel and sand, water-bearing	8	210
23/4-35A1. Puget Western, Inc., boring 62-15. Drilled by Dames & Moore, 1962. Altitude 13 ft.		
Loam, silty, gray and brown, contains organic matter	7	7
Sand, fine to medium, gray, water-bearing, occasional lenses of gray silty loam and occasional organic matter	10	17
Loam, silty, gray, contains organic matter	11	28
Loam, sandy, fine, gray, contains lenses and layers of silty, gray, loam-	7	35
Sand, fine to medium, gray, contains lenses of silty, gray loam	41	76
Loam, silty, gray, contains layers of fine, sandy, gray loam	8	84
Loam, fine, sandy, gray, contains lenses of silty gray loam	7	91
23/4-36H1. William Kozak. Drilled by J. C. Maxwell. Altitude 17 ft. Casing: 6-inch.		
Topsoil and clay	140	140
Clay and sand	30	170
Sand, water-bearing	10	180
Sand, fine to coarse	30	210

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-3D1. City of Renton, well 7. Drilled by L. R. Gaudio, 1959. Altitude 438 ft. Casing: 12-inch to 236 ft; 10-inch, 236-345 ft; 100-slot screen, 320-345 ft.		
Topsoil	3	3
Gravel, cemented	11	14
Hardpan	12	26
Hardpan and boulders	27	53
Clay, blue	26	79
Clay, sandy, blue	9	88
Clay, blue	12	100
Clay, sandy, silty, blue	17	117
Clay, blue	45	162
Clay, sandy, blue	18	180
Sand, tight, silty	31	211
Sand	12	223
Sand, contains thin clay lens	32	255
Hardpan	17	272
Sand, tight, and clay	7	279
Sand, tight, and gravel	11	290
Hardpan and boulders	13	303
Sand and large gravel	4	307
Clay, blue	2	309
Sand, thin layers of hard sandy clay	2	311
Sand, some gravel	10	321
Sand and gravel	24	345
Shale	7	352
Sand, coarse, contains shale and clay	1	353
23/5-3M1. City of Renton, well 6. Drilled by L. R. Gaudio, 1959. Altitude 432 ft. Casing: 12-inch to 238 ft; 10-inch, 238-360 ft; perforated 284-330 ft.		
Topsoil	5	5
Hardpan, boulders	29	34
Sand and large gravel	5	39
Hardpan, boulders	16	55
Clay, blue	25	80
Hardpan, boulders, layers of clay	9	89
Clay, sandy	11	100
Clay, blue	25	125
Clay, silty, blue	7	132
Silt, sandy	30	162
Sand, very fine, silty, sand tight with thin clay lens	120	282
Clay, blue	4	286
Sand, gravel, and boulders	4	290
Hardpan	15	305
Sand, tight	21	326
Sand and clay layers	33	359
Clay, blue	21	380
23/5-8D1. METRO, boring B 19. Drilled by Metropolitan Engineers, 1961. Altitude 24 ft.		
Sand, brown, contains silt and gravel	4	4

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-8D1 - Continued		
Sand, silty, fine, brown-gray, changes to gray at 12 ft, contains peat	18	22
Sand and gravel, gray	3	25
Sand, fine, gray, contains silt and medium dense pumice	7	32
Sand, medium-fine, gray, contains gravel	6	38
Silt, peaty, gray-brown, becomes sandy near base	13	51
Sand, fine-medium, gray, contains silt, water-bearing	2	53
Silt, peaty, gray	2	55
Sand, fine-medium, gray	5	60
23/5-8E1. METRO, boring B 31. Drilled by Metropolitan Engineers, 1962. Altitude 28 ft.		
Sand and gravel, brown	8	8
Silt, sandy, gray-brown, contains peat	5	13
Sand, fine, gray, contains wood fragments and occasional gravel	10	23
Gravel, sandy, gray	4	27
Silt, very fine, sandy, brown-gray, some peat	7	34
Peat, interbedded, brown, and peaty silt	7	41
Sand, fine, gray	2	43
Silt, sandy, peaty, brown	5	48
Sand and gravel, clean, gray	8	56
23-5-8E2. METRO, boring B 20. Drilled by Metropolitan Engineers, 1961. Altitude 29 ft.		
Sand, silty, brown-gray, and gravel	6	6
Silt, gray, contains brown peat layers	4	10
Sand, silty, fine, gray-brown	4	14
Sand, medium coarse, brown, contains gravel, water-bearing	18	32
Silt, peaty, gray, and silty, brown peat	7	39
Sand, medium, gray, water-bearing	2	41
Peat, silty, brown, and gray peaty silt layers	4	45
Sand, silty, fine, gray, becomes coarser and gravelly near base	12	57
23/5-8E3. METRO, boring B 32. Drilled by Metropolitan Engineers, 1962. Altitude 27 ft.		
Sand and gravel	4	4
Silt, brown-gray, and peaty silt lamination	3	7
Sand, fine, brown-gray	1	8
Silt, brown-gray, peaty silt, and fine gray sand	14	22
Sand, fine-medium, gray, contains occasional organic matter, medium dense	7	29
Silt, peaty, brown-gray, brown peat and silty, fine, gray sand in layers	12	41
Sand, fine to medium, gray, contains occasional decayed wood	7	48
Sand, silty, fine to medium, gray, contains wood	4	52
Sand and gravel	3	55
Sand, medium, clean, gray, contains peaty, sandy, silt layers	4	59
23/5-8E4. The Boeing Co., boring J. Drilled by Dames & Moore, 1956. Altitude 30.		
Loam, silty, clayey, reddish brown	4	4

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-8E4 - Continued		
Sand, fine, reddish brown	2	6
Loam, silty, clayey, gray-brown	3	9
Sand, fine, gray, contains layers of silt	5	14
Sand, fine to medium, gray, contains gravel and a thin layer of wood chips at 15 ft	4	18
Silt, gray	2	20
Peat, silty, dark brown	1	21
Peat, silty, dark brown and black	3	24
Sand, fine, gray, contains layers of silt	6	30
Silt, gray	3	33
Sand, fine, gray	2	35
Sand, medium to coarse, gray, and gravel	1	36
Clay, silty, gray, contains occasional gravel	11	47
Silt, brown, contains organic matter	3	50
Sand, medium to coarse, gray, and gravel, less gravel below 61 ft	7	57
Sand, fine, gray, contains layers of silt	17	74
Silt, gray, contains organic matter	5	79
Sand, fine, gray	4	83
Silt, brown, contains organic matter	8	91
Sand, fine, gray, contains thin layers of gray silt and silty clay, occasional seashells	7	98
Clay, silty, gray, occasional laminations of gray silt and fine sand	6	104
Sand, fine to medium, gray	25	129
23/5-8F1. The Boeing Co., boring H. Drilled by Dames and Moore, 1962. Altitude 34 ft.		
Loam, sandy, brownish gray, and sand with occasional gravel	12	12
Peat, brown, contains layers of fine to medium gray sand and brownish gray organic silty loam	6	18
Sand, fine, gray	5	23
Sand, fine to coarse, gray, contains gravel, increasing gravel content towards base	10	33
Sand, fine to medium, gray, contains brownish gray peaty silt	5	38
Peat, brown, contains layers of silty, gray loam and fine, gray sand	10	48
Loam, silty, gray, contains organic matter and layers of fine, gray sand	5	53
Sand, fine to coarse, gray, contains small gravel	4	57
Peat, brown and brownish gray silty loam with organic matter	6	63
Sand, fine to coarse, gray, contains gravel	11	74
Loam, silty, brownish gray, contains layers of fine, gray sand and brown peat, volcanic ash layer, light brown silt at base	7	81
Loam, sandy, greenish gray, contains layers of silty gray loam and fine to coarse, gray sand	5	86
Sand, fine to medium, gray	23	109
Clay, silty, gray, contains thin lenses of fine, gray sand	11	120
Loam, fine, sandy, gray	4	124
Sand, fine to medium, gray	7	131
23/5-8M1. METRO, boring B 29. Drilled by Metropolitan Engineers. Altitude 29 ft.		
Sand, gravelly, brown	3	3
Silt, gray, sand, cinders, coal and wood	2	5

