THE HYDROLOGIC SYSTEM of EAST-CENTRAL McLEAN COUNTY, NORTH DAKOTA: WATER RESOURCES DATA

By
Kevin D. Swanson

North Dakota Ground-Water Studies
Number 105 - Part I
North Dakota State Water Commission
David Sprynczynatyk, State Engineer

Prepared by the
North Dakota State Water Commission
In cooperation with the
McLean County Water Resource District

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TABLE OF CONTENTS

INTRODUCTION 1
Purpose, Objectives, And Scope 1
Location of the study area 3
Location-numbering System 3
Acknowledgments 5

EXPLANATION OF DATA TABLES AND METHODS OF DATA COLLECTION 5
Records of test holes and wells 5
Lithologic Logs of Test Holes and Wells 7
Water Levels In Selected Wells 7
Records of Water Surface Elevation in Lakes Sakakawea and Audubon 7
Water Surface Elevations of Selected Lakes and Sloughs 8
Water Quality 8
Chemical Constituents in Solution 8
Properties and Characteristics of Water 10
Precipitation Data 12

REFERENCES 13

ILLUSTRATIONS

Plate 1. Location of Wells, Test Holes and Surface water Measurement Sites in the Study Area ..... (in pocket)
Figure 1. Location of McLean County, North Dakota and the East-Central McLean County Hydrologic Systems Study Area 2
Figure 2. Location-numbering System 4
Figure 3. Location of Rain Gages Monitored 1985-1987 388

TABLES 14
1. Records of Test Holes and Wells 14
2. Lithologic Logs of Test Holes and Wells 27
3. Water Levels in Selected Observation Wells. 289
4. Partial Record of Water Surface Elevations for Lakes Audubon and Sakakawea 362
5. Water Surface Elevations of Selected Lakes and Sloughs - Staff Gage Data 367
6. Chemical Analyses of Ground Water in East Central McLean County. 374
7. Chemical Analyses of Selected Surface Water Bodies in East Central McLean Co 384
8. Summary of NOAA Precipitation Data at Turtle Lake, McLean County, ND 387
9. Precipitation measured at six rain gage locations in the study area vs. precipitation at Turtle Lake NOAA station (1985-1987). 388

INTRODUCTION

The investigation of the hydrologic system of East-Central McLean County was conducted cooperatively by the North Dakota State Water Commission (SWC) and the McLean County Water Resource District. Results of the investigation are presented in two parts. Part I is a compilation of the hydrologic data and part II is an interpretive report describing the dynamics of the of the hydrologic system in East-Central McLean County. This report (part I) makes available the hydrologic and geologic data collected during the investigation and serves as a reference for part II.

The investigation was initiated in response to reports from area residents regarding water logging of agricultural land, deterioration and flooding of county and township roads, and an increase in size of some lakes and sloughs in Eastern McLean County in the area from Lake Audubon eastward to Brush Lake. Rising water levels in some observation wells in this area had been noted when the water-level record of the late 1960's to early 1970's was compared to that of the 1980's (Armstrong, 1983).

The probable cause of these conditions was uncertain. It had been variously attributed to the presence of the McClusky Canal and Lakes Audubon and Sakakawea reservoirs, as well as to the 13 ft increase in operating surface elevation of Lake Audubon during 1975. Climatic patterns have also influenced surface water and ground water levels. The primary goal of this investigation was to develop an hydrologic data base sufficient to allow assessment of the relative importance of the man-made perturbations and climatic patterns on the changes in water levels in the study area.

Purpose, Objectives, And Scope

The primary purpose of this study is to develop an information base necessary for managing the ground-water resources of eastern McLean County. The information base provides the framework necessary to:

- better interpret the ground-water flow system in the glacial-drift aquifers;
- examine the interaction between ground water and surface water systems;
- evaluate the propagation of climatic patterns through other components of the hydrologic system; and
- to assess the degree to which anthropogenic activities may have influenced components of the hydrologic system.

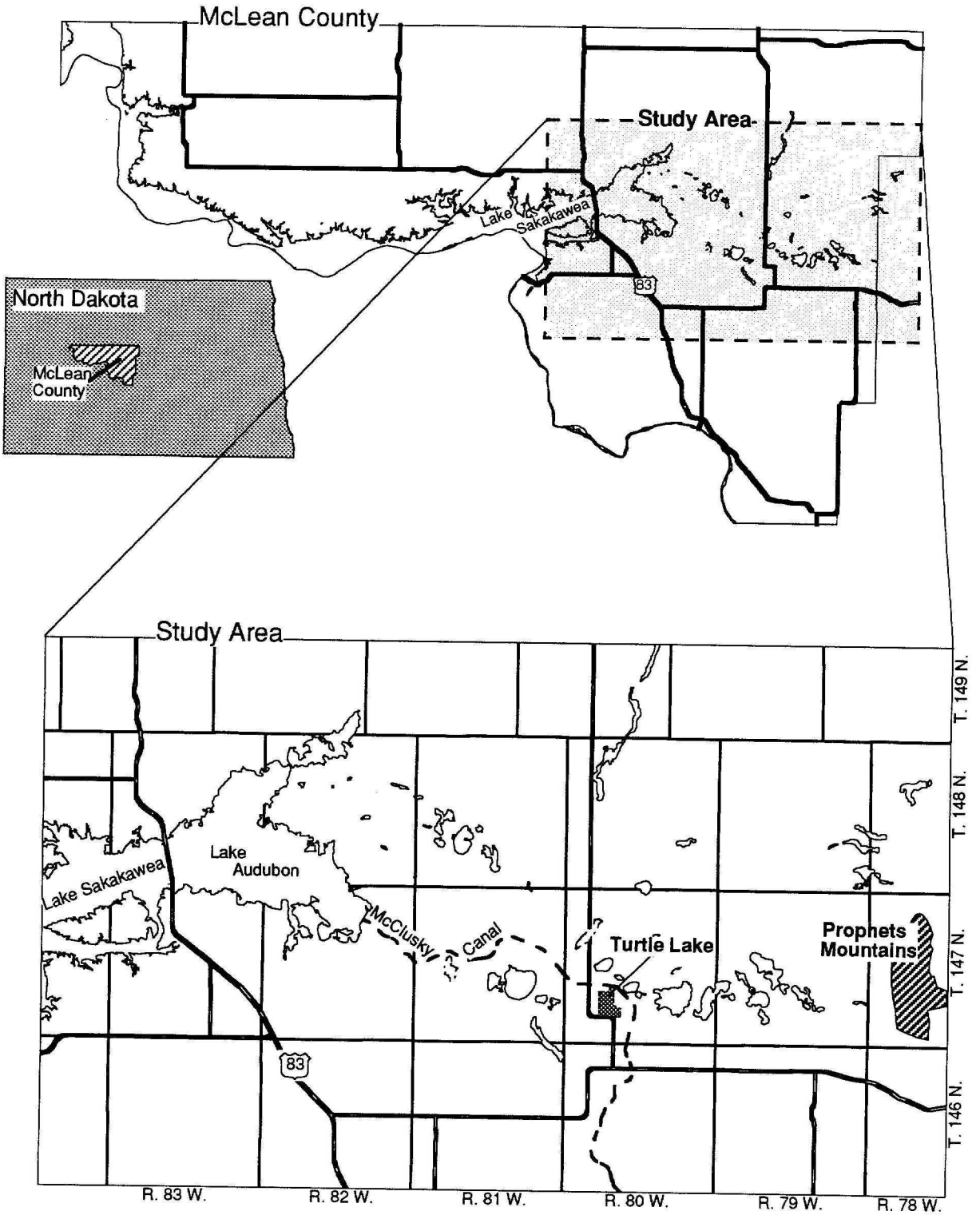


Figure1. Location of McLean County, North Dakota and the East-Central McLean County Hydrologic Systems Study Area.

The objectives of the study are to:

1- better define the hydrogeology of the Lake Nettie aquifer system and the hydraulic connection between the ground-water system and surface water bodies,

2- further define the thickness, extent, and lithology of the Wolf Creek aquifer;

3- establish and monitor a network of observation wells, lake-stage and precipitation gages in the study area to develop the base line data with which future water levels can be compared;

4- collect and analyze water samples to determine variation in water quality in the Lake Nettie aquifer system;

5- assess the significance of the hydrologic changes which may have occurred in the study area as a result of man's activities, and the potential for further changes in the hydrologic system to occur; and

6- determine the feasibility of using a digital model to simulate ground-water flow in the Lake Nettie aquifer system and interactions between ground water and surface water.

This study expands on the work of Armstrong (1983) and is primarily focused toward the Lake Nettie and Turtle Lake aquifer systems which were described in the McLean County ground-water study (Klausing, 1974). These glacial drift aquifers underlie much of the area between Lake Audubon and the McLean - Sheridan county line to the east.

Location of the study area

The study area is located in the east-central part of McLean County as shown on Figure 1. The collection of data was primarily limited to the area extending from near the west side of Lake Audubon on the west to the area near the Prophets Mountains on the east (fig. 1). The area of primary interest encompasses approximately 500 square miles.

Location-numbering System

Wells, test holes and other data collection points used in this study are numbered according the federal system of rectangular surveys of public lands as illustrated in Figure 2. The first and second series of numbers denote the township north of a base line and range west of the Fifth Principal Meridian, respectively. The third series of numbers designates the section within the township. The first, second, and third letters after the section number indicate, respectively, the quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre tract). The letters A, B, C, and D respectively designate the northeast, northwest, southwest and southeast quarter of the tract. For example, a location given as 147-079-30BDD (fig. 2) is in the SE1/4 of the SE1/4 of the NW1/4 of Section 30, Township 147 North, Range 79 West. Consecutive terminal numbers are added after the letters if more than one well or other data collection point is located in a particular 10-acre tract.

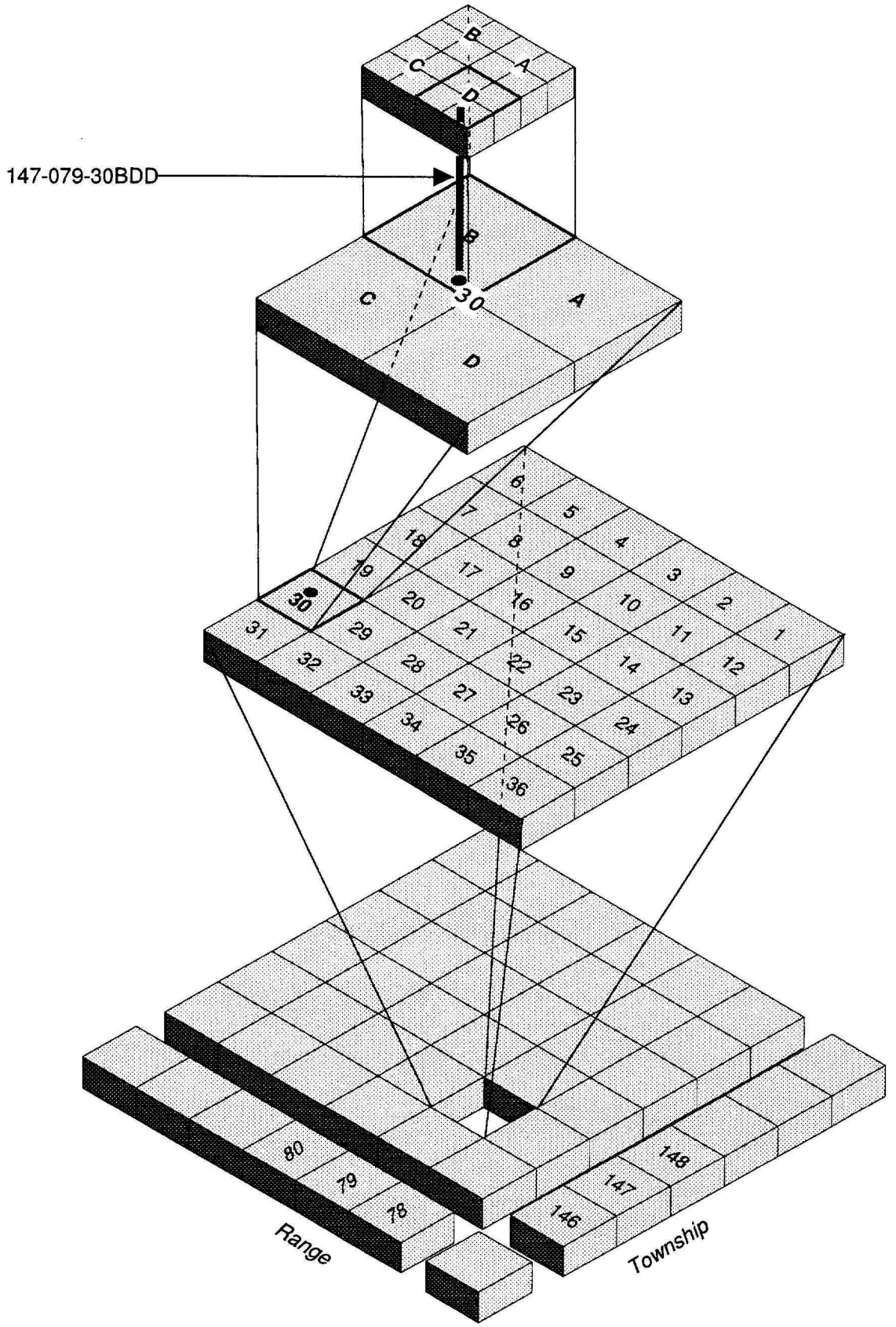


Figure 2. Location-numbering system.

Acknowledgments

Appreciation is expressed to Arden Mathison and other members of the U.S. Bureau of Reclamation for their help in gathering, obtaining, and compiling data for this study. Appreciation is also expressed to the U.S. Corps of Engineers, the U.S. Geological Survey, and the U.S. Fish and Wildlife Service for furnishing data used in this report.

Particular recognition is due the following present and former employees of the North Dakota State Water Commission: G. Calheim and D. Sorge for drilling test holes and installing observation wells; A. Comeskey and D. Larson for logging test holes; G. Muri and M. Osborn for chemical analysis of water samples; M.Hove, K. Kunz, L. MacArthur, M. Osborn and M. Skaley for collection of water samples, collection of water level measurements and compilation of water level and water quality files; and to C. Bader for development of the database programs used in preparation of this report. Appreciation is expressed to M. Lindvig for the SWC for critical review of this report. Recognition is also expressed to the well drillers who furnished well logs and to farmers and ranchers who allowed access to their land.

EXPLANATION OF DATA TABLES AND METHODS OF DATA COLLECTION

In addition to compilation of previously existing data, hydrologic investigation of the study area included drilling 72 test holes for lithologic information and drilling and installation of an additional 90 observation wells across the study area between October 1984 and June 1986. Depth to water in selected observation wells was periodically measured. Additional data collection included: measurement of the water surface elevation in selected lakes and sloughs across the study area, measurement of precipitation in rain gages at 6 sites during 1985 - 1987, and collection of surface water and ground-water samples for chemical analyses.

Records of test holes and wells

Table 1 provides a summary list of 729 test holes and wells included in this report. Prior to this study numerous test holes and wells had been drilled in the study area. These earlier test holes and wells were associated with drilling performed by the U.S. Corps of Engineers (USCOE) for the Snake Creek Embankment constructed to form Lake Audubon, by the U.S. Bureau of Reclamation (USBR) for the McClusky Canal and the Lake Brekken-Holmes recreation area, and cooperatively by the U.S. Geological Survey (USGS), N.D. Geological Survey (NDGS) and SWC for the McLean County Ground-Water Study. In addition, logs for selected private and municipal wells were obtained from the files of the N.D. Board of Water Well Contractors. Although many of these logs were previously published (Klausing, 1971), those that were deemed relevant to this study have been reproduced in table 2. Of the 729 test hole/well logs listed in tables 1 and 2, a total of 339 are for test holes drilled by the SWC (during this investigation and previous

investigations), 240 are for test holes drilled by the USBR, USCOE and NDGS, and 150 are logs which were submitted to the ND Board of Water Well Contractors for test holes and wells drilled by commercial drillers. The locations of the test holes and wells are shown on Plate 1.

Most test holes installed for this study between 1984 and 1986 were drilled with a Failing model 1250 forward rotary drill rig owned by the SWC. Monitoring wells were constructed with either 1 1/4-inch or 2-inch diameter polyvinyl chloride (PVC) casing with 5 or 10 ft long PVC well screens. 25 test holes were drilled through ice cover on 3 sloughs in February 1986 with a truck mounted auger drill rig using hollow stem augers. Split spoon samples were collected through the hollow stem augers at periodic intervals.

Nests of monitoring wells were constructed for this investigation to determine the vertical distribution of water levels and ground water quality in the study area. In some instances new monitoring wells were nested with observation wells that had been installed between 1967 and 1970 for the McLean County ground-water study. Construction of new monitoring well nests involved the drilling of an initial deep test hole to determine the local stratigraphy. Once the stratigraphy at the site was known, the number and required screen depths of the monitoring wells could be determined. The initial deep test hole also served as a hole for the deepest monitoring well of the nest.

After drilling was completed, the desired length of casing and screen were inserted into the test hole. In most instances fresh water was then pumped through the well screen and bottom ball check valve to thin the drilling mud in the borehole. The formation was then collapsed around the screen by using compressed air to displace the water in the well and annular space. The annular space was then sealed with bentonite chips or high solids bentonite grout to the land surface. A few of the monitoring wells were not completed by air collapse. Rather, silica sand was placed around the screen using a tremie pipe. After sand packing, the tremie pipe was lifted so that the bottom of the tremie pipe was above the top of the sand pack. High solids bentonite grout was then injected down the tremie pipe and upward into the annular space. This process continued until the grout overflowed around the casing at land surface. After the grout settled, additional grout was used to fill the annular space to land surface. Subsequent monitoring wells at each nest site were completed by moving the drilling rig ahead 15 to 20 feet for the next borehole. The wells were pumped by displacing the casing water with compressed air to complete development.

Summary information pertaining to test holes and wells in the study area are presented in Table 1. This information includes location, well owner or SWC number (a consecutive string of identity numbers for wells drilled with the SWC drill rig), aquifer name, land surface elevation, date drilled, purpose of the drill hole; total depth , screened interval, casing type, casing diameter, measuring point height, and the source of the log.

The elevation with reference to mean sea level was established for all monitoring wells used in this study. Differential leveling surveying work was conducted by the survey crew of

the State Water Commission and by contract to private engineering firms. Land surface elevations of SWC test hole sites with no observation well installed and of private wells/test holes were estimated from USGS topographic maps (7-1/2 minute quadrangle series).

Lithologic Logs of Test Holes and Wells

Pertinent lithologic logs obtained from earlier reports, from private well drillers, from other agencies as well as logs of test holes drilled for this study are included in Table 2. Minor changes in word order have been made on some of the commercial logs. However, terminology and geologic interpretations shown on the commercial logs are those of the individual driller. Locations of all test holes and monitoring wells are shown on Plate 1.

During the forward rotary drilling, samples of drill cuttings were visually analyzed continuously for lithologic characteristics and changes in stratigraphy. Visual estimations of grain size for USGS and SWC test holes are in reference to the Wentworth (1922) grain size scale. Resistivity and spontaneous potential electric logs were obtained for most of the deeper SWC test hole. Copies of these geophysical logs are available for inspection in the office of the SWC.

Water Levels In Selected Wells

Depths to water from the top of well casing in selected wells is presented in Table 3. Water levels in approximately 140 wells were measured on a monthly basis from 1985 through 1987. Water levels were monitored more frequently in a subset of the well network in early 1985 when the water level of Lake Audubon was lowered and raised approximately 4 ft, and in mid-1987 during a pump down of Lake Nettie. The number of wells monitored monthly was decreased to approximately 60 in 1988 with the remaining observation wells measured on a quarterly to yearly basis. Water levels were measured with a chalked steel tape.

Periodic water levels are available for some observation wells for the time period between 1967 and 1985. Most of the available water levels are during the period 1967 to 1970 and are associated with data collection for the McLean County ground-water study. Water levels in some wells were monitored between 1970 and 1984 by the USGS. These water levels are also included in Table 3.

Records of Water Surface Elevation in Lakes Sakakawea and Audubon

A partial record of water surface elevations in Lakes Sakakawea and Lake Audubon is provided in Table 4. The data is collected by USBR personnel at the Snake Creek Pumping Plant and was provided to the SWC.

Water Surface Elevations of Selected Lakes and Sloughs

The water surface elevations of selected lakes and sloughs was determined by setting seasonal staff gages in the selected surface water bodies and referencing the elevation of the staff gage to mean sea level by differential leveling to established bench marks. Between 15 and 16 staff gages were monitored from 1985 to 1987. A network of 5 staff gages has been maintained since 1987. These water surface elevation data are presented in Table 5. Staff gage locations are shown on Plate 1.

Water Quality

Water quality data for the study area are listed in Table 6 (ground water) and Table 7 (surface water). Pertinent water quality data from previous publications are also included in the tables.

Observation wells were sampled by using compressed air to lift water out of the well casing. Samples were collected after several casing volumes had been purged. The ground water sampling procedure involved the collection of 500 milliliters (ml) of raw water, 500 ml of filtered water and 500 ml of filtered and nitric acid acidified water (for those metals considered unstable) in clean plastic bottles. Filtration was performed with 0.45 micron filters to remove suspended sediment from the sample. Field measurements of specific conductance and water temperature were also made. Water temperature was, however, measured at land surface and does not represent an in situ temperature. The pH was measured in the laboratory. Samples were stored at laboratory room temperature from the time of collection until analyzed.

Surface water bodies were measured with a Kemmerer lake sampler to sample a discrete depth interval or with a dip bucket. Surface water samples were treated in a similar fashion to the ground water samples with regard to filtration and preservation.

Water samples were analyzed at the SWC Laboratory in Bismarck. Methods of analyses were generally those described by Brown and others, 1970.

Chemical Constituents in Solution

Ground water contains a variety of dissolved constituents which result from chemical and biochemical interactions between the ground water and the geologic materials through which it has moved. The following discussion presents a brief synopsis of some of the potential sources of the dissolved constituents which are reported in Tables 6 and 7, and some of the affects that the dissolved constituents may have on potential uses of the water. A more detailed description of the chemical characteristics of natural waters, and common sources of the dissolved constituents is given in Hem (1985).

Silica (SiO_2)

Weathering processes dissolve silica from practically all rocks and sediments. Silica affects the usefulness of water because it can contribute to the formation of scale in pipes, water heaters and boilers in the presence of calcium and magnesium.

Iron (Fe)

Iron is a widespread constituent in rocks and is easily leached by ground water under reducing or acidic conditions. Water containing more than 0.3 milligrams per liter (mg/L) of iron may become discolored after exposure to air. Reddish-brown stains on porcelain or enamel ware and fixtures and on fabrics in the water result from the iron.

Manganese (Mn)

Manganese in concentrations as low as 0.2 mg/L may cause a dark-brown or black stain on fabrics and porcelain fixtures. Ground water that contains high concentrations of iron may also have considerable amounts of manganese.

Calcium and Magnesium (Ca and Mg)

Limestone and similar rocks are the principal sources of calcium and magnesium in natural water. Calcium and magnesium cause water hardness and, with counter anions, can form scale on utensils and in water heaters, boilers and pipes.

Sodium and Potassium (Na and K)

Sodium and potassium are present in many igneous and sedimentary rocks. Sodium dissolves readily and tends to remain in solution. Potassium is dissolved with greater difficulty than sodium and exhibits a stronger tendency to be re-incorporated into solid weathering products, especially clay minerals. In most natural water the concentration of potassium is much lower than the concentration of sodium. Water that contains a large proportion of sodium salts may be unsatisfactory for irrigation on certain types of poorly drained soils. The presence of several hundred milligrams per liter of sodium in water can make it unsuitable for use in sodium-restricted diets (North Dakota State Department of Health, 1962).

Bicarbonate and Carbonate (CO_3 and HCO_3)

Bicarbonate and carbonate ions are the major source of alkalinity in most natural water. The significance of alkalinity to the domestic, agricultural and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, and K) associated with it. However, moderate amounts of alkalinity do not adversely affect most uses.

Alkalinity can be calculated as an equivalent amount of calcium carbonate ($CaCO_3$) from the analyses with the following formula (all units in mg/L):

$$\text{Alkalinity (as } CaCO_3) = 0.82(HCO_3) + 1.67(CO_3)$$

Sulfate (SO_4)

Metallic sulfide minerals in both sedimentary and igneous rocks may be converted to sulfates upon weathering or with bacterial action. Dissolution of gypsum ($CaSO_4$), sodium sulfate and other sulfosalts during infiltration of precipitation water through the unsaturated zone or from sedimentary deposits can also contribute sulfate to natural waters.

Chloride (Cl)

Chloride is present in all natural waters, but the concentrations are usually low. Important sources of chloride are sedimentary rocks that were deposited under marine conditions. Chloride concentrations of 400 mg/L impart a salty taste for most people.

Fluoride (F)

Fluoride in ground water is probably derived from the dissolution of fluorite, apatite and hornblende minerals. Fluoride is used in the structure of bones and teeth. High fluoride content (depending on annual averaged maximum daily air temperature) may cause mottling of tooth enamel in children's teeth during calcification.

Nitrate (NO_3)

The occurrence of high nitrate concentrations in shallow ground water has been attributed to leaching from septic tanks and feedlots, or to applications of nitrogen containing fertilizers. High nitrate content is undesirable in drinking water because of its bitter taste. High nitrate concentrations have been reported to cause methemoglobinemia (blue babies) in infants (Comly, 1945).

Boron (B)

Boron is a constituent of the mineral tourmaline and may be present in biotite and amphiboles. In small quantities boron is essential for plant growth. Excessive concentrations in soil and in water used for irrigation are harmful to some plants.

Total Dissolved Solids (TDS)

The total concentration of all dissolved solids is calculated from the weight of residue left by evaporation at 180°C from a known volume of water.

Properties and Characteristics of Water

Hardness

Calcium and magnesium are the principal causes of "hardness" in water. Hardness exhibits the characteristic of requiring greater quantities of soap to produce a lather as the hardness increases. Hard water can also contribute to the formation of scale in boilers, water heaters, radiators and pipes.

The amount of hardness that is equivalent to the carbonate alkalinity is termed carbonate hardness (and is reported as the equivalent amount of $CaCO_3$). Any hardness in excess of

the carbonate alkalinity is called noncarbonate hardness (NCH). The carbonate hardness is the quantity that will contribute scale on heating and the noncarbonate hardness is the quantity of hardness that will remain after removal of the carbonate hardness. As a general reference, the following classification of water hardness is often used (Hem, 1985):

Hardness Range (mg/L as $CaCO_3$)	Hardness Description
0-60	Soft
61-120	Moderately hard
121-180	Hard
more than 180	Very hard

Percent Sodium (%Na) and Sodium Adsorption Ratio (SAR)

The percent sodium is the percentage that sodium contributes to total cations, with individual cation concentrations expressed in milliequivalents per liter. The displacement of calcium and magnesium by sodium in soils is slight unless the percent sodium is considerably higher than 50.

The term SAR (sodium adsorption ratio) was introduced by the U.S. Salinity Laboratory Staff (1954). Their experiments show that the SAR relates to the degree to which dissolved cations in water enter into cation exchange reactions with soil minerals. SAR is expressed by the equation:

$$SAR = \frac{[Na^{+}]}{\sqrt{\frac{[Ca^{++}]+[Mg^{++}]}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter. The U.S. Salinity Laboratory Staff (1954) divided water into 16 classes, depending on the SAR and specific conductance. The classifications indicate the suitability of water for irrigation of different crops on different types of soil.

Specific Conductance (Spec Cond)

Specific conductance, expressed as micromhos per centimeter at 25°C (μmho), is a measure of the ability of water to conduct an electric current. An approximation of the amount of dissolved solids (in mg/L) in the water can often be made by taking 65 to 70 percent of the specific conductance (in μmho). However, this relationship in not consistent and will vary with the chemical composition of the water.

Hydrogen Ion Activity (pH)

Hydrogen ion activity is expressed in terms of pH units. The pH affects the corrosiveness of water. A pH of 7.0 indicates that the water is neutral, neither acidic or basic. Readings progressively lower than 7.0 indicate increasing acidity, and those progressively higher

than 7.0 denote increasing alkalinity. The pH of natural waters will be controlled by interrelated chemical reactions that contribute hydrogen ions to or remove hydrogen ions from solution. The naturally occurring pH of ground water in the study area, and in many other areas of North Dakota, is usually between 7.5 and 8.5, because of buffering by the minerals calcite and dolomite which are ubiquitous in the glacial aquifer sediments. The pH of lake and slough waters may typically be slightly higher due to effects of biologic activity.

Almost all of the pH values reported in the tables of analyses are laboratory pH measurements which were typically made within 1 to 2 weeks of sample collection. pH measurements made under these conditions in the laboratory have been shown to vary as much as plus or minus 0.7 pH units from field measured pH values of the same water sample (Shaver, 1991).

Temperature

Temperature is important for evaluating the usefulness of water. This is evident for a direct use such as an industrial coolant. Temperature is also important for its influence upon concentrations of dissolved mineral matter and gases. Water temperatures are given in degrees Celsius. Water temperature was, however, measured at land surface and does not represent a direct measurement of in situ temperature

Precipitation Data

Precipitation data collected by the National Oceanic and Atmospheric Administration (NOAA) from 1912 -1993 in Turtle Lake are summarized in Table 8.

Standard rain gauges were set up at six different sites (fig. 3) to assess the variability in distribution of precipitation across the study area during 1985-1987. Table 9 shows the total precipitation measured with the gauges, the time intervals the gauges were in place during 1985 through 1987, and the total precipitation recorded at the NOAA station in Turtle Lake for the same time periods as the gauges were in place.

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Table 1. Records of Test Holes and Wells

EXPLANATION: L.S. Elev = land surface elevation (ft, msl); Date = date drilled; Purp = purpose; T.D. = total depth drilled (ft); S.I. = screened interval (ft, below land surface; Dia = well diameter (inches); MP = measuring point (ft above land surface);

Aquifer Abbreviations: H.S. = Horseshoe Valley; Strwby Lake = Strawberry Lake; Undiff = Undifferentiated;

Purpose Codes: DW = domestic well, Ind = industrial well, IrW = irrigation well, MW = municipal well, OW = observation well, TH = test hole;

Casing types : ABS = Acrylonitrile butadiene styrene, PVC = poly vinyl chloride

Location	Owner/SWC#	Aquifer	L.S.Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14607808BBB	5263	Lake Nettie	2011.4	10/26/77	OW	242	120 - 123	ABS	1.25	1.95	SWC
14607817CCC	5920	No Well	1875	5/13/71	TH	300	-	None			SWC
14607830AAA	5919	No Well	1875	5/12/71	TH	300	-	None			SWC
14607830DDD	5921	Lake Nettie	1895	5/13/71	OW	500	317 - 323	PVC	1.25	2	SWC
14607902CCB	City of Mercer	Ft. Union	1930	6/2/78	MW	608	554 - 584	Steel	6		LTP Enterprises
14607902DAC	City of Mercer	Undiff.	1910	8/5/82	MW	60	20 - 30	Steel	7		H.L. McLean Drilling
14607903ADA	11553	No Well	1928	6/5/85	TH	100	-	None			SWC
14607906AAA1	11525	Lake Nettie	1879.45	12/20/84	OW	235	220 - 225	PVC	1.25	2.2	SWC
14607906AAA2	11525A	Lake Nettie	1879.01	8/8/85	OW	160	155 - 160	PVC	1.25	1.57	SWC
14607907AAA	11554	No Well	1917	6/5/85	TH	180	-	None			SWC
14607907DDD	11546	No Well	1950	6/3/85	TH	210	-	None			SWC
14607910AAA	Leonard Gessele	Lake Nettie	1930	10/1/72	DW	320	308 - 320	Steel	4		Driver Well Drilling
14607910DAD	11607	Lake Nettie	1884.5	8/5/85	OW	240	198 - 203	PVC	1.25	1.96	SWC
14607911AAD	11609	No Well	1918	8/6/85	TH	40	-	None			SWC
14607912BBC	2867	No Well	1920	10/13/67	TH	340	-	None			SWC
14607915ADD	2866	Mercer	1859.5	10/12/67	OW	240	21 - 24	ABS	1.25	2.55	SWC
14607915DAA	NDGS	No Well	1863		TH	26	-				NDGS
14607922DDD	11555	No Well	1869	6/6/85	TH	120	-	None			SWC
14607934BBB	3883	No Well	1820	10/28/69	TH	820	-	None			SWC
14608001BBB	11604	Lake Nettie	1822.6	8/1/85	OW	100	63 - 68	PVC	1.25	2	SWC
14608003BCB	USBR	Lake Nettie	1873.7	5/15/72	OW	60	-	PVC	1.25		USBR
14608004ACB1	USBR	No Well	1832.5	8/22/55	TH	55	-	None			USBR
14608004ACB2	USBR	No Well	1838.4	8/22/52	TH	32	-	None			USBR
14608004ACB3	USBR	No Well	1837	8/23/52	TH	60	-	None			USBR
14608004DBB	USBR	No Well	1835	9/21/67	TH	50	-	None			USBR
14608004DCD	NDGS	No Well	1835		TH	15	-	None			NDGS
14608006CBB1	11562	No Well	1841	6/24/85	TH	20	-	None			SWC
14608006CBB2	11562A	Ft. Union	1839.5	6/24/85	OW	60	48 - 53	PVC	1.25	2.1	SWC
14608009AAB3	USBR	No Well	1844.5	9/22/67	TH	50	-	None			USBR
14608009AAB4	USBR	No Well	1846.5	12/3/68	TH	55	-	None			USBR
14608009AAB6	USBR	No Well	1841.9	12/6/68	TH	55	-	None			USBR
14608009ABA	USBR	No Well	1834.3		TH	70	-	None			USBR
14608009ABB1	USBR	No Well	1828.2		TH	65	-	None			USBR
14608009ABB2	USBR	No Well	1841.6		TH	65	-	None			USBR
14608009BAA	USBR	No Well	1887.5		TH	130	-	None			USBR
14608009BBB	11536	No Well	1929	5/24/85	TH	60	-	None			SWC
14608009DBB	USBR	No Well	1836	9/25/67	TH	60	-	None			USBR
14608016BBB	USBR	No Well	1843.9	9/26/67	TH	60	-	None			USBR
14608017AAA	11535	Lake Nettie	1834.5	5/24/85	OW	80	58 - 63	PVC	1.25	2.07	SWC
14608017AAA2	USBR	Lake Nettie	1824.6	11/14/73	OW	45	10.5 - 27	PVC	4		USBR
14608017ABA1	USBR	Ft. Union	1871.7	11/4/71	OW	50	-	PVC	1.25		USBR
14608017ABA2	USBR	Ft. Union	1872.1	10/26/72	OW	200	-	PVC	1.25		USBR
14608017ADA1	USBR	No Well	1842.6	3/20/70	TH	50	-	None			USBR
14608017ADA2	USBR	No Well	1835.3	3/21/72	TH	60	-	None			USBR
14608017ADA3	USBR	No Well	1832.6	3/22/72	TH	60	-	None			USBR
14608017ADD2	USBR	No Well	1839.8	10/3/72	TH	50	-	None			USBR
14608017ADD3	USBR	No Well	1843	10/4/72	TH	50	-	None			USBR
14608017DAB	USBR	No Well	1837.2	9/27/67	TH	60	-	None			USBR

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14608017DCC	USBR	No Well	1846.1	9/28/67	TH	60	-	None			USBR
14608017DDD	USBR	Ft. Union	1941.1	11/8/71	OW	125	-	PVC	1.25		USBR
14608018DDA	USBR	Turtle Lake	1924.6	5/19/72	OW	110	-				USBR
14608019ABB	2860	No Well	1815	10/3/67	TH	60	-	None			SWC
14608019BAA	11602	Turtle Lake	1811.7	8/1/85	OW	40	20 - 25	PVC	1.25	2.1	SWC
14608020CAA	USBR	No Well	1852.5	9/29/67	TH	60	-	None			USBR
14608027AAA	11603	No Well	1923	8/1/85	TH	120	-	None			SWC
14608028CBB	USBR	Till	1929	11/15/72	OW	150	-	PVC	1.25		USBR
14608029BAB	USBR	No Well	1882.9	10/2/67	TH	85	-	None			USBR
14608029BCA	USBR	No Well	1863.5	10/20/54	TH	101	-	None			USBR
14608029BCA3	USBR	No Well	1828.7	10/26/54	TH	66	-	None			USBR
14608029BCB1	USBR	No Well	1812	9/29/54	TH	75	-	None			USBR
14608029BCB2	USBR	No Well	1807.3		TH	43	-	None			USBR
14608029BDB	USBR	No Well	1855	6/17/55	TH	50.8	-	None			USBR
14608029BDC	USBR	Till	1885.5	8/24/72	OW	70	-	PVC	1.25		USBR
14608030AAC	USBR	No Well	1866.3		TH	108	-	None			USBR,
14608030AAD1	USBR	No Well	1849.9		TH	95	-	None			USBR
14608030AAD2	USBR	No Well	1809.5		TH	30	-	None			USBR
14608031BBA	Walter Flemmer	Ft. Union	1820	11/18/76	DW	197	105 - 126	Steel	4		Russell Drlg
14608035DDC	2912	Mercer	1852	5/1/68	OW	180	48 - 51	ABS	1.25		SWC
14608102CDD	3934	No Well	1952	11/25/69	TH	540	-	None			SWC
14608118CDA	Underwood	Turtle Lake	1920	11/1/78	OW	160	73 - 93	PVC	1.25		Water Supply Inc.
14608118CDD	2859	Turtle Lake	1920	10/3/67	OW	280	188 - 191	ABS	1.25		SWC
14608118CDD2	Underwood	Turtle Lake	1915	9/14/78	OW	140	78 - 88	PVC	1.25		Water Supply Inc.
14608118CDD3	Underwood	Turtle Lake	1915	10/20/78	OW	100	68 - 88	PVC	1.25		Water Supply Inc.
14608118CDD4	Underwood	Turtle Lake	1915	10/20/78	OW	160	121 - 141	PVC	5		Water Supply Inc.
14608118CDD5	Underwood	Turtle Lake	1915	10/30/78	OW	160	112 - 122	PVC	1.25		Water Supply Inc.
14608118CDD6	Underwood	Turtle Lake	1915	10/30/78	OW	160	60 - 80	PVC	1.25		Water Supply Inc.
14608118DCC1	Underwood	Turtle Lake	1920	9/13/78	OW	240	118 - 138	PVC	1.25		Water Supply Inc.
14608118DCC2	Underwood	Turtle Lake	1935	10/14/78	OW	100	63 - 78	PVC	1.25	2.5	Water Supply Inc.
14608118DDC	11569	No Well	1993	6/26/85	TH	40	-	None			SWC
14608119ABB	11570	No Well	1928	6/26/85	TH	80	-	None			SWC
14707806BBB	3941	Lake Nettie	1903.7	12/4/69	OW	80	20 - 40	ABS	1.25	2.62	SWC
14707830BCC1	3939	Lake Nettie	1907	12/3/69	OW	320	148 - 168	ABS	1.25		SWC
14707830BCC2	3940	Lake Nettie	1906.6	12/2/69	OW	60	39 - 59	ABS	1.25	2	SWC
14707902DDD	11552	No Well	1944	6/5/85	TH	140	-	None			SWC
14707903AAA	11548	No Well	1954	6/4/85	TH	140	-	None			SWC
14707908BBB	3938	No Well	1890	12/3/69	TH	220	-	None			SWC
14707910ADB	Russell Makeef	No Well	1870	2/28/75	TH	82	-	None			Russell Drilling
14707910DAA	Russell Makeef	Ft. Union	1920	3/15/75	DW	402	230 - 251	Steel	4		Russell Drilling
14707911BBC	Russell Makeef	Lake Nettie	1875	12/15/75	IrW	36	16 - 36	Steel	10		Russell Drilling
14707911BCB	2788	Lake Nettie	1869.7	8/29/67	OW	100	28 - 33	ABS	1.25	1.88	SWC
14707911BCC	Russell Makeef	Lake Nettie	1870	9/18/80	IrW	35	24 - 32	Cement	24		Clint's Well Boring
14707911CCC	11549	No Well	1908	6/4/85	TH	140	-	None			SWC
14707914CCC	11550	Lake Nettie	1858.3	6/4/85	OW	60	31 - 36	PVC	1.25	1.94	SWC
14707915DDB1	Russell Makeef	No Well	1870	9/28/73	TH	41	-	None			Farmers Supply
14707915DDB2	Russell Makeef	Lake Nettie	1870	5/22/75	IrW	45	31 - 45	Steel	12		Russell Drilling
14707915DDD1	Russell Makeef	No Well	1850	9/28/73	TH	61	-	None			Farmers Supply
14707915DDD2	Russell Makeef	Lake Nettie	1850	8/25/79	DW	35	19 - 31	Cement	24		Clint's Well Drilling
14707915DDD3	Russell Makeeff	Lake Nettie	1850	10/24/92	IrW	50	42 - 50	Steel	8		Stumvoll Drilling
14707917AAA	4092	No Well	1885	8/12/70	TH	160	-	None			SWC
14707918ADD	11542	Lake Nettie	1865.3	5/29/85	OW	200	173 - 178	PVC	1.25	2.16	SWC
14707918CDB	R. Schock	No Well	1840	8/30/77	TH	160	-	None			Water Supply Inc.
14707918DCC	11613	Lake Nettie	1827.59	8/8/85	OW	185	178 - 183	PVC	1.25	1.76	SWC
14707919BAA1	2750	Lake Nettie	1828	8/10/67	OW	220	188 - 191	ABS	1.25		SWC
14707919BAA2	2750A	Lake Nettie	1828.04	8/10/67	OW	125	118 - 121	ABS	1.25	1.32	SWC
14707919BAA3	2750B	Lake Nettie	1828.04	8/10/67	OW	45	39 - 42	ABS	1.25	1.07	SWC
14707920AAC	Kemp Makeeff	Lake Nettie	1850	10/17/93	IrW	53	41 - 53	Steel	12		Stumvoll Drilling
14707920ABD	11543	Lake Nettie	1842.24	5/30/85	OW	240	138 - 143	PVC	1.25	2.08	SWC

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14707921BAA	Warren Lee	Lake Nettie	1825	9/22/89	DW	40	34 - 40	PVC	4		Broneske Well Drilling
14707922CBB	11544	Lake Nettie	1849.2	5/31/85	OW	200	68 - 73	PVC	1.25	1.92	SWC
14707922CBD	Dick Baron	Lake Nettie	1830	6/28/90	DW	75	55 - 75	PVC	4		Zachmeier Drilling
14707922CCC	S&K Construction	Lake Nettie	1840	4/11/91	DW	75	62 - 72	PVC	5		Water Supply Inc.
14707922CDA	Adam Berger	Lake Nettie	1830	9/1/91	DW	60	40 - 60	PVC	4		Zachmeier Drilling
14707922CDD	Warren Buehler	Lake Nettie	1835	7/8/76	DW	60	50 - 60	PVC	4		Farmers Supply
14707922DAA	Leroy Neilson	Lake Nettie	1838	5/30/75	IrW	65	35 - 65	Steel	12		Aqua Well Drilling
14707923BBD	Leroy Nielson	No Well	1850	5/29/75	TH	40	-	None			Aqua Well Drilling
14707924DDD	11608	Lake Nettie	1967.9	8/6/85	OW	220	152 - 157	PVC	1.25	0.12	SWC
14707926DDA	11545	Lake Nettie	1912.8	5/31/85	OW	260	168 - 173	PVC	1.25	2.06	SWC
14707927AAA	4093	Lake Nettie	1851.2	8/12/70	OW	180	36 - 48	ABS	1.25	1.72	SWC
14707927AAC	Ernest Barbie	Lake Nettie	1835	7/7/76	DW	40	30 - 40	PVC			Farmers Supply
14707927ADA1	2787	Lake Nettie	1842.56	8/28/67	OW	200	168 - 178	ABS	1.25	1.8	SWC
14707927ADA2	2787A	Lake Nettie	1842.92	8/28/67	OW	60	57 - 60	ABS	1.25	1.83	SWC
14707927ADC	Glen Lelm	Lake Nettie	1830	5/27/92	DW	46	34 - 46	PVC	4.5		Stumvoll Drilling
14707927BD	Jim Moses	Lake Nettie	1835	5/8/80	DW	60	60 - 70	PVC	4		Zachmeier Drilling,
14707927BDD	Myron Goughnour	Lake Nettie	1830	5/8/80	DW	50	40 - 50	PVC	4		Zachmeier Drilling
14707927DDA	Brush Lake Rodeo Grounds	Lake Nettie	1830	5/1/91	DW	100	87 - 97	PVC	4		Broneske Well Drilling
14707927DDD	USBR	No Well	1869.8		TH	238	-	None			USBR
14707928DAA	Lloyd Brunner	Lake Nettie	1850	4/10/76	DW	80	75 - 80	Steel	4		Driver Well Drilling
14707929BBB	11524	Lake Nettie	1826.8	12/19/84	OW	140	43 - 48	PVC	1.25	1.92	SWC
14707929DCB	John Fibelstad	No Well	1835	10/15/73	TH	50	-	None			Midwest Valley Inc.
14707930DDD	2786	No Well	1845	8/28/67	TH	200	-	None			SWC
14707931ACD	Alfred Schock	Lake Nettie	1865	4/26/74	DW	153	143 - 153	PVC	4		Gross Drilling
14707934DDC	Myron Makeef	Ft. Union	1905	12/11/72	DW	600	575 - 600	Steel	4		Farmers Supply
14707935BCC	4094	Lake Nettie	1924.69	8/12/70	OW	320	218 - 224	ABS	1.25	1.8	SWC
14707935CBB	4094A	Lake Nettie	1925.43	8/6/85	OW	140	136 - 141	PVC	1.25	2.2	SWC
14707935DDC	11610	No Well	1939	8/7/85	TH	280	-	None			SWC
14708001CCC2	3937	Lake Nettie	1876.5	12/2/69	OW	320	48 - 53	PVC	4	1.22	SWC
14708003BDC	4087	Lake Nettie	1860	8/10/70	OW	200	39 - 59	ABS	1.25		SWC
14708003CBA	M-S Rural Water	Lake Nettie	1863.7	10/20/88	OW	72	53 - 63	PVC	2	1.99	Water Supply Inc.
14708003CCA	Gerald Presser	Lake Nettie	1870	5/12/72	IrW	66	52 - 62	Steel	12		Midwest Valley Inc.
14708003CCC	2730	Lake Nettie	1872.99	8/2/67	OW	180	48 - 51	ABS	1.25	2.16	SWC
14708003DAA	11591	Lake Nettie	1863.5	7/29/85	OW	240	78 - 83	PVC	1.25	1.88	SWC
14708004BBB	4086	No Well	1869	8/7/70	TH	200	-	None			SWC
14708004CCC	M-S Rural Water	Lake Nettie	1862.5	11/16/88	OW	40	25 - 35	PVC	2	1.91	Water Supply Inc.
14708004CCD	M-S Rural Water	Lake Nettie	1860.37	11/14/88	OW	40	24 - 34	PVC	2	1.9	Water Supply Inc.
14708004CDA	M-S Rural Water	Lake Nettie	1870.4	11/14/88	OW	60	41 - 51	PVC	2	1.93	Water Supply Inc.
14708004CDD	M-S Rural Water	Lake Nettie	1860.33	10/18/88	OW	51	35 - 45	PVC	2	1.5	Water Supply Inc.
14708004CDD2	M-S Rural Water	Lake Nettie	1860.2	11/18/88	OW	40	20 - 30	PVC	2	2.11	Water Supply Inc.
14708004DDB	Leland Lindteigen	Lake Nettie	1870	5/29/72	IrW	46	38 - 45	Steel	12		Midwest Valley Inc.
14708004DDD1	Leland Lindteigen	Lake Nettie	1870	5/28/72	IrW	46	30 - 45	Steel	12		Midwest Valley Inc.
14708004DDD2	Leland Lindteigen	Lake Nettie	1870	11/7/73	IrW	45	39 - 44	Steel	12		Midwest Valley Inc.
14708005AAC1	Jeffery Presser	No Well	1870	9/8/76	TH	100	-	None			Water Supply Inc.
14708005AAC2	Jeff Presser	Lake Nettie	1865	4/24/77	IrW	100	72 - 98	Steel	10		Water Supply Inc.
14708005BBB	M-S Rural Water	Lake Nettie	1871.38	10/14/88	OW	100	83 - 93	PVC	2	1.8	Water Supply Inc.
14708005BCC	2732	No Well	1868	8/3/67	TH	120	-	None			SWC
14708005CCC	M-S Rural Water	Lake Nettie	1869.91	10/17/88	OW	112	80 - 90	PVC	2	1.8	Water Supply Inc.
14708005DDA	11521	Ft. Union	1850.7	11/7/84	OW	120	107 - 112	PVC	1.25	2.02	SWC
14708005DDD	M-S Rural Water	Lake Nettie	1848.89	10/13/88	OW	80	58 - 68	PVC	2	1.6	Water Supply Inc.
14708006BCD	Gerald Presser	No Well	1860	9/3/76	TH	110	-	None			Water Supply Inc.
14708006BCD2	Gerald Presser	Lake Nettie	1865	10/27/77	IrW	104	85 - 100	Steel	12		Water Supply Inc.
14708006CBA	Gerald Presser	Lake Nettie	1860	5/1/78	IrW	100	72 - 92	PVC	8		Water Supply Inc.
14708007CBB	Kraft Brothers	Lake Nettie	1860	7/7/78	DW	115	94 - 98	Steel	4		Russell Drilling
14708007CCC	2728	No Well	1848	8/2/67	TH	100	-	None			SWC
14708007DCB	Gerald Kraft,	No Well	1860	7/11/77	TH	80	-	None			Water Supply Inc.
14708008AAD3	M-S Rural Water	Lake Nettie	1848.4	11/25/88	MW	40	24.5 - 36.5	Steel	8		Water Supply Inc.
14708008AAD4	M-S Rural Water	Lake Nettie	1848.9	11/28/88	OW	40	22 - 32	PVC	2	1.72	Water Supply Inc.

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14708008AAD6	M-S Rural Water	Lake Nettie	1848.3	11/30/88	OW	100	78 - 88	PVC	2	1.82	Water Supply Inc.
14708008AAD8	M-S Rural Water	Lake Nettie	1850	10/12/89	MW	40	22 - 37	Steel	5		Water Smith Inc.
14708008AADB	M-S Rural Water	Lake Nettie	1850	10/12/89	MW	44	20 - 40	Steel	5		Water Smith Inc.
14708008ADA1	M-S Rural Water	Lake Nettie	1847	11/17/88	OW	35	18 - 28	PVC	2	1.85	Water Supply Inc.
14708008ADA4	M-S Rural Water	Lake Nettie	1846.2	11/30/88	OW	40	21 - 31	PVC	2	2.12	Water Supply Inc.
14708008ADA5	M-S Rural Water	Ft. Union	1848.5	12/1/88	OW	118	104 - 114	PVC	2	1.67	Water Supply Inc.
14708008ADD2	M-S Rural Water	No Well	1853	1/27/89	TH	45	-	None			Water Supply Inc.
14708008CCC	11596	Lake Nettie	1855.9	7/31/85	OW	80	58 - 63	PVC	1.25	1.97	SWC
14708008DAA	M-S Rural Water	No Well	1845.1	1/27/89	TH	35	-	None			Water Supply Inc.
14708008DAA5	M-S Rural Water	No Well	1867	1/15/90	TH	40	-	None			Water Supply Inc.
14708008DAD	M-S Rural Water	Lake Nettie	1859.08	11/17/88	OW	35	17 - 27	PVC	2	1.9	Water Supply Inc.
14708009CBB	2731	Lake Nettie	1845.9	8/2/67	OW	120	26 - 29	ABS	1.25	1.78	SWC
14708009CDD	M-S Rural Water	Lake Nettie	1878.8	10/18/88	OW	60	42 - 52	PVC	2	2.02	Water Supply Inc.
14708009DDD	11595	No Well	1876	7/31/85	TH	80	-	None			SWC
14708010BAC	Virgil Haas	No Well	1890	8/30/77	TH	140	-	None			Water Supply Inc.
14708010CBB	M-S Rural Water	Lake Nettie	1891.1	10/19/88	OW	52	37 - 47	PVC	2	1.69	Water Supply Inc.
14708011CAA	Gerald Presser	Lake Nettie	1890	10/1/82	DW	77	71 - 75	Steel	4		Russell Drilling
14708013CCC	2749	Lake Nettie	1852.16	8/10/67	OW	160	128 - 131	ABS	1.25	1.75	SWC
14708015AAA2	11541A	Lake Nettie	1877.2	5/29/85	OW	300	43 - 48	PVC	1.25	1.85	SWC
14708015CAB	Jeff Presser	No Well	1850	7/11/77	TH	110	-	None			Water Supply Inc.
14708015DAC	Jeff Presser	Lake Nettie	1840	12/3/79	IrW	98	76 - 98	Steel	8		Water Supply Inc.
14708015DBD	Jeff Presser	No Well	1845	12/6/79	TH	110	-	None			Water Supply Inc.
14708015DCA	Jeff Presser	No Well	1840	8/29/79	TH	280	-	None			Water Supply Inc.
14708016BCA	11522	Lake Nettie	1901.4	11/8/84	OW	160	115 - 120	PVC	1.25	2.25	SWC
14708016CBC	USBR	Lake Nettie	1859.3	6/14/78	OW	50	26.8 - 46.8	PVC	1.5		USBR
14708017BCB	2729	No Well	1865	8/2/69	TH	120	-	None			SWC
14708017CAD	USBR	Turtle Lake	1854.1	8/28/78	OW	68	42 - 52	PVC	1.5		USBR
14708017CBA	USBR	Turtle Lake	1862.4	4/7/72	OW	45	45 - 45	PVC	1.25		USBR
14708017CCC	USBR	Turtle Lake	1829	6/9/78	OW	30	19.4 - 29.4	PVC	1.5		USBR
14708017CDA	USBR	Undiff.	1857	9/1/78	OW	60	- 52	PVC	1.5		USBR
14708017CDC	USBR	Lake Nettie	1851.2	6/2/78	OW	50	39.2 - 49.2	PVC	1.5		USBR
14708017DBD	USBR	Lake Nettie	1879.3	6/8/78	OW	85	63.7 - 83.7	PVC	1.5		USBR
14708018BBB	USBR	Till	1849.1	4/6/72	OW	30	30 - 30	PVC	1.25		USBR
14708018CCC	USBR	Till	1839.6	4/7/72	OW	20	20 - 20	PVC	1.25		USBR
14708018DAD2	USBR	No Well	1844.2	2/19/69	TH	50	-	None			USBR
14708018DCC	USBR	Turtle Lake	1866.7	9/15/72	OW	45	45 - 45	PVC	1.25		USBR
14708019ACC	USBR	No Well	1843	3/29/55	TH	30	-	None			USBR
14708019ADD1	USBR	No Well	1836.4		TH	40	-	None			USBR
14708019ADD2	Turtle Lake	No Well	1828		TH	70	-	None			C.A. Simpson & Son
14708019ADD3	Turtle Lake	No Well	1835		TH	65	-	None			C.A. Simpson & Son
14708019BCC	2723	Turtle Lake	1843	8/1/67	OW	180	148 - 151	ABS	1.25		SWC
14708019BCC2	USBR	Turtle Lake	1847.1	9/15/72	OW	35	35 - 35	PVC	1.25		USBR
14708019CBB	USBR	No Well	1845.4	8/16/54	TH	36	-	None			USBR
14708019CBC	Turtle Lake	Turtle Lake	1840	7/22/81	OW	101	84 - 87	PVC	1.25	3	C.A. Simpson & Son
14708019DAA	2722	Turtle Lake	1840	7/31/67	OW	100	57 - 60	ABS	1.25		SWC
14708019DBBD	USBR	No Well	1841.6	8/16/54	TH	25	-	None			USBR
14708019DDA1	USBR	No Well	1847.3	12/9/68	TH	50	-	None			USBR
14708019DDA2	USBR	No Well	1846.1	12/11/68	TH	50	-	None			USBR
14708020AAA	USBR	Lake Nettie	1866.9	5/25/78	OW	78	68.3 - 78.3	PVC	1.5		USBR
14708020AAA2	USBR	Lake Nettie	1866.9	5/25/78	OW	45	33.7 - 43.7	PVC	1.5	1.8	USBR
14708020ACCB	USBR	No Well	1860	11/4/54	TH	114	-	None			USBR
14708020ADA	USBR	Lake Nettie	1823.5	5/23/78	OW	20	8.9 - 18.9	PVC	1.5		USBR
14708020BAD1	USBR	Lake Nettie	1858.2	5/26/78	OW	72	33.3 - 43.3	PVC	1.5	1.8	USBR
14708020BAD2	USBR	Lake Nettie	1858	6/12/78	OW	75	53.4 - 73.4	PVC	1.5	1.9	USBR
14708020BBA	USBR	Lake Nettie	1841.7	6/1/78	OW	40	29.4 - 39.4	PVC	1.5		USBR
14708020BBD	USBR	No Well	1830.9	6/18/75	TH	30	-	None			USBR
14708020BCB	USBR	No Well	1856.3	6/23/75	TH	30	-	None			USBR
14708020BCC1	USBR	No Well	1836.4	8/16/54	TH	40	-	None			USBR
14708020CAA	Turtle Lake	No Well	1860		TH	61	-	None			C.A. Simpson & Son

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14708020CDD	Turtle Lake	No Well	1858		TH	81	-	None			C.A. Simpson & Son
14708020DBBC	USBR	No Well	1852	10/29/54	TH	85	-	None			USBR
14708020DDA1	USBR	No Well	1849.8	12/17/68	TH	65	-	None			USBR
14708020DDA3	USBR	No Well	1851.5	4/14/69	TH	60	-	None			USBR
14708021ADA	USBR	Lake Nettie	1846.8	4/26/78	OW	60	24.2 - 34.2	PVC	1.5		USBR
14708021ADC	USBR	Lake Nettie	1850.8	4/27/78	OW	55	33.4 - 43.4	PVC	1.5		USBR
14708021BAC	11523	Lake Nettie	1854.3	11/8/84	OW	100	37 - 42	PVC	1.25	2.19	SWC
14708021BDD	USBR	Lake Nettie	1865.9	5/3/78	OW	70	45 - 55	PVC	1.5	1.9	USBR
14708021CCA	USBR	No Well	1833.4	9/20/54	TH	25	-	None			USBR
14708021CCC	11538	No Well	1865	5/28/85	TH	100	-	None			SWC
14708021CDC	USBR	Lake Nettie	1837.6	4/20/78	OW	47	33.3 - 43.3	PVC	1.5		USBR
14708021DBB	USBR	Till	1820.1	5/18/78	OW	30	13.5 - 23.5	None			USBR
14708021DDA	USBR	No Well	1835.1	5/11/79	TH	50	-	None			USBR
14708021DDA2	USBR	Undiff.	1843.4	4/17/78	OW	50	32.9 - 42.9	PVC	1.5		USBR
14708021DDD	USBR	No Well	1817.4	5/9/79	TH	70	-	None			USBR
14708021DDD2	USBR	No Well	1833.1	5/4/79	TH	60	-	None			USBR
14708022AAD	11592	Lake Nettie	1831.8	7/30/85	OW	120	38 - 43	PVC	1.25	2.08	SWC
14708022BBB	3936	Lake Nettie	1835	12/2/69	OW	180	128 - 131	ABS	1.25		SWC
14708022BCA	USBR	No Well	1861.1	5/31/79	TH	75	-	None			USBR
14708022BCB	USBR	No Well	1828.7	6/15/79	TH	40	-	None			USBR
14708022BCC	USBR	No Well	1828.7	6/19/79	TH	40	-	None			USBR
14708022BCD	USBR	No Well	1847.8	5/29/79	TH	55	-	None			USBR
14708022BCD2	USBR	No Well	1850.8	5/29/79	TH	54	-	None			USBR
14708022CBA	USBR	No Well	1848.3	5/23/79	TH	56	-	None			USBR
14708022CBB	USBR	No Well	1823.6	6/6/79	TH	34	-	None			USBR
14708022CBC1	USBR	No Well	1848.9	5/22/79	TH	55	-	None			USBR
14708022CBC2	USBR	No Well	1836.3	6/12/79	TH	40	-	None			USBR
14708022CBC3	USBR	Lake Nettie	1855.9	7/3/79	OW	40	29.9 - 39.9	PVC	1.5	1.62	USBR
14708022CCB	USBR	No Well	1853.7	5/16/79	TH	60	-	None			USBR
14708022CCC3	USBR	No Well	1850.8	5/21/79	TH	55	-	None			USBR
14708022CDD1	11593	Lake Nettie	1843.8	7/31/85	OW	180	138 - 143	PVC	1.25	1	SWC
14708022CDD2	11593A	Lake Nettie	1843.8	7/31/85	OW	40	25 - 30	PVC	1.25	2.1	SWC
14708023AAD	R. Schock	No Well	1845	8/30/77	TH	130	-	None			Water Supply Inc.
14708023ADD	11594	Lake Nettie	1834.9	7/31/85	OW	140	98 - 103	PVC	1.25	1.7	SWC
14708027BAC	USBR	Lake Nettie	1838.6	4/6/78	OW	35	24 - 34	PVC	1.5		USBR
14708027BBD1	USBR	Lake Nettie	1833.6	4/11/78	OW	55	43.4 - 53.4	PVC	1.5	1.7	USBR
14708027BBD2	USBR	Lake Nettie	1833.9	4/13/78	OW	34	23.3 - 33.3	PVC	1.5	1.8	USBR
14708027CCC	USBR	Till	1866.8	5/11/72	OW	40	40 - 40	PVC	1.25		USBR
14708027DDD	11605	No Well	1840	8/2/85	TH	100	-	None			SWC
14708028AAA	USBR	Lake Nettie	1817.9	4/25/78	OW	25	13.4 - 23.4	PVC	1.5		USBR
14708028AAC	USBR	Lake Nettie	1840.8	4/13/78	OW	40	27.3 - 37.3	PVC	1.5		USBR
14708028ABB1	USBR	No Well	1847.7	4/28/78	TH	45	-	None			USBR
14708028ADD	USBR	Lake Nettie	1840.8	5/17/72	OW	20	- 20	PVC	1.25	1.1	USBR
14708028BCC	USBR	Lake Nettie	1873.1	5/16/72	OW	50	- 50	PVC	1.25		USBR
14708028CBC	Turtle Lake	Ft. Union	1880		MW	445	390 - 445	Steel	12		Layne-Minnesota
14708028DAB	USBR	No Well	1851	11/2/54	TH	35	-	None			USBR
14708028DDB	USBR	No Well	1848	6/15/55	TH	40	-	None			USBR
14708028DDB2	USBR	No Well	1850.1	8/16/68	TH	51	-	None			USBR
14708028DDB4	USBR	No Well	1845.9	8/20/68	TH	51	-	None			USBR
14708028DDB5	USBR	No Well	1842.9	8/21/68	TH	51	-	None			USBR
14708029AAA	USBR	Lake Nettie	1864.5	5/16/72	OW	40	- 40	PVC	1.25		USBR
14708029AAD	USBR	No Well	1828	3/30/55	TH	30	-	None			USBR
14708030AAD	Kraft Brothers	Ft. Union	1890	5/1/75	DW	260	210 - 230	Steel	4		Russell Drilling
14708030BBC	Turtle Lake	No Well	1830	7/22/81	TH	81	-	None			C.A. Simpson & Son
14708032AAA	11537	No Well	1903	5/24/85	TH	100	-	None			SWC
14708033AAB	USBR	No Well	1844.1	10/12/72	TH	55	-	None			USBR
14708033ABA	USBR	No Well	1844.3	10/12/72	TH	60	-	None			USBR
14708033ABA2	USBR	Lake Nettie	1845.8	5/10/72	OW	30	- 30	PVC	1.25		USBR
14708033ABA3	USBR	No Well	1844.8	10/6/72	TH	60	-	None			USBR

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14708033ABD	USBR	No Well	1845.3	11/3/54	TH	30	-	None			USBR
14708033BBB	USBR	Till	1895.3	5/10/72	OW	50	- 50	PVC	1.25		USBR
14708033CCC	USBR	Ft. Union	1952.6	5/8/72	OW	125	- 125	PVC	1.25		USBR
14708033DCC	USBR	No Well	1840		TH	30	-	None			USBR
14708033DDD	3935	Lake Nettie	1824.9	12/1/69	OW	40	18 - 24	ABS	1.25	1.63	SWC
14708034CAA	USBR	Lake Nettie	1835.3	5/11/72	OW	20	- 20	PVC	1.25		USBR
14708034CCC	USBR	Lake Nettie	1825.6	5/11/72	OW	15	- 15	PVC	1.25		USBR
14708036ACB	Monty Fast	No Well	1825	9/25/89	TH	101	-	None			Water Supply Inc.
14708036ACC	Monty Fast	Lake Nettie	1830	10/10/89	IrW	52	31 - 49	Steel	12		Water Supply Inc.
14708036ADB	Monty Fast	No Well	1830	9/25/89	TH	105	-	None			Water Supply Inc.
14708036BBD	Monty Fast	Lake Nettie	1820	10/5/89	IrW	64	35 - 55	Steel	12		Water Supply Inc.
14708102DDD	11600	No Well	1868	8/1/85	TH	60	-	None			SWC
14708103BBB	USBR	Lake Nettie	1846.77	6/16/87	OW		16.2 - 17.6	PVC	2	2.1	
14708104DAA	USBR	Lake Nettie	1845.63	6/16/87	OW		16.1 - 17.9	PVC	2	2.25	
14708107AAA	11568	No Well	1895	6/26/85	TH	120	-	None			SWC
14708107DDD	4098	Turtle Lake	1912.9	8/13/70	OW	220	118 - 138	ABS	1.25	2.47	SWC
14708109AAA1	11505	No Well	1843	10/17/84	TH	40	-	None			SWC
14708109AAA2	11506	Lake Nettie	1843.39	10/17/84	OW	11	5 - 10	PVC	1.25	1.68	SWC
14708109DAD	USBR	Ft. Union	1882.2	3/29/72	OW	60	- 60	PVC	1.25		USBR
14708110AAA	11599	No Well	1868	8/1/85	TH	60	-	None			SWC
14708110ADD	2727	No Well	1864	8/2/67	TH	80	-	None			SWC
14708111CCC	USBR	No Well	1852	3/18/55	TH	30	-	None			USBR
14708111CDC	USBR	Till	1850.2	4/5/72	OW	20	- 20	PVC	1.25		USBR
14708112CCC	11601	No Well	1859	8/1/85	TH	60	-	None			SWC
14708112DCC	USBR	Lake Nettie	1860.8	4/6/72	OW	30	- 30	PVC	1.25		USBR
14708113BCC	USBR	No Well	1849	3/22/55	TH	30	-	None			USBR
14708113DCC1	USBR	Turtle Lake	1860	4/11/72	OW	25	- 25	PVC	1.25		USBR
14708114AAA	USBR	Lake Nettie	1850.5	4/5/72	OW	30	- 30	PVC	1.25		USBR
14708114ACC	USBR	No Well	1851	3/21/55	TH	30	-	None			USBR
14708114BBB	USBR	No Well	1839.8	8/10/54	TH	30	-	None			USBR
14708114CAC	USBR	Turtle Lake	1835.1	3/30/72	OW	27	- 18	PVC	1.25		USBR
14708114DAA	USBR	Turtle Lake	1849.1	3/31/72	OW	40	- 36	PVC	1.25		USBR
14708114DAD	USBR	No Well	1834.8	8/11/54	TH	30	-	None			USBR
14708115ABB1	USBR	No Well	1832.4	4/16/69	TH	50	-	None			USBR
14708115BAD	USBR	No Well	1847.3	9/16/54	TH	32	-	None			USBR
14708115BCC	11507	No Well	1858	10/17/84	TH	60	-	None			SWC
14708115DCC	USBR	Till	1838.6	3/29/72	OW	20	- 20	PVC	1.25		USBR
14708115DDD	2725	No Well	1830	8/1/67	TH	50	-	None			SWC
14708116CDD	USBR	No Well	1837.9	8/9/54	TH	25	-	None			USBR
14708116DAD	USBR	No Well	1847	3/24/55	TH	40	-	None			USBR
14708116DAD2	USBR	No Well	1845	2/11/69	TH	50	-	None			USBR
14708116DAD3	USBR	No Well	1845.7	2/12/69	TH	50	-	None			USBR
14708116DAD4	USBR	No Well	1845	2/13/69	TH	50	-	None			USBR
14708116DCC	USBR	No Well	1851	4/5/55	TH	30	-	None			USBR
14708117BCCA	USBR	No Well	1840.9	8/5/54	TH	30	-	None			USBR
14708117DDA	USBR	No Well	1860	8/6/54	TH	35.8	-	None			USBR
14708118AAA	USBR	Turtle Lake	1909.3	12/10/71	OW	85	- 85	PVC	2		USBR
14708118ADC	Harold Sellons	No Well	1850	8/29/77	TH	80	-	None			Water Supply Inc.
14708118CCB	USBR	Turtle Lake	1876.9	9/18/72	OW	153	111 - 153	PVC	4		USBR
14708118CCC1	USBR	Till	1872.7	12/7/71	OW	50	- 50	PVC	1.25		USBR
14708118DAAA	USBR	No Well	1835.5	4/8/55	TH	30	-	None			USBR
14708118DAD1	USBR	No Well	1845.1	2/18/69	TH	50	-	None			USBR
14708118DAD2	USBR	Till	1843.5	8/12/75	OW	20	3 - 20	PVC	1.25		USBR
14708118DBB	USBR	Turtle Lake	1877.2	8/22/75	OW	67	- 67	PVC	1.25		USBR
14708118DBC	USBR	No Well	1860.3	9/15/54	TH	35	-	None			USBR
14708118DBD	Harold Sellons	Turtle Lake	1840	8/29/77	OW	120	108 - 118	PVC	1.25		Water Supply Inc.
14708118DCA1	USBR	Till	1845.8	8/13/75	OW	14	3 - 14	PVC	1.5		USBR
14708118DCC1	USBR	Till	1840.2	8/14/75	OW	15	3 - 15	PVC	1.25		USBR
14708118DDB4	USBR	No Well	1847.4	8/28/75	TH	20	-	None			USBR

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14708118DDC	USBR	Till	1837.3	9/8/75	OW	19	3 - 19	PVC	1.25		USBR
14708118DDD1	USBR	Till	1835.7	8/13/75	OW	25	4 - 25	PVC	1.25		USBR
14708119AAA	2718	Turtle Lake	1837	7/31/67	OW	120	94 - 97	ABS	1.25		SWC
14708119BBB1	USBR	Till	1847.3	8/14/75	OW	28	3 - 28	PVC	1.25		USBR
14708119BBB2	USBR	Till	1840.1	8/15/75	OW	16	3 - 16	PVC	1.25		USBR
14708119DAB	USBR	Till	1832.5	11/18/71	OW	20	- 20	PVC	1.25		USBR
14708120CAC	P Schlichenmayer	Ft. Union	1840	7/25/82	DW	183	173 - 183	Steel	4		Feickert Drilling
14708121AAA	2726	No Well	1847	8/1/67	TH	80	-	None			SWC
14708121DAA	11508	Turtle Lake	1828.4	10/17/84	OW	120	81 - 86	PVC	1.25	3.2	SWC
14708122AAA	11564	Turtle Lake	1830.15	6/24/85	OW	40	18 - 23	PVC	1.25	1.82	SWC
14708122BBB	USBR	No Well	1844.6	8/9/54	TH	30	-	None			USBR
14708122BBB2	USBR	Till	1845.4	3/29/72	OW	20	- 19.8	PVC	1.25		USBR
14708123AAA1	2724	Turtle Lake	1828.05	8/1/67	OW	70	48 - 51	ABS	1.25	1.84	SWC
14708123AAA2	2724A	Turtle Lake	1827.6	6/24/85	OW	40	23 - 28	PVC	1.25	2.05	SWC
14708123ADB	Robert Hanson	No Well	1828	7/22/74	TH	40	-	None			Mann Drilling
14708124AAC	Turtle Lake	Turtle Lake	1840	12/1/81	MW	107	80 - 100	Steel	8		LTP Enterprises, Inc.
14708124ADD	11612	Turtle Lake	1842.3	8/7/85	OW	120	98 - 103	PVC	1.25	1.85	SWC
14708124BAA1	USBR	No Well	1834.3	8/11/54	TH	75	-	None			USBR
14708124BAA2	Turtle Lake	Turtle Lake	1850	7/22/81	OW	121	97 - 100	PVC	1.25		C.A. Simpson & Son
14708124BAA3	USBR	Turtle Lake	1853.8	9/13/72	OW	35	- 35	PVC	1.25		USBR
14708124DBD	Robert Hanson	No Well	1830	7/22/74	TH	140	-	None			Mann Drilling
14708124DCC	Turtle Lake	Turtle Lake	1824		TH	53	-	None			C.A. Simpson & Son
14708125AAA	USBR	Turtle Lake	1859.1	3/28/72	OW	30	- 30	PVC	1.25		USBR
14708125ABB	USBR	Turtle Lake	1830.7	5/18/72	OW	20	- 20	PVC	1.25		USBR
14708125BAA	Turtle Lake	No Well	1824	7/22/81	TH	41	-	None			C.A. Simpson & Son
14708125CBB	11563	No Well	1837	6/24/85	TH	40	-	None			SWC
14708125DCB	Turtle Lake	Turtle Lake	1830	3/3/69	MW	60	31 - 41	Steel	10		Moe's Well Drilling
14708125DDD	2721	No Well	1878	7/31/67	TH	140	-	None			SWC
14708128ADD	2719	Turtle Lake	1836.93	7/31/67	OW	120	78 - 81	ABS	1.25	2.3	SWC
14708130AAA	11565	Turtle Lake	1845.8	6/24/85	OW	120	88 - 93	PVC	1.25	1.91	SWC
14708130ADD	4097	Turtle Lake	1863	8/13/70	OW	180	78 - 81	ABS	1.25		SWC
14708130CDD	3929	No Well	1897	11/19/69	TH	100	-	None			SWC
14708132BBB	2717	No Well	1895	7/31/67	TH	80	-	None			SWC
14708134ABB	John Gessele	Ft. Union	1885	8/14/72	DW	187	157 - 187	PVC			Backman Drilling Inc.
14708134CBB	11509	No Well	1910	10/17/84	TH	40	-	None			SWC
14708135ABB	2720	Turtle Lake	1852	7/31/67	OW	60	18 - 21	ABS	1.25		SWC
14708136DCB	Bryan Tomlinson	Ft. Union	1840	7/24/84	DW	120	70 - 120	PVC	4		Zachmeier Drilling
14708202DCC	11516	Ft. Union	1878	11/5/84	OW	120	113 - 118	PVC	1.25	2.2	SWC
14708203AAA	11502	No Well	1885	10/12/84	TH	120	-	None			SWC
14708203CDC	USBR	No Well	1833.4	7/28/54	TH	60	-	None			USBR
14708211AAA	USBR	Undiff.	1912.2	11/11/71	OW	90	- 90	PVC	1.25		USBR
14708211BBB	3927	Turtle Lake	1841	11/14/69	OW	160	98 - 104	ABS	1.25		SWC
14708211BCB	USBR	No Well	1845	6/16/55	TH	52	-	None			USBR
14708211BCC	USBR	No Well	1846.9	7/30/54	TH	60	-	None			USBR
14708211BCD1	USBR	No Well	1860.2	4/11/62	TH	77	-	None			USBR
14708211BCD8	USBR	No Well	1863.3	4/27/62	TH	80	-	None			USBR
14708211BDB	11539	Turtle Lake	1857.4	5/28/85	OW	160	123 - 128	PVC	1.25	1.83	SWC
14708211CCC	3928	No Well	1855	11/19/69	TH	140	-	None			SWC
14708211CDD	USBR	Undiff.	1892	11/15/71	OW	70	- 70	PVC	1.25		USBR
14708211DBB	USBR	No Well	1877.7	9/2/54	TH	70	-	None			USBR
14708211DDD	USBR	No Well	1858	8/2/54	TH	50	-	None			USBR
14708212CBB	USBR	No Well	1881.2	11/12/71	OW	60	- 60	None			USBR
14708212DAD	USBR	Ft. Union(?)	1895.5	12/8/71	OW	75	- 75	None			USBR
14708213ADD	USBR	Turtle Lake	1873	11/9/71	OW	50	- 50	PVC	1.25		USBR
14708213BAB	USBR	Till	1852	8/27/74	OW	30	- 30	ABS	1.25	1	USBR
14708213BAD	USBR	Undiff.	1853.3	8/28/74	OW	35	- 35	ABS	1.25	0.8	USBR
14708213BDB1	USBR	No Well	1836.9	9/14/54	TH	25	-	None			USBR
14708213BDB2	USBR	Till	1839.2	8/20/75	OW	23.5	- 23.5	ABS	1.25	1.1	USBR
14708213BDD	USBR	Undiff.	1856.6	8/29/74	OW	35	- 35	ABS	1.25	1	USBR

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14708213CAA	USBR	Till	1841	8/20/75	OW	19	- 19	ABS	1.25	1.7	USBR
14708213CCC	USBR	Ft. Union	1876.2	11/16/71	OW	55	- 55	PVC	1.25		USBR
14708213DAC	USBR	Undiff.	1867.3	9/30/74	OW	35	- 35	ABS	1.25	1	USBR
14708213DAC2	USBR	Undiff.	1843.5	8/18/75	OW	28.5	- 28.5	PVC	1.25		USBR
14708213DBA	USBR	Undiff.	1868	9/3/74	OW	45	- 45	ABS	1.25	1	USBR
14708213DBB	USBR	Till	1868	8/30/74	OW	45	- 45	ABS	1.25	1	USBR
14708213DBB2	USBR	Till	1848	8/19/75	OW	25	- 25	ABS	1.25	1.5	USBR
14708213DBB3	USBR	Till	1869.8	9/9/75	OW	54	- 54	PVC	1.25		USBR
14708213DDA	USBR	Undiff.	1858.4	10/2/74	OW	30	- 30	ABS	1.25	1.1	USBR
14708213DDB	USBR	Till	1838.8	8/15/75	OW	15	- 15	ABS	1.25	1.8	USBR
14708213DDD	USBR	No Well	1847.7	8/4/54	TH	35	-	None			USBR
14708214CDD	USBR	Ft. Union	1931.8	11/17/71	OW	110	- 110	PVC	1.25		USBR
14708215AAD	USBR	Till	1868.8	11/10/71	OW	50	- 50	PVC	1.25		USBR
14708215ADD	11503	No Well	1910	10/16/84	TH	100	-	None			SWC
14708215DDD	3926	No Well	1927	11/19/69	TH	100	-	None			SWC
14708218DCC2	2716	No Well	1905	7/31/67	TH	60	-	None			SWC
14708224AAD	USBR	Till	1843	11/9/71	OW	25	- 24	PVC	1.25		USBR
14708225DDD	11566	No Well	1940	6/25/85	TH	60	-	None			SWC
14708226ADA	Arthur Grueneich	Ft. Union	1935	7/9/80	DW	340	310 - 340	PVC	4		Baumgartner Drilling
14708227AAA	11504	No Well	1955	10/16/84	TH	60	-	None			SWC
14708227DDA	4095	No Well	2012	8/12/70	TH	100	-	None			SWC
14708235BBC	4096	No Well	2000	8/13/70	TH	100	-	None			SWC
14708236BBB	11567	No Well	1970	6/25/85	TH	40	-	None			SWC
14708303CDB	Audubon NWR	Wolf Creek	1840	6/7/86	DW	100	86 - 96	PVC	6		Water Smith Inc.
14708303DDD	USCOE	No Well	1872	1/13/50	TH	69	-	None			USCOE
14708304BAA	USCOE	No Well	1827.5	2/13/50	TH	185	-	None			USCOE
14708304BAD	USCOE	No Well	1839	12/19/50	TH	87	-	None			USCOE
14708304BDD1	USCOE	No Well	1847.6	12/16/50	TH	57	-	None			USCOE
14708304BDD2	USCOE	No Well	1850.7	1/13/51	TH	66	-	None			USCOE
14708304CAA	USCOE	No Well	1872.5	11/28/50	TH	90	-	None			USCOE
14708305DCB	USCOE	No Well	1813.8	4/26/50	TH	225	-	None			USCOE
14708307AAD	USCOE	No Well	1883.9	2/23/50	TH	55	-	None			USCOE
14708308BCD	USCOE	No Well	1873.6	4/11/50	TH	67.5	-	None			USCOE
14708308CAD	USCOE	No Well	1838.9	2/27/50	TH	70.5	-	None			USCOE
14708309CBD	USCOE	No Well	1860	4/14/50	TH	52.5	-	None			USCOE
14708311CCC2	3924	No Well	1857	11/19/69	TH	240	-	None			SWC
14708312BAA	11571	Wolf Creek	1861	6/26/85	OW	160	48 - 53	PVC	1.25	0.1	SWC
14708312CCC	11572	Wolf Creek	1854.3	6/26/85	OW	86	35 - 40	PVC	1.25	0.19	SWC
14708313DDD	3925	No Well	1881	11/19/69	TH	60	-	None			SWC
14708314BCC	4041	Wolf Creek	1857.63	7/9/70	OW	260	144 - 147	ABS	1.25	1.33	SWC
14708315BBA	11498	Ft. Union	1856.9	10/10/84	OW	80	57 - 61	PVC	1.25	2.15	SWC
14708315CDD3	4042	No Well	1865	7/9/70	TH	140	-	None			SWC
14708315DCC	1-983	No Well	1875	6/29/62	TH	84	-	None			SWC
14708316BBC	USBR	No Well	1865	9/24/92	TH	40	-	None			SWC
14708316BCC	USBR	No Well	1855	9/24/92	TH	80	-	None			SWC
14708317DAB	USBR	No Well	1835	9/24/92	TH	80	-	None			SWC
14708317DCB	USBR	No Well	1860	9/24/92	TH	40	-	None			SWC
14708318CCA	USBR	No Well	1865	9/23/92	TH	55	-	None			SWC
14708318DCC	USBR	No Well	1850	9/23/92	TH	37	-	None			SWC
14708318DDA	USBR	No Well	1855	9/23/92	TH	35	-	None			SWC
14708320BBA	USBR	No Well	1875	9/23/92	TH	60	-	None			SWC
14708322DBB1	4-983	No Well	1881	6/29/62	TH	31.5	-	None			SWC
14708322DBB3	7-983	No Well	1881		TH	42	-	None			SWC
14708322DBC6	6-983	No Well	1886	12/5/66	TH	168	-	None			SWC
14708322DCB	13-983	Wolf Creek	1883	12/7/66	OW	31.5	14 - 18	ABS	1.25		SWC
14708325AAA	4040	No Well	1903	7/9/70	TH	60	-	None			SWC
14708325CBB	2715	No Well	1957	7/28/67	TH	140	-	None			SWC
14708328AAA	2714	No Well	1905	7/28/67	TH	200	-	None			SWC
14708334ABB	3923	Weller Slough	1920	11/18/69	OW	380	198 - 204	ABS	1.25		SWC

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S.Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14807820BBA	10251	Lake Nettie	1909.8	9/6/78	OW	140	35 - 41	PVC	1.25	2.15	SWC
14807832CBC	10250	No Well	1910	9/5/78	TH	140	-	None			SWC
14807905BDB	C. Lick	Lake Nettie	1995	7/23/80	OW	90	- 80	PVC	2		Schimelfenig Drilling
14807911DDD	3942	No Well	1986	12/4/69	TH	180	-	None			SWC
14807915DDA	11547	No Well	1997	6/4/85	TH	120	-	None			SWC
14807916CCC	4091	No Well	2020	8/11/70	TH	180	-	None			SWC
14807919CCC	3946	No Well	1970	12/9/69	TH	240	-	None			SWC
14807920AAB	Eugene Schon	Ft. Union	2010	3/6/75	DW	222	177 - 198	Steel	4		Russell Drilling
14807923BBC	Dennis Fiedler	Ft. Union	1998	12/4/74	DW	422	400 - 420	Steel	4		Russell Drilling
14807927ADD1	2789	Lake Nettie	1907.8	8/29/67	OW	260	183 - 198	ABS	1.25	1	SWC
14807927ADD2	2789A	Lake Nettie	1907.8	8/29/67	OW	260	83 - 98	ABS	1.25	1	SWC
14807927DDD	Lavern Schon	Lake Nettie	1978	3/4/75	DW	162	125 - 129	Steel	4		Russell Drilling
14807928AAD	Cliff Alexander,	Fox Hills	2010	9/23/93	DW	733	680 - 720	Steel	2		Stumvoll Drilling
14807931DDD	4090	No Well	1937	8/11/70	TH	240	-	None			SWC
14807932AAA	3945	Lake Nettie	1948.1	12/5/69	OW	160	108 - 111	ABS	1.25	2.03	SWC
14807936CDC	11551	Ft. Union	1901.3	6/5/85	OW	73	66 - 71	PVC	1.25	1.75	SWC
14808003DAA	2791	No Well	2018	8/30/67	TH	140	-	None			SWC
14808006AAB	11540	Strwby Lake	1952.5	5/28/85	OW	200	168 - 173	PVC	1.25	1.85	SWC
14808007AAA	11517	Strwby Lake	1947.1	11/5/84	OW	170	149 - 154	PVC	1.25	1.64	SWC
14808012ADD	2790	Lake Nettie	1958.1	8/30/67	OW	120	23 - 28	ABS	1.25	1.72	SWC
14808013CCD	Donald Sondrol	Lake Nettie	1970	8/20/84	DW	92	80 - 92	PVC	4		Broneske Well Drilling
14808015DDD	3947	No Well	1960	12/10/69	TH	120	-	None			SWC
14808017AAA	11587	No Well	1960	7/25/85	TH	240	-	None			SWC
14808017CAB1	4084	No Well	1920	8/6/70	TH	160	-	None			SWC
14808017CAB2	4085	Strwby Lake	1917.9	8/6/70	OW	200	118 - 138	ABS	1.25	1.87	SWC
14808018AAA	11518	Strwby Lake	1930.1	11/6/84	OW	80	29 - 34	PVC	1.25		SWC
14808019AAA	11586	No Well	1905	7/25/85	TH	60	-	None			SWC
14808019BBB	11585	No Well	1905	7/24/85	TH	157	-	None			SWC
14808019CCC1	2745	Lake Nettie	1861.85	8/8/67	OW	300	198 - 201	ABS	1.25	2.27	SWC
14808019CCC2	2746	Lake Nettie	1862.39	8/9/67	OW	40	24 - 27	ABS	1.25	2.06	SWC
14808020CCC	11588	Lake Nettie	1889.4	7/25/85	OW	205	98 - 103	PVC	1.25	1.6	SWC
14808021BBB	11519	No Well	1922	11/6/84	TH	180	-	None			SWC
14808021CCC	3948	Lake Nettie	1914.9	12/10/69	OW	200	78 - 81	ABS	1.25	2.3	SWC
14808023CDD	11590	No Well	1930	7/29/85	TH	40	-	None			SWC
14808023DCD	11606	Lake Nettie	1883.7	8/2/85	OW	80	25 - 30	PVC	1.25	1.93	SWC
14808026DCC	M-S Rural Water	Lake Nettie	1867.2	10/24/88	OW	44	30 - 38	PVC	2	1.85	Water Supply Inc.
14808026DDB	M-S Rural Water	No Well	1870	10/24/88	TH	70	-	None			Water Supply Inc.
14808026DDC2	M-S Rural Water	Lake Nettie	1865.2	10/19/88	OW	100	22 - 32	PVC	2	1.98	Water Supply Inc.
14808026DDD	M-S Rural Water	Lake Nettie	1872.1	10/24/88	OW	48	30 - 35	PVC	2	1.89	Water Supply Inc.
14808027CCC	11589	No Well	1920	7/26/85	TH	220	-	None			SWC
14808027DCC	M-S Rural Water	No Well	1920	10/20/88	TH	120	-	None			Water Supply Inc.
14808028DCD	USAF	No Well	1895.1		TH	100	-	None			USAF
14808029CCC	M-S Rural Water	Lake Nettie	1866.8	10/21/88	OW	52	35.5 - 45.5	PVC	2	1.96	Water Supply Inc.
14808029DDD1	11520	No Well	1872	11/6/84	TH	280	-	None			SWC
14808029DDD2	11520A	Lake Nettie	1871.9	5/29/85	OW	120	98 - 103	PVC	1.25	1.72	SWC
14808031AAA1	2747	Lake Nettie	1861.07	8/9/67	OW	260	208 - 211	ABS	1.25	1.78	SWC
14808031AAA2	2747A	Lake Nettie	1861.07	8/9/67	OW	260	78 - 81	ABS	1.25	1.88	SWC
14808031AAA3	M-S Rural Water	Lake Nettie	1859.39	10/14/88	OW	40	28 - 38	PVC	2	1.7	Water Supply Inc.
14808031AAB	M-S Rural Water	Lake Nettie	1853.9	10/20/88	OW	40	23 - 33	PVC	2	1.81	Water Supply Inc.
14808031ADA	M-S Rural Water	Lake Nettie	1854.1	10/21/88	OW	35	20 - 30	PVC	2	1.95	Water Supply Inc.
14808032ADA	Ivon Boe	No Well	1870	7/11/77	TH	60	-	None			Water Supply Inc.
14808033CAA	Ivon Boe	Lake Nettie	1875	6/7/75	IrW	55	38 - 53	Steel	12		Mann Drilling
14808033CBC1	1-958	Lake Nettie	1865	7/2/62	OW	51.5	41 - 51	ABS	1.25		SWC
14808033CBC2	2-958	Lake Nettie	1855.5	7/2/62	OW	49	39 - 49	ABS	1.25		SWC
14808033CBC3	5768	Lake Nettie	1863.4	8/27/70	OW	80	42 - 48	ABS	1.25		SWC
14808033CBC4	5769	No Well	1860	8/27/70	TH	220	-	None			SWC
14808033CBD	Tom Boe	Lake Nettie	1863.2	6/10/61	IrW	70	39 - 51	Cement	17		Schnell Inc.
14808033CCA1	4-958	Lake Nettie	1859.8	7/3/62	OW	53	43 - 53	ABS	1.25		SWC
14808033CCA2	5767	Lake Nettie	1862.5	8/27/70	OW	80	40 - 43	ABS	1.25		SWC

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14808033CCB	5766	Lake Nettie	1866	8/26/70	OW	80	47 - 53	ABS	1.25		SWC
14808033CCC	3-958	Lake Nettie	1868.01	7/3/62	OW	50.5	45 - 48	ABS	1.25	2.25	SWC
14808033DCC	M-S Rural Water	Lake Nettie	1863.7	10/13/88	OW	50	30 - 40	PVC	2	1.7	Water Supply Inc.
14808034DAA	4089	No Well	1855	8/11/70	TH	220	-	None			SWC
14808034DAA2	Harold Sackman	Lake Nettie	1860	8/23/79	OW	120	79 - 89	PVC	1.25		Water Supply Inc.
14808034DAB1	Harold Sackman	Lake Nettie	1860	8/22/79	OW	115	100 - 110	PVC	1.25		Water Supply Inc.
14808034DAB5	Harold Sackman	Lake Nettie	1860	12/19/79	IrW	35	21 - 31	Steel	8		Water Supply Inc.
14808034DBC2	Harold Sackman	No Well	1860	8/27/79	TH	120	-	None			Water Supply Inc.
14808034DBD	Harold Sackman	Lake Nettie	1860	7/25/79	OW	280	241 - 258	PVC	1.25		Water Supply Inc.
14808034DCC	4088	Lake Nettie	1867.5	8/10/70	OW	360	198 - 207	ABS	1.25	1.51	SWC
14808034DCC2	Harold Sackman	No Well	1860	8/27/79	TH	120	-	None			Water Supply Inc.
14808034DDA1	Harold Sackman	No Well	1870	8/27/79	TH	120	-	None			Water Supply Inc.
14808035BBC	2748	Lake Nettie	1860.5	8/9/67	OW	120	38 - 41	ABS	1.25	1.95	SWC
14808035CCC	11611	No Well	1887	8/7/85	TH	280	-	None			SWC
14808102AAA	3950	No Well	1950	12/11/69	TH	80	-	None			SWC
14808103AAB	2804	H.S. Valley	1883.4	9/8/67	OW	60	32 - 37	PVC	4	1.4	SWC
14808103ABA	Durnell Klain	H.S. Valley	1880	6/26/89	IrW	47	30 - 44	Steel	8		Water Supply Inc.
14808103ABC1	Leonard Klain	No Well	1880	7/10/79	TH	45	-	None			Mann Drilling
14808103CCD	11581	H.S. Valley	1864.56	7/22/85	OW	100	33 - 38	PVC	1.25	2.05	SWC
14808104CBC	11513	Lake Nettie	1913.99	10/30/84	OW	100	49 - 54	PVC	1.25	1.89	SWC
14808106BBC	Arlo Voth	Lake Nettie	1925	7/1/77	DW	97	92 - 97	Steel	4		Broneske Well Drilling
14808106BCC	3952	No Well	1875	12/11/69	TH	140	-	None			SWC
14808106CCC	11579	No Well	1918	7/17/85	TH	140	-	None			SWC
14808107DCC	Dakota Irrigators	No Well	1877	8/8/76	TH	125	-	None			R&F Drilling
14808108DAA	USBR	Lake Nettie	1872.11	6/11/87	OW		19 - 20.9	PVC	2	3.5	
14808108DDA	11512	Lake Nettie	1859.75	10/19/84	OW	40	13 - 18	PVC	1.25	1.9	SWC
14808109BAA	USBR	H.S. Valley	1896.14	6/9/87	OW		25.1 - 27	PVC	2	2.9	
14808109DDA	Bryon Fylling	No Well	1860	2/28/90	TH	80	-	None			Water Supply Inc.
14808110AAA	USBR	H.S. Valley	1910.16	6/4/87	OW		20.5 - 22.4	PVC	2	2.95	
14808110ABB	USBR	H.S. Valley	1878.61	6/4/87	OW		21.1 - 23	PVC	2	3	
14808110CCB2	Bryon Fylling	Lake Nettie	1860	3/1/90	OW	145	118 - 138	PVC	2		Water Supply Inc.
14808110CCB3	Bryon Fylling	Lake Nettie	1870	5/10/91	IrW	150	112 - 140	Steel	12		Water Supply Inc.
14808110DDC	11582	Lake Nettie	1882.31	7/23/85	OW	200	150 - 155	PVC	1.25	2.1	SWC
14808112CCC	11584	No Well	1900	7/24/85	TH	80	-	None			SWC
14808112DAA	3949	Strwby Lake	1894.7	12/11/69	OW	100	38 - 41	ABS	1.25	1.53	SWC
14808114CDD	5-C-6	Lake Nettie	1858.57	9/11/62	OW	149	136 - 141	ABS	1.25	1.98	SWC
14808115DBB	USBR	Lake Nettie	1862	6/5/87	OW		16.2 - 18.2	PVC	2	1.75	
14808115DDB	3-C-6	Lake Nettie	1859.71	8/9/62	OW	95	77 - 80	Steel	1.25		SWC
14808115DDD1	USAF	Lake Nettie	1862		Ind	101	-	Unkn			USAF
14808115DDD2	USAF	Lake Nettie	1865	8/8/62	Ind	147	-	Unkn			SWC
14808116BCC	USBR	Lake Nettie	1859.71	6/11/87	OW		20 - 21.9	PVC	2	2.4	
14808116DDD	2743	Lake Nettie	1852.15	8/8/67	OW	180	18 - 21	ABS	1.25	1.62	SWC
14808117BCB1	11580	Lake Nettie	1885.54	7/17/85	OW	210	188 - 193	PVC	1.25	2.18	SWC
14808117BCB2	11580A	Lake Nettie	1885.63	7/18/85	OW	125	113 - 118	PVC	1.25	2.2	SWC
14808117BCB3	11580B	Lake Nettie	1885.88	7/18/85	OW	40	23 - 28	PVC	2	1.8	SWC
14808117DAC	Virgil Haas	No Well	1865	8/29/77	TH	180	-	None			Water Supply Inc.
14808118DCD1	2740	Lake Nettie	1841.17	8/4/67	OW	220	178 - 181	ABS	1.25	5	SWC
14808118DCD2	2741	Lake Nettie	1841.56	8/7/67	OW	60	18 - 21	ABS	1.25	2	SWC
14808119BBB	11780	Lake Nettie	1848.86	6/10/86	OW	35	18 - 23	PVC	1.25	2	SWC
14808120AAA	11511	Lake Nettie	1847	10/18/84	OW	210	178 - 183	PVC	1.25		SWC
14808120AAA2	11511A	Lake Nettie	1846.7	7/19/85	OW	165	148 - 153	PVC	1.25	2.55	SWC
14808120AAA3	11511B	Lake Nettie	1846.6	7/19/85	OW	40	18 - 23	PVC	1.25	1.82	SWC
14808120ADC	4101	Lake Nettie	1850.2	8/14/70	OW	320	138 - 178	ABS	1.25	2	SWC
14808120BAA	2742	Lake Nettie	1839.31	8/7/67	OW	180	148 - 151	ABS	1.25	5.42	SWC
14808120CAA	5765	Lake Nettie	1844.9	8/26/70	OW	240	178 - 184	ABS	1.25	2	SWC
14808120CCA	5762	Lake Nettie	1847.1	8/24/70	OW	180	149 - 155	ABS	1.25	1	SWC
14808120CCD1	5761	Lake Nettie	1861	8/24/70	OW	280	169 - 175	ABS	1.25	1	SWC
14808120CCD2	5763	Lake Nettie	1850.4	8/25/70	OW	240	179 - 185	ABS	1.25	1	SWC
14808120CCD3	5763A	Lake Nettie	1850.5	8/25/70	OW	120	99 - 105	ABS	1.25	1	SWC

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14808120CCD4	5763B	Lake Nettie	1850.4	8/25/70	OW	60	49 - 55	ABS	1.25	1	SWC
14808120CDC1	5764	Lake Nettie	1853.8	8/26/70	OW	260	179 - 185	ABS	1.25	1	SWC
14808120CDC2	5764A	Lake Nettie	1854	8/26/70	OW	105	99 - 105	ABS	1.25	1	SWC
14808120CDC3	5764B	Lake Nettie	1854.7	8/26/70	OW	80	54 - 60	ABS	1.25	1	SWC
14808120DDA	BH-25	No Well	1840.4	2/6/86	TH	11	-	None			NDSWC
14808121ABB		Lake Nettie	1852	1/1/87	OW	12	- 12	Unkn			
14808121ADD	USBR	Lake Nettie	1848.63	6/11/87	OW		16.7 - 19	PVC	2	2.45	
14808121BCC		Lake Nettie	1841.83	6/11/87	OW	3.4	0.4 - 3.4	Steel	1.25	2.6	
14808121CAB	11781	Lake Nettie	1845.88	6/11/86	OW	60	33 - 38	PVC	1.25	1.3	SWC
14808121CCC	BH-24	No Well	1840.1	2/6/86	TH	26	-	None			NDSWC
14808121CCD	BH-23	No Well	1839.9	2/6/86	TH	16	-	None			NDSWC
14808121CDA	11782	Lake Nettie	1859.57	6/11/86	OW	40	23.5 - 28.5	PVC	1.25	2.37	SWC
14808121CDC	BH-22	No Well	1839.9	2/6/86	TH	26	-	None			NDSWC
14808121CDD	BH-21	No Well	1840.2	2/6/86	TH	21	-	None			NDSWC
14808121DCC1	11783	Lake Nettie	1851.19	6/11/86	OW	60	33 - 38	PVC	1.25	1.4	SWC
14808121DCC2	11784	Lake Nettie	1845.27	6/11/86	OW	60	30 - 35	PVC	1.25	1.64	SWC
14808121DCD	11785	Lake Nettie	1842.79	6/11/86	OW	40	23 - 28	PVC	1.25	3.27	SWC
14808122AAB	1-C-6	Lake Nettie	1847.12	8/8/62	OW	100	85 - 87	Steel	1.25	3.14	SWC
14808122AAD	6-C-6	Lake Nettie	1855.1	9/11/62	OW	94	63 - 81	ABS	1.25	2.05	SWC
14808122BAB	4-C-6	Lake Nettie	1846.04	8/9/62	OW	105	91 - 94	ABS	1.25	2.12	SWC
14808122DDD1	11583	Lake Nettie	1858.91	7/23/85	OW	240	188 - 193	PVC	1.25	2.15	SWC
14808122DDD2	11583A	Lake Nettie	1858.88	7/24/85	OW	100	88 - 93	PVC	2	1.4	SWC
14808122DDD3	11583B	Lake Nettie	1859.15	7/24/85	OW	40	28 - 33	PVC	2	1.8	SWC
14808124BBB	2744	Lake Nettie	1864	8/8/67	OW	230	13 - 18	ABS	1.25		SWC
14808126DBC	2735	Lake Nettie	1860.5	8/3/67	OW	120	78 - 81	ABS	1.25	1.95	SWC
14808128BCB	BH-17	No Well	1840.1	2/5/86	TH	26	-	None			NDSWC
14808128BCD	BH-16	No Well	1839.7	2/5/86	TH	8	-	None			NDSWC
14808128BDB1	11786	Lake Nettie	1842.67	6/11/86	OW	40	23 - 28	PVC	1.25	1.3	SWC
14808128BDB2		Lake Nettie	1841.87	6/11/87	OW	3.5	0.5 - 3.5	Steel	1.25	2.5	SWC
14808128BDB3		Lake Nettie	1842.88	6/11/87	OW	5	2 - 5	Steel	1.25	1	SWC
14808128CAB	11787	Lake Nettie	1843.61	6/11/86	OW	50	32 - 37	PVC	1.25	1.16	SWC
14808128CCC	11510	Lake Nettie	1847.16	10/17/84	OW	80	42 - 47	PVC	1.25	1.9	SWC
14808129ACA	BH-19	No Well	1840.3	2/5/86	TH	26	-	None			NDSWC
14808129ACC	BH-20	No Well	1840.3	2/5/86	TH	8	-	None			NDSWC
14808129ADA	BH-18	No Well	1840.3	2/5/86	TH	13	-	None			NDSWC
14808129BAA1	4100	Lake Nettie	1857.02	8/13/70	OW	260	158 - 178	ABS	1.25	1.92	SWC
14808129BAA2	4100A	Lake Nettie	1856.79	7/22/85	OW	80	54 - 59	PVC	1.25	2	SWC
14808129CAA	4099	Lake Nettie	1851	8/13/70	OW	120	38 - 48	ABS	1.25	1.78	SWC
14808129CCC	3930	No Well	1858	11/20/69	TH	80	-	None			SWC
14808131BBB	2738	No Well	1860	8/4/67	TH	80	-	None			SWC
14808132CCD	Jack Walcker	Ft. Union	1890	11/18/82	DW	180	163 - 180	PVC	5		Water Supply Inc.
14808133CDD	2737	Lake Nettie	1852.53	8/3/67	OW	80	33 - 38	PVC	4	1.2	SWC
14808134CBB	11598	Lake Nettie	1845.2	8/1/85	OW	70	18 - 23	PVC	1.25	1.65	SWC
14808134DDD	2736	Lake Nettie	1843.71	8/3/67	OW	100	18 - 21	ABS	1.25	1.67	SWC
14808135DDD	11597	Lake Nettie	1847.81	7/31/85	OW	100	63 - 68	PVC	1.25	1.95	SWC
14808136CCC	2734	No Well	1846	8/3/67	TH	120	-	None			SWC
14808136DDD	2733	Lake Nettie	1850.7	8/3/67	OW	120	78 - 81	ABS	1.25	2.2	SWC
14808202AAA1	11575	Lake Nettie	1945.7	7/16/85	OW	120	73 - 78	PVC	1.25		SWC
14808202AAA2	11575A	Lake Nettie	1945.9	7/22/85	OW	80	65 - 70	PVC	1.25		SWC
14808203CDC	11778	Lake Nettie	1850.08	6/10/86	OW	60	53 - 58	PVC	1.25	5.22	SWC
14808206CBA	Gorson Stumvoll	Lake Nettie	1910	3/27/90	DW	90	70 - 80	PVC	4		Mann-Stumvoll Dring
14808207AAD1	11499	No Well	1855.7	10/10/84	TH	200	-	None			SWC
14808207AAD3	11499B	Lake Nettie	1856	10/10/84	OW	80	67 - 72	PVC	1.25	1.78	SWC
14808208CDC1	11495	Lake Nettie	1854.8	12/11/80	OW	220	151 - 154	PVC	1.25	1.92	SWC
14808208CDC2	11496	Lake Nettie	1854.62	12/11/80	OW	60	53 - 56	PVC	1.25	2.07	SWC
14808209DCC	Jerome Bauer	Lake Nettie	1870	2/7/76	DW	80	67 - 77	PVC	4		Mann Drilling
14808210ADD	Ted Fitzer	Lake Nettie	1870	7/9/79	DW	60	38 - 48	PVC	4.5		Mann Drilling
14808211BBB	3953	No Well	1882	12/12/69	TH	160	-	None			SWC
14808211BCC	11777	No Well	1868	6/10/86	TH	20	-	None			SWC

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14808211CBC	11776	Lake Nettie	1876.05	6/10/86	OW	20	3.3 - 8.3	PVC	1.25	1.9	SWC
14808211DCC1	11747	Lake Nettie	1875.39	1/9/86	OW	60	38 - 43	PVC	1.25	1.92	SWC
14808211DCC2	11747A	Lake Nettie	1875.55	6/10/86	OW	25	14 - 19	PVC	1.25	1.95	SWC
14808212BBC	USAF	Till	1910.9		OW	100	- 100				USAF
14808212CCD2	Jerry Blotter	No Well	1880	7/27/92	TH	140	-	None			Stumvoll Drilling
14808212DCC	Jerry Blotter	Lake Nettie	1890	7/23/90	OW	258	248 - 258	PVC	2		Mann-Stumvoll Drlng
14808212DDD1	11578	No Well	1881	7/17/85	TH	220	-				SWC
14808212DDD2	11578A	Lake Nettie	1881.2	7/17/85	OW	60	53 - 58	PVC	1.25	1.75	SWC
14808213BAA	BH-15	No Well	1853	2/4/86	TH	9	-	None			NDSWC
14808213BAB	11577	Lake Nettie	1863.96	7/16/85	OW	180	168 - 173	PVC	1.25	2.1	SWC
14808213BAD1	BH-11	No Well	1853	2/4/86	TH	14	-	None			NDSWC
14808213BAD2	BH-12	No Well	1853	2/4/86	TH	31	-	None			NDSWC
14808213BAD3	BH-13	No Well	1853	2/5/86	TH	36	-	None			NDSWC
14808213BAD4	BH-14	No Well	1853	2/4/86	TH	31	-	None			NDSWC
14808213BBA1	11576	Lake Nettie	1858.88	7/16/85	OW	260	217 - 222	PVC	2	2	SWC
14808213BBA2	11576A	Lake Nettie	1859.16	6/10/86	OW	35	22 - 27	PVC	1.25	2.05	SWC
14808213BBA3	BH-6	No Well	1853	2/3/86	TH	11.5	-	None			NDSWC
14808213BBA4	BH-7	No Well	1853	2/3/86	TH	18	-	None			NDSWC
14808213BBA5	BH-8/8A	No Well	1853	2/3/86	TH	61	-	None			NDSWC
14808213BBA6	BH-9	No Well	1853	2/4/86	TH	31	-	None			NDSWC
14808213BBA7	BH-10	No Well	1853	2/4/86	TH	11	-	None			NDSWC
14808213BBB1	3932	Lake Nettie	1849.9	11/21/69	OW	280	18 - 38	ABS	1.25		SWC
14808213BBB2	11746	Lake Nettie	1863.52	1/8/86	OW	40	28 - 33	PVC	1.25	1.8	SWC
14808213BBB3	11746A	Lake Nettie	1864.04	6/10/86	OW	30	17 - 23	PVC	1.25	1.5	SWC
14808214AAB	11748	No Well	1870	1/9/86	TH	20	-	None			SWC
14808214CDD	Wilbert Gottschall	Lake Nettie	1885	7/1/77	DW	189	189 - 189	Steel	4		Broneske Well Drilling
14808215BBB	3933	Lake Nettie	1845.83	11/21/69	OW	250	178 - 198	ABS	1.25	1.98	SWC
14808221BBB	4102	Lake Nettie	1873	8/14/70	OW	220	180 - 200	PVC	1.25		SWC
14808221DDD	11501	Lake Nettie	1869.03	10/11/84	OW	186	168 - 173	PVC	1.25	2.2	SWC
14808222BBB	11500	Lake Nettie	1875.32	10/10/84	OW	220	125 - 130	PVC	1.25	2.38	SWC
14808223BBB	3931	Lake Nettie	1883.56	11/20/69	OW	300	198 - 204	ABS	1.25	1.95	SWC
14808223BCB1	BH-1/1A	No Well	1866	2/3/86	TH	8.5	-	None			NDSWC
14808223BCB2	BH-2	No Well	1866	2/3/86	TH	12	-	None			NDSWC
14808223BCB3	BH-3	No Well	1866	2/3/86	TH	13.5	-	None			NDSWC
14808223BCB4	BH-4	No Well	1866	2/3/86	TH	10	-	None			NDSWC
14808223BCB5	BH-5	No Well	1866	2/3/86	TH	7.5	-	None			NDSWC
14808224ABB1	2739	Lake Nettie	1856.17	8/4/67	OW	230	198 - 201	ABS	1.25	1.93	SWC
14808224ABB2	2739A	Lake Nettie	1856.03	6/10/86	OW	40	32 - 37	PVC	1.25	2.06	SWC
14808226BBB	11574	Lake Nettie	1880.43	7/15/85	OW	154	139 - 143	PVC	1.25	1.87	SWC
14808226DAA	11573	Ft. Union	1868.06	7/15/85	OW	120	113 - 118	PVC	1.25	2.44	SWC
14808234AAA	4103	No Well	1893	8/14/70	TH	140	-	None			SWC
14808236CCB	USAF	No Well	1890		TH	100	-	None			USAF
14808302DDD	5593	No Well	1850	11/20/69	TH	120	-	None			SWC
14808309DDD	5594	No Well	1900	11/20/69	TH	140	-	None			SWC
14808318BBC	5794	No Well	1947	9/11/70	TH	60	-	None			SWC
14808318CBB	5793	No Well	1952	9/11/70	TH	60	-	None			SWC
14808319CCC	5792	No Well	1870	9/11/70	TH	40	-	None			SWC
14808320DDA	USCOE	No Well	1864.1	7/20/50	TH	87	-	None			USCOE
14808321CCC	USCOE	No Well	1877.2	5/22/50	TH	95.5	-	None			USCOE
14808323CBB	USCOE	No Well	1832	1/20/50	TH	151	-	None			USCOE
14808328BBD	USCOE	No Well	1860.9	7/18/50	TH	84	-	None			USCOE
14808328BCA	USCOE	No Well	1861.5	12/5/49	TH	269	-	None			USCOE
14808328BCD1	USCOE	No Well	1841	5/25/50	TH	64.5	-	None			USCOE
14808328BCD2	USCOE	No Well	1845.9	11/29/50	TH	80	-	None			USCOE
14808328CBA	USCOE	No Well	1835.2	7/12/50	TH	156	-	None			USCOE
14808328CBD	USCOE	No Well	1832.6	11/2/49	TH	183	-	None			USCOE
14808328CCA	USCOE	No Well	1783.4	11/9/49	TH	179	-	None			USCOE
14808328CDC	USCOE	No Well	1808.7	12/30/49	TH	332	-	None			USCOE
14808329CCB	USCOE	No Well	1832.7	5/17/50	TH	59	-	None			USCOE

TABLE 1 continued

Location	Owner/SWC#	Aquifer	L.S Elev	Date	Purp	T.D.	S.I.	Casing	Dia	MP	Log Source
14808333BAB	USCOE	No Well	1829.1	10/10/50	TH	155	-	None			USCOE
14808333BAC	USCOE	No Well	1830.1	7/26/50	TH	171	-	None			USCOE
14808333BDB	USCOE	No Well	1792.8	9/7/50	TH	290	-	None			USCOE
14808333CAA	USCOE	No Well	1836.6	3/24/50	TH	209	-	None			USCOE
14808333CAD	USCOE	No Well	1815.7	11/14/50	TH	185	-	None			USCOE
14907823BBB	2794	No Well	2000	8/31/67	TH	40	-	None			SWC
14907833CCD	2793	No Well	1945	8/31/67	TH	320	-	None			SWC
14907925DCC	2792	No Well	2010	8/30/67	TH	100	-	None			SWC
14907926CDC	5614	Lake Nettie	1970	12/4/69	OW	120	37 - 40	PVC	1.25		SWC
14907928ADD	Orlin Lelm	Ft. Union	2005	11/8/74	DW	255	232 - 253	Steel	4		Russell Drilling
14907929AAA	Meinhardt Skaley	Undiff.	2020	6/20/79	DW	38	18 - 38	PVC	4		Backman Drilling
14908019AAA	2803	H.S. Valley	1912	9/7/67	OW	60	33 - 38	PVC	1.25		SWC
14908020AAA	5598	No Well	1930	11/20/69	TH	80	-	None			SWC
14908020AAA2	9322	H.S. Valley	1923.2	6/26/75	OW	60	43 - 46	PVC	1.25	2	SWC
14908020BBB	9323	H.S. Valley	1911	6/26/75	OW	60	43 - 46	PVC	1.25	2	SWC
14908023CCD	4082	No Well	1980	8/6/70	TH	160	-	None			SWC
14908023DDC	9324	Strwby Lake	1952.1	6/27/75	OW	180	108 - 111	PVC	1.25	1.5	SWC
14908026AAB	4083	No Well	1980	8/6/70	TH	140	-	None			SWC
14908026ABA	5613	Strwby Lake	1931.7	12/3/69	OW	180	77 - 80	PVC	1.25	1.6	SWC
14908026BAA	9325	H.S. Valley	1975	6/27/75	OW	60	37 - 40	PVC	1.25		SWC
14908028CBB	5597	No Well	1935	11/20/69	TH	140	-	None			SWC
14908028DAA	Clyde Nelson	Undiff.	1970	7/7/78	DW	155	105 - 126	Steel	4		Russel Drilling
14908031BBD	5596	No Well	1895	11/20/69	TH	60	-	None			SWC
14908034CBB	USAF	No Well	1971		TH	101	-	None			USAF
14908123BB	USAF	Ft. Union	1958		OW	98.5	- 82		3		USAF
14908125CCD	3951	H.S. Valley	1905.6	12/11/69	OW	100	47 - 50	PVC	1.25	2.04	SWC
14908127DDD	11515	No Well	1928	11/5/84	TH	100	-	None			SWC
14908129BAA	5595	No Well	1895	11/20/69	TH	140	-	None			SWC
14908134DDD	11514	Lake Nettie	1927.6	10/30/84	OW	180	78 - 83	PVC	1.25	1.85	SWC
14908227BBB	USAF	No Well	1954.4		TH	100	-	None			USAF
14908227DDD	4074	No Well	1899	7/29/70	TH	60	-	None			SWC
14908234CCC	4073	No Well	1910	7/29/70	TH	120	-	None			SWC
14908236ABA	2805	Snake Creek	1850	9/7/67	OW	140	32 - 38.8	PVC	1.25		SWC

