STATE OF WASHINGTON
Daniel J. Evans, Governor

DEPARTMENT OF ECOLOGY
JOHN A. BIGGS, Director

WATER-SUPPLY BULLETIN 39

Water in the Palouse River Basin, Washington

By
E. G. NASSAR
and
KENNETH L. WALTERS

Prepared in Cooperation With
U. S. Geological Survey
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CONTENTS

CONTENTS (continued)

ILLUSTRATIONS

ILLUSTRATIONS (continued)

TABLES

In recognition of a worldwide trend to adoption of the metric system of measurements (SI or System Internationale), the following factors are provided for conversion of English values used in this report to metric values:

Multiply	By	To obtain
Inches	2.540	centimeters (cm)
	0.0254	meters (m)
Feet (ft)	0.3048	meters (m)
Miles (mi)	1.609	kilometers (km)
Square miles (mi^2)	2.590	square kilometers (km^2)
Acres	4047	square meters (m^2)
	0.00404	square kilometers (km^2)
Acre-feet (acre-ft)	1233.	cubic meter (m^3)
Cubic feet per second (ft^3/s)	0.02832	cubic meters per second (m^3/s)
Gallons per minute (gpm)	3.785	liters per minute (l/m)
Bushels	35.24	liters (l, or liters)
Tons	0.9072	tonnes
Tons per square mile ($tons/mi^2$)	0.3503	tonnes per square kilometer ($tonnes/km^2$)

WATER IN THE PALOUSE RIVER BASIN, WASHINGTON

By E. G. Nassar and Kenneth L. Walters

INTRODUCTION

This report on the Palouse River basin in Washington describes the third in a series of studies of the hydrologic conditions in major river basins in Washington State. The two earlier reports (Walters, 1974; Walters and Nassar, 1974) discuss water in the Okanogan and Methow River basins.

The Palouse River basin includes an area of 3,283 mi^2 (square miles) of which 2,730 mi^2 is in Washington and 553 mi^2 is in Idaho. The part of the basin in Washington includes most of Whitman County, and parts of Spokane, Lincoln, Adams, and Franklin Counties.

Historically, the Palouse River basin has been a richly productive region of dryland farming. Precipitation increases with altitude from west to east (pl. 1 in pocket), from about 12 inches in the western part of the basin to about 18 inches in the central part and to more than 50 inches in the mountainous headwaters area in Idaho. The variation in precipitation affects the raising of crops, which consist principally of wheat, barley, lentils, peas, and hay. East of Colfax (pl. 1) the crops generally are grown each year, whereas west of Colfax they are grown in alternate years. During the noncrop years, the land is left fallow, and is cultivated only to control weeds and increase the moisture content of the soil.

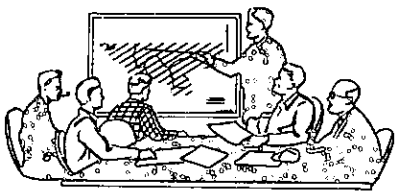
Less than 1 percent of the farmland in the basin is irrigated, with more than half of the irrigation water coming from ground water that occurs in deep basalt aquifers underlying most of the area. The aquifers are recharged locally by infiltration from streams and lakes, or during the winter by downward percolation from the overlying saturated soil; however, most of the early precipitation is accounted for by surface runoff and evapotranspiration.

Despite the generally favorable conditions which prevail for agriculture over most of the Palouse River basin, water problems exist locally. For example, in the heavily populated areas of Pullman, Wash., and Moscow, Idaho (pl. 1), extensive pumping of ground water for municipal supplies has lowered artesian pressures to such an extent that wells that once flowed freely no longer do so; the ground-water discharge has exceeded the natural recharge. In other areas, where farms are irrigated from streams, upstream diversions have sometimes depleted streamflow to the detriment of downstream irrigators.

Existing records provide considerable information on water resources and use in the basin. However, those records have been compiled for years in separate and differing tabulations by several agencies with various approaches and goals, and the raw data therefore are scattered among several sources. Existing data were interpreted on the basis of (a) the amount of water available, (b) the quality or usability of the water, and (c) the frequency of seasonal water shortages or surpluses. This report, then, gathers, summarizes, and interprets the water information now (1971) available for use in developing, protecting, and managing the area's water resources.

This report comprises three parts. Part A presents basinwide information both as a self-contained generalized report and as an introduction and summary of Parts B and C, Part B gives technical information on the hydrology of specific parts of the basin, and Part C presents basic hydrologic data collected in the part of the basin in Washington. Part A contains certain estimated values without qualification or substantiation; however, Parts B and C include the basic data and the interpretations and assumptions used to make estimates.

The U.S. Geological Survey prepared the report as part of a program of river-basin studies in cooperation with the State of Washington Department of Ecology. The studies provide scientific information that the Department of Ecology needs to protect and manage water resources in Washington State.



PREVIOUS RELATED INVESTIGATIONS

One of the earliest reports on the geology and landforms of parts of the Palouse River basin is that by Russell (1897). Although the report only generally discusses hydrologic features in the area, it contains sufficient detail to compare some of the features with those of the present day. Of particular interest is Russell's description of several flowing artesian wells in the eastern part of the basin in and adjacent to the Pullman-Moscow area.

In January 1934, the U.S. Geological Survey, in cooperation with the Soil Conservation Service, started detailed hydrologic studies in the South Fork Palouse River basin. The studies were made to evaluate the relationship between rainfall, runoff, and soil erosion (Potter and Love, 1942). Systematic collection of ground-water data was also part of the studies (W. A. Rockie and others, written commun., 1938). Periodic measurements of water levels in several wells included in those studies have been continued to the present time (1971).

In 1953 the U.S. Geological Survey, in cooperation with the Washington State Department of Conservation, began a detailed investigation to determine whether ground-water withdrawal exceeded the perennial yield of the aquifers being tapped in the Pullman area. The investigation also was made to determine whether deeper aquifers might be tapped and whether the yield of the aquifers being tapped could be increased by artificial recharge (Foxworthy and Washburn, 1963).

A reconnaissance ground-water investigation in the Moscow basin during October and November 1955 was made by Stevens (1960). The study included an evaluation of the available hydrologic and geologic data, an estimate of the amount of water available annually in relation to the amount used, and an appraisal of artificially recharging aquifers by injecting excess surface water.

A report by Molenaar (1961) includes information on eight flowing artesian wells in the Palouse River basin as part of a statewide summary. A general evaluation and summary of the availability and use of ground water in Whitman County were made by Walters and Glancy (1969).

A study of the sediment-transport characteristics of streams in the Palouse River basin and an evaluation of factors that cause the soil erosion and sediment discharge were made by Boucher (1970).

A study of the hydraulic characteristics of the basalt aquifers and effects of present and projected pumpage on the long-term ground-water supply in east-central Washington, including parts of Whitman County, was made by Luzier and Burt (1974).

PART A

GENERAL HYDROLOGIC CONDITIONS

PART A: GENERAL HYDROLOGIC CONDITIONS

Physical and Cultural Features

The Basin and Its History—In Brief

The Palouse River derives its name from the French word "Pelouse," meaning green meadows, descriptive of the region as it first appeared to the white man and as it existed for years after the coming of the first settlers.

Some parts of the Palouse River basin were settled as early as 1836, but many of these settlers were driven out during the Cayuse war, following the Whitman Massacre in 1847. Most did not return until shortly after the close of Colonel Wright's successful campaign against the Indians in September 1858 (Snowden, 1909, v. 4, p. 73). For many years, development of settlements in the basin was slow. Initially the agricultural potential of the area was not recognized owing to the barren appearance of the land, particularly in those parts where sagebrush, cactus, and greasewood seemed to be the only natural flora. Even the "bunchgrass" in the eastern part of the basin tempted only the cattlemen and sheepmen for many years.

The first agricultural development in Whitman County began about 1864, when it was discovered that cereal crops would grow on the hills as well as in the valleys. Development of the Palouse Hills area, most of which lies in Whitman County, has been directed since the mid-1860's toward raising wheat and other grain crops. The first large influx of settlers came to Whitman County from the Walla Walla valley in 1868. In 1869 more settlers established themselves along Union Flat Creek (pl. 1), and in 1870, James A. Perkins and T. J. Smith located their claims at the site of the present city of Colfax. As in other parts of the basin, the first arrivals were stockmen. In Adams County it was not until 1872 that the first 100 acres was plowed and sown in wheat, by James G. Bennett, who also dug the first farm well in the county.

The first settlers in Lincoln County arrived in the early 1870's, and they and those who followed in different parts of the basin continued in developing the land toward growing wheat and other grain crops.

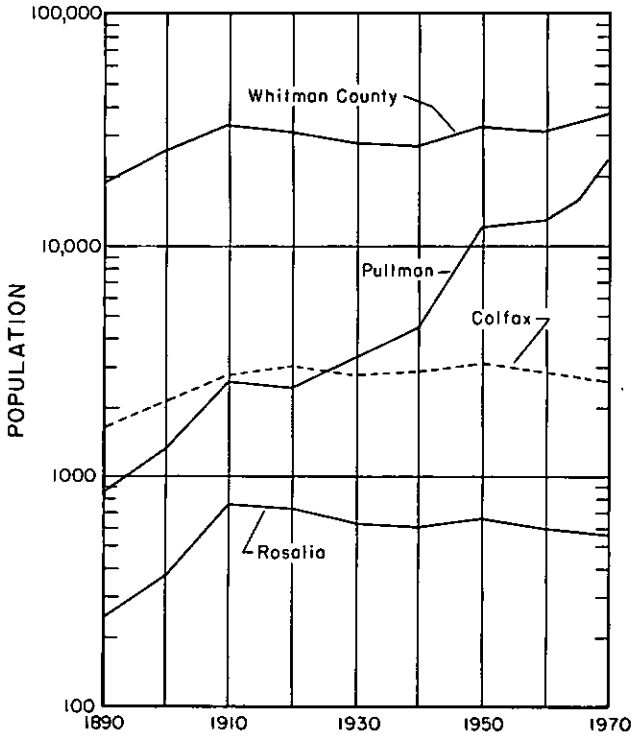


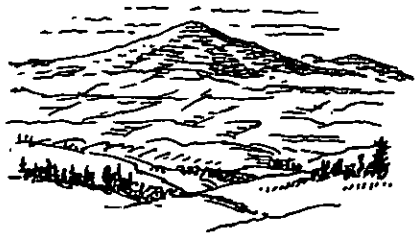
FIGURE A1.--Trends in population of Whitman County and selected cities in the Palouse River basin in Washington, 1890-1970.

Population in the Palouse River basin grew steadily for about 40 years and by about 1910 the basin was largely settled. Between 1900 and 1970 the population increased by about 50 percent. The trend in population since 1890 for major counties and cities in the basin is shown in figure A1. After the sustained sharp increase ended in the early 1900's, population in most cities in the basin has been more or less stable or has shown a small decrease. Trends portraying this pattern are also shown in figure A1. According to Schmid and Schmid (1969), 14 incorporated towns existed in Whitman County when the census was taken in 1910; since then 10 towns had population declines and of the remaining 4 towns that gained population, 3 had only small increases. Pullman and Moscow, the two largest cities in the basin, have had a fairly consistent rate of growth since the turn of the century; from 1890 to 1970 the population of Pullman increased from 850 to 20,384, while that of Moscow increased from 2,484 to 14,146. The population growth and economics of Pullman and Moscow are closely associated with the growth of Washington State University and the University of Idaho, respectively. However, it is important to note that beginning with the 1950 census, college students living away from home were included in the population of the towns in which they resided while attending college, whereas previously they were enumerated at their parental homes.

Topography and Drainage

The Palouse River basin (pl. 1) is in the Walla Walla section of the Columbia Plateau physiographic province (Fenneman, 1931, p. 251). Most of the eastern part of the basin is characterized by a rolling surface of low relief, with broad rounded wavelike swells, rising generally 20 to 80 ft (feet) above valleys which

contain neither streams nor channels. The area generally slopes westerly and northwesterly and has an average altitude of 2,000 to 3,000 ft above mean sea level. In a few places, isolated buttes rise above their surrounding areas. Among the better known is Steptoe Butte about 7 mi (miles) southwest of Oakesdale; it is a conical mountain of quartzite rising about 1,000 ft above the surrounding terrain.



In general, streams in the Palouse River basin have sluggish flows owing to the predominantly low stream gradients. However, in most of the western part of the basin bank erosion may be severe during high-flow periods. Locally, highly erodible fine-grained loessal soil results in channel trenching and bank cutting below the adjacent plains.

The headwaters of the Palouse River originate in St. Joe National Forest in Idaho, where altitudes generally range from 3,800 to 5,300 ft above mean sea level. From the mountains the river flows predominantly westward about 95 mi to the vicinity of Winona (pl. 1), and then about 50 mi southwesterly to the Snake River at Lyons Ferry at an altitude of about 500 ft.

At Colfax, the Palouse River is joined by the South Fork Palouse River, a major tributary with a drainage area of about 300 mi^2. The South Fork heads in the Thatuna Mountains (Moscow Mountains), about 7 mi northeast of Moscow, Idaho. Other major tributaries include Rock Creek (drainage area 954 mi^2), which empties into the Palouse River about 6 mi southwest of Winona, Union Flat Creek (drainage area 313 mi^2), which joins the Palouse River about 5 mi west of La Crosse, and Cow Creek (drainage area 680 mi^2),which joins the Palouse River near Hooper. Rock Creek and Palouse River below Rock Creek flow across the easternmost part of what is known as the "channeled scablands" (Bretz, 1959).

The four major tributaries--South Fork Palouse River, Rock Creek, Union Flat Creek, and Cow Creek--have a total drainage area of 2,247 mi^2 (68.4 percent of the basin area), of which 187 mi^2 is in Idaho. The main stem of the Palouse River above the confluence with the South Fork has a drainage area of 497 mi^2, of which 366 mi^2 is in Idaho.

According to a study by Wolcott (1964), 616 lakes and ponds are in the Palouse River basin. Of these, 323 are in the Cow Creek drainage, 261 are in the Rock Creek drainage, 3 are in the South Fork Palouse River drainage, 2 are in the Union Flat Creek drainage, and 27

are in the remaining minor drainages to the main stem of the Palouse River. The total area covered by lakes and ponds is about 13,265 acres or 20.7 mi^2 distributed as follows: Cow Creek basin 7,963.9 acres, Rock Creek basin 5,197.6 acres, main stem of Palouse River 95.7 acres, South Fork Palouse River basin 5.3 acres, and Union Flat Creek basin 2.5 acres.

Geology and Soils

The bedrock underlying most of the western and central parts of the Palouse River basin is composed of layers of basalt lava. These overlie granitic and very old metamorphic rocks--mostly quartzite and schist--which are exposed at the surface only in the mountainous eastern part of the basin and as isolated knobs, such as Steptoe Butte, in the central part of the basin. The surface of these older rocks, where exposed in the Washington part of the basin (pl. 1 in pocket) is very irregular which suggests that the rocks were subjected to a period of erosion before they were partly buried by the lava flows. Locally, where exposed, the surface of these older rocks is decomposed and weathered, resulting in a layer of sand or clay that grades downward to the unweathered zone.

The basalt flows accumulated in great thickness which increases westward from the mountains. Material eroded from the older rocks forming the rim of the basin across which the lava flowed was deposited across the basalt surface, resulting in a series of basalt flows alternating with sedimentary materials (fig. A2). The sedimentary interbeds are thickest and have the coarsest materials in the mountainous eastern part of the basin. Subsidence in the western part of the basin continued as the basalt was extruded, so that individual basalt flows appear nearly horizontal or have a slight downward slope westward. Individual basalt flows average 80 ft in thickness, and the entire basalt sequence near the west side of the Palouse River basin probably is more than 5,000 ft thick.

Most of the surface of the basalt in the Palouse River basin has a mantle of loess (wind-deposited silt) that forms the fertile soils of the basin. The loess, which is locally more than 300 ft thick, ranges in age from Pleistocene (ice age) to Holocene (Recent), and owes its origin to a combination of (1) deposition of clay and silt in temporary lakes to the west of the Palouse River basin during the ice age, (2) periodic lowering of the lake levels, and (3) widespread wind transport of the lakebed material to areas to the northeast, including the Palouse area. The rolling topography that is typical of the Palouse River basin is the result of local variations in the thickness of the loess.

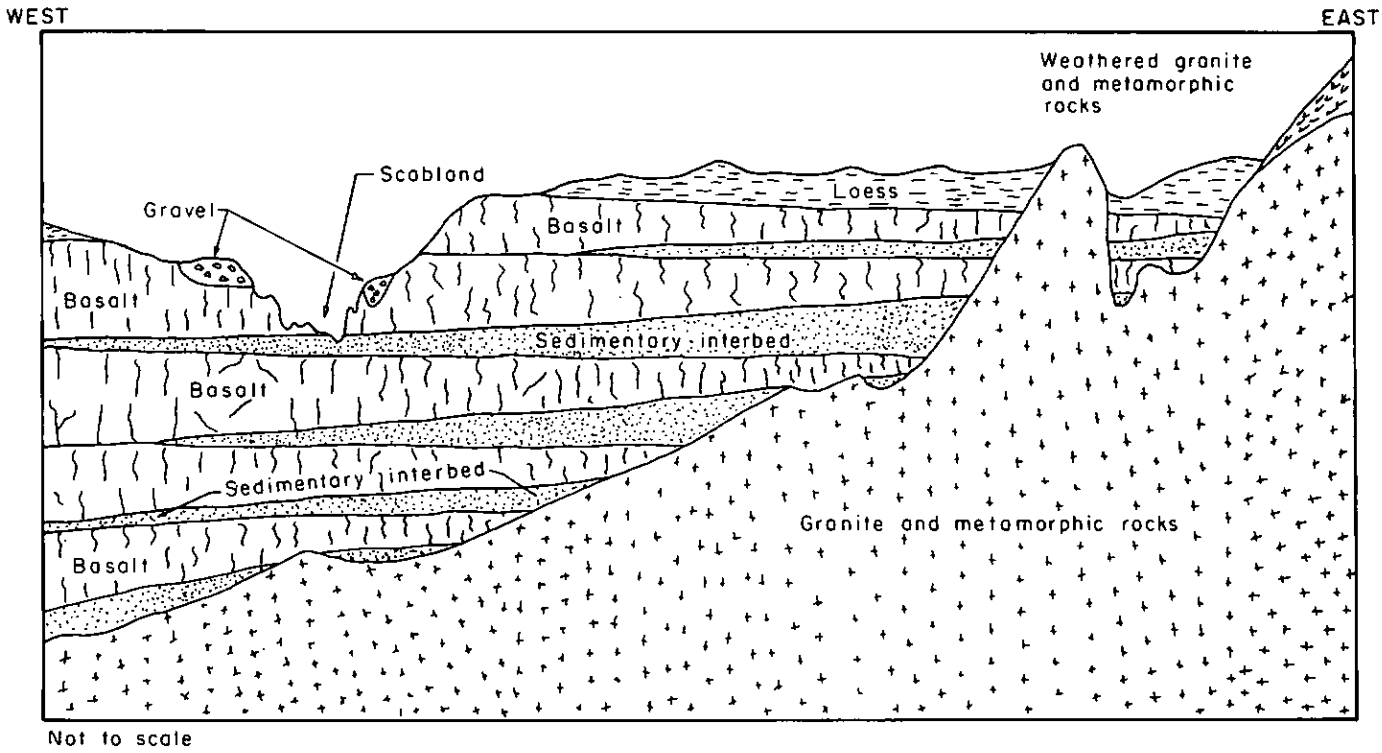


FIGURE A2.--Diagrammatic west-to-east geologic section through the Palouse River basin.

Glacial activity during the ice age also disrupted normal drainage patterns in much of eastern Washington, and resulted in catastrophic floods that crossed the divide between the Spokane River north of the basin, and the Snake River south of the basin. These floods removed much of the loess cover and scoured the underlying basalt to form the channeled scablands of the Columbia Plateau; these extend across the plateau from near Spokane to the mouth of the Palouse River. Gravel deposits accumulated locally in these channels as the floodwaters diminished, and subsequently alluvial deposits consisting primarily of redeposited loess and basaltic sand and gravel have accumulated and are still being deposited along the courses of major streams of the basin.

Agriculture and Industry

Prior to the settling of the Palouse River basin, most of the basin was grassland which was grazed by antelope, elk, deer, and wild horses. In the mid-1860's, before the land was considered ideal for raising wheat, the region was first used for cattle grazing. Species of native grasses varied between the drier western part of the basin and the wetter Palouse Hills in the east. The most common native vegetation in the drier western and central parts of the basin included sagebrush, cactus, and greasewood. In the eastern part of the basin, bunchgrass was most common, with the wetter areas supporting sod-forming bluegrass and June grass. Willow, cottonwood, and aspen once grew in the bottomlands and other areas where ground moisture was abundant, while Ponderosa pine, lodgepole pine, western larch, Engelman spruce and alpine fir were found in scattered stands on some of the higher uplands.

The Palouse River basin has grown from a frontier grassland area used by cattlemen to one specializing primarily in the production of wheat and other grain crops; today the basin is among the richest agricultural areas in the United States. At the present time (1971) Whitman County produces annually about 21 million bushels of grain crops, and Adams County produces about 8.5 million bushels. The annual value of all farm products sold from farms in the basin is about $75 million with about $51 million coming from Whitman County alone.

The forested mountains, largely in the far eastern part of the basin in Idaho, provide employment in lumber production for many of the urban residents. The basin also is an important bird-hunting area, mostly for pheasants, ducks, and geese.

Washington State University at Pullman, Wash., and the University of Idaho at Moscow, Idaho, provide employment for the largest nonagricultural part of the working force in the basin.

Climate

The characteristics of both a mild maritime climate and a more severe continental climate exist in most of the Palouse River basin. Maritime influence is observed in the winter when the prevailing westerly winds are strongest and most persistent. Winters are milder than in other locations at similar latitudes west of the Rocky Mountains, principally because the area is protected from much of the cold continental airmass moving southward from Canada by the Selkirk and Rocky Mountains in British Columbia and Idaho.

Extreme temperatures in both summer and winter generally occur when the basin is under the influence of air from the interior of the continent. Conversely, a warming trend in the winter is usually the result of an influx of moist, warm air from the Pacific Ocean. Mixing of this marine air with the colder air causes considerable cloudiness and some fog during the winter. During the summer, warm, dry air from the continental interior results in low relative humidity and high temperatures.

Summers are warm, dry and sunny, with average maximum temperatures during the summer months ranging from 27° to 32°C (degrees Celsius) or 80° to 90°F (degrees Fahrenheit). Average temperatures generally are a few degrees warmer in the western part of the basin than in the eastern part. Maximums of 43°C (110°F) have been recorded at Colfax, La Crosse, and Pullman. Average minimum temperatures during January (the coldest month) are about -5° to -7°C (23° to 19°F). However, winter temperatures as low as -36°C (-32°F) have been recorded at various places in the basin.

Average annual precipitation over the basin ranges from about 12 inches in the western part to about 25 inches along the Idaho border and about 50 inches at the headwaters of the Palouse River (pl. 1). Variations in maximum, minimum, and mean monthly and annual precipitation at Colfax and La Crosse (pl. 1), are given in table A1, and variation in average monthly temperature and precipitation at Colfax is shown in figure A3.

TABLE A1.--Maximum, minimum, and mean monthly and annual precipitation at Colfax and La Crosse for the periods indicated

	Precipitation, in inches					
	Maximum	Minimum	Mean	Maximum	Minimum	Mean
	Colfax (1881-83, 1892-1970)			La Crosse (1884-1901, 1908-70)		
January	8.61	0.28	2.64	5.19	0.33	1.95
February	5.42	.19	2.07	4.92	.22	1.42
March	5.85	.36	2.04	4.50	0	1.26
April	4.49	.10	1.44	3.52	.08	.98
May	5.58	0	1.45	3.58	.04	1.03
June	4.78	.12	1.31	3:28	.02	.99
July	2.85	0	.52	1.84	0	.32
August	2.38	0	.55	1.89	0	.37
September	5.07	.06	1.09	5.15	0	.76
October	6.81	0	1.77	3.32	.02	1.17
November	6.35	.10	3.08	4.68	.05	1.91
December	8.36	.62	2.69	4.38	.61	1.96
Annual	30.84	12.99	20.59	23.90	8.58	14.14

Although the summers are generally dry, heavy rain and hail are occasionally associated with thunderstorm activity in the spring and summer months. The frost-free season--the period between the last freeze in the spring and the first freeze in the fall--generally extends from the end of April to the end of September. Precipitation during the 5-month growing season, as recorded at Colfax and La Crosse (table A1), is about one-fourth of the average annual precipitation. The winter snowpack, which constitutes most of the annual precipitation, usually melts with the first warming trend in February or March, and peak stream discharge occurs before the start of the growing season. A "Chinook" wind or a rain sometimes melts a snow cover rapidly and the resultant runoff may cause severe erosion in the hilly areas under cultivation.

The Hydrologic Cycle and Water Budget

The rain and snow that fall within the Palouse River basin are the source of virtually all the freshwater supply in that basin. Locally, where ground-water divides are outside the topographic divides, some ground water may move into the basin from adjoining

basins, but this, too, originates from rain and snow in those basins. The hydrologic cycle, or the overall movement of water into and out of the basin, is illustrated in figure A4.

Evaporation and transpiration--the return of water vapor to the atmosphere from soil, water surfaces, and plants--are commonly considered as a single process called evapotranspiration. Evapotranspiration begins to reclaim the precipitation as soon as it falls, and in arid areas may claim all the precipitation from a storm.

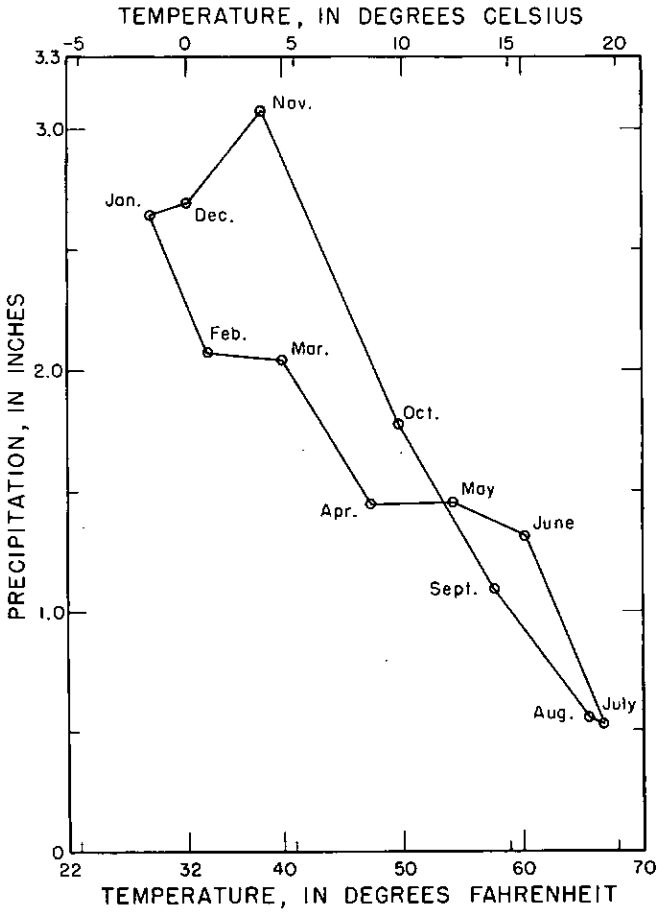


FIGURE A3.--Variations in average monthly temperature and precipitation at Colfax, Wash., 1881-83 and 1892-1970. From U.S. Weather Bureau (1936, 1956, and 1953-70).

Water from precipitation that is not removed from the basin by evapotranspiration either (1) leaves the basin as streamflow, (2) is stored in lakes or reservoirs, or (3) percolates below the soil zone and recharges the ground-water body. The ground water is removed (returned to the surface) by seepage to spring zones or to streams and lakes, or is pumped from wells.

The evaluation of water involved in the hydrologic cycle, or the water budget, includes quantitative estimates of the precipitation, evapotranspiration, and streamflow in the basin. From calculations based on the lines of equal precipitation in plate 1, the mean annual precipitation over the entire Palouse River basin (including Idaho) is about 17 inches or 3,030,000 acre-feet. With the annual evapotranspiration in the basin ranging from 13.1 inches at La Crosse to 15.4 inches at Colfax and averaging 14.5 inches (Phillips, 1965), the annual evapotranspiration loss from the basin is about 2,540,000 acre-feet per year, or about 84 percent of the mean annual precipitation.

The average surface-water discharge from the Palouse River basin is assumed to be equivalent to the monitored discharges of the Palouse River at Hooper plus that of Cow Creek near Hooper, a

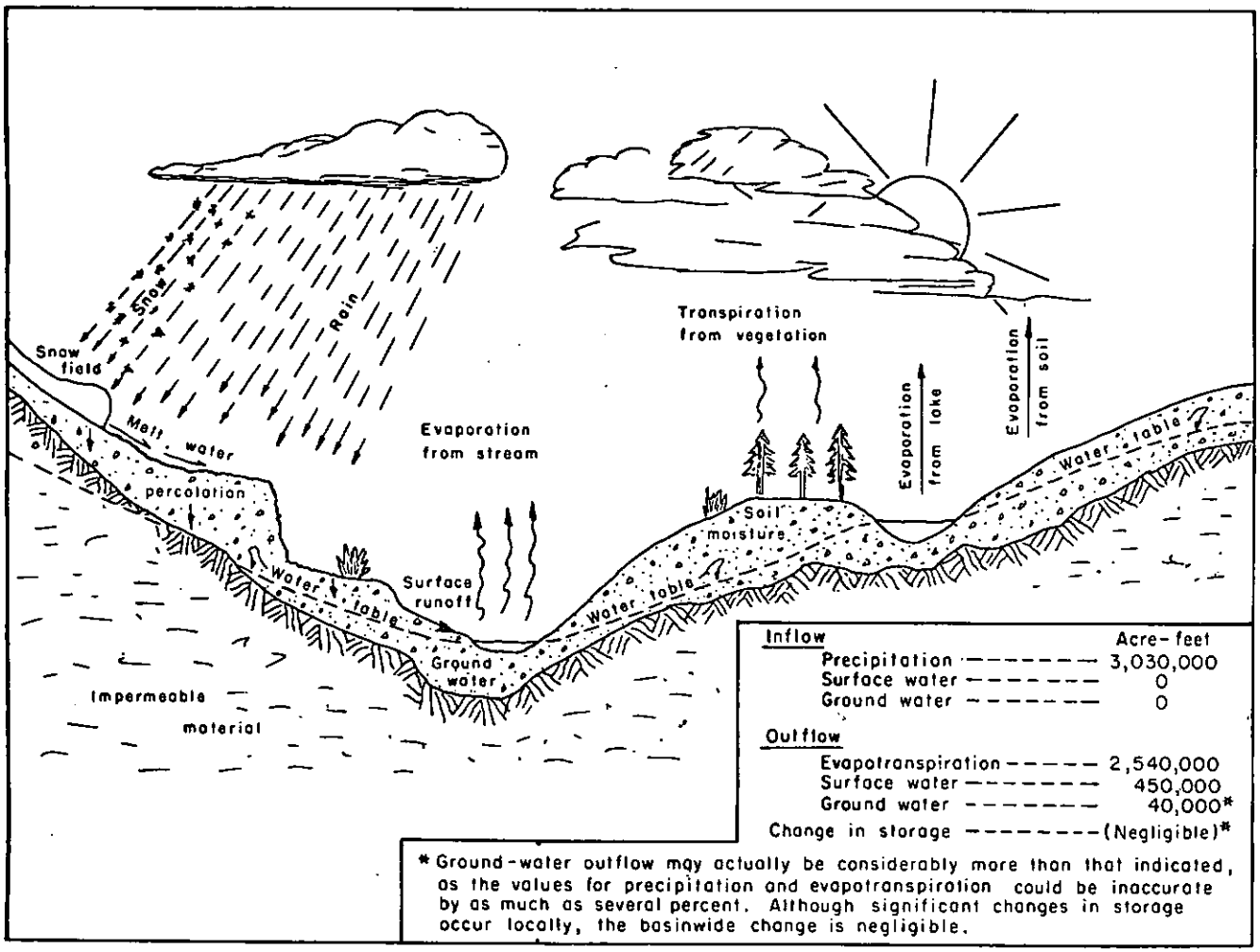


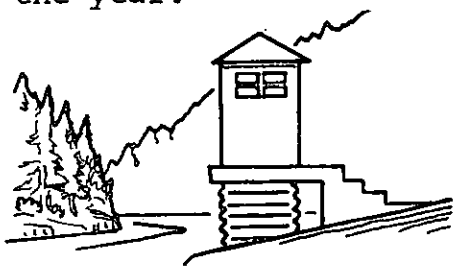
FIGURE A4.--Hydrologic cycle and yearly water budget, Palouse River basin.

total of about 450,000 acre-feet, or about 15 percent of the average annual precipitation. Thus, only about 1 percent of the average annual precipitation--40,000 acre-feet--is unaccounted for and is assumed to represent the water available for recharge. As basinwide changes in volumes of ground water in storage are negligible, about 40,000 acre-feet may be also discharged yearly by underflow out of the basin. The "budget" is calculated on the basis of average conditions and does not necessarily apply to any one year.

A summary of the water budget is included in figure A4.

Surface Water

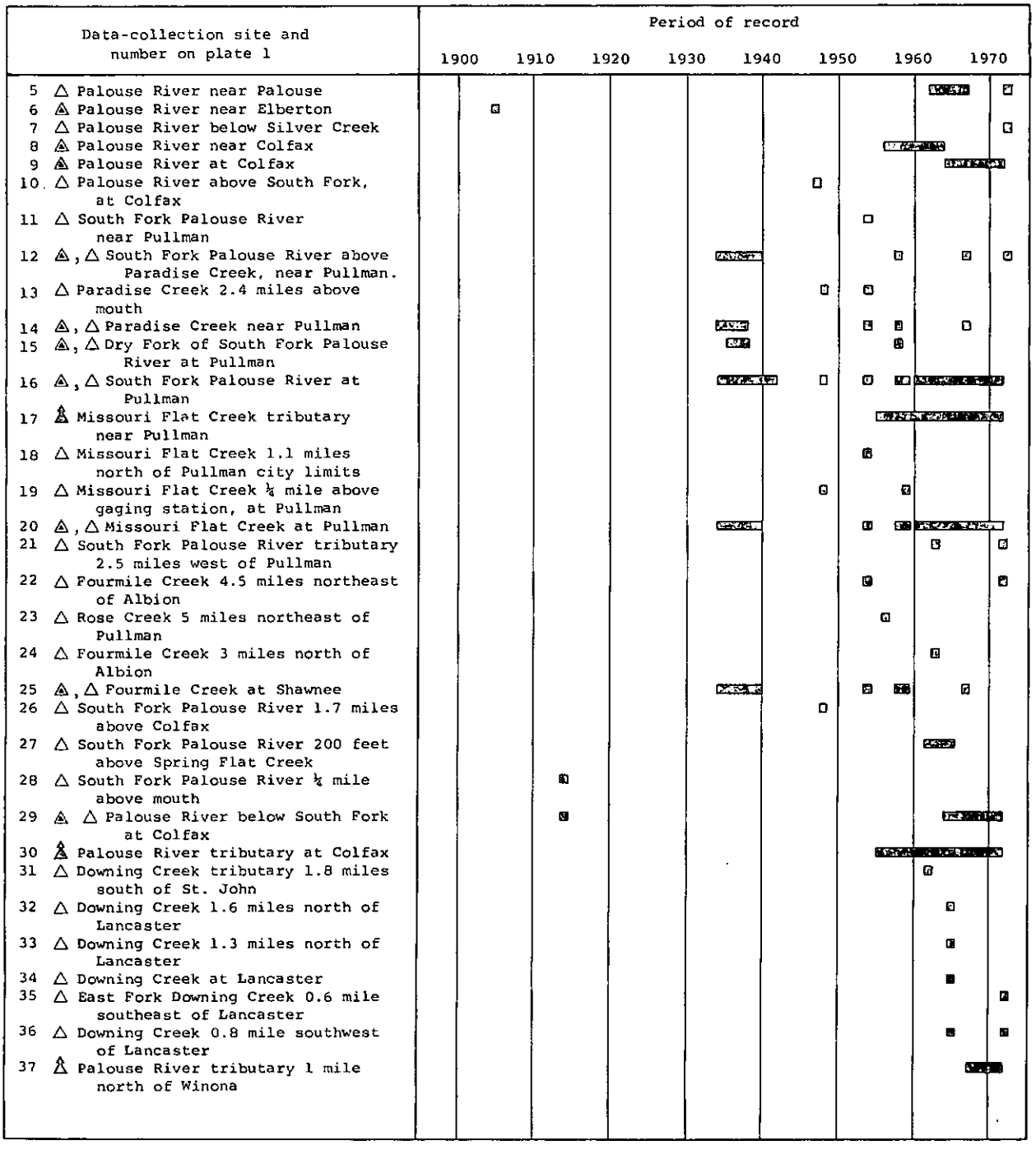
The major towns and original farmsteads in the Palouse River basin are in the valleys of perennial streams such as the main stem and South Fork of the Palouse River, Rock Creek, and Cow Creek, and the lower reaches of Rebel Flat Creek and Union Flat Creek. The streamflows vary throughout the basin, depending on variations in precipitation across the basin and throughout the year.



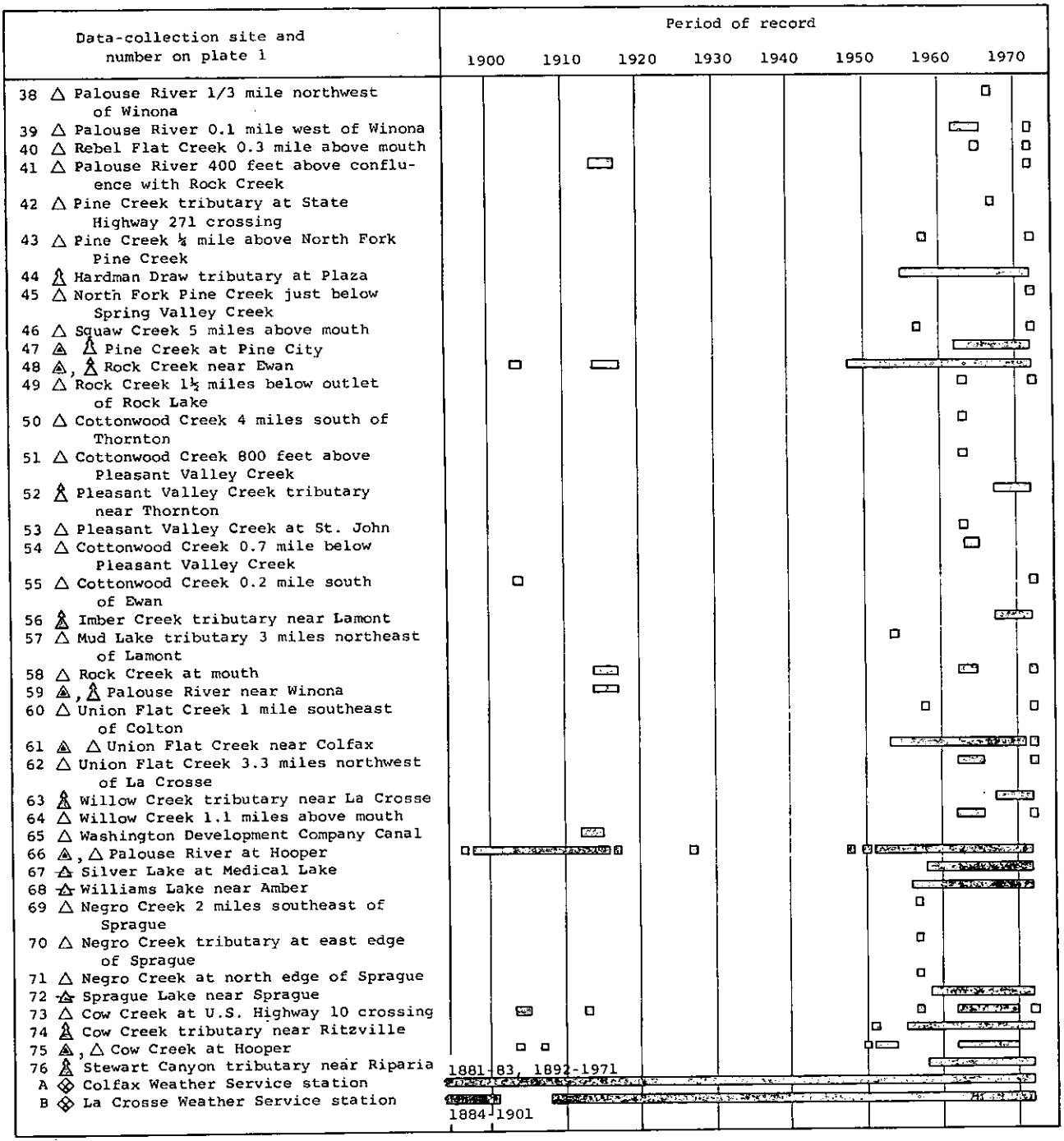
Analyses of the surface-water resources of the Palouse River basin are based principally on gaging-station records collected at the sites shown on plate 1. The periods of record collection for these stations are shown graphically in figure A5, and quantitative tabulations of streamflow data appear in table C2. Where continuous streamflow records are lacking, miscellaneous measurements are used to help define patterns of low flows as well as floods in the basin.

As shown in figure A5, most periods of streamflow record are short. Therefore, for long-term surface-water interpretation, the only records used in the analyses are those for stations with 10 or more years of record, the minimum requirement set by the U.S. Geological Survey.

FIGURE A5.--Types and periods of record at data-collection sites.



[▲ continuous-record gage; △ miscellaneous measurements; ☆ lake-stage gage; ⅄ crest-stage gage; ◇ precipitation station]



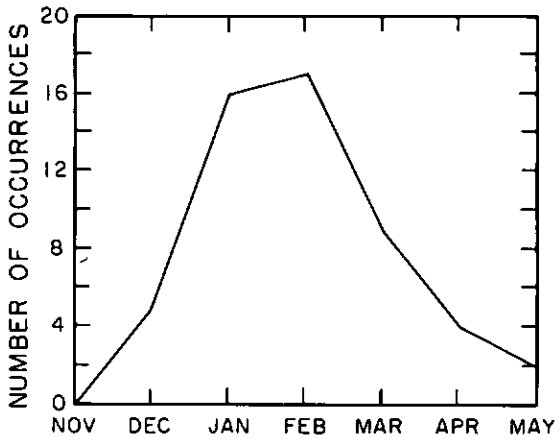


FIGURE A6.--Distribution of peak flows greater than 3,700 ft^3/s during 1952-71, Palouse River at Hooper.

Peak Flows

Peak flows in the Palouse River basin occur as a result of snowmelt or extended intense rains combined with snowmelt. In much of the basin, such flows may occur anytime during the period December-May but most occur during January or February (fig. A6). However, streams draining the westernmost part of the basin, largely the scablands, reach their peaks mostly in April and May. Most of the water of peak flows comes from the upper reaches of the Palouse River, South Fork Palouse River, and Pine Creek, all originating in Idaho. Peak flows of tributary streams, such as Rebel Flat Creek and Union Flat Creek, are more closely associated with storm duration and seldom have high flows that last for more than a few days during the peak-flow season. Peak flows of Cow and Rock Creeks are less "flashy" than those of the other streams because (1) their basins receive the least amount of precipitation--about 15 inches annually--and (2) most of the precipitation which falls over the scabland part of the basins is trapped and temporarily stored in numerous lakes and depressions in the basalt surface.

The decrease in precipitation over the basin from east to west results in a similar decrease in annual peak runoff per square mile. For example, the average peak runoff per square mile of the Palouse River at Colfax is 1.66 times that of Union Flat Creek near Colfax and 22.4 times that of Cow Creek at Hooper.

Low Flows

The low-flow characteristics of streams are of particular interest to the planners of municipal and industrial water-supply projects, and of projects dealing with fish propagation, supplemental irrigation, and waste disposal. Unless low-flow characteristics of streams are fully understood, establishment of any of the above projects could result in (1) depletion of irrigation-water supplies at times of greatest demand, (2) raising of water temperature, which makes the water unfit for fish propagation, and (3) decreased efficiency in the disposal and dilution of liquid waste.

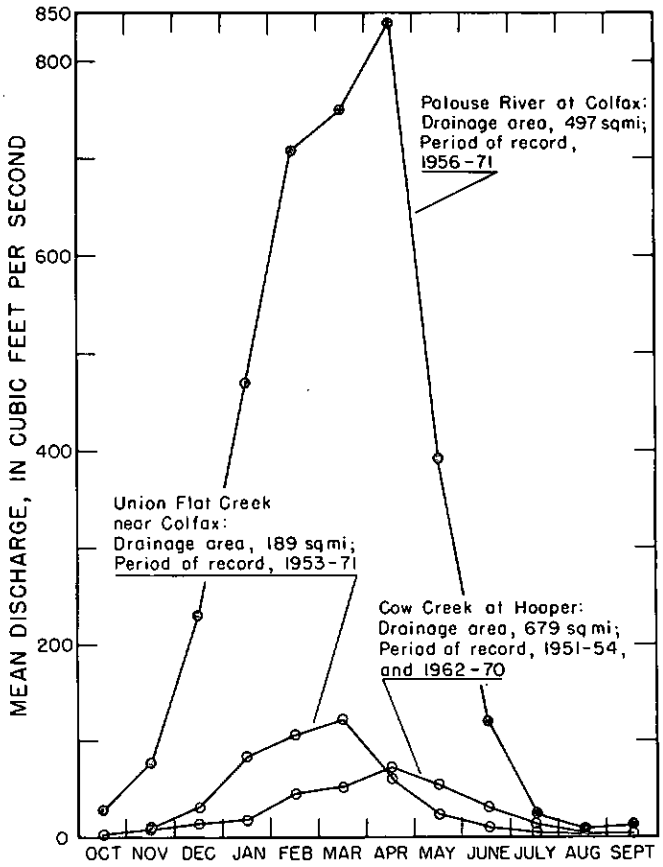
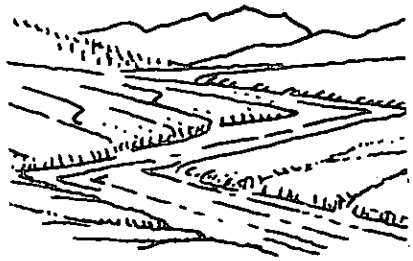


FIGURE A7.--Comparison of monthly mean discharges of three streams in the Palouse River basin in Washington.

The low-flow period of streams in the Palouse River basin extends from June through November (fig. A7). The streams draining the upper reaches of the basin generally have their low flows during the period July-October, whereas those in the middle and lower reaches, such as Union Flat and Cow Creeks, have their low flows during the period June-November.

During the summer and early fall, most small streams in the Washington part of the basin go dry for long periods. Occasionally even the main stem of the Palouse River is reduced to a negligible flow or has dry reaches. Streamflows during the low-flow period average only 7 to 14 percent of the average annual flows, as shown by records collected on principal streams in the basin.



Water Quality

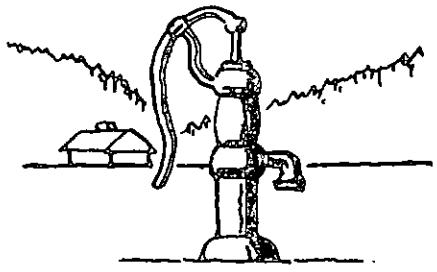
Because all elements and compounds found in nature are, in varying degree, soluble in water, all natural water contains chemical substances in solution. Precipitation contains trace amounts of most chemical constituents. On its way to streams, water originating as precipitation contains progressively more dissolved solids largely as a result of coming into contact with minerals in rocks and soil particles.

Analyses of samples collected from streams in the Palouse River basin showed the water to be chemically suitable for most common uses. The water temperature of the Palouse River at Hooper during October 1967-September 1971 (table C8) ranged from a low of 0°C (32°F) in December to a high of 30°C (86°F) in July. The quantity of suspended sediment transported by streams in the basin, owing to the rapid erosion of the loess soils covering much of the basin, is greater than that of most other basins in the State. The average annual sediment yield during July 1961-June 1965 ranged from 5 tons/mi^2 from Cow Creek at Hooper to 2,100 tons/mi^2 from Rebel Flat Creek at Winona, and the average annual suspended-sediment discharge of the Palouse River at its mouth during the same period was 1.58 million tons.

Ground Water

General Occurrence

The availability of ground water has been one of the principal factors influencing the development of the Palouse River basin. Nearly every town and original farmstead in the basin is in a stream valley where ground-water supplies are developed from springs or wells. The wells tap water in valley alluvium or in fracture zones or sedimentary layers in the underlying basalt; most large municipal supplies come from the basalt aquifers. The farms on the uplands between the valleys obtain domestic water supplies and some irrigation supplies from basalt aquifers.



The loess (eolian deposits, pl. 1) and the weathered surface of granitic and metamorphic rocks--where they occur at or near land surface--commonly yield only small to moderate quantities of water to wells. However, these deposits occur at shallow depths, and many springs and shallow wells obtain water from them. Many farm homes are supplied by large-diameter (generally 36 to 48 inches) dug wells that penetrate the entire

thickness of loess and extend a few feet into the underlying rock. The upper surface of the rock impedes downward percolation and water becomes perched in the lower part of the loess or along the contact between the loess and the underlying rock. Because they serve as storage reservoirs between pumping periods, these large-diameter wells are more satisfactory than smaller diameter wells in obtaining water from low-yield aquifers. The water-bearing zones contain water only under perched water-table (non-artesian) conditions, where small bodies of ground water are retained above the principal ground-water body in the basalt by an impermeable unit such as a bed of clay.

Granitic and metamorphic rocks normally contain small quantities of water only where they are fractured or weathered. From such zones properly constructed wells yield enough for domestic use. Ground water in these rocks is commonly under artesian pressure--that is, the water rises in the wells above the level at which it was found in drilling, and wells may flow at the land surface.

Ground water occurs in moderate to large quantities in the fracture zones in the basalt and in their associated sedimentary interbeds, and it may occur under either water table or artesian conditions. Artesian wells in the basalt are usually deep and limited to areas where the structural configuration of the basalt layers is favorable to development of a pressure head.

The amount of water stored in the ground-water body varies seasonally, as indicated by fluctuations in water levels in wells. Figure A8 shows that in parts of the Palouse River basin where there has been relatively little ground-water development water levels fluctuate seasonally with variations in recharge and discharge, but little net change occurs in the total storage. However, in areas of considerable ground-water development, water levels and the amount of ground water in storage have declined steadily.

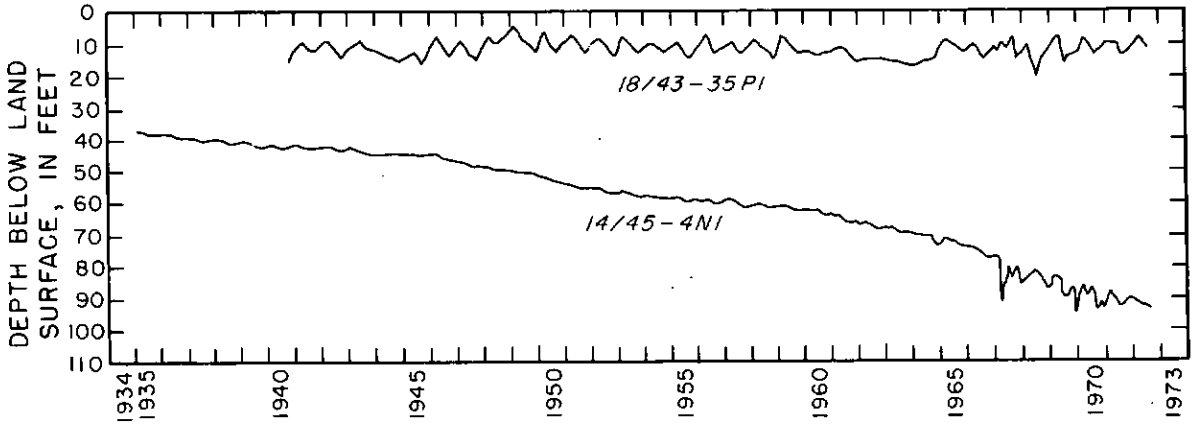


FIGURE A8.--Fluctuations of static water levels in basalt wells. Well 14/45-4N1 is in an area of large ground-water development and well 18/43-35P1 is in an area of relatively small ground-water development.

Water Quality

In general, ground water in the Palouse River basin is chemically suitable for domestic, irrigation, and industrial uses. Virtually all samples analyzed showed that all important constituents in the water were safely below the limits of concentration recommended for drinking water by the U.S. Public Health Service (1962). The water ranged from soft to very hard, and averaged hard. (See classification in Part B, p. 70.) Hard water requires greater-than-normal quantities of soap or detergents in homes and laundries to make it lather acceptably. Water temperatures ranged from 7 °C (45 °F) in shallow wells to 20 °C (67 °F) in deep wells.

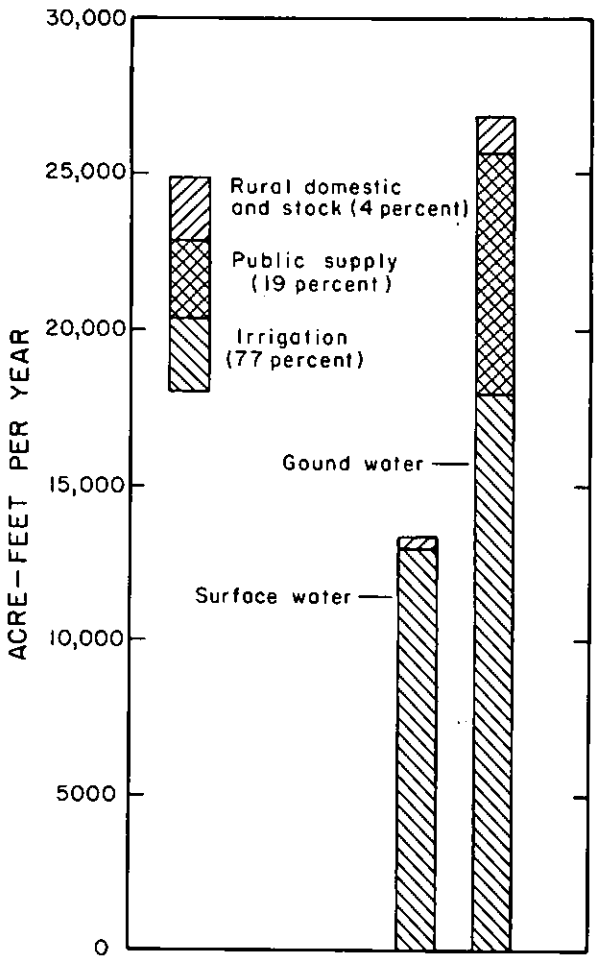


FIGURE A9.--Withdrawals of surface and ground water in the Palouse River basin in Washington in 1970.

Water Use and Management

By far, the largest quantity of water used in the Palouse River basin in Washington is for irrigation supply; the second largest quantity is for public supply. There are about 20 public water-supply systems, the largest being that serving Washington State University at Pullman. No industrial supplies of appreciable size are known. The quantities of surface and ground water used each year for irrigation, public supply, and rural domestic and stock supplies in the Palouse River basin in Washington are shown graphically in figure A9.

Surface Water

Withdrawal of surface water in the Palouse River basin in Washington is mostly for irrigation and is estimated to be about 13,000 acre-feet per year. The water is withdrawn--mostly by privately owned pumping plants--from the main stem of the Palouse River and from Pine, Union Flat, Rock, and Cow Creeks.

No withdrawals of surface water for public supplies or industrial use are known in the Palouse River basin in Washington.

The recreational, esthetic, and wildlife-conservation uses by man of surface water in the Palouse River basin in Washington are nonconsumptive--that is, the water is not evaporated, nor incorporated into a product, nor diverted from its natural channel or place of occurrence. It is not possible to determine the quantity of water used for nonconsumptive uses; there is no practical limit to the number of times that a body of water can be reused nonconsumptively. Several lakes and wildlife refuges are located in the Cow and Rock Creek drainages, and a State park serving almost 40,000 visitors per year is located at Palouse Falls.

The streams of the Palouse River basin are used also to dilute and transport effluent from sewage-treatment plants. Streams in the Palouse River basin in Washington receive about 4.7 million gallons of effluent per day from eight treatment plants that serve about 30,000 people (G. G. Parker, Jr., written commun., 1971). This effluent seriously modifies the physical and chemical qualities of water in some streams during low-flow periods.

Ground Water

The greatest part of the ground water withdrawn in the Palouse River basin in Washington is used for irrigation. An estimated 18,000 acre-feet is applied to about 4,500 acres each year. Most of the irrigation by ground water is in the area drained by Cow and Rock Creeks, and by the main stem of the Palouse River between Hooper and Winona.

All public water supplies in the Palouse River basin in Washington are from ground-water sources; about 7,670 acre-feet of ground water is used each year for this purpose. Based on figures presented by the Washington Office of Program Planning and Fiscal Management (1972) and the U.S. Bureau of the Census (1967) about 1,750 acre-feet of water is used each year for rural domestic supplies and livestock watering. About 75 percent of this water is from ground-water sources.

Trends in Development

Although the quantity of water used for public supplies is secondary to that for irrigation, the most serious water-supply problems in the Palouse River basin in Washington involve those of Washington State University and the city of Pullman, which both use ground water from the same artesian basin. The annual use of water by these two systems has increased greatly during the past 34 years, as tabulated below:

User	Water use by years indicated (millions of gallons)		
	1936[a]	1963[b]	1970[c]
City of Pullman----------	175	448	700
Washington State University--	176	535	735

[a]From Foxworthy and Washburn (1963, p.20).
[b]From Walters and Glancy (1969, p.23).
[c]From G.G. Parker, Jr. (written commun., 1971).

According to figures presented by the Washington Office of Program Planning and Fiscal Management (1972), the 1971 enrollment of Washington State University has stabilized, at least temporarily. The population of Pullman and the combined water use by the two systems also have probably stabilized at about the present level. Studies are now underway in the Pullman area--and in the Moscow area of Idaho--to determine if the present rate of ground-water withdrawal can continue, and to propose alternate or supplemental sources of water.

The quantity of water used for irrigation in the Palouse River basin in Washington also has increased noticeably in the past several decades, but is not likely to change appreciably in the future. Irrigation from both surface- and ground-water sources started about 1947 and increased steadily until about 1964. Supplemental irrigation of pastures and alfalfa fields by pumping directly from streams or lakes was the first form of irrigation to be practiced. Since about 1960, most available water has been withdrawn from the smaller lakes and streams, and most of the suitable land has been irrigated along the larger bodies of water, hence there has been little increase in irrigation from surface-water sources. Furthermore, the topography of the Palouse River basin in Washington does not lend itself to the construction of dams, reservoirs, and extensive systems of irrigation canals and ditches. Also, owing to the large quantities of sediment

carried by the principal streams in the basin, due consideration would have to be given to the probability that, generally, reservoirs constructed along the streams would rapidly fill with sediment.

The lack of appreciable increases in ground-water irrigation since about 1964 has been due in part to general economic factors and to the scarcity of additional choice irrigable land. Irrigation of the marginally suitable land is likely to increase very slowly, if at all, under present (1971) economic conditions.

PART B

TECHNICAL ANALYSIS
OF HYDROLOGIC DATA

PART B: TECHNICAL ANALYSIS OF HYDROLOGIC DATA

Description of the Basin

The Palouse River basin comprises 3,283 mi^2 of which 2,730 mi^2 is in southeastern Washington and the remainder is in Idaho (pl. 1). Major tributaries of the Palouse River in Washington include the South Fork Palouse River and Rebel Flat, Pine, Rock, Union Flat, and Cow Creeks. In general, these tributaries have basins characterized by moderate gradients and narrow flood plains. Though the major tributaries are basically perennial, the water becomes ponded and flow becomes negligible or ceases completely in certain reaches of almost every stream during the low-flow season of June-November. The smaller tributaries generally dry up toward the middle of the low-flow season. Because of the low stream gradients and (or) aggradation of valley floors by deposition of sediment carried from higher altitudes, the streamflow in the Washington part of the basin is rather sluggish most of the year.

Streams in the easternmost parts of the basin in Washington originate mostly in Idaho and flow across a topography characterized by steptoes, buttes, and foothills generally higher than 2,600 ft. In these relatively high areas loess cover is thin, and precipitation is comparatively heavy (pl. 1).

The Palouse Hills dominate the central parts of the basin. The hills consist of fertile deposits of loess overlying basaltic lava. After being deposited as large dunes, the material was reshaped by surface runoff, resulting in low, rounded hills generally rising 20 to 80 ft above valleys that contain neither streams nor channels. The Palouse Hills range in altitude from 1,500 ft near the lower reaches of Palouse River to about 2,500 ft near the Idaho border; in a few places, older rocks project above the general topography at prominent buttes such as Steptoe Butte, Kamiak Mountain, and Tekoa Mountain. Annual precipitation averages about 16-25 inches over the Palouse Hills area, compared to 25-40 inches over the eastern parts of the basin.

The channeled scablands include the lower Palouse River valley and the two tributary basins of Rock and Cow Creeks. Glacial melt water during the Pleistocene Epoch and gigantic floods resulting from breakage of ice dams holding ancestral glacial Lake Missoula in the mountains of Montana and Idaho eroded deep channels in the basalt surface. Much of the wind-deposited soils covering the basalt were removed by the floods and today bare rock and thin soils characterize the old channels. Between the old river channels are

small plateaus where soils are deep enough for cultivation. Lack of an integrated drainage system and low local relief are common features of this area, which receives an average of about 14 inches of precipitation annually.

Surface Water

History of Data Collection

The first measurements of streams in the Palouse River basin in Washington were those of April 1-August 31, 1897, when gage heights only were recorded at a staff gage established on the Palouse River 2.5 mi upstream from the present gaging-station site at Hooper (13351000 on pl. 1). Additional observations were begun September 9, 1897, with the installation of several staff gages 1.5 mi upstream from the present site. Other staff gages, read once or twice daily, were installed as early as 1904 on the Palouse River at Elberton (13345500) and Rock Creek near Ewan (13349500). Except for those at the station at Hooper, the staff-gage records were terminated in 1905, resumed in 1914, and again terminated in 1917. In addition to those for the Elberton, Ewan, and Hooper stations, similar records were collected on the Palouse River near Winona (13350000) during October 1915-September 1917.

The first water-stage recorder was installed October 1914 in the Idaho part of the basin at the gaging station on the Palouse River near Potlatch (station 4 on pl. 1). Collection of records at this station ceased in 1919, but was resumed December 1966. The only additional surface-water recording activity in the Idaho part of the basin at the present time (1971) comprises operation of two crest-stage stations on Deep Creek (stations 2 and 3 on pl. 1). Because the present study deals only with streamflow in the Washington part of the basin, records collected in Idaho are not included in the report; these can be found in Geological Survey publications that discuss water-resources data for Idaho.

Very few surface-water data were collected in the basin during the 1920's and early 1930's. It was not until January 1934 that detailed hydrologic studies were started in the South Fork Palouse River basin, under cooperation of the Soil Conservation Service with the Geological Survey. The studies were conducted to investigate the relationship between rainfall, runoff, and soil erosion, and necessitated the establishment of the first water-stage recorders in the Washington part of the basin. The recorders were installed at three sites on the South Fork Palouse River, and one each on Paradise, Missouri Flat, and Fourmile Creeks. The operation of all water-stage recorders in the Palouse River basin was discontinued in

September 1942. For the next 8 years, until March 1951, streamflow measurements were virtually ended (fig. A5). In 1951, gages on the Palouse River at Hooper (13351000) and Cow Creek at Hooper (13352500) were reactivated. New or reactivated gaging stations were established in the basin as follows: in August 1953 on Union Flat Creek near Colfax (13350500); in September 1955 on the Palouse River near Colfax (13346000; moved downstream to the town of Colfax in 1964); in 1960 on the South Fork Palouse River at Pullman (13348000) and on Missouri Flat Creek at Pullman (13348500); in 1961 on Pine Creek at Pine City (13349400); in 1962 on Cow Creek at Hooper (13352500); and in 1964 on the Palouse River below the South Fork at Colfax (13349210).

Continuous monitoring of surface-water altitudes began in 1955 on Williams Lake near Amber (13351500), and in 1958 on Silver Lake at Medical Lake (13351300) and Sprague Lake near Sprague (13351800).

In all, streamflow has been measured at 73 locations on 35 streams in the Palouse River basin either continuously through the use of water-stage recorders or intermittently by discharge measurements.

In 1971 water-stage recorders were operated at three stations on the main stem of the Palouse River and at one station each on the South Fork Palouse River, Missouri Flat Creek, Pine Creek, and the three lakes mentioned above.

The miscellaneous measurements and (or) short-term records collected in the Palouse River basin are useful for limited comparisons of discharges from different tributary basins for specific periods. However, the value of these miscellaneous measurements or short-term records will grow appreciably where they can be statistically correlated with records collected at long-term stations, as is the case in some tributary basins in the study area. Work of this nature, however, is beyond the scope of this study.

Data Tabulated

Table C1 contains a complete record, through September 1971, of (1) all streamflow measurements made at miscellaneous sites in the basin (pl. 1), and (2) all indirect measurements made to determine the annual peak flows at 10 crest-stage gage sites and 22 other sites (fig. B5). All miscellaneous measurements prior to January 1961 are listed in a publication by the Washington State Department of Conservation (1964).

Table C2 lists the monthly and yearly mean discharges where continuous records were collected, along with first-of-the-month mean gage heights of the three lakes mentioned previously. Maximum,

minimum, and daily mean discharges at any of the 19 gaging stations in the study area--listed in table C2 in Part C of this report--are available in compilations of surface-water records for the period through 1960 by the U.S. Geological Survey (1956, 1963) and for the period 1961-71 by the U.S. Geological Survey (1962-72).

Table B1 presents a streamflow summary showing the mean, maximum, and minimum monthly and annual discharges recorded at the eight gaging stations in the basin (pl. 1) having the longest period of record.

The varying effects of temperature and precipitation on streamflow are depicted in figure B1. Here, average monthly air temperature and precipitation as recorded at the Colfax Weather Service station (pl. 1), are compared with monthly mean discharge for the Palouse River at Colfax.

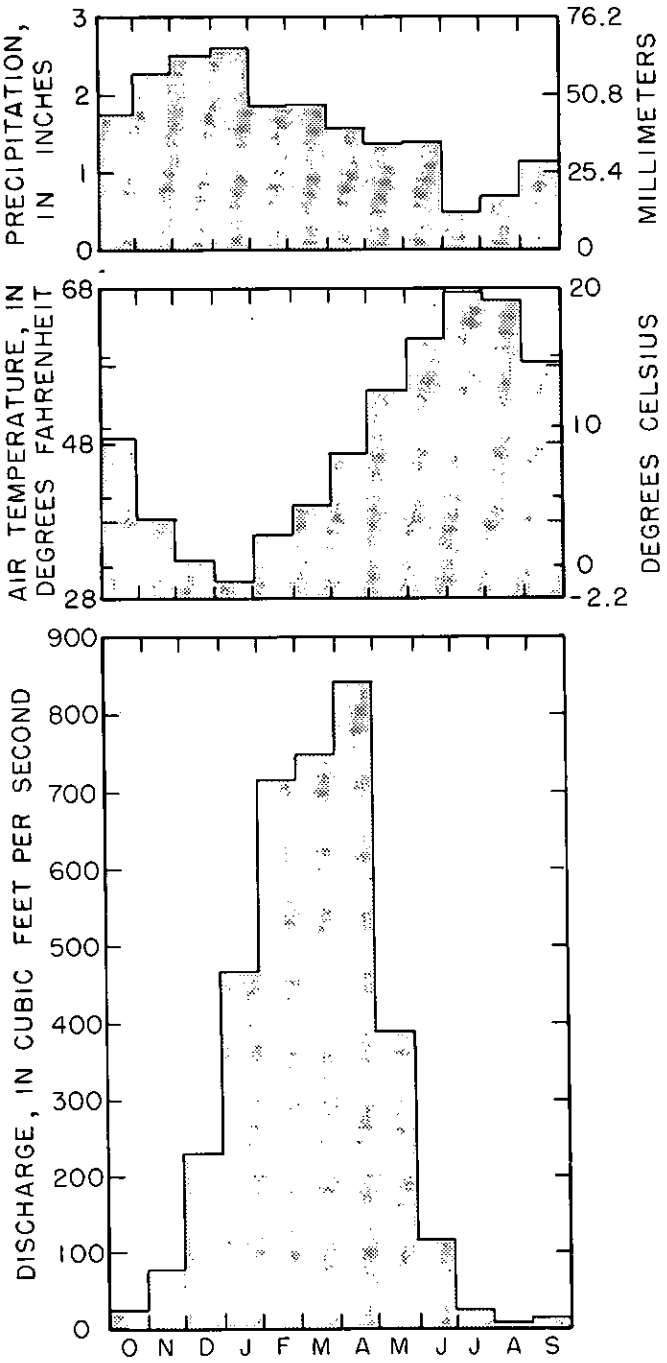


FIGURE B1.--Monthly-mean discharge of the Palouse River at Colfax, compared with the average monthly air temperature and precipitation at Colfax, October 1, 1955-September 31, 1971. Climatological data from annual summaries of U.S. Weather Bureau (1956-70).

TABLE B1.--Periods of record, drainage areas, and mean, maximum, and minimum monthly and annual discharges at selected gaging stations

Gaging station						
Official number and number on plate 1 (in parentheses)	Name and period of record	Drainage area (mi^2)	Type of discharge	Oct.	Nov.	Dec.
13346100 (9)	Palouse River at Colfax (Oct. 1955-Sept. 1971)[a]	497	Mean	26.6	77.2	230
			Maximum	67.7	168	1,123
			Minimum	6.32	24.9	32.2
13348000 (16)	South Fork Palouse River at Pullman (Feb. 1934-Sept. 1942, and Jan. 1961-Sept. 1971)	132	Mean	3.10	6.76	26.6
			Maximum	5.58	19.5	113
			Minimum	1.08	1.44	2.70
13348500 (20)	Missouri Flat Creek at Pullman (Feb. 1934-Sept. 1940, and Jan. 1960-Sept. 1971)	27.1	Mean	.26	.72	4.44
			Maximum	.67	3.19	28.4
			Minimum	.01	.01	.11
13349210 (29)	Palouse River below South Fork, at Colfax (Oct. 1964-Sept. 1971)	796	Mean	28.0	68.6	292
			Maximum	48.9	168	1,377
			Minimum	12.2	31.4	39.4
13349400 (47)	Pine Creek at Pine City (Sept. 1961-Sept. 1971)	302	Mean	2.76	5.48	31.7
			Maximum	4.94	8.27	160
			Minimum	1.35	1.66	6.69
13350500 (61)	Union Flat Creek near Colfax (Aug. 1953-Sept. 1971)	189	Mean	2.85	9.18	31.7
			Maximum	7.12	27.6	140
			Minimum	.33	2.57	5.71
13351000 (66)	Palouse River at Hooper (Oct. 1898-Dec. 1900, Apr. 1900-Mar. 1907, July 1908-July 1912, Apr. 1913-Mar. 1916, and Mar. 1951-Sept. 1971)	2,500	Mean	60.9	137	434
			Maximum	151	349	2,101
			Minimum	23.5	39.6	36.9
13352500 (73)	Cow Creek at Hooper (Feb. 1951-Nov. 1954, and Apr. 1962-Sept. 1970)	679	Mean	5.68	7.28	10.4
			Maximum	12.2	11.4	16.6
			Minimum	0	0	.34

[a]Published "near Colfax" prior to October 1964.

Discharge, in cubic feet per second

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Annual
468	716	749	842	389	117	23.1	8.31	12.2	302
1,449	1,996	1,410	1,673	862	420	51.1	19.3	27.3	463
54.5	171	235	149	51.6	24.8	5.86	.65	1.22	137
68.9	86.0	119	53.1	17.9	8.60	2.66	1.75	2.17	32.7
247	288	313	137	41.6	40.5	7.58	4.56	5.30	57.3
1.77	13.8	21.7	13.9	5.75	1.52	.86	.50	.49	16.7
17.2	21.2	27.6	8.01	1.67	.96	.29	.19	.18	7.06
56.6	85.4	92.8	24.5	7.42	8.90	1.38	.45	.47	16.5
0	1.58	2.64	1.36	.29	.03	0	0	.001	2.15
784	833	934	911	438	167	32.1	14.1	21.0	375
1,636	1,485	2,114	1,877	837	566	69.2	25.3	33.0	581
156	203	298	539	76.2	33.8	15.8	3.50	4.71	170
136	162	161	72.7	30.3	13.5	3.49	2.10	2.13	51.4
393	438	613	311	92.3	48.5	7.39	3.02	3.09	111
11.1	44.7	34.6	15.1	4.36	1.69	.98	1.27	.99	22.4
82.8	105	122	58.1	23.7	9.38	2.61	1.02	1.52	37.1
262	214	454	185	49.1	28.8	7.58	2.18	4.12	83.0
10.8	35.3	27.2	17.3	5.73	3.15	.64	.04	.04	14.6
997	1,708	1,860	1,368	626	241	77.9	27.8	31.5	597
3,330	4,820	6,660	4,130	1,335	671	291	85.8	72.3	1,072
46.6	225	348	286	105	50.5	3.72	.06	4.20	161
17.6	44.5	52.3	71.3	53.1	29.2	11.9	4.30	3.74	25.1
41.3	139	97.2	139	161	69.7	26.0	12.4	10.6	42.5
2.55	10.1	8.75	9.43	6.18	2.52	.01	0	0	4.31

Streamflow Characteristics

The average annual flow of streams at any point in the basin represents the limit of potential water available if it were stored and released at a uniform rate during the year. Without storage, the low flows of streams during the summer and early fall, when the water demand is high, define the dependable surface-water supplies.

Although streamflow varies daily and yearly, mean annual discharges from different parts of the basin follow similar patterns (fig. B2). Seasonal variation in streamflows, as shown in figure A7, is also grossly similar between adjoining basins. The average discharge of the Palouse River at Colfax (13346100) during the low-flow period June-November (table B1) is about 7.8 percent that of the high-flow period December-May and about 15 percent of the average annual discharge. The average discharge during the high-flow period December-May is about 187 percent of the average annual discharge, while that for the high-flow period February-April is about 255 percent of the average. These relationships do not vary appreciably for stations monitoring streamflow in the eastern part of the Palouse River basin, but may differ for stations on streams originating in the middle and western parts of the basin because of atmospheric, physiographic, and geologic variations. Although the high-flow period extends from December through May, the period during which most precipitation occurs is October through March. High flows occur as a result of the movement of warm airmasses over the area coupled with rainfall on the snowpack. Snow depth averages 10-15 inches during winters in the eastern part of the basin where it remains on the ground from the middle of December until the end of February. Westward across the basin, annual rainfall and snowfall, and unit runoff (cubic feet per second per square mile) decrease gradually.

To determine the seasonal variability in the quantity of water available at various points on the streams, the streamflow at these points must be monitored throughout the year. Following the monitoring phase, which may be of different durations, the records are analyzed and streamflow characteristics may be defined. These include the maximum and minimum discharges, flow durations, and the frequencies of low flows and floodflows. Statistical analyses of such characteristics enable the planner to assess the frequency or probability of occurrence of specified streamflows. The data are useful in planning the design of flood-control, water supply, or other projects affected by low flows or floodflows of specified durations and frequencies.

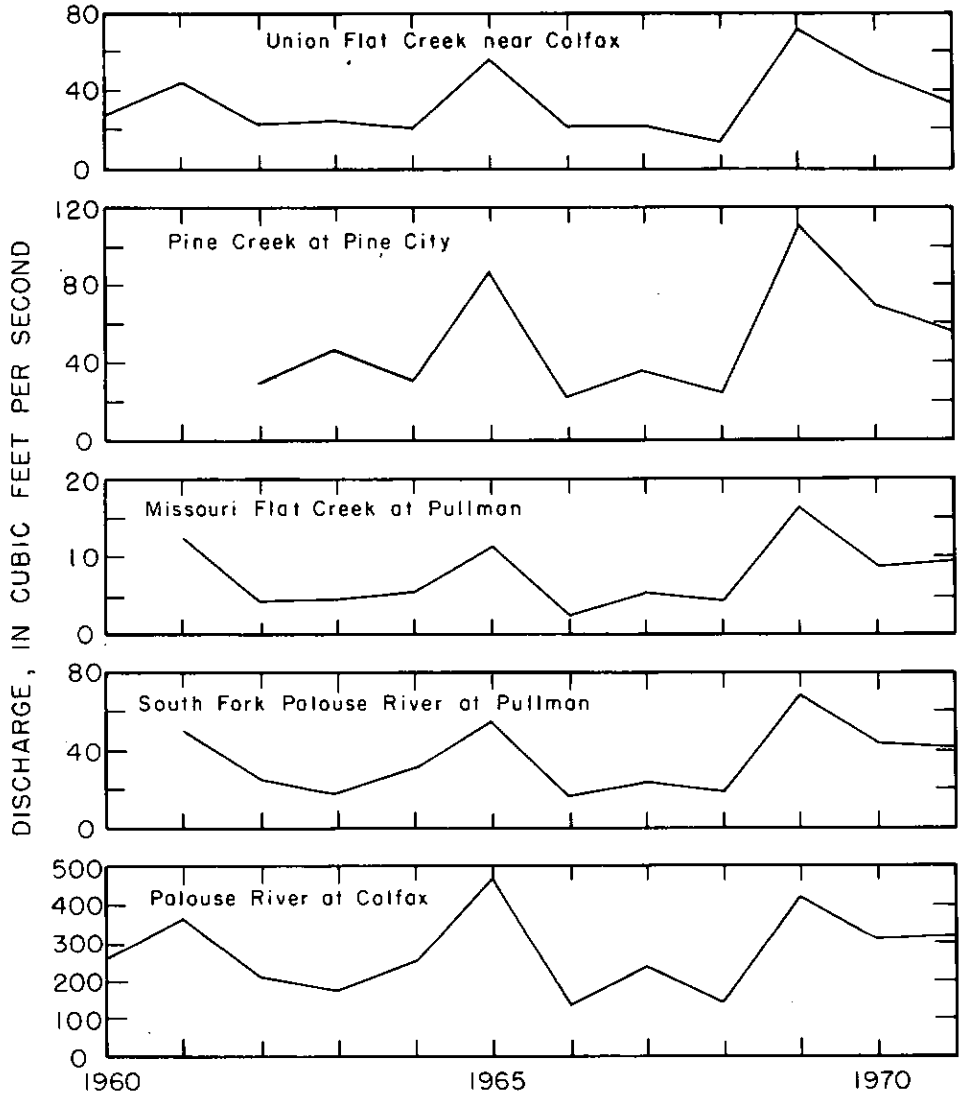


FIGURE B2.--Trends in annual mean discharges of selected streams in the Palouse River basin, 1960-71 water years.

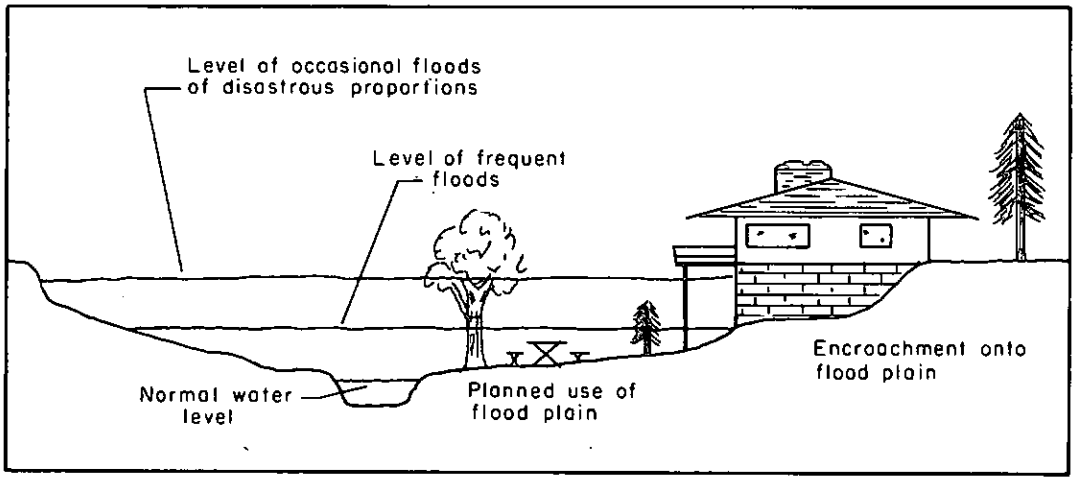


FIGURE B3.--Generalized sketch showing relation of flood magnitude to flood-plain development.

The flow-frequency curve is a statistical tool used to relate recurrence intervals to peak flows, minimum flows, or any average flow of selected duration.

It should be noted that recurrence intervals--or probability of occurrence--denote averages and do not imply any regularity of recurrence. For example, a 50-year flood occurring in any particular year may be followed by another such flood in the same year, the next year, or not for perhaps another 60 or 100 years; the intervals represent only the average period between such flows on a long-term basis. Stated in a different way, the discharge having 50-year recurrence interval has a 2-percent (reciprocal of the recurrence interval) probability of occurring in any given year.

Floods.--Information on floods of various frequencies and magnitudes (shown diagrammatically in fig. B3) in various parts of the Palouse River basin is essential to man's developments on flood plains and in the design of flood-control projects, bridges and culvert openings, channel-control structures, roadbed altitudes, and water- and sewage-treatment plants.

Although the time of occurrence of a flood of a certain magnitude can never be predicted, it is possible to forecast with reasonable accuracy the chance that a given-size flood may occur in any year. This is accomplished through flood-frequency analysis based on previously collected flood data. In this study, floods were analyzed only for the magnitude and frequency of maximum peak discharges which occur in each year. Only eight continuous-record gaging stations and six crest-stage gages, located on 12 streams, have adequate records from which to establish flood-frequency curves. The method used in this study for computing the magnitude and frequency of occurrence of floods is that described by Riggs (1968) and D. M. Thomas (written commun., 1968).

Flood-frequency data for eight gaging stations in the basin are presented in table B2. These data can be used to construct flood-frequency curves similar to that in figure B4.

An evaluation of flood frequencies for ungaged sites can be obtained either from regional relations developed by Thomas, Broom, and Cummans (1963), or from the report by Cummans, Nassar, and Collings (1975). A plot of the unit runoff of the 50-year flood (a flood with high degree of destructive capability), as shown in figure B5, indicates a decline in the intensity of flooding from east to west. Figure B5 also shows that the unit runoff of floods in small-stream valleys is larger than in principal-stream valleys primarily because of intense thunderstorms.

Most of the Palouse River basin has been free from destructive flooding. However, floods are a serious problem in parts of several towns situated on flood plains; large areas of the business and residential districts of Pullman and Colfax have been flooded by the South Fork Palouse River, Missouri Flat Creek, and Palouse River. The numerous bridges that cross the streams in towns on flood plains--especially Pullman--may not be adequately designed for extreme floods and thus the flooding problems are further complicated.

Channel improvements by the Corps of Engineers in Colfax during the 1960's have reduced flood hazards previously posed by the Palouse River and South Fork Palouse River.

In addition to flooding from spring snowmelt, runoff resulting from extremely heavy rains during spring and summer is also known to cause flood damage in some developed areas. The storm of April 22, 1969, which brought about 2 inches of rainfall in 1 hour in the Colfax area, resulted in flooding and deposition of mud in parts of the business and residential areas of the town.

TABLE B2.--Flood-frequency data for selected gaging stations

Official station number and number in figure B5 (in parentheses)	Station name	Flood discharge, in cubic feet per second, at indicated recurrence intervals, in years								
		1.01	1.05	1.11	1.25	2.0	5.0	10	25	50
13346100 (9)	Palouse River at Colfax	1,420	2,040	2,460	3,040	4,470	6,340	7,520	8,920	[ab]9,920
13348000 (16)	South Fork Palouse River at Pullman	285	385	456	562	858	1,350	1,720	2,260	[b]2,710
13348400 (17)	Missouri Flat Creek tributary near Pullman	5.0	8.3	11	15	30	69	115	206	[ab]312
13348500 (20)	Missouri Flat Creek at Pullman	92	137	170	221	374	644	864	1,190	[ab]1,470
13349210 (29)	Palouse River below South Fork at Colfax	1,290	2,120	2,750	3,720	6,440	10,800	13,900	[bc]18,000	[bc]21,100
13349300 (30)	Palouse River tributary at Colfax	2.9	5.3	7.3	11	25	57	90	148	[ab]205
13349350 (44)	Hardman Draw tributary at Plaza	10	11	12	14	27	90	216	677	[bc]1,600
13349400 (47)	Pine Creek at Pine City	433	537	628	792	1,430	3,230	5,430	[bc]10,200	[bc]16,100
13349500 (48)	Rock Creek near Ewan	85	194	295	476	1,110	2,330	3,320	[c]4,720	[bc]5,830
13350500 (61)	Union Flat Creek near Colfax	219	304	368	472	798	1,450	2,040	3,000	[b]3,890
13351000 (66)	Palouse River at Hooper[d]	998	1,990	2,800	4,150	8,270	15,200	20,300	26,900	31,900
13352200 (74)	Cow Creek tributary near Ritzville	.3	1.2	2.4	5.8	22	65	113	194	[ab]274
13352500 (75)	Cow Creek at Hooper	8.7	14	20	30	80	259	523	[bc]1,190	[bc]2,090
13352500 (76)	Stewart Canyon tributary near Riparia	.4	1.0	1.9	3.9	16	58	122	[c]272	[bc]478

[a]Period of record less than 20 years.

[b]Recurrence interval exceeds twice the period of record.

[c]Period of record less than 15 years.

[c]Discharge estimated to be 36,900 ft^3/s at 100-year recurrence intervals.

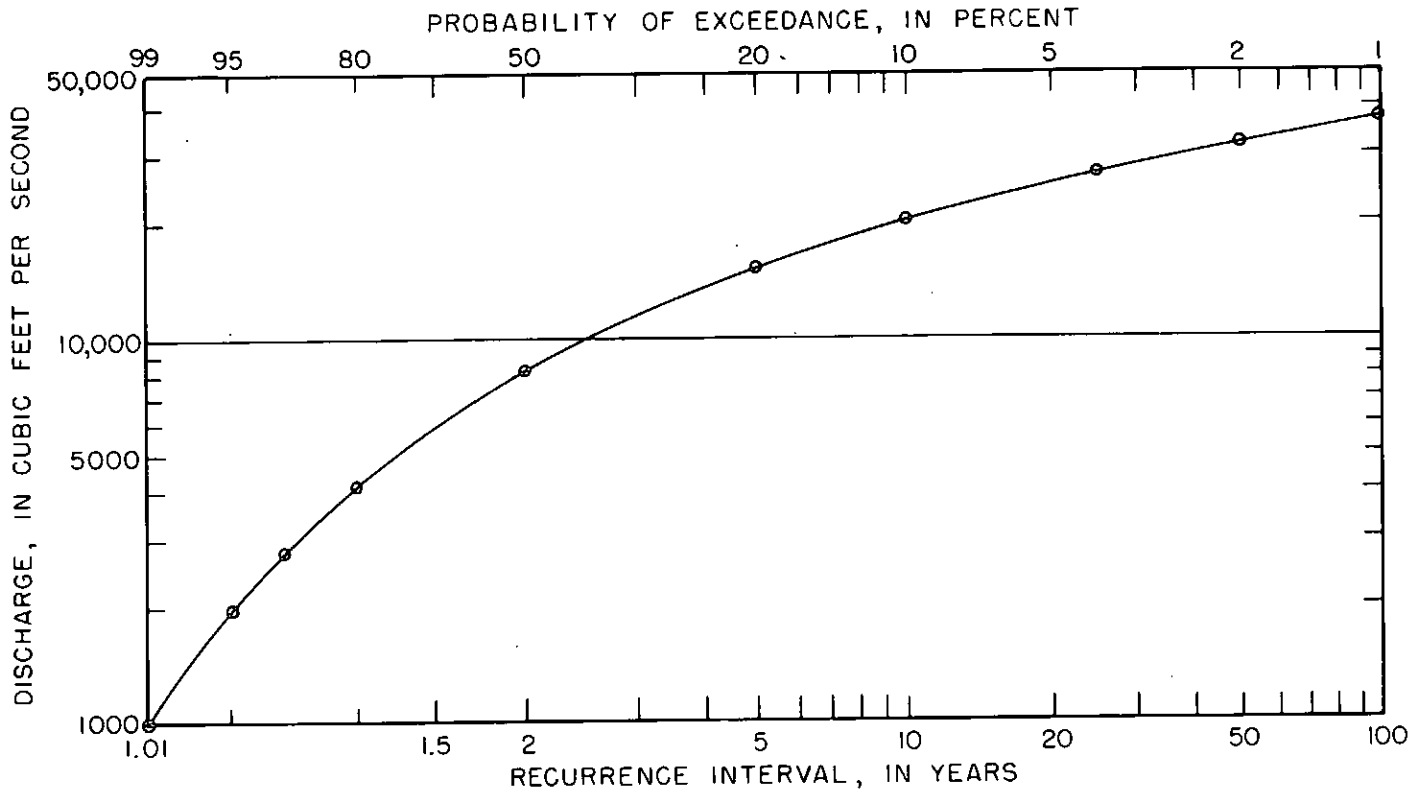


FIGURE B4.--Flood-frequency curve for Palouse River at Hooper. Points on curve indicate calculated values.

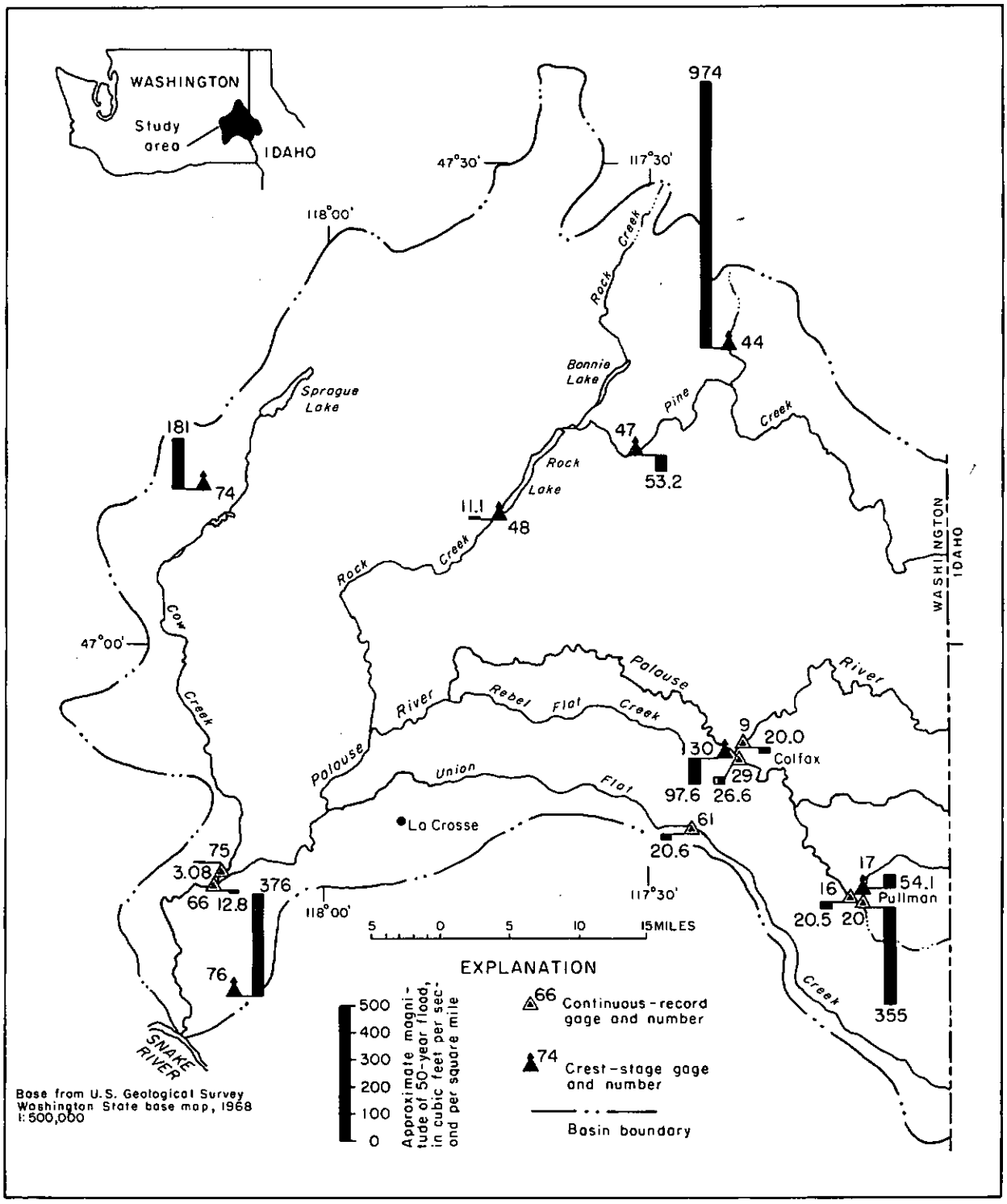


FIGURE B5.--Comparison of magnitudes of 50-year floodflows at selected stations in the Palouse River basin.

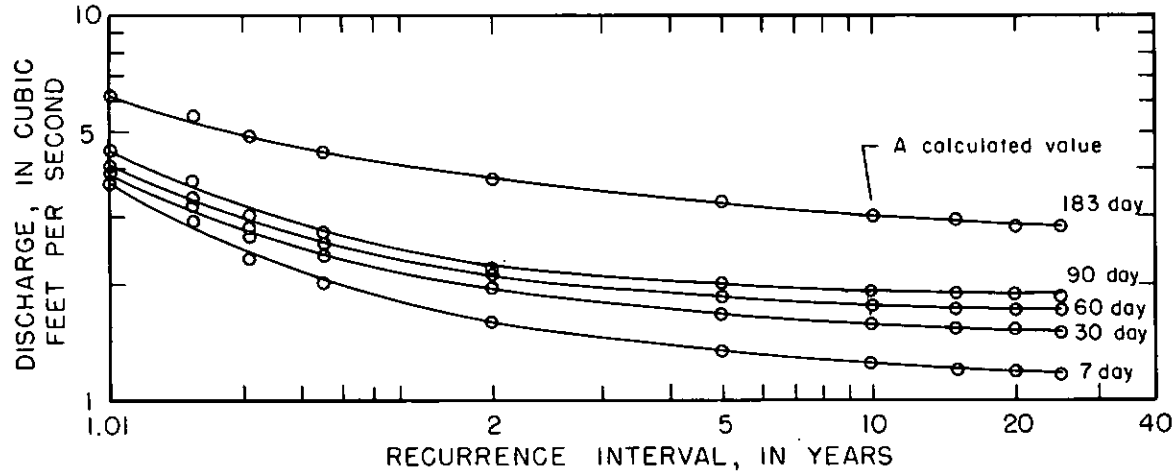


FIGURE B6.--Magnitude and frequency of annual low flows of South Fork Palouse River at Pullman, January 1960-September 1971.

Low flows.--Knowledge of the magnitude, frequency, and duration of minimum streamflows may be obtained from low-flow-frequency curves, which are based on past gaging-station records. The 7-, 30-, 60-, 90-, and 183-day low-flow-frequency curves (fig. B6) for the South Fork Palouse River at Pullman (13348000) were prepared in accordance with Geological Survey standards (Riggs, 1972). The minimum average discharges for the consecutive days indicated were used to develop the frequency curves in figure B6.