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-8M1 - Continued		
Sand, silty, very fine, gray	3	8
Sand, gravelly, brown, contains wood fragments, dense	12	20
Sand, fine, gray, contains medium dense silt and mica	5	25
Sand, silty, fine, gray, contains pumice and organic matter	4	29
Sand, fine-medium gray	3	32
Silt, gray, contains peat layers	2	34
Sand, fine-medium, gray, medium dense	2	36
Sand, silty, very fine, gray	2	38
Sand, fine to medium, gray, contains coarse sand	3	41
Peat, brown	2	43
Sand, medium, gray	2	45
Silt, thinly bedded, gray, some sand and peat	8	53
Sand, gray, and cobble gravel	10	63
Silt, gray, peaty silt and brown peat	6	69
Sand, fine-medium, gray, contains silt	1	70
23/5-8M2. METRO, boring B 21. Drilled by Metropolitan Engineers. Altitude 28 ft.		
Sand, silty, brown and gray and gravel	7	7
Sand, silty, very fine, medium dense, gray-brown	1	8
Sand, fine, brown-gray, some silt	3	11
Sand, medium-coarse, rusty, contains small gravel	7	18
Sand, fine to medium, gray, with gravel and decayed wood, medium dense	11	29
Sand, medium, gray, grades to sand and gravel with depth, medium dense	15	44
Peat, silty, brown, and gray peaty silt with decayed wood	13	57
Sand, fine, gray, contains silty, medium dense	8	65
23/5-8M3. METRO, boring B 30. Drilled by Metropolitan Engineers, 1962. Altitude 29 ft.		
Sand, gravelly, brown	6	6
Sand, silty, laminated, gray, contains organic matter	4	10
Sand, fine to medium, brown, medium dense	2	12
Sand, gravelly, gray, contains some silt, dense	11	23
Sand, gray, contains wood fragments, gravel, silt and thin peat layer at base	19	42
Silt, gray, occasional organic matter	4	46
Peat, brown-black	2	48
Silt, gray, contains occasional sand, wood, and peat	3	51
Sand, silty, fine to medium, gray	4	55
Sand, silty, gray, contains gravel, cobble, gravel increasing with depth, dense	13	68
23/5-8N1. METRO, boring 10. Drilled by Metropolitan Engineers, 1960. Altitude 26 ft.		
Sand and gravel, road surfacing	1	1
Sand, brown	4	5
Silt, clayey, gray	1	6
Sand, fine-medium, brown	4	10
Sand, fine, gray, and silty fine sand layers	10	20
Silt, fine, sandy, gray	2	22

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-8N1 - Continued		
Sand, silty, brown, peat, and gray silt layers	5	27
Sand and gravel, gray, contains silt binder	6	33
23/5-9E1. City of Renton, well 3. Drilled in 1943. Altitude 285 ft. Casing: 24-inch to 104 ft; 12-inch 0-241 ft; 10-inch, 215-424 ft; perforated 186-241 ft and 344-421 ft.		
Clay, gravel, and sand	55	55
Sandstone	16	71
Clay, blue	33	104
Sandstone	26	130
Gravel	5	135
Gravel, hard-packed	25	160
Clay, blue	21	181
Shale	13	194
Clay, blue	5	199
Sand, water-bearing	21	220
Shale	21	241
Gravel and shale	44	285
Clay, blue	45	330
Hardpan	20	350
Sand, blue, water	15	365
Sand and fine gravel, water-bearing	30	395
Clay	5	400
Gravel, fine	24	424
23/5-15G1. C. L. Bentley. Drilled by J. J. Bell, 1946. Altitude 391 ft. Casing: 6-inch; perforated 60-67 ft.		
Topsoil	5	5
Hardpan	18	23
Sand and gravel, water-bearing	3	26
Hardpan and boulders	27	53
Sand and gravel, water-bearing	15	68
23/5-15Q1. S. K. Ramberg. Drilled by J. L. Bell, 1958. Altitude 362 ft. Casing: 6-inch.		
Dug	26	26
Gravel and boulders	34	60
Sand and gravel, water-bearing	4	64
Sand and gravel, brown	26	90
Hardpan, blue	38	128
Sand, fine, blue	7	135
Sand and gravel, coarser, blue	5	140
23/5-15Q2. Joe Fontaine. Drilled by J. J. Bell, 1951. Altitude 358 ft. Casing: 6-inch; screened 135-140 ft.		
Sand and gravel	55	55
Clay, brown	5	60
Sand and gravel, hard, blue	23	83
Sand and clay, brown	35	118

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-15Q2 - Continued		
Silt, blue	17	135
Sand, brown, pebbles, water-bearing	5	140
23/5-16B1. Greenwood Memorial Park. Drilled by Jannsen Drilling Co., 1920. Altitude 326 ft. Casing: 8-inch; perforated 72-80 ft and 93-115 ft.		
Dug, no record	36	36
Gravel	30	66
Sand and gravel, water-bearing at 70 ft	7	73
Sand	40	113
23/5-17D1. METRO, boring 3. Drilled by Metropolitan Engineers, 1959. Altitude 30 ft.		
Paving and ballast	2	2
Silt, sandy, brown, with some peat	2	4
Silt, gray	2	6
Sand, fine, reddish-brown	2	8
Sand, gray, contains considerable angular and subangular gravel	6	14
Sand, fine, bluish-gray, contains layers of sandy, bluish gray silt	6	20
Sand, silty, gray, contains layers of soft bluish-gray silt and brown peat	3	23
Sand, silty, gray, with considerable gravel	11	34
Sand, silty, contains peat and gravel	4	38
Silt, sandy, with peat layers	2	40
Gravel	2	42
23/5-17D2. METRO, boring 15. Drilled by Metropolitan Engineers, 1959. Altitude 30 ft.		
Gravel, sandy, brown some silt binder	14	14
Sand, fine, gray, and loose peat	7	21
Sand, well graded, gravelly, loose, gray	7	28
Silt, clayey, green-gray, contains shells and fine, gray sand layers, soft	7	35
Sand, fine, gray, with silt, loose	4	39
Sand, gray, and gravel, some silt, color changes to brown at 45 feet	9	48
23/5-17F1. City of Renton, well 1. Drilled by N. C. Jannsen, 1942. Altitude 30 ft. Casing: 26-inch to 44 ft, 16-inch 0-82 ft; perforated 44-82 ft.		
Clay and gravel	16	16
Sand and gravel	25	41
Sand, coarse	3	44
Gravel, pea	9	53
Sand and gravel	13	66
Sand and pea gravel	2	68
Rocks, sand and gravel	14	82
23/5-17F2. City of Renton, well 2. Drilled by N. C. Jannsen, 1942. Altitude 30 ft. Casing: 26-inch to 44 ft, 16-inch 0-82 ft; perforated 39-82 ft.		
Clay and gravel	25	25

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-17F2 - Continued		
Sand and gravel	14	39
Gravel, pea	14	53
Sand and gravel	29	82
23/5-17F3. City of Renton, well 8. Drilled by L. R. Gaudio, 1960. Altitude 30 ft. Casing: 12-inch; perforated 45-80 ft; screened 60-66 ft.		
Topsoil	4	4
Sand and gravel	16	20
Gravel, loose, water-bearing	15	35
Gravel, compact	2	37
Gravel, loose, and boulders, water-bearing	13	50
Sand and gravel, water-bearing	5	55
Sand and gravel, compact	3	58
Sand and gravel, coarse, water-bearing	15	73
Sand and gravel, compact	6	79
Sand and gravel, layers, contains clay	5	84
Clay, silty	7	91
Clay and gravel	7	98
Clay, sandy	3	101
Clay, blue	4	105
23/5-18H1. METRO, boring 12. Drilled by Metropolitan Engineers, 1960. Altitude 33 ft.		
Asphalt pavement	1	1
Sand, brown	3	4
Silt, clayey, brown, with very fine, sandy, soft, silt layers	5	9
Silt, gray, contains layers of peaty and very fine silty sand	4	13
Sand, brown-gray, and dense gravel with silt binder	19	32
Sand, reddish brown, and gravel, contains silt binder	8	40
23/5-18J1. City of Renton, well 12. Drilled by L. R. Gaudio, 1962. Altitude 40 ft.		
Sand	3	3
Clay, silty	30	33
Gravel, water-bearing	2	35
Sand and gravel, dirty	15	50
Sand and gravel	8	58
Gravel, cemented	7	65
23/5-18J2. City of Renton, well 13. Drilled by L. R. Gaudio, 1962. Altitude 40 ft.		
Fill	5	5
Gravel	6	11
Sand, silty	19	30
Sand and gravel, layers of clay in bottom foot	16	46
Gravel, cemented	10	56