Table 2. Lithologic Logs of Test Holes and Wells

146-078-08BBB
NDSWC 5263

Date Completed:	10/26/77	Purpose:	Observation Well
L.S. Elevation (ft):	2011.4	Well Type:	1.25" ABS
Depth Drilled (ft):	242	Aquifer:	Lake Nettie
Screened Interval (ft):	120-123	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to coarse, angular to subrounded, poorly sorted, oxidized; mostly carbonates with some quartz, granite, and shale; abundant coarse sand; mostly quartz and carbonates	0-12
CLAY	sandy, silty, pebbly, moderate yellowish brown, moderately tight, cohesive, oxidized, (TILL)	12-22
SAND & GRAVEL	(70% sand, 30% gravel); sand is fine to very coarse, subrounded to rounded, and mostly quartz with carbonates and shale; gravel is fine to medium, 50% shale, 40% carbonate, and 10% quartz pebbles; fair sorting	22-47
CLAY	sandy, silty, pebbly, gravelly, medium dark gray to olive gray, moderately tight to tight, cohesive, very slightly plastic, (TILL)	47-96
SAND & GRAVEL	sand is fine to coarse, subrounded, and mostly quartz and shale; gravel is fine to medium, angular to subrounded, and mostly shale with carbonates and quartz; moderate sorting	96-136
CLAYSTONE	sandy, silty, chocolate brown to greenish gray; some glauconitic sand with carbonaceous shale zones (Fort Union Group bedrock)	136-242

146-078-17CCC
NDSWC 5920

Date Completed:	5/13/71	Purpose:	Test Hole
L.S. Elevation (ft):	1875	Well Type:	
Depth Drilled (ft):	300	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, brownish-black	0-1
CLAY	very silty, sandy, pebbly, dusky yellow to moderate yellowish brown, moderately cohesive, plastic, oxidized; TILL	1-24
CLAY	silty, moderately sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous; TILL	24-34
SAND	gravelly, fine to coarse, angular to rounded, fairly sorted	34-37
CLAY	silty, moderately sandy, pebbly, olive gray, cohesive, plastic, calcareous, gravelly in places; cobbles; TILL	37-215
CLAY	very silty, olive gray to medium dark gray, very cohesive, highly plastic, calcareous, scattered detrital lignite; with light olive gray laminations; (fluvial)	215-256
CLAY	silty, moderately sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous; a few cobbles; TILL	256-275
SHALE	moderately sandy, silty, brownish gray to light brownish gray, moderately indurated, slightly calcareous; (bedrock, Hell Creek Formation/Fox Hills Sandstone, undifferentiated)	275-300

146-078-30AAA
NDSWC 5919

Date Completed:	5/12/71	Purpose:	Test Hole
L.S. Elevation (ft):	1875	Well Type:	
Depth Drilled (ft):	300	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, brownish black	0-1
CLAY	very silty, sandy, pebbly, dusky yellow to moderate yellowish brown, moderately cohesive and plastic, oxidized; cobbles; TILL	1-27

146-078-30AAA continued

CLAY	silty, moderately sandy, pebbly, olive gray to medium dark gray, cohesive, moderately plastic, calcareous; a few cobbles; TILL	27-84
GRAVEL	very sandy, slightly clayey, fine to coarse, angular to subrounded, fairly sorted; mostly carbonates, some granitics and shale; no water loss	84-96
CLAY	very silty, slightly cohesive, very plastic, highly calcareous; light olive gray to medium gray with light gray laminations; (fluvial)	96-102
CLAY	very silty, sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous; scattered thin gravel layers; TILL	102-215
CLAY	very silty, very cohesive, plastic, highly calcareous, olive gray with light olive gray laminations (fluvial)	215-249
CLAY	very silty, sandy, pebbly, gravelly, olive gray, moderately cohesive, plastic, calcareous; TILL	249-289
SHALE	moderately sandy, slightly clayey; and light brownish gray indurated calcareous siltstone; sulfurous odor upon acidization, (bedrock, Hell Creek Formation/Fox Hills Sandstone, undifferentiated)	289-300

146-078-30DDD

NDSWC 5921

Date Completed:	5/13/71	Purpose:	Observation Well
L.S. Elevation (ft):	1895	Well Type:	1.25" PVC
Depth Drilled (ft):	500	Aquifer:	Lake Nettie
Screened Interval (ft):	317-323	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, grayish black	0-1
clay	silty, sandy, pebbly, dusky yellow to moderate yellowish brown, moderately cohesive and plastic, oxidized; TILL	1-35
clay	silty, moderately sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous; cobbles; TILL	35-105
shale block	very, sandy, dark greenish gray, indurated, slightly calcareous	105-115
clay	silty, moderately sandy, pebbly, gravelly, olive gray, cohesive, moderately plastic, calcareous; TILL	115-225
clay	very silty, olive gray to medium dark gray, very cohesive, highly plastic, calcareous; scattered light olive gray laminations (fluvial)	225-251
clay	silty, moderately sandy, pebbly, olive gray, cohesive, moderately plastic, calcareous; a few cobbles; TILL	251-272
gravel	very clayey, moderately sandy, fine to medium, angular to subrounded, poorly sorted; 50% carbonates, 30% igneous and metamorphic and 20% siliceous rock fragments (shale, siltstone and detrital lignite); (no water loss)	272-336
clay	very sandy, silty, cohesive, slightly plastic, moderately calcareous, scattered pebbles; olive gray with scattered dark greenish gray streaks; TILL	336-376
sand	gravelly, moderately clayey, very fine to very coarse, mostly fine to medium, subangular to rounded, moderately well sorted, moderately lignitic; mostly quartz and feldspar with some carbonate grains; (no appreciable water loss with thin mud)	376-485
gravel	and cobbles; sandy, fine to coarse, angular to well rounded, fairly sorted; (taking some water)	485-495
shale	clayey, medium dark gray to dark gray, well indurated, non-calcareous (bedrock, Hell Creek Formation/Fox Hills Sandstone, undifferentiated)	495-500

146-079-02CCB

NDSWC

Date Completed:	6/2/78	Purpose:	Municipal Well
L.S. Elevation (ft):	1930	Well Type:	6" Steel
Depth Drilled (ft):	608	Aquifer:	Fort Union
Screened Interval (ft):	554-584	Source:	LTP Enterprises

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Sandy (TILL); with lenses of sand and gravel 26-32 ft	0-32
CLAY	Soft	32-91

146-079-02CCB continued

CLAY	Sandy (TILL); rocks 116.5-118 ft.	91-128
SAND		128-132
CLAY	Sandy (TILL).	132-203
CLAY	Silty, soft, with lenses of fine sand.	203-223
SAND	Fine; with lenses of coal 243-263 ft.	223-263
CLAY	Sandy (TILL); with lenses of clay, coal and sand.	277-297
SAND		297-302
CLAY	Sandy (TILL); with lenses of sand.	302-313
SAND	With lenses of clay 313-323 ft.	313-333
CLAY	Sandy (TILL).	333-343
SAND		343-380
SHALE		380-443
SANDSTONE		443-448
SHALE		448-481
SANDSTONE		481-494
SHALE	With lenses of fine sandstone 501-507 ft.	494-517
SANDSTONE		517-524
SHALE		524-528
SANDSTONE	With lenses of shale 528-535 ft.	528-600
SHALE		600-605
SANDSTONE	Fine grained.	605-608

146-079-02DAC

NDSWC

Date Completed:	8/5/82	Purpose:	Municipal Well
L.S. Elevation (ft):	1910	Well Type:	7" Steel
Depth Drilled (ft):	60	Aquifer:	Undefined
Screened Interval (ft):	20-30	Source:	H.L. McLean Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND	sand, silt and gravel	2-10
SAND & GRAVEL		10-19
GRAVEL		19-30
CLAY		30-60

146-079-03ADA

NDSWC 11553

Date Completed:	6/5/85	Purpose:	Test Hole
L.S. Elevation (ft):	1928	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Moderately Silty and Sandy with minor Gravel; yellowish brown and gray, mottled with reddish brown, oxidized; moderately soft; moderately cohesive and plastic but somewhat crumbly; scattered rocks (TILL).	0-30
CLAY	As above, but unoxidized brownish-gray; cohesive and plastic (TILL).	30-36
CLAY	Moderately Silty, slightly Sandy; dark gray; moderately soft, cohesive and plastic, somewhat stiff; smooth (LACUSTRINE).	36-42
SAND & GRAVEL	Fine Sand to very coarse Gravel; poorly sorted; mostly shale, carbonates and lignite, with quartz and some granitics.	42-43
CLAY	Moderately Silty and Sandy, with some Gravel (very fine Sand to sparse coarse Gravel); gray; moderatly soft, cohesive and plastic; (TILL); with layers of gray, smooth, silty clay.	43-51

146-079-03ADA continued

SAND & GRAVEL	Very fine SAND to very coarse GRAVEL; poorly sorted, subangular; predominantly carbonates, shale and quartz with granitics.	51-52
CLAY	Moderately Silty and Sandy, with some Gravel (very fine Sand to medium Gravel); olive gray; moderately soft, cohesive and plastic; (TILL).	52-62
CLAY	Silty; brownish gray; soft; slightly to moderatey cohesive and plastic; smooth; (LACUSTRINE).	62-65
SANDSTONE	Very fine to fine grained; well sorted; blueish-gray; slightly firm, poorly indurated and compact; very friable.	65-80
SANDSTONE	Very fine to fine grained; well sorted; brownish-gray; slightly firm, poorly indurated; somewhat firmer than above; interbedded with brownish gray, slightly firm, very friable claystone.	80-100

146-079-06AAA1

NDSWC 11525

Date Completed:	12/20/84	Purpose:	Observation Well
L.S. Elevation (ft):	1879.45	Well Type:	1.25" PVC
Depth Drilled (ft):	235	Aquifer:	Lake Nettie
Screened Interval (ft):	220-225	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Pebbly; (TILL); brown, oxidized 0-26 ft; olive gray, unoxidized below 26 ft.	0-103
SILT	Clayey, olive gray; with scattered detrital lignite fragments.	103-141
SAND	Fine to coarse; gray; with detrital lignite fragments.	141-161
GRAVEL	Very fine to very coarse; predominantly medium to coarse.	161-172
CLAY	Silty, Sandy, Gravelly; olive gray; (TILL); granitic boulders 183-184 ft and 212-213 ft.	172-216
GRAVEL	Very fine to very coarse with cobbles; predominantly coarse to very coarse; cobbly and bouldery at base (couldn't keep circulation, terminated drilling).	216-235

146-079-06AAA2

NDSWC 11525A

Date Completed:	8/8/85	Purpose:	Observation Well
L.S. Elevation (ft):	1879.01	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Lake Nettie
Screened Interval (ft):	155-160	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty and Sandy, with some Gravel (very fine Sand to fine Gravel); yellowish brown, oxidized; moderately soft, slightly to moderately cohesive, slightly plastic to crumbly; dark yellowish brown and light gray mottles; gritty; (TILL).	0-28
CLAY	Moderately Silty and Sandy with some Gravel (very fine Sand to fine Gravel and sparse medium gravel); gray to olive gray, unoxidized; moderately soft and cohesive, slightly to moderately plastic; somewhat stiff; gritty; (TILL); granite boulder 43-44 ft.	28-66
SAND & GRAVEL	Fine SAND to medium GRAVEL; predominantly coarse Sand to fine Gravel; moderately sorted; mostly subangular mixed with subrounded grains; predominalty shale and carbonates with some quartz, lignite and igneous rock fragments.	66-70
CLAY	Till, as above, (28-66 ft).	70-105
SILT	Moderately Clayey; olive gray; very soft; slightly to moderately cohesive, slightly plastic to somewhat crumbly; smooth; numerous thin layers of detrital lignite fragments (medium sand to medium gravel size); (LACUSTRINE).	105-127
SAND	Very Silty to Sandy SILT, Clayey; very fine to fine; well sorted; numerous thin layers of detrital lignite fragments (medium sand to medium gravel size).	127-139
SAND	Very fine to medium (predominantly very fine to fine); well sorted; subrounded; moderately lignitic (medium sand to medium gravel size subangular lignite fragments).	139-160

146-079-07AAA
NDSWC 11554

Date Completed:	6/5/85	Purpose:	Test Hole
L.S. Elevation (ft):	1917	Well Type:	
Depth Drilled (ft):	180	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Moderately Silty and Sandy (very fine to fine Sand, sparse medium to very coarse Sand), trace fine to coarse Gravel; olive brown; moderately soft, cohesive, and plastic; gritty; brownish gray and iron oxide mottles; (TILL); granitic boulder 8-9 ft.	0-22
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly medium Sand to fine Gravel); oxidized; poorly sorted; subangular to subrounded; carbonates, shale, and quartz with some granitic fragments.	22-36
TILL	Moderately Silty and Sandy (very fine to medium sand), some fine GRAVEL (carbonates and shale); olive gray; moderately soft, cohesive, and plastic; gritty; (TILL); 61-64 ft: Silty CLAY; brownish gray, soft. 88-91 ft: SAND and GRAVEL (very fine Sand to very coarse Gravel and Cobbles); poorly sorted, mostly shale, carbonates and quartz with some granitic fragments.	36-102
SANDSTONE	Very fine to fine grained; blueish-greenish gray; slightly firm, very friable, poorly indurated, crumbly; (probable ice-thrust material).	102-105
CLAYSTONE	Slightly Silty; brownish gray; slightly firm, very friable, poorly indurated; interbedded with Sandstone as above, 102-103 ft; (probable ice-thrust material).	105-118
SANDSTONE	As above, (102-105 ft).	118-122
CLAY	Silty and Sandy; olive gray; as above, 36-102 ft; (TILL); with incorporated sandstone fragments to 136 ft.	122-152
CLAYSTONE	Slightly Silty; brownish gray; slightly firm, poorly indurated, very friable; with lignite layers and thin black, soft, Silty Clay layers 152-162 ft and 173-180 ft; scattered silty layers.	152-180

146-079-07DDD
NDSWC 11546

Date Completed:	6/3/85	Purpose:	Test Hole
L.S. Elevation (ft):	1950	Well Type:	
Depth Drilled (ft):	210	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty and Sandy (very fine to very coarse Sand), with some fine to medium Gravel; yellowish brown with iron oxide mottles; soft, slightly cohesive to crumbly; gritty; contains some shale fragments and gray/black organic matter; (TILL); dark brown and more cohesive 9-22 ft.	0-22
CLAY	Silty and Sandy (with very fine to very coarse Sand), with trace fine to coarse Gravel; olive gray, unoxidized; moderately soft, cohesive and plastic; gritty; slightly lignitic; gravel is mostly carbonates and shale; (TILL); somewhat sandier below 120 ft, with scattered greenish gray fine-grained sandstone fragments.	22-133
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates and shale with some quartz.	133-135
CLAY	TILL, as above, 22-133 ft.	135-182
SANDSTONE	Very fine to fine grained; gray, salt and pepper appearance; very firm, slighty indurated and friable; lignite layers.	182-185
SILTSTONE	Moderately Sandy (with very fine Sand); dark greenish gray; very firm, moderately indurated and friable; interbedded with scattered Sandstone layers (as above); lost water and drilling mud to borehole at 210 feet.	185-210

146-079-10AAA
NDSWC

Date Completed:	10/1/72	Purpose:	Domestic Well
L.S. Elevation (ft):	1930	Well Type:	4" Steel
Depth Drilled (ft):	320	Aquifer:	Lake Nettie
Screened Interval (ft):	308-320	Source:	Driver Well Drilling

146-079-10AAA continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Brown	0-2
Brown	(Till?)	2-27
Gray	(Till?); Rock 58-59 ft; Lignite 85-86 ft; With lignite streaks 105-150 ft.	27-193
SAND	Fine; brown.	193-215
Gray	(Till?); Rock, pink granite 300-303 ft.	215-303
GRAVEL	Coarse 303-315 ft; rock 315-316 ft.	303-320

146-079-10DAD

NDSWC 11607

Date Completed:	8/5/85	Purpose:	Observation Well
L.S. Elevation (ft):	1884.5	Well Type:	1.25" PVC
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	198-203	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty and Sandy with some Gravel (very fine Sand to medium Gravel); light yellowish brown, oxidized; moderately to very soft, moderately cohesive, slightly plastic to crumbly; gritty; scattered mottles of dark yellowish brown; (TILL).	0-3
SAND & GRAVEL	Very fine SAND to medium GRAVEL; brown, oxidized; poorly sorted, subangular to subrounded; mostly quartz, carbonates, shale and igneous rock fragments with silicates.	3-16
CLAY	Yellowish brown TILL, as above, 0-3 ft.	16-17
CLAY	Silty and Sandy, Gravelly (with very fine Sand to medium Gravel); gray, unoxidized; moderately soft, cohesive and plastic; slightly to moderately stiff; gritty; (TILL); less sandy 50-58 ft; possible layers of silty Clay 58-72 ft; moderately to very sandy 72-104 ft.	17-104
SAND	Very fine to coarse; poorly sorted; moderately to very Silty and Clayey; interbeds of gray, Sandy, Silty, CLAY.	104-107
CLAY	Silty and Sandy to Clayey SAND; gray; moderately soft and cohesive, slightly to moderately plastic; gritty; (TILL); with layers of sand 116 to 121 ft.	107-121
CLAY	Slightly Silty; olive gray to gray; moderately soft, cohesive and plastic; moderately stiff; with layers of softer siltier Sandy (very fine sand) CLAY; (LACUSTRINE).	121-131
CLAY	Silty, Sandy with some Gravel (very fine Sand to fine Gravel in Clay matrix); gray; moderatley soft, cohesive and plastic; moderately stiff to tight; gritty; scattered thin layers of gravel; (TILL).	131-144
CLAY	Silty; olive gray to gray; soft, moderately cohesive; slightly plastic; smooth; with thin layers of Silty SAND (very fine to medium) and detrital lignite fragments; (LACUSTRINE).	144-161
SAND	Very fine to medium, moderately Silty and slightly Clayey interstitially; gray; moderately to well sorted; very lignitic to 183 ft, slightly to moderately lignitic below 183 ft.	161-193
SAND	Very fine to coarse, moderately Silty; moderately well sorted; gray; slightly lignitic.	193-203
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly coarse Sand to fine Gravel); slighlty to moderately well sorted; sand is mostly subrounded, gravel is mostly subangular; predominantly quartz and carbonates with some shale, igneous rock fragments and hard, very fine grained sandstone fragments.	203-209
CLAYSTONE	Gray, interbedded with dark brownish gray; moderately firm; very friable; compact and tight; vaguely apparent bedding; 228-240 ft: interbedded with dark greenish gray silty claystone and gray, silty, very fine grained sandstone, with scattered lignite layers .	209-240

146-079-11AAD

NDSWC 11609

Date Completed:	8/6/85	Purpose:	Test Hole
L.S. Elevation (ft):	1918	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

146-079-11AAD continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Gravelly, Silty; reddish brown; very crumbly.	0-2
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; brown, oxidized; poorly sorted; subangular to subrounded; mostly carbonates, quartz and shale, with some silicates, igneous, metamorphic and hard sandstone fragments; (takes water, mixed 5 bags of mud to 30 ft).	2-28
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel interstitially); moderately soft and cohesive, slightly plastic; gritty; (TILL); yellowish brown, oxidized 28-30 ft; gray, unoxidized 30-40 ft.	28-40

146-079-12BBC

NDSWC 2867

Date Completed:	10/13/67	Purpose:	Test Hole
L.S. Elevation (ft):	1920	Well Type:	
Depth Drilled (ft):	340	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, gravelly, brownish black, (topsoil)	0-1
SAND	medium to very coarse, gravelly with 10-20% fine to coarse gravel; angular to subrounded	1-17
CLAY	silty, sandy, yellowish brown, (TILL)	17-22
CLAY	silty, sandy, olive gray, (TILL)	22-192
SAND	very clayey, silty, lignitic, olive gray; (about 50% sand and 50% clay)	192-235
CLAY	silty, sandy, gravelly, olive gray, (TILL)	235-316
SHALE	siliceous, medium light gray (Fort Union Group bedrock)	316-325
SANDSTONE	fine to medium, noncalcareous, yellowish brown to bluish gray (Fort Union Group bedrock)	325-340

146-079-15ADD

NDSWC 2866

Date Completed:	10/12/67	Purpose:	Observation Well
L.S. Elevation (ft):	1859.5	Well Type:	1.25" ABS
Depth Drilled (ft):	240	Aquifer:	Mercer
Screened Interval (ft):	21-24	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, gravelly, brownish black	0-1
SAND	coarse to very coarse, gravelly, (25-35% fine to coarse gravel); angular to subrounded, very gravelly toward bottom	1-25
CLAY	silty, sandy, calcareous, olive gray to medium dark gray, (TILL)	25-82
CLAY	silty, plastic, calcareous, olive gray to medium gray, laminated	82-110
CLAY	silty, sandy, calcareous, olive gray, (TILL)	110-120
CLAY	silty, plastic, olive gray to medium dark gray, very cohesive, sticky	120-210
SHALE	siliceous, noncalcareous, medium light gray to medium gray (Fort Union Group bedrock)	210-221
SANDSTONE	fine to medium, subangular to subrounded, noncalcareous, light bluish gray (Fort Union Group bedrock)	221-240

146-079-15DAA

NDSWC

Date Completed:	0/0	Purpose:	Test Hole
L.S. Elevation (ft):	1863	Well Type:	
Depth Drilled (ft):	26	Source:	NDGS

Lithologic Log

Unit	Description	Depth (ft)
SAND	gravelly, silty	0-25
CLAY	glacial till	25-26

146-079-22DDD

NDSWC 11555

Date Completed:	6/6/85	Purpose:	Test Hole
L.S. Elevation (ft):	1869	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty and Sandy, with some Gravel (very fine to very coarse Sand and fine to coarse Gravel, mostly very fine to fine Sand); moderately soft, cohesive and plastic; gritty; scattered rocks, somewhat stiffer below 50 ft; (TILL); yellowish brown, oxidized 0-8 ft; bownish gray with olive brown 8-24 ft; dark gray, unoxidized 24-78 ft; yellowish green 78-80 ft.	0-80
CLAYSTONE	Very Silty, dark brownish gray; slighlty soft to slightly firm; very friable.	80-90
CLAYSTONE	As above, dark greenish gray.	90-96
CLAYSTONE	Slightly Silty; dark gray to black; slightly to moderately firm to stiff; friable; silty, brownish gray laminae and layers.	96-111
CLAYSTONE	Very silty; brownish gray; soft, poorly indurated; moderately stiff drilling.	111-120

146-079-34BBB

NDSWC 3883

Date Completed:	10/28/69	Purpose:	Test Hole
L.S. Elevation (ft):	1820	Well Type:	
Depth Drilled (ft):	820	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	pebbly, dark brown, (topsoil)	0-1
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	1-20
CLAY	silty, olive brown; scattered pebbles, (TILL)	20-30
CLAY	silty, olive gray; scattered pebbles, (TILL)	30-43
SAND & GRAVEL	coarse sand to fine gravel, silty; till layer 46-49 ft	43-53
CLAY	silty, olive gray; scattered pebbles, (TILL)	53-108
SILT	very fine sand, gray	108-116
SAND	very fine to fine	116-160
SAND	medium to coarse, subangular to subrounded	160-180
SAND	very coarse, and fine gravel	180-190
SHALE	silty, sandy, gray to green (Fort Union Group, bedrock)	190-210
SAND	very fine, clayey, dark greenish gray (Fort Union Group, bedrock)	210-236
SHALE	silty, medium gray; interbedded with silt and fine sand (Fort Union Group, bedrock)	236-260

146-079-34BBB continued

SHALE	silty, sandy, variegated gray, green, and brown (Fort Union Group, bedrock)	260-280
SILT	very fine sand, clayey, brownish gray; thin shale interbeds (Fort Union Group, bedrock)	280-300
SHALE	silty, brittle, light olive gray (Fort Union Group, bedrock)	300-317
SAND	very fine, clayey, carbonaceous, calcareous, greenish gray to brownish gray (Hell Creek Formation, bedrock)	317-345
SANDSTONE	very fine, calcareous, dark greenish gray (Hell Creek Formation, bedrock)	345-349
SHALE	silty, brittle, light olive gray; brown, carbonaceous stains (Hell Creek Formation, bedrock)	349-380
SAND	very fine, clayey, silty, carbonaceous, variegated gray, green, and brown (Hell Creek Formation, bedrock)	380-420
SHALE	silty, sandy, brittle, medium gray to dusky brown (Hell Creek Formation, bedrock)	420-433
SAND	very fine to fine, dark greenish gray (Hell Creek Formation, bedrock)	433-460
SAND	very fine to fine, dark greenish gray; interbedded with silt and greenish gray shale (Hell Creek Formation, bedrock)	460-484
SANDSTONE	very fine, clayey, carbonaceous, greenish gray to dusky brown (Hell Creek Formation, bedrock)	484-501
SHALE	silty, sandy, carbonaceous, variegated gray, green, and brown; thin lignite beds at 509 and 515 ft (Hell Creek Formation, bedrock)	501-520
SHALE	silty, sandy, carbonaceous, variegated gray, green, and brown; interbedded with silt and fine sand (Hell Creek Formation, bedrock)	520-540
SAND	very fine, clayey, noncalcareous, greenish gray; sandstone lens at 594 ft (Fox Hills Formation, bedrock)	540-607
SHALE	silty, brownish gray; sand lenses at 636 and 645 ft (Fox Hills Formation, bedrock)	607-668
SAND	fine, clayey, greenish gray (Fox Hills Formation, bedrock)	668-679
SHALE	hard, carbonaceous, waxy, greenish gray to brownish black (Fox Hills Formation, bedrock)	679-704
SILT	and very fine sand, greenish gray; brown carbonaceous stains (Fox Hills Formation, bedrock)	704-731
SAND	very fine to fine, carbonaceous, greenish gray; isolated shale interbeds; shell fragments (Fox Hills Formation, bedrock)	731-773
SHALE	silty, brittle, noncalcareous, dark gray to brownish gray (Pierre Formation, bedrock)	773-792
SHALE	silty, brittle, noncalcareous, dark gray to black (Pierre Formation, bedrock)	792-820

146-080-01BBB

NDSWC 11604

Date Completed:	8/1/85	Purpose:	Observation Well
L.S. Elevation (ft):	1822.6	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	63-68	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy and Gravelly (with very fine Sand to fine Gravel,trace medium to coarse Gravel); moderately soft and cohesive; slightly to moderately plastic; gritty; (TILL); moderately to very sandy below 40 ft; 0-13 ft: yellowish brown with mottles of light gray and orangeish brown, oxidized; 6-13 ft: dark yellowish brown to olive brown with some gray mottles; 19-48 ft: olive gray; somewhat stiff.	0-48
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates and shale with quartz, silicates, igneous rock fragments, and lignite.	48-50
CLAY	Silty; brownish gray; soft and cohesive; moderately plastic; smooth; LACUSTRINE).	50-61
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly shale, carbonates lignite and quartz, with silicates and igneous rock fragments.	61-71
CLAY	Silty; brownish gray; moderately soft; moderately to very cohesive; moderately plastic; smooth; slightly sticky; (LACUSTRINE).	71-79
CLAY	Silty and Sandy with some Gravel (very fine Sand to fine Gravel); dark olive gray; moderately soft and cohesive; slightly to moderately plastic; gritty; slightly stiff (TILL).	79-84

146-080-01BBB continued

CLAYSTONE	Silty; brownish gray; poorly indurated; slightly to moderately firm; very friable; interbedded with dark gray, firmer, blocky claystone and brownish gray Silty, Sandy, Claystone to Siltstone.	84-100

146-080-03BCB

NDSWC

Date Completed:	5/15/72	Purpose:	Observation Well
L.S. Elevation (ft):	1873.7	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):		Source:	USBR, from drillers report

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty	0-1
SAND	Silty; very fine; brown; (possibly aeolian).	1-7
SAND	Silty, Gravelly; brown.	7-16
SAND	Coarse; Gravelly; brown; scattered lignite fragments.	16-20
SAND & GRAVEL	Brown.	20-34
CLAY	Gravelly to 54 ft; with some Sand 40-48 ft and 54-60 ft; brown 34-37 ft, gray below 37 ft; scattered lignite fragments 54-60 ft; (TILL).	34-60

146-080-04ACB1

NDSWC

Date Completed:	8/22/55	Purpose:	Test Hole
L.S. Elevation (ft):	1832.5	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.2
CLAY	gray, silty, slightly plastic to plastic	1.2-12
SAND & GRAVEL	brown, fine to medium, silty	12-19.1
SAND & GRAVEL	gray, medium to coarse, shale particles throughout	19.1-48.5
SHALE	gray, silty, firm	48.5-55

146-080-04ACB2

NDSWC

Date Completed:	8/22/52	Purpose:	Test Hole
L.S. Elevation (ft):	1838.4	Well Type:	
Depth Drilled (ft):	32	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.5
SILT	clayey, brown	1.5-3.2
SAND & GRAVEL		3.2-10.8
SANDSTONE	brown; silty, hard, (possibly a sandstone concretion), (Fort Union Group, bedrock)	10.8-22
SHALE	gray, silty, firm to hard; (Fort Union Group, bedrock)	22-24.5
LIGNITE	(Fort Union Group, bedrock)	24.5-28
SHALE	gray, hard, (Fort Union Group, bedrock)	28-32

146-080-04ACB3

NDSWC

Date Completed:	8/23/52	Purpose:	Test Hole
L.S. Elevation (ft):	1837	Well Type:	
Depth Drilled (ft):	60	Source:	USBR, from driller's log

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	brown, silty, plastic	1-19
SAND & GRAVEL	brown, silty, shale particles throughout	19-24
SAND	gray, fine, very silty	24-31
SAND & GRAVEL	gray, coarse, silty, lignite and shale particles throughout	31-47.5
SHALE	gray, silty, hard	47.5-60

146-080-04DBB

NDSWC

Date Completed:	9/21/67	Purpose:	Test Hole
L.S. Elevation (ft):	1835	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, dark gray	0-2.5
SAND	silty, brown	2.5-10
CLAY	sandy, brown to dark gray; silty sand zones at 14.5-15.5 ft and 17-18 ft	10-19
SAND & GRAVEL		19-25
SHALE	sandy, dark gray to medium gray; numerous lignite inclusions (Fort Union Group, bedrock)	25-30
SILTSTONE	sandy, hard, medium gray (Fort Union Group, bedrock)	30-45
SHALE	sandy, hard, medium gray (Fort Union Group, bedrock)	45-50

146-080-04DCD

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1835	Well Type:	
Depth Drilled (ft):	15	Source:	NDGS

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy	0-1
SAND	silty, gravelly	1-13
GRAVEL		13-15

146-080-06CBB1

NDSWC 11562

Date Completed:	6/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1841	Well Type:	
Depth Drilled (ft):	20	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly; dark brown;	0-1
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; brown; poorly sorted; angular to subrounded (mostly angular to subangular); predominantly carbonates and shale with some quartz.	1-3
SANDSTONE	Very fine to fine grained; greenish gray salt and pepper appearance, with yellowish tinge; well sorted; poorly indurated to loose; with slightly firmer clayey layers; scattered carbonaceous streaks. Abandoned hole due to caving of surface gravel and water loss to borehole.	3-20

146-080-06CBB2

NDSWC 11562A

Date Completed:	6/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1839.5	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Fort Union
Screened Interval (ft):	48-53	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly; dark brown.	0-1
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; brown; poorly sorted; angular to subrounded (mostly angular to subangular); predominantly carbonates and shale with some quartz.	1-3
SANDSTONE	Very fine to fine grained; greenish gray salt and pepper appearance, with yellowish tinge; well sorted; poorly indurated to loose; with slightly firmer clayey layers; scattered carbonaceous streaks. Blueish gray and slightly firmer 26-29 ft.	3-29
CLAYSTONE	Slightly Silty; brown to grayish brown; moderately firm; poorly indurated; moderately friable; tight; with layers of lignite.	29-38
SANDSTONE	Very fine to fine grained; very Silty to a Sandy Siltstone, moderately Clayey; well sorted; blueish gray to gray; salt and pepper appearance; poorly indurated, very friable.	38-43
SANDSTONE	As above (38-43 ft), but slightly to moderately Silty.	43-52
SANDSTONE	Very fine to fine grained; silty; well sorted; blueish gray interbedded with dark brownish red to gray; poorly indurated; very friable; dark brownish red to gray layers are Clayey Sandstone.	52-60

146-080-09AAB3

NDSWC

Date Completed:	9/22/67	Purpose:	Test Hole
L.S. Elevation (ft):	1844.5	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
CLAY	brown, sandy, dry, sand is fine, considerable organic material 0.5-2.5 ft; does not contain pebbles, (SC-CL)	0.5-5
SAND	brown, fine, poorly graded, silty, trace of clay, (SM)	5-9.5
CLAY (Glacial Till)	gray, gravelly, (CL)	9.5-10
CLAY & SHALE	and siltstone, light gray to gray, compact but not indurated like a true shale, zones are quite clayey, high degree of shrinkage on drying, laminated in places, lignitic zone at 24.8-25 ft (Fort Union Group, bedrock)	10-28
SANDSTONE	light gray, compact, not cemented, fine, uniform sand, silty, sand does not contain enough binder in zones (30-35 ft) to remain in core barrel (Fort Union Group, bedrock)	28-50

146-080-09AAB4

NDSWC

Date Completed:	12/3/68	Purpose:	Test Hole
L.S. Elevation (ft):	1846.5	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, damp, (OL&SM)	0-2
SILTY SAND	brown, moist to wet, (SM)	2-13
CLAY SHALE	gray 13-25 ft and 36-55 ft; brown 25-36 ft; moist, sandy, hard 25-55 ft (Fort Union Group, bedrock)	13-55

146-080-09AAB6

NDSWC

Date Completed:	12/6/68	Purpose:	Test Hole
L.S. Elevation (ft):	1841.9	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, damp, (OL & SM)	0-2
SAND	silty, brown; moist to wet, (SM)	2-7.5
CLAY SHALE	brown to 12.5 ft; gray below, sandy, (Fort Union Group, bedrock)	7.5-19.5
LIGNITE	(Fort Union Group, bedrock)	19.5-22.5
SANDSTONE	brown, compacted, (Fort Union Group, bedrock)	22.5-37
CLAY SHALE	sandy, gray, moist, firm, (Fort Union Group, bedrock)	37-55

146-080-09ABA

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1834.3	Well Type:	
Depth Drilled (ft):	70	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	(clay), silty, sandy	0-2.8
CLAY	sandy, soft to stiff, slightly plastic, brown	2.8-9.7
CLAY	sandy, soft, moderately plastic, gray brown	9.7-12
SAND	medium, slightly clayey, gravelly, gray brown	12-28
SAND	medium, clayey, gravelly, gray brown	28-35.5
SILT	sandy, slightly clayey, soft, gray	35.5-39
SAND & GRAVEL	fairly well graded from medium sand to fine gravel; clean, loose, gray	39-59.8
SILT (SHALE)	clayey, firm, gray	59.8-63.9
LIGNITE	hard, brittle, black	63.9-67
CLAY (SHALE)	bentonitic, stiff, gray brown	67-70

146-080-09ABB1

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1828.2	Well Type:	
Depth Drilled (ft):	65	Source:	USBR, log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, soft, organic, very plastic, black	0-4
CLAY	silty, stiff, moderately plastic, gray brown	4-14.8
CLAY	organic, soft to stiff, very plastic, black	14.8-16.5
CLAY	silty, sandy, organic, gray brown; contains abundant pelecypod and gastropod shells	16.5-23
CLAY	very sandy, soft, gray	23-25.8
SAND	fine to medium, clean, gray; clayey from 25.8-28 ft	25.8-36

146-080-09ABB1 continued

SAND	medium to coarse, loose, gray; trace of clay; grains are composed chiefly of shale	36-41
SAND	medium to coarse, clean, gray brown	41-50
SAND & GRAVEL	medium sand to fine gravel, gray brown; trace of silt and clay	50-54
SILT (SHALE)	firm, clayey, gray (Fort Union Group, bedrock)	54-59
LIGNITE	hard, brittle, black (Fort Union Group, bedrock)	59-60
CLAY (SHALE)	bentonitic, firm t hard, gray brown (Fort Union Group, bedrock)	60-65

146-080-09ABB2

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1841.6	Well Type:	
Depth Drilled (ft):	65	Source:	USBR, log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, organic, black	0-2
CLAY	sandy, buff	2-6.3
CLAY (SHALE)	silt lenses, firm, gray brown (Fort Union Group, bedrock)	6.3-16.5
SILT (SHALE)	sandy, gray brown, laminated; weakly indurated zones consist of compacted clayey sandy silt (Fort Union Group, bedrock)	16.5-25
SAND	fine to medium, clayey, micaceous, moderately to well compacted, brown to gray (Fort Union Group, bedrock)	25-37.5
SAND	fine to medium, micaceous, clean, loose, well compacted, gray (Fort Union Group, bedrock)	37.5-64
CLAY (SHALE)	bentonitic, firm to hard, gray brown (Fort Union Group, bedrock)	64-65

146-080-09BAA

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1887.5	Well Type:	
Depth Drilled (ft):	130	Source:	USBR log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
SAND	very fine, silty, clayey, buff	0-3.7
SAND & GRAVEL	silty, loose, gravel	3.7-6
SAND	very fine, silty, loose, buff	6-9.5
CLAY (SHALE)	firm to hard, gray brown; contains several thin silt clay zones (Fort Union Group, bedrock)	9.5-24.4
SILT (SHALE)	clayey, gray brown (Fort Union Group, bedrock)	24.4-26.4
CLAY (SHALE)	silty, bentonitic, very stiff, tan (Fort Union Group, bedrock)	26.4-27.5
LIGNITE	hard, brittle, black (Fort Union Group, bedrock)	27.5-30.2
CLAY (SHALE)	bentonitic, hard, greenish gray; contains small lignite inclusions (Fort Union Group, bedrock)	30.2-50.2
SILT (SHALE)	sandy, hard, light gray; lignite from 49-50.8 ft and 59.8-60.4 ft (Fort Union Group, bedrock)	50.2-70
SAND	very fine, silty, micaceous, well compacted, gray to greenish gray (Fort Union Group, bedrock)	70-113.5
CLAY (SHALE)	silty, hard, gray; lignite 123.5-126.7 ft (Fort Union Group, bedrock)	113.5-130

146-080-09BBB

NDSWC 11536

Date Completed:	5/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1929	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty and slightly Sandy; brown to brownish gray variegated; firm; moderately stiff; scattered oxide mottles.	0-20
SAND & GRAVEL	Fine SAND to coarse GRAVEL; oxidized; poorly sorted; subangular to rounded; shale, quartz and carbonates.	20-23
CLAY	Silty, slighlty to moderately Sandy (with very fine to fine Sand); brown to brownish gray; moderately soft; sticky, greasy; scattered iron oxides.	23-28
SANDSTONE	Very fine to fine grained; well sorted quartz; subrounded to rounded; variegated yellowish brown, brown and gray; somewhat firm; very friable.	28-43
LIGNITE	Black; friable; firm; blocky.	43-44
CLAYSTONE	Silty, slightly Sandy; dark brown, interbedded with greenish gray and black; firm, moderately cohesive and sticky; somewhat friable.	44-50
CLAYSTONE	As above, but very Silty; medium blackish gray.	50-60

146-080-09DBB

NDSWC

Date Completed:	9/25/67	Purpose:	Test Hole
L.S. Elevation (ft):	1836	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
CLAY	sandy, brown	0.5-6
SAND	fine, silty, brown	6-10.2
CLAY	sandy, brown to gray; bottom 2.5 ft is all clay	10.2-15
SAND	fine, silty, brown to gray	15-40
GRAVEL	trace of clay	40-41.5
CLAY	sandy; some gravel	41.5-42.5
CLAY (SHALE)	and siltstone, interbedded, gray, nonindurated (Fort Union Group, bedrock)	42.5-60

146-080-16BBB

NDSWC

Date Completed:	9/26/67	Purpose:	Test Hole
L.S. Elevation (ft):	1843.9	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, silty	0-2
SAND	very fine to fine, silty, tan	2-12.5
SHALE	bentonitic, brown; trace of fine sand (Fort Union Group, bedrock)	12.5-16
SILTSTONE	sandy, light gray and tan; contains silt and clay laminae (Fort Union Group, bedrock)	16-20
SHALE	silty, moderately hard, light gray to dark gray; silt and sand laminae 33.8-34.6 ft; lignite and lignitic shale 35-39 ft (Fort Union Group, bedrock)	20-40
SILTSTONE	sandy; becoming clayey with depth; compact, light gray (Fort Union Group, bedrock)	40-50.6
SHALE	silty, sandy, moderately hard, medium gray (Fort Union Group, bedrock)	50.6-60

146-080-17AAA

NDSWC 11535

Date Completed:	5/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1834.5	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	58-63	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Very Silty, Sandy (with very fine Sand), with sparse fine Gravel; olive brown to dark olive brown, oxidized; moderately cohesive and sticky; Gravel is mostly carbonates; (TILL).	1-9
SAND & GRAVEL	Coarse SAND to medium GRAVEL; subangular to subrounded; poorly sorted; mostly carbonates, shale and quartz; oxidized.	9-12
CLAY	As above, 1-9 ft (TILL).	12-20
CLAY	Silty, slightly Sandy (with very fine Sand); dark olive gray; moderately to very cohesive; moderately soft to moderately stiff.	20-28
SAND	Very fine to medium; with trace fine to medium Gravel; dark gray; moderately well sorted; subrounded.	28-32
CLAY	As above, 20-28 ft.	32-36
ROCK	Sandstone boulder; greenish white; very firm; moderately crumbly.	36-37
SAND & GRAVEL	Very fine SAND to Coarse GRAVEL; dark gray; poorly sorted; subangular to subrounded; mostly quartz, shale, carbonates and sandstone fragments with some lignite fragments.	37-67
CLAYSTONE	Silty; light gray; moderately to very firm; blocky; somewhat friable; some reddish brown Silty, Sandy laminae; interbedded with dark gray to black Claystone - moderately friable, thinly bedded, firm, slighlty bentonitic; scattered beds of dark olive brown, slightly soft Sandy Claystone.	67-80

146-080-17AAA2

NDSWC

Date Completed:	11/14/73	Purpose:	Observation Well
L.S. Elevation (ft):	1824.6	Well Type:	4" PVC
Depth Drilled (ft):	45	Aquifer:	Lake Nettie
Screened Interval (ft):	10.5-27	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clay, black (organic) to .8 ft; dark gray below, moist, soft, numerous small roots to .8 ft; very slight reaction to HCl	0-2
CLAY	gray with scattered red oxide stains, moist, firm, estimate 60-65% medium plastic fines; 30-35% coarse to fine sand; 5% fine subrounded gravel to 1/2 inch scattered throughout, trace of lignite fragments; rapid reaction to HCl, (TILL), (CL)	2-4
SAND & GRAVEL	clayey, gray, wet, soft to loose, estimate 35-40% coarse to mostly fine sand; 30-35% fine subrounded gravel to 5/8 inch, 30% low to medium plastic fines; rapid reaction to HCl, (Glaciofluvial), (SC-GC)	4-6
CLAYEY SAND	gray, wet, soft; estimate 55-60% coarse to mostly fine sand, 35-40% medium plastic clay fines, 5% fine subrounded gravel to 5/8 inch scattered throughout with trace of coarse to 1.5-inch; rapid reaction to HCl, (TILL), (SC)	6-8.6
SAND	silty, gray, wet soft to loose; estimate 50% fairly well graded subrounded sand, 35% coarse to mostly fine subrounded gravel to 1 inch, 15% low plastic fines; rapid reaction to HCl, (Glaciofluvial), (SM)	8.6-10
SAND	silty, reddish brown, saturated, soft and loose; estimate 75% well graded subrounded sand decreasing to 55% sand 15-21.5 ft; 15% fine subrounded gravel to 15 ft; and 35% coarse to fine gravel to 1.5-inch, 15-21.5 ft; 10% low plastic fines; rapid reaction to HCl, (Glaciofluvial), (SW-SM)	10-21.5
SAND & GRAVEL	silty, reddish brown, saturated, loose; estimate 50% mostly fine subrounded gravel to 1-inch, 40% well graded sand, 10% low plastic fines; rapid reaction to HCl, (glaciofluvial), (GP-GM)	21.5-24.5
CLAY	gray, wet, soft; 24.5-27 ft reworked clay with 10% fine gravel to 3/8-inch, laminated bedding with 1/8 to 1/4-inch sand interbeds; 39.6-40.5 ft gray laminated silt; estimate 65% medium plastic fines, 35% predominantly fine sand; rapid reaction to HCl, (Lacustrine), (CL)	24.5-40.5
SHALE	gray, moist, firm, dense, laminated bedding, remolded to medium to high plastic fines, no reaction to HCl, (Fort Union Group, bedrock)	40.5-45

146-080-17ABA1

NDSWC

Date Completed:	11/4/71	Purpose:	Observation Well
L.S. Elevation (ft):	1871.7	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Fort Union
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, sandy	0-1
CLAY	brown, gravelly, (TILL)	1-5
SAND	brown, fine to 12 ft; gravelly 12-15 ft	5-15
CLAY	brown to gray at 19 ft; silty 19-21.5 ft; (TILL)	15-21.5
CLAY SHALE	green to 28.5 ft; gray 28.5-50 ft; with scattered thin seams of lignite	21.5-50

146-080-17ABA2

NDSWC

Date Completed:	10/26/72	Purpose:	Observation Well
L.S. Elevation (ft):	1872.1	Well Type:	1.25" PVC
Depth Drilled (ft):	200	Aquifer:	Fort Union
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	clayey, brown with very thin buff lenses, damp, very firm to hard; estimate 55% poorly graded medium to fine sand with occasional coarse sand and fine gravel, 45% moderate plasticity fines; moderate toughness, limey throughout; HCl reaction rapid; (SC-CL), (TILL)	1-5
SAND	clayey, brown, damp, firm; estimate 55% poorly to fairly well graded sand, 5% fairly well graded subangular to subrounded gravel and 40% slight to moderately plastic fines; slight to moderate toughness; rapid HCl reaction, (SC)	5-7
CLAY	brown, moist, firm; estimate 85% moderate plasticity fines, moderate toughness, and 15% very fine sand with occasional medium sand; slight HCl reaction, (CL), (TILL)	7-8
SAND	silty, brown, moist, soft to firm, some cementation; estimate 85% poorly graded medium to fine sand, 15% slight to none plastic fines, no toughness, gravelly zone 15-17 ft; some cementation below 14 ft; rapid HCl reaction, (SM)	8-19
CLAY	silty, brown becoming dark brown at 21 ft, moist to wet, firm to soft and sticky; estimate 85% moderate plasticity fines, moderate toughness and 15% very fine uniform sand; no HCl reaction, (CL)	19-22
CLAY	silty, dark brown, moist, firm; estimate 70% moderate plasticity fines, moderate toughness and 30% very fine sand; no HCl reaction, (CL)	22-23
SHALE	light gray becoming gray at 29 ft, moist, firm to very firm; 29-40 ft gray with firm to very firm black lignite fragments scattered throughout; concentrated lignitic zone 35.5-37.5 ft (Fort Union Group, bedrock)	23-40
SHALE	predominantly gray with alternating light and dark gray zones, alternating soft, firm to very hard zones; scattered lignite fragments throughout with concentrated lignite zones from 48-51 ft and 98-106 ft, some smooth zones (Fort Union Group, bedrock)	40-123
SANDSTONE	fine, weakly cemented, gray, soft, with lignite and shale laminations (Fort Union Group, bedrock)	123-146
SHALE	sandy, gray, lignite particles, firm (Fort Union Group, bedrock)	146-150
SANDSTONE	medium, weakly cemented, gray, firm with lignite and shale laminations (Fort Union Group, bedrock)	150-159
SHALE	sandy, gray, firm with scattered lignite particles (Fort Union Group, bedrock)	159-170
SANDSTONE	weakly cemented, gray, with shale and lignite laminations (Fort Union Group, bedrock)	170-200

146-080-17ADA1

NDSWC

Date Completed:	3/20/70	Purpose:	Test Hole
L.S. Elevation (ft):	1842.6	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

146-080-17ADA1 continued

Lithologic Log

Unit	Description	Depth (ft)
SAND	brown, moist, silty, some clay, soft	0-4
SANDY CLAY	brown, gravelly, (TILL)	4-6
CLAY	red, soft to smooth, (probably clinker)	6-7
CLAY SHALE	gray with occasional brown zone, moist, soft to firm, lignite fragments in zones, sandy in zones (Fort Union Group, bedrock)	7-50

146-080-17ADA2

NDSWC

Date Completed:	3/21/72	Purpose:	Test Hole
L.S. Elevation (ft):	1835.3	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist	0-0.5
SAND	clayey, silty, trace of gravel, brown, moist, moderately firm; about 75% coarse to predominantly fine sand, 25% low to medium plasticity fines, cohesive, strong acid reaction, colluvium, (SC)	0.5-10
SAND	silty, brown to gray at 39 ft, wet, predominantly soft; variable but predominantly about 80% fine sand, 20% non to low plasticity fines; cohesive, in zones, some clayey zones, gravelly zones, thin silt lens at 33.5 ft, siltier below 39 ft; slight to spotty strong HCl reaction near bottom, (Glaciofluvial), (SM-SC)	10-44
SAND	(glacial till) clayey, gray, wet, predominantly soft, about 45% coarse to fine sand, 40% low to medium plasticity fines, 15% predominantly fine gravel, moderate to spotty strong HCl reaction, (SC)	44-50
SAND	silty, gray, moist, soft; about 70% fine sand, 30% low to medium plasticity fines; slight HCl reaction, glaciofluvial (SM-SC)	50-53
CLAY SHALE	black to gray at 55.5 ft; firm, nonindurated, lignitic to 55.5 ft; few silty laminations and lenses; spotty slight HCl reaction, (Fort Union Group, bedrock)	53-60

146-080-17ADA3

NDSWC

Date Completed:	3/22/72	Purpose:	Test Hole
L.S. Elevation (ft):	1832.6	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	brown, moist, scattered gravel throughout, traces of silt, few scattered lignite fragments below 29 ft	0-38
SAND	gray, wet, clean	38-44
SILT	gray, sandy and gravelly	44-49
GRAVEL	gray, wet, sandy, gravel to 1.5-inch diameter	49-55.7
CLAY SHALE	gray, hard	55.7-60

146-080-17ADD2

NDSWC

Date Completed:	10/3/72	Purpose:	Test Hole
L.S. Elevation (ft):	1839.8	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1

146-080-17ADD2 continued

SAND	fine, silty, brown	1-3
SAND	fine, clayey, brown, occasional fine gravel 3-4 ft	3-6
CLAY SHALE	light gray 6-17 ft becoming dark gray 17-50 ft; hard becoming firm below 9 ft; lignitic zones from 18-24, 29.4-42, and 48-49 ft; gray sandy zones 19-22 and 31-38 ft; occasional zones of light dark layered clay shale, (Fort Union Group, bedrock)	6-50

146-080-17ADD3

NDSWC

Date Completed:	10/4/72	Purpose:	Test Hole
L.S. Elevation (ft):	1843	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SILTY SAND	brown, fine, clayey	1-4
SAND	brown, fine, clean	4-11
CLAYEY SAND	white and gray layered, soft, some small lignite particles 14-16 ft	11-16
CLAY SHALE	light gray 16-19 ft and 43-49 ft; gray 24-34 ft and 39-43 ft; dark gray 19-24 ft and 34-39 ft; firm becoming hard at 43 ft; lignite fragments throughout with a heavy concentration from 32.5-34 ft; some clayey sand zones from 16-19 ft and 34-39 ft; smooth from 39-43 ft (Fort Union Group, bedrock)	16-50

146-080-17DAB

NDSWC

Date Completed:	9/27/67	Purpose:	Test Hole
L.S. Elevation (ft):	1837.2	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey sand, some organic material, slightly plastic, dark gray	0-2.5
SAND	fine, clayey, tan; contains shale fragments	2.5-22
SHALE	sandy, and siltstone, medium gray to brown; sandy to plastic shale 22-26 ft, uncemented sandy siltstone 26-30 ft; silty shale 30-31 ft; lignite 25.3-25.4 ft (Fort Union Group, bedrock)	22-31
SANDSTONE	fine, silty, light gray to brown (Fort Union Group, bedrock)	31-60

146-080-17DCC

NDSWC

Date Completed:	9/28/67	Purpose:	Test Hole
L.S. Elevation (ft):	1846.1	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, clay, some organic material, dark gray	0-1
CLAY	sandy, moderately hard	1-5
SILTSTONE	sandy, brown to light gray (Fort Union Group, bedrock)	5-6
SHALE	plastic, brown to light gray (Fort Union Group, bedrock)	6-8
SILTSTONE	sandy, brown to light gray (Fort Union Group, bedrock)	8-11
SHALE	silty, brown to light gray (Fort Union Group, bedrock)	11-14.7
SILTSTONE	brown to light gray (Fort Union Group, bedrock)	14.7-20
SHALE	silty, medium gray (Fort Union Group, bedrock)	20-30.5
SILTSTONE	medium gray (Fort Union Group, bedrock)	30.5-35
SHALE	medium gray (Fort Union Group, bedrock)	35-60

146-080-17DDD

NDSWC

Date Completed:	11/8/71	Purpose:	Observation Well
L.S. Elevation (ft):	1941.1	Well Type:	1.25" PVC
Depth Drilled (ft):	125	Aquifer:	Fort Union
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	brown, gravelly 18-35 ft; sandy 35-44 ft; (TILL)	0-44
CLAY SHALE	brown to gray at 55 ft; lignite seams 44-45 ft and 120-121 ft, silty 45-55 ft	44-125

146-080-18DDA

NDSWC

Date Completed:	5/19/72	Purpose:	Observation Well
L.S. Elevation (ft):	1924.6	Well Type:	
Depth Drilled (ft):	110	Aquifer:	Turtle Lake
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, brown.	0-2
CLAY	Sandy and Gravelly zones; brown, becoming dark brown at 14 ft; scattered lignite fragments; (TILL).	2-19
SAND	Brown becoming gray at 76 ft; Silty 19-30 ft; Gravelly 30-66 ft; mostly clean but with some Clay zones from 19-30 ft, 40-70 ft and 76-83 ft; scattered lignite fragments from 40-66 ft and 70-83 ft.	19-83
SHALE	Gray; firm; softer and sandier below 102 ft; scattered lignite fragments at 88-91 and 102-104 ft.	83-104
SANDY SHALE	gray, scattered lignite fragments.	104-110
	Reported water depth was 74.2 ft on 8/15/72.	

146-080-19ABB

NDSWC 2860

Date Completed:	10/3/67	Purpose:	Test Hole
L.S. Elevation (ft):	1815	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, grayish black	0-2
CLAY	very silty, sandy, plastic, light brownish gray to dark greenish gray	2-10
CLAY	very sandy, silty, calcareous, dark greenish gray	10-16
GRAVEL	fine to coarse, sandy with 15-25% coarse to very coarse sand; angular to subrounded	16-28
SANDSTONE	fine to medium, noncalcareous, light gray to light bluish gray (Fort Union Group, bedrock)	28-50
SHALE	siliceous, noncalcareous, grayish brown (Fort Union Group, bedrock)	50-60

146-080-19BAA

NDSWC 11602

Date Completed:	8/1/85	Purpose:	Observation Well
L.S. Elevation (ft):	1811.7	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Turtle Lake
Screened Interval (ft):	20-25	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, dark reddish brown.	0-1

146-080-19BAA continued

CLAY	Silty, Sandy with some Gravel (with very fine Sand to fine Gravel); yellowish brown; moderately to very soft; moderately cohesive and plastic; gritty; (TILL).	1-3
CLAY	Silty with some Sand (with very fine to fine Sand); light grayish brown; cohesive; slightly plastic and stiff; smooth to slightly gritty.	3-5
SAND & GRAVEL	Very fine SAND to fine GRAVEL; poorly sorted, subangular to subrounded; mostly carbonates, quartz, granitic fragments and shale; increased Gravel below 20 ft.	5-29
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel); moderately soft, cohesive and plastic; slightly to moderately stiff; gritty; (TILL).	29-30
SANDSTONE	Very fine to fine grained; Silty; light gray; well sorted; firm; poorly indurated; interbedded with poorly indurated, brownish gray Claystone.	30-40

146-080-20CAA

NDSWC

Date Completed:	9/29/67	Purpose:	Test Hole
L.S. Elevation (ft):	1852.5	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, dark gray	0-1
SAND	clayey, brown; scattered gravel	1-6.5
SHALE	silty, compact, medium gray; silty sand laminae 9-10 ft and 14.2-14.4 ft (Fort Union Group, bedrock)	6.5-16
SILTSTONE	sandy, moderately hard, light gray to yellowish brown (Fort Union Group, bedrock)	16-28.5
SHALE	moderately hard, medium to dark gray; becomes more silty from 31-40 ft; trace of fine sand and lignite from 39.7-40 ft (Fort Union Group, bedrock)	28.5-40
SILTSTONE	sandy, compact, light gray (Fort Union Group, bedrock)	40-44
SHALE	silty, moderately hard, medium gray (Fort Union Group, bedrock)	44-60

146-080-27AAA

NDSWC 11603

Date Completed:	8/1/85	Purpose:	Test Hole
L.S. Elevation (ft):	1923	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Slightly Gravelly; dark reddish brown.	0-2
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel); light yellowish brown, mottles of light gray and orangeish brown; moderately to very soft; slightly to moderately cohesive; slightly plastic to crumbly; gritty; (TILL).	2-8
CLAY	As above, (light yellowish brown Till); but firmer and more cohesive.	8-21
CLAY	Slightly Silty and Sandy, with trace coarse Sand to fine Gravel dispersed in the Clay matrix; yellowish brown; cohesive and plastic; stiff; smooth; slightly greasy; (possibly Lacustrine).	21-33
CLAY	Silty, slightly Sandy and Gravelly (with medium Sand to fine Gravel dispersed in the Clay matrix); olive gray; moderately soft to moderately stiff; moderately to very cohesive and plastic; smooth; slightly greasy; (possibly Lacustrine).	33-61
CLAY	Silty, very Sandy (with very fine to fine Sand); gray; moderately soft and cohesive; slightly plastic to slightly crumbly; mostly gritty; (probable TILL).	61-67
CLAY	As above, 33-61 ft.	67-74
CLAY	Silty; olive gray; soft; slightly to moderately cohesive and plastic; smooth; (LACUSTRINE).	74-79
CLAY	Silty, very Sandy, slightly to moderately Gravelly with very fine to fine Sand and some medium Gravel); dark gray; moderately soft to moderately stiff; moderately cohesive and plastic; gritty; (TILL).	79-97
SANDSTONE	Very fine to fine grained; slightly Clayey; greenish gray; well sorted; moderately firm; poorly indurated; very friable; with thin, very firm, moderately indurated layers from 97 to 101 ft.	97-120

146-080-28CBB

NDSWC

Date Completed:	11/15/72	Purpose:	Observation Well
L.S. Elevation (ft):	1929	Well Type:	1.25" PVC
Depth Drilled (ft):	150	Aquifer:	Till
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	brown, clay chunks with some small gravel scattered throughout	1-6.5
CLAY (Glacial Till)	brown to 79 ft, predominantly gray below with some alternating brown and gray zones; till oxidized from 20-74 ft and 84-90 ft; alternating soft and firm zones, sandy and silty zones with scattered lignite particles throughout, possibly calcareous 100-150 ft	6.5-150

146-080-29BAB

NDSWC

Date Completed:	10/2/67	Purpose:	Test Hole
L.S. Elevation (ft):	1882.9	Well Type:	
Depth Drilled (ft):	85	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, dark gray	0-1
CLAY	sandy, tan; scattered gravel, cobbles, and boulders	1-6.5
CLAY (Glacial Till)	sandy, brown; scattered gravel, cobbles and boulders	6.5-24.5
SHALE	moderately hard, brown; trace of very fine sand (Fort Union Group bedrock)	24.5-24.9
SANDSTONE	very fine, compact, brown (Fort Union Group bedrock)	24.9-37.5
SHALE	moderately hard, light gray to dark gray; cemented shalestone 43-43.1 ft; silty shale with higher sand content 45-55 ft; lignitic shale 56.5-57 ft and 59.8-59.9 ft (Fort Union Group bedrock)	37.5-60.5
SILTSTONE	sandy, compact, light gray; silty sandstone 64.5-64.9 ft and 70-70.8 ft; silty shale from 73.7-75 ft (Fort Union Group bedrock)	60.6-76.3
SHALE & SILTSTONE	interbedded, medium gray; shale is moderately hard (Fort Union Group bedrock)	76.3-85

146-080-29BCA

NDSWC

Date Completed:	10/20/54	Purpose:	Test Hole
L.S. Elevation (ft):	1863.5	Well Type:	
Depth Drilled (ft):	101.2	Source:	USBR, log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
CLAY	stiff, moist, gray brown	0-13.5
SILT	and fine sand, buff	13.5-16
SILT	clayey, buff	16-18
SAND	medium, and fine to medium gravel,, clayey, brown	18-19.3
CLAY	silty, sandy, stiff, brown to gray; abundant pebbles and lignite fragments, (TILL)	19.3-36.6
SAND	fine to coarse, silty, clayey, gravelly, brown	36.6-40.4
SAND	fine, silty, clayey, brown	40.4-43.1
SAND	fine and medium gravel, silty, clayey, gray brown	43.1-50.5
SAND	very fine to fine, silty, micaceous, compacted, brown to gray; lignitic from 60.8-61 ft (Fort Union Group, bedrock)	50.5-60.8

146-080-29BCA continued

CLAY (SHALE)	bentonitic, hard, gray; includes a few small carbonized plant fragments (Fort Union Group, bedrock)	60.8-66.7
LIGNITE	hard, brittle, black (Fort Union Group, bedrock)	66.7-69
CLAY (SHALE)	bentonitic, hard, gray; includes a few small carbonized plant fragments (Fort Union Group, bedrock)	69-72.8
CLAY (SHALE)	bentonitic, very stiff to hard, gray; siltstone concretion from 93-93.2 ft (Fort Union Group, bedrock)	72.8-95.5
LIGNITE	brittle, black; shaly from 95.8-98.6 ft (Fort Union Group, bedrock)	95.5-98.6
CLAY (SHALE)	bentonitic, gray (Fort Union Group, bedrock)	98.6-101.2

146-080-29BCA3

NDSWC

Date Completed:	10/26/54	Purpose:	Test Hole
L.S. Elevation (ft):	1828.7	Well Type:	
Depth Drilled (ft):	66	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	buff, fine to medium sand, approximately 25% fine to medium gravel; clayey, silty, fair gradation, cohesionless (SP-GP)	0-7.5
SAND	fine, trace of clay, brown to gray; micaceous, well compacted, oxidized, gravelly streak at 12.8 ft (Fort Union Group bedrock)	7.5-14.5
CLAY (SHALE)	silty, gray, hard, very plastic when saturated (Fort Union Group bedrock)	14.5-17.6
SAND	fine, clayey, buff, oxidized (Fort Union Group bedrock)	17.6-19.2
CLAY	sandy, black, carbonaceous, moist, crumbly (Fort Union Group bedrock)	19.2-21.6
CLAY (SHALE)	light greenish gray, stiff to hard bentonitic type clay, very plastic (Fort Union Group bedrock)	21.6-29.5
LIGNITE	black, hard, brittle (Fort Union Group bedrock)	29.5-32.2
CLAY (SHALE)	silty, to very silty, gray, stiff to firm, plasticity decreases with depth; very silty and hard below 47.5 ft; hard, well indurated siltstone 49-49.2 ft (Fort Union Group bedrock)	32.2-49.6
LIGNITE	black, hard, brittle (Fort Union Group bedrock)	49.6-50.2
CLAY (SHALE)	gray, bentonitic type clay, stiff to firm, dries very hard (Fort Union Group bedrock)	50.2-57
LIGNITE	black, hard, brittle (Fort Union Group bedrock)	57-60.5
CLAY (SHALE)	same as 50.2-57 ft (Fort Union Group bedrock)	60.5-66

146-080-29BCB1

NDSWC

Date Completed:	9/29/54	Purpose:	Test Hole
L.S. Elevation (ft):	1812	Well Type:	
Depth Drilled (ft):	75	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
SAND	fine, clayey, brown (SC)	0.5-5
SAND	fine to medium, clayey, gray brown, cohesionless (SP-SC)	5-12.1
SAND	fine to medium and fine gravel, clayey, gray (SC-GC)	12.1-15
SAND	fine to medium, clayey, gray brown	15-18.2
SILT	sandy, gray; trace of clay, laminated (ML)	18.2-21
SAND	fine to medium, gray, clean, cohesionless (SP)	21-25
SAND	fine to medium, clayey, gray; trace of fine gravel (SC-GC)	25-30.2
CLAY (SHALE)	bentonitic, stiff, gray (Fort Union Group, bedrock)	30.2-35
CLAY (SHALE)	organic, gray to black (Fort Union Group, bedrock)	35-36.5
LIGNITE	hard, black (Fort Union Group, bedrock)	36.5-38
CLAY (SHALE)	bentonitic, stiff, gray; very sandy and hard from 44-45 ft (Fort Union Group, bedrock)	38-45

146-080-29BCB2

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1807.3	Well Type:	
Depth Drilled (ft):	43	Source:	USBR. log published is Co. study

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
SAND & CLAY	gray; fine to medium clayey sand with included strata of sandy plastic clay; sand proportion increases with depth	0.5-20.3
SAND	medium, clean, loose, gray brown; 5-10% fine gravel	20.3-33
LIGNITE	black; thin laminae of clay shale (Fort Union Group, bedrock)	33-35.5
SHALE	silty, gray; grades from silty shale to bentonitic type clay shale (Fort Union Group, bedrock)	35.5-43

146-080-29BDB

NDSWC

Date Completed:	6/17/55	Purpose:	Test Hole
L.S. Elevation (ft):	1855	Well Type:	
Depth Drilled (ft):	50.8	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	fine with some medium sand and some fine gravel, buff and light gray; very hard, dry, compact (SP)	1-11.4
CLAY (Glacial Till)	silty, sandy, pebbly, light gray (CL)	11.4-12
CLAY	silty, gray, plastic; some sand 12-14 ft	12-20
CLAY	sandy, black, lignitic (SC)	20-25
CLAY	silty, grayish green, plastic (CL-CH)	25-30.8
SILT & SAND	gray, compact; granite boulder 42-42.6 ft (SM)	30.8-47
SAND	coarse, silty, gray, compact (SM)	47-50.8

146-080-29BDC

NDSWC

Date Completed:	8/24/72	Purpose:	Observation Well
L.S. Elevation (ft):	1885.5	Well Type:	1.25" PVC
Depth Drilled (ft):	70	Aquifer:	Till
Screened Interval (ft):		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	brown, clayey, dry and hard	0-1.5
CLAY (Glacial Till)	sandy, brown, soft	1.5-4
ROCKS	and cobbles	4-5
CLAY (Glacial Till)	brown, smooth and soft	5-11
GRAVEL	clean, to 1/2-inch size	11-14
CLAY SHALE	(Float); gray, firm, smooth becoming brittle below 30 ft; (probable ice-thrust bedrock block)	14-41
CLAY (Glacial Till)	gray, sandy and gravelly from 41-43 ft, sandy below; soft with some lignite particles below 43 ft	41-70

146-080-30AAC

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1866.3	Well Type:	
Depth Drilled (ft):	108	Source:	USBR log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey, organic, brown	0-1
SAND	fine to coarse, brown to gray; scattered gravel	1-7
SAND	very fine, gray; some gravel and silt	7-20
CLAY	silty, sandy, brown from 20-31 ft, gray from 31-65 ft; scattered gravel, (TILL)	20-65
CLAY SHALE	silty, compact, light to medium gray; contains lenses of silt throughout (Fort Union Group, bedrock)	65-72
SILTSTONE	sandy, slightly clayey, gray (Fort Union Group, bedrock)	72-86.5
CLAY SHALE	silty, lignitic, compact, gray; lignitic clay shale from 86.5-89 ft (Fort Union Group, bedrock)	86.5-94.5
LIGNITE	(Fort Union Group, bedrock)	94.5-99
SILTSTONE	sandy, clayey, gray (Fort Union Group, bedrock)	99-108

146-080-30AAD1

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1849.9	Well Type:	
Depth Drilled (ft):	95	Source:	USBR log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clay	0-1.5
CLAY	silty, sandy, gray brown; abundant pebbles and lignite fragments, (TILL)	1.5-25
CLAY	silty, sandy, pebbly, stiff to hard, gray; silt, sand, and gravel lens from 40.6-42.4 ft, (TILL)	25-51
CLAY (SHALE)	silty, bentonitic, stiff to hard, gray (Fort Union Group, bedrock)	51-56
SAND	fine to medium, loose, gray; streaked with fine lignite fragments, includes clay lenses (Fort Union Group, bedrock)	56-70
SAND	fine, micaceous, loose, gray; trace of clay (Fort Union Group, bedrock)	70-80.4
LIGNITE	(Fort Union Group, bedrock)	80.4-82.9
CLAY	sandy, stiff, gray (Fort Union Group, bedrock)	82.9-85
CLAY (SHALE)	silty, stiff to hard, gray; includes zones of clayey silt (Fort Union Group, bedrock)	85-95

146-080-30AAD2

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1809.5	Well Type:	
Depth Drilled (ft):	30	Source:	USBR log published in Co. study

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clay	0-1.5
CLAY	silty, stiff, gray	1.5-5
CLAY	silty, sandy, soft, very plastic, gray	5-10.5
SAND	fine, very clayey, gray	10.5-14
SAND	medium to coarse, and fine loose gravel, gray	14-16.5
SAND	fine, micaceous, clayey, moderately compacted, gray (Fort Union Group, bedrock)	16.5-23.5
SILT (SHALE)	very clayey, well compacted, gray (Fort Union Group, bedrock)	23.5-24.9
SILT (SHALE)	clayey, well compacted, gray (Fort Union Group, bedrock)	24.9-27.5
CLAY (SHALE)	silty, stiff, gray (Fort Union Group, bedrock)	27.5-30

146-080-31BBA

NDSWC

Date Completed:	11/18/76	Purpose:	Domestic Well
L.S. Elevation (ft):	1820	Well Type:	4" Steel
Depth Drilled (ft):	197	Aquifer:	Fort Union
Screened Interval (ft):	105-126	Source:	Russell Drlg Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SAND	fine	3-48
SHALE		48-63
LIGNITE		63-65
SILT		65-77
SAND		77-90
LIGNITE		90-92
SHALE		92-107
SAND		107-130
SAND	tight	130-150
SHALE		150-197

146-080-35DDC

NDSWC 2912

Date Completed:	5/1/68	Purpose:	Observation Well
L.S. Elevation (ft):	1852	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Mercer
Screened Interval (ft):	48-51	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	gravelly, sandy, silty, moderate yellowish brown	0-1
GRAVEL	fine to coarse, sandy, with 30-40% medium to very coarse sand; angular to subrounded, moderate yellowish brown	1-27
GRAVEL	fine to coarse, sandy, with 30-50% medium to very coarse sand; interbedded with clay lenses	27-38
CLAY	gravelly, sandy, silty, medium dark gray, (TILL)	38-45
GRAVEL	fine to very coarse, sandy, with 20-30% medium to very coarse sand, slightly clayey	45-52
CLAY	silty, sandy, gravelly, olive gray to medium gray, (TILL)	52-125
CLAY	very silty, slightly sandy, calcareous, olive gray to medium dark gray	125-140
CLAY	gravelly, sandy, olive gray; cobbles and rocks 151-153 ft; (TILL)	140-153
SANDSTONE	fine to medium, medium bluish gray; calcareous near top but noncalcareous at bottom (Fort Union Group, bedrock)	153-180

146-081-02CDD

NDSWC 3934

Date Completed:	11/25/69	Purpose:	Test Hole
L.S. Elevation (ft):	1952	Well Type:	
Depth Drilled (ft):	540	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	pebbly, dark yellowish brown	0-1
SAND	fine, clayey, silty, pebbly, yellowish gray	1-4
CLAY	silty, sandy, pebbly, moderate olive brown, (TILL)	4-18
SILT	clayey, dusky yellow green (Fort Union Group, bedrock)	18-33

146-081-02CDD continued

SAND	very fine to medium, micaceous, noncalcareous, dark yellowish green (Fort Union Group, bedrock)	33-79
LIGNITE	brittle, black; interbedded with dark green shale (Fort Union Group, bedrock)	79-84
SILT	light gray (Fort Union Group, bedrock)	84-102
SHALE	sandy, lignitic, black (Fort Union Group, bedrock)	102-110
SAND	very fine to fine, clayey, carbonaceous, dusky green (Fort Union Group, bedrock)	110-120
SILT	soft, carbonaceous, dusky brown (Fort Union Group, bedrock)	120-125
SAND	fine, micaceous, lignitic, dusky green (Fort Union Group, bedrock)	125-153
SHALE	sandy, light to medium gray; numerous silt and sand interbeds (Fort Union Group, bedrock)	153-193
SILT	soft, light gray to light olive gray; carbonaceous streaks; thin interbeds of shale (Fort Union Group, bedrock)	193-217
SHALE	silty, medium gray (Fort Union Group, bedrock)	217-237
SILT	light bluish gray (Fort Union Group, bedrock)	237-244
SHALE	silty, sandy, medium gray; thin interbeds of sandstone and silt (Fort Union Group, bedrock)	244-280
SANDSTONE	very fine, calcareous, dark greenish gray (Fort Union Group, bedrock)	280-291
SHALE	sandy, micaceous, carbonaceous, olive black (Fort Union Group, bedrock)	291-313
SHALE	silty, sandy, noncalcareous, light gray to medium gray (Fort Union Group, bedrock)	313-396
SANDSTONE	(bedrock, Hell Creek Formation(?))	396-408
SHALE	silty, sandy, carbonaceous, variegated gray, green, and brown (bedrock, Hell Creek Formation(?))	408-417
SANDSTONE	(bedrock, Hell Creek Formation(?))	417-429
SHALE	silty, sandy, carbonaceous, variegated gray, green, and brown (bedrock, Hell Creek Formation(?))	429-477
SILT	medium gray (bedrock, Hell Creek Formation(?))	477-483
SHALE	silty, cohesive, medium gray (bedrock, Hell Creek Formation(?))	483-495
SAND	very fine, clayey, light green (bedrock, Hell Creek Formation(?))	495-518
SHALE	hard, brittle, carbonaceous, noncalcareous, brownish black (bedrock, Hell Creek Formation(?))	518-540

146-081-18CDA

NDSWC

Date Completed:	11/1/78	Purpose:	Observation Well
L.S. Elevation (ft):	1920	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	73-93	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
CLAY	silty, yellowish brown (TILL)	2-49
SAND	fine, medium to coarse, with a little coal	49-58
GRAVEL	fine, medium to coarse, it's about 15% sand	58-77
COAL	and sand	77-79
SAND	fine to medium, with a little coal	79-93
CLAY	coal, and sand	93-120
SAND	fine to medium	120-128
CLAY	silty, medium gray	128-136
GRAVEL	fine, medium to coarse	136-141
CLAY	sandy, silty, olive gray, with coal layers	141-160

146-081-18CDD

NDSWC 2859

Date Completed:	10/3/67	Purpose:	Observation Well
L.S. Elevation (ft):	1920	Well Type:	1.25" ABS
Depth Drilled (ft):	280	Aquifer:	Turtle Lake
Screened Interval (ft):	188-191	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, grayish black, (topsoil)	0-1
CLAY	silty, sandy, olive gray	1-8
CLAY	silty, sandy, yellowish brown; reddish brown laminae	8-16
CLAY	very silty, moderate yellowish brown; grayish yellow laminae	16-38
CLAY	very silty, lignitic, olive gray to greenish gray	38-84
GRAVEL	fine to coarse, sandy with 15-25% coarse to very coarse sand, clayey; angular to subrounded	84-116
SAND	fine to coarse, angular to subrounded	116-194
CLAY	silty, sandy, light gray	194-196
GRAVEL	fine to very coarse, lignitic, angular to subrounded	196-210
CLAY	silty, sandy, light gray	210-214
GRAVEL	fine to very coarse, lignitic, shaly, angular to subrounded	214-217
CLAY	very silty, olive gray to dark gray	217-250
CLAY	silty, lignitic, brownish gray	250-274
SANDSTONE	fine to medium, light greenish gray (Fort Union Group, bedrock)	274-280

146-081-18CDD2

NDSWC

Date Completed:	9/14/78	Purpose:	Observation Well
L.S. Elevation (ft):	1915	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Turtle Lake
Screened Interval (ft):	78-88	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-3
CLAY	silty, yellowish brown, (TILL)	3-20
SAND	fine, medium to coarse	20-31
CLAY	silty, yellowish brown, (TILL)	31-34
CLAY	silty, olive gray	34-39
CLAY	silty, olive gray, (TILL)	39-57
SAND	fine to medium	57-61
CLAY	silty, olive gray, (TILL)	61-72
GRAVEL	and rocks	72-74
SAND	fine, medium to coarse	74-92
CLAY	silty, olive gray, (TILL)	92-101
CLAY	silty, gravelly with lots of coal, (TILL)	101-132
CLAY	sandy, silty, bluish-greenish gray, with coal layers, BEDROCK	132-140

146-081-18CDD3

NDSWC

Date Completed:	10/20/78	Purpose:	Observation Well
L.S. Elevation (ft):	1915	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Turtle Lake
Screened Interval (ft):	68-88	Source:	Water Supply Inc.

146-081-18CDD3 continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
CLAY	silty, yellowish brown, (TILL)	2-36
CLAY	silty, olive gray	36-54
GRAVEL	fine, medium to coarse, it's about 40% sand	54-59
GRAVEL	fine, medium to coarse, with lots of coal	59-68
GRAVEL	fine, medium to coarse, it's about 40% sand, with a little coal	68-80
SAND	fine, medium to coarse, with lots of coal	80-88
SAND	fine, medium to coarse, with clay layers	88-97
CLAY	silty, olive gray, TILL ?	97-100

146-081-18CDD4

NDSWC

Date Completed:	10/20/78	Purpose:	Observation Well
L.S. Elevation (ft):	1915	Well Type:	5" PVC
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	121-141	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-3
CLAY	silty, yellowish brown, (TILL)	3-46
CLAY	silty, olive gray	46-51
SAND	fine, medium to coarse	51-53
CLAY	silty, olive gray, (TILL)	53-58
SAND	fine to medium	58-59
CLAY	sandy, silty, olive gray	59-81
SAND	fine to medium	81-95
SAND	fine, medium to coarse, with lots of coal	95-101
CLAY	sandy, silty, olive gray	101-115
SAND	fine, medium to coarse, it's about 20% gravel	115-120
GRAVEL	fine, medium to coarse, it's about 10% sand	120-141
SAND	fine, medium to coarse, with lots of coal	141-152
GRAVEL	fine, medium to coarse	152-160

146-081-18CDD5

NDSWC

Date Completed:	10/30/78	Purpose:	Observation Well
L.S. Elevation (ft):	1915	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	112-122	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-4
CLAY	silty, yellowish brown	4-12
CLAY	sandy, silty, yellowish brown	12-21
CLAY	silty, yellowish brown	21-38
CLAY	silty, olive gray	38-63
GRAVEL	and sand	63-64
CLAY	silty, olive gray, (TILL)	64-78

46-081-18CDD5 continued

CLAY	silty, olive gray, with small sand layers and a little coal, (TILL)	78-102
SAND	fine, medium to coarse, with a little coal	102-122
SAND	fine to medium, with clay layers	122-160

146-081-18CDD6

NDSWC

Date Completed:	10/30/78	Purpose:	Observation Well
L.S. Elevation (ft):	1915	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	60-80	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-4
CLAY	silty, yellowish brown	4-22
CLAY	silty, yellowish brown, (TILL)	22-41
SAND	fine to medium, with lots of coal	41-46
GRAVEL	fine, medium to coarse, it's about 40% sand, yellowish brown	46-54
GRAVEL	fine, medium to coarse, it's about 50% sand	54-80
SAND	fine to medium, with lots of coal	80-85
GRAVEL	fine, medium to coarse	85-88
SAND	fine to medium, with lots of coal	88-140
SAND	fine, medium to coarse, it's about 30% gravel	140-160

146-081-18DCC1

NDSWC

Date Completed:	9/13/78	Purpose:	Observation Well
L.S. Elevation (ft):	1920	Well Type:	1.25" PVC
Depth Drilled (ft):	240	Aquifer:	Turtle Lake
Screened Interval (ft):	118-138	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-6
CLAY	silty, yellowish brown, (TILL)	6-36
GRAVEL	fine, medium to coarse, it's about 15% sand	36-49
SAND	fine, medium to coarse, it's about 15% gravel	49-59
GRAVEL	fine, medium to coarse, it's about 25% sand, with a little coal	59-81
SAND	fine, medium to coarse, it's about 40% gravel, with a little coal	81-103
GRAVEL	fine, medium to coarse	103-107
CLAY	silty, olive gray	107-113
GRAVEL	fine, medium to coarse, with a few rocks	113-116
GRAVEL	fine, medium to coarse, it's about 15% sand, with a few rocks	116-148
GRAVEL	fine, medium to coarse, it's about 50% rocks with a little clay, rough drilling	148-206
CLAYEY SAND	fine, medium to coarse, it's about 50% clay, with a few rocks	206-223
COAL		223-226
ROCK	limestone	226-228
GRAVEL	and rocks	228-234
CLAY	silty, light medium gray, BEDROCK	234-240

146-081-18DCC2

NDSWC

Date Completed:	10/14/78	Purpose:	Observation Well
L.S. Elevation (ft):	1935	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Turtle Lake
Screened Interval (ft):	63-78	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-3
GRAVEL	and rocks	3-6
CLAY	silty, yellowish brown, with gravel layers and a few rocks, (TILL)	6-14
SAND	fine, medium to coarse, it's about 15% gravel	14-42
GRAVEL	fine, medium to coarse, it's about 20% sand, with a few rocks	42-78
CLAY	silty, light medium gray to bluish gray, BEDROCK	78-100

146-081-18DDC

NDSWC 11569

Date Completed:	6/26/85	Purpose:	Test Hole
L.S. Elevation (ft):	1993	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Silty, Clayey, (possible fill).	0-1
CLAY	Silty, Sandy; yellowish brown; soft; moderately cohesive.	1-4
LIGNITE	Upper part is very loose.	4-7
CLAYSTONE	Slightly Silty; dark olive gray; moderately firm; poorly indurated; compact; friable; interbedded with brownish gray and dark brown Claystone.	7-11
SANDSTONE	Silty; very fine to fine grained; greenish brown; slightly to moderately firm; poorly indurated; very friable to loose.	11-25
LIGNITE	With thin Claystone beds.	25-31
CLAYSTONE	Interbedded gray, brownish gray, and olive gray; slightly to moderately firm; compact; poorly indurated; tight; moderately waxy; friable.	31-40

146-081-19ABB

NDSWC 11570

Date Completed:	6/26/85	Purpose:	Test Hole
L.S. Elevation (ft):	1928	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Gravelly (with very fine Sand to coarse Gravel); yellowish brown, oxidized; moderately soft; slightly cohesive to crumbly; gritty; (TILL).	0-1
LIGNITE		1-4
SANDSTONE	Very fine to fine grained; greenish gray with mottles of orangeish and yellowish brown; well sorted; slightly firm; poorly indurated; very friable to slightly loose; (probable ice-thrust block).	4-19
CLAY	Silty, Sandy (with very fine to very coarse Sand), Gravelly (with fine to coarse Gravel); dark yellowish brown, oxidized; moderately soft; slightly to moderately cohesive and plastic; (TILL).	19-26
SAND & GRAVEL	Medium SAND to medium GRAVEL; poorly sorted; carbonates, shale and quartz.	26-27
CLAY	Dark yellowish brown, as above, 19-26 ft; (TILL).	27-35
CLAYSTONE	Slightly Silty; brownish gray interbedded with dark brownish gray and dark gray; poorly indurated; stiff; moderately firm; slightly to moderately friable.	35-45
LIGNITE		45-47
CLAYSTONE	As above (35-45 ft), with lignite layers at 66 ft and 74 ft.	47-80

147-078-06BBB

NDSWC 3941

Date Completed:	12/4/69	Purpose:	Observation Well
L.S. Elevation (ft):	1903.7	Well Type:	1.25" ABS
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	20-40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black; sandy loam	0-1
SAND	fine to very coarse, with fine to coarse gravel; angular to subrounded, mostly subrounded, iron-stained, oxidized; assorted; lenticular; mainly carbonates and granitics with hard siliceous shale, lignite, and sandstone; taking water	1-38
SHALE	silty, sandy, tight, slightly hard, chunky to soft and slightly friable, noncalcareous, bentonitic; interbedded variegated grays but mostly light medium gray (Fort Union Group, bedrock)	38-80

147-078-30BCC1

NDSWC 3939

Date Completed:	12/3/69	Purpose:	Observation Well
L.S. Elevation (ft):		Well Type:	1.25" ABS
Depth Drilled (ft):	320	Aquifer:	Lake Nettie
Screened Interval (ft):	148-168	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Fine Sandy Loam; dark brownish black.	0-1
SAND	Fine to very coarse, with fine and medium Gravel; some very coarse Gravel and Cobbles; angular to subrounded, lenticular; iron oxide staining to 40 ft; mostly carbonates (60%) with granitics and dark gray, indurated, siliceous shale; 5% lignite and miscellaneous lithologies; taking water.	1-65
CLAY	Silty, Sandy, Pebbly, Cobbly; olive gray; moderately soft; cohesive; stiff; (TILL).	65-146
GRAVEL	Fine to coarse; Sandy; angular to subrounded, lenticular; mostly carbonates with granitics and siliceous shale with minor chert, sandstone, iron silicates, and lignite.	146-179
SAND	Fine to medium; dark gray; subangular to subrounded; moderately well sorted; quartzose; lignitic; calcareous.	179-200
SAND	Clayey; very fine to fine; black; moderately cohesive; non-plastic; highly organic, oily; lignitic; smears easily.	200-216
CLAY	Silty; olive gray to black; moderately soft; tight; cohesive; moderately plastic; stiff; organic; oily.	216-222
GRAVEL	Sandy; fine to coarse; mostly subangular; carbonates with granitics and siliceous shale; takes water.	222-236
SILT	Clayey with very fine Sand; olive gray; moderately soft and cohesive; calcareous; organic smears.	236-272
ROCKS	cobbles and boulders	272-275
SHALE	Silty, Sandy; variegated grays with green and brown, mostly medium gray; moderately soft to hard and brittle; tight; noncalcareous; micaceous (bedrock - Hell Creek Fm-Fox Hills Sandstone, undifferentiated)	275-320

147-078-30BCC2

NDSWC 3940

Date Completed:	12/2/69	Purpose:	Observation Well
L.S. Elevation (ft):	1906.6	Well Type:	1.25" ABS
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	39-59	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy Loam; dark brownish black.	0-1
SAND	Fine to very coarse (mostly medium to coarse), with Gravel and Cobbles; angular to subrounded, lenticular; oxidized to 40 ft; mostly carbonates with granitics, shale and lignite; taking water.	1-60

147-079-02DDD

NDSWC 11552

Date Completed:	6/5/85	Purpose:	Test Hole
L.S. Elevation (ft):	1944	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy; light brown with white; very soft; slightly cohesive to crumbly.	0-5
CLAY	Silty, Sandy; yellowish gray to yellowish brown; moderately soft and cohesive; slightly plastic.	5-11
CLAY	Slightly Silty and Sandy; gray to dark gray; slightly to moderately soft; cohesive; moderately plastic; somewhat stiff; smooth.	11-27
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates and shale with quartz and minor granitics.	27-28
CLAY	Olive gray; with thin Sand and Gravel layers throughout; gravelly from 32-33 ft.	28-33
SILT	Slightly Clayey and Sandy (with very fine to fine Sand); brownish gray; very soft; non-cohesive; smooth.	33-41
CLAY	Silty, Sandy (with mostly very fine to fine Sand) with some coarse Sand to coarse Gravel; olive brownish gray; moderately soft; moderately cohesive and plastic; gritty; (TILL); Sand and Gravel layer, 46-48 ft.	41-87
CLAY	Very Silty to Clayey Silt; olive gray; very soft; slightly cohesive and plastic; smooth.	87-97
CLAY	Silty, Sandy, with some Gravel; olive gray; moderately soft, cohesive and plastic; gritty; scattered rocks; (TILL).	97-116
CLAYSTONE	Silty; brownish gray; moderately firm; poorly indurated; friable; blocky; with sandy, lignitic laminae; scattered layers of very fine to fine Sandstone.	116-140

147-079-03AAA

NDSWC 11548

Date Completed:	6/4/85	Purpose:	Test Hole
L.S. Elevation (ft):	1954	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; reddish brown; crumbly.	0-1
CLAY	Silty, Sandy with some Gravel (very fine Sand to medium Gravel); moderately soft and cohesive; slightly plastic to crumbly; gritty; (TILL); 1-24 ft: yellowish brown to light olive brown, mottled and oxidized; 24-43 ft: olive brown to dark olive brown; 43-83 ft: gray; stiffer and more cohesive, unoxidized.	1-83
CLAY	Silty; gray with brownish gray layers; moderately soft, cohesive and plastic; smooth.	83-96
CLAY	Gray, as above 43-83 ft, (TILL); sandier below 110 ft.	96-114
SANDSTONE	Very fine to fine grained; slightly Clayey; yellowish brown; well sorted; moderately firm; poorly indurated; very friable; interbedded with scattered layers of yellowish brown, Sandy Siltstone.	114-126
CLAYSTONE	Gray; very firm; slightly indurated; moderately friable; interbedded with Siltstone (gray, moderately firm, poorly indurated, very friable), and very fine to fine grained Sandstone.	126-140

147-079-08BBB

NDSWC 3938

Date Completed:	12/3/69	Purpose:	Test Hole
L.S. Elevation (ft):	1890	Well Type:	
Depth Drilled (ft):	220	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, olive brown; scattered sand and pebbles, (TILL)	0-30
CLAY	silty, sandy, olive gray; scattered pebbles and cobbles; isolated sand and gravel lenses, (TILL)	30-198
SHALE	silty, sandy, brittle, noncalcareous, greenish gray; sandstone from 212-215 ft (Fort Union Group, bedrock)	198-220

147-079-10ADB

NDSWC

Date Completed:	2/28/75	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	82	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Yellow.	1-3
SAND & GRAVEL	Yellow; not very round.	3-12
SAND & GRAVEL		12-38
CLAY		38-41
SAND & GRAVEL		41-64
SHALE		64-82

147-079-10DAA

NDSWC

Date Completed:	3/15/75	Purpose:	Domestic Well
L.S. Elevation (ft):	1920	Well Type:	4" Steel
Depth Drilled (ft):	402	Aquifer:	Fort Union
Screened Interval (ft):	230-251	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Yellow; with rocks.	1-12
TILL	Gray.	12-110
SHALE	Shale and Sand.	110-162
SHALE	Brown.	162-240
SAND	Probable Sandstone.	240-262
SHALE		262-360
SHALE	With some Sand.	360-380
SHALE	Brown.	380-391
SANDSTONE	Very hard.	391-396
SHALE		396-402

147-079-11BBC

NDSWC

Date Completed:	12/15/75	Purpose:	Irrigation Well
L.S. Elevation (ft):	1875	Well Type:	10.75" Steel
Depth Drilled (ft):	36	Aquifer:	Lake Nettie
Screened Interval (ft):	16-36	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, light	0-10
CLAY		10-17
GRAVEL & SAND	medium coarse to coarse	17-36

147-079-11BCB

NDSWC 2788

Date Completed:	8/29/67	Purpose:	Observation Well
L.S. Elevation (ft):	1869.7	Well Type:	1.25" ABS
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	28-33	Source:	SWC

147-079-11BCB continued

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, brownish black, (topsoil)	0-1
CLAY	silty, sandy, yellowish brown, (TILL)	1-2
SAND	medium to very coarse, and fine to medium gravel	2-26
GRAVEL	fine to coarse, angular to rounded	26-36
CLAY	silty, olive gray, (TILL)	36-43
SAND	fine to coarse, angular to subrounded	43-60
SILTSTONE	sandy, calcareous, light gray (Fort Union Group, bedrock)	60-100

147-079-11BCC

NDSWC

Date Completed:	9/18/80	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	24" Cement
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	24-32	Source:	Clint's Well Boring

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-3
CLAY	sandy, yellow	3-6
SAND & GRAVEL	coarse gray sand, coal and pearock	6-26
ROCKS	2-inch to 5-inch rocks	26-35

147-079-11CCC

NDSWC 11549

Date Completed:	6/4/85	Purpose:	Test Hole
L.S. Elevation (ft):	1908	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy with some Gravel (very fine Sand to medium Gravel); moderately soft; slightly cohesive and plastic to crumbly; gritty; somewhat stiffer below 8 ft; (TILL); oxidized to 18 ft depth; Variegated yellowish brown, olive brown and light grayish brown 0-8 ft; light olive brown with mottles of yellowish brown and grayish brown 8-22 ft; olive gray 22-96 ft; SAND and GRAVEL lens 52-53 ft.	0-96
CLAY	Silty; dark gray; slightly to moderately cohesive; stiff; interbedded with Clayey Silt, moderately soft (slightly cohesive and plastic).	96-102
CLAY	Gray, as above, 22-96 ft (TILL).	102-120
SAND & GRAVEL	Medium SAND to medium GRAVEL; poorly sorted; mostly shale and carbonates with quartz and some granitics.	120-122
CLAYSTONE	Silty; brownish gray; moderately firm; poorly indurated; friable; slightly micaceous.	122-132
SANDSTONE	Very fine to fine grained; gray; well sorted; moderately firm; poorly indurated; friable; interbedded with layers of Claystone, as above (from 122-132 ft).	132-138
CLAYSTONE	As above, 122-132 ft.	138-140

147-079-14CCC
NDSWC 11550

Date Completed:	6/4/85	Purpose:	Observation Well
L.S. Elevation (ft):	1858.3	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	31-36	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, silty; reddish brown.	0-1
SAND	Very fine to coarse; brown; slightly well sorted; mostly subrounded; oxidized.	1-3
SILT	Sandy (with very fine to fine Sand); yellowish brown with mottles of grayish brown; very soft; slightly cohesive; non-plastic.	3-11
SAND & GRAVEL	Fine SAND to very coarse GRAVEL; poorly sorted; subangular to subrounded; mostly shale, quartz and carbonates with some granitics and lignite fragments; brown, oxidized to 31 ft; gray below 31 ft.	11-57
CLAY	Silty; gray; poor sample return. Terminated drilling at 60 ft due to borehole caving; (used 13 bags of drilling mud 11-60 ft).	57-60

147-079-15DDB1
NDSWC

Date Completed:	9/28/73	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	41	Source:	Farmers Supply Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
GRAVEL	Coarse, dry, caves in.	2-26
CLAY	gray (couldn't keep hole open, gravel above caving in)	26-41

147-079-15DDB2
NDSWC

Date Completed:	5/22/75	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	45	Aquifer:	Lake Nettie
Screened Interval (ft):	31-45	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Brown	1-3
SAND & GRAVEL	Very yellow.	3-20
SAND	Medium coarse SAND with GRAVEL; darker; well rounded.	20-30
GRAVEL	Large GRAVEL; with some SAND, 40-45 ft.	30-45

147-079-15DDD1
NDSWC

Date Completed:	9/28/73	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	61	Source:	Farmers Supply Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
GRAVEL	Medium coarse.	2-22
SAND	Coarse.	22-42
GRAVEL	Medium coarse.	42-55
CLAY	And SAND; gray; (probable bedrock, Fort Union Group).	55-61

147-079-15DDD2

NDSWC

Date Completed:	8/25/79	Purpose:	Domestic Well
L.S. Elevation (ft):	1850	Well Type:	24" Cement
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	19-31	Source:	Clint's Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black	0-2
GRAVEL	with large rocks	2-35

147-079-15DDD3

NDSWC

Date Completed:	10/24/92	Purpose:	Irrigation Well
L.S. Elevation (ft):	1850	Well Type:	8" Steel
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	42-50	Source:	Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy	0-7
SAND & GRAVEL	dry	7-16
SAND & GRAVEL	medium to coarse	16-32
SAND & GRAVEL	coarse	32-48
SAND & GRAVEL	boulders	48-50
TILL	gray	50-50

147-079-17AAA

NDSWC 4092

Date Completed:	8/12/70	Purpose:	Test Hole
L.S. Elevation (ft):	1885	Well Type:	
Depth Drilled (ft):	160		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, pebbly, black	0-1
SILT	clayey, sandy, yellowish gray; scattered pebbles, (TILL)	1-7
GRAVEL	fine to medium, sandy, subangular to subrounded	7-12
CLAY	silty, sandy, pebbly, moderate olive brown, (TILL)	12-35
CLAY	plastic, olive gray; interbedded with silt	35-50
CLAY	silty, sandy, pebbly, lignitic, olive gray, (TILL)	50-103
SAND	medium, subrounded, olive gray; scattered lignite chips	103-109
CLAY	stiff, dark gray	109-112
SANDSTONE	very fine to fine, clayey, yellowish green (Fort Union Group, bedrock)	112-120
SANDSTONE	very fine to fine, clayey, greenish gray; numerous carbonaceous streaks (Fort Union Group, bedrock)	120-145
SILTSTONE	hard, noncalcareous, greenish gray (Fort Union Group, bedrock)	145-160

147-079-18ADD
NDSWC 11542

Date Completed:	5/29/85	Purpose:	Observation Well
L.S. Elevation (ft):	1865.3	Well Type:	1.25" PVC
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	173-178	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	Clayey, slightly Sandy (with very fine to medium Sand); brown to dark grayish brown, oxidized; soft, moderately cohesive, slightly plastic; smooth.	0-6
SAND & GRAVEL	Very fine SAND to medium GRAVEL; angular to subrounded; poorly sorted; quartz, shale and carbonates with igneous rock fragments; scattered Clay layers; brown 6-21 ft; gray 21-26 ft.	6-26
CLAY	Silty, Sandy (very fine to medium Sand) with some Gravel (fine to medium Gravel); dark gray; moderately soft, cohesive, plastic, and stiff; gritty; rocks at 33 ft and 40-41 ft; (TILL).	26-59
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly coarse Sand to fine Gravel); poorly sorted; subangular to subrounded; quartz, shale and carbonates with igneous and lignite fragments.	59-68
SILT	Clayey, Sandy (with very fine to fine Sand); gray to brownish gray; soft; slightly to moderately cohesive and plastic; smooth; (LACUSTRINE).	68-92
CLAY	Silty, with some Sand and Gravel (very fine Sand to coarse Gravel); olive gray; moderately soft and plastic; cohesive; gritty; (TILL).	92-105
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; poorly sorted; subangular with some subrounded grains; mostly quartz, carbonates and shale with granitic fragments.	105-106
CLAY	Silty; olive gray; moderately soft and plastic; very cohesive.	106-113
SAND & GRAVEL	As above, 105-106 ft.	113-115
CLAY	Silty but with scattered slightly Silty intervals with very Silty layers; scattered slightly Sandy intervals with trace fine to medium Gravel; moderately soft and plastic; cohesive; generally smooth but scattered gritty intervals; scattered Claystone inclusions below 126 ft.	115-135
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted to slightly well sorted; mostly subangular to subrounded; abundant shale, quartz and carbonates with granitic and lignite fragments; interbedded layers of olive gray Silty Clay as above, 115-135 ft.	135-150
CLAY	Silty; dark olive gray; moderately soft to moderately stiff; smooth; slightly greasy; interbedded with scattered layers of brown Silty Clay.	150-156
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular to subrounded; abundant carbonates, quartz, shale and igneous rock fragments with some Claystone and lignite fragments.	156-168
SAND	Very fine to very coarse; poorly sorted; subangular to subrounded; abundant carbonate, quartz, shale and granitics.	168-175
SAND & GRAVEL	As above, 156-168.	175-178
ROCK		178-179
CLAYSTONE	Slightly Silty; dark brownish gray; firm; blocky; friable; poorly indurated; interbedded with greenish gray, very fine Sandstone; scattered layers of light brown, silty Claystone and brown clayey Siltstone; layers of dark gray, poorly indurated Sandstone and greenish gray, indurated Sandstone common below 196 ft.	179-200

147-079-18CDB

NDSWC

Date Completed:	8/30/77	Purpose:	Test Hole
L.S. Elevation (ft):	1840	Well Type:	
Depth Drilled (ft):	160	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black	0-1
GRAVEL	Fine to coarse, with about 15% Sand.	1-12
CLAY	Silty; TILL; yellowish brown 12-15 ft; olive gray 15-71 ft.	12-71
SAND	Fine to medium; with a little coal; with Sandy Clay layers.	71-94
CLAY	Sandy, Silty, olive gray.	94-126
SAND & GRAVEL	Gravel is fine to medium; with numerous rocks; with thin Clay layers.	126-155
CLAY	Silty; olive gray.	155-160

147-079-18DCC

NDSWC 11613

Date Completed:	8/8/85	Purpose:	Observation Well
L.S. Elevation (ft):	1827.59	Well Type:	1.25" PVC
Depth Drilled (ft):	185	Aquifer:	Lake Nettie
Screened Interval (ft):	178-183	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	Clayey; yellowish brown; soft; slightly cohesive and plastic to crumbly; orangeish brown and pale gray mottles, oxidized.	0-6
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly quartz, carbonates and shale with igneous rock fragments; brown, oxidized to 13 ft; gray below 13 ft.	6-52
CLAY	Silty, with trace very fine Sand; olive gray with brownish gray laminations; cohesive; moderately plastic; slightly stiff; (LACUSTRINE).	52-61
CLAY	Silty; olive gray; moderately to very soft and cohesive; moderately plastic; common thin layers of detrital lignite fragments; (LACUSTRINE).	61-115
SAND & GRAVEL	Very fine SAND to fine GRAVEL (with lignite fragments to medium gravel size); poorly sorted; subangular to subrounded; mostly quartz, carbonates and shale with lignite and igneous rock fragments.	115-136
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel); dark gray; cohesive, slightly plastic; slightly to moderately stiff; lignitic; (TILL).	136-173
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates, shale and lignite with quartz, igneous rock fragments and green, hard, very fine grained Sandstone fragments; with coarse gravel below 183 ft; (terminated borehole at 185 ft due to difficult drilling).	173-185

147-079-19BAA1

NDSWC 2750

Date Completed:	8/10/67	Purpose:	Observation Well
L.S. Elevation (ft):	1828	Well Type:	1.25" ABS
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	188-191	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty, Sandy; brownish black.	0-1
CLAY	Silty, Sandy; dark yellowish brown; (TILL).	1-8

147-079-19BAA1 cont

GRAVEL	Medium to coarse; Sandy (with coarse to very coarse Sand).	8-20
SAND	Medium to very coarse; Gravelly (with fine to coarse Gravel); subangular to subrounded.	20-55
SAND	Fine to medium; subangular to rounded.	55-64
CLAY	Silty, Sandy; scattered pebbles and lignite fragments; (TILL).	64-72
SAND	Fine to medium; subangular to rounded; becomes coarse to very coarse toward bottom of interval.	72-115
GRAVEL	Fine to coarse; Sandy; subangular to rounded.	115-136
CLAY	Silty; olive gray; (TILL).	136-184
GRAVEL	Fine to coarse; angular to subrounded.	184-218
SANDSTONE	Fine to medium; dark greenish gray; non-calcareous.	218-220

147-079-19BAA2

NDSWC 2750A

Date Completed:	8/10/67	Purpose:	Observation Well
L.S. Elevation (ft):	1828.04	Well Type:	1.25" ABS
Depth Drilled (ft):	125	Aquifer:	Lake Nettie
Screened Interval (ft):	118-121	Source:	SWC

Lithologic Log

see log of NDSWC 2750 (147-79-19 BAA1) for lithologic description

147-079-19BAA3

NDSWC 2750B

Date Completed:	8/10/67	Purpose:	Observation Well
L.S. Elevation (ft):	1828.04	Well Type:	1.25" ABS
Depth Drilled (ft):	45	Aquifer:	Lake Nettie
Screened Interval (ft):	39-42	Source:	SWC

Lithologic Log

see log of NDSWC 2750 (147-79-19BAA1) for lithologic description

147-079-20AAC

NDSWC

Date Completed:	10/17/93	Purpose:	Irrigation Well
L.S. Elevation (ft):	1850	Well Type:	12" Steel
Depth Drilled (ft):	53	Aquifer:	Lake Nettie
Screened Interval (ft):	41-53	Source:	Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SAND & GRAVEL		3-18
SAND & GRAVEL	medium, aquifer, uniform	18-53
TILL	gray	53-53

147-079-20ABD

NDSWC 11543

Date Completed:	5/30/85	Purpose:	Observation Well
L.S. Elevation (ft):	1842.24	Well Type:	1.25" PVC
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	138-143	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to very coarse GRAVEL (mostly very coarse Sand to very coarse Gravel); poorly sorted; subangular to subrounded; shale, quartz, carbonates and granitics; oxidized.	1-10
CLAY	Silty, Sandy (very fine to very coarse Sand) with some Gravel (fine to coarse); yellowish brown, oxidized; moderately soft; cohesive; somewhat sticky and gritty; plastic; with iron oxide mottles; (TILL).	10-20
CLAY	As above, but dark olive gray to brownish gray; (TILL).	20-36
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly very coarse Sand to fine Gravel); abundant shale and quartz with carbonates, lignite and granitics.	36-46
CLAY	Silty, Sandy (very fine to very coarse Sand) with some Gravel (fine to very coarse); dark olive gray; moderately soft; cohesive; somewhat sticky; slightly to moderately plastic; gritty; (TILL).	46-105
SAND	Very fine to very coarse; with trace fine to medium Gravel; abundant shale, carbonates and quartz with some granitics.	105-135
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly fine to medium Sand); slightly well sorted; subrounded; lignitic (gravel is mostly lignite).	135-149
CLAY	Silty, Sandy (with very fine to very coarse Sand), with some Gravel (fine to medium); gray; soft; moderately cohesive and plastic; gritty; (TILL).	149-216
CLAYSTONE	Silty; dark gray to black; soft with firm layers; poorly indurated; interbedded with layers of lignite and brownish Sandy Claystone.	216-240

147-079-21BAA

NDSWC

Date Completed:	9/22/89	Purpose:	Domestic Well
L.S. Elevation (ft):	1825	Well Type:	4" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	34-40	Source:	Broneske Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SILT & CLAY		3-17
SAND & GRAVEL		17-40

147-079-22CBB

NDSWC 11544

Date Completed:	5/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1849.2	Well Type:	1.25" PVC
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	68-73	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Very fine SAND to very coarse GRAVEL (mostly coarse Sand to medium Gravel); brown; poorly sorted; subangular to subrounded; mostly quartz, carbonates, and shale with granitics.	0-8

147-079-22CBB cont

CLAY	Silty, Sandy with some Gravel (very fine Sand to very coarse Gravel); yellowish brown, with reddish brown mottles, oxidized; soft; moderately cohesive to crumbly; slightly to moderately plastic; gritty; (TILL).	8-18
CLAY	As above, but olive brown with olive gray mottles; (TILL).	18-23
CLAY	Silty, Sandy with some Gravel (very fine Sand to very coarse Gravel); olive gray; moderately soft; cohesive; plastic; gritty; granitic boulders 26-27 ft; (TILL).	23-42
CLAY	Very Silty and Sandy (with very fine to fine Sand); very soft; slightly cohesive and somewhat plastic; slightly gritty.	42-60
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular to subrounded; mostly shale, quartz, carbonates and granitics.	60-76
CLAY	Silty, Sandy and slightly Gravelly (with very fine Sand to very coarse Gravel); brownish gray; moderately soft and plastic; cohesive; gritty; firmer to stiff below 88 ft; (TILL).	76-92
CLAY	Silty, Sandy and slightly Gravelly (with very fine Sand to coarse Gravel); dark gray; moderately soft; cohesive; moderately plastic to somewhat crumbly; gritty; lignitic; (TILL).	92-100
CLAY	Very Silty (to Clayey Silt), Sandy (with very fine to medium Sand); dark gray with black streaks; very soft; slightly cohesive and plastic; lignitic; interbedded with grayish black, lignitic, very fine to medium Silty Sand.	100-129
SAND	Very fine to coarse (mostly very fine to fine); gray; moderately well sorted; lignitic (with medium sand to very coarse gravel size lignite fragments); with moderately Silty and Sandy layers.	129-140
CLAY	Very Silty to a Clayey Silt; dark gray; very soft; slightly cohesive and plastic; smooth.	140-152
SILT	Clayey, Sandy (with very fine to coarse Sand); dark gray; very soft; slightly cohesive and plastic; lignitic.	152-162
CLAY	Silty, Sandy, Gravelly (with very fine Sand to very coarse Gravel and rocks); dark gray; cohesive; plastic; slightly to moderately stiff; (TILL).	162-171
BOULDERS	Mostly granitics with carbonates.	171-172
CLAYSTONE	Dark gray with gray Silty, Sandy laminations; firm; poorly indurated; friable; slightly micaceous; below 196 ft: interbedded with layers of gray, very fine to fine Sandstone (slightly to moderately firm, poorly indurated, very friable to loose).	172-200

147-079-22CBD

NDSWC

Date Completed:	6/28/90	Purpose:	Domestic Well
L.S. Elevation (ft):	1830	Well Type:	4" PVC
Depth Drilled (ft):	75	Aquifer:	Lake Nettie
Screened Interval (ft):	55-75	Source:	Zachmeier Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, brown	0-8
GRAVEL	fine	8-20
CLAY		20-58
SAND		58-75

147-079-22CCC

NDSWC

Date Completed:	4/11/91	Purpose:	Domestic Well
L.S. Elevation (ft):	1840	Well Type:	5" PVC
Depth Drilled (ft):	75	Aquifer:	Lake Nettie
Screened Interval (ft):	62-72	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL & ROCK	fill	0-10

147-079-22CCC

CLAY	silty to gravelly, yellowish brown, (TILL)	10-27
SAND	fine to medium	27-53
GRAVEL	to coarse, about 15% sand	53-75

147-079-22CDA

NDSWC

Date Completed:	9/1/91	Purpose:	Domestic Well
L.S. Elevation (ft):	1830	Well Type:	4" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	40-60	Source:	Zachmeier Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
SAND	brown	0-3
SAND	coarse	3-27
CLAY	gray	27-42
GRAVEL	small	42-60

147-079-22CDD

NDSWC .

Date Completed:	7/8/76	Purpose:	Domestic Well
L.S. Elevation (ft):	1835	Well Type:	4" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	50-60	Source:	Farmers Supply Co.