Low-flow-frequency data for seven stations presented in table B3, were used to prepare low-flow-frequency curves similar to those in figure B6. The data are presented in a form convenient for use in studies of water availability during periods of low flows where storage facilities are not contemplated. However, because of the very large differences between total yields and low-flow yields of streams in the Palouse River basin, water supplies may be inadequate for most uses unless storage is provided. The data in table B3 may be used in the design of seasonal storage facilities by establishing a frequency-mass curve that represents the total discharge available for a low-flow period of a specified recurrence interval. The flow-mass-curve method (Rippl method) may then be applied to determine the storage required to maintain a constant draft rate (Ven Te Chow, 1964, p. 14-44 to 14-46; and Riggs, 1973, p. 3). An example of the application of this method is shown in figure B7. The flow-mass curve in the figure, corresponding to a 20-year recurrence interval (5-percent probability), is drawn smoothly through points obtained by plotting the volume of discharge for various durations of minimum average flow against the duration periods of 7, 30, 60, 90, and 183 days. Riggs (1973, p. 4) suggested that frequency-mass curves be prepared for recurrence intervals of 5 and 20 years and for a greater recurrence interval only if justified by the length of record. The design of a storage facility probably

would not be based on a 5-year frequency, but inclusion of such information would help place the results of higher frequencies in proper perspective.

The median 7-day low flow (annual 7-day minimum low flow at 2-year recurrence interval) of a stream is generally considered to be the dependable flow, also referred to as the low-flow-yield index. This index, along with the slope, spacing, and base-flow indexes, defines the characteristics of low-flow potentials at seven gaging stations in the basin (table B4). These indexes reflect the hydraulic relationship between the stream and the adjacent ground-water reservoir and (or) of water stored as snow in the basin upstream from the gaging station. Derivation of the four indexes is explained briefly in table B4.

The several characteristics of a river basin that influence the low flows of streams are defined by the yield index, slope index, spacing index, and base-flow index. These are further defined as follows:

(1) The low-flow-yield index is a good measure of average dry-weather flows of streams which depend largely on ground-water contribution.

(2) The slope index is a good indicator of the variability of low flows over the years. The quantities of ground- and surface-water storage available in a basin influence the year-to-year variability of low flows; large quantities of storage decrease the variations, whereas small quantities increase them. Streams characterized by large storages are represented by frequency curves with flat slopes, whereas streams characterized by small storages are represented by frequency curves with steep slopes.

(3) The spacing index is influenced by the seasonal storage in the geologic materials underlying the basin. Streams in basins underlain by relatively impermeable materials and (or) small ground-water reservoirs will have widely spaced frequency curves and large spacing indexes, whereas streams in basins underlain by permeable materials or large ground-water reservoirs will have small spacing indexes, as their frequency curves are closely spaced.

(4) The base-flow index for the Palouse River basin is a measure of the contribution to total streamflow of ground water; high base-flow indexes indicate a relatively large contribution whereas low indexes indicate a small contribution.

TABLE B3.--Low-flow-frequency data for selected gaging stations

Gaging station: Official number and number on plate 1 (in parentheses)	Gaging station: Name and period of record	Number of consecutive days	Low-flow discharge, in cubic feet per second, at indicated recurrence interval, in years: 1.01	1.05	1.11	1.25	2	5	10	15	20	25	30	50
13346100 (9)	Palouse River at Colfax (Oct. 1955-Sept. 1971)[1]	7	17.0	14.0	11.5	8.80	3.85	0.87	0.36	0.23	0.17	0.13	0.11	--
		30	30.0	20.0	15.5	11.0	4.80	1.55	.77	.56	.45	.39	.34	--
		60	35.5	25.0	19.5	14.0	7.00	2.80	1.60	1.18	.95	.81	.71	--
		90	45.5	34.0	28.0	21.5	12.0	5.40	3.15	2.30	1.90	1.60	1.40	--
		183	95.0	71.0	59.0	46.0	28.5	17.5	13.5	11.5	10.5	9.80	9.30	--
13348000 (17)	South Fork Palouse River at Pullman (Jan. 1960-Sept. 1971)	7	3.63	2.90	2.31	2.01	1.60	1.35	1.25	1.21	1.19	1.17	--	--
		30	3.83	3.20	2.66	2.37	1.96	1.68	1.58	1.53	1.51	1.49	--	--
		60	3.92	3.30	2.79	2.51	2.12	1.86	1.76	1.71	1.70	1.70	--	--
		90	4.46	3.70	3.07	2.74	2.30	2.04	1.94	1.90	1.88	1.87	--	--
		183	6.20	5.50	4.83	4.42	3.76	3.23	2.99	2.90	2.81	2.80	--	--
13348500 (20)	Missouri Flat Creek at Pullman (Jan. 1960-Sept. 1971)	7	.21	.15	.13	.12	.10	.10	.09	.09	.09	.09	--	--
		30	.44	.29	.24	.20	.15	.11	.10	.10	.10	.09	--	--
		60	.58	.39	.32	.26	.19	.14	.12	.12	.11	.10	--	--
		90	.56	.39	.34	.28	.21	.16	.14	.14	.13	.12	--	--
		183	.53	.48	.46	.43	.37	.30	.27	.26	.24	.23	--	--
13349210 (29)	Palouse River below South Fork, at Colfax (Oct. 1955-Sept. 1971)[2]	7	28.0	21.5	18.0	14.0	8.00	3.75	2.40	1.90	1.60	1.42	1.30	--
		30	33.0	25.0	21.0	16.5	9.70	4.85	3.10	2.48	2.13	1.88	1.72	--
		60	36.0	28.0	24.0	19.5	12.0	6.60	4.45	3.65	3.17	2.85	2.65	--
		90	38.0	31.0	26.5	22.0	14.5	8.40	6.00	5.00	4.37	4.00	3.70	--
		183	105	81.0	68.5	55.0	35.5	23.5	18.5	16.5	15.3	14.4	13.7	--
13349400 (47)	Pine Creek at Pine City (Sept. 1961-Sept. 1971)	7	3.30	2.70	2.40	2.05	1.44	.87	.63	.52	.46	--	--	--
		30	3.60	3.05	2.70	2.30	1.60	.99	.71	.60	.52	--	--	--
		60	4.10	3.40	3.00	2.55	1.77	1.08	.78	.65	.57	--	--	--
		90	4.35	3.60	3.20	2.75	1.90	1.16	.84	.70	.61	--	--	--
		183	7.60	6.40	5.60	4.80	3.30	2.00	1.45	1.20	1.05	--	--	--
13350500 (61)	Union Flat Creek near Colfax (Oct. 1953-Sept. 1971)	7	1.64	1.31	1.12	.91	.55	.28	.18	.14	.12	.11	--	--
		30	1.53	1.50	1.45	1.33	.86	.33	.15	.09	.07	.05	--	--
		60	4.18	2.88	2.21	1.58	.70	.24	.12	.09	.07	.06	--	--
		90	3.08	2.66	2.35	1.96	1.18	.55	.33	.26	.21	.19	--	--
		183	8.20	6.23	5.35	4.50	3.19	2.21	1.80	1.62	1.52	1.45	--	--
13351000 (66)	Palouse River at Hooper (Feb. 1951-Sept. 1971)	7	29.9	29.0	28.4	26.0	16.4	5.68	2.41	1.45	1.00	.76	.61	0.33
		30	37.7	37.0	36.5	33.6	20.0	5.08	1.58	.76	.46	.32	.24	.11
		60	52.5	48.5	45.5	39.6	23.5	8.86	4.30	2.75	2.10	1.70	1.50	1.00
		90	62.5	57.5	53.2	46.6	31.1	16.2	10.3	8.00	6.69	5.80	5.25	3.80
		183	147	127	115	101	75.3	52.8	42.6	38.0	35.2	33.0	31.5	28.0

[1] Published as "near Colfax" prior to October 1964.

[2] Record synthesized by correlation prior to October 1953.

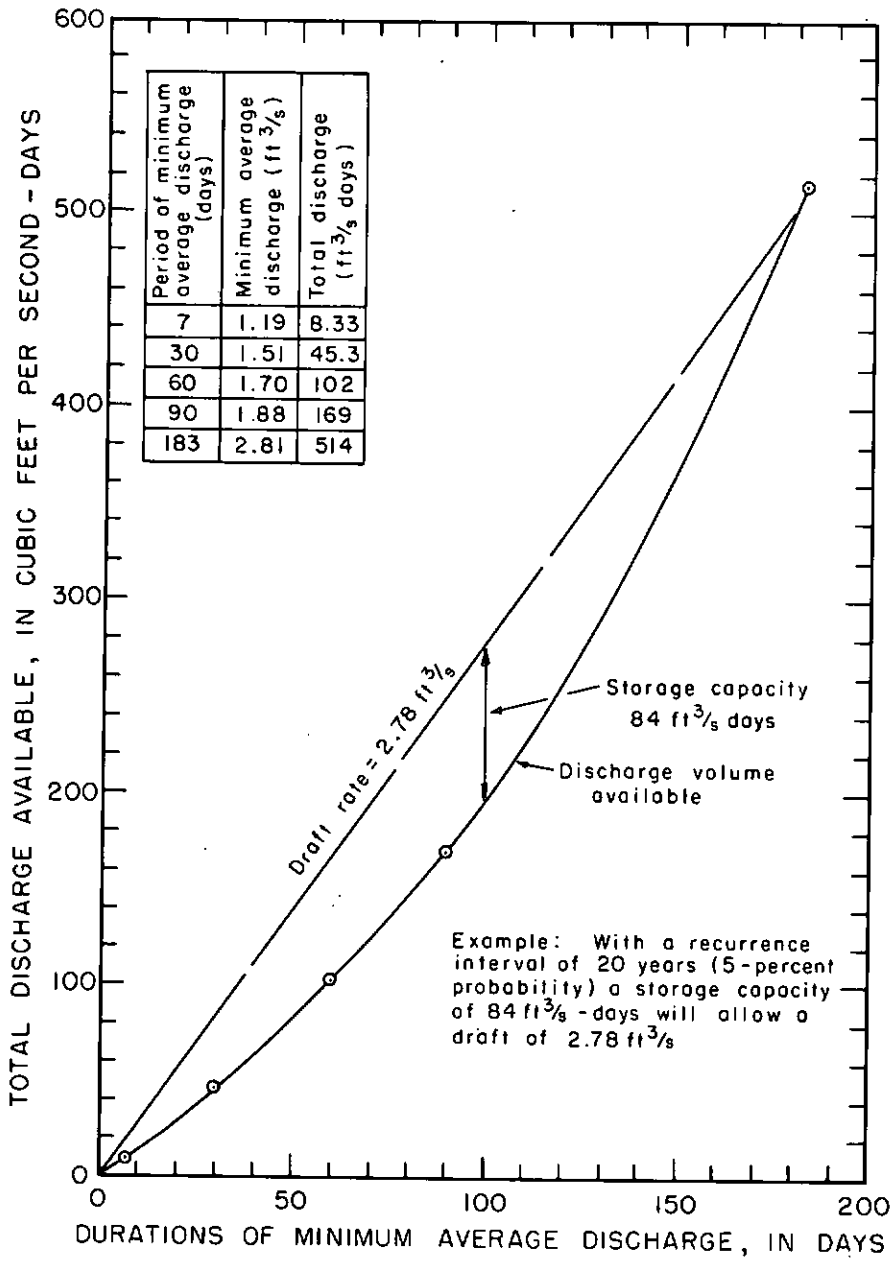


FIGURE B7.--Frequency-flow-mass curve, at 20-year recurrence interval, and storage-draft rate for South Fork Palouse River at Pullman. Minimum average discharge from table B3.

TABLE B4.--Low-flow indexes at selected gaging stations

Gaging station		Low-flow indexes[1]			
Official number and number on plate 1 (in parentheses)	Name and period of record	Yield	Slope	Spacing	Base flow
13346100 (9)	Palouse River at Colfax (Oct. 1955-Sept. 1971)[2]	0.008	22.6	7.40	0.013
13348000 (17)	South Fork Palouse River at Pullman (Jan. 1960-Sept. 1971)	.012	1.34	2.35	.045
13348500 (20)	Missouri Flat Creek at Pullman (Jan. 1960-Sept. 1971)	.004	1.11	3.70	.013
13349210 (29)	Palouse River below South Fork, at Colfax (Oct. 1963-Sept. 1971)	.010	5.00	4.44	.021
13349400 (47)	Pine Creek at Pine City (Sept. 1961-Sept. 1971)	.005	3.13	2.29	.028
13350500 (61)	Union Flat Creek near Colfax (Oct. 1953-Sept. 1971)	.003	4.58	5.80	.015
13351000 (66)	Palouse River at Hooper (Feb. 1951-Sept. 1971)	.007	16.4	4.59	.027

[1]The yield index is the ordinate of the annual 7-day minimum low-flow-frequencey curve at a 2-year recurrence interval. It is expressed in ft^3/s (cubic feet per second) per square mile to compare streams whose drainage areas differ in size.

The slope index is the ratio of the ordinates of the annual 7-day minimum low-flow-frequency curve at the 2-year and 20-year recurrence intervals.

The spacing index is the ratio of the ordinates, at the 2-year recurrence interval, of the 183-day and 7-day low-flow-frequency curves.

Base-flow index is the ratio between the yield index in ft^3/s and the mean annual discharge.

[2]Published as "near Colfax" prior to October 1964.

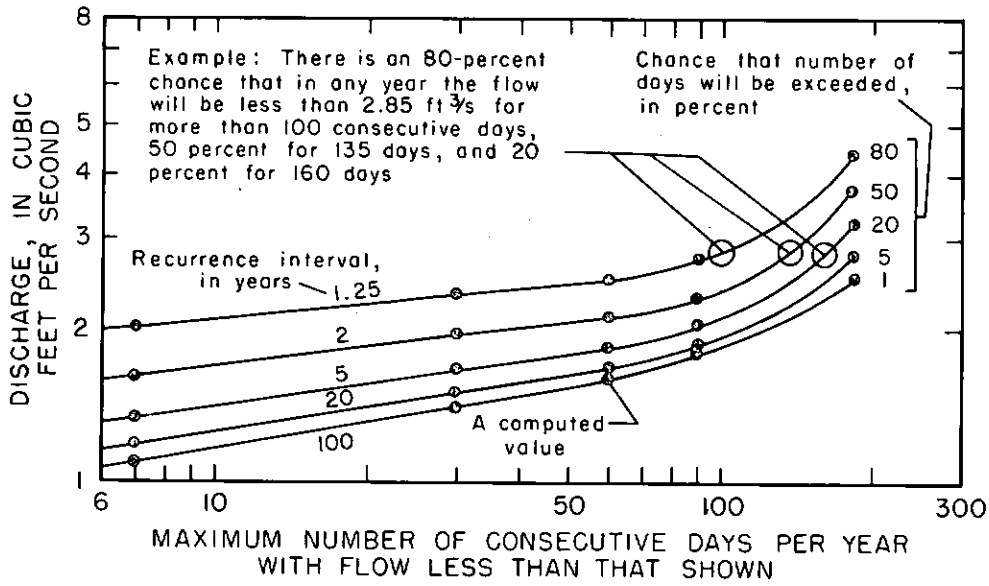


FIGURE B8.--Number of consecutive days of deficient discharge, South Fork Palouse River at Pullman (13348000), 1960-72.

Streamflows at all the gaging stations, except that of Missouri Flat Creek (13348500), are affected by diversions either for irrigation or for domestic use, and by minor regulation for industrial uses such as sewage treatment and lumber processing. Therefore, the indexes for those stations, as they appear in table B4, do not necessarily reflect the natural hydraulic relation between the individual stream and adjacent ground-water reservoir. The magnitudes of those indexes are affected, in varying degree, by man's activities.

In designing a water-supply project dependent on the low flow of a stream, the project planner must know the maximum number of consecutive days a year that a predetermined flow could be expected; anytime the flow is less than that predetermined rate it will be considered deficient. Such information is depicted in figure B8, which contains frequency curves for maximum periods of deficient discharge for the South Fork Palouse River at Pullman (13348000). The figure shows for example, that there is an 80-percent chance in any year that the flow will be less than 2.85 ft^3/s (cubic feet per second) for 100 consecutive days, but only a 20-percent chance that the flow will be deficient for 160 days. Data in table B5--for the seven stations for which adequate records have been maintained--were derived from curves similar to those in figure B8.

TABLE B5.--Magnitude and frequency of deficient discharge at selected gaging stations

Gaging station: Official number and number on plate 1 (in parentheses)	Gaging station: Name and period of record	Recurrence interval, in years	Discharge, in cubic feet per second, below which flow remained continuously for length of period indicated: 7-day	30-day	60-day	90-day	183-day
13346100 (9)	Palouse River at Colfax (Oct. 1955-Sept. 1971)[1]	1.25	8.80	11.0	14.0	21.5	46.0
		2	3.85	4.80	7.00	12.0	28.5
		5	.87	1.55	2.80	5.40	17.5
		10	.36	.77	1.60	3.15	13.5
		20	.17	.45	.95	1.90	10.5
		30	.11	.34	.71	1.40	9.30
13348000 (17)	South Fork Palouse River at Pullman (Jan. 1960-Sept. 1971)[2]	1.25	2.01	2.38	2.51	2.74	4.42
		2	1.60	1.96	2.12	2.30	3.76
		5	1.35	1.68	1.86	2.04	3.23
		10	1.25	1.58	1.76	1.94	2.99
		20	1.19	1.51	1.70	1.88	2.81
		25	1.17	1.49	1.70	1.87	2.80
13348500 (20)	Missouri Flat Creek at Pullman (Jan. 1960-Sept. 1971)	1.25	.12	.20	.26	.28	.43
		2	.10	.15	.19	.21	.37
		5	.10	.11	.14	.16	.30
		10	.09	.10	.12	.14	.27
		20	.09	.10	.11	.13	.24
		25	.09	.09	.10	.12	.23
13349210 (29)	Palouse River below South Fork, at Colfax (Oct. 1955-Sept. 1971)	1.25	14.0	16.5	19.5	22.0	55.0
		2	8.00	9.70	12.0	14.5	35.5
		5	3.75	4.85	6.60	8.40	23.5
		10	2.40	3.10	4.45	6.00	18.5
		20	1.60	2.13	3.17	4.37	15.3
		30	1.30	1.72	2.65	3.70	13.7
13349400 (47)	Pine Creek at Pine City (Sept. 1961-Sept. 1971)	1.25	2.05	2.30	2.55	2.75	4.80
		2	1.44	1.60	1.77	1.90	3.30
		5	.87	.99	1.08	1.16	2.00
		10	.63	.71	.78	.84	1.45
		20	.46	.52	.57	.61	1.05
13350500 (61)	Union Flat Creek near Colfax (Oct. 1953-Sept. 1971)	1.25	.91	1.33	1.58	1.96	4.50
		2	.55	.86	.70	1.18	3.19
		5	.28	.33	.24	.55	2.21
		10	.18	.15	.12	.33	1.80
		20	.12	.07	.07	.21	1.52
		25	.11	.05	.06	.19	1.45
13351000 (66)	Palouse River at Hooper (Feb. 1951-Sept. 1971)	1.25	26.0	33.6	39.6	46.6	101
		2	16.4	20.0	23.5	31.1	75.3
		5	5.68	5.08	8.86	16.2	52.8
		10	2.41	1.58	4.30	10.3	42.6
		20	1.00	.46	2.10	6.69	35.2
		50	.33	.11	1.00	3.80	28.0

[1]Published as "near Colfax" prior to October 1964.

[2]Record synthesized by correlation prior to October 1963.

Flow duration.--Another way of graphically showing streamflow variability at a gaging station is by the flow-duration curve, which depicts the percentage of the total time of record that any discharge was equaled or exceeded. The flow-duration curve for a gaging station is constructed by (1) arraying, in order of magnitude, the daily discharges for a specific period of record, and (2) grouping daily discharges into classes or rates, and computing the percentage of time that the various rates were equaled or exceeded. The discharge is then plotted against the corresponding percentage as shown in figure B9. The figure shows that the daily discharge past the gaging station on the South Fork Palouse River at Pullman was equal to or exceeded 7.5 ft^3/s 50 percent of the time during the period of record--January 1960 to September 1971--and that the discharge was 1.6 ft^3/s or more 99 percent of the time in that period. Thus calculated, flow-duration data for eight stations in the Palouse River basin are presented in table B6. The slope of the lower end of the flow-duration curve is a measure of the availability of streamflow during the low-flow period. A flat slope, as the one for the station on the South Fork Palouse River at Pullman (fig. B9), indicates a dependable supply of water during dry-weather periods. It also indicates that a good hydraulic relationship exists between the stream and the ground-water reservoir, and that ground water is the primary contributor to streamflow during the low-flow periods.

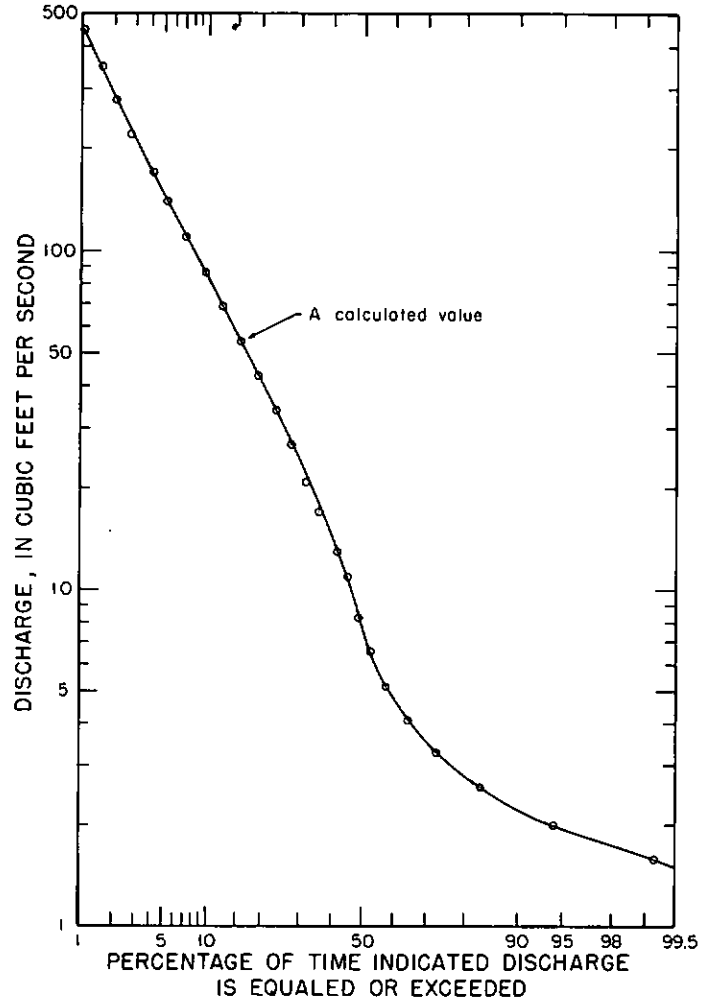


FIGURE B9.--Flow-duration curve for South Fork Palouse River at Pullman (13348000).

TABLE B6.--Daily-discharge durations at selected gaging stations

Percentage of time discharge equaled or exceeded that shown	Daily discharge, in cubic feet per second, at indicated gaging stations and period of record							
	13346100. Palouse River at Colfax (Oct. 1955-Sept. 1971)[1]	13348000. South Fork Palouse River at Pullman (Jan. 1960-Sept. 1971)	13348500. Missouri Flat Creek at Pullman (Jan. 1960-Sept. 1971)	13349210. Palouse River below South Fork at Colfax (Oct. 1964-Sept. 1971)	13349400. Pine Creek at Pine City (Sept. 1961-Sept. 1971)	13350500. Union Flat Creek near Colfax (Oct. 1953-Sept. 1971)	13351000. Palouse River at Hooper (Feb. 1951-Sept. 1971)	13352500. Cow Creek at Hooper (Apr. 1962-Sept. 1970)
1	2,650	450	125	3,600	630	420	5,100	155
2	2,000	280	74	2,750	385	270	3,700	125
5	1,300	142	30	1,500	215	154	2,350	93
10	840	82	15	950	105	90	1,560	62
20	470	41	6.0	530	53	45	910	36
30	270	24	3.0	285	28	28	550	22
40	145	14	1.5	155	16	15	300	14
50	77	7.5	.81	77	8.3	8.6	180	10
60	43	4.8	.47	47	4.9	5.0	105	8.0
70	25	3.5	.33	31	3.1	3.7	70	5.9
80	16	2.8	.25	22	2.3	1.9	46	2.8
90	7.8	2.2	.19	10	1.6	.90	25	.10
95	4.0	1.9	.16	5.8	1.3	.35	13	--
98	1.7	1.7	.14	3.9	1.1	.01	3.8	--
99	.97	1.6	.13	3.3	1.0	--	1.4	--
99.5	.57	1.5	.12	2.9	.92	--	.20	--
99.8	30	1.3	.12	2.6	.82	--	.10	--

[1]Published as "near Colfax" prior to October 1964.

Water Quality

Sample collection.--The chemical quality of surface water in the Palouse River basin is adequately defined only for water sampled at the gaging-station site at Hooper (13351000), where 123 samples were collected during July 30, 1959-September 20, 1971. Prior to February 1971 water samples were collected generally on a monthly basis. During February 1971 and thereafter, two samples were collected per month and analyzed. On February 20 and June 28, 1968, water samples were collected and analyzed at two additional sites, Pine Creek at Rosalia (13349340) and Union Flat Creek near Colton (13350300). Table C6 (in Part C of this report) gives the concentrations of the major chemical constituents in water samples collected through September 1971.

The only other analysis of surface-water quality in the basin was of samples collected at the gage on the Palouse River below the South Fork at Colfax (13349210). However, results of this analysis were mainly for the determination of nutrient concentrations in the water.

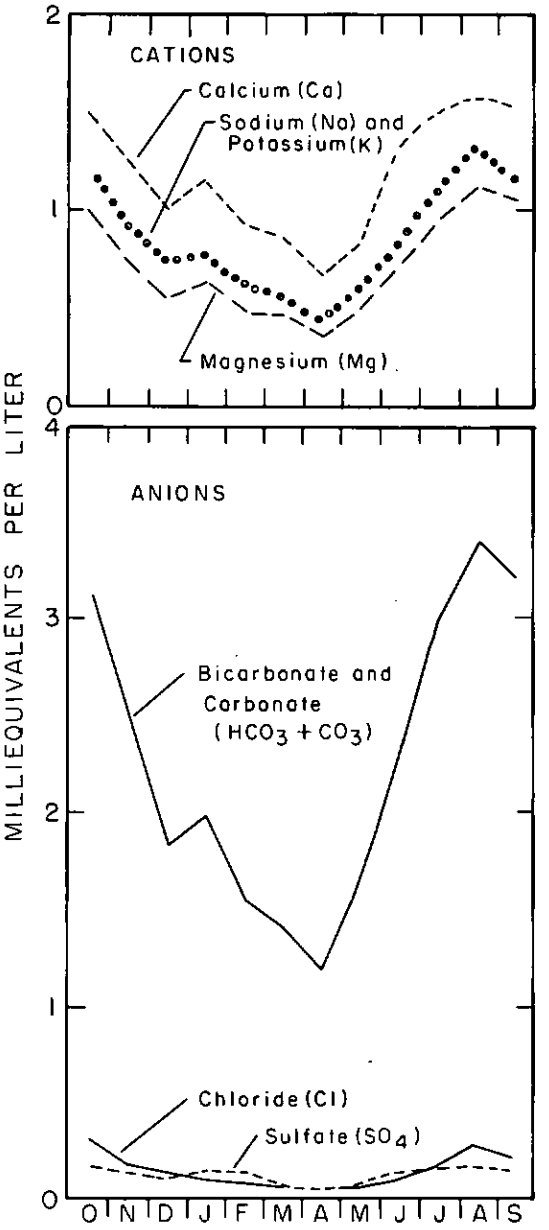


FIGURE B10.--Monthly average concentrations of major cations and anions in samples collected from the Palouse River at Hooper, July 1959-August 1969.

Water samples were analyzed in U.S. Geological Survey laboratories at Portland, Oreg., Salt Lake City, Utah, and Tacoma, Wash., at the Washington State Department of Health Laboratory at Olympia, and at Washington State University at Pullman.

Chemical quality.--Surface-water chemical quality as monitored at Palouse River at Hooper is shown in figure B10. The water samples had dissolved-solids concentration ranging from 70 to 273 mg/l (milligrams per liter) and averaging 170 mg/l (table C6). The average of the samples taken during July-October is 214 mg/l, and of those taken during March-June is 131; the lowest average was that for samples taken during April (112), and the highest for those taken during August (229). However, as shown below, while the concentration of the cations and anions increased significantly from February to June in Pine Creek at Rosalia--also at Palouse River at Hooper (fig. B10)--the reverse unexplainably occurred in Union Flat Creek near Colton.

Station name and number	Chemical constituents (milliequivalent per liter)								Date
	Cations				Anions				
	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Sulfate (SO_4)	Chloride (Cl)	Bicarbonate (HCO_3)	Carbonate (CO_3)	
Pine Creek at Rosalia (13349340)	0.80	0.38	0.52	0.12	0.29	0.11	0.64	0	Feb. 20, 1968
	1.50	1.65	1.74	.12	.40	.59	3.92	0	June 28, 1968
Union Flat Creek near Colton (13350300)	.85	.39	.61	.10	.25	.17	.77	0	Feb. 20, 1968
	.26	.12	.10	.02	.01	.01	.48	0	June 28, 1968

According to the method of classifying waters for irrigation devised by the U.S. Salinity Laboratory Staff (1954), all 105 samples obtained from the Palouse River at Hooper (13351000) during July 1950-August 1969, contained water that was classified (fig. B11) as in the low and lower half of medium-salinity-hazard (C1 and C2) and low-sodium-hazard (S1). Low-sodium water (S1) can be used for irrigation on almost all soils with little danger of the development of a sodium problem. However, although medium-salinity water (C2) might create a soil-salinity problem, it can be used if a moderate amount of leaching occurs.

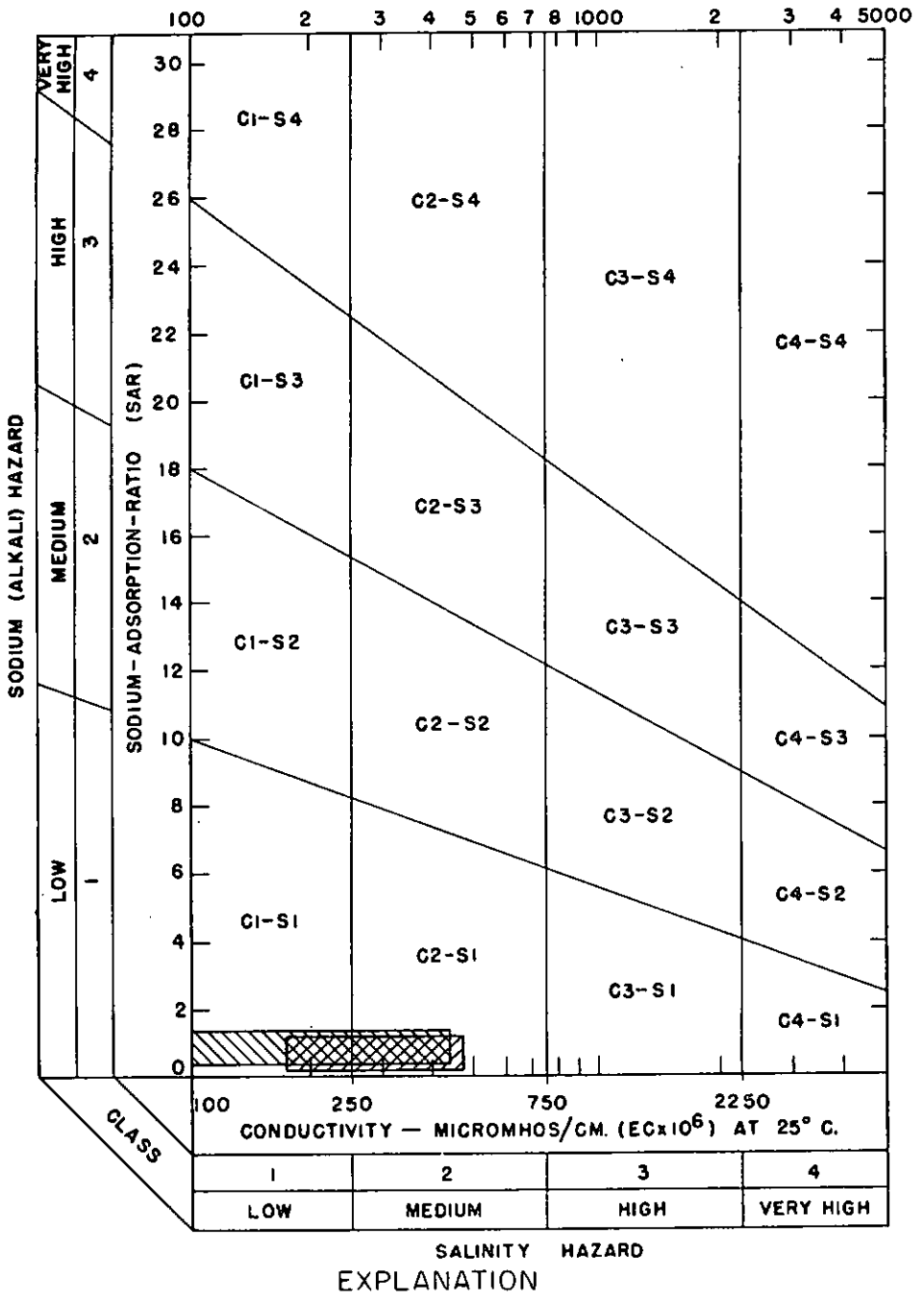


FIGURE B11.--Relative classification of irrigation waters in the Palouse River basin, within general classification by U.S. Salinity Laboratory Staff (1954, p. 80).

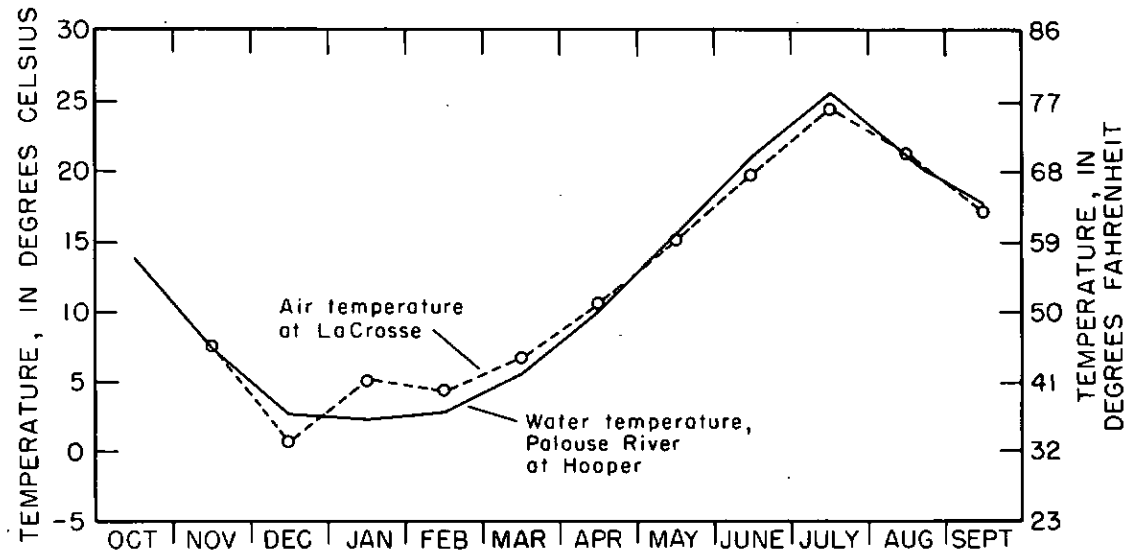


FIGURE B12.--Comparison of monthly average air temperature at LaCrosse and water temperature of Palouse River at Hooper, October 1963-September 1964.

Water temperature.--Changes in temperature of surface water depend to a large degree on the amount of solar radiation reaching streams and lakes. The average monthly temperature of surface water in the basin, except during freezing periods, is generally close to that of the average monthly air temperature as shown in figure B12. Variations in temperature of streams under the influence of similar climatic conditions are due largely to the volume of flow in each stream and the varying amounts of inflow from ground-water reservoirs.

Records of water temperature were collected generally on a daily basis on the Palouse River at Hooper (station 13351000) during October 1961-September 1971 (table C8 in Part C of the report). Table C9 lists air and water temperatures recorded during discharge measurements and (or) during inspections of various streams in the basin.

Suspended sediment.--Factors influencing the quantity, and type of sediment in streams are (1) geology and soil types, (2) land use and vegetative cover, (3) quantity and intensity of precipitation, (4) surface runoff, and (5) slope of land surface.

Streams in the Palouse River basin generally carry large quantities of suspended sediment that originates primarily from sheet erosion of hills and fields, and secondly from channel erosion of streambanks and streambeds. Channel erosion is more dominant in the central part of the basin where stream channel sides are steep banks of soft materials.

TABLE B7.--Average annual suspended-sediment discharges from selected drainage areas, July 1, 1961-June 30, 1965. Adapted from Boucher (1970)

Official station number and number on plate 1 (in parentheses)	Sediment-sampling station or drainage between stations
13345400 (5)	Palouse River at Palouse
--	Palouse to Colfax
13346100[3] (9)	*Palouse River at Colfax
13348000[3] (16)	South Fork Palouse River at Pullman
13348500[3] (20)	Missouri Flat Creek at Pullman
--	Pullman to Colfax
13349200 (28)	South Fork Palouse River at Colfax
--	Colfax to Winona
13349310 (39)	Palouse River at Winona
13349320 (40)	Rebel Flat Creek at Winona
13349400[3] (47)	Pine Creek at Pine City
13349500 (48)	Rock Creek at Ewan
13349690 (54)	Cottonwood Creek below Pleasant Valley Creek, near Ewan
--	Rock Creek below Ewan stations
13349900 (58)	Rock Creek near Winona
13350500[3] (61)	Union Flat Creek near Colfax
--	Union Flat Creek below Colfax to La Crosse
13350700 (62)	Union Flat Creek near La Crosse
13350900 (64)	Willow Creek at Gordon
--	Areas below Winona, La Crosse, and Gordon stations
13351000[3] (66)	Palouse River at Hooper
13352500[3] (73)	Cow Creek at Hooper
--	Palouse River at mouth

*Published as "near Colfax" prior to October 1964.

[1]Percentage values based on unrounded loads.

[2]D, difference in sediment discharge between stations; E, estimated; Ea, partly estimated; F, sediment-transport flow-duration curve, discussed by Jordan, Jones, and Petri (1964, p. 60-63), Miller (1951), Wark and Keller (1963, p. 10-13); F_1, translation of flow-duration curves for Missouri Flat Creek at Pullman and Pine Creek at Pine City; F_2, translation of flow-duration curves for Union Flat Creek near Colfax; R, daily station record, Palouse River at Hooper; S, storm loads, discussed by Jones (1964, p. 63-69), Palouse River at Hooper; underlined letters indicate computation given most weight or total weight.

Drainage area above station (mi^2)	Average annual suspended-sediment discharge (tons)	Percentage of load of Palouse River at mouth[1]	Average annual sediment yield ($tons/mi^2$)	Discharge-weighted mean concentration (mg/l)	Method of computation[2]
398	180,000	12	460	--	S
99	180,000	12	1,800	--	D
497	360,000	23	730	1,300	S,F
132	93,000	5.9	700	2,900	S,F
27.1	46,000	2.9	1,700	7,400	S,F
69	86,000	5.4	1,200	--	D
228	220,000	14	980	--	S
261	260,000	16	1,000	--	D
986	850,000	54	860	--	S
73.2	160,000	10	2,100	--	S,Ea
302	160,000	10	600	3,400	F
[4]526	4,700	.3	9	--	S,Ea
110	187,000	12	1,700	--	S,F_1,Ea
318	72,000	4.6	230	--	E
[5]954	260,000	17	280	--	E
[6]428	260,000	17	620	--	E
189	80,000	5.0	420	2,600	F
105	150,000	10	1,500	--	D
294	230,000	15	800	--	S,F_2
67.4	52,000	3.3	770	--	S
165	16,000	1.0	96	--	E
[5]2,500	1,572,000	99.5	629	2,970	R
[6]1,974	1,568,000	--	796	--	R
679	3,200	.2	5	135	F
3,283	1,580,000	100	480	2,850	Ea

[3]Site also is stream-gaging station.

[4]Outflow from Rock Lake.

[5]Includes drainage area of Rock Lake.

[6]Excludes drainage area of Rock Lake.

Based on records collected during July 1961-June 1965, Boucher (1970) found that the concentrations of suspended sediment in streams in the central part of the Palouse River basin tend to be greater than those in streams in either the eastern (mostly in Idaho) or the western (scabland) parts of the basin. Boucher also found that sediment concentrations in streams near the boundary between the eastern and central areas are greater than those in the upper reaches of the Palouse River in the eastern part. However, the heavier runoff of nearly sediment-free water from the streams in the mountainous eastern part of the basin dilutes the sediment concentrations in the downstream tributaries as they enter the main stem of the Palouse River. Boucher's findings are given in table B7. The subareas, A, B, and C, as given in the table are equivalents, respectively, for the eastern, central, and western parts of the basin discussed above.

Table B8 lists the monthly suspended-sediment discharge, in tons, for 1962-71 in the Palouse River at Hooper (station 13351000). Daily sediment discharges and mean concentrations are documented in reports by the U.S. Geological Survey (1964-72).

Generally, land use has the greatest effect on sediment yield. Lands that once were covered and protected by natural vegetation have been extensively cultivated and much of the soil has become susceptible to erosion, particularly in areas mantled by loessal soil. According to Kaiser (1961; written commun., 1966), annual soil loss by water erosion from Whitman County ranged from 1.0 million tons during 1946-47 to 21.9 million tons during 1962-63, and averaged 9.6 million tons for the 26-year period 1939-65. However, the average annual soil loss during July 1961-June 1965 was 14.2 million tons (Boucher, 1970).

Soils in the Palouse River basin are composed mostly of clay-sized particles that generally are coarser in the western part of the basin than in the eastern part (Caldwell, 1961, p. 115-116). The fluvial sediment in the basin also is generally coarser toward the western boundary (Boucher, 1970, p. C21; table C10 in Part C of this report). A summary of discharge-weighted averages of particle size is presented in figure B13.

TABLE B8.--Monthly suspended-sediment discharge, Palouse River at Hooper, 1962-71

Water year	Monthly suspended-sediment discharge, in tons											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1962	109	163	2,702	7,497	16,627	376,697	22,667	40,818	2,011	201	55	51
1963	319	1,479	6,899	1,460	3,156,807	18,666	24,409	370	2,070	541	78	66
1964	175	376	1,253	58,512	19,204	169,589	73,581	4,746	777	141	89	155
1965	86	1,177	1,006,055	895,814	185,306	15,865	151,397	1,654	695	106	52	65
1966	43	60	175	24,473	9,205	47,003	5,349	213	95	37	6	10
1967	20	48	1,912	66,479	6,678	8,350	4,343	16,545	2,863	150	12	8
1968	42.44	40.06	97,960.7	38,147	462,848	3,234	720.0	179.9	145.47	7.71	.16	62.27
1969	125.9	2,708.4	19,889	119,972	19,352	855,156	175,430	11,577	552	144.6	41.12	56.9
1970	64.9	91.1	267.5	423,142.5	226,734	85,275	3,237	1,518	445.9	157.5	76.9	58.0
1971	78.1	260.9	7,855.7	1,653,667	111,948	175,710	10,902	1,952	13,988	327.4	111.4	684.1

Analyses of the particle size of bed material from sites in the basin (table B9) showed that the streambeds are composed of materials ranging in size from very fine (less than 0.062 millimeter) to very large, such as cobbles and boulders. Boucher (1970, p. C30) reported that beds appear to be rather stable, with only moderate shifting of stream channels. Rocks in the streambeds are large and angular and may be cemented together, and in places the Palouse River flows directly on exposed basalt. Also, sand-size particles constitute only a small part of the suspended load, indicating a small amount of sand available for transport by the streams. During periods of high flow, silt particles comprise the largest part of the suspended-sediment load, whereas during periods of low flow, clay particles comprise the greatest part. On the average, the suspended sediment transported by the Palouse River past Hooper comprises 3 percent sand, 68 percent silt, and 29 percent clay.

Ground Water

Large quantities of ground water can be obtained from wells in most parts of the Palouse River basin, except in those areas where very old granitic or metamorphic rocks are locally at or near the surface, as shown on plate 1. However, even within those areas conditions are locally favorable--as at Pullman--and large yields are obtained from wells. Near the Palouse River in Tps. 13 and 14 N., Rs. 36 and 37 E., and perhaps near the Snake River southwest of Pullman, water is drained from the upper few hundred feet of rocks and large yields can be obtained only from deep wells.

TABLE B9.--Particle-size analyses of bed material at four sites. Modified from Boucher (1970)

[Method of analysis: C, chemically dispersed; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water]

Date of collection	Hour	Discharge (ft^3/s)	Water temperature (°C)	Percent finer than indicated size, in millimeters					
				0.002	0.004	0.008	0.016	0.031	0.062
South Fork Palouse River at Pullman (13348000)									
Feb. 18, 1964	1440	38	4	13	19	30	45	67	86
				8	13	22	33	44	54
				11	14	26	47	76	88
				24	31	45	68	90	99
			Average	17	24	36	54	73	84
Pine Creek at Pine City (13349400)									
Feb. 19, 1964	1200	62	3	0	0	1	1	2	2
Cottonwood Creek below Pleasant Valley Creek, near Ewan (13349690)									
Feb. 19, 1964	1040	27	2	7	9	12	20	40	66
				5	7	12	22	47	73
				4	6	8	13	31	83
				7	8	13	20	45	92
			Average	6	8	12	19	41	78
Palouse River at Hooper (13351000)									
Dec. 19, 1963	1800	128	2	--	--	--	--	--	11
				4	5	6	7	11	16
				2	3	3	4	6	8
				36	45	50	62	78	92
				32	35	46	57	71	88
				18	23	29	37	55	69
			Average	18	22	27	33	44	55
Apr. 4, 1964	1110	1,960	6	--	--	--	0	1	1
				--	--	--	--	--	--
				--	--	--	--	--	--
				--	--	--	--	--	--
			Average	--	--	--	--	--	--

Percent finer than indicated size, in millimeters										Method of analysis
0.125	0.250	0.350	0.500	1.000	2.000	4.000	8.000	16.000	32.000	
94	98	99	99	100	--	--	--	--	--	VPSWC
59	70	75	79	94	95	98	100	--	--	VPSWC
--	--	--	--	--	100	--	--	--	--	SPWC
100	--	--	--	--	--	--	--	--	--	VPSWC
88	92	94	94	98	99	100	--	--	--	
4	5	6	7	19	35	66	86	100	--	VPSWC
87	97	98	98	99	100	--	--	--	--	VPSWC
84	92	95	96	99	100	--	--	--	--	VPSWC
98	99	100	--	--	--	--	--	--	--	VPWC
100	--	--	--	--	--	--	--	--	--	VPWC
92	97	98	98	100	--	--	--	--	--	
14	28	45	66	84	98	100	--	--	--	VSW
23	36	46	55	76	87	95	97	100	--	VPSWC
12	18	24	30	52	59	68	74	83	100	VPSWC
95	98	99	100	--	--	--	--	--	--	VPWC
96	99	99	100	--	--	--	--	--	--	VPWC
84	89	91	93	94	100	--	--	--	--	VPWC
62	68	72	76	84	89	93	94	97	100	
3	16	49	85	91	94	95	99	100	--	VPSWC
--	4	17	55	100	--	--	--	--	--	V
--	0	3	11	42	46	51	54	64	100	V
--	0	1	2	10	14	21	26	37	100	V
1	5	18	38	61	64	67	70	75	100	

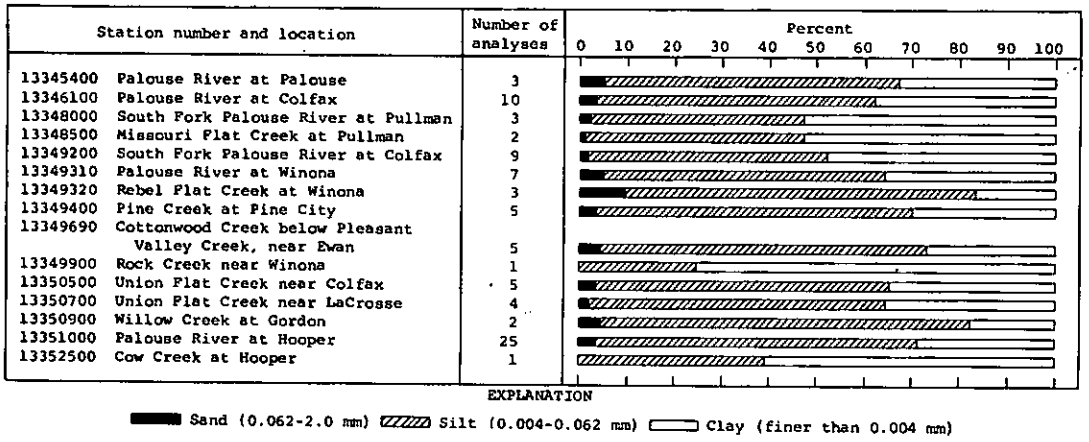
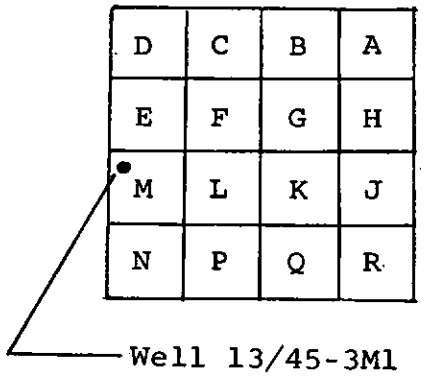


FIGURE B13.--Percentage distribution of sand, silt, and clay in suspended-sediment samples, Palouse River basin. Values are averages weighted by sediment discharge. From Boucher (1970).

Well-Numbering System

Wells inventoried during this study and listed in tables C3, C4, C5, and C7 have been assigned numbers identifying them by location, within a section, township, and range.

For example, in the symbol 13/45-3M1, the part preceding the hyphen indicates successively the township and range (T.13 N., R.45 E.) north and east of the Willamette base line and meridian. Because the study area lies entirely north and east of the base line and meridian, in tables C3, C4, and C7 the letters indicating the directions north and east are omitted. The first number following the hyphen indicates the section (sec.3), and the letter "M" gives the 40-acre subdivision of the section, as shown in the figure below. The numeral "1" indicates that this well is the first one inventoried within the subdivision. In table C5, a computer printout, the same well number is given as 13N45E03M01.



Availability in Geologic Units

Granitic and metamorphic rocks.--The granitic and metamorphic rocks extend thousands of feet below the surface, and form the "basement rocks" underlying the eastern part of the basin. The areas in which these rocks are exposed at the surface are of limited extent (pl. 1), but the areas where these rocks are thinly covered by loess or gravel, or by a few feet of basalt, are considerably more extensive. Unweathered and unfractured granitic and metamorphic rocks contain very little water, if any. However, where fractures occur near the surface, they may yield enough water to wells for domestic or stock supplies. When subjected to weathering, these rocks physically disintegrate into clay, silt, sand, and gravel. A mixture of these materials yields very little water to wells, but when the mixture is reworked by streams the finer materials are carried away and the remaining deposits of sand and gravel, if sufficiently thick to contain large quantities of water, may yield as much as several hundred gallons per minute per well. Such sand and gravel deposits, with only a thin loess or clay cover, may rest on unweathered granitic or metamorphic rocks, or they may occur as sedimentary interbeds between layers of basalt, as shown in figure A2. Where these sand and gravel deposits slope downward from their area of recharge and are overlain by impermeable materials, they may contain water under artesian pressure (wells 15/44-11F2 and 16/44-24H1 in tables C3 and C4).

Basalt.--Basalt of the Columbia River Group underlies about 95 percent of the Palouse River basin in Washington and, with its associated interbeds, is the principal water-bearing unit underlying about 85 percent of the basin. The maximum thickness of basalt underlying the basin is not known. Waters (1961) measured 1,735 ft comprising 25 individual flows exposed in the Snake River gorge near Uniontown, and an oil-test well about 45 miles west of the basin penetrated the base of the basalt at a depth of 4,465 ft.

Water does not occur throughout the entire thickness of basalt, but rather in rubbly zones near contacts between successive flows or in sedimentary interbeds between the flows. The average thickness of flows is about 80 ft, and the yield of water to a well from an individual flow contact or interbed may range from only a few gallons per minute to as much as 1,000 gpm (gallons per minute)

In most parts of the basin, the yields of wells increase about 125 to 200 gpm for each additional 100 ft of penetration below the water table. The average depth to water in wells more than 100 ft deep and having little or no artesian pressure is 95 ft.

On the basis of a 125- to 200-gpm increase in yield for each 100 ft of penetration below the water table, the average 750-ft well in the basin probably will yield between 800 and 1,300 gpm.

The reported specific capacity of irrigation and public-supply wells in the basin averages about 40 gpm per foot of drawdown.

Water in basalt wells in many parts of the basin is under artesian pressure, where water rises above the level at which it was found when the well was drilled; however, the distribution of artesian wells that flow at the surface is more restricted. The principal areas of flowing basalt wells are near Pullman, Farmington, Hooper, and Benge.

In many parts of the basin, hydrostatic head decreases with depth, so that water in uncased wells moves down the well from higher aquifers to lower aquifers. In parts of the basin where such uncased deep wells are numerous, considerable amounts of water may drain from shallow aquifers to deeper aquifers.

Eolian deposits.--Much of the area between stream channels of the Palouse River basin in Washington is mantled by eolian silt or loess (pl. 1). In the channeled scablands of the western half of the basin, where the eolian deposits were mostly eroded away by ice age floodwaters, only elongate patches of these deposits remain on the surfaces between the channels. In the central part of the basin, these fine soils overlie basalt, and in the eastern half of the basin they overlie granitic and metamorphic rocks except in the bottoms of the major valleys and in the mountains where the loess is absent. The eolian deposits range in thickness from a few feet to as much as 300 ft.

Much of the precipitation on eolian deposits runs off, but in the winter, when precipitation is highest and evapotranspiration is lowest, there is some recharge if the ground is not frozen. The porosity of the eolian deposits is high and, where the material is saturated, it contains large quantities of water. However, because the permeability is low, water moves through these deposits very slowly.

Drilled wells normally do not obtain appreciable quantities of water from eolian deposits, but large-diameter dug wells--with their large storage capacities--are adequate for domestic or stock supplies. Where eolian deposits are thin, as in draws and along ravines, dug wells commonly extend through them and a few feet into the underlying bedrock. Locally, the upper surface of the bedrock retards downward percolation and ground water is perched

at the contact between the eolian deposits and the bedrock. Many small springs issue from this contact zone in the eastern half of the basin.

Alluvial deposits.--Alluvial deposits occur as silt and sand flood-plain deposits along present-day streams and as coarser gravels and cobbles along the flood-scoured scabland channels in the western half of the Palouse River basin (pl. 1). The character and thickness of the alluvium differ greatly from valley to valley. Near the headwaters of some of the smaller streams the alluvium consists of reworked eolian deposits and may be only a few feet thick; many of these thinner deposits of alluvium are not shown in plate 1. In the larger stream valleys, alluvium consists of a few feet of basaltic rubble overlain by 10 to 20 ft of silt. Alluvial deposits in some of the larger stream valleys yield as much as 150 gpm of water to wells; in the valleys of the smaller streams, they yield only enough water for domestic and stock supplies (1-10 gpm).

The alluvial deposits of the scablands--principally medium to coarse gravel--were deposited where the velocity of the ancient floodwaters decreased, such as downstream from bedrock or loess-mantled "islands" or where deltas were formed in ponded water. Although the scabland alluvial deposits are laterally extensive, they are mostly thin or deeply dissected and contain little ground water. At a few locations (19/40-15D1, table C3) large yields are obtained from shallow wells or infiltration trenches.

Water-Level Fluctuations

Water levels in wells in the Palouse River basin fluctuate in response to seasonal variations in precipitation, pumping of individual wells, and regional ground-water pumpage. Insignificant water-level fluctuations also occur in response to changes in barometric pressure. Water levels in more than 100 wells in the basin have been measured at various frequencies during 1932-72; these are listed in table C5.

Fluctuations of water levels in wells tapping unconfined aquifers indicate changes in the amount of water stored in the ground-water reservoir. Rising or declining water levels, as in surface reservoirs, result from an imbalance between recharge and discharge.

Lowering of water levels in wells tapping confined (artesian) aquifers results from a change in pressure and does not indicate dewatering of the aquifer in the area of ground-water discharge unless the water level drops below the base of the upper confining

bed. Lowering of the artesian head in an aquifer may be noticeable at a considerable distance from the points of discharge, but dewatering of the aquifer may take place only near areas of recharge.

Natural water-level fluctuations through the year result chiefly from seasonal variations in recharge and discharge. In very shallow wells in the Palouse River basin, water levels usually are highest at the end of the rainy season (March, April, or May) and lowest at the end of the dry season (about October). Normal seasonal water-level fluctuations average about 10 ft, but in years that have an unusually wet winter followed or preceded by a dry summer the fluctuation may be as much as 20 ft. Deep wells generally have smaller water-level fluctuations and they do not coincide as closely with the wet and dry periods. The long-term water-level trend is either upward or downward depending on whether annual precipitation during a few years is above or below the long-term normal precipitation.

The season of greatest pumpage from wells for irrigation or public supplies usually coincides with the season of least precipitation. In these wells the seasonal fluctuations are much more pronounced, and if the annual pumpage exceeds the recharge, the seasonal variations are superimposed on a long-term net decline in water level. The greatest long-term decline in water levels in the Palouse River basin--more than 50 ft in some wells (fig. A8)--has occurred in the Pullman area where wells tapping artesian aquifers are closely spaced and withdraw large quantities of water. During the pumping season, water levels in some irrigation wells in other parts of the basin are lowered 100 to 300 ft, but because pumping is seasonal and most wells are widely spaced, the water level recovers rapidly when pumping is stopped, and any long-term decline is negligible.

Water Quality

Table C7 (in Part C of the report) lists results of chemical analyses made of ground-water samples collected during 1946-72. The majority of the samples were collected from public-supply wells and a few were collected from domestic wells. The distribution of the sampled wells is not uniform over the basin, with the sparsely populated western part being represented by only a few analyses. Although the available data may not be representative of ground-water quality throughout the basin, they do represent the quality of water currently being pumped for the major supplies.

Water samples were analyzed in U.S. Geological Survey laboratories at Portland, Oreg., Salt Lake City, Utah, and Tacoma, Wash.,

at the Washington State Department of Health Laboratory at Olympia, and at Washington State University at Pullman.

Ground water commonly has a longer period of contact with rock materials than does surface water and, perhaps partly for that reason, it usually is more highly mineralized. Most ground water in the Palouse River basin can be classified as a calcium bicarbonate type high in silica, and the water is generally acceptable for domestic, irrigation, and industrial purposes. However, some industrial processes are highly sensitive to specific constituents, and industrial water users should evaluate individual ground-water supplies on the basis of the water-quality requirements of their particular process. The analyses of water given in table C7 show only the amounts of dissolved mineral matter in the ground water and do not indicate the sanitary quality--the bacteria content--of the water.

Changes in the chemical quality of water from a given well over a period of years probably result from lateral or vertical migration--in response to pumpage--of water having different chemical characteristics.

The dissolved-solids concentration of ground water sampled in the Palouse River basin ranged from 135 to 311 mg/l (table C7). Those values are considerably below the 500 mg/l recommended for drinking water by the U.S. Public Health Service (1962), which sets as limits those which "should not be exceeded whenever more suitable supplies are, or can be made, available at reasonable cost" (U.S. Public Health Service, 1962, p. V). The specific conductance of water, a measure of the ability of water to conduct an electrical current, also is indicative of the amount of dissolved-mineral matter in the water. Commonly, the dissolved-solids value in milligrams per liter is about 55 to 75 percent of the specific-conductance value in micromhos. On this basis, the dissolved-solids concentration of water from well 16/36-11H1 (table C7)--not analyzed for dissolved-solids concentration--may be as much as 450 to 620 mg/l.

Silica concentrations ranged from 26 to 69 mg/l and averaged about 51 mg/l. This concentration is rather high for ground water and reflects the influence of igneous rocks (basalt and granite) which are formed by siliceous minerals. No correlation between silica content and well depth or aquifer lithology is suggested, nor is a pattern of areal distribution apparent. Silica may combine with calcium and magnesium to form objectionable scale in heat-exchange equipment.

Iron concentrations ranged from zero to 1.8 mg/l and averaged about 0.24 mg/l. The limit of suitability suggested by the U.S. Public Health Service (1962) is 0.3 mg/l. Excessive iron is objectionable because it stains plumbing fixtures, laundry, and industrial products. Manganese in water has much the same effect as iron.

The sulfate concentration of ground-water samples from the Palouse River basin ranged from less than 1 to 72 mg/l--much less than the limit of 250 mg/l recommended by U.S. Public Health Service (1962).

Chloride concentrations were well below the 250 mg/l limit recommended by the U.S. Public Health Service (1962) for drinking water. The concentrations ranged from 1.2 to 40 mg/l.

Nitrate (as N) concentrations in ground-water samples from the Palouse River basin ranged from zero to 13 mg/l; that of only one sample--from well 22/43-32L1--was above the limit of 10 mg/l recommended for drinking water by U.S. Public Health Service (1962). Excessive nitrate in water used in the preparation of formula for infants may cause methemoglobinemia. The major source of nitrate in ground water in the basin probably is from surface contamination by legumes, fertilizers, and sewage.

Hardness of ground water sampled in the basin ranged from 71 to 243 mg/l and averaged about 126 mg/l. Hardness of water is classified by the U.S. Geological Survey as follows:

Hardness range (mg/l)	Description
0-60	Soft
61-120	Moderately hard
121-180	Hard
More than 180	Very hard

"Hard water" requires excessive amounts of soap or detergents in homes and laundries, and chemical treatment for domestic use is desirable.

The sodium-adsorption ratio (SAR), used to express the relative activity of sodium ions in exchange reactions with soil, is a valuable measure of the suitability of water for irrigation. The sodium-adsorption ratio may be determined by the formula

$$SAR = \frac{Na^{+}}{\sqrt{\frac{(Ca^{++} + Mg^{++})}{2}}},$$

where the ionic concentrations are expressed in milliequivalents per liter (U.S. Salinity Laboratory Staff, 1954). The salinity hazard of water, generally based on its specific conductance, also is an important indicator of suitability for irrigation. Irrigation water of high quality is typified by low SAR and low salinity hazard. Determinations of SAR--computed by the above formula--and salinity hazard (specific-conductance values listed in table C7) indicate that of 36 samples, all were of very low SAR (fig. B11), 5 were of low salinity hazard, and 31 were of medium salinity hazard (fig. B11).

Data are not available on temperature of ground water in the Palouse River basin except for wells from which water was sampled for chemical analysis. Temperatures of water in wells less than 100 ft deep are typically about the same as the mean annual air temperature. Water temperature in deeper wells is generally affected more by heat from the earth's interior. Temperature of ground water in the wells sampled (table C7) ranged from 7 °C (45 °F) to 20 °C (67 °F) and averaged 11 °C (52 °F). By comparison, the average annual air temperature at Colfax is 9 °C (48 °F) for 1881-83 and 1892-1971.

Water-Management Considerations and Constraints

The decreased artesian pressures in the Pullman area and the resulting local concern about potential water shortages clearly illustrate how an area can become completely dependent on a source of supply before overdevelopment becomes apparent. Planning is important in preventing similar conditions from occurring elsewhere in the basin. Adequate well spacing and careful monitoring of water levels until the capacity of the local aquifer system has been determined are important considerations in developing plans for withdrawing large quantities of ground water in less-developed parts of the basin. For example, irrigation from ground-water sources could be limited and water-level trends monitored until long-term data indicate that more water can be withdrawn without continuous overdraft.

Artificial recharge of aquifers in areas where overdraft has occurred or is anticipated may not be practical in the Palouse River basin because of limited availability of surplus surface water to serve for recharge. Also, the water must be of acceptable quality for successful operation of most types of recharge projects; the high sediment load in the surface water of the Palouse River basin would necessitate extensive treatment of the water were it to be used for recharge.

Surface-water supplies are inadequate for irrigation in much of the Palouse River basin because the low-flow period of most streams generally coincides with the period of greatest demand for irrigation water. Many of the smaller streams of the basin are completely dry during late summer and early fall. Also, suitable sites for reservoirs, in which to store winter and spring streamflow for summer irrigation, are scarce in the Washington part of the basin. Furthermore, storage reservoirs would have a limited useful life because of the large amount of sediment that would be deposited by streams of the basin.

Despite the limiting conditions mentioned above, about 13,000 acre-ft of water was withdrawn in 1971 from streams for irrigation in the basin. Although this amount is only a small fraction of the total available streamflow, removal of this water during the low-flow season could significantly modify the physical and chemical quality of water in some streams used to dilute and transport effluent from sewage treatment plants. For this reason a study directed toward defining in detail the low-flow characteristics of streams in the Palouse River basin could provide results that could be of value to water-management agencies in the area.

Measures for prevention of flood damage have been taken in certain populated areas in the basin and have shown good results. The damage resulting from annual flooding of the Palouse River and the South Fork Palouse River in Colfax has been reduced after the channel-improvement project by the Corps of Engineers was completed in November 1965. In most other areas, however, flood-control measures are lacking. Foremost among these is the city of Pullman where there are no extensive channel improvements of adequate capacity and no formalized regulations which require strict control of flood plains. Over the years, authorities in Pullman have done some work on channel maintenance and, with the cooperation of Washington State University there has been some control of recent construction of permanent buildings in lowlands near the upstream limits of the city. The U.S. Soil Conservation Service has urged farmers in upstream farming areas to abide by sound land-management

practices and thus reduce erosion and excessive runoff. All these activities have been of some help in reducing flood damage, but they are not adequate to alleviate the serious problems posed by large floods.

References Cited

Boucher, P. R., 1970, Sediment transport by streams in the Palouse River basin, Washington and Idaho,July 1961-June 1965: U.S. Geol. Survey Water-Supply Paper 1899-C, 37 p.

Bretz, J H., 1959, Washington's channeled scabland: Washington Div. Mines and Geology Bull. 45, 57 p.

Caldwell, H. H., 1961, The Palouse in diverse disciplines: Northwest Sci., v. 35, no. 4, p. 115-121.

Cummans, J. E., Nassar, E. G., and Collings, M. R., 1975, Magnitude and frequency of floods in Washington: U.S. Geol. Survey open-file report (in press).

Fenneman, N. M., 1931, Physiography of western United States: New York, McGraw-Hill Book Co., 534 p.

Foxworthy, B. L., and Washburn, R. L., 1963, Ground water in the Pullman area, Whitman County, Washington: U.S. Geol. Survey Water-Supply Paper 1655, 71 p.

Jones, B. L., 1964, Sediment and land use in Corey Creek and Elk Run basins, Pennsylvania, 1954-60: U.S. Geol. Survey open-file report, 112 p.

Jordan, P. R., Jones, B. F., and Petri, L. R., 1964, Chemical quality of surface waters and sediment in the Saline River basin, Kansas: U.S. Geol. Survey Water-Supply Paper 1651, 90 p.

Kaiser, V. G., 1961, Historical land use and erosion in the Palouse--A reappraisal: Northwest Sci., v. 35, no. 4, p. 139-153.

Luzier, J. E., and Burt, R. J., 1974, Hydrology of basalt aquifers and depletion of ground water in east-central Washington: Washington Dept. Ecology Water-Supply Bull. 33, 53 p.

Miller, C. R., 1951, Analysis of flow-duration, sediment-rating curve method of computing sediment yield: Denver, Colo., U.S. Bur. Reclamation, 55 p.

Molenaar, Dee, 1961, Flowing artesian wells in Washington State: Washington Div. Water Resources Water Supply Bull. 16, 115 p.

Phillips, E. L., 1965, Washington climate for these counties - Adams, Lincoln, Spokane and Whitman: Washington State Univ., Agr. Ext. Service, Extension Multilith 2545, 64 p.

Potter, W. D., and Love, S. K., 1942, Hydrologic studies at the South Fork Palouse River demonstration project: U.S. Soil Conserv. Service, 5 p.

Riggs, H. C., 1968, Frequency curves: U.S. Geol. Survey Water-Resources Inv. Techniques, book 4, ch. A2, 15 p.

Riggs, 1972, Low-flow investigations: U.S. Geol. Survey Water-Resources Inv. Techniques, book 4, ch. B1, 18 p.

-----1973, Storage analyses for water supply: U.S. Geol. Survey Water-Resources Inv. Techniques, book 4, ch. B2, 20 p.

Russell, I. C., 1897, A reconnaissance of southeastern Washington: U.S. Geol. Survey Water-Supply Paper 4, 96 p.

Schmid, C. F., and Schmid, S. E., 1969, Growth of cities and towns, State of Washington: Washington State Planning and Community Affairs Agency, 176 p.

Snowden, C. A., 1909, History of Washington, the rise and progress of an American State: New York, Century History Co., 467 p.

Stevens, P. R., 1960, Ground-water problems in the vicinity of Moscow, Latah County, Idaho: U.S. Geol. Survey Water-Supply Paper 1460-H, p. 325-358.

Thomas, C. A., Broom, H. C., and Cummans, J. E., 1963, Magnitude and frequency of floods in the United States, Part 13, Snake River basin: U.S. Geol. Survey Water-Supply Paper 1638, 250 p.

U.S. Bureau of the Census, 1967, Census of agriculture, 1964: v. 1, part 46, 413 p.

U.S. Geological Survey, 1956, Compilation of records of surface waters of the United States through September 1950, Part 13: U.S. Geol. Survey Water-Supply Paper 1317, 566 p.

-----1962-65, Surface water records of Washington, 1961-64: Tacoma, Wash., annual reports published for years indicated.

-----1963, Compilation of records of surface waters of the United States, October 1950 to September 1960, Part 13: U.S. Geol. Survey Water-Supply Paper 1737, 232 p.

-----1964, Quality of surface waters of the United States, 1962, Parts 9-14: U.S. Geol. Survey Water-Supply Paper 1945, 691 p.

-----1965, Water quality records in Washington, 1964: Tacoma, Wash.

-----1966, Quality of surface waters of the United States, 1963: U.S. Geol. Survey Water-Supply Paper 1951, 781 p.

-----1966-71, Water resources data for Washington, part 1, Surface water records, 1965-70: Tacoma, Wash., annual reports published for years indicated.

-----1966-72, Water resources data for Washington, part 2, Water quality records, 1965-71: Tacoma, Wash., annual reports published for years indicated.

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

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

U.S. Weather Bureau, 1936, Climatic summary of the United States: Climatography of the United States no. 10-39, 40 p.

-----1954-71, Climatological data, Washington, annual summaries 1953 through 1970, v. 57, no. 13 through v. 74 no. 13.

-----1956, Climatic summary of the United States - supplement for 1931 through 1952: Climatography of the United States no. 11-39, 79 p.

-----1965, Mean annual precipitation, 1930-57, State of Washington: Portland, Oreg., U.S. Soil Conserv. Service, map M-4430.

Ven Te Chow, editor-in-chief, 1964, Handbook of applied hydrology: New York, McGraw-Hill Book Co., sec. V-13 (14-44 to 14-46).

Walters, K. L., 1974, Water in the Okanogan River basin, Washington: Washington Dept. Ecology Water-Supply Bull. 34, 136 p.

Walters, K. L., and Glancy, P. A., 1969, Reconnaissance of geology and of ground-water occurrence and development in Whitman County, Washington: Washington Dept. Water Resources Water-Supply Bull. 26, 169 p.

Walters, K. L., and Nassar, E. G., 1974, Water in the Methow River basin, Washington: Washington Dept. Ecology Water-Supply Bull. 38, 73 p.

Wark, J. W., and Keller, F. J., 1963, Preliminary study of sediment sources and transport in the Potomac River basin: Interstate Commission on the Potomac River basin, Tech. Bull. 1963-11, 28 p.

Washington Office of Program Planning and Fiscal Management, 1972, State of Washington pocket data book, 1971: 331 p.

Washington State Department of Conservation, 1964, Miscellaneous streamflow measurements in the State of Washington, 1890 to January 1961: Washington Div. Water Resources Water-Supply Bull. 23, 291 p.

Waters, A. C., 1961, Stratigraphic and lithologic variations in the Columbia River Basalt: Am. Jour. Sci., v. 259, no. 8, p. 583-611.

Wolcott, E. E., 1964, Lakes of Washington, vol. 2, Eastern Washington: Washington Dept. Water Resources Water-Supply Bull. 14, 650 p.

PART C

BASIC DATA

TABLE C1.--Streamflow data for miscellaneous sites

[Records for continuous discharge sites appear in table C2]

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
5	Palouse River	Snake River	Lat 46°54'53", long 117°05'03", in NW¼NE¼ sec. 1, T.16 N., R.45 E., Whitman County, at bridge on State Highway 272, 0.5 mile northwest of Palouse.	398	M	8-17-62	6.63
						5-16-63	124
						2-18-64	96.1
						3-20-64	676
						3-31-64	1,860
						8-12-64	12.6
						4-22-65	2,940
						7-12-65	29.8
						8-17-65	13.8
						9- 8-67	*1.60
						8-31-72	14.6
7	do.	do.	Lat 46°58'57", long 117°13'13", in NE¼SE¼ sec.11, T.17 N., R.44 E., Whitman County, 200 ft below Silver Creek, 100 ft above bridge in Elberton.	453	M	8-31-72	14.5
10	do.	do.	Lat 46°53'24", long 117°21'47", in NW¼SW¼ sec.11, T.16 N., R.43 E., Whitman County, above South Fork, at highway bridge at north end of Colfax.	497	M	3-27-48	+6,930
11	South Fork Palouse River	Palouse River	Lat 46°41'28", long 117°09'03", in SE¼SW¼ sec.16, T.14 N., R.45 E., Whitman County, 2.5 miles south of Pullman, 75 ft above bridge over South Fork Palouse River.	82.6	M	3-16-54	14.6
12	do.	do.	Lat 46°42'23", long 117°09'44", in SE¼SE¼ sec.8, T. 14 N., R.45 E., Whitman County, on right bank 1 mile upstream from Paradise Creek, and 2 miles southeast of Pullman.	84.4	G2	9-16-58	0.46
						9- 8-67	0
						9- 1-72	1.06
13	Paradise Creek	South Fork Palouse River	Lat 46°43'35", long 117°07'07", in NE¼SE¼ sec.3, T. 14 N., R.45 E., Whitman County, 2.4 miles above mouth, at railroad bridge, 3 miles east of Pullman.	28.4	M	2-26-48	+1,200
						2-28-48	90.4
						3-16-54	7.20
						9- 1-72	4.00
14	do.	do.	Lat 46°43'17", long 117°09'07", in SE¼SW¼ sec.4, T.14 N., R.45 E., Whitman County, on left bank 2,500 ft upstream from mouth, and 1 mile southeast of Pullman.	34.5	G2	5- 4-38	3.86
						3-17-54	6.68
						9-16-58	1.78
						9- 8-67	*1.91
15	Dry Fork of South Fork Palouse River	do.	Lat 46°43'30", long 117°11'05", in NE¼SE¼ sec.6, T.14 N., R.45 E., Whitman County, on right bank, 250 ft upstream from South State Street crossing in Pullman and 1/2 mile upstream from mouth.	7.21	G2	9-16-58	0

16	South Fork Palouse River	Palouse River	Lat 46°43'57", long 117°10'48", in NE¼NE¼ sec.6, T.14 N., R.45 E., Whitman County, on right bank of State Street crossing in Pullman, 600 ft above mouth of Missouri Flat Creek.	132	G1	2-26-48 3-17-54 9-16-58 1-24-59	+5,000 28.4 1.80 +1,860
17	Missouri Flat Creek tributary	Missouri Flat Creek	Lat 46°45'52", long 117°10'01", in SW¼SE¼ sec.20, T.15 N., R 45 E., Whitman County, at county road to Whelan Grange, 1.5 miles north of Pullman city limits.	0.88	C1	2- 8-55 5- 8-56 2-25-57 4-20-58 1-27-59 2- 7-60 2-11-61 3-25-62 2- 3-63 3-17-64 3-19-64 12-22-64 1966 1-20-67 2-19-68 3-18-69 1-23-70 1-15-71	+23.1 +140 partly est. +33.4 +24.8 +80.3 +23 +19 +10 +234 +28 .86 +129 e<.1 +24 +52 +28 +16 +26
18	Missouri Flat Creek	South Fork Palouse River	Lat 46°45'30", long 117°09'54", in SW¼NE¼ sec.29, T.15 N., R.45 E., Whitman County, above small tributary, 1.1 miles north of Pullman city limits.	22.8	M	3-16-54	+3.34
19	do.	do.	Lat 46°44'05", long 117°10'33", in NW¼NW¼ sec.5, T.14 N., R.45 E., Whitman County, 0.25 mile above former gaging station at Pullman	27.0	M	2-28-48 1-24-59	+1,500 +870
20	do.	do.	Lat 46°43'59", long 117°10'47", on line between secs. 5 and 6, T.14 N., R.45 E., Whitman County, on left bank at State Street crossing in Pullman, 600 ft from mouth.	27.1	G1	3-17-54 9-16-58 12-23-59	4.0 .74 .88
21	South Fork Palouse River tributary	do.	Lat 46°44'47", long 117°14'01", in NE¼NW¼ sec.35, T.15 N., R.44 E., Whitman County, 2.5 miles west of Pullman and 3 miles south of Albion.	1.4	M	6-16-63 9- 1-72	+123 .02
22	Fourmile Creek	do.	Lat 46°50'06", long 117°10'00", in NW¼NE¼ sec.32, T.16 N., R.45 E., Whitman County, 600 ft below county bridge, and 4.5 miles northeast of Albion.	52.4	M	3-16-54 9- 1-72	10.5 .2
23	Rose Creek	Fourmile Creek	Lat 46°47'45", long 117°08'20", in SE¼SE¼ sec.9, T.15 N., R.45 E., Whitman County, at State Highway 3, 5 miles northeast of Pullman.	1.91	M	5- 8-56	+1,130

TABLE C1.--Streamflow data for miscellaneous sites--Continued

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
24	Formile Creek	South Fork Palouse River	Lat 46°50'14", long 117°15'00", in NW¼NE¼ sec.34, T.16 N., R. 44 E., Whitman County, at road crossing, 0.9 mile upstream from discontinued gaging station, 1.5 miles northeast of Shawnee, and 3 miles north of Albion.	70.4	M	2- 3-63	+2,140
25	do.	do.	Lat 46°49'54", long 117°16'16", in NE¼SW¼ sec.33, T.16 N., R.44 E., Whitman County, on right bank 0.5 mile upstream from mouth, 3/4 mile north of Shawnee, and 5.5 miles southeast of Colfax.	71.6	G2	3-17-54 9-16-58 1-25-59 9- 7-67	17.0 .13 +1,990 0
26	South Fork Palouse River	Palouse River	Lat 46°52'32", long 117°20'33", in NE¼SW¼ sec.13, T.16 N., R.43 E., Whitman County, 0.6 mile below railroad crossing, and 1.7 miles above Colfax.	277	M	2-26-48	+8,800
27	do.	do.	Lat 46°52'34", long 117°21'50", in NE¼SW¼ sec.14, T.16 N., R. 43 E., Whitman County, at bridge on U.S. Highway 195, 200 ft above Spring Flat Creek, 0.2 mile south of Colfax city center.	278	M	7-13-62 12-18-62 1-18-63 2- 3-63 2- 6-63 4-16-63 8-29-63 12-24-63 1-28-64 3-12-64 7-22-64 2-25-65	2.15 83.4 15.7 6,900 210 56.1 2.68 19.8 162 307 4.33 225
28	do.	do.	Lat 46°53'13", long 117°21'48", in SE¼SW¼ sec.11, T.16 N., R.43 E., Whitman County, at bridge on U.S. Highway 195, 0.25 mile above mouth, at Colfax.	299	M	6-20-14	2.72
29	Palouse River	Snake River	Lat 46°53'23", long 117°22'09", in NW¼SW¼ sec.11, T.16 N., R.43 E., Whitman County, on left bank at Colfax, 750 ft downstream from South Fork.	796	G1	6-20-14	37.0
30	Palouse River tributary	Palouse River	Lat 46°53'22", long 117°22'59", in SE¼SW¼ sec.10, T.16 N., R.43 E., Whitman County, at U.S. Highway 295, about 1 mile west of Colfax.	2.10	C1	2- 9-55 12-22-55 5-20-57 2-24-58 1-24-59 2- 7-60 2- 2-61 1962 9-23-63 4- 1-64 12-22-64	+17.9 +70.5 +60.5 +46.4 +52 +15.5 +16 e +<6 +183 +8 +55

						3-28-66	+7
						1-20-67	+7
						12-25-67	+18
						4-23-69	+30
						1-23-70	+20
						1-15-71	+59
31	Downing Creek tributary	Downing Creek	Lat 47°04'09", long 117°35'19", in NE¼SW¼ sec.12, T.18 N., R.41 E., Whitman County, at county road, 1.8 miles south of St. John.	0.75	M	5-25-62	+279
32	Downing Creek	Palouse River	Lat 47°03'22", long 117°38'37", in SE¼NE¼ sec.16, T.18 N., R.41 E., Whitman County, at railroad trestle 1.6 miles north of Lancaster.	5.51	M	7-27-65	0.56
33	do.	do.	Lat 47°03'02", long 117°39'33", in SW¼SW¼ sec.16, T.18 N., R.41 E., Whitman County, 1.3 miles north of Lancaster.	6.98	M	7-27-65	0.76
34	do.	do.	Lat 47°01'53", long 117°39'47", in NE¼NE¼ sec.29, T.18 N., R.41 E., Whitman County, at road crossing at Lancaster.	9.45	M	7-27-65	0.81
35	East Fork Downing Creek	Downing Creek	Lat 47°01'37", long 117°39'04", in SE¼NW¼ sec.28, T.18 N., R.41 E., Whitman County, at county bridge, 0.6 mile above mouth, and 0.6 mile southeast of Lancaster.	8.46	M	8-30-72	0.6
36	Downing Creek	Palouse River	Lat 47°01'21", long 117°40'22", in NE¼SW¼ sec.29, T.18 N., R.41 E., Whitman County, at wooden bridge between railroad and county road, 0.8 mile southwest of Lancaster.	19.3	M	7-27-65	1.17
						8-31-72	1.06
37	Palouse River tributary	do.	Lat 46°57'37", long 117°48'12", in SE¼SW¼ sec.17, T.17 N., R.40 E., Whitman County, at county road, 1 mile north of Winona.	2.94	Cl	12-25-67	16
						1- 7-69	27
						1-23-70	9.7
						1-16-71	59
						8-30-72	0
38	Palouse River	Snake River	Lat 46°57'00", long 117°48'19", in NW¼SW¼ sec.20, T.17 N., R.40 E., Whitman County, 0.3 mile northwest of Winona.	--	M	9- 7-67	*1.80
39	do.	do.	Lat 46°56'44", long 117°48'11", on south line SE¼SW¼ sec.20, T.17 N., R.40 E., Whitman County, at county road bridge, 0.1 mile west of Winona.	986	M	8-16-62	11.0
						11-15-62	73.2
						12-19-62	725
						2- 5-63	3,880
						9-26-63	18.2
						1-28-64	639
						5-19-64	985
						8-12-64	18.8
						2- 2-65	2,950

TABLE C1.--Streamflow data for miscellaneous sites--Continued

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
39 (continued)						4-19-65	1,010
						7-12-65	42.8
						8-30-72	25.9
40	Rebel Flat Creek	Palouse River	Lat 46°56'36", long 117°47'47", in NW¼NE¼ sec.29, T.17 N., R.40 E., Whitman County, at county bridge, 0.3 mile above mouth and 0.1 mile southwest of Winona.	73.2	M	1-27-65	533
						3-15-65	9.56
						8-30-72	1.14
41	do.	do.	Lat 46°54'45", long 117°55'19", in NW¼NW¼ sec.4, T.16 N., R.39 E., Whitman County, 400 ft above confluence with Rock Creek, and 6 miles southwest of Winona.	1,100	M	6-17-14	74.8
						12-16-14	14.5
						2- 4-15	1,110
						2- 4-15	964
						2- 5-15	548
						2- 5-15	477
						9-18-15	4.31
						2-24-16	1,110
						2-21-17	535
						2-22-17	484
						2-22-17	464
						8-30-72	23.7
42	Pine Creek tributary	Pine Creek	Lat 47°11'23", long 117°20'02", in SE¼NW¼ sec.36, T.20 N., R.43 E., Whitman County, at State Highway 271 crossing, 1 mile west of McCoy, and 3 miles southeast of Rosalia.	3.12	M	9-23-67	+1,110
43	Pine Creek	Rock Creek	Lat 47°16'14", long 117°22'02", in SW¼NE¼ sec.34, T.21 N., R.43 E., Spokane County, 0.25 mile above North Fork, and 2.7 miles north of Rosalia.	193	M	2-26-48	+5,600
						8-31-72	.66
44	Hardman Draw tributary	North Pine Creek	Lat 47°18'36", long 117°23'10", in NW¼SW¼ sec.16, T.21 N., R.43 E., Spokane County, at U.S. Highway 195, 0.7 mile south of Plaza.	1.64	Cl	2- 9-55	+67
						12-22-55	+80.9
						5-14-57	+1,780
						1-17-58	+21.4
						1-24-59	+43
						2- 7-60	+16
						1-31-61	+27
						3-25-62	+21
						2- 4-63	+175
						2- 4-63	48.5
						3-17-64	+11
						3-18-64	1.81
						1-29-65	+92
						3- 9-66	+18
						1-28-67	+10
						2- 3-68	+30

						3-18-69	+36
						2-17-70	+21
						1-15-71	+29
						8-31-72	0
45	North Fork Pine Creek	Pine Creek	Lat 47°16'48", long 117°21'45", in NE¼SW¼ sec.27, T.21 N., R.43 E., Spokane County, just below Spring Valley Creek, 3 miles southeast of Plaza and 0.9 mile above mouth.	49.1	M	8-31-72	0
46	Squaw Creek	do.	Lat 47°17'53", long 117°26'32", in SW¼NE¼ sec.24, T.21 N., R.42 E., Spokane County, 5 miles above mouth, and 3 miles southwest of Plaza.	3.81	M	5-14-57	+5,310
						8-31-72	0
48	Rock Creek	Palouse River	Lat 47°08'22", long 117°43'26", in NW¼SW¼ sec.13, T.19 N., R.40 E., Whitman County, on old concrete dam abutment at downstream end of Rock Lake, 150 ft upstream from county road bridge and 1.6 miles northeast of Ewan.	523	Cl	12- 4-03	10
						3- 9-04	+1,980
						1-(28-30)-05	+203
						2-12-15	+393
						2-17-16	+1,520
						3-(29-30)-17	+1,450
						9-15-58	0
						1-24-59	+1,870
						6-27-59	1,510
						2- 4-63	+4,000
						2- 7-63	2,210
						5-16-63	75.4
						3-19-64	441
						7-15-64	14.9
						7-22-64	11.7
						8-13-64	3.89
						9-11-64	1.23
						10-23-64	2.36
						11-24-64	7.60
						12-28-64	472
						1-19-65	229
						1-30-65	+2,930
						2- 3-65	1,200
						3-15-65	228
						4-19-65	126
						5-24-65	70.7
						7-12-65	15.2
						8-17-65	3.07
						9-21-65	.64
						10-26-65	1.87
						12- 7-65	12.7
						1-10-66	111
						2- 7-66	84.5
						3-10-66	196
						3-11-66	+280
						4-14-66	84
						5-20-66	28.2
						6-22-66	13.1
						1-27-67	158

TABLE C1.--Streamflow data for miscellaneous sites--Continued

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
48 (continued)						1-29-67	+502
						4-20-67	90.1
						9- 7-67	0
						2-13-68	146
						2-21-68	+494
						3-21-68	81.4
						3-18-69	+1,980
						2-17-70	+1,460
						1-16-71	+1,680
49	Rock Creek	Palouse River	Lat 47°07'27", long 117°44'57", in NE¼SE¼ sec.22, T.19 N., R.40 E., Whitman County, at bridge on State Highway 23, 1 mile northwest of Ewan and 1.5 miles below outlet of Rock Lake.	526	M	2- 4-63	+4,330
						8-30-72	2.37
50	Cottonwood Creek	Rock Creek	Lat 47°03'41", long 117°22'48", in NW¼NW¼ sec.15, T.18 N., R.43 E., Whitman County, 0.1 mile north of Cashup, and 4 miles south of Thornton.	10.8	M	2-(3-4)-63	+580
51	do.	do.	Lat 47°07'02", long 117°38'45", in SE¼NE¼ sec.28, T.19 N., R.41 E., Whitman County, at farm bridge 800 ft above Pleasant Valley Creek, 4 miles east of Ewan.	--	M	5-16-63	3.79
52	Pleasant Valley Creek tributary	Pleasant Valley Creek	Lat 47°02'30", long 117°26'19", in NE¼SW¼ sec.19, T.18 N., R.43 E., Whitman County, at county road bridge 6 miles southwest of Thornton.	0.77	C1	12-25-67	+34
						3-18-69	+22
						1-23-70	+14
						1-17-71	+37
53	Pleasant Valley Creek	Cottonwood Creek	Lat 47°05'31", long 117°34'56", in NW¼NE¼ sec.1, T.18 N., R.41 E., Whitman County, in the town of St. John at road crossing on St. John-Endicott road.	38.2	M	2- 3-63	2,220
54	Cottonwood Creek	Rock Creek	Lat 47°06'52", long 117°39'45", in SE¼NE¼ sec.29, T.19 N., R.41 E., Whitman County, at county road bridge 0.7 mile below Pleasant Valley Creek, and 3.3 miles east of Ewan.	--	M	5-16-63	5.45
						11- 7-63	4.98
						2- 9-64	25.8
						7-22-64	2.14
						1-28-65	1,140
						3-15-65	15.3
55	do.	do.	Lat 47°06'52", long 117°44'01", in SW¼NE¼ sec.26, T.19 N., R.40 E., Whitman County, at county road crossing, 0.2 mile south of Ewan.	118	M	4-16-04	32
						5- 7-04	41
						6-24-04	.6
						8-30-72	1.38

56	Imbler Creek tributary	Imbler Creek	Lat 47°09'51", long 117°52'56", in SW¼SE¼ sec.3, T.19 N., R.39 E., Whitman County, at county road, 2.8 miles southeast of Lamont.	1.33	C1	1-28-67 12-25-67 3-18-69 8- 2-70 1-16-71	46 37 57 198 87
57	Mud Lake tributary	Mud Lake	Lat 47°13'02", long 117°50'47", in SE¼NW¼ sec.24, T.20 N., R.39 E., Whitman County, 0.2 mile west of county road intersection, 3 miles northeast of Lamont.	--	M	8-19-54	+1,140
58	Rock Creek	Palouse River	Lat 46°54'45", long 117°55'37", in NE¼NE¼ sec.5, T.16 N., R.39 E., Whitman County, at mouth, 6 miles southwest of Winona.	954	M	6-17-14 12-16-14 3- 3-15 7-16-15 9-18-15 11-12-15 5-24-16 6-27-17 8-16-62 10-16-63 1-28-64 10-20-64 8-30-72	27.0 4.7 195 33.1 8.30 6.70 128 49.5 4.16 3.33 123 10.2 6.39
59	Palouse River	Snake River	Lat 46°54'33", long 117°55'32", in SE¼NE¼ sec.5, T.16 N., R.39 E., Whitman County, on right bank 1,000 ft downstream from Rock Creek, and 6.5 miles southeast of Winona.	2,056	G2	6-17-14 12-16-14 10- 8-17	102 19.2 21.1
60	Union Flat Creek	Palouse River	Lat 46°33'53", long 117°06'45", in NW¼SE¼ sec.35, T.13 N., R.45 E., Whitman County, 250 ft below railroad bridge, 1 mile southeast of Colton.	106	M	10- 7-58 8-29-72	1.0 2.35
61	do.	do.	Lat 46°48'37", long 117°25'52", in NW¼NW¼ sec.8, T.15 N., R.43 E., Whitman County, on right bank 20 ft upstream from county highway bridge and 6 miles southwest of Colfax, at mile 32.3.	189	G2	8-29-72	3.84
62	do.	do.	Lat 46°51'45", long 117°53'33", in SW¼NE¼ sec.22, T.16 N., R.39 E., Whitman County, at bridge on county road, 3.3 miles northwest of La Crosse.	294	M	8-16-62 2-14-63 2- 6-63 5-15-63 10-16-63 1-19-64 1-27-64 7-21-64 4-21-65 5-24-65 8-29-72	0.37 2,740 314 17.6 1.51 10.7 37.9 .38 192 23.0 4.16

TABLE C1.--Streamflow data for miscellaneous sites--Continued

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
63	Willow Creek tributary	Willow Creek	Lat 46°45'28", long 117°55'08", in SW¼NE¼ sec.28, T.15 N., R.39 E., Whitman County, at county road, 4.3 miles southwest of LaCrosse.	0.95	C1	10- 1-66 9-30-67	e<1
						12-25-67	7.2
						3-18-68	9.4
						1-23-70	37
						1-15-71	12
						8-30-72	0
64	Willow Creek	Palouse River	Lat 46°45'54", long 118°01'24", in NE¼NE¼ sec.27, T.15 N., R.38 E., Whitman County, at bridge on county road, 0.1 mile northwest of Gordon and 1.1 miles above mouth.	67.4	M	8-16-62	0.53
						2- 4-63	483
						5-15-63	1.62
						1-26-64	5.37
						7-21-64	.57
						3-17-65	2.25
						8-28-72	1.02
65	Washington Development Company canal	Diverts from Palouse River	Sec.25, T.15 N., R.37 E., Whitman County, about 1 mile east of Hooper, above all diversion.	--	M	8-25-13	8.07
						5-29-14	9.7
						9- 5-14	5.14
						4-17-15	12.0
						10-11-15	9.3
						10-12-15	3.9
						10-12-15	2.9
						10-12-15	.83
66	Palouse River	Snake River	Lat 46°45'31", long 118°08'52", in NE¼SE¼ sec.27, T.15 N., R.37 E., Whitman County, on left bank 150 ft downstream from bridge on State Highway 26 at Hooper, and 0.3 mile upstream from Cow Creek.	2,500	G1	9- 9-1897	73
						10-30-1917	48.5
						12-21-27	463
						2-28-48	24,700
						12- 7-50	378
						12-18-50	679
						1- 4-51	1,690
						1-22-51	1,000
						8-29-72	37.6
69	Negro Creek	Colville (Sprague) Lake	Lat 47°17'20", long 117°55'56", in NE¼NE¼ sec.30, T.21 N., R.39 E., Lincoln County, at county bridge 2 miles southeast of Sprague.	194	M	3- 9-57	+239
70	Negro Creek tributary	Negro Creek	Lat 47°18'00", long 117°58'24", in SE¼NE¼ sec.23, T.21 N., R.38 E., Lincoln County, 100 ft above U.S. Highway 10 at east edge of Sprague.	45.1	M	3- 9-57	+23.1
71	Negro Creek	Colville (Sprague) Lake	Lat 47°18'03", long 117°58'37", in NE¼ sec.23, T.21 N., R.38 E., Lincoln County, 200 ft below railroad bridge at north edge of Sprague.	267	M	3- 9-56	+175

73	Cow Creek	Palouse River	Lat 47°13'26", long 118°06'53", in NW¼SE¼ sec.14, T.20 N., R.37 E., Adams County, at U.S. Highway 10 crossing, 1 mile below Colville (Sprague) Lake outlet, 2.25 miles east of Keystone, and 10 miles southwest of Sprague.	292	M	11- 8-04	3
						11- 8-04	2.6
						5-15-05	13
						12-20-05	4.78
						5- 4-13	103
						5-17-13	56.6
						9- 8-13	2.51
						10-22-58	.28
						3-19-62	18.0
						4- 6-62	31.5
						4-28-62	49.8
						6-11-62	35.5
						7-23-62	+7.89
						8-24-62	+2.98
						10- 1-62	+.19
						11-16-62	1.39
						12-14-62	+14.7
						2- 1-63	13.2
						3- 4-63	49.3
						4- 1-63	44.4
						5- 6-63	54.2
						6-14-63	35.6
						7-25-63	10.1
						9- 5-63	1.89
						10-10-63	.17
						11-23-63	1.02
						12-24-63	5.97
						1- 3-64	9.88
						2-24-64	12.4
						3-30-64	21.1
						5- 8-64	25.0
						6-15-64	11.3
						7- 6-64	4.85
						8-13-64	.70
						9-11-64	.35
						11-20-64	.63
						12- 8-64	6.33
						1- 8-65	7.07
						2- 4-65	23.9
						3-10-65	130
						4-23-65	113
						6- 2-65	59.2
						7-12-65	20.6
						8- 9-65	12.4
						9-24-65	.06
						12-17-65	.93
						1-14-66	9.93
						2-11-66	11.3
						3-17-66	23.1
						4-14-66	45.7
						5-20-66	23.4

TABLE C1.--Streamflow data for miscellaneous sites--Continued

Number on plate 1	Stream	Tributary to:	Location	Drainage area (mi^2)	Type of record[1]	Date	Discharge (ft^3/s)
73 (continued)						6-22-66	12.6
						7-27-66	.09
						9- 3-66	0
						10-21-66	0
						11-16-66	0
						12-19-66	1.56
						2- 5-67	17.8
						3-17-67	32.0
						4-30-67	29.1
						6-12-67	15.5
						7-19-67	8.51
						8-30-67	.77
						10- 3-67	.02
						11-15-67	.17
						12-29-67	6.71
						2-14-68	16.2
						3-18-68	.36
						4-29-68	23.4
						6- 3-68	4.96
						7-15-68	1.52
						8-19-68	.19
						9-30-68	.04
						11-18-68	+6.11
						1- 6-69	7.45
						2-14-69	13.8
						4-18-69	225
						5-26-69	119
						7-23-69	28.4
						9- 5-69	11.0
						10-23-69	3.57
						12- 4-69	5.62
						1- 8-70	4.51
						1-14-70	29.6
						1-16-70	14.1
						1-22-70	28.2
						2-18-70	23.8
						4- 2-70	19.0
						5-14-70	10.8
						6-30-70	3.46
						8-30-72	2.93
74	Cow Creek tributary	Cow Creek	Lat 47°10'38", long 118°11'31", in SW¼SW¼ sec.32, T.20 N., R.37 E., Adams County, at county road crossing, 9.5 miles northeast of Ritzville.	1.51	C1	3-18-51	+200(approx.)
						2- 8-55	+82.5
						2-21-56	+105
						2-25-57	+43.3
						2-23-58	+34.0
						1-24-59	+98

						2- 7-60	+13
						1-31-61	+33
						1- 3-62	+5.3
						2- 4-63	+53
						1964	+4.0
						3- 4-65	+8.0
						1966	(a)
						1-28-67	+8.0
						1-15-68	+11
						3-18-69	+22
						1-23-70	+1.9
						1-16-71	+35
75	Cow Creek	Palouse River	Lat 46°45'56", long 118°08'46", in NW¼NW¼ sec.26, T.15 N., R.37 E., Adams County, on left bank downstream wingwall of county road bridge, 0.5 mile upstream from mouth, and 0.5 mile north of Hooper.	679	G2	2-26-04	32
						3- 7-04	40
						8- 5-04	1
						8-31-04	4
						4-25-07	117
						12-18-50	12.3
						1-22-51	23.2
						12- 7-53	13.5
						1-16-71	+180
						8-29-72	.05
76	Steward Canyon tributary	Steward Canyon	Lat 46°38'21", long 118°07'41", in NE¼SE¼ sec.2, T.13 N., R.37 E., Whitman County, at county road, 4.5 miles northwest of Riparia and 8 miles south of Hooper.	1.27	C1	10- 1-57 to 9-30-58	(a)
						12-14-58	+17.8
						10- 1-59 to 9-30-60	+10
						1-31-61	+14
						10- 1-61 to 9-30-62	+e<5
						2- 4-63	+277(approx.)
						1-25-64	+19
						12-22-64	+172
						1- 6-66	+25
						12-13-66	+e4
						10- 1-67 to 9-30-68	(a)
						2-12-69	+68
						1-14-70	+46
						1-15-71	+9.4
						8-28-72	0

Note: *, measurement of base flow; +, peak discharge; a, no or negligible flow for period indicated; e, discharge estimated.