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-18J3. METRO, boring 1. Drilled by Metropolitan Engineers, 1959. Altitude 33 ft.		
Sand, silty, black, with gravel	7	7
Sand, silty, brown-gray, with small gravel, peat and wood fragments	6	13
Silt, blue-gray, with occasional organic matter, grades sandier	9	22
Sand, silty, very fine, bluish gray, and occasional wood fragments	8	30
Sand, fine to medium, gray, with silt and occasional small gravel	3	33
Gravel, sandy, brown	9	42
23/5-18J4. METRO, boring 13. Drilled by Metropolitan Engineers, 1960. Altitude 35 ft.		
Sand and gravel, brown	2	2
Silt, fine, gray, with fine sand laminations	6	8
Sand, fine, silty, gray, with layers of soft silt and decayed wood	7	15
Silt, gray, with layers of fine-medium, gray sand	5	20
Sand, fine-medium, gray	11	31
Sand and gravel, gray	10	41
Sand and gravel, dense, brown	3	44
23/5-18J5. METRO, boring 2. Drilled by Metropolitan Engineers, 1959. Altitude 35 ft. Casing: 8-inch to 33 ft; 6-inch 30-40 ft; perforated 33-40 ft; gravel packed to 48 ft.		
Sand, dark brown, and gravel	12	12
Sand, silty, bluish gray, contains sandy silt layers	13	25
Sand, medium, gray, contains wood fragments	4	29
Sand, silty, brown, contains considerable gravel, pumice, coal fragments	9	38
Sand, silty, fine, with sandy silt layers	7	45
Sand, fine, reddish brown, with silt and gravel, dense	3	48
23/5-18J6. METRO, boring 14. Drilled by Metropolitan Engineers, 1961. Altitude 35 ft. Casing: 10-inch; perforated 45-65 ft.		
Sand, gravelly, brown, with silt	4	4
Sand, silty, fine, gray to brown-gray, contains mica and wood fragments	6	10
Silt, very fine, gray, with organic matter, grades to fine, gray sand, contains gravel	5	15
Sand, brown to reddish brown, and gravel with fine to medium sand, fairly clean, cobble gravel near base	6	21
Sand, silty, gray, contains gravel	27	48
Sand and gravel, brown, contains fine to medium sand	10	58
Sand, silty, brown gray, and gravel	5	63
23/5-18R1. METRO, boring 9. Drilled by Metropolitan Engineers, 1960. Altitude 27 ft.		
Brick	1	1
Sand, brown	1	2
Silt, clayey, brown-gray	3	5
Sand and gravel, fine to medium, gray	4	9
Peat, brown, clayey silt and silty, fine sand	9	18

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-18R1 - Continued		
Clay, silty, gray	3	21
Peat, gray-brown, with silt and fine sand layers	6	27
Sand, medium dense, gray	3	30
Silt, gray, contains layers of sandy silt, peat, and clay	10	40
23/5-19A1. METRO, boring 8. Drilled by Metropolitan Engineers, 1960. Altitude 21 ft.		
Sand and gravel	2	2
Silt, clayey, gray	3	5
Sand, gray, contains silt	3	8
Silt, gray and peaty silt layers	5	13
Sand, fine to medium, gray, contains	3	16
Peat, brown	3	19
Sand, fine, gray, contains silty very fine sand, and very fine, sandy, silt layers	7	26
Silt, peaty, brown-gray	2	28
Sand, silty, fine, gray, and small gravel	5	33
Sand, brown, and gravel with silt binder	4	37
Gravel, brown, water-bearing	3	40
Sand, medium to coarse, brown, contains gravel	5	45
23/5-19A2. Puget Western, Inc., boring A. Drilled by Dames & Moore. Altitude 20 ft.		
Sand, fine to medium, brown-gray, and gravel with silty, gray loam	5	5
Loam, silty, brown-gray, with occasional lenses of medium, gray sand	4	9
Sand, medium to coarse, gray with organic matter	3	12
Loam, sandy, fine, gray, with occasional organic matter	4	16
Loam, silty, gray, contains organic matter	10	26
Sand, fine to medium, gray, becomes finer and changes to brown near base	8	34
Loam, sandy, brown, contains occasional gravel, changes to gray at 39 ft	9	43
Loam, sandy, gray, contains gravel	5	48
Sandstone, gray, contains layers of brown and gray shale	11	59
23/5-19B1. Metro, boring 7. Drilled by Metropolitan Engineers, 1960. Altitude 22 ft.		
Gravel surfacing	2	2
Sand, silty, brown-gray	4	6
Silt, brown gray, and decayed wood	3	9
Sand, silty, fine, gray, contains peaty silt and sand laminations	11	20
Silt, clayey, brown-gray, and fine sandy silt	10	30
Sand and gravel, brown-gray, contains silt	3	33
23/5-19B2. City of Renton. Drilled by L. R. Gaudio. Altitude 25 ft.		
Pavement	1	1
Sand, silty	28	29
Sand and gravel; layers of clay, water-bearing	9	38
Sand and gravel, water-bearing	19	57
Sand and gravel, layer of clay	3	60
Sand and gravel, water-bearing	3	63

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-19B3. City of Renton. Drilled by L. R. Gaudio. Altitude 25 ft.		
Sand, silty	38	38
Gravel, layers of clay	10	48
Gravel	2	50
Sand and gravel, log at 67 ft	18	68
23/5-19C1. METRO, boring 5. Drilled by Metropolitan Engineers, 1960. Altitude 19 ft.		
Sand, silty, fine, brown	6	6
Sand, silty, medium-coarse, brown	2	8
Sand, gravelly, brown-gray	3	11
Sand, gravelly, gray	4	15
Sand, gravelly, brown-gray, and silt, dense	15	30
23/5-25K1. U.S. Army, Youngs Lake Launcher Area, well 1. Drilled by Service Hardware & Implement Co., 1954. Altitude 656 ft. Casing: 6-inch to 169 ft; 20-slot screen, 169-179 ft.		
Clay, yellow	18	18
Sandstone, gray	64	82
Clay with rock	8	90
Shale, dark brown	10	100
Sandstone, gray, water-bearing, starting at 115 ft	88	188
Clay, hard	15	203
23/5-25R2. E. C. Holden. Drilled by Johnson Drilling Co., 1961. Altitude 550 ft. Casing: 6-inch.		
Hardpan	68	68
Sandstone	7	75
Clay, gray	10	85
Sandstone	5	90
Clay, brown	30	120
Sandstone	65	185
Shale, brown	10	195
Coal	10	205
Shale, brown	10	215
Sandstone, water-bearing	40	255
23/5-30P1. Unknown. Drilled in 1963. Altitude 20 ft.		
Gravel	1	1
Loam, silty, brown, contains organic matter and roots	3	4
Loam, silty, gray, contains layers of fine, gray sand and occasional matter, soft	11	15
Sand, fine to medium, gray, contains occasional organic matter, grades occasional gravel	11	26
Loam, sandy, greenish gray, contains occasional gravel, grading occasional shell fragments	24	50
Sandstone, gray	12	62