Lithologic Log

Unit	Description	Depth (ft)
SAND		0-9
CLAY	sandy, yellow	9-26
TILL	clayey, gray	26-45
SAND	fine, silty	45-50
SAND & GRAVEL	coarse Sand to fine Gravel	50-60

147-079-22DAA

NDSWC

Date Completed:	5/30/75	Purpose:	Irrigation Well
L.S. Elevation (ft):	1838	Well Type:	12" Steel
Depth Drilled (ft):	65	Aquifer:	Lake Nettie
Screened Interval (ft):	35-65	Source:	Aqua Well Drilling and Pump Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
TILL	Sandy, brown.	2-6
TILL	Sandy, yellow.	6-10
CLAY	Blue.	10-16
GRAVEL	Fine to medium.	16-21
GRAVEL	Fine, with lignite.	21-23

147-079-22DAA cont

GRAVEL	Fine to medium.	23-30
GRAVEL	Medium.	30-38
SAND & GRAVEL	Coarse SAND and fine GRAVEL.	38-40
GRAVEL	Medium.	40-45
GRAVEL	Medium to coarse.	45-65

147-079-23BBD

NDSWC

Date Completed:	5/29/75	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	40		
		Source:	Aqua Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
TILL	Yellow.	2-6
GRAVEL	Medium to coarse.	6-13
TILL	Yellow; and medium GRAVEL.	13-15
GRAVEL	Fine to medium.	15-18
CLAY	Sandy, gray.	18-21
CLAY	Gray.	21-23
CLAY	Green.	23-34
CLAY	Gray; hard; (possible bedrock Claystone).	34-40

147-079-24DDD

NDSWC 11608

Date Completed:	8/6/85	Purpose:	Observation Well
L.S. Elevation (ft):	1967.9	Well Type:	1.25" PVC
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	152-157	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy; dark reddish brown.	0-1
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); yellowish brown, oxidized, mottled; soft; slightly cohesive and plastic to crumbly; gritty; (TILL).	1-4
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; brown; poorly sorted; angular to subrounded; mostly quartz, carbonates and igneous rock fragments with some silicates.	4-10
CLAY	As above, 1-4 ft; (TILL).	10-11
SAND & GRAVEL	As above, 4-10 ft.	11-26
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); moderately soft and cohesive; slightly to moderately plastic; gritty; with layers of Sand and Gravel.	26-36
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); gray; cohesive; slightly to moderately plastic; moderately stiff; gritty; (TILL); 41-65 ft: with less Sand and Gravel; 65-68 ft: with thin layers of fine Sand to medium Gravel; 100-121 ft: scattered layers of Silty Clay, smooth.	36-129

147-079-24DDD

CLAY	Silty with some Sand; olive gray; soft and cohesive; slightly plastic; smooth; with scattered layers of dark gray, Silty, Clayey, very fine to fine Sand, and layers of detrital lignite fragments.	129-142
SAND & GRAVEL	Fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted to slightly well sorted; subangular to subrounded; mostly carbonates and shale with quartz, igneous rock fragments, silicates, and green, hard, very fine Sandstone fragments; 148-161 ft: lignitic; with layers of gray, Silty, Sandy Clay, moderately cohesive and plastic.	142-161
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel; cohesive and plastic; stiff; gritty; (TILL); Rocks (quartz, igneous; and carbonates) 163-164 ft and 167-168 ft; with layers of medium Sand to coarse Gravel (quartz, carbonates, shale and igneous fragments) 168-180 ft.	161-180
CLAYSTONE	Slightly Silty; dark greenish gray to dark gray; moderately firm; poorly indurated; stiff; tight; compact; slightly micaceous; with scattered layers of dark gray, very fine to fine Sandstone (slightly indurated, friable).	180-203
SANDSTONE	Very fine to fine; Silty; gray to greenish gray; well sorted; poorly indurated, very friable; moderately firm; interbedded with scattered layers of gray Claystone and lignite (Fort Union Group Bedrock).	203-220

147-079-26DDA

NDSWC 11545

Date Completed:	5/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1912.8	Well Type:	1.25" PVC
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	168-173	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty; Sandy (very fine to very coarse Sand) with some Gravel (fine to medium); moderately soft; gritty ; (TILL); 0-17 ft: yellowish brown, oxidized; slightly cohesive to crumbly; 17-28 ft: olive gray; more cohesive and plastic.	0-28
CLAY	Slightly Silty; dark olive gray to dark gray; stiff; smooth.	28-41
CLAY	As above, 17-28 ft; (TILL).	41-62
CLAY	As above, 28-41 ft.	62-92
CLAY	Silty, Sandy with some Gravel (very fine Sand to medium Gravel); moderately cohesive, plastic and stiff: gritty; (TILL).	92-128
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to fine Gravel); slightly well sorted; subangular to subrounded; mostly shale and carbonates with quartz, granitics and silicates; with numerous thin layers of gray Silty Clay.	128-137
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly fine to coarse Sand with some Gravel); slightly well sorted; subangular to subrounded; mostly shale and carbonates with quartz, granitics and silicates.	137-181
CLAY	Silty; olive gray; cohesive; plastic; somewhat stiff; smooth.	181-192
SAND & GRAVEL	Very fine SAND to very coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular to subrounded; mostly shale, carbonates, quartz and granitics with silicates.	192-206
CLAY	Very Silty (to a Clayey Silt), Sandy (with very fine to coarse Sand); olive gray; cohesive; plastic; slightly stiff; gritty.	206-226
CLAY	Silty, Sandy with some Gravel; (very fine Sand to medium Gravel); olive gray; moderately soft, cohesive and plastic; gritty; (TILL).	226-245
CLAYSTONE	Silty; dark brownish gray interbedded with dark gray to black; firm; compact; slightly sticky; poorly indurated; friable; slightly micaceous (Fort Union Group Bedrock).	245-260

147-079-27AAA

NDSWC 4093

Date Completed:	8/12/70	Purpose:	Observation Well
L.S. Elevation (ft):	1851.2	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	38-48	Source:	SWC

147-079-27AAA cont

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty SAND; black.	0-1
SAND & GRAVEL	Interbedded; subangular to subrounded.	1-51
CLAY	Silty; scattered pebbles and lignite fragments; olive gray: (TILL).	51-82
CLAY	Silty; plastic; olive gray.	82-101
CLAY	Dark olive gray; plastic.	101-105
SAND	Fine to medium; gray; subrounded.	105-111
CLAY	Dark olive gray; plastic.	111-113
SAND	Fine to coarse (mostly medium); gray; subrounded.	113-120
CLAY	Dark olive gray; plastic.	120-130
SAND	Fine to coarse (mostly medium); gray subrounded.	130-136
SILT	Light olive gray; soft, crumbly.	136-142
SAND	Fine to coarse (mostly medium); with gravel size lignite fragments.	142-162
SHALE	Silty, Sandy; dark gray; noncalcareous.	162-180

147-079-27AAC

NDSWC

Date Completed:	7/7/76	Purpose:	Domestic Well
L.S. Elevation (ft):	1835	Well Type:	0" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	30-40	Source:	Farmers Supply Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOILS	sandy	0-12
SAND	coarse, some Gravel	12-25
GRAVEL	medium coarse, very loose	25-40

147-079-27ADA1

NDSWC 2787

Date Completed:	8/28/67	Purpose:	Observation Well
L.S. Elevation (ft):	1842.56	Well Type:	1.25" ABS
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	168-178	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty, Sandy; grayish black.	0-1
CLAY	Silty, Sandy; yellowish brown; (TILL).	1-12
CLAY	Silty, Gravelly; olive gray; (TILL).	12-32
SAND & GRAVEL	Medium to very coarse SAND and fine to medium GRAVEL.	32-73
CLAY	Silty, Sandy; olive gray; (TILL).	73-95
SAND	Fine to very coarse; subangular to subrounded; mostly fine Sand to 114 ft; mostly coarse to very coarse Sand 114-124 ft.	95-124

147-079-27ADA1 cont

CLAY	Very Sandy, Silty; olive gray; (TILL).	124-130
SAND	Very fine, grading to very coarse near bottom of interval; subangular to subrounded; with scattered clay layers.	130-152
GRAVEL	Fine to coarse; subangular to rounded; with scattered thin clay layers.	152-192
SANDSTONE	Fine; grayish green; calcareous.	192-200

147-079-27ADA2

NDSWC 2787A

Date Completed:	8/28/67	Purpose:	Observation Well
L.S. Elevation (ft):	1842.92	Well Type:	1.25" ABS
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	57-60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
CLAY	silty, sandy, gravelly, moderate yellowish brown, (TILL)	1-14
CLAY	silty, sandy, calcareous, olive gray, (TILL)	14-32
SAND & GRAVEL	medium to very coarse subangular to rounded Sand and fine to medium subangular to rounded Gravel	32-60

147-079-27ADC

NDSWC

Date Completed:	5/27/92	Purpose:	Domestic Well
L.S. Elevation (ft):	1830	Well Type:	4.5" PVC
Depth Drilled (ft):	46	Aquifer:	Lake Nettie
Screened Interval (ft):	34-46	Source:	Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND, GRAVEL, CLAY		1-15
SAND & GRAVEL	medium	15-46
TILL	gray	46-46

147-079-27BD

NDSWC

Date Completed:	5/8/80	Purpose:	Domestic Well
L.S. Elevation (ft):	1835	Well Type:	4" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	60-70	Source:	Zachmeier Well Drilling, Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
CLAY		1-30
SAND	fine	30-41
GRAVEL		41-46
SAND		46-57
CLAY		57-60

147-079-27BDD

NDSWC

Date Completed:	5/8/80	Purpose:	Domestic Well
L.S. Elevation (ft):	1830	Well Type:	4" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	40-50	Source:	Zachmeier Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
GRAVEL		1-14
SAND		14-21
GRAVEL		21-32
SAND		32-36
GRAVEL		36-48
CLAY		48-50

147-079-27DDA

NDSWC

Date Completed:	5/1/91	Purpose:	Domestic Well
L.S. Elevation (ft):	1830	Well Type:	4" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	87-97	Source:	Broneske Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
CLAY		0-23
SILT		23-28
CLAY	and silt	28-80
SAND & GRAVEL		80-100

147-079-27DDD

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1869.8	Well Type:	
Depth Drilled (ft):	238	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, stiff, gray brown; few small pebbles, (TILL)	0-44
SAND	fine to medium and gravel fine, clean, gray brown	44-65
SAND	fine to medium, gray; trace of fine gravel and lignite fragments	65-91.2
SAND	fine, silty, gray	91.2-95.8
SAND	fine, gray; trace of gravel	95.8-108.2
CLAY	silty, sandy, stiff, gray; few small pebbles, (TILL)	108.2-110
BOULDER		110-110.8
SAND	fine, and fine gravel, brown	110.8-125
SAND	fine, clean, loose, brown	125-136
SAND	coarse, clean, loose, brown; some gravel; abundant lignite slack from 150-158 ft	136-158.2
CLAY	silty, sandy, stiff, gray; few small pebbles, (TILL)	158.2-170

147-079-27DDD continued

SAND	fine, clean, loose, brown	170-182
LIGNITE SLACK		182-184
SAND	coarse, loose, brown; abundant lignite slack	184-195
SILT	clayey, slightly plastic, gray; trace of fine sand	195-211
LIGNITE SLACK		211-215.3
CLAY	sandy, stiff to firm, gray; silt laminae	215.3-226
CLAY	silty, firm to hard, gray (Fort Union Group, bedrock)	226-238

147-079-28DAA

NDSWC

Date Completed:	4/10/76	Purpose:	Domestic Well
L.S. Elevation (ft):	1850	Well Type:	4" Steel
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	75-80	Source:	Driver Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
GRAVEL		2-48
CLAY	blue	48-50
SAND & GRAVEL	mixed	50-67
CLAY	blue	67-72
GRAVEL		72-80

147-079-29BBB

NDSWC 11524

Date Completed:	12/19/84	Purpose:	Observation Well
L.S. Elevation (ft):	1826.8	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Lake Nettie
Screened Interval (ft):	43-48	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty; brown.	0-7
SAND	Medium to very coarse (mostly very coarse), with some fine Gravel; brown, oxidized; common detrital lignite and shale.	7-12
GRAVEL	Very fine to fine, Sandy; coarser toward base of interval.	12-51
CLAY	Silty; gray; non-calcareous; (probable Fort Union Group Claystone); with thin lignite beds 109-123 ft.	51-123
SANDSTONE	Very fine to fine; light greenish gray; indurated; with scattered beds of white Clay.	123-129
CLAYSTONE(?)	Poor sample recovery; slow drilling.	129-140

147-079-29DCB

NDSWC

Date Completed:	10/15/73	Purpose:	Test Hole
L.S. Elevation (ft):	1835	Well Type:	
Depth Drilled (ft):	50		
		Source:	Midwest Valley Inc.

Lithologic Log

147-079-29DCB continued

Unit	Description	Depth (ft)
CLAY	Sandy	0-15
SAND & GRAVEL	Loose 15-20 ft; tighter or with rocks 25-30 ft.	15-30
SAND & GRAVEL	Coarse GRAVEL and SAND; fairly well sorted; subangular.	30-47
CLAY	Gray; soft.	47-50

147-079-30DDD
NDSWC 2786

Date Completed:	8/28/67	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	200		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy; grayish black.	0-1
CLAY	Silty, to very Sandy; yellowish brown; calcareous; (TILL).	1-28
CLAY	Silty to Sandy; olive gray to dark greenish gray; (TILL).	28-121
GRAVEL	Medium to coarse; subangular to rounded; interbedded with Clay lenses.	121-125
CLAY	Silty, Sandy; olive gray; calcareous; (TILL).	125-187
SILTSTONE	Light gray to gray; indurated; non-calcareous.	187-200

147-079-31ACD
NDSWC

Date Completed:	4/26/74	Purpose:	Domestic Well
L.S. Elevation (ft):	1865	Well Type:	4" PVC
Depth Drilled (ft):	153	Aquifer:	Lake Nettie
Screened Interval (ft):	143-153	Source:	Gross Drilling

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Brown.	0-30
SAND	Fine.	30-50
CLAY	Blue.	50-140
GRAVEL		140-153

147-079-34DDC
NDSWC

Date Completed:	12/11/72	Purpose:	Domestic Well
L.S. Elevation (ft):	1905	Well Type:	4" Steel
Depth Drilled (ft):	600	Aquifer:	Fort Union
Screened Interval (ft):	575-600	Source:	Farmers Supply Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
CLAY	Yellow.	3-22
CLAY	Gray.	22-115

147-079-34DDC cont

CLAY	Gray; with gravel layers.	115-135
CLAY	Gray; with Sand layers.	135-155
CLAY	Gray; tough.	155-158
CLAY	Gray; with Sand layers.	158-165
CLAY	Gray.	165-240
CLAY	Gray; with Sand layers, and Sand and Gravel layers.	240-280
CLAY	Gray; with fine Sand layers.	280-295
CLAYS	Gray; (Claystone bedrock ?).	295-575
SANDSTONE	Green Sands and Rock, cemented.	575-600

147-079-35BCC

NDSWC 4094

Date Completed:	8/12/70	Purpose:	Observation Well
L.S. Elevation (ft):	1924.69	Well Type:	1.25" ABS
Depth Drilled (ft):	320	Aquifer:	Lake Nettie
Screened Interval (ft):	218-224	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	Clayey, Sandy with scattered pebbles; yellowish gray; granitic boulder 7-9 ft; (TILL).	0-9
CLAY	Silty, Sandy, Pebbly; olive brown; (TILL).	9-26
CLAY	Silty with scattered Sand and Gravel grains; light olive gray; stiff; smooth; slightly brittle.	26-52
CLAY	Silty, Sandy, Pebbly; olive gray; with numerous Sand and Gravel lenses; (TILL).	52-100
SILT	Clayey, with very fine Sand; light olive gray; laminated.	100-114
SAND	Medium to coarse; subrounded.	114-160
CLAY	Silty, Sandy, Pebbly, Gravelly; olive gray; (TILL).	160-169
GRAVEL	Medium to coarse; subangular to subrounded.	169-176
CLAY	Silty, Sandy, Pebbly; olive gray; lignitic; (TILL).	176-196
SAND	Medium to very coarse; light olive gray; subangular to subrounded; with few Silt and Gravel lenses.	196-243
CLAY	Silty, Sandy, Pebbly; olive gray; lignitic; (TILL); interbedded with Sand and Gravel lenses to 296 ft.	243-260
SAND & GRAVEL		260-268
CLAY	Silty, Sandy, Pebbly; olive gray; lignitic; (TILL).	268-273
SAND & GRAVEL		273-279
CLAY	Silty, Sandy, Pebbly; olive gray; lignitic; (TILL).	279-284
SAND & GRAVEL		284-296
SHALE	Sandy; greenish gray; brittle; carbonaceous; non-calcareous.	296-302
SANDSTONE	Very fine; dark greenish gray; calcareous.	302-306
SHALE	Sandy; greenish gray; brittle; carbonaceous; non-calcareous.	306-320

147-079-35CBB

NDSWC 4094A

Date Completed:	8/6/85	Purpose:	Observation Well
L.S. Elevation (ft):	1925.43	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Lake Nettie
Screened Interval (ft):	136-141	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy; reddish brown.	0-1
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel in Clay matrix); yellowish brown with mottles of orangeish brown and light gray, oxidized; moderately soft and cohesive; slightly plastic to slightly crumbly; gritty; (TILL).	1-6
CLAY	Very Silty with trace very fine Sand; yellowish brown; very soft; slightly cohesive and plastic; smooth; (LACUSTRINE).	6-11
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel in Clay matrix); slightly stiff; moderately cohesive; slightly plastic to slightly crumbly; gritty; (TILL); granitic and dolomitic rocks 24-25 ft; 11-26 ft: yellowish brown with orangeish brown mottles, oxidized; 26-37 ft: gray.	11-37
SILT	Very Clayey to Silty Clay; olive gray with brownish gray and dark gray laminations; slightly stiff; moderately cohesive and plastic; brownish gray laminations have a trace of very fine Sand.	37-71
CLAY	Very Silty to Clayey Silt; olive gray to dark gray with brownish gray Silt laminations; very cohesive; plastic; somewhat tighter and stiffer than 37-71 ft; (LACUSTRINE).	71-87
SILT	Clayey, Sandy (with very fine Sand); olive gray; soft; slightly cohesive and plastic to crumbly; (LACUSTRINE).	87-103
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); cohesive and plastic; stiff; slightly lignitic; gritty; (TILL).	103-120
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates, shale and quartz with lignite, igneous rock fragments and silicates.	120-140

147-079-35DDC

NDSWC 11610

Date Completed:	8/7/85	Purpose:	Test Hole
L.S. Elevation (ft):	1939	Well Type:	
Depth Drilled (ft):	280		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy; dark reddish brown.	0-2
CLAY	Silty, Sandy, Gravelly; moderately soft; slightly cohesive and plastic; gritty; with some carbonaceous streaks; (TILL); 2-18 ft: yellowish brown, mottled, oxidized; 18-30 ft: gray.	2-30
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly medium Sand to fine Gravel); poorly sorted; subangular to subrounded; mostly carbonates and shale with quartz, igneous rock fragments and silicates.	30-31
CLAY	Silty; olive gray; moderately soft; cohesive and plastic; smooth.	31-46
CLAY	Silty, slightly Sandy and Gravelly; olive gray; slightly stiff; cohesive and plastic; gritty; stiffer and less Sandy below 118 ft; (TILL).	46-133
SAND & GRAVEL	Fine SAND to medium GRAVEL (mostly medium Sand to fine Gravel); slightly well sorted; subangular to subrounded; mostly shale and carbonates with quartz and some igneous rock fragments; coarser below 143 ft.	133-147
CLAY	Silty, Sandy (with very fine to fine Sand); gray; moderately soft and cohesive; slightly plastic.	147-148
SAND & GRAVEL	As above, 133-147 ft.	148-149
CLAY	Very Silty; gray; soft; moderately cohesive; slightly plastic; smooth; tight and stiff below 163 ft.	149-166

147-079-35DDC cont

CLAY	Silty with some Sand and Gravel (very fine Sand to fine Gravel); gray; moderately stiff, cohesive and plastic; slightly gritty (TILL); thin layers of shale and carbonate gravel at 166, 167 and 170 ft; scattered fragments of dark, very fine to fine Sandstone and gray Sandy Clay.	166-199
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; subangular to subrounded; mostly quartz, carbonates, shale and lignite with granitics; with layers of Silty Clay; 221-236 ft: increased layers of lignite and Silty Clay; 236-264 ft: abundant detrital lignite and somewhat thicker layers of Silty Clay.	199-264
BOULDERS	Granitic.	264-265
SANDSTONE	Very fine to fine; Clayey; greenish gray and brownish gray; well sorted; moderately firm; very friable; poorly indurated but with thin indurated beds to 273 ft; interbedded with Claystone (dark brown; dark reddish brown and brownish gray; moderately firm; poorly indurated; very friable).	265-280

147-080-01CCC2

NDSWC 3937

Date Completed:	12/2/69	Purpose:	Observation Well
L.S. Elevation (ft):	1876.5	Well Type:	4" PVC
Depth Drilled (ft):	320	Aquifer:	Lake Nettie
Screened Interval (ft):	48-53	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty, black.	0-2
CLAY	Silty; yellowish gray.	2-4
CLAY	Silty, Sandy; olive brown; (TILL).	4-20
CLAY	Silty, Sandy; olive gray; (TILL).	20-36
SAND & GRAVEL	Coarse SAND to very coarse GRAVEL (mostly fine to medium Gravel); subrounded.	36-71
CLAY	Silty, Sandy; olive gray; (TILL).	71-75
SAND & GRAVEL	As above, 36-71 ft; 84-87 and 91-94 ft: lenses of CLAY (Silty, Sandy, olive gray; TILL).	75-117
CLAY	Silty, Sandy, Pebbly; olive gray; (TILL).	117-181
GRAVEL	Fine to coarse, lignitic.	181-189
CLAY	Silty, Sandy; olive gray; (TILL).	189-203
SAND	Gravelly; Clayey.	203-206
CLAY	Silty, Sandy; olive gray; (TILL).	206-215
SAND	Gravelly, Clayey.	215-233
CLAY	Silty, Sandy, Pebbly; olive gray; (TILL).	233-282
SANDSTONE	Very fine, Clayey; light gray.	282-285
SANDSTONE	Very fine; greenish gray; calcareous.	285-287
SHALE	Silty, Sandy; dark gray; micaeous; lignitic.	287-320

147-080-03BDC

NDSWC 4087

Date Completed:	8/10/70	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	1.25" ABS
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	39-59	Source:	SWC

147-080-03BDC cont

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, black.	0-1
SAND	Silty; very fine to fine; yellowish gray.	1-5
CLAY	Silty, Sandy with scattered Pebbles; olive brown; (TILL).	5-22
CLAY	Silty, Sandy with scattered Pebbles; olive gray; scattered lignite fragments; (TILL).	22-31
SAND & GRAVEL	Mostly medium to very coarse SAND; subangular to subrounded.	31-46
GRAVEL	Fine to medium; subrounded.	46-66
CLAY	Sandy; olive gray; scattered lignite fragments; (TILL).	66-81
CLAY	Silty, Sandy, Pebbly; olive gray; (TILL).	81-98
GRAVEL	Fine to medium; subrounded.	98-107
CLAY	Silty, olive gray.	107-112
GRAVEL	Fine to medium; subrounded.	112-118
CLAY	Silty, olive gray.	118-123
CLAY	Silty, Sandy, Pebbly; dark brownish gray; lignitic; (TILL).	123-168
SHALE	Silty; dark gray; brittle.	168-188
SANDSTONE	Very fine; Clayey; greenish gray.	188-194
SHALE	Silty, Sandy; dark gray; brittle.	194-200

147-080-03CBA

NDSWC

Date Completed:	10/20/88	Purpose:	Observation Well
L.S. Elevation (ft):	1863.7	Well Type:	2" PVC
Depth Drilled (ft):	72	Aquifer:	Lake Nettie
Screened Interval (ft):	53-63	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown, (TILL)	1-19
CLAY	silty, with lots of rocks, olive gray, (TILL)	19-40
GRAVEL	to coarse, about 20% sand	40-44
SAND	fine to coarse	44-56
GRAVEL	to coarse, about 20% sand	56-67
CLAY	silty, olive gray, (TILL)	67-72

147-080-03CCA

NDSWC

Date Completed:	5/12/72	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	66	Aquifer:	Lake Nettie
Screened Interval (ft):	52-62	Source:	Midwest Valley Inc.

147-080-03CCA continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL	cemented	1-15
CLAY & GRAVEL		15-20
CLAY	gray	20-40
CLAY	silty, sandy, soft	40-42
SAND & GRAVEL	coarse, (looked good but it drilled harder than it should have)	42-62
SAND	silty	62-66

147-080-03CCC

NDSWC 2730

Date Completed:	8/2/67	Purpose:	Observation Well
L.S. Elevation (ft):	1872.99	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	48-51	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Clayey; brown.	0-1
SAND & GRAVEL	Coarse to very coarse SAND and medium to coarse GRAVEL; subangular to rounded.	1-19
CLAY	Silty, Sandy; olive gray; (TILL).	19-24
SAND & GRAVEL	Coarse to very coarse SAND and medium to coarse GRAVEL; subangular to rounded.	24-53
CLAY	Sandy, Gravelly; olive gray; (TILL).	53-81
SAND	Fine to medium; angular to subrounded.	81-96
CLAY	Very Silty; olive gray; calcareous.	96-100
SAND & GRAVEL	Coarse to very coarse SAND and medium to coarse GRAVEL; subangular to rounded.	100-112
CLAY	Silty; scattered carbonate and shale granules; (TILL).	112-150
SAND	Fine to medium; Clayey; subrounded to rounded.	150-152
CLAY	Silty; olive gray to dark gray; with abundant Sand grains; (TILL).	152-154
SANDSTONE	Fine to medium; blueish gray; non-calcareous.	154-180

147-080-03DAA

NDSWC 11591

Date Completed:	7/29/85	Purpose:	Observation Well
L.S. Elevation (ft):	1863.5	Well Type:	1.25" PVC
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	78-83	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Very Silty and Clayey; medium SAND to Coarse GRAVEL; poorly sorted; subangular to subrounded; mostly carbonates, shale, quartz and igneous rock fragments; oxidized.	0-8
CLAY	Silty, Sandy, Gravelly (with very fine Sand to coarse Gravel); moderately soft, cohesive and plastic; slightly lignitic; scattered thin gravelly lenses; 8-16 ft: yellowish brown, oxidized; 16-57 ft: gray, unoxidized.	8-57

147-080-03DAA cont

SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted to slightly well sorted; subangular to subrounded; mostly carbonates, shale and quartz with igneous rock fragments, silicates and lignite.	57-90
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); gray; moderately soft, cohesive and plastic; gritty; slightly lignitic; (TILL).	90-94
SAND & GRAVEL	Fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular to subrounded; mostly carbonates, shale and quartz with igneous rock fragments, silicates and lignite; common layers of gray Clay (as above, 90-94 ft).	94-103
CLAY	Very Silty; olive gray with laminations of dark gray to black; very soft; slightly cohesive and plastic; smooth.	103-112
LIGNITE	Detrital fragments; with some shale and carbonate gravel.	112-113
CLAY	Silty; Sandy, Gravelly (with very fine Sand to fine Gravel); stiff, cohesive, plastic; gritty; lignitic; rocks at 131 ft, and 196-197 ft; increased sand and gravel below 184 ft; (TILL); 113-150 ft: gray; 150-197 ft: olive gray.	113-197
SAND & GRAVEL	Fine SAND to very coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular to subrounded; mostly carbonates, shale, quartz, and lignite with granitics; with layers of olive gray Clay, as above, 150-197 ft.	197-209
CLAYSTONE (?)	Silty; dark brownish gray; firm; poorly indurated; friable to somewhat stiff.	209-212
SAND & GRAVEL	With Clay layers, as above 197-209 ft.	212-216
SANDSTONE	Very fine to fine; light greenish gray; well sorted; very firm; moderately indurated; dense; moderately friable.	216-218
SAND & GRAVEL	Medium SAND to medium GRAVEL; poorly sorted; mostly subangular fragments of shale carbonate and quartz; abundant blocky and angular lignite fragments.	218-225
CLAYSTONE	Silty; brownish gray; firm; poorly indurated; friable; bedding is apparent; interbedded with layers of well sorted; very fine to fine Sandstone.	225-240

147-080-04BBB

NDSWC 4086

Date Completed:	8/7/70	Purpose:	Test Hole
L.S. Elevation (ft):	1869	Well Type:	
Depth Drilled (ft):	200	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty, black.	0-1
GRAVEL	Fine to coarse; Sandy; subrounded to rounded; with cobbles.	1-46
CLAY	Silty, Sandy, Pebbly; olive gray; lignitic; (TILL).	46-70
SAND	Fine to medium; lignitic; interbedded with Silty and very fine, Clayey Sand.	70-106
GRAVEL	Fine to medium; subrounded.	106-113
CLAY	Silty, Sandy , Pebbly; brownish olive gray; with cobbles; (TILL).	113-140
BOULDERS	Sandtone.	140-142
SILT	Clayey, Sandy, with scattered pebbles; light olive gray; soft; interbedded and laminated.	142-177
SANDSTONE	Very fine to fine; calcareous; dark gray.	177-187
SHALE	Silty; dark gray to brownish gray; carbonaceous; non-calcareous.	187-200

147-080-04CCC

NDSWC

Date Completed:	11/16/88	Purpose:	Observation Well
L.S. Elevation (ft):	1862.5	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	25-35	Source:	Water Supply Inc.

Lithologic Log

147-080-04CCC continued

Unit	Description	Depth (ft)
CLAY	silty, black topsoil	0-1
GRAVEL	fine to coarse, about 20% sand	1-6
SAND	fine to coarse, about 15% gravel	6-16
SAND	fine to coarse	16-37
CLAY	silty, medium gray	37-40

147-080-04CCD

NDSWC

Date Completed:	11/14/88	Purpose:	Observation Well
L.S. Elevation (ft):	1860.37	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	24-34	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1
GRAVEL	Fine to coarse, with about 20% SAND; scattered rocks.	1-6
SAND	Fine.	6-15
SAND	Fine to coarse, with about 15% GRAVEL.	15-29
SAND	Fine to coarse.	29-35
CLAY	Silty; olive gray; (TILL).	35-40

147-080-04CDA

NDSWC

Date Completed:	11/14/88	Purpose:	Observation Well
L.S. Elevation (ft):	1870.4	Well Type:	2" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	41-51	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	fine to coarse, about 20% sand, with lots of rocks	1-23
SAND	fine to coarse, about 10% gravel	23-35
SAND	fine to coarse	35-55
CLAY	silty, medium gray	55-60

147-080-04CDD

NDSWC

Date Completed:	10/18/88	Purpose:	Observation Well
L.S. Elevation (ft):	1860.33	Well Type:	2" PVC
Depth Drilled (ft):	51	Aquifer:	Lake Nettie
Screened Interval (ft):	35-45	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1

147-080-04CDD cont

GRAVEL	To coarse, with about 20% SAND.	1-24
SAND	Fine to coarse; slightly lignitic.	24-36
SAND	Fine to medium.	36-45
CLAY	Silty; olive gray; (TILL).	45-51

147-080-04CDD2

NDSWC

Date Completed:	11/18/88	Purpose:	Observation Well
L.S. Elevation (ft):	1860.2	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	20-30	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	fine to coarse, about 10% sand	1-12
GRAVEL	fine to medium, about 15% sand	12-28
SAND	fine to coarse, with a little coal	28-37
CLAY	silty, medium gray	37-40

147-080-04DDB

NDSWC

Date Completed:	5/29/72	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	46	Aquifer:	Lake Nettie
Screened Interval (ft):	38-45	Source:	Midwest Valley Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
GRAVEL	cemented with clay	3-15
SAND	silty	15-20
SAND		20-25
GRAVEL	brown	25-40
GRAVEL	harder	40-43
SAND	gray	43-45
CLAY	gray	45-46

147-080-04DDD1

NDSWC

Date Completed:	5/28/72	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	46	Aquifer:	Lake Nettie
Screened Interval (ft):	30-45	Source:	Midwest Valley Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
GRAVEL	brown, cemented	3-15
SAND	fine and Silt	15-20

147-080-04DDD1 continued

SAND		20-25
GRAVEL	brown, loose	25-40
GRAVEL & SAND	loose	40-45
CLAY	gray	45-46

147-080-04DDD2

NDSWC

Date Completed:	11/7/73	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	45	Aquifer:	Lake Nettie
Screened Interval (ft):	39-44	Source:	Midwest Valley Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND & GRAVEL	red	1-11
CLAY	gray	11-16
SAND	fine	16-18
SAND & GRAVEL	red	18-31
CLAY	gray	31-33
GRAVEL	red, a little tight	33-44
SAND & CLAY	grey fine Sand turns to gray Clay	44-45

147-080-05AAC1

NDSWC

Date Completed:	9/8/76	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	100	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
SAND	Fine to coarse; with about 20% Gravel.	1-30
SAND	Fine to coarse.	30-41
CLAY	Silty; olive gray Till.	41-66
SAND & GRAVEL	Interbedded Gravelly SAND and Sandy GRAVEL; fine Sand to coarse Gravel.	66-97
CLAY	Silty; olive gray Till.	97-100

147-080-05AAC2

NDSWC

Date Completed:	4/24/77	Purpose:	Irrigation Well
L.S. Elevation (ft):	1865	Well Type:	10" Steel
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	72-98	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1

147-080-05AAC2 cont

SAND	Gravelly.	1-28
SAND	To medium.	28-42
TILL		42-67
SAND	To coarse, with some Gravel.	67-71
GRAVEL	Sandy.	71-81
SAND	To coarse, with some Gravel.	81-89
SAND	To medium.	89-100

147-080-05BBB

NDSWC

Date Completed:	10/14/88	Purpose:	Observation Well
L.S. Elevation (ft):	1871.38	Well Type:	2" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	83-93	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1
GRAVEL	To coarse, with about 20% SAND.	1-17
SAND	Fine to coarse.	17-37
CLAY	Silty; olive gray.	37-65
GRAVEL	To coarse, with about 15% SAND.	65-77
SAND	Fine to coarse; with abundant lignite.	77-93
CLAY	Silty; olive gray.	93-100

147-080-05BCC

NDSWC 2732

Date Completed:	8/3/67	Purpose:	Test Hole
L.S. Elevation (ft):	1868	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty, grayish black.	0-1
GRAVEL	Fine to medium, Sandy (with coarse to very coarse Sand); angular to subrounded.	1-24
CLAY	Silty, Pebbly; olive gray; lignitic.	24-58
SAND	Fine to medium, Clayey, angular to subrounded; with layers of olive gray, Silty, Sandy Clay from 68-70 and 76-78 ft.	58-84
CLAY	Silty, Sandy, dark gray; lignitic; (TILL); 88-92 ft: Gravel lens (poor sample return).	84-104
SANDSTONE	Fine to medium; noncalcareous; light blueish gray.	104-120

147-080-05CCC

NDSWC

Date Completed:	10/17/88	Purpose:	Observation Well
L.S. Elevation (ft):	1869.91	Well Type:	2" PVC
Depth Drilled (ft):	112	Aquifer:	Lake Nettie
Screened Interval (ft):	80-90	Source:	Water Supply Inc.

147-080-05CCC cont
Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1
CLAY	Silty; yellowish brown; (TILL).	1-4
GRAVEL	To coarse, with about 20% SAND.	4-14
SAND	Fine to coarse.	14-29
CLAY	Silty; olive gray; (TILL).	29-73
SAND	Fine to coarse.	73-81
SAND	Fine to medium.	81-108
CLAY	Silty, Sandy; blueish gray; Bedrock.	108-112

147-080-05DDA
NDSWC 11521

Date Completed:	11/7/84	Purpose:	Observation Well
L.S. Elevation (ft):	1850.7	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Fort Union
Screened Interval (ft):	107-112	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SAND & GRAVEL	Coarse SAND to coarse GRAVEL (mostly very coarse Sand); subangular to subrounded; mostly quartz and carbonates.	3-15
CLAY	Silty, Pebbly; olive gray; soft; plastic; (TILL).	15-47
SAND	Coarse; subrounded to rounded; mostly spherical quartz grains with some carbonates; 58-60 ft: probable Clay layer, no sample recovered; 69-72 ft: with interbedded gravel.	47-72
CLAY	Greenish gray; very waxy; plastic.	72-88
GRAVEL	And COBBLES; boulder at 94 ft.	88-94
SANDSTONE	Fine, well sorted, subrounded quartz grains; bentonitic Clay layer 104-105 ft; with interbedded Claystone and lignite below 105 ft.	94-120

147-080-05DDD
NDSWC

Date Completed:	10/13/88	Purpose:	Observation Well
L.S. Elevation (ft):	1848.89	Well Type:	2" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	58-68	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Clay, silty, black	0-1
CLAY	silty, yellowish brown, (TILL)	1-6
SAND	fine to medium, about 10% gravel	6-14
CLAY	silty, olive gray, (TILL)	14-46
SAND	fine to coarse	46-68
CLAY	silty, olive gray	68-76
GRAVEL	to coarse	76-77
CLAY	silty, olive gray, (TILL)	77-80

147-080-06BCD

NDSWC

Date Completed:	9/3/76	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	110	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty; olive black.	0-1
SAND	Fine to coarse, with some Gravel.	1-25
CLAY	Silty; olive gray Till.	25-65
SAND	Fine to coarse; with some Gravel.	65-90
GRAVEL	Fine to coarse; with some Sand.	90-100
CLAY	Silty; olive gray Till.	100-104
CLAY	Sandy, Silty; black to gray; Bedrock.	104-110

147-080-06BCD2

NDSWC

Date Completed:	10/27/77	Purpose:	Irrigation Well
L.S. Elevation (ft):	1865	Well Type:	12" Steel
Depth Drilled (ft):	104	Aquifer:	Lake Nettie
Screened Interval (ft):	85-100	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	slity, black	0-1
SAND	fine, medium to coarse, with about 25% gravel	1-28
CLAY	silty, olive gray, (TILL)	28-35
SAND	fine, medium to coarse, with about 15 % gravel	35-48
CLAY	silty, olive gray, (TILL)	48-56
GRAVEL	fine, medium to coarse	56-60
CLAY	silty, olive gray, (TILL)	60-66
SAND	fine, medium to coarse with lots of coal, its about 15% gravel	66-85
GRAVEL	fine, medium to coarse, with about 20% sand	85-100
CLAY	silty, medium gray	100-104

147-080-06CBA

NDSWC

Date Completed:	5/1/78	Purpose:	Irrigation Well
L.S. Elevation (ft):	1860	Well Type:	8" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	72-92	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
GRAVEL	Fine to coarse; Sandy.	1-24
CLAY	Silty; olive gray Till.	24-65
SAND	Fine to coarse; Gravelly (about 15% Gravel 65-82 ft; about 30% Gravel 82-92 ft);	65-92
GRAVEL	And Rocks.	92-94
CLAY	Silty; olive gray (Till).	94-100

147-080-07CBB

NDSWC

Date Completed:	7/7/78	Purpose:	Domestic Well
L.S. Elevation (ft):	1860	Well Type:	4" Steel
Depth Drilled (ft):	115	Aquifer:	Lake Nettie
Screened Interval (ft):	94-98	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL		0-35
TILL		35-80
SAND	Fine.	80-93
SAND	Coarse.	93-98
SAND	White; Bedrock.	98-115

147-080-07CCC

NDSWC 2728

Date Completed:	8/2/67	Purpose:	Test Hole
L.S. Elevation (ft):	1848	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY; Silty; grayish black.	0-1
SAND	Coarse to very coarse; with fine Gravel; subangular to subrounded;	1-16
CLAY	Silty, Gravelly; olive gray; lignitic; cobbles and boulders 48-49 ft and 52-54 ft; (TILL).	16-58
SAND & GRAVEL	Medium to coarse SAND and fine GRAVEL.	58-68
SHALE	Light gray; interbedded with fine to medium, non-calcareous, blueish gray Sandstone.	68-100

147-080-07DCB

NDSWC

Date Completed:	7/11/77	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	80		
		Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
SAND & GRAVEL	Fine to coarse GRAVEL, with about 40% SAND.	1-24
CLAY	Silty; olive gray Till.	24-70
GRAVEL	Fine to coarse.	70-76
CLAY	Sandy, Silty; blueish gray Bedrock.	76-80

147-080-08AAD3

NDSWC

Date Completed:	11/25/88	Purpose:	Municipal Well
L.S. Elevation (ft):	1848.4	Well Type:	8" Steel
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	24.5-36.5	Source:	Water Supply Inc.

Lithologic Log

147-080-08AAD3 cont

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1
GRAVEL	Fine to coarse, with about 15% SAND.	1-19
GRAVEL	Fine to coarse, with about 25% SAND.	19-37
CLAY	Silty; olive gray.	37-40

147-080-08AAD4

NDSWC

Date Completed:	11/28/88	Purpose:	Observation Well
L.S. Elevation (ft):	1848.9	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	22-32	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clay, silty, black	0-1
GRAVEL	fine to coarse, with about 30% sand	1-8
GRAVEL	fine to coarse, with about 20% sand	8-32
CLAY	silty, olive gray	32-40

147-080-08AAD6

NDSWC

Date Completed:	11/30/88	Purpose:	Observation Well
L.S. Elevation (ft):	1848.3	Well Type:	2" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	78-88	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	fine to coarse, about 20% sand	1-32
CLAY	silty, olive gray, (TILL)	32-60
SAND	fine to coarse, with lots of coal	60-92
GRAVEL	and rocks	92-95
CLAY	silty, medium gray, BEDROCK	95-100

147-080-08AAD8

NDSWC

Date Completed:	10/12/89	Purpose:	Municipal Well
L.S. Elevation (ft):	1850	Well Type:	5" Steel
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	22-37	Source:	Water Smith Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.5
SAND	fine to medium, brown to gray near 20 ft	1.5-20
SAND & GRAVEL	medium sand to coarse gravel	20-37
CLAY		37-40

147-080-08AADB

NDSWC

Date Completed:	10/12/89	Purpose:	Municipal Well
L.S. Elevation (ft):	1850	Well Type:	5" Steel
Depth Drilled (ft):	44	Aquifer:	Lake Nettie
Screened Interval (ft):	20-40	Source:	Water Smith Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND & GRAVEL	Coarse SAND and GRAVEL, brown.	2-20
SAND & GRAVEL	Medium GRAVEL and coarse SAND; gray; clean.	20-40
CLAY		40-44

147-080-08ADA1

NDSWC

Date Completed:	11/17/88	Purpose:	Observation Well
L.S. Elevation (ft):	1847	Well Type:	2" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	18-28	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown, (TILL)	1-3
GRAVEL	fine to coarse, about 20% sand	3-11
SAND	fine to coarse	11-28
CLAY	silty, medium gray	28-35

147-080-08ADA4

NDSWC

Date Completed:	11/30/88	Purpose:	Observation Well
L.S. Elevation (ft):	1846.2	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	21-31	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown	1-3
GRAVEL	fine to coarse, about 10% sand, with a few rocks	3-12
GRAVEL	fine to coarse, about 40% sand	12-18
SAND	fine to coarse, about 15% gravel	18-31
CLAY	silty, olive gray, (TILL)	31-40

147-080-08ADA5

NDSWC

Date Completed:	12/1/88	Purpose:	Observation Well
L.S. Elevation (ft):	1848.5	Well Type:	2" PVC
Depth Drilled (ft):	118	Aquifer:	Fort Union
Screened Interval (ft):	104-114	Source:	Water Supply Inc.

147-080-08ADA5 cont

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown	1-2
GRAVEL	fine to coarse, about 20% sand	2-32
CLAY	silty, olive gray, (TILL)	32-61
SAND	fine to coarse, with lots of coal	61-92
GRAVEL	and rocks	92-94
CLAY	silty, medium gray, BEDROCK	94-103
SAND	fine bluish gray, about 15% clay	103-114
CLAY	silty, medium gray	114-118

147-080-08ADD2

NDSWC

Date Completed:	1/27/89	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	45		
		Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	and rocks	1-6
GRAVEL	fine to coarse, about 25% sand	6-22
GRAVEL	fine to coarse, about 35% sand	22-40
CLAY	silty, olive gray, (TILL)	40-45

147-080-08CCC

NDSWC 11596

Date Completed:	7/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1855.9	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	58-63	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty; brown.	0-1
SAND & GRAVEL	Very fine SAND to medium GRAVEL; brown; poorly sorted; subangular to subrounded; mostly carbonates, quartz, shale with igneous rock fragments; with lignite 25-29 ft.	1-29
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); gray; moderately soft, cohesive and plastic; slightly sticky; gritty; (TILL).	29-50
CLAY	Silty; gray; soft; smooth; 58-59 ft: Sand and Gravel lens.	50-60
SAND & GRAVEL	Fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); poorly sorted; subangular; mostly shale, lignite, quartz, carbonates and green very fine Sandstone fragments.	60-68
SANDSTONE	68-69 ft: very fine; yellowish brown; slightly firm; poorly indurated; 69-70 ft: very fine to fine; gray; hard; indurated; moderately friable; 70-80 ft: very fine to fine; gray; soft; poorly indurated; very friable (Fort Union Group, bedrock)	68-80

147-080-08DAA

NDSWC

Date Completed:	1/27/89	Purpose:	Test Hole
L.S. Elevation (ft):	1845.1	Well Type:	
Depth Drilled (ft):	35		
		Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	fine to coarse, about 20% sand	1-8
GRAVEL	fine to coarse, about 10% sand	8-30
CLAY	silty, olive gray, (TILL)	30-35

147-080-08DAA5

NDSWC

Date Completed:	1/15/90	Purpose:	Test Hole
L.S. Elevation (ft):	1867	Well Type:	
Depth Drilled (ft):	40		
		Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	and rocks	1-5
GRAVEL	fine to coarse, about 30% sand	5-23
CLAY	silty, olive gray, (TILL)	23-40

147-080-08DAD

NDSWC

Date Completed:	11/17/88	Purpose:	Observation Well
L.S. Elevation (ft):	1859.08	Well Type:	2" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	17-27	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; black.	0-1
GRAVEL	Fine to coarse, with about 20% SAND.	1-6
SAND	Fine to coarse, with about 10% GRAVEL.	6-27
CLAY	Silty; olive gray; (TILL).	27-35

147-080-09CBB

NDSWC 2731

Date Completed:	8/2/67	Purpose:	Observation Well
L.S. Elevation (ft):	1845.9	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	26-29	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Clayey; brownish black.	0-1

147-080-09CBB cont

CLAY	Silty, Sandy; yellowish brown; clacareous.	1-3
SAND & GRAVEL	Coarse to very coarse SAND and fine GRAVEL; subangular to rounded.	3-28
CLAY	Silty, Sandy with scattered Pebbles; olive gray; (TILL); lignitic with less silt 60-70 ft.	28-70
SAND & GRAVEL	Coarse to very coarse SAND and medium to coarse GRAVEL; subangular to rounded.	70-85
CLAY	Silty; olive gray to dark gray; calcareous.	85-96
SANDSTONE	Fine to medium; blueish gray; well indurated; non-calcareous.	96-120

147-080-09CDD

NDSWC

Date Completed:	10/18/88	Purpose:	Observation Well
L.S. Elevation (ft):	1878.8	Well Type:	2" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	42-52	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty to sandy, yellowish brown	1-7
CLAY	silty, yellowish brown, (TILL)	7-12
GRAVEL	to coarse, about 20% sand	12-32
CLAY	silty, olive gray, (TILL)	32-34
SAND	fine to coarse	34-53
CLAY	silty, yellowish brown	53-60

147-080-09DDD

NDSWC 11595

Date Completed:	7/31/85	Purpose:	Test Hole
L.S. Elevation (ft):	1876	Well Type:	
Depth Drilled (ft):	80		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly, dark reddish brown.	0-1
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel in Clay matrix); moderately soft; cohesive and plastic; gritty; (TILL); 1-18 ft: yellowish brown, mottled, oxidized; 18-28 ft: grayish brown; 28-51 ft: olive gray to gray, moderately stiffer; with less Sand and Gravel.	1-51
SAND & GRAVEL	Medium SAND to fine GRAVEL; poorly sorted; subangular to subrounded; shale and carbonates (poor sample return).	51-52
CLAYSTONE	Silty; gray and dark gray; firm; poorly indurated; very friable; with scattered Sandy layers.	52-64
SANDSTONE	Very fine; greenish gray; well sorted; hard; well indurated; non-friable.	64-66
SANDSTONE	Very fine; Clayey; greenish gray; well sorted; firm; poorly indurated; friable.	66-80

147-080-10BAC

NDSWC

Date Completed:	8/30/77	Purpose:	Test Hole
L.S. Elevation (ft):	1890	Well Type:	
Depth Drilled (ft):	140		
		Source:	Water Supply Inc.

147-080-10BAC cont

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
SAND & GRAVEL	1-14 ft: fine to coarse Gravel; 14-21 ft: fine to coarse Sand; 21-44 ft: fine to coarse Gravel, with about 20% Sand; 44-55 ft: fine to coarse Sand, with about 15 % Gravel.	1-55
CLAY	Silty; olive gray; (TILL).	55-99
SAND	Fine to coarse.	99-116
CLAY	Silty; olive gray; (TILL).	116-125
GRAVEL	Fine to coarse.	125-129
CLAY	Silty; olive gray; (TILL).	129-135
GRAVEL	And Rocks.	135-138
CLAY	Silty; olive gray; (TILL).	138-140

147-080-10CBB

NDSWC

Date Completed:	10/19/88	Purpose:	Observation Well
L.S. Elevation (ft):	1891.1	Well Type:	2" PVC
Depth Drilled (ft):	52	Aquifer:	Lake Nettie
Screened Interval (ft):	37-47	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	to coarse, about 20% sand	1-47
CLAY	silty, olive gray, (TILL)	47-52

147-080-11CAA

NDSWC

Date Completed:	10/1/82	Purpose:	Domestic Well
L.S. Elevation (ft):	1890	Well Type:	4" Steel
Depth Drilled (ft):	77	Aquifer:	Lake Nettie
Screened Interval (ft):	71-75	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND	Yellow.	2-20
TILL	With Gravel layers; yellow to 31 ft; gray 31-58 ft.	20-58
GRAVEL	Medium to coarse.	58-77

147-080-13CCC

NDSWC 2749

Date Completed:	8/10/67	Purpose:	Observation Well
L.S. Elevation (ft):	1852.16	Well Type:	1.25" ABS
Depth Drilled (ft):	160	Aquifer:	Lake Nettie
Screened Interval (ft):	128-131	Source:	SWC

147-080-13CCC cont

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty, Sandy; brownish black.	0-1
SAND & GRAVEL	Medium to very coarse SAND and fine to coarse GRAVEL; angular to subrounded.	1-11
CLAY	Silty, Sandy, Pebbly; olive gray; (TILL).	11-24
GRAVEL	Medium to coarse, with some coarse to very coarse Sand; subangular to subrounded.	24-44
CLAY	Very Silty; olive gray; laminated (some bedding planes apparent).	44-62
SILT	Clayey, Sandy; olive gray.	62-120
SAND & GRAVEL	Coarse SAND to coarse GRAVEL; subangular to rounded.	120-138
SANDSTONE	Fine to medium; blueish gray; non-calcareous (Fort Union Group, bedrock).	138-160

147-080-15AAA2

NDSWC 11541A

Date Completed:	5/29/85	Purpose:	Observation Well
L.S. Elevation (ft):	1877.2	Well Type:	1.25" PVC
Depth Drilled (ft):	300	Aquifer:	Lake Nettie
Screened Interval (ft):	43-48	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Silty, Clayey; poorly sorted; subangular to angular; oxidized.	0-1
CLAY	Silty, Sandy with some Gravel; moderately soft and cohesive; (TILL); yellowish brown to 13 ft; olive gray to gray below 13 ft.	1-25
SAND & GRAVEL	Very fine SAND to medium GRAVEL; poorly sorted; brown, oxidized to approx. 40 ft; subangular to rounded; mostly quartz, carbonates and shale with fragments of sandstone, igneous rock and lignite.	25-50
CLAY	Silty with some Sand and Gravel; dark olive gray; soft; moderately cohesive and plastic; (TILL).	50-62
CLAY	Silty, with trace very fine Sand; dark olive gray to dark gray; very soft; cohesive and slightly plastic; with scattered light olive gray Silty laminae.	62-92
SAND & GRAVEL	Coarse SAND to medium GRAVEL; poor sample return.	92-93
CLAY	Silty, Sandy (very fine to very coarse Sand) with some Gravel (fine to medium); olive gray; soft; moderately cohesive and plastic; (TILL).	93-102
CLAY	Very Silty; dark olive gray; very soft; cohesive; slighlty to moderately plastic.	102-120
CLAY	Silty, sith some Sand (very fine to fine); dark olive gray; very soft; cohesive and plastic; smooth; lignitic; interbedded with layers of Clayey Silt; increased Sand 244-249 ft.	120-249
CLAY	Silty, Sandy with some Gravel (fine Sand to coarse Gravel); dark brownish gray; cohesive and plastic; slightly stiff; gritty; (TILL).	249-268
SILTSTONE	Clayey; gray to brownish gray; very firm; poorly indurated; friable; interbedded with scattered thin layers of hard Siltstone and very fine Sandstone (greenish gray; well sorted; firm; poorly indurated; friable).	268-278
CLAYSTONE	Silty; gray to greenish gray; firm; poorly indurated; friable; interbedded with scattered greenish gray Siltstone and very fine Sandstone.	278-300

147-080-15CAB

NDSWC

Date Completed:	7/11/77	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	110		
		Source:	Water Supply Inc.

Lithologic Log

147-080-15CAB continued

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
CLAY	Silty; (TILL); yellowish brown to 16 ft; olive gray below 16 ft.	1-24
SAND	Fine to coarse, with about 15% Gravel.	24-32
CLAY	Silty; olive gray.	32-68
SAND	Fine to medium; 83-97 ft: with some lignite and Sandy Clay.	68-97
CLAY	Silty; olive gray.	97-110

147-080-15DAC

NDSWC

Date Completed:	12/3/79	Purpose:	Irrigation Well
L.S. Elevation (ft):	1840	Well Type:	8" Steel
Depth Drilled (ft):	98	Aquifer:	Lake Nettie
Screened Interval (ft):	76-98	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
SAND	Fine to medium.	1-5
CLAY	Silty; (TILL); yellowish brown to 16 ft; olive gray below 16 ft.	5-32
SAND & GRAVEL	Fine SAND to coarse GRAVEL.	32-38
CLAY	Silty; olive gray; (TILL).	38-40
SAND	Fine to medium.	40-42
CLAY	Silty; olive gray.	42-79
SAND	Fine to medium.	79-98

147-080-15DBD

NDSWC

Date Completed:	12/6/79	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	110	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
CLAY	Silty; yellowish brown (TILL).	1-4
SAND	Fine to coarse.	4-6
CLAY	Silty; (TILL); yellowish brown to 18 ft; olive gray below 18 ft.	6-34
SAND	Fine to coarse.	34-36
CLAY	Silty; olive gray; (TILL).	36-41
CLAY	Silty; olive gray.	41-82
SAND	Fine to medium; with Clay layers.	82-94
SAND	Fine to medium.	94-106
CLAY	Silty; medium gray.	106-110

147-080-15DCA

NDSWC

Date Completed:	8/29/79	Purpose:	Test Hole
L.S. Elevation (ft):	1840	Well Type:	
Depth Drilled (ft):	280		
		Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
SAND	Fine to coarse.	1-4
CLAY	Silty; (TILL); yellowish brown to 13 ft; olive gray below 13 ft.	4-24
SAND	Fine to medium.	24-32
CLAY	Silty; olive gray; (TILL).	32-34
CLAY	Silty; olive gray.	34-73
SAND	Fine to medium; with a little lignite.	73-96
CLAY	Silty; olive gray.	96-235
SAND	Fine to medium; with a little lignite.	235-280

147-080-16BCA

NDSWC 11522

Date Completed:	11/8/84	Purpose:	Observation Well
L.S. Elevation (ft):	1901.4	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Lake Nettie
Screened Interval (ft):	115-120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-2
CLAY	Silty, Sandy, Pebbly; yellowish orange, oxidized; soft, crumbly; (TILL).	2-14
CLAY	SHALE, dark yellowish orange, oxidized; waxy; cuts in ribbons; (ice-thrust bedrock block).	14-17
CLAY	SHALE, greenish gray; waxy; cuts in ribbons; 29-35 ft: slightly argillaceous SILTSTONE layer; (ice-thrust bedrock block).	17-36
SAND	Fine to very coarse (mostly fine to medium); subangular to rounded; with interbedded detrital lignite.	36-51
SAND	Very coarse to fine pebble size; angular to subrounded; with abundant detrital lignite.	51-75
SILTSTONE	To very fine SANDSTONE; greenish gray; very argillaceous; slightly carbonaceous; (ice-thrust bedrock block).	75-82
SAND & GRAVEL	Very coarse SAND to coarse GRAVEL (mostly very coarse Sand to fine Gravel); angular to rounded (predominantly subrounded to rounded); mostly quartz and carbonates with granitics and shale.	82-121
CLAYSTONE	Interbedded lignite and bentonitic Claystone.	121-160

147-080-16CBC

NDSWC

Date Completed:	6/14/78	Purpose:	Observation Well
L.S. Elevation (ft):	1859.3	Well Type:	1.5" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	26.8-46.8	Source:	USBR

Lithologic Log

147-080-16CBC continued

Unit	Description	Depth (ft)
TOPSOIL	dark brown, dry, hard, lean clay with grass roots. Active HCL reaction. (CL)	0-1
CLAY(Glacial Till)	gray brown with scattered heavy oxide stains along joints to 5', reddish brown below; hard and dry to 5', moist and very firm 5' to 22.6 ft; heavy white calcareous salts along joints to 5'. Estimate 60% medium plastic fines, 35% coarse to mostly fine subrounded sand and 5% mostly fine hard subrounded cherty gravel to 1-inch. Violent HCL reaction to 5', active below. (CL)	1-22.6
SILTY SAND	light reddish brown to 25 ft, gray brown below; dry; very firm but recovered loose; very thin to thin bedded; gravelly with heavy lignitic stains 24.5-25.5'. Interbedded SANDY SILT AND SILTY SAND 22.6' to 23.0' - yellowish tan, dry, laminated bedding, fine uniform sand. Estimate 80% coarse to mostly fine subrounded hard sand and 20% nonplastic fines. Trace of gravel to 24.5-25.5 ft. Active HCL reaction. (SM) (Glaciofluvial)	22.6-26.2
POORLY GRADED SAND	tan, dry, hard but recovered loose, thick bedded except 5% very thin silty and lignitic beds 27.3-28.3'. Estimate 90% fine uniform sand and 10% nonplastic fines. Active HCL reaction. (SP-SM) (Glaciofluvial)	26.2-29.6
SANDY GRAVEL	light red brown (intensely weathered), dry, hard but recovered loose, gradational contact at top and sharp at bottom, calcareous (white) rich matrix. Estimate 55% coarse to fine subrounded soft sandstone and hard quartzite gravel to 1.5-inch (max. rec.), 35% coarse to fine subrounded to subangular hard to soft sand and 10% nonplastic calcareous fines. Very active HCL reaction. (GP-GM) (Glaciofluvial)	29.6-30.4
POORLY GRADED SAND	gray, dry to 38.5', moist 38.5-39.0', hard but recovered loose, very thin to thin bedded with 10% lignite detritus interbeds to 1-inch scattered throughout. Calcareous rich zones 32.4-32.8', 34-35' and 38.5-38.9'. Estimate 90% fine uniform sand (except coarse to medium with fine gravel 34.2-34.7') and 10% nonplastic fines. Active to very active HCL reaction. (SP-SM) (Glaciofluvial)	30.4-39
SILTY SAND	light red brown with a few oxide stains along bedding to 47', light gray 47-48.5'; wet; firm to hard in place but recovered loose. 10% 1/2 to 1-inch silt, clay and lignite detritus interbeds 39.9' to 43.0'. Gravelly 40-46.5', mostly 44.9-46' (poor recovery 44.9-46'). Thin bedded becoming more silty 47-48.5'. Estimate (excluding silt and clay beds) 85% mostly fine subrounded to subangular sand and 15% nonplastic fines. Active decreasing downward to moderate HCL reaction. (SM) (Glaciofluvial)	39-48.5
CLAY (Glacial Till)	(reworked?) gray, wet, firm. Estimate 65% medium plastic fines. 35% coarse, to mostly fine subangular sand. Trace of gravel. Slight HCL reaction. Looks like well mixed till and outwash. (CL)	48.5-50

147-080-17BCB

NDSWC 2729

Date Completed:	8/2/69	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, brownish black.	0-1
SAND & GRAVEL	Coarse SAND to medium GRAVEL; subangular to rounded.	1-28
CLAY	Sandy, Silty, Gravelly; olive gray; calcareous; very Sandy 38-52 ft; scattered cobbles, boulders, and lignite fragments; (TILL).	28-68
CLAY	Very Silty; olive gray; boulders from 84-86 ft.	68-105
SANDSTONE	Fine to medium; blueish gray; non-calcareous; interbedded with SHALE (dusky brown; indurated; non-calcareous).	105-120

147-080-17CAD

NDSWC

Date Completed:	8/28/78	Purpose:	Observation Well
L.S. Elevation (ft):	1854.1	Well Type:	1.5" PVC
Depth Drilled (ft):	68	Aquifer:	Turtle Lake
Screened Interval (ft):	42-52	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy with trace Gravel; brown oxidized; (TILL).	0-21

147-080-17CAD cont

SAND	Fine; with little Silt; well sorted; with thin Silt interbeds; (Glaciofluvial).	21-23
SAND	Fine to coarse; Silty (35% fines); yellowish tan; with lignitic interbeds; dry.	23-34
SAND	As above, 21-23 ft.	34-39
SAND & GRAVEL	With little Silt; poorly sorted; oxide stains; moist to wet at 40 ft.	39-40
SAND	With some Silt and trace Gravel; light brown; wet.	40-47
CLAY	Silty, Sandy, Gravelly; gray; firm to hard; (TILL).	47-49
SAND	Mostly fine; with little Silt and trace Gravel; gray; uniform; (Glaciofluvial).	49-68

147-080-17CBA

NDSWC

Date Completed:	4/7/72	Purpose:	Observation Well
L.S. Elevation (ft):	1862.4	Well Type:	1.25" PVC
Depth Drilled (ft):	45	Aquifer:	Turtle Lake
Screened Interval (ft):	45-45	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2.5
CLAY	(glacial till), brown with some sand and gravel	2.5-5
SAND	brown with some silty and gravelly zones throughout and scattered lignite particles from 18-30 ft	5-38
SAND	silty, brown with clayey zones	38-45

147-080-17CCC

NDSWC

Date Completed:	6/9/78	Purpose:	Observation Well
L.S. Elevation (ft):	1829	Well Type:	1.5" PVC
Depth Drilled (ft):	30	Aquifer:	Turtle Lake
Screened Interval (ft):	19.4-29.4	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	medium brown, dry, loose, numerous grass roots, gravelly, silty sand. Moderate HCl reaction (SM) (Alluvial)	0-0.9
GRAVELLY SAND	medium brown, dry, loose, a few grass roots. Estimate 40% coarse to fine hard subrounded gravel to 1.5-inch (recovered), 40% coarse to mostly fine hard subrounded sand and 20% low plasticity fines. Active HCl reaction. (SM) (Glaciofluvial)	0.9-1.9
CLAY (Glacial Till)	gray brown with scattered red oxide stains to 15', dark gray 15-18.3', very firm to hard and damp to 9.5', very firm to firm and moist to wet 9.5-18.3', moderate white calcareous salts along joints to 4.5'. Scattered lignite fragments to 1/4. Estimate 50% increasing to 60% (below 10'), medium to high plastic fines, 45% decreasing to 30%. (below 10') coarse to fine subrounded to subangular sand and 5% coarse to fine hard subrounded gravel to 1.25-inch (recovered). Very active to active HCl reaction to 9.5', moderate below. (CL).	1.9-18.3
POORLY GRADED SAND	Gray, saturated, recovered loose, thin bedded with 3/4-inch lignite detritus interbeds at 20.2' and 25.3'. Lignite rich sand 23' to 24'. Clean Sand (SP) 21.4-23.0' and 25.4-26.4'. Estimate 90% mostly fine uniform sand with trace of coarse and 10% nonplastic fines. Lower 0.7' grading into silt. Active HCl reaction. (SP-SM) (Glaciofluvial).	18.3-27.1
SILTY SAND-SANDY SILT	gray sandy silt and gray brown silty sand color banded, saturated, recovered soft. Laminated horizontal bedding with 20% sandy silt interbeds increasing downward. Estimate 60% very fine uniform sand and 40% none to low plasticity fines. Active to spotty very active (on silt) HCl reaction (SM) (Lacustrine).	27.1-30

147-080-17CDA

NDSWC

Date Completed:	9/1/78	Purpose:	Test Hole
L.S. Elevation (ft):	1857	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	medium brown, dry, soft, grass roots. Clayey sand (SC). Active HCl reaction.	0-0.4
SANDY CLAY (Glacial Till)	light gray brown, intensely weathered with heavy calcareous salts, dry, blocky, hard to very hard. Estimate 50% medium plastic fines, 45% coarse to mostly fine, hard sand and 5% coarse to fine hard subrounded sandstone gravel to 2.5-inch (cored recovery). Violent HCl reaction. (SC-CL)	0.4-6
CLAY Glacial Till)	dark gray brown with scattered red oxide streaks and particles, moist, very firm to hard. Cobble 7.0-7.5'. Rocky zone with poor recovery and water loss 7.5-15'. Pseudo bedded 25-33.3'. Estimate 60% medium plastic fines, 35% coarse to fine subangular sand and 5% mostly fine gravel to 2-inch (recovered). Scattered lignite fragments to 1/2-inch throughout. Active HCl reaction. (CL)	6-33.3
POORLY GRADED SAND	tan with scattered red oxide particles to 41'; dark red brown (heavy oxide) 41-46.3', dry to 41', damp(?) 41-42', wet below 42', firm to very firm but recovered loose to 45' (no recovery 41-42'), soft 45-46.3'. Lignite stained interbeds to 0.1' from 42.0' to 46.3'. Clean Sand (SP) from 37.1' to 38.5'. Estimate 90% coarse to mostly medium and fine hard subangular sand (except fine uniform sand 38.5'-45.0') and 10% nonplastic fines. Trace (up to 5%) of fine hard gravel to 1/2-inch from 33.3' to 37.1' and 45.0' to 46.3'. Moderate to active HCl reaction. (SP-SM) (Glaciofluvial).	33.3-46.3
SILTY SAND	light yellowish tan, wet, firm in place but recovered loose, thin horizontal bedding. Estimate 80% fine uniform sand and 20% nonplastic fines. Slight to moderate HCl reaction. (SM) (Glaciofluvial).	46.3-48.7
SILTY GRAVEL	light reddish brown, wet, firm. Estimate 50% mostly fine subrounded hard gravel to 1.5-inch, 35% well graded hard subrounded sand and 15% low plasticity fines. Very active HCl reaction. (GM-SM) (Glaciofluvial).	48.7-49.7
SILTY SAND AND SILT	(Interbedded); gray, wet, soft to firm, laminated to thinly bedded. Clay 50.7-51.2' - gray medium plastic. Silty sand with 40% 1/8-inch to 1-inch silt interbeds. Estimate 55% fine uniform sand and 40% none plasticity fines (lignite stained). Active HCl reaction. (SM-ML) (Glaciofluvial).	49.7-54.1
CLAY (Glacial Till)	gray, wet, very firm to hard. Estimate 60% medium plastic fines, 35% coarse to fine subangular sand and 5% fine gravel to 1/2-inch. Moderate HCl reaction. Scattered lignite fragments. (CL).	54.1-60

147-080-17CDC

NDSWC

Date Completed:	6/2/78	Purpose:	Observation Well
L.S. Elevation (ft):	1851.2	Well Type:	1.5" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	39.2-49.2	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft, sandy clay with small grass roots. Moderate HCl reaction. (CL).	0-0.5
CLAY (Glacial Till)	gray brown with scattered heavy red oxide stained particles and seams; dry and hard to 10.5', moist and firm below; pseudo bedded throughout spaced 0.5 to 1-inch, mostly horizontal; scattered white calcareous and gypsum seams and spots to 10.5'; scattered lignite fragments throughout. Estimate 60% medium plasticity fines, 30%, coarse to mostly fine subangular hard sand and 10% fine hard subrounded mostly chert and limestone gravel to 1-inch. Moderate to active HCl reaction. (CL).	0.5-34.2
POORLY GRADED SAND	dark reddish brown to 36.7', gray brown with light reddish brown streaks to 39', gray brown below; wet; firm to hard but recovered loose; thin to medium horizontally bedded; lignite fragments scattered throughout. No recovery 35.0-35.5' and 39.5-40.2'. 0.2' to 0.3' silty sand (SP-SM) interbeds 36.7' to 36.9' and 38.2' to 38.5'. Estimate 95% coarse to mostly medium and some fine subrounded sand and 5% low to nonplasticity fines. Trace of fine gravel to 3/8-inch mostly 38.5' to 39.0'. Moderate to active HCl reaction (SP) (Glaciofluvial).	34.2-44.7
SILTY SAND	(no recovery 45.0-45.8') gray, wet, soft, very thin horizontal lignite stained interbeds. Estimate 85% fine uniform sand and 15% nonplastic fines. Active HCl reaction. (SM) (Glaciofluvial).	44.7-46.9
CLAY	gray, wet, very firm, very thin horizontal bedding, 5% 1/16 to 1/2-inch silt interbeds mostly in lower 1', scattered lignite fragments to 1/4-inch. 90% medium to high plasticity fines and 10% fine sand. Moderate to active HCl reaction. (CL) (Lacustrine?).	46.9-49.3
SILT	gray, wet, firm, laminated horizontal bedding, 10% paper thin to 1/8-inch clay interbeds. Estimate 85% low plasticity fines and 15% fine sand. Active (very active on some seams) HCl reaction. (ML) (Lacustrine-varved).	49.3-50

147-080-17DBD

NDSWC

Date Completed:	6/8/78	Purpose:	Observation Well
L.S. Elevation (ft):	1879.3	Well Type:	1.5" PVC
Depth Drilled (ft):	85	Aquifer:	Lake Nettie
Screened Interval (ft):	63.7-83.7	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	Mostly fine; Silty, with some Gravel; brown; dry.	0-4
CLAY	Silty, Sandy with little Gravel; gray below 5 ft; firm; lignitic; (TILL).	4-32
SAND	Fine to coarse; Silty with trace Gravel; grayish brown; dry.	32-33
SAND	Fine to coarse; with little Silt and trace Gravel; tan; dry.	33-40
SAND & GRAVEL	With some Silt; reddish brown; dry.	40-44
CLAY	Silty, with trace very fine Sand; banded reddish brown and gray to 55 ft, gray below 55 ft; laminated to thin horizontal beding; wet at 65 ft; (LACUSTRINE).	44-77
SAND	Silty; Clayey; grayish brown; with thin horizontal bedding; (Glaciofluvial).	77-85

147-080-18BBB

NDSWC

Date Completed:	4/6/72	Purpose:	Observation Well
L.S. Elevation (ft):	1849.1	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Till
Screened Interval (ft):	30-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty	0-1
GRAVEL		1-5
SAND	brown	5-10
SAND	brown, fine with occasional lignite fragments	10-24
CLAY	gray, soft (TILL)	24-30

147-080-18CCC

NDSWC

Date Completed:	4/7/72	Purpose:	Observation Well
L.S. Elevation (ft):	1839.6	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	20-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	brown, gravelly, (TILL)	2-5
CLAY	brown becoming soft at 10 ft, (TILL)	5-17
SAND	silty, gray with traces of clay	17-18
CLAY	brown, soft, (TILL)	18-20

147-080-18DAD2

NDSWC

Date Completed:	2/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1844.2	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, dry.	0-0.5
CLAYEY SAND & GRAVEL	brown, dry to moist, Alluvium, (SC-GC).	0.5-8.5
CLAY (Glacial Till)	brown, moist, sandy, silty, scattered gravel and lignite fragments throughout, (CL).	8.5-17
CLAY (Glacial Till)	gray, moist, firm, sandy, silty, scattered gravel and lignite fragments throughout.	17-50

147-080-18DCC

NDSWC

Date Completed:	9/15/72	Purpose:	Observation Well
L.S. Elevation (ft):	1866.7	Well Type:	1.25" PVC
Depth Drilled (ft):	45	Aquifer:	Turtle Lake
Screened Interval (ft):	45-45	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Brown.	0-25
CLAY	Gray, soft, plastic,lignitic, (TILL).	25-36
SAND	Brown and gray, lignitic.	36-45

147-080-19ACC

NDSWC

Date Completed:	3/29/55	Purpose:	Test Hole
L.S. Elevation (ft):	1843	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND & GRAVEL	trace of silt and clay, poorly graded, cohesionless	1-20
SILT	sandy, gray to tan	20-30

147-080-19ADD1

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1836.4	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
Clay (glacial till)	silty, sandy, brown	0-5
Clay (glacial till)	sandy, stiff, brown to gray; scattered gravel	5-21.7
Sand	fine, loose, gray; trace of silt	21.7-40

147-080-19ADD2

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1828	Well Type:	
Depth Drilled (ft):	70	Source:	C.A. Simpson and Son

Lithologic Log

Unit	Description	Depth (ft)
Topsoil		0-1.5
Clay	gravelly, yellow	1.5-3
Clay	sandy, yellow	3-14
Clay	gray	14-29
Clay	very sandy, gray	29-44
Clay	sandy, light-gray	44-70

147-080-19ADD3

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1835	Well Type:	
Depth Drilled (ft):	65		
		Source:	C.A. Simpson and Son

Lithologic Log

Unit	Description	Depth (ft)
Topsoil		0-1
Clay	light-gray	1-7
Clay	yellow; rocks	7-17
Clay	sandy, gray; rocks	17-27
Sand	clayey	27-36
Clay	gravelly, blue	36-40
Sand and gravel	clayey	40-42
Sand and gravel		42-48
Sand	lignitic, slightly clayey	48-54
Clay	very sandy, light-gray	54-65

147-080-19BCC

NDSWC 2723

Date Completed:	8/1/67	Purpose:	Observation Well
L.S. Elevation (ft):	1843	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Turtle Lake
Screened Interval (ft):	148-151	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; grayish black.	0-1
SAND	Coarse; subangular to subrounded; with fine gravel toward bottom of interval.	1-25
CLAY	Silty, gravelly; dark gray; lignitic; (TILL).	25-76
SAND	Fine to medium; subangular to subrounded.	76-88
CLAY	Silty; dark gray.	88-90
SAND	Fine to medium; subangular to subrounded.	90-105
SAND	Fine to very coarse (mostly coarse to very coarse); with some fine Gravel; subangular to subrounded.	105-154
CLAY	Silty; dark gray; laminated.	154-173
SANDSTONE	Fine to medium; blueish gray; non-calcareous.	173-180

147-080-19BCC2

NDSWC

Date Completed:	9/15/72	Purpose:	Observation Well
L.S. Elevation (ft):	1847.1	Well Type:	1.25" PVC
Depth Drilled (ft):	35	Aquifer:	Turtle Lake
Screened Interval (ft):	35-35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	silty, brown, fine, eolian	0-10
SAND	fine, brown, occasional lignite particles 10-20 ft, some small gravel 20-27 ft	10-27
CLAY	brown to 28 ft, gray below, moist, soft and plastic, with occasional lignite fragments below 28 ft, (TILL)	27-33
SAND	gray, fine	33-35

147-080-19CBB

NDSWC

Date Completed:	8/16/54	Purpose:	Test Hole
L.S. Elevation (ft):	1845.4	Well Type:	
Depth Drilled (ft):	36	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	brown, fine to medium, silty, cohesionless, fairly clean, small proportion of fine gravel, poorly graded, (SP).	1-30
SILT	gray, large proportion of fine sand, moderately compacted, (ML-SM).	30-36

147-080-19CBC

NDSWC

Date Completed:	7/22/81	Purpose:	Observation Well
L.S. Elevation (ft):	1840	Well Type:	1.25" PVC
Depth Drilled (ft):	101	Aquifer:	Turtle Lake
Screened Interval (ft):	84-87	Source:	C.A. Simpson and Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	Medium to coarse; yellow.	1-21
SAND	Coarse; blue.	21-24
SAND	Very fine; blue.	24-30
SAND	Coarse.	30-37
CLAY	Blue.	37-40
SAND	Fine.	40-57
CLAY	Blue; with layers of fine Sand 63-76 ft.	57-81
SAND	Very coarse.	81-90
SANDSTONE		90-94
CLAY	Or SHALE; blue.	94-101

147-080-19DAA

NDSWC 2722

Date Completed:	7/31/67	Purpose:	Observation Well
L.S. Elevation (ft):	1840	Well Type:	1.25" ABS
Depth Drilled (ft):	100	Aquifer:	Turtle Lake
Screened Interval (ft):	57-60	Source:	SWC

147-080-19DAA

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Silty; grayish black.	0-1
CLAY	Silty, Sandy; dusky yeloow to olive gray; (TILL).	1-21
SAND & GRAVEL	Coarse SAND and fine GRAVEL, with some Clay; angular to subrounded.	21-34
CLAY	Silty, Sandy, Pebbly; dark gray; (TILL).	34-40
SAND	Coarse to very coarse, Gravelly.	40-64
SILTSTONE	Light gray; calcareous.	64-78
SANDSTONE	Fine to medium; blueish gray; calcareous.	78-100

147-080-19DBBD

NDSWC

Date Completed:	8/16/54	Purpose:	Test Hole
L.S. Elevation (ft):	1841.6	Well Type:	
Depth Drilled (ft):	25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
CLAY (Glacial Till)	silty, sandy, gray-brown, oxidized, dry, gypsiferous, (CL)	0.5-5
CLAY (Glacial Till)	silty, abundant pebbles and coal particles, gray-brown; stiff, moderately plastic, iron oxide stained (CL)	5-25

147-080-19DDA1

NDSWC

Date Completed:	12/9/68	Purpose:	Test Hole
L.S. Elevation (ft):	1847.3	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, dry, sandy, silty, organic material, parent material, glacial till, (OL&CL)	0-1
CLAY	light gray, dry, hard, sandy, silty, gravel and lignite fragments; white mottling throughout, leached, oxidized, active acid reaction, (CL), (TILL)	1-4
CLAY	brown to 19 ft; gray below, moist, sandy, silty, scattered gravel and lignite fragments, oxidized to 19 ft; sandier and gravelier below 34 ft; slight to spotty active acid reaction, (CL), (TILL)	4-39
CLAY	sandy, gray, moist to wet, estimate 50-60% fine to coarse sand, silty; lignite concentrations and fragments, few scattered gravel, active acid reaction, (SC), (TILL)	39-44
SAND	silty, gray, wet, estimate 65-70% uniform fine sand, 30-35% non to slightly plastic fines; occasional lignite fragment and coarse sand grain, glaciofluvial, (SM)	44-50

147-080-19DDA2

NDSWC

Date Completed:	12/11/68	Purpose:	Test Hole
L.S. Elevation (ft):	1846.1	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist, sandy.	0-1
SAND & GRAVEL	brown, moist to wet, few boulders, Glaciofluvial (SP-GP)	1-7

147-080-19DDA2 continued

CLAY (Glacial Till)	brown, moist, silty, sandy, scattered gravel and lignite fragments, (CL).	7-17.5
CLAY (Glacial Till)	gray, moist, sandy, silty, scattered gravel and lignite fragments, (CL).	17.5-37
SAND	gray, wet, gravelly zones, layers of lignite slack.	37-50

147-080-20AAA

NDSWC

Date Completed:	5/25/78	Purpose:	Observation Well
L.S. Elevation (ft):	1866.9	Well Type:	1.5" PVC
Depth Drilled (ft):	78	Aquifer:	Lake Nettie
Screened Interval (ft):	68.3-78.3	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Clayey; dark brown.	0-2
SAND	Fine to coarse (mostly fine) and SILT; brown; with gray CLAY interbeds to 0.5 ft thick.	2-10
CLAY	And SILT; gray; interbedded with Silty fine Sand.	10-49
CLAY	Silty, Sandy, with trace fine Gravel; gray; (TILL).	49-68
SAND	Medium; grayish brown; well sorted; with little Silt; wet.	68-77
SAND	Silty; fine; gray; wet.	77-78

147-080-20AAA2

NDSWC

Date Completed:	5/25/78	Purpose:	Observation Well
L.S. Elevation (ft):	1866.9	Well Type:	1.5" PVC
Depth Drilled (ft):	45	Aquifer:	Lake Nettie
Screened Interval (ft):	33.7-43.7	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	(SC)	0-1.8
SILTY SAND	and CLAY, interbedded (SC-CL)	1.8-10
CLAY	and SANDY SILT, interbedded (CL)	10-45

147-080-20ACCB

NDSWC

Date Completed:	11/4/54	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	114	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY (Glacial Till)	Silty, Sandy, Pebbly; light brown, oxidized. (CL)	0-25.3
SAND	Fine to medium; Silty, with trace fine Gravel; brown; poorly graded. (SP)	25.3-36.5
SAND	Fine to medium, clean; cohesionless, fairly well graded. (SP)	36.5-42
CLAY	Silty; gray; stiff; moderately plastic. (CL)	42-49.6
CLAY	Gray; stiff; very plastic; with scattered thin Silt beds; Silty 75-82.6 ft. (CH)	49.6-82.6
CLAY (Glacial Till)	Silty, Sandy, Pebbly; stiff; slightly plastic. (CL)	82.6-101.4
SAND	Fine; very Silty, Clayey, gray, (SC)	101-104.5
SAND & GRAVEL	Medium SAND and fine to medium GRAVEL; Silty; gray. (SP-GP)	104.5-107
SAND	Fine to medium; Clayey; gravelly Clay and lignite slake 109.6-110.5 ft. (SC-GC)	107-110.5
CLAY (SHALE)	Silt, gray, hard (Fort Union Group).	110-114

147-080-20ADA

NDSWC

Date Completed:	5/23/78	Purpose:	Observation Well
L.S. Elevation (ft):	1823.5	Well Type:	1.5" PVC
Depth Drilled (ft):	20	Aquifer:	Lake Nettie
Screened Interval (ft):	8.9-18.9	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, damp, firm, grass roots, clayey sand, (SC)	0-0.5
CLAY	medium reddish brown (oxidized), moist, firm; estimate 55% medium plastic fines, 40% coarse to fine subrounded to subangular sand and 5% fine hard subrounded gravel to 3/4-inch, active HCl reaction, (SC-CL), (TILL)	0.5-1.9
SAND	poorly graded, light reddish brown, moist, recovered loose; estimate 90% coarse to mostly fine subangular sand, 5% nonplastic fines and 5% fine subangular to subrounded gravel to 3/4-inch; trace of lignite; active HCl reaction, (SP), (glaciofluvial)	1.9-3.1
SAND	clayey, black (organic, roots), moist, soft, laminated horizontal bedding, 3.1-3.4 ft till ball; estimate 70% fine sand and 30% slight to low plasticity fines; no HCl reaction at top to active reaction at 4.6 ft; (SC), (slough or lacustrine)	3.1-4.9
GRAVEL	clayey, tan to light pink, wet, soft to firm; estimate 55% fine subrounded hard gravel to 3/4-inch, 20% coarse to fine subrounded hard sand, and 25% medium plasticity, calcareous fines; violent HCl reaction on fines, (GC), (glaciofluvial)	4.9-5.5
SAND & SILT	interbedded silty sand and silt, light reddish brown, (oxidized) and brown color banded, soft to firm (compressible), wet, laminated horizontal bedding with sand content decreasing downward; composed of 50% 1/8-inch to 0.1 ft silty sand, 40% 1/16- to 1/2-inch silt and 10% 1/16- to 1/2-inch clay in alternating interbeds; several 1/8- to 1/2-inch white calcareous salt interbeds 5.5-6.7 ft; estimate 60% very fine sand and 40% low plasticity fines, scattered lignite stained interbeds throughout, active to violent (on white beds) HCl reaction, (SM), (lacustrine)	5.5-16.5
SILT & CLAY	interbedded sandy silt and clay; light reddish brown silt and gray clay color banded, wet, soft (compressible), laminated horizontal bedding with 50% sandy silt and 50% clay; clay interbeds increasing downward; estimate 70% low to medium plasticity fines and 30% very fine sand, scattered lignite stained interbeds, active HCl reaction, (CL-ML), (lacustrine)	16.5-19.6
CLAY	gray, wet, firm to very firm; estimate 80% medium plasticity fines, 20% coarse to mostly fine sand and trace of fine gravel to 5/8-inch, moderate HCl reaction, (CL), (TILL)	19.6-20

147-080-20BAD1

NDSWC

Date Completed:	5/26/78	Purpose:	Observation Well
L.S. Elevation (ft):	1858.2	Well Type:	1.5" PVC
Depth Drilled (ft):	72	Aquifer:	Lake Nettie
Screened Interval (ft):	33.3-43.3	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, damp, very firm sandy clay with grass roots. Active HCl reaction. (CL).	0-1.2
CLAY (Glacial Till)	gray brown with oxide stains to 24', dry and hard to 9.5', moist and very firm to hard 9.5' to 26.7'. Several white calcareous salt stringers and coatings to 9.5'. Estimate 60% medium plasticity fines, 35% coarse to mostly fine subangular sand and 5% subrounded to subangular mostly fine hard chert, limestone and quartzite gravel to 1.5-inch. Violent HCl reaction to 9.5' decreasing downward to active reaction. (CL). Boulder encountered 18' to 19'.	1.2-26.7
POORLY GRADED SAND	tan, dry, firm but recovered loose, thin bedded. Estimate 85% coarse to mostly fine subangular sand (except fine uniform 29-30.2'), 10% nonplastic fines and 5% fine subrounded hard gravel to 1/2-inch mostly 28' to 29'. Active HCl reaction. (SP-SM) (Glaciofluvial)	26.7-30.2
SILTY SAND	light brown with heavy oxide stains 32.4-33.2' and lower 0.7', dry, very firm but recovered loose. Lignite detritus interbed 32.2 to 32.3'. CLEAN SAND heavy oxide stained (SP-SM) 32.4-33.2'. Calcareous rich 34-35'. Estimate 85% coarse to mostly fine subangular sand and 15% nonplastic fines. Active to very active (34' to 35') HCl reaction. (SM) (Glaciofluvial).	30.2-35.7
POORLY GRADED SAND	tan, dry, firm but recovered loose, thin bedded. Estimate 90% fine uniform sand and 1O% nonplastic fines. Active HCl reaction. (SP-SM) (Glaciofluvial).	35.7-37.6
SILTY SAND	tan, dry, very firm but recovered loose, thin bedded. Calcareous to 38.4'. CLEAN SAND (SP-SM) 40' to 40.6'. Lignite stained 40.6-41.2' Estimate 85% mostly fine uniform sand and 15% nonplastic fines. Moderate to very active HCl reaction. (SM) (Glaciofluvial).	37.6-41.8

147-080-20BAD1 continued

SANDY SILT	(poor recovery) reddish brown, dry, very firm, laminated horizontal bedding with moderate oxide stained beds. Estimate 65% low plasticity fines and 35% very fine sand. Very active to violent HCl reaction. (ML) (Lacustrine).	41.8-44.2
LEAN TO FAT CLAY	dark gray moist to wet, very firm, very thin to thin bedded. 5% 1/8 to 1-inch silt interbeds throughout. Scattered 1/2-inch sandy lenses 49.1-50.4'. Estimate 85% medium to high plasticity fines and 15% very fine sand. Moderate (to very active on silt) HCl reaction. (CL-CH) (Lacustrine).	44.2-68.1
SILTY SAND and SANDY SILT	(interbedded), gray brown, wet, very firm, laminated horizontal bedding. Composed of 70% silty sand and 30% sandy silt interbeds. Estimate 60% fine uniform sand and 40% nonplastic fines. Active HCl reaction. (SM) (Glaciofluvial).	68.1-71.3
LEAN to FAT CLAY	similar to 44.2 to 68.1' interval.	71.3-72

147-080-20BAD2

NDSWC

Date Completed:	6/12/78	Purpose:	Observation Well
L.S. Elevation (ft):	1858	Well Type:	1.5" PVC
Depth Drilled (ft):	75	Aquifer:	Lake Nettie
Screened Interval (ft):	53.4-73.4	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	(CL)	0-1.2
CLAY	TILL (CL)	1.2-26.7
SAND	poorly graded (SP-SM)	26.7-30.2
SILTY SAND	(SM)	30.2-35.7
SAND	poorly graded (SP-SM)	35.7-37.6
SILTY SAND	(SM)	37.6-41.8
SANDY SILT	(ML)	41.8-44.2
CLAY	lean to fat Clay (CL-CH)	44.2-68.1
SILT SAND	and SANDY SILT, interbedded (SM)	68.1-71.3
CLAY	lean to fat Clay (CL-CH)	71.3-75

147-080-20BBA

NDSWC

Date Completed:	6/1/78	Purpose:	Observation Well
L.S. Elevation (ft):	1841.7	Well Type:	1.5" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	29.4-39.4	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft sandy clay with grass roots, active HCl reaction, (CL)	0-0.6
CLAY	gray brown with scattered red oxide stained pebbles and lenses; damp to 5.5 ft, moist below; hard to 5.5 ft; very firm below; scattered white calcareous and gypsum seams; scattered pseudo bedding 8.5 ft to bottom dipping 15-55 degrees, parallel to joints from 5.7-9.5 ft; spaced 0.6-1.1 ft; estimate 60% medium plasticity fines, 30% coarse to mostly fine subangular to subrounded sand and 10% subrounded hard chert and limestone gravel to 3/4-inch; moderate to active HCl reaction, (CL), (TILL)	0.6-25.5
SAND	silty, gray mottled with brown, wet to saturated, hard but recovered soft, laminated to thin horizontal bedding, thin lignite slack and clayey interbeds; estimate 80% medium to fine sand and 20% low plasticity fines, moderate HCl reaction, (SM), (glaciofluvial)	25.5-26.9
SAND	poorly graded, reddish brown (oxide stained) except gray 28-29.5 ft, wet, hard but recovered loose, massive lignitic 30-30.8 ft; estimate 90% medium to fine (except fine uniform 28-29.5 ft) sand and 10% nonplastic fines; active HCl reaction, (SP-SM), (glaciofluvial)	26.9-30.8
SAND	silty, gray, wet, hard but recovered soft, laminated to thin horizontal bedding, 15% interbedded silt layers to 1/2-inch; estimate 80% fine uniform sand and 20% nonplastic fines mostly in lenses, moderate HCl reaction, (SM), (glaciofluvial)	30.8-33.4

147-080-20BBA continued

SAND	poorly graded, gray, wet, hard but recovered loose, massive to faint thin horizontal bedding; (34-35.6? ft clean sand (SP) (no recovery 34.9-35.6 ft) coarse to mostly medium and fine sand with 5% gravel to 3/8-inch); estimate 90% fine uniform sand and 10% nonplastic fines, moderate to weak HCl reaction, (SP-SM), (glaciofluvial)	33.4-37.6
SAND	silty, gray with black lignite slack bands, wet, firm but recovered soft, laminated to very thin 0-3 degrees dipping beds; 15% lignite slack and silt interbeds in lower .7 ft; estimate 85% fine uniform sand and 15% low plasticity fines, weak to spotty moderate HCl reaction, (SM), (glaciofluvial)	37.6-39.5
SILT	medium gray, wet, firm, massive to faint thin bedded, estimate 90% low plasticity fines and 10% fine sand, moderate HCl reaction, (ML), (glaciofluvial or lacustrine)	39.5-40

147-080-20BBD

NDSWC

Date Completed:	6/18/75	Purpose:	Test Hole
L.S. Elevation (ft):	1830.9	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist to wet, soft, with scattered roots throughout	0-1.1
CLAY	(MARLACEOUS), gray to buff to 4 ft; buff to brown (some oxide stains) below, moist to wet, soft and compresses, scattered roots, numerous white calcareous seams, clayey sand zone 3.5-4 ft; estimate 75-80% moderate plasticity fines and 20-25% mostly fine sand with scattered subrounded to rounded fine gravel, moderate to violent HCl reaction, (CL)	1.1-7.5
CLAY	brown with oxide stains to 17.8 ft, gray below, moist to wet, soft and compresses, scattered white calcareous seams to 9 ft; clayey sand zone (SC) 16.6-17.3 ft; scattered lignite particles throughout, estimate 70% moderate to high plasticity fines and 30% coarse to mostly fine sand with occasional fine gravel; encountered silty sand (SM) 29-30 ft; moderate to spotty violent HCl reaction, (CL), (TILL)	7.5-30

147-080-20BCB

NDSWC

Date Completed:	6/23/75	Purpose:	Test Hole
L.S. Elevation (ft):	1856.3	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, moist, soft, scattered roots	0-0.5
CLAY	(MARLACEOUS), silty, brown, moist, soft to firm; slough salts present in small pockets; estimate 65% moderate plasticity fines, 25% coarse to mostly fine sand and 10% mostly fine gravel, strong HCl reaction (CL)	0.5-5
CLAY	silty, brown, (oxide stained with some color banding throughout) moist, firm, lignite fragments and scattered calcareous pockets; estimate 65% moderate to high plasticity fines, 25% coarse to fine sand and 10% mostly fine gravel to 1-inch; moderate HCl reaction, (CL), (TILL)	5-20
CLAY	gray and brown (some oxide stained pockets), moist, soft to firm, scattered lignite particles and calcareous seams; estimate 65% moderate to high plasticity fines, 20% coarse to fine sand and 15% coarse to mostly fine gravel to 2 inches; strong HCl reaction, (CL), (TILL)	20-25.3
CLAY	sandy, brown, moist, soft, scattered lignite particles; lignitic sandy clay 29.9-30 ft; estimate 55% moderate to high plasticity fines, 40% coarse to fine sand and 5% fine gravel to 1/2-inch; strong HCl reaction, (SC-CL), (TILL)	25.3-30

147-080-20BCC1

NDSWC

Date Completed:	8/16/54	Purpose:	Test Hole
L.S. Elevation (ft):	1836.4	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY (Glacial Till)	brown, silty, sandy, oxidized (CL).	0-5

147-080-20BCC1 continued

CLAY (Glacial Till)	gray to brown, stiff, sandy, trace of gravel, moderately plastic, includes clay rich zones, oxidized to 20 ft.	5-21.7
SAND	fine, trace of silt, gray, cohesionless, poorly graded (SP).	21.7-40

147-080-20CAA

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	61	Source:	C.A. Simpson & Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-3
CLAY	gray	3-8
CLAY	yellow, rocks.	8-16
CLAY	sandy, gray	16-29
SAND	clayey, hard, gray	29-37
SAND & GRAVEL	clayey	37-38
SAND	fine, clayey	38-44
CLAY	sandy, gray	44-48
CLAY or SHALE	gray	48-61

147-080-20CDD

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1858	Well Type:	
Depth Drilled (ft):	81	Source:	C.A. Simpson and Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black.	0-2.5
CLAY	Gray.	2.5-14
CLAY	With scattered rocks; yellow; (TILL).	14-28
CLAY	Very Sandy; gray.	28-52
CLAY	Pebbly; gray; lignitic; (TILL).	52-69
SHALE	Gray SHALE and gray Sandy SHALE.	69-81

147-080-20DBBC

NDSWC

Date Completed:	10/29/54	Purpose:	Test Hole
L.S. Elevation (ft):	1852	Well Type:	
Depth Drilled (ft):	85	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.8
CLAY (Till)	silty, sandy, pebbly, gray-brown, moist, stiff, moderately plastic when saturated, oxidized.	0.8-27
SAND	fine to coarse, trace of clay, gray-brown, fairly well graded, cohesionless (SP).	27-38
SAND	fine, fairly clean, gray, poorly graded, cohesionless (SP).	38-45
CLAY	gray, stiff, well compacted, moist, very plastic, with scattered thin silt streaks; very sandy 62.5 to 64 ft (CH).	45-64
CLAY (Till)	very sandy, pebbly, gray, moist, stiff, slightly plastic, (CL).	64-70
SAND	medium to coarse, clayey, gray-brown, fair gradation, (SP-SC).	70-75.5
SAND	fine, slightly clayey, gray, micaceous, well compacted, friable (bedrock, Fort Union Group).	75.5-85

147-080-20DDA1

NDSWC

Date Completed:	12/17/68	Purpose:	Test Hole
L.S. Elevation (ft):	1849.8	Well Type:	
Depth Drilled (ft):	65	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, damp, (OL&CL)	0-0.5
CLAY (Glacial Till)	brown, moist, firm, sandy, silty, scattered gravel and lignite fragments, (CL).	0.5-17
CLAY (Glacial Till)	gray, moist, firm, sandy, silty, scattered gravel and lignite fragments, (CL).	17-32
SAND	brown, becoming gray, wet, glaciofluvial (SP).	32-42.5
INORGANIC SILT	gray, wet, glaciofluvial (ML).	42.5-63
CLAY (Glacial Till)	gray, moist, sandy, silty, scattered gravel and lignite fragments, (CL).	63-65

147-080-20DDA3

NDSWC

Date Completed:	4/14/69	Purpose:	Test Hole
L.S. Elevation (ft):	1851.5	Well Type:	
Depth Drilled (ft):	60		
		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, firm, parent material glacial till, (CL&OL)	0-0.5
CLAY	brown, to 4 ft; gray brown 4-19 ft; gray 19-34 ft; moist, firm, oxidized to 19 ft; sandy, silty, scattered gravel and lignite fragments throughout, moderate to active acid reaction, (CL), (TILL)	0.5-34
SAND	silty, brown to 42 ft gray below, wet; estimate 80% predominantly medium sand, 20% nonplastic fines, trace of clay; fine sand 38.5-39 ft; very silty and limy 42-44 ft; moderate to active acid reaction, (glaciofluvial), (SM)	34-44
CLAY	gray, moist, firm, tough, moderate to high plasticity, silty in zones with silt laminations 56-60 ft; slight to spotty high acid reaction with silt zones having the active acid reaction, (glaciofluvial), (CL-CH)	44-60

147-080-21ADA

NDSWC

Date Completed:	4/26/78	Purpose:	Observation Well
L.S. Elevation (ft):	1846.8	Well Type:	1.5" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	24.2-34.2	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft silty sand with grass roots. No HCl reaction. (SM).	0-2.5
SILTY SAND	tan with red oxide stains to 3.5', dry, firm to hard but recovered loose, massive. Estimate 75% coarse to mostly medium and fine subangular sand, 15% low to nonplastic fines and 10% fine subrounded hard gravel to 3/4-inch. Active to violent HCl reaction. (SM) (Glaciofluvial).	2.5-8.5
CLAY (Glacial Till)	gray brown to 20', gray below; moist; very firm to hard; lignite fragments scattered throughout. Estimate 60% medium plasticity fines, 30% coarse to mostly fine subangular sand and 10% fine hard subrounded to subangular gravel to 3/4-inch, mostly above 16'. Active HCl reaction. (CL).	8.5-22.6
POORLY GRADED SAND	light reddish brown (oxide stained); dry to 29', moist below; firm to hard in place but recovered loose; no bedding. Estimate 75% coarse to mostly medium and fine hard subangular sand, 15% fine hard subangular to subrounded gravel to 3/4-inch and 10% low to nonplastic fines. Active HCl reaction. (SP-SM) (Glaciofluvial).	22.6-29.7
SILTY SAND	reddish brown, wet to saturated at 33', firm in place but recovered loose, massive to thin bedded in lower 2.4' with 1/2-inch lignite stained interbeds 31.1-32.3'. 0.1' hard calcareous cemented sandstone gravel at bottom. Estimate 85% medium to mostly fine subangular sand and 15% nonplastic fines. Moderate to active HCl reaction. (SM) (Glaciofluvial).	29.7-33.5

147-080-21ADA continued

SANDY SILT	(no recovery 35-36.8') gray brown with several red oxide stained interbeds, saturated, soft, laminated to very thin horizontally bedded with 40% 1/8-inch to 1-inch sandy interbeds . 15% 1/8-inch-1/2-inch clay interbeds 37.2-38.2'. Estimate 65% low plasticity fines and 35% fine sand. Active HCl reaction on silt and moderate on sand/clay. (ML) (Glaciofluvial).	33.5-38.2
CLAY	medium gray, wet, thin to laminated bedding dipping 5-20°. 10% 1/16 to 1/2-inch silt interbeds. Estimate 95% medium to high plasticity fines and 5% very fine sand (mostly in silt beds). Moderate to active (on silt) HCl reaction (CL-CH) (Lacustrine).	38.2-49.3
SILT	(no recovery 53-55') gray color banded; wet; firm except soft 52.7-55.5'; laminated to very thin bedding dipping 0-10°, except 50-56.2' dips 15-45° (cross-bedded). SANDY SILT 51.6' to 56.2'. Clay interbeds 50-50.4', 50.8-51.6' and 56.2-58.8'. Estimate 70% low plasticity fines and 30% very fine sand. Active HCl reaction. (ML) (Glaciofluvial/Lacustrine).	49.3-60

147-080-21ADC

NDSWC

Date Completed:	4/27/78	Purpose:	Observation Well
L.S. Elevation (ft):	1850.8	Well Type:	1.5" PVC
Depth Drilled (ft):	55	Aquifer:	Lake Nettie
Screened Interval (ft):	33.4-43.4	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft, fine clayey sand with small grass roots, weak HCl reaction (SC)	0-1.5
CLAY	gray brown, moist, very firm to hard, scattered bright red oxidized grains throughout, poor recovery due to compressibility and washing by rocks; estimate 60% medium to high plasticity fines, 30% coarse to fine subangular sand and 10% fine hard subrounded to subangular gravel to 3/4-inch, active HCl reaction, (CL), (TILL)	1.5-30.6
SAND	clayey, gray brown, dry, hard, laminated horizontal bedding with clay and sand interbeds; estimate 55% medium to mostly fine sand, 45% low to medium plasticity fines, active HCl reaction, (SC-CL), (glaciofluvial)	30.6-31.7
SAND	poorly graded, medium red brown (oxide) to 32.5 ft, gray brown below; damp; hard but recovered loose; becomes finer downward with scattered calcareous silty lenses to 1/4-inch, estimate 90% coarse to mostly fine hard subrounded sand and 10% low to nonplastic fines, scattered fine gravel to 1/2-inch; active HCl reaction (SP-SM) (glaciofluvial)	31.7-34.5
SAND	silty, gray brown with dark brown (lignitic) interbeds; moist to 36 ft; wet below; hard to 34.5 ft, soft to firm below (compressible); very thin to laminated horizontal bedding, 30% silt interbeds to 1/2-inch from 37.6-42.6 ft, becomes finer gradation downward; lignite zone 36-37 ft; estimate 80% decreasing to 60% fine sand and 20% increasing to 40% non to low plastic fines, active to violent HCl reaction, (SM), (glaciofluvial)	34.5-42.6
CLAY	gray, wet to moist, soft to firm, thin to laminated horizontal bedding; estimate 95% medium to high plasticity fines and 5% fine sand, occasional gravel to 1-inch, active HCl reaction, (CL-CH), (lacustrine)	42.6-48.9
SAND & SILT	interbedded, gray color banded, moist to wet, firm but compressible, laminated horizontal alternating light sand and dark silt bedding becoming clayey in lower 0.5 ft; estimate 55% low plasticity fines and 45% very fine sand, active to violent HCl reaction, (ML-SM), (lacustrine)	48.9-53
CLAY	gray, moist to wet, firm but compressible, laminated horizontal bedding with 20% sandy silt interbeds; estimate 85% medium plasticity fines and 15% very fine sand (mostly in silt interbeds), active to violent HCl reaction, (CL), (lacustrine)	53-55

147-080-21BAC

NDSWC 11523

Date Completed:	11/8/84	Purpose:	Observation Well
L.S. Elevation (ft):	1854.3	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	37-42	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Silty, Sandy, Pebbly; dark yellowish orange; with boulders; (TILL).	1-28
SAND & GRAVEL	Fine SAND to fine GRAVEL (mostly coarse Sand); angular to rounded.	28-42
CLAY	Olive gray; waxy; plastic; interbedded with Silty Clay; (LACUSTRINE).	42-81
SANDSTONE	Fine; greenish gray; well sorted; argillaceous.	81-100

147-080-21BDD

NDSWC

Date Completed:	5/3/78	Purpose:	Observation Well
L.S. Elevation (ft):	1865.9	Well Type:	1.5" PVC
Depth Drilled (ft):	70	Aquifer:	Lake Nettie
Screened Interval (ft):	45-55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Clayey SAND; dark brown.	0-1
CLAY	Silty, Sandy, with little Gravel; grayish brown with red oxide staining; (TILL).	1-43
SAND	Wet at 50 ft; lignitic; 43-44 ft: fine to medium, with trace fine Gravel and Silt; 44-51 ft: fine, with little Silt; 51-55 ft: fine to medium, with trace Silt.	43-55
CLAY	With trace fine Sand; reddish brown to 56 ft, gray below.	55-59
SILT	Gray; laminated horizontal bedding; with thin interbeds of Sandy Silt and Clay.	59-68
CLAY	Gray.	68-70

147-080-21CCA

NDSWC

Date Completed:	9/20/54	Purpose:	Test Hole
L.S. Elevation (ft):	1833.4	Well Type:	
Depth Drilled (ft):	25		
		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.6
CLAY (Glacial Till)	silty, sandy, pebbly, gray-brown; stiff slightly to moderately plastic, (CL)	0.6-25

147-080-21CCC

NDSWC 11538

Date Completed:	5/28/85	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	100		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, slightly Gravelly; yellowish brown to brown (grayish brown 13-16 ft); moderately soft and cohesive; with iron oxide mottles, black organic matter and scattered shale fragments.	0-25
SAND	Gravelly; very fine SAND to medium GRAVEL (mostly fine to coarse Sand); generally oxidized; mostly quartz, shale and carbonates.	25-43
CLAY	Slightly Silty; olive gray to dark gray; smooth; moderately soft; very cohesive; greasy.	43-46
CLAY	Silty, slightly Sandy (with very fine to very coarse Sand); dark olive gray; moderately soft, cohesive and plastic; gritty; (TILL).	46-52
SAND & GRAVEL	Fine SAND to fine GRAVEL; poorly sorted; subangular to subrounded; mostly quartz, granitics and lignite fragments with carbonates.	52-55
CLAY	Silty; dark gray; moderately soft; cohesive and plastic; smooth; slightly greasy; tight.	55-61
SAND	Fine; Silty and Clayey; dark gray; subrounded; mostly quartz and lignite fragments, thinly bedded.	61-66
CLAYSTONE	Gray and greenish gray interbedded with dark gray; firm; slightly cohesive; very friable; interbedded with greenish gray, very fine, Silty Sandstone (very friable, slightly bentonitic); scattered layers of dark reddish brown Claystone.	66-78
SANDSTONE	Very fine; very Silty, Clayey; greenish gray and light gray; well sorted; poorly indurated; friable.	78-100

147-080-21CDC

NDSWC

Date Completed:	4/20/78	Purpose:	Observation Well
L.S. Elevation (ft):	1837.6	Well Type:	1.5" PVC
Depth Drilled (ft):	47	Aquifer:	Lake Nettie
Screened Interval (ft):	33.3-43.3	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft clayey sand with grass roots, active HCl reaction (SC)	0-0.4
SAND	clayey, gray brown with a few bright red (oxidized) grains, moist to 1.8 ft, dry to damp 1.8-8 ft; moist 8-9.4 ft, scattered 1/8-inch white calcareous spots/seams 1.8-8 ft, hard; gradational to sandy clay in top 1.4 ft and low 1.4 ft; estimate 60% coarse to mostly fine sand, 30% medium to high plasticity fines and 10% hard, subrounded, fine gravel to 3/4 inch, active HCl reaction, (SC), (TILL)	0.4-9.4
CLAY	gray brown with a few bright red (oxidized) pebbles to 25.7 ft, medium gray 25.7-30.9 ft, moist to 15 ft, moist to wet 15-30.9 ft, hard, sandy clay grading into clay at 15 ft; estimate 60% medium to high plasticity fines, 35% coarse to mostly fine sand and 5% hard subrounded mostly fine gravel to 1-3/4 inch, moderate to active HCl reaction, (CL-CH), (TILL)	9.4-30.9
SAND	silty, gray, wet, hard but recovered loose, very thin to thin bedded, 10% lignite, grades downward into coarser sand with less fines and less clay interbeds; 20% decreasing to 10% clayey to mostly silty interbeds to 3/4-inch thick; estimate 70-85% coarse to mostly medium and fine hard subrounded sand and 15-30% low plasticity fines, moderate to active HCl reaction, (SM-SC), (glaciofluvial)	30.9-35
SAND	coarse, gray brown, wet, hard but recovered loose; estimate 90% predominantly coarse to medium sand, 5% hard subrounded fine gravel to 1/2-inch and 5% non plasticity fines, moderate to active HCl reaction, (SP) (glaciofluvial)	35-37.2
SAND	silty, gray, wet, hard but recovered loose, thin bedded with 5% lignite rich silty interbeds to 45.3 ft, clean sand 45.3-46.2 ft; (SP), estimate 85% medium grading downward to fine sand below 40 ft, and 15% non plasticity fines, moderate to active HCl reaction, (SM), (glaciofluvial)	37.2-46.2
SILT	sandy, gray, moist, hard, laminated (varved) bedding to 1/8-inch; estimate 55% non to low plasticity fines and 45% fine sand, active HCl reaction, (SM-ML), (lacustrine)	46.2-47

147-080-21DBB

NDSWC

Date Completed:	5/18/78	Purpose:	Observation Well
L.S. Elevation (ft):	1820.1	Well Type:	0" None
Depth Drilled (ft):	30	Aquifer:	Till
Screened Interval (ft):	13.5-23.5	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, very soft fine grained clayey sand with grass roots, very active HCl reaction	0-1.8
CLAY	sandy, light tan and brown color banded, wet, very soft, laminated horizontal stratified bedding; estimate 60% medium to high plasticity fines and 40% mostly fine sand, active to spotty very active (on tan beds) HCl reaction, (CL) (lacustrine)	1.8-2.4
CLAY	light reddish brown (oxidized) to 15 ft, medium gray below; soft to 7 ft, soft to firm 7-20 ft (loss 1.2 ft core from 2.4-15 ft due to compression), firm becoming very firm 20-30 ft; moist to wet throughout except saturated 2.4-7 ft, scattered calcite/gypsum filled 1/8 to 1/2-inch joints from 2.4-9 ft and scattered selenite crystals to 3/4-inch from 16.2-30 ft; lignite fragments to 1/4-inch scattered throughout; possible sand zone 15-16.2 ft (no core recovery, but sand cuttings returned upon fishtailing with 6 inch bit); estimate 60% medium plasticity fines, 35% coarse to mostly fine hard subrounded sand and 5% mostly fine subrounded hard gravel to 1-1/4 inch, moderate to active HCl reaction, (CL), (TILL)	2.4-30

147-080-21DDA

NDSWC

Date Completed:	5/11/79	Purpose:	Test Hole
L.S. Elevation (ft):	1835.1	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Sandy; dark brown.	0-1
CLAY	With fine SAND; tan; soft.	1-2

147-080-21DDA continued

CLAY	Silty, Sandy, with trace Gravel; brown; (TILL).	2-20
SAND	Fine to coarse (becomes finer with depth); with some Silt; brown; wet.	20-29
SAND	Silty; grayish brown; firm; thin horizontal bedding.	29-36
SILT	Sandy (with fine Sand); gray; Sandy Clay layer 38.3-39.5 ft.	36-40
CLAY	Silty, with trace very fine Sand; gray; very firm; thin horizontal bedding; scattered thin, laminated Silty interbeds.	40-50

147-080-21DDA2

NDSWC

Date Completed:	4/17/78	Purpose:	Observation Well
L.S. Elevation (ft):	1843.4	Well Type:	1.5" PVC
Depth Drilled (ft):	50	Aquifer:	Undefined
Screened Interval (ft):	32.9-42.9	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft clayey sand with grass roots, active HCl reaction, (SC)	0-0.4
SAND	clayey, gray brown with a few bright red (oxidized) grains, dry to 5 ft, moist below, very firm becoming hard, numerous white calcareous seams to 1/8-inch, grades downward into sandy clay; estimate 60% coarse to mostly fine sand, 35% medium to high plasticity fines and 5% mostly fine hard gravel to 1-1/4 inch, active to violent HCl reaction, (SC), (TILL)	0.4-9.5
CLAY	gray brown, moist to dry, hard; estimate 55% medium to high plasticity fines, 35% coarse to mostly fine sand and 10% subrounded hard fine gravel to 1-inch, moderate to active HCl reaction, (CL), (TILL)	9.5-11.2
SAND	silty, gray brown with a few bright red (oxidized) grains, dry, hard but recovered loose; clay till ball 14.1-14.6 ft; estimate 80% coarse to mostly medium and fine subangular sand (some cemented sandstone), 15% non to low plasticity fines and 5% fine, subrounded cemented sandstone gravel to 3/4-inch; very active HCl reaction, (SM), (glaciofluvial)	11.2-17.3
SAND	silty, tan, dry, hard but recovered loose, massive, becoming finer downward; estimate 75-80% medium to mostly fine sand and 20-25% nonplastic fines, moderate to active HCl reaction, (SM), (glaciofluvial)	17.3-23.8
SILT	sandy, tan, dry, hard, laminated (varved) horizontal bedding, estimate 60% nonplastic fines and 40% fine sand, active HCl reaction, (ML), (lacustrine)	23.8-26.8
SAND	silty, tan with heavy brown oxide stains at lower contact; dry and hard to 30 ft, moist to wet and firm below; laminated to thin horizontal bedded, sand content increased downward; estimate 60% fine sand and 40% nonplastic fines; active HCl reaction, (SM), (glaciofluvial)	26.8-33.5
SILT	medium gray, wet, soft (compressible), laminated to very thin horizontal bedded; estimate 90% low plasticity fines and 10% very fine sand; active HCl reaction, (ML), (lacustrine)	33.5-37.5
CLAY	medium gray; wet; soft (compressible); thin bedded to 45 ft, very thin to laminated below; bedding dips 0-10 degrees; estimate 95% medium to high plasticity fines and 5% very fine sand, moderate to active HCl reaction, (CL-CH), (lacustrine)	37.5-50

147-080-21DDD

NDSWC

Date Completed:	5/9/79	Purpose:	Test Hole
L.S. Elevation (ft):	1817.4	Well Type:	
Depth Drilled (ft):	70	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY, Sandy; brown to black.	0-2
CLAY	Sitly, Sandy (with mostly medium Sand); brown to gray; firm; with scattered fine Gravel 5-10 ft; grades to Clayey Sand (medium to coarse) 9-10 ft.	2-10
CLAY	Silty, Sandy with trace fine Gravel; brownish gray; firm to hard; (TILL).	10-38
SAND	Silty, Clayey, with trace fine Gravel to 54 ft; grayish brown to gray; thinly bedded; fining with depth; 38-54 ft: estimated 75-80% fine to coarse Sand; 15-20% fines; 5% fine Gravel; 54-60 ft: estimated 70-75% fine Sand and 25-30% fines; 60-62 ft: esitmated 50% very fine Sand and 50% fines.	38-62
SILT	Sandy (with estimated 20-30% very fine Sand); gray; laminated to thin Sand interbeds and Clay interbeds.	62-66
CLAY	Silty, with trace very fine Sand; gray; with trace laminated Silt interbeds; soft to firm.	66-70

147-080-21DDD2

NDSWC

Date Completed:	5/4/79	Purpose:	Test Hole
L.S. Elevation (ft):	1833.1	Well Type:	
Depth Drilled (ft):	60		
		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; wet; very soft; fine roots; sandy clay, slight HCl reaction, (CL)	0-1.2
CLAY	medium brown; moist; medium firm to 5 ft, very firm to hard below, light iron oxide staining; occasional white calcareous inclusions as pockets to 1/4-inch from 1.2-5 ft; trace of lignite fragments to 1/8 inch; estimate 65% low plasticity fines and 30% coarse to fine sand and 5% mostly fine, hard, subangular to subrounded gravel to 1-1/2 inch, strong HCl reaction, (CL), (TILL)	1.2-8
SAND	silty, medium brown; dry except moist from 10-12 ft and 20-22.9 ft; very firm to hard but recovered loose, coarse to fine sand zone 8-10 ft; trace of fine, hard, subrounded gravel to 5/8 inch scattered throughout; estimate 85% coarse to mostly fine sand and 15% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	8-22.9
SAND	silty, medium brown; moist to 23.2, wet below; firm to very firm, faintly laminated bedding dipping 0-5 degrees; estimate 65-70% fine sand and 30-35% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	22.9-24
SILT	sandy, medium gray; wet to 25 ft, moist below; firm to very form, trace of light iron oxide staining along bedding planes 24-26.2 ft; near horizontal faintly laminated bedding; 20% very thin to thin clay interbeds from 28-30 ft; estimate 50-55% none to low plasticity fines and 45-50% fine sand, moderate to strong HCl reaction, (SM-ML), (glaciofluvial/lacustrine)	24-30
CLAY	medium gray; moist; very firm, massive except occasional near horizontal, laminated, light gray silt interbeds, contorted bedding 33-33.3 ft; clayey sand zones at 37.4-37.9 ft and 38.5-38.8 ft; estimate (excluding sand zones) 95% medium to high plasticity fines and 5% very fine sand; moderate to strong (on silt interbeds) HCl reaction, (CH-CL), (lacustrine)	30-39.3
SAND	clayey, medium gray; wet to 45 ft, saturated below; firm to very firm but recovered loose, numerous lignite fragments to 1/4-inch at 46.5-49 ft and 52-53.5 ft; poor recovery from 45-50 ft (sample washed away); estimate 70-75% coarse to fine, mostly medium sand, 20-25% low to medium plasticity fines and 5% fine, hard, subangular to subrounded gravel to 2 inches, strong HCl reaction, (SC), (glaciofluvial)	39.3-60