[1]Type of record: M, miscellaneous discharge measurements; C1, active crest-stage gage; G1, active continuous discharge record gage; G2, discontinued continuous discharge record gage, see table C2.

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet

[Number before station name is from plate 1, that after station name is assigned by U.S. Geological Survey]

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
6. Palouse River at Elberton (13345500)													
1904	--	--	--	--	--	--	--	478	162	45.6	10.1	10.7	--
1905	23.1	31.1	54.4	--	--	--	--	--	--	--	--	--	--
8. Palouse River near Colfax (13346000)													
1956	49.8	189	725	695	310	1,286	1,404	616	150	33.1	13.7	12.2	458
57	31.4	53.8	169	54.5	407	1,116	1,021	862	145	21.9	9.49	4.46	324
58	18.4	40.5	174	412	1,536	451	1,167	322	71.2	24.4	5.66	11.1	343
59	22.0	140	346	1,449	579	837	817	415	125	28.7	8.53	27.3	399
60	67.7	168	99.5	126	668	814	801	292	85.1	12.4	8.86	9.42	260
61	16.6	119	106	197	1,996	1,038	543	421	79.8	13.5	4.40	6.24	367
62	17.7	29.3	96.3	156	346	695	786	236	112	20.0	8.96	10.7	208
63	37.3	67.0	162	81.0	702	350	542	130	48.2	14.5	3.99	6.83	175
64	10.9	52.5	42.9	129	180	525	1,115	688	201	35.5	19.2	24.0	251
9. Palouse River at Colfax (13346100)													
1964	10.4	46.6	38.7	128	171	535	1,195	702	187	34.5	19.3	25.3	257
65	24.6	78.5	1,123	1,175	1,109	532	1,177	239	88.4	25.1	15.7	17.1	463
66	16.0	26.1	32.8	142	125	660	506	103	24.8	10.8	.65	1.91	137
67	6.32	31.2	116	532	370	521	489	662	133	16.7	2.97	1.22	240
68	13.1	24.9	117	147	998	235	149	51.6	25.9	5.86	2.49	23.4	146
69	46.0	139	276	728	340	1,410	1,673	422	80.6	24.5	2.98	7.82	429
70	22.5	25.2	44.4	769	1,046	781	528	384	89.5	31.8	9.95	13.3	308
71	25.5	56.5	61.7	694	746	719	669	395	420	51.1	15.4	17.9	319
12. South Fork Palouse River above Paradise Creek, near Pullman (13346500)													
1934	--	--	--	--	--	--	--	--	2.45	0.351	0.052	0.199	--
35	1.37	2.46	12.7	58.3	35.9	54.9	71.4	13.8	2.58	.514	.041	.067	21.1
36	.406	.822	2.01	29.4	32.1	85.9	26.8	8.84	1.67	.152	0	.016	15.7
37	.187	.330	.927	.506	6.90	103	77.6	10.7	3.71	.394	.004	.034	17.1
38	.637	1.73	8.23	27.9	48.6	85.1	36.5	8.56	1.68	.357	0	0	18.1
39	1.08	1.11	1.65	3.11	25.5	133	19.8	4.12	1.03	.186	0	0	15.9
40	.097	.371	.971	3.23	48.4	54.3	25.9	4.33	.503	0	0	0	11.4

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
						14. Paradise Creek near Pullman (13347000)							
1934	--	--	--	--	--	--	--	1.63	2.37	0.87	0.62	0.666	--
35	1.21	1.31	6.67	36.6	21.9	29.2	38.0	3.43	1.10	.687	.537	.714	11.7
36	.932	1.03	1.44	12.5	11.1	46.5	8.46	2.66	1.10	.497	.435	.685	7.31
37	.703	.742	1.12	.826	2.75	55.2	36.7	3.65	1.75	.748	.503	.704	8.82
38	.866	1.32	5.36	19.3	32.3	40.0	14.7	2.65	1.02	.623	.332	.577	9.80
						15. Dry Fork of South Fork Palouse River at Pullman (13347500)							
1935	--	--	2.09	6.36	3.22	5.05	5.76	0.280	0.023	0	0	0	--
36	0	0.021	.321	4.68	6.74	4.15	.824	.196	.003	0	0	0	1.40
37	0	0	.023	0	3.05	10.2	5.19	.101	.081	0	0	0	1.55
38	0	.058	1.48	2.46	4.68	7.89	1.98	.154	.002	0	0	0	1.54
						16. South Fork Palouse River at Pullman (13348000)							
1934	--	--	--	--	44.4	94.2	25.0	5.75	7.29	1.80	1.10	1.11	--
35	2.91	4.32	23.4	109	63.6	92.1	124	17.8	3.99	1.56	.747	.814	36.8
36	1.39	2.04	4.31	49.6	52.6	140	35.4	12.1	3.46	.900	.542	1.09	25.3
37	1.30	1.56	2.70	1.77	13.8	177	122	15.2	6.75	1.62	.730	.825	28.8
38	1.73	3.43	16.7	51.7	88.7	135	54.7	11.3	3.06	1.30	.606	.788	30.4
39	2.25	2.83	4.05	6.57	47.2	218	26.2	5.95	2.21	1.19	.532	.680	26.5
40	1.08	1.44	3.04	7.01	87.2	90.5	42.3	6.86	1.52	.855	.499	1.24	20.0
41	3.70	19.5	70.0	115	61.3	36.1	41.8	26.8	18.5	4.29	1.10	1.62	33.2
42	2.19	6.94	64.8	39.9	88.6	62.5	20.9	17.9	8.30	1.94	.58	.49	25.9
60	--	--	--	19.8	99.7	90.8	53.5	19.6	6.43	1.80	2.13	1.88	--
61	3.11	15.7	17.6	49.7	288	163	44.7	25.9	8.39	2.24	2.03	2.27	50.4
62	3.25	7.76	28.1	30.0	36.6	110	45.5	19.2	6.48	2.45	2.07	2.81	24.5
63	4.79	5.30	12.3	7.08	127	21.7	34.7	10.0	5.01	2.25	1.78	2.13	18.7
64	2.52	4.97	8.86	29.7	49.4	149	75.8	27.7	12.5	3.94	2.55	2.66	30.8
65	3.00	6.79	113	247	158	56.2	72.0	19.0	8.86	3.21	2.43	2.58	57.3
66	2.85	4.43	4.13	40.5	40.3	70.4	20.1	7.03	4.38	2.65	2.22	1.97	16.7
67	2.84	5.46	16.2	74.8	37.4	40.4	41.3	41.6	12.5	2.72	2.18	2.49	23.3
68	3.87	3.41	47.6	17.9	101	21.7	13.9	6.04	3.27	2.00	2.69	4.60	18.7
69	5.22	16.8	44.6	160	91.0	313	137	35.7	8.23	3.73	3.10	4.20	68.7
70	5.58	5.53	11.0	168	149	103	39.2	23.1	8.98	5.77	2.65	4.06	43.3
71	5.41	10.2	13.3	152	80.4	122	44.7	21.5	40.5	7.58	4.56	5.30	42.1

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
						20. Missouri Flat Creek at Pullman (13348500)							
1934	--	--	--	--	7.90	14.2	3.00	0.60	0.840	0.046	0.023	0.010	--
35	0.346	0.377	4.90	31.9	18.0	23.0	24.5	1.08	.035	.027	.004	.010	8.64
36	.010	.089	.435	12.5	11.3	34.5	3.84	.549	.147	0	0	.001	5.30
37	.010	.011	.114	0	1.58	46.0	22.2	.709	.811	.031	.010	.003	5.99
38	.012	.159	2.65	12.7	24.2	31.0	6.61	.624	.061	.002	0	.001	6.41
39	.010	.128	.452	1.15	8.65	52.2	2.62	.288	.083	.012	.009	.010	5.49
40	.018	.019	.214	1.19	22.5	19.2	7.45	.442	.027	.007	.008	.039	4.18
60	--	--	--	4.13	28.8	18.9	8.35	2.44	.57	.46	.25	.16	--
61	.60	2.0	2.46	9.62	85.4	43.8	6.16	2.58	.93	.19	.15	.15	12.4
62	.22	.91	3.72	5.18	5.35	24.3	5.46	2.78	.52	.15	.15	.20	4.09
63	.52	.76	2.04	1.11	39.9	3.05	5.54	1.34	.38	.39	.21	.20	4.36
64	.17	.60	1.01	4.33	9.33	37.2	8.25	2.34	.87	.27	.35	.44	5.44
65	.16	.76	28.4	56.6	31.8	6.83	7.86	2.20	1.03	.38	.28	.11	11.3
66	.14	.28	.23	5.63	6.22	10.5	1.36	.47	.39	.29	.28	.15	2.15
67	.31	.76	3.29	27.3	7.51	6.27	7.49	7.42	.82	.35	.41	.38	5.20
68	.52	.36	12.6	3.92	26.4	2.64	1.41	.46	.31	.27	.27	.47	4.05
69	.67	3.19	9.45	44.8	21.6	92.8	20.6	2.46	.69	.33	.42	.27	16.5
70	.32	.36	1.43	45.8	31.4	18.7	4.73	1.66	.74	1.38	.39	.32	8.83
71	.45	1.39	2.13	41.5	15.4	38.7	4.75	1.75	8.90	1.00	.45	.44	9.76
						25. Fourmile Creek at Shawnee (13349000)							
1934	--	--	--	--	--	--	8.62	1.79	1.65	0.068	0	0	--
35	0.357	1.34	13.8	74.0	42.4	57.4	60.9	5.64	.619	.077	0	0	21.3
36	0	.200	1.31	31.8	37.8	63.5	10.4	2.19	2.01	0	0	0	12.4
37	0	.004	.483	.031	7.31	103	55.4	3.13	1.77	.045	0	0	14.3
38	0	.480	11.2	31.2	62.7	83.6	22.5	2.64	.512	.021	0	0	17.7
39	0	.236	2.09	3.45	22.4	118	11.3	1.39	.389	.009	0	0	13.3
40	0	.0003	.470	2.41	51.6	47.8	20.4	1.92	.158	0	0	0	10.2

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
						29. Palouse River below South Fork at Colfax (13349210)							
1964	21.3	63.2	64.8	183	284	817	1,275	733	208	37.8	24.1	32.0	311
65	36.5	89.2	1,377	1,636	1,449	658	1,313	281	114	32.1	24.5	24.3	581
66	22.1	38.3	39.4	222	203	780	539	128	40.1	15.8	3.50	6.27	170
67	12.2	47.7	164	876	479	668	660	837	168	23.8	5.83	4.71	329
68	20.8	32.5	217	156	1,343	298	171	76.2	33.8	9.34	6.87	29.6	195
69	48.9	168	349	985	483	2,114	1,877	499	96.1	27.4	5.90	13.4	556
70	27.8	31.4	66.0	1,155	1,485	1,053	649	479	113	41.2	16.6	25.1	422
71	34.7	78.5	99.5	1,056	936	1,082	805	469	566	69.2	25.3	33.0	435
						47. Pine Creek at Pine City (13349400)							
1961	--	--	--	--	--	--	--	--	--	--	--	1.63	--
62	2.74	5.72	23.0	36.9	46.0	159	43.7	25.5	8.57	2.53	1.95	1.62	29.8
63	3.05	6.60	19.1	11.1	438	41.3	42.9	17.6	5.65	2.48	1.75	2.94	46.6
64	1.61	4.33	6.85	26.0	71.5	164	56.6	17.5	8.65	2.60	2.17	2.36	30.3
65	2.82	4.82	160	393	291	82.9	83.8	23.3	10.2	3.22	2.60	2.52	87.4
66	3.05	5.31	6.69	56.0	44.7	116	21.7	7.28	3.93	2.00	1.55	.99	22.4
67	1.40	4.64	18.7	129	81.3	57.5	47.7	69.0	18.3	3.03	1.70	1.40	36.0
68	1.35	1.66	27.3	61.4	149	34.6	15.1	4.36	1.69	.98	1.27	1.05	24.5
69	1.81	8.27	28.3	133	113	613	311	92.3	17.3	7.39	3.02	3.03	111
70	4.81	5.94	11.1	222	314	188	61.9	27.8	11.8	3.75	2.52	3.09	69.9
71	4.94	7.46	15.9	293	75.1	151	42.4	18.6	48.5	6.89	2.44	2.83	56.0
						48. Rock Creek near Ewan (13349500)							
1904	0.48	3.66	20.0	109	268	969	345	113	49.7	19.1	4.90	0.42	158
05	.06	.22	3.30	59.2	110	75.2	69.0	39.6	23.7	11.8	.89	0	32.2
14	--	--	--	--	--	--	113	46.7	17.3	7.74	2.17	.01	--
15	.05	.61	1.30	3.30	179	93.9	36.5	41.6	43.2	30.4	15.5	4.30	36.5
16	1.88	4.43	14.6	26.2	542	768	391	117	63.0	50.1	34.2	18.3	168
17	8.83	10.0	26.2	32.4	343	397	689	167	87.2	28.0	14.2	6.13	149

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
59. Palouse River near Winona (13350000)													
1915	30.0	55.0	30.0	47.5	763	455	420	546	187	52.1	22.9	11.6	214
16	16.9	51.8	156	218	2,760	4,140	1,950	664	222	127	63.8	49.0	861
17	37.9	77.6	146	275	1,200	1,300	4,740	2,350	547	81.7	34.1	20.1	894
61. Union Flat Creek near Colfax (13350500)													
1953	--	--	--	--	--	--	--	--	--	--	1.07	0.61	--
54	1.90	5.44	25.4	50.9	78.5	35.7	24.7	9.72	7.87	1.94	.74	1.53	19.9
55	2.42	4.31	13.4	26.1	66.6	141	82.3	14.4	3.64	1.35	.18	.18	29.4
56	2.68	27.6	140	154	75.5	454	68.7	44.4	12.7	4.00	2.09	1.48	83.0
57	3.62	5.73	23.5	10.8	85.4	148	53.7	35.5	10.2	2.12	.76	1.07	31.4
58	2.67	6.18	32.3	72.1	165	52.1	105	30.0	8.98	3.99	.75	1.31	39.1
59	3.06	17.7	76.6	231	177	109	35.8	28.0	14.4	4.04	2.15	4.12	58.1
60	7.12	15.1	8.20	17.8	103	102	51.5	22.9	6.28	1.44	1.13	2.06	27.9
61	3.36	12.0	15.2	44.3	214	158	50.8	31.2	9.42	2.13	1.03	2.10	44.2
62	3.44	6.24	24.7	33.5	35.3	84.5	43.8	26.9	8.61	2.51	.43	.85	22.6
63	2.02	12.2	27.4	15.1	166	30.4	34.6	9.87	4.52	.85	.35	2.45	24.5
64	1.47	3.31	5.71	20.3	36.9	100	50.5	13.9	6.97	1.40	1.37	1.20	20.2
65	1.59	3.99	62.2	262	189	62.4	69.0	19.9	8.32	2.07	1.28	1.59	56.3
66	2.38	7.89	5.89	43.8	53.2	96.9	22.8	8.29	3.73	1.00	.04	.08	20.4
67	.33	4.32	15.7	62.8	42.5	40.9	47.3	32.7	8.11	1.77	.60	.035	21.3
68	1.62	2.57	28.8	18.0	72.4	27.2	17.3	5.73	3.15	.64	.11	.75	14.6
69	2.32	15.8	38.6	142	91.8	329	185	49.1	10.9	3.15	1.49	1.43	72.6
70	3.91	5.70	12.5	155	163	128	66.1	28.1	12.3	5.06	2.18	3.11	48.1
71	5.35	9.40	14.5	130	67.5	93.8	37.3	16.6	28.8	7.58	1.70	2.83	34.5
66. Palouse River at Hooper (13351000)													
1898	56.8	285	1,290	901	4,490	2,010	2,270	655	307	114	53.2	50.6	1,020
99	64.7	98.5	113	1,080	1,310	1,150	1,750	728	187	67.1	37.7	44.1	547
1900	63.8	125	639	--	--	--	574	457	192	69.8	44.4	40.6	--
01	136	242	1,320	1,820	2,490	3,190	1,380	604	472	287	78.3	66.3	1,000
02	74.5	143	280	424	1,510	1,070	673	816	283	291	85.8	46.8	468

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
						66. Palouse River at Hooper (13351000)--Continued							
1903	63.3	211	714	3,330	1,130	1,560	2,120	1,110	450	81.9	30.4	33.6	903
04	48.7	110	228	409	873	4,300	3,350	678	255	78.8	24.5	17.3	864
05	27.8	39.6	63.0	181	225	348	380	294	258	73.9	27.2	22.2	161
06	82.2	76.9	126	319	878	964	943	253	279	74.8	27.4	30.0	334
07	34.1	235	1,470	1,240	4,820	3,550	--	--	--	--	--	--	--
08	--	--	--	--	--	--	--	--	--	55.7	26.5	24.6	--
09	52.6	66.6	82.1	2,530	1,190	961	568	331	117	43.6	21.9	16.7	497
10	30.0	186	355	1,130	1,800	6,660	1,710	328	112	46.9	31.5	21.2	1,030
11	36.7	125	244	218	308	1,470	559	400	142	36.1	6.83	13.9	297
12	29.4	78.2	78.3	835	1,470	1,040	1,130	1,150	270	63.5	--	--	--
13	--	--	--	--	--	--	4,130	1,070	317	143	31.7	28.2	--
14	51.7	104	114	667	1,160	1,370	925	281	87.1	27.2	6.61	12.5	395
15	31.8	59.8	36.9	46.6	847	505	442	556	185	45.6	16.4	12.1	227
16	17.7	58.2	167	345	3,540	5,520	--	--	--	--	--	--	--
51	--	--	--	--	--	1,845	1,104	431	252	72.5	22.5	26.7	--
52	117	158	354	329	2,791	2,634	2,345	715	198	135	52.9	40.6	813
53	44.9	64.1	118	1,960	2,029	1,291	790	736	376	85.0	36.5	29.5	622
54	45.9	99.4	392	675	1,809	1,135	970	417	254	81.3	36.7	59.9	489
55	72.5	120	153	513	754	896	1,528	898	226	80.8	16.7	21.2	437
56	92.6	349	2,101	2,145	1,181	3,488	2,051	961	282	93.8	35.4	38.2	1,072
57	75.9	119	283	146	1,469	2,191	1,451	1,335	319	71.5	31.0	20.4	621
58	60.7	89.1	311	862	2,687	1,036	2,042	648	174	63.7	12.8	17.9	651
59	59.1	224	723	3,014	1,707	1,844	1,204	672	258	62.8	29.1	72.3	819
60	151	319	251	270	1,324	1,273	1,252	492	182	34.8	15.6	34.5	462
61	60.1	206	237	514	3,627	2,125	977	702	209	48.6	17.1	28.8	710
62	65.9	97.7	218	344	626	1,296	1,207	458	206	38.4	16.5	23.5	381
63	84.8	130	308	166	2,933	599	880	296	118	29.5	11.1	16.9	446
64	37.5	98.6	132	321	499	1,182	1,520	831	274	62.0	28.7	44.7	418
65	60.4	130	1,752	2,590	2,782	1,157	1,636	511	200	72.7	31.0	45.3	903
66	53.8	83.4	100	434	382	1,060	712	175	66.2	18.9	1.40	4.20	257
67	23.5	72.5	214	873	800	790	777	948	250	43.4	4.15	3.90	398
68	29.7	68.9	274	306	1,561	484	286	105	50.5	3.72	.06	27.6	261
69	68.1	186	410	1,226	903	3,682	2,982	920	222	77.6	20.5	30.1	894
70	70.5	86.3	141	1,749	2,329	1,672	953	628	202	67.1	28.7	37.4	654
71	77.5	139	194	1,997	1,271	1,472	1,032	559	671	117	28.2	62.7	631

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
67. Silver Lake at Medical Lake (13351300)													
1959	44.97	44.88	45.09	45.41	46.26	46.80	47.24	47.16	47.22	46.86	46.20	45.70	
60	42.18	42.18	42.33	--	42.63	42.95	43.29	43.40	43.46	43.02	42.35	41.83	
61	--	41.45	41.82	--	42.22	42.95	43.64	43.73	43.67	43.34	42.76	42.16	
62	41.70	41.59	41.69	41.96	42.33	42.60	43.08	43.18	43.26	42.86	42.32	41.80	
63	41.48	41.50	41.76	41.96	41.98	--	--	--	43.29	42.89	42.35	--	
64	--	--	41.53	41.73	42.04	42.18	42.54	--	42.42	42.22	41.74	41.30	
65	--	--	--	--	42.06	--	43.40	43.78	--	--	42.72	42.36	
66	--	41.88	42.04	42.22	--	--	--	--	43.06	42.72	42.22	--	
67	41.22	--	--	--	42.04	42.24	42.52	42.74	--	42.58	--	41.18	
68	--	40.70	40.72	40.98	--	41.66	41.76	41.66	41.44	41.02	--	--	
69	--	--	--	--	40.76	41.00	--	--	--	--	42.68	42.10	
70	41.82	41.70	41.68	--	--	--	43.58	--	43.64	43.30	42.80	42.24	
71	--	--	--	42.24	42.64	42.86	--	--	43.56	--	--	42.34	

Note: Add 2,300 feet to obtain elevation above mean sea level.

68. Williams Lake near Amber (13351500)													
1955	--	--	--	--	--	--	--	--	--	--	--	1.12	
56	0.84	--	1.10	1.78	3.20	3.90	4.84	4.16	3.54	2.84	2.50	2.24	
57	1.91	9.91	1.86	1.94	--	--	2.73	2.79	3.33	--	2.94	2.41	
58	2.11	--	2.10	--	2.64	3.70	4.10	4.02	3.70	--	--	2.10	
59	1.78	1.68	--	--	2.95	3.56	4.18	3.66	3.35	3.08	2.48	--	
60	2.08	2.12	--	--	--	--	--	2.77	--	2.39	--	1.49	
61	1.29	1.19	--	--	--	--	--	4.22	--	3.34	--	--	
62	--	--	--	--	--	--	--	--	--	--	--	--	
63	1.80	--	2.02	2.22	2.36	--	3.45	--	--	--	--	--	
64	--	--	--	--	2.70	--	--	--	--	--	3.05	2.64	
65	--	--	2.44	--	--	--	--	4.38	4.10	--	--	--	
66	--	--	--	--	2.66	--	--	--	--	--	--	1.74	
67	1.46	1.27	--	--	--	--	3.38	--	--	--	2.68	2.06	
68	--	--	--	--	--	--	--	--	2.48	--	--	--	
69	1.14	--	--	--	1.95	2.32	5.38	--	--	3.32	--	--	
70	--	1.88	--	--	--	--	--	--	--	--	2.26	--	
71	--	--	--	--	--	--	--	2.70	2.86	--	--	--	

Note: Add 2,050 feet to obtain elevation above mean sea level.

TABLE C2.--Monthly and yearly mean discharges of streams, in cubic feet per second, and first-of-the-month mean gage heights of lakes, in feet--Continued

Water year	October	November	December	January	February	March	April	May	June	July	August	September	Annual
						72. Sprague Lake near Sprague (13351800)							
1959	76.81	76.90	--	77.53	--	79.69	79.82	79.23	78.68	78.09	77.23	76.85	
60	76.92	77.07	77.32	--	77.75	--	78.16	78.34	--	77.61	76.87	76.45	
61	76.32	76.35	76.73	--	--	79.06	80.09	79.63	79.08	78.28	77.67	77.01	
62	--	--	77.11	--	77.53	77.53	--	--	78.32	--	--	--	
63	76.55	--	--	77.13	77.10	78.42	78.49	78.53	--	77.53	--	76.43	
64	76.26	76.21	--	--	--	--	--	77.94	--	--	--	71.52	
65	--	--	76.70	77.18	--	--	--	--	78.60	--	--	--	
66	--	--	--	--	77.78	78.02	78.46	--	--	77.10	--	--	
67	--	76.00	--	--	--	--	--	--	--	--	77.64	77.14	
68	--	--	77.06	--	--	77.80	--	78.54	--	--	--	--	
69	76.68	76.72	--	--	--	--	79.97	--	--	--	77.84	--	
70	76.82	--	--	--	--	--	--	79.36	-	--	--	77.26	
71	--	--	77.26	77.32	--	--	--	--	77.86	--	--	--	

Note: Add 1,800 feet to obtain elevation above mean sea level.

						75. Cow Creek at Hooper (13352500)							
1951	--	--	--	--	43.3	81.5	109	85.0	53.7	19.9	4.59	4.04	--
52	8.44	7.49	10.7	22.1	139	71.3	131	94.2	51.1	20.5	8.54	5.10	47.0
53	6.56	8.65	16.6	24.4	24.6	21.9	56.0	20.3	18.6	16.1	8.11	9.48	19.2
54	8.23	10.7	--	--	--	--	--	--	--	--	--	--	--
62	--	--	--	--	--	--	38.5	43.7	27.9	4.55	2.64	2.50	--
63	7.93	9.81	13.9	19.4	90.4	54.5	56.8	41.7	30.7	16.6	6.08	3.68	28.8
64	6.36	8.45	10.7	16.7	21.7	18.5	19.0	10.5	8.55	2.87	.85	.58	10.3
65	3.29	6.17	12.4	16.1	38.7	97.2	112	69.5	37.3	19.4	5.21	5.57	35.1
66	6.15	8.17	10.4	17.1	23.6	33.2	36.7	19.5	8.81	2.29	.10	0	13.8
67	1.11	6.22	8.78	10.3	21.0	32.6	34.0	15.4	11.3	6.30	.54	.39	12.3
68	2.21	3.00	4.07	5.66	10.1	8.75	9.43	6.18	2.52	.013	0	0	4.31
69	0	0	.34	2.55	26.3	60.9	139	161	69.7	26.0	12.4	10.6	42.5
70	12.2	11.4	16.2	41.3	50.3	94.7	114	70.4	29.7	8.86	2.50	2.92	37.8

TABLE C3.--Records of representative wells

Well no.: See page 64 for well-numbering system.

Altitude: Interpolated from topographic maps.

Depth: Depth of well below land surface, recorded to nearest foot.

Water level: Water levels expressed in feet and decimals were measured by the Geological Survey; those in whole feet were reported by the owner, tenant, or driller; "flowing" indicates that the level is above land surface, but the height above land surface is not known.

Use of water: D, domestic; I, irrigation; Ind, industrial; N, none; P, public supply; S, stock.

Remarks: C, chemical analysis in table C7 L, log in table C4. Obs, periodic water-level measurements taken during the years indicated. Entries concerning well yields and materials penetrated are reported chiefly by owners, tenants, and well drillers.

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T. 12 N., R. 45 E.								
1H1	George Weber	2,580	90	6	20	--	D	
1N1	Kenneth Meyers	2,740	140	6	21.61	12-10-53	D,S	
2D1	George Druffel	2,680	93	6	15	--	D,S	
11G1	Theodore Kirpes	2,775	85	6	3	--	D,S	Basalt at 35 ft. Bailed at 75 gpm.
11K1	C. M Busch	2,790	20	36	9.80	6-15-54	D,S	
12N1	Otto Moehrle	2,780	200+	6	18.46	6-15-54	D,S	Basalt at 80 ft.
13C1	Norbert Heitstuman	2,740	65	6	10.66	6-15-54	D,S	
36R1	Ted Druffel	2,875	21	30	12.10	8-17-63	--	
T. 12 N., R. 46 E.								
5G1	Joe Bielenberg	2,690	18	48	10.45	6-14-54	D,S	
6F1	John Weber	2,560	110	6	14	--	D,S	Reported yield 20-25 gpm. L.
6P1	Steve Dahmen	2,560	65	6	15.85	6-14-54	D,S	Reported yield 30-50 gpm.
6P2	Ted Druffel	2,570	85	6	50	--	D,S	Reported yield 11 gpm. L.
6R1	Bart Wilson	2,575	22	4	18	--	D	
7B1	Town of Uniontown	2,560	170	12	11.20 4.62	11-22-64 3-19-69	P	Reported yield 60 gpm.
7G1	do.	2,580	227	12-10	60 32	-- 3-19-69	P	Reported yield 80 gpm. C, L.
7G2	do.	2,580	120	6	--	--	P	C.
7G3	do.	2,580	255	8-6	--	--	N	Basalt at 10 ft. Abandoned.
7R1	J. B. Morbeck	2,610	65	6	40	--	D	Rock at 4 ft.
8C1	Mrs. B. J. Hoefer	2,630	95	6	30	2- -55	D,S	Reported yield greater than 18 gpm. L.
8N1	Tom Gooch	2,640	73	6	35.91	6-14-54	N	Oil from tank has seeped into well.
8N2	do.	2,625	75	6	12	--	D	
17D1	Ed Dahm	2,660	97	6	28.06	6-14-54	N	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.12 N., R.46 E.--Continued								
17H1	John Warnecke	2,695	165	6	76.34	6-14-54	N	"Rock" at 27 ft.
17N1	Ed Dahm	2,665	85	8	20	--	N	Basalt at 25 ft. Supply inadequate.
17P1	Alfred Heitstuman	2,740	126	6	40	5- -54	D,S	L.
18A1	Ed Dahm	2,640	125	8	50	--	D,S	
18B1	Joe Sauve	2,610	40	6	--	--	D	
18M1	J. W. Tuschoff	2,735	165	8	80	--	D,S	
19H1	Henry Weis	2,680	14	36	--	--	D,S	
19R1	Ed Wittman	2,775	120	8	50	--	D,S	
20G1	Jack Schlee	2,740	7	60	3	--	D,S	
20G2	do.	2,730	41	6	11.94	8-16-54	N	
29F1	Lester Wolf	2,795	120	6	23.56	8-16-54	D,S	Supply barely adequate.
29P1	R. L. Stout	2,795	75	6	22.99	8-17-54	D,S	
30L1	John Luy	2,805	100	6	53.75	8-17-54	D	
31J1	M. L Barry	2,840	44	36	23.37	8-16-54	D,S	
32E1	Eugene Heitstuman	2,805	30	48	15	--	D,S	
T.13 N., R.37 E.								
2R1	Dr. Craig	1,275	250	6	125	--	D,S	
10B1	Urgel Bell	1,050	72	6	10	1952	S	
15A1	do.	1,250	850	6-5	300	1950	D,S	Basalt at 100 ft.
22C1	Charles Bucher	1,340	190	6	170	--	N	Supply inadequate.
T.13 N., R.44 E.								
1P1	Ida Little	2,650	--	6	130	--	D	
4J1	Henry Travis	2,450	140	6	60	1953	D	Basalt at 40 ft. Reported yield 12 gpm.
4J2	C. A. Hood	2,450	111	6	20.30	8-13-54	N	
10L1	Tom Martin	2,570	245	6	120	4- -54	D	Reported yield more than 12 gpm. L.
12B1	W. A. Meister	2,655	74	6	8	--	D	Basalt at 74 ft.
14L1	L. C. Hatley	2,640	12	48	6	--	D,S	Bottoms in clay.
14R1	Harold Neuman	2,650	25	48	12	--	D,S	
23H1	L. E. Mahon	2,680	23	36	9.65	5-27-54	D	Bottoms in clay. Supply inadequate.
24P1	Dan Hood	2,740	18	30	9.52	5-26-54	D	
T.13 N., R.45 E.								
3E1	Earl Harper	2,660	86	6	50	--	D,S	Basalt at 38 ft.
3H2	do.	2 640	65	6	35.13	6- 9-54	N	Reported yield low.
3L1	F. Druffel	2,635	90	6	12	--	D,S	Penetrates decomposed granite. Drawdown 8 ft bailing 20 gpm.
3M1	do.	2,614	15	30	7.80	7- 3-34	--	Obs., 1934-40.
3M2	Franz Druffel	2,620	100	6	4.85	6- 9-54	D,S	Reported yield 20 gpm. L.
4E1	do.	2,610	20	36	10.13	6- 9-54	N	Temp. 47°F.
5H1	do.	2,605	61	6	31.64	6- 9-54	N	
6A1	M. L. Markham	2,560	15	48	3.89	5-25-54	D,S	
6C1	Joe Gregerson	2,625	9	60	3	--	D	
7Q1	Martin Druffel	2,670	78	6	18.40	12- 9-53	D	Basalt at 30 ft.
8B1	J. W. Maxwell	2,640	304	6	60	1948	D,S	L.
8K1	Martin Druffel	2,695	18	72	3.83	5-27-54	--	
10C1	Tony Frei	2,640	125	6	60	1953	D,S	Reported yield 30 gpm.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.13 N., R.45 E.--Continued								
10C2	Alfred Hoffman	2,640	133	6	20	1945	D	L.
10C3	John Ellerson	2,630	145	72 by 60	25	--	D	L.
10D1	Alfred Druffel	2 640	175	6	100	--	D	Reported yield 10 gpm. L.
10D2	do.	2,630	100	6	9.78	12- 9-53	N	Obs., 1953-56. L.
10E1	Frank Busch	2,635	65	6	22.20	9- 7-55	D	Basalt at 27 ft. Bailed more than 15 gpm.
10L1	do.	2,660	137	6	70	--	D,S	Basalt at 50 ft.
11G1	Wilmar Cooper	2,760	12	96	4	--	D	Entirely in clay.
11N1	John Druffel	2,700	273	6	100	--	D,S	Basalt at about 200 ft.
12E1	Leo Broemmeling	2,865	25	48 by 30	6	--	D	
13A1	R. J. Niehenke	2,780	55	60	35	1953	D,S	
13L1	Mike Becker	2,680	222	6	68	--	D	Basalt from 180 ft to bottom of well. Reported yield more than 60 gpm.
13L2	Alfred Druffel	2,680	190	6	72.78	5-29-63	D	Obs., 1963-72.
13M1	John Becker	2,695	232	6	118.92	6-10-54	D,S	L.
13M2	do.	2,690	37	48	11.83	6-10-54	D	
14P1	L. H. Druffel	2,630	206	6	70	--	D,S	
14P2	do.	2,630	206	6	--	--	N	
15J1	Eugene Reisenauer	2,655	242	6	112.84	12-10-53	N	Drawdown 40 ft after 1/3 hr bailing 10 gpm. L.
15R1	J. Reisenauer	2,650	123	6	47	1- -46	D,S	Basalt at 66 ft.
19F1	Walt Meyre	2,510	219	6	44:60	5-26-54	D,S	Basalt at 30 ft. Supply inadequate.
19N1	J. R. Semler	2,640	15	36	9.36	5-26-54	N	
20A1	Walt Sodorff	2,595	168	6	--	--	N	Basalt at 15 ft.
20E1	Vince Meyer	2,520	180	6	--	--	D,S	
21D1	Roy Sodorff	2,600	294	12	95.5	1-23-64	D,I	L.
22J1	A. J. Reisenauer	2,595	90	4	31.20	6- 9-54	D,S	
24J1	Frank Druffel	2,675	89	6	5	--	D,S	Bottoms in basalt. Reported yield 10 gpm.
24L1	Joe Druffel	2,650	214	8	30.61	6-10-54	N	
24Q1	John Bauer	2,650	65	6	Flowing	12-10-53	D,S	Bottoms in "quicksand." Reportedly flows more than 26 gpm.
25E1	Stella Mustard	2,600	14	36	11.50	6-10-54	D	
25Q1	Frank Bauer	2,690	205	6	13.88	6-11-54	D,S	Clay to 45 ft; granite, 45-205 ft.
26G1	Tony Moser	2,595	75	5	18.04	6- 9-54	D,S	
26M1	Tony Reisenauer	2,570	100	8	6.48	6- 9-54	D,S	
27A1	Leroy Webber	2,600	100	6	40	1948	D,S	
27R1	St. Gauls Cemetery	2,600	170	6	70	--	I	Basalt at about 85 ft.
28B1	Hebert Druffel	2,555	93	6	46.93	8-17-54	D,S	L.
28C1	Vic Druffel	2,557	98	6-4	--	--	D	
28Q1	Ray Meyer	2,550	12	48	1	--	D	Entirely in silt.
29P1	Albert Druffel	2,645	124	4	69.65	5-26-54	D,S	Supply inadequate.
29P2	do.	2,645	12	42	7.63	5-26-54	N	
30J1	W. J. Entel	2,620	19	48	11	--	D	Bottoms in clay.
32F1	Unknown	2,720	11	30	5.46	--	N	
33B1	Paul Druffel	2,575	12	36	6	--	D	Entirely in clay.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.13 N., R.45 E.--Continued								
34A1	Town of Colton	2 530	143	12	25	1963	P	L.
34A2	do.	2,540	136	6	25	--	P	C.
34D1	Jake Schulthies	2,539	73	6	15.23	6-11-54	D,S	Basalt at 9 ft. Reported yield 30 gpm.
34L1	Walt Meyer	2,580	90	6	37.36	5-26-54	D,S	
35D1	Northern Pacific Ry. Co.	2,540	22	204	5	9- -47	Ind	Drawdown 4 ft after 4 hr pumping 50 gpm.
35N1	Pete Busch	2,592	85	6	46.95	1-18-54	S	Basalt at 4 ft. Drawdown 5 ft after 4 hr bailing 30 gpm. Obs., 1954-56.
35R1	Albert Bauer	2,555	164	6	27	--	D,S	Basalt at 54 ft.
36E1	John Ellerson	2,595	--	6	30	--	D,S	
36L1	Alex Bauer	2,590	5	48	1.76	6-11-54	D	
T.13 N., R.46 E.								
5N1	August Kopf	3,005	125	6	19.53	6-11-54	D	"Mica" at 40 ft.
7A1	Frank Becker	2,960	75	8	10	1944	D,S	"Rock" at 40 ft.
7D1	Walter Semler	2,920	10	54	2.84	6-11-54	D,S	
7Q1	C. W. Russell	2,920	30	36	17.42	6-11-54	D,S	
8K1	Frank Niehenke	2,820	155	6	--	--	N	L.
17N1	Mrs. Frank Busch	2,790	460	6	21.51	6-10-54	S	Granite at 10 ft.
17Q1	Glenn Simpson	2,785	165	6	60	--	D,S	L.
19C1	Francis Niehenke	2,725	395	6	30.27	6-10-54	D,S	Reported yield 10 gpm. L
19E1	Elmer Riedner	2,690	64	6	21.16	6-10-54	D,S	Supply inadequate. L.
20R1	--Rauch	2,675	43	6	13.25	--	N	
29G1	Frank Wolf	2,655	43	6	25	--	D	Bottoms in "rock."
29N1	Walter Wieber	2,640	60	6	20	--	D	
30J1	Tony Reisenauer	2,740	115	6	20	--	D,S	"Rock" at about 50 ft.
30N1	A. S. Reisenauer	2,690	110	6	10	--	D,S	L.
32A1	Henry Mengelkamp	2,620	60	6	--	--	D,S	
32G1	Carl Grief	2,610	100	6	--	--	D,S	
T.14 N., R.37 E.								
13E1	McGregor Land Co.	1,420	10	30	6.97	8-31-54	S	
24R1	Ira Daniel	1,440	129	6	98.42	12- 2-53	D,S	Drawdown 29 ft pumping 20 gpm.
26A1	Clanton Eccles	1,355	80	6	45	--	D,S	Reported yield 15 gpm.
26K1	Ira Daniel	1,360	262	6	94.63	12- 2-63	N	Obs., 1953-56.
34F1	do.	1,375	250	6	224.45	8-31-54	N	
35B1	John Mays	1,450	430	6	120	--	D,S	
T.14 N., R.38 E.								
3H1	Ray Myklebust	1,540	270	6	105.90	7-26-55	D	
4P1	William Mays	1,600	343	10	180	1954	D,S,I	Basalt at 20 ft. Drawdown 120 ft after 6 hr pumping 40 gpm.
7G1	do.	1,480	180	12	29	--	--	Reported yield 25 gpm. L.
8F1	McGregor Land Co.	1,560	1,400	9	190	--	D,S	
T.14 N., R.39 E.								
6H1	D. Dorman	1,675	142	6	96	1940	D	Basalt at 40 ft.
T.14 N., R.43 E.								
1K1	Claude Davis	2,398	150	6	20.67	8- 5-54	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.14 N., R.44 E.								
1J1	Ellen Barclay	2,520	210	6	120	--	D,S	
1J2	Floris Gray	2,545	30	42	23.03	8-13-54	D	Supply inadequate in summer.
1L1	Rexvord Daubenmire	2,580	275	6	205	--	D	Obtains water principally from white quartz sand at 270-275 ft.
1M1	Ray Harlow	2,540	241	6	91	--	D,S	Basalt at 90 ft.
1M2	Jay Snyder	2,540	87	6	17	--	D,S	Basalt at 30 ft.
2A1	Shiro Okazaki	2,495	50	6	13.18	7-14-54	D	Basalt at 47 ft.
2K1	Max Hinrichs	2,500	79	6	15	--	D,S	L.
2M1	Floyd Bloomfield	2,500	93	8	48	1950	D,S	Drawdown about 14 ft after 1 hr pumping 7 gpm.
3P1	Gana Jones	2,660	176	6	110	--	N	Entirely in silt.
6B1	Floyd Lyle	2,195	60	6	15	--	D,S	Basalt at about 15 ft.
7R1	W. C. Kamerrer	2,275	7	72	1-2	--	D,S	Entirely in silt.
9J1	Mrs. A. E. Olson	2,470	100	6	69.20	11-11-54	D	Pumps dry in about 1 hr.
10E1	Allen Manring	2,555	143	6	62	8- -49	D,S	
10E2	do.	2,530	23	36	7.79	12- 9-53	N	
12J2	E. L. Harms	2,530	100	6	87	1952	D,S	
12P1	Pullman Country Club	2,630	100	6	--	--	D	
13H1	Arnold Greenwell	2,570	90	6	46	--	D,S	Basalt at 50 ft and sand at 90 ft.
14J1	do.	2,545	62	6	14	--	D	L.
14P1	Wash. State Univ.	2,550	600	10-8	236	2-25-59	S,Ind	Drawdown 24 ft after 24 hr pumping 329 gpm. C, L.
16Q1	Mrs. R. H. Morton	2,325	65	6	25	1949	D	
21F1	Neal Klemgard	2,445	90	6	17.60	8- 4-54	D	Basalt at 3 ft. Reported yield 7 gpm.
21H1	Ben Henson	2,395	68	8-6	22	1943	N	Basalt at 11 ft.
21M1	Neal Klemgard	2,625	175	6	85.60	8- 4-54	D	Basalt at 125 ft. Well pumps dry in 1/2 hr.
23B1	Paul Ledeman	2,580	20	72 by 54	11.24	8- 3-54	D	Well entirely in soil.
24J1	Bob Barbee	2,625	162	6	60	1951	D,S	Basalt at 87 ft.
28J1	J. E. Peterson Estate	2,390	114	6	--	--	N	
34C1	Nora Hatley	2,455	200	8-6	1	--	I,D,S	L.
35H1	A. L. Dunning	2,570	--	2	--	--	D,S	Drilled horizontally into hillside.
36J1	Ada Swofford	2,635	60	6	23.72	8-12-54	D	
T.14 N., R.45 E.								
1F1	--Emerson	2,485	--	6	--	--	D	
2F1	Larry Thonney	2,530	35	6	6.29	10-21-53	D	Temp. 52°F.
2F2	do.	2,485	125	6	53.80	10-22-53	N	L.
3H1	R. L. Thonney	2,460	238	6	155	1940	D,S	Bottoms in sand.
3H2	do.	2,495	34	48	9.39	10-21-53	N	Basalt at 40 ft.
3H3	Wash. Water Power Co.	2,470	259	8	152	8- -57	D	Reported yield 102 gpm. L.
3K1	William Halpin	2,460	230	6	108	1940	D,S	Basalt at 16 ft.
3P1	Sig Jorstad	2,460	60	6	22.26	10-20-53	I	
4H1	Wash. State Univ.	2,440	265	6	116.70	2- 1-55	D,S,I	Obs., 1953-56. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.14 N., R.45 E.--Continued								
4N1	Wash. State Univ.	2,381	100	6	58.30	10-20-53	D,S	Obs., 1932-72. L.
4Q1	King Evers and C. A. Cole	2,560	205	6	95.65	10-21-53	D	L.
4Q2	Wash. State Univ.	2,410	65	6	11	1932	N	Destroyed. L.
4R1	Stanley Buckley	2,440	125	6	35	1946	D	
5D1	City of Pullman, well 1	2,340	164	10	Flows	1938	P	Reported pressure head about 34 ft above land surface, flow 2,400 gpm when drilled in 1913. C,L.
5D2	Standard Lumber Co.	2,370	162	6	11.72	2-15-52	N	Flowed when drilled. Obs., 1933-52.
5D3	City of Pullman, well 3	2,340	167	15	26.50 45.50	6- 5-62 3-18-69	P	Drawdown 106 ft pumping 1,400 gpm. C, L.
5D4	Northern Pacific Ry. Co.	2,360	166	6	10.03	7- 8-55	N	Reportedly flowed 55 gpm originally. Destroyed, C, L.
5E1	City Ice Co.	2,335	95	6	18.86	10-16-53	Ind	Reportedly flowed 240 gpm originally. C, L.
5E3	J. R. Rupley	2,345	73	6	--	--	--	L.
5E4	M. C. True	2,345	77	6	Flows	1894	N	Formerly supplied hotel by natural pressure. L.
5E5	City of Pullman	2,340	84	6	--	--	N	Reported pressure head originally about 20 ft above land surface. L.
5F1	Wash. State Univ.	2,365	144	4	43.16	1-23-63	N	Reported yield 500 gpm. Formerly flowed. Obs., 1935-72. L.
5F2	do.	2,365	237	8	41.24	10-14-53	P	Reported yield 500 gpm. C.
5F3	do.	2,365	223	16-12	44.69	7-15-57	--	Drawdown 3 ft pumping 1,500 gpm. C, L.
5F4	do.	2,365	275	20-12	57 75	11-18-63 3-18-69	P	Drawdown 1½ ft after 7½ hr pumping 1,690 gpm. L.
5G1	do.	2,360	213	10	24.30 62	10-14-38 3-18-69	P	Obs., 1937-38. C, L.
6C1	Nora C. Murray	2,480	200	6	--	--	N	Destroyed.
6D1	J. C. Hodge	2,520	190	6	126.20	10-14-54	D	L.
6D2	do.	2,540	236	6	40	--	D	Supplies 3 families. L.
6D3	George Utzman	2,500	190	6	130.20	7-15-54	D	
6D4	James Anderson	2,515	220	6	146.98	3- 7-56	D	Drawdown 21 ft after 1 hr pumping 11.4 gpm. L.
6E1	Weskel and Gray	2,500	180	6	6	6- -53	D,Ind	Basalt at 6 ft.
6F1	A. A. Samuelson	2,465	142	6	62	--	D	L.
7E1	Harvey Cole	2,530	82	6	36.32	6-18-54	D	L.
7F1	G. R. Spencer	2,495	70	6	32.87	12- 9-53	D	L.
7F2	Evergreen Builders	2,540	270	8-6	129.77	10-13-54	P	Reported yield 110 gpm. L.
7F3	Mrs. Baldwin	2,490	65	6	25	1940	D	L.
7H1	City of Pullman	2,442	712	18-12	148	5-21-69	P	Drawdown 190 ft; pumping 2,285 gpm. L.
7K1	Mrs. Baldwin	2,470	29	6	2.79	5-25-54	N	
7M1	Don Adams	2,520	68	6	33.63	5-24-54	D	L.
7M2	Blosser & Loughrey	2,525	90	6	43.24	6- 9-54	D	Reported yield 30 gpm. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.14 N., R.45 E.--Continued								
7M3	Tomlinson & Baldwin	2,500	87	6	34.08	7- 7-54	D	L.
7N1	Max Hinrichs	2,505	50	6	12	--	D,S	
8A1	James Cook	2,380	85	6	43.59	5-19-54	D	Basalt at 20 ft.
8A2	Marion Wise	2,380	105	6	46.53	5-19-54	D	Basalt at about 20 ft.
8G1	Ben Woolliscroft	2,380	11	42	5.21	5-19-54	N	
8G2	do.	2,398	110	8	72.96	10- 4-54	D,S	Basalt at 10 ft. Obs., 1954-56.
8H1	Herbert Neil	2,414	136	6	86	1948	D	Basalt at 20 ft.
8H2	H. C. Weller	2,425	140	6	119.40	10-15-54	D,S	
8J1	James Askins	2,420	85	6	55	--	D,S	Basalt at 20 ft.
8L1	City Cemetery	2,580	355	6	100	--	I	L.
8R1	Vern Hickman	2,430	145	6	55	1947	D,S	Basalt at about 20 ft.
9E1	C. H. Hinchliff	2,420	67	6	5	--	D	Basalt at 14 ft.
10Q1	Herbert Stratton	2,540	200	6	40	--	D,S	Basalt at 50 ft.
11F1	R. N. Vosburgh	2,560	6	96 by 120	3	--	D,S	Entirely in clay.
11N1	U.S. Geol. Survey	2,538	15	1½	6.53	11-26-63	N	Obs., 1934-68.
11P1	Bathel Baud	2,560	82	6	9.70	5-19-54	D	
12M1	T. E. Wiley	2,605	11	48	.25	5-19-54	D,S	
13F1	Howard Brown	2,545	16	60	12	--	D	Basalt at 14½ ft.
13F2	do.	2,545	20	72	2.06	5-20-54	D,S	
13G1	Kenneth Brown	2,550	11	100 by 54	2.28	5-20-54	D	Entirely in clay.
14R1	Unknown	2,495	6	36 by 72	2.08	5-20-54	N	Bottoms in white clay.
15B1	George Leonard	2,620	213	6	140.42	5-19-54	D,S	Basalt at 90 ft.
16E1	W. Stratton	2,398	80	6	65.69	5-21-54	S	Basalt at about 15 ft. Obs., 1954-56.
16F1	do.	2,410	6	72	2.31	5-21-54	S	
16G1	Wash. State Univ. Agronomy Farm	2,480	400	10	179.50 183	7-17-57 3-19-69	I	Drawdown 55 ft pumping 340 gpm. L.
16P1	Ronald Haynes	2,420	7	72	2.26	5-25-54	D	
17A1	H. M. Jacobsen	2,420	175	6	90	1950	D	Basalt at about 50 ft. Reported yield greater than 20 gpm.
18M1	T. Griffen	2,545	18	48	7.50	1934	N	
19D1	A. W. Kienholz	2,560	74	6	2	1943	D,S	Basalt at 14 ft. Reportedly flowed at about 30 ft depth when drilled.
19P1	Sig Jorstad	2,590	38	48	12.97	5-25-54	--	
20E1	Claude Kirkendall	2,635	16	60-36	10.14	5-25-54	D	
21H1	L. C. Staley	2,435	206	8-6	130	--	D,S	Basalt at about 20 ft.
22P1	John Staley	2,465	100	6	20	1950	D,S	Basalt at 15 ft.
22Q1	F. A. Jennings	2,475	37	6	1	--	D,S	
23J1	M. Mathison	2,485	12	48	--	--	D,S	
23J2	Raymond Meyer	2,485	80	8	50	8-23-65	D	L.
24H1	R. B. Haley	2,495	10	24	.17	5-20-54	D	
24Q1	W. Benedict	2,530	26	48	12.00	5-25-34	N	Obs., 1934-38.
24R1	do.	2,510	12	48	13.00	7-13-34	N	Obs., 1934-38.
25D1	Robert Lyon	2,520	55	6	13.55	5-21-54	D	Bedrock at about 14 ft.
25M1	Albert Webber	2,540	18	96	4.72	5-24-54	D	
25Q1	Don Whitman	2,620	140	6	112.29	5-21-54	N	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.14 N., R.45 E.--Continued								
26C1	Stanton Bursch	2,535	60	6	21.95	5-20-54	D,S	
26J1	Floyd Weber	2,545	26	96	11.03	5-21-54	D,S	Entirely in clay.
28H1	L. C. Staley	2,515	150	8-6	10	1941	D,S	Backfilled from 165 ft. L.
28H2	Harold Boyd	2,520	100	8	15	--	D	"Bedrock" at 10 ft. Drawdown 25 ft bailing 30 gpm.
28K2	L. C. Staley	2,505	80	8	7.90	7-14-54	N	"Bedrock" at about 10 ft.
28L1	Harold Lacey	2,510	86	6	11	6- -53	D	"Bedrock" at about 20 ft.
29D1	Howard Gimlen	2,620	90	6	35	1948	D,S	
29H1	do.	2,575	92	6	33.13	5-25-54	D,S	
31J1	F. A. Jennings	2,555	37	6	8.12	5-25-54	D	
31R1	Glen Glover	2,555	20	36	9.36	5-25-54	D	
31R2	do.	2,550	13	30	4.80	5-25-54	S	
35E1	Kenneth and Arthur Gray	2,560	148	6	18.57	5-24-54	D	"Rock" at 100 ft. Supply barely adequate.
35M1	Earl Harper	2,580	18	54	4.17	5-24-54	D,S	
35N1	G. O. Swales	2,620	117	6	Flowing	5-24-54	D,S	Bottoms in granite.
36Q1	Harry Johnson	2,735	190	6	14.19	5-24-54	N	Granite at 20 ft.
T.14 N., R.46 E.								
6R1	Edgar Anderson	2,710	212	7	90	1945	D,S	L.
6R2	do.	2,660	350	6	--	--	N	L.
7G1	Harlan Reid	2,615	180	6	40	--	D,S	Basalt at about 160 ft.
7N1	C. J. Bowers	2,560	100	6	9.04	5-20-54	N	
7N2	Howard Shriver Est.	2,575	242	6	40	1954	D	L.
7P2	Edgar Anderson	2,580	140	6	101.58	5-19-54	D	Supply inadequate.
8A1	do.	2,758	123	--	106.23	5-19-54	N	Obs., 1936-40.
8K1	Arnold Anderson	2,620	125	6	35	1947	D,S	Granite at 125 ft.
8K2	do.	2,600	240	6	--	--	N	Bottomed in "quicksand" underlying "granite." Destroyed.
17B1	H. M. Peterson	2,530	120	6	65	1945	D,S	Principal aquifer reported to be granitic sand. Reported yield greater than 18 gpm.
19M1	Elmer Haynes	2,480	80	6	9.63	5-20-54	D	L.
20K1	---Cameron	2,545	13	6	7.54	5-20-54	N	
29L1	C. V. Strohm	2,555	278	60-6	--	--	D,S	Dug to 30 ft. L.
29P1	Jesse Hawley	2,625	42	54	38	--	D	Supply inadequate in summer.
29Q1	do.	2,615	13	48	1.32	5-24-54	N	
30L1	Harold Snow	2,560	15	48	3.44	5-20-54	--	
31F1	---Steiner	2,660	33	48	3.87	5-20-54	N	
32C1	C. V. Strohm	2,655	20	36	5.48	5-24-54	N	Obs., 1934-40.
T.15 N., R.37 E.								
12N1	Milard Goude	1,150	200	6	50	--	S	Basalt at 117 ft.
22A1	Henry Milam	1,282	378	10	167	1952	I	Drawdown 25 ft pumping 500 gpm. L.
22H1	Spokane, Portland, and Seattle Ry.	1,227	401	--	146.75	11- 4-65	N	Reported yield 125 gpm. L.
25D1	W. C. Mays	1,090	--	8	Flowing	10-21-65	I	
25D2	do.	1,085	473	4	Flowing	2-26-69	I	Obs., 1965-72.