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-32L1. King County Water Dist. 58, well 2. Drilled by Service Hardware & Implement Co., 1952. Alt. 480 ft. Casing: 8-inch to 258 ft; 6-inch, 258-491 ft.		
Soil, rock, and gravel	5	5
Sand, brown, gravel, rock, and clay	25	30
Sand, blue clay, and rock, water-bearing at 55 ft	25	55
Gravel, clay, and rocks, hard at 79 ft	25	80
Rock	4	84
Clay and gravel	10	94
Sand, green, water-bearing	2	96
Clay, sandy, blue	10	106
Clay, brown to blue	21	127
Clay, blue	18	145
Sandstone	9	154
Coal, sand, gravel, and coal mixture	13	167
Sand, gravel, clay, and rocks, becoming hardpacked	12	179
Gravel, small and large, very hard, some clay	6	185
Gravel, sand and clay, very hard	3	188
Shale, blue, and rock	13	201
Clay and small gravel	41	242
Clay, blue, and shale	23	265
Clay or shale, hard, blue	183	448
Sand, coarse, water-bearing	1	449
Sandstone	37	486
Sand, coarse	1	487
Sandstone	23	510
23/5-33L1. King County Water Dist. 58, well 1. Drilled by N. C. Jannsen, 1949. Altitude 400 ft. Casing: 8-inch to 70 ft; screened 70-100 ft.		
Topsoil	2	2
Sand and gravel	30	32
Boulders and sand	14	46
Gravel and sand with streaks of clay, water-bearing	52	98
Sandstone	98	196
23/5-34B1. Mrs. Mable Hansen. Drilled by J. C. Maxwell, 1953. Altitude 495 ft. Casing: 6-inch.		
Sand, gravel, peat, gas	130	130
Quicksand	15	145
Sand	95	240
Sand, compact	110	350
23/5-36E2. U.S. Army, Youngs Lake Control, well 2. Drilled by H. O. Meyer, 1955. Altitude 588 ft. Casing: 6-inch.		
Hardpan and gravel	12	12
Clay, soft, and sand	8	20
Clay, brown, and pebbles	7	27
Muck, black, and coal	8	35
Muck, harder, brown, and coal	7	42
Clay, compact, cream colored	8	50

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/5-36E2 - Continued		
Sandstone, top of rock	4	54
Sandstone, harder	4	58
Sandstone, light, 70 percent clay	10	68
Sandstone, harder layer	4	72
Sandstone, soft, light gray	20	92
Sandstone, harder, 50 percent pebbles	8	100
Sandstone, firm	4	104
Sandstone, soft	4	108
Sandstone, firm	4	112
Sandstone, medium	28	140
Muck, black, and coal	5	145
Coal	10	155
Coal and muck	5	160
Clay, sticky, gray	15	175
Shale, dark gray	5	180
Clay, chalky, gray	5	185
Clay, gummy, gray, brown	10	195
Muck, shale, coal	5	200
Clay, very sticky	20	220
Clay, brown, coal	25	245
Sandstone and clayey, fine, sandy, shale, and gummy clay	60	305
Sandstone, fine-grained, with clay particles	50	355
Shale, dark gray	2	357
Shale, darker gray	3	360
Shale, darker gray, with coal traces	5	365
Coal and clay	30	395
23/5-36J3. Emil Wolf. Drilled by J. C. Maxwell, 1959. Altitude 525 ft. Casing: 6-inch.		
Topsoil	3	3
Sandstone, vein of coal	42	45
Clay, black	25	70
Sandstone, shale streaks	40	110
23/5-36R2. R. LaBossier. Drilled by J. J. Bell, 1956. Altitude 540 ft. Casing: 6-inch.		
Topsoil	4	4
Hardpan, brown	6	10
Clay, blue	32	42
Gravel, cemented, blue, water-bearing	8	50
23/6-7D2. L. W. Munz. Drilled by J. C. Maxwell, 1957. Altitude 400 ft. Casing: 6-inch.		
Topsoil	3	3
Hardpan	16	19
Clay, gravel	31	50
Sand, gray-blue	30	80
Sand, coarse	12	92

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/6-7F1. John Bandrette. Drilled by J. C. Maxwell, 1960. Altitude 330 ft. Casing: 6-inch.		
Topsoil	2	2
Gravel, cemented, water-bearing at 20 ft	28	30
Gravel, some sand	30	60
Gravel	2	62
23/6-7G1. Don Petzoldt. Drilled by J. C. Maxwell, 1957. Altitude 325 ft. Casing: 6-inch.		
Topsoil	3	3
Gravel, hardpan	48	51
Sand, clay	19	70
Sand, gravel, water-bearing	10	80
23/6-22F1. Paul Wordem. Drilled by H. O. Meyer. Altitude 307 ft. Casing: 6-inch to 175 ft; screened 175-181 ft.		
Topsoil	2	2
Sand, clay, loam like	68	70
Clay, soft	14	84
Clay, harder	21	105
Silt, water-bearing	15	120
Sand, fine	5	125
Sand, coarse, water-bearing	3	128
Sand, clay, silty	7	135
Clay and gravel, blue	34	169
Sand, coarse, water-bearing	1	170
Clay and silt	5	175
Sand, clean	6	181
23/6-22G2. Mary Maranakos. Drilled by H. O. Meyer, 1951. Altitude 280 ft. Casing: 6-inch.		
Clay, brown, and sand	25	25
Clay, gray, and sand	40	65
Sand, water-bearing	1	66
Clay, with rock	16	82
Clay and silt, water-bearing	9	91
Sand, water-bearing	7	98
Gravel and coarse sand	4	102
23/6-22Q1. W. H. Haviland. Drilled by H. O. Meyer, 1951. Altitude 290 ft. Casing: 8-inch to 183 ft; perforated 105-118 ft.		
Topsoil	3	3
Sand and clay	7	10
Gravel and sand, water-bearing	10	20
Silt and clay	12	32
Sand, fine and silt, water-bearing	18	50
Clay	8	58
Gravel	1	59
Clay and silt	26	85
Sand and small gravel	1	86

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/6-22Q1 - Continued		
Clay, soft	4	90
Hardpan, water-bearing	3	93
Hardpan and coarse gravel	4	97
Gravel, coarse	7	104
Gravel, very coarse	1	105
Clay	1	106
Gravel, coarse, and sand, water-bearing	5	111
Clay	14	125
Gravel	1	126
Clay, hard, and gravel	14	140
Silt and clay	40	180
Clay	70	250
23/6-30R2. Charles Johnson. Drilled by Johnson Drilling Co. Altitude 600 ft. Casing: 8-inch.		
Topsoil and rocks	30	30
Clay, silty	23	53
Hardpan	92	145
Sand and gravel, water-bearing	2	147
Hardpan	11	158
23/6-31A2. L. A. Hart. Drilled by Johnson Drilling Co., 1955. Altitude 605 ft. Casing: 6-inch.		
Dug well, no record	25	25
Clay, gray	15	40
Clay, gray, rocks	20	60
Clay, sandy, brown	10	70
Gravel	30	100
Hardpan and gravel, gray	40	140
Sand and gravel, brown	42	182
Gravel, water-bearing	10	192
Hardpan	8	200
23/6-34N2. D. B. Whiting. Drilled by J. C. Maxwell, 1957. Altitude 500 ft. Casing: 6-inch.		
Dug well, no record	21	21
Hardpan	30	51
Sand, gravel, and clay	24	75
Hardpan, sand, and clay	46	121
Sand and gravel	5	126
23/6-34P1. Herb Short. Drilled by Johnson Drilling Co., 1960. Altitude 475 ft. Casing: 6-inch.		
Topsoil	20	20
Sand	10	30
Sand and gravel	20	50
Hardpan and rocks	68	118
Sand and gravel, water-bearing	2	120

Table 10 - Drillers' logs - Continued

Materials	Thickness (feet)	Depth (feet)
23/6-34P1 - Continued		
Hardpan, water-bearing	6	126
23/6-35N1. Fred Voris. Drilled by Johnson Drilling Co. Altitude 535 ft. Casing: 6-inch.		
Topsoil	9	9
Clay, blue	26	35
Clay and rocks	25	60
Hardpan and rocks, brown	60	120
No record, water-bearing	7	127

Table 11 - Records of springs

Table 11 - Records of springs

Spring number: Spring-numbering system described on p. 63.