147-080-22AAD

NDSWC 11592

Date Completed:	7/30/85	Purpose:	Observation Well
L.S. Elevation (ft):	1831.8	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	38-43	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Very fine SAND to fine GRAVEL; Silty; brown; poorly sorted; shale quartz and carbonates.	0-5
CLAY	Silty, Sandy, Gravelly; yellowish olive brown, mottled and oxidized to 14 ft; soft; slightly cohesive and plastic to crumbly to 14 ft depth; lignitic and carbonaceous; gritty; (TILL); 14-23 ft: grayish brown to gray; firmer; more cohesive and plastic.	5-23
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly fine Sand to fine Gravel); poorly sorted; subangular to subrounded; predominantly shale, quartz, and carbonates with lignite, igneous rock fragments and silicates.	23-44
CLAY	Gray TILL, as above, but Sandier and less plastic, with scattered Sand layers; 47-48 ft: Sand and Gravel lens; 58-59 ft: detrital lignite with some Sand and Gravel.	44-61
SAND	Very fine to very coarse (mostly fine to medium; lignitic.	61-64
CLAY	Silty; brownish gray; soft; cohesive; slightly plastic; smooth; with numerous soft Clayey Silt layers 70-80 ft.	64-89
CLAYSTONE	Slightly Silty; brownish gray and dark gray interbedded; moderately firm; poorly indurated; very friable; with gray, softer Silty Sandy interbeds.	89-120

147-080-22BBB

NDSWC 3936

Date Completed:	12/2/69	Purpose:	Observation Well
L.S. Elevation (ft):	1835	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	128-131	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Pebbly; (TILL); yellowish gray to 7 ft, olive brown 7-20 ft.	0-20
SAND	Medium to coarse; loose; iron stained.	20-23
SILT	Clayey; light olive gray; calcareous.	23-26
SAND	Medium to coarse.	26-32
SILT	Clayey, Sandy; olive gray.	32-59
CLAY	Olive gray; plastic.	59-62
SAND	Fine to medium; light olive gray.	62-69
CLAY	Olive gray; stiff.	69-83
SAND	Medium to very coarse, with fine Gravel; mostly shale pebbles with some granitics and lignite; with possible Silty, Clayey layers.	83-140
SANDSTONE	Very fine; Clayey; blueish gray; micaceous; non-calcareous.	140-157
SHALE	Dark gray; hard; brittle.	157-180

147-080-22BCA

NDSWC

Date Completed:	5/31/79	Purpose:	Test Hole
L.S. Elevation (ft):	1861.1	Well Type:	
Depth Drilled (ft):	75		
		Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; dry; soft silty sand ; fine roots. No HCl reaction.	0-2
SILTY SAND	medium brown; damp; soft to 3', firm below but recovered loose. Fine gravel to 1-inch and coarse sand 4-4.5'. Estimate 60-65% coarse to mostly fine sand, 30-35% none to low plasticity fines and 5% fine gravel. Strong HCl reaction. (SM)	2-4.5
CLAY (Glacial Till)	medium brown; dry to 10', damp below; hard to very hard. No core recovery 16-18.7' due to rocks encountered; metamorphic rock cored 18.7-19'; trace of lignite fragments to 1/8-inch, white calcareous inclusions to 1/8-inch and iron oxide inclusions to 1/8-inch and streaks. Estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 2-inch. Strong HCl reaction. (CL)	4.5-27
POORLY GRADED SAND	medium brown; dry; very hard but recovered loose. Fine gravel to 1.25-inch and coarse sand 27-30' Estimate 85-90% coarse to mostly fine sand, 10% none to low plasticity fines and 0-5% fine gravel. Strong HCl reaction (SP-SM) (Glaciofluvial).	27-35
SILTY SAND	medium brown; damp except dry 38.5-40'; hard to very hard but recovered mostly loose. Sandy silt zone 35-35.7'. Estimate 80-85% fine sand and 15-20% none to low plasticity fines. Strong HCl reaction. (SM) (Glaciofluvial).	35-43.5
SANDY SILT	medium brown; moist; hard. No core recovery 44-45'. Estimate 70-80% none to low plasticity fines and 20-30% very fine sand. Strong HCl reaction. (ML) (Lacustrine)	43.5-45
CLAY	medium gray; moist; very firm to very hard. Massive except trace of laminated silt interbeds; silt zones 46.9-48.8' and 54.1-54.2'. Estimate (excluding silt zones) 95% medium to high plasticity fines and 5% very fine sand. Moderate to strong (on silt) HCl reaction. (CL-CH) (Lacustrine).	45-56
CLAYEY SAND	medium gray; moist; very hard. 10% thin clay interbeds. Estimate 60-65% medium to mostly fine sand and 35-40% low to medium plasticity fines. (SC) (Glaciofluvial).	56-57.3
CLAY (Glacial Till)	medium gray; moist; very hard. Trace of lignite fragments to 1/4-inch. Estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 0-5% fine gravel to 1-inch. Strong HCl reaction. (CL)	57.3-61.8
CLAYEY SAND	brownish-gray to 70', light gray below except medium brown 71.5-72.5'; moist; firm to very hard but recovered mostly loose to 70.5'. Trace of fine gravel to 1.5-inch to 70.5'; fine, uniform, well compacted sand 70.5-75'; clay (till) zone 62.4-62.9'; Clean sand (SP) 65-68.8'. Estimate (excluding clean sand) 70-75% coarse to mostly fine sand and 25-30% low plasticity fines. Strong HCl reaction to 70', moderate to slight below. (SC) (Glaciofluvial).	61.8-75

147-080-22BCB

NDSWC

Date Completed:	6/15/79	Purpose:	Test Hole
L.S. Elevation (ft):	1828.7	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; dry to damp; soft sandy clay; fine roots, slight HCl reaction, (SC-CL)	0-2.7
CLAY	sandy, poor core recovery; dark brown to 5 ft, tannish brown below; dry to damp; soft to very firm, rock encountered at 5-5.5 ft and recovered as fragments to 1-1/2 inch, estimate 60% low plasticity fines, 35% coarse to fine sand and 5% fine gravel to 1 inch, strong HCl reaction, (CL), (glacial till or fill)	2.7-7.5
SAND	clayey, medium brown; moist to 9 ft; wet below; firm but recovered loose; poorly graded sand (SP-SC) from 9.4-9.9 ft, coarse to fine mostly medium sand; estimate 80% coarse to mostly fine sand and 20% low plasticity fines; strong HCl reaction (SC), (glaciofluvial)	7.5-9.9
CLAY	medium brown to 20 ft, medium gray below; damp to moist; firm to very firm, trace of lignite fragments to 1/8 inch and iron oxide inclusions to 1/8 inch and streaks; faint pseudo bedding dipping 0-5 degrees spaced 1/4 to 1 inch 15.7-19.5 ft and 30.8-31.3 ft; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 1 inch; strong HCl reaction, (CL), (TILL)	9.9-31.3
SAND	clayey, orange brown to 32.5 ft, medium gray below; moist to wet; soft to firm but recovered loose; sandy clay zone 32-32.5 ft; estimate 70-75% coarse to fine mostly medium sand, 25% low plasticity fines and 0-5% fine gravel to 3/4 inch, strong HCl reaction, (SC), (glaciofluvial)	31.3-39.6
SILT	sandy, light to medium gray color banded; wet; soft; laminated to very thin horizontal bedding; estimate 75-80% none to low plasticity fines and 20-25% very fine sand, strong HCl reaction, (ML), (lacustrine)	39.6-40

147-080-22BCC

NDSWC

Date Completed:	6/19/79	Purpose:	Test Hole
L.S. Elevation (ft):	1828.7	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; dry; soft sandy silt; fine roots, slight HCl reaction, (SM-ML)	0-1.5
SAND	silty, dark brown to 2.5 ft, medium brown below; dry; hard but recovered mostly loose, trace of fine gravel to 1-3/4 inch; estimate 55% coarse to fine sand and 45% none to low plasticity fines, strong HCl reaction, (SM-ML), (colluvium)	1.5-5
CLAY	medium brown to 19 ft, brownish gray below; moist; firm to very firm, no core recovery 5-8.5 ft, rock encountered at 5 ft; occasional white calcareous inclusions to 1/2 inch from 9-15 ft; trace of lignite fragments to 1/8 inch and iron oxide inclusions to 1/4 inch; faint pseudo bedding dipping 0-10 degrees spaced 1/8 to 2 inches from 10.7-20 ft; estimate 60-65% low plasticity fines, 30-35% fine to coarse sand and 5% fine gravel to 1-1/2 inch, strong HCl reaction, (CL), (TILL)	5-25
SAND	clayey, grayish brown to 31 ft; brownish gray below; moist to wet; firm to hard but recovered loose, trace of fine gravel to 1/2 inch; trace of lignite slack 26-27 ft; estimate 80-85% coarse to mostly fine and medium sand and 15-20% low plasticity fines, strong HCl reaction, (SC), (glaciofluvial)	25-33.3
SILT	sandy, light to medium gray color banded; moist; firm, laminated to very thin horizontal bedding; estimate 70-80% none to low plasticity fines and 20-30% very fine sand, strong HCl reaction, (ML), (lacustrine)	33.3-34.5
SAND	silty, medium gray; moist to wet; firm, laminated to thin horizontal bedding with 5% laminated to very thin silt and sandy silt interbeds; estimate 80% fine uniform sand and 20% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	34.5-40

147-080-22BCD

NDSWC

Date Completed:	5/29/79	Purpose:	Test Hole
L.S. Elevation (ft):	1847.8	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Clayey Sand; dark brown.	0-1

147-080-22BCD continued

CLAY	Silty, Sandy, with trace Gravel; brown; very firm to hard; lignitic; (TILL).	1-25
SAND	Coarse to mostly fine; Silty (estimated 15-20% low plasticity fines); reddish brown.	25-37
SAND	Fine; Silty (estimated 45-55% low plasticity fines); gray; faintly laminated to thin horizontal bedding.	37-40
SILT	Sandy (estimated 20-25% very fine Sand); gray; laminated to thin horizontal bedding.	40-45
CLAY	Silty, with trace very fine Sand (<5%); gray; firm to hard; faint laminated interbeds; medium to high plasticity.	45-49
CLAY	Silty, Sandy with trace fine Gravel (<5%); gray; hard to very hard; (TILL).	49-55

147-080-22BCD2

NDSWC

Date Completed:	5/29/79	Purpose:	Test Hole
L.S. Elevation (ft):	1850.8	Well Type:	
Depth Drilled (ft):	54	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; damp; very soft sandy clay; fine roots; trace of fine gravel to 1 inch, strong HCl reaction (SC-CL)	0-1.4
CLAY	medium brown; damp; firm to 10 ft, hard to very hard below, poor core recovery 10-12.8 ft, due to rocks encountered; sand lens 4.5-4.6 ft; limestone and metamorphic rocks cored 12.8-13.3 ft; pseudo bedding dipping 0-15 degrees spaced 1/4 to 1 inch 14.5-19 ft; trace of lignite fragments to 1/4 inch and iron oxide inclusions to 1/8 inch; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 2 inches; very strong HCl reaction to 5 ft, strong below, (CL), (TILL)	1.4-20.3
SAND	silty, medium brown; dry to 30 ft; moist 30-33.5, wet below; very hard to 25 ft, soft 25-29 ft, firm to hard 29-33 ft, soft to firm below but interval recovered loose, trace of fine gravel to 1-1/4 inch and coarse sand 22.5-30 ft; clayey sand 30-30.3 ft; estimate 85-90% coarse to mostly fine sand and 10-15% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	20.3-41.6
SILT	sandy, medium gray; moist; hard, light iron oxide staining 41.6-42 ft; very thin to thin horizontal bedding with 5-10% clay interbeds and 10% laminated sand interbeds; estimate 70-80% none to low plasticity fines and 20-30% very fine sand, strong HCl reaction, (ML), (lacustrine)	41.6-44.7
CLAY	medium gray; moist; hard, massive with trace of horizontal laminated silt interbeds; 5% laminated to very thin sand interbeds 48.6-49.2 ft; estimate 95% medium to high plasticity fines and 5% fine sand, moderate to strong (on silt) HCl reaction, (CL-CH), (Lacustrine)	44.7-49.2
SAND	clayey, medium gray; moist to wet; hard to very hard but recovered loose 52-52.7 ft; 50% 1/4 inch to 0.2 ft sandy clay (flowtill) interbeds 49.2-50 ft; laminated to thin horizontal bedding; trace of fine gravel to 1/2 inch 52.2-52.7 ft; estimate 50-55% coarse to mostly fine sand and 45-50% low to medium plasticity fines, strong HCl reaction, (SC-CL), (glaciofluvial)	49.2-52.7
CLAY	medium gray; damp to moist; very hard, 10% very thin to thin sand interbeds 52.7-53.2 ft, massive below; estimate 60% low plasticity fine, 30-35% coarse to fine sand and 0-5% fine gravel to 3/4 inch, strong HCl reaction, (CL), (TILL)	52.7-54

147-080-22CBA

NDSWC

Date Completed:	5/23/79	Purpose:	Test Hole
L.S. Elevation (ft):	1848.3	Well Type:	
Depth Drilled (ft):	56	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; damp; soft sandy clay; trace of fine gravel to 1 inch; fine roots, none to slight HCl reaction, (CL)	0-1.7
CLAY	medium brown; damp to moist; very firm to hard, trace of iron oxide inclusions to 1/4 inch, white calcareous inclusions to 1/2 inch 1.7-7.5 ft and lignite fragments to 1/4 inch; clay zone 11.6-12.4 ft (reworked lacustrine); near horizontal pseudo bedding spaced 1/8 to 1 inch 7-15 ft; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 3/4 inch, strong HCl reaction, (CL), (TILL)	1.7-22.1
SAND	silty, medium brown; dry to 30 ft, wet below; hard to very hard but recovered mostly loose, trace of fine gravel to 1/2 inch; estimate 85-90% coarse to mostly fine sand and 10-15% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	22.1-34.4

147-080-22CBA continued

SAND	silty, medium brown to 35 ft, medium gray below; moist; soft to firm, faintly laminated to thin horizontal bedding with 10% sandy silt interbeds; estimate 50-55% fine sand and 45-50% none to low plasticity fines, strong HCl reaction, (SM-ML), (glaciofluvial)	34.4-40
CLAY	medium gray; moist to 45 ft, wet to saturated below; very firm; no core recovery 45-46.8 ft (sample washed away); massive with trace of laminated horizontal silt interbeds to 43.9 ft and 20% laminated to thin silt and sand interbeds 43.9-47.4 ft; sharp contact with interval below; estimate 90-95% medium to high plasticity fines and 5-10% fine sand, moderate to strong (on silt) HCl reaction, (CH-CL), (lacustrine)	40-47.4
SAND	clayey, medium gray; wet to saturated; soft, recovered mostly loose, trace of laminated to very thin horizontal clay interbeds; estimate 70-75% medium to mostly fine sand and 25-30% low to medium plasticity fines; strong HCl reaction, (SC), (glaciofluvial)	47.4-48.8
CLAY	medium gray; moist; very firm; estimate 60% low plasticity fines 35-40% coarse to fine sand and 0-5% fine gravel to 3/8 inch, strong HCl reaction, (CL), (TILL)	48.8-54.6
SAND	clayey, brownish gray to medium gray color banded; moist to wet; hard, laminated to very thin horizontal bedding with 20% clay and sandy clay interbeds; estimate 65-70% fine sand and 30-35% low to medium plasticity fines, very strong HCl reaction, (SC), (glaciofluvial)	54.6-56

147-080-22CBB

NDSWC

Date Completed:	6/6/79	Purpose:	Test Hole
L.S. Elevation (ft):	1823.6	Well Type:	
Depth Drilled (ft):	34	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; dry; soft silty sand; trace of fine gravel to 3/4 inch; fine roots, slight HCl reaction, (SM-ML)	0-1.6
CLAY	poor core recovery; medium brown; dry; very firm to hard, massive; trace of lignite fragments to 1/4 inch, white calcareous inclusions to 1/8 inch and iron oxide inclusions to 1/8 inch; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 1-1/4 inch; strong HCl reaction, (CL), (TILL)	1.6-9
SAND	silty, medium brown; moist; soft and recovered mostly loose, trace of fine gravel to 1/2 inch 9-16 ft; trace of laminated sandy silt interbeds 16-18.2 ft; occasional near horizontal laminated lignitic interbeds 23.5-24 ft; estimate 85-90% coarse to mostly fine sand and 10-15% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	9-27.1
SILT	sandy, medium gray; moist; firm; clayey, estimate 80% none to low plasticity fines and 20% very fine sand, strong HCl reaction, (ML), (lacustrine)	27.1-28
CLAY	medium gray; moist; firm to very firm, massive with trace of laminated sandy silt interbeds dipping 0-15 degrees, estimate 95% medium to high plasticity fines and 5% very fine sand, moderate to strong (on silt interbeds) HCl reaction, (CL-CH), (lacustrine)	28-34

147-080-22CBC1

NDSWC

Date Completed:	5/22/79	Purpose:	Test Hole
L.S. Elevation (ft):	1848.9	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; damp; soft sandy clay; fine roots, slight HCl reaction, (CL)	0-1.4
SAND	clayey, medium brown to 2.5 ft, tan brown below; damp; firm, trace of fine gravel to 1/2 inch; white calcareous stringers 2.5-4.3 ft; estimate 50-55% coarse to mostly fine sand and 45-50% low plasticity fines, moderate HCl reaction to 2.5 ft, strong to violent below, (SC-CL)	1.4-4.3
CLAY	medium brown to 15 ft, grayish brown below; damp; very firm to hard, occasional lignite fragments to 1 inch; white calcareous inclusions to 1/8 inch and stringers down to 10 ft; pseudo bedding dipping 0-10 degrees throughout though strong below 16 ft spaced 1/4 to 1 inch; iron oxide staining as inclusions, streaks and occasionally along pseudo bedding planes; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine hard gravel to 1-1/2 inch; strong HCl reaction, (CL), (TILL)	4.3-22.7
SAND	silty, medium brown; dry to 30 ft, moist 30-31 ft, wet below; very firm to very hard but recovered loose, sand generally becomes finer with depth; trace of fine hard gravel to 1-1/2 inch from 22.7-32.8 ft; trace of horizontal laminated silt and clay interbeds 32.8-33.3 ft; estimate 80-85% coarse to mostly fine sand and 15-20% none to low plasticity fines; strong HCl reaction, (SM), (glaciofluvial)	22.7-38.2

147-080-22CBC1 continued

SAND	silty, medium gray; wet; firm, laminated to very thin horizontal bedding; iron oxide staining 38.2-38.3 ft; estimate 55-60% fine sand and 40-45% none to low plasticity fines, strong HCl reaction, (SM), (glaciofluvial)	38.2-40.2
SILT	sandy, medium gray; wet; firm, gradational contact with interval above; laminated to thin horizontal bedding with 10% clay interbeds 43.5-45.2 ft and 10% silty sand interbeds throughout; estimate 60% none to low plasticity fines and 40% very fine sand, strong HCl reaction, (ML), (lacustrine)	40.2-45.2
CLAY	medium gray; moist; very firm, massive to 53.3 ft; with trace of laminated near horizontal light gray silt interbeds, 40% horizontal light gray silt interbeds and 40% horizontal very thin to thin silt and sand interbeds 53.3-55 ft; estimate (excluding 53.3-55 ft interval) 95% medium to high plasticity fines and 5% very fine sand, moderate to strong (on silt interbeds) HCl reaction, (CL-CH), (lacustrine)	45.2-55

147-080-22CBC2

NDSWC

Date Completed:	6/12/79	Purpose:	Test Hole
L.S. Elevation (ft):	1836.3	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; dry; soft silty sand; trace of fine gravel to 1 inch and coarse sand; fine roots, slight HCl reaction, (SM-ML)	0-1.5
CLAY	medium brown; dry; hard, massive; trace of lignite fragments to 1/4 inch and iron oxide inclusions to 1/8 inch; numerous white calcareous stringers 1.5-5 ft; estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine gravel to 1-3/4 inch; strong HCl reaction, (CL), (TILL)	1.5-10.3
SAND	silty, medium brown; dry to 15 ft, damp 15-17.5 ft, dry 17.5-24 ft; moist to wet below; soft to firm but recovered mostly loose, trace of fine gravel to 1/2 inch 10.3-18.5 ft; trace of laminated horizontal lignitic interbeds; estimate 85-90% coarse to mostly fine sand and 10-15% none to low plasticity fines; strong HCl reaction, (SM), (glaciofluvial)	10.3-29.8
SILT	medium gray; moist; soft, massive; tan brown clay zone 29.8-30 ft; estimate 80-90% none to low plasticity fines and 10-20% very fine sand, strong HCl reaction, (ML), (lacustrine)	29.8-31.6
CLAY	medium gray; moist; soft to firm, massive to 39.1 ft and 30% laminated to thin silt and sandy silt interbeds dipping 0-5 degrees from 39.1-40 ft; estimate 95% medium to high plasticity fines and 5% very fine sand, moderate to strong (on silt interbeds) HCl reaction, (CL-CH), (lacustrine)	31.6-40

147-080-22CBC3

NDSWC

Date Completed:	7/3/79	Purpose:	Observation Well
L.S. Elevation (ft):	1855.9	Well Type:	1.5" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	29.9-39.9	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	Till	2-20
SILTY SAND	light to dark brown with some gravel (Glaciofluvial)	20-38
SILTY SAND	gray ; For detailed geologic log refer to DH79-26 (147-080-22CBC1)	38-40

147-080-22CCB

NDSWC

Date Completed:	5/16/79	Purpose:	Test Hole
L.S. Elevation (ft):	1853.7	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy Clay; dark brown; soft.	0-1
CLAY	Silty, Sandy, with trace Gravel; brown; (TILL).	1-26

147-080-22CCB continued

SAND	Fine to coarse; with some Silt (10-15%); scattered fine Gravel; scattered detrital lignite zones.	26-32
SAND	Fine, uniform; Silty (15-20% low plasticity fines); brown to 42 ft, brownish gray below; hard.	32-45
SILT	Clayey; Sandy (20% fine Sand); gray; hard; low plasticity; laminated horizontal bedding with thin Clay interbeds; (LACUSTRINE).	45-50
CLAY	Silty (95% medium to high plasticity fines), with trace fine Sand (5%); gray; scattered gray Silt interbeds; (LACUSTRINE).	50-60

147-080-22CCC3

NDSWC

Date Completed:	5/21/79	Purpose:	Test Hole
L.S. Elevation (ft):	1850.8	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown; damp, very soft sandy clay, fine roots. Strong HCl reaction. (CL)	0-0.9
CLAY (Glacial Till)	grayish brown; damp; hard. Occasional white calcareous stringers and inclusions as pockets to 1/2-inch; occasional lignite fragments to 1/16-inch; occasional iron oxide inclusions to 1/4-inch and streaks; psuedobedding 6-10'; sand content increases from 17-18.8' to 70% at bottom. Estimate 60-65% low plasticity fines, 30-35% coarse to fine sand and 5% fine hard subangular to subrounded gravel to 2-inch. Strong HCl reaction. (CL)	0.9-18.8
SILTY SAND	medium brown to 30', red-brown below; dry to 25', damp 25-30', moist below; hard to very hard to 30', firm below but recovered loose. Moderate to heavy iron oxide staining 30—31.7'; trace of fine hard gravel to 3/4-inch from 18.8-24', trace of horizontal laminated lignitic interbeds at 22.5' and sandy silt interbeds 28.2-28.8'. Estimate 80% coarse to mostly fine sand and 20% none to low plasticity fines. Strong HCl reaction. (SM) (Glaciofluvial).	18.8-31.7
SILTY SAND	medium gray; moist to wet, very soft to soft. Sand content decreases with depth; faintly laminated to very thin horizontal bedding. Estimate 50-55% fine sand and 45-50% none to low plasticity fines. Strong HCl reaction. (SM-ML) (Glaciofluvial).	31.7-32.4
SANDY SILT	medium gray, moist to wet; soft. No core recovery 32.7-35'; clayey; horizontal laminated to thin bedding with 10% clay interbeds; sand zone 36.2-36.5'; clay zone 38.3-38.5'; gradational contact with interval above. Estimate 65-70% low plasticity fines and 30-35% fine sand. Strong HCl reaction. (ML) (Lacustrine).	32.4-39.2
CLAY	medium gray; moist; firm. Massive to 46', horizontal laminated to thin bedding below with 20% sand and silt interbeds 46-51.3'; sand zone with 20% laminated to thin clay interbeds 47.4-48.8'. Estimate 80-85% medium to high plasticity fines and 15-20% fine sand. Moderate to strong (on silt and sand interbeds) HCl reaction. (CL-CH) (Lacustrine).	39.2-51.3
CLAYEY SAND	medium gray; wet to saturated; very firm but recovered mostly loose. Trace of fine hard subangular gravel to 5/8-inch; very thin to thin horizontal bedding with 10% clay and sandy clay interbeds. Estimate 70% coarse to mostly fine sand and 30% low to medium plasticity fines. Strong HCl reaction. (SC) (Glaciofluvial).	51.3-55

147-080-22CDD1

NDSWC 11593

Date Completed:	7/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1843.8	Well Type:	1.25" PVC
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	138-143	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Gravelly; dark brown; soft; crumbly; (probable road fill).	0-3
SAND & GRAVEL	Very fine SAND to fine GRAVEL; brown; poorly sorted; subangular to subrounded; mostly shale, carbonates, quartz and igneous rock fragments.	3-8
CLAY	Silty, Sandy, slightly Gravelly (with fine Sand to fine Gravel; moderately soft, cohesive and plastic; gritty; (TILL); brown, mottled, and oxidized to 16 ft; brownish gray below 16 ft.	8-24
SAND	Gravelly; mostly fine to coarse SAND, with some fine Gravel; brown; poorly sorted; subangular to subrounded; mostly shale, carbonates quartz and igneous rock fragments with silicates and some lignite.	24-32
CLAY	Very Silty; olive gray; soft; slightly plastic and greasy; sticky; smooth; stiff below 40 ft.	32-47

147-080-22CDD1 continued

SAND & GRAVEL		47-48
CLAY	Silty, Sandy, Gravelly; cohesive and plastic; stiff; gritty; slightly lignitic; (TILL).	48-68
SAND & GRAVEL	Mostly fine to very coarse SAND with some fine GRAVEL; subangular to mostly subrounded; predominantly quartz, carbonates and shale with silicates, igneous rock fragments and lignite; rocks and Gravel at 70 ft.	68-70
CLAY	Very Silty; olive gray; stiff; moderately plastic; smooth.	70-80
SILT	Clayey; olive gray; very soft; non-plastic; smooth; scattered Sandy (with very fine Sand) layers, less Clayey layers and lignitic layers.	80-123
SAND & GRAVEL	Very fine SAND to fine GRAVEL (mostly fine to coarse Sand); coarser, with medium Gravel 137-143 ft; slightly Silty; subangular to subrounded; mostly shale, carbonates and quartz; scattered layers of gray Silty Clay.	123-143
CLAY	Sandy; gray; soft.	143-144
GRAVEL	Fine to medium; carbonates, quartz, sandstone and igneous rock fragments; Boulders (gray very fine Sandstone) 146-148 ft and 150-151 ft.	144-152
CLAYSTONE	Slightly Silty; gray and brownish gray interbedded; moderately firm; poorly indurated; very friable; interbedded with Clayey Siltstone and Sandy Siltstone.	152-180

147-080-22CDD2

NDSWC 11593A

Date Completed:	7/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1843.8	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	25-30	Source:	SWC

Lithologic Log

See log of NDSWC Well 11593 for lithologic information.

147-080-23AAD

NDSWC

Date Completed:	8/30/77	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	130	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
GRAVEL	Fine to coarse; with about 20% Sand.	1-20
CLAY	Silty; olive gray Till.	20-31
GRAVEL	Fine to coarse; with about 15% Sand; scattered rocks.	31-42
SAND	Fine to coarse; with about 20% Gravel.	42-49
CLAY	Silty; olive gray Till.	49-60
SAND	Fine to medium; with a little lignite.	60-116
GRAVEL	Fine to coarse.	116-118
CLAY	Silty; olive gray Till.	118-121
CLAYSTONE	CLAY, Silty; medium gray; Bedrock.	121-130

147-080-23ADD

NDSWC 11594

Date Completed:	7/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1834.9	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Lake Nettie
Screened Interval (ft):	98-103	Source:	SWC

Lithologic Log

147-080-23ADD continued

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly fine Sand to fine Gravel); Silty; brown; poorly sorted; mostly carbonates, shale quartz and granitics; scattered thin layers of yellowish brown, Silty Sandy Clay.	1-34
CLAY	Silty, Sandy, Gravelly; gray; plastic; slightly stiff; lignitic; gritty; (TILL).	34-48
CLAY	Very Silty to Clayey Silt; olive gray; very soft; somewhat sticky and greasy; smooth.	48-62
SAND	Very fine to coarse (mostly very fine to fine); dark gray; moderately well sorted; subrounded; mostly quartz and shale with carbonates and lignite fragments; with gray Silty Clay layers.	62-81
CLAY	Olive gray; as above (48-62 ft); interbedded with very Silty Clay to Clayey Silt layers and Silty very fine Sand layers.	81-90
SAND	Fine, dark gray, as above (62-81 ft); interbedded with olive gray Silty Clay and Clayey Silt.	90-101
SAND & GRAVEL	Very fine SAND to fine GRAVEL (mostly medium to very coarse Sand); mostly quartz, shale, carbonates and lignite with igneous rock fragments and silicates; abundant Gravel (sandstone, shale carbonates and quartz) 107-110 ft.	101-110
CLAYSTONE	Slightly Silty; brownish gray interbedded with dark gray; moderately firm; poorly indurated; very friable; scattered layers with very fine Sand.	110-140

147-080-27BAC

NDSWC

Date Completed:	4/6/78	Purpose:	Observation Well
L.S. Elevation (ft):	1838.6	Well Type:	1.5" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	24-34	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, very soft clayey sand with grass roots, moderate HCl reaction, (SC)	0-0.4
SAND	clayey, medium brown, becoming light brown, moist to damp, very soft except firm at bottom, thin bedded with clayey seam 0.8 to 1 ft; estimate 50-60% coarse to mostly fine hard sand, 35% decreasing downward to 25% medium plasticity fines and 15% mostly fine hard subrounded calcareous coated gravel to 1-1/4 inch; active HCl reaction, (SC), (glaciofluvial)	0.4-1.5
SAND	silty, light brown to tan; damp becoming dry below 5 ft; very firm to 2 ft, hard 2-6 ft, very firm to soft 6-10 ft but recovered loose, 20% very thin silty interbeds (some clayey) 4.5-5 ft and 8-10 ft; estimate 65-75% coarse to mostly fine sand increasing in fineness and amount downward, 20-25% low plasticity fines decreasing downward and 5-10% gravel to 1 inch mostly above 5 ft; active HCl reaction decreasing downward, (SM), (glaciofluvial)	1.5-10
SAND	poorly graded, light brown to tan, dry, loose, soft to firm, uniform, clean (SP) in bottom 0.4 ft; 15.5-17.2 ft coarse to fine sand with 5% gravel to 3/4 inch; estimate remainder of interval 90% mostly medium to fine sand and 10% non to low plasticity fines, weak HCl reaction except moderate 15.5-17.9 ft, (SP-SM)	10-18.3
CLAY	red brown becoming gray below 21.6 ft, moist to wet, very firm, scattered ignite fragments, estimate 60% medium to high plasticity fines, 35% coarse to mostly fine sand and 5% fine subrounded gravel, moderate HCl reaction, (CL), (TILL)	18.3-22.8
SAND	silty, medium gray brown, moist to wet, very firm but recovered loose, massive; estimate 80% mostly fine sand and 20% low plasticity fines, weak to moderate HCl reaction, (SM), (glaciofluvial)	22.8-25
SAND	gravelly, medium to dark reddish brown (oxidized), wet, very firm to hard but recovered loose; estimate 70% mostly coarse to medium, hard, subrounded to subangular sand; 25% hard, subrounded, mostly fine gravel to 1-1/4 inch and 5% non plastic fines, moderate to active HCl reaction, (SP), (glaciofluvial)	25-28.9
SAND	silty, dark reddish brown to 30 ft, dark gray below; wet to saturated; hard to 30 ft, soft below; lignite fragments throughout; grading finer downward; estimate 80% decreasing to 70% downward coarse to mostly fine sand and 20-30% non plastic fines; moderate to active HCl reaction, (SM), (glaciofluvial)	28.9-32.3
SILT	sandy, dark gray, wet to saturated, soft, laminated bedding with lignite particles throughout, estimate 60% non plastic fines and 40% fine sand; active HCl reaction, (ML), (lacustrine)	32.3-35

147-080-27BBD1

NDSWC

Date Completed:	4/11/78	Purpose:	Observation Well
L.S. Elevation (ft):	1833.6	Well Type:	1.5" PVC
Depth Drilled (ft):	55	Aquifer:	Lake Nettie
Screened Interval (ft):	43.4-53.4	Source:	USBR

147-080-27BBD1 continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft silty sand with grass roots. Weak HCl reaction. (SM)	0-0.8
SILTY SAND	light brown to tan (with red oxide stained grains), dry, very firm but recovered loose, 10% white calcareous spots to 1/8-inch. 5.4-5.9' Clean Sand (SP). Estimate 85% coarse to mostly fine sand, 10% nonplasticity fines and 5% fine subrounded gravel to 1/2-inch. Active to violent HCl reaction. (SP-SM) (Glaciofluvial) Interbedded CLAY TILL BALLS as follows: 5.9-9.3' and 10.0-10.4' Clay Till Ball - gray-brown (oxidized), moist, hard with gravel and sand imbedded contacts. Estimate 65% medium to high plasticity fines, 30% coarse to fine sand and 5% fine gravel to 1-inch. Moderate HCl reaction. (CL)	0.8-11.6
CLAY (Glacial Till)	gray brown (oxidized), moist to damp, very firm to hard in place. Silty Sand (poor recovery) 14.7-15.0' (SM). Estimate 60% medium plastic fines, 35% coarse to mostly fine sand and 5% fine gravel to 5/8-inch. Moderate HCl reaction. (CL)	11.6-18.5
SILTY SAND	medium gray brown; damp to moist to 20', wet below; hard but recovered loose; massive. Estimate 70% increasing downward to 75% medium to mostly fine sand, 25-30% low plasticity fines. Moderate to active HCl reaction. (SM) (Glaciofluvial).	18.5-20.8
POORLY GRADED SAND	medium reddish brown (oxide stained), wet, firm but recovered loose, massive. Estimate 75% coarse to mostly fine, subangular sand; 15% fine, subrounded, hard gravel to 3/4-inch and 10% nonplastic fines. Lignite slack zone 25.1' to 25.3'. Moderate to active HCl reaction. (SP-SM) (Glaciofluvial).	20.8-26.1
SILTY SAND	medium gray brown, wet, firm but recovered loose. Estimate 90% medium to mostly fine sand and 10% nonplastic fines. Moderate HCl reaction. (SP-SM) (Glaciofluvial).	26.1-29
SILT	red brown to 29.2', gray color banded shades below; wet; soft to firm; laminated (varved) horizontal bedding. Estimate 85% low to nonplastic fines and 15% fine sand. Moderate to active (on light gray bands) HCl reaction. (ML) (Lacustrine).	29-32.1
CLAY	gray, wet, very firm laminated except medium bedded 39-42.3'. Becoming interbedded with sand 42.3' to bottom. Estimate 90% medium to high plasticity fines and 10% fine sand. Active HCl reaction. (CL-CH) (Lacustrine).	32.1-43.6
SILTY SAND	(poor recovery) medium gray, wet, very firm, laminated to thin bedded with 25% 1/8 to 1/2-inch clay beds to 46', trace of lignite slack zones. Estimate 80% mostly fine sand and 20% nonplastic fines. Trace gravel to 2-inch. Active HCl reaction. (SM) (Glaciofluvial).	43.6-52.9
CLAY (Glacial Till)	medium gray, moist, hard. Estimate 65% medium plastic fines, 30% coarse to fine sand and 5% fine subrounded gravel to 1-inch. Moderate HCl reaction. (CL)	52.9-55

147-080-27BBD2

NDSWC

Date Completed:	4/13/78	Purpose:	Observation Well
L.S. Elevation (ft):	1833.9	Well Type:	1.5" PVC
Depth Drilled (ft):	34	Aquifer:	Lake Nettie
Screened Interval (ft):	23.3-33.3	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	(SM)	0-0.8
SILTY SAND	(SP-SM)	0.8-11.6
CLAY	TILL (CL)	11.6-18.5
SILTY SAND	(SM)	18.5-20.8
SAND	poorly graded, (SP-SM)	20.8-26.1
SILTY SAND	(SP-SM)	26.1-29
SILT	(SM)	29-32.1
CLAY	(CL-CH)	32.1-34

See OW-17 (147-080-27BBD1) for classification.

147-080-27CCC

NDSWC

Date Completed:	5/11/72	Purpose:	Observation Well
L.S. Elevation (ft):	1866.8	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Till
Screened Interval (ft):	40-40	Source:	USBR

147-080-27CCC continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
SAND & GRAVEL	brown	6-8
CLAY	brown, sandy	8-11
CLAY	dark brown from 11-12 ft, gray below, soft becoming firmer at 37 ft, sandy from 20-30 ft, gravelly from 11-12 ft and 34-37 ft with occasional lignite fragments from 12-20 ft, (TILL)	11-40
SAND	silty, dark brown	0.5-6

147-080-27DDD

NDSWC 11605

Date Completed:	8/2/85	Purpose:	Test Hole
L.S. Elevation (ft):	1840	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty, Gravelly; dark brown.	0-1
SAND & GRAVEL	Very fine SAND to medium GRAVEL (mostly medium Sand to fine Gravel); subangular to subrounded; mostly carbonates, shale and quartz with igneous rock fragments and silicates.	1-7
CLAY	Silty, Sandy, Gravelly; yellowish brown, oxidized; moderately soft; slighlty plastic to crumbly; gritty; (TILL).	7-11
SAND	Very fine to coarse (mostly very fine to medium); dark brown; mostly quartz, carbonates and shale with igneous rock fragments.	11-31
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); gray; moderately soft; cohesive and plastic; gritty; stiffer and slightly lignitic 49-64 ft; (TILL); 51-52 ft: coarse SAND to medium GRAVEL lens (subangular to subrounded, mostly shale with carbonates, quartz and some igneous rock fragments); 57-58 ft: medium SAND to coarse GRAVEL lens (angular to subangular, mostly detrital lignite fragments with some quartz, carbonates and shale).	31-64
CLAY	Very Silty, with some very fine to medium Sand; gray; moderately soft and plastic; slightly gritty and sticky.	64-71
CLAYSTONE	Slightly Silty; gray to brownish gray; firm; poorly indurated; very friable; with thin lignite layers; 78-100 ft: interbedded with gray Sandy Claystone to Clayey, Silty very fine Sandstone.	71-100

147-080-28AAA

NDSWC

Date Completed:	4/25/78	Purpose:	Observation Well
L.S. Elevation (ft):	1817.9	Well Type:	1.5" PVC
Depth Drilled (ft):	25	Aquifer:	Lake Nettie
Screened Interval (ft):	13.4-23.4	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
ROAD FILL	gray brown, moist firm clayey sand, gravelly, (SC)	0-2.2
SAND	silty, gray except medium red brown (oxide stained) 4.5-9 ft, and dark red (heavy oxide stains) 7.2-7.4 ft; moist to 10 ft, wet below; hard but recovered loose; very thin bedded with silty interbeds 5.4-7.4 ft and lignite fragments to 1/4 inch 8-10.1 ft; grading becoming coarser downward; 7.4 to 8.0 ft clay till ball, gray brown, tough and moist; estimate 75% fine (at top) and coarse to fine (bottom) hard subangular sand, 20% non plastic fines and 5% hard subrounded quartzite gravel to 3/4 inch (8-10.1 ft only), active HCl reaction, (SM), (glaciofluvial)	2.2-10.1
SILT & SAND	interbedded; gray brown and gray color banded, wet, firm, thin to laminated bedding dipping 0-5 degrees, 40% 1/16 inch to 1-3/4 inch gray brown silt interbeds, scattered lignite stained interbeds to 1/8 inch; estimate 60% fine uniform sand and 40% non to low plasticity fines, moderate HCl reaction, (SM), (glaciofluvial/lacustrine)	10.1-11.7
SAND	silty, gray brown to 14.8 ft, gray below; wet; firm but recovered loose below 15 ft; thin horizontal bedding; grades downward into silt; several lignite stained interbeds; estimate 80% decreasing to 60% fine uniform sand and 20% increasing to 40% low to non plasticity fines, moderate HCl reaction, (SM), (glaciofluvial)	11.7-16.9

147-080-28AAA continued

SILT	sandy, (compressible); gray; wet; soft to firm; thin bedded to 19.6 ft, laminated below; decreasing sand interbeds to 19.6 ft and 10% clayey interbeds below; estimate 60% low plasticity fines and 40% fine uniform sand, weak to moderate HCl reaction, (ML), (lacustrine)	16.9-20.2
CLAY	gray, wet, firm, tough, laminated to thin horizontal bedding; silt 23-23.4 ft; estimate 95% medium to high plasticity fines and 5% very fine sand, moderate to weak HCl reaction, (CL-CH), (lacustrine)	20.2-25

147-080-28AAC

NDSWC

Date Completed:	4/13/78	Purpose:	Observation Well
L.S. Elevation (ft):	1840.8	Well Type:	1.5" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	27.3-37.3	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, moist, soft to firm clayey sand with grass roots, very weak HCl reaction, (SC), (Residual)	0-1.5
CLAY	gray brown with some red oxidized fragments to 13.2 ft, gray and brown mottled below; damp to moist; hard to very hard; numerous white calcareous lenses to 1/8 inch from 2.3-5 ft and 6.2-9.4 ft; lignite fragments 1/8-3/4 inch scattered throughout; estimate 60% medium plastic fines, 35% coarse to fine sand (becoming sandier in lower 1 ft) and 5% subrounded to subangular limestone, chert and sandstone gravel to 1-7/8 inch; active to violent HCl reaction, (CL), (TILL)	1.5-21.6
SAND	silty, tan, dry, hard but recovered loose, poorly cemented with secondary white lime, exhibits numerous white lime seams to 1/8 inch, very thin bedded; estimate 80% medium to mostly fine sand (some red oxidized grains) and 20% low plasticity fines, violent HCl reaction, (SM), (glaciofluvial)	21.6-23.8
CLAY	possibly till ball; gray, moist, tough, very firm, estimate 60% medium plastic fines, 35% coarse to fine sand and 5% fine subrounded gravel to 3/4 inch, moderate HCl reaction, (CL), (TILL)	23.8-24.5
SAND	poorly graded, tan; moist to 30 ft, wet below; very firm but recovered loose; silty in top 1.5 ft, grading into clean sand 26-28.8 ft (SP) and fairly clean sand 28.8-31.8 ft (SP-SM); estimate total deposit 90% medium to mostly fine sand and 10% non plastic fines, active to moderate (downward) HCl reaction, (SP-SM), (glaciofluvial)	24.5-31.8
SILT	gray with red brown (oxide) interbeds to 33 ft and 36.6-37.1 ft, wet, firm, laminated horizontal bedding except contorted 33-34.4 ft, lignite stained interbeds scattered to 34.4 ft; estimate 90% non to low plasticity fines and 10% fine sand, moderate HCl reaction, (ML), (lacustrine)	31.8-37.1
CLAY	gray, saturated, firm, laminated (varved) horizontal bedding, gradational to silt above; estimate 95% medium plasticity fines and 5% fine sand, moderate HCl reaction (on lighter colored beds), (CL), (lacustrine)	37.1-40

147-080-28ABB1

NDSWC

Date Completed:	4/28/78	Purpose:	Test Hole
L.S. Elevation (ft):	1847.7	Well Type:	
Depth Drilled (ft):	45	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, wet, very soft (compressible) clayey sand with small grass roots, weak HCl reaction, (SC)	0-0.5
CLAY	gray brown with scattered red (oxide) and white (calcareous) lenses; wet; very soft (compressible) to 2.5 ft, firm below; scattered lignite particles, pseudo laminated stratification throughout; estimate 60% medium plasticity fines, 35% coarse to fine subangular sand and 5% fine hard subangular gravel to 1/2 inch, active to violent HCl reaction, (CL), (TILL)	0.5-4.8
SAND	clayey, (poor recovery), gray brown, moist, firm to soft (compressible), laminated 0-5 degrees dipping bedding, composed of clayey sand and sandy clay interbeds; estimate 60% medium to fine sand with trace of coarse and 40% low to medium plasticity fines, moderate to active HCl reaction, (SC), (glaciofluvial)	4.8-8.4
CLAY	gray brown, moist to wet, soft to firm, lignite fragments to 1/4 inch scattered throughout, scattered very small selenite crystals and bright red oxide fragments; estimate 60% medium to high plasticity fines, 30% coarse to mostly fine subangular to subrounded sand and 10% hard white subrounded chert and limestone gravel to 2-1/4 inch, moderate to active HCl reaction, (CL), (TILL)	8.4-36
SAND	poorly graded, medium reddish brown (oxide stained), wet, firm but recovered loose, scattered black lignite slack zones up to 1 inch below 37 ft; estimate 85% coarse to mostly medium with some fine subangular hard sand, 10% non plastic fines and 5% fine subrounded gravel to 1/2 inch (mostly 36-37 ft), active HCl reaction, (SP-SM), (glaciofluvial)	36-39

147-080-28ABB1 continued

SAND	silty, gray brown except gray 41.5-43.3 ft, saturated, firm but recovered loose, laminated to very thin bedding dipping 0-5 degrees, 10% 1/8 to 1/4 inch lignite slack interbeds 41.5-44.1 ft; estimate 80% fine uniform sand and 20% non plastic fines, active HCl reaction, (SM), (glaciofluvial)	39-44.1
SILT	gray, wet, soft, laminated horizontal bedding, estimate 80% low plasticity fines and 20% fine uniform sand, active HCl reaction, (ML), (lacustrine)	44.1-45

147-080-28ADD

NDSWC

Date Completed:	5/17/72	Purpose:	Observation Well
L.S. Elevation (ft):	1840.8	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Lake Nettie
Screened Interval (ft):	0-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, silty	0-1
SAND & GRAVEL	brown	1-3
CLAY	brown, sandy and gravelly, scattered lignite fragments from 9-16 ft, (TILL)	3-16
SAND	brown, some gravel	16-20

147-080-28BCC

NDSWC

Date Completed:	5/16/72	Purpose:	Observation Well
L.S. Elevation (ft):	1873.1	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	0-50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.5
SILTY SAND	brown, clay binder	1.5-4
CLAY (Glacial Till)	light brown 4-17', dark brown 17-30', with sandy and gravelly zones; scattered lignite fragments 17-39'.	4-39
SAND	gravelly, brown, soft, with some clayey zones.	39-47
CLAY (Glacial Till)	brown, sandy, soft; some gravel and gray clayey zones.	47-50

147-080-28CBC

NDSWC

Date Completed:	0/0	Purpose:	Municipal Well
L.S. Elevation (ft):	1880	Well Type:	12" Steel
Depth Drilled (ft):	445	Aquifer:	Fort Union
Screened Interval (ft):	390-445	Source:	Layne-Minnesota Co.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Till.	0-30
SAND & GRAVEL		30-36
SAND	With Gravel and Clay.	36-40

147-080-28CBC continued

BEDROCK (?)	Probable Fort Union Group Bedrock.	40-445

40-77 ft: Clay and lignite;
77-117 ft: Clay and streaks of lignite;
117-122 ft: Sand;
122-207 ft: Clay and lignite streaks;
207-208 ft: Shale, hard, white;
208-236 ft: Clay and lignite streaks;
236-337 ft: Clay and streaks of Gravel;
337-340 ft: Sand;
340-342 ft: Shale, hard;
342-352 ft: Sand with hard streaks;
352-393 ft: Clay;
393-403 ft: Sand;
403-407 ft: Clay, soft;
407-417 ft: Sand;
417-418 ft: Clay, soft;
418-422 ft: Shale, hard;
422-440 ft: Clay, Sandy;
440-445 ft: Clay and some Gravel.

147-080-28DAB

NDSWC

Date Completed:	11/2/54	Purpose:	Test Hole
L.S. Elevation (ft):	1851	Well Type:	
Depth Drilled (ft):	35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
Sand	very fine, clayey, buff	0-5
Clay (Glacial Till)	very sandy, buff	5-13
Sand	medium to coarse, and fine to medium clayey gravel	13-20
Sand	fine, loose gray-brown	20-23.5
Clay (Glacial Till)	silty, sandy, stiff, gray; scattered small pebbles	23.5-35

147-080-28DDB

NDSWC

Date Completed:	6/15/55	Purpose:	Test Hole
L.S. Elevation (ft):	1848	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	Fine; Silty; gray.	1-3
SAND	Medium to coarse; Silty; Gravelly; brown and buff.	3-13.5
CLAY	Silty, trace fine sand, scattered pebbles and lignite fragments; gray; (TILL).	13.5-23
SAND	Very fine; Silty; gray.	23-23.7
CLAY	Silty, trace fine sand, scattered pebbles and lignite fragments; gray; (TILL).	23.7-40

147-080-28DDB2

NDSWC

Date Completed:	8/16/68	Purpose:	Test Hole
L.S. Elevation (ft):	1850.1	Well Type:	
Depth Drilled (ft):	51	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Silty; brown.	0-8

147-080-28DDB2 continued

CLAY	Silty, Sandy, Gravelly; tan to gray at 18 ft; stiff; scattered lignite fragments; (TILL).	8-47
LIGNITE & SHALE	Lignite and Clay-Shale; gray; compact; (bedrock).	47-51

147-080-28DDB4

NDSWC

Date Completed:	8/20/68	Purpose:	Test Hole
L.S. Elevation (ft):	1845.9	Well Type:	
Depth Drilled (ft):	51	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAYEY SAND & GRAVEL	brown.	0-10
CLAY (Glacial Till)	brown to gray, silty, sandy; gravel throughout, granite boulder 18.7' to 20', scattered lignite fragments. (CL)	10-39
SANDY SHALE	gray, compact, top of bedrock.	39-45
LIGNITE		45-46
SANDY SHALE	gray, compact.	46-51

147-080-28DDB5

NDSWC

Date Completed:	8/21/68	Purpose:	Test Hole
L.S. Elevation (ft):	1842.9	Well Type:	
Depth Drilled (ft):	51	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	CLAYEY (SC)	0-5
CLAY (Glacial Till)	tan, soft to stiff, silty, sandy; gravelly zone 5 to 10', numerous lignite fragments 30 to 45', (CL)	5-40
CLAY SHALE	gray, compacted, non-indurated (Tongue River Fm. of Fort Union Group, bedrock).	40-51

147-080-29AAA

NDSWC

Date Completed:	5/16/72	Purpose:	Observation Well
L.S. Elevation (ft):	1864.5	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	0-40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.5
SILT	brown, sandy	0.5-3
CLAY	brown, becoming dark brown at 25 ft, soft to medium firm zones, occasional lignite fragments from 25-37 ft, sandy throughout, (TILL)	3-37
SAND & GRAVEL	brown, silty	37-40

147-080-29AAD

NDSWC

Date Completed:	3/30/55	Purpose:	Test Hole
L.S. Elevation (ft):	1828	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

147-080-29AAD continued

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY (Till)	sandy, gravelly, compact, tough, moderately plastic, oxidized to 15 ft	1-30

147-080-30AAD

NDSWC

Date Completed:	5/1/75	Purpose:	Domestic Well
L.S. Elevation (ft):	1890	Well Type:	4" Steel
Depth Drilled (ft):	260	Aquifer:	Fort Union
Screened Interval (ft):	210-230	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	Yellow.	1-60
BEDROCK SAND		60-68
SHALE	With lignite.	68-80
SHALE		80-200
BEDROCK SAND		200-230
SHALE		230-260

147-080-30BBC

NDSWC

Date Completed:	7/22/81	Purpose:	Test Hole
L.S. Elevation (ft):	1830	Well Type:	
Depth Drilled (ft):	81	Source:	C.A. Simpson & Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Dark.	1-5
CLAY	Yellow; with Sand layers.	5-15
CLAY	Blue; sticky.	15-56
SAND	Very fine.	56-67
SHALE	Blue.	67-81

147-080-32AAA

NDSWC 11537

Date Completed:	5/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1903	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Sandy with some Gravel (fine Sand to medium Gravel); yellowish brown, mottled, oxidized; moderately soft; sticky; (TILL).	0-22
SAND & GRAVEL	Fine SAND to medium GRAVEL; subangular to rounded; shale, quartz and carbonate fragments.	22-25
CLAY	Sandy, Gravelly; dark olive gray; moderately soft; gritty; (TILL); less Sand and Gravel below 40 ft.	25-50
CLAY	Silty, slightly Sandy (with very fine Sand), trace fine Gravel; dark olive gray; moderately soft; very cohesive; smooth to somewhat gritty.	50-82
CLAYSTONE	Silty; gray; firm; lignite and brownish black Claystone layer 94-95 ft.	82-100

147-080-33AAB

NDSWC

Date Completed:	10/12/72	Purpose:	Test Hole
L.S. Elevation (ft):	1844.1	Well Type:	
Depth Drilled (ft):	55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	Clayey; brown to 4 ft, gray below.	0-5
CLAY	Sandy; gray; soft; (TILL).	5-12
SAND & GRAVEL	Predominantly coarse SAND to fine GRAVEL; brown.	12-23
CLAY	Sandy with some Gravel; gray; soft; plastic; (TILL).	23-37.5
SILT	Gray; soft; smooth.	37.5-44.5
SAND & GRAVEL	Gray.	44.5-48
CLAY	Silty; gray; soft; (TILL).	48-49.6
LIGNITE	Broken and consolidated zones.	49.6-53
CLAY SHALE	gray, firm.	53-55

147-080-33ABA

NDSWC

Date Completed:	10/12/72	Purpose:	Test Hole
L.S. Elevation (ft):	1844.3	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND	brown 0-4 ft and 7-14 ft, gray 4-7 ft; small gravel to pea gravel size 0-4 ft and 7-14 ft; clayey zone 4-7 ft	0-14
CLAY	gray, sandy; soft and plastic; with gray sand lenses from 34-43 ft; (TILL).	14-43
SILT	gray; smooth; soft and plastic.	43-46
SAND	gravelly, gray, lignitic.	46-53
CLAY SHALE	gray, smooth, firm, scattered lignite fragments	53-60

147-080-33ABA2

NDSWC

Date Completed:	5/10/72	Purpose:	Observation Well
L.S. Elevation (ft):	1845.8	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Lake Nettie
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SILTY SAND	brown	1-4
SAND & GRAVEL	brown	4-7
CLAY (Glacial Till)	brown, becoming gray at 14 ft, sandy, soft	7-16
SAND & GRAVEL	gray	16-21
CLAY (Glacial Till)	gray, soft, scattered lignite fragments	21-26
SAND & GRAVEL	gray	26-30

147-080-33ABA3

NDSWC

Date Completed:	10/6/72	Purpose:	Test Hole
L.S. Elevation (ft):	1844.8	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

147-080-33ABA3 continued

Lithologic Log

Unit	Description	Depth (ft)
FILL	sand and gravel	0-1.5
SAND	silty, brown, loose, moist; estimate 70% poorly graded predominantly fine sand, 25% non plastic fines and 5% gravel, rapid HCl reaction, (SM)	1.5-3.5
SAND	clayey, black, moist, soft; estimate 55% predominantly fine sand and 45% low plasticity fines, contains shell fragments and plant fibers throughout, rapid HCl reaction, 0.5 ft gravelly lens at 5 ft, (SC-OL)	3.5-9
SAND	poorly graded, brown, wet, loose; estimate 90% predominantly fine sand and 10% non plastic fines, slight HCl reaction, (SP-SM)	9-14
SAND	well graded, brown, wet, loose; estimate 60% well graded sand, 35% predominantly fine gravel and 5% non plastic fines, slight HCl reaction, (SW)	14-16.3
CLAY	brown to gray at 19 ft, moist, soft; estimate 75% moderate plasticity fines, 25% coarse to fine sand and traces of gravel, moderate HCl reaction, (CL), (TILL)	16.3-24
CLAY	gray, moist, soft; estimate 85% moderate plasticity fines and 15% predominantly fine sand, occasional traces of fine gravel, moderate HCl reaction, (CL), (TILL)	24-39
CLAY	gray, moist, soft; estimate 95% moderate plasticity fines and 5% very fine sand, massive, moderate HCl reaction, (CL)	39-44
SAND	silty, gray, wet, soft, estimate 80% predominantly fine sand and 20% non plastic fines, moderate HCl reaction, (SM)	44-49
LIGNITE	boulder ?	49-50.8
TILL	lignitic; black, moist, soft; estimate 80% slacked lignite and 20% clay (glacial till), similar to 16.3-24 ft interval, no HCl reaction, nonplastic to slightly plastic	50.8-53.5
CLAY	gray, moist, soft; estimate 65% moderate plasticity fines, 20% coarse t fine sand and 15% fine gravel, slight HCl reaction, (CL), (TILL)	53.5-55
SHALE	(weathered), gray, moist, firm, unconsolidated clay shale; massive bedded with occasional faint laminations, plastic, no HCl reaction	55-60

147-080-33ABD

NDSWC

Date Completed:	11/3/54	Purpose:	Test Hole
L.S. Elevation (ft):	1845.3	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.8
SAND	brown, fine to medium, small proportion of clay, cohesionless, (SP-SC)	0.8-7
SAND & GRAVEL	brown, fine to coarse sand, with 20-25% fine gravel, trace of clay	7-9
CLAY	gray brown, silty, pebbly, very plastic, (CL-CH)	9-13
CLAY	gray, silty, moist, stiff, moderately plastic, includes a few small pebbles, (CL-CH), (TILL)	13-30

147-080-33BBB

NDSWC

Date Completed:	5/10/72	Purpose:	Observation Well
L.S. Elevation (ft):	1895.3	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Till
Screened Interval (ft):	0-50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty	0-2
SILT	sandy, brown, soft	2-4
CLAY	brown to 14 ft, dark brown 14-34 ft, gray below, variable sand and gravel content, variable soft to medium firm to firm zones, boulder encountered from 30-32 ft, occasional lignite fragments at 21-50 ft, (TILL)	4-50

147-080-33CCC

NDSWC

Date Completed:	5/8/72	Purpose:	Observation Well
L.S. Elevation (ft):	1952.6	Well Type:	1.25" PVC
Depth Drilled (ft):	125	Aquifer:	Fort Union
Screened Interval (ft):	0-125	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty; light brown.	0-1
CLAY	sandy, with gravelly zones from 1-10 ft, 20-30 ft and 30-47ft; brown to 56 ft, gray below 56 ft; soft to firm zones; smooth 54-60 ft; scattered lignite fragments from 20-30 ft and 47-60 ft; (TILL).	1-60
SAND	gray; soft; clay binder; scattered lignite fragments.	60-72
CLAY	With some Sand 80-90 ft; gray; soft and firm zones; very smooth; scattered lignite fragments; probably Clay Shale of Fort Union Group	72-90
SHALE	gray, some sand 90-95 ft and 97-100 ft; clayey 95-97 ft; smooth; soft and firm zones, scattered lignite fragments	90-100
SAND	gray, soft, clay binder; medium firm, scattered lignite fragments, probably weakly cemented Sandstone of Fort Union Group	100-125

147-080-33DCC

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1840	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Sandy; (TILL); 0-5 ft: brown; 5-9.5 ft: gray.	0-9.5
SAND	Fine; slightly Clayey; gray.	9.5-11.2
SAND	Fine; brown; loose.	11.2-20
SILT	Gray; compacted; laminated; slightly Clayey below 22 ft.	20-30

147-080-33DDD

NDSWC 3935

Date Completed:	12/1/69	Purpose:	Observation Well
L.S. Elevation (ft):	1824.9	Well Type:	1.25" ABS
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	18-24	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
CLAY	Silty; pinkish gray; interbedded with fine to medium Sand.	1-10
SAND	Fine to coarse; dark gray.	10-18
SAND	Coarse; light brown.	18-25
SILTSTONE	Shaly; light gray.	25-28
LIGNITE	Hard; black.	28-31
SHALE	Silty; white to light gray; soft; micaceous.	31-40

147-080-34CAA

NDSWC

Date Completed:	5/11/72	Purpose:	Observation Well
L.S. Elevation (ft):	1835.3	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Lake Nettie
Screened Interval (ft):	0-20	Source:	USBR

147-080-34CAA continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy	0-0.5
SAND	silty, brown	0.5-4
SAND	brown, occasional gravel	4-20

147-080-34CCC
NDSWC

Date Completed:	5/11/72	Purpose:	Observation Well
L.S. Elevation (ft):	1825.6	Well Type:	1.25" PVC
Depth Drilled (ft):	15	Aquifer:	Lake Nettie
Screened Interval (ft):	0-15	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SILTY SAND	brown	1-2
CLAY	gray, sandy and soft	2-7
SILTY SAND	gray, soft and clayey	7-9
SAND & GRAVEL	gray, scattered lignite fragments	9-15

147-080-36ACB
NDSWC

Date Completed:	9/25/89	Purpose:	Test Hole
L.S. Elevation (ft):	1825	Well Type:	
Depth Drilled (ft):	101	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty to sandy, yellowish brown	1-5
GRAVEL	fine to coarse	5-12
SAND	fine, olive gray with lots of coal	12-24
GRAVEL	fine to coarse, about 20% sand	24-46
CLAY	silty, olive gray, TILL	46-48
CLAY	Silty, olive gray	48-57
SAND	fine	57-61
CLAY	silty, olive gray, with clay layers	61-80
SAND	fine, medium gray	80-91.5
SANDSTONE	rock	91.5-98
SAND	fine, bluish gray, BEDROCK	98-101

147-080-36ACC
NDSWC

Date Completed:	10/10/89	Purpose:	Irrigation Well
L.S. Elevation (ft):	1830	Well Type:	12" Steel
Depth Drilled (ft):	52	Aquifer:	Lake Nettie
Screened Interval (ft):	31-49	Source:	Water Supply Ihnc.

Lithologic Log

147-080-36ACC continued

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty to sandy, yellowish brown	1-7
SAND	fine to coarse, about 30% gravel	7-25
GRAVEL	fine to coarse, about 20 % sand	25-30
SAND	fine to coarse, about 20% gravel	30-37
GRAVEL	fine to coarse, about 20 % sand	37-49
CLAY	silty, olive gray	49-52

147-080-36ADB

NDSWC

Date Completed:	9/25/89	Purpose:	Test Hole
L.S. Elevation (ft):	1830	Well Type:	
Depth Drilled (ft):	105	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty to sandy, yellowish brown	1-13
CLAY	silty, yellowish brown, TILL	13-17
CLAY	silty, olive gray, TILL	17-60
SAND	and coal	60-68
CLAY	silty, olive gray, TILL	68-78
SAND	fine, medium gray	78-95
SAND	fine to coarse, about 10% gravel	95-98
CLAY	silty to sandy, bluish gray, BEDROCK	98-105

147-080-36BBD

NDSWC

Date Completed:	10/5/89	Purpose:	Irrigation Well
L.S. Elevation (ft):	1820	Well Type:	12" Steel
Depth Drilled (ft):	64	Aquifer:	Lake Nettie
Screened Interval (ft):	35-55	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty, yellowish brown	1-2
GRAVEL	fine to coarse	2-6
SAND	fine to coarse	6-11
GRAVEL	fine to coarse, about 10% sand (mixed 3 mud from 5 to 20 ft)	11-40
SAND	fine to coarse, about 30% gravel	40-48
GRAVEL	fine to coarse, about 10% sand, with a little lignite and a few rocks	48-57
CLAY	silty, medium gray	57-64

147-081-02DDD

NDSWC 11600

Date Completed:	8/1/85	Purpose:	Test Hole
L.S. Elevation (ft):	1868	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

147-081-02DDD continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to medium GRAVEL; brown; subangular to subrounded; mostly carbonates, quartz, shale and igneous rock fragments, with silicates.	1-18
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel); yellowish brown to 20 ft, gray below; soft (stiffer below 36 ft), plastic; lignitic; gritty; (TILL); very Gravelly at 42 ft (with carbonates, shale, and hard, very fine, greenish gray sandstone fragments).	18-42
CLAYSTONE	Silty; interbedded brownish gray and gray; firm; friable; with scattered layers of firm, greenish gray, very fine to fine Sandstone.	42-60

147-081-03BBB

NDSWC

Date Completed:	6/16/87	Purpose:	Observation Well
L.S. Elevation (ft):	1846.77	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	16.2-17.6	Source:	USBR

Lithologic Log - unavailable

147-081-04DAA

NDSWC

Date Completed:	6/16/87	Purpose:	Observation Well
L.S. Elevation (ft):	1845.63	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	16.1-17.9	Source:	USBR

Lithologic Log - unavailable

147-081-07AAA

NDSWC 11568

Date Completed:	6/26/85	Purpose:	Test Hole
L.S. Elevation (ft):	1895	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	CLAY; Silty, Sandy; dark reddish brown.	0-1
CLAY	Silty, Sandy, Gravelly; slightly plastic; gritty; scattered carbonaceous streaks; slightly lignitic; scattered rocks (TILL); 1-31 ft; grayish brown, mottled with orangeish brown, oxidized; 31-71 ft: gray to brownish gray.	1-71
SILT	Very Sandy (with very fine to fine Sand); gray; interbedded with layers of mostly coarse Sand to fine Gravel (carbonates, shale, lignite and quartz with some fragments of claystone bedrock).	71-89
CLAYSTONE	Slightly Silty; dark brownish gray; slightly firm; poorly indurated; very friable; with dark gray, very firm, slightly indurated layers; thin lignite beds common.	89-116
SANDSTONE	Very fine to fine; Silty; greenish gray; soft to firm; poorly indurated; very friable; with thin interbeds of Claystone and lignite.	116-120

147-081-07DDD

NDSWC 4098

Date Completed:	8/13/70	Purpose:	Observation Well
L.S. Elevation (ft):	1912.9	Well Type:	1.25" ABS
Depth Drilled (ft):	220	Aquifer:	Turtle Lake
Screened Interval (ft):	118-138	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty; black.	0-1
SAND	Very fine to medium; Silty; yellowish gray; subrounded.	1-7
CLAY	Silty, Sandy; olive brown; scattered pebbles; (TILL).	7-44
SILT	Clayey; olive gray; laminated.	44-53
SAND	Medium; gray; lignitic.	53-55
SILT	Clayey; olive gray.	55-58
GRAVEL	Fine to coarse; Sandy; subangular to subrounded.	58-80
SAND	Medium to coarse; Gravelly; subangular to subrounded; lignitic.	80-111
SILT	Clayey, Sandy; olive gray; laminated.	111-118
GRAVEL	Medium to coarse; Sandy; subangular to subrounded; lenses of detrital lignite.	118-154
SHALE	Silty; light greenish gray; non-calcareous.	154-159
SANDSTONE	Dark gray; calcareous.	159-160
SILTSTONE	Light gray.	160-164
SANDSTONE	Fine; Clayey; greenish gray; micaceous.	164-179
SILTSTONE	Brownish black; carbonaceous.	179-184
SANDSTONE	Fine; Clayey; lignitic.	184-194
SHALE	Sandy; black; carbonaceous.	194-199
SHALE	Black; carbonaceous; interbedded with lignite.	199-220

147-081-09AAA1

NDSWC 11505

Date Completed:	10/17/84	Purpose:	Test Hole
L.S. Elevation (ft):	1843	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Medium SAND to very coarse Gravel; oxidized.	0-10
BOULDERS		10-11
CLAY	Silty, Sandy, Pebbly; olive gray; (TILL).	11-30
SANDSTONE	Very fine; Silty; greenish gray; compact.	30-40

147-081-09AAA2

NDSWC 11506

Date Completed:	10/17/84	Purpose:	Observation Well
L.S. Elevation (ft):	1843.39	Well Type:	1.25" PVC
Depth Drilled (ft):	11	Aquifer:	Lake Nettie
Screened Interval (ft):	5-10	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Medium SAND to very coarse GRAVEL; oxidized.	0-11
BOULDERS		11-11

147-081-09DAD

NDSWC

Date Completed:	3/29/72	Purpose:	Observation Well
L.S. Elevation (ft):	1882.2	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Fort Union
Screened Interval (ft):	0-60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SILT	Brown.	3-6
CLAY	Brown; soft.	6-8
CLAY (Glacial Till)	Some Gravel; brown to gray at 35 ft; scattered lignite particles.	8-37
SHALE	Gray; firm with soft zones; smooth; sandier below 40 ft. Note: driller has logged 37-50 ft as shale and 50-60 ft as till. This interval is questionable.	37-60

147-081-10AAA

NDSWC 11599

Date Completed:	8/1/85	Purpose:	Test Hole
L.S. Elevation (ft):	1868	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; brown; poorly sorted; subangular to subrounded; mostly carbonates, shale, igneous rock fragments and silicates, with some hard sandstone.	1-18
CLAY	Silty, Sandy, Gravelly (with very fine Sand to medium Gravel); brown, oxidized to 23 ft, gray below; moderately soft and cohesive; slightly plastic; slightly lignitic; gritty; (TILL).	18-27
SANDSTONE	Very fine to fine; slightly Clayey; olive yellow; lignitic; slighlty firm; poorly indurated; very friable.	27-36
SANDSTONE	Very fine to fine; dark olive; well sorted; slightly soft; poorly indurated; loose.	36-43
CLAYSTONE	Slightly Silty; brownish gray and gray; slightly firm; poorly indurated; very friable; interbedded with greenish gray Siltstone (with little very fine Sand, slightly firm, poorly indurated, very friable, micaceous).	43-52
CLAYSTONE	And SILTSTONE as above; with interbeds of dark maroonish brown Claystone (slightly firm, poorly indurated, very friable, micaceous).	52-60

147-081-10ADD

NDSWC 2727

Date Completed:	8/2/67	Purpose:	Test Hole
L.S. Elevation (ft):	1864	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, silty, brownish-black	0-1
SAND & GRAVEL	coarse to very coarse, angular to subrounded sand; fine angular to subrounded gravel	1-10
CLAY	silty, dark-greenish-gray; upper 3-4 ft is moderate yellowish-brown (till)	10-16
SAND	very fine to fine, clayey, subangular to rounded	16-19
CLAY	silty, olive-gray, scattered shale and limestone fragments (till)	19-29
SAND	clayey, lignitic; scattered pebbles	29-55
SANDSTONE	and shale interbedded; fine indurated noncalcareous light bluish- gray sandstone; indurated noncalcareous brownish-black shale	55-80

147-081-11CCC

NDSWC

Date Completed:	3/18/55	Purpose:	Test Hole
L.S. Elevation (ft):	1852	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Dry; trace of Clay in zones.	0-26.5
SAND	Fine; with trace of Clay; gray; uniform; compact; (probable weathered Sandstone).	26.5-30

147-081-11CDC

NDSWC

Date Completed:	4/5/72	Purpose:	Observation Well
L.S. Elevation (ft):	1850.2	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	0-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, brown.	0-2
SAND & GRAVEL	Coarse, with Gravel to 1.25 inch; brown.	2-10
SAND	Brown; with traces of soft, brown Clay.	10-12.7
CLAY	Brown to 16 ft, gray below; (TILL).	12.7-20

147-081-12CCC

NDSWC 11601

Date Completed:	8/1/85	Purpose:	Test Hole
L.S. Elevation (ft):	1859	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Very fine SAND to fine GRAVEL; brown, oxidized; mostly quartz, carbonates, and igneous rock fragments, with shale and silicates.	0-14
CLAY	Silty, Sandy, Gravelly (with very fine Sand to fine Gravel); yellowish brown to 16 ft, gray below; moderately soft and cohesive; moderately plastic; somewhat sticky; gritty; (TILL).	14-41
SAND	Very fine to very coarse; with trace fine Gravel; subangular to mostly subrounded; mostly quartz, shale and carbonates, with igneous rock fragments, silicates and some lignite.	41-45
CLAYSTONE	Dark gray to maroonish gray; moderately firm, poorly indurated; friable; compact; blocky.	45-60

147-081-12DCC

NDSWC

Date Completed:	4/6/72	Purpose:	Observation Well
L.S. Elevation (ft):	1860.8	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Lake Nettie
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty.	0-2
SAND	Gravelly; brown; clean; with lignite fragments from 7-10 ft.	2-22
CLAY	Gray; soft; (TILL).	22-30

147-081-13BCC

NDSWC

Date Completed:	3/22/55	Purpose:	Test Hole
L.S. Elevation (ft):	1849	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.5
SAND	buff, fine, uniform, poorly graded, trace of fine gravel, cohesionless	1.5-22
CLAY	(Till) gray, sandy, compact, moderately plastic	22-30

147-081-13DCC1

NDSWC

Date Completed:	4/11/72	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	1.25" PVC
Depth Drilled (ft):	25	Aquifer:	Turtle Lake
Screened Interval (ft):	0-25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND & GRAVEL	brown, scattered lignite fragments with material becoming coarser from 10-18 ft	1-18
CLAY	gray (TILL)	18-28

147-081-14AAA

NDSWC

Date Completed:	4/5/72	Purpose:	Observation Well
L.S. Elevation (ft):	1851	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Lake Nettie
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty	0-3
SAND	With scattered Gravel and lignite fragments; brown.	3-7
CLAY	Brown; soft; (TILL).	7-13
CLAY	Sandy; gray; soft; (TILL).	13-30

147-081-14ACC

NDSWC

Date Completed:	3/21/55	Purpose:	Test Hole
L.S. Elevation (ft):	1851	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	Poorly graded; maximum size recovered 1.5 inch diameter; (100% water loss to borehole).	0-30

147-081-14BBB

NDSWC

Date Completed:	8/10/54	Purpose:	Test Hole
L.S. Elevation (ft):	1839.8	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

147-081-14BBB continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	fine to medium, and gravel fine to coarse, clean, loose, brown	1-9.4
SAND	medium, clayey, well compacted greenish-gray (bedrock, Fort Union Group)	9.4-10.5
SHALE	soft, very plastic, gray (bedrock, Fort Union Group)	10.5-28
SHALE	black; clayey gradations of very organic shale and shaly lignite (bedrock, Fort Union Group)	28-30

147-081-14CAC

NDSWC

Date Completed:	3/30/72	Purpose:	Observation Well
L.S. Elevation (ft):	1835.1	Well Type:	1.25" PVC
Depth Drilled (ft):	27	Aquifer:	Turtle Lake
Screened Interval (ft):	0-18	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	Brown; soft.	2-3.5
SAND & GRAVEL	Brown; lignite fragments from 10-17 ft.	3.5-17
SHALE	Gray	17-27

147-081-14DAA

NDSWC

Date Completed:	3/31/72	Purpose:	Observation Well
L.S. Elevation (ft):	1849.1	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Turtle Lake
Screened Interval (ft):	0-36	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty	0-3
SAND	brown	3-10
SAND & GRAVEL	brown	10-26
CLAY (Glacial Till)	gray	26-34
CLAY (Glacial Till)	sandy and gravelly, gray.	34-36
SANDSTONE	noncemented, gray.	36-40

147-081-14DAD

NDSWC

Date Completed:	8/11/54	Purpose:	Test Hole
L.S. Elevation (ft):	1834.8	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	medium, brown, fairly clean, poorly graded, cohesionless (SP)	1-5
SAND & GRAVEL	medium to coarse sand and gravel to 1-inch, brown, fairly clean, cohesionless (SP-GP)	5-14
CLAY	silty, sandy, pebbly, gray; soft to stiff, slightly plastic (TILL) (CL)	14-26
SILT	clayey, with little very fine sand, gray; laminated or varved in zones, moderately compacted (ML)	26-30

147-081-15ABB1

NDSWC

Date Completed:	4/16/69	Purpose:	Test Hole
L.S. Elevation (ft):	1832.4	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	SILTY SAND; dark brown to black, parent material silty sand (SM & OL)	0-1
SAND	Well sorted, brown, moist to wet, estimate 90% fine to medium sand, 10% nonplastic fines, 15% gravel and cobbles in zones, limy to 3 ft, siltier in zones, trace of clay, concentration of lignite slack at bottom. Active to spotty moderate acid reaction, Glaciofluvial (SP-SM)	1-7.5
CLAY	gray, moist, very silty and sandy, moderate to locally highly plastic, few very thin fine sand laminations, fat clay zones 24-29 ft; lignite slack concentration 27-28', with numerous inclusions of lignite slack to 29', slight to moderate acid reaction, Glaciofluvial (CL)	7.5-34
SILTY SAND	gray, moist to wet, dense, firm, estimate 80% fine to medium sand, 20% nonplastic fines trace of clay, slight acid reaction, few lignite slack inclusions, thin clay lenses 40-44 ft, Glaciofluvial (SM)	34-44
LIGNITE	Top of rock; Tongue River Formation.	44-50

147-081-15BAD

NDSWC

Date Completed:	9/16/54	Purpose:	Test Hole
L.S. Elevation (ft):	1847.3	Well Type:	
Depth Drilled (ft):	32	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
Topsoil		0-1
Sand	fine to coarse; and gravel, medium, clean loose, gray-brown	1-11.5
Clay	(glacial till), silty, sandy, stiff, gray-brown; soft wet clay from 21-24 ft	11.5-24.4
Sand	fine to medium, clean, loose, gray; contains thin streaks of pulverized lignite	24.4-32

147-081-15BCC

NDSWC 11507

Date Completed:	10/17/84	Purpose:	Test Hole
L.S. Elevation (ft):	1858	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Pebbly; olive brown, oxidized to 22 ft, olive gray below.	0-37
SAND & GRAVEL		37-39
SAND	Very fine; Silty; greensish gray; compact (bedrock, Fort Union Group).	39-60

147-081-15DCC

NDSWC

Date Completed:	3/29/72	Purpose:	Observation Well
L.S. Elevation (ft):	1838.6	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	0-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty	0-2
CLAY	brown, very soft	2-4
SAND & GRAVEL	brown	4-7
CLAY	brown, soft, becoming dark brown and firmer at 14 ft (TILL)	7-20

147-081-15DDD

NDSWC 2725

Date Completed:	8/1/67	Purpose:	Test Hole
L.S. Elevation (ft):	1830	Well Type:	
Depth Drilled (ft):	50	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, sandy, dark yellowish-brown	0-0.5
Gravel and Sand	coarse subangular to subrounded gravel; coarse to very coarse angular to subangular sand	0.5-20
Clay	silty, dark greenish-gray, laminated; lignitic in lower part of section	20-28
Sandstone	and Shale interbedded; fine to medium noncalcareous greenish-gray sandstone; noncalcareous dark-gray shale	28-50

147-081-16CDD

NDSWC

Date Completed:	8/9/54	Purpose:	Test Hole
L.S. Elevation (ft):	1837.9	Well Type:	
Depth Drilled (ft):	25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	silty, sandy, pebbly, brown to gray, stiff, oxidized to 19.8 ft (TILL) (CL)	1-25

147-081-16DAD

NDSWC

Date Completed:	3/24/55	Purpose:	Test Hole
L.S. Elevation (ft):	1847	Well Type:	
Depth Drilled (ft):	40	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
Topsoil		0-1
Silt	sandy, organic, chiefly topsoil	1-3
Sand	fine, dry, buff; trace of fine gravel	3-8
Sand	fine, loose, buff to gray; trace of silt	8-15
Clay	sandy, gravely, moderately plastic, gray; (TILL)	15-40

147-081-16DAD2

NDSWC

Date Completed:	2/11/69	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, organic, silty clay, frost to 4', parent material till. (OL).	0-1
SANDY CLAY	(Glacial Till) light gray to tan, damp to dry, very limy, active acid reaction, silty, estimate 40% fine to medium grain sand, occasional coarse sand to fine gravel size particles, low to medium plasticity.	1-6
SILTY SAND	brown to light gray, dry, fairly well graded sand, estimate 20% fine gravel, estimate 10-15% silty clayey fines, active acid reaction, Glaciofluvial (SW-SM).	6-9
CLAY	(Glacial Till) brown, oxidized to 14', gray 14-38.8', moist, stiff, silty, sandy, sand content higher 9-13', gravel throughout, occasional lignite fragments, slight acid reaction, medium plasticity, PI estimated 20-25. (CL)	9-38.8
SANDSTONE	bluish gray, moist, compact, uncemented, fine uniform grain, estimate 40% silty to clayey fines, appears tuffaceous (bedrock, Tongue River Formation of Fort Union Group).	38.8-50

147-081-16DAD3

NDSWC

Date Completed:	2/12/69	Purpose:	Test Hole
L.S. Elevation (ft):	1845.7	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, organic, frost to 4 ft, (OL)	0-1
SANDY CLAY	brown, dry (TILL) (SC)	1-6.5
SILTY SAND	brown to light gray, dry, (Glaciofluvial) (SW-SM)	6.5-8
CLAY	brown, oxidized to 13 ft, gray 13-38.5 ft; moist, stiff (TILL) (CL)	8-38.5
SANDSTONE	bluish gray, moist, compact, uncemented (Tongue River Formation of Fort Union Group)	38.5-50

147-081-16DAD4

NDSWC

Date Completed:	2/13/69	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, dry. (OL-CL)	0-1
SANDY CLAY	(Glacial Till) - brown, dry, silty, scattered gravel and lignite fragments throughout, (SC)	1-4
SAND and GRAVEL	brown, Glaciofluvial, (SP-GP)	4-7.5
CLAY	(Glacial Till) brown, moist, sandy, gritty, scattered gravel and lignite fragments throughout, (CL)	7.5-13.5
CLAY	(Glacial Till) - gray, moist, sandy, silty, scattered gravel and lignite fragments throughout, (CL)	13.5-41
SANDSTONE	gray.	41-50

147-081-16DCC

NDSWC

Date Completed:	4/5/55	Purpose:	Test Hole
L.S. Elevation (ft):	1851	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.4
SAND	tan, fine, uniform, silty, dry	1.4-5.6
SAND	brown, fine to medium, poorly graded, clayey	5.6-7.6
CLAY	brown, clay rich, soft, plastic, (TILL)	7.6-17
CLAY	gray, clay rich, soft, plastic, (TILL)	17-30

147-081-17BCCA

NDSWC

Date Completed:	8/5/54	Purpose:	Test Hole
L.S. Elevation (ft):	1840.9	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	brown to gray, silty, sandy, pebbly, oxidized to 13 ft, stiff, plastic when saturated, (CL), (TILL)	1-30

147-081-17DDA

NDSWC

Date Completed:	8/6/54	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	35.8	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-0.8
CLAY	silty, sandy, pebbly; brown to gray; stiff; oxidized to 32.2 ft, (CL)	0.8-35.8

147-081-18AAA

NDSWC

Date Completed:	12/10/71	Purpose:	Observation Well
L.S. Elevation (ft):	1909.3	Well Type:	2" PVC
Depth Drilled (ft):	85	Aquifer:	Turtle Lake
Screened Interval (ft):	0-85	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy to 5 ft; brown to gray at 28 ft; firm; (TILL).	0-49
GRAVEL		49-53
CLAY SHALE	with Lignitic Shale and Lignite layers; some concretions (in place bedrock or ice-shoved block?).	53-75
SANDSTONE(?)	or Siltstone or Concretions; cemented, hard, (listed as gravel on driller's report).	75-85
	USBR log prepared from Driller's Daily Report; suspect top of bedrock fom 53-75 ft, possible float(?).	

147-081-18ADC

NDSWC

Date Completed:	8/29/77	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	80	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	Fine to medium.	1-13
CLAY	Sandy, Silty; medium gray; with some rocks.	13-80

147-081-18CCB

NDSWC

Date Completed:	9/18/72	Purpose:	Observation Well
L.S. Elevation (ft):	1876.9	Well Type:	4" PVC
Depth Drilled (ft):	153	Aquifer:	Turtle Lake
Screened Interval (ft):	111-153	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND	Fine; silty; brown; estimate 75% fine Sand and 25% non-plastic fines. (SM)	2-5
SAND	Fine; brown; estimate 88-95% fine uniform Sand and 5-12% non-plastic fines. (SP-SM)	5-34.5
SAND	Fine, uniform; Silty (estimate 20% non-plastic fines); gray. (SM)	34.5-41
CLAY	With trace (estimate <5%) very fine Sand; gray; soft; medium plasticity, contains silt and sand partings to 1/4-inch. (CL)	41-49
CLAY (Glacial Till)	Silty, Sandy, with trace Gravel; gray; firm. (CL)	49-102

147-081-18CCB continued

CLAY SHALE (Float)	gray; smooth; firm.	102-113
SAND	Gray; lignite particles and small Gravel to 130 ft; clean gray Sand 130-143 ft; cobble at 142.3 ft; lignite particles and fine Sand 143-147 ft; water bearing (artesian). (SP)	113-147
CLAY SHALE	Gray; firm (Tongue River Formation of Fort Union Group).	147-153

147-081-18CCC1

NDSWC

Date Completed:	12/7/71	Purpose:	Observation Well
L.S. Elevation (ft):	1872.7	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Till
Screened Interval (ft):	0-50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black	0-1.5
SAND	silty, brown, dry to 20 ft, moist below 20 ft, loose to soft; estimate 80% fine sand increasing downwards to 85% medium to fine sand, 15-20% non plastic fines; contains scattered 0.1 ft zones of laminated low plasticity clays; moderate reaction with HCl, highly oxidized from 20-29.5 ft, semipervious, alluvium, (SM)	1.5-29.5
SAND	clayey, yellow brown, wet, soft; estimate 60% fine sand and 40% low plasticity fines, moderate reaction with HCl, alluvium, (SC)	29.5-31
SAND	clayey, grayish brown, moist, soft; estimate 55% very fine sand and 45% low plasticity fines, clay partings and lignite laminations common, moderate reaction with HCl, impervious, (lacustrine) (SC-CL)	31-40
LEAN CLAY	grayish brown, moist, soft; estimate 80% low plasticity fines and 20% fine sand, fine sand partings common, moderate reaction with HCl, impervious, (lacustrine), (CL)	40-48
CLAY	brown, moist, firm; estimate 70% moderate to high plasticity fines, 25% coarse to fine poorly graded sand and 5% fine gravel, moderate reaction with HCl, impervious, (CL-CH), (TILL)	48-50

147-081-18DAAA

NDSWC

Date Completed:	4/8/55	Purpose:	Test Hole
L.S. Elevation (ft):	1835.5	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	brown, sandy, gravelly, tough, (TILL)	1-16
CLAY	gray, sandy, gravelly, moderately plastic, tough, (TILL)	16-30

147-081-18DAD1

NDSWC

Date Completed:	2/18/69	Purpose:	Test Hole
L.S. Elevation (ft):	1845.1	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, organic	0-0.5
SAND & GRAVEL	brown, dry, (SP-GP)	0.5-12
CLAY	brown, moist, (CL), (TILL)	12-17.5
CLAY	gray, moist, firm, (CL), (TILL)	17.5-50

147-081-18DAD2

NDSWC

Date Completed:	8/12/75	Purpose:	Observation Well
L.S. Elevation (ft):	1843.5	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	3-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	respread, dark brown to black, dry, soft and loose becoming compacted at 0.6 ft, a few scattered roots, sandy clay	0-1
TOPSOIL	black, moist, soft to firm compacted by equipment traffic, sandy clay with scattered roots	1-2
CLAY	silty and sandy, light gray to brown with scattered oxide stains, moist, soft to firm, a few scattered fine roots and pebbles; faintly to 1/4 inch laminated bedding with silty, sandy and clayey interbeds; white calcareous (slough salts) seams and nodules throughout; estimate 60% slight plasticity fines and 40% mostly fine sand with occasional coarse sand and fine gravel, rapid to violent HCl reaction, (slough deposits), (SC-SM)	2-5.5
SAND	silty, brown with oxide stains, moist, soft and loose, very poor core recovery, a few silty clay lenses scattered throughout; estimate 60% hard, coarse to fine sand with occasional fine gravel and 40% non to slight plasticity fines, moderate HCl reaction, (SM)	5.5-10
CLAY	sandy, brown with oxide stains, moist and soft, scattered lignite particles, 2 inch rock at top; estimate 60% moderate plasticity fines, 35% hard, subangular coarse to mostly fine sand and 5% mostly fine gravel, slight to moderate HCl reaction, (CL), (TILL)	10-20

147-081-18DBB

NDSWC

Date Completed:	8/22/75	Purpose:	Observation Well
L.S. Elevation (ft):	1877.2	Well Type:	1.25" PVC
Depth Drilled (ft):	67	Aquifer:	Turtle Lake
Screened Interval (ft):	0-67	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, dry, soft and loose. Sandy silt with scattered roots and stems.	0-1
SANDY SILT	brown, dry, soft and loose. Scattered fine roots. Estimate 55% non to slight plasticity fines and 45% fine sand. No HCL reaction. (Loess) (SM-ML).	1-4.5
SILTY SAND	light tan, dry soft and loose. Occasional fine roots to 5'. Estimate 60% fine sand and 40% non-plasticity fines. A few cemented sandstone fragments 9.7-9.9'. Slight HCL reaction. (SM).	4.5-10
SANDY SILT	With SILTY CLAY Interbeds - mottled brown with oxide stains to 34.2' becoming gray below, damp to moist, becoming wet to saturated at 29', soft. Laminated bedding with silt, sand, and silty clay interbeds. Pockets of silty sand (SM) 10.8-11', 18.218.6', 19.6-20', 21.8-24' and 25-26'. Estimate 55% slight plasticity fines and 45% mostly fine sand. moderate HCL reaction. (SM-ML).	10-38
CLAYEY SILT	gray, wet, soft. Laminated bedding with silty sand and silty clay interbeds. Estimate 70% slight plasticity fines and 30% fine sand. Non to slight HCL reaction (CL-ML).	38-50
SANDY SILT	gray, wet, soft. Laminated bedding with silty clay interbeds. Estimate 55% non to slight plasticity fines and 45% fine sand. Moderate HCL reaction. (SM-ML)	50-52
SILTY SAND	gray, saturated soft and loose. Estimate 85% hard, subangular coarse to mostly medium to fine sand and 15% non-plasticity fines. Silty clay lens 52-53.1', No HCL reaction (SM).	52-57
CLAY	(Glacial Till), gray, moist with wet silty sand lens, soft. Silty sand (SM) zones 60-62.8' and 65-66.7'. Scattered lignite particles. Estimate 60% moderate plasticity fines and 40% hard, subangular coarse to mostly fine sand with occasional fine gravel. Slight to moderate HCL reaction. (CL).	57-67

147-081-18DBC

NDSWC

Date Completed:	9/15/54	Purpose:	Test Hole
L.S. Elevation (ft):	1860.3	Well Type:	
Depth Drilled (ft):	35	Source:	USBR

Lithologic Log

147-081-18DBC continued

Unit	Description	Depth (ft)
TOPSOIL		0-2
SILT & CLAY	sandy, gray, organic, slightly plastic (ML-CL)	2-5
SAND	fine, gray-brown, fairly clean, cohesionless, poorly graded (SP)	5-10
SAND	fine, slightly clayey, gray-brown, poorly graded (SM)	10-21
SAND	fine, buff, fairly clean, cohesionless, poorly graded, laminated, iron oxide stained (SP)	21-25.5
SAND	fine, silty, slightly clayey, gray, laminated (ground water at 20.4 ft)	25.5-35

147-081-18DBD

NDSWC

Date Completed:	8/29/77	Purpose:	Observation Well
L.S. Elevation (ft):	1840	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	108-118	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Sandy, Silty; olive gray.	1-5
SAND	Fine to medium.	5-12
CLAY	Sandy, Silty; medium gray.	12-81
SAND	Fine to coarse.	81-98
CLAY	Sandy, Silty, medium gray.	98-101
GRAVEL	Fine to coarse; with about 20% Sand; with some rocks.	101-117
CLAY	Sandy, Silty; medium gray.	117-120

147-081-18DCA1

NDSWC

Date Completed:	8/13/75	Purpose:	Observation Well
L.S. Elevation (ft):	1845.8	Well Type:	1.5" PVC
Depth Drilled (ft):	14	Aquifer:	Till
Screened Interval (ft):	3-14	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL & TOPSOIL	brown (oxide stained) and black, moist, firm to compacted by equipment traffic, mixture of glacial till and topsoil, scattered roots throughout, sandy clay with 60% moderate plasticity fines and 40% sand, rapid HCl reaction	0-4.1
CLAY	sandy, brown with oxide stains, moist, soft to firm, scattered white calcareous seams and nodules, scattered lignite particles; estimate 60% moderate plasticity fines, 35% hard, subangular coarse to fine sand and 5% hard, mostly fine gravel, moderate to rapid HCl reaction, (CL), (TILL)	4.1-14

147-081-18DCC1

NDSWC

Date Completed:	8/14/75	Purpose:	Observation Well
L.S. Elevation (ft):	1840.2	Well Type:	1.25" PVC
Depth Drilled (ft):	15	Aquifer:	Till
Screened Interval (ft):	3-15	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	and topsoil; dark brown, dry to damp, soft to firm (compacted), silty clay with scattered roots and stems, fill and topsoil mixture, old county road bed	0-2.3

147-081-18DCC1 continued

SAND	clayey, mottled brown, with oxide stains, moist, soft to firm, some laminated bedding with silt and sand interbeds, scattered fine roots and rounded pebbles, numerous white calcareous (slough salts) seams and pockets; estimate 60% mostly fine sand and 40% slight plasticity fines, violent HCl reaction, (SC)	2.3-5
CLAY	brown with some oxide stains, moist, soft, scattered lignite particles and white calcareous seams and pockets; estimate 65% moderate plasticity fines, 30% hard, subangular coarse to fine sand and 5% hard, mostly subrounded mostly fine gravel, scattered silty and sandy lenses, moderate HCl reaction, (CL), (TILL)	5-15

147-081-18DDB4

NDSWC

Date Completed:	8/28/75	Purpose:	Test Hole
L.S. Elevation (ft):	1847.4	Well Type:	
Depth Drilled (ft):	20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	And Respread Topsoil; brown, damp, soft, silty and sandy clay with scattered roots throughout; some compacted zones, rapid HCL reaction.	0-4.3
TOPSOIL	black to brown, moist, compacted by equipmenttraffic. Scattered roots. Silty clay. Moderate HCL reaction.	4.3-5.5
CLAYEY SAND	With Silty Sand Interbeds - Brown With oxide stains moist, soft. Poor core recovery.Laminated bedding with silt, clay and sand interbeds, Estimate 60% hard, coarse to mostly medium and fine sand and 40% slight plasticity fines. Scattered white calcareous (slough salts) seams. Rapid HCL reaction. (SC)	5.5-8
SILTY SAND	brown (oxide stains) moist, soft. Poor core recovery. Scattered clay interbeds. Estimate 65% mostly medium and fine sand and 35% slight plasticity fines moderate HCL reaction. (SM)	8-12.5
CLAYEY SAND	(Glacial Till) brown (oxide stains), moist, soft. Scattered lignite particles and silty sand lens. Estimate 50% slight to moderate plasticity fines, 5% hard, subangular coarse to fine sand and 5% mostly fine gravel. Moderate to rapid HCL reaction. (SC-CL)	12.5-15.5
SANDY CLAY	(Glacial Till) brown with oxide stains, moist, soft. Scattered lignite particles. Estimate 60% moderate plasticity fines, 35% hard, coarse to mostly fine sand and 5% mostly fine gravel. Moderate HCL reaction. (CL)	15.5-20

147-081-18DDC

NDSWC

Date Completed:	9/8/75	Purpose:	Observation Well
L.S. Elevation (ft):	1837.3	Well Type:	1.25" PVC
Depth Drilled (ft):	19	Aquifer:	Till
Screened Interval (ft):	3-19	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, silty clay, damp, soft, scattered stems and roots	0-1
SAND	silty, buff to 2 ft, brown below; dry and loose (powdery) to 2 ft, damp and soft below, some laminated bedding below 3 ft with clay and sand interbeds; estimate 50% mostly fine sand with occasional coarse sand and fine gravel and 50% slight plasticity fines, scattered calcareous seams, rapid HCl reaction, (SM-ML)	1-3.8
CLAY	silty, mottled brown gray (oxide stains), moist to wet, soft, laminated bedding with clay, silt and sand interbeds, scattered calcareous seams and pockets; estimate 60% slight plasticity fines and 40% mostly fine sand, rapid HCl reaction, (ML-CL)	3.8-6.5
SAND	silty, with clay interbeds; brown, wet, soft, laminated bedding with about 30% clay interbeds; estimate 60% hard, coarse to mostly fine sand with occasional fine gravel and 40% slight plasticity fines, slight HCl reaction, (SC-SM)	6.5-9.3
CLAY	sandy, dark brown with scattered oxide stains, moist, soft, scattered lignite particles and silty sand lens; estimate 60% moderate plasticity fines, 35% hard, subangular coarse to fine sand and 5% mostly fine gravel, no to slight HCl reaction, (CL), (TILL)	9.3-19

147-081-18DDD1

NDSWC

Date Completed:	8/13/75	Purpose:	Observation Well
L.S. Elevation (ft):	1835.7	Well Type:	1.25" PVC
Depth Drilled (ft):	25	Aquifer:	Till
Screened Interval (ft):	4-25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, silty clay, dry, soft, scattered roots	0-1
CLAY	silty, light gray to brown with oxide stains, moist with saturated sand lens, soft, numerous white calcareous (slough salts) seams and nodules, a few fine roots, some laminated bedding with scattered silty sand interbeds and pockets throughout; estimate 60% increasing to 75% below 4.5 ft slight plasticity fines and 40% decreasing to 25% mostly fine sand with occasional coarse sand, rapid to violent HCl reaction, (ML-CL)	1-6.5
SAND	silty, mottled brown with oxide stains, wet to saturated, soft, laminated bedding with clayey sand and silty clay interbeds; estimate 70% hard, subangular coarse to mostly fine sand with occasional fine gravel and 30% non to slight plasticity fines, slight to moderate HCl reaction, (SM)	6.5-14.8
SAND	clayey, brown (oxide stains), moist to saturated, soft, scattered lignite particles and silty sand seams; estimate 65% coarse to fine sand with occasional fine gravel and 35% slight plasticity fines, slight HCl reaction, (SC), (TILL)	14.8-18.2
CLAY	brown, with oxide stains to 19.5 ft, gray below, moist, soft, scattered lignite; sandy to 19.5 ft with scattered lenses below; estimate 55% increasing to 75% moderate to high plasticity fines and 45% decreasing to 25% coarse to mostly fine sand with scattered fine gravel, slight to moderate HCl reaction, (CL), (TILL)	18.2-25

147-081-19AAA

NDSWC 2718

Date Completed:	7/31/67	Purpose:	Observation Well
L.S. Elevation (ft):	1837	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	94-97	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, grayish-black (topsoil).	0-1
CLAY	silty, sandy, yellowish-gray.	1-3
SAND	medium to coarse, angular to subangular	3-6
CLAY	silty, gravelly, olive-gray (till)	6-66
SAND	medium to very coarse, angular to subrounded.	66-92
GRAVEL	fine to medium, sandy, angular to subrounded.	92-98
CLAY	silty, sandy, gravelly, olive-gray (till).	98-103
SANDSTONE	fine, noncalcareous, bluish-gray; interbedded with light gray shale.	103-120

147-081-19BBB1

NDSWC

Date Completed:	8/14/75	Purpose:	Observation Well
L.S. Elevation (ft):	1847.3	Well Type:	1.25" PVC
Depth Drilled (ft):	28	Aquifer:	Till
Screened Interval (ft):	3-28	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	and topsoil, dark brown, dry, soft to firm (compacted), fill to 1 ft with mixture of topsoil and fill below, silty clay with scattered roots	0-3.3
SILT	sandy, buff, dry, soft and loose in core box (firm to drill), scattered slough salts and fine roots; estimate 55% slight plasticity fines and 45% fine sand, rapid HCl reaction, (SM-ML)	3.3-6

147-081-19BBB1 continued

SILT	sandy, brown with oxide stains and dark gray clay laminations most, soft; laminated bedding with paper thin to 1/4 inch color banded, silt, clay and silty sand interbeds; estimate 50% non to slight plasticity fines and 50% fine to very fine sand, rapid HCl reaction, (SM-ML)	6-10.9
CLAY	silty, mottled brown light gray (oxide stained), moist, soft and sticky (material compresses); some faintly laminated bedding; scattered pebbles; estimate 90% slight to moderate plasticity fines and 10% fine sand with occasional fine gravel, slight HCl reaction, (CL)	10.9-18.2
CLAY	tan to brown to 25 ft, gray below (oxide stained), moist, soft, silty and sandier to 20 ft; scattered lignite particles; estimate 65% moderate to high plasticity fines, 30% hard, subangular coarse to mostly fine sand and 5% hard mostly fine gravel, slight to moderate HCl reaction, (CL), (TILL)	18.2-28

147-081-19BBB2

NDSWC

Date Completed:	8/15/75	Purpose:	Observation Well
L.S. Elevation (ft):	1840.1	Well Type:	1.25" PVC
Depth Drilled (ft):	16	Aquifer:	Till
Screened Interval (ft):	3-16	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL & TOPSOIL	dark brown, moist, soft to firm (compacted), clay till and topsoil mixture with fine roots throughout	0-4
CLAY	silty, mottled brown and light gray, moist, soft (compresses); laminated bedding with silty color banded interbeds; scattered fine roots; estimate 85% slight to moderate plasticity fines and 15% mostly fine sand with scattered pebbles; rapid HCl reaction, (ML-CL)	4-6
CLAY	silty, mottled brown light gray with oxide stains and particles, moist, soft; scattered lignite particles; numerous silt and silty sand seams; estimate 65% slight to moderate plasticity fines and 35% coarse to mostly fine sand with scattered fine gravel; scattered white calcareous particles and seams; moderate to rapid HCl reaction, (ML-CL), (TILL)	6-9.7
CLAY	sandy, brown with some oxide stains, moist, soft; scattered lignite particles; estimate 60% moderate plasticity fines, 35% hard, subangular coarse to mostly fine sand and 5% hard, coarse to mostly fine gravel, gravelly clay zone at 10 ft; moderate HCl reaction, (CL), (TILL)	9.7-16

147-081-19DAB

NDSWC

Date Completed:	11/18/71	Purpose:	Observation Well
L.S. Elevation (ft):	1832.5	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	0-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
CLAY	gray 1-3 ft and 14-20 ft; brown 3-7 ft; gravelly 3-7 ft, soft, moist, (TILL)	1-20

147-081-20CAC

NDSWC

Date Completed:	7/25/82	Purpose:	Domestic Well
L.S. Elevation (ft):	1840	Well Type:	4" Steel
Depth Drilled (ft):	183	Aquifer:	Fort Union
Screened Interval (ft):	173-183	Source:	Feickert Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY		1-58
SAND		58-100
CLAY		100-173
SAND		173-183

147-081-21AAA

NDSWC 2726

Date Completed:	8/1/67	Purpose:	Test Hole
L.S. Elevation (ft):	1847	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	clayey and silty, grayish-black.	0-1
Clay	silty, grayish-orange; scattered sand and pebbles (till).	1-27
Clay	silty, olive-gray; scattered sand and pebbles (till).	27-40
Sandstone	fine to medium, noncalcareous, light-bluish-gray to medium bluish-gray.	40-62
Shale	sandy, noncalcareous, dusky-brown.	62-80

147-081-21DAA

NDSWC 11508

Date Completed:	10/17/84	Purpose:	Observation Well
L.S. Elevation (ft):	1828.4	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	81-86	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Black; organic.	0-4
CLAY	Silty, Sandy, Pebbly; brown, oxidized to 22 ft, olive gray and unoxidized below 22 ft; (TILL).	4-49
CLAY	Silty; olive gray; (Lacustrine/Fluvial).	49-66
SAND	Fine (?); poor recovery.	66-72
SAND	Medium to very coarse; pebbly.	72-98
GRAVEL	Very fine to medium Gravel; Sandy; cobbles and boulders and lignite below 113 ft. (Borehole began flowing at about 25 gpm during the drill rod change at 120 ft; lost drilling mud; well was installed and the annular space cemented.)	98-120

147-081-22AAA

NDSWC 11564

Date Completed:	6/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1830.15	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Turtle Lake
Screened Interval (ft):	18-23	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, slightly Gravelly; dark brown.	0-1
SAND & GRAVEL	Very fine SAND to very coarse GRAVEL (mostly medium Sand to medium Gravel); brown; subangular to subrounded; mostly carbonates and shale with quartz and some igneous rock fragments.	1-26
CLAYSTONE	Brownish gray to gray; moderately firm; poorly indurated; very friable; with Sandy layers.	26-40

147-081-22BBB

NDSWC

Date Completed:	8/9/54	Purpose:	Test Hole
L.S. Elevation (ft):	1844.6	Well Type:	
Depth Drilled (ft):	30	Source:	USBR

Lithologic Log

147-081-22BBB continued

Unit	Description	Depth (ft)
SAND & GRAVEL	Medium Sand; Gravel to 1.5 inch; Silty, with trace Clay; brown.	0-5.5
CLAY	Silty, Sandy, Pebbly; brown, oxidized; (TILL).	5.5-9.8
CLAY	Silty, Sandy, Pebbly; brown to gray (oxidized to 13.8 ft); stiff; (TILL).	9.8-29.4
SANDSTONE	Medium Sand; Clayey; gray; well compacted; laminated.	29.4-30

147-081-22BBB2

NDSWC

Date Completed:	3/29/72	Purpose:	Observation Well
L.S. Elevation (ft):	1845.4	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Till
Screened Interval (ft):	0-19.8	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	brown, very soft	2-4
CLAY	brown, soft becoming firmer at 10 ft (TILL)	4-20

147-081-23AAA1

NDSWC 2724

Date Completed:	8/1/67	Purpose:	Observation Well
L.S. Elevation (ft):	1828.05	Well Type:	1.25" ABS
Depth Drilled (ft):	70	Aquifer:	Turtle Lake
Screened Interval (ft):	48-51	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Sand	coarse to very coarse, gravelly, subangular to subrounded, moderate reddish-orange.	0-29
Clay	silty, sandy, pebbly, olive-gray to medium dark-gray (till).	29-41
Gravel and Sand	fine to medium gravel; coarse to very coarse sand; lignitic.	41-50
Lignite	hard, black.	50-59
Sandstone	fine to medium, noncalcareous, light-gray to greenish-gray.	59-70

147-081-23AAA2

NDSWC 2724A

Date Completed:	6/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1827.6	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Turtle Lake
Screened Interval (ft):	23-28	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); subangular to subrounded; mostly carbonates, shale and quartz with igneous rock fragments; 1-9 ft: oxidized; 9-31 ft: gray; with detrital lignite fragments (up to 4-inch diameter).	1-31
CLAY	Silty, with some very fine to fine Sand; grayish brown to gray; soft; moderately plastic; smooth.	31-40

147-081-23ADB

NDSWC

Date Completed:	7/22/74	Purpose:	Test Hole
L.S. Elevation (ft):	1828	Well Type:	
Depth Drilled (ft):	40	Source:	Mann Drilling Co.