TABLE C3. Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.15 N., R.37 E.--Continued								
26C1	McGregor Land Co.	1,090	280	10	Flowing	11- 6-63	I	Does not flow in summer.
26C2	do.	1,090	268	6	Flowing	11- 6-63	I	Do.
26C3	Howard and Warren Morris	1,090	--	8	Flowing	11- 6-63	I	Do.
26G1	do.	1,085	--	6	Flowing	1955	I	Does not flow in summer. C.
27H1	McGregor Land Co.	1,080	281	6	Flowing	11- 6-63	I	Do.
27H2	do.	1,080	226	6	Flowing	11- 6-63	I	Does not flow in summer.
27R1	do.	1,100	281	8	30	--	S,P	Supplies town of Hooper and about 7,000 cattle.
27R2	do.	1,080	248	6	Flowing	11- 6-63	I	
27R3	do.	1,080	286	6	12	9- -63	I	Flows in winter.
28C1	W. C. Mays	1,520	388	6	--	--	D	
32Q1	Ira Scott	1,040	25	60 by 60	20	--	I	Entirely in sand and gravel.
34A1	Union Pacific Ry. Co.	1,045	184	10	Flows	1914	--	Flows 900 gpm. L.
34C1	do.	1,060	194	10	--	--	D	
T.15 N., R.38 E.								
13C1	Herb Camp	1,370	14	30	12.42	9-27-55	S	
19A1	Bill Harder	1,135	--	8	42.72	11- 4-65	D	
22E1	Staley Hereford Ranch	1,140	106	8	--	--	I,D,S	Reported yield about 50 gpm.
24R1	L. F. Arlt	1,320	73	6	35	--	--	
27A1	--Staley	1,195	108	6	--	--	S	
34J1	Mrs. Amanda Gordon	1,430	49	6	32.40	9-27-55	I,D,S	
T.15 N., R.39 E.								
1G1	Floyd F. Fields	1,560	165	6	--	--	N	Supply inadequate for domestic use.
1K1	Mary Scharpenberg	1,560	180	6	--	--	D,S	
2F1	Union Pacific Ry. Co.	1,480	210	13	46	1945	N	Drawdown 15 ft after 4 hr pumping 110 gpm.
2K1	Town of LaCrosse	1,520	273	12	151	--	P	Reported yield 584 gpm. C,L.
2K2	do.	1,520	261	8	150	--	P	Reported yield 500 gpm. C, L.
2L1	do.	1,480	200	12	50.5	8-24-67	P	Obs., 1967-72.
3G1	Harold Snow	1,550	175	6	--	--	D,S	
3R1	W. M. Camp	1,480	250	10	80	6- -61	D,S	Drawdown 13 ft pumping 100 gpm. L.
4D1	Harold Snow	1,525	200	6	141.00	9-27-55	S	Pumping when measured.
5M1	Peter Schwieger	1,505	13	36	12.20	9-27-55	N	
6R1	Herb Camp	1,485	27	36	26.10	9-27-55	S	
8D1	Peter Schwieger	1,600	190	6	90	--	S	
10B1	Lester Camp	1,485	780	7	60	--	S	Formerly used for irrigation.
10B2	do.	1,485	260	12	60	--	I	Pumps 650 gpm.
10D1	Schweiger Bros.	1,530	138	6	88	4- -54	D,S	Drawdown 5 ft pumping 100 gpm.
12R1	Homer Hopkins	1,520	138	6	43	--	D,I	Reported yield 90 gpm.
14A1	R. Camp	1,500	--	6	--	--	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.15 N., R.39 E.--Continued								
14B1	R. Camp	1,480	67	6	48.28	6-27-56	I	
16C1	W. Schweiger	1,465	70	6	40	--	D,S	Reported yield 7 gpm.
17N1	P. Schweiger	1,400	90	6	4	--	D,I	Do.
19P1	Chet Gordon	1,320	86	6	30	--	D,S	
20D1	LaCrosse Grain Elev.	1,355	13	8	5.87	--	D	
20D2	O. M. Fleming	1,360	49	6	20	--	D	
20D3	J. F. Gordon	1,360	9	36	2.00	7- 9-56	D	
20K1	Carl Mackleit	1,400	--	6	8	--	D	
22J1	Herb Camp	1,540	165	6	59.40	6-28-56	D,I	Obs., 1956, 1972.
28C1	C. O. Camp	1,550	120	6	70	--	D	Basalt at 40 ft.
28G1	Dale Bryan	1,560	198	8	45	--	D	
29P1	O. Fleming	1,515	160	10-8	58	4- -55	D	Reported yield 25 gpm. L.
T.15 N., R.40 E.								
4N1	Weldon Washburn	1,580	60	6	15	--	D	Basalt at 60 ft.
4N2	do.	1,575	80	10-6	12	--	N	L.
7G1	Urgel Bell	1,520	50	6	--	--	D	
8D1	Frank Guske	1,540	75	6	42	7- -54	D,S	
9B1	Ira Dark	1,600	101	6	28.89	7-12-55	D	
9M1	Melvin Camp	1,600	116	8	84	--	D	L.
10F1	Gilbert Ferris	1,615	60	6	25	1953	D,S	Entirely in silt.
11E1	Robert and Gilbert Ferris	1,640	60	--	--	--	D	
11H1	do.	1,640	108	6	49.80	11-25-53	D	
12A1	Ray Forney	1,690	100	6	--	--	D,S	
12C1	E. J. Moore	1,645	128	8	45	1953	D,S	Drawdown 20 ft pumping 164 gpm. L.
14C1	Unknown	1,725	125	6	108.60	8- 6-54	N	
T.15 N., R.41 E.								
6N1	Bill Anderson	1,695	80	42	--	--	D	
7C1	Fred Stueckle	1,700	100	6	--	--	D,S	Supply inadequate.
8D1	Ernie Stueckle	1,750	93	6	75	--	D	
T.15 N., R.42 E.								
1B1	Delbert Kammerzel	2,040	111	6	5.07	7-14-55	D,S	
4A1	Elbert Wise	2,040	180	6	150	--	D,S	
11G1	John Heilsberg	1,875	146	6	73	--	D,S	Basalt at 30 ft.
11G2	do.	1,880	236	6	136	1922	N	
12K1	Fred Slonaker	2,040	16	45	5.69	7-14-55	D,S	
T.15 N., R.43 E.								
6R1	Elmer Broweleit	1,870	186	10	105	8- -54	D,I	Reported yield about 200 gpm. L.
7M1	Loren Klaus	2,160	175	6	90	1949	D,S	L.
10D1	Herb Mohr	2,225	60	6	20	--	D,S	
13H1	Harold Upshaw	2,405	112	6	15	--	D	Basalt at 50 ft.
13N1	John O'Neil	2,380	16	--	4	--	D,S	
24H1	Ellery Johnson	2,410	13	48	11.16	8-19-54	D,S	
26L1	Berne Davis	2,395	189	8	32	1951	D,S	L.
26L2	do.	2,382	240	6	120.20	8- 5-54	N	Obs., 1954-56.
35R1	Clyde Davis	2,380	148	8	--	--	D	Basalt at 50 ft.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.15 N., R.44 E.								
1G1	A. V. Clark, Jr.	2,370	157	6	19.45	11-24-53	D	L.
1L1	Jim Kinzer	2,420	13	24	4.05	--	N	Temp. 47°F.
1N1	A. V. Clark, Sr.	2,450	73	6	Flowing	11-24-53	D,S	Basalt at 35 ft.
2R1	Boyd Kelso	2,510	142	6	30	1946	D,S	Basalt at 30 ft.
4A1	Union Pacific Ry.Co.	2,200	200	6	6	--	D	
5A1	Fred Hoffman	2,360	120	6	60	--	D,S	
5B1	Mrs. Mary Buri	2,390	16	48	4	--	D,S	
5L1	Fred Hoffman	2,420	170	6	28	1931	D,S	Basalt at 70 ft.
9E1	Bob Matsen	2,470	100	6	--	--	D,S	
10P1	P. G. Christopher	2,230	115	6	72	--	D,S	Dug 0-20 ft, drilled 20-115 ft.
10Q1	Town of Albion	2,255	83	6	28.60	10- 1-54	N	On standby.
10R1	do.	2,330	234	6	--	--	N	Supply inadequate.
11A1	Joe Bryan	2,515	150	6	132	--	D,S	L.
11F1	Clarence Johnson	2,440	140	7	3.79	11-24-53	N	Reported, "quicksand" overlies "bedrock."
11F2	do.	2,430	225	6-4	Flowing	11-24-53	D	Reported, "quicksand" overlies "granite bedrock."
13J1	do.	2,510	178	8	56.64	11-23-53	N	
14D1	Town of Albion	2,290	235	10-6	12.78	11-23-53	N	"Granite" at 20 ft. Obs., 1953-56.
15A1	Pete Christopher	2,250	63	6	30	--	D	
15A2	Town of Albion	2,260	78	10-8	16	1- -54	N	On standby. C, L.
15A3	do.	2,290	150	10-8	11 15.7	1952 3-19-69	P	C.
15A4	do.	2,240	--	--	--	--	P	C.
15F1	R. A. Mitchum	2,245	25	42	12.42	8-18-54	D,S	
15G1	Union Pacific Ry. Co.	2,240	19	6	13.30	10- 1-54	N	Well plugged.
15G2	Town of Albion	2,380	290	8	127.50 150.0	11-23-64 3-19-69	P	
15H1	George Martin	2,275	150	6	45.59	12- 3-53	D,S	
15R1	Carl Boyd	2,280	12	48	2.23	11-24-53	D,S	Temp. 49°F.
16B1	P. G. Christopher	2,345	--	60	8.80	8-19-54	N	
16K1	Frank Dober	2,365	--	6	29.19	8-18-54	D,S	
16L1	Ed Jones	2,410	78	6	76.24	7-15-54	D,S	Basalt at 73 ft.
16L2	do.	2,430	363	6	72	1944	N	L.
17E1	Albion School Dist.	2,345	18	36	6.48	5-16-34	N	Obs., 1934-38.
17L1	R. Barr	2,330	27	48	15.45	5-16-34	N	Obs., 1934-40.
18J1	Harold Upshaw	2,350	107	6	--	--	D,S	L.
19B1	Johnson Brothers	2,365	91	8	18	--	D	L.
20D1	Leon Cay	2,355	280	6	150	--	D,S	
20G1	Joe Babbitt	2,350	65	6	--	--	D	
20G2	do.	2,370	60	36-6	9.70	7-15-54	S	Dug 0-22 ft. Drilled 22-60 ft.
21C1	John Fulfs	2,375	130	6	30	1948	D	Basalt at 113 ft.
21D1	O. V. McCroskey	2,355	177	8	100	--	D	Basalt at 10 ft.
21D2	do.	2,350	165	8	90	--	D	
26L1	Merle Harlow	2,395	160	8	73.55	7- 8-55	D,S	L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.15 N., R.44 E.--Continued								
28B1	Tom Bush	2,380	50	6	19.44	12-11-53	D	"Bedrock" at 10-15 ft.
31P1	Floyd Lyle	2,145	40	6	15	1950	D	Basalt at about 20 ft.
32A1	--Brown	2,435	11	60	4.00	8-12-54	--	
33B1	Leonard Small	2,435	175	9	60	1944	D	L.
34H1	V. L. Michaelson	2,420	28	180	1	--	S,I	Reported yield about 30 gpm.
35B1	John Fulfs	2,420	75	6	7	--	D	
35E1	V. L. Michaelson	2,412	300	12-10	88.87	6- 8-54	N	Drawdown 34 ft pumping 490 gpm. Obs., 1954-56. L.
35F1	do.	2,440	96	6	--	--	D,S	
35R1	John Fulfs	2,495	56	5	11.61	7-15-54	D,S	
T.15 N., R.45 E.								
1H1	Paul Mader	2,575	26	36	17.61	11- 9-53	D	
1H2	do.	2,585	17	30	4.34	11- 9-53	D	
2M1	Harry Ledeman	2,600	100	5	--	--	D	Supply inadequate for domestic use.
3J1	U.S. Geol. Survey	2,580	20	1½	4.66	11-12-53	N	Obs., 1934-40.
3Q1	I. A. Zakarison	2,555	18	92 by 72	1.67	11-23-53	D	Hard clay at 12 ft.
3R1	Unknown	2,570	20	48	6.33	11- 6-53	S	
4N1	J. H. Peterson	2,505	14	60	7.18	11-12-53	D,S	Entirely in silt and clay.
6H1	Ray Parvin	2,420	10	48	1.73	11-12-53	N	
6H2	do.	2,425	146	6	60.01	11-12-53	D,S	L.
7D1	Unknown	2,465	26	48	9.91	11-24-53	N	
7Q1	W. E. Lawson	2,530	150	6	51.55	11-13-53	D,S	
7R1	Oscar Anderson	2,540	34	42	18.33	11-13-53	D	Supply inadequate.
7R2	do.	2,540	133	6	60	7-28-70	D	L.
8L1	Helmer Rossebo	2,485	123	6	30	1938	D	L.
8M1	Ross Howell	2,495	30	48	8.84	11-13-53	N	L.
8M2	do.	2,490	290	6	60	--	D,S	Basalt at 45 ft. Reported yield about 20 gpm.
9B1	J. H. Petersen	2,555	14	36	.57	11-12-53	D,S	
9C1	Paul Vernier	2,540	260	6	160	1938	D,S	
9C2	do.	2,545	30	36	24.64	11- 5-63	D	
9H1	Kenneth Knight	2,630	25	36	14.70	11-23-53	D,S	
9R1	Paul Vernier	2,505	116	8	17.70	11- 5-53	D	Basalt at 45 ft.
10E1	E. Steever	2,554	263	6	229.65	11- 6-63	N	Obs., 1953-56.
10E2	do.	2,555	15	42	7.68	11- 6-53	D,S	
10F1	do.	2,535	72	10	42.78	11- 6-53	D,S	Basalt at 38 ft.
10F2	do.	2,535	17	42	14.20	11- 6-53	D	Supply inadequate.
11K1	Roy Held	2,560	30	24	20.47	11-10-53	N	"Rock" at 20 ft.
11N1	Jim Kinzey	2,585	150	6	79.82	11- 6-53	N	Supply inadequate for domestic use.
13A1	Omer Pogue	2,610	40	96	30	--	N	
13N1	Earmel Cunningham Est.	2,545	165	6	19.83	10-29-53	N	
14E1	Carl Gray	2,535	10	36	.77	11- 9-53	D,S	
14M1	B. I. Pickell	2,505	10	48	2.56	11- 9-53	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.15 N., R.45 E.--Continued								
14Q1	Mary Stirewalt	2,520	285	6	146	10- -49	D,S	L.
14Q2	do.	2,530	33	30	25.28	10-29-53	N	
15H1	Roy Held	2,540	85	6	27.13	11-10-53	D,S	Basalt at 25 ft. Reported yield about 40 gpm.
15R1	Unknown	2,510	51	6	20.88	11- 5-53	N	
16E1	Unknown	2,540	10	36	7.70	11-23-53	N	
17E1	Rose Howell	2,565	90	6	27.05	11-13-53	D	Basalt at 30 ft.
17M1	Carl Reid	2,530	253	6	18.76	10- 1-54	D,S	Basalt at 24 ft.
18F1	Mrs. August Johnson	2,515	13	72	.62	11-23-53	D	
19F1	Milton Johnson	2,470	135	6	57.04	5-27-54	D,S	
19G1	C. H. Malmquist	2,470	8	60	2	--	D,S	
19P1	Unknown	2,505	17	54	15.69	5-27-54	N	
20H1	Wendell Gwinn	2,520	74	6	10.71	11- 5-53	D	
20K1	Don Sodorff	2,500	20	96	4	--	D,S	Pumps dry in about 6 hrs.
20K2	do.	2,500	173	6	8.78	11- 5-53	N	Basalt at 16 ft; granite or quartzite at 120 ft.
20P1	Whelan Grange	2,490	14	120	4.80	11- 5-53	D	
21H1	Carl Boyd	2,480	248	6	193.30	8- 3-55	D	Basalt at 31 ft.
22K1	Cliff Wexler	2,515	8	60 by 72	5	--	D	
22M1	Tim Pritchard	2,480	20	96	6.59	10-29-53	D	Basalt at 19 ft. Supply inadequate.
23B1	Mary Stirewalt	2,498	50	6	31.43	10-29-53	D	Supply inadequate. Obs., 1936-37.
24C1	Jesse Gray	2,535	20	36	17.12	10-29-53	D,S	
25A1	Merrill Boyd	2,645	137	6	112.13	10-22-53	D,S	Basalt at 96 ft.
25G1	--Driscoll	2,607	22	42	17.53	10-23-53	N	Obs., 1935-40.
25Q1	W. M. Boyd	2,610	264	6	59.53	10-23-53	D,S	L.
26K1	Orval Boyd	2,620	302	6	281.05	10-27-53	D,S	Reported yield 50 gpm. C,L.
26K2	do.	2,620	120	6	60	--	D	
27M1	Frank Boyd	2,520	150	8	30	--	D,S	
28J1	D. R. Burnham	2,545	40	48	34.92	11- 4-53	D	Basalt at about 38 ft.
28J2	do.	2,540	162	6	76.53	11- 4-53	D	L.
29G1	McGregor Co.	2,430	220	8	117	9- 5-63	D	L.
29G2	Davenport Chemicals Inc.	2,440	247	10	155	9-18-63	D,I	C,L.
29P1	Kenneth Hall	2,455	140	6	120.38	4-29-55	D,S	L.
29P2	do.	2,460	120	5	--	--	N	
30G4	Soil Conservation Service Experimental Farm	2,520	371	6	204.40	10-18-54	D,S	Obs., 1955-56. L.
31G1	Mrs. Beuche	2,500	190	6	--	--	N	Basalt at about 4 ft.
31M1	Wash. State Univ.	2,345	172	10	23	5- -57	D,S	Drawdown 9 ft pumping 396 gpm. L.
32C1	O. O. Turner	2,400	105	8	60	--	D,S	
32C2	City of Pullman, well 6	2,430	518	18	126.30	3-18-69	D	Drawdown 15 ft pumping 1,500 gpm. L.
32G1	D. R. Berry	2,380	26	30	11.54	11- 9-53	N	
32N1	City of Pullman, well 2	2,350	231	15	36 52	10- -64 3-18-69	P	Drawdown 34 ft after 4 hr pumping 800 gpm. C,L.
32N2, N3	City of Pullman, well 4	2,356	954	20-12	--	--	P	Drawdown 18.6 ft after 24 hr pumping 1,000 gpm. Annular space between between 16- and 20-inch casing is designated well 15/45-32N3. Obs., 1957-72. C, L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.15 N., R.45 E.--Continued								
33J1	Wash. State Univ.	2,610	438	6	271	9- -33	N	L.
34L1	Ted Taylor	2,540	45	6	22.99	10-28-53	S	
34L2	Wash. State Univ., well 5	2,520	396	16-10	196	1964	P	Drawdown 2½ ft pumping 500 gpm. L.
34N1	Earl Whitlow	2,485	52	6	6	--	D	Basalt at about 10 ft.
35F1	Pullman-Moscow Airport	2,530	172	8	--	--	P	L.
36Q1	H. E. Hagedorn	2,585	10	60	1.52	10-21-53	D	Supply inadequate in summer.
36Q2	do.	2,580	200?	6	--	--	N	Plugged and dry at 50 ft.
T.15 N., R.46 E.								
6B1	Theodore Quist	2,615	65	6	24	10- -52	D,S	Basalt at 30 ft.
6E1	Lilly Hall	2,590	100	6	50	--	D,S	
6P1	Paul Mader	2,620	78	6	24.89	11- 9-53	D	
7B1	Sam Fleener	2,635	14	30	5.15	11- 9-53	N	
7C1	do.	2,640	72	42	47.12	11- 9-53	D,S	"Bedrock" at 72 ft.
7J1	Percy Doyle	2,660	150	7	20	10- -42	D	"Granite" at 18 ft.
8G1	Allan Gillispie	2,760	14	60	3.17	11-10-53	N	
8Q1	Marvin Dahl	2,800	135	8	95	1947	D	
17B1	James Williams	2,800	106	6	36.45	11-10-53	D	Supply inadequate.
18J1	Carl Boyd	2,655	214	6	23.43	10-29-53	N	Obs., 1953-56.
19J1	John O'Donnell	2,575	59	8	16.34	10-29-53	D	"Rock" at about 4 ft.
19R1	W. M. O'Donnell	2,570	41	6	6	--	D	Basalt at about 10 ft.
20K1	N. T. Carson	2,590	15	48	6.38	10-28-53	N	Obs., 1934-62.
20P1	do.	2,590	250	6	101.55	10-28-53	S	Originally 400 ft deep. C, L.
29N1	Charles Paul	2,670	120	5	65	1923	D,S	Basalt at 55 ft.
30D1	W. Boyd	2,561	32	36	19.54	6- 9-36	S	Obs., 1936-40.
30N1	John Goughnour	2,620	23	48	7.93	10-23-53	D,S	
31H1	Gerry Hagedorn	2,610	100	6	70.10	10-22-53	D,S	
31J1	Ed Metzgar	2,520	117	6	8.22	10-22-53	--	Supplies drive-in theater. L.
31K1	Carrie Yarborough	2,515	18	36	11.01	10-22-53	N	
32Q1	Henry Guske	2,540	180	6	--	--	D,S	
T.16 N., R.35 E.								
2A1	Dale Taylor	1,725	110	6	80	7-20-65	D	
T.16 N., R.36 E.								
6B1	Mrs. G. R. Howell	1,676	316	6	--	--	D	
9R1	Lester Snyder	1,595	120	6	99	1959	D,I	
10R1	do.	1,605	235	6	142.22	11-10-65	I,S	Obs., 1965-69.
11H1	A. C. Hille	1,555	127	--	101.52 101.2	11-10-65 4- 4-69	I,S	C.
12Q1	H. C. Norris	1,560	160	6	114.30	11-10-65	S	
23R1	J. Daugherty	1,660	200	6	--	--	D	
T.16 N., R.37 E.								
1A1	School Dist. No. 122, Benge	1,478	300+	10	Flowing	9-10-65	P	C.
1G1	Seattle, Portland, and Spokane Ry.	1,470	302	12	5.98	9-10-65	--	Obs., 1965-72.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.16 N., R.37 E.--Continued								
1L1	Jim Clinesmith	1,465	55	10	13.38 6.66	9- 9-65 4- 3-69	I	Reported yield 500 gpm.
1L2	do.	1,465	400	12	Flowing Flowing	9- 9-65 4- 3-69	I	C.
18D1	H. C. Norris	1,570	102+	8	89.91	10-16-65	S	Obs., 1965-69. C.
T.16 N., R.38 E.								
4B1	Harold Holliday	1,630	175	8	57.2	10-20-65	I,D	Obs., 1965-69. Deepened to 300 ft in April 1969. Drawdown 105 ft pumping 55 gpm. C, L.
9A1	Ronald Watkins	1,620	100	6	50.7	11- 3-65	N	Obs., 1965-69.
9A2	do.	1,620	113	--	55.4	11- 3-65	D	
9A3	do.	1,620	74	--	51.5	11- 3-65	N	
12C1	John Schlomer	1,620	210	6	50	9- 1-70	I,D,S	
15L1	Carl Beckley	1,590	64	--	18	1954	D,S	
22D1	do.	1,550	49	--	18	1954	N	
T.16 N., R.39 E.								
1A1	J. H. Robinette	1,535	111	6	54.31	7-27-56	N	
7G1	John Schlomer	--	500	8	250	1955	D,I	Reported basalt at 40 ft.
12B1	J. H. Robinette	1,720	275	6	195	1934	D,S	Reported basalt at 210 ft.
13P1	Mike Maley	1,490	524	12	70	12- -51	I	Drawdown 83 ft after 4 hr pumping 1,165 gpm. L.
24D1	J. H. Robinette	1,500	--	6	50	--	D,S	
24Q1	C. O. Camp	1,490	495	12	60 61.65	1951 3-13-68	I	Drawdown 290 ft after 1½ hr pumping 1,000 gpm. L.
25P1	J. S. Branch	1,525	72	6	20.76	7-26-55	S	
26J1	do.	1,540	59	6	42.74	1-18-54	S	Obs., 1954-72.
35J1	Paul Scharpenberg	1,485	125	8-6	63.65	9-27-55	N	Drawdown 1 ft after 4 hr pumping 75 gpm. Obs., 1955-56.
T.16 N., R.40 E.								
2N1	--Hayes	1,730	84	6	2.92	7-13-56	N	
4E1	H. O. Storment	1,640	260	6	200	10- -56	D,S	Basalt at 50 ft.
4P1	D. Storment	1,635	150	6	120	--	D,S	
10C1	E. C. Hay Ranch	1,670	58	48	30.35	7-13-56	D	
12R1	L. Wakefield	1,780	120	6	35	--	D,S	
13B1	Bill Hughes	1,710	160	6	90	--	D	
20M1	J. S. Branch	1,525	42	6	18	1944	D,S	
22J1	A. Knott	1,515	65	6	30	1946	D	L.
23A1	W. H. Hughes	1,555	90	8	20	10- -55	D	
24K1	Kate Litzenberg	1,550	135	6	90	--	D	
28D1	Joe Guske	1,520	37	36	26.15	7-12-56	N	
29D1	F. G. Wesselman	1,515	115	6	75	1947	D,I	Reported yield 60 gpm.
30K1	Floyd Fields	1,590	50	6	19.20	8-11-54	N	
30K2	do.	1,610	211	6	175	1954	N	L.
31E1	Franklin Rockwell	1,590	93	6	--	--	D,S	Reported yield 17 gpm.
32R1	Floyd Fields	1,640	265	6	100	1954	D	Basalt at 60 ft.
34H1	Philip Swent	1,680	80	4	60	--	D	
34R1	Hattie Hopkins	1,635	--	6	--	--	D,S	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.16 N., R.41 E.								
4R1	A. Repp	1,800	140	6	70	--	D	
6K1	do.	1,820	190	6	100	--	D	Supply inadequate.
8P1	--Day	1,800	145	6	35	--	D	
9A1	B. Whites	1,760	165	6	45	--	D	Basalt at 50 ft.
10N1	D. Whites	1,720	84	6	--	--	D	
11A1	Richard Kyser	1,850	27	36	11.10	7-17-56	D	
12L1	W. Clark	1,920	65	60	40	--	D,S	Entirely in blue clay.
14R1	B. Pendergrass	1,900	145	6	45	--	D,S	
19E1	F. L. Stapleton Ranch	1,570	90	6	90	8- -42	D,S	L.
24N1	D. Appel	1,650	135	6	50	--	D,S	
26C1	H. Breeden	1,660	106	6	51.30	7-16-56	N	
26C2	do.	1,620	65	6	--	--	D,S	
26P1	J. W. Mader	1,680	120	6	60	--	D	
27F1	A. E. Foundain	1,590	120	6	40	--	D	
33D1	H. C. Ackerman	1,750	107	6	50	--	D,S	
T.16 N., R.42 E.								
1F1	Lloyd Smick	2,090	103	6	33.42	8- 3-62	D	
2B1	Uni-Chem Inc.	2,030	100	8	12	--	Ind	L.
2H1	Ralph Bumgarner	2,060	160	6	55	--	D,S	
4C1	E. Hamilton	2,020	30	6	18	--	D,S	
5K1	--Blevins	1,995	33	48	8.40	7-27-56	D	
6R1	Unknown	2,030	300	6	46.30	7-27-56	N	
11F1	Oscar Steiger	2,155	105	6	4.83	8-29-62	D	
13F1	Fay McNeilly	2,150	150	6	42	--	D	
13H1	Jack Pittman	2,195	100	6	34	--	D,S	
13L1	Orville Krueger	2,130	94	6	Flowing	8-29-62	D,S	
14N1	Z. M. Chestnut	2,030	28	--	4	--	D	
19N1	M. W. Klettke	1,655	50	6	Flowing	7-17-56	D	
25G1	Maurice Ousley	2,135	96	6	53.47	8- 1-55	D,S	
26J1	John Moore	2,030	160	6	--	--	D	
26K1	F. E. Naffziger	1,980	63	6	41.15	8- 1-55	D,S	
36L1	Alex Teade	2,060	90	6	18	1955	D	
T.16 N., R.43 E.								
1B1	James Hayes	2,035	257	6	43	9-14-66	D	L.
3F1	Ira Roberts	2,205	187	6	16	--	D	Basalt at 70 ft.
3H1	George Appel	2,270	102	6	62	--	D	
3J1	--McGuire	2,370	30	6	4.62	8-29-62	D	
3M1	Irwin McGuire	2,270	96	6	30	--	D	
7G1	M. F. Townsend	2,135	152	6	14	--	D,S	
7K1	Robert Kramer	2,125	190	8	12	9-10-62	D	C, L.
9L1	J. W. Daubert	2,230	67	6	8.02	8-26-62	D	
11G1	City of Colfax, well 2	1,970	600	12	180 186	-- 3-19-69	P	Reported yield 711 gpm. L.
11M1	City of Colfax, Sewer Dept.	1,975	125	6	100	1953	N	Destroyed. L.
12A1	--Griffin	2,340	--	6	61.38	10- 3-56	N	
12A2	W. R. Heilsberg	2,395	90	6	--	--	D,S	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.16 N., R.43 E.--Continued								
14A1	Colfax Cementery, Dist. 6	2,265	97	8	25	1945	D	
14A2	do.	2,265	340	8	14.23	10-14-64	N	Formerly used to irrigate cemetery.
14N1	Harvey Ackerman	2,230	65	6	3	2- -55	D	
14N2	City of Colfax, well 3	2,150	750	20-12	340	8- -55	P	C, L.
15D1	R. Turner	2,140	75	6	43	9-27-63	D	Basalt at 20 ft.
15R1	Charles Stevick	2,260	247	6	135	2- -54	D	DO.
15R2	do.	2,290	338	6	189.60	7-28-55	N	
16B1	Maude Jeffries	2,265	178	6	79.69	8-26-62	D	
16J1	Wayne Hopkins	2,210	21	48	7.30	7-29-55	D	Supply inadequate in summer.
17A1	Josh Davis	2,200	14	6	5.22	8-26-62	D	
18H1	L. G. Sarver	2,160	67	6	18.88	8-30-62	D	
20E1	Whitman County Fairgrounds	2,135	94	8	12.16	7-14-55	P	Basalt at 54 ft.
20G1	Arthur Jensen	2,150	100	6	20	1955	D,S	
20P1	Alfred Teal	2,155	69	6	30	--	D,S	L.
21L1	Arthur Jensen	2,202	106	6	11.75	1-18-54	N	Obs., 1954-62.
21P1	Colfax Airport	2,190	175	8	2.49	7-14-55	D,Ind	
22A1	Whitman County	2,280	190	6	19.89	7-28-55	D	
22G1	Ed Broeckel	2,390	190	6	156	7- -55	D,S	Basalt at 18 ft.
22P1	Eugene Mohr	2,290	80	6	60.13	7-13-55	D,S	
25D1	Henry Schmick	2,130	17	48	9	--	D	Basalt at 17 ft.
25F1	L. W. Smawley	2,170	418	7	400	1952	--	Supply inadequate. L.
27E1	A. A. Anderson	2,240	33	42	19.42	7-13-55	D	
28P1	Eugene Mohr	2,180	87	--	--	--	D,S	
29H1	D. C. McClintock	2,210	93	6	38	1949	D,S	Basalt at 60 ft.
29H2	do.	2,210	248	6	242	--	N	Destroyed.
30M1	Mrs. Ruby Lloyd	2,215	141	6	22	7- -55	D	Reported yield 60 gpm. L.
32D1	E. Filan	2,130	68	6	.75	7-14-55	D	
33H1	Lewis Day	2,185	74	8	39	10- -54	D	Reported yield 35 gpm. L.
33R1	John Getz	2,205	17	60	8.05	7-13-55	D,S	
36J1	W. D. Jeffries	2,250	--	4	20	--	D	Basalt at 20 ft.
36J2	E. W. Boldt	2,245	55	6	--	--	D	Do.
T.16 N., R.44 E.								
1D1	C. W. Howell	2,470	55	6	2	12- -50	D,S	Basalt at 16 ft.
2R1	R. L. Hill	2,445	30	8	1.97	10- 3-56	D,S	Do.
4E1	Mrs. E. M. Thompson	2,470	320	6	120	--	D,S	Supply inadequate.
5J1	Unknown	2,420	28	48	16.19	10- 3-56	N	
6M1	Unknown	2,370	8	36	1.33	10- 3-56	N	
7M1	Ed Roberts	2,395	40	6	--	--	D,S	
8N1	Dale Enos	2,415	220	6	29.70	10- 3-56	D,S	
11F1	C. E. Hodge	2,370	46	8	10	1947	D	L.
11M1	do.	2,395	26	42	10	6- -56	D	Basalt at 26 ft.
13E1	A. W. Shelledy	2,475	176	8	141	1955	D,S	Basalt at 38 ft.
17E1	Dale Enos	2,385	274	6	235	9- -56	D,S	Basalt at 30 ft.
22K1	P. S. Brownell	2,415	25	48	5.87	10- 2-56	D	"Quicksand" at 24 ft.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.16 N., R.44 E.--Continued								
24D1	Richard Koeing	2,520	190	6	--	--	D	
24H1	Orvel Walker	2,595	259	8-6	Flowing	9- -55	D,S	Backfilled from 290 ft. L.
24M1	Henry Koenig	2,530	10	54	5.58	10- 2-56	N	
26J1	J. K. McIntosh	2,490	125	6	40	10- -44	D	L.
29F1	Elgie Day	2,330	11	42	6.93	10- 2-56	D	Bottoms in basalt.
30F1	Paul Cocking	2,390	300	6	--	--	D,S	
31Q1	Katie Hensle	2,320	68	6	17.50	8-19-54	D	
32N1	Jack Ensley	2,430	11	36	1.13	8-18-54	D	
32P1	Harold Johnson	2,395	50	40	24.10	8-19-54	D,S	"Bedrock" at about 45 ft.
35L1	Boyd Harlow	2,300	95	8	24.99	10- 2-56	D	L.
35L2	do.	2,300	113	6	8.71	10- 2-56	N	Report "quicksand" in well.
T.16 N., R.45 E.								
1J1	Glen Grady	2,510	18	54	6.16	10-21-54	D	Entirely in silt.
1K1	W. A. Meinig	2,535	186	6	115	--	N	Supply inadequate for domestic use.
1M1	Marvin Styer	2,560	180	6	125	--	D,S	Basalt at 24 ft.
3A1	Fred Olson	2,540	30	60	17.37	12- 4-53	D,S	
3R1	John Daily	2,580	44	48	32.23	12- 4-53	D,S	
6M1	Jim Hensle	2,560	30	36	7	--	D	
6N1	do.	2,560	30	36	6.01	10-21-54	D	
9D1	Fred Slonaker	2,590	46	42	22.39	10-21-54	D,S	Supply inadequate.
9G1	Dan Dailey	2,565	160	6	60	--	D	
10A1	H. L. Miller	2,555	150	6	17.48	10-21-54	D,S	Entirely in silt.
10H1	W. S. Redman	2,560	115	6	112.53	12- 4-53	N	
10H2	Joe Mader	2,565	52	6	20	--	D	L.
10J1	Allan Flansburg	2,550	92	6	--	--	D	Supply inadequate
11D1	H. L. Miller	2,580	60	6	15	--	D	Basalt at 25 ft. Reported yield 21 gpm.
11N1	E. L. Flansburg	2,575	77	36-6	40	--	D	Basalt at 40 ft.
12D1	A. W. Leistner	2,560	110	48-6	60	1925	D	Basalt at 54 ft.
12J1	Raymond Hanson	2,580	120	8	50	--	D,S	Basalt at about 110 ft.
12N1	Boyd Beeson	2,618	198	6	118.20	12- 8-54	N	Obs., 1954-56.
13F1	do.	2,615	125	6	65.31	10-20-54	N	
13H1	Lamona Garrison	2,565	147	6	20	1948	D,S	Basalt at 40 ft.
13N1	Harvey Beeson	2,540	32	42	20.68	10-20-54	N	
14K1	Joe Mader	2,605	80	6	73	--	N	
15F1	J. A. Twitmeyer	2,520	50	48	31.43	12- 3-53	D,S	Basalt at 30 ft.
15P1	Clarence Kuehner	2,495	100	6	--	--	D	
16A1	John Kuehner	2,565	60	36	48.26	12- 4-53	D,S	
16F1	Kamiak State Park	2,800	170	8	56.60	7-23-68	D,I	Obs., 1968-69. L.
16N1	do.	2,875	400	8	168.30	12- 3-53	P	"Rock" at 10 ft. Supply inadequate.
18A1	Welden Askins	2,605	8	36	5.29	10- 3-56	D	Blue clay at 8 ft.
22N1	A. L.Swecker	2,460	25	36	12.67	12- 3-53	D,S	
24J1	Glen Glover	2,610	30	42	12.40	10-19-54	N	
25D1	W. M. Stipe	2,520	240	6	30	1951	D	L.
25R1	John Tate	2,595	24	48	10.54	11-11-53	D	Entirely in clay.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.16 N., R.45 E.--Continued								
27Q1	Jack Leonard	2,460	135	6	20	7- -50	D,S	"Rock" at about 15 ft. Sand reported below rock.
27R1	Jacob Greenwalt	2,480	147	6	40	--	D,S	Entirely in basalt.
30K1	Carl King	2,340	99	6	22	11- -55	D,S	Basalt at 5 ft.
30Q1	C. C. King	2,345	120	6	--	--	D	Reported yield about 60 gpm.
32N1	Roy Parvin	2,520	140	6	50	1940	N	Basalt at 12 ft.
33P1	Unknown	2,520	30	42	11.13	8-19-53	N	
35R1	Paul Mader	2,520	10	60	3.04	11- 9-53	D	
36B1	Lloyd Knapp	2,580	100	36-6	5.95	11-11-53	N	
T.16 N., R.46 E.								
5E1	Bernard Redman	2,630	301	6	200	--	D	L.
6D1	City of Palouse	2,425	284	8	70	1964	P	Only slight drawdown after 24 hr pumping 325 gpm. C.
6D2	do.	2,430	170	6	8	1954	P	This well and 6D3 are in the bottom of an underground reservoir about 18 ft deep. The two wells flow at about 100 to 150 gpm. C.
6D3	do.	2,430	115	8	8	1954	P	C.
8M1	Earl McKenzie	2,720	115	6	63.16	10-20-54	D	
18B1	Harold McKenzie	2,635	69	48	22.40	10-20-54	D,S	Pumping when water level measured.
18G1	Pete Bodker	2,600	57	48-8	20.63	10-20-54	D,S	L.
18M1	Walter Main	2,565	225	6	22.85	10-20-54	D,S	
19N1	Glen Glover	2,565	24	54	8.05	10-19-54	N	
20C1	Bessie Anderson	2,650	35	48	24.92	10-20-54	D,S	
29N1	Howard Hill	2,595	13	72	3.92	11-12-53	D	
29Q1	R.E. Schaffer	2,605	9	36	2.40	11-12-53	D,S	
29Q2	do.	2,605	29	48	10.22	11-12-53	D,S	
30M1	Frank Wilson	2,560	24	42	21.13	10-20-54	D	
30Q1	E. V. Parker	2,600	32	42	21.75	11-11-53	D	
31B1	R. E. Schaffer	2,560	15	48	8.69	11-11-53	D,S	
31R1	--Kaster	2,630	34	28	16.17	11-10-53	N	
32M1	Otto McCoy	2,600	11	40	3.82	11-12-53	D,S	
32N1	Merl Hill	2,620	21	42	13.56	11-12-53	D,S	
T.17 N., R.35 E.								
24A1	C. A. Schwerin	1,727	155	6	152.38	7-20-65	N	Obs., 1965-69.
24A2	do.	1,727	180	8	--	--	D	Reported yield 27 gpm. L.
34B1	R. Kembel	1,728	380	--	60	1950	--	
T.17 N., R.36 E.								
16P1	Art Benzel	1,660	120	6	75.79	9-20-65	S	Obs., 1965-69.
20J1	R. S. Hille	1,674	153	8	102.79 104.6	3-22-66 3-19-69	I,S	Drawdown 18 ft pumping 150 gpm. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.17 N., R.37 E.								
8R1	C. D. Harder & Sons	1,600	32	6	--	--	S	
17B1	do.	1,600	160	6	--	--	S	
17Q1	do.	1,595	250	12	36	1954	I	Drawdown 190 ft pumping 950 gpm. L.
17R1	do.	1,595	214	8	70	1955	D,I,S	Drawdown 20 ft pumping 500 gpm. C, L.
22F1	Frank Connel	1,620	55	6	19	1958	--	Drawdown 18 ft pumping 100 gpm.
22P1	Elda Stephanson	1,590	18	36	13.36	9-10-65	N	
22P2	do.	1,590	18.5	120 by 180	11.91	9-10-65	S	
22Q1	do.	1,595	64	6	10	--	D	C.
28H1	Maybelle Morgan	1,580	64	6	10	11- -47	D	Drawdown 16 ft pumping 750 gpm.
33K1	Kent Bros.	1,595	225	10	70	1953	I	Drawdown 100 ft pumping 710 gpm. L.
35C1	Elda Stephanson	--	265	6	18	1927	D,S	
T.17 N., R.38 E.								
7D1	Unknown	1,645	--	6	30.00	11- 5-65	S	
14R1	Stanley Neace	1,600	502	12	10	1962	N	Reported yield 100 gpm.
18D1	Dale Holliday	1,635	339	10	33	11-13-50	D,I	Drawdown 274 ft pumping 275 gpm. L.
T.17 N., R.39 E.								
2J1	Don Jordan	1,760	200	6	60	--	D	
10A1	Unknown	1,670	60	6	31.82	7-11-56	N	
23A1	Harry Lienweber	1,560	16	2½	10	--	N	
25M1	Catherine Lust	1,560	235	6	144.98	11- 7-63	N	
26B1	M. K. Shawgo	1,600	20	48	15	1956	N	Destroyed.
26B2	do.	1,600	286	8	20 25	1964 1967	D,S,I	L.
27J1	Faye Storment	1,600	110	6	70	9- -55	D,S	Did not reach "rock."
30N1	Gene Marsh	1,560	15	48	6	--	D,S	
31D1	E. A. Norris	1,565	12	36	3	--	D,S	
T.17 N., R.40 E.								
4B1	Paul Brown	1,530	96	6	35	--	D	
4H1	E. N. Aldridge	1,520	80	6	40	--	D	
8C1	Abe Leinweber	1,540	7	48	3	--	D	Basalt at 7 ft.
8H1	Kirk McCall	1,550	102	8	45	--	N	Reportedly in sand from 45 to 100 ft. C.
8L1	--Knott	1,530	5	--	3	--	D	Entirely in basalt.
10D1	E. Richter	1,595	14	84	7.60	7-30-56	D	
12M1	Henry Kackman	1,550	49	6	19.37	9-27-63	D	
15F1	W. G. Carter	1,780	106	6	51.60	11- 9-54	D	Obs., 1954-56.
22P1	W. Leinweber	1,550	33	8	18	1941	D,S	
23N1	William Hughes,Jr.	1,580	80	6	50	--	D,S	
25L1	Unknown	1,665	64	6	7.57	9-27-63	N	
26A1	C. S. Storment	1,620	114	8	35	--	D	Obs., 1968-72.
26D1	William Hughes, Jr.	1,600	140	6	110	--	D,S	
26H1	C. S. Storment	1,620	101	12	25	1953	I	Drawdown 44 ft after 4 hr pumping 800 gpm. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.17 N., R.40 E.--Continued								
29B1	R. M. Hughes	1,480	50	9	30	--	D	
29C1	Union Pacific Ry. Co.	1,470	16	144	10	1964	D	
30A1	Emmett Cain	1,480	33	10	35.32	10- 2-63	D,S	
31P1	E. V. Storment	1,605	195	6	75.32	7-10-56	D,S	
33P1	J. R. Setters	1,680	120	4	13	--	D,S	
34H1	Phillip Swendt	1,740	101	6	32.71	9-27-63	D	
36M1	Unknown	1,830	137	6	101.84	9-27-63	N	
T.17 N., R.41 E.								
2B1	Carl Schmick	1,615	103	6	62	--	D,S	
6D1	F. C. Lueknos	1,890	253	6	220.17	10- 3-63	D,S	
9E1	J. Grove	1,560	10	36	8	--	D,S	
10R1	Don Scheurman	2,040	196	6	25	--	D	
11P1	H. H. Smick	1,880	70	6	15	--	D	
13A1	Allan Whitney	2,020	82	6	39.78	9-11-62	S	
15F1	M. L. Kleweno	2,040	293	6	200	--	D,S	Basalt at 156 ft.
16K1	do.	1,910	36	48	15.27	7-25-63	S	
16N1	G. M. Smick	1,880	40	36	35	--	D	
17A1	Zendse Smick	1,880	165	6	160	--	D	
18D1	Floyd Bafus	1,860	190	6	84	--	D,S	
18P1	Unknown	1,880	34	4	3.67	9-27-63	N	
20H1	Dan Lust	1,840	185	8	85	--	D,S	Basalt at 100 ft.
23H1	Dan Whites	1,955	245	6	150	--	D,S	
25H1	Ben Huntley	1,900	270	6	--	--	D	
26K1	Solomon Ochs	1,805	50	6	20	--	D,S	
30D1	Ralph Garrett	1,760	100	6	60	--	D	
30R1	Town of Endicott	1,760	175	8	40 41.09	7- 3-45 8-23-67	P	Drawdown less than 1 ft after 5 hr pumping 229 gpm. C, L.
31G1	do.	1,800	314	6	100	--	P	C.
31J1	Jack Schmick	1,720	160	6	60	--	D,S	
31N1	J. Whites	1,810	273	6	105	--	D	
32H1	B. Leinweber	1,800	100	6	30	--	S	
32J1	do.	1,755	85	6	20	--	D	
32M1	Fred Green	1,710	50	8	12	--	I	Reported yield 65 gpm. L.
33A1	G. Bafus	1,760	90	6	40	--	D,S	
T.17 N., R.42 E.								
1F1	A. L. Nickerson	2,250	199	8	44	1959	D	L.
5N1	Garnett White	1,760	109	8	14.23	9-13-62	D,S	
6K1	Ray DeLong	1,720	105	8	Flowing	9-13-62	D,S	
10A1	Carlos White	2,220	300	6	--	--	D,S	
10N1	Frank Feenan	2,140	360	8	30	1951	I	Reported yield about 300 gpm.
10P1	do.	2,140	363	8	30	1951	I	Do.
11A1	Unknown	2,270	23	48	17.59	8-25-62	--	
13N1	Gene Feenan	2,240	70	6	55	--	D	
14C1	do.	2,170	130	6	80	--	D	
18M1	Phillip Smick	2,035	204	6	146.59	11-13-54	D,S	Reported yield about 12 gpm. Obs., 1954-56.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.17 N., R.42 E.--Continued								
19C1	Adam Batus	2,120	268	6	86.86	8- 5-55	--	Obs., 1955-56.
20N1	Forrest Garrett	2,000	129	7	68.30	8- 5-55	D	Basalt at 36 ft.
22L1	John Shields	1,800	27	6	Flowing	8-24-62	D,S	
27G1	Jerry Simmons	2,080	328	6	--	--	D	
33E1	A. C. Swift	1,955	72	6	18.52	8-30-62	D	
33N1	E. Hamilton	2,000	30	6	18	--	D	
34N1	Unknown	2,000	15	6	10.00	7-27-56	N	
35N1	--Guske	2,070	61	6	33.42	8-26-62	D	
T.17 N., R.43 E.								
2B1	School Dist.	2,330	64	8	28	--	P	Supply for school.
2B2	Robert Alderman	2,310	117	8	2	10- -61	D	L.
2C1	General Mills Inc.	2,310	18	48	13.32	9-19-62	N	
4C1	Dale Hall	2,365	90	6	40.00	8- 8-56	D	
6N1	Unknown	2,260	9	96	4.43	8-25-62	D,S	
7H1	John Morgan	2,380	370	6	160	--	D	Basalt at 80 ft.
8E1	Unknown	2,320	17	48	6.24	8-22-62	N	
8M1	Lee Tate	2,310	103	7	Flows	Winter	D	Basalt at 30 ft.
10K1	B. C. Pettibone	2,255	48	8	15.32	8-22-62	D	
14E1	J. T. Danaher	2,215	12	48	.83	8-22-62	D,S	
17B1	Vern Faires	2,280	147	6	--	--	D	Basalt at 47 ft.
17P1	R. B. Pogue	2,255	526	6	458	--	D	
18A1	Norman Willson	2,350	222	6	103	--	D	
18P1	Unknown	2,310	183	6	65.57	8-22-62	N	
18Q1	Vern Faires	2,300	111	6	68.22	8-28-62	S	
20J1	George Massingale	2,200	230	6	94.66	8-22-62	D	
20R1	Leo Lynch	2,070	64	6	55.11	8-21-62	I	Irrigates lawn and garden.
25L1	Fayne Cochran	2,360	185	8-6	51.96	10- 5-56	S	L.
25L2	do.	2,370	120	6	--	--	D	Originally 230 ft deep.
26Q1	Unknown	2,385	142	6	54.59	8-21-62	N	
30C1	C. B. Kennedy	1,865	24	48	21.73	8-28-62	D	
34R1	W. H. Willson	2,335	195	8	52.82	8-21-63	D,S	Drawdown 35 ft pumping 45 gpm. L.
35E1	do.	2,310	12	48	--	--	--	Dry 8-21-62.
35Q1	L. L. Saylor	2,345	115	6	18	6- -51	I	Reported yield 30 gpm.
35Q2	do.	2,350	278	8	18.8	12- 2-66	--	Obs., 1967-72.
35Q3	Inland Power Co.	2,340	319	6	29	12- 3-68	Ind	
36B1	Leslie Shahan	2,425	33	36	12.26	9-18-62	D	
T.17 N., R.44 E.								
8F1	Orville Eskelson	2,470	171	8	18.59	9-18-62	D,S	
9F1	George Imler	2,375	169	5	101.33	9-20-62	D,S	
14P1	F. W. Draper	2,485	140+	5	80	--	D,S	
16E1	Curtis Cattle Co.	2,395	115	8	44	5- -49	D,I	Drawdown 44 ft after 6 hr pumping 350 gpm. Obs., 1966-69. L.
18J1	Charles Rodgers	2,350	90	6	27.43	9-18-62	D,S	
20E1	Unknown	2,450	20	48	4.51	9-20-62	N	
23C1	Roy Lohman	2,480	100+	6	15	--	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.17 N., R.44 E.--Continued								
26A1	O. R. Brown	2,560	83	6	--	--	D,S	
30B1	Fayne Cochran	2,485	12	60	3.21	10- 5-56	D,S	
30E1	P. L. Crumbaker	2,450	40	48	4	--	D,S	Entirely in silt.
32A1	City of Colfax	2,075	100	10	Flowing	10-31-63	P	East Glenwood well. Flows about 625 gpm.
32A2	do.	2,075	105	12-8	Flowing	10-31-63	P	West Glenwood well. Flows about 625 gpm.
33C1	do.	2,090	380	12	--	--	N	Was drilled for public supply, but yield is insufficient.
33G1	E. W. Johnson	2,390	69	6	17.22	10- 4-56	D	Probably entirely in basalt.
33Q1	do.	2,405	80	8	30.18	10- 3-56	D,S	
34M1	Paul Johnson	2,475	85	6	20	10- -56	D	
34N1	do.	2,505	400	8	--	--	N	Depth to water in excess of 300 ft. 10-4-56.
35F1	Adolf Harder	2,540	180	6	30	--	D,S	
T.17 N., R.45 E.								
4C1	Town of Garfield	2,480	380	10	130	--	P	Drawdown 1 ft after 4 hr pumping 300 gpm. Obs., 1967-69. C, L.
6J1	J. C. Gwinn	2,480	170	6-4	72	--	D	L.
8D1	John Gwinn	2,530	266	6-4	180	12- -46	D	L.
13D1	W. S. Redman	2,555	9	36	2.77	12- 4-53	D,S	
13M1	Harry Curtis	2,500	240	6	140	--	D	
14K1	J. E. Miller	2,480	60	4	19	--	D,S	"Bedrock" at 25 ft.
14P1	Glen Curtis	2,480	47	6	32	--	N	
19K1	D. F. Lange	2,520	197	6	90	1940	N	
19P1	do.	2,460	190	8-6	98	12- -55	D	Backfilled from 237 ft. Drawdown 89 ft after 4 hr pumping 73 gpm. L.
22A1	J. E. Miller	2,500	200	--	120	--	D,S	Originally 220 ft deep. Drawdown 20 ft after 4 hr bailing 2 gpm. L.
22J1	do.	2,520	500	6	300	1930	N	
26F1	W. S. Redman	2,555	240	6	--	--	D,S	Reported yield in excess of 8 gpm.
31P1	Unknown	2,760	78	6	23.98	10- 4-56	N	
36N1	Frank Kuehner	2,510	60	6	20	--	D,S	Basalt at 5 ft.
T.18 N., R.36 E.								
4A1	D. Heinemann	1,769	575	16	139.52	10-15-65	I	Drawdown 243 ft pumping 340 gpm. Obs., 1965-72. Well deepened from 400 ft in 1968. L.
4G1	do.	1,705	--	6	38.06	10-15-65	S	Obs., 1965-69. C.
4M1	Walter Teske	1,778	151	8	135	1965	I	Drawdown 14 ft pumping 70 gpm. L.
5B1	D. Heinemann	1,785	438	8	151.3 149.20	3-11-68 4- 3-69	N	
8B1	do.	1,772	138	8	100	1949	--	L.
12B1	Lester Sielaff	1,727	103	6	97.4	8- 4-65	S	C.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.18 N., R.36 E.--Continued								
13H1	Lester Sielaff	1,738	326	6	178.37	8- 4-65	D,I,S	Obs., 1965-68.
14E1	Jacob Harder	1,595	--	8	10.28	11- 9-65	D	
T.18 N., R.37 E.								
5K1	Orville Moeller	1,740	12	6	--	--	S	C.
6P1	A. Sielaff	1,785	304	6	--	--	I,D	
8E1	O. Moeller	1,745	125	6	23	--	S	Reported yield 70 gpm.
8J1	do.	1,877	527	12	289	1956	I	C.
8M1	do.	1,748	132	6	--	--	D	Reported yield 70 gpm.
9C1	do.	1,760	260	6	143.19	4-20-67	S	
9C2	do.	1,760	294	16	146 143.8	3-24-67 3-11-68	--	L.
9G1	do.	1,753	226	6	137.62	8- 5-65	S	Obs., 1965-68. C.
14D1	R. H. Spencer	1,700	34	6	dry	9- 8-65	N	
22C1	Unknown	1,713	157	6	116.09	8- 5-65	S	
22Q1	O. Moeller	1,690	172	6	75.23	8- 5-65	S	Obs., 1965-69.
24H1	R. H. Spencer	1,689	106	8	62.27	9- 8-65	S	
28R1	O. Moeller	1,700	236	8	90.32	8- 5-65	S	
29D1	W. C. Hennings	1,638	400	--	100	1962	D,S	
29E1	Union Pacific Rd. Co.	1,638	260	12	71	9- -45	D,Ind	Drawdown 30 ft pumping 300 gpm. L.
36B1	A. E. Barnes	1,625	12	48	9.33	11- 5-65	S	
T.18 N., R.38 E.								
2F2	Harry Harder	1,600	114	6	96.78	9- 2-65	D	
4F1	C. H. Harder	1,730	370	10	65	--	D,I	Drawdown 45 ft pumping 700 gpm. L.
4M1	do.	1,879	528	12	260	1951	I	Drawdown 55 ft pumping 1,480 gpm. L.
4Q1	do.	1,777	370	6	72	1949	I	Drawdown 50 ft pumping 440 gpm. L.
8N1	Cecil McCall	1,688	48	8	16.86	9- 3-65	S	
9L1	do.	1,802	175	6	150	--	D,S	
10N1	Unknown	1,680	64	6	18.27	9- 3-65	D	Obs., 1965-69.
10P1	Seattle, Portland, and Spokane RR.	1,699	88	8	33.08	11- 5-65	N	
15D1	R. Spencer	1,678	10	36	9.1	9- 3-65	S	
15K1	do.	1,690	10	48	6.25	9- 9-65	S	
18H1	do.	1,677	362	16	69.5	3-12-68	I	Drawdown 69 ft pumping 2,000 gpm. L.
18M1	do.	1,677	143	12	--	--	I	C.
21F1	do.	1,695	8	36 by 40	4.92	9- 8-65	D	
21F2	do.	1,695	12	48 by 48	10.52	9- 8-65	D,I	
21F3	do.	1,695	115	8	8	1-31-68	D	Drawdown 4 ft pumping 250 gpm. L.
22R1	H. Harder	1,660	80	--	37.86	9- 3-65	S	
28N1	R. Spencer	1,682	16	60 by 60	9.39	9- 8-65	S	
32J1	Unknown	1,720	95	6	90.65	9- 8-65	N	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T. 18 N., R.39 E.								
6A1	Unknown	1,765	175	6	158.75	7-25-56	N	
8G1	Mary Smick	1,670	170	6	34.47	7-31-56	D,S	L.
12K1	G. D. Ferris	1,740	115	6	58	7- -51	D,I	Drawdown 15 ft after 4 hr pumping 125 gpm.
12K2	do.	1,750	16	48	6	--	D,I	Entirely in basalt.
22P1	Willis Lamb	1,780	102	6	60	--	D,S	
26N1	G. D. Sayles	1,850	325	6	215	--	D,S	Basalt at 280 ft.
35M1	do.	1,720	90	6	60	--	D	
T.18 N., R.40 E.								
1D1	Joe Hargrave	1,860	84	6	6.00	7-26-56	D	Basalt at 6 ft.
1H1	--Davis	1,920	90	6	40	--	D	
1J1	--Conover	1,930	80	6	30	--	D	
2A1	E. M. Hays, Jr.	1,840	297	12	51	1954	I	Drawdown 89 ft pumping 1,200 gpm. L.
2A2	do.	1,840	140	6	90	--	--	L.
9M1	Unknown	1,740	10	36	7.00	11- 5-64	S	
10F1	Jack Smith	1,835	352	10	104 200	10- -52 7-28-56	I	Reported yield 361 gpm. L
11B1	Ray Hann	1,840	200	6	110	--	N	Supply inadequate, well abandoned.
11C1	do.	1,810	320	12	31 52.35 39.20	5- -49 8-23-67 8-14-68	I	Drawdown 200 ft after 4 hr pumping 300 gpm. L.
13F1	Jack Smith	1,940	171	6	13	8- -45	D	L.
14D1	Delbert Countryman	1,855	150	6	95	--	D	
20B1	E. Wolfe	1,735	9	48	6.31	7-26-56	N	
28K1	J. Christensen	1,780	122	6	77	--	D	Basalt at 4 ft.
30R1	Unknown	1,750	18	54	15.87	11-18-64	S	
32P1	Jack Smith	1,515	105	--	36 26 47	11- -64 8-23-67 3-23-69	I	
T.18 N., R.41 E.								
1A1	City of St. John	1,965	150	12	9.18	9-14-39	N	Destroyed. C.
1A2	Roy Freeman	1,970	100	6	3.57	9-26-63	I	Irrigates two lawns.
1H1	City of St. John, well 3	2,050	350	12	140	--	P	
1J1	City of St. John, well 1	2,140	315	6	135	--	P	
3B1	H. Oakes	2,050	125	6	70	--	D	
3C1	Adam Lautenschlager	2,035	130	6	75	--	D	
6L1	Lyle Harwood	1,940	575	12	46.90	3-14-68	I	Obs., 1967-72.
6M1	do.	1,935	132	6	72	--	D	Basalt at 25 ft.
6Q1	do.	1,960	129	6	60	1964	D,S	
11F1	A. H. Stubbe	2,010	60	6	37.45	9-17-62	D	
12L1	J. W. Freier	2,090	74	6	41.22	9-17-62	D	
16F1	Harvey Schneidmiller	1,955	110	6	30	--	D	Obs., 1967-69.
16M1	Schneidmiller Bros.	1,890	208	16	44.3	8-23-67	I	Obs., 1967-69. L.
18K1	Harry Pierce	1,980	87	6	28	--	D	
18L1	Mrs. H. O. Conn	1,955	90	6	69.10	9-30-63	N	
19D1	Harry Pierce	1,970	89	6	61.78	9-30-63	N	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.18 N., R.41 E.--Continued								
20H1	Edwin Schierman	1,850	56	6	20.31	10- 3-63	D	
20R1	Ben Schierman	1,830	149	6	8.01	9-27-63	D	
21E1	Frank Oswald	1,850	110	6	60.81	9-27-63	D	
22R1	Dave Repp	1,960	142	8	20	1953	D,I	Drawdown 35 ft pumping 85 gpm. L.
23N1	Paul Marcus	1,955	33	6	28.33	9-14-62	D	
23Q1	Marvin Repp	1,975	83	6	58.81	9-14-62	D	L.
24A1	Herb Scheuerman	1,970	68	6	35.51	9-17-62	D	
26P1	B. W. Kerkman	1,975	252	6	198.71	9-14-62	D,S	
28G1	C. J. Schierman	1,855	62	6	53.31	9-17-62	D	Basalt at 15 ft.
28L1	do.	1,845	310	8	42.48	9-14-62	I	L.
29A1	Ben Schierman	1,850	210	8	12.33	10-30-63	D	Reported "no" drawdown after 4 hr bailing 20 gpm.
29A2	Waldo Schierman	1,830	238	6	18	2-27-64	D	L.
29L1	Dan Smick	1,845	150	6	48.16	10- 2-63	D,S	
29P1	Brennan Smick	1,800	55	6	20	--	D	
31A1	Catherine Andor	1,865	55	6	25	--	D	
34B1	Ed Jones	2,005	134	6	120.13	9-14-62	D	
T.18 N., R.42 E.								
4E1	Larry Miller	2,120	210	6	33.91	10-29-62	D	
4N1	St. John Cemetery Assoc.	2,130	167	6	64	--	I	
10H1	Unknown	2,230	91	6	16.70	10-26-62	N	
11Q1	Unknown	2,280	12	30	4.21	10-26-62	S	
14K1	James Curtis	2,275	120	8	55.24	10-26-62	D	L.
18N1	Randall Henry	2,090	70	6	18	1962	D	
21C1	Dan Lautenschlager	2,170	49	6	38.98	9-17-62	S	
23B1	James Schmidt	2,315	225	6	175	--	D,S	Basalt at 30 ft.
23C1	Ben Cook	2,275	22	24	17.43	10-25-62	D,S	
29L1	Dean Morse	2,115	125	6	93	--	D,S	
31N1	Art Mattingly	1,980	108	6	46.31	9-13-62	D,S	
31P1	Ray Schneider	2,020	84	6	50.67	9-13-62	D	
34J1	Donald Hooper	2,180	160	6	118	--	D,S	
35J1	Roy Taylor	2,155	200	6	180	--	D,S	
35M1	John Miller	2,175	40	6	10.00	8- 7-56	D	
36B1	E. M. Hayes	2,170	41	6	3.48	8- 8-56	D	
36M1	Jesse Lowe	2,170	130	6	21	6- -55	D,S	
T.18 N., R.43 E.								
2A1	C. Hampton	2,380	190	6	37.65	8-11-56	D	
4J1	J. T. Ellis	2,300	80	6	25	--	D	
5A1	Elmer Huntley	2,300	108	8	19.76	12- 3-66	D	L.
5D1	Hugh McDonald	2,250	84	6	8	--	D,S	Drawdown 25 ft pumping 130 gpm.
5M1	Elmer Huntley	2,270	116	12	7.88	1-10-67	D,I	Obs., 1967-69. L.
9B1	B. Blakemore	2,420	77	6	23.50	8-10-56	D	
9R1	Guy Alderman	2,350	50	6	20	8- -56	D	
10J1	Virgil Klaveano	2,375	90	6	65	--	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.18 N., R.43 E.--Continued								
12C1	Orval Greer	2,460	125	6	84.95	8- 9-56	D	L.
13H1	Anna Ripley	2,460	30	30	4.38	10-15-64	D,S	
17P1	Jim Hereford	2,350	142	6	58.23	8- 8-56	D,S	
17P2	do.	2,350	20	60	5.10	8- 8-56	S	
20Q1	Henry Tiegs	2,265	100	8	20	--	D,S	
21P1	Ed Fournier	2,330	140	6	35	--	D,S	
23B1	Ben Mohr	2,405	90	6	20	--	D	
24R1	Unknown	2,510	26	48	17.58	10-15-64	N	Formerly domestic and stock supply.
27M1	Fred Gfeller	2,370	100	6	50	--	D	
30N1	Harold Dodds	2,200	117	6	17	--	D,S	
32B1	Dwayne Shahan	2,290	24	72	16	--	D	Basalt at 14 ft.
33R1	Richard Hall	2,390	102	6	30	--	D,S	
35D1	V. McGrady	2,370	103	6	--	--	D	
35D2	B. Fisher	2,398	20	36	--	--	D	Entirely in silt.
35L1	Eugene Goss	2,330	42	6	4.81	9-19-62	D	
35N1	Don Hall	2,340	286	8	16	--	D	Basalt at about 85 ft.
35N2	Robert Suess	2,335	53	6	22.85	9-19-62	D	
35P1	G. H. Noe	2,331	132	6	18.99	9- 7-55	D	Obs., 1940-72.
35P2	Mrs. Bontadilli	2,320	45	6	11	--	N	Flows in spring.
35P3	---Mitchell	2,325	81	6	5.71	9-19-62	D	
35P4	Colfax Grain Growers	2,320	14	36	6	--	D	
35P5	Bud Harvey	2,335	58	6	8	--	D	
35P6	Bill Ratliffe	2,320	29	6	24.98	9-19-62	D	
35P7	Uni-Chem Inc.	2,311	124	8	12	7-30-69	Ind	
36L1	C. H. Watson	2,390	40	48	20	--	D	
T.18 N., R.44 E.								
5K1	W. MacQuarrie	2,450	60	6	--	--	D,S	
8E1	Hermon Brown	2,490	90	6	40	--	D,S	
11A1	Hobart Huggins	2,540	74	8	28.67	9-12-63	D	
14E1	Ora Fox	2,585	92	6	63.66	9- 6-63	D,S	
18Q1	H. Parson	2,510	92	8	52	--	D	Basalt at 48 ft.
19L1	Unknown	2,590	140	6	75.70	10-15-64	N	Formerly domestic and stock supply.
22E1	Warren Hanford	2,540	68	8	16	--	D,S	Reported yield 20 gpm.
22H1	do.	2,550	22	48	17.04	9- 6-63	D	
24F1	M. J. Gump	2,530	28	36	16.93	9- 6-63	D	Unfit for drinking. Supply inadequate.
30N1	Nellie Ward	2,510	34	--	18.89	9-18-62	D,S	
33J1	W. E. Haun	2,460	145	8	110.37	9-11-62	D	
T.18 N., R.45 E.								
1H1	Albert Leonard	2,605	87	6	Flowing	9- 5-63	D	
1L1	Bert Lehn	2,595	--	6	11.78	1-10-67	N	Obs., 1967-69.
1L2	do.	2,594	419	10	232.7	12- 1-66	I	Drawdown 101 ft pumping 680 gpm. Obs., 1966-69. C. L.
2K1	Ed Robinson	2,585	62	--	31.56	9- 4-63	D,S	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.18 N., R.45 E.--Continued								
3N1	Carl Repp	2,540	51	6	28	--	D	
7B1	Roy Peringer	2,510	80	6	30	--	D,S	L.
7F1	do.	2,510	245	12-8	12	11- -52	I	Drawdown 188 ft after 24 hr pumping 130 gpm. Obs., 1967-72. L.
9E1	George Miller	2,560	153	8	34.55	12- 7-53	D	Reported yield 40 gpm. L.
11M1	Dean Johnson	2,570	165	6	130	--	D,S	
12J1	Hannah Boyer	2,680	160	6	81.43	9-10-63	D,S	
14B1	Unknown	2,660	223	6	47.64	9-10-63	N	
16C1	Gerald Miller	2,570	150	6	23.11	9- 6-63	D	
20J1	Solomon Schroetlin	2,550	130	6	Flowing	9- 6-63	D,S	
22F1	Art Walters	2,580	210	6	39.08	9- 6-63	D	
23P1	P. H. Johnson	2,535	122	6	Flowing	9-10-63	D,S	
23R1	James Walters	2,550	113	2	Flowing	11-20-64	N	L.
32A1	J. E. Love	2,545	165	6	32.04	12- 7-53	D	Basalt at about 30 ft.
32H1	do.	2,525	131	6	55.15	12- 7-53	N	Obs., 1953-70.
33M1	Town of Garfield, well 1	2,510	195	6	115	--	P	Drawdown 25 ft after 12 hr pumping 75 gpm.
33P1	Town of Garfield, well 2	2,470	325	8	100	1938	P	C.
T.18 N., R.46 E.								
6G1	Town of Farmington	2,625	225	6	Flowing	11- 5-63	P	Reported yield about 100 gpm. C.
6H1	Union Pacific Ry. Co.	2,630	24	120	5	1- -46	--	Drawdown 12 ft after 4 hr pumping 25 gpm.
7C1	Earl Crowe	2,655	167	6	32	--	D,S	Supply inadequate.
7N1	Paul Wagner	2,680	152	6	70	--	D	
18R1	Albert Schoepflin	2,690	232	6	63.32	9-10-63	D,S	
19P1	Unknown	2,600	33	6	15.89	9-10-63	N	
T.19 N., R.36 E.								
2A1	Norman Krause	1,860	402	16	80	12-27-66	I	Drawdown 277 ft pumping 335 gpm. L.
9K1	Gayle Gering	1,855	425	16	137	10-30-68	I	Drawdown 50 ft pumping 2,600 gpm. L.
12F1	Norman Krause	1,834	63	10	43	10- 2-66	I	Drawdown 1 ft pumping 60 gpm. L.
19R1	--Meyer	1,806	350	10	142	7-22-65	I	Drawdown 24 ft pumping 620 gpm. Obs., 1965-69. C. L.
20H1	Maynard Galbreath	1,863	491	12	237	12-14-65	I	Reported yield about 600 gpm. Obs., 1965-69. C. L.
20H2	do.	1,860	563	16	222.2	3- 4-68	I	Drawdown 80 ft pumping 1,300 gpm. L.
21F1	do.	1,812	300	16	181.7	3-20-69	--	
21M1	D. Foulkes	1,840	94	6	73.43	8- 4-65	N	Obs., 1965-69.
24C1	Les Fannekuchen	1,815	90	6	45	1957	S	
28B1	Maynard Galbreath	1,816	338	12	190 187	9-17-68 3-20-69	--	Drawdown 1 ft pumping 1,200 gpm. L.
31D1	Mary Vehas	1,900	227	6	215	9- -50	D,S	Drawdown 1 ft pumping 50 gpm.
34F1	Don Heinemann	1,774	329	12	132	1961	I	Reported yield 1,000 gpm. Obs., 1965-69. C, L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface: Feet	Water level below land surface: Date	Use of water	Remarks
T.19 N., R.37 E.								
4B1	John Hennings	1,915	120	6	110	--	D,S	
11G1	John Harder	1,782	190	6	--	--	D,S	
17N1	Harry Schwison	1,815	88	6	57.48	11- 8-65	--	Obs., 1965-69.
17N2	do.	1,815	384	8	57.48	11- 8-65	D,S	Reported yield 110 gpm.
18C1	L. P. Fannekuchen	1,920	200	6	122	9- -64	D	
18Q1	Milton Schwison	1,841	106	6	69.58	12-15-60	D	
35C1	Union Pacific Ry. Co.	1,788	--	6	9.55	11- 9-65	D	
T.19 N., R.38 E.								
1R1	O. W. Kuhlman Estate	1,932	102	6	56.50	9- 1-65	D	
12K1	Jack Brown	1,922	125	6	124.55	9- 1-65	D	
13M1	--Becker	1,852	126	6	82.64	9- 1-65	N	Obs., 1965-72.
14K1	H. Harder	1,786	140	10	--	--	I	Reported yield 400 gpm.
15A1	do.	1,900	9	42	6.65	9- 1-65	D,S	
15A2	do.	1,800	130	10	--	--	I,S	Drawdown 48 ft pumping 700 gpm. C.
24N1	Cook & Tuggle	1,820	160	6	62.61	9- 9-65	--	
26J1	H. Harder	1,740	100	10	--	--	I	
36P1	Sorrels Bros.	1,738	90	8	56.56	9- 2-65	S	
T.19 N., R.39 E.								
1A1	Charles Phillips	1,990	112	6	23.47	10- 7-54	N	Obs., 1954-56.
4A1	Ernest Bailey	2,020	137	8	20	--	D,S	
5N1	C. T. Shields	1,980	65	6	45	--	D	
12C1	Clint Dirks	1,990	90	6	20	--	D	
12Q1	E. V. Appel	1,950	180	6	20	--	D	
15A1	H. E. Davis	1,905	140	6	32	--	D,S	
15K1	Mary Bradley	1,890	180	6	30	--	D	
16M1	B. Potts	1,910	30	36	20	--	D,S	
16M2	do.	1,920	180	6	Flows	1963	D,S	
18E1	Arthur Tuggle	1,955	38	8	20	--	D,S	Drawdown 10 ft pumping 30 gpm.
20L1	L. Potts	1,840	100	6	12	--	D,S	
22G1	D. E. Morton	1,860	100	6	16	--	D,S	
22P1	Earl Colyer	1,835	120	6	60	--	D,S	
26L1	Bard Cook	1,790	52	6	10	--	D,S	
27B1	Unknown	1,800	11	60	6.30	7-31-56	N	
30F1	Cecil Wagner	1,810	60	6	30	--	D,S	
31G1	Sorrels Bros.	1,800	250	6	160	--	D,S	
31G2	do.	1,810	250	6	225	--	D,S	
34B1	Willard Bowen	1,770	154	6	90	--	D,S	
35L1	Julius Sauer	1,800	60	6	20	--	D,S	
T.19 N., R.40 E.								
2B1	Leon Miller	2,080	99	6	88.29	8- 8-63	D,S	
4R1	Emmett Shawgo	2,010	180	8	88	4- -55	D,S	L.
7A1	John Wiltzius	1,910	128	6	6.68	8- 2-56	D,S	
8A1	do.	1,995	195	6	155	--	D	
10L1	Emmett Shawgo	1,830	177	12	4	2- -64	I	Drawdown 50 ft pumping 500 gpm. Obs., 1966-69. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.19 N., R.40 E.--Continued								
10M1	Emmett Shawgo	1,880	31	8	Flows	1951	D,S	
15D1	Glorfield Bros.	1,830	20	--	5	1964	I	Infiltration trench about 20 by 30 ft. Reported yield 550 gpm.
15M1	J. P. Glorfield	1,875	101	6	40	1951	D,S	Basalt at 35 ft.
16J1	L. D. Shawgo	1,825	192	8	10	2- -54	I	Drawdown 28 ft pumping 540 gpm. Obs., 1967-69. L.
16K1	do.	1,840	88	8	10	1959	D	L.
17R1	Fred Bailey	1,890	60	--	57	--	D	
18M1	Roy Cook	1,885	254	8	30.70	8- -56	D	L.
21N1	Glorfield Bros.	1,820	278	12	19	11- -64	I	Drawdown 70 ft pumping 1,200 gpm. Obs., 1967-69. L.
25C1	Mrs. J. P. Glorfield	1,740	98	6	Flowing	11- 3-64	D,I	Flows 80 gpm slight drawdown after 4 hr pumping 316 gpm. Obs., 1966-69. L.
26B1	City of Ewan	1,750	105	6	30	--	P	Reported yield 105 gpm; slight drawdown. Formerly supplied railroad.
30K1	Dean Deschane	1,845	119	8	12	1958	D,S	L.
32D1	Fred Wagner	1,140	90	6	13.50	7-26-56	D	
T.19 N., R.41 E.								
3A1	Dan Hopkins	2,145	23	36	12.76	8-14-63	N	
8G1	Ronald Schuster	1,930	61	6	37.73	8-13-63	D,S	Pumping when measured.
8P1	Ruth Hixson	2,080	100	6	70	--	D	
10C1	Fred Hollingsworth	2,070	76	6	35	--	D,S	
14Q1	C. C. Countryman	2,040	266	10	4	11- -64	I	Drawdown 92 ft pumping 300 gpm. Obs., 1966-69. L.
16L1	Mrs. Emma Brophy	1,980	43	6	28.85	8- 3-63	D	
18Q1	Fred Bailey	1,950	72	6	27	--	D,S	
21E1	Eugene Webb	1,935	185	6	150	--	D,S,I	
34C1	D.F. Hamilton	1,890	73	6	32.83	9-27-63	D,S	
36R1	City of St. John, well 2	1,970	256	8	125	--	P	Drawdown 22 ft after 4 hr pumping 110 gpm. C.
36R2	Thomas Kimball	1,963	84	6	3.58	12- 5-41	N	Obs., 1941-72.
T.19 N., R.42 E.								
5C1	M. L. Crites	2,290	239	8	--	--	D	L.
6C1	Leonard Heimbigner	2,315	120	6	50.50	8-13-63	D	
7A1	J. H. Gordon	2,305	150	8	--	--	D	L.
7R1	Paul Kratzer	2,280	80	6	21.53	8-28-62	D	
8R1	Donald Crites	2,350	94	6	27	--	N	
9J1	Unknown	2,300	30	48	22.41	10-30-62	N	
11J1	Lester Kile	2,195	126	6	52.98	10-31-62	D	L.
11N1	Lelah Pettibone	2,195	74	8	47.91	10-30-62	D,S	
12N1	Lester Kile	2,200	115	6	8	--	D,S	
15B1	Mayberry Davis	2,210	90	6	37	--	D	
18H1	Vernon Kratzer	2,275	55	--	17	--	D	
19N1	Samuel Hergert	2,090	56	6	11.39	10-26-62	D,S	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.19 N., R.42 E.--Continued								
20E1	Darwin Smith	2,175	146	10	43.02	10-28-62	D,S	
23N1	W. P. Pollock	2,110	110	6	25	--	D,S	
25A1	Hugh McDonald	2,200	69	6	19	--	I	
26D1	Ray Reich	2,105	114	6	5	--	D,S	
26G1	James Henning	2,130	70	6	10	--	D,S	
26H1	do.	2,135	140	6	40	--	N	
30M1	Gene Weiss	2,010	315	8	30.84	10-25-62	D	
32R1	Elmer Eades	2,135	90	6	25.00	9-27-63	N	
35A1	Harry Davis	2,245	82	6	64.69	10-25-62	D	
36B1	Burdett Prince	2,290	520	12	245	1954	N	Drawdown 55 ft pumping 470 gpm. Obs., 1966-69. L.
T.19 N., R.43 E.								
6N1	W. Dawson	2,290	107	6	65	--	D	Basalt at 87 ft.
14Q1	Sam Hester	2,500	225	6	80	--	D	
18K1	L. Maley	2,260	68	6	32.10	8-13-56	D	
19F1	Unknown	2,345	102	6	25.64	8-25-56	N	
19L1	Unknown	2,280	100	6	16.90	8-11-56	N	
20D1	R. G. Harvey	2,350	29	36	22.80	8-13-56	D	
24P1	F. S. Henning	2,470	98	36	90	--	D	Basalt at 10 ft.
27G1	Robert Scholz	2,350	64	6	9.16	8-21-62	D,S	
27N1	Anson Patterson	2,310	124	6	Flowing	2- -53	I	Drawdown 9 ft after 4 hr pumping 450 gpm.
28B1	McGregor Co.	2,290	84	8	Flowing	9-12-63	Ind	Obs., 1967-72.
28C1	--Good	2,295	72	6	Flowing	8-11-56	D	Basalt at 26 ft.
28M1	Adam Witte	2,440	260	8	90	--	D	
28M2	do.	2,440	230	6	80	--	D	
34K1	C. Comegys	2,340	117	6	60.20	8-11-56	D	
35J1	William Kilpatrick	2,375	300	8	--	--	D	
35N1	H. Comegys	2,375	157	6	67	--	D	L.
T.19 N., R.44 E.								
11C1	T. R. Kendall	2,515	165	6	45	--	D	
12D1	Unknown	2,470	25	36	14.56	9-10-56	D	
14C1	Mrs. E. P. Lamb	2,555	60	48	50	--	D,S	
14N1	J. J. Russell	2,550	55	36	50	--	D	
16A1	David Hanford	2,495	21	30	4.77	5-18-54	N	Obs., 1954-56.
18B1	Gerald Shahan	2,555	61	48	39.65	10-20-64	D	Supply inadequate in summer.
20J1	Howard Rambo	2,580	70	6	35	1943	D	
21P1	Charles Crow	2,510	20	--	5.73	8-21-62	D,S	
22K1	Town of Oakesdale	2,460	481	12-8	13	9- -51	P	Drawdown 175 ft after 4 hr pumping 206 gpm. Obs., 1967-69. C, L.
30M1	Harry Setters	2,510	105	36	91.13	8-21-62	D	
32F1	Mrs. J. Eckahart	2,595	169	6	42.12	8- 9-56	D	Reported "mica" at 169 ft.
33C1	Lee Ellis	2,550	130	6	50	--	D,S	"Bedrock" at 30 ft.
33N1	R. E. Blakemore	2,520	110	6	--	--	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.19 N., R.45 E.								
3F1	Unknown	2,655	50	6	20.17	9-11-56	N	
10R1	Eugene Logan	2,500	160	6	44.52	12- 8-53	D,S	
12J1	Howard Thompson	2,565	58	6	9.44	12- 8-53	D,S	L.
14A1	Paul Thompson	2,545	78	6	17	--	D,S	Drawdown 46 ft bailing 25 gpm. L.
14A2	do.	2,545	36	5	22.89	12- 8-53	N	Obs., 1953-56.
14P1	Mrs. Clizer	2,640	190	6	100	--	N	"Rock" at about 60 ft.
18D1	Milton Silzel	2,440	230	16	50.4	1-10-68	I	Drawdown 1.1 ft after 8 hr pumping 1,000 gpm. L.
18E1	do.	2,420	67	6	--	--	D,S	"Rock" at about 1 ft.
18F1	Clement Est.	2,420	100+	6	--	--	N	Entirely in gray "rock."
20L1	Dave Doneen	2,475	6	48	Flowing	9-12-63	D,S	
20L2	do.	2,480	20	8	18.38	9-12-63	D,S	
25G1	Bert Lehn	2,600	268	12-8	78.1	12- 1-66	I	Backfilled from 648 ft. Drawdown 108 ft after 6 hr pumping 457 gpm. Obs., 1966-69. L.
25G2	do.	2,600	134	12	28.89	12- 1-66	N	Obs., 1967-72.
28R1	Roy Auvil	2,540	28	36	15.47	9-12-63	D	
32P1	Fred Zimmerman	2,500	74	8	6	12- -51	D,S	L.
33J1	Harold Doneen	2,535	235	8-6	90	1- -48	D,S	L.
T.19 N., R.46 E.								
30N1	C. R. Stemm	2,620	45	42	21.73	12- 8-53	D	
T.20 N., R.36 E.								
24J1	Carl Schell	1,918	239	8	144	8- 2-63	D,I	Reported yield 300 gpm. L.
34A1	Cliff Telecky	1,970	341	6	180	6-25-45	N	L.
35D1	do.	1,910	275	6	--	--	I,S	Reported yield 60 gpm. C.
36H1	W. F. Stockman	1,880	190	6	150	1954	I,D	
T.20 N., R.37 E.								
20A1	A. F. Schweer	1,957	457	18	83	7-21-65	I	Reported yield 1,000 gpm. Obs., 1965-69. C, L.
20A2	do.	1,960	128	8	--	--	D,S	Reported yield 15 gpm.
20C1	Carl Schell	1,965	185	6	--	--	D	Do.
28J1	R. Telecky	1,993	120	6	--	--	D	
31L1	W. F. Stockman	1,866	18	36	8	1953	I,S	Drawdown 4 ft pumping 450 gpm.
T.20 N., R.38 E.								
5P1	Unknown	1,920	93	6	38.33	8- 6-65	N	
8E1	Unknown	1,915	67	6	41.07	8- 6-65	N	Obs., 1965-67.
25F1	Unknown	1,670	250	10	18	1955	I	Reported yield 750 gpm. C.
T.20 N., R.39 E.								
12N1	Earl Swift	2,110	284	10	164	10- -57	D,S	Reported yield 332 gpm. Obs., 1967-72. L.
14A1	do.	2,150	--	12	148.08	8- 6-63	D,S,I	
22H1	Curtis Melville	2,040	267	12	93	1957	I	Drawdown 149 ft pumping 300 gpm. Obs., 1967-69. L.
22H2	Unknown	2,050	155	6	54	1964	N	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.20 N., R.39 E.--Continued								
23H1	P. B. Pool	2,105	120	8	12	--	D,S	Basalt at 18 ft.
23J1	Unknown	2,190	80	6	29.50	8- 1-56	N	
24F1	Arno Melville	2,130	115	6	30	--	D	Supply inadequate.
27D1	R. Rehn	2,030	100	6	70	--	D,S	
28A1	Lamont School Dist.	1,960	138	8	27	1954	--	Supplies school. L.
28E1	Spokane, Portland, and Seattle Ry. Co.	1,935	480	10	45	1908	N	Drawdown 180 ft after 4 hr pumping 600 gpm.
28F1	do.	1,960	700	10	28	7-22-38	N	Drawdown 180 ft after 4 hr pumping at 50 gpm. L.
28F2	do.	1,960	132	--	28	--	N	Reported yield 200 gpm. L.
28F3	do.	1,960	300	--	28	--	N	
28G1	Town of Lamont	1,955	202	12	17.70	8-25-67	P	Drawdown 69 ft pumping 150 gpm. Obs., 1967-69. L.
28H1	R. Kelly	1,970	80	6	30	4- -56	D	
28L1	Floyd Schy	1,945	150	8	13	1968	D	Basalt at 30 ft.
32A1	C. W. Shields	1,940	250	12-10	3	4- -54	I	Drawdown 135 ft pumping 307 gpm. L.
32K1	do.	1,975	15	--	10	--	D	
33D1	E. Shields	1,955	57	6	3	--	D	
34J1	W. C. Swannack	2,020	88	6	50	--	D,S	
T.20 N., R.40 E.								
5R1	G. J. Cree	2,135	8	60	5	--	D,S	
11F1	R. W. Becker	2,245	92	8	18.19	8- 7-63	D	
13A1	Unknown	2,290	121	6	38.62	8- 2-56	N	
15F1	Caroline Spuler	2,185	72	6	2.31	8- 7-63	D	
16G1	Ernest Bageant	2,215	85	6	43	--	D,S	
18M1	Mrs. E. Pool	2,170	66	6	--	--	D	
18R1	Austin Pool	2,170	54	6	18	--	D	Basalt at 25 ft.
19D1	Arno Melville	2,150	90	6	20	--	D	Supply inadequate in dry years.
24G1	F. J. Smith	2,160	9	48	.01	8- 7-63	D	
27D1	G. P. Gibson	2,110	40	6	28	--	D	
33H1	Leon Miller	2,090	66	6	28	--	D,S	
34L1	Unknown	2,060	74	24	34.31	8- 7-63	N	
35F1	Elmer Smith	2,005	268	12	12	--	I	Drawdown 150 ft pumping 300 gpm. L.
T.20 N., R.41 E.								
3N1	Osborne Belsby	2,160	60	6	46	--	D,S	
4J1	do.	2,170	435	10	330	4- -51	N	Destroyed. Drawdown 95 ft after 4 hr pumping 286 gpm. L.
8D1	Unknown	2,180	78	6	51.18	11- 3-64	N	
18A1	Unknown	2,180	19	4	14.39	8- 7-63	D	
20Q1	Unknown	2,140	72	6	25.94	8- 1-56	N	Basalt at about 10 ft.
34F1	Robert Schuster	2,115	28	--	15.43	8-13-63	D	

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.20 N., R.42 E.								
8A1	Ted Gustin	2,285	70	6	14	--	D	
13J1	Nellie Ferrell	2,070	31	6	19.81	8-22-56	N	
13L1	Town of Malden	2,080	375	12-10	80	--	P	Formerly railroad well. C.
13M1	do.	2,100	83	48	70	3- -40	N	Destroyed. L.
13M2	do.	2,140	269	10	--	--	P	Obs., 1967-72.
13N1	do.	2,280	460	10	270	--	P	Drawdown 3 ft after 8 hr pumping 75 gpm.
14F1	Andrew Melhuse	2,100	55	6	18	--	D	
17C1	A. L. Cook	2,220	90	6	Flowing	8-15-63	D,S	
19H1	Isaac Tye	2,020	203	6	99.98	8-15-63	D	
19J1	do.	2,030	241	8	178	1956	D	L.
24N1	Frank Dennis	2,200	12	--	9.31	9-11-63	D	
27N1	Pine City Cemetery Assoc.	2,210	204	8	29	--	I	Drawdown 151 ft pumping 150 to 175 gpm. L.
28H1	Unknown	2,130	800	8	4	1956	N	Reportedly an oil test hole.
28L1	R. Johnson	2,020	140	8	Flows	1964	D,S	Drawdown 20 ft pumping 100 gpm. L.
29L1	Leo Addington	1,995	15	36	10.59	8-15-63	D	
30B1	do.	2,185	70	6	30	--	D	
31C1	Unknown	2,230	127	--	34.45	11-20-64	N	
33Q1	W. W. Kimm	2,040	40	36	23.23	10-29-62	D,S	
36F1	Ronald Dube	2,240	218	8	95.99	9-11-63	D	
T.20 N., R.43 E.								
10R1	Town of Rosalia	2,225	308	12	60	11- -64	P	Drawdown 4.62 ft after 2 hr pumping 250 gpm. Temp 52°F. C, L.
15K1	do.	2,210	220	6	80	--	P	
19D1	C. J. Shindler	2,190	107	6	17.20	10-18-54	N	Obs., 1954-56.
20J1	W. R. Boozer	2,390	81	6	32.23	9-11-63	D,S	
23Q1	Rose Donahoe	2,250	100	6	Flowing	8-14-56	D	
24G1	H. Huether	2,320	53	6	23.00	9- 7-56	D	
26M1	--Dowling	2,320	14	48	10.75	8-14-56	D	Supply inadequate.
29E1	W. R. Boozer	2,340	50	8	12	--	N	
30K1	do.	2,355	81	--	Flowing	9-11-63	N	
34F1	J. Olson	2,450	50	36	35.75	8-14-56	D	
T.20 N., R.44 E.								
8Q1	E. R. Merritt	2,405	120	6	30	--	D	
10H1	G. Pittman	2,420	170	6	19.00	9- 7-56	D,S	
29B1	Andy Johnson	2,380	135	6	30	--	D,S	
31M1	R. H. Heineman	2,370	160	6	20	1951	D,S	
32B1	H. C. St. John	2,490	171	8	166	8- -56	D,S	Basalt at 40 ft.
32P1	N. Hodges	2,450	17	36	6	--	D,S	
35P1	Bob Lamb	2,560	21	36	15	--	D,S	
T.20 N., R.45 E.								
8D1	Reuben Born	2,600	160	6	--	--	D	
21C1	A. L. Wolf	2,560	160	6	30	--	D	Supply inadequate.
21D1	do.	2,590	40	6	18	--	D	Do.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.20 N., R.45 E.--Continued								
28P1	R. Warner	2,525	12	36	10.00	9-10-56	D	
30R1	Unknown	2,525	32	6	28.31	9-12-63	N	
32E1	H. T. Brandt	2,535	83	6	49.08	9-12-63	--	
34A1	Roy Gumm	2,605	102	6	47.90	9-10-56	N	
34M1	Unknown	2,575	91	6	39.20	9-12-56	N	
T.21 N., R.38 E.								
2F1	P. H. Ringwood	2,080	176	8	20	11-30-66	I	Drawdown 100 ft pumping 25 gpm. L.
14E1	Pacific NW Bell Telephone Co.	2,185	353	8	154.41	11-29-66	Ind	Drawdown 68 ft pumping 80 gpm. Obs., 1966-69. L.
14J1	Wash. State Hwy. Dept.	2,020	175	8	125.6	9-15-68	D	Slight drawdown pumping 70 gpm.
21N1	do.	1,990	219	8	135.7	9-15-68	D,I	Drawdown 38 ft pumping 70 gpm.
23A1	Town of Sprague	1,900	26	96	20.37	11-17-66	P	Reported yield 350 gpm. Obs., 1966-69.
23A2	do.	1,900	208	8	72.95	11-17-66	P	Reported yield 240 gpm. Obs., 1966-69.
24G1	M. L. Jones	1,920	16	--	14	--	--	C.
24G2	Clifford Daweritz	1,920	22	1¼	20.24	10- 7-45	N	Obs., 1945-57.
24H1	Max Harder	2,035	18	48	13.95	11-30-66	I	
28D1	Wash. State Hwy. Dept.	1,997	287	8	19	7-31-67	D,I	Drawdown 12 ft pumping 80 gpm. Obs., 1972. L.
T.21 N., R.39 E.								
9C1	U.S. Army	2,097	381	8	70	8-13-59	--	Drawdown 10 ft pumping 112 gpm. L.
9C2	do.	2,099	368	8	70	9- 9-59	--	Drawdown 86 ft pumping 80 gpm. L.
T.21 N., R.40 E.								
2N1	Fred McKinley	2,160	120	6	10	2-13-67	D	
T.21 N., R.41 E.								
31R1	Osborn Belsby	2,070	120	10	.41	2-13-67	--	Obs., 1967-72.
31R2	do.	2,070	100	12	38.95	2-13-67	I	Reported yield 750 gpm.
T.22 N., R.40 E.								
36M1	Amber School Dist.	2,300	127	6	30	--	P	
T.22 N., R.41 E.								
34M1	Eastern Wash. State College	2,240	260	6	97.97	4- 3-72	--	Obs., 1972. L.
T.22 N., R.42 E.								
1D1	W. C. McKinley	2,390	10	36	5	7- -56	I	
9A1	D. E. Majer	2,310	320	12	154	1959	I	Drawdown 26 ft after 18 hr pumping 1,600 gpm.
11F1	do.	2,400	484	12	163	2-16-67	I	
T.22 N., R.43 E.								
32L1	William Hendrixson	2,520	115	--	--	--	D	C.
T.23 N., R.41 E.								
19R1	P. M. Steele	2,365	516	12	78.73	2-10-67	--	Obs., 1967-72. L.

TABLE C3.--Records of representative wells--Continued

Well no.	Owner or tenant	Altitude (ft)	Depth (ft)	Diameter (inches)	Water level below land surface		Use of water	Remarks
					Feet	Date		
T.24 N., R.41 E.								
3N1	U.S. Air Force	2,375	410	10	29.37	7-27-42	P	C,L.
10A1	John Anderson	2,380	185	6	30.14 41.06	4-23-42 1-30-63	D	
11N2	Vernon Hopkins	2,410	220	6	58	10-25-71	D	L.
20Q1	East Washington Bible Camp	2,350	135	10	42	2- 5-60	P	L.
28H1	Wash. St. Hwy. Dept.	2,414	115	8	57	6- 1-67	D	L.
28H2	do.	2,415	303	8	15	10-26-67	D	Water reported of inferior quality. L.
28H3	do.	2,415	36	8	16.5	10-30-69	D	Replaces well 28H2. L.
31K1	Inland Empire Bible Association	2,405	130	8	8	6-28-58	D	L.
31Q1	Esvelt Saxon	2,390	367	8	73	12-14-71	D	
T.25 N., R.41 E.								
28L1	U.S. Air Force	2,432	312	--	63.8	7-25-42	N	Well abandoned. L.
29M1	Burlington Northern RR.	2,455	97	8	10	1942	D	L.

TABLE C4.--Drillers' logs of representative wells

[See p. 64 for well-numbering system]

Material	Thickness (feet)	Depth (feet)
12/46-6P1. John Weber. Altitude about 2,560 ft. Drilled by George Woodard, 1934. Cased to 90 ft. (Log from owner's memory.)		
Clay	27	27
"Sandstone"	58	85
"Soft material"	2	87
"Sandstone" or decomposed granite	3	90
Granite	20	110
12/46-6P2. Ted Druffel. Altitude about 2,570 ft. Drilled in 1935. Cased to 40 ft. (Log from owner's memory.)		
Clay	38	38
"Rock," loose	2	40
Basalt	45	85
12/46-7G1. Town of Uniontown. Altitude about 2,580 ft. Drilled by James Burns, 1956. Cased to 130 ft; perforated from 85 to 107 ft.		
Clay and shale, hard	68	68
Basalt, hard, gray	15	83
"Rock," loose (caving)	3	86
Shale, hard; clay and "rock," water-bearing	14	100
Clay, gray	12	112
"Boulder"	2	114
"Soapstone"	16	130
Shale, firm	25	155
Basalt, light-gray	69	224
Crevice in basalt	3	227
12/46-8C1. Mrs. B. J. Hoefer. Altitude 2,630 ft. Drilled by Spray Bros., 1955. Cased to 55 ft.		
Clay, soil, and soft basalt	50	50
Basalt, solid	25	75
Basalt, broken, water-bearing at 75 ft	20	95
12/46-17P1. Alfred Heitstuman. Altitude about 2,740 ft. Drilled in 1927. Cased to 65 ft.		
Soil	17	17
"Rock," soft, porous	48	65
Basalt, blue, hard	61	126
13/44-10L1. Tom Martin. Altitude about 2,570 ft. Drilled by Spray Bros. Cased to 52 ft. (Log from owner's memory.)		
Soil and sand	45	45
Basalt	75	120
"Shell rock," soft, water-bearing (5 gpm)	5	125
Basalt, hard	120	245
Basalt, soft, water-bearing	--	--
13/45-3M2. Franz Druffel. Altitude 2,620 ft. Drilled by Mike Braden. (Log from owner's memory.)		
Clay and sand	30	30
Basalt	60	90
Clay, basalt, and sand, water-bearing	10	100
13/45-8B1. J. W. Maxwell. Altitude about 2,640 ft. Drilled by A. R. McInroy. Cased to 40 ft. (Log from owner's memory.)		
Topsoil	2	2
Clay [loess]	38	40
Basalt	264	304
13/45-10C2. Alfred Hoffman. Altitude about 2,640 ft. Drilled by Spray Bros., 1945. Cased to 44 ft. (Log from owner's memory.)		
Overburden [loess]	44	44
Basalt	76	120
Granite, decomposed	13	133

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
13/45-10C3. John Ellerson. Altitude about 2,630 ft. Drilled by Spray Bros., 1955. Cased to 45 ft., and from 85 to 125 ft.		
Soil [loess]	45	45
Basalt, water-bearing (2 gpm at 85 ft)	40	85
Clay	40	125
Basalt, water-bearing at 125 ft	20	145
13/45-10D1. Alfred Druffel. Altitude about 2,640 ft. Drilled by Spray Bros., 1952. Cased to 60 ft.		
Topsoil	2	2
Clay [loess]	58	60
"Rock" [basalt]	113	173
Sand	2	175
13/45-10D2. Alfred Druffel. Altitude about 2,630 ft. Drilled by Spray Bros., 1948. Cased to 60 ft.; perforated from 25 to 60 ft.		
Topsoil	2	2
Clay [loess]	58	60
"Rock" [basalt]	40	100
Sand (?)	--	--
13/45-13M1. John Becker. Altitude about 2,695 ft. Drilled by Mike Braden, 1930. Cased to 213 ft. (Log from owner's memory.)		
Clay	70	70
Sand	4	74
Clay, sand, and mica	106	180
Sand	32	212
Basalt	4	216
Granite	16	232

Material	Thickness (feet)	Depth (feet)
13/45-15J1. Eugene Reisenauer. Altitude about 2,655 ft. Drilled by Spray Bros., 1953. Cased to 187 ft.		
Topsoil	3	3
Clay	183	186
"Rock" [basalt]	56	242
13/45-21D1. Roy Sodorff. Altitude about 2,600 ft. Drilled by Bloyd Drilling Co., 1964. Cased to 140 ft.		
Soil	5	5
Basalt, hard	90	95
Basalt, loose	18	113
Clay, and decomposed granite	17	130
Basalt, hard	155	285
Basalt, loose; and white gravel	2	287
Basalt, loose	7	294
Rock, hard	at	294
13/45-28B1. Herbert Druffel. Altitude about 2,555 ft. Drilled by Mike Braden, 1946. (Log from owner's memory.)		
Soil	10	10
Basalt, hard	50	60
Clay	33	93
13/45-34A1. Town of Colton. Altitude about 2,530 ft. Drilled by James Burns. Cased to 143 ft; perforated from 113 to 143 ft.		
Topsoil and clay	8	8
"Rock," broken, and boulders	16	24
Basalt, hard, blue-black	52	76
Clay, gray and yellow	29	105
Basalt, honeycombed, water-bearing	28	133
Basalt, blue-black, water-bearing	10	143

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
13/46-8K1. Frank Niehenke. Altitude about 2,820 ft. Drilled by Spray Bros., 1950. Cased to 60 ft.		
Soil, black	4	4
Clay, red	76	80
"Quicksand," water-bearing	75	155
13/46-17Q1. Glenn Simpson. Altitude about 2,785 ft. Drilled in 1914. Cased to 40 ft.		
Silt, black	5	5
Clay	13	18
Granite	18	36
"Quicksand"	4	40
Granite	125	165
13/46-19C1. Francis Niehenka. Altitude about 2,725 ft. Drilled by De Tray and Hughes, 1954. Cased to 55 ft. (Log from owner's memory.)		
Clay	55	55
Granite	337	392
Granite, broken, water-bearing	3	395
13/46-19E1. Elmer Riedner. Altitude about 2,690 ft. Drilled by Mike Braden, 1940. Cased to 58 ft. (Log from owner's memory.)		
Clay	17	17
Gravel	41	58
Granite	6	64
13/46-30N1. A. S. Reisnauer. Altitude about 2,690 ft. Drilled by Spray Bros., 1952. Cased to 100 ft.		
Clay	50	50
Granite, decomposed	50	100
Granite	10	110

Material	Thickness (feet)	Depth (feet)
14/38-7G1. William Mays. Altitude about 1,480 ft. Drilled by owner, 1955. Cased to 57 ft.; perforated from 38 to 53 ft.		
Soil	30	30
Basalt	18	48
Sand	2	50
Basalt, water-bearing at 102 ft	130	180
14/44-2K1. Max Hinrichs. Altitude about 2,500 ft. Drilled by J. W. Queen about 1943. Cased to 79 ft.		
Soil [loess]	13	13
Basalt, hard, blue	12	25
Basalt, soft, gray	15	40
Clay, blue	4	44
Basalt, porous, black	35	79
14/44-14J1. Arnold Greenwell. Altitude about 2,545 ft. Drilled by Spray Bros., 1954. Cased to 39 ft.		
Soil [loess]	31	31
Basalt, soft, some water	10	41
Basalt, hard	14	55
Basalt, soft, some water	3	58
Basalt, hard	3	61
Basalt, soft, porous, water-bearing	1	62
14/44-14P1. Wash. State Univ. Altitude about 2,550 ft. Drilled by Midland Drilling Co., 1959. Cased to 400 ft.		
Clay, sticky, brown	37	37
Clay, and dark, medium hard "hardpan"	39	76
Basalt, hard, dark-gray	37	113
Basalt, medium-hard, broken	11	124
Basalt, medium-hard, dark	7	131
Shale, medium-hard, sandy, gray	2	133
Basalt, medium-hard, gray	3	136
Basalt, hard, gray	105	241

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/44-14P1.--Continued		
Shale, medium-hard, green	15	256
Clay, medium-hard, yellow	10	266
Basalt, medium-hard, broken, brown	10	276
Basalt, hard, black	5	281
Shale, medium-hard, sticky, blue and gray	12	293
Basalt, medium-hard, light gray	27	320
Shale, medium-hard, sandy, gray	53	373
Basalt, medium-hard, dark-gray	2	375
Basalt and shale, medium-hard, broken, black	25	400
Basalt, medium-hard, broken, muddy, gray	11	411
Basalt, medium-hard, muddy, brown	9	420
Basalt, hard, brown	4	424
Basalt, hard, light-gray	26	450
Basalt, hard, gray	50	500
Basalt, medium-hard, light-gray	9	509
Basalt, medium-hard, brown	21	530
Basalt, hard, gray	15	545
Basalt, medium-hard, gray	19	564
Basalt, hard, gray	2	566
Basalt, soft, gray	3	569
Basalt, hard, gray	31	600
14/44-34C1. Nora Hatley. Altitude about 2,455 ft. Drilled about 1895. Cased to 19 ft.		
Soil [loess]	19	19
"Rock" [basalt], hard	160	179
Sand, soft, water-bearing	21	200
14/45-2F2. Larry Thonney. Altitude about 2,485 ft. Drilled by Nelson, 1947. Cased to 6 ft.		
Soil	2	2
Basalt	120	122
"Shale"	3	125
14/45-3H3. Wash. Water Power Co. Altitude about 2,470 ft. Drilled by A. A. Durand & Son, 1957. Cased to 178 ft.		
Topsoil, soft, black	3	3
Basalt, and soft brown clay	8	11
Basalt, medium-hard, black	11	22
Basalt, medium-hard, brown	1	23
Basalt, hard, brown	9	32
Basalt, very hard, gray	5	37
Basalt, hard, brown	2	39
Basalt, hard, gray	2	41
Basalt, medium-hard, brown	1	42
Basalt, hard, dark-gray	55	97
Basalt, medium-hard, dark-gray	5	102
Clay, soft, light-gray	15	117
Basalt, medium-hard, dark gray	86	203
Basalt, medium-hard, black	11	214
Basalt, soft, black	10	224
Basalt, medium-hard, black	2	226
Basalt, soft, black	10	236
Basalt, medium-hard, black	7	243
Basalt, hard, dark-gray	16	259
14/45-4H1. Wash. State Univ. Altitude 2,440 ft. Drilled by J. W. Queen, 1935. Cased to 175 ft.		
Soil	7	7
Boulders	8	15
Basalt, very hard, black	36	51
Basalt, hard, gray	25	76
Basalt, blue	1	77
Basalt, soft, black	5	82
Basalt, soft, gray	10	92
Basalt, porous, black, water-bearing (5 gpm)	23	115
Basalt, soft, black	55	170
Basalt, water-bearing (20 gpm)	50	220
Basalt, porous at 250 to 260 ft, black	45	265

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/45-4N1. Wash. State Univ. Altitude about 2,381 ft.		
Topsoil	6	6
Basalt	89	95
"Rock" [basalt], water-bearing	5	100
14/45-4Q1. King Evers and C. A. Cole. Altitude about 2,560 ft. Drilled by Spray Bros., 1953.		
Topsoil	2	2
"Clay," [loess], yellow	48	50
"Rock" [basalt]	155	205
14/45-4Q2. Wash. State Univ. Altitude 2,410 ft. Drilled by J. W. Queen, 1938.		
Soil	8	8
Boulders	14	22
Basalt, hard, black	12	34
"Rock" [basalt], soft, gray; some blue clay	11	45
"Rock" [basalt], hard, black	15	60
"Rock" [basalt], soft, and sand [aquifer]	5	65
14/45-5D1. City of Pullman, well 1. Altitude 2,340 ft. Drilled in 1913. Cased to 34 ft.		
"Valley fill" [soil]	6	6
"Hardpan," blue, contains rock fragments	15	21
Basalt, hard	35	56
"Rock" [basalt], porous	91	147
Unknown	--	164
14/45-5D3. City of Pullman, well 3. Altitude about 2,340 ft. Drilled by R. J. Strasser, 1946. Cased to 40 ft.		
"Fill" [soil]	7	7
Silt, gray	9	16
"Rock" [basalt], decomposed, yellow	6	22
(continued)		

Material	Thickness (feet)	Depth (feet)
14/45-5D3.--Continued		
"Rock" [basalt], hard, gray	2	24
"Rock" [basalt], soft, yellow	25	49
"Rock" [basalt], hard, yellow	14	63
"Rock" [basalt], soft, gray	16	79
"Rock" [basalt], hard, gray	13	92
"Rock" [basalt], medium-hard, gray	6	98
"Rock" [basalt], soft, green	8	106
"Rock" [basalt], hard, black	6	112
"Rock" [basalt], hard, gray	10	122
"Rock" [basalt], soft, black	29	151
"Rock" [basalt], soft, red	8	159
"Rock" [basalt], with crevices, gray, water-bearing	3	162
"Rock" [basalt], soft, red	5	167
14/45-5D4. Northern Pacific Ry. Co. Altitude about 2,360 ft.		
"Overburden"	10	10
Basalt, black	27	37
"Rock" [basalt], hard, gray	23	60
"Rock" [basalt], soft	29	89
"Rock" [basalt], honeycombed	10	99
Basalt, black	67	166
14/45-5E1. City Ice Co. Altitude about 2,335 ft. Drilled in 1926. Cased to 19 ft.		
Soil	10	10
Clay, blue	5	15
Basalt	45	60
Sand, granitic, with some lignite	20	80
Clay, blue, underlain by porous basalt, underlain by fine-grained sand	15	95

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/45-5E3. J. R. Rupley. Altitude about 2,345 ft. Drilled in 1889.		
Soil and loose rocks	10	10
Basalt	63	73
Sand, micaceous, water-bearing	--	--
14/45-5E4. M. C. True. Altitude about 2,345 ft. Drilled in 1894.		
Soil and cobblestones	12	12
Basalt	53	65
Sand, water-bearing	12	77
14/45-5E5. City of Pullman. Altitude about 2,340 ft. Drilled in 1890.		
Soil	3	3
Clay	10	13
Basalt	60	73
Gravel and sand with "lignite," water-bearing	11	84
14/45-5F1. Wash. State Univ. Altitude about 2,365 ft. Drilled about 1910.		
Basalt	65	65
Clay	30	95
Basalt	49	144
14/45-5F3. Wash. State Univ. Altitude about 2,365 ft. Drilled by R. J. Strasser, 1946.		
Topsoil	3	3
Clay, yellow, with scattered rock	10	13
"Rock" [basalt], hard, gray	25	38
"Rock" [basalt], soft, yellow	9	47
Basalt, hard, gray	21	68
"Rock" [basalt], soft, black	4	72
(continued)		

Material	Thickness (feet)	Depth (feet)
14/45-5F3.--Continued		
Conglomerate, blue and gray	13	85
"Rock" [basalt], soft, black	2	87
"Rock" [basalt], soft, gray	21	108
"Rock" [basalt], porous, black, water-bearing	4	112
"Rock" [basalt], hard, black	11	123
"Rock" [basalt], soft, black, underlain by hard, gray "rock" [basalt]	27	150
"Rock" [basalt], fairly hard, black	17	167
"Rock" [basalt], soft, black	3	170
"Rock" [basalt], hard, gray	8	178
"Rock" [basalt], soft, black, underlain by very hard, gray "rock" [basalt]	14	192
"Rock" [basalt], hard, black	3	195
"Rock" [basalt], soft, porous, black, water-bearing	25	220
"Rock" [basalt], hard, gray	3	223
14/45-5F4. Wash. State Univ. Altitude about 2,365 ft. Drilled by Holman Drilling Co., 1962.		
Topsoil	15	15
"Hardpan," brown, and clay	8	23
Basalt	7	30
Basalt, hard, gray	15	45
Basalt, firm, brown	3	48
Basalt, hard, gray	17	65
Basalt, firm, gray	3	68
Basalt, soft, black	2	70
Clay and sand	15	85
Conglomerate, green and blue	13	98
Basalt, soft, gray	7	105
Basalt, medium-soft, black	3	108
Basalt, medium-hard, gray	12	120
Basalt, firm, gray	11	131
Basalt, hard, gray	13	144
Basalt, medium-hard, gray	7	151
Basalt, hard, gray	10	161
Basalt, medium-hard, gray	3	164
Basalt, hard, gray	7	171
Crevice	8	179
(continued)		

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/45-5F4.--Continued		
Basalt	11	190
Basalt, very hard	2	192
Basalt, hard, gray	7	199
Basalt, soft, black	11	210
Basalt, broken, "cavey," black	5	215
Basalt, black	5	220
Basalt, hard	5	225
Basalt, broken, gray	10	235
Basalt, hard and "sharp," gray	7	242
Basalt, hard, gray	4	246
Basalt, broken, gray	10	256
Basalt, hard	1	257
Basalt, firm and broken, gray	6	263
Crevice in gray basalt, water-bearing	7	270
Basalt, firm, gray	5	275
14/45-5G1. Wash. State Univ. Altitude about 2,360 ft.		
Soil [loess]	15	15
Basalt, hard	71	86
Clay, blue	14	100
Basalt, dense	16	116
Basalt, vesicular, water-bearing	14	130
Basalt, dense	15	145
Unknown	68	213
14/45-6D1. J. C. Hodge. Altitude about 2,520 ft. Drilled by Spray Bros., 1951. Cased to 10 ft.		
Soil	5	5
Basalt	185	190
Sand, water-bearing	--	--
14/45-6D2. J. C. Hodge. Altitude about 2,540 ft. Drilled by Spray Bros., 1949. Cased to 12 ft.		
Soil [loess]	10	10
Basalt	225	235
Sand, water-bearing	1	236
14/45-6D4. James Anderson. Altitude about 2,515 ft. Drilled by Spray Bros., 1955. Cased to 40 ft.		
"Dirt and clay" [loess]	28	28
Basalt, hard	15	43
"Rock" [basalt], soft	2	45
"Rock" [basalt], hard	30	75
"Rock" [basalt], soft	30	105
"Rock" [basalt], hard	68	173
Clay	37	210
Basalt	10	220
Sand, white, water-bearing	--	--
14/45-6F1. A. A. Samuelson. Altitude about 2,465 ft. Drilled by Spray Bros., 1948. (Log from owner's memory.)		
Soil	6	6
"Rock" [basalt], soft	34	40
"Rock" [basalt], hard	65	105
"Rock" [basalt], very hard	35	140
Sand, water-bearing	2	142
14/45-7E1. Harvey Cole. Altitude about 2,530 ft. Drilled by Spray Bros., 1954. Cased to 8 ft.		
Soil [loess]	7	7
Basalt, hard, gray	63	70
Basalt, soft, black	12	82
14/45-7F1. G. R. Spencer. Altitude about 2,495 ft. Drilled by Spray Bros., 1952. Cased to 27 ft.		
Clay [loess]	20	20
"Rock" [basalt]	6	26
Gravel and clay, some water	6	32
"Rock" [basalt]	38	70

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/45-7F2. Evergreen Builders. Altitude 2,540 ft. Drilled by Spray Bros., 1954. Cased to 31 ft and from 135 to 223 ft.		
Soil [loess]	11	11
Basalt	17	28
Basalt, porous, water-bearing	2	30
Basalt, hard	110	140
"Seams" and boulders	25	165
Clay, blue	15	180
Sand, quartzose, micaceous, water-bearing	5	185
Basalt, hard and soft layered	80	265
Basalt, soft, broken, water-bearing	5	270
14/45-7F3. Mrs. Baldwin. Altitude about 2,490 ft. Drilled by Spray Bros., about 1940. Cased to 20 ft. (Log from owner's memory.)		
Soil [loess]	15	15
"Rock" [basalt], soft	50	65
"Rock" [basalt], hard	at	65
14/45-7H1. City of Pullman. Altitude about 2,442 ft. Drilled by Charles Jungmann Drilling Co., 1969. Cased to 672 ft.		
Soil	5	5
Basalt, broken, hard, black	4	9
Basalt, medium-hard, black	15	24
Basalt, hard, black	30	54
Basalt, hard, gray	13	67
Basalt, hard, dark	5	72
Basalt, fractured, medium-hard, dark	5	77
Clay, medium-soft, green and blue	6	83
Clay, medium-soft, blue-brown	9	93
Clay, medium-soft, gray	15	108
Basalt, fractured, medium-hard, black	31	139
Basalt, fractured, and soft black clay	33	172
Basalt, fractured, medium-soft, black	58	230
Basalt, hard, black	47	277

(continued)

Material	Thickness (feet)	Depth (feet)
14/45-7H1.--Continued		
Basalt, medium-hard, black	141	418
Basalt, medium-soft, black	47	465
Basalt, medium, black	43	508
Basalt, soft, black	20	528
Basalt, hard, black	2	530
Basalt, medium-hard, black	8	538
Basalt, medium, black	21	559
Basalt, medium-hard, black	9	568
Clay, soft, gray	2	570
Basalt, medium-hard, black	13	583
Basalt, medium, black	8	591
Basalt, fractured, medium-soft, black	8	599
Clay, sticky, soft, green	11	610
Basalt, medium-hard, black	2	612
Basalt, medium, black	13	625
Rock, fractured, and soft black clay	20	645
Basalt, medium-hard, black	30	675
Basalt, medium-soft, black	7	682
Basalt, fractured, medium, black	16	698
Basalt, fractured, medium-hard, black	14	712
14/45-7M1. Don Adams. Altitude about 2,520 ft. Drilled by Spray Bros., 1954. Cased to 30 ft.		
Soil	5	5
Clay [loess]	9	14
Basalt, hard, black	46	60
Basalt, porous	8	68
14/45-7M2. Blosser & Loughrey. Altitude about 2,525 ft. Drilled by Spray Bros., 1954. Cased to 62 ft.		
Soil	4	4
Clay [loess]	26	30
Basalt, hard, black	22	52
Clay	8	60
Basalt, hard, black	25	85
Basalt, soft	5	90

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/45-7M3. Dr. Tomlinson & Baldwin. Altitude about 2,500 ft. Drilled by Spray Bros., 1954.		
Clay [loess]	17	17
Basalt, hard, black	63	80
Basalt, soft, water-bearing	7	87
14/45-8L1. City Cemetery. Altitude about 2,580 ft. Drilled in 1932.		
Topsoil and loess	44	44
Basalt, hard	148	192
Basalt, soft, black	7	199
Clay; intermixed basalt and sand; blue clay, water-bearing	29	228
Basalt, medium-hard	66	294
Basalt, soft, porous, water-bearing	21	315
Basalt, hard	40	355
14/45-16G1. Wash. State Univ. Agronomy Farm. Altitude about 2,480 ft. Drilled by A. A. Durand & Son, 1956. Cased to 400 ft.		
Topsoil [loess]	14	14
Basalt, weathered, black	15	29
Basalt, very hard, black	12	41
Basalt, porous, brown, water-bearing	1	42
Basalt, very hard, dark-gray	151	193
Basalt, medium-hard, dark-gray	7	200
Basalt, medium-hard, broken, dark-gray	5	205
Clay, soft, blue-green	17	222
Basalt, porous, fractured; clay	16	238
Basalt, very hard, dark-gray	33	271
Basalt, medium-hard to soft, broken, dark-gray	44	315
Basalt, hard, gray	20	335
Basalt, very hard, gray	8	343
Basalt, hard to very hard, gray	13	356
Basalt, medium-hard, gray	18	374
Basalt, hard, gray	26	400

Material	Thickness (feet)	Depth (feet)
14/45-23J2. Raymond Meyer. Altitude about 2,485 ft. Drilled by A. E. Spray Well Drilling Co., 1965. Cased to 46 ft.		
Soil	6	6
Clay, red	35	41
Clay, blue	4	45
Basalt, shelly	1	46
Basalt, gray	24	70
Basalt, black, water-bearing	10	80
14/45-28H1. L. C. Staley. Altitude about 2,515 ft. Drilled by J. W. Queen, 1941. Cased to 20 ft. (Log from owner's memeory.)		
Clay [soil]	5	5
"Rock" [basalt]	145	150
Sand, fine, white	15	165
14/46-6R1. Edgar Anderson. Altitude about 2,710 ft. Drilled by J. W. Queen, 1940. Cased to 90 ft. (Log from owner's memory.)		
Loess	90	90
Basalt	--	--
Clay	6	--
Basalt	--	202
Basalt, porous, water-bearing	10	212
14/46-6R2. Edgar Anderson. Altitude about 2,660 ft. Drilled by J. W. Queen. Cased to 50 ft.		
Soil [loess]	50	50
Basalt	201	251
Clay, blue	30	281
Sand	20	301
(Deepened later)	49	350
Sand, heaving	--	--

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
14/46-7N2. Howard Shriver Est. Altitude about 2,575 ft. Drilled by Spray Bros., 1937.		
Clay [loess]	14	14
Basalt, soft	50	64
Basalt, hard	2	66
Basalt, soft	24	90
Basalt, hard	55	145
Clay, blue; black sand	20	165
Basalt, soft and hard	77	242
14/46-19M1. Elmer Haynes. Altitude about 2,480 ft. Drilled by Spray Bros., 1951. Cased to 30 ft.		
Clay, blue	20	20
"Rock" [basalt]	59	79
Sand	1	80
14/46-29L1. C. V. Strohm. Altitude about 2,555 ft. Drilled by George Woodard. Cased to 278 ft.		
"Dirt" [loess]	15	15
"Rock" [basalt]	260	275
Sand	3	278
15/37-22A1. Henry Milan. Altitude about 1,282 ft. Drilled by A. A. Durand & Son, 1952. Cased to 213 ft.		
Gravel	9	9
Gravel, coarse, and boulders	55	64
Gravel, coarse	21	85
Gravel and boulders	16	101
Gravel	13	114
Gravel, coarse	26	140
Gravel, pea, and some clay	72	212
Basalt, and blue clay	14	226
Basalt, hard	10	236
Basalt, hard, creviced	23	259
15/37-22A1.--Continued		
Basalt, hard, blue	13	272
Basalt, water-bearing	4	276
Basalt, hard	9	285
Clay and gravel	10	295
Basalt, broken	20	315
Sand	3	318
Basalt, broken	35	353
Gravel, red	17	370
Basalt, red, water-bearing	5	375
Basalt, black	3	378
15/37-22H1. Spokane, Portland, and Seattle Ry. Altitude about 1,227 ft. Drilled by N. C. Jannsen, 1918.		
Gravel	83	83
Basalt, soft	2	85
Boulders	28	113
Basalt	18	131
Basalt, hard	3	134
Basalt, blue	2	136
Basalt	113	249
Basalt, blue	2	251
Basalt, red	4	255
Basalt, soft, red	3	258
Basalt, harder, red	4	262
Basalt, red	3	265
Basalt, hard, blue	20	285
Basalt, hard, black	44	329
Basalt, red	4	333
Basalt, blue	5	338
Basalt, hard, black	15	353
Basalt, hard, blue	12	365
Basalt, medium, red	5	370
Basalt, hard, black, crevice at 390 ft	31	401

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/37-34A1. Union Pacific Ry. Co. Altitude about 1,045 ft. Drilled in 1914. Cased to 20 ft.		
"Earth" [soil]	2	2
Basalt, soft, gray, some water at about 44 ft	42	44
Basalt, hard, black	9	53
"Lava" [basalt], soft, water-bearing	3	56
Basalt, hard, gray	64	120
Shale	10	130
"Lava" [basalt], porous	9	139
Basalt, hard, black	37	176
"Disintegrated volcanic strata" [porous basalt], water-bearing	8	184
15/39-2K1. Town of LaCrosse. Altitude about 1,520 ft. Drilled by A. A. Durand & Son, 1939. Cased to 86 ft.		
Soil	10	10
Soil and "hardpan"	25	35
"Hardpan"	25	60
"Rock" [basalt], broken	1	61
Basalt, brown	1	62
"Rock" [basalt], porous, broken	7	69
"Rock" [basalt], solid, brown	1	70
"Rock" [basalt], brown	3	73
"Rock" [basalt], porous	5	78
"Rock" [basalt], broken, black	5	83
Basalt, black	5	88
Basalt, gray	11	99
Basalt, broken, black	2	101
Basalt, black	2	103
Basalt, broken, black	12	115
Basalt, hard, gray	72	187
"Rock" [basalt], decomposed, black and brown	12	199
Basalt, black	2	201
Basalt, soft, black	8	209
Basalt, hard, black	2	211
Basalt, black	16	227
Basalt, brown	5	232
"Rock" [basalt], "ashy," red	3	235
Basalt, porous, brown, some water	2	237
Basalt, brown	36	273

Material	Thickness (feet)	Depth (feet)
15/39-2K2. Town of LaCrosse. Altitude about 1,520 ft. Drilled by N. C. Jannsen, 1939.		
Clay [soil]	63	63
"Rock" [basalt], soft, brown	37	100
Basalt, hard, blue	70	170
"Rock" [basalt], porous, brown	26	196
"Rock" [basalt], soft, black	17	213
Basalt, hard, black	15	228
"Rock" [basalt], soft, brown	26	254
Basalt, black	7	261
15/39-3R1. W. M. Camp. Altitude about 1,480 ft. Drilled by Jones Drilling Co., 1961. Cased to 112 ft.		
"Overburden"	100	100
Basalt	6	106
Basalt, broken; some gravel(?)	41	147
Basalt, clay; some gravel(?)	23	170
Basalt, porous; some gravel(?)	40	210
Basalt, dense; some gravel(?)	16	226
Basalt, dense, water-bearing	24	250
15/39-29P1. O. Fleming. Altitude about 1,515 ft. Drilled by L. Cousineau. Cased to 66 ft.		
Soil	30	30
Basalt, broken	36	66
Basalt, hard	54	120
Basalt, soft, water-bearing at 120 ft	40	160
15/40-4N2. Weldon Washburn. Altitude about 1,575 ft. Drilled by Ralph Smith.		
Soil	10	10
Clay, white, with "alkali"; mud	30	40
Clay and soft "rock"	20	60
Basalt, hard	20	80

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/40-9M1. Melvin Camp. Altitude about 1,600 ft. Drilled by John Davisson. Cased to 58 ft.		
Soil	57	57
Gravel	4	61
Clay, sandy; shale, water-bearing	8	69
Sand	15	84
"Rock" [basalt], hard, black	31	115
"Rock", hard, green	1	116
15/40-12C1. E. J. Moore. Altitude about 1,645 ft. Drilled by John Davisson, 1953. Cased to 60 ft.		
Soil	57	57
"Rock" [basalt], soft	23	80
Clay, sandy, water-bearing	5	85
"Rock" [basalt], soft	15	100
"Rock" [basalt], hard	10	110
"Rock" [basalt], soft, water-bearing	18	128
15/43-6R1. Elmer Broweleit. Altitude about 1,870 ft. Drilled by John Davisson, 1954.		
Soil	5	5
Clay	11	16
Gravel	2	18
Basalt	5	23
Basalt, hard	85	108
Basalt	7	115
Basalt, broken, water-bearing	6	121
Basalt, hard	6	127
Basalt, broken	11	138
Basalt, soft, water-bearing	45	183
Basalt, hard	3	186
15/43-7M1. Loren Klaus. Altitude about 2,160 ft. Drilled by John Davisson. Cased to 100 ft.		
Soil	60	60
Basalt	1	61
"Rock," white, some water at 61 ft	39	100
Basalt	75	175
15/43-26L1. Berne Davis. Altitude about 2,395 ft. Drilled by Davisson & Dreyer, 1951. Cased to 60 ft. (Log from owner's memory.)		
Clay	60	60
Basalt	47	107
Shale	80	187
Basalt	2	189
15/44-1G1. A. V. Clark, Jr. Altitude about 2,370 ft. Drilled by Spray Bros. Cased to 40 ft.		
"Silt" [loess]	15	15
"Rock" [basalt], soft, decomposed	25	40
"Rock" [basalt], hard	117	157
15/44-11A1. Joe Bryan. Altitude about 2,515 ft. Drilled by Spray Bros. Cased to 90 ft.		
Soil	4	4
"Clay [loess]	66	70
Clay and boulders	20	90
Basalt	30	120
Basalt, vesicular	15	135
Crevice	15	150

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/44-15A2. Town of Albion. Altitude about 2,260 ft. Drilled by Elmer Ray, 1954. Cased to 78 ft.		
Topsoil	3	3
"Shale" [loess], brown	9	12
"Silt" [loess]	12	24
Gravel, some water	1	25
"Shale" [loess], brown	5	30
Granite, decomposed	12	42
Shale, brown	3	45
Granite, decomposed	2	47
Granite, decomposed; silt, water-bearing (40 gpm)	23	70
Granite, coarse, decomposed, water-bearing (70 gpm)	2	72
Granite, hard	2	74
Granite, decomposed, crevice at 78 ft, water-bearing (90 gpm)	4	78
15/44-16L2. Ed Jones. Altitude about 2,430 ft. Drilled in 1924. Cased to 72 ft. (Log from owner's memory.)		
Clay and shell rock	72	72
Basalt, hard, blue	240	312
Basalt	51	363
15/44-18J1. Harold Upshaw. Altitude about 2,350 ft. Drilled by John Davisson, 1948.		
Soil	12	12
Clay	7	19
Basalt, soft, some water	26	45
Basalt, hard	45	90
Basalt, soft	12	102
Basalt, hard, water-bearing	5	107
15/44-19B1. Johnson Brothers. Altitude about 2,365 ft. Drilled by Hickam, 1939. Cased to 80 ft. (Log from owner's memory.)		
Soil	80	80
Basalt	5	85
Crevice in basalt	6	91
15/44-26L1. Merle Harlow. Altitude about 2,395 ft. Drilled by John Davisson, 1950. Cased to 20 ft.		
Soil	5	5
Basalt	150	155
Basalt, soft	5	160
15/44-33B1. Leonard Small. Altitude about 2,435 ft. Drilled in 1901.		
Soil	6	6
Basalt	169	175
Sand, black	--	--
15/44-35B1. V. L. Michaelson. Altitude 2,412 ft. Drilled by Art Yaeger, 1951. Cased to 39 ft.		
Soil and brown clay [loess]	16	16
"Rock" [basalt], broken, brown	22	38
"Rock" [basalt], hard, gray	103	141
Shale, soft, black	24	165
"Rock" [basalt], soft, black	80	245
"Rock" [basalt], soft, brown	47	292
"Rock" [basalt], soft, red, water-bearing	8	300

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/45-6H2. Ray Parvin. Altitude about 2,425 ft. Drilled by J. W. Queen, 1940. Cased to 8 ft. (Log from owner's memory.)		
Soil [loess]	8	8
"Rock" [basalt]	137	145
Sand	1	146
15/45-7R2. Oscar Anderson. Altitude about 2,540 ft. Drilled by De Tray Drilling Co., 1970. Cased to 88 ft.		
Soil	5	5
Clay	80	85
Basalt, weathered	3	88
Basalt	27	115
Basalt, porous	18	133
15/45-8L1. Helmer Rossebo. Altitude about 2,485 ft. Drilled by J. W. Queen. Cased to 40 ft.		
Soil [loess]	25	25
Basalt, soft, gray (bailed 5 gpm at 65 ft)	50	75
Basalt, hard, black	29	104
Basalt, soft, porous, water-bearing	19	123
15/45-8M1. Ross Howell. Altitude about 2,495 ft. Drilled in 1888. Cased to 30 ft.		
Soil, black	4	4
Clay, white and yellow	25	29
"Rock" [basalt]	1	30
15/45-14Q1. Mary Stirewalt. Altitude about 2,520 ft. Drilled in 1938.		
Basalt, dense	240	240
Basalt, porous	26	266
Quartzite (?)	19	285
15/45-25Q1. W. M. Boyd. Altitude about 2,610 ft. Drilled by Spray Bros., 1941. Cased to 65 ft.		
Silt	65	65
Basalt, hard; stringer of sand	135	200
Basalt, very hard	64	264
15/45-26K1. Orval Boyd. Altitude about 2,620 ft. Drilled by owner, 1953. Cased to 74 ft.		
Dirt, black	2	2
Clay (water below 60 ft)	62	64
Shale, water-bearing	10	74
Basalt	124	198
Rock, porous, brown	6	204
Soapstone(?)	12	216
Basalt	14	230
Soapstone(?)	25	255
Basalt	37	292
Rock, porous, brown	10	302
15/45-28J2. D. R. Burnham. Altitude about 2,540 ft. Drilled by Noel, 1926.		
Soil [loess]	41	41
"Rock" [basalt]	97	138
Clay	24	162
15/45-29G1. McGregor Co. Altitude about 2,430 ft. Drilled by Barnett Plumbing and Well Drilling Co., 1963. Cased to 41 ft.		
Fill	5	5
Sand and silt	13	18
Gravel	4	22
Basalt, broken, black	8	30
Basalt, gray	37	67
Shale, and small rock, some water	20	87
Shale	10	97