Altitude: Land surface above mean sea level, estimated from topographic maps.

Use: D, Domestic; Irr, irrigation; NU, not used; PS, public supply; Obs, observation; S, stock.

Remarks: Yield is given in gallons per minute (gpm); C, chemical analysis in table 12.

Spring	Owner or tenant	Altitude (feet)	Use	Remarks
19/7- 4J1s	U.S. Corps of Engineers, Mud Mountain Dam	1,100-1,140	Obs	Four openings.
4N1s	U.S. Corps of Engineers, Mud Mountain Dam	1,040	Obs	
8E1s	U.S. Corps of Engineers, Mud Mountain Dam	832	Obs	
20/5-12J1s	H. J. Rock	475	D,S	
20/6- 9H1s	O. E. Mills	580	D	
11M1s	J. J. Hearn	659	D,S	
19D1s	Don Mundy	480	D,S	
36K1s	P. Wilson	825	D,S	Yields about 35 gpm.
20/7- 7J1s	V. Peterson	740	D,S	Yields about 12 gpm. Noticeable iron content.
17C1s	City of Enumclaw, Newaukum Creek Springs	778	NU	Yields about 2,000 gpm. C.
19D1s	City of Enumclaw, Water Cress Springs	738	PS	Yields about 800 gpm. Minor seasonal variability. C.
19F1s	C. W. Watson	740	Irr	
29F1s	City of Enumclaw, Boise Creek Springs	924	PS	Yields 600 to 1,000 gpm. C.
21/3-12C1s	R. G. Gagnon	180	D	
12C2s	C. J. McWhirter	220	D	
21/4- 5F1s	King County Water Dist. 56, Redondo Springs	195	PS	Yields about 1,200 gpm.
11F1s and F2s	City of Auburn, West Hill Springs	325-420	PS	Yield is greater than 1,400 gpm. Minor seasonal variability. C.
14H1s	C. G. Henak	85	NU	
32F1s	H. A. Wollen	45	NU	
32F2s	. . . do . . .	45	NU	
35F1s	Town of Pacific	150	NU	Yields about 10 gpm.
21/5- 2F1s	C. M. Johnson	285	D	Temp 48°F.
2G1s	C. A. Rees	317	D,S	Supplies 3 families. Temp 52°F.
2G2s	L. H. Miller	310	D,S	Temp 49°F.
3M1s	V. Lauderdale	365	D,S	Noticeable iron content.

Table 11 - Records of springs - Continued

Spring	Owner or tenant	Altitude (feet)	Use	Remarks
21/5- 5F1s	Green River Golf and Country Club	190	D,Irr	
5P1s	T. L. Nickell	240	D	Noticeable iron content.
5P2s	T. W. Erikson	264	D,S	Supplies 2 families.
8G1s	C. O. Taylor	268	D,S	Noticeable iron content.
8K1s	A. H. Wirachowsky	287	D,S	Supplies 2 families. Temp 53°F.
10P1s	E. Severson	150	D	
10Q1s	W. A. Panton	140	D	Yields about 100 gpm. Temp 42°F.
11D1s	E. L. Murphy	349	Irr	Yields 50 to 100 gpm. Temp 52°F.
11N1s	C. M. Craig	175	D	Supplies 2 families.
11N2s	L. Lundberg	150	D	
15D1s	S. Lone	150	D	
16H1s	Washington State Salmon Hatchery	150-200	D	Yields about 200 gpm. Temp 49°F.
16Q1s	G. Abel	100	D	
17D1s	C. M. Chadwell	100	D	Supplies 2 families.
21A1s	F. Miles	280	D	Noticeable iron content.
21Q1s	F. Bull	76	D,S	
21Q2s	A. Bull	210	D	
22G1s	A. C. Nieman	275	D,S	
22L1s	J. Kaech	275	D,S	Noticeable sulfur odor. Supplies 3 families.
25E1s	James McCue	230	D,S	Yields about 20 gpm.
26A1s	G. D. French	250	D	Noticeable iron content.
27C1s	A. Neely	275	D,S	Supplies 2 families. Temp 52° F.
27Q1s	M. Henry	422	D	
28P1s	City of Auburn, Coal Creek Springs	190-198	PS	Yields about 4,200 gpm. Twenty openings. Temp 43-48°F. C.
31B1s	H. L. Proaps	225	D,S	
31L1s	O. H. Bode	230	D	Supplies 2 families.
31N1s	S. Wallace	275	D	Supplies 3 families.
32M1s	P. Nickolsen	280	D,S	
21/6-20M1s	Don Murdock	300	D	
21M1s	Tom Spaight	300	D,S	
27Q1s	Flaming Geyser Park	290	D	Temp 58°F.
28A1s	C. A. Paramore	360	D	
32K1s	Unknown	540	NU	
21/7- 2N1s	W. F. Nixon	1,000	D	
8E1s	Simon Media	650	D,S	Yields about 50 gpm.
8N1s	Marshall Richmond	770	D	
10F1s	Jack Wolshlagl	780	PS	Yields 1,900 to 12,000 gpm.[a] Supplies 18 houses. Temp 45°F. C.
17L1s	Evergreen Air Park	650	D	Yields 900 to 2,200 gpm.[a]

a/ Smaller yield shown was measured 9-16-63; higher yield was measured 2-12-64.

Table 11 - Records of springs - Continued

Spring	Owner or tenant	Altitude (feet)	Use	Remarks
21/7-19K1s	Garner	560	NU	Yields 1,800 to 11,000 gpm.[a/]
21/7-19P1s	City of Black Diamond	540	PS	Combined yield of 19P1s and 19Q1s, 2,200 to 18,000 gpm.[a/] Temp 45°F.
19Q1s	. . . . . . do	550	PS	Do.
30N1s	City of Kent, Icy Creek Springs	590-640	PS, NU	Yields 3,300 to 23,000 gpm.[a/] Numerous openings. Temp 42-48°F. C.
33H1s	Dodge Wilson	1,020	D	
33H2s	M. A. Scher	1,038	D	
22/4- 2D1s	Orillia Water Co.	120-150	PS	Yields about 350 gpm. Seven openings. C.
8F1s	J. D. Bonds	175	D,Irr	Noticeable iron content. Temp 55°F.
8F2s	C. V. Jessee	175	Irr	Yields about 10 gpm.
10C1s	White River Water Co.	150	PS	
10F1s	E. M. Duske	45	D,S	
10F2s	Jesse Shiach	60	D	Supplies 9 families.
10F3s	. . . do . . .	75	D,S	
15K1s	C. E. Rogers	65	D	
15K2s	H. E. Wolvin	65	D,S	
16M1s	J. W. McCoy	109	D	Yields about 5 gpm. Noticeable iron content.
17R1s	H. Bruce	154	D	
22B1s	S. E. Rea	70	D,S	
22C1s	Fred Frazer	225	Irr	
22G1s	J. T. Westall	60	D	
29J1s	S. McKinskry	230	D	
22/5- 6B1s	Mrs. Albert Krohn	53	D	
6H1s	City of Renton, Springbrook Springs	250	PS	Yields 1,000 to 1,500 gpm. C.
22E1s	Schüver	415	D,S	
22R1s	Joseph Schultze	345	D,S	
26G1s	I. W. Scogin	396	D	Temp 51°F.
27A1s	Frank Wetherby	412	D,S	
30K1s	Jeff Estates	170	D,S	Yields about 50 gpm. Supplies 13 families and 2 dairies. Temp 46°F.
32D1s	Joe Malnati	165	D	Yields about 5 gpm. Supplies 2 families.
32E1s	W. E. Ramstead	306	D,S	Temp 47°F.
32P1s	W. B. Martin	165	D	Yields about 2 gpm.
32P2s	A. Olson	165	D	Temp 50°F.
34Q1s	R. P. Gabrielsen	406	D,S	
35B1s	H. H. Park	343	D	
36K1s	Northern Pacific Railway Co.	403	D	
22/6- 1N1s	John Kabasta	500	D	Yields about 30 gpm.
1Q1s	R. G. Parker	580	D	

a/ Smaller yield shown was measured 9-16-63; higher yield was measured 2-12-64.