147-081-23ADB continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL		1-39
CLAY		39-40

147-081-24AAC

NDSWC

Date Completed:	12/1/81	Purpose:	Municipal Well
L.S. Elevation (ft):	1840	Well Type:	8" Steel
Depth Drilled (ft):	107	Aquifer:	Turtle Lake
Screened Interval (ft):	80-100	Source:	LTP Enterprises, Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
GRAVEL	brown	1-23 1817
CLAY	sandy, blue	23-76.5
SAND	and some gravel	76.5-87
SAND	finer, 15-slot	87-92
SAND	coarser, 20-slot	92-100
SHALE	blue	100-107

147-081-24ADD

NDSWC 11612

Date Completed:	8/7/85	Purpose:	Observation Well
L.S. Elevation (ft):	1842.3	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	98-103	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Sandy, Silty; reddish brown.	0-1
SAND	Mostly fine to coarse; with a little fine Gravel; brown; subangular to mostly subrounded; mostly quartz, carbonates and shale, with igneous rock fragments and silicates.	1-23 1819
CLAY	Silty; yellowish brown, oxidized to 23 ft, gray and unoxidized below 23 ft; soft; slightly plastic; smooth; (LACUSTRINE).	23-44
SAND & GRAVEL	Fine SAND to medium GRAVEL; subangular to subrounded; mostly shale, carbonates and quartz, with igneous rock fragments.	44-51
CLAY	Silty, Sandy, Gravelly (with very fine Sand to very fine Gravel); moderately plastic; slightly stiff; (TILL).	51-58
CLAY	Very Silty to Clayey Silt; olive gray; soft; moderately plastic; smooth; (LACUSTRINE).	58-76
SAND & GRAVEL	Fine SAND to medium GRAVEL (mostly medium Sand to fine Gravel); subangular to subrounded; mostly carbonates, shale and quartz, with igneous rock fragments.	79-86
CLAY	Olive gray lacustrine Silty Clay, as above (58-76 ft).	86-89
SAND & GRAVEL	As above (76-86 ft).	89-101
SAND	Very fine to very coarse (mostly fine to medium); gray; slightly well sorted; subangular to subrounded; mostly carbonates, shale and quartz.	101-120

147-081-24BAA1

NDSWC

Date Completed:	8/11/54	Purpose:	Test Hole
L.S. Elevation (ft):	1834.3	Well Type:	
Depth Drilled (ft):	75	Source:	USBR

147-081-24BAA1 continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	fine to medium, trace clay, brown, cohesionless, poorly graded (SP-SC).	1-6
SAND	medium to coarse, with 15-20% medium gravel, brown, fairly clean, cohesionless, trace of lignite detritus, (SP-GP).	6-17
SAND & GRAVEL	fine Gravel and coarse Sand, gray, clean, cohesionless, trace of lignite detritus (GP-SP).	17-37.5 1792
SILT	Sandy (with very fine sand), Clayey; gray, moderately compacted; laminated in silt and sandy silt zones; contains zones of soft plastic clay, (ML-CL).	37.5-53.8
SAND	medium to coarse with some fine Gravel; gray, cohesionless, clean, (SP).	53.8-75

147-081-24BAA2

NDSWC

Date Completed:	7/22/81	Purpose:	Observation Well
L.S. Elevation (ft):	1850	Well Type:	1.25" PVC
Depth Drilled (ft):	121	Aquifer:	Turtle Lake
Screened Interval (ft):	97-100	Source:	C.A. Simpson & Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL		1-22
CLAY	Blue, with pebbles.	22-76
GRAVEL	Medium.	76-82
GRAVEL	Coarse.	82-99
SAND	Coarse.	99-105
SHALE	Blueish gray.	105-121

147-081-24BAA3

NDSWC

Date Completed:	9/13/72	Purpose:	Observation Well
L.S. Elevation (ft):	1853.8	Well Type:	1.25" PVC
Depth Drilled (ft):	35	Aquifer:	Turtle Lake
Screened Interval (ft):	0-35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	brown, aggregate to 1.5-inches	0-21
CLAY	sandy, gray, scattered lignite particles, plastic, (TILL)	21-35

147-081-24DBD

NDSWC

Date Completed:	7/22/74	Purpose:	Test Hole
L.S. Elevation (ft):	1830	Well Type:	
Depth Drilled (ft):	140	Source:	Mann Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Sandy.	0-6
SAND & GRAVEL		6-42 1792
CLAY	Silty.	42-68
GRAVEL		68-96
CLAY	Silty.	96-108
GRAVEL		108-124
CLAY	(Probable Shale or Claystone bedrock, inferred).	124-140

147-081-24DCC

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1824	Well Type:	
Depth Drilled (ft):	53	Source:	C.A. Simpson & Son

Lithologic Log

Unit	Description	Depth (ft)
	No Sample.	0-8
Sand	clayey.	8-25
Sand	fine, and gravel.	25-33
Sand	very fine, clayey, gray; contains lignite particles (probable weathered bedrock).	33-47
Clay	or Shale, blue.	47-53

147-081-25AAA

NDSWC

Date Completed:	3/28/72	Purpose:	Observation Well
L.S. Elevation (ft):	1859.1	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Turtle Lake
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	light, silty and sandy	0-4
SAND & GRAVEL	brown, with gravel to 1/4-inch	4-12
CLAY	brown becoming gray at 26 ft; with scattered lignite fragments from 20-30 ft; (TILL)	12-30

147-081-25ABB

NDSWC

Date Completed:	5/18/72	Purpose:	Observation Well
L.S. Elevation (ft):	1830.7	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Turtle Lake
Screened Interval (ft):	0-20	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, organic	0-6
SAND	brown, fine, clean	6-9
SILTY SAND	brown, fine, some clay binder	9-11
SAND	coarse, gravelly, with scattered lignite fragments	11-20

147-081-25BAA

NDSWC

Date Completed:	7/22/81	Purpose:	Test Hole
L.S. Elevation (ft):	1824	Well Type:	
Depth Drilled (ft):	41	Source:	C.A. Simpson & Son

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	Yellow.	1-4
GRAVEL	(With water).	4-23
LIGNITE		23-25
SHALE		25-41

147-081-25CBB
NDSWC 11563

Date Completed:	6/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1837	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, Gravelly; dark reddish brown.	0-1
SAND & GRAVEL	Very fine SAND to fine GRAVEL; brown, oxidized; subangular to subrounded.	1-13
SANDSTONE	Very fine; yellowish orange to yellowish brown; well sorted; moderately hard and indurated; slightly friable; dense.	13-14
SANDSTONE	Very fine to fine; blueish to greenish gray; well sorted; moderately firm; poorly indurated; very friable; in part Clayey and slightly cohesive.	14-16
CLAY	Brownish gray, dark brown and black layers interbedded with lignite seams; firm; moderately friable; slightly indurated; somewhat waxy.	16-20
LIGNITE		20-24
CLAYSTONE	Gray and greenish gray layers interbedded with brownish gray and dark brown to black layers; moderately firm; slightly indurated; slightly waxy; with some layers of Sandy Siltstone (gray; moderately firm; poorly indurated); scattered bentonitic layers.	24-40

147-081-25DCB
NDSWC

Date Completed:	3/3/69	Purpose:	Municipal Well
L.S. Elevation (ft):	1830	Well Type:	10" Steel
Depth Drilled (ft):	60	Aquifer:	Turtle Lake
Screened Interval (ft):	31-41	Source:	Moe's Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL	Fine to medium; and Sand.	1-45
LIGNITE	Coal; soft.	45-45.3
TILL(?)	Brown; (driller's log notes possible bedrock).	45.3-49
TILL(?)	Gray; (driller's log notes possible bedrock).	49-60

147-081-25DDD
NDSWC 2721

Date Completed:	7/31/67	Purpose:	Test Hole
L.S. Elevation (ft):	1878	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, clayey, dark-gray.	0-1
Clay	silty, sandy, dusky-yellow; moderate reddish-brown, limonitic laminations.	1-6
Sand	medium to coarse, subangular to subrounded.	6-8
Clay	silty, olive-gray; scattered sand and pebbles (till).	8-78
Sand	fine to medium, subangular to subrounded.	78-88
Clay	silty, sandy, olive-gray to dark-gray; scattered pebbles and lignite fragments	88-96
Gravel	coarse, clayey, sandy, angular to subrounded.	96-100
Siltstone	noncalcareous, light-gray to medium light-gray.	100-128
Sandstone	fine to medium, noncalcareous, light greenish-gray; numerous thin lignite interbeds.	128-140

147-081-28ADD

NDSWC 2719

Date Completed:	7/31/67	Purpose:	Observation Well
L.S. Elevation (ft):	1836.93	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	Clay silty, grayish black.	0-1
Clay	silty, sandy, dusky yellow (till).	1-10
Clay	silty, gravelly, olive-gray (till).	10-26
Sand	very fine to fine, clayey.	26-41
Clay	silty, sandy, olive gray (till).	41-61
Gravel	fine, sandy, angular to subrounded.	61-85
Sandstone	fine to medium, noncalcareous, bluish gray.	85-120

147-081-30AAA

NDSWC 11565

Date Completed:	6/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1845.8	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Turtle Lake
Screened Interval (ft):	88-93	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Very Silty; dark brown to black; soft.	0-2
CLAY	Silty, Sandy, slightly Gravelly; olive yellowish brown, oxidized with light blueish gray mottles; soft; moderately plastic; gritty; (TILL).	2-18
SILT	Slightly Clayey; olive yellowish brown, oxidized; slightly cohesive; smooth.	18-19
CLAY	Silty, Sandy, slightly Gravelly (with very fine Sand to fine Gravel); dark gray; moderately soft; plastic; gritty; with scattered coarse Gravel and rocks; (TILL).	19-43
SILT	With some Clay and very fine to fine Sand to scattered Sandy layers; brownish gray; very soft; non-plastic; smooth.	43-57
CLAY	Slightly Silty; brownish gray; very cohesive; plastic; somewhat stiff; smooth.	57-73
SAND & GRAVEL	Very fine SAND to fine GRAVEL (mostly medium to coarse Sand); subrounded; mostly shale and lignite fragments with quartz and some igneous rock fragments.	73-91
SAND & GRAVEL	Very fine SAND to coarse GRAVEL (mostly coarse Sand to medium Gravel); subangular to subrounded; mostly carbonates, shale and quartz with some igneous rock fragments.	91-96
CLAYSTONE	Slightly Silty; brownish gray; moderately firm; poorly indurated; very friable.	96-101
SANDSTONE	Very fine to fine; dark gray with light blueish gray layers; well sorted; poorly indurated with thin moderately indurated layers; friable.	101-117
LIGNITE		117-120

147-081-30ADD

NDSWC 4097

Date Completed:	8/13/70	Purpose:	Observation Well
L.S. Elevation (ft):	1863	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Turtle Lake
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Silt	gravelly, black (topsoil).	0-1
Gravel	sandy, subangular to subrounded, reddish brown.	1-4
Clay	silty, sandy, pebbly, olive-brown (till).	4-18

147-081-30ADD continued

Clay	silty, sandy, pebbly, lignitic, olive-gray (till).	18-36
Sand	fine to medium, subangular to subrounded, gray.	36-42
Clay	silty, olive-gray.	42-46
Sand	fine to medium, silty; scattered shale and lignite fragments	46-78
Gravel	fine to medium subangular to subrounded.	78-84
Silt	clayey, olive-gray; gravel lenses.	84-98
Sandstone	medium, subangular, dark greenish-gray.	98-106
Sandstone	fine, calcareous, gray.	106-110
Sandstone	fine, calcareous, dark greenish-gray.	110-116
Sandstone	very fine, clayey, greenish-gray.	116-122
Siltstone	medium gray; interbedded with clayey sandstone and thin lignite seams.	122-164
Sandstone	very fine, clayey, light-gray.	164-180

147-081-30CDD
NDSWC 3929

Date Completed:	11/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1897	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty sandy, black.	0-1
Clay	silty gravelly, dusky-yellow.	1-4
Clay	silty sandy, pebbly, stiff, olive-gray (till).	4-62
Sandstone	very fine to fine, clayey, lignitic, dark greenish-gray to brownish-black.	62-85
Shale	silty, sandy, carbonaceous, hard, brittle, greenish-gray to black.	85-100

147-081-32BBB
NDSWC 2717

Date Completed:	7/31/67	Purpose:	Test Hole
L.S. Elevation (ft):	1895	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, clayey, grayish-black.	0-1
Clay	silty, sandy, light-olive-gray; scattered gravel (till).	1-19
Clay	silty, sandy, olive-gray; scattered cobbles and boulders (till).	19-37
Sand	fine to medium, angular to subrounded.	37-43
Clay	silty, sandy, olive-gray (till).	43-52
Shale	noncalcareous, medium bluish-gray; lignitic in upper part.	52-80

147-081-34ABB
NDSWC

Date Completed:	8/14/72	Purpose:	Domestic Well
L.S. Elevation (ft):	1885	Well Type:	0" PVC
Depth Drilled (ft):	187	Aquifer:	Fort Union
Screened Interval (ft):	157-187	Source:	Backman Drilling Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2

147-081-34ABB continued

CLAY	Brown.	2-42
CLAY	Gray; with some pebbles.	42-112
CLAY	Blue (probable bedrock, inferred).	112-142
CLAY SAND	blue (probable bedrock, inferred).	142-187

147-081-34CBB

NDSWC 11509

Date Completed:	10/17/84	Purpose:	Test Hole
L.S. Elevation (ft):	1910	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, Sandy, Pebbly; olive brown, oxidized; rock at 15 ft; (TILL).	0-15
CLAYSTONE	Silty; grayish brown; firm; non-calcareous; upper part oxidized; lignite bed 17-17.5.	15-40

147-081-35ABB

NDSWC 2720

Date Completed:	7/31/67	Purpose:	Observation Well
L.S. Elevation (ft):	1852	Well Type:	1.25" ABS
Depth Drilled (ft):	60	Aquifer:	Turtle Lake
Screened Interval (ft):	18-21	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, clayey, grayish-black.	0-1
Clay	silty, sandy, dusky-yellow, scattered pebbles.	1-4
Sand and Gravel	coarse to very coarse subangular to rounded sand; fine angular to subrounded gravel.	4-21
Siltstone	calcareous, light-brownish-gray.	21-30
Sandstone	fine to medium, noncalcareous, medium bluish-gray to light bluish-gray.	30-60

147-081-36DCB

NDSWC

Date Completed:	7/24/84	Purpose:	Domestic Well
L.S. Elevation (ft):	1840	Well Type:	4" PVC
Depth Drilled (ft):	120	Aquifer:	Fort Union
Screened Interval (ft):	70-120	Source:	Zachmeier Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black.	0-1
CLAY	Brown.	1-16
CLAY	Gray.	16-59
LIGNITE	Coal (probable top of bedrock).	59-69
CLAY	Sandy (probable Sandy Claystone bedrock).	69-76
SAND	Fine (probable fine Sandstone bedrock).	76-120

147-082-02DCC

NDSWC 11516

Date Completed:	11/5/84	Purpose:	Observation Well
L.S. Elevation (ft):	1878	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Fort Union
Screened Interval (ft):	113-118	Source:	SWC

147-082-02DCC continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow brown, oxidized, very silty, some pebbles; interbedded pure silt beds	1-21
SAND	gravelly, medium sand to fine pebble, predominantly coarse sand, oxidized	21-24
TILL	as above, 1-21 ft	24-26
TILL	olive gray, silty, clayey, pebbly; soft, plastic, cohesive; many carbonate pebbles with some shale and coal pebbles	26-91
SANDSTONE	greenish gray, medium grain; well sorted, angular to subangular, glauconitic, poorly indurated; little or no interstitial clay, some interbedded clay, (Fort Union Group, bedrock)	91-120

147-082-03AAA

NDSWC 11502

Date Completed:	10/12/84	Purpose:	Test Hole
L.S. Elevation (ft):	1885	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	olive brown, oxidized, silty, sandy, pebbly, (TILL)	0-8
CLAY	brown, silty, oxidized	8-12
SAND & GRAVEL	oxidized	12-13
SILT	sandy, slightly clayey, brown, oxidized	13-17
CLAY	olive gray, silty, sandy, pebbly, (TILL)	17-71
SILT	grayish brown, clayey, firm, noncalcareous; less clayey with increasing depth; becomes more sandy toward base, (Fort Union Group, bedrock)	71-86
SAND	very fine to fine, silty, gray; compact, well sorted; some clayey brown silt beds, (Fort Union Group, bedrock)	86-120

147-082-03CDC

NDSWC

Date Completed:	7/28/54	Purpose:	Test Hole
L.S. Elevation (ft):	1833.4	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY	black, organic, soft, very plastic. (CH)	0-4
CLAY	gray, silty, stiff, gypsiferous, moderately plastic. (CL)	4-14
SAND	brown, fine, clay binder, poorly graded. (SC)	14-19
CLAY (Glacial Till)	gray-brown, silty, sandy, pebbly, stiff, slightly plastic when saturated. (CL)	19-30
SAND	gray, fine, small proportion of silt and clay, poorly graded. (SP-SC)	30-38
CLAY (Glacial Till)	same as 19' to 30.4'.	38-42
SAND	gray, fine, cohesionless, fairly clean, poorly graded, gravelly from 43.5' to 44', (SP); clay lens from 44' to 44.7' (CH).	42-45
CLAY (Lacustrine)	gray, consists predominately of moderate to very plastic clay with thin streaks or laminae of silt, stiff. (CL-CH)	45-60

147-082-11AAA

NDSWC

Date Completed:	11/11/71	Purpose:	Observation Well
L.S. Elevation (ft):	1912.2	Well Type:	1.25" PVC
Depth Drilled (ft):	90	Aquifer:	Undefined
Screened Interval (ft):	0-90	Source:	USBR

147-082-11AAA continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black, moist.	0-2
CLAY (Glacial Till)	Brown, moist; clay rich, about 20% sand; sand zones 6-8', scattered fine gravel; soft to firm; moderate to high plasticity fines. (CL-CH)	2-18
CLAY	Some silt,trace fine sand; gray, soft to firm, moderate to high plasticity; lacustrine. (CL-CH)	18-21.5
CLAY (Glacial Till)	Variable sand content; gray, soft to firm, moderate to moderately high plasticity fines. (CL)	21.5-60
CLAY and SILT	Sandy clay to silt; traces of laminations; variable from high plasticity; scattered gravel, probably from ice rafting.	60-70
CLAY SHALE	Silty, sandy with Lignite layers; black to gray; firm, compact, uncemented; lignitic fill and lignite 70-73', 75.5-80', and 84.5-90'. (Tongue River Formation of Fort Union Group)	70-90

147-082-11BBB

NDSWC 3927

Date Completed:	11/14/69	Purpose:	Observation Well
L.S. Elevation (ft):	1841	Well Type:	1.25" ABS
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	98-104	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	pebbly, black (topsoil).	0-1
CLAY	silty, sandy, pebbly olive-brown (till).	1-12
CLAY	silty, sandy pebbly, olive-gray (till).	12-73
CLAY	black, very stiff to hard, tightly compacted, smooth, oily, organic, sticky.	73-80
GRAVEL	fine, interbedded with coarse sand.	80-110
SANDSTONE	very fine to fine, micaceous, carbonaceous, dusky-green (Fort Union Group).	110-130
LIGNITE	hard, black.	130-138
SHALE	silty, carbonaceous, dusky-brown to black.	138-160

147-082-11BCB

NDSWC

Date Completed:	6/16/55	Purpose:	Test Hole
L.S. Elevation (ft):	1845	Well Type:	
Depth Drilled (ft):	52	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
SANDY CLAY (TILL)	light gray and brown, silty, sandy, alkaline. SC.	0-3
CLAY (TILL)	light gray and brown, becoming gray at 10', silty sandy, with pebbles and occasional lignite fragments, oxidized to 10', slightly plastic when saturated. CL	3-20
CLAY	gray, silty soft and plastic. CL-CH.	20-25
CLAY (TILL)	gray, same as 10' to 20'.	25-27
CLAY	gray, silty soft and plastic. CL-CH.	27-37
CLAY (TILL)	same as gray till above.	37-52

147-082-11BCC

NDSWC

Date Completed:	7/30/54	Purpose:	Test Hole
L.S. Elevation (ft):	1847	Well Type:	
Depth Drilled (ft):	60	Source:	USBR

147-082-11BCC continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY (GLACIAL TILL)	gray-brown, very sandy, well oxidized, slightly plastic when saturated, abundant pebbles. (CL)	1-18.8
SAND & GRAVEL	brown, medium, large proportion of clay. (SC-GC)	18.8-27.6
CLAY (GLACIAL TILL)	same as above (1' to 18.8').	27.6-31
CLAY	gray, silty, soft and plastic, laminated. (CL-CH)	31-44
CLAY (GLACIAL TILL)	gray, silty, sandy, pebbly, stiff, slightly plastic when saturated. (CL)	44-60

147-082-11BCD1

NDSWC

Date Completed:	4/11/62	Purpose:	Test Hole
L.S. Elevation (ft):	1860.2	Well Type:	
Depth Drilled (ft):	77	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black, organic, clayey. (OL-CL)	0-1
SAND	Brown, oxidized occasionally silty and clayey; scattered fine gravel, moderate HCl reaction. (SC)	1-4
CLAY (Glacial till)	Brown, oxidized to 15', silty, fine to coarse sand, approx. 10% gravel, scattered cobbles and boulders, contains lignite particles throughout, medium plasticity, moderate reaction to HCl. (CL)	4-24
CLAY (Glacial till)	Gray, silty sandy, approx. 5% fine gravel, scattered cobbles and boulders, lignite particles and clay-shale fragments throughout, moderate HCl reaction, medium to high plasticity. (CL-CH)	24-77

147-082-11BCD8

NDSWC

Date Completed:	4/27/62	Purpose:	Test Hole
L.S. Elevation (ft):	1863.3	Well Type:	
Depth Drilled (ft):	80	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, organic, clayey (OL-CL)	0-1.5
CLAY	silty, with fine to coarse sand and approximately 10% gravel, scattered cobbles and boulders, brown and gray, oxidized to 29 ft; lignitic, medium plasticity, slight acid reaction, (TILL) (CL).	1.5-29
CLAY	silty, sandy, approx. 5% fine gravel, scattered cobbles and boulders; gray, oxidized 29-30.5 ft; lignitic with clay shale fragments, slight acid reaction, medium to high plasticity (TILL) (CL-CH)	29-80

147-082-11BDB

NDSWC 11539

Date Completed:	5/28/85	Purpose:	Observation Well
L.S. Elevation (ft):	1857.4	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Turtle Lake
Screened Interval (ft):	123-128	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	moderately silty, slightly-moderately sandy with very fine to very coarse sand, slightly gravelly with fine to coarse gravel; yellowish brown, moderately soft, moderately to very cohesive, somewhat sticky and gritty, iron oxide mottles; (TILL)	0-16
CLAY	silty, slightly sandy with very fine to very coarse sand, slightly gravelly with fine to coarse gravel; dark olive gray; moderately soft, moderately to very cohesive, slightly sticky, somewhat stiff; with shale and carbonate fragments to 2-inch diameter; (TILL)	16-96

147-082-11BDB continued

SAND	very fine to coarse, slightly silty, brownish gray; poorly sorted to slightly well sorted, subangular to subrounded; quartz, shale and carbonate fragments	96-111
CLAY	silty, brownish gray to olive gray; soft, smooth, cohesive, moderately greasy, somewhat sticky	111-117
SAND & GRAVEL	very fine sand to coarse gravel, mostly coarse sand to medium gravel; poorly sorted, angular to subrounded; fragments are quartz, shale, carbonates and minor scoria with some igneous rock and sandstone fragments	117-135
SILTSTONE	sandy with very fine sand, light gray to whitish gray, firm; very friable, nonindurated; interbedded with medium to dark gray claystone (firm, moderately friable, slightly indurated, compact); and greenish gray very fine nonindurated sandstone, scattered indurated layers, (Fort Union Group, bedrock)	135-155
SANDSTONE	very fine, light greenish gray; hard, indurated, slightly friable 155-156 ft; softer, less indurated, lignitic 156-160 ft, (Fort Union Group, bedrock)	155-160

147-082-11CCC

NDSWC 3928

Date Completed:	11/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1855	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	medium to very coarse, gravelly, iron stained.	0-17
CLAY	silty, sandy, pebbly, olive-gray (till).	17-83
CLAY	carbonaceous, hard, dark-gray to black.	83-94
SAND	fine to coarse, dark-gray; scattered lignite fragments.	94-112
SHALE	sandy, hard, brittle, dark-greenish-gray to brownish-gray; interbedded with greenish-gray very fine to fine sandstone.	112-140

147-082-11CDD

NDSWC

Date Completed:	11/15/71	Purpose:	Observation Well
L.S. Elevation (ft):	1892	Well Type:	1.25" PVC
Depth Drilled (ft):	70	Aquifer:	Undefined
Screened Interval (ft):	0-70	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist, with grass roots to 5 ft.	0-5
CLAY (Glacial Till)	variable sand content, scattered gravel; brown, moist, firm. (CL)	5-20
CLAY (Glacial Till)	variable sand content, scattered gravel, moderate to moderately high plastic fines; appears to be lacustrine of paludal in origin 47-54'; sandy, gravelly and firm below 65'. (CL)	20-70

147-082-11DBB

NDSWC

Date Completed:	9/2/54	Purpose:	Test Hole
L.S. Elevation (ft):	1877.7	Well Type:	
Depth Drilled (ft):	70	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1.5
CLAY (Glacial Till)	gray-brown, silty, sandy, gravelly in zones, stiff, moist, oxidized. (CL)	1.5-20
CLAY (Glacial Till)	gray, silty, sandy, stiff to hard, moderately plastic when saturated, very few pebbles. (CL)	20-70

147-082-11DDD

NDSWC

Date Completed:	8/2/54	Purpose:	Test Hole
L.S. Elevation (ft):	1858	Well Type:	
Depth Drilled (ft):	50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
CLAY (Glacial Till)	silty, sandy, pebbly, gray-brown, oxidized, slightly plastic. (CL)	0-20
CLAY	gray, soft and very plastic, scattered small pebbles. (CL-CH)	20-43
CLAY (Glacial Till)	silty, sandy, pebbly, gray, stiff, plastic. (CL)	43-50

147-082-12CBB

NDSWC

Date Completed:	11/12/71	Purpose:	Observation Well
L.S. Elevation (ft):	1881.2	Well Type:	0" None
Depth Drilled (ft):	60	Aquifer:	No Obs Well Installed
Screened Interval (ft):	0-60	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist.	0-1.5
CLAY (Glacial Till)	sandy with scattered gravel, tan, dry, hard, leached. (CL)	1.5-5
CLAY (Glacial Till)	sandy, with about 10% gravel; brown to gray at 55'; moist, firm with soft zones; moderately plastic fines; sandier below 45' with sand lenses 48.5-49.5' and 53-55'; firm gray till with lignite fragments below 55'. (CL)	5-60

147-082-12DAD

NDSWC

Date Completed:	12/8/71	Purpose:	Observation Well
L.S. Elevation (ft):	1895.5	Well Type:	0" None
Depth Drilled (ft):	75	Aquifer:	Fort Union(?)
Screened Interval (ft):	0-75	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	fine, brown, with thin clay lenses.	1-18
SILT	sandy, brown.	18-23
CLAY (Glacial Till)	sandy, brown.	23-44
SAND & GRAVEL	clayey, brown; boulders 44-47'.	44-57
CLAY SHALE	gray, sandy and silty with lignite (Float? questioned by USBR geologist).	57-75

147-082-13ADD

NDSWC

Date Completed:	11/9/71	Purpose:	Observation Well
L.S. Elevation (ft):	1873	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Turtle Lake
Screened Interval (ft):	0-50	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, sandy.	0-1.5
SAND	varying silt content, brown to gray at 19', soft.	1.5-50

147-082-13BAB

NDSWC

Date Completed:	8/27/74	Purpose:	Observation Well
L.S. Elevation (ft):	1852	Well Type:	1.25" ABS
Depth Drilled (ft):	30	Aquifer:	Till
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	compacted sandy clay, dark brown, moist, scattered roots, calcareous particles and fine gravel, some topsoil mixed in with fill material, estimate 65% slight to moderate plasticity fine and 35% mostly fine sand, moderate to spotty violent HCl (CL)	0-2
TOPSOIL	compacted sandy clay, dark brown, moist, scattered roots, some fill material mixed in with topsoil	2-3
SILTY SAND	brown, damp, soft, and loose, estimate 60% fine sand and 40% nonplastic fines, moderate HCl reaction, glaciofluvial (SM)	3-5
SANDY SILT	mottled brown to reddish brown (oxide stained) to gray brown, damp to 7 ft, moist to wet below, soft, driller noted some compressing in zones, laminated bedding with paper thins to 1/4 inch silty sand and silty clay interbeds, estimate 85% sandy silt and silty sand and 15% silty clay interbeds, estimate 55% no to slight plasticity fines and 45% fine sand, silty sand lens 7-8 ft, rapid to violent HCl reaction to 7 ft; slight to moderate below, glaciofluvial (SM-ML)	5-22.5
SILTY CLAY & SANDY SILT INTERB	gray, moist to wet, soft, laminated bedding with paper thin to 1/2 inch silt, clay and silty sand interbeds, estimate 60% silty clay and 40% silty sand and sandy silt interbeds , remolds to silty clay, silty sand lens 28.3-28.6 ft, estimate 65% slight to moderate plasticity fines and 35% fine sand, slightly HCl reaction, glaciofluvial-lacustrine? (CL-ML)	22.5-28.6
CLAY	(glacial till), gray, moist, soft, scattered lignite particles, estimate 65% moderate to high plasticity fines, 30% hard, subangular, coarse to mostly fine sand and 5% hard, subrounded to subangular fine gravel to 1/2 inch, slight to moderate HCl reaction (CL)	28.6-30

147-082-13BAD

NDSWC

Date Completed:	8/28/74	Purpose:	Observation Well
L.S. Elevation (ft):	1853.3	Well Type:	1.25" ABS
Depth Drilled (ft):	35	Aquifer:	Undefined
Screened Interval (ft):	0-35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	compacted sandy clay, dark brown, moist, scattered roots, lignite and calcareous particles, some topsoil mixed in with fill material, estimate 65% slight to moderate plasticity fine and 35% coarse to mostly fine sand with some fine gravel, moderate to spotty HCl reaction (CL)	0-6.3
TOPSOIL	compacted sandy clay, dark brown, moist, scattered roots, some fill material mixed in with topsoil	6.3-7
SILTY SAND	brown (faintly oxide stained), moist, soft and loose, laminated bedding with scattered sandy silt interbeds below 9 ft, estimate 75% predominantly fine sand and 25% nonplastic fines, slight to moderate HCl reaction, glaciofluvial (SM)	7-10
SILTY SAND	brown (oxide stained) to about 18 ft, gray below, moist to wet to 15 ft, wet below, soft throughout, scattered lignite particles and seams, laminated bedding with paper thin to 1/8 inch sandy silt and clayey silt interbeds, estimate 50% fine sand and 50% non to slight plasticity fines, slight to moderate HCl reaction, glaciofluvial (SM-ML)	10-20.3
SANDY SILT	gray with black lignitic particles and seams, moist to wet, soft, laminated bedding to very thin bedded with paper thin to 1 inch silty sand and silty clay interbeds, some compressing noted by driller, estimate 75% sandy silt and silt sand and 25% silt clay interbeds, estimate 55% non to slight plasticity fines and 45% fine sand, slight HCl reaction, glaciofluvial (SM-ML)	20.3-33
SILTY CLAY & SANDY SILT INTERB	gray, moist to wet, soft, some compressing noted by driller, scattered lignite particles and seams, laminated bedding with paper thin to 1/4 inch clay, silt and silty sand interbeds, remolds to clayey sand, estimate 40% silty clay and 60% sandy silt and silty sand interbeds, estimated 60% fine sand and 40% slight plasticity fines, slight HCl reactions, glaciofluvial-lacustrine (SC)	33-35

147-082-13BDB1

NDSWC

Date Completed:	9/14/54	Purpose:	Test Hole
L.S. Elevation (ft):	1836.9	Well Type:	
Depth Drilled (ft):	25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	gray-brown, sandy, very soft, moderately plastic, alkaline, (CL)	1-7
CLAY (Glacial Till)	silty, sandy, abundant pebbles, brown to gray; stiff, moderately plastic, saturated, slightly oxidized to 12.5 ft (CL)	7-25

147-082-13BDB2

NDSWC

Date Completed:	8/20/75	Purpose:	Observation Well
L.S. Elevation (ft):	1839.2	Well Type:	1.25" ABS
Depth Drilled (ft):	23.5	Aquifer:	Till
Screened Interval (ft):	0-23.5	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	brown, silty, clayey sand, moist, soft, some topsoil mixed with fill, 60% fine sand and 40% fines	0-4.5
TOPSOIL	(Marlaceous Clay), black, very soft, wet, scattered roots and stems, material compresses easily, numerous shells and shell fragments, estimate 65% slight to moderate plasticity fines and 35% fine sand, rapid HCl reaction (CL)	4.5-7.5
CLAYEY SILT	brown, becoming gray at 8.5 ft, soft, wet to saturated, scattered shell fragments and reed stalks, silty sand lens 8-8.5 ft, estimate 65% slight plasticity fines and 35% mostly fine sand, slight to moderate HCl reaction (slough deposits) (CL-ML)	7.5-11
SILT, CLAYEY SAND	gray, wet, soft, scattered fine roots, estimate 60% hard, subangular coarse to mostly fine sand, 35% slight plasticity fines and 5% fine gravel, slight HCl reaction, (SM-SC)	11-13.2
SANDY CLAY	(glacial till), gray, moist, soft, scattered lignite particles, clayey sand till lens 14.1-14.3 ft and 15.4-16 ft with scattered fine lens below, estimate 60% moderate plasticity fines, 35% hard, subangular coarse to mostly fine sand and 5% hard, subrounded to subangular coarse to mostly fine gravel, slight to moderate HCl reaction (CL)	13.2-23.5

147-082-13BDD

NDSWC

Date Completed:	8/29/74	Purpose:	Observation Well
L.S. Elevation (ft):	1856.6	Well Type:	1.25" ABS
Depth Drilled (ft):	35	Aquifer:	Undefined
Screened Interval (ft):	0-35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey sand, dark brown, dry, soft, loose, scattered fine roots	0-1.2
SILTY CLAY	buff to brown, dry, soft, and loose, numerous white calcareous particles with some cementation, estimate 80% slight plasticity fines and 20% fine sand, violent HCl reaction, alluvial-glaciofluvial (ML-CL)	1.2-2
SILTY SAND	brown with scattered zones of oxidation to heave oxidation 9-10 ft and 12-13 ft, dry becoming damp to moist below about 7 ft, soft and loose, scattered sandy silt and silt interbeds and white calcareous and lignite seams 5-8 ft and 10-12 ft, estimate 60-70% fine sand with occasional coarse sand and fine gravel and 30-40% non to slight plasticity fines, slight to moderate with spotty violent HCl reaction, glaciofluvial (SM)	2-13
SANDY SILT	mottled brown (oxide stained), moist to wet, soft, some compressing noted by driller, laminated bedding with paper thin to 1/8 inch clayey and sandy interbeds with scattered lignite seams throughout, estimate 55% non to slight plasticity fines and 45% fine sand, slight to moderate HCl reaction, glaciofluvial (SM-ML)	13-20
SILTY SAND	gray to gray black (lignitic), moist to wet, soft, numerous lignite particles and seams, laminated bedding with paper thin to 1/8 inch clay and silt interbeds, some compressing noted by driller, estimate 55% fine sand and 45% non to slight plasticity fines, slight HCl reaction, glaciofluvial (SM-ML)	20-28.5

147-082-13BDD continued

CLAYEY SILT	gray, moist, soft, laminated bedding with paper thin to 1/8 inch silty sand, clay and silt interbeds, scattered fine lignitic particles and seams, some compressing noted by driller, estimate 60% increasing to 75% slight plasticity fines below about 30 ft and 40% decreasing to 25% fine sand below about 30 ft, moderate HCl reaction, glaciofluvial-lacustrine? (ML-CL)	28.5-33.8
CLAY	(glacial till), gray, moist, soft to firm, scattered lignite particles, estimate 70% moderate to high plasticity fines, 25% hard, subangular to subrounded coarse to fine sand and 5% hard, subangular to subrounded mostly fine gravel to 3/4 inch, slight HCl reaction (CL)	33.8-35

147-082-13CAA

NDSWC

Date Completed:	8/20/75	Purpose:	Observation Well
L.S. Elevation (ft):	1841	Well Type:	1.25" ABS
Depth Drilled (ft):	19	Aquifer:	Till
Screened Interval (ft):	0-19	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, moist, soft, silty clay with grass stems and roots	0-3.5
SILTY CLAY	light gray, moist, soft, scattered fine roots and stems, estimate 75% slight to moderate plasticity fines and 25% mostly fine sand, rapid HCl reaction (slough deposits) (CL)	3.5-4.7
SANDY CLAY	(glacial till), brown with oxide stains to 14.8 ft, gray below, moist and soft, clayey sand (SC-CL) till zones 10-10.5 ft, 11-11.2 ft, 16-17 ft, and 18.3-18.5 ft, estimate 60% moderate plasticity fines, 35% hard, subangular coarse to fine sand and 5% hard, subrounded coarse to mostly fine gravel, slight to moderately HCl reaction (CL)	9-19
SILTY SAND & GRAVEL	tan and brown (oxide stains), wet to 5 ft, saturated below, loose scattered zones of coarser and finer sand with lenses of silty clay, estimate 55% hard, subangular coarse to fine sand, 25% hard, subangular to subrounded coarse to mostly fine gravel and 20% non to slight plasticity fines, slight HCl reaction (SM)	4.7-9

147-082-13CCC

NDSWC

Date Completed:	11/16/71	Purpose:	Observation Well
L.S. Elevation (ft):	1876.2	Well Type:	1.25" PVC
Depth Drilled (ft):	55	Aquifer:	Fort Union
Screened Interval (ft):	0-55	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black.	0-2
CLAY (Glacial Till)	brown to gray at 23', moist, soft, sandy 2-23' and 33-38'.	2-38
CLAY SHALE	gray, firm.	38-46
LIGNITE	and lignitic Shale.	46-54
CLAY SHALE	tan.	54-55

147-082-13DAC

NDSWC

Date Completed:	9/30/74	Purpose:	Observation Well
L.S. Elevation (ft):	1867.3	Well Type:	1.25" ABS
Depth Drilled (ft):	35	Aquifer:	Undefined
Screened Interval (ft):	0-35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey sand, dark brown, dry, soft, scattered roots	0-1.3
CLAYEY SAND	buff to brown, dry, soft and loose, a few fine roots, some calcareous cementation, estimate 60% predominantly fine sand and 40% slight plasticity fines, violent HCl reaction, alluvial-glaciofluvial (SC)	1.3-4.6

147-082-13DAC continued

SILTY SAND	brown becoming reddish brown (oxide stained), below 15 ft dry to 20 ft, moist 20-22 ft, wet below, soft and loose, scattered faint to 1/8 inch silty and clayey laminations, estimate 75-85% medium to predominantly fine sand and 15-25% non to slight plasticity fine, scattered clean sand and clayey sand lenses, slight to spotty moderate HCl reaction, glaciofluvial (SM)	4.6-25.4
SILTY SAND & SILTY CLAY INTERB	gray to mottles gray and reddish brown (oxide stained), wet, soft, laminated bedding with paper thin to 1/4 inch silt, sand and clay interbeds, estimate 30% silty sand and 50% silty clay interbeds, estimate 65% predominately fine sand and 35% slight plasticity fine, no to slight HCl reaction, glaciofluvial (SM-SC)	25.4-29
SILTY SAND	reddish brown (oxide stained), wet, soft and loose, estimate 80% fine sand and 20% nonplastic fines, no HCl reaction, glaciofluvial (SM)	29-30
SILTY SAND	reddish brown (oxide stained) to 31.4 ft, gray below, wet, soft, scattered lignitic lenses, laminated bedding with paper thin to 1/8 inch silty and clay interbeds, clayey sand lens 30-30.5 ft, estimate 70% predominantly fine sand and 30% non to slight plasticity fines, no to slight HCl reaction, glaciofluvial (SM)	30-35

147-082-13DAC2

NDSWC

Date Completed:	8/18/75	Purpose:	Observation Well
L.S. Elevation (ft):	1843.5	Well Type:	1.25" PVC
Depth Drilled (ft):	28.5	Aquifer:	Undefined
Screened Interval (ft):	0-28.5	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	silty and clayey sand, brown, moist soft. Some topsoil mixed in.	0-3
TOPSOIL (buried)	dark gray, moist, soft; silty clay. Scattered fine roots.	3-4.8
SILTY CLAY	light brown to 6', mottled light gray-brown below, oxide stains throughout, moist, soft. Scattered fine roots. Some color banding below 7'. Estimate 75% slight to moderate plasticity fines and 25% hard, subangular coarse to mostly fine sand. Sandier with a few pebbles to 6.5'. Rapid HCl reaction (Slough deposits). (ML-CL)	4.8-8
SILTY SAND	with Clay interbeds; mottled brown-tan and gray, moist to wet, soft. Laminated bedding with paper thin to 1/4-inch silt, sand and clay interbeds. Coarse sand with some fine gravel interbeds 8-9'. Estimate 80% sand and silt interbeds and 20% clay interbeds. Estimate 60% hard, subangular coarse to mostly fine sand and 40% non to slight plasticity fines. Moderate to rapid HCl reaction. (SM)	8-15
SILTY SAND	gray, saturated, soft and loose. Estimate 65% hard, subangular coarse to mostly medium and fine sand and 35% non to slight plasticity fines. Non to slight HCl reaction. (SM)	15-18.5
CLAY (Glacial till)	gray, moist soft. Sandier 20-21'. Scattered lignite particles. Estimate 70% moderate plasticity fines and 30% hard, subangular coarse to fine sand with scattered fine gravel. No HCl reaction. (CL)	18.5-28.5

147-082-13DBA

NDSWC

Date Completed:	9/3/74	Purpose:	Observation Well
L.S. Elevation (ft):	1868	Well Type:	1.25" ABS
Depth Drilled (ft):	45	Aquifer:	Undefined
Screened Interval (ft):	0-45	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty sand, brown, dry and loose, a few scattered roots	0-1.3
SILTY SAND	light brown, dry, soft and loose, estimate 70% predominately fine sand with occasional fine gravel and 30% non to slight plasticity fines, rapid HCl reaction, glaciofluvial (SM)	1.3-5
SILTY SAND	light brown, dry, soft and loose, estimate 90% hard, subangular coarse to predominately medium and fine sand and 10% nonplastic fines, slight HCl reaction, glaciofluvial (SP-SM)	5-9
SILTY SAND	brown with some oxide stains and zones of heavy oxidation 18.5-20 ft, 20.2-20.5 ft, 23-24.3 ft and 25-26 ft, dry except for wet zone 24.3-25 ft, soft and loose, estimate 80-85% medium to predominately fine sand with occasional coarse sand and fine gravel to 1 inch and 15-20% nonplastic fines, laminated bedding with clayey sand, clayey silt and silty sand interbeds 24.3-25 ft, slight to spotty rapid HCl reaction, glaciofluvial (SM)	9-28
SILTY SAND & SILTY CLAY INTERB	gray, wet, soft, laminated bedding with paper thin to 1/4 inch clay, sand an silt interbeds, estimate 70% silty sand with 30% silty clay interbeds, estimate 70-80% predominately fine sand and 20-30% slight plasticity fines, slight to moderate HCl reaction, glaciofluvial (SM-SC)	28-43.6

147-082-13DBA

SILTY SAND	brown, soft, wet and loose, estimate 95% fine sand and 5% nonplastic fines, slight to moderate HCl reaction, glaciofluvial (SM-SC)	41.2-43
CLAY	(glacial till), gray, moist, firm, estimate 60% moderate plasticity fines, 35% hard, subangular coarse to predominately fine sand and 5% hard, subangular to subrounded fine gravel to 1/2 inch, slight to moderate HCl reaction (CL)	43-45

147-082-13DBB

NDSWC

Date Completed:	8/30/74	Purpose:	Observation Well
L.S. Elevation (ft):	1868	Well Type:	1.25" ABS
Depth Drilled (ft):	45	Aquifer:	Till
Screened Interval (ft):	0-45	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy clay, dark brown, dry, soft with scattered roots	0-1
SILTY SAND	brown with some oxide stains to 15 ft with numerous stains and particles below, dry to 15 ft, becoming dry to damp below, soft and loose, faintly laminated bedding in zones with paper thin silt and silty clay interbeds, occasional lignite seams, estimate 70-75% predominately fine sand wit some coarse sand to fine gravel from 1-6 ft and 25-30% non to slight plasticity fines, cleaner sand zone 15-16.5 ft, slight to spotty violent HCl reaction, glaciofluvial (SM)	1-19.5
SANDY SILT	mottled brown to reddish brown with numerous black lignitic and white calcareous seams, moist, soft, laminated bedding, estimate 55% non to slight plasticity fines and 45% fine sand, moderate to spotty violent HCl reaction, glaciofluvial (SM-ML)	19.5-20
SILTY CLAY & SILTY SAND INTERB	mottled brown with numerous oxide stains and lignitic stains to 25 ft, mottled gray brown (oxide stained) below, moist to wet, soft, some compressing noted by driller, laminated bedding with paper thin to 3/8 inch silt, clay and sand interbeds, estimate 50% silty clay and 50% silty sand interbeds, estimate 60% fine sand and 40% slight to moderate plasticity fines, remolds to clayey sand, slight to moderate HCl reaction, glaciofluvial (SC)	20-34.7
CLAY	(glacial till), gray, moist, soft with some firmer zones, some compressing noted by driller, scattered lignite particles, estimate 70% moderate to high plasticity fines, 25% hard, subangular coarse to mostly fine sand and 5% hard, subangular to subrounded fine gravel to 1/2 inch, slight to moderate HCl reaction (CL)	34.7-45

147-082-13DBB2

NDSWC

Date Completed:	8/19/75	Purpose:	Observation Well
L.S. Elevation (ft):	1848	Well Type:	1.25" ABS
Depth Drilled (ft):	25	Aquifer:	Till
Screened Interval (ft):	0-25	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	(RESPREAD) silty clay, dry, soft, scattered roots	0-1
FILL	brown, firm, (compacted), damp, some topsoil with fine roots mixed with compacted fill, estimate 50% coarse t fine sand and 50% slight plasticity fines, moderate HCl reaction (SC-CL)	1-4
CLAYEY SAND	brown, moist, firm at top, (probably from equipment traffic) becoming soft, estimate 60% hard, subangular coarse to fine sand and 40$ slight plasticity fines, moderate HCl reaction (SC)	4-6
SANDY SILT	mottled tan brown, gray greenish gray with oxide stains throughout (heavy oxide stains 8-9.5 ft), wet to saturated, soft, laminated bedding with silt, sand and clay interbeds, gravelly 9.5-9.7 ft and below 14.6 ft, estimate 55% non to slight plasticity fines and 45% mostly fine sand with fine gravel in zones, moderate to rapid HCl reactions (SM-ML)	6-15
CLAY	(glacial till), gray, moist, soft, material compresses, scattered lignite particles, scattered sandy zones, estimate 60% moderate plasticity fines, 35% hard, subangular coarse to fine sand and 5% mostly fine gravel, slight HCl reaction, (CL)	15-25

147-082-13DBB3

NDSWC

Date Completed:	9/9/75	Purpose:	Observation Well
L.S. Elevation (ft):	1869.8	Well Type:	1.25" PVC
Depth Drilled (ft):	54	Aquifer:	Till
Screened Interval (ft):	0-54	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
FILL	brown, sandy clay and clayey sand, moist, soft.	0-8
SANDY SILT	tan to brown with some oxide stains, moist, soft. faintly laminated bedding with numerous clay interbeds. Estimate 55% slight plasticity fines and 45% fine sand. Moderate to rapid HCl reaction. (SM-ML)	8-16.3
SILTY SAND	tan to brown, moist, soft and loose. Estimate 75% fine sand and 25% non-plasticity fines. Moderate HCl reaction. (SM)	16.3-18.4
SANDY SILT	tan to brown with oxide stains, moist becoming wet at 24', soft. Laminated bedding with scattered clay interbeds from paper thin to 1/4-inch in thickness. Estimate 55% slight plasticity fines and 45% fine sand. Moderate HCl reaction. (SM-ML)	18.4-31.5
CLAYEY SILT	gray, wet to saturated, soft. Laminated bedding with clay and silt interbeds. Estimate 60% non to slight plasticity fines and 40% fine sand. Moderate HCl reaction. (ML)	31.5-35
CLAYEY SAND	(Glacial till?) gray, wet to saturated, soft. Estimate 55% increasing to 65% hard, subangular coarse to fine sand with scattered fine gravel and 35%-45% moderate plasticity fines. Scattered fine lignite particles. Slight HCl reaction. (SC)	35-36.3
SANDY CLAY	(Glacial till) gray, moist, soft. Scattered lignite particles and silty sand lenses. Estimate 60% moderate plasticity fines and 40% hard, subangular coarse to mostly fine sand with occasional fine gravel. Slight HCl reaction. (CL)	36.3-39
SILTY SAND	brown to gray, saturated, soft. Clayey silt zone 39-39.7'. Estimate 80% hard, subangular coarse to fine sand and 20%. non to slight plasticity fines. Moderate HCl reaction. (SM)	39-43.5
SANDY CLAY	(Glacial till) gray wet, soft. Scattered lignite particles. Estimate 55% moderate plasticity fines and 45% coarse to fine sand. Moderate HCl reaction. (SC-CL)	43.5-48
CLAY	(Glacial till) gray, moist, soft. Scattered lignite particles. Estimate 75% moderate plasticity fines and 25% mostly fine sand. Slight HCl reaction. (CL)	48-54

147-082-13DDA

NDSWC

Date Completed:	10/2/74	Purpose:	Observation Well
L.S. Elevation (ft):	1858.4	Well Type:	1.25" ABS
Depth Drilled (ft):	30	Aquifer:	Undefined
Screened Interval (ft):	0-30	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey and silty sand, dark brown, dry, soft and loose, a few scattered roots	0-2
SILTY SAND	brown to buff, dry, soft and loose, some calcareous cementation, estimate 70% fine sand and 30% slight plasticity fines, violent HCl reaction, glaciofluvial (SM-SC	2-5
SILTY SAND	brown with some oxide stains, dry becoming moist at 10 ft, soft and loose, laminated bedding with scattered clayey silt and clay interbeds, estimate 75-85% predominately fine sand and 15-25% non to slight plasticity fines, slight to spotty rapid HCl reaction, glaciofluvial (SM)	5-12
SILTY SAND & SILTY CLAY INTERB	mottle brown becoming mottled gray brown below 18 ft, oxide stains throughout, soft, moist to wet, scattered lignitic lenses, some compressing noted by driller, laminated bedding with paper thin to 1/4 inch silt, clay, and clayey sand interbeds, estimate 60% silty sand and 40% silty clay interbeds, estimate 65-70% predominately fine sand and 30-35% slight plasticity fines, slight to moderate HCl reaction, glaciofluvial (SM-SC)	12-20
SILTY CLAY & SILTY SAND INTERB	gray, wet, soft, scattered fine lignitic lenses, laminated bedding with paper thin to 1/4 inch silt, silty and clayey sand interbeds, estimate 50% silty sand interbeds, estimate 60% predominately fine sand and 40% slight plasticity fines, slight HCl reaction, glaciofluvial (SM-SC)	20-30

147-082-13DDB

NDSWC

Date Completed:	8/15/75	Purpose:	Observation Well
L.S. Elevation (ft):	1838.8	Well Type:	1.25" ABS
Depth Drilled (ft):	15	Aquifer:	Till
Screened Interval (ft):	0-15	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black to 1 inch, gray below, damp, soft, numerous roots and stems to 1 inch, scattered roots below, silty and sandy clay	0-2.7
SILTY & CLAYEY SAND	mottled brown light gray with oxide stains, moist with wet zones, soft, some laminated bedding with silt, sand and clay interbeds, scattered fine roots, numerous white calcareous (slough salts) seams and pockets, estimate 45% hard, subangular, coarse to fine sand, 35% non to slight plasticity fines and 20% hard, subangular coarse to mostly fine gravel, rapid to violent HCl reaction, (SC-SM)	2.7-5.5
SANDY CLAY	(glacial till), brown with oxide stains to 14 ft, gray below, moist, soft, gravelly to 8.5 ft, scattered silty and sandy zones, estimate 60% moderate plasticity fines, 35% hard, subangular coarse to mostly fine sand and 5% hard, subangular coarse to mostly fine gravel, scattered lignite particles and seams, moderate HCl reactions, (CL)	5.5-14.4
SILTY SAND	dark gray, saturated, loose, estimate 80% mostly medium to fine sand and 20% non plasticity fines, slight HCl reaction, (SM)	14.4-14.7
CLAY	(glacial till), gray, moist, soft, scattered lignite particles, estimate 65% moderate plasticity fines and 35% hard, subangular coarse to fine sand with scattered fine gravel, moderate HCl reaction, (CL)	14.7-15

147-082-13DDD

NDSWC

Date Completed:	8/4/54	Purpose:	Test Hole
L.S. Elevation (ft):	1847.7	Well Type:	
Depth Drilled (ft):	35	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	sandy, gray, slightly plastic (CL)	1-3.2
SILT	very sandy (with very fine sand), trace clay, brown to gray; with trace fine gravel fro, 20-21.6 ft; moderately compacted, (ML-SP)	3.2-21.6
CLAY	(Glacial Till), silty, sandy, pebbly, gray; stiff, slightly plastic (CL)	21.6-35

147-082-14CDD

NDSWC

Date Completed:	11/17/71	Purpose:	Observation Well
L.S. Elevation (ft):	1931.8	Well Type:	1.25" PVC
Depth Drilled (ft):	110	Aquifer:	Fort Union
Screened Interval (ft):	0-110	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black.	0-1
SAND & GRAVEL	brown.	1-12
CLAY	(Glacial Till) brown to gray at 21.5', soft.	12-54.5
CLAY SHALE	gray, with Siltstone layers in upper portion; thin lignite seams throughout with 1' lignite layer 93-94'.	54.5-110

147-082-15AAD

NDSWC

Date Completed:	11/10/71	Purpose:	Observation Well
L.S. Elevation (ft):	1868.8	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Till
Screened Interval (ft):	0-50	Source:	USBR

147-082-15AAD

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL and SUBSOIL	black, moist, sandy.	0-5
CLAY	light gray, partially leached, sand lenses near bottom, soft, moderate plasticity fines. (CL)	5-8
CLAY	(Glacial Till), sandy, silty with about 10% gravel; brown to gray at 22', moderate plasticity; silt lens 39-42'. (CL)	8-50

147-082-15ADD

NDSWC 11503

Date Completed:	10/16/84	Purpose:	Test Hole
L.S. Elevation (ft):	1910	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	olive brown, silty, sandy, pebbly, oxidized to 26 ft; olive gray and unoxidized below 26 ft; oxidized zone from 46 to 48; (TILL)	0-68
CLAY	silty, grayish brown, firm, (Fort Union Group, bedrock)	68-72
CLAY	silty, green, firm, noncalcareous, (Fort Union Group, bedrock)	72-77
SAND	very fine, silty, compact, gray, (Fort Union Group, bedrock)	77-81
CLAY	silty, brown noncalcareous, firm, with some thin lignite beds, (Fort Union Group, bedrock)	81-96
CLAY	grayish brown, shaly, green in part, (Fort Union Group, bedrock)	96-100

147-082-15DDD

NDSWC 3926

Date Completed:	11/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1927	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, sandy, yellowish-gray (till).	0-5
CLAY	silty, soft, yellowish-gray to moderate olive-brown; scattered sand and pebbles (till).	5-21
CLAY	silty, sandy, olive-brown scattered pebbles (till).	21-44
SHALE	silty, sandy, moderately hard, light to medium-gray (Fort Union Group).	44-62
SILT	and interbedded SAND, very fine, light-gray to pale yellowish-green (Fort Union Group, bedrock).	62-76
SHALE	hard, waxy, dusky-green.	76-81
SHALE	silty, sandy, hard, brittle, light gray to pale green; interbedded with thin sandstone and clay beds.	81-100

147-082-18DCC2

NDSWC 2716

Date Completed:	7/31/67	Purpose:	Test Hole
L.S. Elevation (ft):	1905	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, grayish-black.	0-1
CLAY	silty, moderate-brown to greenish gray (till).	1-16
SHALE & SILTSTONE	interbedded; medium bluish-gray to dusky-blue; well indurated; calcareous in upper part.	16-28
SANDSTONE	fine; noncalcareous, grayish-blue-green; well indurated; interbedded with shale.	28-60

147-082-24AAD

NDSWC

Date Completed:	11/9/71	Purpose:	Observation Well
L.S. Elevation (ft):	1843	Well Type:	1.25" PVC
Depth Drilled (ft):	25	Aquifer:	Till
Screened Interval (ft):	0-24	Source:	USBR

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, dry.	0-2.5
CLAY	(Glacial Till), sandy, silty and gravelly; tan and leached to 10 ft, brown to18 ft, gray 18-25ft; firm, dry to moist at 15'. (CL)	2.5-25

147-082-25DDD

NDSWC 11566

Date Completed:	6/25/85	Purpose:	Test Hole
L.S. Elevation (ft):	1940	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	very silty, slightly sandy and gravelly, yellowish brown; very soft, crumbly, nonplastic	0-1
CLAY	moderately silty, moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine to medium gravel, yellowish brown with mottles of dark yellowish brown; slightly to moderately soft, moderately cohesive and plastic, somewhat stiff, gritty, oxidized; brown to dark brownish gray 18-22 ft; yellowish brown with mottles of dark brown to brownish gray 22-35 ft; (TILL)	1-35
CLAYSTONE	interbedded dark yellowish brown, orangish brown, brownish gray, and dark maroonish gray; moderately firm, nonindurated, very friable, compact, somewhat waxy and tight; with soft and greasy light gray thin beds, (Fort Union Group, bedrock)	35-60

147-082-26ADA

NDSWC

Date Completed:	7/9/80	Purpose:	Domestic Well
L.S. Elevation (ft):	1935	Well Type:	4" PVC
Depth Drilled (ft):	340	Aquifer:	Fort Union
Screened Interval (ft):	310-340	Source:	Baumgartner Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	yellow	2-40
CLAYSTONE	Clay, blue (probable bedrock).	40-135
COAL	Lignite	135-139
CLAYSTONE	Clay, blue (bedrock)	139-225
CLAYSTONE	Clay, gray (bedrock)	225-300
CLAYSTONE	Clay with Sand streaks (bedrock)	300-310
SANDSTONE	blue Sand with layers of Clay (bedrock)	310-340

147-082-27AAA

NDSWC 11504

Date Completed:	10/16/84	Purpose:	Test Hole
L.S. Elevation (ft):	1955	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	olive brown, silty, sandy, pebbly, oxidized, (TILL); olive gray and unoxidized below 22 ft	0-49

147-082-27AAA continued

CLAY	silty, dark brown; carbonaceous, firm, noncalcareous, (Fort Union Group, bedrock)	49-51
LIGNITE	black (Fort Union Group, bedrock)	51-52
CLAY	gray, silty, firm to shaly; some carbonaceous brown clay and very fine gray sand, (Fort Union Group, bedrock)	52-60

147-082-27DDA
NDSWC 4095

Date Completed:	8/12/70	Purpose:	Test Hole
L.S. Elevation (ft):	2012	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
SILT	clayey, sandy, yellowish-gray; scattered pebbles (till).	1-7
CLAY	silty, sandy pebbly, moderate olive-brown (till).	7-11
CLAY	stiff, greenish-brown, smooth, tight.	11-16
SAND	fine to medium, shaly, subrounded.	16-19
SILT	clayey, sandy, reddish-yellow, laminated.	19-38
SAND	gravelly; interbedded with clay.	38-49
SHALE	silty, hard, noncalcareous gray; interbedded with noncalcareous light gray Siltstone; fine-grained, greenish-gray clayey Sandstone; and lignite.	49-100

147-082-35BBC
NDSWC 4096

Date Completed:	8/13/70	Purpose:	Test Hole
L.S. Elevation (ft):	2000	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, yellowish-gray.	0-3
CLAY	silty. sandy pebbly, moderate olive-brown; isolated gravel lenses (till).	3-13
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	13-27
LIGNITE	hard, black.	27-29
SILTSTONE	light gray.	29-32
LIMESTONE	dark-gray.	32-35
SILTSTONE	lignitic, medium-gray.	35-53
SHALE	silty, hard, green.	53-58
SHALE	silty, hard, medium-gray.	58-66
LIGNITE	hard, black.	66-70
SHALE	silty, light-gray; interbedded with very fine grained clayey sandstone and lignite.	70-100

147-082-36BBB
NDSWC 11567

Date Completed:	6/25/85	Purpose:	Test Hole
L.S. Elevation (ft):	1970	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, silty clay, sandy, moderately gravelly	0-1
CLAY	silty, sandy, gravelly with fine sand to fine gravel, yellowish brown; soft, cohesive, slightly plastic to somewhat crumbly, gritty, oxidized, (TILL)	1-3

147-082-36BBB continued

SAND & GRAVEL	very fine sand to medium gravel, mostly medium sand to medium gravel, brown; poorly sorted, subangular to subrounded, predominantly carbonates, quartz, shale with igneous rock fragments, oxidized	3-7
CLAY	as above, but somewhat firmer and more plastic, oxidized, (TILL)	7-20
CLAY	silty, sandy and slightly to moderately gravelly, with fine sand to sparse medium gravel, dark brown to brownish gray with dark yellowish brown mottles; moderately soft, moderately cohesive and plastic, gritty, (TILL)	20-23
CLAYSTONE	light brownish gray and light gray interbedded; moderately firm and tight; compact, nonindurated; smooth, slightly waxy; interbedded with scattered thin layers of lignite, (Fort Union Group, bedrock)	23-40

147-083-03CDB
NDSWC

Date Completed:	6/7/86	Purpose:	Domestic Well
L.S. Elevation (ft):	1840	Well Type:	6" PVC
Depth Drilled (ft):	100	Aquifer:	Wolf Creek
Screened Interval (ft):	86-96	Source:	Water Smith Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	brownish yellow	1-23
CLAY	blue mix, with gravel streaks	23-57
GRAVEL	mix, with clay	57-60
CLAY	mix, coal, light sand	60-82
GRAVEL	fine to coarse, with fine to medium sand, with coal	82-100

147-083-03DDD
NDSWC

Date Completed:	1/13/50	Purpose:	Test Hole
L.S. Elevation (ft):	1872	Well Type:	
Depth Drilled (ft):	69	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	layers of fat clay, lean clay and sandy clay (TILL); silty sand 8.5-11 ft	0-47
SAND	clayey (SC)	47-55
SAND	fine (SP)	55-58
SAND	silty (SM)	58-60
SAND	fine (SP)	60-62
SAND	fine, gravelly (SP)	62-64
CLAYSTONE		64-69

147-083-04BAA
NDSWC

Date Completed:	2/13/50	Purpose:	Test Hole
L.S. Elevation (ft):	1827.5	Well Type:	
Depth Drilled (ft):	184.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	(Glacial Till) sandy, gray to brown.	0-24.2
SAND	fine, silty, loose, gray; trace of gravel.	24.2-30
SAND	clayey, compact to loose, dark-brown.	30-36
SAND	fine, silty, brown.	36-40.8

147-083-04BAA continued

SAND	fine, gravelly, loose, brown.	40.8-42.6
SAND	silty, gravelly.	42.6-43.8
SAND	fine, loose, dark-gray; scattered lignite fragments.	43.8-495
GRAVEL	sandy, loose, gray; scattered lignite fragments.	495-64
CLAY	(Glacial Till) sandy, dark-gray; 5 % gravel.	64-126.4
GRAVEL	sandy, loose, gray; few thin clay lenses.	126.4-131.4
CLAY	(Glacial Till) sandy, dark-gray; 5 percent gravel.	131.4-137.3
GRAVEL	medium, sandy, gray.	137.3-143
GRAVEL	silty, sandy, gray.	143-1455
GRAVEL	sandy, loose, gray.	1455-1794
SILTSTONE	sandy, friable, bluish-gray.	1794-181.5
CLAYSTONE	plastic, dark-brown; lignitic and carbonaceous.	181.5-184.5

147-083-04BAD

NDSWC

Date Completed:	12/19/50	Purpose:	Test Hole
L.S. Elevation (ft):	1839	Well Type:	
Depth Drilled (ft):	87	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
Silt	sandy, friable, dark-brown.	0-0.8
Clay	(Glacial Till) sandy, friable, brownish-gray; scattered lignite fragments.	0.8-32.4
Sand	fine, silty, loose, light-brown; scattered gravel and lignite fragments.	32.4-35
Sand	fine, loose, light-brown; scattered gravel and lignite fragments.	35-45.6
Sand	fine to coarse, loose, grayish-brown.	45.6-48.4
Sand	coarse, loose, brown; scattered lignite fragments.	48.4-50
Sand	coarse, silty, brown; scattered lignite fragments.	50-51.8
Gravel	medium, sandy, loose, brown; scattered lignite fragments and cobbles.	51.8-53.6
Sand	fine, silty, loose, brown, scattered lignite fragments.	53.6-55.8
Clay	(Glacial Till) sandy, dark-gray; scattered lignite fragments.	55.8-66
Sand	fine, silty, loose, dark-gray; scattered lignite fragments.	66-68
Clay	(Glacial Till) sandy, dark-gray; scattered lignite fragments.	68-73.6
Gravel	silty, sandy, cemented, gray; scattered cobbles and lignite fragments.	73.6-78
Gravel	sandy, loose, gray; scattered cobbles and lignite fragments.	78-80.4
Siltstone	sandy, firm, gray.	80.4-82.8
Sandstone	fine, silty, soft, dark-bluish-gray; scattered lignite fragments.	82.8-87

147-083-04BDD1

NDSWC

Date Completed:	12/16/50	Purpose:	Test Hole
L.S. Elevation (ft):	1847.6	Well Type:	
Depth Drilled (ft):	57	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	(Glacial Till) sandy, friable, dark-brown; scattered gravel.	0-1.6
CLAY	(Glacial Till) sandy, friable, brownish-gray; scattered lignite and gravel.	1.6-28.6
CLAY	(Glacial Till) sandy, dark-gray; scattered Gravel and lignite.	28.6-49.2
CLAYSTONE	plastic, gray.	49.2-49.5
LIGNITE	hard, black.	49.5-53
CLAYSTONE	gray.	53-57

147-083-04BDD2

NDSWC

Date Completed:	1/13/51	Purpose:	Test Hole
L.S. Elevation (ft):	1850.7	Well Type:	
Depth Drilled (ft):	66	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	(Glacial Till) sandy, friable to subfirm, brownish gray; scattered lignite and scoria fragments.	0-33
SILT	sandy, loose, brown; scattered lignite and cobbles.	33-36.6
SAND	clayey, brown.	36.6-37.6
CLAY	(Glacial Till) sandy, dark-gray; scattered lignite fragments.	37.6-56.6
GRAVEL	silty, sandy, loose, dark-gray; scattered lignite fragments.	56.6-58.6
SAND	coarse, silty, loose, dark-gray; scattered lignite and gravel.	58.6-61
CLAYSTONE	plastic, bluish-gray.	61-62.2
LIGNITE	hard, black.	62.2-65.2
SILTSTONE	sandy, compact, gray.	65.2-66

147-083-04CAA

NDSWC

Date Completed:	11/28/50	Purpose:	Test Hole
L.S. Elevation (ft):	1872.5	Well Type:	
Depth Drilled (ft):	90	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, dark-brown.	0-2.6
CLAY	(Glacial Till), sandy, brown to gray at 36.7 ft; plastic; scattered gravel and lignite, sand streaks and boulders near bottom.	2.6-66.3
CLAYSTONE	plastic, gray; slightly weathered.	66.3-67.8
No Sample		67.8-68.5
CLAYSTONE	subfirm, gray; slightly weathered, few limestone nodules and silty streaks.	68.5-72.8
CLAYSTONE	plastic, gray.	72.8-73.4
LIMESTONE	argillaceous, hard, light gray.	73.4-74.4
CLAYSTONE	plastic, calcareous, light-gray.	74.4-75.1
LIMESTONE	argillaceous, hard, light-gray.	75.1-75.4
CLAYSTONE	plastic, gray, few calcareous streaks.	75.4-78.3
LIGNITE	hard, black.	78.3-78.7
CLAYSTONE	plastic, dark-gray; carbonaceous streaks.	78.7-79.9
No Sample		79.9-81.2
CLAYSTONE	plastic, dark-gray; carbonaceous streaks.	81.2-81.6
LIGNITE	hard, black.	81.6-83.2
CLAYSTONE	subfirm, dark-gray; carbonaceous streaks.	83.2-83.7
CLAYSTONE	silty, light-gray to dark-gray.	83.7-88.6
CLAYSTONE	plastic, dark-gray.	88.6-89.3
No Sample		89.3-90

147-083-05DCB

NDSWC

Date Completed:	4/26/50	Purpose:	Test Hole
L.S. Elevation (ft):	1813.8	Well Type:	
Depth Drilled (ft):	225	Source:	USCOE

Lithologic Log

147-083-05DCB continued

Unit	Description	Depth (ft)
CLAY	(Glacial Till) sandy, friable, dark-grayish-brown	0-3.8
SAND	fine, loose, grayish-brown	3.8-8.2
CLAY	(Glacial Till) sandy, brownish-gray; scattered lignite fragments; Sand, fine, loose, light-brown 10.6-12.5'	8.2-39
SAND	coarse, loose, dark-gray	39-46.2
CLAY	(Glacial Till) sandy, dark-gray	46.2-66.4
SAND	fine, loose, dark-gray; coarse Sand 66.4-72'; Clay, plastic dark-gray 101.6-102.4'	66.4-102.4
SAND	fine, silty, loose, dark-gray; Clay, plastic, dark-gray 106-106.8'	102.4-124.5
SILT	loose, dark-gray; scattered lignite fragments	124.5-130.5
SAND	silty, loose, dark-gray; scattered lignite fragments	130.5-133.8
CLAY	plastic, dark-gray	133.8-135.4
SAND	fine, silty, loose, dark-gray scattered lignite and gravel	135.4-159
CLAY	plastic, dark-gray	159-160.8
SAND	fine, silty, loose dark-gray with thin interbeds of plastic clay	160.8-168
CLAY	dark-gray; plastic 170-171',	168-171
SAND	fine, silty, loose, dark-gray; carbonaceous streaks	171-201
CLAY	plastic, dark-gray	201-202.6
SAND	coarse, loose, brownish-gray	202.6-214
GRAVEL	silty, sandy, loose, brownish-gray	214-219
CLAYSTONE	dark-gray, slightly carbonaceous 219-220'; plastic, dark gray 220-221'; dark gray 221-223.3'; plastic, dark brownish-gray, slightly carbonaceous, silt streaks 223-225'; (Fort Union Group)	219-225

147-083-07AAD

NDSWC

Date Completed:	2/23/50	Purpose:	Test Hole
L.S. Elevation (ft):	1883.9	Well Type:	
Depth Drilled (ft):	55	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy (TILL); sandy silt from 41 to 43 ft	0-46.8
LIGNITE		46.8-51.5
CLAYSTONE		51.5-53.2
LIGNITE		53.2-55

147-083-08BCD

NDSWC

Date Completed:	4/11/50	Purpose:	Test Hole
L.S. Elevation (ft):	1873.6	Well Type:	
Depth Drilled (ft):	67.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy (TILL)	0-41.5
SAND	fine (SP)	41.5-45
SAND	fine, silty (SM)	45-50
CLAYSTONE		50-59.5
SANDSTONE	clayey	59.5-64
CLAYSTONE		64-67.5

147-083-08CAD
NDSWC

Date Completed:	2/27/50	Purpose:	Test Hole
L.S. Elevation (ft):	1838.9	Well Type:	
Depth Drilled (ft):	70.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy (TILL)	0-11.5
SAND	silty (SM)	11.5-16.5
CLAY	sandy (TILL); gravel lens from 36 to 36.5 ft	16.5-65.4
CLAYSTONE		65.4-67.7
LIGNITE		67.7-70.5

147-083-09CBD
NDSWC

Date Completed:	4/14/50	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	52.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy (TILL)	0-15
SAND & GRAVEL	(GP and SP)	15-21
SAND	fine, silty (SM)	21-24
CLAY	sandy (TILL)	24-41
LIGNITE	and Claystone, interbedded	41-46
CLAYSTONE	scattered thin lignite seams	46-52.5

147-083-11CCC2
NDSWC 3924

Date Completed:	11/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1857	Well Type:	
Depth Drilled (ft):	240	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to medium, sandy.	0-11
CLAY	silty, sandy, dusky yellow (till).	11-19
CLAY	silty, sandy, olive gray (till).	19-33
CLAY	silty, very sandy, brownish-black, soft, crumble organic (till).	33-39
SAND	medium to coarse, gray.	39-51
SAND	fine, clayey, gray.	51-54
GRAVEL	fine to medium.	54-60
CLAY	medium gray, smooth.	60-66
CLAY	silty, olive-gray (till).	66-80
CLAY	hard, light-gray to black (lacustrine?).	80-130
GRAVEL	with clay lenses.	130-136
SAND	fine to medium, lignitic.	136-150
CLAY	silty, sandy, olive gray (till).	150-209
SAND	very fine to fine, clayey, carbonaceous, grayish-green; interbedded with silty sandy Shale; (Fort Union Group, bedrock).	209-240

147-083-12BAA

NDSWC 11571

Date Completed:	6/26/85	Purpose:	Observation Well
L.S. Elevation (ft):	1861	Well Type:	1.25" PVC
Depth Drilled (ft):	160	Aquifer:	Wolf Creek
Screened Interval (ft):	48-53	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, Sandy, slightly Gravelly; dark reddish brown.	0-1
CLAY	Silty, Sandy, Gravelly (with very fine Sand to Coarse Gravel); veriegated and mottled olive brown, yellowish brown, and grayish brown, oxidized; moderately soft; cohesive; gritty: (TILL).	1-4
SAND & GRAVEL	Medium SAND to coarse GRAVEL; poorly sorted; subangular to subrounded; mostly shale, carbonates and quartz with igneous rock fragments.	4-5
CLAY	As above, 1-4 ft (TILL).	5-11
SAND & GRAVEL	As above, 4-5 ft.	11-12
CLAY	As above, 4-5 ft, somewhat darker below 25 ft (TILL).	12-28
CLAY	Silty with some Sand and Gravel (fine Sand to fine Gravel); gray to olive gray; moderately cohesive; somewhat stiff; gritty; slightly lignitic; (TILL).	28-36
SAND & GRAVEL	Very fine SAND to fine GRAVEL (mostly very fine to coarse Sand); slightly well sorted; subrounded; lignitic (to medium gravel size fragments); mostly carbonates, quartz and shale with lignite; 45-58 ft: very fine Sand to medium Gravel, poorly sorted.	36-58
CLAYSTONE	Dark brownish gray; firm; poorly indurated; interbedded with light brown, soft, very friable Claystone (probable ice-shoved block).	58-69
CLAY	Silty with some Sand and Gravel; light olive brown; soft, cohesive, slightly plastic.	69-77
SAND & GRAVEL	Very coarse SAND to medium GRAVEL; poorly sorted; subangular to subrounded.	77-79
CLAY	As above, 69-77 ft.	79-81
CLAY	Silty, with some Sand and Gravel (very fine Sand to fine Gravel); gray; slightly to moderately cohesive; slightly plastic; stiff; lignitic; increased Gravel 91-104 ft; rock at 104 ft.	81-104
CLAY	Silty, Sandy with minor Gravel (very fine Sand to fine Gravel); gray; moderately soft; slightly to moderately cohesive and plastic; (TILL); with layers of very fine to very coarse (mostly medium to coarse) Sand, Silty and very lignitic (with lignite fragments to 4-inch diameter and 1-inch thickness).	104-122
SAND & GRAVEL	Very fine SAND to coarse GRAVEL; poorly sorted; subangular to subrounded; lignitic; with scattered thin layers of gray Clay (TILL), as above 104-122 ft.	122-131
LIGNITE	Interbedded with, brownish gray, moderately firm, compact, poorly indurated, friable CLAYSTONE.	131-135
SANDSTONE	Very fine to fine grained; light greenish gray; well sorted; firm with very firm to hard layers; poorly indurated with thin indurated layers; friable; interbedded with thin lignite layers, Siltstone layers (brownish gray, hard), dense, hard Claystone layers (dark reddish brown, siliceous, pyritic), and softer, brownish gray Claystone layers.	135-160

147-083-12CCC

NDSWC 11572

Date Completed:	6/26/85	Purpose:	Observation Well
L.S. Elevation (ft):	1854.3	Well Type:	1.25" PVC
Depth Drilled (ft):	86	Aquifer:	Wolf Creek
Screened Interval (ft):	35-40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, silty and sandy	0-1
CLAY	slightly silty, light gray to grayish white; crumbly, soft	1-4
CLAY	silty to very silty, yellowish brown; soft, moderately cohesive, slightly plastic, oxidized	4-8
SAND & GRAVEL	very fine sand to medium gravel, mostly medium sand to fine gravel; poorly sorted, subangular to subrounded; predominantly carbonates, shale, and quartz	8-10
CLAY	silty, slightly sandy and gravelly with very fine sand to fine gravel, yellowish brown to dark yellowish brown; moderately soft, moderately cohesive, slightly to moderately plastic, gritty, somewhat stiff, (TILL)	10-24
SAND & GRAVEL	very fine sand to fine gravel, mostly fine to medium sand, moderately well sorted; mostly shale, carbonates, and quartz	24-46

147-083-12CCC continued

CLAYSTONE	dark maroon gray and dark brownish gray interbedded; lignite layers; moderately firm, slightly indurated and compact, moderately to very friable; some layers slightly soft to slightly firm, nonindurated; with greenish gray and brownish gray layers 70-80 ft	46-80

147-083-13DDD
NDSWC 3925

Date Completed:	11/19/69	Purpose:	Test Hole
L.S. Elevation (ft):	1881	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	Medium to very coarse, with fine-medium Gravel; iron-stained.	0-17
CLAY	Silty, sandy with scattered pebbles; moderate olive brown (till).	17-22
SHALE	Hard, brittle, light to medium gray.	22-34
SILTSTONE	And very fine Sandstone; shaly, carbonaceous, variegated gray, green and brown.	34-60

147-083-14BCC
NDSWC 4041

Date Completed:	7/9/70	Purpose:	Observation Well
L.S. Elevation (ft):	1857.63	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Wolf Creek
Screened Interval (ft):	144-147	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, black.	0-1
SILT	Yellowish-gray.	1-4
CLAY	Silty, sandy, pebbly, moderate-olive-brown (till).	4-30
SAND	Medium to coarse, subangular to subrounded, dark-gray.	30-39
SILT	Light-olive-gray.	39-49
CLAY	Silty, plastic, light-olive-gray.	49-54
CLAY	Plastic, black.	54-66
CLAY	Silty, plastic, gray to light green to yellowish green.	66-92
CLAY	Stiff, olive-gray.	92-121
CLAY	Stiff, black.	121-140
GRAVEL	Fine to medium, angular to subrounded; scattered sand and cobbles.	140-158
CLAY	Silty, sandy, pebbly, dark-olive-gray (till).	158-190
SHALE	Silty, carbonaceous, calcareous light gray, interbedded with Siltstone.	190-211
SANDSTONE	Very fine to fine, micaceous, calcareous, greenish-gray; interbedded with light gray Siltstone.	211-250
SHALE	Silty, hard, medium gray to black; lignite from 254-256 ft.	250-260

147-083-15BBA
NDSWC 11498

Date Completed:	10/10/84	Purpose:	Observation Well
L.S. Elevation (ft):	1856.9	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Fort Union
Screened Interval (ft):	57-61	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, pebbly, brown, oxidized, (TILL)	0-11
SILT	clayey, brown, oxidized	11-19

147-083-15BBA continued

SAND	fine to very coarse, with some fine pebble gravel, oxidized	19-23
CLAY	silty, sandy, pebbly, gray, (TILL)	23-37
CLAY	gray, firm (Fort Union Group, bedrock)	37-44
SAND	fine to coarse, greenish tinge, sorted, some green clayey silt (Fort Union Group, bedrock)	44-63
LIGNITE	black	63-69
CLAY	slightly silty, light gray, firm, (Fort Union Group, bedrock)	69-80

147-083-15CDD3

NDSWC 4042

Date Completed:	7/9/70	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	sandy, black.	0-2
Sand	very fine to fine, silty, yellowish gray.	2-10
Clay	silty, sandy, moderate-olive-brown; scattered pebbles (till).	10-42
Sand	medium to very coarse, gravelly with fine gravel, angular to subrounded.	42-56
Clay	calcareous dark olive-gray; looks like weathered Shale.	56-68
Shale	silty, variegated gray to yellowish green; interbedded with Siltstone.	68-85
Shale	silty, hard, medium-gray.	85-90
Shale	silty, medium-gray; interbedded with Siltstone and clay; lignite from 110-113 ft, 121-123 ft, and 130-132 ft.	90-140

147-083-15DCC

NDSWC 1-983

Date Completed:	6/29/62	Purpose:	Test Hole
L.S. Elevation (ft):	1875	Well Type:	
Depth Drilled (ft):	84	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black.	0-1
GRAVEL	fine to medium; clayey; scattered cobbles.	1-5
CLAY	Silty; yellow (till).	5-18
CLAY	Silty; olive gray; lignite fragments; (till).	18-46
CLAY	Silty, bluish-black.	46-58
CLAY	Silty, olive gray.	58-84

147-083-16BBC

NDSWC

Date Completed:	9/24/92	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	SILT, Clayey, Sandy, Pebbly; yellowish brown, oxidized; stiff to hard below 8 ft (partially cemented); slightly lignitic.	1-18
SILT	Clayey; brownish gray, mottled with orangish red; moderately soft, smooth; carbonaceous (with decomposed lignite fragments).	18-28

147-083-16BBC continued

LIGNITE	Slack, weathered.	28-30
CLAYSTONE	Silty; medium gray; stiff, poorly indurated.	30-35
SILTSTONE	Clayey, Sandy (with very fine sand); yellowish brown; moderately soft.	35-40

147-083-16BCC

NDSWC

Date Completed:	9/24/92	Purpose:	Test Hole
L.S. Elevation (ft):	1855	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	SILT, Clayey, Sandy, Pebbly; yellowish brown, oxidized; moderately soft.	1-16
CLAY	Silty; yellowish brown, mottled with gray and rust; stiff to hard, blocky texture, smooth.	16-25
SAND	Very fine to mostly fine, with some medium and scattered coarse Sand; oxidized brown to 40 ft, gray below 40 ft; quartz with minor carbonate mineral grains; lignitic 44 to 46 ft.	25-46
SILT	Clayey; medium to dark gray; stiff to very stiff.	46-56
SAND & GRAVEL	Medium SAND to medium GRAVEL; subangular; predominantly sandstone, carbonate and igneous rock fragments with minor shale and lignite fragments.	56-60
SILTSTONE	Clayey, to Silty Claystone; light bluish gray to medium gray; stiff to very stiff; interbedded with Silty, slightly Clayey, very fine, friable Sandstone.	60-77
LIGNITE		77-80

147-083-17DAB

NDSWC

Date Completed:	9/24/92	Purpose:	Test Hole
L.S. Elevation (ft):	1835	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	Fine to mostly medium; subangular to subrounded; predominantly quartz with some shale, carbonate and igneous rock fragments.	0-8
SAND & GRAVEL	Medium GRAVEL and SAND; lithology as above (0 to 8 ft).	8-10
TILL	SILT, Sandy, Clayey, Pebbly; yellowish brown, oxidized.	10-19
SILT	Clayey, with some very fine Sand; brown; soft, smooth.	19-31
CLAY	Silty; dark gray; stiff.	31-34
SAND & GRAVEL	Fine to mostly medium and coarse SAND and fine to medium GRAVEL, with coarse gravel size lignite fragments; mostly subangular; predominantly quartz, shale and carbonates with some igneous rock fragments.	34-46
CLAY(?)	Silty; medium gray (poor sample return).	46-48
SAND & GRAVEL	Medium to very coarse SAND and GRAVEL; subangular to angular; gravel is predominantly lignite fragments, shale, and gray, fine sandstone fragments.	48-51
SANDSTONE	Very fine; Silty with some Clay; bluish gray to light gray; uniform; poorly indurated to loose with scattered better cemented but friable seams.	51-58
LIGNITE		58-63
SANDSTONE	Very fine; Silty; light bluish gray; poorly indurated with scattered cemented seams; interbedded with light bluish gray Siltstone and medium gray Claystone; Siltstone interbeds are sandy (with very fine sand) and soft; Claystone interbeds are silty with little very fine sand, firmer, poorly indurated, smooth, and friable.	63-80

147-083-17DCB

NDSWC

Date Completed:	9/24/92	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	SILT, Sandy, Clayey, Pebbly; olive brown, oxidized; soft to 14 ft, firmer and slightly lignitic below 14 ft.	1-17
LIGNITE		17-18
SILTSTONE	Brown; poorly indurated, soft.	18-25
CLAYSTONE	Silty; light gray; moderately firm, poorly indurated.	25-29
SILTSTONE	Clayey; interbedded medium gray and brown layers.	29-40

147-083-18CCA

NDSWC

Date Completed:	9/23/92	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	55	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	Silty, Clayey, with some Sand and Pebbles; brown, oxidized, rust and gray mottles; scattered lignite fragments.	1-24
LIGNITE	Weathered, loose, takes water, (top of bedrock).	24-26
SILTSTONE	Clayey, with some very fine Sand; olive brown to orangish brown, with brownish gray interbeds; poorly indurated.	26-45
CLAYSTONE	Silty; dark gray to black; firm, friable; poorly indurated; scattered thin lignite seams.	45-49
LIGNITE		49-54
CLAYSTONE	As above (45-49 ft).	54-55

147-083-18DCC

NDSWC

Date Completed:	9/23/92	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	37	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black.	0-1
SAND	Fine to medium with little coarse; subangular to rounded; quartzose with some carbonate grains; oxidized.	1-6
TILL	SILT, Sandy, Clayey, Pebbly; yellowish brown; oxidized.	6-7
LIGNITE	Slack, highly weathered 7-15 ft, firmer below 15 ft; takes water.	7-20
CLAYSTONE	Silty; moderately firm, friable; (poor sample return).	20-29
LIGNITE		29-32
CLAYSTONE	Silty; gray to light gray; moderately firm; (poor sample return).	32-37

147-083-18DDA

NDSWC

Date Completed:	9/23/92	Purpose:	Test Hole
L.S. Elevation (ft):	1855	Well Type:	
Depth Drilled (ft):	35	Source:	SWC

147-083-18DDA continued

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	SILT, Clayey, Sandy, Pebbly with scattered cobbles; yellowish brown, oxidized.	1-12
LIGNITE	Takes water.	12-14
SILTSTONE	Clayey; yellowish-orangish brown; cohesive, moderately firm.	14-17
CLAYSTONE	Silty; gray; cohesive; interbedded with clayey Siltstone, as above; lignite at 35 ft.	17-35

147-083-20BBA

NDSWC

Date Completed:	9/23/92	Purpose:	Test Hole
L.S. Elevation (ft):	1875	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	SILT, Sandy, Clayey, Pebbly; yellowish brown, with gray and reddish brown mottles, oxidized to 36 ft; dark gray below 36 ft.	1-45
CLAYSTONE	Silty; gray; moderately firm, friable, poorly indurated; smooth; scattered thin lignite seams 52 to 60 ft.	45-60

147-083-22DBB1

NDSWC 4-983

Date Completed:	6/29/62	Purpose:	Test Hole
L.S. Elevation (ft):	1881	Well Type:	
Depth Drilled (ft):	31.5	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black.	0-1
SAND	Fine.	1-5
CLAY	Silty, yellow (till).	5-9
SAND	Fine.	9-11
CLAY	Silty, yellow (till).	11-22
CLAY	Silty, olive gray; scattered lignite fragments (till).	22-31.5

147-083-22DBB3

NDSWC 7-983

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1881	Well Type:	
Depth Drilled (ft):	42	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silt, clayey, sandy, dusky brown.	0-1
SAND	Medium to coarse, with fine to medium gravel; silty, clayey, dusky yellow.	1-3
CLAY	Silty, dusky yellow; plastic, calcareous, scattered sand and pebbles (till).	3-15
CLAY	Silty, olive brown to olive gray; plastic, calcareous; scattered sand and pebbles (till).	15-42

147-083-22DBC6
NDSWC 6-983

Date Completed:	12/5/66	Purpose:	Test Hole
L.S. Elevation (ft):	1886	Well Type:	
Depth Drilled (ft):	168	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, sandy, dusky-brown (topsoil).	0-1
CLAY	silty, sandy, plastic to brittle calcareous (till).	1-5
SAND	fine to medium, lignitic.	5-15
GRAVEL	fine to medium, sandy.	15-18
CLAY	silty, plastic, slightly calcareous olive-gray (till).	18-57
CLAY	silty, plastic, calcareous, dusky yellow-green to grayish-yellow-green (lacustrine).	57-74
CLAY	silty, plastic, calcareous, dark olive-gray (lacustrine).	74-99
CLAY	silty, brittle, slightly calcareous, olive-brown; contains lenses of fine to coarse sand and fine gravel.	99-103
CLAY	silty, plastic, slightly calcareous, moderate-olive-brown to olive-gray, scattered sand and pebbles (till).	103-115
CLAY	silty, sandy, gravelly, slightly calcareous, olive-gray (till).	115-124
CLAYSTONE	silty, plastic, noncalcareous, light olive-gray to pale-yellowish-brown.	124-127
LIGNITE	very brittle, black; interbedded with pale-yellowish-brown silty clay.	127-130
CLAYSTONE	silty, and very fine sand, brittle, noncalcareous pale-yellowish-brown.	130-135
CLAYSTONE	silty, brittle, noncalcareous, light-olive-gray.	135-150
CLAYSTONE	silty, and very fine sand, brittle, noncalcareous, dark-olive-gray to medium bluish-gray.	150-168

147-083-22DCB
NDSWC 13-983

Date Completed:	12/7/66	Purpose:	Observation Well
L.S. Elevation (ft):	1883	Well Type:	1.25" ABS
Depth Drilled (ft):	31.5	Aquifer:	Wolf Creek
Screened Interval (ft):	14-18	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, dusky brown, (topsoil)	0-1
CLAY	silty, slightly plastic, calcareous, yellowish gray to dusky yellow; scattered sand and pebbles, (TILL)	1-2
GRAVEL	fine to medium, and 40% medium to coarse sand	2-8
SAND	medium to coarse	8-16
GRAVEL	fine to coarse	16-21
CLAY	silty, plastic, calcareous, olive gray; scattered sand and pebbles, (TILL)	21-31.5

147-083-25AAA
NDSWC 4040

Date Completed:	7/9/70	Purpose:	Test Hole
L.S. Elevation (ft):	1903	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black.	0-1
SAND	fine to medium, dark reddish-brown.	1-4
CLAY	silty, sandy, pebbly, dusky-yellow to moderate-olive-brown.	4-9
SHALE	silty, grayish-yellow.	9-13
SANDSTONE	micaceous, calcareous, pale yellowish-green.	13-25

147-083-25AAA continued

SHALE	silty, brittle, light gray.	25-27
LIGNITE	hard, black.	27-31
SHALE	silty, hard, light gray.	31-33
SHALE	hard, grayish-green.	33-36
SHALE	silty, calcareous, medium to light gray.	36-56
SHALE	carbonaceous, black.	56-60

147-083-25CBB

NDSWC 2715

Date Completed:	7/28/67	Purpose:	Test Hole
L.S. Elevation (ft):	1957	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish-black.	0-1
CLAY	silty, sandy, dusky-yellow to moderate yellowish-brown (till).	1-40
CLAY	silty, sandy, olive-gray (till).	40-86
GRAVEL	fine to medium, clayey, sandy, angular to subrounded.	86-91
BOULDER		91-93
CLAY	silty, sandy, medium bluish-gray, laminated.	93-115
SANDSTONE	interbedded with Shale; fine to medium noncalcareous medium bluish gray Sandstone; noncalcareous dark yellowish-brown Shale; lignitic at top of section.	115-140

147-083-28AAA

NDSWC 2714

Date Completed:	7/28/67	Purpose:	Test Hole
L.S. Elevation (ft):	1905	Well Type:	
Depth Drilled (ft):	200	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, grayish-black.	0-1
CLAY	silty, sandy, grayish-orange; scattered pebbles (till).	1-75
GRAVEL	fine to coarse, clayey, angular to subrounded.	75-97
CLAY	silty, calcareous, dusky-yellow, laminated (lacustrine).	97-109
BOULDER	Sandstone.	109-114
CLAY	silty, calcareous, light-olive-gray (lacustrine).	114-160
SANDSTONE	interbedded with Shale; fine noncalcareous pale olive Sandstone; lignitic noncalcareous medium bluish-gray to grayish-blue Shale.	160-200

147-083-34ABB

NDSWC 3923

Date Completed:	11/18/69	Purpose:	Observation Well
L.S. Elevation (ft):	1920	Well Type:	1.25" ABS
Depth Drilled (ft):	380	Aquifer:	Weller Slough
Screened Interval (ft):	198-204	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Clay	Pebbly, black (topsoil).	0-1
Clay	Silty, sandy, yellowish-gray, few boulders (till).	1-9
Clay	Silty, sandy, olive brown (till).	9-22

147-083-34ABB continued

Clay	Silty, sandy, olive gray (till).	22-62
Clay	Silty, sandy, lignitic, yellowish-green to olive-gray, mostly re-worked bedrock clays (till).	62-96
Clay	Hard, lignitic, carbonaceous, variegated gray and green with black organic or carbonaceous stains.	96-164
Clay	Hard, lignitic, oily, dark-gray to black.	164-190
Gravel	Fine to coarse, sandy.	190-224
Clay	Silty, sandy, pebbly; olive gray, isolated gravel lenses (till).	224-343
Shale	Silty, sandy, micaceous, lignitic, brittle, greenish-gray; isolated sand lenses.	343-380

148-078-20BBA
NDSWC 10251

Date Completed:	9/6/78	Purpose:	Observation Well
L.S. Elevation (ft):	1909.8	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Lake Nettie
Screened Interval (ft):	35-41	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, brownish black	0-1
CLAY	silty, pale yellowish brown	1-5
GRAVEL	fine to coarse, subangular, oxidized	5-18
SAND	fine to very coarse, subrounded; mostly shale and granitics; 30% gravel	18-28
GRAVEL	fine to coarse, rounded to subrounded; 30% medium to coarse sand	28-48
SILT	sandy, medium gray	48-56
SAND	gravelly, fine to coarse	56-64
TILL	sandy, medium dark gray	64-96
SILT	sandy, dark brownish gray; detrital lignite	96-108
SAND	silty, fine to medium	108-118
CLAY	silty, medium dark gray	118-126
SHALE	light gray, tight, fissile, (Fort Union Group, bedrock)	126-140

148-078-32CBC
NDSWC 10250

Date Completed:	9/5/78	Purpose:	Test Hole
L.S. Elevation (ft):	1910	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy to rocky, brown	0-1
TILL	sandy, yellowish brown, oxidized	1-2
GRAVEL	fine to coarse, subrounded, highly oxidized	2-7
TILL	sandy, medium dark brown	7-12
GRAVEL	fine to coarse, subrounded; 40% medium to coarse sand	12-32
TILL	sandy, medium dark gray	32-34
SAND	medium to coarse; lenses of clay	34-36
TILL	silty, medium dark gray	36-122
SHALE	light gray, tight, fissile, (Fort Union Group, bedrock)	122-140

148-079-05BDB

NDSWC

Date Completed:	7/23/80	Purpose:	Observation Well
L.S. Elevation (ft):	1995	Well Type:	2" PVC
Depth Drilled (ft):	90	Aquifer:	Lake Nettie
Screened Interval (ft):	0-80	Source:	Schimelfenig Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL	medium; with some till	1-10
TILL	brown	10-25
GRAVEL	medium	25-30
TILL	brown	30-35
GRAVEL	medium to coarse	35-45
SAND	fine to medium; with some till	45-50
TILL	brown; with some sand	50-65
GRAVEL	medium to very coarse	65-83
TILL	gray	83-90

148-079-11DDD

NDSWC 3942

Date Completed:	12/4/69	Purpose:	Test Hole
L.S. Elevation (ft):	1986	Well Type:	
Depth Drilled (ft):	180	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	pebbly black.	0-1
SAND	clayey, silty, yellowish-gray, scattered pebbles.	1-8
CLAY	silty, sandy, moderate-olive-brown; scattered pebbles (till).	8-40
CLAY	silty, olive-gray; scattered sand and pebbles; numerous cobbles, boulders and lignitic sand lenses (till).	40-102
SILT	sandy, olive-gray; scattered pebbles.	102-133
GRAVEL	fine to medium.	133-140
SHALE	silty, sandy, hard, brittle, noncalcareous, gray.	140-180

148-079-15DDA

NDSWC 11547

Date Completed:	6/4/85	Purpose:	Test Hole
L.S. Elevation (ft):	1997	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy and slightly to moderately gravelly, with fine sand to coarse gravel; very light gray variegated with light olive to yellowish brown; soft, cohesive, slightly plastic, somewhat crumbly, gritty, oxidized; (TILL)	0-23
CLAY	silty, sandy and slightly gravelly, with very fine sand to coarse gravel; olive gray; moderately soft, cohesive, and plastic, slightly stiff, occasional coarse to very coarse gravel size carbonate and lignite fragments; gritty, carbonate rock 79-80 ft; (TILL)	23-84
SANDSTONE	very fine to fine grained, slightly silty, yellowish brown; well sorted; slightly firm, nonindurated, crumbly; with slightly to moderately clayey layers; oxidized to 118 ft, gray below 118 ft, (Fort Union Group, bedrock)	84-120

148-079-16CCC
NDSWC 4091

Date Completed:	8/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	2020	Well Type:	
Depth Drilled (ft):	180	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black.	0-1
SILT	clayey, sandy, yellowish-gray; scattered pebbles (till).	1-6
CLAY	silty, sandy, pebbly, moderate olive-brown (till).	6-60
CLAY	silty, sandy, pebbly, lignitic, olive-gray; scattered cobbles (till).	60-130
GRAVEL	fine to coarse, subangular to subrounded.	130-136
CLAY	silty, sandy, pebbly, lignitic, olive-gray; scattered pebbles (till).	136-148
SANDSTONE	fine, clayey, micaceous, pale yellowish-green (Fort Union Group, bedrock)	148-154
SILTSTONE	sandy, hard, light gray (Fort Union Group, bedrock)	154-158
SANDSTONE	fine, clayey, greenish-gray (Fort Union Group, bedrock)	158-169
SILTSTONE	hard, noncalcareous, medium light gray, laminated (Fort Union Group, bedrock)	169-180

148-079-19CCC
NDSWC 3946

Date Completed:	12/9/69	Purpose:	Test Hole
L.S. Elevation (ft):	1970	Well Type:	
Depth Drilled (ft):	240	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy gravelly, olive-brown (till).	1-8
CLAY	silty, olive-brown; scattered sand and pebbles (till).	8-44
CLAY	silty, olive-gray; scattered sand and pebbles (till).	44-72
GRAVEL	fine to medium, sandy.	72-78
CLAY	silty, sandy, gravelly, olive-gray (till).	78-125
SAND & GRAVEL	medium Sand to very coarse Gravel; predominantly coarse sand to medium gravel; mostly carbonates, granitic and indurated siliceous shale grains.	125-196
SILT	light olive-gray.	196-200
SHALE	carbonaceous, variegated gray and black; interbedded with gray Siltstone and greenish-gray, clayey, fine Sandstone (Fort Union Group, bedrock)	200-240

148-079-20AAB
NDSWC

Date Completed:	3/6/75	Purpose:	Domestic Well
L.S. Elevation (ft):	2010	Well Type:	4" Steel
Depth Drilled (ft):	222	Aquifer:	Fort Union
Screened Interval (ft):	177-198	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow	1-55
CLAY	blue	55-80
TILL		80-152
SAND	yellow	152-154
SHALE	brown	154-158
SAND	fine, gray (bedrock)	158-198
SHALE		198-222

148-079-23BBC
NDSWC

Date Completed:	12/4/74	Purpose:	Domestic Well
L.S. Elevation (ft):	1998	Well Type:	4" Steel
Depth Drilled (ft):	422	Aquifer:	Fort Union
Screened Interval (ft):	400-420	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow	1-58
TILL	gray	58-67
GRAVEL		67-70
SHALE	sandy	70-122
SHALE		122-140
SHALE	sandy	140-165
SHALE		165-200
SHALE	sandy	200-220
SHALE		220-400
SAND	fine	400-422

148-079-27ADD1
NDSWC 2789

Date Completed:	8/29/67	Purpose:	Observation Well
L.S. Elevation (ft):	1907.8	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	183-198	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, yellowish-brown (till).	0-4
GRAVEL	fine to medium, sandy, estimate 25-35% coarse to very coarse sand.	4-12
CLAY	very silty, yellowish brown, oxidized.	12-20
CLAY	silty, grayish-olive with yellowish-gray layers.	20-60
CLAY	silty, sandy, grayish-olive (till).	60-64
CLAY	silty, sandy, pebbly; olive gray; gravelly lens from 72-78 ft (till).	64-81
GRAVEL	fine to coarse, subangular to rounded.	81-113
CLAY	silty, sandy, olive gray (till).	113-134
GRAVEL	fine to coarse, sandy, angular to rounded.	134-146
GRAVEL	fine to coarse, sandy, angular to rounded; with numerous clay beds (2 to 4 ft thick).	146-211
CLAY	silty, sandy, olive gray (till).	211-219
GRAVEL	fine to coarse, sandy; with thin clay beds (approximately 2 ft thick).	219-238
CLAY	silty, sandy, dark gray (till).	238-242
SHALE	siliceous, brownish-gray to dark greenish-gray to medium bluish-gray, indurated, noncalcareous.	242-260

148-079-27ADD2
NDSWC 2789A

Date Completed:	8/29/67	Purpose:	Observation Well
L.S. Elevation (ft):	1907.8	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	83-98	Source:	SWC

Lithologic Log

see log of NDSWC 2789 (148-79-27ADD1) for lithologic information

148-079-27DDD

NDSWC

Date Completed:	3/4/75	Purpose:	Domestic Well
L.S. Elevation (ft):	1978	Well Type:	4" Steel
Depth Drilled (ft):	162	Aquifer:	Lake Nettie
Screened Interval (ft):	125-129	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow, rocky	1-48
SAND & GRAVEL	with interbedded clay	48-86
TILL	gray	86-101
GRAVEL	with clay	101-112
TILL		112-114
GRAVEL	medium to coarse	114-133
TILL		133-162

148-079-28AAD

NDSWC

Date Completed:	9/23/93	Purpose:	Domestic Well
L.S. Elevation (ft):	2010	Well Type:	2" Steel
Depth Drilled (ft):	733	Aquifer:	Fox Hills
Screened Interval (ft):	680-720	Source:	Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
TILL	tan	2-55
GRAVEL	dry	55-57
TILL	tan	57-69
SAND & GRAVEL	dry	69-137
TILL	gray	137-159
CLAY	gray (probable bedrock claystone)	159-379
CLAY	sandy (bedrock, probable sandy claystone)	379-402
CLAY	gray (bedrock, probable claystone)	402-496
CLAY	sandy (bedrock, probable sandy claystone)	496-508
CLAY	gray (bedrock, probable claystone)	508-665
CLAY	sandy (bedrock, probable sandy claystone)	665-681
SAND	fine (bedrock, probable sandstone; possibly Fox Hills Formation)	681-724
CLAY	gray (bedrock, probable claystone)	724-733

148-079-31DDD

NDSWC 4090

Date Completed:	8/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	1937	Well Type:	
Depth Drilled (ft):	240	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	pebbly, silty, black.	0-1
SILT	sandy, clayey, yellowish-gray; scattered pebbles (till).	1-5
CLAY	silty, sandy, pebbly, moderate olive-brown to 24 ft, olive gray below, (till).	5-39
GRAVEL	fine to medium, subangular.	39-43

148-079-31DDD continued

CLAY	silty, sandy, pebbly, olive-gray, (till).	43-76
CLAY	silty, sandy, pebbly, lignitic, (till).	76-116
CLAY	silty, sandy, pebbly, olive-gray; with lenses of clay and silt (till).	116-152
GRAVEL	fine to medium, subangular to subrounded.	152-154
SILT	clayey, sandy, olive-gray, laminated.	154-178
CLAY	stiff, olive-gray, smooth.	178-182
SAND	very fine to fine, silty, lignitic, dark-gray.	182-202
CLAY	silty, sandy, pebbly, olive-gray (till.)	202-223
SHALE	silty, hard, noncalcareous, medium-gray.	223-240

148-079-32AAA
NDSWC 3945

Date Completed:	12/5/69	Purpose:	Observation Well
L.S. Elevation (ft):	1948.1	Well Type:	1.25" ABS
Depth Drilled (ft):	160	Aquifer:	Lake Nettie
Screened Interval (ft):	108-111	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	fine, clayey, gravelly, yellowish-gray (till).	0-4
CLAY	silty, sandy, olive brown (till).	4-29
GRAVEL	fine to medium, oxidized with heavy iron-oxide staining; silty and clayey in bottom 10 ft of section.	29-64
CLAY	silty, sandy, olive-gray, scattered pebbles and cobbles (till).	64-96
GRAVEL	fine to medium, slightly sandy.	96-125
SHALE	silty, sandy, micaceous, carbonaceous, noncalcareous, olive-gray (Fort Union Group, bedrock)	125-160

148-079-36CDC
NDSWC 11551

Date Completed:	6/5/85	Purpose:	Observation Well
L.S. Elevation (ft):	1901.3	Well Type:	1.25" PVC
Depth Drilled (ft):	73	Aquifer:	Fort Union
Screened Interval (ft):	66-71	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	very fine sand to very coarse gravel, mostly coarse sand to coarse gravel, brown; poorly sorted; subangular to subrounded, oxidized	0-5
CLAY	silty, sandy with very fine to very coarse sand, yellowish brown; moderately soft, slightly to moderately cohesive and plastic, to crumbly, oxidized, (TILL)	5-11
CLAY	silty, slightly sandy with very fine to fine sand, gray; very soft, moderately cohesive and plastic, smooth	11-17
CLAY	silty, sandy with very fine to fine sand to sparse coarse and very coarse sand, with trace fine to coarse gravel, moderately soft, cohesive, and plastic, moderately gritty, (TILL)	17-31
CLAYSTONE	dark yellowish brown to orangish brown, slightly firm, compact, nonindurated, very friable, blocky but somewhat crumbly, (Fort Union Group, bedrock)	31-33
SANDSTONE	very fine to fine grained, clayey, well sorted; dark yellowish brown to orangish brown; slightly soft to slightly firm, nonindurated, very friable to loose, (Fort Union Group, bedrock)	33-38
CLAYSTONE	gray, very firm, compact, moderately indurated, slightly to moderately friable, (Fort Union Group, bedrock)	38-42
SANDSTONE	very fine to fine grained, gray; well sorted; moderately firm, nonindurated, compact, very friable, (Fort Union Group, bedrock)	42-44
CLAYSTONE	silty, gray; slightly to moderately firm, slightly indurated, compact, moderately to very friable, (Fort Union Group, bedrock)	44-46
SANDSTONE	very fine to fine grained, slightly silty to very silty in layers, gray; well sorted; slightly soft to slightly firm, compact, nonindurated, very friable to crumbly, (Fort Union Group, bedrock)	46-72
CLAYSTONE	gray, as above 44-46 ft, (Fort Union Group, bedrock)	72-73

148-080-03DAA

NDSWC 2791

Date Completed:	8/30/67	Purpose:	Test Hole
L.S. Elevation (ft):	2018	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
CLAY	silty, sandy, moderate yellowish orange, (TILL)	1-50
CLAY	silty, sandy, olive gray, (TILL)	50-120
SANDSTONE	fine to medium, noncalcareous, moderate yellowish brown (Fort Union Group)	120-134
SHALE	siliceous, medium to light gray to light bluish gray (Fort Union Group)	134-140

148-080-06AAB

NDSWC 11540

Date Completed:	5/28/85	Purpose:	Observation Well
L.S. Elevation (ft):	1952.5	Well Type:	1.25" PVC
Depth Drilled (ft):	200	Aquifer:	Strawberry Lake
Screened Interval (ft):	168-173	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	yellowish brown, olive yellowish brown, yellowish gray variegated, with occasional thin light gray zones; moderately silty, moderately sandy with very fine to coarse sand, slightly gravelly with fine to medium gravel; moderately soft, moderately cohesive, gritty, somewhat crumbly above 13 ft, rocks 26-27 ft; more compact and darker below 28 ft, (TILL)	0-31
CLAY	olive gray, moderately silty, slightly to moderately sandy with very fine to coarse sand, slightly gravelly with fine to coarse gravel; moderately soft, moderately to very cohesive, somewhat gritty and stiff, slightly lignitic in part; occasional very coarse gravel fragments; mostly carbonate and quartz, carbonate rock at 87-88 ft; (TILL)	31-114
SAND & GRAVEL	fine sand to coarse gravel; poorly sorted, angular to subrounded, mostly lignite with quartz, carbonates, and shale; interbedded with olive gray clay till, as above; some sandstone fragments present	114-123
CLAY	olive gray, as above, (TILL)	123-127
SAND & GRAVEL	as above	127-129
CLAY	olive gray as above; lignitic, lignite fragments are medium sand to very coarse gravel size; hard, dark brownish gray, silty claystone; boulder 153-154 ft; (TILL)	129-160
SAND & GRAVEL	medium sand to very coarse gravel, poorly sorted, subangular to subrounded, mostly quartz, shale, and carbonate fragments with some sandstone, igneous, and lignite fragments	160-175
CLAYSTONE	brownish gray, slightly silty, smooth, moderately firm, nonindurated, slightly cohesive and sticky; interbedded with greenish gray, very fine grained, silty sandstone, moderately firm, nonindurated; and dark gray claystone, slightly silty, moderately to very firm, slightly indurated and compact, blocky, smooth, soapstone texture with laminae of greenish gray silty claystone, less firm and compact	175-200

148-080-07AAA

NDSWC 11517

Date Completed:	11/5/84	Purpose:	Observation Well
L.S. Elevation (ft):	1947.1	Well Type:	1.25" PVC
Depth Drilled (ft):	170	Aquifer:	Strawberry Lake
Screened Interval (ft):	149-154	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow brown, oxidized, silty, pebbly, soft, crumbly, predominantly carbonate pebbles; interbedded gravel at 29-30 ft	1-42
TILL	olive gray, silty, pebbly, soft, plastic, cohesive; thin sand lens at 61 ft; dark dusky yellow brown and brittle 61-67 ft	42-67

148-080-07AAA continued

SAND & GRAVEL	medium sand to fine pebble predominantly very coarse sand; equal quartz and shale fragments; subrounded to rounded	67-81
TILL	as above, boulder 85-86 ft	81-86
TILL	yellow brown, oxidized, very sandy and pebbly; tighter, brittle	86-90
TILL	olive gray, very pebbly; tight, plastic, cohesive	90-108
SAND (?)	or silt, no sample return	108-112
TILL	gray, as above, with abundant lignite pebbles; detrital lignite seam at 130-131 ft	112-143
SAND & GRAVEL	fine to medium sand with interbedded carbonate and detrital lignite gravel near bottom of interval	143-154
CLAY	greenish to brownish gray, hard, carbonaceous streaks (Fort Union Group, bedrock)	154-170

148-080-12ADD
NDSWC 2790

Date Completed:	8/30/67	Purpose:	Observation Well
L.S. Elevation (ft):	1958.1	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	23-28	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, brownish-black.	0-1
SAND & GRAVEL	medium to very coarse, subangular to rounded sand; fine to medium, angular to subrounded gravel.	1-28
CLAY	silty, sandy, olive-gray (till).	28-32
GRAVEL & SAND	fine to coarse, subangular to rounded gravel; coarse to very coarse sand; numerous clay lenses.	32-41
CLAY	silty, sandy, olive-gray; gravelly near base (till).	41-85
SANDSTONE	fine to medium, indurated, noncalcareous, medium bluish-gray.	85-120

148-080-13CCD
NDSWC

Date Completed:	8/20/84	Purpose:	Domestic Well
L.S. Elevation (ft):	1970	Well Type:	4" PVC
Depth Drilled (ft):	92	Aquifer:	Lake Nettie
Screened Interval (ft):	80-92	Source:	Broneske Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
CLAY	and silt	2-42
CLAY	and sand	42-76
SAND & GRAVEL		76-92

148-080-15DDD
NDSWC 3947

Date Completed:	12/10/69	Purpose:	Test Hole
L.S. Elevation (ft):	1960	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	pebbly, black	0-1
SAND	fine, clayey, yellowish-gray	1-8
CLAY	silty, dusky-brown; scattered sand and pebbles (till)	8-33
CLAY	silty, sandy, olive-gray; scattered pebbles (till)	33-81
SHALE	silty, hard, brittle, noncalcareous, moderate yellowish-brown (Fort Union Group, bedrock)	81-84

148-080-15DDD

SILT	soft to hard, moderate yellowish-brown (Fort Union Group, bedrock)	84-99
SILT	soft to hard, medium-gray (Fort Union Group, bedrock)	99-104
LIGNITE	shaly, hard, black (Fort Union Group, bedrock)	104-109
SAND	fine, clayey, micaceous, noncalcareous, greenish-gray (Fort Union Group, bedrock)	109-120

148-080-17AAA

NDSWC 11587

Date Completed:	7/25/85	Purpose:	Test Hole
L.S. Elevation (ft):	1960	Well Type:	
Depth Drilled (ft):	240	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	yellowish brown, moderately silty, slightly to moderately sandy and slightly gravelly with very fine sand to fine gravel interstitially; moderately to very soft, slightly cohesive, nonplastic, crumbly, gritty, oxidized; gray and reddish brown mottles; (TILL)	0-8
CLAY	light gray, very silty, very sandy and slightly gravelly with very fine sand to fine gravel, mostly fine to medium sand interstitially; moderately to very soft, slightly cohesive and plastic, (TILL)	8-11
CLAY	olive brown, moderately silty, slightly sandy and gravelly, moderately soft, cohesive and plastic; oxidized, slightly stiff, slightly to moderately lignitic; moderately sandy and gravelly, with very fine sand to medium gravel from 37-51 ft; (TILL)	11-51
CLAY	dark gray, moderately silty, slightly sandy and gravelly with very fine sand to fine gravel; slightly to moderately soft, moderately cohesive and plastic, slightly gritty, slightly stiff, (TILL)	51-66
SAND & GRAVEL	overall yellowish brown color, very fine sand to medium gravel; poorly sorted, subangular; mostly carbonates, shale, and quartz with silicates	66-74
CLAY	yellowish brown, silty, soft, gritty	74-76
SAND & GRAVEL	as above (66-74 ft); with abundant lignite shale fragments 79-84 ft	76-84
CLAY	dark gray, moderately silty, slightly sandy and gravelly with very fine sand to sparse medium gravel interstitially; slightly to moderately soft, moderately cohesive and plastic, gritty, slightly to moderately stiff; slightly lignitic, (TILL)	84-108
CLAY	olive to olive brown, moderately to very silty, very slightly sandy with very fine sand; moderately soft, moderately cohesive, slightly plastic, smooth	108-110
CLAY	dark gray, as above 84-108 ft, (TILL)	110-127
CLAY	dark gray interbedded with brownish gray, moderately to very silty, moderately to very sandy with very fine to fine sand; moderately soft, moderately cohesive, slightly plastic, smooth; occasional thin detrital lignite layers; carbonaceous in part	127-147
SAND & GRAVEL	fine sand to medium gravel, poorly sorted; subangular; mostly yellowish brown carbonates with shale, quartz, and some detrital lignite	147-149
CLAY	as above, 127-147 ft	149-151
SAND & GRAVEL	as above, 147-149 ft; with clay layers below 156 ft	151-160
CLAY	gray, moderately silty, moderately sandy to slightly gravelly with very fine sand to medium gravel interstitially, in part very sandy in layers; moderately soft, moderately cohesive, slightly to moderately plastic; gritty, slightly to moderately lignitic, somewhat stiff; thin sand and gravelly layers from 190-196 ft; boulder 196-197 ft; interbedded sand and gravel layers from 197-207 ft	160-207
LIGNITE	interbedded with very fine sandy layers and blackish gray silty sandy clay (bedrock)	207-222
SANDSTONE	very fine grained, dark gray, dark brownish gray and black speckled and variegated, slightly to moderately firm, nonindurated, very friable, compact, carbonaceous and micaceous	222-240

148-080-17CAB1

NDSWC 4084

Date Completed:	8/6/70	Purpose:	Test Hole
L.S. Elevation (ft):	1920	Well Type:	
Depth Drilled (ft):	160	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	fine to medium, subrounded, yellowish-gray	0-6

148-080-17CAB1 continued

CLAY	sandy, gravelly, yellowish-gray	6-20
CLAY	silty, sandy, pebbly, moderate olive-brown (till)	20-46
GRAVEL	fine to coarse, yellowish-brown	46-61
CLAY	silty, sandy, pebbly, olive gray (till)	61-104
GRAVEL	fine to medium, subangular to subrounded	104-113
CLAY,	plastic, olive-gray	113-117
GRAVEL	fine to medium, sandy, subangular to subrounded; about 50 percent detrital lignite	117-126
SILTSTONE	hard, calcareous, light gray (Fort Union Group)	126-131
SANDSTONE	very fine, micaceous, calcareous, light-gray (Fort Union Group)	131-137
SHALE	silty, sandy, lignitic, medium gray to black (Fort Union Group)	137-160

148-080-17CAB2

NDSWC 4085

Date Completed:	8/6/70	Purpose:	Observation Well
L.S. Elevation (ft):	1917.9	Well Type:	1.25" ABS
Depth Drilled (ft):	200	Aquifer:	Strawberry Lake
Screened Interval (ft):	118-138	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	gravelly, subangular to subrounded.	0-6
CLAY	silty, sandy, pebbly, moderate-olive-brown; cobbles (till).	6-22
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	22-70
GRAVEL	medium, subrounded.	70-87
CLAY	silty, sandy, olive gray, laminated; scattered pebbles.	87-116
GRAVEL	cobbles, and boulders; with isolated clay beds.	116-167
CLAY	sandy, calcareous, white (Fort Union Group).	167-170
SANDSTONE	fine, light green (Fort Union Group)	170-172
SANDSTONE	very fine to fine, clayey, micaceous, calcareous (Fort Union Group)	172-189
SILTSTONE	carbonaceous, light-gray (Fort Union Group)	189-200

148-080-18AAA

NDSWC 11518

Date Completed:	11/6/84	Purpose:	Observation Well
L.S. Elevation (ft):	1930.1	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Strawberry Lake
Screened Interval (ft):	29-34	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	very silty; light greenish gray 1-6 ft; yellowish orange below	1-10
TILL	yellow brown, clayey, silty, pebbly, carbonate and quartz pebbles, soft, plastic	10-15
TILL	olive gray, silty, pebbly, soft, plastic	15-30
SAND & GRAVEL	coarse sand to medium pebble, predominantly very coarse sand to fine pebble; angular to rounded predominantly subrounded; predominantly carbonates and quartz with granite and shale fragments	30-35
TILL	dark gray as above, granite boulder 60-61 ft	35-61
LIGNITE	detrital or bedrock (uncertain)	61-63
SANDSTONE	very fine grain, well sorted, angular; dark yellowish orange, oxidized	63-66
SANDSTONE	greenish gray, very fine grain, well sorted, angular; slightly argillaceous and carbonaceous, with some interbedded claystone	66-80

148-080-19AAA

NDSWC 11586

Date Completed:	7/25/85	Purpose:	Test Hole
L.S. Elevation (ft):	1905	Well Type:	
Depth Drilled (ft):	60		
		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	yellowish brown, moderately silty, slightly to moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine gravel interstitially; moderately to very soft, slightly cohesive, nonplastic, gritty, oxidized, somewhat crumbly; dark brown and reddish brown mottles, (TILL)	0-13
CLAY	dark yellowish brown to 15 ft, grayish brown below; moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel interstitially; moderately soft, slightly to moderately cohesive, slightly plastic, gritty, oxidized, somewhat stiff, carbonaceous mottles and laminations; lignitic, (TILL)	13-31
SAND & GRAVEL	very fine sand to coarse gravel, mostly medium sand to fine gravel; poorly sorted, subangular to subrounded; mostly carbonates, shale, and quartz, with igneous rock fragments, lignite and silicates; overall brown color	31-51
CLAY	olive yellowish brown, slightly to moderately silty, slightly to moderately sandy with very fine to very coarse sand, slightly gravelly with fine gravel interstitially; moderately soft, moderately to very cohesive, moderately plastic; gritty, slightly to moderately stiff; oxidized, (TILL)	51-55
SAND & GRAVEL	as above (31-51 ft), with very coarse gravel	55-57
SANDSTONE	dark yellowish brown, very fine grained, well sorted; very firm to hard, moderately indurated, moderately friable, compact; with some claystone 58-60 ft	57-60

148-080-19BBB

NDSWC 11585

Date Completed:	7/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1905	Well Type:	
Depth Drilled (ft):	157	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	very fine to very coarse with sparse fine gravel; poorly sorted, silty, oxidized; interbedded with clay, yellowish brown, soft, silty; oxidized	0-5
CLAY	yellowish brown with mottles of brownish gray and reddish brown, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine to very coarse gravel; moderately soft, slightly to moderately cohesive, slightly plastic, gritty; oxidized, (TILL)	5-29
SAND & GRAVEL	very fine sand to medium gravel, yellowish brown; subangular to subrounded, poorly sorted, carbonates, shale, quartz, and igneous rock fragments with silicates, oxidized	29-52
CLAY	as above (5-29 ft), olive brown, (TILL)	52-55
CLAY	dark gray, moderately silty, slightly to moderately sandy with very fine to very coarse sand, slightly gravelly with fine gravel interstitially; moderately soft, cohesive, and plastic; gritty, somewhat stiff; slightly lignitic with moderately lignitic layers; boulder 90-91 ft; (TILL)	55-145
SAND & GRAVEL	fine sand to medium gravel, mostly coarse sand to medium gravel; poorly sorted, angular to subrounded, mostly subangular; mostly carbonates, shale, lignite, with quartz, sandstone, and claystone fragments	145-153
CLAYSTONE	brownish gray, moderately silty, moderately firm, nonindurated, very friable, interbedded with sandy layers; slightly micaceous	153-156
SANDSTONE	gray, very fine, well sorted, hard, indurated, slightly friable	156-157