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/45-29G1.--Continued		
Basalt, gray	35	132
Basalt, soft, black	33	165
Basalt, broken, brown	5	170
Basalt, porous, brown, much water	45	215
Basalt, gray	5	220
15/45-29G2. Davenport Chemicals Inc. Altitude about 2,440 ft. Drilled by Charles Jungmann Drilling Co., 1963. Cased to 187 ft.		
Basalt, broken, and clay	34	34
Basalt, dark	72	106
Clay	12	118
Basalt, dark	45	163
Basalt, broken	23	186
Basalt, dark	22	208
Basalt, broken, water-bearing	8	216
Basalt, dark	31	247
15/45-29P1. Kenneth Hall. Altitude about 2,455 ft. Drilled by A. R. McInroy. Cased to 16 ft.		
Soil [loess]	16	16
"Rock" [basalt], hard	50	66
"Shale rock" [basalt], black, with two thin layers of hard rock	74	140
"Rock" [basalt], hard	--	--
15/45-30G4. Soil Conservation Service Experimental Farm. Altitude about 2,520 ft. Drilled by U.S. Government, 1938.		
Soil	60	60
Basalt, hard, black, with crevices at 124 and 129 ft	107	167
Basalt, hard, black	11	178
Basalt, soft, gray	11	189
15/45-30G4.--Continued		
Basalt, hard, black	21	210
Basalt, very hard, black	20	230
Sand, water-bearing (3 gpm)	10	240
Basalt, broken, black	9	249
Basalt, black; green shale	1	250
Basalt, broken, black	17	267
Basalt, hard, black	19	286
Basalt, very hard, black; crevices at 286 and 297 ft	49	335
Basalt, soft, porous, black (water, large flow; not able to lower level perceptibly with bailer; no change in water level)	25	360
Basalt, hard, black	11	371
15/45-31M1. Wash. State Univ. Altitude about 2,345 ft. Drilled by A. A. Durand & Son, 1957. Cased to 52 ft.		
Soil, clay; clay and basalt talus	29	29
Basalt, brown and weathered	11	40
Basalt, hard, dense, black	15	55
Basalt (no interbeds)	117	172
15/45-32C2. City of Pullman, well 6. Altitude about 2,430 ft. Drilled by Charles Jungmann Drilling Co., 1968. Cased to 235 ft.		
Basalt, black	59	59
Clay, green	32	91
Basalt, broken	43	134
Basalt, gray	28	162
Basalt, black	156	318
Basalt, brown	8	326
Basalt, brown	192	518

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/45-32N1. City of Pullman, well 2. Altitude about 2,350 ft. Drilled by R. J. Strasser, 1946. Cased to 24 ft.		
Topsoil	3	3
"Rock" [basalt], broken, gray	10	13
"Rock" [basalt], soft, black	6	19
"Rock" [basalt], hard, gray	8	27
"Rock" [basalt], hard, black	4	31
"Rock" [basalt], hard, gray	4	35
"Rock" [basalt], soft, black	6	41
"Rock" [basalt], hard, gray	4	45
"Rock" [basalt], soft, black	4	49
"Rock" [basalt], hard, gray	2	51
"Rock" [basalt], soft, black	2	53
"Rock" [basalt], soft, blue	15	68
"Rock" [basalt], hard, gray	1	69
Sandstone(?), gray	4	73
"Rock" [basalt], soft, gray	7	80
"Rock" [basalt], hard, black	16	96
"Rock" [basalt], hard, gray	13	109
"Rock" [basalt], soft, gray	15	124
"Rock" [basalt], hard, gray	4	128
"Rock" [basalt], soft, black	1	129
"Rock" [basalt], hard, gray; crevices	17	146
"Rock" [basalt], hard, gray	5	151
"Rock" [basalt], very hard, gray	19	170
"Rock" [basalt], soft, black, water at 170 to 176 ft	6	176
"Rock" [basalt], soft, brown	11	187
"Rock" [basalt], soft, black	19	206
"Rock" [basalt], soft, brown	6	212
"Rock" [basalt], soft, black	3	215
"Rock" [basalt], soft, red	11	226
"Rock" [basalt], hard, gray	5	231
15/45-32N2,N3. City of Pullman, well 4. Altitude about 2,356 ft. Drilled by A. A. Durand & Son., 1956. Cased to 399 ft.		
Topsoil	3	3
Clay and gravel	5	8
Gravel	2	10

(continued)

Material	Thickness (feet)	Depth (feet)
15/45-32N2,N3.--Continued		
Clay and gravel	5	15
Gravel, cemented	3	18
Basalt, hard, dark	2	20
Sand, dark, water-bearing	1	21
Basalt, hard, dark	6	27
Basalt, hard, gray	23	50
Shale, soft, black	25	75
Clay, soft, gray	5	80
Basalt, broken	20	100
Basalt, hard, gray	5	105
Basalt, medium-hard, dark	44	149
Shale, sandy, soft, gray	4	153
Basalt, medium-hard, gray	18	171
Basalt, medium-hard, dark	27	198
Basalt, hard, dark	2	200
Basalt, hard, gray	3	203
Basalt, medium-hard, variegated	11	214
Basalt, hard, gray	12	226
Basalt, medium-hard, gray	40	266
Basalt, soft, gray	2	268
Basalt, medium-hard, gray	6	274
Basalt, hard, gray	6	280
Basalt, medium-hard, broken, dark	10	290
Basalt, hard, gray	15	305
Basalt, very hard, gray	3	308
Basalt, hard, gray	5	313
Basalt, medium-hard, gray	22	335
Basalt, hard, gray	13	348
Basalt, medium-hard, dark	11	359
Basalt, medium-hard, gray	44	403
Basalt, medium-hard, dark	49	452
Basalt, soft, broken, dark	2	454
Basalt, medium-hard, gray	10	464
Basalt, soft, dark	3	467
Basalt, medium-hard, dark	64	531
Basalt, soft, broken, dark	9	540
Basalt, medium-hard, dark	32	572
Shale, medium-hard, sticky, gray	13	585
Basalt, medium-hard, broken, dark; mixed with shale	21	606
Basalt, medium-hard, dark; shale	4	610
Basalt, medium-hard, dark	10	620

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/45-32N2,N3.--Continued		
Basalt, soft, dark	3	623
Basalt, medium-hard, dark	19	642
Shale, soft, sticky, brown	5	647
Basalt, medium-hard, dark	23	670
Basalt, medium-hard, brown; brown shale	14	684
Basalt, medium-hard, gray	4	688
Basalt, hard, gray	22	710
Basalt, medium-hard, dark	13	723
Basalt, hard, dark	15	738
Basalt, medium-hard, dark	11	749
Basalt, medium-soft, brown	26	775
Basalt, medium-hard, gray	10	785
Basalt, hard, gray	4	789
Basalt, medium-hard, gray	87	876
Basalt, hard, gray	8	884
"Basalt crevice," hard, gray	2	886
Basalt, hard, gray	3	889
Basalt, medium-hard, gray; shale	4	893
Basalt, medium-hard, gray	11	904
Basalt, hard, gray	2	906
Basalt, medium-hard, gray	48	954
15/45-33J1. Wash. State Univ. Altitude about 2,610 ft.		
Topsoil and loess	91	91
Basalt, solid	180	271
Basalt, in flows not more than 10 ft thick, variable hardness	149	420
Basalt, water at 420 ft	18	438
15/45-34L2. Wash. State Univ., well 5. Altitude about 2,520 ft.		
Topsoil	3	3
Clay, soft, yellow	8	11
Basalt, medium-hard, black	5	16
Basalt, hard, black	118	134
Basalt, medium-hard, black	4	138
(continued)		

Material	Thickness (feet)	Depth (feet)
15/45-34L2.--Continued		
Basalt, hard, black	1	139
Basalt, medium-hard, blue	16	155
Basalt, medium-hard, black	21	176
Basalt, hard, black	18	194
Basalt, medium-hard, black	4	198
Basalt, hard, black	6	204
Basalt, medium-hard, black	7	211
Basalt, hard, black	24	235
Basalt, hard, gray	13	248
Basalt, medium-soft, black	32	280
Basalt, medium-hard, black	2	282
Basalt, hard, black	74	356
Basalt, soft, black	9	365
Basalt, medium-hard, black	7	372
Basalt, hard, black	2	374
Basalt, medium-hard, black	22	396
15/45-35F1. Pullman-Moscow Airport. Altitude about 2,530 ft. Drilled by Spray Bros., 1933.		
Topsoil [loess]	12	12
Basalt [weathered]	10	22
Basalt, firm, fresh	46	68
Basalt, vesicular, weathered, soft	3	71
Basalt, firm, fresh, black	4	75
Basalt, firm, fresh	33	108
Basalt, platy	5	113
Basalt, firm, fresh	15	128
Clay, siltstone, and carbonized wood	2	130
Basalt, slightly vesicular, firm	42	172
15/46-20P1. N. T. Carson. Altitude about 2,590 ft. Cased to 180 ft.		
Old well, mostly basalt	196	196
"Shale," soft [basalt]	3	199
Clay, blue	51	250
Sand, hard, granitic	30	280
Clay, brown	120	400

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
15/46-31J1. Ed Metzgar. Altitude about 2,520 ft. Drilled by Spray Bros. (Log from owner's memory.)		
Silt [loess]	18	18
"Rock" [basalt]	62	80
"Rock" [basalt], hard	20	100
"Porous or soft formation" [porous basalt]	17	117
16/38-4B1. Harold Holliday. Altitude about 1,630 ft. Drilled by John Davisson, 1965. Cased to 60 ft.		
Silt	28	28
Clay, yellow	21	49
Basalt, broken, black	2	51
Basalt, medium-hard	9	60
Basalt, hard, gray	5	65
Basalt, medium-hard	11	76
Sand, black	4	80
Basalt, red, water-bearing	16	96
Basalt, medium-hard	20	116
Basalt, broken	4	120
Basalt, hard, black	16	136
Basalt, hard, gray	21	157
Basalt, hard, black	8	165
Basalt, medium-hard, black	10	175
16/39-13P1. Mike Maley. Altitude about 1,490 ft. Drilled by John Davisson, 1951. Cased to 8 ft.		
"Shale rock"	3	3
"Rock" [basalt], red	15	18
"Boulders"	7	25
"Shale rock"	23	48
"Rock" [basalt], hard, gray	19	67
"Rock" [basalt], medium-hard, brown	11	78
"Rock" [basalt], hard, gray	18	96
Basalt, brown, with break; small amount of water	14	110
"Rock" [basalt], hard, gray	146	256
"Rock" [basalt], medium-hard, black, water-bearing	33	289
"Rock" [basalt], hard, gray	37	326

(continued)

Material	Thickness (feet)	Depth (feet)
16/39-13P1.--Continued		
Basalt, green, with break	111	437
"Rock" [basalt], hard, gray	26	463
"Rock" [basalt], hard, black	25	488
"Rock" [basalt], medium-hard, green	22	510
Sand, soft, black	14	524
16/39-24Q1. C. O. Camp. Altitude about 1,490 ft. Drilled by John Davisson, 1951. Cased to 91 ft.		
Soil	12	12
"Shale rock"	5	17
Clay, yellow	23	40
Gravel, sandy	5	45
Clay, blue	33	78
"Rock" [basalt], soft, black	15	93
"Rock" [basalt], hard, blue	16	109
"Rock" [basalt], soft, black	10	119
"Rock" [basalt], hard, black	138	257
"Rock" [basalt], soft, black	13	270
"Rock" [basalt], hard, black	71	341
"Rock" [basalt], soft, black	36	377
"Rock" [basalt], hard, black	65	442
Shale, sandy, black	53	495
16/40-22J1. A. Knott. Altitude about 1,515 ft. Drilled by Oliver Zinkgraf, 1946. Cased to 65 ft.		
Soil	40	40
Sand	20	60
"Shale rock," water-bearing	5	65
16/40-30K2. Floyd Fields. Altitude about 1,610 ft. Drilled in 1943. Cased to 38 ft.		
Unknown	40	40
Basalt, hard, gray, water at 97 to 100 ft	142	182
Basalt, creviced	12	194

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
16/40-30K2.--Continued		
Basalt, gray	5	199
Basalt, badly creviced	11	210
"Creek bottom," lots of water	1	211
16/41-19E1. F. L. Stapleton Ranch. Altitude about 1,570 ft. Drilled by Oliver Zinkgraf, 1942. Cased to 30 ft.		
"Dirt" [silt]	20	20
Shale	6	26
"Boulders"	10	36
Shale	52	88
"Rock" [basalt], hard	2	90
16/42-2B1. Uni-Chem Inc. Altitude about 2,030 ft. Drilled by John Davisson.		
Soil	15	15
Basalt, broken, "shelly," brown	5	20
Basalt, "shelly," gray	50	70
Clay, blue	10	80
Gravel, water-bearing	18	98
Basalt, gray	2	100
16/43-1B1. James Hayes. Altitude about 2,035 ft. Drilled by Zinkgraf's Well Drilling Co., 1966. Cased to 47 ft.		
Soil	2	2
Basalt, broken, medium-hard, black	3	5
Clay, hard, brown	37	42
Sand, gravel, and rocks	4	46
Basalt, slightly fractured, blue and brown	4	50
Basalt, hard, black	20	70
Basalt, hard, fractured, blue-brown	1	71
Basalt, hard, black	32	103
Basalt, fractured, water-bearing	30	133

(continued)

Material	Thickness (feet)	Depth (feet)
16/43-1B1.--Continued		
Basalt, hard, black	47	180
Basalt, fractured, hard, black	1	181
Basalt, hard, black	13	194
Basalt, hard, fractured, black-brown	20	214
Basalt, hard, black	43	257
16/43-7K1. Robert Kramer. Altitude about 2,125 ft. Drilled by Jasper Jones, 1962. Cased to 101 ft.		
Clay	56	56
Basalt, broken, and clay	18	74
Basalt, broken, and black sand	27	101
Basalt, dense, gray	64	165
Basalt, broken, porous, water-bearing	25	190
16/43-11G1. City of Colfax, well 2. Altitude about 1,970 ft. Drilled by A. A. Durand & Son, 1949. Cased to 306 ft.		
Clay	5	5
Gravel, coarse	3	8
Gravel, cemented	17	25
Basalt, broken	4	29
Basalt	28	57
Clay	6	63
Basalt, fractured	26	89
Basalt, hard	2	91
Basalt, honeycombed	5	96
Basalt, hard	4	100
Basalt, soft	2	102
Basalt, hard	7	109
Basalt, fractured; clay seams	2	111
Basalt, hard	3	114
Basalt, broken; clay	14	128
Basalt, honeycombed	9	137
Clay, yellow	9	146
Basalt, fractured	6	152
Basalt, hard	5	157

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
16/43-11G1.--Continued		
Basalt, honeycombed	1	158
Basalt, hard	9	167
Basalt, fractured	8	175
Basalt, medium-soft	15	190
Basalt, dense, with crevices	7	197
Basalt, dense, black	35	232
Basalt, black; sand, some water	6	238
Basalt, black	3	241
Basalt, "cinder," red, some water	7	248
Basalt, broken, red	8	256
Basalt, "cinder," black	9	265
Basalt, fractured, black	8	273
Conglomerate, (caving badly)	37	310
Basalt, hard, black	19	329
Basalt, porous, black	7	336
Basalt, very hard, gray	33	369
Basalt, fractured, with blue clay seams	15	384
Basalt, very hard, gray	10	394
Basalt, fractured, with blue clay seams	72	466
Basalt, very hard, gray	29	495
Basalt, sandy, water-bearing	3	498
Basalt, very hard, gray	17	515
Basalt, fractured, black (caving)	30	545
Basalt, very hard	55	600
16/43-11M1. City of Colfax, Sewer Dept. Altitude about 1,975 ft. Drilled by Spray Bros., 1953. Cased to 18 ft.		
"Dirt" [soil]	10	10
Basalt, broken	30	40
Basalt, hard, dense	60	100
Basalt, honeycombed, water-bearing	25	125
16/43-14N2. City of Colfax, well 3. Altitude about 2,150 ft. Drilled by A. A. Durand & Son.		
Clay and basalt, broken	28	28
Basalt, broken, medium-hard	12	40

(continued)

Material	Thickness (feet)	Depth (feet)
16/43-14N2.--Continued		
Basalt, broken, very little clay	6	46
Basalt, very hard, dark	6	52
Basalt, very hard, gray	8	60
Basalt, hard, gray	5	65
Basalt, medium-hard, dark-gray	7	72
Basalt, very hard, dark-gray	3	75
Basalt, hard, gray	3	78
Basalt, very hard, dark-gray	2	80
Basalt, hard, gray	13	93
Basalt, medium-hard, broken	1	94
Basalt, hard, gray	5	99
Basalt, medium-hard, gray	2	101
Basalt, hard, gray	2	103
Basalt, broken; gravel	2	105
Basalt, medium-soft, broken, brown	15	120
Basalt, medium-hard, broken, brown; some clay	16	136
Basalt, medium-soft, broken, brown; clay	5	141
Basalt, medium-hard, dark	5	146
Basalt, broken, brown; some clay	10	156
Clay, medium-hard, yellow	10	166
Clay, medium-hard, blue	15	181
Basalt, medium-hard, dark	64	245
Basalt, medium-hard, gray	10	255
Basalt, medium-hard, dark	22	277
Basalt, medium-hard, broken; some blue clay	10	287
Basalt, medium-soft, broken; blue clay	18	305
Basalt, medium-hard, broken, dark	11	316
Basalt, medium-hard, dark	9	325
Basalt, medium-hard, broken, dark	15	340
Basalt, medium-hard, broken, dark	15	355
Basalt, medium-hard, broken, gray	10	365
Basalt, medium-hard, dark	20	385
Basalt, medium-hard, brown	15	400
Basalt, medium-hard, dark	36	436
Basalt, hard, gray	5	441
Basalt, hard, dark	2	443
Basalt, hard, gray	25	468
Basalt, soft, variegated, brown	18	486
Basalt, medium-hard, variegated	9	495
Basalt, soft, broken, brown	13	508
Basalt, porous, dark brown (caving)	5	513

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
16/43-14N2.--Continued		
Basalt, medium-hard, dark	14	527
Basalt, medium-hard, dark-gray	14	541
Basalt, medium-hard, broken, brown	7	548
Basalt, medium-hard, dark-gray	7	555
Basalt, medium-hard, broken, gray	14	569
Basalt, medium-hard, gray	97	666
Basalt, hard, gray	18	684
Basalt, medium-hard, reddish-brown	28	712
Basalt, gray and red	2	714
Basalt, medium-soft, brown	9	723
Basalt, medium-soft, broken, dark	5	728
Basalt, medium-hard, dark	3	731
Basalt, hard, gray	19	750
16/43-20P1. Alfred Teal. Altitude about 2,155 ft. Drilled by Adams and Wilson.		
"Dirt" and clay	22	22
Basalt, hard, blue	45	67
Crevice in basalt, water-bearing	2	69
16/43-25P1. L. W. Smawley. Altitude about 2,170 ft. Drilled in 1952. Cased to 30 ft.		
Soil	20	20
Basalt	200	220
"Lava formation," soft	198	418
16/43-30M1. Mrs. Ruby Lloyd. Altitude about 2,215 ft. Drilled by John Baumgardner, 1929.		
Soil	48	48
Basalt	63	111
"Soapstone," water-bearing	30	141
16/43-33H1. Lewis Day. Altitude about 2,185 ft. Drilled by John Davisson, 1954. Cased to 20 ft.		
Soil, clayey	20	20
Basalt, hard	51	71
Basalt, soft, broken	3	74
16/44-11F1. C. E. Hodge. Altitude about 2,370 ft. Drilled by John Davisson, 1947. Cased to 40 ft.		
"Soil" [silt and clay]	25	25
"Rock," light-colored	20	45
Sand, black	1	46
16/44-24H1. Orvel Walker. Altitude about 2,595 ft. Drilled by John Davisson, 1955. Cased to 258 ft.		
Soil	4	4
Clay	225	229
Basalt	4	233
Clay, sandy, water-bearing	5	238
Basalt	4	242
Clay, sandy	6	248
"Granite, wash" [sand and gravel, granitic]	8	256
Basalt	4	260
Clay	6	266
Basalt	2	268
Clay, sandy, water-bearing	22	290
16/44-26J1. J. K. McIntosh. Altitude about 2,490 ft. Drilled in 1944.		
Soil	50	50
Basalt, hard	60	110
"Gravel and sand"	15	125

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
16/44-35L1. Boyd Harlow. Altitude about 2,300 ft. Drilled by John Davisson, 1952.		
Soil	5	5
Clay, yellow	22	27
Clay, micaceous, water-bearing	32	59
Basalt	1	60
Clay	22	82
Basalt, soft	9	91
Clay	4	95
16/45-10H2. Joe Mader. Altitude about 2,565 ft. Drilled by J. W. Queen, 1940. Cased to 28 ft.		
Topsoil	3	3
Clay	17	20
Basalt	32	52
16/45-16F1. Kamiak State Park. Altitude about 2,800 ft. Drilled by A. E. Spray, 1960. Cased to 140 ft.		
Silt	10	10
Clay, red, and boulders	70	80
Clay, yellow	40	120
Clay, blue	23	143
Basalt, black	27	170
16/45-25D1. W. M. Stipe. Altitude about 2,520 ft. Drilled by Spray Bros., 1951. Cased to 25 ft.		
Soil	25	25
Basalt(?)	175	200
"Gravel"	40	240
16/46-5E1. Bernard Redman. Altitude about 2,630 ft. Drilled by Oliver Zinkgraf, 1948. Cased to 90 ft. (Log from owner's memory.)		
Clay	88	88

(continued)

Material	Thickness (feet)	Depth (feet)
16/46-5E1.--Continued		
Basalt	212	300
Sand, micaceous, fine, white	1	301
16/46-18G1. Pete Bodker. Altitude about 2,600 ft. Drilled by Oliver Zinkgraf. Cased to 48 ft. (Log from owner's memory.)		
Soil	27	27
"Rock" [basalt], soft, dark	30	57
Sand, black	--	--
17/35-24A2. C. A. Schwerin. Altitude about 1,727 ft. Drilled by John Davisson, 1961. Cased to 71 ft.		
Silt	60	60
Basalt, soft	42	102
Basalt, hard	25	127
Basalt, soft	7	134
Basalt, hard, red	26	160
Basalt, soft	12	172
Sand	3	175
Basalt, hard	5	180
17/36-20J1. R. S. Hille. Altitude about 1,674 ft. Drilled by owner, 1965. Cased to 76 ft.		
Soil	2	2
Sand	65	67
Basalt, soft, red, water-bearing	43	110
Basalt, soft	20	130
Basalt, black	13	143
"Rock," soft	10	153

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
17/37-17Q1. C. D. Harder & Sons. Altitude about 1,595 ft. Drilled by John Davisson, 1954. Cased to 90 ft.		
Soil	3	3
Gravel	13	16
Sand and gravel, brown	24	40
Basalt, brown	3	43
Clay and gravel, red	23	66
Sand, brown	22	88
Basalt	4	92
Shale, black	28	120
Basalt, hard, green	22	142
Basalt, hard, gray	48	190
Sand, red and brown	37	227
Sand, hard, gray	3	230
Basalt, hard, brown	20	250
17/37-17R1. C. D. Harder & Sons. Altitude about 1,595 ft. Drilled by John Davisson, 1955.		
Gravel	40	40
Basalt, hard	10	50
Shale	10	60
Basalt, hard, brown	7	67
Basalt, hard, gray	6	73
Basalt, hard, black	24	97
Basalt, hard, green	21	118
Basalt, hard, black	76	194
Sand, water-bearing	20	214
17/37-33K1. Kent Bros. Altitude about 1,595 ft. Drilled by Davisson and Dryer, 1953. Cased to 8 ft.		
Gravel	7	7
Basalt, broken	25	32
Basalt, red, water-bearing	67	99
Basalt, hard, black	102	201
Sand, water-bearing	12	213
Basalt, hard, gray	3	216
Basalt, soft, water-bearing	9	225
17/38-18D1. Dale Holliday. Altitude about 1,635 ft. Drilled by Davisson and Dryer, 1950. Cased to 16 ft.		
Soil	1	1
Gravel	14	15
Basalt, hard	14	29
Basalt, soft, water-bearing	3	32
Basalt, hard	44	76
Basalt, soft	7	83
Basalt, hard	159	242
Basalt, soft	4	246
Basalt, hard	37	283
Basalt, soft, red, water-bearing	15	298
Basalt, hard	10	308
Basalt, soft, red, water-bearing	11	319
Basalt, hard	3	322
Basalt, soft, and sand, water-bearing	11	333
Basalt, hard	6	339
17/39-26B2. M. K. Shawgo. Altitude about 1,600 ft. Drilled by John Davisson, 1962. Cased to 50 ft.		
Basalt, "shelly"	22	22
Basalt, soft	6	28
Basalt, broken	4	32
Basalt, soft	10	42
Basalt, hard	38	80
Basalt, soft, water-bearing	2	82
Basalt, hard	23	105
Basalt, hard	55	160
Basalt, soft	5	165
Basalt, hard	10	175
Basalt, soft	3	178
Basalt, hard	12	190
Basalt, soft	3	193
Basalt, hard	13	206
Basalt, soft	9	215
Basalt, hard	3	218
Basalt, soft	18	236
Basalt, hard	5	241
Basalt, soft	6	247

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
17/39-26B2.--Continued		
Basalt, hard	3	250
Basalt, soft, water-bearing	30	280
Basalt, hard	6	286
17/40-26H1. C. S. Storment. Altitude about 1,620 ft. Drilled by John Davisson, 1953.		
"Dirt" [clay]	25	25
Boulders	10	35
Sand	2	37
"Rock" [basalt], hard, green	13	50
Sand, hard, brown	12	62
Sand, soft, brown	3	65
Sand, broken, brown	7	72
Sand, red and brown	14	86
Sand, brown	11	97
Sand, hard	4	101
17/41-30R1. Town of Endicott. Altitude about 1,760 ft. Drilled by A. A. Durand & Son, 1945. Cased to 55 ft.		
Soil	38	38
Basalt	6	44
Basalt, hard	11	55
Basalt	15	70
Basalt, hard and "sharp"	15	85
Basalt, hard	13	98
Basalt, soft	12	110
Basalt, broken	20	130
Basalt (bailed 48 gpm)	20	150
Basalt, porous, black	10	160
Basalt, hard, grayish	5	165
Basalt, hard, gray to black (bailed 48 gpm)	8	173
Basalt, hard, black	2	175
17/41-32M1. Fred Green. Altitude about 1,710 ft. Drilled by John Davisson, 1949. Cased to 19 ft.		
Soil	12	12
Sand and gravel, water-bearing	7	19
"Rock" [basalt], hard, blue	27	46
"Rock" [basalt], soft, blue, water-bearing	4	50
17/42-1F1. A. L. Nickerson. Altitude about 2,250 ft. Drilled by John Davisson, 1953.		
Soil	6	6
Clay, water-bearing at 20 ft	58	64
"Rock" [basalt], hard	57	121
"Rock" [basalt], sand and yellow clay, water-bearing at 122 ft	43	164
"Rock", broken	35	199
17/43-2B2. Robert Alderman. Altitude about 2,310 ft. Drilled by John Davisson, 1961. Cased to 100 ft.		
Soil, black	6	6
Clay, yellow	14	20
Clay and gravel	10	30
Clay	68	98
Basalt, broken	2	100
Basalt, hard	1	101
Gravel, water-bearing	8	109
Basalt	8	117
17/43-25L1. Fayne Cochran. Altitude about 2,360 ft. Drilled by Lewis Cousineau. Cased to 35 ft; perforated from 150 to 185 ft.		
Soil	34	34
Basalt	123	157
Clay	28	185

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
17/43-34R1. W. H. Willson. Altitude about 2,335 ft. Drilled in 1958. Cased to 195(?)ft.		
Soil	6	6
Clay	40	46
Gravel and clay	63	109
Basalt, soft	2	111
Basalt, hard	9	120
Basalt, soft	2	122
Basalt, hard	31	153
Basalt, soft	37	190
Basalt, hard	5	195
17/44-16E1. Curtis Cattle Co. Altitude about 2,395 ft. Drilled by John Davisson, 1947. Cased to 41 ft.		
Soil, black	10	10
Clay, yellow	6	16
"Rock" [basalt], "shaley"	2	18
"Rock" [basalt], hard	8	26
"Rock," medium-hard	4	30
Sand, black	8	38
"Rock," "shaley"	9	47
"Rock" [basalt], medium-hard, black	25	72
"Rock" [basalt], soft, black	8	80
"Rock" [basalt], hard	8	88
"Rock" [basalt], soft	15	103
"Rock" [basalt], hard	12	115
17/45-4C1. Town of Garfield. Altitude about 2,480 ft. Drilled by Oliver Zinkgraf, 1948. Cased to 282 ft.		
"Dirt and clay" [soil]	35	35
Clay and loose rock	35	70
"Rock" [basalt]	128	198
Clay, blue and yellow	47	245
"Rock" [basalt], honeycombed	15	260
Clay, blue and yellow	20	280
"Rock" [basalt], variable hardness, water-bearing	100	380

Material	Thickness (feet)	Depth (feet)
17/45-6J1. J. C. Gwinn. Altitude about 2,480 ft. Drilled by Ralph Smith, 1948. Cased to 160 ft. (Log from owner's memory.)		
Clay, yellow	20	20
Basalt, hard	120	140
"Quicksand"	1	141
"Rock"	16	157
"Quicksand"	2	159
"Rock"	11	170
17/45-8D1. John Gwinn. Altitude about 2,530 ft. Drilled by Oliver Zinkgraf, 1946. Cased to 252 ft.		
Silt (old well)	46	46
Basalt, hard	139	185
Sand, gray and yellow, water-bearing	21	206
"Rock," hard, sandy	2	208
Sand, soft, yellow	10	218
Clay, green and brown	33	251
"Rock," soft, porous, black	5	256
Basalt, hard	10	266
17/45-19P1. D. F. Lange. Altitude about 2,460 ft. Drilled by Bloyed Bros., 1955. Cased to 190 ft.		
Soil and clay	20	20
Basalt, hard, water-bearing (1/2 gpm at 60 ft)	75	95
Basalt, blocky and soft; small streaks of green shale	25	120
Basalt, water-bearing (73 gpm at 146 ft)	45	165
Shale, blue and green	25	190
Basalt, broken; shale	30	220
Basalt	17	237

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
17/45-22A1. J. E. Miller. Altitude about 2,500 ft. Drilled by John Baumgardner, 1930. Cased to 20 ft. (Log from owner's memory.)		
Clay	19	19
"Rock"	121	140
Clay, chalky, blue	1	141
Sand, very fine	79	220
18/36-4A1. D. Heinemann. Altitude about 1,769 ft. Drilled by Barnett Pump and Irrigation, Inc., 1965. Cased to 13 ft.		
Sand and silt	5	5
Basalt, broken, black	8	13
Basalt, gray	47	60
Basalt, porous, brown, water-bearing	15	75
Basalt, broken, black	30	105
Basalt, broken, silt layers	35	140
Basalt, gray	125	265
Basalt, porous, brown	12	277
Basalt, gray	80	357
Basalt, black	5	362
Basalt, porous, brown, water-bearing	18	380
Basalt, gray	20	400
Unknown (well deepened in 1968)	175	575
18/36-4M1. Walter Teske. Altitude about 1,778 ft. Drilled by John Davisson, 1949. Cased to 22 ft.		
Soil	7	7
Basalt, broken	13	20
Basalt, hard	14	34
Basalt, broken, creviced	22	56
Basalt, hard	16	72
Basalt, soft	35	107
Basalt, hard	21	128
Basalt, soft, red, water-bearing	21	149
Basalt, hard	2	151
18/36-8B1. D. Heinemann. Altitude about 1,772 ft. Drilled by Davisson and Dreyer, 1949. Cased to 30 ft.		
Soil	5	5
Basalt	3	8
Gravel	12	20
Basalt, hard	36	56
Basalt, soft, red, water-bearing	8	64
Basalt, hard, black	22	86
Basalt, hard, gray	26	112
Basalt, hard, black	13	125
Basalt, soft	7	132
Gravel, water-bearing	6	138
18/37-9C2. O. Moeller. Altitude about 1,760 ft. Drilled by Frandsen Bros., 1967. Cased to 15 ft.		
Clay and gravel	15	15
Basalt, red and gray	70	85
Basalt, gray	90	175
Basalt, very hard, gray	10	185
Creviced	5	190
Basalt, very hard, gray	37	227
Basalt, soft	10	237
Basalt, very hard	5	242
Basalt, soft	5	247
Basalt, very hard	6	253
Clay, brown and red	15	268
Basalt, soft, red	17	285
Basalt, loose, gray	3	288
Basalt, very hard, gray	5	294
18/37-29E1. Union Pacific Rd. Co. Altitude about 1,638 ft. Drilled in 1944.		
Gravel	34	34
Basalt, broken, black	31	65
Basalt, hard, black	9	74
Basalt, hard, blue	101	175
Basalt, honeycomb, black	24	199
Basalt, hard, solid, black	61	260

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
18/38-4P1. C. H. Harder. Altitude about 1,730 ft. Drilled in 1949.		
Basalt, hard	48	48
"Shale," water-bearing	25	73
Basalt, hard	265	338
"Shale," water-bearing	31	369
Basalt, hard	1	370
18/38-4M1. C. H. Harder. Altitude about 1,879 ft. Drilled in 1951.		
Soil	6	6
Clay	82	88
Basalt, hard	287	375
"Shale," water-bearing	10	385
Basalt, hard	126	511
"Shale," water-bearing	12	523
Basalt, hard	5	528
18/38-4Q1. C. H. Harder. Altitude about 1,777 ft. Drilled in 1949. Cased to 33 ft.		
Soil	11	11
"Shale"	22	33
Basalt, hard	290	323
"Shale," water-bearing	44	367
Basalt, hard	3	370
18/38-18H1. R. Spencer. Altitude about 1,677 ft. Drilled by Barnett Pump and Irrigation, Inc., 1968.		
Gravel	16	16
Basalt, hard, blue-black	18	34
Basalt, hard	16	50
Basalt, broken, black, some water	25	75
Basalt, broken, red, water-bearing	43	118
Basalt, hard	1	119
Basalt, hard, gray	85	204

(continued)

Material	Thickness (feet)	Depth (feet)
18/38-18H1.--Continued		
Basalt, broken, clayey, some water	28	232
Basalt, hard, gray	55	287
Basalt, broken, black	5	292
Basalt, hard, gray	24	316
Basalt, red, water-bearing	46	362
18/38-21F3. R. Spencer. Altitude about 1,695 ft. Drilled by Barnett Pump and Irrigation, Inc., 1968. Cased to 25 ft.		
Silt	8	8
Gravel, water-bearing	4	12
Basalt, hard	3	15
Gravel, water-bearing	8	23
Basalt, medium-hard	62	85
Basalt, black, water-bearing	27	112
Basalt, hard	3	115
18/39-8G1. Mary Smick. Altitude 1,670 ft. Drilled by John Davisson, 1955.		
Soil	12	12
Shale	50	62
Basalt, hard, gray	12	74
Basalt, soft	61	135
Sand	18	153
Basalt, hard, black	17	170
18/40-2A1. E. M. Hays, Jr. Altitude 1,840 ft. Drilled by John Davisson, 1954. Cased to 28 ft.		
Soil	4	4
Basalt	10	14
Basalt, large boulders, water-bearing	12	26
Basalt	6	32
Sand, soft, red	116	148
Basalt	4	152

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
18/40-2A1.--Continued		
Sand, soft, brown	16	168
Sand, soft, red	42	210
Basalt, brown	4	214
Basalt, red	16	230
Sand, soft, red	17	247
Basalt, hard	7	254
Sand, brown, water-bearing	14	268
Basalt, hard	5	273
Sand, brown, water-bearing	7	280
Basalt	6	286
Sand, brown, water-bearing	9	295
Basalt	2	297
18/40-2A2. E. M. Hays, Jr. Altitude about 1,840 ft. Drilled by John Davisson, 1954. Cased to 71 ft.		
Soil	5	5
Basalt, soft	50	55
Clay	30	85
Basalt, soft	35	120
Basalt, soft, red, water-bearing	20	140
18/40-10F1. Jack Smith. Altitude about 1,835 ft. Drilled by John Davisson, 1953. Cased to 31 ft.		
Soil and clay	15	15
"Rock," shelly,"	16	31
"Rock" [basalt], soft	15	46
"Rock," hard	12	58
"Rock," soft	9	67
"Rock," hard	12	79
Shale, broken	29	108
"Rock," hard	7	115
Sand, soft, water-bearing	27	142
"Rock" [basalt], hard	26	168
"Rock" [basalt], soft	24	192
"Rock" [basalt], hard	4	196
"Rock" [basalt], soft	23	219

(continued)

Material	Thickness (feet)	Depth (feet)
18/40-10F1.--Continued		
"Rock" [basalt], hard	5	224
"Rock" [basalt], soft	17	241
"Rock" [basalt], hard	45	286
"Rock" [basalt], soft	2	288
"Rock" [basalt], hard	3	291
"Rock" [basalt], soft	2	293
"Rock" [basalt], hard	2	295
"Rock" [basalt], soft, water-bearing	17	312
Clay	10	322
"Rock" [basalt], soft	3	325
Clay	12	337
"Rock" [basalt], soft, water-bearing	3	340
Clay	6	346
"Rock" [basalt], soft	3	349
Clay	3	352
18/40-11C1. Ray Hann. Altitude about 1,810 ft. Drilled by John Davisson, 1946.		
Soil	9	9
"Rock" [basalt], shaley	22	31
"Rock" [basalt], hard, blue	12	43
"Rock" [basalt], soft, red, water-bearing	74	117
"Rock" [basalt], hard, blue	78	195
Shale, sandy, water-bearing	125	320
18/40-13F1. Jack Smith. Altitude about 1,940 ft. Drilled by A. A. Durand & Son, 1945. Cased to 34 ft.		
Old well, no record	30	30
Gravel and mud (caved)	28	58
Basalt, gray, creviced at 92 ft	41	99
Clay, sandy	53	152
Basalt, gray, creviced at 171 ft	19	171

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
18/41-16M1. Schneidmiller Bros. Altitude about 1,890 ft. Drilled by Holman Drilling Corp., 1967. Cased to 28 ft.		
Soil	2	2
Clay, and broken basalt	17	19
Basalt, soft, brown	9	28
Basalt, fractured, black, water-bearing	9	37
Basalt, fractured, black	16	53
Basalt, brown, water-bearing	5	58
Clay, yellow, and basalt	10	68
Basalt, hard, light gray	4	72
Basalt, hard, gray	3	75
Basalt, creviced, water-bearing	6	81
Basalt, soft, brown	15	96
Basalt, medium-hard, black	23	119
Basalt, hard, gray	55	174
Basalt, medium, gray	8	182
Clay, gray	2	184
Basalt, fractured, gray, water-bearing	24	208
18/41-22R1. Dave Repp. Altitude about 1,960 ft. Drilled by John Davisson, 1953. Cased to 46 ft.		
Soil	35	35
Clay	9	44
"Rock" [basalt], hard	18	62
"Rock" [basalt], soft, water-bearing	9	71
"Rock" [basalt], hard	9	80
"Rock" [basalt], soft	12	92
"Rock" [basalt], hard	6	98
"Rock" [basalt], sand, water-bearing	12	110
"Rock" [basalt], hard	12	122
Clay, yellow	6	128
"Rock" [basalt], soft, water-bearing	11	139
"Rock" [basalt], hard	3	142
18/41-23Q1. Marvin Repp. Altitude about 1,975 ft. Drilled in 1954.		
Soil	15	15
(continued)		

Material	Thickness (feet)	Depth (feet)
18/41-23Q1.--Continued		
Clay	7	22
Gravel, water-bearing	2	24
Basalt, soft, water-bearing	28	52
Basalt, hard	13	65
Basalt, soft, water-bearing	10	75
Basalt, hard	8	83
18/41-28L1. C. J. Schierman. Altitude about 1,845 ft. Drilled by John Davisson, 1958.		
Soil	15	15
Clay, water-bearing at 110 ft	250	265
Shale, sandy, water-bearing 265 to 308 ft	45	310
18/41-29A2. Waldo Schierman. Altitude about 1,830 ft. Drilled by A. E. Spray, 1964. Cased to 213 ft.		
Soil	3	3
Clay, red	97	100
Clay, light	85	185
Clay, blue	27	212
Basalt, black	26	238
18/42-14K1. James Curtis. Altitude about 2,275 ft. Drilled by John Davisson, 1958.		
Clay	31	31
Basalt, "shelly"	15	46
Basalt, hard	40	86
Basalt, soft	19	105
Sand	15	120
18/43-5A1. Elmer Huntley. Altitude about 2,300 ft. Drilled by Holman Drilling Corp., 1966. Cased to 32 ft.		
Clay	29	29
Basalt, soft, brown	1	30
(continued)		

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
18/43-5A1.--Continued		
Basalt, hard, gray	18	48
Basalt, soft, brown, water-bearing	6	54
Basalt, hard, gray	13	67
Basalt, soft, brown, water-bearing	3	70
Basalt, medium-hard, black, water-bearing	6	76
Basalt, soft, brown, water-bearing	6	82
Basalt, hard, gray	4	86
Basalt, soft, brown, water-bearing	8	94
Basalt, hard, gray	14	108
18/43-5M1. Elmer Huntley. Altitude about 2,270 ft. Drilled in 1953. Cased to 22 ft.		
Soil	18	18
"Rock," soft, water-bearing	7	25
"Rock," hard	5	30
"Rock," soft	8	38
Boulders and sand, water-bearing	6	44
"Break," sandy clay	14	58
Sand, brown	21	79
Clay, sandy	26	105
Sand	11	116
18/43-12C1. Orval Greer. Altitude about 2,460 ft. Drilled by A. A. Durand & Son, 1948. Cased to 19 ft.		
Soil	6	6
Gravel	1	7
"Rock," brown	23	30
Basalt, broken, black, some water	15	45
"Rock," brown	2	47
"Rock," [basalt], broken, brown	43	90
"Rock," [basalt], hard, gray	2	92
"Rock," [basalt], broken, brown	23	115
"Rock," [basalt], broken, brown, water-bearing	10	125
18/45-1L2. Bert Lehn. Altitude about 2,594 ft. Drilled by Holman Drilling Corp., 1966. Cased to 327 ft.		
Clay	16	16
Basalt, brown	4	20
Basalt, hard, gray	41	61
Basalt, soft, brown, water-bearing	46	107
Basalt, hard, gray	135	242
Clay, gray	20	262
Sand, clean, white	20	282
Clay, blue	13	295
Clay, brown	17	312
Basalt, black, water-bearing	2	314
Basalt, black	51	365
Basalt, fractured, black, water-bearing	45	410
Basalt, hard, gray	9	419
18/45-7B1. Roy Peringer. Altitude about 2,510 ft. Drilled by Ralph Smith, 1948. Cased to 20 ft.		
Topsoil	2	2
Clay, red	18	20
"Rock"	60	80
18/45-7F1. Roy Peringer. Altitude about 2,510 ft. Drilled by Elmer Ray, 1952. Cased to 111 ft.		
Soil	2	2
Clay, some water	12	14
Clay	9	23
Gravel, fine; clay, water-bearing at 25 ft (25 gpm)	3	26
Shale, brown	13	39
Basalt, hard	21	60
Basalt, honeycombed, silted	10	70
Shale, brown (caving)	38	108
Basalt, honeycombed, silt	12	120
Basalt, "coarse"	45	165
Basalt, "coarse," water-bearing	20	185

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
18/45-7F1.--Continued		
Basalt, "very coarse," water-bearing	8	193
Basalt, "coarse"	11	204
Basalt, very hard	2	206
Basalt, "coarse," black	19	225
Basalt, "coarse," heavy [dense]	11	236
Shale, blue	1	237
Shale, blue, and clay	8	245
18/45-9E1. George Miller. Altitude about 2,560 ft. Drilled by Don Smith, 1950. Cased to 96 ft.		
Topsoil	4	4
Clay, yellow	39	43
Clay, brown	4	47
"Hardpan"	8	55
"Rock" [basalt], cemented, broken	14	69
Basalt, hard, gray	29	98
Clay, blue	8	106
Basalt, black	34	140
Basalt, broken, black, water-bearing	13	153
18/45-23R1. James Walters. Altitude about 2,550 ft. Drilled in 1892.		
"Dirt" [soil]	16	16
Basalt	65	81
Clay, blue	5	86
Clay, gray	5	91
"Cement," hard	2	93
Clay, blue and yellow; "quicksand," water-bearing	20	113
19/36-2A1. Norman Krause. Altitude about 1,860 ft. Drilled by R. L. Sewall, 1966. Cased to 19 ft.		
Soil and gravel	17	17
Basalt, hard	18	35
Basalt, broken, water-bearing	19	54

(continued)

Material	Thickness (feet)	Depth (feet)
19/36-2A1.--Continued		
Basalt, hard	6	60
Basalt, sand, and gravel	5	65
Basalt, hard (lost water)	37	102
Basalt, hard	120	222
Basalt, broken	5	227
Basalt, hard	3	230
Crevice, water-bearing	3	233
Basalt, hard	119	352
Crevice	3	355
Basalt, hard	5	360
Basalt	28	388
Basalt, broken	10	398
Basalt, hard	4	402
19/36-9K1. Gayle Gering. Altitude about 1,855 ft. Drilled by Shinn Irrigation Equipment, Inc., 1968. Cased to 15 ft.		
Unknown	15	15
Basalt, green to gray	33	48
Basalt, broken	9	57
Basalt, medium-hard	13	70
Basalt, very hard	56	126
Cavity	2	128
Basalt, broken, gray	40	168
Cinders, broken, red	32	200
Basalt, porous to hard, gray	64	264
Basalt, very hard	39	303
Basalt, broken	18	321
Basalt, hard, gray	71	392
Basalt, gray	26	418
Basalt, very hard	7	425
19/36-12F1. Norman Krause. Altitude about 1,834 ft. Drilled by R. L. Sewall, 1966. Cased to 21 ft.		
Soil	2	2
Basalt, black	13	15

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/36-12F1.--Continued		
Boulders	1	16
Basalt, black	20	36
Basalt, gray	13	49
Basalt, broken, brown	5	54
Basalt, gray	9	63
19/36-19R1. --Meyer. Altitude about 1,806 ft. Drilled by John Davisson, 1960. Cased to 27 ft.		
Gravel	10	10
Basalt, shelley	24	34
Basalt, hard, blue	15	49
Basalt, brown, water-bearing	10	59
Basalt, red	35	94
Basalt, hard, gray	37	131
Basalt, soft, brown, water-bearing	38	169
Basalt, hard, gray	5	174
Sand	6	180
Basalt, hard, gray	81	261
Basalt, black	19	280
Basalt, hard, gray	24	304
Sand	4	308
Basalt, hard, gray	21	329
Basalt, red, water-bearing	21	350
19/36-20H1. Maynard Galbreath. Altitude about 1,863 ft. Drilled by John Davisson, 1964. Cased to 109 ft.		
Clay	87	87
Basalt, hard	63	150
Basalt, hard, green	20	170
Basalt, hard, gray	11	181
Basalt, hard, green	16	197
Basalt, soft, brown, water-bearing	31	228
Basalt, hard, brown	13	241
Basalt, soft, red, water-bearing	5	246
Sand, water-bearing	3	249
Basalt, hard, gray	59	308
Basalt, soft, brown, water-bearing	20	328

(continued)

Material	Thickness (feet)	Depth (feet)
19/36-20H1.--Continued		
Basalt, hard, gray	10	338
Basalt, hard, green	16	354
Basalt, soft, black	4	360
Basalt, hard, gray	31	391
Basalt, soft, red	5	396
Basalt, soft, gray	23	419
Basalt, hard, gray	20	439
Basalt, soft, black, water-bearing	48	487
Clay, blue	4	491
19/36-20H2. Maynard Galbreath. Altitude about 1,860 ft. Drilled by Barnett Pump and Irrigation, Inc., 1968. Cased to 63 ft.		
Soil	8	8
Clay, sandy	28	36
Basalt, broken, brown	6	42
Clay, sandy, brown	13	55
Basalt, broken, brown	5	60
Basalt, hard, black	67	127
Basalt, broken	2	129
Basalt, hard, black	46	175
Basalt, broken	15	190
Basalt, broken, and clay layers	12	202
Basalt, broken	8	210
Basalt, broken, water-bearing	20	230
Basalt, hard	4	234
Basalt, broken, water-bearing	7	241
Basalt, hard	28	269
Basalt, medium-hard	9	278
Basalt, hard, gray	30	308
Basalt, water-bearing	20	328
Basalt, hard, gray	49	377
Basalt, broken	10	387
Basalt, medium-hard	12	399
Basalt, hard, gray	24	423
Basalt, broken, black	20	443
Basalt, broken, and shale	21	464
Basalt, medium-hard	20	484
Basalt, hard, gray	29	513

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/36-20H2.--Continued		
Basalt, water-bearing	39	552
Basalt, hard, gray	11	563
19/36-28B1. Maynard Galbreath. Altitude about 1,816 ft. Drilled by John Davisson, 1960. Cased to 62 ft.		
Soil	1	1
Gravel	51	52
Clay, and gravel, water-bearing	9	61
Basalt	20	81
Basalt, soft	15	96
Basalt, hard	84	180
Basalt, soft, water-bearing	40	220
Basalt, hard	19	239
Basalt, soft, water-bearing	7	246
Basalt, hard	49	295
Basalt, soft, water-bearing	39	334
Basalt, hard	4	338
19/36-34F1. Don Heinemann. Altitude about 1,774 ft. Drilled by Barnett Plumbing and Drilling Co., 1961. Cased to 68 ft.		
Soil	2	2
Sand, and gravel	66	68
Basalt, black	77	145
Basalt, broken, brown	15	160
Basalt, porous, brown	10	170
Basalt, broken, brown, some water	20	190
Basalt, gray	100	290
Basalt, broken, black, water-bearing	36	326
Basalt, gray	3	329
19/40-4R1. Emmett Shawgo. Altitude about 2,010 ft. Drilled by John Davisson, 1955. Cased to 51 ft.		
Soil	44	44
Sand	3	47

(continued)

Material	Thickness (feet)	Depth (feet)
19/40-4R1.--Continued		
"Shale rock"	15	62
"Rock" [basalt], hard, gray	96	158
"Rock" [basalt], black	22	180
19/40-10L1. Emmett Shawgo. Altitude about 1,830 ft. Drilled by John Davisson, 1959.		
Sand, water-bearing	25	25
Boulders	6	31
Basalt, hard, brown	31	62
Basalt, broken, blue, water-bearing	21	83
Basalt, hard, gray	6	89
Basalt, soft, black	38	127
Basalt, hard, gray	29	156
Basalt, soft, black, water-bearing	19	175
Basalt, hard, gray	2	177
19/40-16J1. L. D. Shawgo. Altitude about 1,825 ft. Drilled by John Davisson, 1951. Cased to 27 ft.		
Soil	5	5
"Rock;" gravel	15	20
Gravel	7	27
"Rock" [basalt]	18	45
"Rock" [basalt], soft; gravel	12	57
"Rock" [basalt], clay	5	62
"Rock" [basalt], hard	8	70
"Rock" [basalt], soft	6	76
"Rock" [basalt], hard	30	106
"Rock" [basalt], soft	10	116
"Rock" [basalt], hard	17	133
"Rock" [basalt], soft	20	153
"Rock" [basalt], hard	4	157
"Rock" [basalt], soft, water-bearing	35	192

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/40-16K1. L. D. Shawgo. Altitude about 1,840 ft. Drilled by John Davisson, 1959.		
Soil and clay	20	20
Basalt, "shelly"	14	34
Basalt, hard	14	48
Basalt, "loose"	4	52
Basalt, hard, blue	17	69
Basalt, "loose"	19	88
19/40-18M1. Roy Cook. Altitude about 1,885 ft. Drilled by John Davisson, 1956. Cased to 83 ft.		
"Dirt" [soil]	12	12
Shale, water-bearing	51	63
Clay	15	78
Basalt, hard	29	107
Basalt, broken, gray, water-bearing	61	168
Basalt, hard	69	237
Basalt, soft, black, water-bearing	17	254
19/40-21N1. Glorfield Bros. Altitude about 1,820 ft. Drilled by John Davisson, 1957. Cased to 43 ft.		
Gravel, water-bearing from 18 to 38 ft	40	40
"Rock," hard, brown	32	72
"Rock," hard, gray	11	83
Clay, brown	14	97
"Rock," [basalt], hard, gray	13	110
"Rock," [basalt], hard, brown	17	127
"Rock," [basalt], hard, green	22	149
"Rock," [basalt], hard, black	23	172
"Rock," [basalt], hard, gray	22	194
"Break," sandy, blue, brown, red clay, water-bearing	84	278
19/40-25C1. Mrs. J. P. Glorfield. Altitude about 1,740 ft. Drilled by Oliver Zinkgraf. Cased to 27 ft.		
Soil	22	22
Basalt, black	40	62
19/40-25C1.--Continued		
Basalt, hard, gray	28	90
Basalt, honeycombed, black	8	98
19/40-30K1. Dean Deschane. Altitude about 1,845 ft. Drilled by John Davisson, 1958.		
Soil	2	2
Gravel	24	26
Clay	16	42
Basalt	6	48
Basalt, hard	12	60
Basalt, soft, water-bearing	1	61
Basalt, hard	21	82
Basalt, soft	2	84
Basalt, hard	5	89
Basalt, soft	2	91
Basalt, hard	11	102
Basalt, soft, water-bearing	16	118
Basalt, hard	1	119
19/41-14Q1. C. C. Countryman. Altitude about 2,040 ft. Drilled by E. A. Holman, 1961. Cased to 121 ft.		
Sand and gravel	85	85
Clay and broken basalt	20	105
Basalt, black	20	125
Basalt, blue	7	132
Basalt, decomposed; blue basalt	33	165
Basalt, blue	8	173
Clay, hard, green; broken basalt	12	185
Basalt, hard, black	13	198
Clay, all colors	27	225
Basalt, broken	8	233
Basalt, hard, blue	2	235
Basalt, black	10	245
Basalt, hard, gray	13	258
Basalt, blue	8	266

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/42-5C1. M. L. Crites. Altitude about 2,290 ft. Drilled by John Davisson, 1958.		
Soil	2	2
Clay	110	112
Basalt, soft	5	117
Basalt, hard	41	158
Basalt, soft, water-bearing	6	164
Basalt, hard	12	176
Basalt, soft	6	182
Basalt, hard	16	198
Basalt, soft, water-bearing	41	239
19/42-7A1. J. H. Gordon. Altitude about 2,305 ft. Drilled by John Davisson, 1958.		
Soil	4	4
Clay	16	20
Gravel	2	22
Clay	13	35
Basalt, hard	8	43
Clay	25	68
Basalt, soft	21	89
Basalt, hard	4	93
Basalt, soft	57	150
19/42-11J1. Lester Kile. Altitude about 2,195 ft. Drilled by John Davisson, 1956.		
Soil	25	25
Shale, water-bearing	48	73
Clay, sandy	39	112
"Rock," hard, gray	6	118
"Rock," broken, brown, water-bearing	8	126
19/42-36B1. Burdett Prince. Altitude about 2,290 ft. Drilled by A. A. Durand & Son, 1954. Cased to 15 ft.		
Topsoil	3	3
Clay, sticky, brown	8	11

(continued)

Material	Thickness (feet)	Depth (feet)
19/42-36B1.--Continued		
Basalt, hard, black	11	22
Basalt, medium-hard, broken, black	23	45
Basalt, hard, black	3	48
Basalt, hard, blue	5	53
Basalt, medium-hard, black	9	62
Basalt, hard, gray	3	65
Basalt, medium-hard, brown	16	81
Basalt, medium-hard, black	7	88
Basalt, medium-hard, broken, black	25	113
Sand, black	2	115
Basalt, broken, black	45	160
Basalt, hard, black	32	192
Basalt, medium-hard, broken, black	86	278
Basalt, hard, black	33	311
Basalt, medium-hard, broken, black	79	390
Basalt, hard and soft	24	414
Basalt, soft, water-bearing	2	416
Basalt	32	448
Basalt, very hard	72	520
19/43-35N1. H. Comegys. Altitude about 2,375 ft. Drilled by J. W. Queen.		
Soil	32	32
"Quicksand"	88	120
"Rock," solid	37	157
19/44-22K1. Town of Oakesdale. Altitude about 2,460 ft. Drilled by A. A. Durand & Son, 1951. Cased to 77 ft.		
Topsoil and clay	5	5
Basalt	18	23
Boulders, gravel and basalt	19	42
Basalt, gray, brown; blue mud	7	49
Basalt, hard, gray	31	80
Basalt, hard	10	90
Basaslt, hard, gray and dark, with crevices	36	126
Basalt, medium-hard and hard, dark-gray	98	224

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/44-22K1.--Continued		
Basalt, soft, shaley, black, some water	4	228
Basalt, dark	1	229
Clay, blue	15	244
Basalt, soft, fractured, some water at 265 ft	43	287
Basalt, soft, brown	3	290
Basalt, hard, gray	17	307
Basalt, hard and soft streaks	74	381
Basalt, medium-hard, black	9	390
Basalt, hard, black	27	417
Basalt, porous, black, water-bearing	64	481
19/45-12J1. Howard Thompson. Altitude about 2,565 ft. Drilled by Ralph Smith, 1948. Cased to 25 ft. (Log from owner's memory.)		
Clay	8	8
Gravel	8	16
"Rock"	42	58
19/45-14A1. Paul Thompson. Altitude about 2,545 ft. Drilled by Elmer Roy.		
Soil, black	2	2
Clay	9	11
"Rock" [basalt]	67	78
19/45-18D1. Milton Silzel. Altitude about 2,440 ft. Drilled by Holman Drilling Corp., 1968. Cased to 260 ft; perforated 90-95 ft, 140-150 ft, 210-228 ft.		
Basalt, gray	83	83
Basalt, black, water-bearing	14	97
Clay, gray	12	109
Clay, green	3	112
Clay, sandy, brown	25	137
Basalt, dark gray, water-bearing	13	150
Basalt, black	12	162

(continued)

Material	Thickness (feet)	Depth (feet)
19/45-18D1.--Continued		
Basalt, dark gray	50	212
Crevice, water-bearing	1	213
Basalt, fractured, gray, water-bearing	13	226
Basalt, black	4	230
19/45-25G1. Bert Lehn. Altitude about 2,600 ft. Drilled by Holman Drilling Corp., 1966. Cased 0 to 53 ft and 205 to 228 ft; screened 228 to 268 ft.		
Soil	2	2
Clay, yellow	50	52
Basalt, fractured, water-bearing	28	80
Basalt, hard	88	168
Basalt, fractured, water-bearing	6	174
Basalt, hard	44	218
Basalt, and gray clay	2	220
Clay, gray	8	228
Sand, medium grained, white	42	270
Clay, brown	36	306
Clay, red	46	352
Clay, dark gray, some brown sand	8	360
Clay, red	40	400
Clay, gray, some carbonized wood	30	430
Clay, brown	65	495
Clay, green	10	505
Clay, gray	96	601
Quartzite, gray-green, water-bearing	47	648
19/45-32P1. Fred Zimmerman. Altitude about 2,500 ft. Drilled by Don Smith, 1951.		
Topsoil	4	4
Clay, very hard, yellow	6	10
"Rock" [basalt], broken, gray	2	12
"Rock" [basalt], hard gray	4	16
"Rock" [basalt], gray, water-bearing	4	20
Clay, brown	9	29
Basalt, black	38	67

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
19/45-32P1.--Continued		
"Rock" [basalt], broken, brown, water-bearing	1	68
Basalt, gray	6	74
19/45-33J1. Harold Doneen. Altitude about 2,535 ft. Drilled by A. A. Durand & Son, 1948. Cased to 54 ft. (Log from owner's memory.)		
Topsoil	4	4
Clay	50	54
"Rock," soft, blue, underlain by hard black basalt	161	215
Clay, blue	5	220
Sand	5	225
"Rock"	9	234
Coal	1	235
20/36-24J1. Carl Schell. Altitude about 1,918 ft. Drilled by John Davisson, 1963.		
Basalt, soft	26	26
Basalt, hard, gray	48	74
Basalt, hard, black	25	99
Basalt, soft, brown	41	140
Sand, and gravel	4	144
Basalt, hard, black	23	167
Basalt, broken, soft, some water	3	170
Basalt, hard, black	50	220
Basalt, soft, brown	5	225
Basalt, broken, soft, water-bearing	10	235
Basalt, hard, gray	4	239
20/36-34A1. Cliff Telecky. Altitude about 1,970 ft. Drilled by A. A. Durand & Son, 1945.		
Silt	12	12
Clay	54	66
Basalt, brown and black	23	89
Basalt, gray	62	151

(continued)

Material	Thickness (feet)	Depth (feet)
20/36-34A1--Continued		
Clay	2	153
Basalt, gray	29	182
Basalt, brown, water-bearing	4	186
Basalt, gray	133	319
Basalt, porous, water-bearing	22	341
20/37-20A1. A. F. Schweer. Altitude about 1,957 ft. Drilled by John Davisson, 1963. Cased to 34 ft.		
Gravel	12	12
Basalt, soft, brown	45	57
Basalt, hard, brown	26	83
Basalt, soft, brown	25	108
Basalt, hard, black	24	132
Basalt, gray	23	155
Basalt, soft	5	160
Basalt, hard, black	10	170
Basalt, hard, gray	25	195
Basalt, soft, gray	6	201
Basalt, hard, gray	8	209
Basalt, soft, gray	19	228
Sand	5	233
Basalt, hard, black	18	251
Basalt, hard, gray	19	270
Basalt, soft, red	7	277
Basalt, hard, gray	51	328
Basalt, soft, brown	17	345
Sand	3	348
Basalt, hard	47	395
Basalt, broken, soft	62	457
20/39-12N1. Earl Swift. Altitude about 2,110 ft. Drilled by John Davisson, 1957. Cased to 79 ft.		
Clay, some water	74	74
"Rock" [basalt], hard, gray	108	182
"Rock" [basalt], broken, brown	8	190
"Rock" [basalt], hard, black	13	203

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
20/39-12N1.--Continued		
"Rock" [basalt], broken, brown	28	231
"Rock" [basalt], hard, black	9	240
"Rock" [basalt], broken, brown	5	245
Sand, water-bearing	6	251
[Basalt], hard, black	33	284
20/39-22H1. Curtis Melville. Altitude about 2,040 ft. Drilled by John Davisson. Cased to 45 ft.		
Boulders	12	12
Gravel	29	41
Boulders and sand, water-bearing	9	50
"Rock" [basalt], hard, gray	8	58
"Rock" [basalt], broken, green	5	63
"Rock" [basalt], red, water-bearing	16	79
"Rock" [basalt], hard, brown	63	142
Clay, green	5	147
"Rock" [basalt], soft, black	26	173
"Rock" [basalt], hard, gray	19	192
"Rock" [basalt], soft, gray	18	210
Sand	5	215
"Rock" [basalt], hard, gray	28	243
"Rock" [basalt], soft, brown, water-bearing	20	263
"Rock" [basalt], hard, gray	4	267
20/39-28A1. Lamont School Dist. Altitude about 1,960 ft. Drilled by John Davisson.		
Soil, clayey	24	24
Basalt	25	49
"Break," water-bearing	8	57
Basalt, hard	15	72
Basalt, soft, water-bearing	4	76
Basalt, hard	18	94
Basalt, soft	28	122
Basalt, hard	2	124
Basalt, soft, water-bearing	11	135
Basalt, hard, water-bearing	3	138
20/39-28F1. Spokane, Portland and Seattle Ry. Co. Altitude about 1,960 ft. Drilled by A. A. Durand & Son, 1938.		
Basalt, hard, gray	31	31
Basalt, honeycombed, gray	8	39
"Rock" [basalt], brown	8	47
Basalt, hard, gray	53	100
Basalt, broken, black	54	154
Basalt, gray	5	159
Basalt, black	41	200
Basalt, hard, gray	22	222
Basalt, black	7	229
Basalt, hard, gray	50	279
Basalt, soft, gray	26	305
Basalt, hard, gray	32	337
Basalt, soft, gray	19	356
Basalt, hard, gray	21	377
Basalt, very hard, gray	38	415
Basalt, brown	57	472
Basalt, broken, gray	5	477
Basalt, hard, gray	125	602
Basalt, medium-hard, black	35	637
Basalt, very hard, gray	31	668
Basalt, black	32	700
20/39-28F2. Spokane, Portland and Seattle Ry. Co. Altitude about 1,960 ft. Drilled by N. C. Jannsen, 1918.		
"Rock"[basalt], blue	23	23
"Rock" [basalt], soft	80	103
"Rock" [basalt], hard, blue	11	114
Sand	2	116
"Rock" [basalt]	16	132

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
20/39-28G1. Town of Lamont. Altitude about 1,955 ft. Drilled by John Davisson. Cased to 64 ft.		
Topsoil	5	5
Clay	59	64
Basalt, medium-hard, dark	11	75
Basalt, soft, gray	55	130
Basalt, soft, dark	20	150
Basalt, hard, black	12	162
Basalt, soft, gray	36	198
Basalt, hard, black	4	202
20/39-32A1. C. W. Shields. Altitude about 1,940 ft. Drilled by A. A. Durand & Son, 1953. Cased to 186 ft.		
Topsoil	2	2
"Hardpan"	1	3
Boulders, basalt	12	15
Basalt, broken	23	38
Basalt, hard, gray	24	62
Basalt, dark	21	83
Basalt, hard, gray	2	85
Basalt, broken	10	95
Basalt, medium-hard, dark	10	105
Basalt, medium-soft, dark	38	143
Basalt, medium-hard, gray	12	155
Basalt, medium-soft, dark	31	186
Basalt, medium-hard, dark	42	228
Basalt, hard, gray	18	246
Basalt, medium-soft, dark	4	250
20/40-35F1. Elmer Smith. Altitude about 2,005 ft. Drilled by John Davisson, 1954. Cased to 45 ft.		
"Earth" [soil]	8	8
Gravel	11	19
Sand, water-bearing	10	29
Clay	19	48
Clay, sandy, water-bearing	41	89
"Rock" [basalt], porous	5	94
(continued)		

Material	Thickness (feet)	Depth (feet)
20/40-35F1.--Continued		
"Rock" [basalt], hard, gray	48	142
"Rock" [basalt], broken	26	168
"Rock", hard, gray	23	191
Clay, sandy, water-bearing at 240 ft	77	268
20/41-4J1. Osborne Belsby. Altitude about 2,170 ft. Drilled by Victor Trodel, 1951. Cased to 51 ft.		
Topsoil	3	3
Gravel	42	45
"Rock" [basalt], soft, brown, water-bearing	19	64
"Rock" [basalt], hard, green	10	74
"Rock" [basalt], soft, brown, water-bearing	20	94
Basalt, hard, blue	4	98
Basalt, hard, gray	71	169
Basalt, black	23	192
Basalt, porous, black, water-bearing	28	220
Shale, blue	70	290
Basalt, porous, gray, water-bearing	145	435
20/42-13M1. Town of Malden. Altitude about 2,100 ft. Cased to 42 ft.		
Gravel and clay	68	68
Clay	3	71
Gravel	8	79
Clay	4	83
"Bedrock"	--	--
20/42-19J1. Isaac Tye. Altitude about 2,030 ft. Drilled by John Davisson, 1956.		
Soil	4	4
Basalt, "shelly"	14	18
Basalt, hard	12	30
Basalt, soft	12	42
Basalt, hard	34	76
(continued)		

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
20/42-19J1.--Continued		
Basalt, soft	44	120
Basalt, hard	30	150
Basalt, soft	26	176
Basalt, hard	22	198
Basalt, soft	40	238
Basalt, hard	3	241
20/42-27N1. Pine City Cemetery Assoc. Altitude about 2,210 ft. Drilled by John Davisson, 1957. Cased to 40 ft.		
Pit	15	15
Clay	15	30
"Rock" [basalt], soft; clay, water-bearing	4	34
"Rock" [basalt]	5	39
"Rock" [basalt], soft	58	97
"Rock" [basalt], hard	52	149
"Rock" [basalt], soft	2	151
"Rock" [basalt], hard	29	180
"Rock" [basalt], soft, water-bearing	20	200
"Rock" [basalt], hard	4	204
20/42-28L1. R. Johnson. Altitude about 2,020 ft. Drilled by John Davisson, 1960.		
Soil	2	2
Gravel	8	10
Clay and gravel	29	39
Basalt, soft, water-bearing	26	65
Basalt, hard	9	74
"Break," sand	2	76
Basalt, hard, gray	7	83
Basalt, soft	3	86
Basalt, hard	19	105
Basalt, soft, water-bearing	5	110
Basalt, hard	30	140
20/43-10R1. Town of Rosalia. Altitude about 2,225 ft. Drilled by Oliver Zinkgraf, 1952.		
Clay, yellow, some water	20	20
Clay, sandy, yellow	6	26
Clay	3	29
Basalt, black	11	40
"Rock" [basalt], hard, brown, water-bearing	13	53
Basalt, black, water-bearing	5	58
"Rock" [basalt], black	7	65
Basalt, black	15	80
Basalt, blue	36	116
"Rock" [basalt], soft, broken	3	119
Basalt, hard, gray	8	127
Basalt, gray	1	128
Basalt, hard, gray	2	130
Basalt, soft, brown, water-bearing	5	135
Basalt, hard, gray	115	250
Basalt, hard	48	298
Basalt, soft	9	307
Unknown	1	308
21/38-2F1. P. H. Ringwood. Altitude about 2,080 ft. Drilled by John Davisson, 1960. Cased to 44 ft.		
Soil	2	2
Gravel	35	37
Basalt, soft, water-bearing	10	47
Basalt, hard	82	129
Basalt, soft	9	138
Basalt, hard	7	145
Basalt, soft, water-bearing	25	170
Basalt, hard	6	176
21/38-14E1. Pacific NW Bell Telephone Co. Altitude about 2,185 ft. Drilled by Spokane Drilling Co. Cased to 74 ft.		
Clay, and sand	74	74
Basalt, hard	38	112

(continued)

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
21/38-14E1.--Continued		
Basalt, soft	6	118
Basalt, hard	205	323
Basalt, broken	30	353
21/38-28D1. Wash. State Hwy. Dept. Altitude about 1,997 ft. Drilled by J and S Drilling Co., 1967. Cased to 21 ft.		
Soil, and basalt cobbles	20	20
Basalt	133	153
Basalt, broken	9	162
Basalt, hard	125	287
21/39-9C1. U.S. Army. Altitude about 2,097 ft. Drilled by Curley Beard Drilling Co., 1959. Cased to 381 ft; perforated 320-330 ft, 350-380 ft.		
Soil	3	3
Gravel, cobbles, and boulders	47	50
Basalt, gray	20	70
Basalt, hard, black	65	135
Basalt, medium-hard, black	40	175
Basalt, hard, black	5	180
Basalt, hard, gray	15	195
Basalt, medium-hard, gray	17	212
Clay, blue-green	1	213
Basalt, medium-hard, black	17	230
Basalt, hard, gray	35	265
Basalt, medium-hard, black	20	285
Basalt, hard, gray	10	295
Basalt, medium-hard, gray	27	322
Basalt, black	13	335
Basalt, fractured, and clay	7	342
Basalt, hard, black	13	355
Basalt, medium-hard, black	11	366
Basalt, hard, black	15	381

Material	Thickness (feet)	Depth (feet)
21/39-9C2. U.S. Army. Altitude about 2,099 ft. Drilled by Curley Beard Drilling Co., 1959. Cased to 368 ft; perforated 306-326 ft, 346-366 ft.		
Gravel, cobbles, and boulders	52	52
Basalt, medium-hard, black	23	75
Basalt, hard, gray	10	85
Basalt, medium-hard, gray	13	98
Basalt, hard, gray	57	155
Basalt, soft, black	10	165
Basalt, medium-hard, gray	35	200
Shale, green, basalt fragments	10	210
Basalt, broken	10	220
Basalt, black	10	230
Basalt, hard, gray	35	265
Basalt, medium-hard, gray	62	327
Shale, blue	8	335
Basalt, black	5	340
Clay, with rock fragments	6	346
Basalt, medium-hard, black	6	352
Basalt, hard, blue	16	368
22/41-34M1. Eastern Wash. State College. Altitude about 2,240 ft. Drilled by E. A. Holman Drilling Co., 1971. Cased to 40 ft.		
Basalt, broken, brown	1	1
Basalt, hard, blue	59	60
Basalt, hard, gray	45	105
Basalt, medium-soft, black	4	109
Basalt, hard, gray	21	130
Basalt, porous, black	6	136
Basalt, hard, blue	12	148
Basalt, hard, gray	28	176
Basalt, broken, brown	2	178
Basalt, hard, gray	28	206
Basalt, porous, black	17	223
Basalt, hard, blue	18	241
Basalt, porous, black	12	253
Basalt, hard, gray	1	254
Basalt, porous, black	4	258
Basalt, hard, gray	2	260

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
23/41-19R1. P. M. Steele. Altitude about 2,365 ft. Drilled by Victor Trodel, 1956. Cased to 24 ft.		
Topsoil and gravel	5	5
Boulders, loose	16	21
Basalt, hard	46	63
Basalt, fractured	6	69
Basalt, hard	23	92
Shale, blue	12	104
Basalt, hard	56	160
Shale	44	204
Basalt, porous, water-bearing	21	225
Basalt, hard	65	290
Basalt, porous, water-bearing	30	320
Basalt, gray	72	392
Basalt, hard, porous, black, water-bearing	50	474
Basalt, porous, water-bearing	8	482
Shale, blue	13	495
Granite	21	516
24/41-3N1. U.S. Air Force. Altitude about 2,375 ft. Drilled by U.S. Army Engineers, 1941.		
Silt	4	4
Sand, and fine gravel	48	52
Clay, and rock fragments	13	65
Basalt, broken, vesicular	6	71
Basalt, dense	104	175
Basalt, broken, vesicular	5	180
Clay	72	252
Basalt, broken, vesicular	60	312
Shale, soft	3	315
Basalt, black	36	351
Sand and silt, basaltic, black	2	353
Basalt, black	42	395
Basalt, broken, porous	15	410
24/41-11N2. Vernon Hopkins. Altitude about 2,410 ft. Drilled by Zinkgraf Well Drilling Co., 1971. Cased to 28 ft.		
Soil	2	2
Rocks, and clay	1	3
Basalt, broken, honeycombed	6	9
Basalt, fractured, hard, brown and black	7	16
Clay, hard, brown	10	26
Basalt, honeycombed, hard, brown	2	28
Basalt, fractured, hard, black and brown	7	35
Basalt, fractured, honeycombed, hard, black and brown	13	48
Basalt, fractured, hard, gray-black	9	57
Basalt, hard, gray-black	5	62
Basalt, very hard, gray-black	5	67
Basalt, fractured, hard, gray-black	30	97
Basalt, fractured, medium-hard, gray-black	13	110
Basalt, hard, fractured, black	9	119
Basalt, hard, gray and black	1	120
Basalt, fractured, hard, and blue-green shale	6	126
Basalt, hard, black	39	165
Basalt, very hard, gray-black	12	176
Basalt, hard, gray-black	5	181
Basalt, very hard, gray-black	4	185
Basalt, fractured, hard, gray-black, and green shale	2	187
Shale, hard, gray	3	190
Basalt, honeycombed, medium-hard, water-bearing	11	201
Basalt, honeycombed, hard	7	208
Basalt, honeycombed, gray-black, water-bearing	12	220
24/41-20Q1. East Washington Bible Camp. Altitude about 2,350 ft. Drilled by Jasper Jones, 1960. Cased to 133 ft; perforated 84-133 ft.		
Basalt, broken	12	12
Basalt, dense, blue	68	80
Basalt, broken, hard	16	96
Basalt, broken, hard, gray	39	135

TABLE C4.--Drillers' logs of representative wells--Continued

Material	Thickness (feet)	Depth (feet)
24/41-28H1. Wash. St. Hwy. Dept. Altitude about 2,414 ft. Drilled by J and S Drilling Co., 1967.		
Basalt, hard, black	76	76
Sand	17	93
Basalt	22	115
24/41-28H2. Wash. St. Hwy. Dept. Altitude about 2,415 ft. Drilled by J and S Drilling Co., 1967. Cased to 297 ft; perforated 63-73 ft.		
Gravel, packed	15	15
Basalt	43	58
Basalt, broken	12	70
Clay, blue	15	85
Clay, yellow	55	140
Clay, blue, and sand	135	275
Sand	22	295
Granite, solid	6	303
24/41-28H3. Wash. St. Hwy. Dept. Altitude about 2,415 ft. Drilled by St. George Drilling Co., 1969. Cased to 36 ft; perforated 26-36 ft.		
Sand and gravel	1	1
Basalt, broken, black	32	33
Basalt, broken, red	3	36
Basalt, hard	--	--
24/41-31K1. Inland Empire Bible Association. Altitude about 2,405 ft. Drilled by Ira Page, 1958. Cased to 32 ft.		
Soil	3	3
Rock, soft	5	8
Rock, hard	122	130
25/41-28L1. U.S. Air Force. Altitude about 2,432 ft.		
Soil	3	3
Gravel, silt, clay	50	53
Sand, silt, clay	22	75
Basalt, fractured	42	117
Ash, volcanic	5	122
Silt, and clay	21	143
Basalt, dense	84	227
Shale, seam	--	--
Basalt, dense	8	235
Silt and clay, sandy	17	252
Basalt, porous	31	283
Basalt, dense	29	312
25/41-29M1. Burlington Northern RR. Altitude about 2,455 ft. Drilled by C. M. Wick, 1942. Cased to 20 ft.		
Clay	12	12
Sand, some water	2	14
Basalt, broken	13	27
Basalt, hard	68	95
Crevice, water-bearing	2	97

TABLE C5.--Fluctuations of water levels in observation wells, in feet

[A, well being pumped; B, well pumped recently; C, nearby well being pumped; D, nearby well pumped recently]

13N45E03M01 F DRUFFEL

ALTITUDE OF LAND SURFACE 2614 FEET.

HIGHEST WATER LEVEL 1.20 BELOW LSD, MAR. 16, 1938,
LOWEST WATER LEVEL 10.46 BELOW LSD, OCT. 26, 1938.
RECORDS AVAILABLE 1934-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 13, 1934	7.54	AUG. 27, 1935	8.65	NOV. 1, 1936	9.75	FEB. 9, 1938	2.95
JULY 21	7.83	SEP. 4	8.86	NOV. 11	9.57	FEB. 16	2.10
JULY 28	8.07	SEP. 18	8.90	NOV. 18	9.51	FEB. 23	2.14
AUG. 4	8.42	SEP. 25	8.97	NOV. 25	9.35	MAR. 2	1.39
AUG. 11	8.77	OCT. 2	9.03	DEC. 2	9.28	MAR. 16	1.20
AUG. 18	8.93	OCT. 16	8.56	DEC. 9	9.16	MAR. 30	2.07
AUG. 25	9.26	OCT. 30	8.17	DEC. 16	9.10	APR. 6	2.15
SEP. 1	9.39	NOV. 6	7.98	DEC. 30	8.90	APR. 20	2.14
SEP. 7	9.48	NOV. 20	7.65	JAN. 6, 1937	8.91	APR. 27	2.66
SEP. 17	9.51	NOV. 27	7.54	JAN. 13	8.62	MAY 4	3.08
SEP. 27	9.25	DEC. 4	7.40	FEB. 12	7.73	MAY 18	3.61
OCT. 3	9.32	DEC. 18	7.17	FEB. 23	6.89	MAY 25	4.00
OCT. 17	9.08	DEC. 26	7.06	MAR. 23	2.56	JUNE 1	4.39
OCT. 31	8.35	JAN. 2, 1936	6.36	MAR. 30	2.85	JUNE 15	5.27
NOV. 7	8.14	JAN. 15	5.23	APR. 6	2.10	JUNE 22	5.50
NOV. 14	8.03	JAN. 22	4.97	APR. 13	1.65	JUNE 29	5.86
NOV. 21	7.85	JAN. 29	4.76	APR. 28	2.30	JULY 6	6.30
NOV. 28	7.56	FEB. 5	4.70	MAY 5	2.95	AUG. 3	8.96
DEC. 5	7.31	FEB. 19	4.72	MAY 19	3.87	SEP. 7	9.90
DEC. 12	7.10	FEB. 26	4.35	MAY 26	4.39	SEP. 28	10.39
DEC. 27	6.09	MAR. 4	2.33	JUNE 2	4.79	OCT. 26	10.46
JAN. 3, 1935	6.03	MAR. 18	2.27	JUNE 16	5.07	NOV. 30	8.81
JAN. 16	5.22	MAR. 25	2.58	JUNE 23	4.77	DEC. 28	8.34
JAN. 30	3.77	APR. 1	2.33	JUNE 30	4.95	JAN. 25, 1939	7.20
FEB. 5	3.65	APR. 15	2.80	JULY 7	5.44	FEB. 22	4.64
FEB. 20	3.27	APR. 22	3.32	AUG. 4	7.42	MAR. 29	2.51
FEB. 27	3.05	APR. 29	3.60	SEP. 1	8.58	APR. 29	3.56
MAR. 06	3.04	MAY 6	3.61	SEP. 15	9.12	MAY 24	4.92
MAR. 20	2.47	MAY 20	4.48	SEP. 28	9.22	JUNE 26	6.27
MAR. 27	1.87	MAY 27	4.85	OCT. 6	9.05	JULY 13	7.70
APR. 3	2.02	JUNE 3	4.98	OCT. 20	8.64	AUG. 14	9.53
APR. 17	1.86	JUNE 17	5.42	OCT. 27	8.43	SEP. 10	10.43
APR. 24	2.10	JUNE 24	5.93	NOV. 3	8.80	OCT. 15	10.33
MAY 1	2.67	JULY 1	6.46	NOV. 10	8.58	DEC. 16	9.02
MAY 13	3.58	JULY 8	6.80	NOV. 24	8.20	JAN. 15, 1940	8.62
MAY 29	4.29	JULY 15	7.29	DEC. 1	7.48	FEB. 17	6.64
JUNE 5	4.70	AUG. 5	9.00	DEC. 8	7.34	MAR. 15	4.08
JUNE 19	5.19	SEP. 2	9.83	DEC. 15	6.36	APR. 16	3.28
JUNE 26	5.56	SEP. 9	9.91	DEC. 22	6.02	MAY 17	3.92
JULY 5	5.82	SEP. 16	9.98	DEC. 29	5.11	JUNE 19	5.77
JULY 17	6.63	SEP. 22	10.13	JAN. 5, 1938	4.62	JULY 19	8.21
JULY 24	7.31	OCT. 7	10.36	JAN. 20	3.63	AUG. 21	9.51
AUG. 7	7.88	OCT. 21	10.11	JAN. 26	3.52	SEP. 17	9.83
AUG. 21	8.37	OCT. 28	10.00	FEB. 2	3.29	OCT. 4	8.80

13N45E10D02 A DRUFFEL

ALTITUDE OF LAND SURFACE 2630 FEET.

HIGHEST WATER LEVEL 6.05 BELOW LSD, FEB. 17, 1954,
LOWEST WATER LEVEL 23.87 BELOW LSD, OCT. 6, 1954.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 9, 1953	9.78	SEP. 3, 1954	18.19	AUG. 4, 1955	10.00	MAR. 6, 1956	6.35
JAN. 18, 1954	7.95	OCT. 6	23.87	SEP. 7	20.15	APR. 4	6.19
FEB. 17	6.05	NOV. 10	21.86	OCT. 4	23.43	MAY 9	6.17
APR. 22	6.40	DEC. 8	14.48	NOV. 2	11.25	JUNE 6	7.34
MAY 18	7.13	JAN. 5, 1955	10.84	DEC. 6	8.03	JUNE 29	7.79
JUNE 8	7.50	FEB. 1	9.98	JAN. 10, 1956	7.25	JULY 28	8.93
JULY 7	9.55	MAR. 29	6.32	FEB. 7	7.18	AUG. 24	10.35
AUG. 3	11.00	JULY 7	9.02				

13N45E13L02 ALFRED DRUFFEL

ALTITUDE OF LAND SURFACE 2680 FEET.

HIGHEST WATER LEVEL 71.95 BELOW LSD, MAR. 24, 1964,
LOWEST WATER LEVEL 78.64 BELOW LSD, OCT. 27, 1970.
RECORDS AVAILABLE 1963-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 29, 1963	72.78	MAY 11, 1966	74.40	MAY 2, 1968	75.25	JULY 21, 1970	77.24
JULY 25	73.27	JUNE 14	74.68A	JUNE 14	75.20	AUG. 31	75.54
SEP. 26	74.39	JULY 19	74.83	JULY 26	75.57	OCT. 27	78.64
NOV. 21	74.51	AUG. 24	75.06	SEP. 10	75.72	DEC. 9	75.69
MAR. 24, 1964	71.95	SEP. 29	75.22A	OCT. 17	75.76	JAN. 18, 1971	77.78
MAY 21	73.73	NOV. 2	75.37	DEC. 5	75.42	MAR. 3	75.33
JULY 27	73.92	DEC. 14	75.09C	JAN. 15, 1969	74.63	APR. 27	75.30
SEP. 29	74.44	JAN. 25, 1967	75.93C	MAR. 4	74.55	JUNE 15	75.61
NOV. 17	74.79	MAR. 7	74.26	APR. 17	73.94	AUG. 10	77.21
JAN. 20, 1965	74.69	APR. 18	74.84	MAY 28	74.19	SEP. 29	76.22
MAR. 16	74.27	MAY 26	75.44	JULY 15	77.56	NOV. 23	76.13
MAY 25	74.40	JULY 12	75.57A	SEP. 2	74.87	JAN. 18, 1972	75.3
AUG. 16	74.88	AUG. 30	76.32A	OCT. 13	74.94	MAR. 2	74.5
SEP. 20	75.03	OCT. 3	75.97	NOV. 25	77.30	APR. 17	74.52
OCT. 26	75.32	NOV. 15	75.81	JAN. 5, 1970	75.06	JUNE 21	74.91
DEC. 7	75.08	DEC. 27	76.66	MAR. 17	74.05	AUG. 17	76.51
JAN. 11, 1966	75.02	FEB. 7, 1968	75.63	APR. 29	74.34	OCT. 17	76.3
MAR. 8	74.48A	MAR. 19	75.47				

13N45E35N01 PETE BUSCH

ALTITUDE OF LAND SURFACE 2592 FEET.

HIGHEST WATER LEVEL 47.73 BELOW LSD, APR. 4, 1956,
LOWEST WATER LEVEL 52.14 BELOW LSD, SEP. 7, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 18, 1954	51.15	SEP. 3, 1954	51.70	AUG. 4, 1955	51.55A	MAR. 6, 1956	48.34
FEB. 17	50.43	OCT. 6	51.45	SEP. 7	52.14B	APR. 4	47.73
MAR. 22	50.59	NOV. 10	51.23	OCT. 6	51.90	MAY 9	49.29
APR. 22	50.69	DEC. 8	51.03	NOV. 2	51.37	JUNE 6	50.29
MAY 18	51.02	JAN. 5, 1955	51.10	DEC. 6	50.01	JUNE 29	50.72
JUNE 8	50.99	FEB. 1	50.98	JAN. 10, 1956	49.98	JULY 25	51.26
JULY 7	51.52	MAR. 29	49.08	FEB. 7	49.67	AUG. 24	51.82A
AUG. 3	51.90	JULY 7	51.13				

14N37E26K01 IRA DANIEL

ALTITUDE OF LAND SURFACE 1360 FEET.

HIGHEST WATER LEVEL 94.47 BELOW LSD, JAN. 18, 1954,
LOWEST WATER LEVEL 95.61 BELOW LSD, DEC. 8, 1955.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 2, 1953	94.63	JUNE 8, 1954	95.10	DEC. 9, 1954	95.49	DEC. 8, 1955	95.61
JAN. 18, 1954	94.47	JULY 6	95.18	FEB. 1, 1955	94.97	FEB. 7, 1956	95.51
FEB. 17	94.61	JULY 29	95.32	JULY 6	94.85	APR. 5	94.96
MAR. 22	94.86	AUG. 31	95.49	JULY 26	95.09	JUNE 5	94.68
APR. 22	94.88	SEP. 27	95.19	SEP. 27	95.55	AUG. 29	95.02
MAY 17	94.98	NOV. 9	95.50				

14N45E04H01 WSU EXP FARM

ALTITUDE OF LAND SURFACE 2440 FEET.

HIGHEST WATER LEVEL 116.74 BELOW LSD, FEB. 1, 1955,
LOWEST WATER LEVEL 148.00 BELOW LSD, MAR. 18, 1969.
RECORDS AVAILABLE 1953, 1955-56, 1969.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 21, 1953	117.08	JULY 7, 1955	117.08	APR. 4, 1956	117.13	MAR. 18, 1969	148.
FEB. 1, 1955	116.74	NOV. 3	117.69				

14N45E04N01 WASH STATE U

ALTITUDE OF LAND SURFACE 2381 FEET.

HIGHEST WATER LEVEL 36.80 BELOW LSD, DEC. 15, 1932,
LOWEST WATER LEVEL 93.76 BELOW LSD, OCT. 17, 1972.
RECORDS AVAILABLE 1932, 1934-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 15, 1932	36.8	DEC. 29, 1938	40.82	OCT. 12, 1946	46.65	AUG. 24, 1956	60.41
DEC. 6, 1934	38.09	JAN. 13, 1939	40.82	MAR. 5, 1947	46.83	OCT. 1	59.84
FEB. 14, 1935	37.37	JAN. 27	42.65A	MAY 25	47.25	OCT. 5	60.15
FEB. 20	37.33	FEB. 10	40.60	OCT. 19	48.20	DEC. 18	59.76
FEB. 27	37.30	FEB. 24	40.69	JAN. 19, 1948	48.69	FEB. 24, 1957	59.00
MAR. 7	36.82	MAR. 10	40.40	MAR. 20	48.66	APR. 27	59.61
MAR. 12	37.34	MAR. 24	41.58	JULY 17	49.55	AUG. 23	60.78
MAR. 19	36.95	APR. 3	40.44	OCT. 23	49.10	OCT. 24	61.66
MAR. 28	37.21	APR. 21	40.46	DEC. 30, 1949	51.35	DEC. 16	59.96
APR. 2	37.12	MAY 5	41.87A	APR. 7, 1950	52.87	FEB. 23, 1958	60.05
APR. 9	37.07	MAY 19	42.03A	JUNE 29	53.07	APR. 26	60.04
APR. 16	37.13	MAY 31	41.91A	OCT. 6	54.15	JUNE 25	60.67
APR. 29	36.85	JUNE 26	41.34	DEC. 15	55.59A	AUG. 20	61.96
MAY 6	37.30	JULY 19	41.70	APR. 2, 1951	56.09A	OCT. 20	61.98
MAY 29	37.34	AUG. 4	44.45A	JUNE 22	56.74A	DEC. 17	61.63
JUNE 26	37.84	AUG. 17	42.19	AUG. 25	56.93A	FEB. 27, 1959	61.46
MAY 21, 1936	38.39	SEP. 24	42.16	OCT. 20	57.84A	APR. 25	61.07
MAY 28	38.13	OCT. 15	42.23	DEC. 13	55.70	JUNE 25	61.59
JUNE 4	38.40	NOV. 11	42.49A	FEB. 15, 1952	55.55	AUG. 26	62.13
JUNE 11	38.34	DEC. 11	42.13	APR. 18	55.19	OCT. 29	62.37
JUNE 18	38.47	DEC. 21	72.10A	JUNE 5	56.01	NOV. 29	62.39
JULY 2	38.44	JAN. 6, 1940	41.81	AUG. 15	56.90	JAN. 23, 1960	62.06
JULY 9	38.25	JAN. 20	42.03A	OCT. 18	57.07	MAR. 29	61.65
JULY 15	38.58	FEB. 6	41.51A	DEC. 9	56.92	MAY 24	61.58
JULY 24	38.99	FEB. 22	41.36	FEB. 18, 1953	56.81	JULY 22	63.61
AUG. 7	39.12	MAR. 5	41.89	APR. 25	56.65	SEP. 30	63.80
JUNE 11, 1937	39.43	MAR. 19	41.87A	JUNE 19	57.00A	DEC. 1	63.69
JUNE 30	39.42	APR. 3	41.49	AUG. 23	58.17	JAN. 26, 1961	64.11
JULY 7	39.61	APR. 16	41.70	OCT. 23	58.11	MAR. 24	63.60
AUG. 5	39.83	APR. 30	41.76	NOV. 20	58.15	JULY 26	66.00
AUG. 18	40.01	MAY 16	41.79A	JAN. 19, 1954	57.64	SEP. 26	66.42
SEP. 3	39.95	MAY 17	41.97A	FEB. 17	57.31	DEC. 1	65.78
SEP. 15	40.14	MAY 30	42.02	MAR. 22	57.61	JAN. 28, 1962	66.48
OCT. 2	40.09	JUNE 10	42.02	APR. 22	57.49	MAR. 26	66.03
NOV. 12	39.95	JUNE 25	42.39A	MAY 18	57.81	MAY 26	65.81
DEC. 2	40.00	JULY 19	42.86	JUNE 8	57.47	JULY 26	67.97
DEC. 30	39.83	AUG. 19	43.06	JULY 7	58.31	SEP. 19	67.72
JAN. 13, 1938	39.55	SEP. 16	42.77	AUG. 3	58.71	NOV. 30	67.25
JAN. 26	39.57	OCT. 3	45.02A	SEP. 3	58.51	JAN. 23, 1963	68.01
FEB. 18	39.70	OCT. 7	42.97	SEP. 28	58.37	MAR. 27	67.45
FEB. 24	40.07	DEC. 28	42.34	NOV. 10	58.52	MAY 29	68.24
MAR. 10	39.74	MAR. 28, 1941	42.24	DEC. 7	58.39	JULY 25	69.22
MAR. 24	39.57	JUNE 3	42.46	JAN. 4, 1955	58.11	SEP. 26	69.71
APR. 7	39.87	AUG. 9	43.08	FEB. 1	58.16	NOV. 21	69.49
APR. 21	39.56	OCT. 10	42.93	MAR. 28	57.82	JAN. 24, 1964	69.24
MAY 4	39.71	DEC. 5	42.90	APR. 25	57.69	MAR. 24	70.19
MAY 17	39.56	FEB. 3, 1942	42.43	JULY 7	58.52	MAY 21	69.34
JUNE 1	40.42A	APR. 1	42.74	AUG. 3	59.30	JULY 27	69.89
JUNE 17	40.46	JUNE 6	42.50	SEP. 6	59.72	SEP. 29	70.40
JUNE 29	40.55A	AUG. 13	43.86	OCT. 6	59.67	NOV. 17	73.29
JULY 20	41.31A	OCT. 5	43.93	NOV. 3	59.13	JAN. 20, 1965	70.64
AUG. 11	45.15A	DEC. 10	43.65	DEC. 6	58.78	MAR. 16	70.62
AUG. 31	42.20A	MAY 29, 1943	43.30	JAN. 10, 1956	58.99	MAY 25	71.09
SEP. 16	41.21	DEC. 27	44.28	FEB. 7	59.17	AUG. 17	73.39
SEP. 31	41.44	AUG. 17, 1944	44.94	MAR. 6	59.05	SEP. 20	73.50
OCT. 15	40.85	DEC. 7	44.93	APR. 4	58.56	OCT. 26	73.85
OCT. 28	41.77	JUNE 12, 1945	44.30	MAY 8	58.67	DEC. 7	73.55
NOV. 11	41.02	OCT. 7	45.45	JUNE 5	58.86	JAN. 12, 1966	73.82
DEC. 2	42.09A	APR. 7, 1946	44.88	JUNE 29	59.40	MAR. 9	73.73
DEC. 16	43.97A	AUG. 19	46.50	JULY 25	59.77	MAY 11	74.53

14N45E04N01 WASH STATE U (CONTINUED)

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 14, 1966	74.94	DEC. 27, 1967	85.02	JULY 15, 1969	88.85	MAR. 3, 1971	88.06
JULY 20	76.17	FEB. 6, 1968	83.40	SEP. 23	88.75	APR. 27	89.64
AUG. 25	77.32	MAR. 19	81.69	OCT. 13	86.29	JUNE 15	91.29
SEP. 29	77.34	MAY 2	82.00	NOV. 24	86.47	AUG. 10	92.87
NOV. 3	77.47	JUNE 13	81.41	JAN. 5, 1970	93.12	SEP. 29	92.49
DEC. 14	77.47	JULY 26	81.90	MAR. 16	85.81	NOV. 23	90.08
JAN. 23, 1967	76.85	SEP. 9	82.98	APR. 20	86.87	FEB. 1, 1972	90.24
MAR. 6	77.29	OCT. 17	84.38	JUNE 10	89.07	MAR. 6	90.24
APR. 17	91.46	DEC. 5	85.19	JULY 21	86.83	APR. 19	91.56
JULY 10	80.24	JAN. 15, 1969	86.97	OCT. 27	93.37	JUNE 21	91.43
AUG. 29	84.15	MAR. 4	83.24	DEC. 9	91.05	AUG. 17	92.40
OCT. 3	80.37	APR. 15	84.61	JAN. 18, 1971	92.48	OCT. 17	93.76
NOV. 14	80.41	MAY 28	83.84				

14N45E05D02 STAND LUMBER CO

ALTITUDE OF LAND SURFACE 2370 FEET.