Table 11 - Records of springs - Continued

Spring	Owner or tenant	Altitude (feet)	Use	Remarks
22/6- 2H1s	John Slette	500	D,S	
2R1s	S. M. Black	460	D,S	Yields about 8 gpm. Supplies 3 families.
4H1s	Q. J. Robichaux	300	D	
12B1s	E. G. Wright	630	D	
14N1s	Reed-Ranch Road Water Co.	500	PS	Supplies 27 families.
15J1s	Orchard Grove Community Water Association	470	D	
15K1s	Mrs. Bowman	375	D	
16H1s	J. M. Sloane	375	D	
19M1s	Unknown	410	D	Supplies 2 families.
25A1s	Joe Kobe	719	D	
25G1s	Elon Scherrard	810	D,S	
25K1s	W. C. Ashley	619	D,S	
26L1s	City of Kent, Clark Springs	545	PS	Yields 1,800 to 22,000 gpm. Numerous openings. C.
33P1s	City of Kent, Kent Springs	475	PS	Yields 2,000 to 7,000 gpm.
36K1s	Unknown	690	NU	
22/7- 6B1s	Talbot	580	NU	
26B1s	C. L. Frazier	970-990	NU	Yields about 1,200 gpm. Numerous openings. Temp 50°F.
32F1s	King County Highway Dept.	710	D	Supplies 4 families.
34K1s	L. R. Anderson	1,145	D	
23/4-12G1s	King County Water Dist. 14	300	PS	Yields about 50 gpm.
29N1s	King County Water Dist. 4	235	PS	
23/5-12H1s	Max Setzer	480	D	
19Q1s	W. E. Warren	115	Irr	
31J1s	A. I. Button, Jr.	210	D	
32D1s	A. N. Edlund	187	D,S	
32D2s	C. E. Lundberg	183	D	Supplies 4 families.
23/6- 2E1s	E. P. Pearson	650	D,S	Supplies 6 families.
3E1s	Harold Keith	400	D	Supplies 2 families.
3H1s	E. St. Pierre	400	D,S	
7L1s	M. C. Smith	335	D	
10B1s	Ronald Stranack	170	D,S	
15A1s	Forestia Nudist Fraternity	575	D	Supplies 15 families in summer.
15B1s	Issaquah Water Association	275	PS	Supplies 13 families.
23/6-15B2s	F. A. Schellhase	190	D	
15R1s	J. N. Vidos	375	D	Supplies 4 families.
16J1s	W. J. Splinter	275	D	
17M1s	Joe Tucker	510	D	Yields about 13 gpm. Supplies 12 families.
20D1s	Lake McDonald Association	590	PS	
22H1s	J. J. Tondereau	475	D,S	
23M1s	L. N. Secwold	350	D	
23N1s	Elva Larson	365	D	Supplies 5 families.
27B1s	D. J. Horrocks	340	D,S	
29D1s	E. G. Littlefield	225	D	Supplies 6 families.
33C1s	Frank LaDue	375	D,S	
33P1s	Tiny Rawson	285	D,S	Supplies 2 families.
33Q1s	S. H. Bren	325	D	

Table 12 - Chemical analyses of water from wells and springs

Analyst: BC, Bennetts Chemical Laboratory, Inc., Tacoma; DE, Dearborn Chemical Co., Seattle; GE, General Electric Supply Co., Seattle; GS, U.S. Geological Survey, Portland, Oreg.; LC, Laucks Laboratories, Inc., Seattle; LJ, Lewis E. Jeklen, Tacoma; NL, Northwest Laboratories, Seattle; NP, Northern Pacific Railway Co., Tacoma; NS, National Starch & Chemical Corp., Seattle.

Iron and manganese: Unless followed by "t," values indicate amounts actually in solution at the time of sample collection, based on information that the sample was clear and sediment free when collected. The "t" indicates a "total" iron or manganese concentration that includes amounts in solution, in suspension, and in sediment at the time of collection. The "t" also is used for analyses having no description of sample appearance when collected.

Sodium: Computed concentrations of sodium plus potassium, expressed as sodium, are indicated by a "c" following the value.

Bicarbonate: Carbonate values are 0 mg/l for all analyses with reported bicarbonate values, except 8 mg/l of carbonate for sample from well 21/5-10N2.

Dissolved solids: Values followed by "c" were computed by totaling concentrations of individual constituents reported in a comprehensive chemical analysis (bicarbonate is recomputed as carbonate using the factor 0.492). Values followed by "e" were determined analytically, based on residue dried at 180°C following evaporation. Remaining values are of uncertain origin.

Table 12 - Chemical analyses of water from wells and springs

Well or spring	Depth (feet)	Date of collection	Analyst	Milligrams per liter					
				Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)
20/7-17C1s	0	4-19-51	LC	33	--	--	7.8	2.2	1.9
19D1s	0	4-19-51	LC	27	--	--	11	2.4	2.3
29F1s	0	3- 6-52	GE	36	--	--	10	2.1	1.5
31D1	102	10- 3-63	GS	18	1.7t	--	40	11	9.8
21/3-12J1	416	6-13-61	BC	28	.04t	0.09t	--	--	--
21/4- 1M1	236	3-30-63	GS	40	.11t	--	18	6.8	8.0
1Q1	179	1-25-63	GS	37	1.5	.3	17	5.2	17
4N1	329	12- 2-58	LC	24	.2t	--	48	10	8.0
5R1	335	12-18-59	GS	19	4.4t	--	14	5.3	5.8
		6- 2-60	GS	--	--	--	--	--	--
7Q2	207	10-10-56	?	30	.15t	--	--	--	--
9A1	350	6-17-50	LJ	34	.4t	.8t	50	21	--
10F1	200	12-19-51	BC	--	--	--	--	--	--
11F1s	0	1957	NL	19	.05t	.0t	11	3.9	4.1
11N1	211	2-10-56	BC	23	.07t	.01t	8.4	7.0	13
25A2	46	1- 8-61	NP	14	2.0t	--	--	--	--
25J1	86	12-10-57	NP	28	4.2t	--	--	--	--
29C2	130	12- -48	?	30	.1t	--	8.0	7.6	7.6
29C3	125	9-11-47	NL	41	.1t	--	8.8	6.2	8.7
		2-13-50	NL	51	--	--	8.4	7.7	9.9
21/5-10N2	666	10- 3-63	GS	19	.74t	--	12	1.5	96
14D1	718	10- 3-63	GS	17	6.4t	--	14	4.5	72
14E1	100	10- 3-63	GS	23	.06	--	16	4.2	3.3
19A1	298	7-15-57	NL	29	.11	.0	16	3.4	10c
19A2	134	5-15-59	NL	31	.01	.01	9.8	7.5	8.9
28P1s	0	1957	NL	29	.09t	.0t	8.3	6.1	--
21/6-27R1	1,461	10- 3-63	GS	11	9.5t	--	40	20	4,260
21/7-10F1s	0	1-25-63	GS	12	0.01	--	8.5	2.3	5.8
19Q1s	0	1-25-63	GS	13	.00	--	6.5	1.7	3.2
30N1s	0	3-30-63	GS	12	.00	--	6.5	.9	2.9
22/4- 2D1s	0	6- 9-61	LC	40	.00t	--	16	9.0	16
4L1	593	5- 5-49	NL	38	.1t	--	14	8.4	8.7c
8A1	395	7- -62	BC	40	.03t	0.08t	--	--	--
9A2	253	7- -62	BC	27	.25t	.04t	--	--	--
9P1	318	7- 6-61	LC	40	.70t	--	12	9.0	8.0

a/ Density: 1.004 grams per milliliter at 20°C.