148-080-19CCC1

NDSWC 2745

Date Completed:	8/8/67	Purpose:	Observation Well
L.S. Elevation (ft):	1861.85	Well Type:	1.25" ABS
Depth Drilled (ft):	300	Aquifer:	Lake Nettie
Screened Interval (ft):	198-201	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, sandy, grayish-black (topsoil).	0-1

148-080-19CCC1 continued

CLAY	Silty, sandy. yellowish brown (till).	1-9
GRAVEL	Fine to coarse, with 20-30% medium to very coarse sand.	9-34
CLAY	Silty, pebbly, olive gray (till).	34-58
GRAVEL	Fine to coarse, with 25-35% coarse to very coarse sand.	58-67
CLAY	Silty, olive-gray, abundant limestone, dolostone and shale grains and granules in clayey matrix (till) ; numerous sand and gravel lenses from 111-142 ft, rocks and gravel 118-123 ft.	67-182
GRAVEL	Fine to coarse, and 20-30% coarse to very coarse sand; interbedded with clay layers below 200 ft.	182-208
CLAY	Silty, lignitic, medium-gray.	208-226
GRAVEL	Medium to coarse, with 10-20% coarse to very coarse sand; with clay lenses from 240-244 and 252-258 ft.	226-268
CLAY	Very silty, plastic, medium gray, laminated (lacustrine).	268-276
BOULDERS	Limestone boulders.	276-278
SANDSTONE	Fine to medium, noncalcareous, dark greenish-gray, consolidated; interbedded with noncalcareous grayish-brown shale (Fort Union Group).	278-300

148-080-19CCC2

NDSWC 2746

Date Completed:	8/9/67	Purpose:	Observation Well
L.S. Elevation (ft):	1862.39	Well Type:	1.25" ABS
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	24-27	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Silty, clayey, grayish black	0-1
CLAY	Silty, moderate yellowish brown (till).	1-9
GRAVEL	Sandy; fine to coarse angular to subrounded Gravel; 20-30% medium to very coarse angular to subrounded Sand; predominantly carbonate and shale fragments with granitic and sandstone fragments.	9-29
CLAY	Silty, olive gray; cohesive and plastic; abundant carbonate and shale grains and granules (till).	29-40

148-080-20CCC

NDSWC 11588

Date Completed:	7/25/85	Purpose:	Observation Well
L.S. Elevation (ft):	1889.4	Well Type:	1.25" PVC
Depth Drilled (ft):	205	Aquifer:	Lake Nettie
Screened Interval (ft):	98-103	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	yellowish brown, moderately silty, slightly to moderately sandy and gravelly with very fine sand to medium gravel interstitially; moderately to very soft, slightly cohesive to crumbly, gritty, oxidized; slightly lignitic; mottles of light gray and reddish brown; (TILL)	0-34
SAND & GRAVEL	very fine sand to medium gravel, poorly sorted; overall color is yellowish brown; mostly carbonates and shale with quartz, silicates, igneous rock, and lignite fragments; scattered thin layers silty clay (1 ft thick)	34-51
CLAY	dark gray, moderately silty, moderately soft, moderately to very cohesive, moderately plastic, smooth, somewhat stiff	51-55
CLAY	dark gray, moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel interstitially; moderately soft, moderately cohesive and plastic, gritty, somewhat stiff, slightly lignitic, (TILL)	55-86
SAND & GRAVEL	very fine sand to medium gravel, mostly fine sand to fine gravel; poorly sorted, subangular to subrounded; mostly carbonates, shale, and lignite with quartz, silicates, and some greenish yellow very fine grained sandstone	86-107
CLAY	brownish gray to gray, moderately silty, moderately sandy and gravelly with very fine sand to medium gravel interstitially; moderately soft and cohesive, slightly to moderately plastic, pliable; gritty, slightly lignitic, (TILL)	107-121
ROCK	sandstone (?)	121-122

148-080-20CCC continued

SAND & GRAVEL	as above, interbedded with till layers	122-124
ROCK	sandstone, very fine grained, greenish gray, hard, indurated, slightly friable, salt and pepper appearance	124-126
CLAY	gray to brownish gray, moderately silty, moderately sandy and slightly to moderately gravelly with very fine sand to fine gravel interstitially; moderately soft, cohesive and plastic, gritty, slightly stiff; slightly to moderately lignitic with layers of sand and gravel, lignite and greenish gray sandstone fragments 154-157 ft; (TILL)	126-157
CLAY	pale gray to white, slightly silty, moderately to very soft, non cohesive, moderately crumbly, smooth	157-160
CLAY	as above 126-154 ft; (TILL)	160-182
SANDSTONE	interbedded greenish gray, olive brown, and gray; very fine to fine grained, well sorted; mostly very firm to hard, very compact, moderately to very indurated, slightly friable; gray sandstone is softer and more friable; with interbedded layers of maroonish brown, moderately firm claystone	182-195
CLAYSTONE	dark gray to black, slightly firm, nonindurated, compact, very friable, slightly silty, carbonaceous	195-204
SANDSTONE	greenish gray with salt and pepper appearance; very fine to fine grained, well sorted; very hard, dense, well indurated, very slightly friable	204-205

148-080-21BBB
NDSWC 11519

Date Completed:	11/6/84	Purpose:	Test Hole
L.S. Elevation (ft):	1922	Well Type:	
Depth Drilled (ft):	180	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SILT	dark yellowish orange to light gray, slightly clayey	1-8
TILL	yellowish orange, silty, very pebbly; blocky, brittle, carbonaceous streaks, softer and more plastic below 20 ft	8-27
TILL	olive gray, silty, pebbly, soft, plastic, abundant carbonate pebbles; with granite pebbles 36-38 ft; rocks 56-57 ft and 63-64 ft; carbonate gravel 80-81 ft	27-109
CLAY	olive gray; waxy, plastic (lacustrine)	109-123
SAND & GRAVEL	very coarse sand to coarse pebble, predominantly very coarse sand and very fine pebble; angular to rounded, predominantly subangular to subrounded; 50% carbonates, 40% shale, 5% quartz, and 5% granitics	123-127
TILL	yellow brown, oxidized, silty, pebbly, soft, plastic	127-142
SILT	yellow brown, very clayey	142-148
BOULDERS	gray, fine grained, well indurated sandstone, and granite	148-153
SANDSTONE	greenish gray, very fine grained; well sorted, angular, argillaceous, poorly indurated (bedrock, Fort Union Group)	153-180

148-080-21CCC
NDSWC 3948

Date Completed:	12/10/69	Purpose:	Observation Well
L.S. Elevation (ft):	1914.9	Well Type:	1.25" ABS
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	Sandy, clayey, yellowish-gray (till).	0-5
CLAY	Silty, scattered sand, pebbles and cobbles; olive brown (oxidized) changing to olive gray at 29 ft (till).	5-56
GRAVEL	Fine, very sandy (with coarse sand), iron oxide stained, dry.	56-68
SAND	Medium to mostly coarse, with fine gravel, subrounded.	68-86
CLAY	Very silty, olive-gray; scattered sand and gravel (till).	86-114
SAND	Fine to coarse, with fine gravel, silty (with interbedded silty layers).	114-137
CLAY	Silty, sandy, pebbly, olive-gray (till).	137-161

148-080-21CCC continued

SHALE	Sandy, carbonaceous, brittle, greenish brown (Fort Union Group)	161-164
SANDSTONE	Very fine, dark-gray, indurated (Fort Union Group)	164-166
SANDSTONE	Very fine to fine, clayey, carbonaceous, greenish-gray, moderately soft, friable (Fort Union Group)	166-174
SHALE	Silty, sandy, micaceous, carbonaceous, variegated gray, green, and brown (Fort Union Group)	174-200

148-080-23CDD

NDSWC 11590

Date Completed:	7/29/85	Purpose:	Test Hole
L.S. Elevation (ft):	1930	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, sandy, silty, gravelly, crumbly	0-1
SAND & GRAVEL	yellowish brown, oxidized; very fine sand to coarse gravel, poorly sorted; subangular to subrounded; mostly carbonate, quartz, and igneous rock fragments with shale, and silicates	1-14
CLAY	yellowish brown, oxidized, moderately silty, moderately to very sandy and slightly to moderately gravelly with fine sand to medium gravel interstitially; moderately soft, slightly to moderately cohesive, slightly plastic, gritty; some lignite and carbonaceous streaks, (TILL)	14-21
SAND & GRAVEL	fine sand to coarse gravel, as above, oxidized	21-30
CLAY	as above, (TILL); with oxidized sand and gravel lens from 35 to 38 ft; abandoned hole due to caving	30-40

148-080-23DCD

NDSWC 11606

Date Completed:	8/2/85	Purpose:	Observation Well
L.S. Elevation (ft):	1883.7	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	25-30	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, sandy, silty, crumbly	0-1
CLAY	yellow, very silty, slightly to moderately sandy with very fine to fine sand; very soft, slightly cohesive, nonplastic - loose; slightly gritty, somewhat sticky; oxidized	1-3
CLAY	yellowish brown, moderately silty; moderately sandy and gravelly with very fine sand to medium gravel interstitially; moderately soft and cohesive; slightly plastic and somewhat crumbly; gritty; oxidized, (TILL)	3-9
SAND & GRAVEL	brown, very fine sand to medium gravel, mostly coarse sand to medium gravel; poorly sorted; subangular to subrounded; mostly quartz, shale, carbonates, and silicates with igneous rock fragments	9-32
CLAY	olive gray, moderately silty, moderately sandy and slightly to moderately gravelly with very fine sand to sparse medium gravel interstitially; moderately soft and cohesive, slightly to moderately plastic; gritty, (TILL)	32-49
ROCKS	gravel, igneous rock fragments, quartz, silicates, carbonates, and indurated green very fine grained sandstone	49-51
SAND & GRAVEL	as above, with layers of olive gray clayey till	51-60
SAND & GRAVEL	fine sand to coarse gravel; poorly sorted, subangular to subrounded; mostly quartz, carbonates, shale and silicates with igneous rock fragments and hard sandstone fragments	60-62
SANDSTONE	greenish gray, very fine grained, well sorted; hard, indurated, slightly friable, dense	62-63
CLAYSTONE	brownish gray interbedded with gray and brown; slightly silty, slightly to moderately firm, nonindurated, very friable, compact; interbedded with layers of sandy claystone	63-80

148-080-26DCC

NDSWC

Date Completed:	10/24/88	Purpose:	Observation Well
L.S. Elevation (ft):	1867.2	Well Type:	2" PVC
Depth Drilled (ft):	44	Aquifer:	Lake Nettie
Screened Interval (ft):	30-38	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty to sandy, yellowish brown, (TILL)	1-4
GRAVEL	and rocks	4-10
CLAY	silty, yellowish brown, (TILL)	10-16
SAND	fine to coarse	16-20
CLAY	silty, olive gray, (TILL)	20-30
GRAVEL	to coarse, about 20% sand, with lots of rocks	30-38
CLAY	silty, olive gray, (TILL)	38-44

148-080-26DDB

NDSWC

Date Completed:	10/24/88	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	70	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown, (TILL)	1-17
CLAY	silty, olive gray, (TILL)	17-61
SAND	fine to coarse	61-64
GRAVEL	and rocks	64-65
CLAY	silty, medium bluish gray, bedrock	65-70

148-080-26DDC2

NDSWC

Date Completed:	10/19/88	Purpose:	Observation Well
L.S. Elevation (ft):	1865.2	Well Type:	2" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	22-32	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clay, silty, black	0-1
CLAY	silty, yellowish brown (TILL)	1-14
SAND	fine to coarse, with about 10% gravel	14-32
CLAY	silty, olive gray (TILL)	32-66
GRAVEL	to coarse, with about 15% sand	66-73
CLAY	silty, olive gray (TILL)	73-77
SAND	fine to coarse	77-81
CLAY	silty, medium to brownish gray, bedrock	81-100

148-080-26DDD

NDSWC

Date Completed:	10/24/88	Purpose:	Observation Well
L.S. Elevation (ft):	1872.1	Well Type:	2" PVC
Depth Drilled (ft):	48	Aquifer:	Lake Nettie
Screened Interval (ft):	30-35	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown, (TILL)	1-14
CLAY	silty, with a few rocks, olive gray, (TILL)	14-28
SAND	fine to coarse, about 20% gravel	28-35
CLAY	silty, olive gray, (TILL)	35-48

148-080-27CCC

NDSWC 11589

Date Completed:	7/26/85	Purpose:	Test Hole
L.S. Elevation (ft):	1920	Well Type:	
Depth Drilled (ft):	220	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	light to medium grayish olive brown; moderately silty, moderately sandy and slightly gravelly with very fine sand to medium gravel interstitially; moderately to very soft, slightly cohesive, slightly plastic to crumbly; slightly lignitic; mottles of light gray, reddish brown and yellowish orange; oxidized, (TILL)	0-13
CLAY	dark olive brown, as above, somewhat firmer and more cohesive; occasional zones of grayish brown, (TILL)	13-37
SAND & GRAVEL	medium sand to medium gravel, poorly sorted; angular to subangular, mostly carbonates, lignite, and shale with quartz, igneous rock fragments, sandstone and silicates	37-41
CLAY	yellowish brown with dark brown mottles, moderately silty, moderately to very sandy and moderately gravelly with very fine sand to fine gravel; moderately soft, moderately cohesive, slightly plastic, slightly stiff, gritty; slightly lignitic and carbonaceous; scattered thin gravel lenses below 45 ft; (TILL)	41-65
CLAY	gray, moderately silty, moderately to very sandy and slightly to moderately gravelly with very fine sand to medium gravel interstitially; slightly to moderately soft, moderately cohesive, slightly to moderately plastic, slightly stiff; lignitic; gritty, (TILL)	65-110
SAND & GRAVEL	medium sand to medium gravel, mostly coarse sand to fine gravel, poorly sorted; angular to subangular predominantly; mostly shale and carbonates with lignite, quartz, igneous rock fragments and silicates	110-114
CLAY	gray, as above (65-110 ft); thin gravel zones 135-156 ft (1 ft thick); shale gravel lens 147-148 ft, (TILL)	114-156
CLAY	gray, moderately silty, moderately to very sandy and slightly gravelly with very fine sand to fine gravel interstitially; moderately soft, cohesive, and plastic; slightly to moderately sticky; gritty; slightly lignitic; thin layers of gravel and rocks below 182 ft (1 ft thick), (TILL)	156-190
CLAY	dark olive gray, slightly to moderately silty, moderately soft, moderately to very cohesive and plastic; smooth, slightly to moderately greasy, slightly sticky	190-196
SANDSTONE	brownish gray, moderately silty, slightly to moderately clayey; very fine grained, well sorted; slightly firm, nonindurated, very friable, compact, slightly lignitic	196-199
SANDSTONE	light gray salt and pepper appearance; very fine grained, well sorted; slightly to moderately firm, nonindurated, very friable, compact; interbedded with claystone, brownish gray, silty, slightly to moderately firm, nonindurated, moderately to very friable (blocky), slightly micaceous; scattered beds of softer maroonish gray claystone	199-220

148-080-27DCC

NDSWC

Date Completed:	10/20/88	Purpose:	Test Hole
L.S. Elevation (ft):	1920	Well Type:	
Depth Drilled (ft):	120	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1

148-080-27DCC

CLAY	silty, yellowish brown, (TILL)	1-29
CLAY	silty, olive gray, (TILL)	29-49
CLAY	silty, yellowish brown, (TILL)	49-60
GRAVEL	fine to coarse, about 20% sand	60-66
CLAY	silty, olive gray, (TILL)	66-96
CLAY	silty, medium gray	96-115
CLAY	silty, brownish to medium gray, bedrock	115-120

148-080-28DCD

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1895.1	Well Type:	
Depth Drilled (ft):	100	Source:	U.S. Air Force

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, trace of gravel, very stiff, brown, (TILL)	0-20
CLAY	silty, trace of sand, gravel, and lignite, very stiff, brown, (TILL)	20-30
SAND	silt, and clay, gravelly, trace of lignite, very dense, brown	30-39.5
SAND	fine to coarse, gravelly, silty, very dense, brown	39.5-53.5
CLAY	silty, trace of sand and gravel, very stiff to hard, dark gray, (TILL)	53.5-96.5
SAND	fine to medium, silty, trace of gravel, very dense, gray	96.5-100

148-080-29CCC

NDSWC

Date Completed:	10/21/88	Purpose:	Observation Well
L.S. Elevation (ft):	1866.8	Well Type:	2" PVC
Depth Drilled (ft):	52	Aquifer:	Lake Nettie
Screened Interval (ft):	35.5-45.5	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	to coarse, about 10% sand, with lots of rocks	1-10
CLAY	silty, yellowish brown, (TILL)	10-13
SAND	fine to medium	13-14
CLAY	silty, olive gray, (TILL)	14-24
SAND	fine to coarse, about 20% gravel	24-47
CLAY	silty, olive gray, (TILL)	47-52

148-080-29DDD1

NDSWC 11520

Date Completed:	11/6/84	Purpose:	Test Hole
L.S. Elevation (ft):	1872	Well Type:	
Depth Drilled (ft):	280	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	dark yellowish orange, oxidized; silty, pebbly (with carbonate and lignite fragments); soft, friable	1-26
TILL	olive gray; silty, pebbly; soft, plastic; boulder 32-33 ft	26-42
SAND		42-43

148-080-29DDD1 continued

SILT	interbedded with clay and detrital lignite	43-49
TILL	olive gray, as above (26-42 ft); silt lens 52-54 ft; thin gravel lenses below 60 ft	49-72
SAND & GRAVEL	coarse sand to coarse pebble; angular to rounded; with interbedded olive gray till	72-77
TILL	as above, olive gray	77-84
SAND & GRAVEL	coarse sand to coarse pebbles, predominantly very coarse sand and fine pebbles; angular to rounded, mostly subrounded; approximately 50% carbonates, 40% shale and 10% granitic fragments	84-107
CLAY	olive gray; scattered shale pebbles; scattered thin interbedded sand lenses; rocks and cobbles 119-120 ft	107-120
TILL	olive gray, very silty, pebbly, soft, plastic; detrital lignite and gravel 149-151 ft; with thin lenses of gravel below 155 ft; possible interbedded silt layers below 160 ft; abundant detrital lignite at 182 ft	120-207
TILL	olive gray, clayey, pebbly, tight; interbedded lignite layers; boulders 236-237 ft	207-237
SANDSTONE	gray, fine grained, well sorted, angular, well indurated	237-240
LIGNITE	and layers of sandstone and brown claystone, interbedded	240-277
SANDSTONE	fine grained, well sorted, angular, well indurated	277-280

148-080-29DDD2
NDSWC 11520A

Date Completed:	5/29/85	Purpose:	Observation Well
L.S. Elevation (ft):	1871.9	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	98-103	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	dark yellowish brown, moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel; moderately to very soft, slightly to moderately cohesive, slightly plastic to crumbly; slightly to moderately lignitic; oxidized, (TILL)	1-26
ROCKS	granite	26-27
CLAY	olive gray, as above, somewhat firmer and more plastic, (TILL)	27-43
SAND & GRAVEL	coarse sand to medium gravel, mostly very coarse sand to fine gravel; slightly to moderately well sorted; subrounded; predominantly shale with quartz, carbonates, and lignite	43-44
CLAY	olive gray, moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel; moderately soft, cohesive, and plastic; scattered very silty layers to lacustrine silt and clay below 50 ft; (TILL)	44-72
SAND & GRAVEL	fine sand to fine gravel, mostly fine to coarse sand; poorly sorted; subangular to subrounded	72-76
CLAY	as above, 44-72 ft	76-84
SAND & GRAVEL	very fine sand to medium gravel, mostly coarse sand to fine gravel; slightly well sorted; subangular to subrounded; predominantly shale and carbonates with quartz and granitics	84-107
CLAY	gray, slightly to moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel, slightly to moderately soft, moderately cohesive and plastic, somewhat stiff; slightly lignitic, (TILL)	107-115
ROCKS	granitic	115-116
CLAY	gray, moderately silty, moderately sandy and gravelly with very fine sand to sparse medium gravel; moderately soft, moderately to very cohesive, moderately plastic; slightly lignitic, (TILL)	116-120

148-080-31AAA1
NDSWC 2747

Date Completed:	8/9/67	Purpose:	Observation Well
L.S. Elevation (ft):	1861.07	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	208-211	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish-black	0-1

148-080-31AAA1 continued

CLAY	silty, sandy, moderate yellowish brown	1-5
SAND & GRAVEL	fine to coarse angular to rounded gravel; medium to very coarse angular to subrounded sand	5-36
CLAY	silty, olive-gray; scattered pebbles (till)	36-56
SAND	medium to very coarse, angular to rounded	56-74
GRAVEL	fine to coarse, sandy, angular to rounded	74-88
CLAY	silty, olive-gray; scattered sand and lignite (till)	88-195
SAND & GRAVEL	fine to coarse angular to subrounded gravel; coarse to very coarse angular to subrounded sand; few thin clay lenses	195-218
CLAY	very silty, light-gray to medium gray (lake sediment)	218-228
GRANITIC BOULDERS		228-232
CLAY	silty, olive-gray to medium light gray; pebbly, lignitic (till)	232-240
SANDSTONE & SHALE	interbedded; fine grained Sandstone, noncalcareous, bluish gray; noncalcareous, grayish-brown, indurated Shale (Fort Union Group)	240-260

148-080-31AAA2

NDSWC 2747A

Date Completed:	8/9/67	Purpose:	Observation Well
L.S. Elevation (ft):	1861.07	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

see log of NDSWC 2747 (148-80-31AAA1) for lithologic information

148-080-31AAA3

NDSWC

Date Completed:	10/14/88	Purpose:	Observation Well
L.S. Elevation (ft):	1859.39	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	28-38	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
CLAY	silty, yellowish brown, (TILL)	1-3
GRAVEL	and rocks	3-5
CLAY	silty, yellowish brown, (TILL)	5-10
GRAVEL	to coarse, about 40% sand	10-39
CLAY	silty, olive gray, (TILL)	39-40

148-080-31AAB

NDSWC

Date Completed:	10/20/88	Purpose:	Observation Well
L.S. Elevation (ft):	1853.9	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	23-33	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	to coarse	1-4
SAND	fine to coarse, about 10% gravel	4-33
CLAY	silty, olive gray, (TILL)	33-40

148-080-31ADA
NDSWC

Date Completed:	10/21/88	Purpose:	Observation Well
L.S. Elevation (ft):	1854.1	Well Type:	2" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	20-30	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
GRAVEL	to coarse, about 20% sand	1-5
SAND	fine to coarse, about 10% gravel	5-30
CLAY	silty, olive gray, (TILL)	30-35

148-080-32ADA
NDSWC

Date Completed:	7/11/77	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	60	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
SAND	fine to coarse	1-6
GRAVEL	fine to coarse with a few rocks	6-12
CLAY	silty, yellowish brown (TILL)	12-15
CLAY	silty, olive gray (TILL)	15-22
SAND	fine to medium	22-28
SAND	fine to coarse, with about 40% gravel, with a little coal, with abundant shale gravel	28-56
CLAY	silty, olive gray (TILL)	56-60

148-080-33CAA
NDSWC

Date Completed:	6/7/75	Purpose:	Irrigation Well
L.S. Elevation (ft):	1875	Well Type:	12" Steel
Depth Drilled (ft):	55	Aquifer:	Lake Nettie
Screened Interval (ft):	38-53	Source:	Mann Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND & GRAVEL		2-53
CLAY		53-55

148-080-33CBC1
NDSWC 1-958

Date Completed:	7/2/62	Purpose:	Observation Well
L.S. Elevation (ft):	1865	Well Type:	1.25" ABS
Depth Drilled (ft):	51.5	Aquifer:	Lake Nettie
Screened Interval (ft):	41-51	Source:	SWC

Lithologic Log

148-080-33CBC1 continued

Unit	Description	Depth (ft)
SAND	fine	0-1
GRAVEL	fine to medium, sandy with about 25% sand	1-10
GRAVEL	very coarse, slightly sandy	10-22
GRAVEL	fine to medium, and sand, with about 50% fine to medium sand	22-51
CLAY	silty, olive gray, (TILL)	51-51.5

148-080-33CBC2

NDSWC 2-958

Date Completed:	7/2/62	Purpose:	Observation Well
L.S. Elevation (ft):	1855.5	Well Type:	1.25" ABS
Depth Drilled (ft):	49	Aquifer:	Lake Nettie
Screened Interval (ft):	39-49	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	fine	0-1
GRAVEL	fine to medium, and 25% sand	1-10
GRAVEL	fine to medium, slightly sandy	10-22
SAND	fine to medium, slightly gravelly	22-26
GRAVEL	fine to medium, slightly sandy	26-41
SAND	fine	41-49

148-080-33CBC3

NDSWC 5768

Date Completed:	8/27/70	Purpose:	Observation Well
L.S. Elevation (ft):	1863.4	Well Type:	1.25" ABS
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	42-48	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, pebbly, brownish black	0-1
GRAVEL	fine to coarse, with 40% medium to very coarse sand, angular to rounded; about 30% shale	1-22
SAND	very fine to very course, mostly medium to very course, gravelly, with 30-40% fine to course gravel; subangular to rounded	22-51
CLAY	silty, sandy, pebbly, olive gray, (TILL)	51-80

148-080-33CBC4

NDSWC 5769

Date Completed:	8/27/70	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	220	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, pebbly, brownish-black	0-1
SAND & GRAVEL	fine to coarse Gravel and fine to very coarse Sand; angular to rounded, scattered cobbles	1-21
SAND	fine to very coarse, with some gravel	21-49
CLAY	silty, sandy, pebbly, olive-gray; scattered cobbles (till)	49-88
SAND	very fine to coarse, lignitic, subangular to rounded	88-92
CLAY	very silty, olive-gray, with scattered light olive gray laminations (glaciofluvial)	92-106
CLAY	silty, sandy, pebbly, olive-gray; cobbles and boulders from 111-113 ft (till)	106-147

148-080-33CBC4 continued

GRAVEL	sandy, clayey; fine to coarse gravel, angular to rounded; about 50 percent shale and siltstone fragments	147-155
CLAY	silty, slightly sandy, pebbly, olive-gray; scattered cobbles and boulders (till)	155-200
BOULDERS	granite and dolomite, with some clayey till	200-206
SILTSTONE	clayey, sandy, micaceous, medium gray to medium bluish gray with dark brown laminations and bedding, scattered small brown concretions (Fort Union Group)	206-220

148-080-33CBD
NDSWC

Date Completed:	6/10/61	Purpose:	Irrigation Well
L.S. Elevation (ft):	1863.2	Well Type:	17" Cement
Depth Drilled (ft):	70	Aquifer:	Lake Nettie
Screened Interval (ft):	39-51	Source:	Schnell Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND		1-5
GRAVEL	Coarse, dry	5-28
SAND		28-31
GRAVEL		31-66
CLAY		66-70

148-080-33CCA1
NDSWC 4-958

Date Completed:	7/3/62	Purpose:	Observation Well
L.S. Elevation (ft):	1859.8	Well Type:	1.25" ABS
Depth Drilled (ft):	53	Aquifer:	Lake Nettie
Screened Interval (ft):	43-53	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
GRAVEL	fine to medium, and fine to coarse sand (50% sand)	1-19
GRAVEL	fine to medium, slightly sandy	19-23
SAND	fine to coarse	23-30
GRAVEL	fine to coarse, with 25% sand	30-53

148-080-33CCA2
NDSWC 5767

Date Completed:	8/27/70	Purpose:	Observation Well
L.S. Elevation (ft):	1862.5	Well Type:	1.25" ABS
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	40-43	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, silty, pebbly, brownish black	0-1
GRAVEL	fine to very coarse, very sandy, angular to rounded; about 30% shale	1-20
SAND	very fine to mostly medium to very coarse, with about 40% fine to coarse gravel, subangular to rounded; about 20% shale	20-36
GRAVEL	fine to coarse, moderately sandy, angular to rounded; scattered cobbles	36-50
CLAY	silty, sandy, pebbly, olive gray, (TILL)	50-80

148-080-33CCB
NDSWC 5766

Date Completed:	8/26/70	Purpose:	Observation Well
L.S. Elevation (ft):	1866	Well Type:	1.25" ABS
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	47-53	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, pebbly, silty, brownish black	0-1
SAND	fine to very coarse, with about 25-35% fine to medium gravel; predominantly quartz with carbonate and shale fragments, minor lignite	1-54
CLAY	silty, sandy, pebbly, olive gray (till)	54-80

148-080-33CCC
NDSWC 3-958

Date Completed:	7/3/62	Purpose:	Observation Well
L.S. Elevation (ft):	1868.01	Well Type:	1.25" ABS
Depth Drilled (ft):	50.5	Aquifer:	Lake Nettie
Screened Interval (ft):	45-48	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	Silty, black.	0-1
GRAVEL	Fine to medium, sandy.	1-9
SAND	Fine to coarse, gravelly.	9-29
GRAVEL	Fine to coarse, sandy.	29-37
SAND	Fine to coarse, gravelly.	37-50
CLAY	Silty, olive gray (till).	50-50.5

148-080-33DCC
NDSWC

Date Completed:	10/13/88	Purpose:	Observation Well
L.S. Elevation (ft):	1863.7	Well Type:	2" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	30-40	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, black, topsoil	0-1
SAND	fine to coarse	1-6
GRAVEL	to coarse, about 20% sand	6-22
SAND	fine to coarse, about 20% gravel	22-35
GRAVEL	to coarse, about 20% sand, with a little coal	35-44
CLAY	silty, olive gray, (TILL)	44-50

148-080-34DAA
NDSWC 4089

Date Completed:	8/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	1855	Well Type:	
Depth Drilled (ft):	220	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, dark-brown (topsoil).	0-1

148-080-34DAA continued

SAND	medium to coarse subrounded, reddish-brown.	1-13
GRAVEL	fine to coarse, subrounded.	13-28
SAND	fine, clayey, silty, gray.	28-40
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	40-66
SAND & GRAVEL	medium sand to very coarse gravel with cobbles, predominantly medium gravel; subrounded; clay layers 81-83 ft and 94-99 ft.	66-101
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	101-132
SAND	medium to coarse, subangular to subrounded.	132-138
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	138-146
GRAVEL	fine to coarse, subrounded; till layer 158-160 ft.	146-164
CLAY	silty, sandy, pebbly, lignitic, olive-gray (till).	164-168
CLAY	silty, sandy, dusky yellow (till).	168-172
CLAY	silty, sandy, pebbly, olive-gray (till).	172-178
SANDSTONE	very fine, clayey, carbonaceous, noncalcareous, greenish gray, grading to gray and brown shale with depth (Fort Union Group)	178-220

148-080-34DAA2

NDSWC

Date Completed:	8/23/79	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	79-89	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
GRAVEL	fine and medium to coarse, with about 10% sand, with a few rocks	2-21
GRAVEL	fine and medium to coarse, with about 30% sand	21-29
CLAY	silty, olive gray (TILL)	29-79
GRAVEL	fine and medium to coarse, with about 15% sand	79-87
SAND	fine and medium to coarse	87-89
CLAY	silty, olive gray (TILL)	89-93
SAND	fine to medium, with a little coal	93-104
GRAVEL	and rocks	104-105
CLAY	silty, olive gray (TILL)	105-120

148-080-34DAB1

NDSWC

Date Completed:	8/22/79	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	1.25" PVC
Depth Drilled (ft):	115	Aquifer:	Lake Nettie
Screened Interval (ft):	100-110	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1.5
GRAVEL	fine and medium to coarse, with about 10% sand, with a few rocks	1.5-22
GRAVEL	fine and medium to coarse, with about 30% sand	22-33
CLAY	silty, olive gray (TILL)	33-73
SAND	fine and medium to coarse	73-75
GRAVEL	and rocks	75-79
SAND	fine and medium to coarse	79-81

148-080-34DAB1 continued

CLAY	silty, olive gray	81-88
SAND	fine to medium, with a little coal	88-100
GRAVEL	fine and medium to coarse, with about 15% sand, with a few rocks	100-110
CLAY	silty, olive gray (TILL)	110-115

148-080-34DAB5

NDSWC

Date Completed:	12/19/79	Purpose:	Irrigation Well
L.S. Elevation (ft):	1860	Well Type:	8" Steel
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	21-31	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
GRAVEL	fine, medium to coarse, with a few rocks	1-14
SAND	fine, medium to coarse, with about 20% gravel	14-19
GRAVEL	fine, medium to coarse, about 30% sand with a little coal	19-31.5
CLAY	silty, olive gray	31.5-35

148-080-34DBC2

NDSWC

Date Completed:	8/27/79	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	120	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
GRAVEL	fine and medium to coarse, with about 10% sand	2-21
GRAVEL	fine and medium to coarse, with about 25% sand	21-36
CLAY	silty, olive gray (TILL)	36-85
SAND	fine and medium to coarse	85-95
CLAY	silty, olive gray (TILL)	95-99
SAND	fine and medium to coarse, with a little coarse	99-108
GRAVEL	and rocks	108-109
CLAY	silty, olive gray (TILL)	109-120

148-080-34DBD

NDSWC

Date Completed:	7/25/79	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	1.25" PVC
Depth Drilled (ft):	280	Aquifer:	Lake Nettie
Screened Interval (ft):	241-258	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
SAND	fine and medium to coarse, with about 20% gravel	1-12
GRAVEL	fine and medium to coarse, with about 20% sand, with a few rocks	12-31
CLAY	silty, olive gray (TILL)	31-86
SAND	fine and medium to coarse; with about 25% gravel, with abundant coal	86-96

148-080-34DBD continued

CLAY	silty, olive gray	96-99
SAND	fine to medium	99-113
CLAY	silty, olive gray	113-118
CLAY	silty, olive gray (TILL)	118-144
ROCK	granite	144-145
CLAY	silty, olive gray (TILL)	145-155
GRAVEL	and rocks	155-159
CLAY	silty, olive gray (TILL)	159-199
GRAVEL	fine and medium to coarse, with lots of rocks	199-212
CLAY	silty, olive gray (TILL)	212-218
SAND	fine and medium to coarse	218-238
CLAY	silty, olive gray (TILL)	238-241
GRAVEL	fine and medium to coarse; with about 10% sand 241-249 ft and 254-260 ft and about 5% sand 249-254 ft; with a few rocks 241-249 ft and 254-260 ft	241-260
GRAVEL	and rocks (rough drilling)	260-268
CLAY	silty, medium brownish gray (Bedrock)	268-280

148-080-34DCC

NDSWC 4088

Date Completed:	8/10/70	Purpose:	Observation Well
L.S. Elevation (ft):	1867.5	Well Type:	1.25" ABS
Depth Drilled (ft):	360	Aquifer:	Lake Nettie
Screened Interval (ft):	198-207	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, pebbly, black	0-1
CLAY	very silty and sandy, pebbly, yellowish gray to moderate olive-brown; with gravelly sand lenses (till)	1-25
GRAVEL	fine to medium, with some sand, subrounded	25-37
CLAY	silty, olive-gray; scattered sand, pebbles and lignite fragments (till)	37-66
GRAVEL	fine to coarse, subangular to subrounded; till layers 70-72 ft and 80-82 ft	66-80
SAND	very fine to medium, silty, lignitic	80-100
SAND	fine to coarse, silty; with gravel and detrital lignite lenses	100-163
CLAY	silty, sandy, pebbly, lignitic, olive gray (till)	163-190
SAND	medium, subrounded, dark-gray; scattered gravel-size lignite fragments	190-198
GRAVEL	coarse, subrounded; abundant cobbles and boulders	198-214
CLAY	silty, smooth, gray	214-219
GRAVEL	coarse, subrounded; abundant cobbles and boulders; interbedded with silty clay lenses	219-240
CLAY	silty, olive-gray, smooth, laminated	240-266
SAND	very fine to medium, lignitic, subrounded, medium gray	266-300
SILT	clayey, olive-gray	300-311
SAND	very fine to fine, lignitic, medium gray	311-322
SAND	medium, lignitic, medium-gray	322-335
SANDSTONE	very fine to fine, hard, calcareous, light gray (Fort Union Group)	335-338
SHALE	silty, hard, carbonaceous, noncalcareous, medium to dark gray (Fort Union Group)	338-353
SANDSTONE	very fine to fine, hard, calcareous, light-gray (Fort Union Group)	353-356
SHALE	silty, sandy, hard, carbonaceous, noncalcareous, medium to dark gray (Fort Union Group)	356-360

148-080-34DCC2

NDSWC

Date Completed:	8/27/79	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	120	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
GRAVEL	fine and medium to coarse; with about 25% sand 24-35 ft	2-35
CLAY	silty, olive gray (TILL)	35-88
GRAVEL	fine and medium to coarse	88-93
SAND	fine to medium, with a little coal	93-97
CLAY	silty, olive gray (TILL)	97-101
SAND	fine to medium, with a little coal	101-114
GRAVEL	and rocks	114-115
CLAY	silty, olive gray (TILL)	115-120

148-080-34DDA1

NDSWC

Date Completed:	8/27/79	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	120	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-2
GRAVEL	fine and medium to coarse	2-18
CLAY	silty, yellowish brown (TILL)	18-24
GRAVEL	fine and medium to coarse	24-31
CLAY	silty, yellowish brown (TILL)	31-35
SAND	fine and medium to coarse	35-38
CLAY	silty, olive gray (TILL)	38-40
GRAVEL	fine and medium to coarse	40-42
CLAY	silty, olive gray (TILL)	42-93
GRAVEL	fine and medium to coarse	93-96
SAND	fine to medium, with about 10% coarse sand, with a little coal	96-116
CLAY	silty, olive gray (TILL); roxka 116-117 ft	116-120

148-080-35BBC

NDSWC 2748

Date Completed:	8/9/67	Purpose:	Observation Well
L.S. Elevation (ft):	1860.5	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	38-41	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, brownish-black	0-1
SAND & GRAVEL	fine to coarse, angular to subrounded gravel; coarse to very coarse, angular to subrounded sand	1-44
CLAY	silty, olive-gray, scattered sand and pebbles (till)	44-73
CLAY	silty, light olive gray, laminated; scattered sandy lenses	73-104
SANDSTONE	fine to medium, noncalcareous; light olive gray, to medium bluish gray in lower part of section (Fort Union Group)	104-120

148-080-35CCC

NDSWC 11611

Date Completed:	8/7/85	Purpose:	Test Hole
L.S. Elevation (ft):	1887	Well Type:	
Depth Drilled (ft):	280	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	reddish brown, silty, and sandy	0-1
CLAY	pale yellowish brown with mottles of light gray, dark brown and orangish brown, moderately silty, slightly to moderately sandy and gravelly with very fine sand to medium gravel interstitially; moderately to very soft, slightly cohesive and plastic, gritty, some carbonaceous streaks; firm and more cohesive 4-16 ft; (TILL)	1-16
SAND & GRAVEL	fine sand to fine gravel, brown, poorly sorted, subangular to subrounded; carbonates, quartz, and shale, oxidized	16-17
CLAY	dark yellowish brown, moderately silty, moderately to very sandy and moderately gravelly with very fine sand to fine gravel interstitially; moderately soft, slightly to moderately cohesive, slightly plastic to somewhat crumbly, gritty, carbonaceous streaks; (TILL)	17-24
SAND & GRAVEL	brown, very fine sand to medium gravel; mostly fine to very course sand to 30 ft, mostly medium sand to fine gravel below 30 ft; predominantly carbonates, shale, and quartz with igneous rock fragments and silicates	24-54
CLAY	yellowish brown, as above 17-24 ft, (TILL)	54-57
CLAY	gray, moderately silty, slightly to moderately sandy and gravelly with very fine sand to sparse medium gravel interstitially; moderately soft and cohesive, slightly to moderately plastic; gritty; slightly stiff and lignitic; rocks 74-75 ft; (TILL)	57-100
SAND & GRAVEL	very fine sand to medium gravel, mostly medium sand to medium gravel, poorly sorted; subangular to subrounded; mostly carbonates, shale, and quartz with igneous rock fragments; interbedded with layers of gray clay till, as above 57-100 ft	100-106
SAND & GRAVEL	as above 100-106 ft; with occasional scattered thin clay layers; slightly to moderately lignitic	106-116
SAND & GRAVEL	as above, with clay layers common	116-121
SAND & GRAVEL	as above 106-116 ft, with scattered thin clay layers; somewhat coarser with more lignite below 136 ft; also subrounded fragments of greenish, hard, very fine to fine grained sandstone	121-143
CLAY	olive gray, moderately silty, moderately to very sandy and slightly gravelly with very fine sand to fine gravel interstitially; slightly to moderately soft, moderately cohesive and plastic; gritty, slightly to moderately stiff, tight drilling; slightly lignitic to very lignitic below 157 ft; (TILL); with layers of sand and gravel, dark gray sandy clay and lignite from 163-181 ft	143-181
CLAY	dark gray, very sandy to clayey sand; moderately firm, tight, nonindurated, very friable	181-197
CLAY	as above 181-197 ft; slightly to moderately tight with lignite detrital layers	197-214
SANDSTONE	dark gray and dark maroonish gray to black, very fine to fine grained well sorted, moderately to very clayey, slightly to moderately firm, nonindurated, very friable, compact; thin harder layers; (ice thrust bedrock block ?)	214-224
CLAY	dark olive gray, moderately silty, slightly to moderately sandy and gravelly with very fine sand to fine gravel interstitially; slightly to moderately soft, slightly cohesive to blocky, slightly plastic, moderately stiff; slightly lignitic; scattered cobbles; (TILL)	224-237
SAND & GRAVEL	fine sand to medium gravel, mostly medium sand to fine gravel, poorly sorted, subangular to subrounded; predominantly carbonates, shale, and lignite with quartz, sandstone, and igneous rock fragments; clay layers common	237-249
SANDSTONE	interbedded dark gray to black, dark maroonish brown, and greenish gray; very fine to fine; well sorted; moderately to slightly firm, nonindurated, very friable, compact, very firm to hard in thin layers; somewhat micaceous	249-280

148-081-02AAA

NDSWC 3950

Date Completed:	12/11/69	Purpose:	Test Hole
L.S. Elevation (ft):	1950	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black	0-1
SILT	sandy, soft, moderate yellow	1-5

148-081-02AAA continued

CLAY	silty, scattered sand and pebbles (TILL)	5-18
SHALE	silty, hard, brittle, dark greenish yellow	18-25
SILT	and fine Sand, clayey, soft, lignitic, dark greenish yellow (Fort Union Group)	25-41
SILT	soft, micaceous, medium gray (Fort Union Group)	41-47
SHALE	silty, hard, brittle, carbonaceous, noncalcareous; variegated gray, brown, and black (Fort Union Group)	47-61
LIGNITE	hard, black (Fort Union Group)	61-68
SILT	soft, brownish black (Fort Union Group)	68-70
SHALE	hard, brittle, brownish black (Fort Union Group)	70-76
SHALE	silty, very light gray (Fort Union Group)	76-80

148-081-03AAB

NDSWC 2804

Date Completed:	9/8/67	Purpose:	Observation Well
L.S. Elevation (ft):	1883.4	Well Type:	4" PVC
Depth Drilled (ft):	60	Aquifer:	Horseshoe Valley
Screened Interval (ft):	32-37	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, brownish black	0-1
SAND & GRAVEL	fine to coarse angular to rounded Gravel and medium to very coarse subangular to rounded Sand	1-45
SHALE	siliceous, dusky brown to light bluish gray (Fort Union Group)	45-60

148-081-03ABA

NDSWC

Date Completed:	6/26/89	Purpose:	Irrigation Well
L.S. Elevation (ft):	1880	Well Type:	8" Steel
Depth Drilled (ft):	47	Aquifer:	Horseshoe Valley
Screened Interval (ft):	30-44	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
SAND	fine to coarse with about 20% gravel	1-20
GRAVEL	to coarse	20-24
SAND	fine to coarse with about 20% gravel	24-27
GRAVEL	to coarse, with about 15% sand	27-30
SAND	fine to coarse with about 15% gravel	30-44
CLAY	silty, medium gray, bedrock	44-47

148-081-03ABC1

NDSWC

Date Completed:	7/10/79	Purpose:	Test Hole
L.S. Elevation (ft):	1880	Well Type:	
Depth Drilled (ft):	45	Source:	Mann Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL		0-43
BEDROCK		43-45

148-081-03CCD

NDSWC 11581

Date Completed:	7/22/85	Purpose:	Observation Well
L.S. Elevation (ft):	1864.56	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Horseshoe Valley
Screened Interval (ft):	33-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	pale grayish brown with reddish brown mottles, moderately silty, slightly sandy with very fine sand, very soft, moderately cohesive, slightly to moderately plastic, slightly gritty; oxidized; some snail shells	0-8
SAND & GRAVEL	very fine sand to fine gravel with some medium gravel, mostly medium to very coarse sand, poorly sorted, subangular to subrounded; predominantly carbonates, shale, quartz, with lignite and igneous rock fragments	8-28
CLAY	dark gray, very silty , very slightly sandy with very fine to fine sand, very soft, slightly cohesive, nonplastic, smooth	28-31
SAND & GRAVEL	very fine sand to coarse gravel, mostly very coarse sand to medium gravel, poorly sorted, subangular to subrounded; predominantly shale and carbonates with quartz, lignite, igneous rock fragments, and greenish gray very fine grained sandstone; scattered thin clay layers	31-42
CLAY	dark olive gray, moderately silty, slightly to moderately sandy with very fine to very coarse sand, slightly gravelly with fine to medium gravel to slightly to moderate in layers with fine to coarse gravel; moderately soft, cohesive and plastic, gritty, somewhat stiff, occasional sand and gravel stringers; (TILL)	42-61
CLAY	olive gray, very silty, very slightly sandy with very fine sand, moderately to very soft, slightly moderate cohesive, slightly plastic; smooth sticky; slightly micaceous	61-83
SANDSTONE	greenish gray, very fine, well sorted, hard, indurated, moderately friable, compact (boulder?)	83-84
SAND & GRAVEL	very fine sand to coarse gravel, mostly coarse sand to medium gravel, predominantly subangular to subrounded, shale, carbonates, quartz, and lignite with igneous rock fragments	84-89
ROCK	granite	89-90
SANDSTONE	greenish gray, very fine, well sorted, moderately hard and indurated, moderately to very friable, interbedded with dark reddish brown claystone, slightly to moderately firm, nonindurated, compact, very friable to stiff	90-94
CLAYSTONE	dark reddish brown	94-100

148-081-04CBC

NDSWC 11513

Date Completed:	10/30/84	Purpose:	Observation Well
L.S. Elevation (ft):	1913.99	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	49-54	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow brown, oxidized, very silty, a few quartz and carbonate pebbles, slightly cohesive, friable, becomes more clayey with depth	1-14
SILT	yellow brown, oxidized, clayey	14-18
SAND & GRAVEL	medium sand to fine gravel, predominantly very coarse sand; angular to predominantly rounded, 50% quartz, 40% carbonate, 10% shale; oxidized stains to 30 ft; with interbedded coarse gravel 34-44 ft; increased gravel below 44 ft	18-54
TILL	dark olive gray, clayey and silty, few quartz sand grains; plastic, soft and cohesive; carbonaceous with carbonate pebbles below 60 ft; (driller's log denoted gray sandy clay bedrock 76-83 ft)	54-83
ROCK	boulder	83-84
SANDSTONE	fine grained, yellowish orange, oxidized; well sorted, angular to subangular, slightly argillaceous, glauconitic; poorly indurated with well indurated streaks	84-100

148-081-06BBC
NDSWC

Date Completed:	7/1/77	Purpose:	Domestic Well
L.S. Elevation (ft):	1925	Well Type:	4" Steel
Depth Drilled (ft):	97	Aquifer:	Lake Nettie
Screened Interval (ft):	92-97	Source:	Broneske Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
SAND &CLAY		0-62
SAND	and water	62-85
SAND & GRAVEL		85-97

148-081-06BCC
NDSWC 3952

Date Completed:	12/11/69	Purpose:	Test Hole
L.S. Elevation (ft):	1875	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	very fine, silty, black	0-5
CLAY	silty, sandy, yellowish gray; with thin lenses of fine gravel (TILL)	5-10
CLAY	silty, dusky yellow	10-18
CLAY	olive gray	18-38
SAND	very fine, clayey, light olive gray to gray; lensed with coarse sand and fine to medium gravel from 64 to 92 ft; (Till?)	38-92
GRAVEL	fine to coarse, angular to subrounded	92-106
CLAY	stiff, dark olive gray (Fort Union Group)	106-111
LIGNITE	hard, black; interbedded with clayey sand and shale; (Fort Union Group)	111-119
SHALE	silty, soft to hard, dark gray; interbedded with light blue clay; (Fort Union Group)	119-140

148-081-06CCC
NDSWC 11579

Date Completed:	7/17/85	Purpose:	Test Hole
L.S. Elevation (ft):	1918	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	brown, silty, sandy, crumbly	0-1
CLAY	pale yellowish brown, moderately silty, moderately to very sandy with very fine to very coarse sand, slightly gravelly; very soft, slightly cohesive to crumbly; mottled, (TILL)	1-3
CLAY	as above, but darker color, somewhat firmer and more cohesive, mottles of light gray and orange brown, (TILL)	3-12
CLAY	dark yellowish brown, moderately silty, moderately sandy to very sandy with sandy laminae, slightly to moderately gravelly with fine to coarse gravel; moderately soft, moderately cohesive and plastic, gritty, moderately lignitic; dark brown to grayish brown 27-49 ft; (TILL)	12-49
CLAY	dark gray, moderately silty, moderately to very sandy with very fine to very coarse sand, slightly gravelly with fine to medium gravel; slightly to moderately soft, slightly to moderately cohesive, slightly plastic to somewhat crumbly and blocky, stiff, gritty; slightly lignitic with scattered fine to coarse gravel size fragments, (TILL)	49-72
SAND & GRAVEL	brownish yellow, very fine sand to coarse gravel; poorly sorted, subangular to subrounded, mostly yellowish carbonates with quartz, shale, and igneous rock fragments; clay layer at 77 ft	72-79
CLAY	as above, 49-72 ft, (TILL)	79-108
SANDSTONE	olive green, very fine to fine, well sorted, slightly firm, nonindurated, very friable with thin more indurated layers, salt and pepper appearance	108-124
CLAYSTONE	brownish gray and greenish gray, moderately firm, nonindurated, moderately to very friable; interbedded with light brown siltstone and lignite; stiff drilling	124-140

148-081-07DCC
NDSWC

Date Completed:	8/8/76	Purpose:	Test Hole
L.S. Elevation (ft):	1877	Well Type:	
Depth Drilled (ft):	125	Source:	R&F Drilling and Supply

Lithologic Log

Unit	Description	Depth (ft)
SOIL	black	0-1.5
CLAY		1.5-94
SAND & GRAVEL	coarse	94-112
GRAVEL	laced with clay	112-125

148-081-08DAA
NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1872.11	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	19-20.9	Source:	USBR

Lithologic Log - unavailable

148-081-08DDA
NDSWC 11512

Date Completed:	10/19/84	Purpose:	Observation Well
L.S. Elevation (ft):	1859.75	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	13-18	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	very fine to medium pebble, with coarse to very coarse sand, oxidized; rocks at 7-8 ft; finer below 8 ft; detrital lignite below 8 ft	0-18
CLAY	gray, silty, firm, noncalcareous, (Fort Union Group, bedrock)	18-40

148-081-09BAA
NDSWC

Date Completed:	6/9/87	Purpose:	Observation Well
L.S. Elevation (ft):	1896.14	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Horseshoe Valley
Screened Interval (ft):	25.1-27	Source:	USBR

Lithologic Log - unavailable

148-081-09DDA
NDSWC

Date Completed:	2/28/90	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	80	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty, yellowish brown, TILL	1-3

148-081-09DDA continued

GRAVEL	to coarse, with lots of rocks, rough drilling	3-24
CLAY	silty, olive gray, with a few rock and gravel layers; (TILL)	24-80

148-081-10AAA
NDSWC

Date Completed:	6/4/87	Purpose:	Observation Well
L.S. Elevation (ft):	1910.16	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Horseshoe Valley
Screened Interval (ft):	20.5-22.4	Source:	USBR

Lithologic Log - unavailable

148-081-10ABB
NDSWC

Date Completed:	6/4/87	Purpose:	Observation Well
L.S. Elevation (ft):	1878.61	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Horseshoe Valley
Screened Interval (ft):	21.1-23	Source:	USBR

Lithologic Log - unavailable

148-081-10CCB2
NDSWC

Date Completed:	3/1/90	Purpose:	Observation Well
L.S. Elevation (ft):	1860	Well Type:	2" PVC
Depth Drilled (ft):	145	Aquifer:	Lake Nettie
Screened Interval (ft):	118-138	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
GRAVEL	to coarse with lots of rocks	1-15
CLAY	silty, olive gray, TILL	15-85
SAND	fine to coarse, about 5% gravel	85-128
SAND	fine to coarse, about 35% gravel	128-138
CLAY	silty, medium gray	138-145

148-081-10CCB3
NDSWC

Date Completed:	5/10/91	Purpose:	Irrigation Well
L.S. Elevation (ft):	1870	Well Type:	12" Steel
Depth Drilled (ft):	150	Aquifer:	Lake Nettie
Screened Interval (ft):	112-140	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
GRAVEL	to coarse, with lots of rocks	1-15
CLAY	silty, olive gray, (TILL)	15-81
SAND	fine to coarse, about 15% gravel	81-126
SAND	fine to coarse, about 35% gravel	126-141
CLAY	silty, medium to bluish gray (possible bedrock)	141-150

148-081-10DDC

NDSWC 11582

Date Completed:	7/23/85	Purpose:	Observation Well
L.S. Elevation (ft):	1882.31	Well Type:	1.25" PVC
Depth Drilled (ft):	200	Aquifer:	Lake Nettie
Screened Interval (ft):	150-155	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	very fine sand to coarse gravel, mostly very coarse sand to medium gravel; poorly sorted, subangular to subrounded, predominantly shale, carbonates, and quartz with igneous rock fragments and silicates, oxidized	0-10
CLAY	yellowish brown, moderately silty, slightly to moderately sandy with very fine to coarse sand; moderately soft, moderately cohesive, slightly to moderately plastic, gritty, somewhat stiff; oxidized, (TILL)	10-11
CLAY	gray, moderately silty, moderately sandy with very fine to coarse sand; moderately to very gravelly with fine to coarse gravel, mostly carbonate and shale fragments; moderately soft, cohesive and plastic, somewhat stiff to soft; thin, slightly lignitic gravel lenses at 45 ft, 50 ft, and 52 ft, (TILL)	11-56
CLAY	olive gray to olive brown, moderately silty, slightly to moderately sandy, slightly gravelly; moderately cohesive, plastic, and soft; slightly stiffer than above, slightly lignitic (TILL)	56-62
CLAY	dark gray, moderately silty, moderately sandy with very fine to very coarse sand, moderately gravelly with fine to coarse gravel; moderately soft, moderately cohesive, slightly to moderately plastic, somewhat stiff, gritty, slightly lignitic, (TILL)	62-103
CLAY	olive gray, very silty to clayey silt; moderately to very soft, slightly to moderately cohesive, slightly plastic, smooth; thin sand and lignite layers throughout	103-121
SAND & GRAVEL	very fine sand to medium gravel, mostly coarse sand to medium gravel; poorly sorted, mostly subangular; predominantly shale and lignite with 10-15% quartz, carbonate, igneous and sandstone fragments	121-128
CLAY	gray, moderately silty, moderately sandy, slightly to moderately gravelly, moderately soft, moderately cohesive, slightly plastic, gritty, lignitic, (TILL)	128-136
SAND & GRAVEL	as above, 121-128 ft	136-161
CLAY	brownish gray, very silty, slightly sandy with very fine sand; very soft, slightly cohesive and nonplastic; slightly to moderately sticky, smooth	161-168
SAND & GRAVEL	as above, 136-161 ft	168-181
SILTSTONE	gray, compact, slightly firm, nonindurated, very friable, slightly micaceous and clayey; interbedded with sandstone	181-200

148-081-12CCC

NDSWC 11584

Date Completed:	7/24/85	Purpose:	Test Hole
L.S. Elevation (ft):	1900	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, moderately silty, very sandy, crumbly	0-1
CLAY	yellowish brown, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine to medium gravel; moderately soft, slightly cohesive, nonplastic, gritty, carbonaceous streaks, oxidized, (TILL)	1-9
SAND & GRAVEL	very fine sand to medium gravel; subangular to subrounded, poorly sorted; carbonates, shale, quartz and igneous rock fragments; oxidized	9-11
CLAY	as above, (TILL)	11-13
SAND & GRAVEL	as above	13-15
CLAY	as above, (TILL)	15-18
SAND & GRAVEL	as above	18-30
CLAY	as above, but darker yellowish brown, more compact and firm, (TILL)	30-35
CLAY	gray, moderately silty, moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine to medium gravel; moderately soft, moderately plastic and cohesive, gritty, somewhat stiff, slightly lignitic; with thin layers of sand and gravel; (TILL)	35-41
SILTSTONE	olive to olive yellow, slightly clayey, nonindurated, slightly firm, very friable	41-48

148-081-12CCC continued

SANDSTONE	dark gray, very fine, well sorted, hard, indurated, cemented, nonfriable	48-50
SILTSTONE	as above, interbedded with olive yellow very fine sandstone; light gray layers	50-66
CLAYSTONE	maroonish brown, slightly silty, moderately firm, slightly indurated, very friable, compact; with lignite seams 68-73 ft	66-73
LIGNITE		73-80

148-081-12DAA
NDSWC 3949

Date Completed:	12/11/69	Purpose:	Observation Well
L.S. Elevation (ft):	1894.7	Well Type:	1.25" ABS
Depth Drilled (ft):	100	Aquifer:	Strawberry Lake
Screened Interval (ft):	38-41	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, black	0-5
CLAY	light gray	5-10
CLAY	silty, soft, moderate olive brown	10-28
GRAVEL	fine to medium, sandy	28-41
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	41-55
SILT	clayey, light olive gray to olive gray	55-64
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	64-71
SHALE	silty, sandy, hard, brittle, variegated gray and brown (Fort Union Group bedrock)	71-84
SANDSTONE	micaceous, calcareous, greenish gray (Fort Union Group bedrock)	84-88
SHALE	silty, hard, brittle, carbonaceous, brownish black (Fort Union Group bedrock)	88-100

148-081-14CDD
NDSWC 5-C-6

Date Completed:	9/11/62	Purpose:	Observation Well
L.S. Elevation (ft):	1858.57	Well Type:	1.25" ABS
Depth Drilled (ft):	143.5	Aquifer:	Lake Nettie
Screened Interval (ft):	136-141	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to medium	0-17
TILL	olive gray	17-94
TILL	olive gray; with lenses of fine to medium gravel	94-104
TILL	olive gray	104-136
GRAVEL	fine to medium	136-141
SANDSTONE	indurated (Fort Union Group bedrock)	141-143.5

148-081-15DBB
NDSWC

Date Completed:	6/5/87	Purpose:	Observation Well
L.S. Elevation (ft):	1862	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	16.2-18.2	Source:	USBR

Lithologic Log - unavailable

148-081-15DDB
NDSWC 3-C-6

Date Completed:	8/9/62	Purpose:	Observation Well
L.S. Elevation (ft):	1859.71	Well Type:	1.25" Steel
Depth Drilled (ft):	95	Aquifer:	Lake Nettie
Screened Interval (ft):	77-80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
GRAVEL	fine to coarse	1-12
SAND	fine to coarse	12-28
TILL	olive gray	28-56
GRAVEL	fine to coarse, clayey	56-73
CLAY	silty, olive gray	73-77
GRAVEL	fine to medium	77-81
CLAY	silty, olive gray	81-85
TILL	olive gray	85-95

148-081-15DDD1
NDSWC

Date Completed:	0/0	Purpose:	Industrial Well
L.S. Elevation (ft):	1862	Well Type:	0" Unknown
Depth Drilled (ft):	100.5	Aquifer:	Lake Nettie
Screened Interval (ft):		Source:	U.S. Air Force

Lithologic Log

Unit	Description	Depth (ft)
SAND	silty, medium dense, brown	0-4
SAND	medium to coarse, trace of silt, medium dense to dense, brown	4-13
SAND	fine to medium, silty, trace of gravel, dense, brown-black	13-19
CLAY	and lignite, shale fragments, soft, gray black	19-23.5
SAND	fine to medium, clayey, dense, gray	23.5-27
CLAY	silty, trace of sand and gravel, stiff to very stiff, brown to gray	27-43.5
CLAY	silty, trace of sand and lignite, very stiff to hard, gray	43.5-54.3
SAND	fine to medium, silty, trace of lignite, dense to very dense, gray	54.3-64
SAND	fine, silty, dense, gray; interbedded with silt lenses 65-66.5 ft	64-69
SAND	medium to coarse, gravelly, clayey, dense, dark gray	69-75
CLAY	very stiff, gray	75-76
SAND	fine, trace of silt and lignite, very dense, gray	76-84
SAND	fine, and Silt, trace of clay and gravel, very dense, gray	84-90
CLAY	and Silt, trace of sand and gravel, very hard dark gray	90-93
SILT	sandy, clayey, very dense, dark-gray	93-100.5

148-081-15DDD2
NDSWC 2-C-6

Date Completed:	8/8/62	Purpose:	Industrial Well
L.S. Elevation (ft):	1865	Well Type:	Unknown
Depth Drilled (ft):	147	Aquifer:	Lake Nettie
Screened Interval (ft):		Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	Black	0-2

148-081-15DDD2 continued

GRAVEL	medium	2-10
GRAVEL	medium, sandy	10-29
CLAY	silty, olive gray	29-33
CLAY	silty, sandy, gravelly, olive gray (TILL); fine to medium gravel lens 97-98 ft	33-134
GRAVEL	fine to medium	134-135
SANDSTONE	silty, clayey, dark yellowish orange (Fort Union Group)	135-142
SANDSTONE	silty, clayey, bluish gray (Fort Union Group)	142-147

148-081-16BCC
NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1859.71	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	20-21.9	Source:	USBR

Lithologic Log - unavailable

148-081-16DDD
NDSWC 2743

Date Completed:	8/8/67	Purpose:	Observation Well
L.S. Elevation (ft):	1852.15	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	18-21	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, grayish black (topsoil).	0-1
GRAVEL	medium to coarse, sandy, with medium to very coarse sand.	1-26
CLAY	sandy, lignitic, olive-gray (TILL).	26-56
CLAY	very silty, sandy, lignitic, light olive-gray (TILL).	56-104
SAND	clayey, medium to coarse, angular to subrounded.	104-112
CLAY	silty, sandy, olive gray (TILL).	112-132
SAND	medium to coarse, angular to subrounded; clay till lens from 134-138 ft.	132-150
SANDSTONE	fine to medium, lignitic, noncalcareous, bluish-gray (Fort Union Group)	150-180

148-081-17BCB1
NDSWC 11580

Date Completed:	7/17/85	Purpose:	Observation Well
L.S. Elevation (ft):	1885.54	Well Type:	1.25" PVC
Depth Drilled (ft):	210	Aquifer:	Lake Nettie
Screened Interval (ft):	188-193	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	black, silty and moderately sandy, crumbly, soft, (TILL)	0-7
CLAY	light yellowish brown, moderately silty, moderately to very sandy with very fine to very coarse sand to mostly very fine to fine, soft, crumbly, oxidized, (TILL)	7-10
CLAY	yellowish olive brown, moderately silty, moderately to very sandy as above, slightly gravelly with fine to medium gravel, moderately to very soft, slightly to moderately cohesive, slightly plastic to blocky, mottles of light gray, orange brown; gray 21-23 ft; (TILL)	10-23
SAND	very fine to very coarse, mostly very fine to medium, mostly subrounded	23-29
CLAY	brownish gray to gray, very silty; soft, moderately to very cohesive and plastic, smooth, slightly to moderately sticky	29-45

148-081-17BCB1 continued

CLAY	dark gray to gray, moderately silty, moderately to very sandy (in part) with very fine to very coarse sand, slightly gravelly with fine to medium gravel; moderately soft, slightly to moderately cohesive, slightly plastic to blocky, gritty, slightly to moderately stiff, slightly lignitic; rocks at 96 ft; (TILL)	45-97
SAND & GRAVEL	very fine sand to coarse gravel, mostly coarse sand to medium gravel; poorly sorted, subangular to subrounded; mostly carbonates and shale with quartz, silicates, lignite, igneous rock fragments and scattered greenish gray sandstone fragments	97-123
CLAY	gray, soft, sticky (poor sample return)	123-143
SILT	grayish brown to brownish gray, slightly sandy, slightly clayey; moderately to very soft, slightly cohesive, nonplastic, smooth	143-167
CLAY	gray, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine gravel; moderately soft and cohesive, slightly to moderately plastic to blocky, gritty, somewhat stiff, slightly lignitic; (TILL)	167-173
SAND & GRAVEL	very fine sand to coarse gravel, mostly coarse sand to medium gravel; poorly sorted, subangular to mostly subrounded; mostly carbonates and shale with quartz, silicates, sandstone, igneous and metamorphic rock fragments	173-200
SILTSTONE	buff gray to brownish gray interbedded; slightly sandy with very fine sand; nonindurated, slightly firm, compact, very friable, slightly to moderately micaceous	200-210

148-081-17BCB2

NDSWC 11580A

Date Completed:	7/18/85	Purpose:	Observation Well
L.S. Elevation (ft):	1885.63	Well Type:	1.25" PVC
Depth Drilled (ft):	125	Aquifer:	Lake Nettie
Screened Interval (ft):	113-118	Source:	SWC

Lithologic Log

see log of NDSWC #11580 (148-081-17BCB1) for lithologic information

148-081-17BCB3

NDSWC 11580B

Date Completed:	7/18/85	Purpose:	Observation Well
L.S. Elevation (ft):	1885.88	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	23-28	Source:	SWC

Lithologic Log

see log of NDSWC #11580 (148-081-17BCB1) for lithologic information

148-081-17DAC

NDSWC

Date Completed:	8/29/77	Purpose:	Test Hole
L.S. Elevation (ft):	1865	Well Type:	
Depth Drilled (ft):	180	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
GRAVEL	fine to medium to coarse, with about 30% sand	1-31
CLAY	sandy, silty, olive gray, (TILL)	31-68
GRAVEL	fine to medium to coarse, with about 20% sand	68-73
CLAY	sandy, silty, olive gray; with rock and coal layers; (TILL)	73-177
BEDROCK	light medium gray	177-180

148-081-18DCD1
NDSWC 2740

Date Completed:	8/4/67	Purpose:	Observation Well
L.S. Elevation (ft):	1841.17	Well Type:	1.25" ABS
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	178-181	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, brownish-black (topsoil).	0-0.5
CLAY	silty, dark yellowish brown.	0.5-2
GRAVEL	fine to medium, with 25-35% medium to coarse sand; subangular to subrounded.	2-24
CLAY	silty, sandy, olive gray (TILL).	24-30
SAND	medium to coarse, subangular to subrounded; isolated clay lenses.	30-82
CLAY	silty, olive-gray; scattered pebbles, cobbles, and lignite fragments (TILL).	82-118
GRAVEL	fine, with 25-35% very coarse sand, angular to subrounded; with interbedded light gray silty clay lenses.	118-205
SANDSTONE	fine to medium noncalcareous, bluish gray; interbedded with lignite (Fort Union Group)	205-220

148-081-18DCD2
NDSWC 2741

Date Completed:	8/7/67	Purpose:	Observation Well
L.S. Elevation (ft):	1841.56	Well Type:	1.25" ABS
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	18-21	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, yellowish brown	0-0.5
CLAY	silty, sandy, yellowish brown	0.5-12
GRAVEL	medium to coarse, with some coarse to very coarse sand; subangular to subrounded	12-24
CLAY	silty, scattered sand, olive gray, lignitic (TILL)	24-36
SAND	medium to coarse, subangular to subrounded	36-40
CLAY	silty, scattered sand, olive gray, lignitic (TILL)	40-60

148-081-19BBB
NDSWC 11780

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1848.86	Well Type:	1.25" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	18-23	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	very gravelly, medium sand to pebbles, predominantly coarse to very coarse sand; subrounded to rounded; 70% coarse to very coarse rounded quartz and limestone sand, 5% medium sand, 15% subrounded to rounded, quartz, limestone and igneous granules; 10%, subrounded igneous and limestone pebbles; oxidized, clay lens 9-10 ft; detrital lignite gravel at 23 ft	1-24
SILT	slightly clay to clayey, soft, plastic	24-35

148-081-20AAA
NDSWC 11511

Date Completed:	10/18/84	Purpose:	Observation Well
L.S. Elevation (ft):	1847	Well Type:	1.25" PVC
Depth Drilled (ft):	210	Aquifer:	Lake Nettie
Screened Interval (ft):	178-183	Source:	SWC

148-081-20AAA continued

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	very fine to coarse pebble, with coarse to very coarse sand, oxidized,	0-27
CLAY	olive gray, silty, sandy, pebbly, (TILL)	27-60
BOULDER	hard, green sandstone	60-62
CLAY	gray, sandy, silty, (probable till)	62-72
SAND	very fine to fine, with abundant lignite pebbles and cobbles, (poor sample return of sand)	72-83
CLAY	olive gray, silty, sandy, pebbly, (TILL)	83-140
GRAVEL	very fine to very coarse pebbles, cobbly in places, with coarse to very coarse sand; scattered thin clay beds	140-189
CLAY	greenish gray, silty, sandy, firm; bedrock - clayey sandstone to sandy claystone; (Fort Union Group)	189-210

148-081-20AAA2

NDSWC 11511A

Date Completed:	7/19/85	Purpose:	Observation Well
L.S. Elevation (ft):	1846.7	Well Type:	1.25" PVC
Depth Drilled (ft):	165	Aquifer:	Lake Nettie
Screened Interval (ft):	148-153	Source:	SWC

Lithologic Log

see log of NDSWC #11511 (148-081-20AAA) for lithologic information

148-081-20AAA3

NDSWC 11511B

Date Completed:	7/19/85	Purpose:	Observation Well
L.S. Elevation (ft):	1846.6	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	18-23	Source:	SWC

Lithologic Log

see log of NDSWC #11511 (148-081-20AAA) for lithologic information

148-081-20ADC

NDSWC 4101

Date Completed:	8/14/70	Purpose:	Observation Well
L.S. Elevation (ft):	1850.2	Well Type:	1.25" ABS
Depth Drilled (ft):	320	Aquifer:	Lake Nettie
Screened Interval (ft):	138-178	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, black (topsoil).	0-1
GRAVEL	sandy, subangular to subrounded, reddish brown.	1-11
GRAVEL	sandy, subrounded, dusky yellow.	11-46
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL).	46-66
SAND & GRAVEL	subangular to subrounded.	66-96
BOULDERS		96-98
CLAY	silty, sandy, pebbly, olive gray (TILL).	98-109
SAND	coarse, subangular to subrounded.	109-118
SAND	medium to coarse, subangular to subrounded.	118-136
SAND	medium to coarse; about 40% lignite.	136-157
CLAY	silty, sandy, lignitic, black (TILL).	157-162
GRAVEL	fine to medium, sandy, subangular to subrounded.	162-190

148-081-20ADC continued

SILT	clayey, olive gray, laminated.	190-202
CLAY	silty, olive gray.	202-210
GRAVEL	sandy, lignitic.	210-225
CLAY	sandy, lignitic, black, laminated.	225-233
SAND	fine to coarse; about 50% lignite.	233-255
CLAY	oily, black.	255-259
SILT	sandy, lignitic, light gray, laminated.	259-272
SAND	gravelly, lignitic; about 50% gravel.	272-288
CLAY	stiff, dark gray,	288-290
GRAVEL	fine to coarse.	290-293
SHALE	silty, sandy, carbonaceous, light gray to green (Fort Union Group)	293-315
SANDSTONE	fine, dark gray (Fort Union Group)	315-317
SHALE	silty, sandy, carbonaceous, light gray to green (Fort Union Group)	317-320

148-081-20BAA
NDSWC 2742

Date Completed:	8/7/67	Purpose:	Observation Well
L.S. Elevation (ft):	1839.31	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	148-151	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, grayish black (topsoil).	0-1
CLAY	silty, sandy, yellowish brown (TILL).	1-3
GRAVEL	fine to medium, sandy, subangular to subrounded.	3-14
CLAY	silty, sandy, pebbly, olive gray to dark greenish gray; few isolated fine to medium sand lenses (TILL).	14-144
SAND & GRAVEL	fine to medium Gravel with 25-35% medium to very coarse Sand, lignitic, angular to subrounded.	144-175
LIGNITE	hard black; interbedded with fine to medium noncalcareous bluish-gray Sandstone (Fort Union Group)	175-180

148-081-20CAA
NDSWC 5765

Date Completed:	8/26/70	Purpose:	Observation Well
L.S. Elevation (ft):	1844.9	Well Type:	1.25" ABS
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	178-184	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, silty, pebbly, brown	0-1
CLAY	sandy, silty, pebbly, moderate yellowish brown; abundant cobbles (TILL)	1-3
SAND	very fine to very coarse mostly fine to medium, slightly gravelly, subangular to rounded; about 30% shale	3-40
CLAY	silty, sandy, pebbly, lignitic, olive gray; abundant cobbles (TILL)	40-77
SAND	very fine to medium, clayey, subangular	77-80
CLAY	silty, sandy, pebbly olive gray; scattered cobbles (TILL)	80-122
CLAY	silty sandy, olive gray; scattered lignite fragments, (glaciofluvial)	122-137
SAND	very fine to very coarse, silty, subangular to rounded; thin isolated clay lenses	137-142
GRAVEL	fine to coarse, sandy, subangular to rounded, scattered cobbles and boulders; about 30% shale; with scattered thin clay layers	142-163
CLAY	silty, sandy, pebbly, lignitic, olive-gray (TILL)	163-166
GRAVEL	fine to coarse, sandy, slightly clayey in thin layers, subangular to rounded	166-183

148-081-20CAA continued

SAND	very fine to coarse, mostly fine to medium; lignitic, subangular to rounded; interbedded with silt and sandy clay	183-209
CLAY	silty, sandy, lignitic, olive gray, laminated (glaciofluvial)	209-227
SILTSTONE	clayey, sandy, hard, noncalcareous medium gray to medium bluish gray (Fort Union Group)	227-240

148-081-20CCA

NDSWC 5762

Date Completed:	8/24/70	Purpose:	Observation Well
L.S. Elevation (ft):	1847.1	Well Type:	1.25" ABS
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	149-155	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy. pebbly, brownish black	0-1
CLAY	silty, sandy, pebbly, moderate yellowish brown, abundant cobbles (TILL)	1-3
GRAVEL	fine to coarse, sandy, subangular to rounded; abundant cobbles; about 30% shale	3-10
SAND	very fine to very coarse, slightly gravelly, lignitic, subangular to rounded	10-28
GRAVEL	fine to coarse, sandy, lignitic, angular to well-rounded; scattered cobbles and boulders; about 30% shale and siltstone	28-39
SAND	fine to very coarse, subangular to rounded; scattered lignite chips; 20% shale	39-46
CLAY	silty, sandy, pebbly, olive gray; gravelly near base (TILL)	46-71 25
SAND	very fine to very coarse (mostly medium), subangular to rounded, isolated clay lenses; about 20% shale and lignite; gravelly 98-102 ft	71-102
CLAY	silty, sandy, pebbly, olive gray (TILL)	102-109 7
GRAVEL	fine to coarse, sandy, lignitic, angular to rounded; scattered cobbles; with interbedded clay lenses	109-125
CLAY	sandy, silty, pebbly, olive gray; scattered lignite fragments and isolated sand lenses (TILL)	125-141 16
SAND	very fine to very coarse, slightly gravelly, subangular to subrounded; scattered lignite fragments	141-146
GRAVEL	fine to coarse, sandy, subangular to well rounded; scattered cobbles and boulders, with some thin clay lenses; 30% shale	146-168
CLAY	silty, sandy, olive gray; scattered cobbles and isolated sand lenses (TILL)	168-180

148-081-20CCD1

NDSWC 5761

Date Completed:	8/24/70	Purpose:	Observation Well
L.S. Elevation (ft):	1861	Well Type:	1.25" ABS
Depth Drilled (ft):	280	Aquifer:	Lake Nettie
Screened Interval (ft):	169-175	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, pebbly, sandy, brownish black	0-1
Sand & Gravel	very fine to very coarse Sand (mostly medium to coarse), subangular to subrounded	1-41
Gravel	fine to coarse, sandy, angular to rounded; scattered cobbles and boulders; about 30% shale and siltstone	41-68
Clay	silty, sandy, pebbly, olive gray; scattered cobbles and boulders (TILL)	68-81 13
Sand	very fine to very coarse (mostly medium), subangular to subrounded; gravelly in lower 10 ft of section, about 30% shale and lignite	81-110
Clay	silty, sandy, pebbly, olive-gray; scattered cobbles (TILL)	110-119 9
Sand	very fine to very coarse, gravelly, subangular to rounded; interbedded with thin layers of silty sandy clay; about 30% shale and lignite	119-131
Clay	sandy, silty, pebbly, olive-gray (TILL)	131-156 25
Sand	very fine to very coarse, subangular to rounded	156-162
Gravel	fine to coarse, sandy, lignitic, angular to rounded; scattered cobbles and boulders; about 30% shale and siltstone	162-188

148-081-20CCD1 continued

Sand	very fine to very coarse, gravelly, lignitic, subangular to subrounded; isolated clay lenses	188-203
Clay	silty, sandy, pebbly, olive gray; scattered cobbles and boulders (TILL)	203-220
Sand	very fine to very coarse, lignitic, subangular to rounded; interbedded with silty sandy clay lenses (glaciofluvial)	220-235
Clay	silty, sandy, olive-gray, laminated; isolated lignitic sand lenses	235-249
Siltstone	sandy, clayey, hard, micaceous, noncalcareous, medium-gray (Fort Union Group)	249-280

148-081-20CCD2

NDSWC 5763

Date Completed:	8/25/70	Purpose:	Observation Well
L.S. Elevation (ft):	1850.4	Well Type:	1.25" ABS
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	179-185	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Topsoil	silty, sandy, pebbly, black	0-1
Clay	silty, sandy, pebbly, moderate yellowish brown (TILL)	1-8
Sand	very fine to very coarse, gravelly, subangular to rounded; about 10% shale and lignite	8-56
Clay	silty, sandy, pebbly, olive-gray	56-60
Sand	fine to coarse, clayey, lignitic, subangular to rounded	60-66
Clay	silty, sandy, pebbly, olive gray (TILL)	66-71
Sand	very fine to medium, subangular to rounded; isolated silty clay lenses; about 30% shale and lignite	71-78
Clay	silty, sandy, pebbly, olive gray (TILL)	78-82
Sand	very fine to coarse, lignitic, subangular to rounded; isolated clay lenses	82-109
Clay	sandy, silty, pebbly, olive gray	109-111
Sand	very fine to coarse, clayey, subangular to rounded	111-117
Clay	silty, sandy, lignitic, olive-gray, laminated; isolated sand lenses (glaciofluvial)	117-149
Gravel	fine to coarse, sandy, subangular to rounded, isolated clay lenses; about 30% shale, siltstone, and lignite	149-185
Sand	very fine to coarse, gravelly, lignitic; subangular to rounded; isolated clay lenses	185-194
Clay	silty, sandy, pebbly, olive gray (TILL)	194-212
Sand	fine to coarse, clayey, gravelly, lignitic, subangular to rounded	212-219
Clay	sandy, silty, pebbly, olive-gray; abundant cobbles (TILL)	219-230
Siltstone	clayey, sandy, hard, noncalcareous, medium gray to brownish gray (Fort Union Group)	230-240

148-081-20CCD3

NDSWC 5763A

Date Completed:	8/25/70	Purpose:	Observation Well
L.S. Elevation (ft):	1850.5	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	99-105	Source:	SWC

Lithologic Log

see log of NDSWC #5763 (148-81-20CCD2) for lithologic information

148-081-20CCD4

NDSWC 5763B

Date Completed:	8/25/70	Purpose:	Observation Well
L.S. Elevation (ft):	1850.4	Well Type:	1.25" ABS
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	49-55	Source:	SWC

Lithologic Log

see log of NDSWC #5763 (148-81-20CCD2) for lithologic information

148-081-20CDC1

NDSWC 5764

Date Completed:	8/26/70	Purpose:	Observation Well
L.S. Elevation (ft):	1853.8	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	179-185	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, pebbly, silty, brownish black	0-1
CLAY	sandy, silty, pebbly, moderate yellowish brown (TILL)	1-3
SAND	very fine to very coarse, gravelly, subangular to rounded; about 10% shale and lignite	3-45
GRAVEL	fine to coarse, sandy, subangular to rounded	45-58
CLAY	silty, sandy, pebbly, olive gray; scattered cobbles (TILL)	58-77 ~20
SAND	very fine to very coarse, gravelly, subangular to rounded, about 30% shale and lignite	77-111
CLAY	sandy, silty, pebbly, olive gray (TILL)	111-115
GRAVEL	fine to coarse, sandy, clayey, subangular to subrounded	115-119
CLAY	sandy, silty, pebbly, lignitic, olive gray, isolated sand lenses (TILL)	119-149 ~30
GRAVEL	fine to coarse, sandy, subangular to subrounded; isolated clay lenses and scattered cobbles and boulders, about 30% shale and siltstone	149-184
SAND	very fine to coarse, gravelly, subangular to rounded; isolated clay lenses, about 30% shale and siltstone	184-196
CLAY	sandy, silty, pebbly, lignitic, olive gray; isolated sand lenses (TILL)	196-213 ~17
GRAVEL	fine to coarse, clayey, sandy, angular to rounded	213-222
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL)	222-236
SILTSTONE	clayey, sandy, hard, noncalcareous, medium gray; few small concretions (Fort Union Group)	236-260

148-081-20CDC2

NDSWC 5764A

Date Completed:	8/26/70	Purpose:	Observation Well
L.S. Elevation (ft):	1854	Well Type:	1.25" ABS
Depth Drilled (ft):	105	Aquifer:	Lake Nettie
Screened Interval (ft):	99-105	Source:	SWC

Lithologic Log

see log of NDSWC #5764 (148-81-20CDC1) for lithologic information

148-081-20CDC3

NDSWC 5764B

Date Completed:	8/26/70	Purpose:	Observation Well
L.S. Elevation (ft):	1854.7	Well Type:	1.25" ABS
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	54-60	Source:	SWC

Lithologic Log

see log of NDSWC #5764 (148-81-20CDC1) for lithologic information

148-081-20DDA

NDSWC BH-25

Date Completed:	2/6/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.4	Well Type:	
Depth Drilled (ft):	11	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-5.3

148-081-20DDA continued

SILT	moderately clayey, moderately to very sandy (with very fine to very coarse sand), slightly gravelly (with sparse fine gravel); brownish gray; moderately soft, slightly cohesive to somewhat crumbly, slightly stiff; wet	5.3-9.5
SAND & GRAVEL	very fine sand to medium gravel; gray; thin layer of black silty, clayey sand and gravel with plant matter at 9.5 ft	9.5-11

148-081-21ABB

NDSWC

Date Completed:	1987	Purpose:	Observation Well
L.S. Elevation (ft):	1852	Well Type:	0" Unknown
Depth Drilled (ft):	12	Aquifer:	Lake Nettie
Screened Interval (ft):	0-12	Source:	SWC

Lithologic Log

HAND DRIVEN sand point, no log available

148-081-21ADD

NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1848.63	Well Type:	2" PVC
Depth Drilled (ft):	0	Aquifer:	Lake Nettie
Screened Interval (ft):	16.7-19	Source:	USBR

Lithologic Log - unavailable

148-081-21BCC

NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1841.83	Well Type:	1.25" Steel
Depth Drilled (ft):	3.4	Aquifer:	Lake Nettie
Screened Interval (ft):	0.4-3.4	Source:	SWC

Lithologic Log

Hand Driven Observation Well, 3.4 ft

148-081-21CAB

NDSWC 11781

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1845.88	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	33-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	gravelly, coarse sand to pebble gravel, predominantly coarse to very coarse sand; subrounded to rounded; predominantly quartz and carbonates with some shale; with angular, detrital lignite at 15 ft; oxidized to 12 ft; increased fine gravel below 15 ft	1-20
GRAVEL	slightly sandy, predominantly rounded limestone and igneous pebbles; clayey or silty below 42 ft	20-51
CLAY	silty, sandy, pebbly, olive gray; soft, plastic, (TILL)	51-60

148-081-21CCC
NDSWC BH-24

Date Completed:	2/6/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.1	Well Type:	
Depth Drilled (ft):	26	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-6.3
CLAY	very silty; grayish brown; slightly cohesive to somewhat crumbly, smooth; dry; thin wall tube sample 9.5-11.5 ft: laboratory falling head permeability = 0.028 ft/day (lab classification as light brown lean clay)	6.3-14
CLAY	moderately silty; brownish gray; slightly to moderately cohesive, slightly stiff, smooth, blocky; appears dry	14-17.5
SILT	very clayey, very slightly sandy (with very fine sand); vaguely laminated brownish gray and brown; slightly cohesive to somewhat crumbly, smooth, scattered snail shells	17.5-23
SAND & GRAVEL	very fine sand to medium gravel; gray; poorly sorted, subangular to subrounded	23-26

148-081-21CCD
NDSWC BH-23

Date Completed:	2/6/86	Purpose:	Test Hole
L.S. Elevation (ft):	1839.9	Well Type:	
Depth Drilled (ft):	16	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-6.5
CLAY	very silty; very dark brown; very soft, slightly cohesive and sticky, smooth; dry	6.5-9
SAND & GRAVEL	very fine sand to fine gravel; moderately to very silty and clayey	9-14
CLAY	moderately silty; brownish gray; very soft, slightly cohesive to somewhat crumbly and stiff, smooth, some plant material; dry	14-14.5
SAND & GRAVEL	very fine sand to medium gravel; dark gray with black zoning (color changes may be sedimentary structures); poorly sorted, subangular to subrounded	14.5-16

148-081-21CDA
NDSWC 11782

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1859.57	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	23.5-28.5	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	gravelly, medium sand to pebbles (1.5-inch diameter), predominantly coarse to very coarse sand; subrounded to rounded; mostly quartz and carbonates; oxidized	1-20
GRAVEL	sandy, predominantly rounded fine pebbles; igneous and limestone; oxidized	20-33
SILT	clayey, soft, plastic; oxidized dark yellow orange to 37 ft, olive gray below	33-40

148-081-21CDC
NDSWC BH-22

Date Completed:	2/6/86	Purpose:	Test Hole
L.S. Elevation (ft):	1839.9	Well Type:	
Depth Drilled (ft):	26	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-6.5

148-081-21CDC continued

CLAY	silty, very slightly sandy (with very fine sand); brown; very soft, slightly cohesive to somewhat crumbly, smooth,; dry	6.5-14
SILT	moderately clayey; brown; very soft, slightly cohesive, smooth; thinly bedded with scattered dark brown clay layers and sparse very fine to medium sand layers	14-22
SAND & GRAVEL	very fine sand to medium gravel; poorly sorted, subangular to subrounded	22-26

148-081-21CDD

NDSWC BH-21

Date Completed:	2/6/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.2	Well Type:	
Depth Drilled (ft):	21	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-6.5
CLAY	very silty, very slightly sandy with very fine to fine sand; brownish gray; very soft, slightly cohesive to somewhat crumbly, smooth; dry	6.5-8.5
CLAY	as above, interbedded with 1-inch thick layers of brownish gray clayey, sandy (very fine to fine sand) silt	8.5-12.5
CLAY	silty, very slightly sandy (with very fine to fine sand); brown; very soft, slightly cohesive to crumbly, smooth; dry	12.5-13
CLAY	silty, very slightly sandy (with very fine to fine sand); brown; moderately soft, slightly cohesive, somewhat stiff, smooth, snail shells common in thin layers; appears wetter than above	13-18
SAND & GRAVEL	very fine sand to medium gravel; poorly sorted, subangular to subrounded	18-21

148-081-21DCC1

NDSWC 11783

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1851.19	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	33-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	gravelly, coarse sand to pebbles (0.75-inch diameter), predominantly coarse to very coarse sand; subrounded to rounded; quartz, igneous and carbonate fragments; oxidized to 20 ft	1-20
GRAVEL	sandy, predominantly round limestone and shale pebbles to 0.5-inch diameter	20-41
SAND & GRAVEL	interbedded detrital lignite layers	41-56
CLAY	silty, sandy, pebbly; soft, plastic, olive gray, (TILL)	56-60

148-081-21DCC2

NDSWC 11784

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1845.27	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	30-35	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
SAND	gravelly, medium sand to pebbles (1-inch diameter), predominantly coarse to very coarse sand; subrounded to rounded; with interbedded detrital lignite below 28 ft	2-35
GRAVEL	predominantly rounded limestone, shale, and igneous pebbles	35-41
CLAY	silty, sandy, pebbly; soft, plastic, olive gray, (TILL)	41-60

148-081-21DCD
NDSWC 11785

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1842.79	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	23-28	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	very clayey, pale yellow brown, well sorted, firm, oxidized,	1-3
SAND	gravelly, coarse sand to pebbles (2-inch diameter), predominantly coarse to very coarse sand; subrounded to rounded; quartz, limestone, and shale grains; oxidized to 9 ft	3-20
GRAVEL	rounded limestone and shale pebbles	20-30
CLAY	silty, sandy, pebbly; soft, plastic, olive gray, (TILL)	30-40

148-081-22AAB
NDSWC 1-C-6

Date Completed:	8/8/62	Purpose:	Observation Well
L.S. Elevation (ft):	1847.12	Well Type:	1.25" Steel
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	85-87	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to coarse	0-11
SAND	fine to coarse, gravelly with fine gravel, lignitic	11-23
CLAY	lignitic, olive gray, (TILL)	23-44
SAND	fine to coarse, slightly gravelly	44-54
CLAY	lignitic, olive gray, (TILL)	54-58
SAND	find to coarse; clay lenses and scattered lignite fragments	58-82
GRAVEL	fine to medium	82-89
CLAY	olive gray, (TILL)	89-92
GRAVEL	fine to medium	92-94
CLAY	lignitic, olive gray, (TILL)	94-100

148-081-22AAD
NDSWC 6-C-6

Date Completed:	9/11/62	Purpose:	Observation Well
L.S. Elevation (ft):	1855.1	Well Type:	1.25" ABS
Depth Drilled (ft):	94	Aquifer:	Lake Nettie
Screened Interval (ft):	63-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black	0-1
GRAVEL	coarse	1-11
SAND	fine to medium	11-20
CLAY	silty	20-21
SAND	fine to medium	21-39
TILL	olive gray	39-63
SAND	medium to coarse	63-72
CLAY	silty, olive gray	72-76
GRAVEL	medium to coarse	76-81
TILL	olive gray	81-94

148-081-22BAB

NDSWC 4-C-6

Date Completed:	8/9/62	Purpose:	Observation Well
L.S. Elevation (ft):	1846.04	Well Type:	1.25" ABS
Depth Drilled (ft):	105	Aquifer:	Lake Nettie
Screened Interval (ft):	91-94	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	fine to medium	0-31
TILL	olive gray	31-41
SAND	fine to medium	41-46
GRAVEL	fine to coarse	46-52
TILL	olive gray	52-71
SAND		71-74
TILL	olive gray	74-80
SAND	fine to medium, with a little clay	80-94
TILL	olive gray	94-105

148-081-22DDD1

NDSWC 11583

Date Completed:	7/23/85	Purpose:	Observation Well
L.S. Elevation (ft):	1858.91	Well Type:	1.25" PVC
Depth Drilled (ft):	240	Aquifer:	Lake Nettie
Screened Interval (ft):	188-193	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, very sandy, silty, crumbly	0-1
SAND & GRAVEL	very fine sand to coarse gravel, mostly very fine sand to fine gravel; oxidized yellowish brown to unoxidized gray below 23 ft; poorly sorted; subangular to subrounded, mostly quartz, carbonates, shale, with igneous rock fragments silicates and lignite	1-35
CLAY	brownish gray, very silty, very slightly sandy with very fine sand; very soft, slightly cohesive, nonplastic, smooth, slightly to moderately sticky	35-51
SAND & GRAVEL	shale and carbonates with lignite and quartz	51-52
CLAY	olive gray, moderately to very silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine gravel; moderately to very soft, moderately to very cohesive, slightly to moderately plastic, moderately gritty, slightly to moderately sticky, (TILL)	52-63
SAND & GRAVEL	very fine sand to medium gravel, mostly fine sand to fine gravel; poorly sorted, subangular to subrounded; mostly carbonates, shale, and lignite with quartz, igneous rock fragments, and some silicates	63-118
CLAY	brownish gray, moderately silty; moderately soft, moderately to very cohesive, moderately plastic, smooth, somewhat stiff	118-122
CLAY	brownish gray, very silty, very soft, slightly to moderately cohesive, slightly plastic, smooth, slightly sticky; thin layers detrital lignite and thin sandy zones common	122-163
SAND & GRAVEL	very fine sand to medium gravel, mostly fine sand to fine gravel; poorly sorted, subangular to subrounded; mostly shale carbonates and quartz, with lignite, igneous rock fragments and silicates	163-203
LIGNITE	angular fresh fragments, with claystone layers	203-212
LIGNITE	interbedded with dark reddish brown claystone and dark gray very fine sandstone, (poor sample return)	212-240

148-081-22DDD2

NDSWC 11583A

Date Completed:	7/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1858.88	Well Type:	2" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	88-93	Source:	SWC

Lithologic Log

see log of NDSWC #11583 (148-081-22DDD1) for lithologic information

148-081-22DDD3
NDSWC 11583B

Date Completed:	7/24/85	Purpose:	Observation Well
L.S. Elevation (ft):	1859.15	Well Type:	2" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	28-33	Source:	SWC

Lithologic Log

see log of NDSWC #11583 (148-081-22DDD1) for lithologic information

148-081-24BBB
NDSWC 2744

Date Completed:	8/8/67	Purpose:	Observation Well
L.S. Elevation (ft):	1864	Well Type:	1.25" ABS
Depth Drilled (ft):	230	Aquifer:	Lake Nettie
Screened Interval (ft):	13-18	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
SAND & GRAVEL	coarse sand to coarse gravel; angular to subrounded	1-16
CLAY	silty, sandy, scattered pebbles, olive gray (till)	16-80
CLAY	silty, scattered sand and pebbles, light olive gray to greenish gray; (till)	80-110
CLAY	very silty, greenish-gray to medium light gray; laminated in places (till)	110-165
CLAY	plastic, light gray to medium light gray, sandy from 172-176 ft (lacustrine)	165-212
SHALE	noncalcareous, grayish brown (Fort Union Group)	212-230

148-081-26DBC
NDSWC 2735

Date Completed:	8/3/67	Purpose:	Observation Well
L.S. Elevation (ft):	1860.5	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, brownish black (topsoil).	0-1
SAND	coarse to very coarse, with 20-30% fine gravel, subangular to subrounded.	1-11
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL).	11-60
SAND	coarse to very coarse, with 20-30% fine gravel, subangular to rounded.	60-88
CLAY	very silty, grayish-brown (TILL)	88-96
SHALE	noncalcareous, grayish brown; interbedded with fine to medium noncalcareous bluish gray Sandstone (Fort Union Group)	96-120

148-081-28BCB
NDSWC BH-17

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.1	Well Type:	
Depth Drilled (ft):	26	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-7
CLAY	silty, slightly sandy with very fine to fine sand: brownish gray; very soft, slightly cohesive to somewhat crumbly, gritty, dry	7-10

148-081-28BCB continued

CLAY	silty, slightly sandy and gravelly with fine sand to fine gravel; light brownish gray; soft, slightly cohesive, somewhat stiff, dry	10-14
CLAY	as above, with layers of brownish gray silty clay	14-20
SAND & GRAVEL	medium sand to medium gravel; poorly sorted, subangular to subrounded	20-26

148-081-28BCD
NDSWC BH-16

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1839.7	Well Type:	
Depth Drilled (ft):	8	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-4
SAND & GRAVEL	very fine sand to medium gravel (predominantly fine to very coarse sand), slightly to moderately silty and clayey interstitially; gray; 4 inches of black silty clayey sand and gravel at 4 ft	4-8

148-081-28BDB1
NDSWC 11786

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1842.67	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	23-28	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	very silty, soft, slightly plastic, med. gray	1-2
SAND	gravelly, medium sand to pebbles (2-inch diameter), predominantly coarse to very coarse sand; subrounded to rounded; oxidized	2-9
GRAVEL	fine to coarse (to 2-inch diameter), sandy (with coarse sand); rounded; shale and limestone grains	9-30
CLAY	silty, soft, plastic, olive gray (TILL)	30-40

148-081-28BDB2
NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1841.87	Well Type:	1.25" Steel
Depth Drilled (ft):	3.5	Aquifer:	Lake Nettie
Screened Interval (ft):	0.5-3.5	Source:	SWC

Lithologic Log

Hand Driven Observation Well, West Well; on East Shoreline of Lake Nettie

148-081-28BDB3
NDSWC

Date Completed:	6/11/87	Purpose:	Observation Well
L.S. Elevation (ft):	1842.88	Well Type:	1.25" Steel
Depth Drilled (ft):	5	Aquifer:	Lake Nettie
Screened Interval (ft):	2-5	Source:	SWC

Lithologic Log

Hand Driven Observation Well, East Well; near east shoreline of Lake Nettie

148-081-28CAB
NDSWC 11787

Date Completed:	6/11/86	Purpose:	Observation Well
L.S. Elevation (ft):	1843.61	Well Type:	1.25" PVC
Depth Drilled (ft):	50	Aquifer:	Lake Nettie
Screened Interval (ft):	32-37	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	silty, medium gray, soft, plastic	1-3
SAND	gravelly, coarse sand to pebbles (to 2-inch diameter), predominantly very coarse sand to fine gravel; subrounded to rounded; mostly quartz and limestone fragments; oxidized to 11 ft	3-20
GRAVEL	sandy, abundant very coarse detrital lignite gravel; limestone and igneous rock fragments	20-36
CLAY	silty, sandy, pebbly, olive gray, soft, plastic (TILL)	36-50

148-081-28CCC
NDSWC 11510

Date Completed:	10/17/84	Purpose:	Observation Well
L.S. Elevation (ft):	1847.16	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	42-47	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	coarse to very coarse, with fine Gravel; coarse Gravel at base of unit, oxidized to 16 ft	0-38
CLAY	gray (?) poor recovery	38-41
CLAY	silty, olive gray	47-61
SAND	very fine to fine sand, greenish gray, poor recovery (proabable Fort Union Group)	61-67
LIGNITE	brown and black, with brown carbonaceous clay	67-72
SILTSTONE	Clayey, gray, firm	72-80
SAND	coarse to very coarse, with fine Gravel	41-47

148-081-29ACA
NDSWC BH-19

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.3	Well Type:	
Depth Drilled (ft):	26	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-7
SILT	moderately clayey, very slightly sandy with very fine sand; brown; slightly cohesive to somewhat crumbly, smooth, dry; thin wall tube sample 10 - 12 ft: laboratory falling head permeability = 0.0085 ft/day (lab classification as light gray lean clay)	7-12
SILT	as above, but somewhat firmer and more cohesive	12-15.5
SILT	moderately to very clayey; brownish gray; moderately soft, slightly to moderately cohesive, smooth, vaguely laminated; dry	15.5-18.5
SILT	laminated brownish gray, dark brownish gray and dark gray, as above (15.5-18.5 ft); wet	18.5-23
SAND & GRAVEL	very fine sand to coarse gravel; poorly sorted, subangular to subrounded	23-26

148-081-29ACC
NDSWC BH-20

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.3	Well Type:	
Depth Drilled (ft):	8	Source:	NDSWC

148-081-29ACC continued

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-4
SAND & GRAVEL	very fine sand to medium gravel; gray; poorly sorted, subangular to subrounded, 1 inch of black organic matter at 4.0 ft	4-8

148-081-29ADA

NDSWC BH-18

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1840.3	Well Type:	
Depth Drilled (ft):	13	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to lake bottom, measured through borehole in ice	0-7.1
CLAY	very silty; brownish gray; very soft, slightly cohesive to crumbly, smooth; moderately sandy with very fine to fine sand from 9.5 to 10 ft	7.1-10
SAND & GRAVEL	very fine sand to medium gravel; dark gray; poorly sorted, subangular to subrounded	10-13

148-081-29BAA1

NDSWC 4100

Date Completed:	8/13/70	Purpose:	Observation Well
L.S. Elevation (ft):	1857.02	Well Type:	1.25" ABS
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	158-178	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to coarse, sandy, subangular to subrounded, reddish brown.	0-17
GRAVEL	fine to coarse, slightly sandy, subrounded.	17-38
GRAVEL	fine to coarse, sandy, subangular to subrounded; cobbles.	38-72
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL).	72-81
GRAVEL	fine to coarse, sandy, subrounded; numerous silt and clay lenses.	81-116
SILT	clayey, gray; interbedded with fine to very fine sand and detrital lignite.	116-153
GRAVEL	medium to coarse, subrounded.	153-184
GRAVEL	medium to coarse, very sandy, lignitic, subrounded.	184-203
CLAY	and clayey Silt, slightly sandy; olive gray, laminated with whitish streaks .	203-217
SAND	medium to very coarse, gravelly, lignitic, subangular to subrounded.	217-236
SHALE	silty, carbonaceous, noncalcareous, medium to dark gray (Fort Union Group)	236-260

148-081-29BAA2

NDSWC 4100A

Date Completed:	7/22/85	Purpose:	Observation Well
L.S. Elevation (ft):	1856.79	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	54-59	Source:	SWC

Lithologic Log

see log of NDSWC #4100 (148-81-29BAA1) for lithologic information

148-081-29CAA
NDSWC 4099

Date Completed:	8/13/70	Purpose:	Observation Well
L.S. Elevation (ft):	1851	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	38-48	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to coarse, sandy, subangular to subrounded, moderate reddish brown	0-12
GRAVEL	medium to coarse, abundant cobbles	12-34
GRAVEL	medium to coarse, interbedded with sand, silt, and detrital lignite	34-48
CLAY	silty, sandy, pebbly, lignitic, olive-gray; isolated sand lenses (TILL)	48-69
SILTSTONE	clayey, noncalcareous, medium gray (Fort Union Group)	69-78
SANDSTONE	fine clayey, carbonaceous greenish gray laminated (Fort Union Group)	78-92
SHALE	silty, carbonaceous, brittle medium to dark gray (Fort Union Group)	92-100
SANDSTONE	very fine to fine, clayey, carbonaceous, greenish gray (Fort Union Group)	100-120

148-081-29CCC
NDSWC 3930

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1858	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, sandy, cohesive, yellowish gray; scattered pebbles (TILL)	0-7
CLAY	silty, sandy, moderate olive brown; scattered pebbles (TILL)	7-16
CLAY	silty, sandy, olive gray; scattered pebbles (TILL)	16-37
GRAVEL		37-42
CLAY	silty, sandy, olive gray; scattered pebbles (TILL)	42-49
GRAVEL		49-54
CLAY	silty, sandy, olive gray; scattered pebbles (TILL)	54-56
SHALE	hard, carbonaceous, dark-gray (Fort Union Group)	56-57
SHALE	lignitic, black (Fort Union Group)	57-66
SHALE	silty, medium-gray (Fort Union Group)	66-80

148-081-31BBB
NDSWC 2738

Date Completed:	8/4/67	Purpose:	Test Hole
L.S. Elevation (ft):	1860	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, brownish black	0-1
GRAVEL	sandy, clayey, angular to subrounded, oxidized	1-3
CLAY	silty, moderate yellowish brown; scattered sand (TILL)	3-14
CLAY	silty, olive gray; scattered sand and pebbles (TILL)	14-45
SAND	fine to medium, subangular to rounded, few lignite fragments	45-50
CLAY	silty, olive gray; scattered sand and lignite fragments (TILL)	50-62
SHALE	noncalcareous, medium-gray (Fort Union Group)	62-80

148-081-32CCD

NDSWC

Date Completed:	11/18/82	Purpose:	Domestic Well
L.S. Elevation (ft):	1890	Well Type:	5" PVC
Depth Drilled (ft):	180	Aquifer:	Fort Union
Screened Interval (ft):	163-180	Source:	Water Supply Inc.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
CLAY	silty, yellowish brown, (TILL)	1-39
CLAY	silty, olive gray, (TILL)	39-55
SAND	fine, brownish gray, its about 40% clay	55-67
CLAY	silty, brownish gray, BEDROCK	67-78
COAL		78-79
CLAY	silty, medium gray	79-94
COAL		94-96
CLAY	silty, medium gray	96-129
SAND	fine to medium, bluish gray	129-134
COAL	slack	134-136
COAL		136-137
CLAY	silty, medium gray	137-147
ROCK	sandstone	147-148
CLAY	silty, medium gray	148-164
COAL		164-171
SAND	fine to medium, its about 20% clay	171-180

148-081-33CDD

NDSWC 2737

Date Completed:	8/3/67	Purpose:	Observation Well
L.S. Elevation (ft):	1852.53	Well Type:	4" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	33-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, grayish black	0-1
SAND	medium to very coarse, angular to subrounded, with 20-30% fine, angular to subrounded Gravel	1-34
GRAVEL	fine to coarse, subangular to subrounded, with 20-30% coarse to very coarse, subangular to subrounded Sand	34-40
CLAY	silty, scattered gravel; olive gray; lignite float from 47-49 ft (TILL)	40-62
CLAY	calcareous, dark-gray (lacustrine)	62-67
SANDSTONE	fine to medium, noncalcareous, light-bluish-gray to medium-bluish-gray; few lenses of brownish-black shale (Fort Union Group)	67-80

148-081-34CBB

NDSWC 11598

Date Completed:	8/1/85	Purpose:	Observation Well
L.S. Elevation (ft):	1845.2	Well Type:	1.25" PVC
Depth Drilled (ft):	70	Aquifer:	Lake Nettie
Screened Interval (ft):	18-23	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, sandy, silty, slightly gravelly, crumbly	0-2

148-081-34CBB continued

SAND & GRAVEL	brown, slightly silty, very fine sand to coarse gravel, mostly very fine sand to fine gravel; poorly sorted, subangular to subrounded; mostly quartz, carbonates, igneous rock fragments and silicates with shale and lignite	2-18
SAND & GRAVEL	gray, fine sand to coarse gravel, mostly coarse sand to medium gravel; slightly well sorted, subangular to subrounded; mostly quartz, shale, carbonates, igneous rock fragments and silicates; slightly lignitic; caving	18-25
CLAY	gray, moderately silty, slightly to moderately sandy and slightly gravelly with very fine sand to fine gravel interstitially; moderately soft, cohesive, and plastic, gritty; slightly to moderately lignitic; gravel is mostly shale and carbonates (TILL)	25-63
CLAYSTONE	brown to grayish brown with some dark gray, slightly silty; slightly to moderately firm, nonindurated very friable to soft, compact, drills stiff	63-70

148-081-34DDD

NDSWC 2736

Date Completed:	8/3/67	Purpose:	Observation Well
L.S. Elevation (ft):	1843.71	Well Type:	1.25" ABS
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	18-21	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, grayish black	0-1
SAND	fine to very coarse, angular to subrounded; gravelly (with medium to coarse gravel) near bottom of section; upper 12-15 ft oxidized	1-20
CLAY	silty, olive gray; scattered sand and pebbles (TILL)	20-50
CLAY	silty, olive gray to medium dark gray; scattered sand; lignite float from 58-59 ft and 68-72 ft (TILL)	50-76
SHALE	and Sandstone interbedded; noncalcareous grayish brown shale; fine to medium noncalcareous medium bluish gray sandstone (Fort Union Group)	76-100

148-081-35DDD

NDSWC 11597

Date Completed:	7/31/85	Purpose:	Observation Well
L.S. Elevation (ft):	1847.81	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Lake Nettie
Screened Interval (ft):	63-68	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	reddish brown, sandy, silty, crumbly, moderately gravelly	0-1
SAND & GRAVEL	very fine sand to medium gravel, mostly medium sand to medium gravel; poorly sorted, subangular to subrounded; quartz, carbonates and shale, with igneous rock fragments and silicates; brown, oxidized	1-15
CLAY	olive gray, moderately silty, slightly to moderately sandy and gravelly with very fine sand to medium gravel interstitially; moderately to very soft, moderately cohesive and plastic, gritty, somewhat stiff, (TILL)	15-45
CLAY	olive gray, silty, soft, smooth, sticky; with dark gray stiff silty clay	45-55
SAND & GRAVEL	very fine sand to medium gravel; poorly sorted, subangular to subrounded; mostly quartz, shale, carbonates with igneous rock fragments, silicates and some lignite	55-71
SANDSTONE	greenish gray to gray, very fine grained, slightly silty; well sorted, slightly firm, nonindurated, very friable, compact; interbedded with scattered dark gray sandstone; interbedded with brownish gray silty claystone, firm, nonindurated, very friable, compact	71-100

148-081-36CCC

NDSWC 2734

Date Completed:	8/3/67	Purpose:	Test Hole
L.S. Elevation (ft):	1846	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

148-081-36CCC continued

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, brownish black	0-1
SAND	coarse to very coarse, subangular to subrounded, with 10% fine gravel	1-11
CLAY	silty, olive gray; scattered sand and pebbles (TILL)	11-48
SAND	medium to coarse, angular to rounded; gravelly near base of section	48-71
CLAY	silty, olive-gray to medium dark gray; scattered sand (TILL)	71-95
SAND	very fine to fine, subangular to subrounded, well sorted, dusky bluish green - very poor samples (probable Fort Union Group)	95-104
SANDSTONE	and Shale interbedded; fine to medium noncalcareous light bluish gray to medium bluish gray sandstone; calcareous to noncalcareous brownish gray shale (Fort Union Group)	104-120

148-081-36DDD

NDSWC 2733

Date Completed:	8/3/67	Purpose:	Observation Well
L.S. Elevation (ft):	1850.7	Well Type:	1.25" ABS
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	78-81	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, grayish black (topsoil).	0-1
CLAY	silty, sandy, pebbly, yellowish brown (TILL).	1-3
SAND	medium to coarse, angular to rounded.	3-20
CLAY	silty, gravelly, olive gray (TILL),	20-50
SAND	fine to medium at top of section grading to very coarse at bottom of section; subangular to subrounded.	50-90
CLAY	silty, sandy, lignitic, olive gray (TILL).	90-95
SANDSTONE	fine to medium, noncalcareous, bluish gray (Fort Union Group)	95-120

148-082-02AAA1

NDSWC 11575

Date Completed:	7/16/85	Purpose:	Observation Well
L.S. Elevation (ft):	1945.7	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	73-78	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, silty, sandy	0-1
CLAY	olive yellowish brown, moderately silty, moderately sandy with very fine to very coarse sand, mostly very fine to medium, slightly gravelly with fine to medium gravel; moderately to very soft, slightly cohesive to crumbly, gritty, occasional mottles of light gray and orangish brown; slightly carbonaceous in streaks, (TILL)	1-13
CLAY	olive brown, as above, somewhat firmer and more cohesive; scattered mottles of orangish brown, carbonaceous streaks; thin laminae of very sandy clay to very fine to fine sand apparent, (TILL)	13-18
CLAY	dark olive brown, moderately silty, slightly to moderately sandy with very fine to very coarse sand, slightly gravelly with fine to coarse gravel to rare coarse gravel, moderately soft, moderately cohesive and plastic; gritty, (TILL)	18-29
CLAY	dark olive gray, moderately silty, moderately sandy and slightly gravelly with very fine sand to fine gravel; moderately soft, moderately cohesive and sticky, plastic, gritty; slightly to moderately lignitic with very course sand to medium gravel size fragments, (TILL)	29-68
SAND & GRAVEL	very fine sand to coarse gravel, poorly sorted, subangular to subrounded; quartz, shale, carbonates, silicates, with lignite and igneous rock fragments	68-73
CLAY	gray, silty, moderately soft, moderately to very cohesive and plastic, smooth and, silty, sandy and gravelly, gritty, (TILL)	73-77
SAND & GRAVEL	as above	77-86
CLAY	dark olive gray as above 29-68 ft; (TILL)	86-89

148-082-02AAA1 continued

ROCKS & SAND		89-90
CLAY	dark olive gray, moderately silty, moderately to very sandy with very fine to very course sand, mostly very fine to medium sand, slightly gravelly with fine gravel; moderately soft and cohesive, slightly to moderately plastic and sticky, gritty, (TILL)	90-93
CLAYSTONE	dark blackish brown, moderately to very silty, slightly soft, slightly cohesive, nonindurated, very friable, slightly micaceous, drills firm, layers of very firm lignite	93-107
CLAYSTONE	grayish green with scattered olive mottles; slightly firm, nonindurated, very friable, slightly sandy with very fine sand; very silty; some darker green layers; drills firm	107-120

148-082-02AAA2

NDSWC 11575A

Date Completed:	7/22/85	Purpose:	Observation Well
L.S. Elevation (ft):	1945.9	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	65-70	Source:	SWC

Lithologic Log

see log of NDSWC #11575 (148-82-02AAA1) for lithologic information

148-082-03CDC

NDSWC 11778

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1850.08	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	53-58	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SILT	very clayey, greenish brown, soft	1-9
SILT	very clayey, pale yellow brown, oxidized; soft, plastic	9-11
CLAY	silty, sandy, pebbly; soft, plastic, oxidized dark yellowish orange to 17 ft, olive gray below 17 ft (TILL)	11-38
SAND	gravelly; coarse sand to medium gravel, predominantly coarse to very coarse sand; subrounded to rounded; mostly quartz, limestone and shale with some detrital lignite and igneous fragments with	38-60

148-082-06CBA

NDSWC

Date Completed:	3/27/90	Purpose:	Domestic Well
L.S. Elevation (ft):	1910	Well Type:	4" PVC
Depth Drilled (ft):	90	Aquifer:	Lake Nettie
Screened Interval (ft):	70-80	Source:	Mann-Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
CLAY	buff	0-24
TILL	gray	24-68
SAND & GRAVEL	fine sand to fine gravel	68-79
CLAY	gray	79-90

148-082-07AAD1

NDSWC 11499

Date Completed:	10/10/84	Purpose:	Test Hole
L.S. Elevation (ft):	1855.7	Well Type:	
Depth Drilled (ft):	200	Source:	SWC

Lithologic Log

148-082-07AAD1

Unit	Description	Depth (ft)
CLAY	brown, silty, sandy, pebbly, oxidized to 16 ft, gray and unoxidized below 16 ft; rock at 19 ft; (TILL)	0-61
SAND	fine to very coarse, predominantly coarse to very coarse; abundant detrital lignite; 10-25% fine pebble gravel	61-80
CLAY	gray, silty, sandier than interval 0 to 61 ft; pebbly, (TILL)	80-113
SAND	gray, silty, clayey; poor recovery; rocks at 120-121 ft	113-121
SAND	medium to coarse, greenish gray; scattered white grains; good sorting, 'salt and pepper' appearance; (Fort Union Group, bedrock)	121-143
SAND	fine to medium, light greenish gray; well sorted, more clay and silt in the matrix, (Fort Union Group, bedrock)	143-193
CLAY	light brown and light green; firm to shaly, (Fort Union Group, bedrock)	193-200