HIGHEST WATER LEVEL 7.09 ABOVE LSD, JUNE 27, 1935,
LOWEST WATER LEVEL 12.05 BELOW LSD, DEC. 13, 1951.
RECORDS AVAILABLE 1933-52.

DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL	DATE		WATER LEVEL
APR. 0, 1933	+	6.95	MAY 22, 1937	+	4.73	DEC. 29, 1938	+	3.34	JUNE 25, 1940	+	1.43A
DEC. 6, 1934	+	5.87	JUNE 11	+	4.35	JAN. 13, 1939	+	3.11A	JULY 19	+	0.96A
FEB. 14, 1935	+	6.61C	JUNE 30	+	4.53	JAN. 14	+	2.89	AUG. 19	+	0.84A
FEB. 20	+	6.68	JULY 13	+	4.36	JAN. 27	+	3.70	SEP. 16	+	1.08A
FEB. 27	+	6.54	JULY 27	+	3.90	FEB. 24	+	3.27A	OCT. 3	+	1.16A
MAR. 7	+	7.07	AUG. 5	+	4.08	MAR. 10	+	3.53A	OCT. 7	+	1.18
MAR. 12	+	6.53	AUG. 18	+	3.75	MAR. 24	+	3.29A	DEC. 28	+	1.59
MAR. 19	+	6.87	SEP. 3	+	3.82	APR. 3	+	3.52A	MAR. 28, 1941	+	1.67
MAR. 28	+	6.59	SEP. 15	+	3.90	APR. 21	+	3.35A	JUNE 4	+	1.46
APR. 2	+	6.72	OCT. 2	+	3.95	MAY 5	+	3.07A	AUG. 9	+	0.71
APR. 9	+	6.82	OCT. 15	+	3.81	MAY 19	+	2.93A	OCT. 10	+	0.95
APR. 16	+	6.77	NOV. 12	+	3.90	MAY 31	+	2.80A	DEC. 5	+	1.02
APR. 24	+	6.53	DEC. 4	+	3.59	JUNE 6	+	3.82A	FEB. 3, 1942	+	1.54
APR. 30	+	7.04	DEC. 30	+	4.24	JUNE 28	+	2.71A	APR. 1		1.17
MAY 6	+	6.65	JAN. 13, 1938	+	3.97	JULY 17	+	2.51	JUNE 6	+	1.36
MAY 29	+	6.53	JAN. 26	+	3.90	AUG. 4	+	1.82	AUG. 13		0.15
JUNE 27	+	7.09	FEB. 18	+	4.30	AUG. 17	+	1.63A	OCT. 5		0.12
AUG. 14	+	5.43	FEB. 24	+	3.99	SEP. 14	+	1.68	DEC. 10	+	0.39
MAY 21, 1936	+	5.98	MAR. 10	+	4.25	SEP. 23	+	1.68A	MAY 29, 1943	+	0.57
MAY 28	+	5.83	MAR. 24	+	4.50	OCT. 21	+	1.62A	AUG. 17, 1944		1.11C
JUNE 4	+	5.85	APR. 7	+	4.16	NOV. 18	+	1.72	DEC. 7		1.03C
JUNE 11	+	5.55	APR. 21	+	4.39	DEC. 2	+	1.73A	JUNE 13, 1945		.55
JUNE 18	+	5.55	MAY 4	+	4.24	DEC. 21	+	1.90	APR. 8, 1946		0.90
JULY 17	+	4.99	MAY 17	+	4.27	JAN. 6, 1940	+	2.10	AUG. 19		2.77
JULY 24	+	4.93	JUNE 1	+	3.90	JAN. 22	+	2.15A	OCT. 12		2.87
JULY 31	+	4.86	JUNE 17	+	3.79	FEB. 6	+	2.63	MAR. 5, 1947		2.95
AUG. 7	+	4.74	JUNE 29	+	3.67	FEB. 22	+	2.60	JAN. 19, 1948		4.84
SEP. 3	+	4.92	AUG. 11	+	2.69	MAR. 5	+	1.92A	OCT. 23		6.20
SEP. 15	+	4.49	AUG. 31	+	2.67	MAR. 19	+	2.07A	DEC. 30, 1949		8.52
SEP. 29	+	4.58	SEP. 16	+	2.96	APR. 3	+	2.48A	APR. 7, 1950		8.49
OCT. 13	+	4.47	SEP. 30	+	2.78	APR. 16	+	2.23	JUNE 30		9.39
OCT. 20	+	4.74	OCT. 14	+	2.89	APR. 30	+	2.23	DEC. 15		10.26
NOV. 5	+	4.59	OCT. 17	+	2.79	MAY 16	+	2.18	APR. 2, 1951		10.55C
NOV. 20	+	4.55	OCT. 28	+	3.12	MAY 18	+	2.00A	JUNE 22		11.10C
DEC. 16	+	4.89	NOV. 16	+	3.20	MAY 30	+	1.93A	DEC. 13		12.05
JAN. 23, 1937	+	4.83	DEC. 2	+	3.39A	JUNE 10	+	1.88A	FEB. 15, 1952		11.72
MAR. 17	+	5.21									

14N45E05F01 WASH STATE U NO 1

ALTITUDE OF LAND SURFACE 2365 FEET.

HIGHEST WATER LEVEL 19.52 BELOW LSD, MAR. 19, 1935,
LOWEST WATER LEVEL 76.90 BELOW LSD, OCT. 17, 1972.
RECORDS AVAILABLE 1935-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 15, 1935	19.97C	DEC. 16, 1938	23.53	JUNE 13, 1945	27.26	FEB. 8, 1956	42.20C
MAR. 19	19.52C	DEC. 29	23.34	OCT. 7	28.16	MAR. 6	42.05C
MAR. 28	19.76C	JAN. 13, 1939	23.52	APR. 8, 1946	27.80	APR. 3	41.71C
APR. 2	19.75C	JAN. 14	23.49	AUG. 19	30.82C	MAY 9	41.7
APR. 9	19.68C	JAN. 27	23.07	OCT. 12	29.54C	JUNE 5	41.87C
APR. 16	19.75C	FEB. 10	23.25	MAR. 5, 1947	29.70	JUNE 29	44.66C
APR. 30	19.77C	FEB. 24	23.35	MAY 25	30.21	JULY 25	45.40C
MAY 6	19.93C	MAR. 10	23.07	JULY 19	31.55	AUG. 24	44.88C
MAY 21, 1936	22.79C	MAR. 24	23.36	OCT. 19	30.90	OCT. 2	42.80C
MAY 28	22.45C	APR. 3	23.09	JAN. 19, 1948	33.54	DEC. 18	43.73C
JUNE 4	22.62C	APR. 21	23.30	MAR. 20	33.11	FEB. 24, 1957	41.66
JUNE 11	22.41C	MAY 5	23.60	JULY 17	32.46C	APR. 27	42.70
JUNE 18	22.77C	MAY 19	23.80	OCT. 25	32.98	JUNE 25	45.64C
JUNE 24	22.81C	MAY 31	23.84	MAR. 20, 1949	33.03	AUG. 23	44.74C
JULY 15	24.02C	JUNE 6	23.88C	DEC. 30	36.18C	OCT. 24	46.17C
JULY 24	23.95C	JUNE 26	23.99	APR. 7, 1950	35.95C	AUG. 22, 1958	46.65
JULY 31	24.05C	JULY 17	24.46	JUNE 30	35.98C	DEC. 17	45.4 C
AUG. 7	23.97C	AUG. 4	24.81	OCT. 6	38.20C	FEB. 27, 1959	45.2
SEP. 4	24.16C	AUG. 17	27.21A	DEC. 15	36.77C	APR. 25	43.96
SEP. 28	24.21C	SEP. 14	25.07C	APR. 2, 1951	38.02C	JUNE 25	44.63
OCT. 13	24.13C	SEP. 23	25.08	JUNE 22	38.68C	AUG. 26	45.08
OCT. 20	24.00C	OCT. 21	24.99	AUG. 25	39.06	MAR. 29, 1960	44.42C
NOV. 5	23.97C	NOV. 11	25.15	OCT. 20	38.33	MAY 24	44.35
NOV. 20	24.07C	DEC. 11	24.95	DEC. 13	38.71	JAN. 26, 1961	46.95
DEC. 16	23.73C	DEC. 21	24.67	FEB. 15, 1952	38.46	MAR. 24	53.96C
JAN. 23, 1937	23.69C	JAN. 6, 1940	24.63	APR. 18	38.18	JULY 26	50.59C
MAY 22	23.64C	JAN. 22	24.57	JUNE 5	40.29C	SEP. 26	46.39
JUNE 30	23.97C	FEB. 6	23.99	AUG. 5	39.84	DEC. 1	40.85
JULY 13	24.50C	FEB. 22	24.01	OCT. 18	39.83	JAN. 28, 1962	40.71
JULY 27	24.87C	MAR. 5	24.71	DEC. 9	39.52	MAR. 26	41.69C
AUG. 5	24.77C	MAR. 19	24.58	FEB. 18, 1953	39.44	MAY 26	41.91
AUG. 18	25.08C	APR. 3	24.11	APR. 25	39.65	JULY 26	42.81C
SEP. 3	25.19C	APR. 16	24.48	JUNE 19	39.72	SEP. 19	43.26C
SEP. 15	25.24C	APR. 30	24.44	AUG. 23	41.23	NOV. 30	44.03
OCT. 2	25.26C	MAY 16	24.61	OCT. 23	41.10	JAN. 23, 1963	43.16C
NOV. 12	25.09C	MAY 17	24.64	NOV. 20	41.11C	SEP. 26	54.4 C
DEC. 4	25.14C	MAY 30	24.67	JAN. 19, 1954	40.44C	NOV. 21	53.41C
DEC. 30	24.50C	JUNE 10	24.92	FEB. 17	40.00C	JAN. 24, 1964	52.26C
JAN. 13, 1938	24.85C	JUNE 25	27.41A	MAR. 22	32.87	MAR. 24	53.18
JAN. 26	24.92C	JULY 19	25.76	APR. 22	32.80	MAY 21	52.11
FEB. 24	22.64	AUG. 19	25.94	MAY 18	40.64	JULY 27	53.77C
MAR. 10	22.39C	SEP. 16	25.41	JUNE 8	41.44C	SEP. 29	54.36C
MAR. 24	22.20	OCT. 3	25.52	JULY 7	42.70C	NOV. 17	53.37C
APR. 7	22.53	OCT. 7	25.65	AUG. 3	42.85C	JAN. 20, 1965	53.30
APR. 21	22.24	DEC. 28	25.09	SEP. 3	41.20	MAR. 16	53.52C
MAY 4	22.42	MAR. 28, 1941	25.07	SEP. 28	41.06	MAY 25	54.14
MAY 17	24.24C	JUNE 3	25.24	NOV. 10	42.68C	AUG. 16	56.42
JUNE 1	24.70C	AUG. 9	25.93	DEC. 7	41.13	SEP. 20	57.24C
JUNE 17	24.78C	OCT. 10	25.78	JAN. 3, 1955	40.84	OCT. 26	57.89
JUNE 29	25.36C	DEC. 5	25.81	FEB. 1	40.85	DEC. 7	56.30
JULY 20	26.16C	FEB. 3, 1942	25.10	MAR. 28	40.74C	JAN. 12, 1966	56.28
AUG. 11	26.54C	APR. 1	25.44	APR. 25	40.62C	MAR. 9	57.35
AUG. 31	26.65C	JUNE 6	25.36	JUNE 21	43.02C	MAY 11	53.5
SEP. 16	26.31C	AUG. 13	28.54C	JULY 6	42.45C	JUNE 14	57.00
OCT. 14	23.69C	OCT. 5	26.82	AUG. 2	43.56	JULY 20	57.98
OCT. 15	26.36C	DEC. 10	26.26	SEP. 6	44.13C	AUG. 25	65.30C
OCT. 28	26.27C	MAY 29, 1943	26.18	OCT. 6	42.41C	SEP. 26	59.68D
NOV. 11	26.38A	DEC. 27	27.13	NOV. 3	43.16C	NOV. 3	60.30
NOV. 16	23.41	AUG. 17, 1944	29.49C	DEC. 6	42.89C	DEC. 14	60.20
DEC. 2	25.85A	DEC. 7	27.79	JAN. 11, 1956	43.25C	JAN. 23, 1967	59.60

14N45E05F01 WASH STATE U NO 1 (CONTINUED)

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 6, 1967	60.10	JULY 26, 1968	65.66	JAN. 5, 1970	69.69A	JUNE 15, 1971	71.48
APR. 17	61.71A	SEP. 9	65.89	MAR. 16	68.59	AUG. 10	72.40
MAY 25	60.58	OCT. 17	65.84	APR. 28	69.34	AUG. 11	74.76A
JULY 10	61.56	DEC. 5	65.89	JUNE 10	69.47	SEP. 29	74.39A
AUG. 29	65.61A	JAN. 15, 1969	68.88	JULY 21	72.26A	NOV. 23	72.93
OCT. 3	63.10A	MAR. 4	56.48	AUG. 31	73.15C	FEB. 1, 1972	72.97
NOV. 14	62.96	APR. 15	65.94	OCT. 27	71.86A	MAR. 6	73.24
DEC. 27	61.90	MAY 28	67.64	DEC. 9	71.03	APR. 19	73.20
FEB. 6, 1968	63.39	JULY 15	70.46A	JAN. 18, 1971	70.99	JUNE 21	73.65
MAR. 19	63.86	SEP. 2	69.46A	MAR. 3	70.84	AUG. 17	73.80
MAY 2	64.69	OCT. 13	68.98	APR. 27	73.72	OCT. 17	76.9 C
JUNE 13	66.03	NOV. 24	65.98A				

14N45E05G01 WASH STATE U NO 2

ALTITUDE OF LAND SURFACE 2360 FEET.

HIGHEST WATER LEVEL 14.71 BELOW LSD, JUNE 28, 1937,
LOWEST WATER LEVEL 62.00 BELOW LSD, MAR. 18, 1969.
RECORDS AVAILABLE 1937-38, 1969.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 28, 1937	14.71	MAR. 24, 1938	23.90	JUNE 29, 1938	24.41	OCT. 14, 1938	25.40
DEC. 4	24.75	APR. 7	24.23	JULY 20	25.22	OCT. 15	25.22
DEC. 30	24.14	APR. 21	23.93	AUG. 11	25.58	OCT. 28	25.88
JAN. 13, 1938	24.45	MAY 4	24.07	AUG. 31	25.46	NOV. 11	25.38
JAN. 26	24.51	MAY 17	24.05	SEP. 16	25.35	DEC. 2	24.90
FEB. 24	24.40	JUNE 1	24.42	SEP. 30	25.66	MAR. 18, 1969	62.
MAR. 10	24.96	JUNE 17	24.49				

14N45E08G02 BEN WOOLISCROFT

ALTITUDE OF LAND SURFACE 2398 FEET.

HIGHEST WATER LEVEL 72.38 BELOW LSD, APR. 25, 1955,
LOWEST WATER LEVEL 73.85 BELOW LSD, NOV. 3, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 4, 1954	72.96	JULY 14, 1955	73.47	NOV. 3, 1955	73.85	MAY 9, 1956	73.15
APR. 25, 1955	72.38						

14N45E11N01 U S GEOL SURVEY

ALTITUDE OF LAND SURFACE 2538 FEET.

HIGHEST WATER LEVEL 1.66 BELOW LSD, FEB. 27, 1959,
LOWEST WATER LEVEL 13.05 BELOW LSD, SEP. 16, 1940.
RECORDS AVAILABLE 1934-40, 1954-68.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 14, 1934	5.86	JAN. 6, 1937	10.28	OCT. 22, 1939	10.35	APR. 25, 1958	2.48
JULY 27	6.15	JAN. 27	10.05	NOV. 5	10.08	JUNE 25	2.76
AUG. 6	6.35	FEB. 3	10.03	NOV. 26	9.83	AUG. 20	7.11
AUG. 28	9.70	FEB. 24	9.78	DEC. 4	9.75	OCT. 20	7.86
SEP. 6	9.66	MAR. 3	9.48	DEC. 30	9.47	DEC. 17	2.27
SEP. 24	9.27	MAR. 30	5.97	JAN. 6, 1940	9.37	FEB. 27, 1959	1.66
OCT. 1	9.16	APR. 6	5.48	JAN. 27	9.11	APR. 25	2.59
OCT. 15	8.96	APR. 28	5.32	FEB. 3	8.97	JUNE 25	2.89
OCT. 29	8.67	MAY 5	5.79	FEB. 24	8.49	AUG. 26	3.06
NOV. 5	8.61	MAY 26	6.74	MAR. 2	8.24	OCT. 29	5.53
NOV. 26	8.47	JUNE 2	7.11	MAR. 29	5.88	NOV. 29	4.21
DEC. 3	8.33	JUNE 30	7.90	APR. 5	5.82	JAN. 23, 1960	4.04
DEC. 24	8.20	JULY 7	8.29	APR. 30	6.52	MAR. 29	2.82
JAN. 3, 1935	7.86	AUG. 4	9.45	MAY 6	6.64	MAY 24	3.53
JAN. 29	4.89	SEP. 1	10.69	MAY 27	7.70	JULY 22	6.19
FEB. 4	5.27	SEP. 29	11.17	JUNE 3	8.07	SEP. 30	7.20
FEB. 25	5.67	OCT. 6	10.81	JUNE 24	9.09	DEC. 1	5.85
MAR. 4	5.80	OCT. 27	10.41	JULY 1	9.35	JAN. 26, 1961	4.14
MAR. 27	5.23	NOV. 4	10.27	JULY 20	10.68	MAR. 24	2.51
APR. 1	4.96	NOV. 24	9.93	AUG. 19	12.33	JULY 25	6.11
APR. 29	5.30	DEC. 1	9.82	SEP. 16	13.05	SEP. 26	6.44
MAY 6	5.70	DEC. 29	9.41	SEP. 30	12.21	DEC. 1	5.71
MAY 27	6.54	JAN. 5, 1938	9.21	NOV. 20, 1953	6.56	JAN. 28, 1962	5.01
JUNE 5	7.02	JAN. 26	8.60	JAN. 19, 1954	4.66	MAR. 26	2.37
JUNE 24	7.97	FEB. 2	8.45	FEB. 17	3.50	MAY 26	4.12
JULY 3	8.12	FEB. 23	7.47	MAR. 22	3.28	JULY 26	5.37
JULY 29	9.10	MAR. 2	5.62	APR. 22	3.67	SEP. 19	7.01
AUG. 7	9.53	MAR. 31	5.46	MAY 18	4.12	NOV. 30	5.88
AUG. 26	10.49	APR. 6	5.61	JUNE 8	4.34	JAN. 23, 1963	5.00
SEP. 3	10.72	APR. 27	5.88	JULY 7	5.09	MAR. 27	3.69
SEP. 30	10.98	MAY 4	6.19	AUG. 3	6.08	MAY 29	4.61
OCT. 7	10.97	MAY 25	6.94	SEP. 28	6.30	JULY 25	6.34
OCT. 28	10.04	JUNE 1	7.26	NOV. 10	5.94	SEP. 26	6.81
NOV. 4	9.97	JUNE 29	8.49	DEC. 6	5.66	NOV. 21	6.53
NOV. 27	9.74	JULY 6	8.66	JAN. 3, 1955	4.89	JAN. 24, 1964	7.52
DEC. 4	9.65	AUG. 3	9.83	FEB. 1	4.25	MAR. 24	6.97
DEC. 30	9.37	SEP. 7	10.95	MAR. 28	2.56	MAY 21	4.37
JAN. 2, 1936	9.37	SEP. 28	11.08	APR. 25	2.87	JULY 27	5.61
JAN. 29	9.26	OCT. 26	10.27	JUNE 21	4.45	NOV. 17	6.82
FEB. 3	8.84	NOV. 2	10.15	JULY 7	4.69	JAN. 20, 1965	3.57
FEB. 26	8.30	NOV. 30	9.72	AUG. 3	5.90	MAR. 16	3.25
MAR. 2	7.81	DEC. 7	9.63	SEP. 7	6.90	MAY 25	4.06
MAR. 25	5.58	DEC. 28	9.39	SEP. 29	7.00	AUG. 17	5.78
APR. 1	5.47	JAN. 4, 1939	9.30	NOV. 1	6.40	SEP. 20	5.87
APR. 29	6.43	JAN. 25	9.04	DEC. 6	5.37	OCT. 26	5.98
MAY 6	6.50	FEB. 1	8.95	JAN. 11, 1956	3.33	DEC. 7	5.58
MAY 27	7.40	FEB. 22	8.11	FEB. 8	3.27	JAN. 11, 1966	3.37
JUNE 3	7.74	MAR. 1	8.00	MAR. 6	2.84	MAR. 8	3.52
JUNE 24	8.41	MAR. 29	5.24	APR. 3	2.68	MAY 10	4.31
JULY 1	8.69	APR. 5	5.65	MAY 9	2.74	JUNE 14	5.50
JULY 29	10.02	APR. 26	6.32	JUNE 5	3.43	JULY 19	6.65
AUG. 5	10.53	MAY 3	6.61	JUNE 29	3.82	AUG. 25	7.72
SEP. 2	11.80	MAY 31	7.72	JULY 25	4.80	SEP. 29	8.35
SEP. 30	11.95	JUNE 7	7.95	OCT. 3	5.82	NOV. 3	8.40
OCT. 7	11.86	JUNE 28	8.53	FEB. 24, 1957	3.13	DEC. 14	7.30
OCT. 28	11.30	JULY 15	8.91	APR. 27	3.09	JAN. 23, 1967	5.85
NOV. 4	11.11	JULY 28	9.32	AUG. 23	5.95	MAR. 6	5.04
NOV. 25	10.82	AUG. 4	9.61	OCT. 24	5.38	APR. 17	4.71
DEC. 2	10.70	AUG. 18	10.25	DEC. 16	3.76	MAY 25	4.79
DEC. 30	10.34	SEP. 24	10.96	FEB. 23, 1958	2.34	JULY 10	6.68

14N45E11N01 U S GEOL SURVEY (CONTINUED)

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 29, 1967	7.99	NOV. 14, 1967	7.75	FEB. 6, 1968	6.24	MAR. 19, 1968	4.85
OCT. 3	8.30	DEC. 27	7.00				

14N45E16E01 W STRATTON

ALTITUDE OF LAND SURFACE 2398 FEET.

HIGHEST WATER LEVEL 65.69 BELOW LSD, MAY 21, 1954,
LOWEST WATER LEVEL 66.70 BELOW LSD, NOV. 3, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 21, 1954	65.69	MAR. 30, 1955	65.82A	NOV. 3, 1955	66.70	APR. 4, 1956	66.17
NOV. 10	66.36A	JULY 8	66.42A				

14N45E24001 W BENEDICT

ALTITUDE OF LAND SURFACE 2530 FEET.

HIGHEST WATER LEVEL 2.22 BELOW LSD, MAR. 4, 1936,
LOWEST WATER LEVEL 19.95 BELOW LSD, OCT. 7, 1936.
RECORDS AVAILABLE 1934-38.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 25, 1934	9.46	JUNE 19, 1935	8.58	JUNE 17, 1936	10.01	JULY 7, 1937	12.95
JUNE 2	11.56	JULY 3	11.53	JULY 1	13.61	AUG. 4	17.77
JULY 2	15.16	JULY 11	12.08	JULY 22	16.86	SEP. 1	18.88
JULY 21	17.37	JULY 24	14.43	AUG. 5	18.00	SEP. 22	19.13
AUG. 4	18.37	AUG. 7	16.18	AUG. 19	18.55	OCT. 6	19.26
AUG. 18	18.89	AUG. 21	17.54	SEP. 2	18.97	OCT. 13	18.92
SEP. 1	19.15	SEP. 4	18.06	SEP. 23	19.71	NOV. 3	17.03
SEP. 20	19.45	SEP. 18	18.42	OCT. 7	19.95	NOV. 17	15.61
OCT. 3	19.28	OCT. 2	18.33	OCT. 21	19.63	DEC. 1	14.49
OCT. 24	17.97	OCT. 23	17.23	NOV. 4	19.07	DEC. 22	10.40
NOV. 7	17.13	NOV. 6	15.83	NOV. 18	18.30	JAN. 5, 1938	5.03
NOV. 21	16.26	NOV. 20	15.01	DEC. 2	17.72	JAN. 19	2.78
DEC. 5	15.80	DEC. 4	14.36	DEC. 16	17.08	FEB. 2	3.30
DEC. 19	14.79	DEC. 26	13.30	DEC. 30	16.75	FEB. 21	2.85
JAN. 2, 1935	12.08	JAN. 2, 1936	11.75	JAN. 6, 1937	16.84	MAR. 7	2.78
JAN. 23	7.60	JAN. 22	2.95	JAN. 13	16.63	MAR. 21	2.45
FEB. 6	4.77	FEB. 4	4.04	FEB. 24	5.14	APR. 4	3.58
FEB. 20	4.64	FEB. 19	4.63	MAR. 3	2.26	APR. 18	3.66
MAR. 6	4.82	MAR. 4	2.22	MAR. 23	2.66	MAY 2	5.13
MAR. 20	4.20	MAR. 18	3.21	APR. 6	2.97	MAY 23	6.59
APR. 3	3.58	APR. 1	3.78	APR. 21	2.41	JUNE 1	7.79
APR. 17	3.26	APR. 22	5.08	MAY 5	4.92	JUNE 22	12.30
MAY 1	4.45	MAY 6	5.33	MAY 19	5.97	JULY 6	14.70
MAY 22	5.90	MAY 20	6.90	JUNE 2	7.50	AUG. 10	18.04
JUNE 5	7.44	JUNE 3	8.77	JUNE 23	10.48	SEP. 7	19.06

14N45E24R01 W BENEDICT

ALTITUDE OF LAND SURFACE 2510 FEET.

HIGHEST WATER LEVEL 1.98 BELOW LSD, APR. 4, 1938,
LOWEST WATER LEVEL .5.45 BELOW LSD, OCT. 7, 1936.
RECORDS AVAILABLE 1934-38.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 13, 1934	3.31	JULY 3, 1935	3.15	JULY 8, 1936	2.38	SEP. 1, 1937	3.14
JULY 28	3.36	JULY 24	3.20	JULY 15	2.65	SEP. 22	3.20
AUG. 4	3.40	AUG. 7	3.25	AUG. 5	3.28	OCT. 6	3.16
AUG. 18	3.53	AUG. 21	3.31	SEP. 2	5.22	OCT. 20	3.04
SEP. 1	3.80	SEP. 4	3.31	SEP. 22	5.31	NOV. 3	2.98
SEP. 20	4.11	SEP. 18	3.14	OCT. 7	5.45	NOV. 17	2.90
OCT. 3	4.05	OCT. 2	3.13	OCT. 21	5.37	DEC. 1	2.74
OCT. 24	3.68	OCT. 23	2.88	NOV. 4	4.80	DEC. 22	2.39
NOV. 7	3.80	NOV. 6	2.78	NOV. 25	5.38	JAN. 5, 1938	2.22
NOV. 21	3.64	NOV. 20	2.79	DEC. 2	5.30	JAN. 19	2.08
DEC. 5	3.64	DEC. 4	2.74	DEC. 23	4.22	FEB. 2	2.12
DEC. 19	3.42	DEC. 18	2.75	JAN. 6, 1937	4.28	FEB. 21	2.10
JAN. 2, 1935	3.22	JAN. 2, 1936	2.18	JAN. 13	4.27	MAR. 7	2.03
JAN. 30	2.40	JAN. 22	2.18	FEB. 24	2.90	MAR. 28	2.05
FEB. 6	2.44	FEB. 5	2.23	MAR. 3	2.15	APR. 4	1.98
FEB. 20	2.40	FEB. 19	2.28	MAR. 23	2.19	APR. 18	2.01
MAR. 6	2.60	MAR. 4	1.99	APR. 6	2.08	MAY 2	2.18
MAR. 20	2.54	MAR. 18	2.22	APR. 21	2.06	MAY 23	2.37
APR. 3	2.43	APR. 1	2.20	MAY 5	2.74	JUNE 1	2.54
APR. 17	2.37	APR. 22	2.15	MAY 19	2.79	JUNE 22	2.61
MAY 1	2.55	MAY 6	2.10	JUNE 2	3.21	JULY 6	2.80
MAY 22	2.77	MAY 20	2.28	JUNE 23	3.16	AUG. 10	3.41
JUNE 5	3.10	JUNE 3	2.27	JULY 7	3.30	SEP. 7	3.90
JUNE 19	3.09	JUNE 17	2.28	AUG. 4	3.26		

14N46E08A01 EDGAR ANDERSON

ALTITUDE OF LAND SURFACE 2758 FEET.

HIGHEST WATER LEVEL 109.90 BELOW LSD, MAY 26, 1936,
LOWEST WATER LEVEL 113.77 BELOW LSD, JAN. 25, 1939.
RECORDS AVAILABLE 1936-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 26, 1936	109.90	MAY 5, 1937	110.37	MAR. 2, 1938	110.70	APR. 24, 1939	112.39
JUNE 3	110.21	MAY 19	110.42	MAR. 31	110.74	MAY 24	113.42
JUNE 24	111.71	JUNE 2	110.39	APR. 6	110.71	JUNE 26	110.74
JULY 1	111.47	JUNE 30	110.45	APR. 27	110.32	JULY 15	111.20
JULY 22	112.24	JULY 7	110.46	MAY 4	110.28	AUG. 14	113.00
SEP. 2	110.57	AUG. 4	110.50	MAY 23	110.24	SEP. 10	111.14
SEP. 23	110.85	SEP. 1	110.66	JUNE 1	110.15	OCT. 22	111.30
OCT. 7	110.85	SEP. 29	110.88	JUNE 28	110.17	DEC. 18	111.66
OCT. 21	110.98	OCT. 20	111.05	JULY 6	110.28	JAN. 16, 1940	111.60
NOV. 4	110.98	OCT. 27	111.08	AUG. 10	110.43	FEB. 16	111.76
NOV. 25	111.10	NOV. 3	111.03	SEP. 7	110.61	MAR. 21	111.83
DEC. 2	111.14	NOV. 24	111.10	SEP. 28	110.55	APR. 20	111.80
DEC. 23	111.03	DEC. 1	111.06	OCT. 26	110.66	MAY 17	112.02
JAN. 6, 1937	111.10	DEC. 29	111.17	NOV. 30	110.75	JUNE 19	111.93
FEB. 24	111.49	JAN. 5, 1938	111.34	DEC. 28	112.23	JULY 19	112.08
MAR. 3	111.54	JAN. 26	111.25	JAN. 25, 1939	113.77	AUG. 22	111.19
APR. 6	110.99	FEB. 2	110.96	FEB. 20	111.22	SEP. 18	112.32
APR. 21	110.41	FEB. 23	111.10	MAR. 28	111.84	OCT. 7	111.31

14N46E32C01 CV STROHM

ALTITUDE OF LAND SURFACE 2655 FEET.

HIGHEST WATER LEVEL 3.55 BELOW LSD, MAR. 28, 1938,
LOWEST WATER LEVEL 9.54 BELOW LSD, AUG. 21, 1940.
RECORDS AVAILABLE 1934-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 24, 1934	7.65	NOV. 27, 1935	7.37	NOV. 3, 1937	7.74	APR. 5, 1939	5.18
AUG. 4	7.72	DEC. 4	7.66	NOV. 24	7.60	APR. 26	5.74
AUG. 25	7.79	DEC. 18	7.66	DEC. 1	7.62	MAY 3	5.97
SEP. 1	7.81	JAN. 2, 1936	7.33	DEC. 15	7.55	MAY 31	7.14
SEP. 27	7.80	JAN. 29	7.01	DEC. 29	7.44	JUNE 6	7.35
OCT. 1	7.78	FEB. 5	7.08	JAN. 5, 1938	7.17	JUNE 26	7.53
OCT. 31	7.67	MAR. 4	5.05	JAN. 19	7.14	JULY 15	7.70
NOV. 14	7.70	MAR. 18	4.44	JAN. 26	6.86	JULY 31	7.85
NOV. 21	7.65	MAR. 25	4.66	FEB. 2	6.51	AUG. 7	7.89
DEC. 5	7.55	APR. 1	4.38	FEB. 16	6.37	AUG. 21	7.97
DEC. 19	7.57	APR. 29	5.56	FEB. 28	5.41	SEP. 3	7.99
JAN. 9, 1935	6.12	MAY 6	5.68	MAR. 7	4.27	OCT. 22	7.97
JAN. 16	6.34	MAY 27	6.12	MAR. 28	3.55	OCT. 28	7.90
FEB. 6	4.55	JUNE 3	6.25	APR. 4	3.76	NOV. 4	7.87
MAR. 6	5.28	JUNE 24	6.70	APR. 26	4.75	NOV. 25	7.81
MAR. 20	5.26	JULY 1	6.97	MAY 2	5.11	DEC. 2	7.80
APR. 10	3.75	JULY 15	7.18	MAY 23	5.76	DEC. 30	7.72
APR. 26	3.92	SEP. 2	7.77	JUNE 1	6.06	JAN. 6, 1940	7.67
MAY 1	4.30	SEP. 30	7.89	JUNE 29	6.72	JAN. 29	7.47
MAY 15	5.11	OCT. 7	7.91	JULY 6	6.93	FEB. 6	7.46
MAY 29	5.53	OCT. 28	7.90	AUG. 3	7.61	FEB. 27	7.23
JUNE 5	5.79	APR. 6, 1937	4.96	SEP. 7	7.85	MAR. 5	6.69
JUNE 19	6.22	APR. 21	4.63	SEP. 28	7.85	MAR. 26	6.25
JUNE 26	6.52	MAY 5	5.15	OCT. 26	7.81	APR. 3	6.09
JULY 3	7.00	MAY 26	5.88	NOV. 2	7.68	APR. 30	6.50
JULY 17	7.33	JUNE 2	6.09	NOV. 30	7.65	MAY 7	6.59
JULY 31	7.56	JUNE 23	6.23	DEC. 9	7.64	MAY 30	6.98
AUG. 7	7.62	JULY 7	7.01	DEC. 28	7.62	JUNE 5	7.06
AUG. 28	7.81	AUG. 3	7.92	JAN. 7, 1939	7.60	JUNE 25	7.43
SEP. 4	7.85	SEP. 15	8.02	JAN. 27	7.63	JULY 1	7.56
SEP. 25	7.89	SEP. 22	7.94	FEB. 1	7.62	JULY 19	8.79
OCT. 2	7.87	SEP. 29	7.87	FEB. 22	6.94	AUG. 21	9.54
OCT. 16	7.80	OCT. 6	7.78	MAR. 3	6.98	SEP. 17	7.40
OCT. 30	7.75	OCT. 13	7.80	MAR. 29	4.91	OCT. 2	4.20
NOV. 6	7.71	OCT. 27	7.76				

15N37E25D02 WC MAYS

ALTITUDE OF LAND SURFACE 1085 FEET.

HIGHEST WATER LEVEL 1.50 ABOVE LSD, FEB. 21, 1969, APR. 21, 1969, JUNE 25, 1969, APR. 1, 1970, MAY 13, 1970,
LOWEST WATER LEVEL 17.23 BELOW LSD, AUG. 21, 1968.
RECORDS AVAILABLE 1965-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 21, 1965	8.12	MAR. 11, 1967 +	.06	FEB. 21, 1969 +	1.5	NOV. 20, 1970	4.28
NOV. 3	5.87	APR. 21 +	.60	APR. 21 +	1.5	FEB. 3, 1971	1.16
NOV. 17	4.79	MAY 5	1.85	JUNE 25 +	1.5	MAR. 31	0.05
DEC. 15	4.04	JULY 6	8.90	AUG. 25	2.72	MAY 17	3.77
JAN. 12, 1966	3.40	SEP. 6	14.28	OCT. 3	3.86	JULY 26	8.58
FEB. 9	2.30	OCT. 17	13.18	DEC. 4	3.17	SEP. 20	11.62
MAR. 16	1.18	DEC. 21	5.28	JAN. 7, 1970	1.50	NOV. 30	5.81
JUNE 3	7.57	MAR. 7, 1968	1.77	FEB. 19 +	0.78	JAN. 27, 1972	2.56
JULY 12	10.71	APR. 19	3.08	APR. 1 +	1.5	MAR. 28	0.14
SEP. 1	13.57	JUNE 28	12.58	MAY 13 +	1.5	MAY 24	4.53
OCT. 7	14.03	AUG. 21	17.23	JUNE 29	1.33	JULY 24	8.72
NOV. 17	7.49	OCT. 23	12.34	AUG. 10	6.28	SEP. 28	12.94
DEC. 19	3.20	DEC. 27	3.52	SEP. 28	8.98	NOV. 28	9.23
FEB. 2, 1967	1.58						

15N39E02L01 TN OF LACROSSE

ALTITUDE OF LAND SURFACE 1480 FEET.

HIGHEST WATER LEVEL 44.22 BELOW LSD, MAY 13, 1970,
LOWEST WATER LEVEL 57.55 BELOW LSD, JULY 31, 1969.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967	50.5	MAR. 20, 1969	49.12	MAY 13, 1970	44.22	MAY 18, 1971	45.09
MAR. 13, 1968	50.65	MAY 15	48.28	JUNE 29	45.78	JULY 26	49.3
MAY 17	51.80	JULY 31	57.55	AUG. 10	47.15	SEP. 20	49.0
JULY 23	53.92	DEC. 4	50.52	SEP. 28	49.2	NOV. 30	47.6
SEP. 13	54.97	JAN. 7, 1970	50.52	NOV. 20	48.2	JAN. 27, 1972	45.9
OCT. 31	54.28	FEB. 19	47.60	FEB. 3, 1971	45.2	MAR. 28	44.8
JAN. 17, 1969	52.23	APR. 1	44.88	MAR. 31	45.24	MAY 24	46.6

15N39E22J01 HERB CAMP

ALTITUDE OF LAND SURFACE 1540 FEET.

HIGHEST WATER LEVEL 59.40 BELOW LSD, JUNE 28, 1956,
LOWEST WATER LEVEL 112.60 BELOW LSD, JULY 24, 1972.
RECORDS AVAILABLE 1956, 1972.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 28, 1956	59.40	APR. 5, 1972	109.5	MAY 24, 1972	110.2	JULY 24, 1972	112.6

15N43E26L02 BERNE DAVIS

ALTITUDE OF LAND SURFACE 2382 FEET.

HIGHEST WATER LEVEL 113.09 BELOW LSD, APR. 3, 1956,
LOWEST WATER LEVEL 127.71 BELOW LSD, JULY 25, 1956.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 5, 1954	120.20	FEB. 1, 1955	116.66	NOV. 1, 1955	120.56	MAY 8, 1956	118.44
OCT. 6	117.69	JULY 8	120.23	DEC. 6	119.81	JUNE 5	121.30
NOV. 11	120.28	AUG. 4	125.37	JAN. 10, 1956	119.76	JULY 25	127.71
DEC. 8	116.85	SEP. 7	125.18	FEB. 7	115.86	AUG. 24	125.40
JAN. 5, 1955	118.9	OCT. 3	120.60	APR. 3	113.09		

15N44E14D01 TOWN OF ALBION

ALTITUDE OF LAND SURFACE 2290 FEET.

HIGHEST WATER LEVEL 5.69 BELOW LSD, APR. 4, 1956,
LOWEST WATER LEVEL 13.35 BELOW LSD, OCT. 1, 1954.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 23, 1953	12.78	JULY 29, 1954	12.63	JULY 6, 1955	10.40	FEB. 8, 1956	6.50
JAN. 19, 1954	11.20	OCT. 1	13.35	AUG. 3	11.27	MAR. 6	5.83
FEB. 17	9.18	NOV. 10	11.68	SEP. 6	12.43	APR. 4	5.69
MAR. 22	9.69	DEC. 6	11.04	OCT. 3	11.37	MAY 8	7.69
APR. 22	10.63	JAN. 5, 1955	10.05	NOV. 2	10.56	JUNE 6	9.69
MAY 18	11.28	FEB. 2	9.35	DEC. 7	9.13	JUNE 29	10.35
JUNE 8	11.38	MAR. 28	8.36	JAN. 11, 1956	6.78	JULY 25	10.86
JULY 7	11.84	APR. 29	8.30				

15N44E17E01 ALBION SCH DIST

ALTITUDE OF LAND SURFACE 2345 FEET.

HIGHEST WATER LEVEL 1.87 BELOW LSD, DEC. 30, 1937,
LOWEST WATER LEVEL 7.39 BELOW LSD, AUG. 26, 1935.
RECORDS AVAILABLE 1934-38.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 14, 1934	7.18	JULY 1, 1935	7.15	JULY 7, 1936	7.17	AUG. 30, 1937	7.12
JULY 23	7.18	JULY 30	7.22	JULY 14	7.18	SEP. 22	6.41
AUG. 3	7.04	AUG. 6	7.20	AUG. 6	7.18	OCT. 2	6.38
AUG. 29	7.10	AUG. 26	7.39	SEP. 1	7.08	OCT. 5	6.35
SEP. 6	7.05	SEP. 2	7.19	OCT. 6	7.02	OCT. 26	6.34
SEP. 24	6.89	SEP. 30	7.16	OCT. 27	6.92	NOV. 5	6.35
OCT. 1	7.05	OCT. 7	6.90	NOV. 3	6.98	NOV. 29	6.21
OCT. 29	6.90	OCT. 29	6.99	NOV. 24	6.99	DEC. 10	6.37
NOV. 5	6.83	NOV. 4	7.07	DEC. 1	6.98	DEC. 30	1.87
NOV. 26	6.94	NOV. 26	7.13	DEC. 29	6.60	JAN. 6, 1938	4.18
DEC. 3	6.74	DEC. 3	7.13	JAN. 5, 1937	6.62	JAN. 27	4.34
DEC. 24	6.80	DEC. 24	7.14	JAN. 14	6.57	FEB. 4	4.05
JAN. 2, 1935	6.44	JAN. 2, 1936	6.47	FEB. 11	6.33	FEB. 25	3.15
JAN. 28	4.11	JAN. 28	5.35	FEB. 26	2.98	MAR. 4	3.40
FEB. 4	4.87	FEB. 4	6.31	MAR. 2	2.45	MAR. 24	3.20
FEB. 25	5.59	FEB. 25	5.96	MAR. 31	4.51	APR. 7	4.65
MAR. 4	5.94	MAR. 3	4.08	APR. 7	4.46	APR. 27	5.48
MAR. 25	5.93	MAR. 31	5.13	APR. 27	3.62	MAY 4	6.09
APR. 2	5.30	APR. 7	6.31	MAY 4	6.08	MAY 25	6.38
APR. 29	5.91	APR. 28	6.99	MAY 25	7.08	JUNE 2	6.43
MAY 6	5.95	MAY 5	7.09	JUNE 3	7.12	JUNE 30	6.39
MAY 27	7.08	MAY 26	7.24	JUNE 29	7.13	JULY 7	6.39
JUNE 3	7.12	JUNE 2	7.13	JULY 8	7.17	AUG. 11	6.38
JUNE 25	7.14	JUNE 30	7.15	AUG. 5	7.13	SEP. 2	6.38

15N44E17L01 R BARR

ALTITUDE OF LAND SURFACE 2330 FEET.

HIGHEST WATER LEVEL 10.61 BELOW LSD, APR. 27, 1938,
LOWEST WATER LEVEL 18.70 BELOW LSD, SEP. 16, 1940.
RECORDS AVAILABLE 1934-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 14, 1934	17.08	SEP. 30, 1935	18.06	DEC. 29, 1936	17.08	APR. 7, 1938	11.02
JULY 27	17.58	OCT. 7	18.14	JAN. 5, 1937	16.98	APR. 27	10.61
AUG. 3	17.64	OCT. 29	17.30	JAN. 14	17.02	MAY 4	10.74
AUG. 29	18.11	NOV. 4	17.36	FEB. 11	16.82	MAY 25	11.60
SEP. 6	18.13	NOV. 26	16.97	FEB. 26	15.45	JUNE 2	12.15
SEP. 24	18.00	DEC. 3	16.93	MAR. 2	14.55	JUNE 30	14.78
OCT. 1	17.94	DEC. 24	16.73	MAR. 31	12.65	JULY 7	15.54
OCT. 29	17.19	JAN. 2, 1936	15.24	APR. 7	12.60	AUG. 11	17.91
NOV. 5	16.98	JAN. 28	14.27	APR. 27	11.42	SEP. 2	18.31
NOV. 26	16.73	FEB. 4	14.26	MAY 4	11.48	SEP. 30	18.44
DEC. 3	16.55	FEB. 25	13.70	MAY 25	12.63	OCT. 24	18.14
DEC. 24	15.67	MAR. 3	12.90	JUNE 3	13.41	NOV. 28	17.33
JAN. 2, 1935	15.40	MAR. 31	11.68	JUNE 29	14.64	DEC. 29	16.86
JAN. 28	14.06	APR. 7	11.57	JULY 8	15.55	JAN. 23, 1939	16.24
FEB. 4	14.96	APR. 28	11.84	AUG. 5	17.76	FEB. 24	14.37
FEB. 25	13.68	MAY 5	11.76	AUG. 30	18.10	MAR. 31	13.04
MAR. 4	13.18	MAY 26	12.45	SEP. 22	18.30	APR. 27	12.98
MAR. 25	13.12	JUNE 2	12.95	OCT. 2	18.13	MAY 23	13.72
APR. 2	12.62	JUNE 30	15.83	OCT. 27	17.74	JUNE 26	15.73
APR. 29	11.50	JULY 7	16.42	NOV. 5	17.35	JULY 13	17.31
MAY 6	11.52	JULY 14	17.02	NOV. 29	16.56	JULY 21	17.68
MAY 27	11.95	AUG. 6	17.94	DEC. 10	16.75	AUG. 15	18.23
JUNE 3	12.17	SEP. 1	18.16	DEC. 30	15.82	SEP. 17	18.44
JUNE 25	14.11	SEP. 29	18.36	JAN. 6, 1938	15.11	OCT. 29	18.03
JULY 1	14.77	OCT. 6	18.36	JAN. 27	14.08	DEC. 19	17.37
JULY 30	17.46	OCT. 27	17.90	FEB. 4	13.86	AUG. 21, 1940	18.57
AUG. 6	17.59	NOV. 3	17.75	FEB. 25	13.25	SEP. 16	18.70
AUG. 26	17.88	NOV. 24	17.64	MAR. 4	12.88	OCT. 1	18.46
SEP. 2	18.02	DEC. 1	17.68	MAR. 10	12.79		

15N44E35E01 VL MICHAELSON

ALTITUDE OF LAND SURFACE 2412 FEET.

HIGHEST WATER LEVEL 88.89 BELOW LSD, APR. 28, 1955,
LOWEST WATER LEVEL 90.70 BELOW LSD, SEP. 7, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 8, 1954	88.9	APR. 28, 1955	88.89	SEP. 7, 1955	90.70	APR. 5, 1956	89.75
DEC. 6	89.15						

15N45E03J01 US GEOL SURVEY

ALTITUDE OF LAND SURFACE 2580 FEET.

HIGHEST WATER LEVEL 4.36 BELOW LSD, MAR. 15, 1940,
LOWEST WATER LEVEL 17.62 BELOW LSD, OCT. 30, 1934.
RECORDS AVAILABLE 1934-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 30, 1934	17.62	JAN. 6, 1936	12.02	APR. 1, 1937	6.98	JULY 7, 1938	6.69
NOV. 7	17.57	JAN. 28	9.43	APR. 29	5.20	AUG. 11	8.18
NOV. 26	17.38	FEB. 4	9.10	MAY 4	5.74	SEP. 30	8.65
DEC. 3	17.23	FEB. 25	8.43	MAY 25	6.24	OCT. 24	8.60
DEC. 3	17.23	MAR. 3	6.99	JUNE 2	6.56	DEC. 1	8.40
DEC. 24	15.20	MAR. 31	5.46	JUNE 29	6.41	DEC. 27	8.10
JAN. 8, 1935	11.94	APR. 7	5.56	JULY 8	6.80	JAN. 26, 1939	7.42
JAN. 29	7.94	APR. 28	6.21	AUG. 5	8.20	FEB. 23	6.20
FEB. 4	7.38	MAY 5	6.21	SEP. 14	9.97	MAR. 30	4.67
FEB. 25	6.07	MAY 26	6.80	SEP. 25	10.10	APR. 27	5.33
MAR. 5	5.97	JUNE 2	7.06	OCT. 1	10.18	MAY 22	5.80
MAR. 26	5.63	JUNE 30	7.84	OCT. 27	10.12	JUNE 26	6.46
APR. 1	5.31	JULY 7	8.19	NOV. 5	10.51	JULY 21	7.12
APR. 29	5.15	AUG. 6	10.15	NOV. 24	9.87	AUG. 16	7.67
MAY 7	5.79	SEP. 1	11.49	DEC. 2	9.32	SEP. 3	7.69
MAY 28	6.67	SEP. 29	12.18	DEC. 30	8.54	OCT. 22	7.91
JUNE 3	7.11	OCT. 6	12.30	JAN. 6, 1938	7.95	DEC. 16	7.69
JUNE 24	8.03	OCT. 27	12.44	JAN. 19	7.10	JAN. 15, 1940	7.18
AUG. 7	10.57	NOV. 3	12.33	FEB. 3	6.15	FEB. 20	5.48
AUG. 26	11.80	NOV. 24	12.25	FEB. 28	5.19	MAR. 15	4.36
SEP. 3	12.25	DEC. 1	12.16	MAR. 7	5.07	APR. 16	4.83
SEP. 30	13.27	DEC. 29	11.42	MAR. 28	4.57	MAY 17	5.67
OCT. 7	13.40	JAN. 5, 1937	11.35	APR. 4	4.50	JUNE 19	6.55
OCT. 28	13.32	JAN. 19	11.35	APR. 25	4.87	JULY 19	7.79
NOV. 4	13.42	FEB. 2	11.25	MAY 2	5.20	AUG. 19	9.05
NOV. 25	13.28	FEB. 25	10.59	MAY 23	5.73	SEP. 16	10.05
DEC. 2	13.07	MAR. 2	9.73	JUNE 7	6.17	OCT. 1	9.95
DEC. 30	12.49	MAR. 24	7.82	JUNE 30	6.33		

15N45E10E01 E STEEVER

ALTITUDE OF LAND SURFACE 2554 FEET.

HIGHEST WATER LEVEL 224.40 BELOW LSD, FEB. 17, 1954,
LOWEST WATER LEVEL 231.16 BELOW LSD, JULY 25, 1956.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 6, 1953	229.65	SEP. 3, 1954	230.22	APR. 29, 1955	228.95	FEB. 8, 1956	230.29
JAN. 19, 1954	229.15	OCT. 15	230.60	JULY 7	230.0	MAR. 7	229.31
FEB. 17	224.4	NOV. 10	230.30	SEP. 30	230.97	APR. 4	227.69
APR. 22	229.20	DEC. 8	229.90	NOV. 2	230.77	MAY 9	230.31
JUNE 18	229.71	JAN. 5, 1955	229.85	DEC. 7	230.10	JUNE 29	230.92
JULY 16	229.82	FEB. 2	229.80	JAN. 11, 1956	230.34	JULY 25	231.16

15N45E23B01 M STIREWALT

ALTITUDE OF LAND SURFACE 2498 FEET.

HIGHEST WATER LEVEL 29.31 BELOW LSD, MAR. 24, 1937,
LOWEST WATER LEVEL 32.45 BELOW LSD, OCT. 26, 1936.
RECORDS AVAILABLE 1936-37.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 1, 1936	29.54	SEP. 1, 1936	31.33	NOV. 30, 1936	31.53	FEB. 25, 1937	30.83
JUNE 29	30.28	SEP. 28	31.57	DEC. 7	31.37	MAR. 2	30.57
JULY 6	30.51	OCT. 5	31.68	DEC. 30	31.03	MAR. 15	29.53
JULY 13	30.65	OCT. 26	32.45	JAN. 7, 1937	31.15	MAR. 24	29.31
AUG. 4	31.13	NOV. 2	32.07	JAN. 14	31.12		

15N45E25G01 DRISCOLL

ALTITUDE OF LAND SURFACE 2607 FEET.

HIGHEST WATER LEVEL 7.75 BELOW LSD, APR. 26, 1937,
LOWEST WATER LEVEL 21.72 BELOW LSD, SEP. 14, 1937.
RECORDS AVAILABLE 1935-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 17, 1935	17.65	FEB. 25, 1937	17.44	APR. 26, 1938	9.47	JULY 28, 1939	20.40
DEC. 31	17.24	MAR. 3	15.87	MAY 3	10.05	AUG. 4	20.13
JAN. 6, 1936	17.09	MAR. 15	10.02	MAY 31	12.93	AUG. 18	20.28
JAN. 27	16.35	APR. 5	8.68	JUNE 7	13.87	SEP. 3	20.44
FEB. 3	16.40	APR. 26	7.75	JUNE 28	14.45	OCT. 15	21.41
FEB. 25	16.38	MAY 6	8.85	JULY 5	15.01	OCT. 28	21.35
MAR. 5	15.20	MAY 24	10.63	AUG. 9	17.47	NOV. 4	21.27
MAR. 30	11.19	JUNE 2	11.90	SEP. 6	18.43	NOV. 25	21.33
APR. 6	10.77	JUNE 28	13.76	SEP. 27	19.10	DEC. 4	21.45
APR. 27	11.57	JULY 7	14.22	OCT. 25	18.99	DEC. 29	21.47
MAY 4	12.21	AUG. 4	18.24	NOV. 1	18.90	JAN. 6, 1940	21.45
MAY 25	13.16	SEP. 2	21.68	NOV. 29	18.41	JAN. 30	21.45
JUNE 1	14.24	SEP. 14	21.72	DEC. 9	18.21	FEB. 6	21.39
JUNE 29	15.68	SEP. 25	21.45	DEC. 27	17.94	FEB. 27	21.42
JULY 6	16.01	OCT. 1	21.23	JAN. 4, 1939	17.81	MAR. 5	21.46
JULY 13	16.42	OCT. 26	20.78	JAN. 31	17.36	MAR. 26	21.28
AUG. 4	17.71	NOV. 2	20.52	FEB. 7	17.27	APR. 3	20.88
SEP. 1	18.61	NOV. 30	19.54	FEB. 28	17.72	APR. 30	19.03
SEP. 28	19.12	DEC. 8	19.31	MAR. 7	17.34	MAY 6	18.73
OCT. 5	19.36	DEC. 30	18.62	MAR. 28	9.29	MAY 30	18.20
OCT. 26	19.29	JAN. 6, 1938	18.41	APR. 4	8.92	JUNE 5	18.33
NOV. 2	19.17	JAN. 27	17.75	APR. 25	10.37	JUNE 25	19.70
NOV. 30	18.86	FEB. 3	17.48	MAY 2	11.65	JULY 1	20.75
DEC. 7	18.56	FEB. 24	16.71	MAY 30	14.66	JULY 19	21.19
DEC. 28	18.13	MAR. 2	16.39	JUNE 6	15.34	AUG. 19	21.44
JAN. 7, 1937	18.02	MAR. 30	8.62	JUNE 26	18.39	SEP. 17	20.32
JAN. 14	18.00	APR. 6	8.77	JULY 13	21.20	OCT. 1	20.74

15N45E30G04 SCS EXP FARM

ALTITUDE OF LAND SURFACE 2520 FEET.

HIGHEST WATER LEVEL 190.00 BELOW LSD, .. , 1938,
LOWEST WATER LEVEL 204.65 BELOW LSD, NOV. 2, 1955.
RECORDS AVAILABLE 1938, 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
.. 1938	190.	MAR. 28, 1955	203.36	NOV. 2, 1955	204.65	APR. 4, 1956	204.20
OCT. 18, 1954	204.4	JULY 8	203.99				

15N45E32N02 CITY OF PULLMAN NO 4

ALTITUDE OF LAND SURFACE 2356 FEET.

HIGHEST WATER LEVEL 25.98 BELOW LSD, MAY 24, 1960,
LOWEST WATER LEVEL 113.16 BELOW LSD, JULY 18, 1969.
RECORDS AVAILABLE 1959-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR. 25, 1959	45.36A	SEP. 29, 1964	35.13C	AUG. 29, 1967	66.27A	MAR. 16, 1970	61.1[illegible]
JUNE 25	26.14	NOV. 17	36.98	OCT. 3	44.72	APR. 28	62.54[illegible]
AUG. 26	55.98A	JAN. 20, 1965	34.95B	NOV. 14	44.71	JUNE 10	101.2[illegible]
OCT. 29	26.79	MAR. 16	62.25A	DEC. 27	44.64	JULY 21	69.57[illegible]
NOV. 29	26.79	MAY 25	35.67	FEB. 6, 1968	45.78	SEP. 2	53.0[illegible]
JAN. 23, 1960	53.27A	AUG. 16	38.20	MAR. 19	45.54	OCT. 27	47.38
MAR. 29	26.04	SEP. 20	38.00	MAY 2	80.38A	DEC. 9	52.62
MAY 24	25.98	DEC. 7	38.23	JUNE 13	80.52A	JAN. 18, 1971	53.22
JULY 22	51.57A	JAN. 12, 1966	38.10	JULY 25	90.15A	MAR. 18	89.42A
SEP. 30	28.22B	MAR. 9	52.95B	SEP. 9	86.87A	APR. 27	52.59
JAN. 26, 1961	28.51B	MAY 11	51.50A	OCT. 17	87.75A	JUNE 15	53.05
DEC. 1	30.29B	JUNE 14	39.40	DEC. 5	87.95A	AUG. 10	54.90
SEP. 19, 1962	61.56A	JULY 20	75.04A	JAN. 16, 1969	47.67	SEP. 29	54.20
NOV. 1	32.34	AUG. 25	77.72A	MAR. 4	47.67	NOV. 23	91.55A
NOV. 30	59.19A	SEP. 29	41.62	APR. 15	47.82	FEB. 1, 1972	90.60
MAR. 27, 1963	31.84B	NOV. 2	76.57A	MAY 27	84.05A	MAR. 6	49.50
MAY 29	32.86	DEC. 12	41.86	JULY 18	113.16A	APR. 19	91.7 A
JULY 25	63.66A	JAN. 23, 1967	41.49	SEP. 2	111.69A	JUNE 21	55.35
SEP. 26	65.41A	MAR. 6	41.50	OCT. 13	50.71	AUG. 17	55.9
NOV. 21	34.05B	APR. 17	41.59	NOV. 24	51.22	OCT. 17	56.8
JAN. 24, 1964	33.73	MAY 25	42.40A	JAN. 5, 1970	50.60A	DEC. 4	56.6
JULY 27	63.58A	JULY 10	63.92A				

15N45E32N03 CITY OF PULLMAN

ALTITUDE OF LAND SURFACE 2356 FEET.

HIGHEST WATER LEVEL 24.32 BELOW LSD, DEC. 16, 1957,
LOWEST WATER LEVEL 56.80 BELOW LSD, OCT. 17, 1972.
RECORDS AVAILABLE 1957-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 23, 1957	25.84	MAY 26, 1962	31.14C	JUNE 14, 1966	39.49	JULY 15, 1969	51.19A
DEC. 16	24.32	JULY 26	33.15C	JULY 20	41.40A	SEP. 2	52.21A
APR. 26, 1958	24.40	SEP. 19	32.90C	AUG. 25	42.99A	OCT. 13	50.79
JUNE 25	25.32	NOV. 1	32.37	NOV. 3	42.63A	NOV. 24	51.41
AUG. 22	27.21C	NOV. 30	32.26C	DEC. 12	42.03	JAN. 5, 1970	53.12A
OCT. 22	26.57	JAN. 23, 1963	33.11C	JAN. 23, 1967	41.70	MAR. 16	50.22
DEC. 17	26.12	MAR. 27	31.87D	MAR. 6	41.70	APR. 28	51.22C
FEB. 27, 1959	25.84	MAY 29	32.88	APR. 17	41.84	JUNE 10	52.04C
APR. 25	25.99C	JULY 25	34.28C	MAY 25	42.83A	JULY 21	53.14C
JUNE 25	26.17	SEP. 26	33.99C	JULY 10	43.9 A	SEP. 2	53.17
AUG. 26	27.03C	NOV. 21	34.09D	AUG. 29	46.46A	OCT. 27	53.27
OCT. 29	26.81	JAN. 24, 1964	34.77	OCT. 3	44.77	DEC. 9	52.71
NOV. 29	26.82	MAR. 24	34.38C	NOV. 14	44.79	JAN. 18, 1971	53.22
JAN. 23, 1960	26.87C	MAY 21	34.12	DEC. 27	44.67	MAR. 1	53.72C
MAR. 29	26.06	JULY 27	35.50C	FEB. 6, 1968	45.81	APR. 27	52.63
MAY 24	26.02	SEP. 29	35.34	MAR. 19	45.77	JUNE 15	54.65
JULY 22	28.80C	NOV. 17	35.18	MAY 20	46.17C	AUG. 10	55.89
SEP. 30	28.25D	JAN. 20, 1965	34.95	JUNE 13	46.71C	SEP. 29	54.37
DEC. 1	28.62C	MAR. 16	35.34D	JULY 9	48.65C	NOV. 23	55.30C
JAN. 26, 1961	28.26D	MAY 25	35.74	JULY 25	48.42C	FEB. 1, 1972	55.70C
MAR. 24	28.17	AUG. 16	38.38	OCT. 17	48.24C	MAR. 6	54.6
JULY 26	31.29C	SEP. 20	36.98	DEC. 5	48.40C	APR. 19	55.6 C
SEP. 26	31.46C	DEC. 7	38.42	JAN. 16, 1969	47.87	JUNE 21	55.43
DEC. 1	30.35C	JAN. 12, 1966	38.24	MAR. 4	47.75	AUG. 17	56.1
JAN. 28, 1962	29.54C	MAR. 9	38.85A	APR. 15	47.81	OCT. 17	56.8
MAR. 26	30.98C	MAY 11	39.91A	MAY 27	48.93C	DEC. 4	56.7

15N46E18J01 CARL BOYD

ALTITUDE OF LAND SURFACE 2655 FEET.

HIGHEST WATER LEVEL 20.68 BELOW LSD, JUNE 6, 1956,
LOWEST WATER LEVEL 23.78 BELOW LSD, SEP. 29, 1955.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 29, 1953	23.43	AUG. 3, 1954	23.01	JULY 7, 1955	22.16	JAN. 11, 1956	21.32
APR. 22, 1954	21.45	SEP. 29	23.45	AUG. 3	23.18	JUNE 6	20.68
MAY 18	21.70	NOV. 10	23.27	SEP. 7	23.77	JUNE 29	21.11
JUNE 8	21.80	DEC. 8	22.99	SEP. 29	23.78	JULY 25	21.92
JULY 7	22.31	JAN. 4, 1955	22.45	NOV. 1	23.27	AUG. 24	22.53

15N46E20K01 NT CARSON

ALTITUDE OF LAND SURFACE 2590 FEET.

HIGHEST WATER LEVEL 3.24 BELOW LSD, MAR. 24, 1961,
LOWEST WATER LEVEL 8.62 BELOW LSD, FEB. 15, 1937.
RECORDS AVAILABLE 1934-37, 1939, 1942-62.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 13, 1934	7.20	DEC. 16, 1935	8.02	OCT. 6, 1950	6.43	JAN. 11, 1956	4.38
JULY 27	7.43	DEC. 30	7.75	DEC. 15	5.34	FEB. 8	4.36
AUG. 6	7.61	JAN. 6, 1936	7.49	APR. 2, 1951	3.36	MAR. 6	3.69
AUG. 22	7.67	FEB. 24	7.09	JUNE 22	4.98	APR. 3	3.29
SEP. 6	7.83	MAR. 30	5.90	AUG. 26	5.89	MAY 10	4.01
SEP. 19	7.81	APR. 27	6.24	OCT. 20	5.96	JUNE 6	4.83
OCT. 1	7.90	MAY 25	6.76	DEC. 13	5.83	JUNE 29	5.32
OCT. 15	7.71	JUNE 29	7.08	FEB. 15, 1952	3.57	JULY 25	5.90
OCT. 29	7.98	JULY 6	7.14	APR. 18	3.45	AUG. 24	6.17
NOV. 5	7.92	AUG. 3	7.50	JUNE 5	5.55	OCT. 3	6.40
NOV. 19	7.74	OCT. 5	8.04	AUG. 15	5.89	DEC. 18	6.22
DEC. 3	8.18	NOV. 2	8.26	OCT. 18	7.45	APR. 27, 1957	3.86
DEC. 17	8.14	NOV. 30	8.49	DEC. 9	6.79	OCT. 24	5.80
DEC. 29	7.50	DEC. 28	8.32	FEB. 18, 1953	4.00	DEC. 16	5.77
JAN. 7, 1935	7.30	JAN. 25, 1937	8.50	APR. 25	4.28	FEB. 23, 1958	3.60
JAN. 29	5.91	FEB. 15	8.62	JUNE 19	5.37	JUNE 25	4.86
FEB. 4	5.96	MAR. 1	8.32	OCT. 23	6.78	AUG. 22	5.79
FEB. 18	6.00	MAR. 8	6.71	NOV. 20	6.94	OCT. 20	6.27
MAR. 4	5.44	SEP. 7	8.14	JAN. 19, 1954	5.76	DEC. 17	4.65
MAR. 18	5.32	OCT. 19	8.40	FEB. 17	4.47	APR. 25, 1959	3.44
APR. 1	4.92	DEC. 3	8.54	MAR. 22	4.17	JUNE 25	4.01
APR. 18	4.78	FEB. 28, 1939	7.63	APR. 22	4.60	AUG. 26	6.83
MAY 0	5.91	DEC. 10, 1942	7.57	MAY 18	5.37	OCT. 29	6.25
MAY 6	5.17	MAY 29, 1943	5.12	JUNE 8	5.46	NOV. 29	6.10
JUNE 4	6.18	AUG. 17, 1944	7.93	JULY 7	6.08	JAN. 23, 1960	5.95
JUNE 17	6.27	JUNE 12, 1945	7.33	AUG. 3	6.50	MAR. 29	3.91
JULY 2	6.50	OCT. 7	8.20	SEP. 29	6.85	MAY 24	4.14
JULY 15	6.62	AUG. 19, 1946	7.10	NOV. 10	7.18	JULY 22	6.05
JULY 29	6.95	OCT. 12	7.42	DEC. 8	7.18	SEP. 30	6.48
AUG. 6	6.93	MAR. 5, 1947	5.89	JAN. 4, 1955	6.99	DEC. 1	6.60
AUG. 19	7.17	MAY 25	6.39	MAR. 29	5.30	JAN. 26, 1961	6.17
SEP. 3	7.24	JULY 19	7.18	APR. 26	4.65	MAR. 24	3.24
SEP. 16	7.40	OCT. 19	7.66	JUNE 21	5.75	JULY 26	5.57
SEP. 30	7.46	MAR. 20, 1948	4.08	JULY 7	6.34	SEP. 26	5.91
OCT. 7	7.75	JULY 17	4.47	AUG. 3	6.84	DEC. 1	6.62
OCT. 21	7.53	OCT. 23	5.80	SEP. 7	7.08	MAR. 26, 1962	4.35
NOV. 4	7.77	DEC. 30, 1949	6.35	SEP. 28	7.19	MAY 26	5.17
NOV. 15	7.65	APR. 7, 1950	3.43	NOV. 1	7.13	JULY 26	6.18
NOV. 25	7.89	JUNE 29	5.39	DEC. 7	5.43	SEP. 19	6.80
DEC. 2	7.87						

15N46E30D01 W BOYD

ALTITUDE OF LAND SURFACE 2561 FEET.

HIGHEST WATER LEVEL 19.54 BELOW LSD, JUNE 9, 1936,
LOWEST WATER LEVEL 25.66 BELOW LSD, SEP. 17, 1940.
RECORDS AVAILABLE 1936-40.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JUNE 9, 1936	19.54	APR. 19, 1937	20.13	FEB. 17, 1938	23.36	FEB. 24, 1939	24.17
JUNE 22	22.69	MAY 6	20.18	MAR. 2	21.01	MAR. 27	21.15
JULY 6	23.32	MAY 17	20.91	MAR. 17	20.54	APR. 24	21.91
JULY 13	23.49	JUNE 2	22.07	MAR. 30	19.82	MAY 22	22.87
AUG. 4	24.00	JUNE 14	22.48	APR. 6	19.91	JUNE 26	23.63
SEP. 1	24.34	JUNE 28	22.91	APR. 13	19.78	JULY 14	23.90
SEP. 14	24.44	JULY 7	23.18	APR. 19	19.86	AUG. 18	24.93
SEP. 28	24.56	AUG. 4	23.90	MAY 3	20.07	SEP. 3	24.98
OCT. 5	24.62	SEP. 1	24.48	MAY 17	20.60	OCT. 15	25.26
OCT. 19	24.62	SEP. 14	24.72	MAY 31	21.24	DEC. 16	25.02
NOV. 2	24.60	OCT. 1	24.80	JUNE 7	21.64	JAN. 15, 1940	25.08
NOV. 16	24.68	OCT. 19	24.88	JUNE 28	22.55	FEB. 20	24.75
NOV. 30	24.67	NOV. 2	24.94	JULY 5	23.09	MAR. 15	23.41
DEC. 7	24.57	NOV. 16	24.84	AUG. 9	23.99	APR. 16	22.30
DEC. 22	24.51	NOV. 30	24.93	SEP. 6	24.64	MAY 17	23.05
JAN. 7, 1937	24.64	DEC. 8	24.97	SEP. 27	24.81	JUNE 19	23.70
FEB. 4	24.56	DEC. 23	24.87	OCT. 25	24.92	JULY 19	24.72
MAR. 2	24.38	JAN. 6, 1938	24.88	NOV. 29	24.96	AUG. 19	25.46
MAR. 15	23.07	JAN. 20	24.48	DEC. 27	24.88	SEP. 17	25.66
MAR. 29	21.15	FEB. 4	24.23	JAN. 23, 1939	24.91	OCT. 1	25.50
APR. 5	21.03						

16N36E10R01 LE SNYDER

ALTITUDE OF LAND SURFACE 1605 FEET.

HIGHEST WATER LEVEL 140.97 BELOW LSD, JULY 30, 1969,
LOWEST WATER LEVEL 197.35 BELOW LSD, APR. 20, 1966.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 10, 1965	142.22	JULY 14, 1966	141.67	APR. 21, 1967	142.23	SEP. 13, 1968	145.84
DEC. 15	142.99	AUG. 31	142.49	AUG. 18	141.1	OCT. 30	143.01
DEC. 28	143.22	OCT. 6	142.19	DEC. 11	143.26	JAN. 16, 1969	143.18
FEB. 9, 1966	142.21	NOV. 16	141.92	JAN. 21, 1968	143.3	MAR. 24	143.03
MAR. 16	142.19	DEC. 20	142.18	MAR. 9	142.6	MAY 16	141.81
APR. 20	197.35A	FEB. 1, 1967	142.00	MAY 19	142.85	JULY 30	140.97
JUNE 2	142.50	MAR. 12	143.43	JULY 17	142.94		

16N37E01G01 SP AND S RR

ALTITUDE OF LAND SURFACE 1470 FEET.

HIGHEST WATER LEVEL 3.69 BELOW LSD, MAR. 11, 1967,
LOWEST WATER LEVEL 127.89 BELOW LSD, SEP. 1, 1966.
RECORDS AVAILABLE 1965-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
SEP. 10, 1965	5.98	NOV. 17, 1966	5.70	MAR. 24, 1969	5.06	FEB. 3, 1971	5.07
OCT. 14	5.89	DEC. 19	6.02	MAY 15	5.37	MAR. 31	5.22
NOV. 17	5.70	FEB. 2, 1967	5.71	JULY 31	79.9 A	MAY 17	5.30
DEC. 15	5.67	MAR. 11	3.69	DEC. 5	5.39	JULY 26	93.3
JAN. 12, 1966	5.64	APR. 21	5.80	JAN. 7, 1970	5.31	SEP. 20	85.4
FEB. 8	5.64	DEC. 12	5.6	FEB. 20	5.20	NOV. 30	5.4
MAR. 16	5.80	JAN. 21, 1968	5.2	APR. 1	4.82	JAN. 27, 1972	5.91
APR. 20	5.85	MAR. 10	5.30	MAY 13	24.78A	MAR. 28	5.88
JUNE 3	39.50	JULY 23	108.8 A	JUNE 29	69.62A	MAY 24	26.3
JULY 12	88.86A	SEP. 13	76.8	AUG. 10	72.90	JULY 24	90.6
SEP. 1	127.89A	OCT. 31	5.1	SEP. 28	5.80	SEP. 28	84.9
OCT. 7	71.23	JAN. 17, 1969	5.97	NOV. 20	6.30	NOV. 28	5.7

16N37E18D01 HC NORRIS

ALTITUDE OF LAND SURFACE 1570 FEET.

HIGHEST WATER LEVEL 56.40 BELOW LSD, JULY 30, 1969,
LOWEST WATER LEVEL 91.80 BELOW LSD, DEC. 11, 1967, JAN. 21, 1968, SEP. 13, 1968.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 16, 1965	89.91R	AUG. 31, 1966	91.13	APR. 21, 1967	91.26	JULY 17, 1968	91.64
NOV. 17	89.70	OCT. 7	91.46A	AUG. 17	91.7	SEP. 13	91.8
DEC. 15	90.15	NOV. 16	91.63A	DEC. 11	91.8	OCT. 30	91.60
JAN. 12, 1966	90.4	DEC. 20	91.16	JAN. 21, 1968	91.8	MAR. 24, 1969	58.9
MAR. 16	91.4	FEB. 1, 1967	91.20	MAR. 9	91.2	MAY 16	67.0
JUNE 2	91.18A	MAR. 12	90.32	MAY 19	91.7	JULY 30	56.4
JULY 14	90.31						

16N38E04B01 H HOLLIDAY

ALTITUDE OF LAND SURFACE 1630 FEET.

HIGHEST WATER LEVEL 56.13 BELOW LSD, APR. 20, 1966,
LOWEST WATER LEVEL 170.80 BELOW LSD, SEP. 1, 1966.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 20, 1965	57.2	JUNE 3, 1966	147.80A	MAR. 11, 1967	61.87	MAY 17, 1968	79.07
NOV. 17	56.50	JULY 12	62.31	APR. 21	61.28	JULY 23	92.91
DEC. 15	56.46	SEP. 1	170.8 A	AUG. 17	76.57	SEP. 13	84.99
JAN. 12, 1966	56.49	OCT. 7	168.57A	DEC. 12	62.0	MAR. 24, 1969	59.95
FEB. 9	56.45	NOV. 17	64.52	JAN. 21, 1968	65.3	MAY 15	88.70A
MAR. 16	56.43	DEC. 19	63.84	MAR. 10	63.96	JULY 31	93.30
APR. 20	56.13	FEB. 2, 1967	62.33				

16N38E09A01 R WATKINS

ALTITUDE OF LAND SURFACE 1620 FEET.

HIGHEST WATER LEVEL 50.70 BELOW LSD, NOV. 3, 1965,
LOWEST WATER LEVEL 61.55 BELOW LSD, MAY 15, 1969.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 3, 1965	50.70	JULY 12, 1966	60.53	APR. 21, 1967	59.85	SEP. 13, 1968	60.3
DEC. 15	59.90	SEP. 1	59.99	AUG. 17	60.1	OCT. 31	59.6
JAN. 12, 1966	59.89	OCT. 7	59.87	DEC. 12	60.1	JAN. 17, 1969	59.77
FEB. 9	59.83	NOV. 17	59.96	JAN. 21, 1968	60.0	MAR. 24	59.24
MAR. 16	59.97	DEC. 19	59.77	MAR. 10	59.85	MAY 15	61.55
APR. 20	59.38	FEB. 2, 1967	59.61	MAY 17	59.67	JULY 31	59.10
JUNE 3	59.82	MAR. 11	60.35	JULY 23	60.12		

16N39E26J01 JS BRANCH

ALTITUDE OF LAND SURFACE 1540 FEET.

HIGHEST WATER LEVEL 35.75 BELOW LSD, APR. 1, 1970,
LOWEST WATER LEVEL 52.00 BELOW LSD, MAY 23, 1967.
RECORDS AVAILABLE 1954-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 18, 1954	42.74	DEC. 16, 1957	44.49	NOV. 21, 1963	44.86	MAY 16, 1968	46.74
FEB. 17	42.94	FEB. 23, 1958	44.97	MAR. 24, 1964	43.96	JUNE 20	47.01
MAR. 22	42.84	APR. 25	44.32	MAY 21	44.29	JULY 30	46.65
APR. 22	42.23	JUNE 25	43.31	JULY 27	50.52	SEP. 11	46.99
MAY 17	42.14	AUG. 22	43.65	SEP. 28	45.05	OCT. 23	46.28
JUNE 8	42.25	OCT. 20	43.69	NOV. 18	45.43	DEC. 5	47.49
JULY 6	42.50	DEC. 17	44.51	JAN. 19, 1965	45.35	FEB. 4, 1969	44.80
JULY 29	42.80	FEB. 27, 1959	44.60	MAR. 15	40.05	MAR. 12	42.65
AUG. 31	43.20	APR. 25	37.34	MAY 24	41.45A	APR. 7	38.38
SEP. 27	43.33	JUNE 25	39.15	AUG. 18	41.97	MAY 6	38.99
NOV. 9	43.80	AUG. 26	40.48	SEP. 22	42.48	JUNE 12	40.73
DEC. 9	43.96	OCT. 28	41.68	OCT. 28	43.32	JULY 29	40.91
JAN. 3, 1955	44.22	NOV. 29	41.27	DEC. 8	43.18	SEP. 10	41.54
FEB. 1	44.44	MAR. 26, 1960	43.40	JAN. 12, 1966	43.65	OCT. 22	42.43
MAR. 30	44.83	MAY 24	43.96	MAR. 14	44.20	DEC. 4	42.88
APR. 29	44.99	JULY 25	44.53	MAY 12	44.56	JAN. 7, 1970	43.01
JULY 6	45.43	SEP. 30	45.00	MAY 16	44.81	FEB. 19	42.35
JULY 26	45.57	DEC. 1	45.42	JULY 20	45.12	APR. 1	35.75
SEP. 8	47.16A	JAN. 26, 1961	45.80	AUG. 24	45.34	MAY 13	36.78
SEP. 27	46.95A	MAR. 24	38.16	SEP. 30	45.60	JUNE 29	43.17
NOV. 1	46.87	JULY 26	40.60	OCT. 31	45.82	AUG. 10	39.37
DEC. 8	47.25	SEP. 26	41.04	DEC. 15	46.02	SEP. 28	40.30
JAN. 10, 1956	46.16	DEC. 1	41.84	JAN. 25, 1967	46.20	NOV. 9	41.07
FEB. 7	41.09	JAN. 28, 1962	41.69	MAR. 8	45.84	FEB. 18, 1971	42.33
MAR. 6	39.11	MAR. 26	41.03	APR. 19	45.80	MAR. 31	42.88
APR. 5	37.97A	MAY 26	42.27	MAY 23	52.00	MAY 17	46.01
MAY 8	37.29	JULY 26	42.59	JULY 13	46.88	JUNE 30	41.67
JUNE 5	38.15	SEP. 19	42.97	SEP. 6	46.14	AUG. 11	44.24
JUNE 29	38.87	NOV. 30	43.12	OCT. 5	47.75	SEP. 20	44.40
JULY 29	39.53	JAN. 22, 1963	46.13	NOV. 15	46.34	NOV. 15	46.40
AUG. 29	40.12	MAR. 26	41.83	DEC. 29	46.44	JAN. 3, 1972	45.82
OCT. 1	40.80	MAY 28	40.63	JAN. 31, 1968	46.47	FEB. 14	45.32
AUG. 23, 1957	43.58	JULY 25	41.32	MAR. 7	46.57	MAR. 28	45.67
OCT. 24	41.14	SEP. 27	42.13	APR. 2	46.63		

16N39E35J01 P SCHARPENBERG

ALTITUDE OF LAND SURFACE 1485 FEET.

HIGHEST WATER LEVEL 57.99 BELOW LSD, MAY 8, 1956,
LOWEST WATER LEVEL 63.65 BELOW LSD, SEP. 27, 1955.
RECORDS AVAILABLE 1955-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
SEP. 27, 1955	63.65	JAN. 10, 1956	63.09A	APR. 5, 1956	58.60	JULY 27, 1956	60.40
NOV. 1	63.23	FEB. 7	60.88	MAY 8	57.99	AUG. 29	61.27
DEC. 8	62.55	MAR. 6	59.82	JUNE 29	59.48		

16N43E21L01 ART JENSEN

ALTITUDE OF LAND SURFACE 2202 FEET.

HIGHEST WATER LEVEL 10.15 BELOW LSD, FEB. 17, 1954,
DRY, WATER LEVEL NOT MEASUREABLE, JULY 26, 1962, SEP. 19, 1962.
RECORDS AVAILABLE 1954-62.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 18, 1954	11.75	APR. 29, 1955	12.28	JULY 25, 1956	15.14	NOV. 29, 1959	13.20
FEB. 17	10.15	JULY 6	15.57	AUG. 24	16.13	JAN. 23, 1960	12.67
MAR. 22	10.51	AUG. 5	15.75	OCT. 1	16.30	MAR. 26	11.81
APR. 22	11.36	SEP. 6	16.23	AUG. 23, 1957	16.18	MAY 24	11.97
MAY 17	12.42	OCT. 3	15.98	OCT. 24	16.12	DEC. 1	14.22
JUNE 8	12.54	NOV. 1	15.47	DEC. 16	12.82	JAN. 26, 1961	14.52
JULY 6	13.45	DEC. 6	12.60	FEB. 23, 1958	11.42	MAR. 24	12.08
JULY 29	14.74	JAN. 10, 1956	11.29	APR. 25	11.29	JULY 26	16.19
AUG. 31	15.70	FEB. 7	10.87	DEC. 17	14.68	DEC. 1	15.34
SEP. 27	15.43	MAR. 6	10.80	FEB. 27, 1959	11.39	JAN. 28, 1962	14.73
NOV. 13	15.03	APR. 3	10.74	APR. 25	12.32	MAR. 26	13.99
DEC. 6	14.38	MAY 8	11.51	JUNE 25	15.16	MAY 26	13.21
JAN. 3, 1955	13.28	JUNE 5	13.29	AUG. 26	16.15	JULY 26	DRY
FEB. 1	12.23	JUNE 29	14.18	OCT. 28	14.37	SEP. 19	DRY
MAR. 28	11.99						

16N45E12N01 ROYD REESON

ALTITUDE OF LAND SURFACE 2618 FEET.

HIGHEST WATER LEVEL 117.86 BELOW LSD, JUNE 6, 1956,
LOWEST WATER LEVEL 118.91 BELOW LSD, SEP. 30, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 8, 1954	118.20	AUG. 4, 1955	118.67	NOV. 2, 1955	118.76	JULY 25, 1956	117.87
JAN. 5, 1955	117.99	SEP. 7	118.66	JUNE 6, 1956	117.86	AUG. 24	117.97
JULY 8	118.38	SEP. 30	118.91	JUNE 29	117.90		

16N45E16F01 KAMIAK STATE PK

ALTITUDE OF LAND SURFACE 2800 FEET.

HIGHEST WATER LEVEL 50.73 BELOW LSD, APR. 23, 1969,
LOWEST WATER LEVEL 56.60 BELOW LSD, JULY 23, 1968.
RECORDS AVAILABLE 1968-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 23, 1968	56.60	DEC. 26, 1968	53.60	APR. 23, 1969	50.73	SEP. 2, 1969	54.94
OCT. 23	54.9	FEB. 25, 1969	50.93	JUNE 30	53.72	OCT. 29	53.83

17N35E24A01 CA SCHWERIN

ALTITUDE OF LAND SURFACE 1727 FEET.

HIGHEST WATER LEVEL 152.26 BELOW LSD, JULY 13, 1966,
LOWEST WATER LEVEL 172.42 BELOW LSD, NOV. 17, 1965.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 20, 1965	152.38	APR. 20, 1966	152.50	APR. 21, 1967	152.63	MAY 19, 1968	154.1
SEP. 18	152.65	JUNE 2	152.41	JUNE 22	152.95	JULY 17	154.8
OCT. 13	152.33	JULY 13	152.26	AUG. 16	153.10	SEP. 13	153.6
NOV. 17	172.42	AUG. 31	152.67	OCT. 4	153.6	OCT. 30	153.8
DEC. 15	152.57	OCT. 6	152.61	DEC. 12	153.8	MAR. 19, 1969	154.0
JAN. 12, 1966	152.93	NOV. 16	152.95	JAN. 21, 1968	153.6	MAY 16	154.1
FEB. 9	152.48	DEC. 20	152.70	MAR. 10	152.8	JULY 30	153.7
MAR. 16	152.92	FEB. 1, 1967	152.53				

17N36E16P01 ART BENZEL

ALTITUDE OF LAND SURFACE 1660 FEET.

HIGHEST WATER LEVEL 75.90 BELOW LSD, FEB. 9, 1966, MAR. 16, 1966,
LOWEST WATER LEVEL 97.25 BELOW LSD, DEC. 12, 1967.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
SEP. 20, 1965	76.79	APR. 20, 1966	76.9	FEB. 1, 1967	77.7	MAR. 10, 1968	88.90
OCT. 13	76.73	JUNE 2	77.0	MAR. 17	78.4	MAY 19	82.3
NOV. 17	76.79	JULY 13	77.0	APR. 21	77.7	JULY 17	86.94
DEC. 15	79.05	AUG. 31	77.6	JUNE 22	77.8	SEP. 14	78.9
JAN. 12, 1966	76.9	OCT. 6	77.7	AUG. 16	83.60	OCT. 30	79.67
FEB. 9	75.9	NOV. 16	78.0	DEC. 12	97.25	MAR. 19, 1969	78.1
MAR. 16	75.9	DEC. 20	77.8	JAN. 21, 1968	93.41	MAY 16	78.5

17N40E15F01 WG CARTER

ALTITUDE OF LAND SURFACE 1780 FEET.

HIGHEST WATER LEVEL 49.15 BELOW LSD, JUNE 5, 1956,
LOWEST WATER LEVEL 51.60 BELOW LSD, NOV. 9, 1954.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 9, 1954	51.6	SEP. 6, 1955	51.1	JAN. 12, 1956	50.5 R	MAY 10, 1956	49.20
DEC. 6	51.1	OCT. 6	51.4	FEB. 9	50.8	JUNE 5	49.15
FEB. 3, 1955	50.85	NOV. 3	50.9	MAR. 8	50.0	JULY 2	49.16
JULY 6	50.66	DEC. 6	49.9	APR. 3	49.69	JULY 27	50.14

17N40E26A01 CS STORMENT

ALTITUDE OF LAND SURFACE 1620 FEET.

HIGHEST WATER LEVEL 24.66 BELOW LSD, MAR. 20, 1969,
LOWEST WATER LEVEL 40.93 BELOW LSD, JULY 27, 1970.
RECORDS AVAILABLE 1968-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 13, 1968	28.78	MAR. 26, 1970	25.43	NOV. 30, 1970	30.01	SEP. 28, 1971	32.00
MAR. 20, 1969	24.66	JUNE 5	31.96	JAN. 27, 1971	26.69	NOV. 30	29.26
DEC. 1	28.53	JULY 27	40.93	APR. 8	25.67	FEB. 2, 1972	27.08
JAN. 27, 1970	27.74	SEP. 28	34.73	AUG. 2	37.06	MAR. 20	25.75

17N42E18M01 PHIL SMICK

ALTITUDE OF LAND SURFACE 2035 FEET.

HIGHEST WATER LEVEL 145.29 BELOW LSD, DEC. 6, 1955,
LOWEST WATER LEVEL 164.40 BELOW LSD, SEP. 6, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 13, 1954	146.59	AUG. 5, 1955	149.1 B	JAN. 12, 1956	145.74	MAY 10, 1956	145.58
DEC. 6	146.36	SEP. 6	164.4 B	FEB. 9	145.96	JUNE 5	145.86
FEB. 3, 1955	146.85B	OCT. 6	146.25	MAR. 8	146.72	JULY 2	147.35
MAR. 28	146.17	NOV. 3	145.72	APR. 3	147.34	AUG. 24	146.84
JULY 6	152.1 A	DEC. 6	145.29				

17N42E19C01 ADAM BATUS

ALTITUDE OF LAND SURFACE 2120 FEET.

HIGHEST WATER LEVEL 84.60 BELOW LSD, MAR. 8, 1956,
LOWEST WATER LEVEL 86.86 BELOW LSD, AUG. 5, 1955.
RECORDS AVAILABLE 1955-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 5, 1955	86.86	NOV. 3, 1955	86.72	MAR. 8, 1956	84.60	JUNE 5, 1956	86.42
SEP. 6	86.75	DEC. 6	86.63	APR. 3	86.54	JULY 2	86.37
OCT. 6	86.82	JAN. 12, 1956	86.66	MAY 10	86.45	AUG. 24	86.36

17N43E35Q02 INLAND POWER

ALTITUDE OF LAND SURFACE 2340 FEET.

HIGHEST WATER LEVEL 9.27 BELOW LSD, MAR. 20, 1972,
LOWEST WATER LEVEL 21.78 BELOW LSD, AUG. 26, 1968.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 10, 1967	19.4	JUNE 28, 1968	20.03	JAN. 27, 1970	16.03	AUG. 2, 1971	16.93
FEB. 21	18.8	AUG. 26	21.78	MAR. 26	14.45	SEP. 28	17.51
MAR. 21	18.82	OCT. 23	20.94	JUNE 5	15.86	NOV. 22	17.51
MAY 3	18.59	DEC. 26	19.93	JULY 27	17.27	JAN. 18, 1972	12.60
JULY 5	17.32	FEB. 25, 1969	17.03	SEP. 28	18.15	MAR. 20	9.27
SEP. 5	20.02	APR. 24	12.89	NOV. 30	17.94	MAY 17	11.39
OCT. 18	20.31	JUNE 30	16.35	JAN. 27, 1971	16.28	JULY 3	16.30
DEC. 22	20.64	AUG. 29	17.84	APR. 8	15.02	SEP. 7	16.26
FEB. 27, 1968	19.43	OCT. 29	18.12	JUNE 14	12.99	OCT. 31	16.44
APR. 23	19.24						

17N44E16E01 CURTIS CATTLE

ALTITUDE OF LAND SURFACE 2395 FEET.

HIGHEST WATER LEVEL 7.57 BELOW LSD, APR. 24, 1969,
LOWEST WATER LEVEL 87.20 BELOW LSD, AUG. 26, 1968.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 2, 1966	24.9	JULY 5, 1967	33.70A	APR. 23, 1968	10.92	APR. 24, 1969	7.57
JAN. 10, 1967	17.7	SEP. 5	62.60A	AUG. 26	87.2 A	JUNE 30	11.55
FEB. 21	10.2	OCT. 18	28.24	OCT. 23	30.64	SEP. 2	56.70A
MAR. 21	9.00	DEC. 22	24.74	DEC. 26	13.12	OCT. 29	23.10
MAY 3	9.2	FEB. 27, 1968	8.84	FEB. 25, 1969	7.68		

17N45E04C01 TN OF GARFIELD NO 3

ALTITUDE OF LAND SURFACE 24800 FEET.

HIGHEST WATER LEVEL 135.47 BELOW LSD, MAR. 14, 1968,
LOWEST WATER LEVEL 142.50 BELOW LSD, SEP. 2, 1969.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967	137.55	DEC. 27, 1968	137.87	APR. 23, 1969	137.29	SEP. 2, 1969	142.50A
MAR. 14, 1968	135.47	FEB. 25, 1969	137.50	JUNE 30	140.50A	OCT. 29	139.80
OCT. 23	139.20						

18N36E04A01 DON HEINEMAN

ALTITUDE OF LAND SURFACE 1769 FEET.

HIGHEST WATER LEVEL 132.10 BELOW LSD, MAR. 15, 1966,
LOWEST WATER LEVEL 280.00 BELOW LSD, MAY 18, 1968.
RECORDS AVAILABLE 1965-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 15, 1965	139.52	NOV. 14, 1966	143.58	OCT. 29, 1968	140.	JAN. 30, 1971	142.2
NOV. 16	138.8	DEC. 21	142.13	JAN. 17, 1969	139.	APR. 9	141.4
DEC. 14	138.8	JAN. 30, 1967	141.7	MAR. 24	141.9	JUNE 15	141.7
JAN. 11, 1966	139.0	MAR. 11	141.8	MAY 17	137.	AUG. 4	260.3 A
FEB. 8	138.6	APR. 20	143.6	JULY 30	256. A	SEP. 29	143.8
MAR. 15	132.1	AUG. 17	279.2 A	DEC. 4	142.6	DEC. 1	143.4
APR. 21	142.1	OCT. 1	141.	MAR. 25, 1970	141.8	FEB. 4, 1972	142.8
MAY 31	276. A	DEC. 12	140.	JUNE 8	146.9	MAR. 21	141.9
JULY 11	144.23	MAR. 10, 1968	142.1	JULY 29	202.5	MAY 16	236.6 A
AUG. 39	176.85	MAY 18	280. A	SEP. 29	145.52	SEP. 6	145.1
SEP. 29	271.30A	JULY 16	147.4	DEC. 3	142.6	NOV. 1	144.0

18N36E13H01 L SIELAFF

ALTITUDE OF LAND SURFACE 1738 FEET.