Milligrams per liter									Specific conductance (micromhos at 25°C)	pH
Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Orthophosphate (PO_4)	Dissolved solids	Hardness (as $CaCO_3$)		
--	--	--	9.4	--	--	--	73	29	--	7.8
--	--	--	6.0	--	--	--	78	38	--	7.5
--	--	--	8.4	--	--	--	80	35	--	7.4
2.3	117	67	1.2	0.2	0.3	0.16	210c	147	320	7.8
--	113	--	2.5	--	--	--	111	80	--	7.7
1.1	107	.6	1.8	.2	.3	.56	130c	73	170	7.9
1.3	109	.0	11	.2	.1	1.5	146c	64	203	7.3
2.2	215	2.4	2.0	--	.1	--	--	161	--	7.7
2.6	77	6.7	4.0	.4	.2	.09	100c	57	157	7.6
--	85	--	--	--	--	--	--	68	165	7.6
--	149	--	2.5	--	--	--	--	81	--	7.4
--	251	.9	2.2	--	--	--	--	212	--	7.8
--	52	.0	1.0	--	--	--	--	43	--	7.7
--	48	6.7	5.0	.1	1.4	--	--	44	--	--
--	73	6.4	7.2	.7	1.8	--	94	50	--	7.5
--	--	--	--	--	--	--	64	--	--	6.2
--	--	--	--	--	--	--	62	--	--	6.9
--	68	5.8	7.0	--	0	--	92	52	--	7.2
--	74	10	3.9	--	--	--	88	48	--	7.3
--	84	1.7	2.5	--	0	--	108	53	--	7.4
2.4	260	8.0	9.2	.1	.1	.85	285c	36	440	8.5
2.0	159	44	24	.1	.4	.13	256c	54	406	8.2
2.0	71	5.4	1.8	.1	.3	.35	92c	57	137	7.7
--	68	9.6	6.8	.0	.1	--	112	54	--	6.2
--	69	2.1	11	.0	--	--	114	56	--	6.7
--	58	6.8	3.6	.0	2.3	--	--	46	--	--
34	2,290	.7	5,330	--	37	.05	a/ 10,900c	182	17,200	7.2
0.3	44	4.2	1.2	0.1	2.5	0.02	59c	30	88	6.7
.1	30	2.6	1.5	.2	1.4	.02	45c	23	62	7.1
.2	26	2.6	1.2	.2	1.3	.02	41c	20	54	6.8
2.6	68	38	6.0	--	--	--	171	77	--	7.1
--	93	4.1	5.0	--	--	--	125	70	--	7.1
--	91	--	2.5	--	--	--	--	56	--	8.0
--	80	--	3.1	--	--	--	--	56	--	7.9
.5	85	10	4.0	--	--	--	132	67	--	7.6

Table 12 - Chemical analyses of water from wells and springs - Continued

Well or spring	Depth (feet)	Date of collection	Analyst	Milligrams per liter					
				Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)
22/4-17Q1	240	4-16-46	NS	10	.03t	--	10	4.0	30c
		10- 4-63	GS	41	.40t	--	--	--	--
17Q4	1,001	5-23-52	NL	34	.56t	--	27	8.1	127c
		10- 4-63	GS	21	.37	--	47	15	162
28P1	342	7- -62	BC	41	.86t	.41t	--	--	--
22/5- 6H1s	0	6- 8-51	GS	29	.04t	--	13	8.2	5.3
6N1	210	10- 3-62	GS	--	--	--	--	--	--
17R1	380	10- 4-63	GS	37	1.3t	--	15	12	6.7
24D2	150	10- 3-62	GS	--	--	--	--	--	--
36M1	106	3-30-63	GS	23	.12	--	11	3.5	6.3
22/6-11M3	97	10- 3-62	GS	--	--	--	--	--	--
13A2	118	1-23-63	GS	20	.29	--	12	5.0	5.1
26L1s	0	10- 4-63	GS	13	.04	--	11	2.0	3.3
23/4-27C1	327	1-25-55	DE	16	.06t	.00t	14	6	10c
27C2	485	1-25-55	DE	9	.12t	.00t	12	6	--
27C3	356	10- 4-63	GS	38	1.1	.2	14	7.3	6.1
28H1	185	5- 7-54	GS	37	2.3t	.00t	8.9	9.1	5.7
34D2	388	3- -62	BC	38	.54t	.09t	--	--	--
		7- -62	BC	38	.36t	.08t	--	--	--
23/4-34H1	115	6-23-60	GS	32	0.02t	--	8.0	7.8	5.2
		10- 4-60	GS	--	--	--	--	--	--
34L2	247	7- -62	BC	38	.09t	0.05t	--	--	--
23/5- 3D1	353	11- 7-62	NL	50	1.2t	.0t	13	6.6	11c
3M1	380	11- 7-62	NL	47	.18t	.2t	15	7.1	11c
9E1	424	6- 4-51	GS	30	.08t	.0t	14	6.3	13c
17F1,2	82	6- 8-51	GS	28	.02t	--	12	8.2	5.5
17F2	82	6-23-60	GS	14	.00t	--	12	3.5	4.0
		10- 5-60	GS	--	--	--	--	--	--
22A1	130	10- 3-62	GS	--	--	--	--	--	--
23M1	665	10- 3-62	GS	--	--	--	--	--	--

Milligrams per liter										
Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Orthophosphate (PO_4)	Dissolved solids	Hardness (as $CaCO_3$)	Specific conductance (micromhos at 25°C)	pH
--	76	--	8.0	--	--	--	--	42	--	--
1.2	98	--	--	--	--	.47	129e	50	172	8.2
--	184	2.0	158	--	.1	--	443	101	--	--
2.2	180	.2	280	.0	.0	.72	617c	178	1,160	7.3
--	82	--	3.5	--	--	--	--	64	--	7.3
4.0	78	9.6	4.2	.4	4.0	--	116	66	161	7.2
--	120	--	2.0	--	--	--	--	86	191	8.0
2.7	103	14	4.5	.1	.2	.11	143c	88	200	7.4
--	92	--	2.5	--	--	--	--	68	153	7.3
1.7	60	6.6	1.8	.1	.1	.09	84c	42	112	7.6
--	75	--	3.2	--	--	--	--	60	142	7.3
.8	71	3.0	1.0	.1	.1	.40	83c	50	119	7.5
.5	44	.8	2.2	.1	.9	.02	56c	36	87	7.3
--	79	15	3	--	--	--	103	60	--	7.8
--	69	2	1	--	--	--	68	55	--	7.8
2.9	71	16	4.8	.1	.3	.28	126c	65	159	7.8
1.7	58	12	5.1	.1	8.0	--	117c	60	152	6.9
--	124	--	3.7	--	--	--	--	92	--	7.5
--	133	--	3.2	--	--	--	--	102	--	7.8
1.8	59	7.2	4.2	0.1	3.7	0.19	99c	52	133	7.4
--	58	--	--	--	--	--	--	58	149	7.2
--	90	--	3.5	--	--	--	--	66	--	7.8
--	92	3.8	4.6	.0	.0	--	81	60	--	6.0
--	95	3.0	6.5	.0	.0	--	77	67	--	6.1
--	92	4.6	6.5	.0	--	--	120	61	--	8.1
2.6	72	9.8	4.0	.2	4.2	--	110	64	161	7.3
.5	49	10	2.2	.1	.8	.02	71c	44	110	6.9
--	54	--	--	--	--	--	--	46	119	6.7
--	50	--	3.2	--	--	--	--	49	116	7.9
--	160	--	22	--	--	--	--	41	304	8.0

Table 13 - Partial field laboratory analyses of water from wells

(Analyses by U. S. Geological Survey. Analytical results determined by field methods are approximate.)