148-082-07AAD3

NDSWC 11499B

Date Completed:	10/10/84	Purpose:	Observation Well
L.S. Elevation (ft):	1856	Well Type:	1.25" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	67-72	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	brown, silty, sandy, pebbly, oxidized; turned gray below 23 ft; (TILL)	0-62
SAND	coarse to very coarse, 25% fine pebble gravel	62-80

148-082-08CDC1

NDSWC 11495

Date Completed:	12/11/80	Purpose:	Observation Well
L.S. Elevation (ft):	1854.8	Well Type:	1.25" PVC
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	151-154	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	dark yellowish brown, oxidized; moderately cohesive; 60% clay with 40% silt, sand, and gravel; (TILL)	1-17
CLAY	olive gray, moderately cohesive, 60% clay with 40% silt, sand, and gravel; rock at 24 ft; (TILL)	17-41
SAND & GRAVEL	60% sand, 40% gravel, medium sand to pebbles, primarily very coarse sand and granules; subangular to subrounded; 30% carbonates, 30% shale and lignite, 20% silicates, 20% quartz	41-61
CLAY	olive gray, as above 17-41 ft; (TILL)	61-71
SAND & GRAVEL	as above 41-61 ft; more pebbles	71-78
CLAY	olive gray, as above; sand and gravel lens at 109 ft; (TILL)	78-147
SAND & GRAVEL	medium sand to pebbles, primarily very coarse sand, granules, and pebbles; scattered cobbles; subangular, about 60% gravel, 40% sand; detrital lignite, shale, silicates, carbonates and quartz (in decreasing order of abundance) added bentonite; from 180 ft: sand and gravel, 80% lignite	147-187
SILTSTONE	olive gray to brownish black interbedded with lignite coal, Bedrock)	187-220

148-082-08CDC2

NDSWC 11496

Date Completed:	12/11/80	Purpose:	Observation Well
L.S. Elevation (ft):	1854.62	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	53-56	Source:	SWC

Lithologic Log

148-082-08CDC2

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	dark yellowish brown, oxidized; moderately cohesive; 60% clay with 40% silt, sand, and gravel; (TILL)	1-17
CLAY	olive gray, moderately cohesive; 60% clay with 40% silt, sand, and gravel; (TILL)	17-42
SAND & GRAVEL	60% sand, 40% gravel, medium sand to pebbles, primarily very coarse sand and granules; lignite, shale, carbonates, silicates, and quartz	42-60

148-082-09DCC

NDSWC

Date Completed:	2/7/76	Purpose:	Domestic Well
L.S. Elevation (ft):	1870	Well Type:	4" PVC
Depth Drilled (ft):	80	Aquifer:	Lake Nettie
Screened Interval (ft):	67-77	Source:	Mann Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-2
TILL		2-65
SAND		65-67
GRAVEL		67-77
TILL		77-80

148-082-10ADD

NDSWC

Date Completed:	7/9/79	Purpose:	Domestic Well
L.S. Elevation (ft):	1870	Well Type:	4.5" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	38-48	Source:	Mann Drilling

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL		0-12
TILL	silty	12-37
SAND & GRAVEL		37-50
CLAY	silty lake clay	50-60

148-082-11BBB

NDSWC 3953

Date Completed:	12/12/69	Purpose:	Test Hole
L.S. Elevation (ft):	1882	Well Type:	
Depth Drilled (ft):	160	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black	0-1
GRAVEL	fine to coarse, sandy, iron stained; scattered cobbles	1-11
CLAY	silty, sandy, olive gray; scattered sand and gravel; soft to moderately soft (TILL)	11-43
CLAY	silty, soft, olive gray; scattered sand and pebbles; moderately soft, stiff (TILL)	43-85
CLAY	silty, sandy, soft, olive gray; scattered pebbles; tough (TILL)	85-104
SANDSTONE	very fine to fine, silty, greenish gray	104-147
SHALE	silty, hard, brittle, carbonaceous	147-155
SANDSTONE	very fine to fine, silty, greenish gray	155-160

148-082-11BCC
NDSWC 11777

Date Completed:	6/10/86	Purpose:	Test Hole
L.S. Elevation (ft):	1868	Well Type:	
Depth Drilled (ft):	20	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	coarse sand to pebbles, predominantly very coarse sand; angular to rounded; mostly limestone and quartz with some igneous granules to pebbles	0-9
CLAY	silty, sandy, pebbly; oxidized yellow to 11 ft, gray bwlow; soft, plastic (TILL)	9-20

148-082-11CBC
NDSWC 11776

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1876.05	Well Type:	1.25" PVC
Depth Drilled (ft):	20	Aquifer:	Lake Nettie
Screened Interval (ft):	3.3-8.3	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND & GRAVEL	coarse sand to pebbles (to 2-inch diameter), predominantly granules; angular to rounded; quartz, limestone and igneous fragments; oxidized	1-8
CLAY	silty, sandy, pebbly; oxidized to 11 ft; gray below; soft, plastic (TILL)	8-20

148-082-11DCC1
NDSWC 11747

Date Completed:	1/9/86	Purpose:	Observation Well
L.S. Elevation (ft):	1875.39	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	38-43	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, sandy and gravelly	0-1
SAND & GRAVEL	yellowish brown, very fine sand to coarse gravel with mostly medium sand to medium gravel; poorly sorted, coarse fraction mostly subangular, rest subangular to subrounded; slightly lignitic; mostly carbonates, igneous rock fragments, shale, and quartz; oxidized	1-20
CLAY	olive gray, moderately silty, moderately sandy and gravelly with fine sand to fine gravel; scattered thin sand and gravel layers, slightly soft, moderately cohesive, somewhat stiff; gritty, (TILL)	20-30
SAND & GRAVEL	as above (1-20 ft), unoxidized, moderately lignitic with fragments to coarse gravel size	30-49
CLAY	olive gray, moderately to very silty, slightly to moderately sandy with very fine to fine sand; moderately to very soft; moderately cohesive, somewhat sticky; smooth	49-60

148-082-11DCC2
NDSWC 11747A

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1875.55	Well Type:	1.25" PVC
Depth Drilled (ft):	25	Aquifer:	Lake Nettie
Screened Interval (ft):	14-19	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
SAND	coarse to predominantly very coarse, gravelly; oxidized; angular to mostly subrounded to rounded; quartz and limstone with some igneous granules and pebbles	1-20
TILL	olive gray	20-25

148-082-12BBC

NDSWC

Date Completed:	0/0	Purpose:	Observation Well
L.S. Elevation (ft):	1910.9	Well Type:	unknown
Depth Drilled (ft):	100	Aquifer:	Till
Screened Interval (ft):	0-100	Source:	U.S. Air Force

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, trace of sand and gravel, very stiff, brown, oxidized (TILL)	0-8
CLAY	silty, trace of sand, gravel, and lignite, very stiff to hard, brown gray, oxidized (TILL)	8-27
CLAY	silty, trace of sand, gravel, and lignite, very stiff, gray; scattered cobbles and boulders gravel 65.5-66.5 ft (TILL)	27-69
CLAY	silty, trace of sand and gravel, very stiff dark gray (TILL)	69-79
SAND	fine to coarse, gravelly, clayey, dense; interbedded clay lenses	79-86.5
CLAY	silty, trace of sand, gravel, and lignite, stiff to very stiff, dark gray brown (TILL)	86.5-100

148-082-12CCD2

NDSWC

Date Completed:	7/27/92	Purpose:	Test Hole
L.S. Elevation (ft):	1880	Well Type:	
Depth Drilled (ft):	140	Source:	Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
SAND	buff	0-8
SAND & GRAVEL		8-21
TILL	buff	21-23
SAND & GRAVEL		23-33
TILL	gray	33-44
SAND & GRAVEL		44-48
TILL	gray, boulders	48-140

148-082-12DCC

NDSWC

Date Completed:	7/23/90	Purpose:	Observation Well
L.S. Elevation (ft):	1890	Well Type:	2" PVC
Depth Drilled (ft):	258	Aquifer:	Lake Nettie
Screened Interval (ft):	248-258	Source:	Mann-Stumvoll Drilling

Lithologic Log

Unit	Description	Depth (ft)
TILL	brown	0-19
TILL	gray	19-41
SAND & GRAVEL	with abundant lignite chips	41-44
CLAY	loose, with coal chips	44-63
CLAY	gray	63-159
SAND & GRAVEL	coarse	159-165
SAND & GRAVEL	with clay stains	165-178
SAND & GRAVEL	coarse	178-258
CLAY	(possible bedrock)	258-258

148-082-12DDD1
NDSWC 11578

Date Completed:	7/17/85	Purpose:	Test Hole
L.S. Elevation (ft):	1881	Well Type:	
Depth Drilled (ft):	220	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, silty, crumbly	0-1
SILT	yellowish brown, slightly sandy, very soft, non cohesive	1-7
SAND & GRAVEL	very fine sand to medium gravel, poorly sorted, subangular to subrounded, mostly quartz, carbonates, silicates, and shale with igneous and metamorphic rock fragments	7-9
CLAY	olive tan, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine gravel, moderately to very soft, slightly to moderately cohesive and plastic, gritty, mottles of light gray, orange brown, (TILL)	9-15
CLAY	gray, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly, moderately soft, moderately cohesive and plastic, somewhat stiff, (TILL)	15-47
SAND & GRAVEL	very fine sand to medium gravel, mostly medium sand to fine gravel; poorly sorted to slightly well sorted; subangular to subrounded, mostly subrounded; mostly quartz, carbonates, shale, and lignite with igneous rock fragments	47-60
CLAY	olive gray, moderately silty, moderately sandy with very fine to very coarse sand, slightly gravelly with fine to medium gravel; moderately to very soft, moderately cohesive and sticky, very plastic; gritty, moderately lignitic with medium sand to medium gravel size fragments; rare coarse gravel size carbonate fragments; thin layers sand and gravel below 106 ft; rocks 97-98 ft; (TILL)	60-127
SAND & GRAVEL	very fine sand to medium gravel, mostly coarse sand to fine gravel, slightly well sorted, predominantly subangular; mostly shale and lignite with quartz, carbonates, and some igneous rock fragments	127-136
CLAY	olive gray as above 60-127 ft; slightly to moderately gravelly and somewhat firmer, rocks at 138-139 ft; (TILL)	136-139
CLAY	brownish olive gray, moderately silty, moderately sandy with very fine to very coarse sand but mostly very fine to medium sand, slightly gravelly with fine to medium gravel, moderately soft, moderately cohesive and plastic; gritty, somewhat stiff; slightly to moderately lignitic with layers, fragments and sand and gravel below 188 ft; (TILL)	139-203
SAND & GRAVEL	very fine sand to fine gravel with sparse medium gravel, mostly coarse sand to fine gravel, mostly subangular, predominantly shale and lignite with quartz, carbonates, and some rock fragments and sandstone	203-211
SILTSTONE	interbedded with claystone and sandstone; greenish gray to light greenish gray; nonindurated, soft, sticky, drills stiff, with maroon gray sandstone	211-217
CLAYSTONE	reddish gray with greenish gray laminae, nonindurated, firm, moderately to very friable	217-220

148-082-12DDD2
NDSWC 11578A

Date Completed:	7/17/85	Purpose:	Observation Well
L.S. Elevation (ft):	1881.2	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Lake Nettie
Screened Interval (ft):	53-58	Source:	SWC

Lithologic Log

see log of NDSWC #11578 (148-82-12DDD1) for lithologic information

148-082-13BAA
NDSWC BH-15

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	9		
		Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-5.8
SAND	very fine to coarse, very silty, slightly clayey; dark brown; poorly sorted, predominantly subrounded quartz, slightly cohesive	5.8-9

148-082-13BAB
NDSWC 11577

Date Completed:	7/16/85	Purpose:	Observation Well
L.S. Elevation (ft):	1863.96	Well Type:	1.25" PVC
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	168-173	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	very fine sand to medium gravel, poorly sorted; subangular to subrounded; mostly carbonates, shale, and quartz; brown; oxidized	0-8
CLAY	olive tan to 12 ft and dark olive brown to 15 ft; olive gray below 15 ft; moderately silty, slightly to moderately sandy and gravelly with fine sand to fine gravel; moderately soft and cohesive, slightly to moderately plastic, gritty; oxidized; some yellowish brown mottles, (TILL)	8-26
SAND & GRAVEL	very fine sand to very coarse gravel, poorly sorted; subangular to subrounded, mostly carbonates, shale, and quartz with granitics; coarse to very coarse gravel is mostly detrital lignite fragments	26-29
CLAY	dark olive gray, moderately silty to in part moderately to very silty, very slightly sandy with very fine to find sand, moderately soft; very cohesive and plastic, smooth, slightly to moderately sticky	29-77
CLAY	dark gray, moderately silty and sandy with very fine to very coarse sand, slightly gravelly, moderately to slightly soft, moderately cohesive, plastic, slightly to moderately stiff, gritty, slightly lignitic; rocks 95-96 ft; (TILL)	77-146
SAND & GRAVEL	very fine sand to medium gravel, poorly sorted, subangular, about 80% lignite fragments with quartz and carbonates to about 90% lignite	146-149
CLAY	dark gray as above, 77-146 ft; (TILL)	149-151
SAND & GRAVEL	as above 146-149 ft; lignite fragments less abundant below 170 ft	151-180

148-082-13BAD1
NDSWC BH-11

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	14	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-8
CLAY	very silty, slightly sandy with very fine to medium sand; black; very soft, non-cohesive, organic	8-11.5
CLAY	very silty and sandy with very fine to very coarse sand and minor fine gravel; dark brown; moderately soft, slightly cohesive, gritty, somewhat stiff, till?	11.5-12.5
SAND & GRAVEL	fine sand to medium gravel slightly to moderately clayey; poorly sorted, subangular to subrounded, with gray silty clay layers	12.5-14

148-082-13BAD2
NDSWC BH-12

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	31	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-9
CLAY	very silty; black; very soft, non-cohesive, organic	9-10.5
CLAY	silty; dark gray; soft, slightly cohesive, smooth, some snail shells; thin wall tube sample 10.5-12.5 ft: laboratory falling head permeability = 0.015 ft/day (lab classification as lean clay)	10.5-14

148-082-13BAD2 continued

CLAY	silty; dark brownish gray; soft, slightly to moderately cohesive, smooth, somewhat stiffer than above, scattered snail shells	14-21
CLAY	moderately silty, moderately sandy with very fine to medium sand; dark brownish gray; moderately soft and cohesive, slightly micaceous, slightly to moderately gritty	21-25
CLAY	very silty to clayey silt, very slightly sandy with very fine sand; brownish gray; slightly cohesive, smooth, very soft, abundant snail shells and layers of light brown matted plant material	25-29
CLAY	very silty to clayey silt; light brownish gray; slightly cohesive to crumbly, moderately to very soft, scattered snail shells	29-30
SAND & GRAVEL	very fine sand to fine gravel; poorly sorted, subangular to subrounded; with 1-inch thick layer of dark reddish brown, silty clay with plant material at 30 ft	30-31

148-082-13BAD3

NDSWC BH-13

Date Completed:	2/5/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	36	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-9.2
CLAY	very silty to clayey silt; black; non-cohesive, very soft, organic	9.2-9.7
SILT	very clayey to silty clay, very slightly sandy with very fine sand; dark gray; slightly cohesive, very soft, smooth, scattered small snail shells, dry	9.7-14
SILT	moderately clayey, very slightly sandy with very fine sand; brownish gray; slightly cohesive to crumbly, very soft, smooth, some snail shells, appears somewhat wetter below 15 ft	14-15.5
SILT	moderately to very clayey; mostly brown to grayish brown with 6 to 12-inch brownish gray to gray layers; very soft, crumbly to slightly cohesive, smooth; scattered slightly sandy thin layers (with very fine sand); mostly massive with bedding apparent in scattered 1 to 2-inch zones; thin layers with mottled light brown plant material below 25 ft; scattered 6-inch thick layers of brown silty clay	15.5-35
SAND & GRAVEL	very fine sand to medium gravel; gray; poorly sorted, subangular to subrounded	35-36

148-082-13BAD4

NDSWC BH-14

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	31	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-8.5
CLAY	very silty; dark blackish brown; very soft, slightly cohesive, smooth, slightly micaceous, scattered very small snail shells	8.5-10
CLAY	very silty to clayey silt; dark brown; very soft, slightly cohesive to crumbly, smooth, slightly micaceous, sparse very small snail shells	10-20
SAND	very fine to very coarse; gray; interbedded with thin layers of brownish gray sandy silt	20-23
SILT	slightly to moderately clayey, slightly to moderately sandy with very fine to fine sand in thin layers; brownish gray; slightly cohesive to crumbly, moderately to very soft, scattered to common snail shells	23-29
SAND & GRAVEL	very fine sand to medium gravel; gray; poorly sorted, subangular to subrounded, with scattered thin layers of detrital lignite fragments	29-31

148-082-13BBA1

NDSWC 11576

Date Completed:	7/16/85	Purpose:	Observation Well
L.S. Elevation (ft):	1858.88	Well Type:	2" PVC
Depth Drilled (ft):	260	Aquifer:	Lake Nettie
Screened Interval (ft):	217-222	Source:	SWC

Lithologic Log

148-082-13BBA1 continued

Unit	Description	Depth (ft)
SAND & GRAVEL	very fine sand to medium gravel, mostly fine to very coarse sand, poorly sorted; subangular to subrounded; mostly quartz, shale, and carbonates with granitic fragments; oxidized	0-27
CLAY	gray, moderately silty, moderately to very sandy and slightly gravelly with very fine to very coarse sand and sparse fine gravel; moderately to very soft, moderately cohesive and plastic; gritty, somewhat sticky, (TILL)	27-41
CLAY	olive gray, very silty, very soft and sticky, slightly cohesive and plastic; smooth, lighter colored laminations in some cuttings	41-90
CLAY	gray, moderately silty, moderately sandy and gravelly with very fine sand to fine gravel; moderately soft, cohesive, and plastic; gritty; lenses of sand and gravel, (TILL)	90-109
SAND & GRAVEL	medium sand to medium gravel, poorly sorted; mostly subangular shale and lignite with quartz, carbonates, and granitics, medium sand to coarse gravel below 121 ft; with shale and lignite less dominant	109-126
CLAY	olive gray, moderately to very silty, very soft, moderately to very sticky, moderately cohesive and plastic, smooth	126-147
SAND & GRAVEL	medium sand to medium gravel, poorly sorted, mostly subangular, predominantly lignite fragments with shale, quartz, carbonates, silicates, and some igneous rock fragments; occasional thin layers of silty gray clay; about 70-80% lignite, lignite fragments subangular and mostly fine to medium gravel size	147-160
SAND & GRAVEL	medium sand to coarse gravel, poorly sorted, mostly subangular, predominantly lignite fragments with shale, quartz, carbonates, and silicates, and igneous rock fragments; about 60%-70% lignite; lignite fragments mostly very coarse sand to coarse gravel size	160-251
SANDSTONE	light greenish gray, very fine to fine, well sorted; hard indurated, slightly friable	251-253
CLAYSTONE	dark gray, slightly to moderately silty, moderately firm, very friable, moderately plastic, nonindurated; drills stiff	253-260

148-082-13BBA2
NDSWC 11576A

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1859.16	Well Type:	1.25" PVC
Depth Drilled (ft):	35	Aquifer:	Lake Nettie
Screened Interval (ft):	22-27	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND	gravelly; coarse sand to pebbles, predominantly coarse to very coarse sand; angular to mostly subrounded to rounded; mostly limestone and quartz with some igneous granules and pebbles; oxidized to 20 ft	0-27
CLAY	very silty, olive gray; soft, slightly brittle (TILL)	27-35

148-082-13BBA3
NDSWC BH-6

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	11.5	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-7.1
CLAY	very silty to clayey silt, sandy and gravelly; black; loose, very soft, organic matter	7.1-7.4
SAND & GRAVEL	very fine sand to medium gravel; yellowish brown, oxidized; subangular to subrounded, poorly sorted	7.4-8.6
SAND & GRAVEL	very fine sand to medium gravel, slightly to moderately silty and clayey; grayish brown; subangular to subrounded, poorly sorted	8.6-9.1
SAND & GRAVEL	yellowish brown; as above, 7.4-8.6 ft	9.1-11.5

148-082-13BBA4

NDSWC BH-7

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	18	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-9
CLAY	very silty, slightly sandy with very fine to fine sand; black; very soft, slightly cohesive, snail shells common	9-10.5
CLAY	very silty; dark grayish brown; soft, slightly to moderately cohesive	10.5-14.5
SAND & GRAVEL	very fine sand to medium gravel, slightly silty; gray; poorly sorted, subangular to subrounded	14.5-18

148-082-13BBA5

NDSWC BH-8/8A

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	61	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-9.3
SILT	slightly clayey; black; loose, abundant organic matter	9.3-10.3
CLAY	moderately to very silty; dark brown; very soft, slightly cohesive to crumbly, smooth, snail shells common; thin wall tube sample 10.5-12.5 ft: laboratory falling head permeability = 0.15 ft/day (lab classification as lean clay); thin wall tube sample 16-18 ft: laboratory falling head permeability = 0.054 ft/day (lab classification as lean clay);	10.3-17
CLAY	silty; brown to dark brown; very soft, crumbly, smooth	17-25
CLAY	silty; dark brown to black; very soft, slightly to moderately cohesive, smooth, some small mica flakes	25-32
CLAY	silty; brown with grayish brown zones; very soft, slightly to moderately cohesive, smooth, slightly micaceous, scattered snail shells; scattered thin layers of light grayish brown silt	32-41
CLAY	moderately silty; dark brown with thin light brown layers; moderately soft; slightly to moderately cohesive, somewhat stiff, smooth, slightly micaceous	41-54
SILT	moderately clayey; light greenish with yellow; very soft, slightly cohesive to crumbly, mostly smooth but in part very slightly sandy with very fine to fine sand; thin bedding structures apparent; scattered thin layers of brown clay as above	54-59.5
CLAY	very silty to clayey silt; dark gray; moderately soft, slightly cohesive, some snail shells; vaguely bedded with moderately sandy (very fine to fine sand) layers and layers of gray very fine to very coarse sand to 1-inch thick	59.5-61

148-082-13BBA6

NDSWC BH-9

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	31	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-9.1
CLAY	very silty; black; very soft, loose, abundant organic matter	9.1-10.6
CLAY	very silty; black; moderately to very soft, slightly cohesive, smooth, slightly micaceous, scattered snail shells	10.6-15
CLAY	as above (10.6-15 ft); with common zones of dark brown moderately clayey non-micaceous silt, moderately to very soft, slightly cohesive to crumbly	15-29.5
SAND	very fine to medium; gray with brown and brownish gray mottles; moderately well sorted, subrounded to rounded; some accumulation of snail shells and bleached plant matter at top of interval	29.5-31

148-082-13BBA7
NDSWC BH-10

Date Completed:	2/4/86	Purpose:	Test Hole
L.S. Elevation (ft):	1853	Well Type:	
Depth Drilled (ft):	11	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-8.5
SILT	slightly clayey, slightly to moderately sandy with very fine to fine sand; black; very soft, non-cohesive, abundant organic matter and plant material	8.5-9
SAND & GRAVEL	very fine sand to medium gravel; subangular, poorly sorted; moderately to very clayey and silty to a sandy, gravelly, silty clay till; yellowish brown with light grayish brown mottles	9-11

148-082-13BBB1
NDSWC 3932

Date Completed:	11/21/69	Purpose:	Observation Well
L.S. Elevation (ft):	1849.9	Well Type:	1.25" ABS
Depth Drilled (ft):	280	Aquifer:	Lake Nettie
Screened Interval (ft):	18-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
GRAVEL	fine to medium, angular to subrounded; interbedded with fine to coarse sand; iron stained; dry to 7 ft	0-26
CLAY	silty, medium gray, smooth	26-31
GRAVEL	fine to medium; interbedded with fine to coarse sand	31-47
CLAY	silty, pebbly, soft, olive gray; scattered sand (TILL)	47-79
CLAY	silty soft, olive gray; with lenses of sand and fine gravel (TILL)	79-120
SILT	clayey, with some very fine sand, olive gray	120-163
SAND	fine to medium, light olive gray; with some silty lenses	163-216
SAND	very fine to fine, clayey, black; interbedded with sandy clay	216-232
GRAVEL	medium to coarse, slightly sandy subangular to subrounded; scattered cobbles	232-250
SHALE	silty, sandy (with very fine sand), moderately hard, brittle, carbonaceous, medium gray (Fort Union Group)	250-280

148-082-13BBB2
NDSWC 11746

Date Completed:	1/8/86	Purpose:	Observation Well
L.S. Elevation (ft):	1863.52	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	28-33	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark reddish brown, sandy and gravelly	0-1
SAND & GRAVEL	yellowish brown, fine sand to coarse gravel, mostly coarse sand to medium gravel, poorly sorted; predominantly subangular; slightly lignitic, mostly shale, carbonates, quartz, and igneous rock fragments; oxidized	1-22
CLAY	gray to dark gray, moderately silty, moderately sandy and slightly gravelly with fine sand to fine gravel; moderately soft and cohesive, somewhat stiff, gritty, (TILL)	22-29
SAND & GRAVEL	as above, mostly gray, unoxidized	29-35
CLAY	gray as above to olive gray; with layers of brownish gray; very sandy clay to clayey sand, very fine to medium, moderately well sorted; very silty	35-40

148-082-13BBB3
NDSWC 11746A

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1864.04	Well Type:	1.25" PVC
Depth Drilled (ft):	30	Aquifer:	Lake Nettie
Screened Interval (ft):	17-23	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-3
SAND & GRAVEL	coarse sand to pebble gravel, predominantly very coarse sand and fine gravel; angular to mostly subrounded to rounded; quartz and limestone fragments; oxidized	3-21
CLAY	silty, sandy, pebbly; oxidized yellowish to 24 ft, gray below; soft, plastic (TILL)	21-30

148-082-14AAB
NDSWC 11748

Date Completed:	1/9/86	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	20	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	yellowish brown, oxidized; medium sand to fine gravel, mostly coarse to very coarse sand with fine gravel, moderately well sorted; carbonates, silicates, and shale	0-12
CLAY	yellowish olive brown, moderately silty, moderately to very soft, cohesive, sticky	12-13
CLAY	gray, moderately silty, moderately soft, cohesive, sticky, somewhat stiff; circulation line broke, terminated drilling	13-20

148-082-14CDD
NDSWC

Date Completed:	7/1/77	Purpose:	Domestic Well
L.S. Elevation (ft):	1885	Well Type:	4" Steel
Depth Drilled (ft):	189	Aquifer:	Lake Nettie
Screened Interval (ft):	189-189	Source:	Broneske Well Drilling

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY		1-45
SAND		45-48
CLAY	gray and sand	48-130
SAND		130-132
CLAY	sandy	132-184
SAND	fine	184-188
SAND & GRAVEL		188-189

148-082-15BBB
NDSWC 3933

Date Completed:	11/21/69	Purpose:	Observation Well
L.S. Elevation (ft):	1845.83	Well Type:	1.25" ABS
Depth Drilled (ft):	250	Aquifer:	Lake Nettie
Screened Interval (ft):	178-198	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
Clay	black (topsoil).	0-2

148-082-15BBB continued

Clay	silty, plastic, white.	2-5
Clay	silty, sandy, pebbly, olive brown (TILL).	5-18
Clay	silty, sandy, pebbly, olive gray few isolated gravel lenses (TILL).	18-70
Clay	silty, sandy, pebbly, olive gray to yellowish brown (TILL).	70-81
Clay	silty, sandy, pebbly, olive-gray (TILL).	81-134
Gravel	fine to coarse, sandy, lignitic, angular to rounded, and cobbles.	134-237
Shale	very sandy (with very fine sand), carbonaceous, brittle, brownish gray (Fort Union Group)	237-250

148-082-21BBB

NDSWC 4102

Date Completed:	8/14/70	Purpose:	Observation Well
L.S. Elevation (ft):	1873	Well Type:	1.25" PVC
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	180-200	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	pebbly, silty, black	0-1
SILT	clayey, sandy, yellowish gray; scattered pebbles (TILL)	1-5
CLAY	silty, sandy, pebbly, moderate olive gray (TILL)	5-29
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL)	29-80
GRAVEL	fine to medium, sandy, subangular to subrounded	80-100
SILT	clayey, olive gray	100-104
SAND	medium subrounded, medium gray	104-108
CLAY	stiff, dark gray	108-114
CLAY	silty, sandy, pebbly, lignitic, olive gray (TILL)	114-126
GRAVEL	fine to medium, subangular to subrounded	126-131
CLAY	silty, sandy, pebbly, lignitic, olive gray; isolated gravel lenses (TILL)	131-159
SAND	very fine to coarse, silty, subangular; mostly shale and lignite	159-180
GRAVEL	fine to coarse, angular to subrounded	180-195
SANDSTONE	fine, grayish green (Fort Union Group)	195-204
SANDSTONE	very fine, silty, hard, light gray to grayish green (Fort Union Group)	204-220

148-082-21DDD

NDSWC 11501

Date Completed:	10/11/84	Purpose:	Observation Well
L.S. Elevation (ft):	1869.03	Well Type:	1.25" PVC
Depth Drilled (ft):	186	Aquifer:	Lake Nettie
Screened Interval (ft):	168-173	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	olive brown, silty, sandy, pebbly oxidized; olive gray and unoxidized below 31 ft; soft, (TILL)	0-44
SILT	greenish gray, slightly clayey	44-46
CLAY	olive gray, silty, sandy, pebbly, (TILL)	46-68
GRAVEL	very fine to coarse pebble, predominantly very fine to fine pebble; detrital lignite; interbedded with fine to very coarse sand	68-83
CLAY	olive gray, silty, sandy, pebbly; firm, (TILL); black lignite boulder 138-139 ft	83-140
GRAVEL	very fine to coarse pebble, predominantly fine to medium pebble; some cobbles	140-178
GRAVEL	coarse, cobbly; (terminated drilling at 186 ft due to repeated loss of drilling mud)	178-186

148-082-22BBB
NDSWC 11500

Date Completed:	10/10/84	Purpose:	Observation Well
L.S. Elevation (ft):	1875.32	Well Type:	1.25" PVC
Depth Drilled (ft):	220	Aquifer:	Lake Nettie
Screened Interval (ft):	125-130	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	olive brown to 28 ft; silty, sandy, pebbly, olive brown, oxidized to 28 ft; olive gray and unoxidized below 28 ft; (TILL)	0-69
SAND	and silt, interbedded (?)	69-72
SAND	fine to medium, gray	72-83
SILT	gray, clayey	83-107
CLAY	olive gray, silty, sandy, pebbly, (TILL)	107-124
GRAVEL	fine to coarse pebble, cobbly in part	124-132
CLAY	olive gray, silty, sandy, pebbly, (TILL)	132-154
SAND & GRAVEL	coarse sand to fine pebble; with detrital lignite	154-162
ROCK		162-163
GRAVEL	very fine to coarse pebble with some coarse to very coarse sand; cobbly (particularly near base); with detrital lignite	163-191
CLAY	grayish brown, silty, firm, noncalcareous; with thin beds of brown lignite, (Fort Union Group, bedrock)	191-220

148-082-23BBB
NDSWC 3931

Date Completed:	11/20/69	Purpose:	Observation Well
L.S. Elevation (ft):	1883.56	Well Type:	1.25" ABS
Depth Drilled (ft):	300	Aquifer:	Lake Nettie
Screened Interval (ft):	198-204	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, clayey, pebbly, yellowish gray, with iron stains (TILL)	0-6
CLAY	silty, sandy, pebbly, moderate olive brown (TILL)	6-28
CLAY	silty, sandy, olive gray; scattered pebbles (TILL)	28-62
SAND	coarse to very coarse, with some fine gravel	62-76
CLAY	stiff, dark gray to black	76-82
SAND	fine, lignitic, dark gray	82-94
CLAY	silty, stiff, olive gray	94-122
GRAVEL	fine to medium, sandy, subangular to rounded	122-142
CLAY	silty, olive gray; scattered sand and pebbles (TILL)	142-164
GRAVEL	fine to coarse, sandy, subangular to rounded	164-197
SAND	medium to coarse, subangular to subrounded	197-211
GRAVEL	fine to coarse, sandy, subangular to rounded	211-229
SAND	medium to coarse, gravelly, lignitic	229-256
GRAVEL	medium to coarse, with some cobbles	256-266
SAND	very fine to fine, slightly clayey, micaceous, light greenish gray to greenish gray (Fort Union Group, bedrock)	266-280
SHALE	very silty, sandy, moderately hard, brittle, micaceous, light gray (Fort Union Group, bedrock)	280-300

148-082-23BCB1

NDSWC BH-1/1A

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1866	Well Type:	
Depth Drilled (ft):	8.5	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-2.8
CLAY	black, silty, very loose; slighlty sandy with very fine to fine sand, organic matter, very soft, wet	2.8-3.6
CLAY	greenish dark gray, silty, slightly to moderately sandy with very fine to fine sand; moderately soft, slightly cohesive to somewhat crumbly, organic matter, wet	3.6-3.8
CLAY	very silty to clayey silt, greenish gray; moderately soft, slightly cohesive; yellowish brown oxidized mottles, dry	3.8-4.3
SILT	slighlty clayey, moderately sandy with very fine to medium sand, slighlty gravelly with scattered pebbles; greenish gray, slighlty crumbly; sand in thin beds but gravel dispersed; dry	4.3-5.8
CLAY	moderately silty, slighlty sandy with very fine to fine sand; greenish gray with yellowish gray mottles, slighlty cohesive, dry	5.8-8.1
CLAY	silty, sandy and gravelly; yellowish brown with mottles of gray; somewhat stiff, moderately cohesive, oxidized till	8.1-8.5

148-082-23BCB2

NDSWC BH-2

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1866	Well Type:	
Depth Drilled (ft):	12	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-4
CLAY	very silty; black; very soft, loose, organic matter, wet	4-5.5
CLAY	moderately to very silty; black; moderately soft, very cohesive, somewhat stiff, scattered snail shells, wet	5.5-5.9
CLAY	moderately silty; dark gray; slighlty soft, very cohesive, moderately stiff, dry	5.9-9
CLAY	slighlty to moderately silty; dark brownish gray; slighlty soft to firm, moderately stiff, dry	9-11
CLAY	silty, sandy , gravelly; yellowish brown; slighlty soft, moderately stiff and cohesive; oxidized till, dry	11-12

148-082-23BCB3

NDSWC BH-3

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1866	Well Type:	
Depth Drilled (ft):	13.5	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-4.8
CLAY	dark gray (lab classification from thin wall tube sample, not described in field); thin wall tube sample: laboratory falling head permeability = 0.0037 ft/day	4.8-7.5
CLAY	moderately silty; dark olive gray to black; slighlty to moderately soft, moderately cohesive, somewhat stiff	7.5-9
CLAY	as above but with mottles of olive green; slighlty stiffer; slighlty sandy with very fine to medium sand; some snail shells, dry?	9-12
CLAY	moderately silty; light gray with layers of dark gray clay as above	12-13
CLAY	very sandy with fine to very coarse sand, moderately to very silty; yellowish brown with scattered gray mottles; crumbly to loose, moderately soft	13-13.5

148-082-23BCB4
NDSWC BH-4

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1866	Well Type:	
Depth Drilled (ft):	10	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-4.5
CLAY	moderately silty; dark gray; very soft, slightly cohesive to crumbly; lighter color 6.0-6.5 ft	4.5-6.5
CLAY	moderately silty; dark gray; moderately soft and cohesive, somewhat stiff, dry	6.5-7.5
CLAY	moderately silty and sandy, slightly gravelly; yellowish brown; moderately soft and stiff, slightly cohesive to crumbly; oxidized till	7.5-10

148-082-23BCB5
NDSWC BH-5

Date Completed:	2/3/86	Purpose:	Test Hole
L.S. Elevation (ft):	1866	Well Type:	
Depth Drilled (ft):	7.5	Source:	NDSWC

Lithologic Log

Unit	Description	Depth (ft)
Ice & Water	depth from ice surface to slough bottom, measured through borehole in ice	0-3.6
CLAY	sandy, gray (lab classification from thin wall tube sample, not described in field); thin wall tube sample: laboratory falling head permeability = 0.00059 ft/day	3.6-5.6
CLAY	moderately silty and sandy, slightly gravelly with fine sand to sparse medium gravel; yellowish brown with gray mottles; slightly soft to firm; moderately stiff and cohesive; oxidized till, dry	5.6-7.5

148-082-24ABB1
NDSWC 2739

Date Completed:	8/4/67	Purpose:	Observation Well
L.S. Elevation (ft):	1856.17	Well Type:	1.25" ABS
Depth Drilled (ft):	230	Aquifer:	Lake Nettie
Screened Interval (ft):	198-201	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SILT	clayey, grayish black (topsoil).	0-1
CLAY	silty, sandy, yellowish orange (TILL).	0-9
CLAY	silty, gravelly, lignitic, olive gray (TILL).	9-20
SAND	medium to coarse.	20-26
SAND & GRAVEL	coarse Sand to fine Gravel, subangular to subrounded.	26-36
SAND	very fine to fine, silty, clayey, subangular to rounded,	36-68
SAND	very fine to fine.	68-74
CLAY	silty, gravelly, olive gray, with layers of hard clay (TILL).	74-140
GRAVEL	medium to coarse, clayey, angular to subrounded.	140-152
GRAVEL	boulders, cobbles, and sand; isolated clay lenses.	152-205
SANDSTONE	fine to medium, noncalcareous, bluish gray (Fort Union Group)	205-230

148-082-24ABB2
NDSWC 2739A

Date Completed:	6/10/86	Purpose:	Observation Well
L.S. Elevation (ft):	1856.03	Well Type:	1.25" PVC
Depth Drilled (ft):	40	Aquifer:	Lake Nettie
Screened Interval (ft):	32-37	Source:	SWC

Lithologic Log

148-082-24ABB2 continued

Unit	Description	Depth (ft)
TOPSOIL		0-1
CLAY	silty, sandy, pebbly, soft, plastic, oxidized, dark yellowish orange, (TILL)	1-10
CLAY	silty, sandy, pebbly, soft, plastic, unoxidized, olive gray, (TILL)	10-18
SAND	gravelly, medium sand to fine gravel, predominantly coarse to very coarse sand; quartz, limestone, and shale fragments; subrounded to rounded; coarse to very coarse below 30 ft with much coarser pebbles to 1.5 inches	18-36
CLAY	silty, soft, plastic, olive gray	36-40

148-082-26BBB

NDSWC 11574

Date Completed:	7/15/85	Purpose:	Observation Well
L.S. Elevation (ft):	1880.43	Well Type:	1.25" PVC
Depth Drilled (ft):	154	Aquifer:	Lake Nettie
Screened Interval (ft):	139-143	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	reddish brown, silty, sandy	0-1
CLAY	yellowish brown, moderately silty, moderately to very sandy, slightly to moderately gravelly, very fine sand to medium gravel; moderately to very soft, slightly cohesive to crumbly, slightly plastic, gritty, oxidized; sand and gravel lens 5-6 ft; (TILL)	1-16
CLAY	dark brownish gray to gray below 28 ft; moderately silty, moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine to medium gravel, moderately soft, cohesive, and plastic, somewhat stiff; gritty; carbonate, shale, and lignite fragments, slightly micaceous, (TILL)	16-55
SAND & GRAVEL	very fine sand to fine gravel, poorly sorted, subangular to subrounded, mostly shale, quartz, and carbonates with some igneous rock fragments	55-58
CLAY	as above, 16-55 ft; (TILL)	58-66
CLAY	olive gray to olive brown, very silty to clayey silt, soft, slightly cohesive, nonplastic to slightly plastic, smooth	66-72
CLAY	dark gray, sandy and gravelly, moderately soft and stiff, gritty, cohesive, plastic; (TILL)	72-76
CLAY	very silty, as above, 66-72 ft	76-88
SAND & GRAVEL	very fine sand to medium gravel, mostly coarse sand to fine gravel, slightly well sorted, subangular to subrounded, predominantly carbonates, shale, and quartz with igneous rock fragments	88-89
CLAY	dark gray, slightly to moderately silty, slightly sandy and gravelly with very fine sand to fine gravel, moderately soft and stiff, plastic and cohesive, somewhat gritty to smooth; stiffer below 103 ft; thin sandy layers, (TILL)	89-111
SAND & GRAVEL	very fine sand to coarse gravel, poorly sorted, subangular to subrounded, carbonates, shale, quartz, silicates with igneous rock fragments	111-116
CLAY	dark olive gray, moderately silty, slightly micaceous, slightly soft, moderately cohesive, slightly plastic, moderately to very stiff, somewhat blocky, smooth	116-119
CLAY	dark gray to dark olive gray, moderately silty to very silty in part, slightly to moderately sandy with very fine to fine sand, very slightly gravelly with scattered fine to coarse gravel; moderately soft, slightly cohesive and very plastic to moderately cohesive and plastic, moderately stiff and tight drilling; somewhat gritty to smooth, some detrital sandstone fragments; (TILL)	119-142
SAND & GRAVEL	very fine sand to medium gravel, mostly coarse sand to medium gravel; poorly sorted to slightly well sorted, subangular to subrounded, mostly carbonates, lignite, shale, silicates, and quartz with sandstone and igneous rock fragments; (caving and taking water, could not maintain circulation, abandoned drilling to construct observation well)	142-154

148-082-26DAA

NDSWC 11573

Date Completed:	7/15/85	Purpose:	Observation Well
L.S. Elevation (ft):	1868.06	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Fort Union
Screened Interval (ft):	113-118	Source:	SWC

Lithologic Log

148-082-26DAA continued

Unit	Description	Depth (ft)
TOPSOIL	dark brown, silty, sandy	0-1
SAND & GRAVEL	coarse sand to coarse gravel, poorly sorted, subangular to subrounded, mostly carbonates and quartz	1-3
CLAY	olive tan to 22 ft, dark grayish tan below 22 ft; moderately silty, moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine to medium gravel, moderately soft, moderately cohesive, slightly plastic, carbonaceous streaks and dark brown and some brownish gray mottles; also orange mottles; oxidized, (TILL)	3-26
SAND	very fine to very coarse, mostly very fine to medium, slightly well sorted, subangular to subrounded	26-30
SILT	brownish gray, moderately clayey, very soft, slightly cohesive and plastic, some thin sand layers; smooth	30-39
CLAY	dark gray, slightly silty, moderately to slightly soft, slightly cohesive to blocky, moderately plastic, smooth, interbedded with scattered thin layers of silt as above	39-62
CLAY	dark brownish gray, moderately silty, moderately sandy with very fine to very coarse sand, slightly to moderately gravelly with fine to coarse gravel mostly fine gravel (carbonates); moderately soft, moderately cohesive and plastic; gritty, moderately to very gravelly in layers below 68 ft; (TILL)	62-71
SANDSTONE	very fine, well sorted, hard, indurated, greenish white, 'salt and pepper'	71-72
CLAYSTONE	dark gray, brownish gray, silty, sand, soft, nonindurated, some sandstone layers	72-84
SANDSTONE	dark gray, very fine to fine, well sorted, nonindurated, loose, soft, interbedded with lignite layers	84-120

148-082-34AAA
NDSWC 4103

Date Completed:	8/14/70	Purpose:	Test Hole
L.S. Elevation (ft):	1893	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, black	0-1
SILT	clayey, sandy, yellowish gray; scattered pebbles (TILL)	1-5
CLAY	silty, sandy, pebbly, dusky yellow to moderate olive brown (TILL)	5-24
CLAY	silty, sandy, pebbly, lignitic, moderate olive brown to olive gray (TILL)	24-50
SAND	medium, subangular to subrounded, light olive gray	50-59
CLAY	plastic, dark olive gray	59-70
LIGNITE	hard, black (Fort Union Group, bedrock)	70-72
SANDSTONE	very fine to fine, micaceous, carbonaceous, greenish gray (Fort Union Group)	72-140

148-082-36CCB
NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1890	Well Type:	
Depth Drilled (ft):	100	Source:	U.S. Air Force

Lithologic Log

Unit	Description	Depth (ft)
CLAY	and Silt, sandy, trace of lignite, stiff, brown	0-8
CLAY	silty, sandy, trace of gravel and lignite, stiff to very stiff, brown	8-19
CLAY	and Silt, trace of sand, very stiff, gray	19-31
SAND	fine, silty, clayey, trace of lignite, very dense, gray	31-34
CLAY	silty, trace of sand, gravel, and lignite, very stiff, dark gray	34-58.5
SAND	fine, silty, thin lignite lenses, trace of clay, dense, brown to dark gray (probable top of Fort Union Group, bedrock)	58.5-72
LIGNITE	soft to hard, black	72-80.5
SILT	clayey, very dense, gray	80.5-83
SHALE	silty, moderately soft, gray brown to black	83-88.5

148-082-36CCB continued

LIGNITE	fissile, hard, black; interbedded sand and shale	88.5-92.5
SAND	fine, silty, trace of lignite, very dense, light gray	92.5-100

148-083-02DDD
NDSWC 5593

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1850	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, clayey, grayish black	0-1
CLAY	silty, grayish black to black; fill	1-3
CLAY	silty, dusky yellow to dark yellowish brown, scattered sand and pebbles (TILL)	3-20
CLAY	silty, sandy, pebbly. olive gray, (TILL).	20-25
GRAVEL	fine to very coarse, sandy	25-43
CLAY	silty, olive gray, scattered sand and pebbles (TILL).	43-90
GRAVEL	fine to coarse, sandy. angular to rounded	90-96
SANDSTONE	very fine to fine, silty, clayey, noncalcareous; medium bluish gray with brownish gray laminae (Fort Union Group)	96-120

148-083-09DDD
NDSWC 5594

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1900	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, pebbly, dark yellowish brown	0-1
CLAY	silty, sandy, pebbly, moderate yellowish brown (TILL)	1-68
CLAY	silty, olive gray to medium dark gray, scattered sand and pebbles (TILL)	68-106
GRAVEL	fine to coarse, sandy, angular to subrounded	106-109
CLAY	silty, olive gray; scattered sand and pebbles (TILL)	109-131
SANDSTONE	very fine to fine, silty, clayey, lignitic, noncalcareous, medium bluish gray (Fort Union Group)	131-140

148-083-18BBC
NDSWC 5794

Date Completed:	9/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	1947	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, pebbly, brownish black	0-1
CLAY	silty, sandy, pebbly, moderate yellowish brown; scattered pebbles (TILL)	1-30
SHALE	sandy, hard, calcareous, light gray to brownish gray; interbedded with Siltstone (Fort Union Group)	30-48
SHALE	clayey, sandy, hard, calcareous, medium gray to brownish gray; interbedded with Siltstone (Fort Union Group)	48-60

148-083-18CBB

NDSWC 5793

Date Completed:	9/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	1952	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, pebbly, brownish black	0-1
CLAY	silty, sandy, pebbly, moderate yellowish brown; scattered cobbles (TILL)	1-24
SAND	fine to medium, lignitic, subangular to subrounded	24-28
SILTSTONE	clayey, hard, noncalcareous, medium gray; interbedded with shale and lignite (Fort Union Group)	28-60

148-083-19CCC

NDSWC 5792

Date Completed:	9/11/70	Purpose:	Test Hole
L.S. Elevation (ft):	1870	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, brownish black	0-2
GRAVEL	fine to coarse, sandy, silty, clayey; angular to subrounded	2-8
CLAY	silty, sandy, pebbly, olive gray; scattered cobbles and lignite (TILL)	8-23
SHALE	clayey, hard, calcareous, medium gray; interbedded with siltstone (Fort Union Group)	23-40

148-083-20DDA

NDSWC

Date Completed:	7/20/50	Purpose:	Test Hole
L.S. Elevation (ft):	1864.1	Well Type:	
Depth Drilled (ft):	87	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, friable, dark brown; scattered medium gravel (TILL)	0-4
CLAY	sandy, brownish gray to dark gray at 31 ft; trace of lignite and clinker; scattered fine to very coarse gravel 4-17 ft and 31-51 ft; (TILL)	4-51
SAND	fine, loose, rusty brown to gray; trace of fine gravel and lignite	51-61.2
GRAVEL	sandy, silty, loose, brownish gray; trace of lignite	61.2-63.8
CLAY	sandy, dark gray; scattered lignite fragments and fine to coarse gravel (TILL)	63.8-69
SAND	coarse, loose, dark gray; trace of gravel	69-72.2
CLAY	subfirm, light bluish gray, plastic; few carbonaceous streaks and limestone nodules; hard lignite layer 77-78 ft (Fort Union Group)	72.2-87

148-083-21CCC

NDSWC

Date Completed:	5/22/50	Purpose:	Test Hole
L.S. Elevation (ft):	1877.2	Well Type:	
Depth Drilled (ft):	95.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
Silt	dark brown	0-0.6
Clay (till)	stiff, calcareous, light-brown; trace of lignite; scattered gravel	0.6-3.6
Clay (till)	sandy, calcareous, brown; trace of lignite; scattered gravel	3.6-45.4

148-083-21CCC continued

Clay	plastic, dark grayish brown; carbonaceous streaks and gypsum crystals	45.4-53.4
Clay	brown	53.4-54.3
Sand	silty, gravelly, loose, brown	54.3-56.6
Sand	silty friable, brown; some gravel	56.6-57.3
Gravel	coarse to very coarse, silty, sandy, compact, brown	57.3-60.3
Sand	silty, gravelly, loose, light brown	60.3-62.2
Sand	silty, loose, light brown; 8 percent gravel	62.2-63.4
Gravel	coarse, sandy, silty, loose	63.4-64.3
Silt	sandy, friable, light brown	64.3-65.4
Sand	fine, silty, loose, light gray to brown	65.4-68.1
Sand	fine, loose, light brown; trace of lignite, slightly silty	68.1-70
Silt	sandy, light grayish brown	70-71.3
Sand	fine, silty, loose, light brown; trace of lignite- scattered fine gravel	71.3-72.8
Sand	gravelly, silty, loose, dark brown	72.8-74.5
Sand	fine, loose, brownish gray; scattered fine gravel	74.5-75.1
Gravel	fine, sandy, loose, grayish brown	75.1-76
Gravel	fine to very coarse, loose, grayish brown	76-80
Sand	coarse, gravelly, loose, gray, trace of lignite	80-83.5
Sand	fine, loose, dark gray; trace of fine gravel and lignite	83.5-85.2
Clay (till)	sandy, dark gray; few lignite fragments and scattered coarse gravel	85.2-88.6
CLAY	plastic, dark gray; few lignite fragments (Fort Union Group, bedrock)	88.6-90
CLAY	stiff, dark gray; few lignite fragments (Fort Union Group, bedrock)	90-91.4
CLAY	silty, friable, blue gray; few carbonaceous streaks and limestone nodules (Fort Union Group, bedrock)	91.4-95.5

148-083-23CBB

NDSWC

Date Completed:	1/20/50	Purpose:	Test Hole
L.S. Elevation (ft):	1832	Well Type:	
Depth Drilled (ft):	151	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	(TILL)	0-93
SAND	fine; gravelly from 96 to 102 ft, (SP)	93-109
CLAY	gravelly from 112-114 ft; (TILL)	109-122
SAND	gravelly (SP)	122-127.5
SILT	sandy (ML)	127.5-129
SAND	clayey (SC)	129-132
SAND	fine, silty (SM)	132-140
SILT	sandy (ML)	140-144
CLAY	(CL)	144-146
CLAYSTONE	(Fort Union Group)	146-151

148-083-28BBD

NDSWC

Date Completed:	7/18/50	Purpose:	Test Hole
L.S. Elevation (ft):	1860.9	Well Type:	
Depth Drilled (ft):	84	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, friable, dark brown	0-2.4
CLAY	sandy, brownish gray (TILL)	2.4-48

148-083-28BBD continued

SAND	fine, silty, loose, grayish brown	48-53.2
GRAVEL	silty, sandy, loose, brown	53.2-56.6
SAND	fine, loose, gray brown	56.6-58
SAND	gravelly, loose, brownish gray; scattered lignite fragments	58-63
SAND	coarse, gravelly, loose, gray	63-64.8
CLAY	sandy, dark gray (TILL)	64.8-67.2
CLAY	subfirm, dark brown (Fort Union Group, bedrock)	67.2-68
CLAY	plastic, dark bluish gray (Fort Union Group, bedrock)	68-71.2
SILT	sandy, friable, bluish gray (Fort Union, Group, bedrock)	71.2-76.5
LIMESTONE	hard gray (Fort Union Group, bedrock)	76.5-77.4
SILT	sandy, friable, bluish gray (Fort Union Group, bedrock)	77.4-81.6
CLAY	plastic, dark bluish gray (Fort Union Group, bedrock)	81.6-84

148-083-28BCA

NDSWC

Date Completed:	12/5/49	Purpose:	Test Hole
L.S. Elevation (ft):	1861.5	Well Type:	
Depth Drilled (ft):	263.9	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
ALLUVIUM		0-3.8
CLAY	lean, brown	3.8-5.1
CLAY	sandy, brown; scattered lignite and scoria; 5% gravel (TILL)	5.1-47
SAND	silty, loose, light gray; 1% gravel	47-48.6
SAND	loose, light gray	48.6-51.6
SILT	sandy, loose, light gray	51.6-53.4
SILT	sandy, gravelly, loose, light gray; 15% gravel	53.4-54.8
GRAVEL	silty, sandy, loose, brownish gray	54.8-56.4
SAND	silty, gravelly, loose, light brown	56.4-58.2
GRAVEL	silty, sandy, loose, brown	58.2-62.5
CLAY	soft, gray, weathered to a depth of 1 ft; scattered lignite fragments near base; (Top of Bedrock - Fort Union Group)	62.5-72.1
LIGNITE	hard, black	72.1-73.5
CLAY	soft, gray	73.5-75
GRAVEL		75-75.5
SILT	sandy, gray	75.5-77.8
CLAY	subfirm, gray	77.8-81.9
CLAY	plastic, gray	81.9-84
LIGNITE	hard black	84-86.2
SILT	sandy, friable, gray; thin clay streaks	86.2-89
CLAY	plastic, gray; streaks of silt and sand	89-91.3
CLAY	and interbedded sandy silt, gray	91.3-95.2
CLAY	plastic, gray, occasional hard limestone streaks	95.2-103.8
LIGNITE	hard, black	103.8-106.6
CLAY	and interbedded silt and sand, grayish brown	106.6-108.3
CLAY	plastic, gray; carbonaceous streaks	108.3-117.8
LIGNITE	hard, black	117.8-118.4
CLAY	plastic, greenish gray to brownish gray; scattered limestone concretions and carbonaceous streaks	118.4-130
CLAY	subfirm, gray; streaks of silt and sand	130-133.3
CLAY	plastic, gray	133.3-135
SILT	sandy, gray; clay lenses and carbonaceous streaks	135-139.7
SANDSTONE	hard, gray	139.7-141

148-083-28BCA continued

CLAY	subfirm, gray to brown	141-142
CLAY	and silt, interbedded, gray	142-148.8
CLAY	plastic, gray to dark brown	148.8-155.4
LIGNITE	hard black	155.4-159.2
SILT	friable dark brown; carbonaceous streaks	159.2-163.1
LIGNITE	hard, black	163.1-165.8
CLAY	plastic, dark brownish gray	165.8-167.5
LIGNITE	hard, black	167.5-168.6
CLAY	plastic, dark brownish gray	168.6-170.7
LIGNITE	hard, black	170.7-172.1
SILT	brown, carbonaceous	172.1-175.3
CLAY	plastic, dark brown, carbonaceous	175.3-175.9
LIGNITE	fractured, black	175.9-177.2
CLAY	gray, carbonaceous; silt lenses	177.2-182.3
CLAY	plastic, greenish gray; carbonaceous	182.3-185.7
SILT	sandy, friable, gray	185.7-196.2
SANDSTONE	hard, brown to yellow	196.2-196.6
LIGNITE	hard black	196.6-200
CLAY	plastic gray to brown; carbonaceous streaks and lenses of nonplastic clay; hard, gray Limestone 206.1-206.3 ft	200-206.3
CLAY	plastic, gray; carbonaceous and silty streaks	206.3-208
CLAY	gray	208-209.9
CLAY	plastic gray, green, and brown; lignitic silt streaks	209.9-230
SILT	sandy, friable, brown, carbonaceous	230-230.5
CLAY	subfirm, dark brown; scattered lignite fragments	230.5-231.3
SILT	sandy, brown; carbonaceous streaks	231.3-236
SAND	very fine, silty, brown; carbonaceous streaks	236-240
CLAY	plastic, gray; silt streaks	240-240.6
SILT	sandy, gray interbedded with very fine silty sand and thin clay layers	240.6-250
SILT	friable, gray, carbonaceous	250-251.3
SAND	silty, gray	251.3-263.9

148-083-28BCD1

NDSWC

Date Completed:	5/25/50	Purpose:	Test Hole
L.S. Elevation (ft):	1841	Well Type:	
Depth Drilled (ft):	64.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	dark brown	0-0.5
CLAY	sandy, plastic, brown to gray; scattered lignite and scoria fragments (TILL)	0.5-33.5
SAND	loose, grayish brown; scattered lignite fragments	33.5-38.4
SAND	coarse, silty, loose, grayish brown; scattered lignite fragments	38.4-41.6
SAND	coarse, loose, gray	41.6-45.4
CLAY	sandy, dark gray; 5% gravel (TILL)	45.4-53
CLAY	bluish gray; scattered lignite fragments	53-57.8
LIGNITE	(float), hard, black	57.8-59.4
SAND	coarse, loose, gray; abundant lignite fragments	59.4-60
LIGNITE	hard, black (Fort Union Group)	60-61.5
CLAY	friable, bluish gray; scattered lignite fragments (Fort Union Group)	61.5-64.5

148-083-28BCD2

NDSWC

Date Completed:	11/29/50	Purpose:	Test Hole
L.S. Elevation (ft):	1845.9	Well Type:	
Depth Drilled (ft):	80	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
No Sample		0-6.3
CLAY	sandy, friable, brown; scattered lignite and scoria fragments (TILL)	6.3-33.4
SAND	fine, silty, loose, dark brown; scattered lignite fragments	33.4-34.5
SAND	fine, loose, dark brown to light brown	34.5-44.6
SAND	fine, silty, compact, gray	44.6-46.2
SAND	silty, gravelly, loose, dark brown; scattered lignite fragments	46.2-47
CLAY	gray	47-48.4
CLAY	sandy, gray; scattered lignite fragments	48.4-52.1
CLAY	brownish gray (Top of Bedrock- Fort Union Group)	52.1-54
LIGNITE	hard, black	54-56.1
CLAY	sandy gray	56.1-58
CLAY	subfirm, gray	58-59.6
CLAY	sandy, subfirm, gray; carbonaceous streaks	59.6-61.2
No Sample		61.2-64.6
CLAY	sandy, subfirm, light gray; carbonaceous streaks	64.6-66.9
CLAY	plastic, dark gray	66.9-68.2
No Sample		68.2-71.1
CLAY	plastic, gray	71.1-71.2
LIGNITE	hard, black	71.2-72.3
CLAY	plastic, gray	72.3-73.5
LIGNITE	sandy, friable, gray	73.5-73.9
SAND	fine, silty, gray; carbonaceous streaks	73.9-75.7
CLAY	sandy, friable, gray	75.7-76.7
SAND	silty, gray	76.7-76.9
CLAY	plastic, dark gray	76.9-79.7
No Sample		79.7-80

148-083-28CBA

NDSWC

Date Completed:	7/12/50	Purpose:	Test Hole
L.S. Elevation (ft):	1835.2	Well Type:	
Depth Drilled (ft):	155.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, brown; scattered lignite fragments (TILL)	0-29.2
SAND	fine, loose, gray	29.2-33.8
SAND	gravelly, loose, brown	33.8-38
SAND	coarse, gravelly, gray	38-43.5
GRAVEL	fine, sandy, gray	43.5-45
SAND	clayey plastic, dark gray (TILL)	45-57
CLAY	sandy, dark gray (TILL)	57-67
SAND	silty, loose, dark gray	67-70
SILT	sandy, loose, dark gray (TILL)	70-78
GRAVEL	silty, sandy, loose, gray	78-98.2

148-083-28CBA

SAND	fine, silty, loose, dark gray	98.2-107.6
GRAVEL	sandy, loose, gray	107.6-111
SAND	fine, silty, loose, dark gray; scattered lignite fragments	111-116.5
SAND	gravelly, loose, gray	116.5-118
SILT	sandy, loose, dark gray; scattered lignite fragments	118-123
SAND	fine silty, loose, gray; lignite132-132.4 ft (float); coarse sand 132.4-133.2 ft (loose, brownish gray)	123-133.2
LIGNITE	hard, dark brown (Top of Bedrock - Fort Union Group)	133.2-135.4
SILT	sandy, loose, brownish gray	135.4-141.4
CLAY	plastic, dark brown; very carbonaceous	141.4-144
LIGNITE	hard, black	144-144.4
CLAY	plastic, gray	144.4-145
SILT	sandy, loose, brownish gray	145-151
LIGNITE	hard black	151-151.7
SILT	sandy, friable, gray	151.7-153
CLAY	subfirm, gray	153-155.3

148-083-28CBD

NDSWC

Date Completed:	11/2/49	Purpose:	Test Hole
L.S. Elevation (ft):	1832.6	Well Type:	
Depth Drilled (ft):	182.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
ALLUVIUM	sandy, silty, brown	0-0.5
CLAY	plastic, light brown; scattered lignite and scoria fragments (TILL)	0.5-3.6
CLAY	sandy, gravelly, brown; scattered lignite and scoria a fragments (TILL)	3.6-5.4
CLAY	sandy, brown, scattered lignite and scoria fragments (TILL)	5.4-29.2
CLAY	plastic, dark gray; scattered lignite and scoria fragments (TILL)	29.2-76
SAND	clayey, loose, dark gray (TILL)	76-76.5
CLAY	plastic, dark gray; scattered lignite fragments (TILL)	76.5-82.5
SAND	silty, gravelly, loose, brown to gray	82.5-87.6
SAND	silty, gray	87.6-89.4
GRAVEL	silty, sandy, brownish gray	89.4-91
SAND	silty, gravelly, loose, brownish gray	91-104.4
SAND	silty, loose, gray	104.4-105.6
SAND	silty, gravelly, loose, dark gray	105.6-107.6
SILT	friable, dark gray	107.6-108.6
SAND	gravelly, loose, brown	108.6-110.4
SAND	silty, loose, gray	110.4-115
SAND	silty, gravelly, loose, gray	115-116
SILT	sandy, loose, dark gray	116-119.2
SAND	silty, gravelly, gray	119.2-125.7
SAND	silty, loose, gray	125.7-129.2
SAND	loose, gray	129.2-131.6
SAND	gravelly, loose, gray	131.6-133
SAND	silty, dark gray	133-134.6
SAND	loose, dark gray	134.6-144.2
SILT	loose, dark gray	144.2-148.7
SILT	sandy, loose, dark gray	148.7-151.9
SAND	loose, dark gray	151.9-156.2

148-083-28CBD continued

SAND	silty, loose, dark gray	156.2-157.7
SAND	fine, loose, dark gray; trace of lignite and scoria	157.7-165.5
GRAVEL	sandy, loose, gray; few cobbles	165.5-177.2
CLAY	plastic, dark gray, carbonaceous (Fort Union Group, bedrock)	177.2-182.5

148-083-28CCA

NDSWC

Date Completed:	11/9/49	Purpose:	Test Hole
L.S. Elevation (ft):	1783.4	Well Type:	
Depth Drilled (ft):	179	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, soft, gray	0-5.4
SAND	silty, gravelly	5.4-7
CLAY	plastic, greenish gray	7-8.2
CLAY	soft, gray to black	8.2-12.6
CLAY	plastic, dark gray: scattered lignite (TILL)	12.6-34.2
SAND	loose, dark gray	34.2-41.1
GRAVEL	sandy, loose, brownish gray	41.1-45.6
SAND	gravelly, loose, brownish gray	45.6-47.4
CLAY	plastic, dark gray, scattered lignite fragments (TILL)	47.4-57.6
SAND	fine, silty, dark gray	57.6-59.4
SAND	coarse, loose, dark gray	59.4-62.1
SAND	silty, loose, dark gray	62.1-63.6
SAND	loose, dark gray	63.6-66.6
SAND	gravelly, loose, dark gray	66.6-79
SAND	silty, loose, dark gray; scattered lignite fragments	79-80.6
SAND	gravelly, loose, dark gray	80.6-81.6
SAND	loose, dark gray	81.6-83.1
SAND	silty, loose, dark gray	83.1-84.6
SAND	silty, gravelly, loose, dark gray	84.6-88
SAND	silty, loose, dark gray	88-92
SAND	silty, gravelly, loose, dark gray; scattered lignite fragments	92-96.6
GRAVEL	silty, sandy, loose, dark gray	96.6-100
SAND	loose, dark gray	100-102.8
SAND	coarse, loose, dark gray	102.8-105.6
SAND	fine, loose, dark gray	105.6-108.4
GRAVEL	sandy, loose, gray	108.4-112
SAND	clayey, loose, bluish gray	112-113.1
SILT	loose, bluish gray; scattered lignite fragments	113.1-116.1
SILT	sandy, loose, bluish gray	116.1-117.6
CLAY	gray; scattered lignite fragments	117.6-122.1
CLAY	sandy, gray	122.1-123.6
SAND	silty, loose, gray	123.6-126.4
SILT	sandy, gray; abundant lignite fragments	126.4-130
SAND	fine, silty, loose, gray; scattered lignite fragments	130-138.6
CLAY	sandy, dark gray; scattered lignite fragments	138.6-140
SAND	fine, loose, gray; scattered lignite fragments	140-143.1
SAND	silty, loose, gray; scattered lignite fragments	143.1-144.6

148-083-28CCA continued

SILT	loose, gray, scattered lignite fragments	144.6-146.1
SAND	fine, loose, gray; scattered lignite fragments	146.1-167.1
SAND	fine, silty, loose, gray; scattered lignite fragments	167.1-168.6
SAND	fine, loose, gray	168.6-170.5
GRAVEL	silty, sandy, loose, brownish gray	170.5-174.4
CLAY	plastic, subfirm, dark brown (Fort Union Group, bedrock)	174.4-179

148-083-28CDC

NDSWC

Date Completed:	12/30/49	Purpose:	Test Hole
L.S. Elevation (ft):	1808.7	Well Type:	
Depth Drilled (ft):	332.4	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	dark brown	0-2.6
CLAY	plastic, dark brown to grayish brown	2.6-8
CLAY	sandy, gravelly, grayish brown; scattered scoria and lignite fragments (TILL)	8-43.5
SAND	fine, loose, dark gray; scattered lignite fragments	43.5-45.6
SAND	fine, silty, loose, dark gray	45.6-47.1
SAND	fine, loose, dark gray	47.1-51
GRAVEL	fine, sandy, gray; lignite fragments up to 2-inch diameter	51-54.6
SAND	fine, loose, gray; abundant lignite fragments	54.6-56.1
SAND	silty, loose, gray	56.1-57.6
SAND	fine, loose, gray	57.6-61
CLAY	gravelly, dark gray (TILL)	61-81
SAND	fine loose, dark gray; scattered lignite fragments	81-87.6
SAND	fine, gravelly, loose, brownish gray; scattered lignite fragments	87.6-95
GRAVEL	sandy, loose, gray; scattered lignite fragments	95-103
SAND	fine, loose, dark gray; scattered lignite fragments; clay lens 110.4-111 ft	103-126.6
SAND	gravelly, loose, dark gray	126.6-128
GRAVEL	sandy, loose, gray; few cobbles	128-137
SILT	loose, dark gray	137-139
CLAY	sandy, dark gray; scattered lignite fragments	139-143
SILT	soft, dark gray	143-144.6
CLAY	dark gray	144.6-145.8
GRAVEL	sandy, gray	145.8-153.4
SAND	fine, loose, gray; abundant lignite fragments	153.4-155.1
SAND	coarse, loose, gray	155.1-156.6
SAND	gravelly, loose, gray; scattered lignite fragments	156.6-161.1
SAND	coarse, loose, gray	161.1-162.6
CLAY	sandy, gray	162.6-164
SAND	coarse, gray	164-167.1
SAND	clayey, gray	167.1-168.6
SAND	coarse, loose, gray; gravelly 170.8-171.6 ft	168.6-171.6
SAND	fine, loose, grayish brown	171.6-180
SAND	fine to coarse, brownish gray	180-192
LIGNITE	float, black	192-193.6
SAND	fine, loose, brownish gray; scattered lignite fragments	193.6-233.5
SAND	gravelly, loose, gray	233.5-234.6

148-083-28CDC continued

GRAVEL	sandy, loose, gray	234.6-246.2
GRAVEL	clayey, sandy, gray	246.2-248.4
SAND	silty, loose, dark gray; scattered lignite fragments	248.4-252.6
SAND	fine, loose, gray; scattered lignite fragments	252.6-293
SAND	coarse, loose	293-299
CLAY	plastic, dark gray	299-301
SAND	gravelly, loose, grayish brown	301-302.4
SAND	coarse, gravelly, dark gray	302.4-308.6
SAND	coarse, loose, dark gray	308.6-313.1
SAND	coarse, gravelly, loose, dark gray	313.1-314.6
SAND	coarse, loose, dark gray	314.6-318.5
SAND	fine, loose, brownish gray	318.5-320
SAND	coarse, loose, brownish gray	320-324.3
SILT	sandy, loose, brownish gray	324.3-328.3
SAND	silty, greenish gray; streaks of clay (Fort Union Group, bedrock)	328.3-330
SILT	sandy, greenish gray; streaks of clay (Fort Union Group, bedrock)	330-332.4

148-083-29CCB

NDSWC

Date Completed:	5/17/50	Purpose:	Test Hole
L.S. Elevation (ft):	1832.7	Well Type:	
Depth Drilled (ft):	59	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	plastic, brownish gray	0-3.6
CLAY	sandy, brownish gray; scattered lignite and scoria fragments (TILL)	3.6-20.6
SAND	gravelly, loose brown	20.6-25.5
SAND	fine, loose, dark brownish gray	25.5-28.5
SAND	fine, silty, loose, gray	28.5-34.5
SAND	coarse, silty, gravelly, loose, brownish gray	34.5-39
SAND	coarse, gravelly, loose, gray	39-43.5
GRAVEL	sandy, loose, brown	43.5-47
CLAY	sandy, dark gray (TILL)	47-51.2
LIMESTONE	hard, bluish gray (Fort Union Group, bedrock)	51.2-54.2
LIGNITE	hard, black (Fort Union Group, bedrock)	54.2-59

148-083-33BAB

NDSWC

Date Completed:	10/10/50	Purpose:	Test Hole
L.S. Elevation (ft):	1829.1	Well Type:	
Depth Drilled (ft):	154.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, grayish brown (TILL)	0-5
CLAY	sandy, brown to brownish gray 5-30 ft, gray below 30 ft; plastic; scattered lignite fragments (TILL)	5-41.7
SILT	sandy, gray	41.7-45
CLAY	gray; scattered lignite fragments	45-51.6
CLAY	sandy, gray; scattered lignite fragments (TILL)	51.6-71.2
SAND	fine, silty, loose, gray	71.2-76

148-083-33BAB

SAND	fine, loose, gray; abundant lignite fragments (50-60 percent)	76-80
SAND	coarse, loose, gray; scattered lignite and scoria fragments	80-86.1
SAND	fine, gray	86.1-89.7
SILT	sandy	89.7-90.8
CLAY	sandy, gray; scattered lignite fragments (TILL)	90.8-105.2
SAND	coarse, gravelly, loose, grayish brown	105.2-117
CLAY	gray	117-118.7
SAND	fine, loose, gray	118.7-120
SAND	coarse, gravelly, loose, dark brown; scattered scoria fragments	120-123
SAND	coarse, loose, gray; scattered scoria fragments	123-135.7
SAND	fine, silty, gray; scattered lignite fragments	135.7-137.1
SAND	fine gray	137.1-138.6
SAND	fine silty, gray; scattered lignite fragments	138.6-147.2
CLAY	gray	147.2-148.5
GRAVEL	sandy, loose, brown	148.5-154.5

148-083-33BAC

NDSWC

Date Completed:	7/26/50	Purpose:	Test Hole
L.S. Elevation (ft):	1830.1	Well Type:	
Depth Drilled (ft):	171	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, friable, dark brown	0-1
CLAY	sandy, plastic, gray to dark gray; scattered lignite fragments (TILL)	1-57.4
CLAY	plastic, dark gray	57.4-63.2
CLAY	sandy, dark gray; scattered lignite fragments (TILL)	63.2-98
SAND	silty, loose, dark gray	98-99.4
CLAY	sandy, dark gray (TILL)	99.4-112.5
SAND	coarse, loose, gray	112.5-121.8
SAND	gravelly, loose, gray	121.8-126.4
CLAY	dark gray	126.4-127.8
CLAY	sandy, plastic, dark gray	127.8-129.6
SAND	fine, silty, loose, dark gray	129.6-132.4
SAND	coarse, gravelly, loose, brownish gray	132.4-144.6
CLAY	sandy, dark gray; scattered lignite fragments (TILL)	144.6-156
GRAVEL	silty, sandy, loose, brownish gray	156-159.4
SILT	sandy, compact, dark gray	159.4-164.6
GRAVEL	fine, sandy, loose, brownish gray	164.6-167.2
SILT	sandy, loose, dark gray scattered lignite fragments	167.2-171

148-083-33BDB

NDSWC

Date Completed:	9/7/50	Purpose:	Test Hole
L.S. Elevation (ft):	1792.8	Well Type:	
Depth Drilled (ft):	289.6	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, dark brown	0-3.6

148-083-33BDB continued

CLAY	sandy, plastic, brownish gray (TILL)	3.6-12
SAND	coarse, loose, brownish gray	12-13.6
CLAY	sandy, soft, brownish gray; 2 to 5% gravel, scattered lignite fragments (TILL)	13.6-51
SAND	fine, loose dark gray	51-51.8
CLAY	sandy, dark gray; 4% gravel (TILL)	51.8-54.4
SAND	coarse, loose, dark gray	54.4-60
SAND	silty, loose, dark gray	60-62.6
CLAY	sandy, gravelly, dark gray	62.6-63.6
CLAY	sandy, dark gray; 2% gravel (TILL)	63.6-80
SAND	fine, loose, dark gray; scattered lignite fragments	80-85.2
SAND	silty, gravelly (coarse sand, fine gravel); loose, gray	85.2-89.4
CLAY	dark gray	89.4-90.6
SILT	sandy, loose, dark gray; scattered lignite fragments	90.6-96
GRAVEL	sandy, loose gray	96-108
GRAVEL	silty, sandy, loose, gray	108-114
SILT	sandy, gravelly, compact, dark gray	114-115.6
SAND	silty, loose, dark gray	115.6-117.2
CLAY	dark gray	117.2-118.6
SILT	sandy, compact, dark gray	118.6-120
SAND	clayey, loose, dark gray	120-124.5
SILT	compact, dark gray	124.5-126.8
SAND	fine, silty, loose, dark gray	126.8-130.4
SAND	fine, loose, dark gray; scattered lignite fragments	130.4-141.6
GRAVEL	silty, sandy, loose, gray; scattered lignite fragments	141.6-146
SILT	sandy, loose, dark gray; scattered lignite fragments	146-157
GRAVEL	silty, sandy, loose, gray	157-165
SILT	sandy, compact, bluish gray	165-167
GRAVEL	sandy, loose, brownish gray; scattered cobbles	167-178.5
SAND	silty, gravelly, loose, dark brown; scattered lignite fragments and cobbles	178.5-184.5
GRAVEL	sandy, loose, gray brown; scattered lignite fragments and cobbles	184.5-189.4
SAND	fine, gravelly, loose, brown; scattered lignite	189.4-194.4
SAND	fine, loose, dark gray; scattered lignite fragments	194.4-208
SAND	fine, silty, loose, dark gray; abundant lignite fragments	208-212.6
SAND	loose, gray; scattered lignite fragments	212.6-217.5
SAND	coarse, loose, dark gray; scattered lignite fragments	217.5-222
SAND	silty, loose, dark gray	222-227.6
SAND	loose, gray; scattered lignite fragments and gravel	227.6-238.5
SAND	coarse, loose, gray	238.5-253.5
NO SAMPLE	core washed out - believed to be sand	253.5-285
SAND & GRAVEL	clayey	285-289.1
CLAY	sandy, gray	289.1-289.6

148-083-33CAA
NDSWC

Date Completed:	3/24/50	Purpose:	Test Hole
L.S. Elevation (ft):	1836.6	Well Type:	
Depth Drilled (ft):	208.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, dark brown	0-1
CLAY	sandy, brown and brownish gray, scattered lignite fragments, generally calcareous (TILL); gray plastic clay 14.1 to 15.6 ft	1-49.8
GRAVEL	medium to coarse, loose, brown	49.8-53
CLAY	sandy, compact, dark gray; scattered lignite fragments (TILL)	53-55.2
SAND	clayey, compact, dark gray; scattered lignite fragments	55.2-58.8
SAND	silty, compact, gray; scattered lignite fragments	58.8-62.6
GRAVEL	silty, compact, brownish gray	62.6-65.4
SAND	silty, compact gray	65.4-71.4
GRAVEL	coarse, loose brown	71.4-75.6
GRAVEL	silty, sandy, compact, brownish gray	75.6-77.4
CLAY	sandy, gray; scattered lignite fragments (TILL)	77.4-101.7
SAND	compact, brown; scattered lignite fragments	101.7-104.2
SAND	fine, silty, compact, gravelly	104.2-107.4
GRAVEL	sandy, loose, brownish gray	107.4-112
SILT	sandy, soft, gray	112-113.5
CLAY	plastic gray	113.5-116.6
SILT	soft, light gray	116.6-118
SAND	silty	118-123.6
SAND	silty, gravelly, loose, brownish gray	123.6-132.6
GRAVEL	sandy, loose, brownish gray	132.6-136.2
SAND	silty, gravelly, brownish gray; scattered lignite fragments	136.2-138.6
GRAVEL	sandy, loose, brownish gray	138.6-142.8
LIGNITE	hard, black (float)	142.8-144.2
SAND	silty, gravelly, compact, brownish gray	144.2-147.5
GRAVEL	coarse, clayey, compact, brownish gray	147.5-150
GRAVEL	loose, brown	150-153.4
SAND	gravelly, loose, brownish gray	153.4-155.4
SILT	sandy, friable, light gray	155.4-157.3
SAND	fine, light gray	157.3-158.7
BOULDER	limestone, hard, dark gray	158.7-159
SAND	very fine, silty, compact, dark brown; limestone boulder 162.6-162.8 ft (hard, dark gray)	159-162.8
SAND	silty, compact, brown; scattered lignite fragments	162.8-164
GRAVEL	medium to coarse, loose, brown	164-166.7
GRAVEL	sandy, loose, brown	166.7-168.8
BOULDER	sandstone, hard, light gray	168.8-169.2
SILT	gravelly, light gray; scattered lignite fragments	169.2-170.3
SAND	very fine to fine, silty, compact, gray; scattered lignite fragments	170.3-172.5
SILT	sandy, soft, light gray	172.5-173.6
SAND	silty, compact, gray; scattered lignite fragments	173.6-178.4
SILT	sandy, soft, light gray	178.4-179.7
SAND	fine, silty, compact, dark gray	179.7-184.8
SAND	medium, loose, gray; abundant lignite fragments	184.8-188.8
GRAVEL	medium to coarse, loose, brownish gray	188.8-202.2
SAND	silty, soft, light gray (Fort Union Group, bedrock)	202.2-208.5

148-083-33CAD
NDSWC

Date Completed:	11/14/50	Purpose:	Test Hole
L.S. Elevation (ft):	1815.7	Well Type:	
Depth Drilled (ft):	184.5	Source:	USCOE

Lithologic Log

Unit	Description	Depth (ft)
SILT	sandy, friable, dark brown	0-0.8
CLAY	sandy, friable, brownish gray; scattered lignite fragments (TILL)	0.8-32.6
GRAVEL	sandy, loose, gray	32.6-35.1
SAND	coarse, gravelly, loose, gray	35.1-36.2
SAND	fine, silty, loose, dark gray; scattered lignite fragments	36.2-50.4
SAND	coarse, loose, gray, scattered lignite fragments	50.4-51.8
SAND	fine, loose, gray; scattered lignite fragments	51.8-53.4
SAND	coarse, gravelly, loose, gray	53.4-59.1
SAND	silty, loose, gray; scattered lignite fragments	59.1-60.6
CLAY	sandy, dark gray; scattered lignite fragments (TILL)	60.6-86.4
SAND	fine, loose, gray; scattered lignite fragments	86.4-88
SAND	coarse, gravelly, loose, brownish gray	88-89.6
GRAVEL	sandy, loose, brownish gray	89.6-92
SAND	fine, silty, loose, dark gray; scattered lignite fragments	92-96.8
SILT	sandy, compact, dark gray; scattered lignite fragments	96.8-98.2
SAND	fine, silty, loose, dark gray; scattered lignite	98.2-99.5
SAND	coarse, gravelly, loose, brownish gray; abundant lignite fragments	99.5-102
SAND	fine, silty, loose, dark gray; scattered lignite fragments	102-104.1
SAND	fine, loose, dark gray	104.1-107.1
SAND	fine, silty, loose, dark gray	107.1-108.6
GRAVEL	sandy, loose, brownish gray	108.6-112
SAND	fine, silty, loose, dark gray; scattered lignite fragments	112-125.6
SAND	fine, loose, dark gray; scattered lignite fragments	125.6-126.6
SAND	coarse, gravelly, loose, brownish gray; scattered lignite fragments	126.6-128.6
SAND	fine, loose, gray; scattered lignite fragments	128.6-131
SAND	fine, loose, gray; scattered lignite fragments	131-132.6
GRAVEL	sandy, loose, brownish gray; scattered lignite fragments and cobbles	132.6-138.8
GRAVEL	sandy, compact, gray	138.8-140
GRAVEL	sandy, loose, gray; scattered lignite and cobbles	140-145.6
SAND	fine, silty, loose, dark gray; scattered lignite and gravel	145.6-148.8
SAND	fine, loose, gray	148.8-150.4
CLAY	compact, dark gray	150.4-152.2
SILT	compact, gray; scattered lignite fragments	152.2-153.8
SAND	fine, silty, loose, gray; scattered lignite fragments	153.8-158.6
GRAVEL	sandy, loose, gray	158.6-159.7
CLAY	sandy, subfirm, dark gray; abundant lignite fragments	159.7-164.1
SAND	fine, silty, compact, greenish gray; scattered lignite fragments (possible reworked bedrock sand)	164.1-174.6
SAND	fine, silty, loose, grayish brown; scattered lignite fragments (possible reworked bedrock sand)	174.6-178.6
CLAY	plastic, dark gray; scattered lignite fragments (Fort Union Group, bedrock)	178.6-184.5

149-078-23BBB
NDSWC 2794

Date Completed:	8/31/67	Purpose:	Test Hole
L.S. Elevation (ft):	2000	Well Type:	
Depth Drilled (ft):	40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
CLAY	silty, sandy, moderate yellowish brown, (TILL)	1-12
CLAY	silty, sandy, gravelly, calcareous, olive gray, (TILL)	12-40

149-078-33CCD
NDSWC 2793

Date Completed:	8/31/67	Purpose:	Test Hole
L.S. Elevation (ft):	1945	Well Type:	
Depth Drilled (ft):	320	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
CLAY	silty, moderate yellowish brown, (TILL)	1-13
CLAY	silty, sandy, gravelly, olive gray, (TILL)	13-75
CLAY	very silty, sandy, gravelly, olive gray, (TILL)	75-300
SANDSTONE	fine to medium, noncalcareous; brownish gray with medium bluish gray zones, (Fort Union Group, bedrock)	300-320

149-079-25DCC
NDSWC 2792

Date Completed:	8/30/67	Purpose:	Test Hole
L.S. Elevation (ft):	2010	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, grayish black	0-1
CLAY	very silty, calcareous, plastic, moderate yellowish brown (lacustrine)	1-25
CLAY	silty, calcareous, plastic, medium dark gray to olive gray; few sand grains (lacustrine)	25-42
CLAY	silty, sandy, olive gray; scattered pebbles, (TILL); (abandoned drilling at 100 ft due to severe water loss in topsoil cracks)	42-100

149-079-26CDC
NDSWC 5614

Date Completed:	12/4/69	Purpose:	Observation Well
L.S. Elevation (ft):	1970	Well Type:	1.25" PVC
Depth Drilled (ft):	120	Aquifer:	Lake Nettie
Screened Interval (ft):	37-40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, black	0-1
GRAVEL	fine to coarse, sandy with 20-30% fine to very coarse sand, mostly coarse to very coarse; angular to subrounded	1-50
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	50-108
SILTSTONE	clayey, sandy, noncalcareous, medium light gray, (Fort Union Group, bedrock)	108-120

149-079-28ADD

NDSWC

Date Completed:	11/8/74	Purpose:	Domestic Well
L.S. Elevation (ft):	2005	Well Type:	4" Steel
Depth Drilled (ft):	255	Aquifer:	Fort Union
Screened Interval (ft):	232-253	Source:	Russell Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	yellow	1-30
TILL		30-123
SAND and CLAY	yellow	123-128
TILL		128-170
SHALE		170-190
CLAY	silty (probable siltstone bedrock)	190-210
SAND	fine (probable sandstone bedrock)	210-255

149-079-29AAA

NDSWC

Date Completed:	6/20/79	Purpose:	Domestic Well
L.S. Elevation (ft):	2020	Well Type:	4" PVC
Depth Drilled (ft):	38	Aquifer:	Undefined
Screened Interval (ft):	18-38	Source:	Backman Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
CLAY	brown	0-15
CLAY	sandy	15-25
CLAY	blue	25-29
GRAVEL		29-38

149-080-19AAA

NDSWC 2803

Date Completed:	9/7/67	Purpose:	Observation Well
L.S. Elevation (ft):	1912	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Horseshoe Valley
Screened Interval (ft):	33-38	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
SAND	medium to very coarse, subangular to rounded; becomes gravelly toward bottom of section	1-47
SHALE & SANDSTONE	interbedded; siliceous light brownish gray shale; fine noncalcareous light bluish gray sandstone; (Fort Union Group, bedrock)	47-60

149-080-20AAA

NDSWC 5598

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1930	Well Type:	
Depth Drilled (ft):	80	Source:	SWC

Lithologic Log

149-080-20AAA continued

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, pebbly, clayey	0-1
GRAVEL	fine to coarse, sandy, angular to rounded	1-50
CLAY	silty, olive gray; scattered sand and gravel, (TILL)	50-72
SILTSTONE	clayey, sandy, lignitic, noncalcareous, brownish gray, (Fort Union Group, bedrock)	72-80

149-080-20AAA2
NDSWC 9322

Date Completed:	6/26/75	Purpose:	Observation Well
L.S. Elevation (ft):	1923.2	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Horseshoe Valley
Screened Interval (ft):	43-46	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	sand is fine to very coarse, angular to subrounded, mostly quartz with some carbonates and minor igneous and shale fragments; gravel predominantly coarse to very coarse, angular to subrounded, mostly carbonates with minor granitics and igneous fragments, very lignitic; oxidized to 20 ft; taking water	0-41
GRAVEL	very coarse, angular to subrounded; mostly carbonates with some granitics, igneous fragments, and quartz; rocky, bouldery	41-50
CLAY	sandy, silty, pebbly, medium dark gray, slightly plastic, (TILL)	50-60

149-080-20BBB
NDSWC 9323

Date Completed:	6/26/75	Purpose:	Observation Well
L.S. Elevation (ft):	1911	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Horseshoe Valley
Screened Interval (ft):	43-46	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
SAND & GRAVEL	sand is fine to very coarse, angular to subrounded, mostly quartz with some carbonates and igneous fragments; gravel is coarse to very coarse, angular to subrounded, mostly carbonates with some igneous and minor granitic fragments; taking water	0-25
GRAVEL	coarse to very coarse, angular to subrounded; mostly carbonates with some igneous and granitic fragments; very cobbly and bouldery; very lignitic	25-47
CLAY	very silty, slightly sandy, light bluish gray, tight, nearly brittle, (Fort Union Group, bedrock)	47-60

149-080-23CCD
NDSWC 4082

Date Completed:	8/6/70	Purpose:	Test Hole
L.S. Elevation (ft):	1980	Well Type:	
Depth Drilled (ft):	160	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	sandy, black	0-1
SAND	fine to coarse, with some fine gravel, subangular to subrounded, reddish brown	1-18
GRAVEL	cobbly	18-22
CLAY	silty, sandy, pebbly, olive gray, (TILL)	22-40
SAND	very fine; numerous thin interbeds of silt, clay, and lignite, (Fort Union Group, bedrock)	40-128
SHALE	silty, hard, dark gray to brownish gray, (Fort Union Group, bedrock)	128-141
LIGNITE	hard, black, (Fort Union Group, bedrock)	141-148
SHALE	silty, hard, dark gray, (Fort Union Group, bedrock)	148-160

149-080-23DDC

NDSWC 9324

Date Completed:	6/27/75	Purpose:	Observation Well
L.S. Elevation (ft):	1952.1	Well Type:	1.25" PVC
Depth Drilled (ft):	180	Aquifer:	Strawberry Lake
Screened Interval (ft):	108-111	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	sandy, silty, pebbly, dark to moderate yellowish brown; lignitic, slightly plastic, iron stained; oxidized, (TILL)	0-30
CLAY	as above, but medium dark gray with thin interbedded gravel lenses, (TILL)	30-89
SAND & GRAVEL	fine sand to very coarse gravel, predominantly coarse sand to gravel; mostly carbonates with some shale, quartz, igneous, and granitic fragments; angular to subrounded	89-116
CLAY	sandy, silty, pebbly, medium dark gray, slightly plastic, (TILL)	116-132
CLAY	silty, slightly sandy, light bluish gray to medium dark gray; (reworked till and Fort Union Group bedrock)	132-154
CLAYSTONE	very silty, slightly sandy, light bluish gray to brownish gray; tight, hard, brittle, (Fort Union Group, bedrock)	154-180

149-080-26AAB

NDSWC 4083

Date Completed:	8/6/70	Purpose:	Test Hole
L.S. Elevation (ft):	1980	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, pebbly, yellowish gray to moderate olive brown	0-19
CLAY	silty, sandy, pebbly, olive gray; isolated gravel lenses, (TILL)	19-53
GRAVEL	sandy, coarse sand to medium gravel, subangular	53-58
CLAY	silty, olive gray, (possibly TILL)	58-63
GRAVEL	fine to coarse, sandy, angular to subrounded; cobbles; clayey layers 99-103 ft	63-116
SANDSTONE	very fine, clayey, calcareous, light gray, (Fort Union Group, bedrock)	116-125
LIGNITE	black, (Fort Union Group, bedrock)	125-126
SANDSTONE	very fine, clayey, carbonaceous, calcareous, (Fort Union Group, bedrock)	126-133
SHALE	silty, brittle, medium gray, (Fort Union Group, bedrock)	133-140

149-080-26ABA

NDSWC 5613

Date Completed:	12/3/69	Purpose:	Observation Well
L.S. Elevation (ft):	1931.7	Well Type:	1.25" PVC
Depth Drilled (ft):	180	Aquifer:	Strawberry Lake
Screened Interval (ft):	77-80	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, gravelly, grayish black	0-1
CLAY	silty, sandy, pebbly, moderate yellowish brown; scattered boulders, (TILL)	1-20
CLAY	silty, pebbly, olive gray; scattered sand and boulders, (TILL)	20-40
GRAVEL	fine to coarse, slightly sandy, angular to subrounded, cobbles	40-46
CLAY	silty, olive gray; scattered sand, gravel, and boulders, (TILL)	46-55
GRAVEL	fine to very coarse, mostly medium to coarse, slightly sandy, angular to subrounded; boulders	55-60
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	60-68
GRAVEL	fine to very coarse, mostly fine to medium, slightly sandy, angular to subrounded; boulders	68-85

149-080-26ABA continued

CLAY	silty, olive gray; scattered sand, gravel, and boulders, (TILL)	85-112
GRAVEL	fine to very coarse, sandy, with 15-30% fine to very coarse sand; angular to subrounded	112-136
CLAY	silty, sandy, gravelly, olive gray, (TILL)	136-146
GRAVEL	fine to very coarse, sandy, with 20-40% fine to very coarse sand, angular to rounded; some cobbles; borehole caving, terminated drilling	146-180

149-080-26BAA
NDSWC 9325

Date Completed:	6/27/75	Purpose:	Observation Well
L.S. Elevation (ft):	1975	Well Type:	1.25" PVC
Depth Drilled (ft):	60	Aquifer:	Horseshoe Valley
Screened Interval (ft):	37-40	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, moderate yellowish brown, slightly plastic, (TILL)	0-17
SAND & GRAVEL	fine sand to very coarse gravel; angular to subrounded; predominantly quartz and carbonates, with some igneous, granitic and shale fragments	17-29
GRAVEL	coarse to very coarse, cobbly and bouldery; angular to subrounded; mostly carbonates with minor igneous and granitics fragments, lignitic; taking water	29-50
CLAY	sandy, silty, medium dark gray, very slightly plastic, abandoned hole due to caving, (TILL)	50-60

149-080-28CBB
NDSWC 5597

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1935	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, grayish black	0-1
GRAVEL	fine to coarse, slightly sandy, silty, angular to subrounded	1-7
CLAY	silty, sandy, pebbly, olive gray, (TILL)	7-15
CLAY	silty, olive gray to medium dark gray; scattered sand and pebbles, (TILL)	15-125
GRAVEL	fine to coarse, slightly sandy, angular to subrounded; some cobbles	125-132
SILTSTONE	sandy, clayey, lignitic, noncalcareous, brownish gray, (Fort Union Group, bedrock)	132-140

149-080-28DAA
NDSWC

Date Completed:	7/7/78	Purpose:	Domestic Well
L.S. Elevation (ft):	1970	Well Type:	4" Steel
Depth Drilled (ft):	155	Aquifer:	Undefined
Screened Interval (ft):	105-126	Source:	Russel Drilling Co.

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL		0-1
TILL	silty, yellow	1-9
TILL	gray	9-80
SAND	white	80-90
SAND	gray, bedrock	90-126
CLAY	silty, gray	126-135
CLAY	gray	135-155

149-080-31BBD

NDSWC 5596

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1895	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, pebbly, clayey, grayish black	0-1
GRAVEL	fine to coarse, sandy with 20-30% fine to very coarse sand; some cobbles	1-45
SILTSTONE	sandy, clayey, noncalcareous, medium gray, (Fort Union Group, bedrock)	45-60

149-080-34CBB

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1971	Well Type:	
Depth Drilled (ft):	101	Source:	U.S. Air Force

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, trace of gravel and lignite, stiff to very stiff, gray brown	0-43
CLAY	silty, trace of sand, gravel, and lignite, stiff to very stiff, dark gray	43-101

149-081-23BB

NDSWC

Date Completed:	0/0	Purpose:	Observation Well
L.S. Elevation (ft):		Well Type:	3"
Depth Drilled (ft):	98.5	Aquifer:	Fort Union
Screened Interval (ft):	0-82	Source:	USAF

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, trace of sand, gravel, and lignite, stiff, gray brown	0-18
SAND	fine to coarse, gravelly, silty, very dense, brown	18-33
SAND	fine to medium, very dense, gray	33-35
SAND	fine to medium, gravelly, dense, brown	35-40
CLAY	silty, trace of sand and gravel, stiff to very stiff, gray brown; boulders from 41-42 ft	40-59.5
CLAY	silty, trace of sand and gravel, very stiff to hard, gray brown	59.5-68.5
SAND	fine to coarse, silty, lignitic, dense, gray	68.5-77
CLAY	and silt, dense, gray brown	77-78
SAND	fine to medium, dense, gray brown	78-82.5
LIGNITE	crumbly, soft, black, (Fort Union Group, bedrock)	82.5-84
SHALE	silty, soft, gray, (Fort Union Group, bedrock)	84-85.5
LIGNITE	crumbly, soft, black, (Fort Union Group, bedrock)	85.5-88
SILT	clayey, lignitic, dense, light gray brown, (Fort Union Group, bedrock)	88-93.5
SAND	fine, clayey, lignitic, dense, light gray, (Fort Union Group, bedrock)	93.5-98.5

149-081-25CCD

NDSWC 3951

Date Completed:	12/11/69	Purpose:	Observation Well
L.S. Elevation (ft):	1905.6	Well Type:	1.25" PVC
Depth Drilled (ft):	100	Aquifer:	Horseshoe Valley
Screened Interval (ft):	47-50	Source:	SWC

Lithologic Log

149-081-25CCD continued

Unit	Description	Depth (ft)
CLAY	silty, black, (topsoil)	0-1
CLAY	silty, light gray	1-3
CLAY	silty, sandy, pebbly, olive brown, (TILL)	3-17
CLAY	silty, sandy, pebbly, lignitic, olive gray, (TILL)	17-40
GRAVEL	fine to medium, sandy, subrounded	40-53
CLAY	silty, sandy, lignitic, olive gray, (TILL)	53-64
GRAVEL	fine to coarse, lignitic, sandy; scattered cobbles	64-76
SILT	clayey, sandy, brownish gray	76-80
SAND	very fine to fine, clayey, greenish gray, (Fort Union Group, bedrock)	80-100

149-081-27DDD
NDSWC 11515

Date Completed:	11/5/84	Purpose:	Test Hole
L.S. Elevation (ft):	1928	Well Type:	
Depth Drilled (ft):	100	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	black, silty	0-3
CLAY	yellow orange	3-4
CLAY	dark greenish gray	4-5
TILL	silty, yellow brown, oxidized; granite and carbonate pebbles	5-10
SILT	brownish gray, slightly clayey	10-21
GRAVEL	coarse sand to coarse pebble, predominantly very fine to fine pebble; subrounded to rounded; oxidized; 50% carbonates, 25% quartz, 25% granitics	21-32
TILL	oxidized to 40 ft, olive gray below; silty, slightly clayey, scattered sand and pebbles; plastic and cohesive	32-56
TILL	light olive gray, more pebbly than above; with small sand stringers	56-67
CLAYSTONE	silty, greenish gray to dark greenish gray; waxy, and carbonaceous stringers	67-79
SANDSTONE	greenish gray, well indurated	79-82
SANDSTONE	very fine, greenish gray; well sorted, subangular to angular, very slightly argillaceous, slightly glauconitic and micaceous; poorly indurated	82-100

149-081-29BAA
NDSWC 5595

Date Completed:	11/20/69	Purpose:	Test Hole
L.S. Elevation (ft):	1895	Well Type:	
Depth Drilled (ft):	140	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, clayey, sandy, black	0-1
CLAY	silty, plastic, carbonaceous, black to grayish black	1-25
CLAY	silty, sandy, pebbly, olive gray to medium dark gray, (TILL)	25-47
GRAVEL	fine to coarse, slightly sandy, angular to subrounded	47-52
CLAY	silty, olive gray; scattered sand and pebbles, (TILL)	52-71
SILTSTONE	sandy, clayey, lignitic, noncalcareous, medium bluish gray to grayish brown, (Fort Union Group, bedrock)	71-83
SAND	fine to medium, lignitic, loose, medium bluish gray to dark greenish gray, (Fort Union Group, bedrock)	83-112
SILTSTONE	clayey, sandy, noncalcareous, medium dark gray to brownish gray, (Fort Union Group, bedrock)	112-140

149-081-34DDD

NDSWC 11514

Date Completed:	10/30/84	Purpose:	Observation Well
L.S. Elevation (ft):	1927.6	Well Type:	1.25" PVC
Depth Drilled (ft):	180	Aquifer:	Lake Nettie
Screened Interval (ft):	78-83	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	dark brown, silty	0-3
CLAY	silty, sandy, pebbly, yellow brown, oxidized, brittle and friable; carbonaceous stringers below 20 ft; (TILL)	3-26
SAND & GRAVEL	medium sand to 1/4-inch gravel, predominantly very coarse sand; subrounded to rounded; quartz and carbonates, oxidized; interbedded coarse gravel below 44 ft, predominantly carbonates with some shale, chert, and igneous pebbles, subrounded to predominantly rounded; rocks 51-52 ft; lignitic below 60 ft	26-85
CLAY	silty, sandy, olive gray, soft, plastic, cohesive, carbonaceous streaks, (TILL)	85-158
SANDSTONE	well indurated, light gray	158-167
SANDSTONE	fine grain, greenish gray, well sorted, angular, argillaceous, glauconitic	167-180

149-082-27BBB

NDSWC

Date Completed:	0	Purpose:	Test Hole
L.S. Elevation (ft):	1954.4	Well Type:	
Depth Drilled (ft):	100	Source:	USAF

Lithologic Log

Unit	Description	Depth (ft)
CLAY	silty, sandy, trace of lignite, very stiff to hard, light brown gray, (TILL)	0-19.5
CLAY	silty, trace of sand and lignite, very stiff to hard, brown gray, (TILL)	19.5-39.5
CLAY	silty, trace of sand, gravel, and lignite, stiff to very stiff, dark gray, (TILL)	39.5-61
SANDSTONE	fine grained, fractured, hard, gray, (Fort Union Group, bedrock)	61-65
CLAY	and silt; dense, light brown gray, (Fort Union Group, bedrock)	65-67
SHALE	silty, moderately soft, light to dark gray, (Fort Union Group, bedrock)	67-87
SAND	fine, very dense, gray, slightly cemented, (Fort Union Group, bedrock)	87-96.5
SHALE	lignitic, moderately hard, black brown, (Fort Union Group, bedrock)	96.5-98.3
SAND	fine, silty, very dense, brown, (Fort Union Group, bedrock)	98.3-100

149-082-27DDD

NDSWC 4074

Date Completed:	7/29/70	Purpose:	Test Hole
L.S. Elevation (ft):	1899	Well Type:	
Depth Drilled (ft):	60	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	clayey, black	0-1
CLAY	silty, sandy, pebbly, yellowish gray, (TILL)	1-12
CLAY	silty, sandy, pebbly, olive gray, (TILL)	12-19
SAND	medium to coarse, subangular to subrounded	19-30
CLAY	silty, sandy, pebbly, olive gray, (TILL)	30-38
SHALE	silty, lignitic, hard, carbonaceous, medium to dark gray, (Fort Union Group, bedrock)	38-60

149-082-34CCC

NDSWC 4073

Date Completed:	7/29/70	Purpose:	Test Hole
L.S. Elevation (ft):	1910	Well Type:	
Depth Drilled (ft):	120	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, pebbly, yellowish brown	0-1
SILT	clayey, sandy, yellowish gray; scattered pebbles, (TILL)	1-5
CLAY	silty, sandy, pebbly, moderate olive brown, numerous cobbles, (TILL)	5-26
CLAY	silty, sandy, pebbly, dark olive brown, (TILL)	26-52
SAND	medium to coarse, with some fine gravel, subangular to subrounded	52-61
CLAY	silty, greenish olive gray; scattered sand and pebbles, (TILL)	61-70
SANDSTONE	very fine to fine, clayey, silty, calcareous, light green, (Fort Union Group, bedrock)	70-106
LIGNITE	black, (Fort Union Group, bedrock)	106-111
SHALE	interbedded with lignite, (Fort Union Group, bedrock)	111-120

149-082-36ABA

NDSWC 2805

Date Completed:	9/7/67	Purpose:	Observation Well
L.S. Elevation (ft):	1850	Well Type:	1.25" PVC
Depth Drilled (ft):	140	Aquifer:	Snake Creek
Screened Interval (ft):	32-38.8	Source:	SWC

Lithologic Log

Unit	Description	Depth (ft)
TOPSOIL	silty, sandy, grayish black	0-1
CLAY	silty, sandy, medium light gray to greenish gray	1-14
SAND & GRAVEL	fine to very coarse subangular to rounded sand; fine to coarse subangular to rounded gravel; grades from fine at top to very coarse at bottom; interbedded with clay layers below 40 ft	14-65
CLAY	silty, sandy, olive gray to medium dark gray, (TILL)	65-108
SHALE	siliceous, dusky brown, indurated, (Fort Union Group, bedrock)	108-140

Table 3. Water Levels in Selected Observation Wells

Depth to Water is reported from top of well casing. WL Elev (msl, ft) = Water Level elevation referenced to Mean Sea Level; SI = Screened Interval (depth below land surface); MP= Measuring Point (top of well casing).