HIGHEST WATER LEVEL 162.70 BELOW LSD, AUG. 17, 1967,
LOWEST WATER LEVEL 186.30 BELOW LSD, AUG. 29, 1966.
RECORDS AVAILABLE 1965-68.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 4, 1965	182.37	MAR. 14, 1966	176.2	SEP. 29, 1966	185.8	APR. 20, 1967	164.41
OCT. 15	182.98	APR. 22	164.7	NOV. 15	176.2	JUNE 22	165.59
NOV. 19	180.27	MAY 31	176.5	DEC. 19	174.1	AUG. 17	162.7
DEC. 14	176.10	JULY 12	185.8	JAN. 30, 1967	169.74	MAR. 12, 1968	167.7
JAN. 11, 1966	172.1	AUG. 29	186.3	MAR. 11	167.75	MAY 18	169.7
FEB. 8	178.4 A						

18N37E09G01 O MOELLER

ALTITUDE OF LAND SURFACE 1753 FEET.

HIGHEST WATER LEVEL 137.10 BELOW LSD, FEB. 8, 1966,
LOWEST WATER LEVEL 139.40 BELOW LSD, MAR. 11, 1968.
RECORDS AVAILABLE 1965-68.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 5, 1965	137.62	FEB. 8, 1966	137.1	JULY 12, 1966	138.05	JAN. 30, 1967	138.23
OCT. 15	138.18A	MAR. 14	137.2	AUG. 29	139.17	MAR. 11	138.65
NOV. 19	137.61A	APR. 22	137.5	SEP. 29	139.11	APR. 20	137.71
DEC. 14	137.40A	JUNE 3	137.88	DEC. 19	138.57	MAR. 11, 1968	139.4
JAN. 11, 1966	137.5						

18N37E22Q01 O MOELLER

ALTITUDE OF LAND SURFACE 1690 FEET.

HIGHEST WATER LEVEL 71.52 BELOW LSD, JUNE 22, 1967,
LOWEST WATER LEVEL 77.90 BELOW LSD, SEP. 16, 1968.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 5, 1965	75.23	APR. 22, 1966	75.8	MAR. 11, 1967	76.67	MAY 18, 1968	77.2
SEP. 19	75.43	JUNE 3	76.0	APR. 14	76.12	JULY 16	77.29
OCT. 14	75.32	JULY 12	76.0	JUNE 22	71.52	SEP. 16	77.9
NOV. 19	75.52	SEP. 1	76.2	AUG. 17	76.7	OCT. 29	77.50
DEC. 14	75.65	SEP. 29	77.5	DEC. 12	76.4	MAR. 20, 1969	77.1
JAN. 11, 1966	75.6	NOV. 17	76.7	JAN. 21, 1968	77.2	MAY 14	77.5 A
FEB. 8	75.7	DEC. 19	76.5	MAR. 10	77.02	JULY 31	77.8
MAR. 14	75.8	FEB. 2, 1967	76.50				

18N38E10N01

ALTITUDE OF LAND SURFACE 1680 FEET.

HIGHEST WATER LEVEL 17.68 BELOW LSD, MAR. 20, 1969,
LOWEST WATER LEVEL 21.40 BELOW LSD, OCT. 29, 1968.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
SEP. 3, 1965	18.27	JUNE 3, 1966	19.18	APR. 20, 1967	19.15	JULY 16, 1968	21.08
OCT. 15	18.47	JULY 12	19.33	JUNE 22	19.35	SEP. 16	21.3
NOV. 17	18.66	SEP. 1	20.50	AUG. 17	20.0	OCT. 29	21.40
DEC. 15	18.78	SEP. 29	19.65	DEC. 12	20.4	JAN. 17, 1969	21.39
JAN. 11, 1966	18.83	NOV. 17	19.79	JAN. 21, 1968	20.7	MAR. 20	17.68
FEB. 8	18.96	DEC. 19	19.46	MAR. 10	20.42	MAY 14	18.76
MAR. 14	19.03	JAN. 30, 1967	19.09	MAY 18	20.9	JULY 31	19.37
APR. 22	18.95	MAR. 11	19.10				

18N38E18H01 ROBT SPENCER

ALTITUDE OF LAND SURFACE 1677 FEET.

HIGHEST WATER LEVEL 68.50 BELOW LSD, MAR. 12, 1968,
LOWEST WATER LEVEL 210.00 BELOW LSD, MAY 16, 1972.
RECORDS AVAILABLE 1968, 1972.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 12, 1968	68.5	MAR. 24, 1969	81.	MAY 16, 1972	210. A	JULY 5, 1972	206. A
SEP. 16	207. A	MAR. 9, 1972	91.9				

18N41E06L01 LYLE HARWOOD

ALTITUDE OF LAND SURFACE 1940 FEET.

HIGHEST WATER LEVEL 46.90 BELOW LSD, MAR. 14, 1968,
LOWEST WATER LEVEL 347.00 BELOW LSD, MAY 17, 1968.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 23, 1967	317.90A	MAR. 23, 1969	48.90	NOV. 30, 1970	50.81	NOV. 30, 1971	52.96
MAR. 14, 1968	46.90	MAY 15	47.40	JAN. 27, 1971	50.85	FEB. 2, 1972	51.93
MAY 17	347. A	DEC. 1	49.40	APR. 8	50.4	MAR. 20	51.14
JULY 23	57.65	JAN. 27, 1970	48.76	JUNE 14	50.85	JULY 3	58.50
OCT. 31	50.70	MAR. 26	48.55	AUG. 2	59.29	OCT. 31	58.48
JAN. 17, 1969	49.04	JULY 27	57.10				

18N41E16F01 SCHNIEDMILLER

ALTITUDE OF LAND SURFACE 1955 FEET.

HIGHEST WATER LEVEL 51.50 BELOW LSD, JAN. 17, 1969,
LOWEST WATER LEVEL 58.50 BELOW LSD, MAY 17, 1968.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 23, 1967	56.11	JULY 23, 1968	58.40	OCT. 31, 1968	57.40	MAY 15, 1969	54.45A
MAR. 14, 1968	54.60	SEP. 12	57.96	JAN. 17, 1969	51.50	JULY 31	55.37A
MAY 17	58.50						

18N41E16M01 SCHNEIDMILLER

ALTITUDE OF LAND SURFACE 1890 FEET.

HIGHEST WATER LEVEL 7.00 BELOW LSD, JAN. 17, 1969,
LOWEST WATER LEVEL 99.40 BELOW LSD, MAY 17, 1968.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 23, 1967	44.3	JULY 23, 1968	9.	JAN. 17, 1969	7.	MAY 15, 1969	32. A
MAR. 14, 1968	46.	SEP. 12	42. A	MAR. 23	8.	JULY 31	8.
MAY 17	99.4 A	OCT. 31	9.				

18N43E05M01 E HUNTLEY

ALTITUDE OF LAND SURFACE 2270 FEET.

HIGHEST WATER LEVEL 6.00 BELOW LSD, APR. 24, 1969,
LOWEST WATER LEVEL 21.40 BELOW LSD, SEP. 5, 1967, AUG. 26, 1968.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 10, 1967	7.88	SEP. 5, 1967	21.4 A	JUNE 28, 1968	7.6	APR. 24, 1969	6.00
FEB. 21	7.10	OCT. 18	9.07	AUG. 26	21.4 A	JULY 3	7.17
MAR. 21	6.87	DEC. 21	8.92	OCT. 23	11.2	AUG. 29	18.14A
MAY 3	6.6	FEB. 27, 1968	7.28	DEC. 26	7.34	OCT. 29	8.44
JULY 5	7.29	APR. 24	7.44	FEB. 25, 1969	6.69		

18N43E35P01 GH NOE

ALTITUDE OF LAND SURFACE 2231 FEET.

HIGHEST WATER LEVEL 5.10 BELOW LSD, MAR. 20, 1949,
LOWEST WATER LEVEL 22.17 BELOW LSD, AUG. 22, 1958.
RECORDS AVAILABLE 1940-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 4, 1940	16.06	DEC. 9, 1952	12.97	APR. 25, 1959	9.26	MAR. 9, 1967	12.27		
DEC. 28	12.36	FEB. 18, 1953	7.93	JUNE 25	19.16A	APR. 20	9.62		
MAR. 28, 1941	9.62	APR. 25	8.81	AUG. 26	16.54A	MAY 25	10.17		
JUNE 4	10.36	JUNE 19	9.79	OCT. 29	12.94	JULY 14	11.53		
AUG. 8	12.03	AUG. 23	12.29	NOV. 29	17.47A	AUG. 30	7.57		
OCT. 10	12.45	OCT. 23	12.75	JAN. 23, 1960	12.21	OCT. 2	14.32		
DEC. 5	11.65	DEC. 16	11.93	MAY 25	13.02	NOV. 16	13.58		
FEB. 4, 1942	9.58	JAN. 19, 1954	11.12	JULY 22	13.15	DEC. 21	12.86		
APR. 1	9.22	MAR. 22	10.15	SEP. 30	15.31B	FEB. 8, 1968	11.11		
JUNE 6	10.39	APR. 22	9.50	DEC. 1	17.48B	MAR. 21	10.09		
AUG. 13	12.87	JUNE 18	10.98	JAN. 26, 1961	11.84	MAY 3	10.44		
OCT. 5	14.29	JULY 16	11.60	MAR. 24	11.33	JUNE 14	17.00A		
DEC. 10	12.16	AUG. 2	12.00	JULY 26	12.43	JULY 23	20.27		
MAY 29, 1943	9.07	SEP. 3	12.45	SEP. 26	13.01	SEP. 5	15.15		
DEC. 27	12.80	OCT. 7	12.57	DEC. 1	15.28	OCT. 15	14.05		
AUG. 17, 1944	14.57	NOV. 14	12.26	JAN. 28, 1962	14.73	DEC. 3	12.68		
DEC. 7	15.05	DEC. 8	12.15	MAR. 26	15.68B	JAN. 17, 1969	10.35		
JUNE 12, 1945	12.20	JAN. 5, 1955	11.33	MAY 36	14.80	MAR. 7	8.27		
OCT. 7	16.23	FEB. 3	11.33	JULY 26	14.51B	APR. 18	7.34		
APR. 8, 1946	7.54	MAR. 30	9.58	SEP. 20	15.30B	MAY 29	7.68		
AUG. 19	12.70	JULY 8	12.51	NOV. 30	14.30	JULY 18	16.76		
OCT. 12	13.71	AUG. 4	14.11	JAN. 23, 1963	15.63B	SEP. 4	13.28		
MAR. 5, 1947	9.43	SEP. 7	18.99B	SEP. 26	16.71B	OCT. 15	13.33		
MAY 25	10.98	OCT. 3	15.08	NOV. 21	16.60	NOV. 26	13.05		
JULY 19	13.25	NOV. 2	13.85	SEP. 29, 1964	20.34A	JAN. 7, 1970	12.29		
OCT. 19	14.85	DEC. 7	14.82B	NOV. 17	14.16	MAR. 18	7.46		
JAN. 19, 1948	9.93	JAN. 11, 1956	10.30	JAN. 19, 1965	10.15	APR. 30	9.04		
MAR. 20	7.91	FEB. 8	9.18	MAR. 15	8.17	JUNE 12	10.44		
JULY 17	9.28	APR. 4	6.51	MAY 24	9.65	JULY 22	11.12		
MAR. 20, 1949	5.10	MAY 9	8.15	AUG. 17	9.92A	SEP. 3	13.27		
MAY 7	8.42	JULY 2	10.66	SEP. 20	14.05A	OCT. 29	12.80		
DEC. 30	12.88	JULY 27	11.43	OCT. 27	13.55A	DEC. 10	11.77		
APR. 7, 1950	6.57	AUG. 24	12.88	DEC. 7	12.62	JAN. 18, 1971	9.82		
JUNE 29	10.23	OCT. 5	18.14B	JAN. 12, 1966	13.60A	MAR. 4	9.54		
OCT. 6	12.45	APR. 27, 1957	9.19	FEB. 14	10.68A	APR. 29	10.56A		
DEC. 15	9.97	JUNE 25	10.95	MAR. 23	9.88	JUNE 18	9.74		
APR. 2, 1951	7.18	AUG. 23	13.44	APR. 26	10.53	AUG. 12	13.44		
JUNE 22	9.17	OCT. 24	14.89B	MAY 24	11.20	OCT. 1	13.43		
AUG. 24	12.86	*FEB. 23, 1958	8.82	JUNE 22	13.63	NOV. 29	12.38		
OCT. 20	12.87	APR. 26	10.47	JULY 27	14.19	JAN. 18, 1972	10.49		
DEC. 13	11.69	JUNE 25	10.92	SEP. 1	15.65	MAR. 20	12.68		
FEB. 15, 1952	9.10	AUG. 22	22.17A	OCT. 6	14.37	MAY 17	8.00		
APR. 18	8.18	OCT. 20	14.33	OCT. 31	14.30	JUNE 20	10.12		
JUNE 5	10.21	DEC. 17	11.99	DEC. 16	11.92	AUG. 14	11.77		
AUG. 15	12.64	FEB. 27, 1959	7.05	JAN. 27, 1967	10.15	OCT. 11	11.81		
OCT. 18	13.72								

18N45E01L01 BERT LEHN

ALTITUDE OF LAND SURFACE 2595 FEET.

HIGHEST WATER LEVEL 4.33 BELOW LSD, APR. 23, 1969,
LOWEST WATER LEVEL 11.78 BELOW LSD, JAN. 10, 1967.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 10, 1967	11.78	SEP. 5, 1967	7.83	JUNE 28, 1968	7.02	APR. 23, 1969	4.33
FEB. 21	7.23	OCT. 18	8.43	AUG. 26	8.98	JUNE 30	8.79
MAR. 21	7.39	DEC. 22	8.72	OCT. 23	9.98	SEP. 2	9.00
MAY 3	5.98	FEB. 27, 1968	4.85	DEC. 27	7.60	OCT. 29	9.44
JULY 5	6.54	APR. 23	5.40				

18N45E01L02 BERT LEHN

ALTITUDE OF LAND SURFACE 2594 FEET.

HIGHEST WATER LEVEL 232.15 BELOW LSD, JAN. 10, 1967,
LOWEST WATER LEVEL 241.90 BELOW LSD, DEC. 27, 1968.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 1, 1966	232.7	JULY 5, 1967	241. A	FEB. 27, 1968	234.19	FEB. 25, 1969	234.74
JAN. 10, 1967	232.15	SEP. 5	240.	JUNE 28	237. A	APR. 23	234.57
FEB. 21	233.24	OCT. 18	234. A	AUG. 26	236.	JUNE 30	238.20A
MAR. 21	233.06	DEC. 22	233.	DEC. 27	241.9	OCT. 29	235.65

18N45E07F01 ROY PERINGER

ALTITUDE OF LAND SURFACE 2510 FEET.

HIGHEST WATER LEVEL 6.91 BELOW LSD, MAR. 2, 1972,
LOWEST WATER LEVEL 13.75 BELOW LSD, SEP. 12, 1968.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967	12.45	JUNE 30, 1969	10.35	SEP. 28, 1970	10.90	NOV. 23, 1971	10.86
MAR. 14, 1968	8.60	SEP. 2	11.35	NOV. 30	10.15	FEB. 2, 1972	8.12
JULY 24	12.78	OCT. 29	11.05	JAN. 27, 1971	7.87	MAR. 2	6.91
SEP. 12	13.75	JAN. 27, 1970	7.31	APR. 5	7.83	MAY 17	7.92
OCT. 23	12.94	MAR. 26	6.98	JUNE 14	8.20	JULY 3	10.17
DEC. 27	10.63	JUNE 5	9.14	AUG. 2	10.71	SEP. 7	10.82
FEB. 25, 1969	7.48	JULY 27	10.43	SEP. 28	11.08	OCT. 31	10.66
APR. 23	7.22						

18N45E32H01 JE LOVE

ALTITUDE OF LAND SURFACE 2525 FEET.

HIGHEST WATER LEVEL 46.96 BELOW LSD, APR. 25, 1959,
LOWEST WATER LEVEL 58.98 BELOW LSD, AUG. 25, 1966.
RECORDS AVAILABLE 1953-70.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 7, 1953	55.15	OCT. 24, 1957	55.75	NOV. 30, 1962	54.36	MAR. 9, 1967	56.48
JAN. 19, 1954	55.59	DEC. 16	54.18	JAN. 23, 1963	56.34	APR. 20	57.71
APR. 22	54.30	FEB. 24, 1958	53.90	MAR. 27	55.68	MAY 25	55.51
MAY 18	54.06	APR. 26	52.58	MAY 29	55.44	JULY 14	55.29
JUNE 18	54.44	JUNE 25	52.15	JULY 24	55.70	AUG. 30	55.39
JULY 16	54.42	AUG. 22	53.78	SEP. 27	56.40	OCT. 5	55.62
AUG. 2	54.38	OCT. 20	53.82	NOV. 20	56.61	NOV. 14	56.08
SEP. 3	54.78	DEC. 17	53.02	MAR. 24, 1964	57.83	DEC. 22	56.13
OCT. 7	54.99	FEB. 27, 1959	49.18	MAY 21	56.98	FEB. 8, 1968	56.83
NOV. 14	55.19	APR. 25	46.96	JULY 27	56.59	MAR. 21	55.53
DEC. 8	55.79	JUNE 25	50.16	SEP. 29	57.02	MAY 2	55.69
JAN. 5, 1955	56.19	AUG. 25	50.98	NOV. 17	57.84	JUNE 14	55.84
FEB. 3	56.47	OCT. 29	52.71	JAN. 20, 1965	57.67	JULY 26	55.98
MAR. 29	55.92	NOV. 29	53.19	MAR. 15	53.76	SEP. 6	56.39
JULY 8	55.51	MAR. 30, 1960	52.66	MAY 26	53.08	OCT. 17	57.11
AUG. 4	55.80	MAY 24	51.97	AUG. 17	54.15	DEC. 5	56.98
SEP. 7	55.94	JULY 22	52.65	SEP. 20	54.67	JAN. 12, 1969	57.38
SEP. 30	56.55	SEP. 30	53.26	OCT. 27	54.93	MAR. 4	56.91
NOV. 2	56.92	DEC. 1	54.03	DEC. 7	54.98	APR. 15	53.74
DEC. 7	57.29	JAN. 26, 1961	54.66	JAN. 12, 1966	55.85	MAY 27	52.47
JAN. 11, 1956	57.43	MAR. 24	51.88	MAR. 9	56.77	JULY 15	54.50
FEB. 8	56.69	JULY 26	51.90	MAY 11	55.44	SEP. 2	55.79
MAR. 7	53.47	SEP. 26	52.92	JUNE 15	55.50	OCT. 13	55.57
APR. 4	51.52	DEC. 1	53.67	JULY 20	56.55	NOV. 24	56.34
MAY 9	50.27	JAN. 28, 1962	54.13	AUG. 25	58.98	MAR. 16, 1970	50.82
JUNE 6	50.38	MAR. 26	53.69	OCT. 5	56.22	APR. 28	54.73
JUNE 29	52.26	MAY 26	54.23	NOV. 4	56.90	JUNE 10	53.19
AUG. 24	53.31	JULY 26	54.14	DEC. 12	57.13	JULY 22	53.17
AUG. 23, 1957	53.11	SEP. 20	54.53	JAN. 23, 1967	57.05		

19N36E19R01 MEYER

ALTITUDE OF LAND SURFACE 1806 FEET.

HIGHEST WATER LEVEL 135.00 BELOW LSD, JAN. 11, 1966, MAR. 14, 1966, MAY 14, 1969,
LOWEST WATER LEVEL 168.00 BELOW LSD, SEP. 18, 1965.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 22, 1965	142.	FEB. 8, 1966	140.	JAN. 30, 1967	140.	SEP. 17, 1968	154. A
SEP. 18	168. A	MAR. 14	135.	MAR. 11	139.	OCT. 30	137.
OCT. 15	140.	JULY 11	148.	APR. 20	140.	JAN. 17, 1969	138.
NOV. 16	143.	SEP. 29	157.	DEC. 12	137.	MAR. 14	137.
DEC. 14	138.	NOV. 14	140.	JAN. 21, 1968	137.	MAY 14	135.
JAN. 11, 1966	135.	DEC. 21	140.	MAR. 12	137.		

19N36E20H01 M GALBREATH

ALTITUDE OF LAND SURFACE 1863 FEET.

HIGHEST WATER LEVEL 238.00 BELOW LSD, NOV. 16, 1965, DEC. 14, 1965, FEB. 8, 1966, MAR. 14, 1966,
LOWEST WATER LEVEL 383.00 BELOW LSD, AUG. 29, 1966.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 3, 1965	353. A	MAR. 14, 1966	238.	DEC. 21, 1966	246.	MAR. 12, 1968	242.
SEP. 18	367. A	APR. 21	360. A	JAN. 30, 1967	241.	SEP. 17	297.
OCT. 15	247.	MAY 31	379. A	MAR. 11	259.	OCT. 30	296.
NOV. 16	238.	JULY 11	372. A	APR. 20	381. A	MAR. 14, 1969	253.
DEC. 14	238.	AUG. 29	383. A	JUNE 26	371.	MAY 14	341. A
JAN. 11, 1966	247.	SEP. 29	378. A	DEC. 12	258.	JULY 30	287.
FEB. 8	238.	NOV. 14	261.				

19N36E21M01 D FOULKES

ALTITUDE OF LAND SURFACE 1840 FEET.

HIGHEST WATER LEVEL 70.99 BELOW LSD, JULY 30, 1969,
LOWEST WATER LEVEL 75.13 BELOW LSD, JAN. 17, 1969.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 4, 1965	73.43	APR. 22, 1966	74.56	MAR. 11, 1967	73.89	JULY 16, 1968	75.05
SEP. 18	73.77	MAY 31	73.67	APR. 20	74.08	SEP. 17	75.1
OCT. 15	73.25	JULY 11	73.81	JUNE 26	73.91	OCT. 30	74.66
NOV. 16	73.32	AUG. 29	73.74	OCT. 3	73.9	JAN. 17, 1969	75.13
DEC. 14	73.36	SEP. 29	73.97	DEC. 12	73.75	MAR. 14	74.9
JAN. 11, 1966	73.52	NOV. 14	73.98	JAN. 21, 1968	73.61	MAY 14	73.65
FEB. 8	73.20	DEC. 21	74.4	MAR. 12	73.64	JULY 30	70.99
MAR. 14	73.19	JAN. 30, 1967	74.13	MAY 16	75.0		

19N36E34F01 DON HEINEMAN

ALTITUDE OF LAND SURFACE 1774 FEET.

HIGHEST WATER LEVEL 139.00 BELOW LSD, JUNE 26, 1967,
LOWEST WATER LEVEL 150.00 BELOW LSD, JULY 30, 1969.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 15, 1965	143.3	MAY 31, 1966	145. A	MAR. 11, 1967	142.	MAY 18, 1968	148. A
NOV. 19	143.3	JULY 11	145. A	APR. 20	140. A	SEP. 14	145.
DEC. 16	143.2	AUG. 29	142.	JUNE 26	139.	OCT. 29	145.
JAN. 11, 1966	143.6	SEP. 29	142.	AUG. 15	146.1	MAR. 24, 1969	144.
FEB. 8	143.2	NOV. 14	143.	OCT. 3	143.5	MAY 17	144.
MAR. 15	140.7	DEC. 20	141.	DEC. 12	145.	JULY 30	150. A
APR. 21	142.95	JAN. 30, 1967	141.	MAR. 10, 1968	144.		

19N37E17N01 H SCHWISON

ALTITUDE OF LAND SURFACE 1815 FEET.

HIGHEST WATER LEVEL 50.18 BELOW LSD, SEP. 29, 1966,
LOWEST WATER LEVEL 68.80 BELOW LSD, JULY 30, 1969.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 8, 1965	57.48	JULY 11, 1966	51.81	APR. 20, 1967	63.81	SEP. 17, 1968	53.0
DEC. 14	59.56	AUG. 29	52.29	JULY 25	61.50	OCT. 29	58.4
JAN. 11, 1966	58.42	SEP. 29	50.18	OCT. 3	53.2	JAN. 19, 1969	68.5
FEB. 8	53.98	NOV. 14	53.40	JAN. 21, 1968	60.2	MAR. 14	67.8
MAR. 14	55.44	DEC. 21	62.28	MAR. 10	60.5	MAY 14	59.90
APR. 22	56.63	JAN. 30, 1967	62.15	MAY 17	53.2	JULY 30	68.8
MAY 31	54.39	MAR. 13	63.34C	JULY 16	58.6		

19N38E13M01 BECKER

ALTITUDE OF LAND SURFACE 1852 FEET.

HIGHEST WATER LEVEL 78.00 BELOW LSD, MAR. 20, 1969,
LOWEST WATER LEVEL 83.45 BELOW LSD, SEP. 29, 1966.
RECORDS AVAILABLE 1965-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
SEP. 1, 1965	82.64	NOV. 17, 1966	83.05	MAR. 20, 1969	78.0	APR. 8, 1971	80.52
OCT. 15	81.60	DEC. 19	82.49	MAY 14	78.16	JUNE 15	80.56
NOV. 19	81.44	FEB. 2, 1967	81.53	JULY 30	79.72	AUG. 14	81.26
DEC. 15	81.15	MAR. 11	80.82	DEC. 1	80.8	SEP. 29	81.62
JAN. 11, 1966	80.94	APR. 20	80.67	JAN. 29, 1970	80.44	DEC. 1	79.57
FEB. 7	80.57	JUNE 26	80.42	MAR. 25	79.39	JAN. 24, 1972	81.17
MAR. 14	80.43	AUG. 15	80.9	JUNE 5	79.54	MAR. 21	80.61
APR. 22	80.39	MAR. 10, 1968	81.1	JULY 27	80.53	MAY 16	80.41
JUNE 3	81.32	MAY 18	80.65	SEP. 29	81.76	JULY 5	80.58
JULY 12	80.38	JULY 16	81.84	DEC. 3	81.37	SEP. 6	81.94
SEP. 1	83.23	SEP. 16	81.4	JAN. 30, 1971	80.95	NOV. 1	81.60
SEP. 29	83.45	OCT. 29	81.39				

19N39E01A01 C PHILLIPS

ALTITUDE OF LAND SURFACE 1990 FEET.

HIGHEST WATER LEVEL 17.13 BELOW LSD, APR. 3, 1956,
LOWEST WATER LEVEL 23.47 BELOW LSD, OCT. 7, 1954.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 7, 1954	23.47	MAR. 28, 1955	17.80	NOV. 3, 1955	20.26	MAR. 8, 1956	17.91
NOV. 19	21.54	JULY 11	19.47	DEC. 6	18.99	APR. 3	17.13
DEC. 6	20.75	AUG. 5	20.00	JAN. 12, 1956	19.26	JULY 30	21.85
FEB. 3, 1955	18.78	SEP. 6	20.49	FEB. 9	18.78		

19N40E10L01 E SHAWGO

ALTITUDE OF LAND SURFACE 1830 FEET.

HIGHEST WATER LEVEL 2.08 BELOW LSD, MAR. 23, 1969,
LOWEST WATER LEVEL 34.35 BELOW LSD, JULY 5, 1967.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 28, 1966	17.68	MAY 3, 1967	4.97	DEC. 20, 1967	9.27	OCT. 31, 1968	10.72
JAN. 11, 1967	2.88	JULY 5	34.35A	FEB. 27, 1968	3.69	MAR. 23, 1969	2.08
FEB. 21	5.47	SEP. 1	21.35	APR. 24	4.97	MAY 15	3.88
MAR. 21	5.20	OCT. 18	19.43	AUG. 26	19.59	JULY 31	8.10

19N40E16J01 LD SHAWGO

ALTITUDE OF LAND SURFACE 1825 FEET.

HIGHEST WATER LEVEL 7.96 BELOW LSD, MAY 15, 1969,
LOWEST WATER LEVEL 46.60 BELOW LSD, SEP. 1, 1967.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 11, 1967	12.69	JULY 5, 1967	17.80A	FEB. 27, 1968	10.49	OCT. 31, 1968	16.55
FEB. 21	11.26	SEP. 1	46.60A	APR. 24	10.60	JAN. 17, 1969	12.69
MAR. 21	10.76	OCT. 18	18.00	JUNE 28	42.9 A	MAR. 23	8.18
MAY 3	10.32	DEC. 20	13.25	AUG. 25	30.38	MAY 15	7.96

19N40E21N01 GLORFIELD BROS

ALTITUDE OF LAND SURFACE 1820 FEET.

HIGHEST WATER LEVEL 12.00 BELOW LSD, MAR. 23, 1969,
LOWEST WATER LEVEL 44.10 BELOW LSD, AUG. 25, 1968.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB. 21, 1967	17.91	SEP. 1, 1967	20.	APR. 24, 1968	17.	MAR. 23, 1969	12.
MAR. 21	16.87	OCT. 18	43.9	JUNE 28	44.0 A	MAY 15	13.
MAY 3	17.00	DEC. 20	26.2	AUG. 25	44.1 A	JULY 31	21.
JULY 5	15. A	FEB. 27, 1968	15.7	OCT. 31	25.		

19N40E25C01 JP GLORFIELD

ALTITUDE OF LAND SURFACE 1740 FEET.

HIGHEST WATER LEVEL 5.00 ABOVE LSD, SEP. 12, 1968,
LOWEST WATER LEVEL 1.28 ABOVE LSD, JAN. 11, 1967.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JAN. 11, 1967 +	1.28	MAY 3, 1967 +	1.68	OCT. 31, 1968 +	1.5	MAY 15, 1969 +	3.0
FEB. 21 +	1.70	FEB. 27, 1968 +	2.10	MAR. 23, 1969 +	2.5	JULY 31 +	3.6
MAR. 21 +	1.88	SEP. 12 +	5.0				

19N41E14001 CC COUNTRYMAN

ALTITUDE OF LAND SURFACE 2040 FEET.

HIGHEST WATER LEVEL 3.58 BELOW LSD, MAY 15, 1969,
LOWEST WATER LEVEL 134.00 BELOW LSD, AUG. 26, 1968.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 28, 1966	13.	JULY 5, 1967	9.	FEB. 27, 1968	5.60	AUG. 26, 1968	134. A
JAN. 11, 1967	9. A	SEP. 1	124. A	APR. 24	4.77	OCT. 31	7.50
FEB. 21	9.	OCT. 18	8.75	JUNE 28	10.77	MAY 15, 1969	3.58
MAY 3	8.	DEC. 20	5.99				

19N41E36R02 THOMAS KIMBALL

ALTITUDE OF LAND SURFACE 1963 FEET.

HIGHEST WATER LEVEL 1.42 BELOW LSD, MAY 25, 1960,
LOWEST WATER LEVEL 12.24 BELOW LSD, FEB. 4, 1942.
RECORDS AVAILABLE 1941-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 5, 1941	3.58	APR. 22, 1954	2.39	MAR. 29, 1960	2.25	DEC. 22, 1966	2.32
FEB. 4, 1942	12.24A	JUNE 18	2.37	MAY 25	1.42	JAN. 27, 1967	2.31
DEC. 27, 1943	2.28	JULY 16	2.40	JULY 22	4.95	MAR. 9	2.30
AUG. 17, 1944	5.89	AUG. 2	3.23	SEP. 30	2.37	APR. 20	2.32
DEC. 7	2.57	SEP. 3	2.38	DEC. 1	2.27	MAY 22	2.32
JUNE 12, 1945	10.13	OCT. 7	2.37	JAN. 28, 1961	2.25	JULY 14	6.47
OCT. 7	3.37	NOV. 14	2.37	MAR. 24	1.77	SEP. 1	6.75
APR. 8, 1946	2.27	DEC. 8	2.37	JULY 26	2.55	OCT. 2	3.69
AUG. 19	3.59	JAN. 5, 1955	2.37	SEP. 26	2.80	NOV. 17	2.35
OCT. 12	2.45	MAR. 28	2.37	DEC. 1	2.27	DEC. 20	2.38
MAR. 5, 1947	2.35	AUG. 4	9.17	JAN. 28, 1962	3.17	FEB. 8, 1968	2.34
MAY 25	2.37	SEP. 7	9.92	MAR. 26	2.21	MAR. 21	2.35
JULY 19	3.71	OCT. 3	2.45	MAY 26	3.76	MAY 3	2.35
OCT. 19	2.40	NOV. 2	2.37	JULY 26	2.89	JUNE 14	3.73
JAN. 19, 1948	2.30	DEC. 7	2.35	SEP. 20	2.35	JULY 23	7.31
MAR. 22	2.26	JAN. 11, 1956	4.63	NOV. 30	2.24	SEP. 5	3.33
OCT. 23	2.39	FEB. 8	2.33	JAN. 23, 1963	2.93	OCT. 15	2.34
MAR. 20, 1949	2.35	APR. 4	2.31	MAR. 27	2.24	DEC. 3	2.36
DEC. 30	2.37	MAY 9	2.36	MAY 29	2.27	JAN. 14, 1969	2.29
APR. 7, 1950	2.35	JUNE 6	2.46	JULY 24	2.61	MAR. 7	2.25
JUNE 29	2.44	JULY 2	4.66	SEP. 26	2.69	APR. 18	2.22
OCT. 6	2.53	JULY 27	2.86	NOV. 21	2.26	MAY 29	2.29
DEC. 15	2.38	AUG. 22	3.97	JAN. 24, 1964	2.26	JULY 18	4.19
APR. 2, 1951	2.37	OCT. 5	3.50	MAY 21	2.27	SEP. 5	3.11
JUNE 22	2.67	DEC. 18	2.34	SEP. 29	2.41	OCT. 16	2.37
AUG. 24	5.34	APR. 27, 1957	2.35	NOV. 17	2.28	NOV. 26	2.34
OCT. 20	2.38	JUNE 25	2.37	JAN. 19, 1965	2.29	JAN. 8, 1970	2.34
DEC. 13	2.39	AUG. 23	2.40	MAR. 15	2.38	MAR. 18	2.21
FEB. 15, 1952	2.38	OCT. 24	2.21	MAY 24	2.52	APR. 30	2.31
APR. 18	2.40	DEC. 16	2.09	AUG. 17	3.91	JUNE 12	2.43
JUNE 5	3.69	FEB. 24, 1958	2.36	SEP. 20	2.35	JULY 23	2.39
AUG. 15	7.04	APR. 26	2.35	OCT. 27	2.39	SEP. 4	3.67
OCT. 18	2.32	JUNE 26	3.52	DEC. 7	2.32	OCT. 29	2.57
DEC. 9	2.01	AUG. 20	7.02	JAN. 10, 1966	2.31	DEC. 10	2.34
FEB. 18, 1953	2.36	OCT. 20	3.88	FEB. 7	2.32	JAN. 17, 1971	2.25
APR. 25	2.37	FEB. 27, 1959	2.35	MAR. 14	2.32	MAR. 4	2.30
JUNE 19	2.38	APR. 25	2.32	MAY 20	2.39	APR. 29	2.34
AUG. 23	5.03	JUNE 25	2.37	JUNE 22	3.66	AUG. 12	7.66
OCT. 23	2.36	AUG. 26	2.66	JULY 27	7.37	OCT. 1	2.64
DEC. 16	5.64	OCT. 29	2.30	SEP. 1	3.97	JAN. 18, 1972	3.52
JAN. 19, 1954	2.39	NOV. 29	2.14	OCT. 6	2.95	MAR. 7	2.68
MAR. 22	2.36	JAN. 23, 1960	3.61	NOV. 4	2.41	APR. 17	2.33

19N42E36B01 BURDET PRINCE

ALTITUDE OF LAND SURFACE 2290 FEET.

HIGHEST WATER LEVEL 248.00 BELOW LSD, DEC. 4, 1966,
LOWEST WATER LEVEL 250.90 BELOW LSD, AUG. 29, 1969.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 4, 1966	248.0	OCT. 18, 1967	249.8	JUNE 28, 1968	250.6	APR. 24, 1969	248.8
JAN. 11, 1967	249.6	DEC. 21	248.74	AUG. 26	250.6	JULY 3	248.8
FEB. 21	248.1	FEB. 27, 1968	250.4	OCT. 23	250.6	AUG. 29	250.9
MAR. 21	249.7	APR. 24	250.5	DEC. 26	249.7	OCT. 29	250.6

19N43E28B01 MCGREGOR CO

ALTITUDE OF LAND SURFACE 2290 FEET.

HIGHEST WATER LEVEL 11.60 ABOVE LSD, MAY 17, 1972,
LOWEST WATER LEVEL 2.00 ABOVE LSD, OCT. 29, 1969.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967 +	6.9	JULY 3, 1969 +	10.0	SEP. 28, 1970 +	8.5	NOV. 23, 1971 +	9.5
JULY 24, 1968 +	2.7	AUG. 29 +	7.4	NOV. 30 +	6.3	JAN. 18, 1972 +	11.1
SEP. 12 +	6.1	OCT. 29 +	2.0	JAN. 27, 1971 +	10.8	MAR. 20 +	8.7
OCT. 23 +	7.7	JAN. 27, 1970 +	10.3	APR. 8 +	11.1	MAY 17 +	11.6
DEC. 26 +	6.2	MAR. 26 +	11.4	JUNE 14 +	10.8	JULY 3 +	6.30
FEB. 25, 1969 +	7.8	JUNE 5 +	7.6	AUG. 4 +	7.5	SEP. 7 +	5.6
APR. 24 +	8.9	JULY 27 +	6.7	SEP. 28 +	9.2	OCT. 31 +	9.3

19N44E16A01 D HANFORD

ALTITUDE OF LAND SURFACE 2495 FEET.

HIGHEST WATER LEVEL 1.82 BELOW LSD, APR. 4, 1956,
LOWEST WATER LEVEL 10.25 BELOW LSD, NOV. 2, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAY 18, 1954	4.77	DEC. 8, 1954	9.65	SEP. 7, 1955	9.78	APR. 4, 1956	1.82
JUNE 18	5.45	JAN. 5, 1955	8.62	SEP. 30	10.19	MAY 9	4.59
JULY 16	6.76	FEB. 3	7.72	NOV. 2	10.25	JUNE 6	5.49
AUG. 2	7.60	MAR. 29	6.91	DEC. 7	8.86	JUNE 29	6.29
SEP. 3	8.99	JULY 8	7.93	JAN. 11, 1956	4.93	JULY 27	7.52
OCT. 7	9.65	AUG. 4	8.81	FEB. 8	3.85	AUG. 24	9.20

19N44E22K01 TN OF OAKESDALE NO 1

ALTITUDE OF LAND SURFACE 2460 FEET.

HIGHEST WATER LEVEL 91.85 BELOW LSD, FEB. 25, 1969,
LOWEST WATER LEVEL 204.00 BELOW LSD, AUG. 24, 1967.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967	204.00A	OCT. 23, 1968	95.3	APR. 23, 1969	97.24	SEP. 2, 1969	201. A
MAR. 14, 1968	200. A	DEC. 27	93.0	JUNE 30	94.4	OCT. 29	95.81
SEP. 17	203. A	FEB. 25, 1969	91.85				

19N45E14A02 PAUL THOMPSON

ALTITUDE OF LAND SURFACE 2545 FEET.

HIGHEST WATER LEVEL 15.42 BELOW LSD, APR. 4, 1956,
LOWEST WATER LEVEL 24.61 BELOW LSD, SEP. 7, 1955.
RECORDS AVAILABLE 1953-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 8, 1953	22.89	OCT. 7, 1954	23.58	AUG. 4, 1955	22.77	FEB. 8, 1956	17.52
MAY 18, 1954	18.41	DEC. 8	22.75	SEP. 7	24.61	MAR. 7	16.48
JUNE 18	19.24	JAN. 5, 1955	20.71	SEP. 30	24.48	APR. 4	15.42
JULY 16	20.75	FEB. 3	19.94	NOV. 2	23.63	MAY 9	16.36
AUG. 2	22.18	MAR. 29	18.51	DEC. 7	21.33	JUNE 6	17.65
SEP. 3	23.40	JULY 8	21.20	JAN. 11, 1956	18.43	AUG. 24	22.38

19N45E25G01 BERT LEHN NO 2

ALTITUDE OF LAND SURFACE 2600 FEET.

HIGHEST WATER LEVEL 65.90 BELOW LSD, FEB. 21, 1967,
LOWEST WATER LEVEL 186.60 BELOW LSD, APR. 23, 1968.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC. 1, 1966	78.1	MAY 3, 1967	97.	FEB. 27, 1968	85.5	FEB. 25, 1969	97.2
JAN. 10, 1967	72.2	SEP. 5	84.	APR. 23	186.6 A	APR. 23	91.7
FEB. 21	65.9	OCT. 18	97.1	AUG. 26	131.1	JUNE 30	104.6
MAR. 21	157.8 A	DEC. 22	96.	DEC. 27	103.5	OCT. 29	98.4

19N45E25G02 BERT LEHN

ALTITUDE OF LAND SURFACE 2600 FEET.

HIGHEST WATER LEVEL
LOWEST WATER LEVEL
RECORDS AVAILABLE 1962-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
APR. 23, 1962	23.62	JUNE 30, 1969	26.63	NOV. 30, 1970	30.94	FEB. 2, 1972	28.2
JUNE 28, 1968	36.8	OCT. 29	33.86	JAN. 27, 1971	28.55	MAR. 2	25.82
AUG. 26	40.60	JAN. 27, 1970	30.53	APR. 5	25.69	MAY 17	24.94
OCT. 23	35.91	MAR. 26	22.64	JUNE 14	26.36	JULY 3	28.38
DEC. 27	29.82	JUNE 5	29.2	AUG. 4	29.78	SEP. 7	31.47
FEB. 25, 1969	23.92	JULY 27	30.05	SEP. 28	33.44	OCT. 31	31.62
APR. 23	22.90	SEP. 28	34.11	NOV. 23	30.70		

20N37E20A01 AF SCHWEER

ALTITUDE OF LAND SURFACE 1957 FEET.

HIGHEST WATER LEVEL 102.00 BELOW LSD, FEB. 11, 1966,
LOWEST WATER LEVEL 184.82 BELOW LSD, AUG. 29, 1966.
RECORDS AVAILABLE 1965-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
JULY 21, 1965	148. A	MAR. 14, 1966	105.	DEC. 21, 1966	124.	MAR. 11, 1968	121.
SEP. 17	136.	APR. 18	156.8 A	JAN. 30, 1967	121.	SEP. 16	169.
OCT. 12	113.	MAY 31	180.4 A	MAR. 13	116.	OCT. 29	144.
NOV. 16	109.	JULY 11	132.1	APR. 20	127.39	JAN. 19, 1969	130.
DEC. 14	107.	AUG. 29	184.82A	OCT. 1	153.	MAR. 18	125.
JAN. 11, 1966	105.	SEP. 29	152.	DEC. 11	132.	MAY 14	157. A
FEB. 11	102.	NOV. 14	133.	JAN. 20, 1968	124.	JULY 15	133.

20N38E08E01

ALTITUDE OF LAND SURFACE 1915 FEET.

HIGHEST WATER LEVEL 39.32 BELOW LSD, MAR. 13, 1967,
LOWEST WATER LEVEL 48.02 BELOW LSD, DEC. 14, 1965.
RECORDS AVAILABLE 1965-67.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 6, 1965	41.07	FEB. 11, 1966	40.65	JULY 11, 1966	41.4	DEC. 22, 1966	41.6
OCT. 12	41.74	MAR. 15	40.44	AUG. 29	42.1	JAN. 30, 1967	40.85
NOV. 19	41.54	APR. 18	39.94	SEP. 29	42.50	MAR. 13	39.32
DEC. 14	48.02	MAY 31	41.40	NOV. 14	42.7	APR. 20	40.32

20N39E12N01 EARL SWIFT

ALTITUDE OF LAND SURFACE 2110 FEET.

HIGHEST WATER LEVEL 161.00 BELOW LSD, MAR. 14, 1968,
LOWEST WATER LEVEL 168.45 BELOW LSD, SEP. 12, 1968.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 22, 1967	167.8	MAY 14, 1969	162.28	SEP. 29, 1970	166.3	DEC. 1, 1971	167.7
MAR. 14, 1968	161.00	JULY 31	164.87	NOV. 30	166.4	JAN. 24, 1972	167.0
MAY 18	167.5	DEC. 1	167.2	JAN. 27, 1971	166.6	MAR. 21	165.8
JULY 16		JAN. 29, 1970	165.9	APR. 8	165.2	MAY 16	165.6
SEP. 12	168.45	MAR. 26	163.2	JUNE 15	165.7	JULY 5	166.0
OCT. 29	167.90	JUNE 5	164.8	AUG. 2	165.1 A	SEP. 6	167.4
MAR. 23, 1969	163.69	JULY 27	165.2	SEP. 29	167.5	NOV. 1	167.9

20N39E22H01 MRS J MELVILLE

ALTITUDE OF LAND SURFACE 2040 FEET.

HIGHEST WATER LEVEL 73.00 BELOW LSD, MAY 14, 1969,
LOWEST WATER LEVEL 193.00 BELOW LSD, JULY 31, 1969.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 22, 1967	190.97A	MAY 15, 1968	192. A	SEP. 12, 1968	79.	MAY 14, 1969	73.
MAR. 14, 1968	78.	JULY 16	78.	OCT. 29	79.	JULY 31	193. A

20N39E28G01 TN OF LAMONT

ALTITUDE OF LAND SURFACE 1955 FEET.

HIGHEST WATER LEVEL 16.00 BELOW LSD, MAR. 23, 1969, MAY 24, 1969,
LOWEST WATER LEVEL 84.00 BELOW LSD, JULY 31, 1969.
RECORDS AVAILABLE 1967-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 25, 1967	17.70	JULY 16, 1968	20.	JAN. 17, 1969	19.	MAY 24, 1969	16.
MAR. 14, 1968	18.	OCT. 29	23.	MAR. 23	16.	JULY 31	84. A

20N42E13M02 TN OF MALDEN

ALTITUDE OF LAND SURFACE 2140 FEET.

HIGHEST WATER LEVEL 112.52 BELOW LSD, APR. 24, 1969,
LOWEST WATER LEVEL 155.50 BELOW LSD, AUG. 24, 1967.
RECORDS AVAILABLE 1967-69, 1972.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
AUG. 24, 1967	155.50A	DEC. 26, 1968	118.74A	OCT. 29, 1969	113.39	JULY 3, 1972	113.44
MAR. 14, 1968	133.50A	APR. 24, 1969	112.52	MAR. 16, 1972	113.1	SEP. 7	113.18
JULY 24	113.45	JULY 3	118.70	MAY 23	112.91	OCT. 31	119.37
SEP. 12	113.33						

20N43E19D01 CJ SHINDLER

ALTITUDE OF LAND SURFACE 2190 FEET.

HIGHEST WATER LEVEL 17.05 BELOW LSD, APR. 4, 1956,
LOWEST WATER LEVEL 17.24 BELOW LSD, DEC. 7, 1955.
RECORDS AVAILABLE 1954-56.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 18, 1954	17.20	JULY 8, 1955	17.20	DEC. 7, 1955	17.24	JUNE 6, 1956	17.20
NOV. 14	17.16	AUG. 4	17.23	JAN. 11, 1956	17.18	JUNE 29	17.21
DEC. 8	17.21	SEP. 7	17.22	FEB. 8	17.22	JULY 27	17.21
JAN. 5, 1955	17.23	OCT. 3	17.19	APR. 4	17.05	AUG. 22	17.23
MAR. 29	17.19	NOV. 2	17.23	MAY 9	17.20		

21N38E14E01 PNW BELL TEL CO

ALTITUDE OF LAND SURFACE 2185 FEET.

HIGHEST WATER LEVEL 150.00 BELOW LSD, FEB. 22, 1967, MAR. 22, 1967, APR. 20, 1967, MAR. 11, 1968,
LOWEST WATER LEVEL 166.00 BELOW LSD, OCT. 3, 1967.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 29, 1966	154.41	JULY 25, 1967	157.5	MAR. 11, 1968	150.	JAN. 19, 1969	152.
JAN. 17, 1967	152.	AUG. 25	159.7	MAY 17	160. B	MAR. 18	155.
FEB. 22	150.	OCT. 3	166.0	JULY 16	158. B	MAY 14	152.
MAR. 22	150.	DEC. 11	154.	SEP. 15	160.	JULY 15	152.
APR. 20	150.	JAN. 20, 1968	152.	OCT. 29	156.		

21N38E23A01 TN OF SPRAGUE

ALTITUDE OF LAND SURFACE 1900 FEET.

HIGHEST WATER LEVEL 10.41 BELOW LSD, MAY 14, 1969,
LOWEST WATER LEVEL 21.10 BELOW LSD, OCT. 29, 1968.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 17, 1966	20.37	DEC. 11, 1967	18.60A	SEP. 13, 1968	20.15A	MAR. 18, 1969	13.67A
JAN. 17, 1967	18.12A	JAN. 20, 1968	17.91A	OCT. 29	21.1 A	MAY 14	10.41A
APR. 20	14.14A	MAR. 11	14.16A	JAN. 19, 1969	17.35A	JULY 15	16.35A
JUNE 26	16.5 A	MAY 17	17.7 A				

21N38E23A02 TN OF SPRAGUE

ALTITUDE OF LAND SURFACE 1900 FEET.

HIGHEST WATER LEVEL 62.50 BELOW LSD, JAN. 20, 1968,
LOWEST WATER LEVEL 84.40 BELOW LSD, OCT. 3, 1967.
RECORDS AVAILABLE 1966-69.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV. 17, 1966	72.95	DEC. 11, 1967	62.90C	MAY 17, 1968	75.0 C	OCT. 29, 1968	78.4 C
MAR. 22, 1967	72.5 C	JAN. 20, 1968	62.50C	JULY 16	77.70C	JAN. 19, 1969	75.5 C
JUNE 26	71.00C	MAR. 11	65.80C	SEP. 15	77.2 C	MAR. 18	72.3 C
OCT. 3	84.4 C						

21N38E24G02 C DAWERITZ

ALTITUDE OF LAND SURFACE 1920 FEET.

HIGHEST WATER LEVEL 5.59 BELOW LSD, APR. 7, 1950,
LOWEST WATER LEVEL 20.24 BELOW LSD, OCT. 7, 1945.
RECORDS AVAILABLE 1945-54, 1956.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT. 7, 1945	20.24	MAR. 23, 1949	6.25	APR. 18, 1952	7.45	DEC. 16, 1953	16.57
AUG. 19, 1946	14.80	JUNE 22	12.97	JUNE 5	10.89	JAN. 19, 1954	13.82
OCT. 12	16.85	APR. 7, 1950	5.59	AUG. 15	15.79	APR. 22	10.49
MAR. 6, 1947	14.25	MAY 28	8.80	OCT. 18	16.88	JUNE 18	14.61
MAY 25	14.55	DEC. 15	15.34	DEC. 9	17.14	JULY 16	15.67
JULY 19	17.43	APR. 2, 1951	7.31	FEB. 16, 1953	7.48	AUG. 2	15.89
NOV. 2	19.07	JUNE 22	12.39	FEB. 21	8.45	AUG. 2, 1956	14.58
JAN. 19, 1948	6.95	AUG. 25	15.60	APR. 25	10.75	AUG. 20	14.85
MAR. 22	7.62	OCT. 20	16.05	JUNE 19	13.49	OCT. 5	15.62
APR. 7	7.88	DEC. 13	14.56	AUG. 23	15.92	DEC. 15	15.65
AUG. 11	9.90	FEB. 15, 1952	10.42	OCT. 23	15.84	APR. 27, 1957	11.35
OCT. 26	13.72						

21N38E28D01 WA STATE HWYS

ALTITUDE OF LAND SURFACE 1997 FEET.

HIGHEST WATER LEVEL 99.75 BELOW LSD, MAY 16, 1972,
LOWEST WATER LEVEL 102.71 BELOW LSD, SEP. 6, 1972.
RECORDS AVAILABLE 1972-73.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
MAR. 15, 1972	100.65	JULY 5, 1972	102.1	NOV. 1, 1972	101.9	MAR. 13, 1973	101.0
MAY 16	99.75	SEP. 6	102.71	JAN. 3, 1973	101.7		

21N41E31R01 OSBORN PELSBY

ALTITUDE OF LAND SURFACE 2070 FEET.

HIGHEST WATER LEVEL 0.65 ABOVE LSD, APR. 22, 1969,
LOWEST WATER LEVEL 16.36 BELOW LSD, OCT. 24, 1968.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB. 13, 1967	0.41	JUNE 28, 1968	2.19	JAN. 29, 1970	0.26	AUG. 2, 1971	1.01
MAR. 19	0.56	AUG. 27	6.22	MAR. 26	+ 0.17	SEP. 29	5.40
JULY 5	1.14	OCT. 24	16.36	JUNE 5	0.89	DEC. 1	10.16
SEP. 1	9.99	DEC. 24	9.97	JULY 27	1.16	JAN. 24, 1972	4.12
OCT. 18	10.23	FEB. 24, 1969	6.72	NOV. 30	9.96	MAR. 20	+ 0.30
DEC. 20	15.67	APR. 22	+ 0.65	JAN. 27, 1971	0.94	MAY 16	0.27
FEB. 28, 1968	1.98	AUG. 27	0.94	APR. 8	0.55	SEP. 6	2.40
APR. 24	0.89	OCT. 28	2.56				

23N41E19R01 PM STEELE

ALTITUDE OF LAND SURFACE 2365 FEET.

HIGHEST WATER LEVEL 75.10 BELOW LSD, JULY 6, 1967,
LOWEST WATER LEVEL 90.00 BELOW LSD, SEP. 6, 1972.
RECORDS AVAILABLE 1967-72.

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
FEB. 10, 1967	78.73A	JUNE 24, 1968	79.6	JAN. 29, 1970	78.4	JUNE 15, 1971	81.4
MAR. 9	77.30	AUG. 27	80.3	MAR. 25	77.9	AUG. 5	87.0
MAY 3	76.8	OCT. 22	80.4	JUNE 5	78.6	SEP. 29	87.1
JULY 6	75.10	DEC. 24	79.5	JULY 29	82.6	DEC. 1	85.15
SEP. 7	83.95	FEB. 27, 1969	78.9	SEP. 29	85.1	JAN. 24, 1972	82.4
OCT. 20	83.15	APR. 22	77.2	DEC. 3	82.0	MAR. 21	80.2
DEC. 22	82.2	JULY 3	76.6	JAN. 30, 1971	80.7	MAY 16	80.7
FEB. 28, 1968	87.4	AUG. 27	77.1	APR. 12	80.2	SEP. 6	90.0
APR. 22	79.2	OCT. 28	78.6				

TABLE C6.--Chemical analyses of water from selected streams

Date of collection	Time	Mean discharge (ft^3/s)	Milligrams per liter: Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3) as N	Nitrite (NO_2) as N	Ammonia (NH_4) as N	Total Kjeldahl nitrogen (N)	Dissolved ortho-phosphorus (P)
Palouse River below South Fork, at Colfax (13349210)																		
1970																		
Dec. 9	1000	152	--	--	--	--	--	--	--	--	--	--	--	2.1	0.030	0.37	0.63	0.13
1971																		
Jan. 26	1010	1,520	--	--	--	--	--	--	--	--	--	--	--	4.5	.020	--	.78	.080
Feb. 9	1000	338	--	--	--	--	--	--	--	--	--	--	--	.32	.000	.19	.29	.13
23	1020	478	--	--	--	--	--	--	--	--	--	--	--	1.4	--	--	.28	--
Mar. 9	1045	422	--	--	--	--	--	--	--	--	--	--	--	2.1	.010	.30	1.4	.080
23	0945	1,070	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.34	--
Apr. 6	1015	670	--	--	--	--	--	--	--	--	--	--	--	1.4	.010	.16	.25	--
20	0950	430	--	--	--	--	--	--	--	--	--	--	--	.41	.000	.06	.19	.11
May 4	0930	915	--	--	--	--	--	--	--	--	--	--	--	.07	.000	.08	.30	.030
18	0955	338	--	--	--	--	--	--	--	--	--	--	--	.23	.010	.05	.35	.11
June 2	0945	321	--	--	--	--	--	--	--	--	--	--	--	--	--	--	.10	--
15	0920	900	--	--	--	--	--	--	--	--	--	--	--	.27	.010	.02	.04	.070
July 6	0915	83	--	--	--	--	--	--	--	--	--	--	--	.11	.000	.02	.09	.060
20	0955	37	--	--	--	--	--	--	--	--	--	--	--	.25	.020	.26	.26	.13
Aug. 3	1005	16	--	--	--	--	--	--	--	--	--	--	--	.14	.000	.11	.14	.060
17	1005	7.5	--	--	--	--	--	--	--	--	--	--	--	.13	.010	.27	.31	.090
Sept. 7	1000	35	--	--	--	--	--	--	--	--	--	--	--	.06	.000	.16	.16	.020
21	0950	22	--	--	--	--	--	--	--	--	--	--	--	.21	.000	.05	.19	.030
Pine Creek at Rosalia (13349340)																		
1968																		
Feb. 20	--	--	25	16	4.6	12	4.8	39	0	--	14	4.0	0.2	11	--	--	--	--
June 28	--	--	20	30	20	40	4.6	239	0	--	19	21	.4	2.0	--	--	--	--
Union Flat Creek near Colton (13350300)																		
1968																		
Feb. 20	--	--	26	17	4.8	14	4.0	47	0	--	12	6.0	0.3	10	--	--	--	--
June 27	--	--	5.2	5.2	1.5	2.4	.8	29	0	--	.4	.2	.1	.11	--	--	--	--
Palouse River at Hooper (13351000)																		
1959																		
July 30	0845	26	23	33	12	22	5.3	200	0	164	11	6.0	0.4	0.13	--	--	--	--
Aug. 26	1415	51	20	29	12	22	5.5	176	7	156	11	6.2	.5	.22	--	--	--	--
Sept. 29	1545	120	21	29	11	21	5.3	178	0	146	8.5	9.0	.3	.36	--	--	--	--
Nov. 4	1545	160	26	24	8.6	16	3.7	142	0	116	7.0	5.5	.3	.43	--	--	--	--
Dec. 3	1345	294	28	18	5.3	11	3.4	99	0	81	5.5	3.2	.3	1.0	--	--	--	--

Total phosphorus (P)	Dissolved solids (residue at 180°C)	Hardness (Ca,Mg)	Noncarbonate hardness	Specific conductance (micromhos at 25 °C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Turbidity (JTU)	Dissolved oxygen (mg/l)	Coliform (MPN)	Immediate coliform (col.per 100 ml)	Milligrams per liter: Arsenic (As)	Boron (B)	Total chromium (Cr)	Copper (Cu)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)
0.22	--	--	--	--	7.6	1.5	--	40	12.8	--	2,000	--	--	--	--	--	--	--
.090	--	--	--	115	7.0	3.1	--	200	12.0	--	30,000	--	--	--	--	--	--	--
.16	--	--	--	57	7.1	.5	2?	15	13.1	--	<1,000	--	--	--	--	--	--	--
--	--	--	--	78	7.4	2.9	93	30	12.5	--	700	--	--	--	--	--	--	--
.13	--	--	--	101	7.4	3.1	89	25	12.4	--	1,500	--	--	--	--	--	--	--
.18	--	--	--	104	7.4	5.0	189	100	11.9	--	2,000	--	--	--	--	--	--	--
.19	--	--	--	58	7.3	8.8	82	20	10.8	--	4,000	--	--	--	--	--	--	--
.14	--	--	--	56	7.5	8.3	66	15	11.3	--	1,200	--	--	--	--	--	--	--
.090	--	--	--	36	7.4	11.2	51	20	10.0	--	4,000	--	--	--	--	--	--	--
.14	--	--	--	54	7.7	8.9	73	20	12.1	--	2,000	--	--	--	--	--	--	--
.070	--	--	--	79	7.3	10.8	76	70	9.4	--	30,000	--	--	--	--	--	--	--
.080	--	--	--	74	7.5	13.3	160	45	9.5	--	5,000	--	--	--	--	--	--	--
.070	--	--	--	75	7.6	15.4	37	4	10.0	--	1,000	--	--	--	--	--	--	--
.14	--	--	--	143	8.2	25.0	44	2	8.5	--	1,500	--	--	--	--	--	--	--
.080	--	--	--	150	8.5	24.8	40	4	8.5	--	4,000	--	--	--	--	--	--	--
.090	--	--	--	132	8.3	18.8	43	3	10.0	--	2,000	--	--	--	--	--	--	--
.080	--	--	--	100	8.0	14.6	44	3	10.0	--	1,300	--	--	--	--	--	--	--
.060	--	--	--	135	7.9	10.5	52	2	10.8	--	1,000	--	--	--	--	--	--	--
--	145	59	27	181	6.7	8	25	--	--	--	--	--	--	--	--	0.00	0.11	--
--	297	158	0	472	7.7	15	20	--	--	--	--	--	--	--	--	.00	.20	--
--	157	62	24	192	6.7	7	30	--	--	--	--	--	--	--	--	0.00	0.10	--
--	37	19	0	57	6.9	8	20	--	--	--	--	--	--	--	--	.00	.00	--
--	215	130	0	368	8.1	20.6	10	--	8.9	--	--	--	--	--	--	--	--	--
--	198	121	0	326	8.5	21.7	10	--	10.5	--	--	--	--	--	--	--	--	--
--	196	119	0	316	8.0	11.7	10	--	11.2	--	--	--	--	--	--	--	--	--
--	162	95	0	257	8.0	7.8	20	--	11.5	--	--	--	--	--	--	--	--	--
--	136	67	0	182	8.1	2.2	25	--	12.4	--	--	--	--	0.00	0.01	--	--	--

TABLE C6.--Chemical analyses of water from selected streams--Continued

Date of collection	Time	Mean discharge (ft^3/s)	Milligrams per liter: Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3) as N	Nitrite (NO_2) as N	Ammonia (NH_4) as N	Total Kjeldahl nitrogen (N)	Dissolved orthophosphorus (P)
Palouse River at Hooper (13351000)--Continued																		
1960																		
Jan. 7	1230	190	31	26	8.3	16	3.9	140	0	115	7.3	4.5	0.2	2.0	--	--	--	--
Feb. 3	0800	1,770	27	18	5.2	11	4.8	79	0	65	7.2	3.0	.2	4.7	--	--	--	--
Mar. 2	1640	200	33	26	8.0	16	3.6	135	0	111	8.8	4.2	.3	2.5	--	--	--	--
30	1730	2,340	24	9.0	2.8	6.3	1.8	49	0	40	4.2	.8	.2	.50	--	--	--	--
Apr. 27	1600	962	28	14	4.5	9.0	2.2	77	0	63	4.8	1.8	.2	.81	--	--	--	--
May 24	1940	545	22	15	5.5	10	2.6	90	0	74	4.8	3.0	.1	.54	--	--	--	--
June 21	1500	158	18	22	7.8	16	3.5	130	2	107	6.4	7.2	.3	.16	--	--	--	--
July 28	1200	10	22	36	12	24	5.4	194	8	159	11	7.8	.2	.02	--	--	--	--
Aug. 22	1230	15	16	32	14	25	5.5	209	0	171	11	8.8	.7	.06	--	--	--	--
Sept.28	1120	36	20	31	13	24	4.9	198	0	162	11	8.8	.4	.22	--	--	--	--
Oct. 24	1130	71	16	29	13	27	5.2	184	4	151	10	15	.4	.27	--	--	--	--
Nov. 23	1100	202	23	18	6.1	13	3.6	97	0	80	6.8	7.0	.3	1.2	--	--	--	--
Dec. 20	1010	756	29	25	8.3	16	3.6	138	0	113	8.8	5.2	.3	1.9	--	--	--	--
1961																		
Jan. 24	1230	360	28	19	6.8	12	3.2	103	0	84	7.0	3.2	.2	1.8	--	--	--	--
Feb. 28	1120	2,020	29	17	5.5	11	2.9	82	0	67	9.2	2.2	.3	2.9	--	--	--	--
Mar. 28	0945	1,600	27	17	5.8	11	2.9	90	0	74	8.4	2.5	.2	1.7	--	--	--	--
Apr. 24	1425	1,110	25	18	5.2	12	2.4	96	0	79	6.8	2.8	.1	.88	--	--	--	--
May 24	1030	484	23	19	6.5	12	3.3	108	0	89	6.2	3.0	.6	.74	--	--	--	--
June 26	1715	98	20	26	11	19	5.2	148	10	121	9.8	5.0	.3	.14	--	--	--	--
July 25	1345	37	21	30	12	28	6.5	208	0	171	12	7.5	.4	.36	--	--	--	--
Aug. 29	1200	14	28	34	14	25	6.5	218	0	179	12	8.0	.4	.50	--	--	--	--
Sept.25	1500	29	25	34	14	26	5.6	196	10	161	12	8.5	.4	.68	--	--	--	--
Oct. 18	1210	70	19	33	14	27	5.4	204	2	167	12	16	.4	.29	--	--	--	--
Nov. 21	--	55	21	31	12	22	4.5	186	0	153	9.8	8.2	.3	.72	--	--	--	--
Dec. 22	1310	408	29	28	9.8	21	5.1	156	0	128	11	8.5	.3	1.6	--	--	--	--
1962																		
Jan. 23	1528	180	38	33	11	22	4.9	180	0	148	14	6.5	.3	2.9	--	--	--	--
Feb. 15	1225	938	28	16	5.0	11	3.1	77	0	63	8.4	3.2	.2	2.3	--	--	--	--
Mar. 9	1645	600	26	19	5.3	11	3.6	94	0	77	7.2	4.2	.3	2.7	--	--	--	--
May 1	1440	564	22	16	5.8	12	3.1	93	0	76	6.2	4.0	.3	.86	--	--	--	--
25	1705	386	21	21	7.2	15	3.4	121	0	99	7.0	4.0	.3	.61	--	--	--	--
June 26	0740	116	23	23	8.8	16	4.8	139	0	114	8.6	4.2	.2	.84	--	--	--	--
July 31	0750	17	27	35	13	25	6.0	212	0	174	12	8.0	.1	.36	--	--	--	--
Aug. 16	0750	17	24	35	12	25	5.6	208	0	171	11	8.0	.3	.50	--	--	--	--
Sept.24	0750	25	22	34	14	26	5.3	216	0	177	11	10	.3	.32	--	--	--	--
Oct. 22	1530	89	24	24	8.4	17	4.6	139	0	114	8.8	7.0	.3	.77	--	--	--	--
Nov. 14	0955	135	26	29	10	22	4.2	166	0	136	12	9.8	.3	.79	--	--	--	--
Dec. 19	1415	700	30	22	6.9	15	3.3	110	0	90	7.8	5.8	.3	2.7	--	--	--	--

Total phosphorus (P)	Dissolved solids (residue at 180°C)	Hardness (Ca,Mg)	Noncarbonate hardness	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Turbidity (JTU)	Dissolved oxygen (mg/l)	Coliform (MPN)	Immediate coliform (Col. per 100 ml)	Milligrams per liter: Arsenic (As)	Boron (B)	Total chromium (Cr)	Copper (Cu)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)
--	181	99	0	271	7.9	1.7	5	--	12.9	--	--	--	--	--	--	--	--	--
--	173	66	2	188	7.1	1.0	15	--	12.6	--	--	--	--	--	--	--	--	--
--	180	98	0	264	7.9	.0	5	--	5.3	--	--	--	--	--	--	--	--	--
--	89	34	0	98	7.2	7.0	25	--	9.9	--	--	--	--	--	--	--	--	--
--	118	54	0	152	7.5	10.3	50	--	10.2	--	--	--	--	0.00	0.01	--	--	--
--	123	60	0	163	7.3	13.2	30	--	11.5	--	--	--	--	--	--	--	--	--
--	149	87	0	235	8.3	19.5	10	--	14.0	--	--	--	--	--	--	--	--	--
--	221	139	0	354	8.6	26.1	10	--	10.6	--	--	--	--	--	--	--	--	--
--	220	136	0	361	8.1	18.3	10	--	11.0	--	--	--	--	--	--	--	--	--
--	213	133	0	357	8.1	16.1	5	--	9.2	--	--	--	--	.01	.03	--	--	--
--	212	127	0	356	8.5	12.2	10	--	10.2	--	--	--	--	--	--	--	--	--
--	139	70	0	198	7.4	3.9	30	--	11.7	--	--	--	--	--	--	--	--	--
--	176	97	0	260	7.7	1.1	15	--	13.3	--	--	--	--	--	--	--	--	--
--	146	76	0	200	7.8	2.8	20	--	13.2	--	--	--	--	.03	.08	--	--	--
--	144	65	0	177	7.6	6.0	30	--	12.4	--	--	--	--	--	--	--	--	--
--	139	66	0	181	7.6	9.4	25	--	11.1	--	--	--	--	--	--	--	--	--
--	129	66	0	179	7.7	9.4	15	--	11.5	--	--	--	--	--	--	--	--	--
--	138	74	0	197	7.7	18.9	20	--	8.4	--	--	--	--	--	--	--	--	--
--	185	111	0	291	8.8	25.6	10	--	10.3	--	--	--	--	--	--	--	--	--
--	228	126	0	369	8.0	27.0	20	--	10.5	--	--	--	--	--	--	--	--	--
--	225	144	0	379	7.8	22.1	10	--	9.0	--	--	--	--	--	--	--	--	--
--	231	143	0	382	8.7	15.4	5	--	11.4	--	--	--	--	--	--	--	--	--
--	232	139	0	384	8.3	16.7	10	--	--	--	--	--	--	--	--	--	--	--
--	205	127	0	337	7.8	1.1	5	--	14.2	--	--	0.01	0.00	.01	.03	--	--	0.05
--	198	110	0	307	7.4	1.7	20	--	--	--	--	--	--	--	--	--	--	--
--	234	128	0	347	7.8	.0	20	--	--	--	--	--	--	--	--	--	--	--
--	138	60	0	168	7.3	5.0	25	--	--	--	--	--	--	--	--	--	--	--
--	146	70	0	201	7.3	--	20	--	--	--	--	--	--	--	--	--	--	--
--	120	64	0	178	8.0	14.4	20	--	--	--	--	.00	.00	.01	.10	--	--	<.05
--	142	82	0	222	7.9	16.7	10	--	--	--	--	--	--	--	--	--	--	--
--	162	94	0	253	7.5	17.8	20	--	--	--	--	--	--	--	--	--	--	--
--	232	142	0	376	8.0	23.3	10	--	--	--	--	--	--	--	--	--	--	--
--	228	138	0	372	8.0	21.7	10	--	--	--	--	--	--	--	--	--	--	--
--	232	144	0	383	8.2	15.6	10	--	--	--	--	--	--	--	--	--	--	--
--	169	94	0	259	7.9	12.2	20	--	--	--	--	--	--	--	--	--	--	--
--	202	116	0	311	7.9	3.9	15	--	--	--	--	--	--	--	--	--	--	--
--	166	83	0	227	7.2	6.1	10	--	--	--	--	.00	.02	.01	.09	--	--	.10

TABLE C6.--Chemical analyses of water from selected streams -Continued

Date of collection	Time	Mean discharge (ft^3/s)	Milligrams per liter: Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3) as N	Nitrite (NO_2) as N	Ammonia (NH_4) as N	Total Kjeldahl nitrogen (N)	Dissolved ortho-phosphorus (P)
Palouse River at Hooper (13351000)--Continued																		
1963																		
Jan. 17	1450	130	33	28	10	18	4.2	156	0	128	10	4.8	0.3	1.8	--	--	--	--
Feb. 20	1050	1,900	26	19	5.2	13	3.7	86	0	71	8.8	3.0	.2	3.4	--	--	--	--
Mar. 20	0950	364	27	23	7.6	15	3.7	127	0	104	9.2	4.5	.2	1.3	--	--	--	--
Apr. 16	1410	675	26	18	6.3	11	2.9	96	0	79	7.6	3.0	.2	.88	--	--	--	--
May 15	0905	309	14	21	7.8	15	3.8	120	4	98	7.6	4.2	.2	.32	--	--	--	--
June 12	1850	135	21	25	9.8	19	5.0	156	0	128	9.2	6.0	.3	.43	--	--	--	--
July 1	0915	63	24	28	11	18	5.7	168	0	138	11	5.2	.3	1.2	--	--	--	--
July 19	1145	26	24	32	15	23	5.9	204	0	167	11	6.5	.4	.38	--	--	--	--
Aug. 28	1605	8.0	29	35	16	27	6.7	227	0	186	13	8.5	.4	.54	--	--	--	--
Sept.23	0940	23	26	35	14	25	5.6	217	0	178	12	8.2	.4	.68	--	--	--	--
Oct. 16	0750	34	26	35	14	29	5.8	216	0	177	12	12	.4	.86	--	--	--	--
Nov. 19	1005	109	26	24	8.6	18	4.5	142	0	116	8.8	6.8	.3	.88	--	--	--	--
Dec. 19	1810	123	29	25	11	19	4.2	152	0	125	9.6	7.8	.3	1.3	--	--	--	--
1964																		
Jan. 19	1435	187	28	26	8.8	18	4.8	136	0	112	9.6	5.5	.3	2.7	--	--	--	--
Feb. 18	0910	400	29	24	7.6	16	4.1	117	0	96	11	4.2	.3	3.8	--	--	--	--
Mar. 20	0630	2,190	26	15	5.2	9.5	4.0	57	0	47	10	2.0	.2	5.42	--	--	--	--
Apr. 14	0950	1,140	24	9.0	3.3	6.3	2.1	50	0	41	4.6	1.5	.2	.81	--	--	--	--
May 19	1540	910	18	6.5	2.5	4.8	1.4	40	0	33	3.4	1.0	.1	.20	--	--	--	--
June 19	0845	248	16	16	6.6	11	3.0	97	0	80	5.4	3.0	.2	.45	--	--	--	--
July 21	0850	60	19	24	10	19	4.3	155	0	127	8.2	5.5	.3	.41	--	--	--	--
Aug. 12	1550	25	15	28	11	21	5.1	176	0	144	9.2	7.0	.3	.38	--	--	--	--
Sept.28	1700	50	17	29	11	21	5.0	175	0	144	8.6	7.5	.2	.59	--	--	--	--
Oct. 20	1135	62	13	27	11	23	4.5	172	0	141	8.8	8.8	.3	.38	--	--	--	--
Nov. 18	1400	86	19	27	11	22	4.2	168	0	138	8.4	10	.3	.79	--	--	--	--
Dec. 26	1055	3,500	21	8.4	3.0	5.2	2.7	42	0	34	6.4	1.0	.1	1.5	--	--	--	--
1965																		
Jan. 19	1040	1,020	25	19	5.5	15	3.5	88	0	72	9.2	3.2	.3	3.2	--	--	--	--
Feb. 23	1030	2,650	25	15	5.4	11	3.0	72	0	59	7.8	2.5	.1	2.2	--	--	--	--
Mar. 17	1610	1,090	25	16	6.4	12	3.3	93	0	76	8.0	2.5	.1	1.5	--	--	--	--
Apr. 23	0945	3,350	21	8.0	3.0	6.1	2.3	45	0	37	4.6	1.5	.2	.56	--	--	--	--
May 24	0720	373	14	20	8.1	15	3.7	125	0	102	7.6	4.5	.5	.47	--	--	--	--
July 12	0930	70	22	28	11	20	5.0	174	0	143	10	5.2	.3	.52	--	--	--	--
Aug. 19	1230	20	24	30	13	24	5.8	196	0	161	11	7.8	.4	.50	--	--	--	--
Sept.22	1505	63	17	29	12	23	4.4	179	3	147	10	7.2	.4	.45	--	--	--	--
Oct. 25	0840	58	12	30	11	25	4.6	187	0	153	9.8	10	.4	.29	--	--	--	--
Dec. 9	1230	103	23	27	9.7	20	3.8	156	0	128	8.4	7.2	.4	.97	--	--	--	--

Total phosphorus (P)	Dissolved solids (residue at 180°C)	Hardness (Ca,Mg)	Noncarbonate hardness	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Turbidity (JTU)	Dissolved oxygen (mg/l)	Coliform (MPN)	Immediate coliform (col. per 100 ml)	Milligrams per liter: Arsenic (As)	Boron (B)	Total chromium (Cr)	Copper (Cu)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)
--	200	112	0	287	7.8	0.0	10	--	--	--	--	--	--	--	--	--	--	--
--	151	69	0	195	7.1	3.9	30	--	--	--	--	--	--	--	--	--	--	--
--	162	89	0	241	7.8	7.2	15	--	--	--	--	--	--	--	--	--	--	--
--	130	71	0	182	7.7	10.0	20	--	--	--	--	--	--	--	--	--	--	--
--	138	84	0	220	8.5	16.1	15	--	--	--	--	--	--	--	--	--	--	--
--	177	103	0	274	7.8	5.0	10	--	13.0	--	--	0.00	0.04	0.01	0.39	--	--	<0.05
--	199	117	0	307	7.5	18.3	15	--	--	--	--	--	--	--	--	--	--	--
--	226	140	0	354	7.7	21.1	10	--	--	--	--	--	--	--	--	--	--	--
--	250	153	0	397	7.7	20.6	10	--	--	--	--	--	--	--	--	--	--	--
--	239	147	0	378	7.4	17.2	5	--	--	--	--	--	--	--	--	--	--	--
--	244	146	0	389	7.9	20.0	10	--	--	--	--	--	--	--	--	--	--	--
--	170	95	0	267	7.3	--	10	--	--	--	--	--	--	--	--	--	--	--
--	186	107	0	286	7.5	1.7	10	--	--	--	--	--	--	--	--	--	--	--
--	181	101	0	271	7.6	1.1	15	--	--	--	--	--	--	--	--	--	--	--
--	178	91	0	251	7.4	3.9	15	--	--	--	--	.00	.02	.00	.03	--	--	<.05
--	156	59	12	168	6.9	3.9	--	--	--	--	--	--	--	--	--	--	--	--
--	95	36	0	101	7.3	8.9	35	--	--	--	--	--	--	--	--	--	--	--
--	70	26	0	76	7.4	18.3	10	--	--	--	--	--	--	--	--	--	--	--
--	115	67	0	177	7.4	16.1	5	--	--	--	--	--	--	--	--	--	--	--
--	169	103	0	277	7.6	21.7	10	--	--	--	--	--	--	--	--	--	--	--
--	182	117	0	316	7.9	23.3	5	--	--	--	--	.00	.01	.00	.04	--	--	.05
--	181	118	0	309	7.9	--	5	--	--	--	--	--	--	--	--	--	--	--
--	178	114	0	310	7.3	9.4	5	--	--	--	--	--	--	--	--	--	--	--
--	191	112	0	312	8.0	--	0	--	--	--	--	--	--	--	--	--	--	--
--	89	33	0	97	6.4	.6	15	--	--	--	--	--	--	--	--	--	--	--
--	143	70	0	196	7.6	2.2	10	--	--	--	--	.00	.02	.00	.05	--	--	<.05
--	128	58	0	162	7.2	2.2	10	--	--	--	--	--	--	--	--	--	--	--
--	131	66	0	182	7.7	2.2	5	--	--	--	--	--	--	--	--	--	--	--
--	79	32	0	92	7.0	10.6	25	--	--	--	--	--	--	--	--	--	--	--
--	138	84	0	228	7.6	11.1	0	--	--	--	--	--	--	--	--	--	--	--
--	193	117	0	304	8.2	17.2	5	--	--	--	--	--	--	--	--	--	--	--
--	215	130	0	349	7.9	19.4	5	--	--	--	--	.00	.09	.00	.03	--	--	<.05
--	198	122	0	323	8.3	16.7	5	--	--	--	--	--	--	--	--	--	--	--
--	196	122	0	335	7.9	10.0	5	--	--	--	--	--	--	--	--	--	--	--
--	181	108	0	292	7.8	5.6	5	--	--	--	--	--	--	--	--	--	--	--

TABLE Co.--Chemical analyses of water from selected streams--Continued

Date of collection	Time	Mean discharge (ft^3/s)	Milligrams per liter: Silica (SiO_2)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3) as N	Nitrite (NO_2) as N	Ammonia (NH_4) as N	Total Kjeldahl nitrogen (N)	Dissolved orthophosphorus (P)
Palouse River at Hooper (13351000)--Continued																		
1966																		
Jan. 13	1315	508	22	19	6.7	12	4.2	94	0	77	10	3.5	0.2	3.2	--	--	--	--
Feb. 10	1430	324	25	22	7.8	15	4.0	116	0	95	9.8	5.0	.3	2.5	--	--	--	--
Mar. 14	1445	1,540	24	13	3.7	8.5	2.8	62	0	51	7.2	2.2	.2	2.1	--	--	--	--
Apr. 6	1430	897	22	10	3.4	6.7	2.1	56	0	46	4.4	2.0	.2	.59	--	--	--	--
May 12	1300	202	13	15	5.2	12	2.6	91	0	75	5.2	3.2	.3	.18	--	--	--	--
June 14	0855	77	14	24	8.9	20	3.8	147	0	121	8.4	7.5	.4	.50	--	--	--	--
July 21	0910	13	25	29	11	24	4.4	183	0	150	10	7.5	.4	.32	--	--	--	--
Aug. 24	1240	4.0	28	38	16	32	7.5	238	0	195	15	18	.4	.29	--	--	--	--
Sept.30	1400	74	15	26	13	24	4.1	162	12	133	12	7.0	.3	.20	--	--	--	--
Oct. 31	1645	49	9.0	31	14	32	4.6	209	0	171	12	16	.4	.20	--	--	--	--
Dec. 15	1330	765	24	19	5.0	15	3.9	103	0	84	9.2	6.5	.2	1.9	--	--	--	--
1967																		
Jan. 25	1520	574	25	16	6.6	11	3.3	75	0	62	9.2	3.2	.2	5.2	--	--	--	--
Mar. 8	1255	475	25	17	6.7	13	2.8	95	0	78	7.6	3.8	.2	2.1	--	--	--	--
Apr. 19	1145	556	21	14	4.7	9.6	2.6	80	0	66	6.2	3.0	.2	.70	--	--	--	--
May 23	1115	650	23	13	3.8	8.6	2.8	72	0	59	5.2	2.0	.2	.68	--	--	--	--
July 13	1200	45	22	27	9.1	19	4.6	156	4	128	9.6	5.0	.3	.05	--	--	--	--
Oct. 5	1300	15	24	31	12	24	4.7	200	0	164	10	6.4	.3	.45	--	--	--	--
Nov. 15	1245	120	19	25	9.0	19	4.5	152	0	125	9.0	7.8	.3	.70	--	--	--	--
Dec. 29	1735	414	19	11	3.5	9.5	4.9	49	0	40	7.2	3.2	.2	2.2	--	--	--	--
1968																		
Jan. 31	1415	180	26	24	7.8	17	4.1	120	0	98	9.6	4.4	.2	3.4	--	--	--	--
Mar. 7	1310	625	24	17	5.7	11	3.0	90	0	74	8.0	2.5	.2	2.1	--	--	--	--
Mar. 18	1420	382	25	20	6.8	14	3.2	108	0	89	8.0	3.7	.2	1.6	--	--	--	--
Apr. 2	1450	375	21	17	5.6	12	2.7	94	0	77	8.2	3.0	.2	1.2	--	--	--	--
May 12	1610	92	8.1	22	7.8	17	3.6	127	4	111	7.4	4.4	.3	.16	--	--	--	--
Aug. 10	1500	.0	27	29	17	37	11	204	15	192	15	22	.4	.05	--	--	--	--
Nov. 12	1435	164	18	25	8.1	22	4.1	143	0	117	11	8.5	.3	.75	--	--	--	--
1969																		
Feb. 24	1530	972	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 12	1130	3,310	24	14	4.4	9.2	2.9	67	0	55	8.0	2.0	.3	2.1	--	--	--	--
Aug. 10	1655	22	27	26	12	27	5.0	184	0	151	12	7.5	.3	.56	--	--	--	--
1970																		
Dec. 8	1620	227	--	--	--	--	--	--	--	--	--	--	--	1.6	0.03	0.16	0.62	0.31
1971																		
Jan. 25	1610	1,690	--	--	--	--	--	--	--	--	--	--	--	4.1	.02	--	.82	.16
Feb. 8	1410	564	--	--	--	--	--	--	--	--	--	--	--	1.6	.00	.31	.41	.23
22	1410	822	--	--	--	--	--	--	--	--	--	--	--	2.7	--	--	.35	--
Mar. 8	1435	515	--	--	--	--	--	--	--	--	--	--	--	3.8	.03	.33	1.1	.19
22	1400	1,340	--	--	--	--	--	--	--	--	--	--	--	5.4	.02	.15	.53	--
Apr. 5	1330	995	--	--	--	--	--	--	--	--	--	--	--	2.8	.03	.29	.37	--
19	1345	866	--	--	--	--	--	--	--	--	--	--	--	1.8	.02	.02	.21	.16
May 3	1250	765	--	--	--	--	--	--	--	--	--	--	--	1.0	.01	.05	.17	.08
17	1410	479	--	--	--	--	--	--	--	--	--	--	--	.66	.01	.50	.30	.12
June 1	1500	328	--	--	--	--	--	--	--	--	--	--	--	.93	.00	.02	.[illegible]	.05
14	1500	1,390	--	--	--	--	--	--	--	--	--	--	--	1.1	.02	.02	.07	.08
July 5	1300	154	--	--	--	--	--	--	--	--	--	--	--	.63	.00	.03	.08	.10
19	1450	91	--	--	--	--	--	--	--	--	--	--	--	.17	.01	.07	.18	.11
Aug. 2	1425	45	--	--	--	--	--	--	--	--	--	--	--	.00	.01	.08	.21	.13
16	1400	26	--	--	--	--	--	--	--	--	--	--	--	.14	.00	.44	.70	.12
Sept. 6	1500	63	--	--	--	--	--	--	--	--	--	--	--	3.7	.13	.47	1.1	.18
20	1425	59	--	--	--	--	--	--	--	--	--	--	--	2.8	.01	.12	.50	.19

Total phosphorus (P)	Dissolved solids (residue at 180°C)	Hardness (Ca,Mg)	Noncarbonate hardness	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Turbidity (JTU)	Dissolved oxygen (mg/l)	Coliform (MPN)	Immediate coliform (col. per 100 ml)	Milligrams per liter: Arsenic (As)	Boron (B)	Total chromium (Cr)	Copper (Cu)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)
--	147	75	0	211	7.4	5.0	20	--	--	--	--	--	--	--	--	--	--	--
--	167	87	0	239	7.8	2.8	15	--	--	--	--	--	--	--	--	--	--	--
--	122	49	0	140	7.3	7.8	20	--	--	--	--	--	--	--	--	--	--	--
--	88	39	0	112	7.3	11.7	10	--	--	--	--	--	--	--	--	--	--	--
--	103	58	0	166	7.9	15.0	5	--	--	--	--	--	--	--	--	--	--	--
--	161	95	0	267	7.3	17.8	5	--	--	--	--	--	--	--	--	--	--	--
--	203	118	0	322	7.8	21.1	5	--	--	--	--	0.00	0.04	0.01	0.01	--	--	0.01
--	273	161	0	439	8.1	27.2	10	--	--	--	--	--	--	--	--	--	--	--
--	193	118	0	316	8.6	18.9	5	--	--	--	--	--	--	--	--	--	--	--
--	223	135	0	390	8.2	10.6	5	--	--	--	--	--	--	--	--	--	--	--
--	148	68	0	221	7.2	4.4	20	--	--	--	--	--	--	--	--	--	--	--
--	156	67	6	192	7.6	1.1	50	--	--	--	--	--	--	--	--	--	--	--
--	134	70	0	195	7.7	--	20	--	--	--	--	--	--	--	--	--	--	--
--	105	54	0	153	7.4	--	10	--	--	--	--	.00	.02	.00	.00	--	--	.00
--	102	48	0	134	7.5	--	5	--	--	--	--	.00	.01	.00	.00	--	--	.02
--	186	105	0	281	8.4	--	10	--	--	--	--	--	--	--	--	--	--	--
--	218	127	0	346	8.0	13.0	10	--	--	--	--	--	--	--	--	--	--	--
--	181	100	0	284	7.8	8.0	10	--	--	--	--	--	--	--	--	--	--	--
--	92	42	2	128	7.0	2.0	40	--	--	--	--	--	--	--	--	--	--	--
--	175	92	0	253	7.7	1.0	5	--	--	--	--	--	--	--	--	--	--	--
--	130	66	0	186	7.7	8.0	10	--	--	--	--	--	--	--	--	--	--	--
--	144	78	0	213	7.8	9.0	10	--	13.2	230	--	--	--	--	--	--	--	--
--	132	66	0	189	7.8	10.0	20	--	--	--	--	--	--	--	--	--	--	--
--	138	87	0	237	8.3	20.0	10	--	8.9	92	--	--	--	--	--	--	--	--
--	272	143	0	429	8.7	28.0	20	--	1.1	40	--	.00	--	.00	.00	--	--	.00
--	184	96	0	282	7.7	7.0	5	--	11.9	4,600	--	--	--	--	--	--	--	--
--	--	--	--	--	--	2.0	--	--	13.2	930	--	--	.03	.00	.00	--	--	.00
--	134	53	0	149	7.5	9.0	30	--	10.0	2,400	--	--	--	--	--	--	--	--
--	216	115	0	335	8.2	24.0	5	--	6.0	70	--	--	--	.00	.00	--	--	.00
0.42	--	--	--	--	7.9	4.4	--	25	12.2	--	--	--	--	--	--	--	--	--
.18	--	--	--	216	7.5	4.5	35	80	12.3	--	20,000	--	--	--	--	--	--	--
.29	--	--	--	190	7.7	2.4	20	30	13.4	--	1,000	--	--	--	--	--	--	--
--	--	--	--	175	7.7	4.0	100	40	12.5	--	1,200	--	--	--	--	--	--	--
.25	--	--	--	226	7.7	5.2	70	30	12.5	--	1,000	--	--	--	--	--	--	--
.20	--	--	--	210	7.8	7.0	195	170	11.5	--	4,000	--	--	--	--	--	--	--
.19	--	--	--	171	7.2	11.7	100	35	10.9	--	420	--	--	--	--	--	--	--
.17	--	--	--	150	7.8	10.9	70	20	11.2	--	1,000	--	--	--	--	--	--	--
.15	--	--	--	146	7.9	17.9	23	20	10.2	--	1,000	--	--	--	--	--	--	--
.13	--	--	--	160	7.6	11.4	47	15	11.7	--	200	--	--	--	--	--	--	--
.08	--	--	--	204	8.3	15.2	45	9	10.6	--	300	--	--	--	--	--	--	--
.10	--	--	--	185	8.1	17.8	69	45	9.8	--	--	--	--	--	--	--	--	--
.12	--	--	--	238	8.8	19.4	32	8	11.6	--	200	--	--	--	--	--	--	--
.17	--	--	--	315	8.3	29.5	44	15	9.2	--	100	--	--	--	--	--	--	--
.22	--	--	--	400	8.8	27.1	29	10	12.1	--	500	--	--	--	--	--	--	--
.35	--	--	--	345	8.9	24.3	50	20	9.5	--	500	--	--	--	--	--	--	--
.59	--	--	--	395	8.0	18.8	135	130	8.2	--	20,000	--	--	--	--	--	--	--
.38	--	--	--	335	8.1	15.7	44	35	10.2	--	1,300	--	--	--	--	--	--	--

TABLE C7.--Chemical analyses of ground water

Well no.: See page 64 for well-numbering system.

Analyst: UEC, United Engineering Co.; USGS, U.S. Geological Survey; WSDH, Washington State Department of Health; WSU, Washington State University.

Well no.	Well depth (ft)	Water-bearing material	Date of collection	Analyst	Milligrams per liter: Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)
T. 12 N., R. 46 E.																	
7G1	227	Basalt[1]	7-23-64	WSDH	34	--	T 0.06	--	61	19	16	4.7	--	--	--	33	13
7G1, 7G2	227, 120	do.	1-21-64	WSDH	53	--	T .08	--	38	9.4	11	1.8	--	--	--	6.1	6.9
T. 13 N., R. 45 E.																	
34A2	136	Basalt	1-21-64	WSDH	62	--	T .02	--	28	12	5.8	2.0	--	--	--	3.0	1.5
T. 14 N., R. 44 E.																	
14P1	600	Basalt	9-29-71	USGS	64	0.01	.04	0.06	23	15	23	3.3	172	17	169	2.8	2.5
			5-25-72	USGS	--	--	--	--	21	15	--	--	--	--	--	--	1.7
T. 14 N., R. 45 E.																	
5D1	164	Basalt	8-16-46	WSDH	58	--	T .5	--	22	14	28	2.4	--	--	--	1.8	2.0
			12- 4-63	WSDH	56	--	T .32	--	45	26	15	.5	--	--	--	34	38
5D3	167	do.	3-30-55	USGS	--	--	T .19	--	24	13	--	--	190	4	--	3.7	4.0
			11-17-59	USGS	69	--	.39	--	22	15	22	4.2	196	0	--	3.1	4.2
			12- 9-63	WSDH	58	--	T .58	--	24	16	11	3.5	--	--	--	4.1	4.9
5D4	166	do.	3-30-55	USGS	--	--	.02	--	22	14	--	--	185	0	--	12	5
5E1	95	Granitic sand	3-30-55	USGS	--	--	.22	--	22	13	--	--	198	0	--	2.1	3
5F2	237	Basalt[1]	12- 2-38	USGS	65	--	T .24	--	22	16	22	4.2	203	0	--	1.8	3.3
5F3	223	do.	3-28-55	USGS	--	--	.03	--	25	15	--	--	216	0	--	2.9	4.0
5G1	213	do.	11- 4-52	UEC	55	--	--	--	19	11	--	--	199	0	--	--	3
			3-28-55	USGS	--	--	.21	--	21	15	--	--	203	0	--	2.9	3
T. 15 N., R. 37 E.																	
26G1	--	Basalt	10-21-65	USGS	43	--	--	--	--	--	--	--	--	--	--	--	7.8
27H1	281	do.	9-29-71	USGS	52	.01	.03	<.02	36	15	25	6.2	233	0	191	11	6.6
T. 15 N., R. 39 E.																	
2K1, 2K2	273, 261	Basalt	1-16-64	WSDH	43	--	T .08	--	40	15	7	1.7	--	--	--	11	11
T. 15 N., R. 44 E.																	
15A2	78	Granite	3-28-58	USGS	50	--	.09	--	42	13	17	2.4	171	0	--	22	13
			11-17-59	USGS	46	--	.81	--	42	15	18	1.7	192	0	--	18	12
			5-16-60	USGS	--	--	--	--	--	--	--	--	174	0	--	--	--
15A3, 15A4	150, --	--	1-31-64	WSDH	53	--	T .16	--	43	11	11	1.7	--	--	--	20	24
T. 15 N., R. 45 E.																	
26K1	302	Basalt	3-30-55	USGS	--	--	T .67	--	24	9.4	--	--	154	0	--	23	3
			5- 1-61	USGS	26	--	T .08	--	32	17	32	5.6	170	4	--	72	2.2
29G2	747	do.	12- 2-70	USGS	55	0	.11	<.02	24	14	22	4.0	185	0	152	7.8	2.8
			5-19-71	USGS	--	--	--	--	23	15	--	--	231	--	--	--	1.3
32N1	231	do.	3-30-55	USGS	--	--	.32	--	21	14	--	--	184	6	--	.8	4
			12- 9-63	WSDH	58	--	T .24	--	21	14	11	3.7	--	--	--	.3	1.7
32N2-N3	110-234	do.	1956	WSU	--	--	T .01	--	--	--	--	--	194	0	--	--	40
	245-395	do.	1956	WSU	--	--	T .9	--	--	--	--	--	148	14	--	--	1.3
	403-954	do.	1956	WSU	--	--	T .2	--	--	--	--	--	153	0	--	--	2.5
	954	do.	3-28-58	USGS	67	--	.50	--	22	15	25	4.4	207	0	--	4.9	2.0
			11- -59	USGS	60	--	.36	--	24	13	22	4.1	194	0	--	.7	3.2
			12- 9-63	WSDH	57	--	T .54	--	22	14	11	3.6	--	--	--	.6	2.0
T. 15 N., R. 46 E.																	
20P1	250	Granitic sand	3-29-55	USGS	--	--	.25	--	58	24	--	--	168	0	--	21	29

Iron: Total iron concentrations ("T") represent iron in solution, suspension, and sediment at the time of sample collection. All other values indicate only the iron actually in solution at the time of collection.