Well	Depth (feet)	Date of collection	Milligrams per liter			Specific conductance (micromhos at 25°C)
			Bicarbonate (HCO_3)	Chloride (Cl)	Hardness at $CaCO_3$	
20/6- 1F1	74	8-19-63	190	3	100	310
2Q2	280	8-19-63	180	3	--	260
7E1	150	8-19-63	110	3	--	200
8J1	151	8-19-63	130	5	100	220
16K1	164	8-19-63	130	8	100	220
27F1	109	8-19-63	56	2	--	110
20/7- 5B1	53	8-19-63	31	2	--	--
30G1	147	8-19-63	110	3	82	200
30G2	54	8-19-63	59	5	--	130
31D1	102	1-29-63	67	--	130	300
21/3- 1K1	323	12-11-62	100	7	88	210
1K2	300	12-11-62	97	4	63	160
24M2	66	12-10-62	19	9	29	99
21/4- 3A1	150	12-11-62	110	5	79	170
5M2	125	12-11-62	69	6	57	140
17R1	178	8-26-63	81	--	--	170
18B1	300	12-10-62	100	4	75	170
20L1	237	1-22-63	40	4	37	77
24C1	135	8-26-63	150	--	--	440
26C1	199	12-12-62	71	5	65	160
26J1	61	8-26-63	82	--	--	110
28N1	130	12-12-62	140	8	100	260
28R1	87	12-11-62	60	7	51	130
34A2	130	12-11-62	74	5	55	130
35R1	257	8-26-63	670	140	--	1,400
21/5- 1C1	83	1-23-63	40	4	25	90
1E1	130	1-23-63	65	4	47	110
2A1	12	1-22-63	59	4	47	110
3M1	54	8-20-63	78	5	--	150
8A1	200	8-20-63	44	6	--	110
8Q2	93	8-20-63	54	6	--	120
10R1	207	8-20-63	130	4	--	200
10R2	82	8-20-63	63	5	--	110
12D1	43	1-22-63	29	3	24	63
12F1	57	1-22-63	25	6	29	92
12F2	69	1-22-63	64	2	52	110
12P2	120	1-22-63	31	4	27	69
14Q1	105	8-20-63	34	6	--	--
17L1	40	8-20-63	59	5	--	140
21K1	70	8-20-63	90	7	--	160
21N4	101	8-20-63	56	8	--	160
29F1	94	8-20-63	54	6	--	110
33L2	175	8-20-63	31	4	--	82
36G1	78	1- 9-63	--	48	92	420
36L1	54	1- 9-63	43	9	100	200
21/6- 3E3	50	8-27-63	87	4	--	160
6C2	72	1- -63	25	4	25	65
6F1	90	1- -63	49	5	42	95
6P1	30	1- -63	49	23	97	340
6Q1	170	1- -63	69	4	57	130
7D1	40	1- -63	59	6	59	130
7H1	58	1- -63	140	4	160	350
7J1	36	1- -63	110	5	86	190
7N1	18	1- -63	29	9	47	120
7N2	83	1-22-63	75	4	63	130
8E1	65	1- -63	97	5	87	180
27R1	1,461	1- 9-63	2,400	--	190	17,000
29N2	98	8-27-63	110	5	--	210

Table 13 - Partial field laboratory analyses of water from wells - Continued

Well	Depth (feet)	Date of collection	Milligrams per liter			Specific conductance (micromhos at 25°C)
			Bicarbonate (HCO_3)	Chloride (Cl)	Hardness at $CaCO_3$	
21/7-34F1	106	8-19-63	59	5	--	120
22/4- 4N1	270	12-18-62	78	5	56	140
5K1	120	12-18-62	71	16	120	290
6A1	144	12-19-62	88	8	88	200
8K5	245	12-18-62	96	4	98	170
12E1	200	8-26-63	710	360	--	2,100
12H1	321	12-31-62	140	4	100	210
13C1	87	12-31-62	220	9	9	340
15G1	65	12-31-62	57	7	69	160
16G1	6	12-18-62	94	12	110	240
17L1	630	12-18-62	75	4	30	120
17L2	242	12-19-62	63	9	82	220
17L3	360	12-19-62	97	4	48	150
17Q1	240	12-21-62	98	4	47	160
17Q4	1,001	12-21-62	180	300	170	1,100
21B1	65	12-10-62	31	10	42	120
21N1	50	8-26-63	68	--	--	100
22Q1	246	12-10-62	89	6	74	170
24G1	428	12-31-62	130	11	43	230
25M1	86	8-26-63	280	29	--	440
27N3	345	12-10-62	78	5	55	130
34F2	19	12-10-62	14	25	64	190
34J2	68	8-26-63	32	--	--	160
22/5- 1A1	117	8-21-63	180	10	--	270
1A2	62	8-21-63	140	--	--	210
3J1	72	12-31-62	55	6	53	120
5Q1	206	12-31-62	91	5	71	160
6L2	178	12-31-62	80	4	77	130
6N1	210	10- 3-62	160	24	42	--
6N3	210	1-29-63	99	--	87	190
7H1	156	8-21-63	140	--	--	190
7M1	180	1-29-63	130	--	120	220
9A1	156	12-31-62	64	5	55	130
9N1	68	12-31-62	68	6	66	150
13P1	130	8-21-63	91	--	--	180
14C1	187	8-21-63	75	--	--	140
14P2	189	12-31-62	78	4	59	130
14P3	136	12-31-62	150	5	120	250
15E1	164	8-20-63	120	--	--	210
16L1	470	12-31-62	120	3	84	190
17E1	166	1-10-63	61	11	60	150
18D1	410	12-31-62	160	6	39	250
18K1	367	1- 2-63	46	5	95	170
19G1	124	8-21-63	93	--	--	180
21K1	225	12-31-62	27	6	59	160
21K2	48	12-31-62	160	3	110	250
21M1	290	12-31-62	160	3	100	250
22N1	143	8-20-63	120	--	--	170
22N2	68	8-21-63	110	--	--	300
23E1	40	1-10-63	41	4	12	80
23L2	118	8-21-63	89	--	--	150
24Q1	85	1-24-63	68	4	51	120
25C1	125	1-24-63	74	4	58	140
25E1	114	1-29-63	83	3	64	140
25J1	55	1-29-63	70	3	54	120
26J1	104	1-24-63	82	4	68	160
28A4	189	8-21-63	150	--	--	240
28K1	75	8-21-63	78	--	--	150
29Q1	125	8-22-63	94	--	--	180
32B4	164	8-22-63	34	--	--	140

Table 13 - Partial field laboratory analyses of water from wells - Continued

Well	Depth (feet)	Date of collection	Milligrams per liter			Specific conductance (micromhos at 25°C)
			Bicarbonate (HCO_3)	Chloride (Cl)	Hardness as $CaCO_3$	
22/5-33C1	109	9-22-63	120	--	--	200
34B1	70	1-24-63	84	7	85	200
34B2	56	1-10-63	73	12	76	180
34E1	60	1-10-63	72	4	63	140
36F1	32	1-23-63	68	4	52	120
36R1	48	1-23-63	78	5	34	93
22/6- 1J1	202	8-22-63	110	--	--	200
1J2	62	8-22-63	100	--	--	200
3A1	110	8-22-63	73	--	--	120
11P3	150	8-22-63	56	--	--	120
12R1	20	8-22-63	32	--	--	--
12R2	134	8-22-63	56	--	--	180
14M1	75	8-22-63	45	--	--	--
17H1	161	8-22-63	130	--	--	210
17J1	250	8-22-63	87	--	--	150
25R1	40	1-22-63	23	5	25	65
29G1	128	1-25-63	46	2	34	92
29H1	180	1-25-63	110	3	80	180
29R1	355	1-25-63	59	3	45	110
30D1	72	1-24-63	21	6	30	88
30E1	10	1-29-63	60	7	48	120
32D1	36	1-25-63	65	3	47	110
23/4-21D1	81	12-21-62	140	10	150	330
23M1	182	12-21-62	94	5	55	150
23M2	42	12-21-62	95	5	68	160
27C2	485	12-18-62	120	5	71	160
27C3	356	12-18-62	69	7	65	150
27P2	300	12-18-62	93	6	74	170
32F2	86	12-18-62	120	5	100	220
34N1	68	8-27-63	61	--	--	260
35C1	200	1- 2-63	110	210	150	1,000
23/5-12E1	25	8-27-63	39	4	--	89
22A1	130	10- 3-62	160	24	42	--
31M3	385	8-27-63	120	4	--	190
23/6- 3H1	148	8-27-63	61	5	--	140
16M1	52	8-27-63	36	6	--	110
31A1	220	8-27-63	62	4	--	130