Dissolved solids: Dissolved-solids concentrations preceded by a "D" are determined analytically; all others are calculated values, which include bicarbonate recomputed as carbonate.

										Milligrams per liter						
Fluoride (F)	Nitrate (NO_3) as N	Orthophosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$	Sodium adsorption ratio (SAR)	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Total chromium (Cr)	Copper (Cu)	Lead (Pb)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)	Remarks
0.4	7.0	0.40	D 269	233	--	496	7.0	7	--	--	---	--	--	--	--	
.3	4.7	.52	D 167	134	--	320	7.1	11	--	--	--	--	--	--	--	Composite sample.
.2	.41	.72	D 153	120	---	239	7.1	12	--	--	--	--	--	--	--	
--	.09	--	236	120	0.9	307	8.4	16.2	5	<0.03	<0.05	<0.1	<0.02	0.07	<0.01	
--	--	--	--	110	--	308	--	16.2	--	--	--	--	--	--	--	
.4	--	--	--	114	--	--	--	--	--	--	--	--	--	--	--	
.2	2.2	.36	D 311	228	--	560	7.2	10	--	--	--	--	--	--	--	
--	--	--	--	113	--	304	8.4	--	--	--	--	--	--	--	--	
.5	.45	.22	238	118	--	346	7.7	--	--	--	--	--	--	--	--	
.3	.45	.20	D 203	126	--	304	7.5	11	--	--	--	--	--	--	--	
--	--	--	--	112	--	305	8.2	--	--	--	--	--	--	--	--	
--	--	--	--	108	--	299	8.2	--	--	--	--	--	--	--	--	
.2	.45	--	224	121	--	--	--	--	--	--	--	--	--	--	--	
--	--	--	--	124	--	323	7.8	--	--	--	--	--	--	--	--	
--	--	--	--	94	--	--	7.5	--	--	--	--	--	--	--	--	
--	--	--	--	114	--	305	8.3	--	--	--	--	--	--	--	--	
--	--	--	--	128	--	362	--	14	--	--	--	--	--	--	--	
.3	1.2	--	272	150	.9	394	7.4	15.0	5	<.03	<.05	<.1	<.02	.09	<.01	
.2	5.9	.18	D 175	162	--	346	7.5	9	--	--	--	--	--	--	--	Composite sample.
.2	5.0	.30	243	158	--	404	6.8	10	--	--	--	--	--	--	--	
.5	5.2	.00	278	166	--	406	7.0	--	--	--	--	--	--	--	--	
--	--	--	--	164	--	411	6.9	10	--	--	--	--	--	--	--	
.4	.47	.46	D 169	155	--	404	6.8	9	--	--	--	--	--	--	--	Composite sample.
--	--	---	--	99	--	287	8.3	--	--	--	--	--	--	--	--	
.6	.16	.03	276	150	--	421	8.4	10	--	--	--	--	--	--	--	
.4	1.9	--	229	118	--	326	7.9	13.6	0	<.03	<.05	<.1	<.02	.03	.10	
--	--	--	--	--	--	325	8.1	13.0	--	--	--	--	--	--	--	
--	--	--	--	110	--	291	8.5	--	--	--	--	--	--	--	--	
.3	--	.62	D 169	109	--	277	7.6	13	--	--	--	--	--	--	--	
.2	.02	--	--	125	--	--	7.6	14	--	--	--	--	--	--	--	Collected during drilling.
.1	--	--	--	107	--	--	--	14	--	--	--	--	--	--	--	Do.
.1	--	--	--	134	--	--	7.6	14	--	--	--	--	--	--	--	Do.
.4	.02	.05	236	117	--	319	7.7	14	--	--	--	--	--	--	--	
--	.02	.24	224	114	--	307	7.8	--	--	--	--	--	--	--	--	
.4	.02	.24	D 194	112	--	277	7.5	14	--	--	--	--	--	--	--	
--	--	--	--	243	--	597	7.4	--	--	--	--	--	--	--	--	

TABLE C7.--Chemical analyses of ground water--Continued

Well no.	Well depth (ft)	Water-bearing material	Date of collection	Analyst	Milligrams per liter: Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)
T. 16 N., R. 36 E.																	
11H1	127	Basalt	11-10-65	USGS	34	--	--	--	--	--	--	--	--	--	--	--	66
T. 16 N., R. 37 E.																	
1A1	300+	Basalt	9-10-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
1L2	400	do.	12- 2-65	USGS	57	--	--	--	--	--	--	--	--	--	--	--	6.4
18D1	102±	do.	10-16-65	USGS	40	--	--	--	--	--	--	--	--	--	--	--	24
T. 16 N., R. 38 E.																	
4B1	175	Basalt	10-20-65	USGS	46	--	--	--	--	--	--	--	--	--	--	--	11
T. 16 N., R. 43 E.																	
7K1	190	Basalt	12- 2-70	USGS	44	0.00	0.04	<0.02	28	8.6	13	1.9	157	0	129	1.0	1.8
			5-19-71	USGS	--	--	--	--	30	8.9	--	--	161	--	--	--	1.6
14N2	750	do.	11- -59	USGS	63	--	.09	--	21	11	24	3.5	173	0	--	7.7	2.2
			5-16-60	USGS	--	--	--	--	--	--	--	--	172	0	--	--	--
T. 16 N., R. 46 E.																	
6D1	284	Basalt	1-27-64	WSDH	58	--	T1.0	--	21	11	16	4.4	--	--	--	.6	2.7
6D1, 6D2, 6D3	284, 170, 115	do.	8-16-46	WSDH	46	--	T1.8	--	27	11	18	5.4	--	--	--	2.8	2.0
T. 17 N., R. 37 E.																	
17R1	214	Basalt	9-20-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
22Q1	64	do.	9-10-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	37
T. 17 N., R. 40 E.																	
8H1	102	In sand from 45 to 100 ft.	12- 2-70	USGS	37	.00	.04	<.02	38	13	20	4.5	220	0	180	7.8	4.8
	102	do.	5-19-71	USGS	--	--	--	--	37	14	--	--	229	--	--	--	4.7
T. 17 N., R. 41 E.																	
30R1, 31G1	175, 314	Basalt	1-16-64	WSDH	56	--	T.01	--	53	15	13	2.4	--	--	--	8.1	6.7
T. 18 N., R. 36 E.																	
4G1	--	Basalt	10-15-65	USGS	40	--	--	--	--	--	--	--	--	--	--	--	45
12B1	103	do.	11- 5-65	USGS	34	--	--	--	--	--	--	--	--	--	--	--	7.3
T. 18 N., R. 37 E.																	
5K1	12	--	11- 9-65	USGS	6.4	--	--	--	--	--	--	--	--	--	--	--	6.4
8J1	527	Basalt	8- 4-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
			10- 5-71	USGS	46	.05	T.06	<.02	34	16	29	4.7	229	0	188	14	0.9
9G1	226	do.	8- 5-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
T. 18 N., R. 38 E.																	
18M1	143	Basalt	9- 8-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	11.2
T. 18 N., R. 41 E.																	
1A1	150	Basalt	8-16-46	WSDH	45	--	--	--	38	12	18	2.6	--	--	--	6.4	5.0
T. 18 N., R. 45 E.																	
1L2	419	Basalt[1]	9-29-71	USGS	56	.01	T.19	.03	23	11	18	4.1	163	0	134	6.3	4.7
33P1	325	Basalt	8-16-46	WSDH	56	--	T.03	--	22	11	24	4.0	--	--	--	.8	6.0
33P1 and 17/45-4C1	325, 380	do.	1-27-64	WSDH	62	--	T.22	--	24	3.6	10	3.1	--	--	--	2.3	2.4
T. 18 N., R. 46 E.																	
6G1	225	Basalt	1-27-64	WSDH	56	--	T.50	--	26	14	7.1	2.9	--	--	--	9.3	3.0
T. 19 N., R. 36 E.																	
19R1	350	Basalt	8- 4-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
20H1	491	do.	8- 4-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
34F1	329	do.	7-22-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	4.3

Fluoride (F)	Nitrate (NO_3) as N	Orthophosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$	Sodium adsorption ratio (SAR)	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Milligrams per liter: Total chromium (Cr)	Copper (Cu)	Lead (Pb)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)	Remarks
--	--	--	--	405	--	828	--	13	--	--	--	--	--	--	--	
--	--	--	--	39	--	289	--	--	--	--	--	--	--	--	--	
--	--	--	--	22	--	258	--	17	--	--	--	--	--	--	--	
--	--	--	--	134	--	321	--	12	--	--	--	--	--	--	--	
--	--	--	--	150	--	328	--	14	--	--	--	--	--	--	--	
0.2	1.0	--	180	106	--	267	7.3	10.6	0	<0.03	<0.05	<0.1	<0.02	0.05	0.05	
--	--	--	--	--	--	266	8.1	11.0	--	--	--	--	--	--	--	
.5	.05	0.05	217	98	--	285	7.9	--	--	--	--	--	--	--	--	
--	--	--	--	100	--	290	8.0	18	--	--	--	--	--	--	--	
.5	.68	.24	D212	99	--	251	7.6	11	--	--	--	--	--	--	--	
.0	.68	--	--	114	--	--	--	--	--	--	--	--	--	--	--	Composite sample.
--	--	--	--	102	--	245	--	16	--	--	--	--	--	--	--	
--	--	--	--	302	--	658	--	15	--	--	--	--	--	--	--	
.3	.45	--	238	149	--	371	7.9	10.8	--	<.03	<.05	<.1	<.02	.05	<.01	
--	--	--	--	--	--	376	8.3	12.0	--	--	--	--	--	--	--	
.2	1.3	.58	D222	196	--	397	7.3	12	--	--	--	--	--	--	--	Composite sample.
--	--	--	--	302	--	689	--	11	--	--	--	--	--	--	--	
--	--	--	--	209	--	450	--	12	--	--	--	--	--	--	--	
--	--	--	--	101	--	232	--	14	--	--	--	--	--	--	--	
--	--	--	--	79	--	285	--	18	--	--	--	--	--	--	--	
.3	2.7	--	278	150	1.0	411	7.6	15	5	<.03	<.05	<.1	<.02	.09	<.01	
--	--	--	--	83	--	223	--	--	--	--	--	--	--	--	--	
--	--	--	--	214	--	462	--	15	--	--	--	--	--	--	--	
.2	2.5	--	--	148	--	--	7.2	--	--	--	--	--	--	--	--	
.3	.18	--	204	100	.8	272	7.2	20	5	<.03	<.05	<.1	<.02	.07	<.01	
.2	.02	--	--	102	--	--	7.4	--	--	--	--	--	--	--	--	
.6	.0	.24	D142	75	--	257	7.3	11	--	--	--	--	--	--	--	Composite sample.
.5	.05	.22	D155	122	--	242	7.4	11	--	--	--	--	--	--	--	
--	--	--	--	102	--	286	--	16	--	--	--	--	--	--	--	
--	--	--	--	77	--	264	--	18	--	--	--	--	--	--	--	
--	--	--	--	111	--	222	--	16	--	--	--	--	--	--	--	

TABLE C7.--Chemical analyses of ground water--Continued

Well no.	Well depth (ft)	Water-bearing material	Date of collection	Analyst	Milligrams per liter: Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Alkalinity as $CaCO_3$	Sulfate (SO_4)	Chloride (Cl)
T. 19 N., R. 38 E.																	
15A2	130	Basalt	8-25-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	5.9
T. 19 N., R. 41 E.																	
36R1	256	Basalt	1-20-64	WSDH	55	--	T 0.03	--	39	18	11	2.5	--	--	--	6.0	3.5
T. 19 N., R. 44 E.																	
22K1	481	Basalt	1-29-64	WSDH	52	--	T .00	--	36	12	10	2.6	--	--	--	13	6.0
T. 20 N., R. 36 E.																	
35D1	275	Basalt	7-22-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	22
T. 20 N., R. 37 E.																	
20A1	457	Basalt	7-21-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	6.6
T. 20 N., R. 38 E.																	
25F1	250	Basalt	8- 6-65	USGS	--	--	--	--	--	--	--	--	--	--	--	--	--
T. 20 N., R. 42 E.																	
13L1	375	Basalt	1-20-64	WSDH	51	--	T .02	--	21	9.6	7.3	2.2	--	--	--	6.8	1.2
T. 20 N., R. 43 E.																	
10R1	308	Basalt	5- 1-62	USGS	46	--	.05	--	34	16	25	2.2	196	0	--	15	8.5
			1-20-64	WSDH	60	--	T .12	--	23	10	10	1.7	--	--	--	4.1	3.1
T. 21 N., R. 38 E.																	
24G1	16	Gravel	5- 2-61	USGS	34	--	.00	--	27	7.9	13	3.7	133	0	--	16	3.8
T. 22 N., R. 43 E.																	
32L1	115	Basalt	5- 2-61	USGS	52	--	.03	--	33	8.7	26	.4	106	0	--	24	13
T. 24 N., R. 41 E.																	
3N1	410	Basalt	2-26-47	USGS	51	--	.02	--	21	9.2	--	--	130	0	--	11	2.8
			1-14-53	USGS	49	--	.04	--	20	9.5	12	2.1	124	0	--	11	2.1
			7-30-57	USGS	--	--	.03	--	19	5.7	10	1.6	86	0	--	11	2.0
			11-22-65	USGS	41	--	.20	--	18	7.3	11	2.1	98	0	--	12	2.5

[1] Includes sediments and weathered zones between basalt flows.

Fluoride (F)	Nitrate (NO_3) as N	Orthophosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$	Sodium adsorption ratio (SAR)	Specific conductance (micromhos at 25°C)	pH (units)	Temperature (°C)	Color (platinum-cobalt units)	Milligrams per liter: Total chromium (Cr)	Copper (Cu)	Lead (Pb)	Lithium (Li)	Strontium (Sr)	Zinc (Zn)	Remarks
--	--	--	--	136	--	341	--	12	--	--	--	--	--	--	--	
0.3	3.8	.52	D216	169	--	347	6.9	12	--	--	--	--	--	--	--	
.4	1.5	.30	D196	146	--	316	7.0	11	--	--	--	--	--	--	--	
--	--	--	--	178	--	372	--	12	--	--	--	--	--	--	--	
--	--	--	--	140	--	245	--	13	--	--	--	--	--	--	--	
--	--	--	--	71	--	212	--	14	--	--	--	--	--	--	--	
.3	.0	.36	D135	92	--	--	7.1	10	--	--	--	--	--	--	--	
.5	3.4	.19	259	150	--	392	7.3	11	--	--	--	--	--	--	--	
.3	.14	.34	D159	99	--	269	7.5	10	--	--	--	--	--	--	--	
.3	1.2	.25	175	100	--	252	8.0	11	5	--	--	--	--	--	--	
.3	13	.36	285	118	--	359	7.3	9	5	--	--	--	--	--	--	
.2	.02	--	163	90	--	220	--	15	--	--	--	--	--	--	--	
.3	.02	--	166	89	--	220	7.5	16	5	--	--	--	--	--	--	
.2	2.1	--	139	71	--	184	7.4	12	0	--	--	--	--	--	--	
.3	.70	--	144	75	--	198	7.6	13	0	--	--	--	--	--	--	

TABLE C8.--Temperature of water in the Palouse River at Hooper

Day	Temperature (°C)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
						October 1961-September 1962						
1	9	7	4	2	2	2	12	13	--	22	25	21
2	--	4	4	2	3	1	13	15	17	21	--	--
3	11	5	4	4	4	--	9	13	--	--	22	--
4	--	5	3	4	4	1	11	12	16	18	--	19
5	11	5	4	3	2	3	10	13	--	--	18	20
6	--	5	3	4	2	4	11	12	14	19	--	--
7	9	4	2	6	4	6	9	13	--	--	19	--
8	--	1	1	6	4	4	8	14	22	17	--	15
9	11	4	0	2	4	4	8	13	--	--	21	17
10	--	4	0	1	6	4	7	--	22	24	--	--
11	10	6	0	1	5	4	6	15	--	--	22	16
12	--	5	0	1	6	4	6	14	--	24	--	--
13	14	4	0	--	7	4	9	16	20	--	23	17
14	--	6	0	0	6	6	16	--	--	--	--	--
15	17	3	0	1	6	7	14	17	24	19	24	--
16	--	2	--	1	6	8	13	17	--	23	22	18
17	13	2	--	1	6	9	11	18	22	--	22	19
18	10	2	--	0	7	9	12	15	22	21	--	--
19	8	2	--	1	7	9	13	13	--	--	--	19
20	8	1	--	--	5	8	--	13	23	22	22	--
21	6	1	--	--	3	6	11	17	23	--	--	--
22	8	3	1	--	3	6	17	18	--	22	--	19
23	9	3	2	0	2	7	14	--	23	--	20	18
24	8	2	2	1	1	7	16	13	--	26	23	16
25	7	2	1	--	1	8	14	15	26	--	--	--
26	9	2	1	1	1	7	12	--	19	26	18	--
27	8	2	1	--	1	7	11	19	22	--	--	18
28	6	3	1	1	1	7	9	19	24	26	15	14
29	7	3	3	1		8	9	17	24	--	--	14
30	4	4	3	2		7	11	16	--	--	18	17
31	3		2	2		11		17		23	--	
						October 1962-September 1963						
1	--	--	4	4	0	4	7	--	23	26	--	--
2	17	10	4	6	1	8	8	--	23	--	26	--
3	--	--	4	6	1	6	6	--	--	25	--	--
4	14	11	3	4	1	6	11	12	23	25	26	24
5	--	10	3	3	3	6	9	--	--	25	--	--
6	12	--	6	4	-3	4	9	12	23	25	27	26
7	--	9	5	3	6	4	12	12	--	24	--	--
8	9	8	4	4	6	6	9	13	24	26	--	26
9	11	--	4	3	3	6	10	13	--	--	26	--
10	10	9	4	0	2	4	11	14	24	26	--	24
11	11	--	4	0	4	4	11	--	--	26	27	--
12	11	--	4	0	6	5	12	13	26	26	--	24
13	11	6	4	0	4	6	12	16	--	26	--	--
14	11	6	6	0	4	4	7	14	26	26	--	22
15	11	6	7	0	4	6	8	16	--	27	--	--
16	12	4	7	0	3	6	--	17	--	--	--	23
17	11	4	7	0	3	6	--	--	--	27	--	--
18	12	4	8	0	4	6	9	18	27	--	26	20
19	10	8	7	0	4	6	10	--	27	27	--	--
20	11	8	6	0	6	10	10	24	26	--	26	24
21	12	8	4	0	6	10	9	--	--	--	--	--
22	12	7	2	0	6	11	10	24	25	26	26	23
23	12	5	1	0	4	9	11	--	25	--	--	17
24	12	6	1	0	4	9	13	--	25	--	25	20
25	11	7	1	0	6	12	13	24	26	26	--	20
26	10	7	1	0	4	10	11	--	25	--	26	19
27	12	6	1	0	4	9	10	26	24	--	--	20
28	--	4	1	0	6	7	16	--	23	28	23	20
29	11	3	2	0		9	16	--	21	--	--	19
30	--	4	3	0		6	--	22	23	24	--	19
31	11		4	0		7		--		--	--	

TABLE C8.--Temperature of water in the Palouse River at Hooper--Continued

Day	Temperature (°C)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	October 1963-September 1964											
1	18	9	4	2	2	4	9	11	21	26	--	--
2	18	--	4	2	3	4	8	--	21	26	21	18
3	18	--	4	3	3	4	9	--	21	26	--	19
4	18	9	4	3	2	3	9	12	20	--	--	--
5	17	--	3	3	2	4	9	11	21	23	17	21
6	17	9	3	2	3	4	9	12	21	24	--	19
7	--	--	3	1	3	4	11	13	21	28	26	18
8	17	9	5	2	3	3	11	12	14	27	--	18
9	18	9	2	2	3	3	11	12	20	24	--	--
10	16	9	2	2	3	4	10	--	18	26	23	18
11	16	8	1	2	3	6	10	14	19	--	--	18
12	16	8	1	2	3	4	10	13	21	30	24	--
13	16	9	2	2	3	5	11	14	--	27	--	18
14	15	8	1	2	3	5	11	16	21	--	23	--
15	17	8	2	2	3	4	10	--	21	24	--	18
16	18	8	2	2	3	6	9	17	21	--	--	--
17	--	8	2	2	3	6	9	14	21	27	24	16
18	15	7	1	2	6	6	11	17	21	--	--	18
19	--	8	2	3	4	6	11	21	21	26	20	--
20	12	6	2	2	3	5	11	18	--	--	--	16
21	--	6	3	2	3	6	9	17	21	21	21	--
22	12	5	2	3	3	6	10	13	--	24	--	18
23	--	6	8	2	4	3	10	15	24	--	24	--
24	--	5	3	3	3	3	8	14	25	27	--	--
25	--	8	2	3	2	5	7	16	24	--	20	18
26	5	8	2	3	2	7	11	16	22	26	--	--
27	7	7	2	3	3	7	12	19	--	--	19	17
28	8	3	2	3	3	7	12	20	24	--	--	--
29	8	4	2	3	3	7	11	18	--	23	18	16
30	9	3	3	3		10	12	18	26	--	18	--
31	9		3	3		12		23		21	--	
	October 1964-September 1965											
1	--	--	4	1	2	5	12	14	22	--	--	--
2	13	9	7	3	3	5	14	--	--	--	24	20
3	--	--	6	--	2	7	12	13	--	24	--	--
4	14	10	5	2	7	7	11	--	--	--	--	18
5	--	--	4	2	--	8	12	11	--	--	24	--
6	13	8	4	3	--	--	9	--	24	--	--	18
7	--	--	4	2	5	8	10	14	--	27	26	--
8	--	7	--	1	4	8	11	--	--	--	--	18
9	16	--	4	2	3	9	10	17	24	--	26	--
10	--	7	4	2	2	10	11	--	--	22	--	18
11	16	--	3	3	--	8	--	19	--	--	24	--
12	--	7	2	3	5	--	12	--	--	24	--	18
13	14	--	3	3	--	--	--	18	--	--	19	--
14	--	5	1	3	4	--	14	--	--	23	--	17
15	13	--	1	--	3	8	15	16	18	27	24	--
16	--	--	--	--	6	7	--	--	--	--	--	12
17	13	5	--	2	8	4	13	14	--	27	--	--
18	--	--	--	2	7	3	--	--	20	--	--	12
19	12	3	--	3	8	3	12	16	--	24	--	--
20	--	--	--	4	6	4	13	--	--	--	--	16
21	--	3	1	3	5	6	13	18	--	18	--	--
22	12	--	2	3	5	7	13	--	--	--	--	17
23	--	5	2	2	5	--	13	--	24	--	22	--
24	--	--	2	3	8	8	14	17	--	27	--	19
25	11	3	2	2	7	4	14	--	22	--	24	--
26	--	4	3	3	--	7	17	21	--	24	--	--
27	8	--	3	4	6	8	17	--	--	--	20	15
28	--	3	2	4	5	6	--	22	19	29	--	--
29	10	3	1	4		9	18	--	--	--	19	--
30	--	4	2	6		10	14	--	24	--	--	16
31	9		--	4		--		--		27	19	

TABLE C8.--Temperature of water in the Palouse River at Hooper--Continued

Day	Temperature (°C)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
						October 1965-September 1966						
1	--	12	--	2	4	4	--	17	--	19	25	19
2	17	--	--	--	3	3	11	--	--	--	--	--
3	--	11	--	2	3	3	11	23	14	--	--	--
4	17	--	7	2	5	3	12	--	--	21	23	--
5	--	--	--	1	4	4	13	24	20	--	--	--
6	--	9	6	4	4	--	6	--	--	23	--	19
7	17	--	--	5	4	6	14	--	22	--	--	--
8	--	14	7	3	4	7	15	22	--	25	24	--
9	17	--	6	2	4	8	--	--	22	--	--	--
10	--	9	6	4	3	7	13	--	--	--	23	25
11	16	--	--	3	3	8	12	18	18	23	--	--
12	--	8	6	4	2	8	9	15	--	--	21	18
13	16	--	--	6	3	8	12	14	19	24	--	--
14	--	--	3	5	3	8	13	--	--	--	--	18
15	12	11	--	5	4	8	14	13	--	23	22	--
16	--	--	1	2	4	7	13	--	22	--	--	18
17	--	8	--	1	4	6	12	--	22	--	22	--
18	13	--	2	2	5	6	--	--	--	23	--	--
19	--	14	--	2	6	6	9	20	--	--	23	17
20	13	--	2	2	--	6	9	--	22	22	--	--
21	--	8	--	2	7	6	--	20	--	22	--	--
22	--	--	2	3	6	7	11	--	19	23	21	19
23	--	6	--	2	6	8	--	17	--	--	--	--
24	--	--	2	1	4	9	--	--	17	--	--	--
25	13	6	--	1	7	10	16	24	--	21	20	--
26	--	--	--	2	7	11	--	--	--	--	18	17
27	13	6	3	2	6	--	12	22	23	22	--	--
28	12	--	--	4	5	--	--	--	--	--	--	17
29	13	4	4	4		--	14	18	21	22	19	--
30	--	3	--	4		--	--	--	--	--	--	--
31	--		--	4		--		16		--	--	
						October 1966-September 1967						
1	--	11	--	--	4	6	6	6	--	--	--	--
2	15	--	--	--	4	--	--	--	--	27	24	--
3	--	--	6	--	5	--	11	11	18	--	--	20
4	14	8	--	--	6	--	--	--	--	--	26	--
5	--	--	5	2	5	--	--	12	22	26	--	--
6	--	--	--	--	--	6	10	16	--	--	--	24
7	14	--	2	--	3	--	--	--	--	--	22	--
8	--	7	--	3	--	3	--	13	--	--	--	--
9	--	--	--	--	4	5	--	--	19	23	--	--
10	18	--	2	--	--	--	11	12	--	--	--	--
11	--	6	--	--	4	--	--	11	19	--	23	--
12	//	--	--	4	--	6	11	11	18	--	--	--
13	--	--	5	5	--	--	--	13	21	16	--	--
14	--	--	--	--	2	--	--	14	18	--	23	--
15	11	8	5	--	--	6	13	16	20	--	--	14
16	--	8	4	3	3	--	--	19	--	26	--	--
17	--	6	3	3	--	--	--	29	22	--	23	--
18	10	5	--	2	3	7	10	--	--	--	--	--
19	--	8	5	4	--	8	4	15	--	22	--	--
20	9	8	6	--	--	9	--	--	--	--	--	--
21	--	7	--	3	4	7	--	--	27	--	22	--
22	--	--	3	2	--	7	11	21	19	--	--	19
23	--	--	--	2	6	8	13	19	--	23	--	--
24	13	6	--	--	--	6	12	--	20	--	21	--
25	--	--	4	1	--	8	13	14	--	--	--	--
26	13	--	3	2	--	7	--	--	--	24	--	--
27	--	5	--	3	6	6	--	21	21	--	--	--
28	--	--	--	6	--	6	--	--	--	--	--	17
29	11	6	--	6		--	7	--	22	--	--	--
30	--	7	1	4		5	9	15	--	23	--	--
31	--		--	4		--		--		--	--	

TABLE C8.--Temperature of water in the Palouse River at Hooper--Continued

Day	Temperature (°C)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
	October 1967-September 1968											
1	--	--	--	3	--	7	--	15	--	--	--	--
2	--	7	4	1	2	--	11	--	21	20	--	--
3	--	--	--	--	4	3	--	--	--	--	23	--
4	--	--	6	--	5	7	11	--	--	--	--	19
5	13	6	--	2	4	--	--	13	--	22	22	--
6	--	--	--	--	3	8	--	--	22	--	--	20
7	13	6	3	1	6	8	11	--	--	--	23	19
8	--	--	--	--	3	8	--	18	--	23	--	--
9	--	--	--	3	3	8	10	--	--	--	--	20
10	14	9	6	1	3	8	--	--	23	22	--	16
11	--	--	--	1	0	7	12	--	--	--	--	19
12	--	8	--	1	2	7	--	14	--	21	22	16
13	13	--	--	2	2	7	--	--	--	--	--	--
14	--	--	0	3	2	8	--	--	20	--	--	--
15	--	8	--	4	--	8	5	17	--	21	--	--
16	13	--	2	4	2	--	--	--	--	--	19	--
17	--	--	--	2	4	8	11	21	--	20	--	--
18	12	8	--	2	6	--	--	--	25	--	--	--
19	--	--	--	2	7	7	--	22	--	19	--	15
20	--	--	1	4	6	--	--	--	21	--	18	13
21	12	--	--	5	8	--	--	--	20	--	--	--
22	--	4	--	--	7	8	13	--	--	20	--	--
23	11	--	--	4	8	--	--	21	--	--	18	11
24	--	--	0	5	--	--	12	--	23	--	--	--
25	9	--	2	3	7	9	--	--	--	24	--	20
26	--	3	4	--	5	--	--	--	--	--	19	--
27	--	--	4	0	--	--	16	18	--	--	--	18
28	11	--	3	--	6	11	--	--	17	--	--	--
29	--	3	2	--	7	--	--	--	--	23	--	--
30	--	--	4	1		8	--	--	18	26	20	19
31	10		--	1		--		--		23	--	
	October 1968-September 1969											
1	--	9.0	3.5	--	--	5.5	9.5	8.5	--	--	24.0	--
2	15.5	--	--	0	--	5.5	9.0	6.5	20.5	21.5	--	2.5
3	--	--	--	--	--	5.0	9.5	7.0	--	--	--	--
4	14.0	7.0	4.5	1.5	1.0	5.5	9.0	9.0	--	--	20.0	--
5	--	--	3.5	--	--	5.5	10.5	11.5	25.5	21.0	--	--
6	--	7.5	2.5	.5	--	4.0	7.5	15.0	--	--	--	--
7	10.5	--	2.5	1.0	--	5.0	5.0	12.5	--	--	21.0	--
8	--	--	4.5	.5	.5	4.0	9.5	--	26.0	--	--	20.5
9	11.0	--	4.5	1.0	1.5	4.5	11.5	20.5	--	--	--	--
10	--	--	5.0	1.5	1.0	4.5	10.5	--	--	23.5	--	20.5
11	11.5	7.0	5.5	1.5	.5	2.5	11.0	--	--	--	21.5	21.5
12	--	--	3.5	.5	1.5	5.0	11.0	15.0	23.5	--	--	--
13	--	11.5	2.0	1.0	.5	5.5	5.5	--	--	--	--	--
14	11.0	--	2.0	1.0	1.0	6.0	7.0	15.0	--	22.5	--	17.5
15	--	4.5	2.5	1.5	2.0	7.0	8.5	--	--	--	20.5	--
16	--	3.5	--	1.0	2.0	7.5	8.5	--	--	24.0	--	--
17	11.0	4.5	2.0	.5	2.5	6.5	11.0	14.5	25.5	--	--	--
18	--	4.5	--	1.0	1.5	5.0	9.0	18.5	--	--	20.0	17.0
19	10.5	6.0	2.0	1.5	1.0	5.5	9.0	--	--	--	--	--
20	--	--	--	1.0	--	6.0	11.0	--	--	--	--	--
21	10.5	5.5	5	.5	1.5	7.0	9.5	20.0	--	26.0	--	17.5
22	--	6.0	.5	.5	2.0	7.0	11.0	21.0	21.0	--	19.0	--
23	10.0	5.5	.5	--	--	7.5	14.0	--	--	--	--	17.0
24	--	5.0	1.0	--	2.0	4.0	10.0	--	16.0	25.5	--	--
25	13.5	5.0	2.5	--	3.5	2.0	11.5	--	--	--	20.0	17.0
26	--	5.0	1.0	--	2.0	1.5	11.0	--	--	--	--	--
27	--	4.5	.5	--	--	4.0	11.5	19.0	--	--	--	--
28	11.0	4.5	0	--	3.5	9.5	11.0	--	--	--	19.0	--
29	--	--	--	--		9.5	8.5	--	20.5	23.5	--	17.5
30	10.0	3.5	--	--		10.0	9.0	--	--	--	--	--
31	--		--	--		10.0		--		--	--	

TABLE C8.--Temperature of water in the Palouse River at Hooper--Continued

Day	Temperature (°C)											
	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
						October 1969-September 1970						
1	14.0	--	--	--	4.0	4.5	8.5	11.5	--	20.5	--	--
2	--	9.5	0.5	1.0	3.0	4.5	7.0	--	--	--	--	18.0
3	--	--	--	--	3.5	--	6.5	--	20.0	--	--	--
4	--	--	--	--	2.0	4.5	8.0	17.0	--	--	20.5	--
5	--	9.5	1.0	0	2.0	--	--	--	--	--	--	--
6	14.5	--	--	--	3.0	--	10.0	--	--	21.5	--	17.0
7	--	--	--	--	5.0	--	--	11.5	23.0	--	--	--
8	--	6.0	3.0	--	5.0	--	9.0	--	--	--	--	--
9	13.0	--	--	--	5.0	4.0	--	--	--	--	--	--
10	--	--	--	1.0	5.5	5.0	9.5	13.5	--	--	23.5	13.5
11	--	8.0	1.5	--	5.0	4.5	--	--	15.0	23.0	--	--
12	8.5	--	--	0	5.0	4.5	9.5	--	--	--	--	--
13	--	--	4.5	1.5	5.5	6.5	--	10.0	--	--	--	--
14	9.0	--	6.0	3.0	6.0	8.5	6.5	--	17.0	--	19.0	--
15	--	5.0	--	.5	5.5	9.0	--	--	--	--	--	--
16	--	--	3.5	.5	6.0	8.0	--	--	--	--	--	10.5
17	--	--	.5	.5	6.0	5.0	8.0	18.0	14.0	20.0	--	--
18	--	3.5	4.5	1.0	4.0	6.0	--	--	--	--	22.0	9.0
19	15.0	--	4.5	1.5	3.5	5.5	--	--	--	--	--	--
20	--	--	--	1.0	4.5	6.0	8.0	17.0	21.5	--	--	--
21	--	5.5	--	1.0	3.0	6.5	--	--	--	--	18.0	--
22	11.0	--	4.5	1.5	5.0	--	8.5	--	--	--	--	14.0
23	--	--	5.0	3.5	4.0	8.0	--	--	23.5	18.0	--	--
24	--	2.0	4.0	4.5	5.0	6.5	--	19.5	--	--	--	--
25	--	--	3.5	4.0	4.0	6.5	6.5	--	--	--	23.0	5.5
26	--	0	--	3.0	5.5	7.0	--	20.0	--	--	--	--
27	--	--	--	--	6.5	6.0	6.5	--	24.5	--	--	--
28	8.0	--	0	--	--	9.0	--	--	--	19.5	--	16.0
29	--	3.0	0	--		--	9.0	--	18.0	--	17.0	14.5
30	9.0	--	--	1.5		8.0	--	--	--	--	--	--
31	--		.5	3.5		6.0		19.5		18.5	--	
						October 1970-September 1971						
1	14.0	--	--	--	5.0	0.5	6.0	--	--	--	--	--
2	13.0	--	3.0	--	5.0	--	6.5	--	13.5	18.0	27.0	--
3	--	--	--	0.5	--	1.5	--	13.5	13.5	--	--	--
4	--	--	--	.5	3.5	--	6.5	--	12.0	23.0	--	16.0
5	--	--	1.5	1.0	--	3.5	--	12.0	13.0	--	23.5	--
6	10.5	6.5	--	--	0	--	10.5	--	--	18.0	--	18.5
7	--	--	5.5	.5	1.0	3.5	--	12.0	16.5	--	--	20.0
8	--	--	--	1.0	--	--	9.0	--	--	--	--	14.5
9	10.0	8.5	--	2.0	0	3.0	9.0	--	16.5	20.5	23.5	15.0
10	--	--	3.0	2.0	--	--	7.0	15.0	--	--	--	15.5
11	--	--	--	3.0	4.0	--	5.5	--	16.0	--	24.0	16.5
12	11.0	8.0	--	1.5	6.5	5.5	8.5	18.0	--	16.5	21.5	--
13	--	--	.5	1.0	8.0	5.0	8.0	--	19.0	--	--	15.0
14	11.5	--	--	1.0	5.5	5.0	--	14.0	15.5	19.0	--	--
15	--	7.0	--	2.0	--	2.0	8.5	--	15.5	--	--	11.5
16	--	--	3.0	1.5	4.0	1.5	--	--	15.5	22.0	21.0	--
17	--	--	--	3.0	4.0	3.0	8.5	13.5	--	--	--	--
18	11.5	6.0	--	4.0	6.0	3.5	--	--	--	30.0	--	9.0
19	15.0	--	1.5	6.0	5.0	4.5	5.5	13.5	18.0	--	19.0	--
20	--	5.0	--	4.0	2.0	4.5	--	--	--	24.5	--	13.5
21	9.0	--	1.5	3.0	3.0	5.0	5.0	13.0	19.5	--	--	--
22	11.0	--	--	1.5	--	5.5	--	--	--	--	--	10.5
23	9.5	--	--	1.5	3.0	5.5	9.5	18.0	21.5	23.0	14.5	--
24	--	6.0	1.0	4.0	--	6.0	--	--	--	--	--	--
25	10.0	--	--	3.0	1.0	6.0	8.0	19.0	20.0	--	17.0	14.0
26	--	--	--	4.5	--	7.0	8.5	--	--	25.0	--	--
27	--	3.0	.5	4.0	1.0	6.0	10.5	20.5	--	--	--	--
28	5.0	--	--	3.5	--	6.0	--	--	16.5	--	20.5	11.0
29	--	--	1.5	4.0		6.0	--	20.0	--	--	--	--
30	9.0	3.0	--	7.0		6.5	10.0	--	17.0	21.0	--	--
31	5.0		3.0	8.5		6.5		14.0		--	--	

TABLE C9.--Air and water temperatures of selected streams and lakes

Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water
8. Palouse River near Colfax (13346000)[1]											
9-20-55	1700	15.6	13.3	8- 6-58	1445	36.7	26.7	11-24-61	1555	4.4	0.6
12- 3-55	1430	-1.7	.6	12-12-58	1550	4.4	5.6	12-27-61	1145	.6	0
1-17-56	1640	2.2	1.1	1- 6-59	1110	-6.7	1.1	2- 9-62	1200	8.9	2.8
1-20-56	1620	2.8	2.2	1- 9-59	1230	10	3.3	2-28-62	1015	-1.7	0
3-13-56	1010	0	0	1-28-59	1220	3.3	2.2	4- 3-62	1415	16.7	7.2
3-20-56	1215	14.4	--	5-18-59	1715	7.2	8.3	4-23-62	1235	28.3	13.3
3-22-56	1855	12.2	--	6-10-59	1845	20	18.9	7-23-62	1930	24.4	28.3
3-23-56	1200	13.3	--	7-22-59	1715	32.2	20	8-20-62	1400	32.2	25.6
3-23-56	1425	--	3.1	8-15-59	0930	28.3	17.8	10- 6-62	1030	11.1	8.9
3-23-56	1700	11.1	--	10-26-59	1220	16.7	8.9	11- 8-62	1040	8.3	5
3-30-56	1030	8.9	6.1	10-27-59	1120	12.2	7.8	12- 9-62	1320	5	2.2
4- 3-56	1425	11.7	--	11-20-59	1600	7.8	2.2	1-24-63	1505	0	0
5-21-56	1010	21.7	17.8	1- 4-60	1630	-2.2	0	2- 4-63	0900	10.6	1.1
7- 2-56	1415	28.3	21.7	2- 8-60	1530	4.4	1.1	2- 7-63	1300	11.7	2.8
8- 6-56	1505	28.3	24.4	3-14-60	1550	6.1	4.4	4-18-63	1210	9.4	6.1
9-17-56	1335	30	18.3	3-21-60	1450	15.6	8.3	5- 9-63	1230	13.9	11.1
10-22-56	1255	11.7	7.2	4-13-60	1230	15	8.3	6-10-63	1520	26.7	21.7
12- 3-56	1240	10	1.1	4-25-60	1230	11.1	--	7-16-63	1400	23.9	23.9
1-15-57	1240	-6.7	.6	5-23-60	1340	16.7	12.8	9- 1-63	1115	27.8	22.8
1-28-57	1350	-22.2	0	6- 9-60	1125	26.1	21.1	10- 7-63	1140	16.1	13.3
2-19-57	1305	-1.1	--	6-27-60	1300	28.3	24.4	11-18-63	1255	6.1	5
4-24-57	1315	2.2	2.8	7-25-60	1340	33.3	24.4	12-17-63	1040	4.4	0
5-23-57	1400	--	10	8-29-60	1035	23.9	16.1	1-20-64	1315	3.9	0
6-24-57	1500	27.2	23.3	10- 3-60	1255	26.7	14.4	2-26-64	0925	1.7	0
7-22-57	1140	33.9	22.8	11-14-60	1130	4.4	2.8	3-30-64	1525	20.6	7.8
8-26-57	1230	20	18.3	12-12-60	1340	6.7	.6	5- 4-64	1010	7.8	5
9-24-57	1505	30	17.8	1- 6-61	1400	--	0	6- 3-64	1430	22.2	20
11- 8-57	1705	-1.1	1.7	2- 3-61	1200	6.1	1.1	7-14-64	1350	--	25.6
12-16-57	1430	10.6	3.3	2-10-61	1515	--	8.3	8-12-64	1310	26.7	24.4
1-24-58	1130	6.7	3.9	2-14-61	1150	5	3.3	9-18-64	0955	--	10.6
3- 3-58	1430	3.9	3.3	2-18-61	1100	6.7	2.2	10-19-64	1135	--	7.2
3-24-58	1500	12.2	10	3-18-61	1520	12.8	6.7				
4-22-58	1615	4.4	7.2	4-17-61	1320	13.9	11.7				
5-20-58	1130	23.9	21.1	5-23-61	1150	16.7	17.8				
7- 8-58	1430	31.7	28.9	9-11-61	0930	18.3	14.4				
9. Palouse River at Colfax (13346100)											
12-30-63	1625	3.3	1.1	5-26-65	1000	18.3	15.6	1-22-67	1030	0.6	0.6
1-21-64	1520	1.7	0	7-14-65	0810	22.2	20	3- 6-67	1220	7.8	3.3
2-26-64	1110	5	.6	8-18-65	1015	31.1	20.6	4-17-67	1400	6.7	3.3
3-12-64	1250	1.7	2.2	9-21-65	1445	16.7	17.2	5-24-67	1030	15.6	14.4
3-20-64	1150	6.1	2.2	10-26-65	1135	18.3	10.6	7-17-67	1900	28.3	17.2
3-30-64	1325	20.6	7.8	12- 8-65	1150	8.3	5	8-29-67	1100	31.1	21.1
4- 1-64	1635	9.4	6.7	1-12-66	1530	5.6	2.2	10- 5-67	0950	11.1	9.4
4-10-64	0910	7.8	10	1-18-66	1440	-1.1	1.1	11-16-67	1300	10.6	8.9
5- 4-64	1200	--	5.6	2- 3-66	1440	-1.1	0	12-21-67	1220	-6.7	.6
7-14-64	1050	--	22.2	2- 9-66	1050	6	1.1	2- 7-68	1700	3.3	2.8
8-12-64	1140	25.6	23.3	3- 9-66	1635	3.9	5.6	3-19-68	1105	13.9	3.3
9-14-64	1515	--	15.6	4- 5-66	1740	22 2	11.1	4-30-68	1050	15.6	13.3
10-23-64	1015	--	7.2	5-11-66	1550	17.8	15	6-13-68	1140	15.6	13.9
11-24-64	1020	9.4	4.4	6-15-66	1550	28.9	25.6	9- 6-68	1040	23.3	21.7
12-24-64	1420	-3.3	2.2	7-20-66	1325	--	23.9	10-15-68	1335	--	13.3
12-29-64	1000	-5.6	--	8-11-66	1410	24.4	21.1	12- 4-68	0955	3.3	3.9
1-21-65	1255	1.1	1.1	8-25-66	1430	30	--	3- 7-69	1030	-2.8	2.2
2- 1-65	1255	3.3	1.7	9-30-66	1020	23.3	14.4	4-17-69	1235	17.8	10
2-25-65	1215	6.1	3.9	11- 3-66	1620	15	6.1	5-29-69	1015	20	13.9
4-21-65	1430	12.8	10	12-16-66	1235	6.1	3.3	7-17-69	0952	19.4	20.6

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

Date	Time	Temperature (°C) Air	Water
9. Palouse River at Colfax (13346100)--Continued			
9- 4-69	0925	16.7	12.2
10-15-69	1002	7.2	3.3
11-26-69	0809	-3.3	--
11-28-69	1153	.6	0
1- 7-70	0953	-6.7	0
1-28-70	1555	1.1	1.7
3-18-70	1030	4.4	6.7
6-12-70	0650	11.1	13.3
7-21-70	1045	22.8	21.1
9- 2-70	1624	30	19.0
10-28-70	1420	15	5.6
10-29-70	0940	--	2.8
11- 4-70	1040	17.2	5
12- 7-70	1045	4.4	3.9
1-17-71	1530	6.7	1.1
1-18-71	1205	9.4	2.2
1-27-71	1005	3.3	1.7
2- 8-71	0900	-2.2	0
3- 4-71	0945	-2.2	0
4- 8-71	0900	8.9	5.6
4-29-71	1145	11.1	10
5- 4-71	0925	15	12.2
5-21-71	1410	22.2	14.4
6-17-71	0730	8.9	12.2
7- 7-71	1435	24.4	--
8-11-71	1515	5	--
8-12-71	0930	31.1	22.5
9-30-71	1620	15	--
10- 1-71	0850	-.6	8.3
11-28-71	1230	6.1	3.5
16. South Fork Palouse River at Pullman (13348000)			
1-22-60	1455	-2.8	0
1-26-60	1555	2.2	0
2- 2-60	1415	2.2	1.7
3-15-60	1250	5	3.9
4-26-60	1045	12.8	8.3
5-23-60	1420	11.7	13.3
6-22-60	0850	16.7	15.6
7-26-60	1025	31.7	23.3
8-29-60	1610	21.1	18.3
12-13-60	1020	8.9	1.1
1- 5-61	1450	3.3	3.3
2-10-61	1530	7.8	6.1
2-15-61	0940	3.9	3.9
2-18-61	1615	3.3	5
3-19-61	1035	11.7	9.4
4-18-61	0925	6.7	10
5-24-61	0850	14.4	15.6
9-11-61	1330	21.1	20.6
11-24-61	1320	5.6	1.1
12-27-61	1530	0	0
2- 9-62	1350	--	3.3
3-27-62	1330	5.6	5.1
4-24-62	0940	18.9	13.3
7-24-62	1000	33.3	22.8
8-21-62	0825	17.8	17.8
10- 5-62	1555	15.6	13.9
11- 8-62	1400	9.4	7.8
12-10-62	0945	2.2	3.3
12-18-62	1020	5.6	5
1-23-63	1545	-2.8	.6
2- 4-63	1000	11.7	--
4- 6-63	1650	10.6	9.4
5- 9-63	1600	11.1	13.3
6-11-63	0950	22.2	18.3
9- 2-63	0810	16.1	16.1
10- 7-63	1325	17.8	15
11-18-63	1445	6.1	6.1
12-17-63	1645	.6	1.7
1-22-64	1005	-1.1	1.1
2-27-64	0930	3.9	.6
3-19-64	0900	0.6	7.8
3-20-64	0900	2.8	1.1
4- 7-64	1805	--	10.6
5- 4-64	1630	--	8.9
7-13-64	1140	26.1	21.1
8-11-64	1115	29.4	19.4
10-12-64	1010	--	13.3
11-23-64	1255	3.9	5
12-23-64	1050	--	2.8
12-24-64	1220	--	0
12-29-64	1300	-.6	0
1-20-65	1315	1.1	1.1
1-30-65	1425	--	4.4
2-24-65	1225	--	1.7
3-16-65	1310	.6	3.9
4-28-65	1255	16.1	13.3
5-25-65	1050	17.2	12.2
7-13-65	1135	22.8	20.6
8-16-65	1430	32.8	18.9
9-20-65	1320	21.1	13.9
10-25-65	1325	22.2	--
12- 6-65	1555	8.3	6.7
1-11-66	1525	3.9	1.7
2- 8-66	1505	1.1	1.7
3- 8-66	1750	4.4	4.4
4- 5-66	1350	20.6	11.7
5-10-66	1435	11.7	12.2
6-14-66	1505	23.9	16.7
7-19-66	1410	24.4	26.7
8-25-66	0730	23.3	16.7
8-26-66	0615	17.8	16.7
9-29-66	1030	23.9	16.1
11- 2-66	1525	18.3	10.6
12-12-66	1540	5.6	4.4
12-14-66	1405	7.8	3.9
1-23-67	1350	0	1.1
3- 7-67	1450	4.4	2.2
4-18-67	1710	6.1	4.4
4-20-67	0820	0	2.2
5-25-67	1345	23.9	16.7
7-12-67	1410	41.7	18.9
10- 3-67	1320	--	12.2
11- 4-67	1350	12.2	10
12-27-67	1400	3.3	1.1
2- 6-68	1600	4.4	1.1
3-20-68	1400	10	6.1
4-30-68	1550	17.8	13.3
6-13-68	1530	13.3	12.2
9-10-68	1230	28.3	21.1
10-17-68	1055	--	10.6
12- 5-68	1315	2.2	3.9
1- 9-69	1630	-2.8	1.7
3- 4-69	1550	3.3	2.2
4-15-69	1310	16.7	8.9
5-27-69	1425	16.7	11.7
9- 2-69	1047	25.6	18.9
10-13-69	1521	8.3	10.6
11-24-69	1356	5.6	3.3
1- 5-70	1436	-5.6	0
1-27-70	1525	2.8	2.2
3-16-70	1730	8.3	7.2
4-29-70	1050	10.6	9.4
6-10-70	1230	19.4	15
7-21-70	1320	23.3	19.4
8-31-70	1530	26.7	23.5
9- 2-70	1500	--	18.5
10-27-70	1115	4.4	3.3
12- 7-70	1435	4.4	5.6
1-27-71	1120	4.4	2.8
2- 8-71	1525	7.2	2.2
3- 1-71	1325	-3.9	2.2
4-27-71	1140	16.1	12.2
6-15-71	1220	18.3	15.6
8-10-71	1220	28.9	23.3
9-29-71	1015	10.6	10.6
11-22-71	1450	3.9	4.5

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water
20. Missouri Flat Creek at Pullman (13348500)											
1-22-60	1350	-2.8	2.2	8-31-64	1750	--	12.2	12-19-68	1410	0	0.6
1-26-60	1450	2.2	1.7	10-12-64	1030	--	10	1-10-69	0955	-2.8	.6
2- 2-60	1445	2.2	1.1	11-23-64	1335	3.9	5.6	2-13-69	1410	2.2	--
4-26-60	1145	11.1	10	12-23-64	1050	--	2.8	3- 4-69	1320	3.3	2.2
5-23-60	1445	11.7	12.8	12-29-64	1250	-.6	0	3- 6-69	0955	-.6	2.2
6-22-60	0900	15.6	16.7	1-20-65	1620	1.1	1.1	4-15-69	1220	15.6	9.4
7-26-60	1130	33.3	25.6	1-30-65	1615	--	4.4	5-27-69	1220	16.7	14.4
8-29-60	1700	21.1	18.3	2-24-65	1445	3.9	2.2	7-15-69	1357	22.2	23.3
12-13-60	1100	11.1	1.7	3-16-65	1125	1.1	3.9	9- 2-69	1300	25.6	16.7
1- 5-61	1515	3.3	3.3	5-25-65	1050	17.2	11.7	10-13-69	1329	11.7	7.8
2- 3-61	1415	6.7	2.2	7-13-65	1335	--	21.7	11-24-69	1124	1.7	2.8
2-11-61	1500	10	5.6	8-16-65	1330	27.8	17.2	1- 5-70	1252	-5.6	0
2-18-61	1525	--	3.3	9-20-65	1335	21.7	10.6	1-27-70	1400	1.1	2.2
3-19-61	1355	--	10	10-25-65	1525	21.1	--	3-16-70	1345	8.3	6.7
4-18-61	1045	9.4	--	12- 6-65	1400	11.1	6.1	4-28-70	1045	6.1	8.9
9-11-61	1430	21.1	19.4	1-11-66	1405	4.4	2.2	6-10-70	1055	18.3	15
11-24-61	1130	5.6	1.1	2- 8-66	1555	-1.1	1.7	7-21-70	1300	25.6	21.1
12-27-61	1530	0	0	3- 8-66	1605	4.4	5	8-31-70	1200	23.9	23.0
2- 9-62	1515	--	3.3	4- 5-66	1425	21.7	14.4	10-27-70	0910	4.4	1.1
7-24-62	1040	27.8	17.8	5-10-66	1435	11.7	--	12- 7-70	1600	3.3	3.9
8-21-62	0720	17.8	16.7	6-14-66	1340	23.9	18.9	1-19-71	0900	3.3	2.8
11- 8-62	1435	9.4	7.8	7-19-66	1455	--	20	1-27-71	1120	4.4	--
12-10-62	1035	2.2	3.9	8-25-66	0900	26.7	16.7	2- 8-71	1550	7.2	1.1
12-18-62	1030	7.2	4.4	11- 2-66	1630	--	8.9	3- 1-71	1455	-1.1	3.1
1-23-63	1640	-3.9	0	12-14-66	1250	7.2	4.4	4-27-71	1115	16.1	11.1
2- 4-63	1300	10	4.4	1-23-67	1515	0	.6	4-28-71	1500	17.8	14.4
2-22-63	1500	--	10	3- 7-67	1730	3.3	3.3	6-15-71	1100	18.3	14.4
4- 6-63	1530	12.2	10	4-17-67	1810	5	3.9	8-10-71	1000	28.9	22.2
6-11-63	0930	17.8	15.6	5-25-67	1210	23.9	14.4	9-29-71	1045	10.6	9.4
9- 2-63	0915	16.7	16.1	8-29-67	1530	33.9	22.2	9-30-71	1305	13.9	8.3
11-18-63	1515	4.4	6.1	10- 3-67	1400	--	11.7	11-22-71	1315	3.9	3.5
12-17-63	1820	.6	2.8	11-14-67	1200	12.2	10				
1-22-64	1040	-.6	1.1	12-27-67	1235	3.3	1.7				
2-27-64	1030	3.9	.6	2- 7-68	1410	5	2.8				
3-19-64	1420	6.7	3.3	3-19-68	1715	11.7	1.7				
3-20-64	1005	2.8	1.1	4-30-68	1520	15.6	13.3				
4- 7-64	1915	--	10.6	6-13-68	1510	13.3	11.1				
5- 4-64	1450	--	10.6	9- 9-68	1200	27.8	21.7				
7-13-64	1240	--	19.2	10-17-68	1340	--	10				
8-11-64	1155	--	16.7	12- 5-68	1136	2.2	3.9				
29. Palouse River below South Fork, at Colfax (13349210)											
12-30-63	1410	--	2.2	12-24-64	1110	-2.8	2.2	4- 6-66	0935	15	10
1-21-64	1635	0	0	12-29-64	1305	-3.9	--	5-11-66	1445	17.8	16.1
2-26-64	1310	6.1	3.3	1-21-65	1500	1.7	1.1	6-15-66	1200	27.2	20
3-12-64	1250	1.7	2.2	2- 1-65	1550	2.2	2.2	7-20-66	1120	21.1	23.3
3-19-64	1520	7.8	1.7	2-25-65	0825	--	3.9	8-25-66	1555	26.7	20.6
3-30-64	1000	16.7	8.3	4-22-65	1100	17.2	8.9	9-29-66	1625	21.1	15.6
4- 2-64	0925	4.4	7.2	5-26-65	1230	21.1	16.7	11- 3-66	1425	--	7.2
4-10-64	1500	11.7	10	7-14-65	0935	23.3	21.7	12-16-66	1020	5	3.9
4-20-64	1305	17.8	12.2	8-18-65	1210	32.8	24.4	1-26-67	1510	-.6	.6
5- 4-64	1405	7.8	7.8	9-22-65	0855	17.2	15.6	3- 6-67	1515	6.7	3.3
7-13-64	1805	--	23.9	10-26-65	1415	18.3	10.6	4-17-67	1650	4.4	4.4
9-14-64	1345	--	17.8	12- 8-65	1325	7.8	5.6	5-23-67	1700	25.6	15
10-19-64	1510	--	9.4	1-12-66	1400	6.1	1.7	7-19-67	0940	24.4	16.7
11-24-64	0910	9.4	5	2- 9-66	1015	0	1.1	8-29-67	1245	33.3	21.7
12-23-64	1525	--	2.2	3- 9-66	1425	8.3	6.1	10- 5-67	1320	11.7	10.6

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

29. Palouse River below South Fork, at Colfax (13349210)--Continued

Date	Time	Temperature (°C) Air	Water	Date	Time	Air	Water	Date	Time	Air	Water
11-16-67	1115	7.2	7.2	5-15-69	1345	22.2	16.1	11- 4-70	1150	17.8	5.0
12-21-67	1600	-6.7	.6	6-16-69	1440	25	24.4	12- 7-70	1250	5	4.4
2- 6-68	1230	5	1.1	7-17-69	1208	25.6	21.1	1-18-71	1040	7.8	2.8
3-19-68	1530	11.7	2.2	9- 4-69	1136	16.7	14.4	1-27-71	1025	3.3	3.3
4-30-68	1200	17.8	13.3	10-15-69	1214	14.4	5.6	2- 8-71	0945	-2.2	0
6-13-68	1400	17.2	13.9	11-26-69	1245	5.6	2.2	2-17-71	1615	2.8	3.5
7-24-68	1600	32.2	24.4	1- 7-70	1502	-2.2	0	3- 3-71	1555	-1.1	1.7
9- 6-68	1320	26.7	21.7	1-28-70	1300	-.6	1.5	4- 8-71	0930	8.9	7.2
10-16-68	1200	10	8.3	3-18-70	1145	8.9	6.7	4-29-71	1240	13.3	12.8
12- 3-68	1515	4.4	3.3	4-30-70	1015	8.9	10.6	5- 4-71	0925	15	14.4
1- 8-69	1500	-1.1	.6	6-12-70	1020	13.3	14.4	5-21-71	1355	22.2	--
1-16-69	1400	-.6	.6	7-21-70	1210	26.7	21.1	6-17-71	1205	18.3	18.3
3- 6-69	1520	6.7	1.7	9- 3-70	1250	20	18.0	7- 7-71	1435	24.4	19.4
3-19-69	1710	6.7	4.4	10-28-70	1555	8.9	5.6	8-12-71	1145	32.2	24.5
4-17-69	1340	17.8	10	10-29-70	0850	-1.7	2.8	10- 1-71	0930	7.2	8.3
								11-29-71	1555	6.1	3.5

47. Pine Creek at Pine City (13349400)

7-21-61	1430	33.3	23.9	1-19-65	1555	0	1.1	1-14-69	1335	-2.8	0.6
9-10-61	1030	20	12.8	2-23-65	1425	2.2	2.8	3- 7-69	1600	4.4	2.2
10-13-61	1645	20	12.2	3-15-65	1455	12.8	6.7	4-18-69	1655	16.7	9.4
11-17-61	1355	0	2.8	4-19-65	1510	10.6	9.4	5-29-69	1410	22.8	13.9
12-28-61	1000	1.7	1.7	5-24-65	1610	13.3	13.9	7-18-69	1145	30	18.9
2- 8-62	1600	--	3.3	7-12-65	1500	22.2	19.4	9- 5-69	0930	15.6	10.6
4- 3-62	1130	16.7	--	8-17-65	1235	29.4	22.2	10-16-69	1041	9.4	5.6
4-23-62	1000	22.2	14.4	9-21-65	1100	17.2	14.4	11-13-69	1350	--	6.7
6- 5-62	0900	11.1	10.6	10-26-65	1005	7.2	6.1	11-26-69	1510	3.3	3.1
7-24-62	1600	32.2	21.7	12- 7-65	1420	6.7	3.9	11-28-69	1436	-2.2	2.8
8-20-62	1155	31.7	--	1-10-66	1110	2.2	.6	1- 8-70	1242	0	1.1
10- 6-62	1200	13.3	9.4	2-14-66	1315	2.8	1.7	1-29-70	1417	1.1	1.0
12- 9-62	1125	2.2	3.3	3-10-66	1330	6.7	3.9	3-19-70	1200	13.9	21.1
1-24-63	1110	-1.7	1.7	4-26-66	1150	8.3	10	4-30-70	1337	16.7	10.6
2- 5-63	1700	7.8	2.8	5-24-66	1500	23.3	18.3	6-12-70	1415	--	16.1
2- 8-63	1630	7.2	4.4	6-22-66	1445	--	18.3	7-23-70	0900	20	13.9
3- 5-63	1545	5.6	2.8	7-27-66	1410	32.2	23.3	9- 4-70	1125	18.3	12.8
5-10-63	1730	14.4	--	10- 6-66	1020	23.9	10	10-29-70	1110	6.1	3.3
6-10-63	1330	23.3	21.7	11- 4-66	1030	5.6	6.1	12-10-70	1320	-1.7	1.1
6-21-63	1250	20	16.1	12-16-66	1545	5.6	4.4	1-17-71	0850	7.2	1.1
7-16-63	1050	19.4	15	1-27-67	1335	1.1	2.2	3- 4-71	1500	0	2.8
9- 1-63	0900	21.1	13.3	3- 9-67	1310	6.7	4.4	4- 8-71	1215	16.7	11.1
10- 7-63	1000	11.1	8.9	4-20-67	1540	4.4	--	4-29-71	1340	--	12.2
11-18-63	1050	6.1	5	5-22-67	1530	23.3	10	5- 4-71	1210	17.3	16.1
12-16-63	1700	1.1	2.2	7-14-67	1440	31.7	17.2	6-18-71	1420	16.7	17.8
1-31-64	1400	.6	1.7	9- 5-67	1050	30	21.1	8-17-71	1415	38.3	21.7
2-28-64	1635	3.3	3.3	10- 2-67	1145	10.6	11.1	10- 1-71	1315	16.1	10.6
3-18-64	1515	6.7	4.4	11-17-67	1115	7.2	8.9	11-30-71	1245	3.3	2.5
4- 2-64	1240	12.2	7.2	12-20-67	1220	-1.7	.6				
5- 6-64	1720	--	10.6	2- 8-68	1520	4.4	1.1				
6- 3-64	1055	23.3	17.2	3-21-68	1420	6.7	4.4				
7-15-64	0955	--	16.1	5- 3-68	1230	21.1	10				
8-13-64	1400	23.9	19.4	9- 5-68	1320	26.7	21.1				
9-11-64	1245	--	16.1	10-15-68	1040	--	8.9				
10-23-64	1230	--	8.3	12- 3-68	1120	6.7	3.9				

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water
				61. Union Flat Creek near Colfax (13350500)							
9-29-53	1530	20	12.2	3-14-60	1825	5	3.9	11-15-65	1315	13.3	8.9
11- 3-53	1155	19.4	3.3	4-25-60	1535	11.1	11.1	12- 6-65	1115	4.4	10
12- 8-53	1015	-2.2	.6	5-23-60	1630	17.8	15	1-11-66	1225	4.4	1.7
12-10-53	1300	5.1	2.8	6-27-60	1520	30.6	27.8	1-18-66	1305	-2.2	1.1
2- 1-54	1330	3.9	.6	7-25-60	1640	32.2	26.7	2- 8-66	1235	2.2	1.1
3-15-54	1525	10.6	6.7	8-29-60	1415	21.1	16.7	3- 8-66	1305	5	3.9
6- 9-54	1415	23.9	18.3	10- 3-60	1545	25.6	16.1	4- 5-66	1210	17.2	10
7-13-54	1205	32.2	26.1	11-14-60	1400	3.3	3.3	5-10-66	1200	--	13.3
8-31-54	1715	26.1	21.7	12-12-60	1530	8.9	0	6-14-66	1100	23.3	20
10- 7-54	1740	14.4	--	1- 6-61	1515	3.9	0	7-19-66	1220	24.4	22.2
11-16-54	1100	12.8	6.7	2- 3-61	1530	5.6	3.3	9-30-66	0840	22.8	10.6
1-25-55	1000	4.4	.6	2-10-61	1715	7.8	--	11- 3-66	1140	16.1	6.1
5-17-55	1325	15.6	12.8	2-14-61	1510	5.6	3.9	12-15-66	1700	3.9	3.3
7-10-55	1440	--	21.7	2-18-61	1245	--	2.8	1-26-67	1250	.6	.6
8-30-55	1505	32.2	--	3-18-61	1650	15.6	9.4	3- 8-67	1745	3.3	3.3
9-27-55	0910	--	12.2	4-17-61	1545	14.4	15	4-19-67	1810	4.4	3.3
12- 6-55	0945	.6	0	5-23-61	1440	23.3	18.3	5-22-67	1840	23.3	13.3
1-18-56	1315	0	1.1	9-11-61	1620	20	18.9	7-18-67	1000	27.8	19.4
3-12-56	1650	--	1.7	11-24-61	1000	5.6	0	10- 5-67	1155	11.7	11.7
3-20-56	1435	14.4	--	12-27-61	0945	.6	0	11-16-67	1250	11.7	7.8
3-28-56	1420	11.7	5	2- 9-62	0955	--	3.3	12-21-67	1340	-6.7	1.1
4- 3-56	1730	11.7	8.9	4- 3-62	1630	15.6	11.7	2- 6-68	1400	5.6	2.2
4-18-56	1510	20.6	16.1	4-23-62	1600	25.6	21.7	3-19-68	1305	10	8.3
5-21-56	1300	22.8	22.2	7-24-62	1230	37.7	26.1	4-30-68	1400	15.6	10
7- 2-56	1730	26.7	25	8-20-62	1530	32.2	26.1	6-13-68	1230	15.6	12.2
8- 6-56	1705	26.7	25	10- 6-62	0850	12.2	8.9	9- 6-68	1145	28.9	21.1
9-17-56	1535	27.8	20	11- 8-62	0930	7.2	5	10-15-68	1415	--	11.1
10-22-56	1440	8.3	7.8	12- 9-62	1510	3.9	2.8	12- 4-68	1200	4.4	2.2
12- 3-56	1500	9.4	1.1	1-24-63	0910	-2.8	0	1-16-69	1230	.6	.3
1-15-57	1450	-5	1.1	2- 4-63	1655	1.7	10	1-17-69	1000	-4.4	0
1-28-57	1600	-20.6	0	2- 6-63	1015	13.3	3.9	2-13-69	1230	.6	--
6-24-57	1840	25.6	23.9	2- 7-63	0905	7.8	2.2	3- 6-69	1205	6.7	1.7
7-22-57	1230	35	28.3	4- 8-63	1005	12.8	8.3	4-17-69	1220	15	8.3
8-26-57	1445	22.2	20	5-10-63	1525	13.9	17.2	5-28-69	1318	20	13.3
9-10-57	1800	--	18.3	6-10-63	1650	26.7	--	7-17-69	1445	23.3	26.1
9-24-57	1620	31.1	20	7-16-63	1630	24.4	24.4	9- 4-69	1405	16.7	14.4
11- 8-57	1330	--	3.9	10- 7-63	1510	17.8	16.1	10-15-69	1455	16.7	7.2
11-12-57	1500	7.8	5	11-18-63	1645	3.9	5	11-25-69	1520	2.2	1.1
12-17-57	1000	8.9	2.8	1-20-64	1630	0	0	1- 8-70	0946	-.6	0
1-24-58	1440	7.8	3.9	2-26-64	1735	3.3	2.8	1-23-70	1320	6.7	4.4
2-14-58	1430	3.3	3.3	3-30-64	0930	13.9	7.8	4-29-70	1322	11.7	10.6
3- 3-58	1635	2.2	1.7	5- 4-64	1035	10.6	5	6-12-70	1155	12.8	--
3-24-58	1130	13.3	10	7-14-64	0815	--	20	9- 3-70	1005	--	18.5
4-18-58	1630	--	10	8-11-64	1350	28.3	25	10-28-70	1240	8.3	3.3
4-23-58	1530	11.7	9.4	9-18-64	0805	--	10	12- 9-70	1515	-.6	1.7
5-20-58	1415	30.6	26.1	10-23-64	0815	--	4.4	1-17-71	1320	8.3	2.8
6-16-58	1230	28.9	24.4	11-23-64	1525	4.4	3.3	1-19-71	1200	4.4	2.2
7- 8-58	1710	32.8	28.9	12-28-64	1720	-5.6	0	2- 8-71	1245	6.1	.6
8- 6-58	1130	31.7	22.8	1-21-65	1015	1.7	.6	3- 1-71	1100	-7.2	0
12-12-58	1345	2.8	--	1-28-65	1608	8.9	3.9	4-29-71	0715	7.2	9.4
1- 6-59	1340	8.9	.6	2- 2-65	1700	.6	2.2	6-17-71	1425	21.7	21.1
1- 9-59	1340	13.3	.6	2-24-65	1100	2.2	1.1	8-12-71	0755	25	18
2- 9-59	1445	-.6	1.1	3-16-65	1600	1.7	4.4	9-30-71	1505	13.9	11.7
5-18-59	1420	8.3	12.8	4-28-65	1115	17.8	15.6				
6-10-59	1520	18.3	20	5-25-65	1500	21.1	17.2				
7-22-59	1615	38.9	21.1	7-13-65	0735	17.2	18.9				
8-15-59	1355	27.8	--	8-18-65	0910	29.4	19.4				
10-26-59	1430	20	10	9-20-65	1100	17.8	12.2				
12- 1-59	1050	6.7	0	10-25-65	1150	21.7	10				
1- 5-60	1250	4.4	0	11- 9-65	1110	8.3	6.7				

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

66. Palouse River at Hooper (13351000)

Date	Time	Temperature (°C) Air	Water
12- 7-50	1645	2.8	1.1
12-18-50	1540	3.9	1.1
1- 4-51	1130	.6	3.3
1-22-51	1350	2.2	3.3
3- 6-51	1215	3.3	1.1
3-16-51	1010	3.3	4.4
4-23-51	1225	20.6	8.3
4-29-51	1550	9.4	7.2
5-10-51	1405	26.1	14.4
7-15-51	1330	20	18.3
7-18-51	1400	31.7	--
7-31-51	1250	32.2	16.1
8-22-51	1250	31.1	22.2
10-12-51	1200	17.8	13.9
11-12-51	1400	3.9	6.1
11-27-51	1500	10	5
12-29-51	1315	2.2	1.1
1- 3-52	1600	--	.6
1-23-52	1355	-4.4	.6
2- 5-52	1150	3.3	2.2
3- 7-52	1450	16.7	--
4-26-52	1330	10	7.2
6- 1-52	1500	31.1	16.7
9- 8-52	1130	15.6	15
10-13-52	1100	20.6	13.3
11-18-52	1520	2.8	--
1- 5-53	1305	2.8	5
1-20-53	1340	7.2	3.9
1-26-53	1355	1.1	3.9
3- 9-53	1400	22.2	8.9
5- 9-53	1430	18.9	13.9
6-25-53	1305	25.6	18.9
8-18-53	1700	37.2	25
9-29-53	1200	21.7	12.8
12- 7-53	1630	4.4	3.3
1- 7-54	1200	10.6	8.3
1-19-54	1500	-3.9	.6
1-29-54	1600	3.9	--
6-10-54	0800	12.2	18.3
7-18-54	0800	29.4	22.8
8-31-54	1300	30	21.7
10- 7-54	1325	--	13.9
11-16-54	1400	10	7.2
1-24-55	1535	2.8	1.7
2- 8-55	1530	8.3	--
4-12-55	1200	8.9	7.8
5-23-55	1545	15.6	14.4
8-30-55	1735	--	23.9
9-26-55	1610	21.1	16.7
12- 5-55	1315	-1.1	0
1-20-56	1320	2.2	2.8
3-17-56	1810	2.0	6.7
3-23-56	1425	14.4	2.2
5-26-56	1105	19.4	20
8-11-56	1150	--	21.1
9-18-56	0835	28.3	18.3
12-17-56	1640	12.2	4.4
1-29-57	1320	-7.8	.6
4-29-57	1445	25.6	3.9
6-25-57	0855	21.1	18.9
7-22-57	1800	35.6	25.6
9-10-57	1600	30.6	18.3
9-24-57	1200	30.6	17.2
11-12-57	1500	5	2.8
12-23-57	1100	6.1	1.7
1-20-58	1335	3.3	2.2
3-29-58	1600	12.2	--
4-29-58	1000	17.2	16.7
5-27-58	1500	33.3	22.2
7-14-58	1000	29.4	21.1
8-13-58	1100	--	24.4
4-29-58	0950	10	8.3
12-13-58	1305	5.6	3.3
3-17-59	1600	7.2	2.2
6-10-59	1215	22.2	16.7
8-15-59	1645	32.2	23.3
9-26-59	0845	17.2	13.3
11- 2-59	1100	16.7	11.1
12- 6-59	1015	-3.3	0
2-14-60	1025	7.8	3.3
3-20-60	1620	16.7	10
4-30-60	1100	22.2	14.4
5-27-60	1015	18.9	15
6-30-60	1655	32.2	27.8
9- 2-60	1630	32.8	22.2
10- 8-60	1705	15	11.7
11-18-60	1520	--	6.7
12-18-60	1210	1.7	0
2- 3-61	1400	4.4	1.1
2-14-61	1600	7.2	9.4
3-17-61	1545	14.4	7.8
5-28-61	1300	27.8	--
9-15-61	1540	--	17.8
10-21-61	1200	15.6	6.7
11-30-61	1300	8.3	2.8
1- 4-62	1400	7.2	3.3
2-14-62	1435	5	4.4
4-27-62	1615	13.3	13.3
7-23-62	1220	38.9	26.7
8-24-62	1325	30	23.3
10- 1-62	1610	25.6	16.7
11-15-62	1325	5	3.9
12-14-62	1235	12.2	3.9
1-31-63	1550	-3.9	0
2- 4-63	1700	--	.6
2- 8-63	1635	--	4.4
3- 4-63	1640	8.3	5
4- 1-63	1645	10.6	6.7
5- 8-63	1255	16.7	12.8
6-14-63	0830	22.2	21.7
6-14-63	0935	25.6	21.7
7-17-63	1045	18.9	18.9
9- 5-63	1200	32.2	23.3
10-10-63	1220	20	15.6
11-23-63	1105	6.7	3.9
12-24-63	1140	4.4	1.1
1-29-64	1550	7.2	2.8
2-24-64	1315	10	3.9
4- 1-64	1010	11.7	8.3
5- 7-64	1800	12.2	--
7- 6-64	1430	29.4	22.8
8- 7-64	1120	27.8	21.7
9- 4-64	1300	--	17.8
10-22-64	1455	--	10.6
11-20-64	1130	1.1	1.7
1-22-65	1440	1.7	1.7
2- 3-65	1515	.6	2.2
2-26-65	1235	6.7	4.4
3-17-65	1530	-.6	3.3
4-29-65	1220	20.6	14.4
5-24-65	0920	17.2	12.2
7-14-65	1315	32.2	22.8
8-19-65	1120	22.2	19.4
9-22-65	1345	21.7	16.7
10-28-65	1600	16.7	11.7
12- 9-65	1145	3.9	5.6
1-13-66	1345	7.2	5
2-10-66	1220	1.1	2.8
3-14-66	1410	11.7	7.8
4- 6-66	1405	23.9	11.7
5-12-66	1300	14.4	15
6-16-66	1055	32.2	22.2
7-21-66	1050	--	21.1
8-24-66	1300	38.3	27.8

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water
67. Silver Lake at Medical Lake (13351300)											
4-13-59	1035	--	9.4	5- 9-60	1010	--	12.2	4-19-66	1135	8.9	11.7
5-11-59	1120	--	11.7	8-10-60	0940	28.9	22.8	5-20-66	1550	22.8	16.1
6-18-59	1000	20.6	18.9	9-14-60	0920	23.9	20.6	6-27-66	1500	26.7	19.4
10-13-59	1500	--	12.8	3-12-63	1400	7.8	7.8	7-26-66	1430	27.2	22.8
3-24-60	0945	10	9.4	1- 5-65	0940	-1.1	--	11- 7-66	1155	2.8	7.8
								2- 6-67	1300	4.4	.6
68. Williams Lake near Amber (13351500)											
9-26-55	1150	--	15.6	7-17-62	0915	18.9	20	4-18-69	1430	18.3	7.8
1-23-56	1605	1.1	1.7	8-24-62	1555	31.7	22.2	3-19-70	1100	10	7.8
7- 2-56	1650	20	18.9	10- 1-62	1125	20	16.7	6-16-70	0815	10.6	16.1
3- 8-57	0845	3.9	1.1	11-16-62	1100	4.4	7.8	10-29-70	1245	--	11.7
4-10-57	1035	17.8	7.2	2- 1-63	1200	--	0	1-19-71	1455	10.6	1.7
12-23-57	1600	6.7	3.3	3- 4-63	1040	9.4	1.1	4-30-71	0815	13.3	10
1-30-58	1750	3.3	2.2	4- 1-63	0940	--	6.1	5- 4-71	1340	18.3	14.4
4-29-58	1545	23.9	18.9	7-25-63	1715	22.2	20	6-21-71	0850	17.8	18.9
7-14-58	1500	29.4	22.8	11-23-63	1430	--	7.8	8-13-71	0830	23.3	24.5
8-13-58	1400	32.2	23.9	1-30-64	1200	2.2	.6	10- 1-71	1350	15	16.1
12-21-58	1445	4.4	3.9	8-11-64	1505	--	21.7				
4-22-59	1015	12.2	7.8	1-27-67	1420	2.2	1.1				
6- 1-59	1000	24.4	17.8	3- 9-67	1720	4.4	.6				
8-10-59	1110	25	22.2	4-20-67	1710	6.1	3.3				
10-20-59	1045	6.7	12.8	5-22-67	1120	25.6	16.1				
12-18-60	1500	--	1.7	7-17-67	1000	25.6	18.3				
2-10-61	1815	4.4	2.8	9- 1-67	1430	36.7	22.2				
11-30-61	1610	6.7	3.9	11-17-67	1200	6.7	8.9				
3-19-62	1030	--	2.8	12-20-67	1300	-5	--				
4-28-62	1620	7.2	8.9	3- 7-69	1655	4.4	.6				
72. Sprague Lake near Sprague (13351800)											
4-22-59	1020	13.3	12.2	6-14-63	1350	32.2	--	6- 3-68	0855	10	15.6
6- 1-59	1110	21.1	--	10-10-63	1520	--	17.8	3-18-70	1755	7.8	10.6
8-10-59	1210	28.9	23.3	1-31-64	1110	2.2	1.1	6-16-70	0900	11.1	14.4
10-20-59	1145	11.7	11.1	2-24-64	1000	3.3	3.9	10-29-70	1320	--	10
11-18-60	1700	--	14.4	6- 3-64	1205	18.3	20	1-19-71	0830	11.1	1.1
12-18-60	1430	--	.6	12- 8-64	0900	4.4	3.9	4-30-71	0855	11.7	11.7
2-10-61	1720	6.1	3.9	7- 2-65	0930	20	18.3	6-21-71	0920	18.9	18.9
11-30-61	1530	--	0	6-22-66	0815	16.7	17.2	8-13-71	0900	27.8	23.5
3-19-62	1115	--	5.6	7-27-66	1625	33.3	23.3	10- 1-71	1425	16.7	13.9
4-28-62	1540	7.2	8.9	9- 3-66	1820	25.6	22.8				
7-17-62	0950	18.9	20	10-16-66	1610	.6	6.1				
8-24-62	1520	31.7	23.9	2- 5-67	1404	7.8	6.7				
10- 1-62	1220	--	18.9	3-17-67	1732	11.1	7.8				
11-16-62	1010	3.9	4.4	4-30-67	1312	10	10.6				
3- 4-63	1115	10	2.8	4-29-68	0920	20	11.1				

TABLE C9.--Air and water temperatures of selected streams and lakes--Continued

Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water	Date	Time	Temperature (°C) Air	Water
				73. Cow Creek at Hooper (13352500)							
12-18-50	1615	3.3	4.4	12- 7-53	1400	7.8	4.4	9- 4-64	1105	--	17.8
1-22-51	1450	2.2	4.4	3-15-62	1015	10	2.8	10-22-64	1310	--	10.6
2- 8-51	1035	10	3.9	4-27-62	1705	11.1	10.6	12-29-64	1500	--	1.1
3- 6-51	1340	5.6	2.2	7-23-62	1500	36.1	30	1-22-65	1045	2.2	1.7
4-23-51	1400	22.2	11.1	8-24-62	1135	30	--	2- 1-65	1530	5.6	4.4
7- 5-51	1445	19.4	17.2	10- 1-62	1500	25	18.3	3-17-65	1250	-.6	3.9
7-18-51	1055	26.1	--	11-15-62	1500	3.9	3.9	5-24-65	1000	17.8	14.4
8-22-51	1405	31.7	18.9	12-14-62	1410	10	7.2	7-14-65	1125	--	21.7
10-22-51	1400	19.4	16.7	1-28-63	1010	-2.8	0	8-19-65	1005	21.7	20
11-12-51	1605	3.9	6.7	2- 7-63	1340	13.3	--	9-22-65	1110	20	14.4
11-22-51	1600	8.9	3.9	3- 4-63	1435	9.4	6.7	10-28-65	1330	16.7	12.8
3- 7-52	1220	11.1	3.9	4- 1-63	1440	11.7	9.4	12- 9-65	1115	3.9	6.1
4-26-52	1540	15.6	7.2	5- 8-63	1055	14.4	8.3	1-13-66	1050	6.7	4.4
6- 1-52	1630	30.6	17.8	6-14-63	1040	26.7	21.1	2-10-66	1010	-.6	1.7
9- 8-52	1400	13.9	15.6	7-17-63	0845	18.9	17.8	3-14-66	1100	12.8	8.3
10-13-52	1330	22.8	15	9- 5-63	0850	24.4	17.2	4- 6-66	1200	18.3	12.8
11-18-52	1315	3.3	--	10-10-63	1330	21.7	17.2	5-12-66	0945	14.4	11.1
12-22-52	1445	1.7	2.2	11-23-63	1100	7.2	6.1	6-16-66	0910	22.2	17.8
1- 5-53	1450	2.8	5	12-24-63	1410	8.9	4.4	7-20-66	1525	28.9	22.2
1-20-53	1600	6.1	3.9	1-30-64	0905	3.3	3.9	8-24-66	1330	38.3	--
3- 9-53	1200	17.8	10.6	2-25-64	1635	8.9	5.6				
5-19-53	1130	17.8	15.6	4- 1-64	1110	11.1	10.6				
8-18-53	1500	37.2	21.7	5- 7-64	1610	17.8	16.1				
9-29-53	1400	23.3	11.1	7- 6-64	1635	21.7	25.6				
11- 8-53	1145	10	8.3	8- 7-64	1250	28.9	24.4				

[1] The number before station name is from plate 1; the official downstream number of the station appears after the station name.

TABLE C10.--Particle-size analyses of suspended-sediment samples

[e, estimated. Method of analysis: B, bottom withdrawal tube; C, chemically dispersed; N, in native water; P, pipet; V, visual accumulation tube; W, in distilled water]

Date of collection	Time	Discharge (ft^3/s)	Water temperature (°C)	Sediment concentration (mg/l)	Percent finer than indicated size, in millimeters										Method of analysis
					0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500	
5. Palouse River at Palouse (13345400)[1]															
3- 9-62	1035	87	2	466	71	99	99	100	--	--	--	--	--	--	PWC
3-31-64	0840	1,860	4	1,240	21	26	39	55	77	95	99	100	--	--	VPWC
4-20-65	0650	2,980	7	2,670	27	35	47	63	84	e95	--	--	--	--	PWC
9. Palouse River at Colfax (13346100)															
3- 9-62	0910	168	1	1,480	50	70	88	98	99	100	--	--	--	--	PWC
3-27-62	1415	3,790	5	2,130	34	42	55	72	93	95	--	--	--	--	PWC
12-18-62	1640	575	5	556	29	36	51	60	76	89	96	100	--	--	VPWC
2- 5-63	0815	2,540	2	12,100	36	44	60	77	94	99	100	--	--	--	VPWC
3-30-63	1230	1,530	6	1,670	23	30	41	58	80	97	99	100	--	--	VPWC
3-30-63	1735	1,980	4	3,580	24	29	42	60	84	98	100	--	--	--	VPWC
3-31-63	1815	2,310	5	1,450	19	27	38	52	81	95	99	100	--	--	VPWC
3-31-64	1520	1,920	7	2,010	18	25	37	54	79	95	100	--	--	--	VPWC
11-25-64	1500	822	4	.958	33	42	59	80	97	--	--	--	--	--	PWC
4-20-65	1440	3,280	10	2,970	26	36	49	64	82	e93	--	--	--	--	PWC
16. South Fork Palouse River at Pullman (13348000)															
3-30-63	0750	91	5	1,910	71	80	90	100	--	--	--	--	--	--	PWC
4- 1-64	1700	365	6	1,530	35	43	60	75	91	99	100	--	--	--	VPWC
12-22-64	1705	700	1	3,530	41	53	65	79	92	98	99	100	--	--	VPWC
20. Missouri Flat Creek at Pullman (13348500)															
3-30-63	1555	33	6	3,130	51	62	74	87	98	--	--	--	--	--	PWC
12-22-64	1730	399	1	5,530	43	53	66	79	94	99	100	--	--	--	VPWC
28. South Fork Palouse River at Colfax (13349200)															
3- 9-62	0930	94	1	882	63	83	97	100	--	--	--	--	--	--	PWC
3-27-62	0640	1,180	--	3,790	29	36	49	67	93	99	100	--	--	--	VPWC
2- 3-63	2000	2,410	1	10,800	35	46	60	77	93	99	100	--	--	--	VPWC
2- 5-63	0910	1,130	2	32,900	41	53	68	86	100	--	--	--	--	--	VPWC
6-18-63	1530	12	24	8,240	83	94	98	100	--	--	--	--	--	--	PWC
6-19-63	0740	11	19	6,440	96	100	--	--	--	--	--	--	--	--	PWC
9-23-63	1205	5.6	14	3,850	78	96	100	--	--	--	--	--	--	--	PWC
3-31-64	1640	352	10	1,680	47	60	75	92	99	--	--	--	--	--	PWC
4-20-65	1520	601	12	5,220	52	68	81	94	100	--	--	--	--	--	PWC
39. Palouse River at Winona (13349310)															
3- 9-62	1510	390	4	1,230	8	80	93	100	--	--	--	--	--	--	PWC
3-27-62	0900	4,730	5	5,600	22	28	40	56	86	97	99	100	--	--	VPWC
12-19-62	1125	665	6	430	46	61	84	97	100	--	--	--	--	--	PWC
2-20-63	1710	1,830	4	3,490	44	54	73	86	100	--	--	--	--	--	PWC
1-26-64	1240	292	1	4,840	47	71	87	97	100	--	--	--	--	--	PWC
1-27-65	1550	2,250	1	1,960	18	25	35	52	78	98	100	--	--	--	VPWC
1-29-65	1140	7,900	2	4,700	29	37	48	60	79	92	95	98	99	100	VPWC
40. Rebel Flat Creek at Winona (13349320)															
1-19-64	1145	5.6	0	2,600	58	83	85	91	98	100	--	--	--	--	--
1-25-64	2310	84	1	33,300	24	36	53	75	91	97	99	100	--	--	VPWC
1-27-65	1520	515	1	32,300	10	14	20	30	54	90	98	100	--	--	VPWC
47. Pine Creek at Pine City (13349400)															
2- 6-63	2315	795	3	14,000	22	30	45	66	86	99	100	--	--	--	VPWC
2- 6-63	2315	795	3	14,000	0	10	29	61	86	99	100	--	--	--	VPN
3-19-64	0640	347	3	1,900	43	52	69	86	98	100	--	--	--	--	PWC
3-31-64	1310	184	12	1,200	57	77	91	97	98	100	--	--	--	--	VPWC
1-27-65	2140	990	1	4,030	25	33	36	56	82	98	100	--	--	--	VPWC
1-28-65	1920	2,620	1	6,920	22	28	36	50	73	96	99	100	--	--	VPWC
55. Cottonwood Creek below Pleasant Valley Creek, near Ewan (13349690)															
1-30-64	1450	24	1	2,590	43	53	72	85	98	100	--	--	--	--	PWC
2-19-64	1040	27	2	3,380	31	46	64	68	93	100	--	--	--	--	PWC
1-27-65	1310	555	1	8,880	18	22	30	44	67	96	100	--	--	--	VPWC
1-28-65	1640	1,120	1	19,500	16	23	32	47	67	94	98	100	--	--	VPWC
1-30-65	1430	500	6	25,300	18	24	36	58	84	98	100	--	--	--	VPWC

TABLE C10.--Particle-size analyses of suspended-sediment samples--Continued

Date of collection	Time	Discharge (ft³/s)	Water temperature (°C)	Sediment concentration (mg/l)	Percent finer than indicated size, in millimeters										Method of analysis
					0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500	
58. Rock Creek near Winona (13349900)															
1-28-64	1305	67	2	3,140	52	76	92	97	100	--	--	--	--	--	PWC
61. Union Flat Creek near Colfax (13350500)															
3- 9-62	1200	70	2	887	28	42	44	70	92	98	--	--	--	--	PWC
3-27-62	1620	422	6	7,170	34	44	56	72	91	98	--	--	--	--	PWC
6-18-63	1400	3.9	28	3,640	97	97	97	99	100	--	--	--	--	--	PWC
6-19-63	0810	3.9	19	3,670	95	100	--	--	--	--	--	--	--	--	PWC
1-28-65	1550	1,540	4	8,330	28	33	42	57	76	97	99	100	--	--	VPWC
62. Union Flat Creek near LaCrosse (13350700)															
2- 4-63	1655	2,620	2	11,500	30	41	57	73	90	98	100	--	--	--	VPWC
1-19-64	0845	86	0	2,270	71	89	99	100	--	--	--	--	--	--	PWC
1-25-64	1840	450	1	33,600	19	28	42	60	76	99	100	--	--	--	PWC
4-20-65	1230	380	13	5,980	23	31	41	56	79	99	100	--	--	--	VPWC
64. Willow Creek at Gordon (13350900)															
2- 4-63	1350	495	6	29,100	9	16	27	46	74	96	98	99	100	100	VPWC
1-25-64	1920	74	3	22,400	24	40	61	84	94	100	--	--	--	--	PWC
66. Palouse River at Hooper (13351000)															
12-22-61	1225	387	1	153	--	84	86	97	97	99	100	--	--	--	BWC
2-15-62	1125	932	5	439	56	74	87	98	100	--	--	--	--	--	PWC
3- 8-62	2255	640	4	2,160	53	84	98	100	--	--	--	--	--	--	PWC
3-27-62	1120	5,980	6	5,440	30	40	59	78	95	97	99	100	--	--	VPW
12-19-62	1250	783	6	417	38	55	77	90	100	--	--	--	--	--	PWC
2- 4-63	0950	32,300	0	11,200	20	31	47	64	89	97	99	99	--	--	VPWC
2- 5-63	0515	18,400	2	62,800	16	22	36	58	86	--	--	--	--	--	PWC
2- 5-63	0515	18,400	2	62,800	5	14	30	53	91	--	--	--	--	--	PN
2- 5-63	1445	15,700	4	44,800	25	36	54	77	93	99	100	--	--	--	VPWC
2-20-63	1140	20,600	4	2,770	40	54	72	83	95	99	100	--	--	--	VPWC
3-31-63	1555	2,970	7	3,060	22	28	41	61	85	98	100	--	--	--	VPWC
4- 1-63	1040	2,560	5	2,670	35	46	60	78	95	99	100	--	--	--	VPWC
12- 6-63	1530	133	6	268	35	46	63	79	91	97	99	100	--	--	VPWC
1-20-64	0730	104	6	44,400	17	26	38	65	93	99	100	--	--	--	VPWC
1-20-64	1700	488	8	3,820	38	55	74	90	100	--	--	--	--	--	VPWC
1-25-64	2145	2,060	7	131,000	18	24	36	57	82	97	99	100	--	--	PWC
1-25-64	2255	1,400	4	105,000	14	22	35	54	78	97	100	--	--	--	VPWC
1-26-64	1830	240	2	1,820	31	33	48	59	83	96	100	--	--	--	VPWC
2- 1-74	0830	222	7	10,900	28	41	57	80	95	100	--	--	--	--	VPWC
4- 1-64	1300	296	9	1,610	8	11	17	30	54	86	96	100	--	--	VPWC
5-19-64	1755	386	18	720	9	12	18	28	49	87	97	100	--	--	VPWC
6- 2-64	1645	344	16	2,210	22	32	36	61	79	94	99	100	--	--	VPWC
12-24-64	1400	12,100	1	2,290	30	38	50	65	81	94	98	100	--	--	VPWC
12-26-64	1145	3,500	1	1,340	17	20	29	42	69	89	98	100	--	--	VPWC
1-28-65	1110	7,600	3	6,860	14	20	26	40	56	95	99	100	--	--	VPWC
1-29-65	1410	15,400	3	6,510	22	30	38	54	76	95	98	100	--	--	VPWC
2- 1-65	1345	8,660	2	1,920	10	25	28	40	57	91	97	100	--	--	VPWC
1- 6-66	1920	814	4	6,380	36	56	79	92	100	--	--	--	--	--	PWC
3-10-66	0910	1,510	6	1,120	42	54	70	86	99	--	--	--	--	--	PWC
3-10-66	1900	1,890	7	1,570	44	56	71	83	97	--	--	--	--	--	PWC
12-25-67	1515	1,070	2	807	55	76	86	98	100	--	--	--	--	--	PWC
12-26-67	0745	4,080	1	11,000	32	47	64	83	100	--	--	--	--	--	PWC
12-26-67	1530	2,990	3	9,760	41	56	74	91	100	--	--	--	--	--	PWC
12-27-67	0745	1,020	4	4,660	57	74	93	98	100	--	--	--	--	--	PWC
12-29-67	1750	392	2	1,310	79	95	100	--	--	--	--	--	--	--	PWC
1-10-68	1700	1,080	1	4,000	28	49	75	95	100	--	--	--	--	--	PWC
1-11-68	1150	232	1	2,640	49	75	95	100	--	--	--	--	--	--	PWC
2- 6-68	1255	760	3	2,440	57	75	90	100	--	--	--	--	--	--	PWC
2-20-68	1430	6,600	6	15,300	--	--	--	--	--	99	100	--	--	--	V
1- 7-69	1220	5,980	1	5,420	14	21	27	35	49	76	92	100	--	--	VPWC
1- 8-69	1340	5,000	0	1,220	29	30	41	52	74	92	96	100	--	--	VPWC
3-20-69	1710	6,480	6	2,900	14	16	28	43	75	97	99	100	--	--	VPWC
4-24-69	1255	3,190	11	4,290	31	39	54	78	92	--	--	--	--	--	PWC
1-14-70	1520	573	.5	5,440	32	53	75	92	93	--	--	--	--	--	PWC
1-22-70	1255	3,040	2.0	2,220	22	32	46	62	83	98	100	--	--	--	VPWC
1-19-71	1515	3,110	5.0	1,740	41	41	47	63	79	100	--	--	--	--	PWC
75. Cow Creek at Hooper (13352500)															
2- 6-63	0735	357	1	532	46	61	89	89	96	--	--	--	--	--	PWC

[1] The number before station name is from plate 1; the official downstream number of the station appears after the station name.