146-078-08BBB
Lake Nettie Aquifer

MP Elev (msl,ft)=2013.35
SI (ft.)=120-123

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/22/77	38.68	1974.67
03/23/78	39.15	1974.20
04/17/78	38.98	1974.37
05/18/78	38.39	1974.96
06/19/78	38.03	1975.32
07/20/78	37.80	1975.55
08/15/78	37.95	1975.40
09/18/78	37.80	1975.55
10/16/78	37.77	1975.58
11/20/78	37.85	1975.50
12/21/78	37.84	1975.51
12/11/84	36.17	1977.18
01/15/85	36.32	1977.03
02/13/85	36.44	1976.91
03/13/85	36.63	1976.72
04/04/85	36.63	1976.72
04/29/85	36.50	1976.85
06/06/85	36.29	1977.06
07/03/85	36.34	1977.01
08/15/85	36.37	1976.98
09/12/85	36.50	1976.85
10/30/85	36.57	1976.78
11/05/85	36.50	1976.85
12/05/85	36.49	1976.86
03/11/86	36.77	1976.58
04/29/86	36.08	1977.27
06/03/86	35.69	1977.66
07/01/86	35.12	1978.23
08/05/86	35.07	1978.28
09/10/86	35.15	1978.20
10/06/86	35.18	1978.17
12/02/86	35.30	1978.05
04/14/87	35.38	1977.97
05/18/87	34.75	1978.60
07/01/87	34.60	1978.75
08/06/87	34.57	1978.78
09/03/87	34.78	1978.57
09/15/87	35.04	1978.31
11/04/87	35.11	1978.24
12/07/87	35.25	1978.10
04/14/88	35.90	1977.45
08/22/88	36.61	1976.74
01/06/89	37.27	1976.08
05/02/89	37.54	1975.81
08/28/89	37.93	1975.42
12/14/89	38.30	1975.05
05/08/90	38.80	1974.55
07/01/90	39.00	1974.35
07/02/90	39.00	1974.35
08/27/90	39.27	1974.08
12/13/90	39.55	1973.80
04/01/91	39.88	1973.47
04/21/92	40.56	1972.79
06/25/92	40.68	1972.67
07/22/92	40.73	1972.62
08/27/92	40.89	1972.46
09/22/92	40.84	1972.51
10/21/92	40.97	1972.38
11/16/92	40.90	1972.45
12/14/92	40.96	1972.39
04/05/93	41.33	1972.02
05/04/93	40.88	1972.47
06/01/93	40.70	1972.65
06/30/93	40.60	1972.75
08/04/93	40.20	1973.15
08/27/93	40.11	1973.24
10/11/93	39.92	1973.43
11/04/93	39.81	1973.54
12/09/93	39.60	1973.75
04/13/94	39.40	1973.95
05/20/94	38.40	1974.95

146-079-06AAA1
Lake Nettie Aquifer

MP Elev (msl,ft)=1881.65
SI (ft.)=220-225

Date	Depth to Water (ft)	WL Elev (msl, ft)
01/16/85	58.66	1822.99
02/13/85	58.71	1822.94
03/13/85	58.55	1823.10
04/04/85	58.38	1823.27
04/29/85	58.33	1823.32
06/06/85	58.32	1823.33
06/13/85	58.51	1823.14
07/03/85	58.63	1823.02
08/15/85	58.83	1822.82
09/12/85	58.91	1822.74
10/01/85	58.83	1822.82
11/05/85	58.77	1822.88
12/05/85	58.79	1822.86
03/11/86	58.54	1823.11
04/29/86	58.22	1823.43
06/03/86	58.37	1823.28
07/01/86	58.50	1823.15
08/07/86	58.67	1822.98
09/10/86	58.74	1822.91
10/06/86	58.66	1822.99
12/02/86	58.58	1823.07
04/14/87	58.40	1823.25
05/18/87	58.29	1823.36
06/30/87	58.46	1823.19
08/06/87	58.47	1823.18
09/03/87	58.51	1823.14
10/15/87	58.69	1822.96
11/04/87	58.72	1822.93
12/07/87	58.63	1823.02
04/14/88	58.44	1823.21
08/22/88	59.39	1822.26
01/06/89	59.50	1822.15
05/03/89	59.18	1822.47
08/28/89	59.95	1821.70
12/14/89	60.10	1821.55
05/09/90	59.88	1821.77
07/01/90	59.97	1821.68
07/02/90	59.97	1821.68
07/19/90	60.13	1821.52
08/27/90	60.35	1821.30
12/13/90	60.44	1821.21
04/01/91	60.17	1821.48
04/21/92	60.10	1821.55
05/04/93	60.32	1821.33
04/13/94	59.64	1822.01

146-079-06AAA2
Lake Nettie Aquifer

MP Elev (msl,ft)=1880.58
SI (ft.)=155-160

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	58.53	1822.05
09/12/85	58.59	1821.99
10/01/85	58.60	1821.98
11/05/85	58.42	1822.16
12/05/85	58.43	1822.15
03/11/86	58.16	1822.42
04/29/86	57.82	1822.76
06/03/86	57.99	1822.59
07/01/86	58.16	1822.42
08/07/86	58.33	1822.25
09/10/86	58.40	1822.18
10/06/86	58.32	1822.26
12/02/86	58.25	1822.33
04/14/87	57.68	1822.90
05/18/87	57.92	1822.66
06/30/87	58.11	1822.47
08/06/87	58.13	1822.45
09/03/87	58.18	1822.40
10/15/87	58.38	1822.20
11/04/87	58.41	1822.17
12/07/87	58.31	1822.27
04/14/88	58.09	1822.49
08/22/88	59.12	1821.46
01/06/89	59.23	1821.35
05/03/89	58.83	1821.75
08/28/89	59.68	1820.90
12/14/89	59.81	1820.77
05/09/90	59.57	1821.01
07/01/90	59.67	1820.91
07/02/90	59.67	1820.91
07/19/90	59.86	1820.72
08/27/90	60.14	1820.44
12/13/90	60.17	1820.41
04/01/91	59.85	1820.73
04/21/92	59.78	1820.80
05/04/93	59.94	1820.64
04/13/94	59.20	1821.38

146-079-10DAD MP Elev (msl,ft)=1886.46

Lake Nettie Aquifer Sl (ft.)=198-203

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	60.02	1826.44	04/14/87	59.37	1827.09				12/14/92	61.73	1824.73
09/12/85	60.02	1826.44	05/18/87	59.40	1827.06	05/08/90	61.95	1824.51			
10/01/85	60.03	1826.43	07/01/87	59.47	1826.99	07/01/90	60.87	1825.59	04/05/93	61.56	1824.90
11/05/85	59.96	1826.50	08/06/87	59.88	1826.58	07/02/90	60.87	1825.59	05/04/93	61.45	1825.01
12/05/85	59.93	1826.53	09/03/87	59.47	1826.99	08/27/90	61.28	1825.18	06/01/93	61.45	1825.01
			10/15/87	59.61	1826.85	12/13/90	61.27	1825.19	06/30/93	61.42	1825.04
03/11/86	59.76	1826.70	11/04/87	59.64	1826.82				08/04/93	61.13	1825.33
04/29/86	59.90	1826.56	12/07/87	59.58	1826.88	04/01/91	61.22	1825.24	08/27/93	61.25	1825.21
06/03/86	59.55	1826.91							09/01/93	61.21	1825.25
07/01/86	59.60	1826.86	04/14/88	59.55	1826.91	04/21/92	61.21	1825.25	10/11/93	61.34	1825.12
07/29/86	59.63	1826.83	08/22/88	61.06	1825.40	06/25/92	61.45	1825.01	11/04/93	61.33	1825.13
08/05/86	59.70	1826.76				07/22/92	61.55	1824.91	12/09/93	61.17	1825.29
09/10/86	59.73	1826.73	01/06/89	60.28	1826.18	08/27/92	61.71	1824.75			
10/06/86	59.68	1826.78	05/02/89	60.20	1826.26	09/22/92	61.72	1824.74	04/13/94	60.90	1825.56
12/02/86	59.63	1826.83	08/28/89	60.65	1825.81	10/21/92	61.75	1824.71	05/20/94	60.73	1825.73
			12/14/89	60.88	1825.58	11/16/92	61.73	1824.73	06/29/94	60.78	1825.68

146-079-15ADD MP Elev (msl,ft)=1862.05

Mercer Aquifer Sl (ft.)=21-24

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/15/67	8.71	1853.34	07/03/85	4.94	1857.11	12/07/87	4.74	1857.31	07/22/92	10.55	1851.50
12/13/67	8.73	1853.32	08/15/85	5.16	1856.89				08/27/92	11.07	1850.98
			09/12/85	5.26	1856.79	05/23/88	5.10	1856.95	09/22/92	11.11	1850.94
01/11/68	8.79	1853.26	10/01/85	5.30	1856.75	08/22/88	6.70	1855.35	10/21/92	11.29	1850.76
02/13/68	8.88	1853.17	11/05/85	5.01	1857.04	10/31/88	8.28	1853.77	11/16/92	10.98	1851.07
03/13/68	8.05	1854.00	12/05/85	5.08	1856.97	11/29/88	7.31	1854.74	12/14/92	11.03	1851.02
04/11/68	7.98	1854.07									
05/16/68	7.98	1854.07	05/01/86	4.19	1857.86	01/06/89	7.29	1854.76	04/05/93	10.37	1851.68
06/12/68	8.05	1854.00	06/03/86	4.39	1857.66	05/02/89	6.83	1855.22	05/04/93	10.09	1851.96
07/16/68	8.36	1853.69	07/01/86	4.40	1857.65	08/28/89	8.14	1853.91	06/01/93	10.03	1852.02
			07/29/86	4.51	1857.54	12/14/89	8.72	1853.33	06/30/93	10.12	1851.93
01/14/69	9.02	1853.03	08/05/86	4.68	1857.37				08/04/93	9.12	1852.93
04/17/69	7.55	1854.50	09/10/86	4.92	1857.13	05/08/90	8.31	1853.74	08/27/93	9.33	1852.72
08/28/69	8.03	1854.02	10/06/86	4.77	1857.28	05/17/90	8.83	1853.22	09/01/93	9.36	1852.69
12/18/69	8.37	1853.68	12/02/86	4.59	1857.46	07/01/90	8.87	1853.18	10/11/93	9.59	1852.46
						07/02/90	8.87	1853.18	11/04/93	9.65	1852.40
09/08/70	7.84	1854.21	04/14/87	3.63	1858.42	08/27/90	9.30	1852.75	12/09/93	9.51	1852.54
			05/18/87	4.00	1858.05	12/13/90	9.81	1852.24			
12/11/84	4.99	1857.06	07/01/87	4.28	1857.77				04/13/94	8.42	1853.63
			08/06/87	4.24	1857.81	04/01/91	9.86	1852.19	05/20/94	8.07	1853.98
01/17/85	5.18	1856.87	09/03/87	4.44	1857.61				06/29/94	7.80	1854.25
02/13/85	5.38	1856.67	10/15/87	4.78	1857.27	04/21/92	9.70	1852.35	08/03/94	7.98	1854.07
06/07/85	4.77	1857.28	11/04/87	4.83	1857.22	06/25/92	10.47	1851.58			

146-080-01BBB MP Elev (msl,ft)=1824.6

Lake Nettie Aquifer Sl (ft.)=63-68

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	6.04	1818.56	08/07/86	5.97	1818.63	12/07/87	6.07	1818.53	07/02/90	7.56	1817.04
08/21/85	6.02	1818.58	09/10/86	6.08	1818.52				07/20/90	7.81	1816.79
09/16/85	6.11	1818.49	10/06/86	5.87	1818.73	04/14/88	5.56	1819.04	08/27/90	8.73	1815.87
10/01/85	6.19	1818.41	12/02/86	5.86	1818.74	08/22/88	7.24	1817.36	12/13/90	8.23	1816.37
11/05/85	5.98	1818.62									
12/05/85	6.03	1818.57	04/14/87	4.82	1819.78	01/06/89	7.22	1817.38	04/01/91	7.71	1816.89
			05/18/87	5.46	1819.14	05/03/89	6.44	1818.16			
03/11/86	5.60	1819.00	06/30/87	5.73	1818.87	08/28/89	7.74	1816.86	04/21/92	7.35	1817.25
04/29/86	4.99	1819.61	08/06/87	5.80	1818.80	12/14/89	7.75	1816.85			
06/03/86	5.37	1819.23	09/03/87	5.91	1818.69				05/04/93	7.56	1817.04
07/01/86	5.66	1818.94	10/15/87	6.09	1818.51	05/09/90	7.67	1816.93			
07/29/86	5.82	1818.78	11/04/87	6.08	1818.52	07/01/90	7.56	1817.04	04/13/94	6.29	1818.31

146-080-06CBB2 MP Elev (msl,ft)=1841.6

Fort Union Aquifer SI (ft.)=48-53

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	21.44	1820.16	09/10/86	21.26	1820.34	12/08/87	20.59	1821.01	07/03/90	23.77	1817.83
09/16/85	21.38	1820.22	10/07/86	21.09	1820.51				08/28/90	23.65	1817.95
10/02/85	21.38	1820.22	12/03/86	20.85	1820.75	04/14/88	21.02	1820.58	12/13/90	23.25	1818.35
11/06/85	21.15	1820.45				08/23/88	21.92	1819.68			
12/06/85	20.92	1820.68	04/14/87	20.71	1820.89				04/02/91	23.34	1818.26
			05/19/87	20.94	1820.66	01/13/89	22.03	1819.57			
03/16/86	21.07	1820.53	06/30/87	21.07	1820.53	05/02/89	22.46	1819.14	04/23/92	21.83	1819.77
04/30/86	20.28	1821.32	08/06/87	21.03	1820.57	08/29/89	23.11	1818.49			
06/04/86	21.14	1820.46	09/03/87	21.58	1820.02	12/14/89	23.17	1818.43	05/05/93	21.86	1819.74
07/03/86	21.16	1820.44	10/15/87	20.75	1820.85						
08/08/86	21.20	1820.40	11/04/87	20.64	1820.96	05/10/90	23.59	1818.01	04/14/94	20.90	1820.70

146-080-17AAA MP Elev (msl,ft)=1836.57

Lake Nettie Aquifer SI (ft.)=58-63

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/29/85	9.14	1827.43	07/01/86	9.65	1826.92	11/04/87	9.94	1826.63	07/01/90	10.37	1826.20
06/12/85	9.44	1827.13	08/07/86	9.81	1826.76	12/07/87	10.02	1826.55	07/02/90	10.37	1826.20
07/18/85	9.95	1826.62	09/10/86	9.96	1826.61				07/20/90	10.40	1826.17
08/15/85	10.24	1826.33	10/06/86	9.66	1826.91	04/14/88	9.75	1826.82	08/27/90	10.66	1825.91
09/16/85	10.06	1826.51	12/02/86	9.50	1827.07	08/22/88	11.57	1825.00	12/13/90	10.68	1825.89
10/01/85	10.05	1826.52									
11/05/85	9.71	1826.86	04/14/87	8.68	1827.89	01/06/89	11.35	1825.22	04/01/91	10.43	1826.14
12/05/85	9.73	1826.84	05/18/87	9.36	1827.21	05/02/89	10.42	1826.15			
			06/30/87	9.85	1826.72	08/28/89	11.85	1824.72	04/21/92	9.82	1826.75
03/11/86	8.89	1827.68	08/06/87	9.80	1826.77	12/14/89	11.30	1825.27			
04/29/86	8.53	1828.04	09/03/87	9.87	1826.70				05/04/93	9.87	1826.70
06/03/86	9.25	1827.32	10/15/87	9.98	1826.59	05/09/90	10.67	1825.90			

146-080-19BAA MP Elev (msl,ft)=1813.8

Turtle Lake Aquifer SI (ft.)=20-25

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	5.43	1808.37	07/01/86	3.73	1810.07	05/18/87	3.49	1810.31	04/14/88	3.55	1810.25
08/26/85	4.96	1808.84	07/29/86	3.81	1809.99	06/30/87	3.79	1810.01	08/22/88	7.23	1806.57
09/11/85	5.28	1808.52	08/07/86	4.46	1809.34	08/06/87	3.82	1809.98			
10/01/85	4.84	1808.96	09/10/86	4.90	1808.90	09/03/87	3.87	1809.93	01/06/89	6.74	1807.06
11/05/85	4.13	1809.67	10/06/86	4.06	1809.74	10/15/87	3.94	1809.86	05/02/89	4.76	1809.04
12/05/85	4.40	1809.40	12/02/86	3.60	1810.20	11/04/87	3.93	1809.87	08/11/89	7.51	1806.29
						12/07/87	3.62	1810.18			
06/03/86	3.89	1809.91	04/14/87	2.83	1810.97						

147-078-06BBB MP Elev (msl,ft)=1906.32

Lake Nettie Aquifer SI (ft.)=20-40

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/10/69	19.78	1886.54
01/21/70	19.83	1886.49
02/19/70	19.94	1886.38
03/25/70	19.99	1886.33
05/05/70	19.41	1886.91
06/04/70	19.01	1887.31
06/24/70	18.66	1887.66
09/08/70	18.62	1887.70
11/30/70	18.71	1887.61
05/18/78	17.35	1888.97
06/19/78	17.27	1889.05
07/21/78	17.34	1888.98
08/15/78	19.20	1887.12
09/19/78	17.66	1888.66
10/17/78	17.64	1888.68
11/22/78	17.76	1888.56
12/11/84	14.82	1891.50
01/15/85	14.90	1891.42
02/13/85	15.07	1891.25
03/13/85	14.83	1891.49
04/04/85	14.53	1891.79
04/29/85	14.35	1891.97
06/06/85	14.20	1892.12
07/03/85	14.39	1891.93
08/15/85	14.72	1891.60
09/10/85	14.90	1891.42
10/01/85	14.97	1891.35
11/05/85	14.76	1891.56
12/05/85	14.98	1891.34
03/11/86	14.70	1891.62
04/22/86	14.16	1892.16
04/29/86	14.06	1892.26
06/03/86	13.88	1892.44
07/01/86	14.08	1892.24
07/29/86	14.19	1892.13
08/05/86	14.21	1892.11
08/07/86	14.25	1892.07
09/10/86	14.40	1891.92
09/30/86	14.57	1891.75
10/06/86	14.55	1891.77
10/21/86	14.60	1891.72
12/02/86	14.68	1891.64
04/14/87	13.72	1892.60
05/18/87	13.84	1892.48
06/30/87	14.08	1892.24
08/06/87	14.27	1892.05
09/03/87	14.14	1892.18
10/15/87	14.66	1891.66
11/04/87	14.76	1891.56
12/07/87	14.84	1891.48
04/14/88	14.93	1891.39
05/19/88	15.02	1891.30
06/20/88	15.23	1891.09
07/21/88	15.51	1890.81
08/22/88	15.85	1890.47
09/26/88	16.23	1890.09
10/31/88	16.45	1889.87
11/29/88	16.61	1889.71
01/06/89	16.72	1889.60
05/02/89	16.32	1890.00
06/05/89	16.70	1889.62
07/06/89	16.75	1889.57
07/31/89	16.92	1889.40
08/28/89	17.09	1889.23
10/06/89	17.35	1888.97
11/03/89	17.42	1888.90
12/14/89	17.69	1888.63
04/02/90	17.98	1888.34
05/09/90	17.99	1888.33
06/07/90	18.00	1888.32
07/01/90	18.01	1888.31
07/02/90	18.01	1888.31
08/02/90	18.12	1888.20
08/27/90	18.21	1888.11
09/28/90	18.31	1888.01
10/22/90	18.48	1887.84
11/23/90	18.59	1887.73
12/13/90	18.63	1887.69
04/01/91	18.80	1887.52
05/01/91	18.78	1887.54
05/22/91	18.73	1887.59
05/29/91	18.73	1887.59
06/24/91	18.78	1887.54
07/23/91	18.87	1887.45
08/12/91	18.93	1887.39
08/28/91	18.99	1887.33
09/23/91	19.10	1887.22
11/07/91	19.25	1887.07
12/05/91	19.27	1887.05
02/05/92	19.30	1887.02
04/21/92	19.01	1887.31
05/26/92	19.11	1887.21
06/25/92	19.29	1887.03
07/22/92	19.40	1886.92
08/27/92	19.49	1886.83
09/22/92	19.58	1886.74
10/21/92	19.71	1886.61
11/16/92	19.80	1886.52
12/14/92	19.85	1886.47
04/05/93	19.45	1886.87
05/04/93	19.42	1886.90
06/01/93	19.39	1886.93
06/30/93	19.44	1886.88
08/04/93	19.19	1887.13
09/01/93	18.94	1887.38
10/11/93	19.00	1887.32
11/04/93	19.18	1887.14
12/09/93	19.17	1887.15
04/13/94	18.84	1887.48
05/20/94	18.64	1887.68
06/29/94	17.58	1888.74

147-078-30BCC2 MP Elev (msl,ft)=1908.6

Lake Nettie Aquifer SI (ft.)=39-59

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/10/69	4.98	1903.62
05/05/70	4.25	1904.35
06/04/70	4.12	1904.48
06/24/70	4.22	1904.38
09/08/70	4.77	1903.83
05/04/78	5.06	1903.54
05/18/78	5.02	1903.58
06/19/78	5.05	1903.55
07/20/78	5.19	1903.41
08/15/78	5.59	1903.01
09/19/78	5.91	1902.69
10/17/78	5.87	1902.73
12/27/78	4.77	1903.83
12/11/84	3.05	1905.55
04/29/85	2.45	1906.15
06/06/85	2.31	1906.29
07/11/85	2.89	1905.71
08/15/85	3.10	1905.50
09/12/85	3.20	1905.40
10/01/85	3.27	1905.33
11/05/85	3.09	1905.51
04/29/86	2.33	1906.27
06/03/86	2.43	1906.17
07/01/86	2.62	1905.98
08/05/86	2.76	1905.84
09/10/86	2.99	1905.61
10/06/86	3.00	1905.60
12/02/86	2.98	1905.62
04/14/87	2.16	1906.44

147-079-11BCB MP Elev (msl,ft)=1871.58

Lake Nettie Aquifer SI (ft.)=28-33

Date	Depth to Water (ft)	WL Elev (msl. ft)
09/14/67	6.26	1865.32
10/13/67	5.94	1865.64
11/15/67	5.82	1865.76
12/13/67	6.21	1865.37
02/13/68	6.31	1865.27
03/13/68	5.68	1865.90
04/11/68	5.34	1866.24
05/16/68	5.26	1866.32
06/12/68	5.58	1866.00
07/16/68	6.29	1865.29
01/16/69	6.72	1864.86
04/17/69	5.25	1866.33
07/17/69	5.96	1865.62
08/28/69	6.42	1865.16
10/02/69	6.42	1865.16
12/10/69	6.42	1865.16
03/25/70	6.52	1865.06
05/05/70	4.78	1866.80
06/04/70	4.91	1866.67
06/30/70	5.32	1866.26
09/08/70	5.19	1866.39
11/30/70	4.79	1866.79
12/11/84	3.02	1868.56
04/29/85	2.61	1868.97
06/06/85	3.14	1868.44
07/03/85	6.71	1864.87
08/15/85	4.68	1866.90
09/12/85	4.20	1867.38
10/01/85	3.90	1867.68
11/05/85	3.16	1868.42
12/05/85	3.32	1868.26
05/01/86	2.77	1868.81
06/03/86	3.22	1868.36
07/01/86	4.41	1867.17
07/29/86	3.63	1867.95
08/05/86	3.95	1867.63
09/10/86	3.58	1868.00
10/06/86	3.09	1868.49
10/21/86	3.10	1868.48
12/02/86	3.04	1868.54
04/14/87	2.73	1868.85
05/18/87	3.63	1867.95
06/30/87	6.49	1865.09
08/06/87	4.40	1867.18
09/03/87	3.93	1867.65
10/15/87	3.78	1867.80
11/04/87	3.63	1867.95
12/07/87	3.38	1868.20
05/19/88	3.13	1868.45
06/20/88	7.77	1863.81
07/21/88	9.95	1861.63
08/22/88	6.79	1864.79
09/26/88	5.51	1866.07
10/31/88	6.43	1865.15
11/29/88	6.23	1865.35
01/06/89	6.10	1865.48
05/02/89	4.86	1866.72
06/05/89	8.10	1863.48
07/06/89	9.04	1862.54
07/31/89	7.24	1864.34
08/28/89	7.03	1864.55
10/06/89	6.84	1864.74
11/03/89	6.62	1864.96
12/14/89	6.65	1864.93
04/02/90	6.54	1865.04
05/09/90	6.44	1865.14
06/07/90	6.46	1865.12
07/01/90	6.58	1865.00
07/02/90	6.58	1865.00
08/02/90	9.63	1861.95
08/27/90	8.17	1863.41
09/28/90	7.62	1863.96
10/22/90	7.44	1864.14
11/23/90	7.36	1864.22
12/13/90	7.32	1864.26
04/01/91	7.24	1864.34
05/01/91	7.08	1864.50
05/22/91	6.99	1864.59
05/23/91	7.06	1864.52
06/24/91	8.58	1863.00
07/23/91	9.47	1862.11
08/12/91	8.53	1863.05
08/28/91	8.26	1863.32
09/23/91	8.10	1863.48
11/07/91	7.87	1863.71
12/05/91	7.78	1863.80
02/05/92	7.21	1864.37
04/21/92	6.87	1864.71
05/26/92	7.84	1863.74
06/25/92	6.81	1864.77
07/22/92	7.44	1864.14
08/27/92	9.35	1862.23
09/22/92	8.28	1863.30
10/21/92	8.02	1863.56
11/16/92	7.90	1863.68
12/14/92	7.82	1863.76
04/05/93	6.96	1864.62
05/04/93	6.80	1864.78
06/01/93	7.18	1864.40
06/30/93	7.64	1863.94
08/04/93	6.34	1865.24
09/01/93	6.63	1864.95
10/11/93	6.68	1864.90
11/04/93	6.66	1864.92
12/09/93	6.49	1865.09
02/15/94	6.68	1864.90
04/13/94	4.60	1866.98
05/20/94	2.80	1868.78
06/29/94	3.68	1867.90
08/03/94	6.99	1864.59

147-079-14CCC MP Elev (msl,ft)=1860.24

Lake Nettie Aquifer SI (ft.)=31-36

Date	Depth to Water (ft)	WL Elev (msl. ft)
06/13/85	21.79	1838.45
07/11/85	23.53	1836.71
07/17/85	24.27	1835.97
08/15/85	24.97	1835.27
09/12/85	24.98	1835.26
10/01/85	24.30	1835.94
11/05/85	23.44	1836.80
12/05/85	23.15	1837.09
03/11/86	21.93	1838.31
04/29/86	21.51	1838.73
06/03/86	21.45	1838.79
07/01/86	23.92	1836.32
07/29/86	23.10	1837.14
08/05/86	23.08	1837.16
09/10/86	22.89	1837.35
10/06/86	22.63	1837.61
10/21/86	22.54	1837.70
12/02/86	22.40	1837.84
04/14/87	20.68	1839.56
05/18/87	21.35	1838.89
06/30/87	23.69	1836.55
08/06/87	23.27	1836.97
09/03/87	22.66	1837.58
10/15/87	22.39	1837.85
11/04/87	22.37	1837.87
12/07/87	22.28	1837.96
04/14/88	22.13	1838.11
05/19/88	22.37	1837.87
06/20/88	25.13	1835.11
07/21/88	26.96	1833.28
08/22/88	25.32	1834.92
09/26/88	24.86	1835.38
10/31/88	24.50	1835.74
11/29/88	24.28	1835.96
01/06/89	24.06	1836.18
05/02/89	23.42	1836.82
06/05/89	23.56	1836.68
07/06/89	24.85	1835.39
07/31/89	26.87	1833.37
08/28/89	27.18	1833.06
10/06/89	26.28	1833.96
11/03/89	25.88	1834.36
12/14/89	25.60	1834.64
04/02/90	25.24	1835.00
05/09/90	25.14	1835.10
06/07/90	25.53	1834.71
06/22/90	25.42	1834.82
07/01/90	25.93	1834.31
07/02/90	25.93	1834.31
08/02/90	26.76	1833.48
08/27/90	27.55	1832.69
09/28/90	27.74	1832.50
10/22/90	26.97	1833.27
11/23/90	26.59	1833.65
12/13/90	26.45	1833.79
04/01/91	25.97	1834.27
05/01/91	25.88	1834.36
05/22/91	25.80	1834.44
06/24/91	27.38	1832.86
07/23/91	28.83	1831.41
08/12/91	29.99	1830.25
08/28/91	29.08	1831.16
09/23/91	28.43	1831.81
11/07/91	27.75	1832.49
12/05/91	27.53	1832.71
02/05/92	26.86	1833.38
04/21/92	26.14	1834.10
05/26/92	26.86	1833.38
06/25/92	28.00	1832.24
07/22/92	29.15	1831.09
08/27/92	28.93	1831.31
09/22/92	28.50	1831.74
10/21/92	28.17	1832.07
11/16/92	27.95	1832.29
12/14/92	27.73	1832.51
04/05/93	26.27	1833.97
05/04/93	26.20	1834.04
06/01/93	26.19	1834.05
06/30/93	26.73	1833.51
08/04/93	25.69	1834.55
09/01/93	26.15	1834.09
10/11/93	26.24	1834.00
11/04/93	26.36	1833.88
12/09/93	25.83	1834.41
02/15/94	25.59	1834.65
04/13/94	24.35	1835.89
05/20/94	23.65	1836.59
06/29/94	22.99	1837.25
08/03/94	25.01	1835.23

147-079-18ADD MP Elev (msl,ft)=1867.46

Lake Nettie Aquifer SI (ft.)=173-178

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/31/85	46.12	1821.34	11/04/87	46.70	1820.76	06/07/90	47.84	1819.62	05/26/92	48.16	1819.30
06/12/85	45.69	1821.77	12/07/87	46.67	1820.79	07/01/90	47.98	1819.48	06/25/92	48.44	1819.02
07/11/85	46.57	1820.89				07/02/90	47.98	1819.48	07/22/92	48.61	1818.85
08/15/85	46.79	1820.67	04/14/88	46.28	1821.18	07/18/90	48.16	1819.30	08/27/92	48.84	1818.62
09/10/85	46.86	1820.60	05/19/88	46.57	1820.89	07/19/90	48.16	1819.30	09/22/92	48.88	1818.58
10/01/85	46.89	1820.57	06/20/88	46.90	1820.56	08/02/90	48.21	1819.25	10/21/92	48.84	1818.62
11/05/85	46.70	1820.76	07/21/88	47.24	1820.22	08/27/90	48.43	1819.03	11/16/92	48.78	1818.68
			08/22/88	47.55	1819.91	09/28/90	48.59	1818.87	12/14/92	48.65	1818.81
03/11/86	46.23	1821.23	09/26/88	47.80	1819.66	10/22/90	48.55	1818.91			
04/29/86	46.01	1821.45	10/31/88	47.80	1819.66	11/23/90	48.50	1818.96	04/05/93	48.07	1819.39
06/03/86	46.18	1821.28	11/29/88	47.75	1819.71	12/13/90	48.43	1819.03	05/04/93	48.07	1819.39
07/01/86	46.42	1821.04							06/01/93	48.18	1819.28
07/29/86	46.47	1820.99	01/06/89	47.55	1819.91	04/01/91	47.95	1819.51	06/30/93	48.25	1819.21
08/07/86	46.57	1820.89	05/02/89	47.07	1820.39	05/01/91	47.95	1819.51	08/04/93	47.80	1819.66
09/10/86	46.63	1820.83	06/05/89	47.37	1820.09	05/22/91	48.01	1819.45	09/01/93	48.00	1819.46
10/06/86	46.62	1820.84	07/06/89	47.74	1819.72	06/24/91	48.22	1819.24	10/11/93	48.16	1819.30
10/21/86	46.60	1820.86	08/01/89	47.95	1819.51	07/23/91	48.38	1819.08	11/04/93	48.26	1819.20
			08/28/89	48.11	1819.35	08/12/91	48.54	1818.92			
04/14/87	45.86	1821.60	10/06/89	48.26	1819.20	08/28/91	48.63	1818.83	04/13/94	47.45	1820.01
05/18/87	46.14	1821.32	11/03/89	48.18	1819.28	09/23/91	48.68	1818.78	05/20/94	47.51	1819.95
06/30/87	46.37	1821.09	12/14/89	48.12	1819.34	12/05/91	48.37	1819.09	06/29/94	47.52	1819.94
08/06/87	46.46	1821.00							08/03/94	47.60	1819.86
09/03/87	46.46	1821.00	04/02/90	47.69	1819.77	02/05/92	48.08	1819.38			
10/15/87	46.68	1820.78	05/09/90	47.73	1819.73	04/21/92	47.94	1819.52			

147-079-18DCC MP Elev (msl,ft)=1829.35

Lake Nettie Aquifer SI (ft.)=178-183

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	7.97	1821.38	11/04/87	7.85	1821.50	05/09/90	8.94	1820.41	04/21/92	9.10	1820.25
08/20/85	7.97	1821.38	12/07/87	7.76	1821.59	06/07/90	9.01	1820.34	05/26/92	9.40	1819.95
09/10/85	8.03	1821.32				07/01/90	9.13	1820.22	06/25/92	9.62	1819.73
10/01/85	7.99	1821.36	04/14/88	7.43	1821.92	07/02/90	9.13	1820.22	07/22/92	9.76	1819.59
11/05/85	7.85	1821.50	05/19/88	7.67	1821.68	07/19/90	9.28	1820.07	08/27/92	10.03	1819.32
			06/20/88	7.99	1821.36	08/02/90	9.36	1819.99	09/22/92	10.06	1819.29
03/11/86	7.45	1821.90	07/21/88	8.35	1821.00	08/27/90	9.58	1819.77	10/21/92	10.06	1819.29
04/22/86	7.16	1822.19	08/22/88	8.66	1820.69	09/28/90	9.74	1819.61	11/16/92	9.99	1819.36
06/03/86	7.39	1821.96	09/26/88	8.88	1820.47	10/22/90	9.64	1819.71	12/14/92	9.85	1819.50
07/01/86	7.59	1821.76	10/31/88	8.88	1820.47	11/23/90	9.62	1819.73			
07/29/86	7.62	1821.73	11/29/88	8.85	1820.50	12/13/90	9.59	1819.76	04/05/93	9.37	1819.98
08/07/86	7.74	1821.61							05/04/93	9.28	1820.07
09/10/86	7.80	1821.55	01/06/89	8.69	1820.66	04/01/91	9.20	1820.15	06/01/93	9.38	1819.97
10/06/86	7.73	1821.62	05/02/89	8.26	1821.09	05/01/91	9.13	1820.22	06/30/93	9.38	1819.97
10/21/86	7.75	1821.60	06/05/89	8.51	1820.84	05/22/91	9.17	1820.18	08/04/93	8.95	1820.40
12/02/86	7.65	1821.70	07/06/89	8.84	1820.51	06/24/91	9.40	1819.95	09/01/93	9.10	1820.25
			08/01/89	9.06	1820.29	07/23/91	9.56	1819.79	10/11/93	9.30	1820.05
04/14/87	7.08	1822.27	08/28/89	9.20	1820.15	08/12/91	9.72	1819.63	11/04/93	9.37	1819.98
05/18/87	7.31	1822.04	10/06/89	9.39	1819.96	08/28/91	9.80	1819.55			
06/30/87	7.54	1821.81	11/03/89	9.29	1820.06	09/23/91	9.84	1819.51	04/13/94	8.68	1820.67
08/06/87	7.59	1821.76	12/14/89	9.28	1820.07	12/05/91	9.55	1819.80	05/20/94	8.62	1820.73
09/03/87	7.62	1821.73							06/29/94	8.57	1820.78
10/15/87	7.79	1821.56	04/02/90	8.89	1820.46	02/05/92	9.29	1820.06	08/03/94	8.75	1820.60

147-079-19BAA2 MP Elev (msl,ft)=1829.36

Lake Nettie Aquifer SI (ft.)=118-121

Date	Depth to Water (ft)	WL Elev (msl, ft)
06/29/77	10.01	1819.35
07/06/77	10.12	1819.24
07/11/77	10.15	1819.21
07/26/77	10.27	1819.09
08/08/77	10.15	1819.21
08/24/77	10.40	1818.96
09/12/77	10.38	1818.98
09/29/77	10.07	1819.29
10/11/77	9.99	1819.37
10/26/77	10.02	1819.34
11/15/77	10.06	1819.30
12/02/77	9.82	1819.54
03/30/78	9.42	1819.94
04/10/78	9.36	1820.00
04/26/78	9.42	1819.94
05/10/78	9.43	1819.93
05/23/78	9.51	1819.85
06/05/78	9.58	1819.78
06/27/78	9.72	1819.64
07/31/78	9.38	1819.98
08/22/78	9.82	1819.54
09/25/78	9.70	1819.66
10/25/78	9.70	1819.66
11/20/78	9.70	1819.66
05/07/79	8.99	1820.37
05/22/79	9.14	1820.22
06/04/79	9.23	1820.13
06/27/79	9.27	1820.09
07/02/79	9.32	1820.04
07/31/79	9.48	1819.88
08/06/79	10.03	1819.33
08/22/79	10.50	1818.86
09/04/79	10.25	1819.11
09/25/79	10.38	1818.98
10/01/79	10.39	1818.97
10/25/79	10.38	1818.98
10/30/79	10.40	1818.96
11/20/79	10.38	1818.98
12/03/79	10.32	1819.04
01/28/80	9.95	1819.41
02/25/80	9.85	1819.51
03/20/80	9.81	1819.55
04/01/80	9.67	1819.69
04/23/80	9.73	1819.63
05/07/80	8.91	1820.45
05/20/80	10.18	1819.18
06/02/80	10.01	1819.35
07/02/80	10.37	1818.99
07/21/80	10.60	1818.76
08/13/80	11.35	1818.01
08/25/80	10.54	1818.82
09/10/80	10.55	1818.81
09/22/80	10.52	1818.84
10/06/80	10.58	1818.78
10/21/80	10.52	1818.84
11/05/80	10.31	1819.05
11/24/80	10.34	1819.02
12/02/80	10.24	1819.12
01/27/81	10.02	1819.34
02/23/81	9.90	1819.46
04/07/81	9.67	1819.69
04/29/81	9.90	1819.46
05/06/81	10.04	1819.32
05/28/81	10.12	1819.24
06/03/81	10.13	1819.23
06/21/81	10.20	1819.16
06/29/81	10.26	1819.10
07/26/81	10.40	1818.96
07/27/81	10.44	1818.92
08/23/81	10.50	1818.86
08/25/81	10.52	1818.84
09/21/81	10.46	1818.90
09/27/81	10.48	1818.88
10/31/81	10.48	1818.88
11/27/81	10.00	1819.36
12/01/81	11.00	1818.36
12/31/81	10.90	1818.46
04/19/82	9.34	1820.02
04/25/82	9.35	1820.01
05/19/82	9.78	1819.58
05/30/82	9.75	1819.61
06/14/82	9.72	1819.64
06/27/82	9.60	1819.76
07/25/82	9.85	1819.51
08/02/82	9.92	1819.44
08/23/82	9.80	1819.56
09/10/82	9.45	1819.91
09/26/82	10.00	1819.36
10/12/82	9.88	1819.48
10/20/82	9.31	1820.05
11/16/82	9.75	1819.61
11/26/82	9.60	1819.76
12/02/82	9.68	1819.68
12/06/82	9.75	1819.61
01/12/83	9.50	1819.86
03/29/83	8.90	1820.46
05/05/83	9.10	1820.26
06/30/83	8.60	1820.76
07/27/83	9.45	1819.91
09/26/83	10.00	1819.36
11/15/83	10.10	1819.26
06/08/84	9.60	1819.76
12/11/84	9.75	1819.61
01/15/85	9.59	1819.77
02/13/85	9.57	1819.79
03/13/85	9.30	1820.06
04/04/85	9.20	1820.16
04/29/85	9.21	1820.15
06/06/85	9.38	1819.98
07/03/85	9.61	1819.75
08/15/85	9.90	1819.46
09/10/85	9.95	1819.41
10/01/85	9.95	1819.41
11/05/85	9.80	1819.56
03/11/86	9.21	1820.15
04/22/86	9.00	1820.36
04/29/86	9.06	1820.30
06/03/86	9.32	1820.04
07/01/86	9.55	1819.81
07/29/86	9.63	1819.73
08/07/86	9.70	1819.66
09/10/86	9.80	1819.56
09/30/86	9.71	1819.65
10/06/86	9.70	1819.66
10/21/86	9.71	1819.65
12/02/86	9.64	1819.72
04/14/87	8.99	1820.37
05/18/87	9.33	1820.03
06/30/87	9.55	1819.81
08/06/87	9.61	1819.75
09/03/87	9.64	1819.72
10/15/87	9.80	1819.56
11/04/87	9.85	1819.51
12/07/87	9.80	1819.56
04/14/88	9.32	1820.04
05/19/88	9.65	1819.71
06/20/88	10.01	1819.35
07/21/88	10.33	1819.03
08/22/88	10.62	1818.74
09/26/88	10.78	1818.58
10/31/88	10.73	1818.63
11/29/88	10.65	1818.71
01/06/89	10.48	1818.88
05/02/89	9.98	1819.38
06/05/89	10.30	1819.06
07/06/89	10.60	1818.76
08/01/89	10.90	1818.46
08/28/89	11.07	1818.29
10/06/89	11.12	1818.24
11/03/89	11.06	1818.30
12/14/89	10.94	1818.42
04/02/90	10.44	1818.92
05/09/90	10.53	1818.83
06/07/90	10.67	1818.69
07/01/90	10.81	1818.55
07/02/90	10.81	1818.55
08/02/90	11.07	1818.29
08/27/90	11.27	1818.09
09/28/90	11.37	1817.99
10/22/90	11.29	1818.07
11/23/90	11.24	1818.12
12/13/90	11.16	1818.20
04/01/91	10.60	1818.76
05/01/91	10.64	1818.72
05/22/91	10.71	1818.65
05/23/91	10.73	1818.63
06/24/91	11.03	1818.33
07/23/91	11.17	1818.19
08/12/91	11.34	1818.02
08/28/91	11.44	1817.92
09/23/91	11.43	1817.93
12/05/91	11.12	1818.24
02/05/92	10.77	1818.59
04/21/92	10.60	1818.76
05/26/92	10.93	1818.43
06/25/92	10.92	1818.44
07/22/92	11.34	1818.02
08/27/92	11.78	1817.58
09/22/92	11.57	1817.79
10/21/92	11.54	1817.82
11/16/92	11.44	1817.92
12/14/92	11.36	1818.00
04/05/93	10.65	1818.71
05/04/93	10.70	1818.66
06/01/93	10.87	1818.49
06/30/93	10.93	1818.43
08/04/93	10.39	1818.97
09/01/93	10.70	1818.66
10/11/93	10.88	1818.48
11/04/93	10.93	1818.43
04/13/94	10.22	1819.14
05/20/94	10.30	1819.06
06/29/94	10.32	1819.04
08/03/94	10.42	1818.94

147-079-19BAA3
Lake Nettie Aquifer

MP Elev (msl,ft)=1829.11
SI (ft.)=39-42

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/18/67	11.53	1817.58
09/14/67	11.70	1817.41
10/11/67	11.66	1817.45
11/17/67	11.61	1817.50
12/15/67	11.53	1817.58
01/12/68	11.36	1817.75
02/13/68	11.18	1817.93
03/14/68	10.91	1818.20
04/12/68	10.93	1818.18
05/16/68	11.05	1818.06
06/12/68	11.31	1817.80
07/16/68	11.51	1817.60
01/16/69	12.08	1817.03
04/17/69	10.53	1818.58
07/17/69	11.25	1817.86
08/28/69	11.45	1817.66
10/02/69	11.53	1817.58
12/10/69	11.35	1817.76
03/25/70	10.93	1818.18
05/05/70	10.63	1818.48
06/04/70	10.14	1818.97
07/01/70	11.01	1818.10
09/10/70	11.15	1817.96
12/02/70	10.48	1818.63
12/03/71	10.51	1818.60
12/05/72	10.06	1819.05
12/03/73	11.11	1818.00
12/02/74	9.20	1819.91
05/16/75	9.71	1819.40
08/27/75	9.92	1819.19
12/02/75	10.63	1818.48
03/03/76	10.16	1818.95
05/21/76	10.15	1818.96
08/30/76	10.23	1818.88
12/02/76	9.99	1819.12
03/01/77	9.63	1819.48
05/26/77	10.08	1819.03
06/29/77	10.40	1818.71
07/06/77	10.51	1818.60
07/11/77	10.52	1818.59
07/26/77	10.55	1818.56
08/08/77	10.69	1818.42
08/24/77	10.67	1818.44
09/12/77	10.69	1818.42
09/29/77	10.41	1818.70
10/11/77	10.35	1818.76
10/26/77	10.17	1818.94
11/15/77	10.36	1818.75
12/02/77	9.83	1819.28
03/06/78	10.05	1819.06
03/30/78	10.36	1818.75
04/10/78	9.68	1819.43
04/26/78	9.81	1819.30
05/10/78	9.76	1819.35
05/23/78	9.83	1819.28
06/05/78	9.90	1819.21
06/27/78	10.08	1819.03
07/12/78	10.10	1819.01
07/25/78	10.20	1818.91
08/07/78	10.26	1818.85
08/24/78	10.50	1818.61
09/13/78	10.27	1818.84
09/22/78	10.14	1818.97
10/13/78	10.40	1818.71
10/31/78	10.47	1818.64
11/06/78	10.42	1818.69
11/27/78	10.37	1818.74
12/11/78	10.38	1818.73
04/23/79	9.38	1819.73
05/07/79	9.25	1819.86
05/22/79	9.48	1819.63
06/04/79	9.51	1819.60
06/27/79	9.67	1819.44
07/02/79	9.70	1819.41
07/31/79	9.85	1819.26
08/06/79	10.02	1819.09
08/22/79	10.15	1818.96
09/04/79	10.23	1818.88
09/25/79	10.24	1818.87
10/01/79	10.17	1818.94
10/25/79	10.30	1818.81
10/30/79	10.26	1818.85
11/20/79	10.27	1818.84
12/03/79	10.22	1818.89
01/02/80	10.09	1819.02
01/28/80	10.10	1819.01
02/25/80	9.85	1819.26
03/20/80	9.70	1819.41
04/01/80	9.59	1819.52
04/23/80	9.60	1819.51
05/07/80	9.82	1819.29
05/20/80	10.04	1819.07
06/02/80	10.13	1818.98
06/23/80	10.25	1818.86
07/02/80	10.42	1818.69
07/21/80	10.54	1818.57
08/13/80	10.52	1818.59
08/25/80	10.49	1818.62
09/12/80	10.48	1818.63
09/22/80	10.45	1818.66
10/06/80	10.50	1818.61
10/21/80	10.51	1818.60
11/05/80	10.25	1818.86
11/24/80	10.23	1818.88
12/02/80	10.25	1818.86
01/27/81	9.66	1819.45
02/23/81	9.85	1819.26
03/04/81	9.28	1819.83
04/07/81	9.62	1819.49
04/29/81	9.77	1819.34
05/06/81	9.94	1819.17
05/28/81	10.11	1819.00
06/03/81	10.12	1818.99
06/21/81	10.25	1818.86
06/29/81	10.19	1818.92
07/26/81	10.30	1818.81
07/27/81	10.35	1818.76
08/23/81	10.45	1818.66
08/25/81	10.42	1818.69
09/21/81	10.38	1818.73
09/27/81	10.38	1818.73
10/31/81	10.43	1818.68
11/27/81	10.00	1819.11
12/01/81	10.63	1818.48
12/31/81	10.17	1818.94
04/19/82	9.16	1819.95
04/25/82	9.30	1819.81
05/19/82	9.67	1819.44
05/30/82	9.75	1819.36
06/14/82	9.62	1819.49
06/27/82	10.68	1818.43
07/25/82	9.74	1819.37
08/02/82	9.77	1819.34
08/23/82	9.80	1819.31
09/10/82	9.90	1819.21
09/26/82	9.90	1819.21
10/12/82	9.78	1819.33
10/20/82	9.60	1819.51
11/16/82	9.67	1819.44
11/26/82	9.60	1819.51
12/02/82	9.58	1819.53
12/06/82	9.65	1819.46
12/28/82	9.38	1819.73
01/12/83	9.40	1819.71
03/29/83	8.90	1820.21
05/05/83	9.00	1820.11
06/30/83	9.30	1819.81
07/27/83	9.30	1819.81
09/26/83	9.90	1819.21
11/15/83	9.95	1819.16
02/08/84	9.60	1819.51
06/08/84	9.40	1819.71
12/11/84	9.62	1819.49
01/15/85	9.48	1819.63
02/13/85	9.47	1819.64
03/13/85	9.20	1819.91
04/04/85	9.08	1820.03
04/29/85	9.08	1820.03
06/06/85	9.27	1819.84
07/03/85	9.49	1819.62
08/15/85	9.78	1819.33
09/10/85	9.84	1819.27
10/01/85	9.84	1819.27
11/05/85	9.70	1819.41
03/11/86	9.07	1820.04
04/22/86	8.87	1820.24
04/29/86	8.93	1820.18
06/03/86	9.18	1819.93
07/01/86	9.43	1819.68
07/29/86	9.49	1819.62
08/07/86	9.58	1819.53
09/10/86	9.69	1819.42
09/30/86	9.59	1819.52
10/06/86	9.58	1819.53
10/21/86	9.59	1819.52
12/02/86	9.51	1819.60
04/14/87	8.82	1820.29
05/18/87	9.20	1819.91
06/30/87	9.43	1819.68
08/06/87	9.48	1819.63
09/03/87	9.54	1819.57
10/15/87	9.70	1819.41
11/04/87	9.71	1819.40
12/07/87	9.69	1819.42
04/14/88	9.18	1819.93
05/19/88	9.53	1819.58
06/20/88	9.90	1819.21
07/21/88	10.21	1818.90
08/22/88	10.49	1818.62
09/26/88	10.68	1818.43
10/31/88	10.60	1818.51
11/29/88	10.53	1818.58
01/06/89	10.36	1818.75
05/02/89	9.84	1819.27
06/05/89	10.18	1818.93
07/06/89	10.50	1818.61
08/01/89	10.78	1818.33
08/28/89	10.97	1818.14
10/06/89	10.99	1818.12
11/03/89	10.93	1818.18
12/14/89	10.81	1818.30
04/02/90	10.29	1818.82
05/09/90	10.37	1818.74
06/07/90	10.54	1818.57
07/01/90	10.69	1818.42
07/02/90	10.69	1818.42
08/02/90	10.91	1818.20
08/27/90	11.14	1817.97
09/28/90	11.22	1817.89
10/22/90	11.16	1817.95
11/23/90	11.12	1817.99
12/13/90	11.02	1818.09
04/01/91	10.43	1818.68
05/01/91	10.48	1818.63
05/22/91	10.56	1818.55
05/23/91	10.59	1818.52
06/24/91	10.88	1818.23
07/23/91	11.02	1818.09
08/12/91	11.20	1817.91
08/28/91	11.29	1817.82
09/23/91	11.28	1817.83
12/05/91	10.98	1818.13
02/05/92	10.64	1818.47
04/21/92	10.45	1818.66
05/26/92	10.78	1818.33
06/25/92	11.01	1818.10
07/22/92	11.19	1817.92
08/27/92	11.43	1817.68
09/22/92	11.41	1817.70
10/21/92	11.28	1817.83
11/16/92	11.23	1817.88
12/14/92	11.22	1817.89
04/05/93	10.48	1818.63
05/04/93	10.57	1818.54
06/01/93	10.69	1818.42
06/30/93	10.80	1818.31
08/04/93	10.24	1818.87
09/01/93	10.56	1818.55
10/11/93	10.74	1818.37
11/04/93	10.81	1818.30
04/13/94	10.05	1819.06
05/20/94	10.14	1818.97
06/29/94	10.17	1818.94
08/03/94	10.27	1818.84

147-079-20ABD

MP Elev (msl,ft)=1844.32

Lake Nettie Aquifer

SI (ft.)=138-143

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/31/85	23.68	1820.64	10/15/87	23.74	1820.58	04/02/90	24.84	1819.48	02/05/92	25.18	1819.14
06/12/85	23.44	1820.88	11/04/87	23.77	1820.55	05/09/90	24.92	1819.40	04/21/92	25.11	1819.21
07/11/85	23.64	1820.68	12/07/87	23.72	1820.60	06/07/90	25.10	1819.22	05/26/92	25.42	1818.90
08/15/85	23.88	1820.44				07/01/90	25.25	1819.07	06/25/92	25.68	1818.64
09/10/85	23.94	1820.38	04/14/88	23.61	1820.71	07/02/90	25.25	1819.07	07/22/92	25.82	1818.50
10/01/85	23.96	1820.36	05/19/88	23.63	1820.69	07/19/90	25.36	1818.96	08/27/92	26.07	1818.25
11/05/85	23.79	1820.53	06/20/88	24.01	1820.31	08/02/90	25.44	1818.88	09/22/92	26.10	1818.22
			07/21/88	24.35	1819.97	08/27/90	25.65	1818.67	10/21/92	26.12	1818.20
04/29/86	23.02	1821.30	08/22/88	24.71	1819.61	09/28/90	25.81	1818.51	11/16/92	26.05	1818.27
06/03/86	23.21	1821.11	09/26/88	25.01	1819.31	10/22/90	25.74	1818.58	12/14/92	25.93	1818.39
07/01/86	23.47	1820.85	10/31/88	25.06	1819.26	11/23/90	25.74	1818.58			
07/29/86	23.54	1820.78	11/29/88	24.96	1819.36	12/13/90	25.60	1818.72	04/05/93	25.32	1819.00
08/07/86	23.65	1820.67							05/04/93	25.30	1819.02
09/10/86	23.76	1820.56	01/06/89	24.77	1819.55	04/01/91	25.17	1819.15	06/01/93	25.42	1818.90
10/06/86	23.69	1820.63	05/02/89	24.22	1820.10	05/01/91	25.15	1819.17	06/30/93	25.45	1818.87
10/21/86	23.69	1820.63	06/05/89	24.55	1819.77	05/22/91	25.26	1819.06	08/04/93	24.95	1819.37
12/02/86	23.59	1820.73	07/06/89	24.90	1819.42	06/24/91	25.47	1818.85	09/01/93	25.19	1819.13
			08/01/89	25.17	1819.15	07/23/91	25.56	1818.76	10/11/93	25.39	1818.93
04/14/87	22.87	1821.45	08/28/89	25.34	1818.98	08/12/91	25.74	1818.58	11/04/93	25.46	1818.86
05/18/87	23.17	1821.15	10/06/89	25.50	1818.82	08/28/91	25.84	1818.48			
06/30/87	23.41	1820.91	11/03/89	25.47	1818.85	09/23/91	25.86	1818.46	04/13/94	24.61	1819.71
08/06/87	23.48	1820.84	12/14/89	25.35	1818.97	12/05/91	25.57	1818.75	05/20/94	24.65	1819.67
09/03/87	23.55	1820.77							06/29/94	24.57	1819.75

147-079-22CBB

MP Elev (msl,ft)=1851.12

Lake Nettie Aquifer

SI (ft.)=68-73

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/13/85	27.70	1823.42	12/07/87	28.05	1823.07	05/09/90	30.32	1820.80	04/21/92	30.58	1820.54
07/11/85	28.01	1823.11				06/07/90	30.34	1820.78	05/26/92	30.81	1820.31
07/24/85	28.09	1823.03	04/14/88	27.83	1823.29	06/22/90	30.39	1820.73	06/25/92	31.07	1820.05
08/15/85	28.19	1822.93	05/19/88	28.07	1823.05	07/01/90	30.39	1820.73	07/22/92	31.20	1819.92
09/12/85	28.28	1822.84	06/20/88	28.44	1822.68	07/02/90	30.39	1820.73	08/27/92	31.47	1819.65
10/01/85	28.33	1822.79	07/21/88	28.82	1822.30	08/02/90	30.52	1820.60	09/22/92	31.55	1819.57
11/05/85	28.14	1822.98	08/22/88	29.22	1821.90	08/27/90	30.72	1820.40	10/21/92	31.63	1819.49
			09/26/88	29.59	1821.53	09/28/90	30.95	1820.17	11/16/92	31.58	1819.54
04/29/86	27.31	1823.81	10/31/88	29.72	1821.40	10/22/90	30.93	1820.19			
06/03/86	27.42	1823.70	11/29/88	29.70	1821.42	11/23/90	31.01	1820.11	04/05/93	30.94	1820.18
07/01/86	27.66	1823.46				12/13/90	30.97	1820.15	05/04/93	30.91	1820.21
07/29/86	27.71	1823.41	01/06/89	29.55	1821.57				06/01/93	30.95	1820.17
08/05/86	27.81	1823.31	05/02/89	29.20	1821.92	04/01/91	30.67	1820.45	06/30/93	30.96	1820.16
09/10/86	28.05	1823.07	06/05/89	29.33	1821.79	05/01/91	30.59	1820.53	08/04/93	30.55	1820.57
10/06/86	28.03	1823.09	07/06/89	29.65	1821.47	05/22/91	30.61	1820.51	09/01/93	30.69	1820.43
10/21/86	28.02	1823.10	07/31/89	29.89	1821.23	06/24/91	30.71	1820.41	10/11/93	30.92	1820.20
			08/28/89	30.14	1820.98	07/23/91	30.83	1820.29	11/04/93	31.01	1820.11
04/14/87	27.08	1824.04	10/06/89	30.44	1820.68	08/12/91	31.00	1820.12			
05/18/87	27.28	1823.84	11/03/89	30.43	1820.69	08/28/91	31.08	1820.04	04/13/94	30.14	1820.98
06/30/87	27.56	1823.56	12/14/89	30.44	1820.68	09/23/91	31.18	1819.94	05/20/94	30.02	1821.10
08/06/87	27.65	1823.47							06/29/94	29.92	1821.20
09/03/87	27.75	1823.37	04/02/90	30.22	1820.90	02/05/92	30.81	1820.31	08/03/94	30.07	1821.05

147-079-24DDD

MP Elev (msl,ft)=1968.02

Lake Nettie Aquifer

SI (ft.)=152-157

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	134.09	1833.93	11/05/85	133.90	1834.12	07/01/86	133.71	1834.31			
08/20/85	134.25	1833.77				08/05/86	133.68	1834.34	04/14/87	133.78	1834.24
09/12/85	134.29	1833.73	04/29/86	133.79	1834.23	09/10/86	133.44	1834.58	05/18/87	133.56	1834.46
10/10/85	133.89	1834.13	06/03/86	133.76	1834.26	10/06/86	133.73	1834.29			

147-079-26DDA MP Elev (msl,ft)=1914.86

Lake Nettie Aquifer SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/13/85	85.35	1829.51	07/01/86	85.29	1829.57	11/04/87	85.48	1829.38	06/22/90	87.67	1827.19
07/11/85	85.54	1829.32	08/05/86	85.27	1829.59	12/07/87	85.25	1829.61	07/01/90	87.46	1827.40
07/17/85	85.53	1829.33	09/10/86	85.23	1829.63				07/02/90	87.46	1827.40
08/15/85	85.62	1829.24	10/06/86	85.49	1829.37	04/14/88	85.58	1829.28	08/27/90	87.74	1827.12
09/12/85	85.73	1829.13	12/02/86	85.24	1829.62	08/22/88	85.97	1828.89	12/13/90	88.20	1826.66
10/01/85	85.74	1829.12									
11/05/85	85.33	1829.53	04/14/87	85.13	1829.73	01/06/89	86.44	1828.42	04/01/91	88.21	1826.65
12/05/85	85.82	1829.04	05/18/87	85.00	1829.86	05/02/89	86.52	1828.34			
			07/01/87	84.94	1829.92	08/28/89	86.91	1827.95	04/21/92	88.32	1826.54
03/11/86	85.50	1829.36	08/06/87	85.14	1829.72	12/14/89	87.44	1827.42			
04/29/86	85.17	1829.69	09/03/87	85.00	1829.86				05/04/93	88.64	1826.22
06/03/86	85.09	1829.77	10/15/87	85.32	1829.54	05/09/90	87.56	1827.30			

147-079-27AAA MP Elev (msl,ft)=1852.92

Lake Nettie Aquifer SI (ft.)=38-48

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/24/70	28.98	1823.94				04/29/85	26.20	1826.72	10/01/85	27.12	1825.80
09/08/70	29.14	1823.78	01/15/85	26.97	1825.95	06/06/85	26.08	1826.84	11/05/85	26.97	1825.95
11/30/70	29.06	1823.86	02/13/85	27.11	1825.81	07/03/85	26.45	1826.47	12/05/85	26.98	1825.94
			03/13/85	26.69	1826.23	08/15/85	27.26	1825.66			
12/12/84	27.04	1825.88	04/04/85	26.34	1826.58	09/12/85	27.08	1825.84	03/11/86	26.40	1826.52

147-079-27ADA1 MP Elev (msl,ft)=1844.36

Lake Nettie Aquifer SI (ft.)=168-178

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	19.00	1825.36
10/13/67	19.07	1825.29
11/15/67	19.16	1825.20
12/13/67	19.24	1825.12
01/11/68	19.12	1825.24
02/13/68	18.98	1825.38
03/13/68	18.87	1825.49
04/11/68	18.72	1825.64
05/16/68	18.80	1825.56
06/12/68	18.90	1825.46
07/16/68	19.10	1825.26
01/16/69	19.34	1825.02
04/17/69	18.83	1825.53
07/17/69	18.80	1825.56
08/28/69	18.98	1825.38
10/02/69	19.13	1825.23
12/10/69	19.24	1825.12
03/25/70	19.07	1825.29
05/05/70	18.67	1825.69
06/04/70	18.53	1825.83
06/30/70	18.57	1825.79
09/08/70	18.80	1825.56
11/30/70	18.67	1825.69
12/05/72	17.22	1827.14
12/03/73	17.80	1826.56
12/02/74	17.74	1826.62
05/16/75	16.77	1827.59
07/01/75	16.57	1827.79
07/21/75	16.82	1827.54
08/26/75	17.08	1827.28
10/01/75	17.16	1827.20
11/06/75	17.03	1827.33
12/02/75	17.10	1827.26
01/26/76	17.00	1827.36
03/03/76	16.90	1827.46
03/24/76	16.53	1827.83
04/27/76	16.17	1828.19
05/21/76	16.18	1828.18
06/29/76	16.45	1827.91
07/30/76	16.94	1827.42
08/30/76	17.11	1827.25
09/25/76	17.44	1826.92
10/12/76	17.49	1826.87
10/23/76	17.58	1826.78
12/02/76	17.61	1826.75
05/26/77	17.74	1826.62
06/29/77	18.07	1826.29
07/11/77	17.94	1826.42
07/26/77	18.20	1826.16
08/08/77	18.38	1825.98
08/24/77	18.50	1825.86
09/12/77	18.51	1825.85
09/29/77	18.20	1826.16
10/11/77	18.25	1826.11
10/26/77	18.20	1826.16
11/15/77	18.19	1826.17
11/29/77	18.10	1826.26
12/12/77	18.05	1826.31
12/28/77	18.20	1826.16
01/09/78	18.10	1826.26
01/23/78	17.99	1826.37
02/13/78	17.95	1826.41
02/27/78	18.03	1826.33
03/06/78	17.99	1826.37
03/30/78	17.51	1826.85
04/10/78	17.35	1827.01
04/26/78	17.05	1827.31
05/10/78	17.05	1827.31
05/23/78	17.20	1827.16
06/05/78	17.23	1827.13
06/27/78	17.46	1826.90
07/12/78	17.52	1826.84
07/25/78	17.55	1826.81
08/07/78	17.72	1826.64
08/24/78	18.08	1826.28
09/13/78	17.98	1826.38
09/22/78	18.09	1826.27
10/13/78	18.13	1826.23
10/31/78	18.20	1826.16
11/06/78	18.16	1826.20
11/27/78	18.09	1826.27
12/11/78	18.07	1826.29
12/27/78	18.08	1826.28
01/08/79	17.99	1826.37
01/23/79	17.95	1826.41
03/06/79	17.35	1827.01
03/26/79	17.76	1826.60
04/23/79	17.07	1827.29
05/07/79	16.28	1828.08
05/22/79	16.23	1828.13
06/04/79	16.22	1828.14
06/27/79	16.33	1828.03
07/02/79	16.46	1827.90
07/31/79	16.81	1827.55
08/06/79	16.32	1828.04
09/04/79	16.97	1827.39
10/01/79	16.80	1827.56
10/30/79	17.27	1827.09
12/03/79	17.16	1827.20
01/02/80	17.23	1827.13
01/28/80	17.15	1827.21
02/25/80	16.80	1827.56
04/01/80	16.93	1827.43
05/07/80	17.00	1827.36
06/02/80	17.66	1826.70
07/02/80	18.13	1826.23
08/13/80	18.60	1825.76
09/10/80	18.50	1825.86
03/04/81	17.60	1826.76
04/29/81	17.38	1826.98
05/28/81	17.76	1826.60
06/21/81	18.56	1825.80
07/26/81	17.90	1826.46
07/27/81	18.20	1826.16
08/23/81	18.45	1825.91
08/25/81	18.53	1825.83
09/21/81	18.40	1825.96
09/27/81	18.38	1825.98
10/31/81	18.28	1826.08
11/27/81	18.15	1826.21
12/01/81	18.15	1826.21
12/31/81	18.05	1826.31
03/24/82	17.80	1826.56
04/19/82	17.01	1827.35
04/25/82	16.60	1827.76
05/30/82	16.62	1827.74
06/27/82	16.65	1827.71
07/25/82	16.85	1827.51
08/02/82	17.26	1827.10
08/23/82	17.35	1827.01
09/10/82	17.27	1827.09
09/26/82	17.25	1827.11
10/12/82	17.17	1827.19
10/20/82	17.00	1827.36
11/16/82	16.99	1827.37
11/26/82	16.09	1828.27
12/02/82	16.65	1827.71
12/28/82	16.45	1827.91
01/12/83	16.80	1827.56
05/05/83	15.90	1828.46
07/27/83	16.40	1827.96
11/16/83	17.15	1827.21
02/08/84	16.91	1827.45
06/08/84	16.00	1828.36
12/11/84	16.60	1827.76
01/15/85	16.55	1827.81
02/13/85	16.57	1827.79
03/13/85	16.29	1828.07
04/04/85	16.07	1828.29
04/29/85	15.94	1828.42
06/06/85	15.83	1828.53
07/03/85	16.34	1828.02
08/15/85	16.70	1827.66
09/12/85	16.68	1827.68
10/01/85	16.70	1827.66
11/05/85	16.48	1827.88
12/05/85	16.53	1827.83
03/11/86	16.02	1828.34
04/29/86	15.54	1828.82
06/03/86	15.66	1828.70
07/01/86	16.10	1828.26
07/29/86	16.11	1828.25
08/05/86	16.28	1828.08
09/10/86	16.40	1827.96
10/06/86	16.32	1828.04
10/21/86	16.33	1828.03
12/02/86	16.30	1828.06
04/14/87	15.34	1829.02
05/18/87	15.53	1828.83
07/01/87	15.84	1828.52
08/06/87	15.97	1828.39
09/03/87	16.05	1828.31
10/15/87	16.29	1828.07
11/04/87	16.33	1828.03
12/07/87	16.30	1828.06
04/14/88	16.20	1828.16
05/19/88	16.32	1828.04
06/20/88	16.63	1827.73
07/21/88	17.01	1827.35
08/22/88	17.37	1826.99
09/26/88	17.71	1826.65
10/31/88	17.80	1826.56
11/29/88	17.79	1826.57
01/06/89	17.72	1826.64
05/02/89	17.44	1826.92
06/05/89	17.55	1826.81
07/06/89	17.83	1826.53
07/31/89	18.06	1826.30
08/28/89	18.32	1826.04
10/06/89	18.61	1825.75
11/03/89	18.62	1825.74
12/14/89	18.68	1825.68
04/02/90	18.58	1825.78
05/09/90	18.63	1825.73
06/07/90	18.63	1825.73
07/01/90	18.68	1825.68
07/02/90	18.68	1825.68
08/02/90	18.89	1825.47
08/27/90	19.00	1825.36
09/28/90	19.24	1825.12
10/22/90	19.24	1825.12
11/23/90	19.29	1825.07
12/13/90	19.32	1825.04
04/01/91	19.13	1825.23
05/01/91	19.03	1825.33
05/22/91	19.06	1825.30
05/23/91	19.07	1825.29
06/24/91	19.15	1825.21
07/23/91	19.33	1825.03
08/12/91	19.53	1824.83
08/28/91	19.56	1824.80
09/23/91	19.60	1824.76
11/07/91	19.40	1824.96
12/05/91	19.52	1824.84
02/05/92	19.44	1824.92
04/22/92	19.17	1825.19
05/26/92	19.38	1824.98
06/25/92	19.59	1824.77
07/22/92	19.78	1824.58
08/27/92	20.04	1824.32
09/22/92	20.09	1824.27
10/21/92	20.15	1824.21
11/16/92	20.10	1824.26
12/14/92	20.02	1824.34
04/05/93	19.60	1824.76
05/04/93	19.49	1824.87
06/01/93	19.52	1824.84
06/30/93	19.50	1824.86
08/04/93	19.20	1825.16
09/01/93	19.30	1825.06
10/11/93	19.49	1824.87
11/04/93	19.53	1824.83
12/09/93	19.37	1824.99
02/15/94	19.18	1825.18
04/13/94	18.90	1825.46
05/20/94	18.65	1825.71
06/29/94	18.47	1825.89
08/03/94	18.66	1825.70

147-079-27ADA2 MP Elev (msl,ft)=1844.75

Lake Nettie Aquifer SI (ft.)=57-60

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	21.84	1822.91
10/13/67	21.91	1822.84
11/15/67	22.00	1822.75
12/13/67	22.12	1822.63
01/11/68	21.88	1822.87
02/13/68	21.83	1822.92
03/13/68	21.47	1823.28
04/11/68	21.30	1823.45
05/16/68	21.50	1823.25
06/12/68	21.54	1823.21
07/16/68	21.76	1822.99
01/16/69	22.06	1822.69
04/17/69	21.21	1823.54
07/17/69	21.40	1823.35
08/28/69	21.59	1823.16
10/02/69	21.75	1823.00
12/10/69	21.92	1822.83
03/25/70	21.77	1822.98
05/05/70	21.17	1823.58
06/04/70	20.89	1823.86
06/30/70	20.98	1823.77
09/08/70	21.44	1823.31
11/30/70	21.40	1823.35
12/05/72	19.58	1825.17
12/03/73	20.49	1824.26
05/16/75	19.03	1825.72
07/01/75	18.81	1825.94
07/21/75	18.99	1825.76
08/27/75	19.24	1825.51
10/01/75	19.50	1825.25
11/06/75	19.41	1825.34
12/02/75	20.20	1824.55
01/26/76	19.47	1825.28
03/03/76	19.34	1825.41
03/24/76	18.86	1825.89
04/27/76	18.28	1826.47
05/21/76	18.33	1826.42
06/28/76	18.58	1826.17
07/30/76	19.01	1825.74
08/30/76	19.34	1825.41
09/25/76	19.61	1825.14
10/12/76	19.84	1824.91
10/23/76	19.88	1824.87
12/02/76	20.27	1824.48
12/28/76	19.98	1824.77
02/01/77	19.94	1824.81
03/02/77	19.94	1824.81
03/26/77	19.82	1824.93
04/23/77	19.89	1824.86
05/26/77	20.05	1824.70
06/29/77	20.20	1824.55
07/11/77	20.40	1824.35
07/26/77	20.53	1824.22
08/08/77	19.74	1825.01
08/24/77	20.74	1824.01
09/12/77	20.80	1823.95
09/29/77	20.42	1824.33
10/11/77	20.63	1824.12
10/26/77	20.55	1824.20
11/15/77	20.32	1824.43
11/29/77	20.57	1824.18
12/12/77	20.55	1824.20
12/28/77	19.68	1825.07
01/09/78	20.62	1824.13
01/23/78	20.53	1824.22
02/13/78	20.55	1824.20
02/27/78	20.53	1824.22
03/06/78	20.55	1824.20
03/30/78	19.83	1824.92
04/10/78	19.75	1825.00
04/26/78	18.53	1826.22
05/10/78	19.34	1825.41
05/23/78	19.05	1825.70
06/05/78	19.42	1825.33
06/27/78	19.61	1825.14
07/12/78	19.59	1825.16
07/25/78	19.71	1825.04
08/07/78	19.88	1824.87
08/24/78	20.14	1824.61
09/13/78	20.15	1824.60
09/22/78	20.21	1824.54
10/13/78	20.38	1824.37
10/31/78	20.49	1824.26
11/06/78	20.46	1824.29
11/27/78	20.43	1824.32
12/11/78	20.43	1824.32
12/27/78	20.45	1824.30
01/08/79	20.36	1824.39
01/23/79	19.97	1824.78
02/13/79	20.20	1824.55
03/01/79	20.34	1824.41
03/06/79	20.45	1824.30
03/26/79	20.33	1824.42
04/23/79	18.86	1825.89
05/07/79	18.21	1826.54
05/22/79	18.15	1826.60
06/04/79	19.20	1825.55
06/27/79	18.25	1826.50
07/02/79	18.20	1826.55
07/31/79	18.41	1826.34
09/04/79	18.68	1826.07
10/01/79	19.04	1825.71
10/30/79	19.23	1825.52
12/03/79	19.34	1825.41
01/02/80	19.42	1825.33
01/28/80	19.37	1825.38
02/25/80	19.38	1825.37
04/01/80	19.22	1825.53
05/07/80	19.10	1825.65
06/02/80	19.37	1825.38
07/02/80	19.66	1825.09
08/13/80	20.06	1824.69
09/10/80	20.13	1824.62
10/06/80	20.29	1824.46
11/05/80	20.13	1824.62
12/02/80	20.22	1824.53
01/27/81	20.12	1824.63
02/23/81	19.95	1824.80
03/04/81	19.81	1824.94
04/07/81	19.33	1825.42
04/29/81	19.34	1825.41
05/06/81	19.56	1825.19
05/28/81	19.99	1824.76
06/04/81	19.55	1825.20
06/21/81	19.80	1824.95
06/29/81	19.67	1825.08
07/26/81	19.80	1824.95
07/27/81	19.85	1824.90
08/23/81	20.00	1824.75
08/25/81	19.78	1824.97
09/21/81	20.15	1824.60
09/27/81	20.25	1824.50
10/31/81	20.35	1824.40
11/27/81	20.05	1824.70
12/01/81	20.17	1824.58
12/31/81	20.25	1824.50
03/24/82	20.05	1824.70
04/19/82	19.04	1825.71
04/25/82	18.85	1825.90
05/30/82	18.48	1826.27
06/27/82	18.50	1826.25
07/25/82	18.75	1826.00
08/02/82	18.88	1825.87
08/23/82	18.85	1825.90
09/10/82	19.00	1825.75
09/26/82	19.20	1825.55
10/12/82	19.16	1825.59
10/20/82	19.00	1825.75
11/16/82	19.10	1825.65
11/26/82	19.00	1825.75
12/02/82	18.76	1825.99
12/06/82	19.20	1825.55
12/28/82	18.80	1825.95
01/12/83	19.20	1825.55
05/05/83	17.80	1826.95
07/27/83	18.05	1826.70
11/15/83	19.20	1825.55
02/08/84	19.28	1825.47
06/08/84	18.10	1826.65
12/11/84	19.00	1825.75
01/15/85	18.84	1825.91
02/13/85	18.97	1825.78
03/13/85	18.59	1826.16
04/04/85	18.26	1826.49
04/29/85	18.08	1826.67
06/06/85	18.03	1826.72
07/03/85	18.24	1826.51
08/15/85	18.60	1826.15
09/12/85	18.75	1826.00
10/01/85	18.33	1826.42
11/05/85	18.67	1826.08
12/05/85	18.80	1825.95
03/11/86	18.24	1826.51
04/29/86	17.65	1827.10
06/03/86	17.86	1826.89
07/01/86	18.07	1826.68
07/29/86	18.19	1826.56
08/05/86	18.28	1826.47
09/10/86	18.58	1826.17
10/06/86	18.62	1826.13
10/21/86	18.65	1826.10
12/02/86	18.62	1826.13
04/14/87	17.45	1827.30
05/18/87	17.77	1826.98
07/01/87	18.04	1826.71
08/06/87	18.25	1826.50
09/03/87	18.32	1826.43
10/15/87	18.66	1826.09
11/04/87	18.79	1825.96
12/07/87	18.71	1826.04
04/14/88	18.59	1826.16
05/19/88	18.75	1826.00
06/20/88	19.05	1825.70
07/21/88	19.43	1825.32
08/22/88	19.84	1824.91
09/26/88	20.21	1824.54
10/31/88	20.30	1824.45
11/29/88	20.40	1824.35
01/06/89	20.30	1824.45
05/02/89	19.98	1824.77
06/05/89	20.13	1824.62
07/06/89	20.44	1824.31
07/31/89	20.65	1824.10
08/28/89	20.87	1823.88
10/06/89	21.20	1823.55
11/03/89	21.18	1823.57
12/14/89	21.30	1823.45
04/02/90	21.18	1823.57
05/09/90	21.27	1823.48
06/07/90	21.27	1823.48
07/01/90	21.30	1823.45
07/02/90	21.30	1823.45
08/02/90	21.43	1823.32
08/27/90	21.60	1823.15
09/28/90	21.82	1822.93
10/22/90	21.85	1822.90
11/23/90	21.90	1822.85
12/13/90	21.92	1822.83
04/01/91	21.71	1823.04
05/01/91	21.65	1823.10
05/22/91	21.59	1823.16
05/23/91	21.65	1823.10
06/24/91	21.75	1823.00
07/22/91	21.94	1822.81
08/12/91	22.09	1822.66
08/28/91	22.13	1822.62
09/23/91	22.22	1822.53
11/07/91	22.26	1822.49
12/05/91	22.15	1822.60
02/05/92	21.98	1822.77
04/21/92	21.76	1822.99
05/26/92	21.94	1822.81
06/25/92	22.22	1822.53
07/22/92	22.33	1822.42
08/27/92	22.55	1822.20
09/22/92	22.65	1822.10
10/21/92	22.69	1822.06
11/16/92	22.69	1822.06
12/14/92	22.62	1822.13
04/05/93	22.12	1822.63
05/04/93	22.02	1822.73
06/01/93	22.03	1822.72
06/30/93	22.04	1822.71
08/04/93	21.74	1823.01
09/01/93	21.88	1822.87
10/11/93	22.04	1822.71
11/04/93	22.18	1822.57
12/09/93	22.00	1822.75
02/15/94	21.73	1823.02
04/13/94	21.43	1823.32
05/20/94	21.12	1823.63
06/29/94	21.00	1823.75
08/03/94	21.17	1823.58

147-079-29BBB MP Elev (msl,ft)=1828.72

Lake Nettie Aquifer SI (ft.)=43-48

Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)
01/16/85	9.43	1819.29	10/01/85	9.74	1818.98	05/18/87	9.19	1819.53	01/06/89	10.35	1818.37
02/13/85	9.41	1819.31	11/05/85	9.55	1819.17	07/03/87	9.49	1819.23	05/03/89	9.84	1818.88
03/13/85	9.04	1819.68				08/06/87	9.49	1819.23			
04/04/85	8.86	1819.86	04/29/86	8.85	1819.87	09/03/87	9.55	1819.17	07/01/90	10.63	1818.09
04/29/85	8.96	1819.76	06/03/86	9.17	1819.55	10/15/87	9.70	1819.02	07/02/90	10.63	1818.09
06/06/85	9.15	1819.57	07/01/86	9.42	1819.30	11/04/87	9.68	1819.04	07/19/90	10.73	1817.99
06/13/85	9.28	1819.44	08/07/86	9.62	1819.10	12/07/87	9.59	1819.13	12/13/90	10.99	1817.73
07/03/85	9.47	1819.25	09/10/86	9.68	1819.04						
07/18/85	9.55	1819.17	10/06/86	9.55	1819.17	04/14/88	9.02	1819.70	04/01/91	10.34	1818.38
08/15/85	9.71	1819.01				08/22/88	10.59	1818.13			
09/10/85	9.76	1818.96	04/14/87	8.78	1819.94				04/21/92	10.41	1818.31

147-079-35BCC MP Elev (msl,ft)=1926.49

Lake Nettie Aquifer SI (ft.)=218-224

Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)
08/24/70	103.87	1822.62	06/03/86	100.71	1825.78	08/22/88	101.67	1824.82	08/27/92	103.71	1822.78
09/08/70	103.80	1822.69	07/01/86	100.92	1825.57	09/26/88	101.90	1824.59	09/22/92	103.67	1822.82
11/30/70	103.63	1822.86	07/29/86	100.84	1825.65	10/31/88	102.02	1824.47	10/21/92	103.87	1822.62
			08/05/86	100.92	1825.57	11/29/88	102.04	1824.45	11/16/92	103.77	1822.72
12/11/84	101.27	1825.22	09/10/86	100.97	1825.52				12/14/92	103.80	1822.69
			10/06/86	101.06	1825.43	01/06/89	101.90	1824.59			
01/15/85	101.23	1825.26	12/02/86	100.97	1825.52	05/03/89	101.87	1824.62	04/05/93	103.70	1822.79
02/13/85	101.33	1825.16				08/28/89	102.41	1824.08	05/04/93	103.45	1823.04
03/13/85	101.25	1825.24	04/14/87	100.59	1825.90	12/14/89	102.73	1823.76	06/01/93	103.42	1823.07
04/04/85	100.99	1825.50	05/18/87	100.63	1825.86				06/30/93	103.37	1823.12
04/29/85	100.93	1825.56	07/01/87	100.66	1825.83	05/09/90	102.67	1823.82	08/04/93	103.11	1823.38
06/06/85	100.88	1825.61	08/06/87	100.75	1825.74	07/01/90	102.77	1823.72	08/27/93	103.22	1823.27
07/03/85	100.97	1825.52	09/03/87	100.71	1825.78	07/02/90	102.77	1823.72	10/11/93	103.45	1823.04
08/15/85	101.02	1825.47	10/15/87	100.95	1825.54	08/27/90	102.96	1823.53	11/04/93	103.43	1823.06
09/12/85	101.22	1825.27	11/04/87	101.08	1825.41	12/13/90	103.23	1823.26	12/09/93	103.33	1823.16
10/10/85	101.27	1825.22	12/07/87	100.93	1825.56						
11/05/85	101.18	1825.31				04/01/91	103.13	1823.36	02/15/94	103.20	1823.29
12/05/85	101.18	1825.31	04/14/88	100.99	1825.50				04/13/94	103.03	1823.46
			05/19/88	100.99	1825.50	04/21/92	103.21	1823.28	05/20/94	102.94	1823.55
03/11/86	100.96	1825.53	06/20/88	101.18	1825.31	06/25/92	103.40	1823.09	06/29/94	102.65	1823.84
04/29/86	100.69	1825.80	07/21/88	101.49	1825.00	07/22/92	103.55	1822.94	08/03/94	102.82	1823.67

147-079-35CBB MP Elev (msl,ft)=1927.63

Lake Nettie Aquifer SI (ft.)=136-141

Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)	Date	Depth to Water (ft)	WL Elev (msl. ft)
08/15/85	101.07	1826.56	07/01/87	100.49	1827.14	08/28/89	102.43	1825.20	11/16/92	104.33	1823.30
09/12/85	101.22	1826.41	08/06/87	100.69	1826.94	12/14/89	102.97	1824.66	12/14/92	104.30	1823.33
10/10/85	101.22	1826.41	09/03/87	100.43	1827.20						
11/05/85	100.83	1826.80	10/15/87	100.80	1826.83	05/09/90	103.18	1824.45	04/05/93	104.15	1823.48
12/05/85	101.31	1826.32	11/04/87	100.94	1826.69	06/22/90	103.28	1824.35	05/04/93	104.10	1823.53
			12/07/87	100.97	1826.66	07/01/90	103.03	1824.60	06/01/93	104.16	1823.47
03/11/86	101.08	1826.55				07/02/90	103.03	1824.60	06/30/93	104.23	1823.40
04/29/86	100.80	1826.83	04/14/88	101.24	1826.39	08/27/90	103.29	1824.34	08/04/93	104.31	1823.32
06/03/86	100.61	1827.02	05/19/88	101.09	1826.54	12/13/90	103.71	1823.92	09/01/93	103.94	1823.69
07/01/86	100.80	1826.83	06/20/88	101.12	1826.51				10/11/93	104.03	1823.60
07/29/86	100.79	1826.84	07/21/88	101.49	1826.14	04/01/91	103.85	1823.78	11/04/93	104.30	1823.33
08/05/86	100.73	1826.90	08/22/88	101.38	1826.25				12/09/93	103.88	1823.75
09/10/86	100.60	1827.03	09/26/88	101.72	1825.91	04/21/92	103.93	1823.70			
10/06/86	101.01	1826.62	10/31/88	101.80	1825.83	06/25/92	104.95	1822.68	02/15/94	104.06	1823.57
12/02/86	100.96	1826.67	11/29/88	101.97	1825.66	07/22/92	104.15	1823.48	04/13/94	103.60	1824.03
						08/27/92	104.13	1823.50	05/20/94	103.77	1823.86
04/14/87	100.92	1826.71	01/06/89	101.94	1825.69	09/22/92	104.49	1823.14	06/29/94	103.88	1823.75
05/18/87	100.73	1826.90	05/03/89	102.05	1825.58	10/21/92	104.05	1823.58	08/03/94	103.72	1823.91

147-080-01CCC2
Lake Nettie Aquifer

MP Elev (msl,ft)=1877.72
SI (ft.)=48-53

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/03/69	38.87	1838.85
12/30/69	38.64	1839.08
01/21/70	38.64	1839.08
02/19/70	39.12	1838.60
03/25/70	38.80	1838.92
05/05/70	38.79	1838.93
06/04/70	38.37	1839.35
06/25/70	38.44	1839.28
07/30/70	38.48	1839.24
08/05/70	38.62	1839.10
08/10/70	38.63	1839.09
08/15/70	38.64	1839.08
08/20/70	38.64	1839.08
08/25/70	38.53	1839.19
08/30/70	38.77	1838.95
09/05/70	38.37	1839.35
09/10/70	38.77	1838.95
09/30/70	38.26	1839.46
10/05/70	38.18	1839.54
10/10/70	38.48	1839.24
10/15/70	38.79	1838.93
10/20/70	38.32	1839.40
10/25/70	38.36	1839.36
10/30/70	38.71	1839.01
11/05/70	38.41	1839.31
11/10/70	38.64	1839.08
11/15/70	38.24	1839.48
11/20/70	38.47	1839.25
11/25/70	38.39	1839.33
11/30/70	38.53	1839.19
12/05/70	38.99	1838.73
12/10/70	38.87	1838.85
12/15/70	38.50	1839.22
12/20/70	38.76	1838.96
12/25/70	38.68	1839.04
12/30/70	38.63	1839.09
12/12/84	35.62	1842.10
01/15/85	35.46	1842.26
02/13/85	35.80	1841.92
03/13/85	35.61	1842.11
04/04/85	35.49	1842.23
04/29/85	35.60	1842.12
06/06/85	35.36	1842.36
07/03/85	35.36	1842.36
08/15/85	35.65	1842.07
09/12/85	35.67	1842.05
10/01/85	35.61	1842.11
11/05/85	35.45	1842.27
12/05/85	35.81	1841.91
03/11/86	35.83	1841.89
04/29/86	35.57	1842.15
06/03/86	35.46	1842.26
07/01/86	35.57	1842.15
08/07/86	35.58	1842.14
09/10/86	35.34	1842.38
10/06/86	35.48	1842.24
12/02/86	35.45	1842.27
04/14/87	35.34	1842.38
05/18/87	35.00	1842.72
06/30/87	34.97	1842.75
08/06/87	35.11	1842.61
09/03/87	35.07	1842.65
10/15/87	35.04	1842.68
11/04/87	35.12	1842.60
12/07/87	34.86	1842.86
04/14/88	35.37	1842.35
05/19/88	35.47	1842.25
06/20/88	35.49	1842.23
07/21/88	35.15	1842.57
08/22/88	35.75	1841.97
09/26/88	35.93	1841.79
10/31/88	35.97	1841.75
11/29/88	36.26	1841.46
01/06/89	36.19	1841.53
05/02/89	36.33	1841.39
08/28/89	36.73	1840.99
12/14/89	37.18	1840.54
05/09/90	37.57	1840.15
07/01/90	37.24	1840.48
07/02/90	37.24	1840.48
08/27/90	37.68	1840.04
12/13/90	37.97	1839.75
04/01/91	38.05	1839.67
04/21/92	38.18	1839.54
05/04/93	38.49	1839.23
04/13/94	37.76	1839.96

147-080-03CCC MP Elev (msl,ft)=1875.15

Lake Nettie Aquifer SI (ft.)=48-51

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	33.46	1841.69
10/11/67	33.32	1841.83
11/17/67	33.43	1841.72
12/15/67	33.20	1841.95
01/11/68	33.46	1841.69
02/15/68	33.27	1841.88
03/13/68	33.25	1841.90
04/12/68	33.42	1841.73
05/16/68	33.35	1841.80
06/12/68	33.32	1841.83
07/15/68	33.36	1841.79
01/16/69	33.80	1841.35
04/17/69	33.78	1841.37
07/17/69	33.48	1841.67
08/27/69	33.36	1841.79
10/02/69	33.25	1841.90
12/30/69	33.43	1841.72
03/25/70	33.55	1841.60
05/05/70	33.36	1841.79
06/04/70	33.28	1841.87
07/01/70	33.20	1841.95
03/27/74	33.78	1841.37
06/27/74	33.74	1841.41
07/24/74	35.43	1839.72
08/22/74	36.10	1839.05
09/23/74	35.98	1839.17
10/23/74	35.19	1839.96
12/02/74	34.59	1840.56
01/31/75	34.16	1840.99
02/25/75	34.11	1841.04
04/01/75	33.55	1841.60
05/16/75	33.60	1841.55
07/01/75	33.37	1841.78
07/21/75	33.98	1841.17
08/27/75	33.79	1841.36
10/01/75	33.24	1841.91
11/06/75	32.98	1842.17
01/26/76	32.78	1842.37
03/03/76	32.74	1842.41
03/18/76	32.70	1842.45
03/24/76	32.78	1842.37
04/21/76	32.50	1842.65
04/27/76	32.51	1842.64
05/06/76	32.60	1842.55
05/17/76	32.50	1842.65
05/21/76	32.38	1842.77
06/08/76	33.30	1841.85
06/29/76	33.40	1841.75
07/13/76	33.90	1841.25
07/30/76	34.91	1840.24
08/02/76	35.10	1840.05
08/23/76	35.20	1839.95
08/30/76	34.78	1840.37
09/07/76	35.00	1840.15
09/20/76	35.00	1840.15
09/25/76	34.87	1840.28
10/12/76	34.90	1840.25
10/14/76	35.00	1840.15
10/23/76	34.60	1840.55
10/28/76	34.40	1840.75
11/24/76	34.00	1841.15
12/02/76	33.74	1841.41
12/16/76	33.80	1841.35
12/28/76	33.66	1841.49
02/01/77	33.43	1841.72
03/01/77	33.42	1841.73
03/26/77	33.28	1841.87
04/23/77	33.32	1841.83
05/26/77	34.63	1840.52
06/29/77	34.71	1840.44
07/11/77	35.42	1839.73
07/26/77	35.98	1839.17
08/08/77	36.20	1838.95
08/24/77	36.45	1838.70
09/12/77	35.80	1839.35
09/30/77	35.35	1839.80
10/11/77	35.14	1840.01
10/26/77	34.85	1840.30
11/15/77	34.67	1840.48
11/30/77	34.50	1840.65
12/12/77	34.39	1840.76
12/28/77	34.29	1840.86
01/09/78	34.23	1840.92
01/23/78	34.05	1841.10
02/13/78	34.05	1841.10
02/27/78	34.04	1841.11
03/06/78	34.05	1841.10
03/30/78	33.78	1841.37
04/10/78	33.72	1841.43
04/26/78	33.43	1841.72
05/10/78	33.34	1841.81
05/23/78	33.33	1841.82
06/05/78	33.41	1841.74
07/12/78	33.45	1841.70
07/25/78	33.97	1841.18
08/07/78	33.99	1841.16
08/24/78	35.14	1840.01
09/13/78	34.93	1840.22
09/22/78	34.63	1840.52
10/13/78	34.28	1840.87
10/31/78	33.98	1841.17
11/06/78	33.88	1841.27
12/11/78	33.59	1841.56
01/08/79	33.42	1841.73
01/23/79	33.39	1841.76
02/20/79	33.34	1841.81
03/06/79	33.35	1841.80
03/26/79	33.28	1841.87
04/23/79	33.22	1841.93
05/07/79	32.89	1842.26
05/22/79	32.84	1842.31
06/04/79	32.73	1842.42
06/27/79	32.53	1842.62
07/01/79	32.50	1842.65
08/06/79	33.39	1841.76
08/22/79	33.76	1841.39
09/04/79	33.38	1841.77
09/25/79	33.02	1842.13
10/01/79	32.97	1842.18
10/30/79	32.79	1842.36
12/03/79	32.72	1842.43
01/02/80	31.65	1843.50
01/28/80	32.54	1842.61
02/25/80	32.52	1842.63
04/01/80	32.49	1842.66
05/07/80	32.49	1842.66
06/02/80	34.20	1840.95
07/02/80	33.80	1841.35
08/13/80	34.94	1840.21
09/10/80	34.21	1840.94
10/06/80	33.84	1841.31
11/05/80	33.36	1841.79
11/27/80	33.25	1841.90
12/03/80	33.14	1842.01
01/27/81	32.89	1842.26
02/23/81	33.14	1842.01
03/04/81	33.05	1842.10
04/07/81	32.92	1842.23
04/29/81	33.70	1841.45
05/06/81	32.97	1842.18
05/28/81	33.35	1841.80
06/03/81	33.26	1841.89
06/21/81	33.05	1842.10
06/29/81	33.26	1841.89
07/26/81	33.50	1841.65
07/27/81	33.81	1841.34
08/23/81	33.55	1841.60
09/21/81	33.96	1841.19
09/27/81	34.20	1840.95
10/31/81	33.54	1841.61
12/01/81	33.14	1842.01
12/31/81	33.15	1842.00
04/19/82	32.93	1842.22
04/25/82	32.88	1842.27
05/19/82	32.56	1842.59
05/30/82	32.51	1842.64
06/14/82	32.40	1842.75
06/27/82	32.31	1842.84
07/25/82	33.01	1842.14
08/02/82	33.07	1842.08
08/23/82	33.36	1841.79
09/10/82	32.55	1842.60
09/26/82	32.76	1842.39
10/12/82	32.66	1842.49
10/20/82	32.51	1842.64
11/16/82	32.41	1842.74
11/26/82	32.21	1842.94
12/02/82	32.13	1843.02
12/09/82	32.20	1842.95
12/28/82	32.06	1843.09
01/12/83	32.10	1843.05
05/05/83	31.45	1843.70
07/27/83	31.84	1843.31
11/16/83	31.60	1843.55
02/08/84	31.60	1843.55
06/07/84	31.20	1843.95
12/12/84	31.15	1844.00
01/16/85	31.02	1844.13
02/13/85	31.11	1844.04
03/13/85	31.01	1844.14
04/04/85	30.97	1844.18
04/29/85	30.99	1844.16
06/07/85	30.97	1844.18
07/03/85	31.10	1844.05
08/15/85	31.66	1843.49
09/16/85	31.33	1843.82
10/01/85	31.27	1843.88
11/05/85	31.30	1843.85
12/05/85	31.25	1843.90
03/13/86	31.12	1844.03
04/29/86	30.97	1844.18
06/03/86	30.89	1844.26
07/02/86	31.87	1843.28
08/07/86	31.45	1843.70
09/10/86	31.27	1843.88
10/07/86	31.13	1844.02
12/02/86	30.92	1844.23
04/14/87	30.15	1845.00
05/19/87	30.02	1845.13
06/30/87	30.68	1844.47
08/06/87	30.87	1844.28
09/03/87	30.58	1844.57
10/15/87	30.42	1844.73
11/04/87	30.39	1844.76
12/07/87	30.35	1844.80
04/14/88	30.59	1844.56
05/19/88	30.68	1844.47
06/20/88	32.10	1843.05
07/21/88	32.28	1842.87
08/23/88	33.04	1842.11
09/26/88	32.57	1842.58
11/01/88	32.19	1842.96
11/29/88	32.20	1842.95
01/06/89	32.07	1843.08
05/02/89	32.02	1843.13
06/05/89	32.09	1843.06
07/06/89	32.39	1842.76
08/01/89	33.31	1841.84
08/28/89	33.66	1841.49
10/06/89	33.32	1841.83
11/03/89	33.33	1841.82
12/14/89	33.13	1842.02
04/02/90	33.03	1842.12
05/09/90	33.08	1842.07
06/07/90	33.25	1841.90
07/01/90	33.14	1842.01
07/02/90	33.14	1842.01
08/02/90	33.63	1841.52
08/27/90	33.91	1841.24
09/28/90	34.17	1840.98
10/22/90	33.94	1841.21
11/23/90	33.80	1841.35
12/12/90	33.82	1841.33
04/01/91	33.68	1841.47
05/01/91	33.80	1841.35
05/22/91	33.83	1841.32
05/23/91	33.80	1841.35
06/24/91	33.94	1841.21
07/23/91	34.00	1841.15
08/12/91	34.02	1841.13
08/28/91	32.68	1842.47
09/23/91	33.90	1841.25
11/07/91	33.75	1841.40
12/05/91	33.87	1841.28
02/05/92	34.00	1841.15
04/22/92	33.82	1841.33
05/26/92	33.75	1841.40
06/25/92	34.32	1840.83
07/22/92	34.45	1840.70
08/27/92	34.57	1840.58
09/22/92	34.49	1840.66
10/21/92	34.36	1840.79
11/16/92	34.40	1840.75
12/14/92	34.18	1840.97
04/05/93	34.33	1840.82
05/04/93	34.29	1840.86
06/01/93	34.22	1840.93
06/30/93	34.28	1840.87
08/04/93	34.15	1841.00
09/01/93	34.01	1841.14
10/11/93	33.87	1841.28
11/04/93	33.80	1841.35
12/09/93	33.66	1841.49
04/13/94	33.53	1841.62
05/20/94	33.46	1841.69
06/29/94	33.47	1841.68
08/03/94	33.67	1841.48

147-080-03DAA

Lake Nettie Aquifer

MP Elev (msl,ft)=1865.38

Sl (ft.)=78-83

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	22.74	1842.64
08/20/85	22.82	1842.56
09/12/85	22.76	1842.62
10/01/85	22.70	1842.68
11/05/85	22.60	1842.78
12/05/85	22.83	1842.55
03/11/86	22.76	1842.62
04/29/86	22.53	1842.85
06/03/86	22.43	1842.95
07/01/86	22.65	1842.73
07/29/86	22.51	1842.87
08/07/86	22.56	1842.82
09/10/86	22.44	1842.94
10/06/86	22.45	1842.93
12/02/86	22.45	1842.93
04/14/87	22.13	1843.25
05/18/87	21.87	1843.51
06/30/87	21.98	1843.40
08/06/87	22.13	1843.25
09/03/87	22.09	1843.29
10/15/87	22.00	1843.38
11/04/87	22.18	1843.20
12/07/87	21.93	1843.45
04/14/88	22.21	1843.17
05/19/88	22.29	1843.09
06/20/88	22.49	1842.89
07/21/88	22.74	1842.64
08/22/88	22.90	1842.48
09/26/88	23.11	1842.27
10/31/88	22.95	1842.43
11/29/88	23.33	1842.05
01/06/89	23.32	1842.06
05/02/89	23.35	1842.03
08/28/89	23.85	1841.53
12/14/89	24.20	1841.18
05/09/90	24.47	1840.91
07/01/90	24.35	1841.03
07/02/90	24.35	1841.03
07/19/90	24.58	1840.80
08/27/90	24.77	1840.61
12/13/90	24.94	1840.44
04/01/91	25.00	1840.38
04/21/92	25.07	1840.31
05/04/93	25.49	1839.89
04/13/94	24.80	1840.58

147-080-04CCD

Lake Nettie Aquifer

MP Elev (msl,ft)=1862.27

Sl (ft.)=24-34

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/16/88	19.49	1842.78
11/23/88	19.52	1842.75
01/05/89	19.66	1842.61
01/11/89	19.65	1842.62
01/12/89	19.65	1842.62
01/13/89	19.59	1842.68
01/16/89	19.67	1842.60
01/18/89	19.69	1842.58
01/23/89	19.73	1842.54
04/01/91	21.38	1840.89
05/01/91	21.38	1840.89
05/22/91	21.63	1840.64
06/24/91	21.41	1840.86
07/23/91	21.18	1841.09
08/12/91	21.30	1840.97
08/28/91	21.33	1840.94
09/23/91	21.44	1840.83
11/07/91	21.39	1840.88
12/05/91	21.45	1840.82
02/05/92	21.58	1840.69
08/27/92	21.76	1840.51
09/22/92	21.93	1840.34
10/21/92	22.04	1840.23
11/16/92	22.02	1840.25
12/14/92	21.92	1840.35
04/05/93	22.00	1840.27
05/04/93	21.96	1840.31
06/01/93	21.92	1840.35
06/30/93	21.91	1840.36
08/04/93	21.74	1840.53
08/27/93	21.37	1840.90
09/01/93	21.23	1841.04
10/11/93	21.12	1841.15
11/04/93	21.14	1841.13
12/09/93	21.11	1841.16
02/15/94	21.57	1840.70
04/13/94	21.11	1841.16
05/20/94	21.43	1840.84
06/29/94	21.00	1841.27

147-080-04CDD

Lake Nettie Aquifer

MP Elev (msl,ft)=1861.83

Sl (ft.)=35-45

Date	Depth to Water (ft)	WL Elev (msl, ft)
04/01/91	20.74	1841.09
05/01/91	20.77	1841.06
05/22/91	20.80	1841.03
06/24/91	20.80	1841.03
07/23/91	20.52	1841.31
08/12/91	20.62	1841.21
08/28/91	20.65	1841.18
09/23/91	20.74	1841.09
11/07/91	20.59	1841.24
12/05/91	20.86	1840.97
02/05/92	20.88	1840.95
08/27/92	21.20	1840.63
09/22/92	21.26	1840.57
10/21/92	21.32	1840.51
11/16/92	21.35	1840.48
12/14/92	21.40	1840.43
04/05/93	21.25	1840.58
05/04/93	21.27	1840.56
06/01/93	21.23	1840.60
06/30/93	21.18	1840.65
08/04/93	20.87	1840.96
08/27/93	20.63	1841.20
09/01/93	20.72	1841.11
10/11/93	20.36	1841.47
11/04/93	20.42	1841.41
12/09/93	20.31	1841.52
02/15/94	20.13	1841.70
04/13/94	20.50	1841.33
05/20/94	20.46	1841.37
06/29/94	20.25	1841.58
08/03/94	20.25	1841.58

147-080-05BBB

Lake Nettie Aquifer

MP Elev (msl,ft)=1873.18

Sl (ft.)=83-93

Date	Depth to Water (ft)	WL Elev (msl, ft)
04/01/91	31.70	1841.48
05/01/91	31.50	1841.68
05/22/91	31.47	1841.71
06/24/91	32.90	1840.28
07/23/91	37.01	1836.17
08/12/91	36.34	1836.84
08/28/91	35.19	1837.99
09/23/91	32.33	1840.85
11/07/91	31.89	1841.29
12/05/91	31.76	1841.42
02/05/92	31.73	1841.45
04/22/92	31.41	1841.77
05/26/92	32.98	1840.20
06/24/92	34.67	1838.51
07/22/92	34.35	1838.83
08/27/92	34.60	1838.58
09/22/92	33.05	1840.13
10/21/92	32.27	1840.91
11/16/92	32.07	1841.11
12/14/92	32.10	1841.08
04/05/93	31.85	1841.33
05/04/93	31.59	1841.59
06/01/93	31.99	1841.19
06/30/93	32.78	1840.40
08/04/93	30.97	1842.21
08/27/93	32.50	1840.68
09/01/93	32.45	1840.73
10/11/93	31.15	1842.03
11/04/93	31.03	1842.15
12/08/93	31.86	1841.32
02/15/94	30.79	1842.39
04/13/94	30.46	1842.72
05/20/94	30.50	1842.68
06/29/94	30.49	1842.69
08/03/94	35.10	1838.08

147-080-05CCC

MP Elev (msl,ft)=1871.71

Lake Nettie Aquifer

SI (ft.)=80-90

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/01/91	32.28	1839.43				12/14/92	32.65	1839.06	11/04/93	31.75	1839.96
05/01/91	32.10	1839.61	02/05/92	32.30	1839.41				12/09/93	31.57	1840.14
05/22/91	32.11	1839.60	04/22/92	32.10	1839.61	04/05/93	32.52	1839.19			
06/24/91	33.82	1837.89	05/26/92	33.72	1837.99	05/04/93	32.25	1839.46	02/15/94	31.51	1840.20
07/23/91	38.10	1833.61	06/25/92	34.99	1836.72	06/01/93	32.73	1838.98	04/13/94	31.20	1840.51
08/12/91	37.23	1834.48	07/22/92	35.55	1836.16	06/30/93	32.49	1839.22	05/20/94	31.30	1840.41
08/28/91	36.45	1835.26	08/17/92	35.83	1835.88	08/04/93	31.75	1839.96	06/29/94	31.26	1840.45
09/23/91	33.28	1838.43	09/22/92	33.91	1837.80	08/27/93	33.66	1838.05	08/03/94	36.44	1835.27
11/07/91	32.53	1839.18	10/21/92	32.85	1838.86	09/01/93	32.71	1839.00			
12/05/91	31.35	1840.36	11/16/92	32.70	1839.01	10/11/93	31.88	1839.83			

147-080-05DDA

MP Elev (msl,ft)=1852.72

Fort Union Aquifer

SI (ft.)=107-112

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/84	10.89	1841.83	04/14/87	9.87	1842.85	11/03/89	12.67	1840.05			
12/11/84	10.67	1842.05	05/19/87	9.76	1842.96	12/14/89	12.38	1840.34	02/05/92	13.00	1839.72
			06/30/87	13.54	1839.18				04/22/92	12.77	1839.95
01/16/85	10.61	1842.11	08/06/87	12.08	1840.64	04/02/90	12.33	1840.39	05/26/92	13.52	1839.20
02/13/85	10.65	1842.07	09/03/87	10.61	1842.11	05/09/90	12.36	1840.36	06/25/92	15.27	1837.45
03/13/85	10.64	1842.08	10/15/87	10.23	1842.49	06/07/90	12.55	1840.17	07/22/92	16.52	1836.20
04/04/85	10.51	1842.21	11/04/87	10.15	1842.57	06/21/90	12.73	1839.99	08/27/92	18.76	1833.96
04/29/85	10.43	1842.29	12/07/87	10.09	1842.63	07/01/90	13.62	1839.10	09/22/92	15.80	1836.92
06/07/85	11.01	1841.71				07/02/90	13.62	1839.10	10/21/92	14.14	1838.58
07/03/85	11.29	1841.43	04/14/88	10.19	1842.53	08/02/90	17.57	1835.15	11/16/92	13.66	1839.06
08/15/85	14.79	1837.93	05/19/88	10.18	1842.54	08/27/90	19.52	1833.20	12/14/92	13.39	1839.33
09/16/85	12.93	1839.79	06/20/88	15.06	1837.66	09/28/90	17.14	1835.58			
10/01/85	12.11	1840.61	07/21/88	17.29	1835.43	10/22/90	14.30	1838.42	04/05/93	13.18	1839.54
11/05/85	11.03	1841.69	08/23/88	14.15	1838.57	11/23/90	13.37	1839.35	05/04/93	13.02	1839.70
12/05/85	10.66	1842.06	09/26/88	12.27	1840.45	12/12/90	13.15	1839.57	06/01/93	13.83	1838.89
			11/01/88	11.75	1840.97				06/30/93	13.46	1839.26
03/13/86	10.54	1842.18	11/29/88	11.58	1841.14	04/01/91	12.91	1839.81	08/04/93	12.63	1840.09
04/29/86	10.16	1842.56				05/01/91	12.80	1839.92	09/01/93	14.35	1838.37
06/03/86	10.41	1842.31	01/06/89	11.46	1841.26	05/22/91	12.75	1839.97	10/11/93	12.96	1839.76
07/02/86	14.87	1837.85	05/02/89	11.40	1841.32	06/24/91	14.73	1837.99	11/04/93	12.65	1840.07
08/07/86	12.03	1840.69	06/05/89	11.65	1841.07	07/23/91	18.12	1834.60			
09/10/86	10.77	1841.95	07/06/89	15.10	1837.62	08/12/91	18.65	1834.07	04/13/94	12.10	1840.62
10/07/86	10.43	1842.29	08/01/89	17.92	1834.80	08/28/91	18.25	1834.47	05/20/94	12.30	1840.42
12/02/86	10.20	1842.52	08/28/89	16.01	1836.71	09/23/91	14.98	1837.74	06/29/94	12.09	1840.63
			10/06/89	13.46	1839.26	12/05/91	13.13	1839.59	08/03/94	16.82	1835.90

147-080-08CCC

MP Elev (msl,ft)=1857.87

Lake Nettie Aquifer

SI (ft.)=58-63

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	23.51	1834.36	12/07/87	21.96	1835.91	06/21/90	24.40	1833.47	06/25/92	25.38	1832.49
08/20/85	23.60	1834.27				07/01/90	24.63	1833.24	07/22/92	25.57	1832.30
09/11/85	23.36	1834.51	04/14/88	22.32	1835.55	07/02/90	24.63	1833.24	08/27/92	26.07	1831.80
10/01/85	22.98	1834.89	05/19/88	22.29	1835.58	08/02/90	25.66	1832.21	09/22/92	25.62	1832.25
11/05/85	22.64	1835.23	06/20/88	23.59	1834.28	08/27/90	26.11	1831.76	10/21/92	25.17	1832.70
12/05/85	22.65	1835.22	07/21/88	24.69	1833.18	09/28/90	25.76	1832.11	11/16/92	25.07	1832.80
			08/23/88	24.28	1833.59	10/22/90	25.10	1832.77	12/14/92	24.89	1832.98
03/13/86	22.46	1835.41	09/26/88	23.70	1834.17	11/23/90	24.87	1833.00			
04/29/86	22.06	1835.81	11/01/88	23.56	1834.31	12/12/90	24.81	1833.06	04/05/93	24.70	1833.17
06/03/86	22.09	1835.78	11/29/88	23.56	1834.31				05/04/93	24.63	1833.24
07/02/86	22.98	1834.89				04/01/91	24.67	1833.20	06/01/93	24.73	1833.14
08/07/86	22.59	1835.28	01/06/89	23.50	1834.37	05/01/91	24.63	1833.24	06/30/93	24.65	1833.22
09/10/86	22.26	1835.61	05/02/89	23.50	1834.37	05/22/91	24.59	1833.28	08/04/93	24.29	1833.58
10/07/86	22.16	1835.71	06/05/89	23.58	1834.29	06/24/91	25.05	1832.82	09/01/93	24.55	1833.32
10/21/86	22.12	1835.75	07/06/89	24.69	1833.18	07/23/91	25.93	1831.94	10/11/93	24.26	1833.61
12/02/86	22.08	1835.79	08/01/89	25.22	1832.65	08/12/91	26.04	1831.83	11/04/93	24.25	1833.62
			08/28/89	24.97	1832.90	08/28/91	26.01	1831.86	12/09/93	24.05	1833.82
04/14/87	21.75	1836.12	10/06/89	24.60	1833.27	09/23/91	25.41	1832.46			
05/19/87	21.59	1836.28	11/03/89	24.27	1833.60	11/07/91	25.00	1832.87	02/15/94	24.02	1833.85
06/30/87	22.89	1834.98	12/14/89	24.29	1833.58	12/05/91	24.80	1833.07	04/13/94	23.76	1834.11
08/06/87	22.47	1835.40							05/20/94	23.69	1834.18
09/03/87	22.02	1835.85	04/02/90	24.38	1833.49	02/05/92	24.68	1833.19	06/29/94	23.70	1834.17
10/15/87	22.01	1835.86	05/09/90	24.38	1833.49	04/22/92	24.55	1833.32	08/03/94	24.80	1833.07
11/04/87	22.06	1835.81	06/07/90	24.39	1833.48	05/26/92	24.64	1833.23			

147-080-08DAD
Lake Nettie Aquifer

MP Elev (msl,ft)=1860.98
SI (ft.)=17-27

Date	Depth to Water (ft)	WL Elev (msl, ft)
04/01/91	19.64	1841.34
05/01/91	19.63	1841.35
05/22/91	19.60	1841.38
06/24/91	19.70	1841.28
07/23/91	19.24	1841.74
08/12/91	19.35	1841.63
08/28/91	19.32	1841.66
09/23/91	19.44	1841.54
02/05/92	19.46	1841.52
04/21/92	19.14	1841.84
05/26/92	19.20	1841.78
06/25/92	19.34	1841.64
07/22/92	19.48	1841.50
08/27/92	19.69	1841.29
09/22/92	19.78	1841.20
10/21/92	19.84	1841.14
11/16/92	19.89	1841.09
12/14/92	19.85	1841.13
04/05/93	19.68	1841.30
05/04/93	19.67	1841.31
06/01/93	19.64	1841.34
06/30/93	19.69	1841.29
08/04/93	19.41	1841.57
08/27/93	19.16	1841.82
06/29/94	18.64	1842.34

147-080-09CBB
Lake Nettie Aquifer

MP Elev (msl,ft)=1847.68
SI (ft.)=26-29

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	7.83	1839.85
09/14/67	8.75	1838.93
10/11/67	7.72	1839.96
11/17/67	7.53	1840.15
12/15/67	7.41	1840.27
03/13/68	7.12	1840.56
04/12/68	6.94	1840.74
05/16/68	6.18	1841.50
06/12/68	6.35	1841.33
07/15/68	6.93	1840.75
04/17/69	5.87	1841.81
07/17/69	6.06	1841.62
08/27/69	6.90	1840.78
10/02/69	7.03	1840.65
05/05/70	5.06	1842.62
06/04/70	5.03	1842.65
07/01/70	5.68	1842.00
09/10/70	6.16	1841.52
12/11/84	5.35	1842.33
01/16/85	5.78	1841.90
02/13/85	5.00	1842.68
03/13/85	5.38	1842.30
04/04/85	4.75	1842.93
04/29/85	4.09	1843.59
06/07/85	4.53	1843.15
07/03/85	5.00	1842.68
08/15/85	5.78	1841.90
09/16/85	5.32	1842.36
10/01/85	5.40	1842.28
11/05/85	4.99	1842.69
04/29/86	3.57	1844.11
06/03/86	4.49	1843.19
07/02/86	4.66	1843.02
08/07/86	5.00	1842.68
09/10/86	5.18	1842.50
10/07/86	4.65	1843.03
04/14/87	3.39	1844.29
05/19/87	4.26	1843.42
06/30/87	5.06	1842.62
08/06/87	4.94	1842.74
09/03/87	4.82	1842.86
10/15/87	5.10	1842.58
11/04/87	4.97	1842.71
12/07/87	4.87	1842.81
04/14/88	4.64	1843.04
05/19/88	4.47	1843.21
06/20/88	5.79	1841.89
07/21/88	6.44	1841.24
08/23/88	6.97	1840.71
09/26/88	7.11	1840.57
11/01/88	6.90	1840.78
11/29/88	6.77	1840.91
01/06/89	6.95	1840.73
05/02/89	5.49	1842.19
06/05/89	5.78	1841.90
07/06/89	6.68	1841.00
08/01/89	7.21	1840.47
08/28/89	7.53	1840.15
10/06/89	7.65	1840.03
11/03/89	7.52	1840.16
12/14/89	7.64	1840.04
04/02/90	7.70	1839.98
05/09/90	7.13	1840.55
06/07/90	6.97	1840.71
07/01/90	6.84	1840.84
07/02/90	6.84	1840.84
08/02/90	7.39	1840.29
08/27/90	7.82	1839.86
09/28/90	8.30	1839.38
10/22/90	8.54	1839.14
11/23/90	8.63	1839.05
12/12/90	8.70	1838.98
04/01/91	9.17	1838.51
05/01/91	8.82	1838.86
05/22/91	8.40	1839.28
05/23/91	8.55	1839.13
06/24/91	9.24	1838.44
07/23/91	8.72	1838.96
08/12/91	9.01	1838.67
08/28/91	9.20	1838.48
09/23/91	9.40	1838.28
12/05/91	9.25	1838.43
02/05/92	9.62	1838.06
04/21/92	8.95	1838.73
05/26/92	8.85	1838.83
06/25/92	9.74	1837.94
07/22/92	9.50	1838.18
08/27/92	9.93	1837.75
09/22/92	10.21	1837.47
10/21/92	10.07	1837.61
11/16/92	10.07	1837.61
12/14/92	10.20	1837.48
04/05/93	9.69	1837.99
05/04/93	9.46	1838.22
06/01/93	9.37	1838.31
06/30/93	9.48	1838.20
08/04/93	7.93	1839.75
09/01/93	8.53	1839.15
10/11/93	8.85	1838.83
11/04/93	8.89	1838.79
04/13/94	8.48	1839.20
05/20/94	8.43	1839.25
06/29/94	8.25	1839.43
08/03/94	8.84	1838.84

147-080-13CCC MP Elev (msl,ft)=1853.91

Lake Nettie Aquifer SI (ft.)=128-131

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/11/67	34.84	1819.07
09/14/67	35.20	1818.71
10/11/67	35.18	1818.73
11/17/67	35.18	1818.73
12/15/67	34.94	1818.97
01/12/68	34.80	1819.11
02/15/68	34.61	1819.30
03/14/68	34.42	1819.49
04/12/68	34.45	1819.46
05/16/68	34.55	1819.36
06/12/68	34.68	1819.23
07/16/68	34.89	1819.02
01/16/69	34.77	1819.14
04/17/69	34.12	1819.79
07/17/69	34.60	1819.31
08/28/69	34.80	1819.11
10/02/69	34.83	1819.08
12/30/69	34.71	1819.20
03/25/70	34.39	1819.52
05/05/70	34.13	1819.78
06/04/70	34.18	1819.73
07/01/70	34.38	1819.53
09/10/70	34.44	1819.47
12/02/70	34.43	1819.48
12/03/71	34.45	1819.46
12/05/72	33.38	1820.53
12/03/73	34.57	1819.34
12/02/74	34.43	1819.48
12/02/75	33.88	1820.03
12/02/76	34.23	1819.68
06/29/77	34.35	1819.56
07/11/77	34.37	1819.54
07/26/77	34.48	1819.43
08/08/77	34.64	1819.27
08/24/77	34.70	1819.21
09/12/77	34.62	1819.29
09/29/77	34.68	1819.23
10/11/77	34.70	1819.21
10/26/77	34.27	1819.64
11/15/77	34.29	1819.62
11/30/77	34.27	1819.64
12/12/77	34.70	1819.21
12/28/77	33.75	1820.16
01/09/78	34.27	1819.64
01/23/78	34.23	1819.68
02/13/78	34.15	1819.76
02/27/78	34.11	1819.80
03/06/78	34.08	1819.83
03/30/78	33.77	1820.14
04/10/78	33.72	1820.19
04/26/78	33.70	1820.21
05/10/78	33.69	1820.22
05/23/78	33.80	1820.11
06/05/78	33.87	1820.04
06/27/78	34.02	1819.89
07/12/78	33.98	1819.93
07/25/78	34.11	1819.80
08/07/78	34.23	1819.68
08/24/78	33.99	1819.92
09/13/78	34.31	1819.60
09/22/78	34.30	1819.61
10/13/78	34.36	1819.55
10/31/78	34.36	1819.55
11/06/78	34.39	1819.52
11/27/78	34.28	1819.63
12/11/78	34.28	1819.63
12/27/78	34.28	1819.63
01/08/79	34.28	1819.63
01/23/79	34.24	1819.67
03/26/79	33.98	1819.93
04/23/79	33.60	1820.31
05/07/79	33.31	1820.60
05/22/79	33.41	1820.50
06/04/79	33.50	1820.41
06/27/79	33.60	1820.31
07/02/79	33.64	1820.27
07/31/79	33.74	1820.17
08/06/79	33.72	1820.19
08/22/79	33.87	1820.04
09/04/79	33.88	1820.03
09/25/79	34.19	1819.72
10/01/79	33.99	1819.92
10/30/79	33.97	1819.94
11/03/79	33.70	1820.21
01/02/80	33.80	1820.11
01/28/80	33.72	1820.19
02/25/80	33.61	1820.30
04/01/80	33.39	1820.52
05/07/80	33.51	1820.40
06/02/80	33.83	1820.08
07/02/80	34.06	1819.85
08/13/80	34.25	1819.66
09/10/80	34.18	1819.73
10/06/80	34.19	1819.72
11/05/80	33.94	1819.97
12/02/80	33.29	1820.62
01/27/81	32.90	1821.01
02/23/81	33.60	1820.31
04/07/81	33.42	1820.49
05/06/81	33.76	1820.15
06/04/81	33.79	1820.12
06/29/81	33.83	1820.08
07/27/81	34.01	1819.90
08/25/81	33.90	1820.01
09/21/81	34.08	1819.83
04/19/82	33.25	1820.66
05/19/82	33.47	1820.44
06/14/82	33.44	1820.47
08/02/82	33.60	1820.31
09/10/82	33.45	1820.46
10/12/82	33.54	1820.37
11/16/82	33.44	1820.47
12/06/82	33.45	1820.46
01/12/83	33.25	1820.66
05/05/83	32.80	1821.11
05/27/83	33.00	1820.91
11/15/83	33.60	1820.31
02/08/84	33.50	1820.41
06/08/84	33.10	1820.81
12/11/84	33.14	1820.77
01/15/85	33.00	1820.91
02/13/85	32.98	1820.93
03/13/85	32.81	1821.10
04/04/85	32.67	1821.24
04/29/85	32.68	1821.23
06/06/85	32.79	1821.12
07/03/85	33.00	1820.91
08/15/85	33.26	1820.65
09/16/85	33.24	1820.67
10/01/85	33.30	1820.61
11/05/85	33.16	1820.75
12/05/85	33.14	1820.77
03/11/86	32.71	1821.20
04/29/86	32.49	1821.42
06/03/86	32.74	1821.17
07/01/86	32.94	1820.97
07/29/86	32.99	1820.92
08/07/86	33.08	1820.83
09/10/86	33.16	1820.75
10/06/86	33.04	1820.87
10/21/86	33.06	1820.85
12/02/86	32.99	1820.92
04/14/87	32.39	1821.52
05/18/87	32.70	1821.21
06/30/87	32.88	1821.03
08/06/87	32.97	1820.94
09/03/87	32.96	1820.95
10/15/87	33.17	1820.74
11/04/87	33.17	1820.74
12/07/87	33.09	1820.82
04/14/88	32.76	1821.15
05/19/88	33.03	1820.88
06/20/88	33.37	1820.54
07/21/88	33.71	1820.20
08/22/88	33.97	1819.94
09/26/88	34.18	1819.73
10/31/88	33.14	1820.77
11/29/88	34.10	1819.81
01/06/89	33.90	1820.01
05/02/89	33.46	1820.45
06/05/89	32.78	1821.13
07/06/89	34.13	1819.78
08/01/89	34.35	1819.56
08/28/89	34.50	1819.41
10/06/89	34.61	1819.30
11/03/89	34.51	1819.40
12/14/89	34.44	1819.47
04/02/90	34.00	1819.91
05/09/90	34.10	1819.81
06/07/90	34.19	1819.72
07/01/90	34.33	1819.58
07/02/90	34.33	1819.58
08/02/90	34.60	1819.31
08/27/90	34.79	1819.12
09/28/90	34.91	1819.00
10/22/90	34.78	1819.13
11/23/90	34.81	1819.10
12/13/90	34.72	1819.19
04/01/91	34.24	1819.67
05/01/91	34.24	1819.67
05/22/91	34.33	1819.58
05/23/91	34.35	1819.56
06/24/91	34.55	1819.36
07/23/91	34.74	1819.17
08/12/91	34.82	1819.09
08/28/91	35.02	1818.89
09/23/91	35.03	1818.88
11/07/91	34.85	1819.06
12/05/91	34.68	1819.23
02/05/92	34.36	1819.55
04/21/92	34.24	1819.67
05/26/92	34.50	1819.41
06/25/92	34.74	1819.17
07/22/92	34.91	1819.00
08/27/92	35.19	1818.72
09/22/92	35.18	1818.73
10/21/92	35.14	1818.77
11/16/92	35.04	1818.87
12/14/92	34.91	1819.00
04/05/93	34.34	1819.57
05/04/93	34.34	1819.57
06/01/93	34.45	1819.46
06/30/93	34.50	1819.41
08/04/93	34.04	1819.87
09/01/93	34.25	1819.66
10/11/93	34.44	1819.47
11/04/93	34.48	1819.43
12/09/93	34.35	1819.56
02/15/94	34.06	1819.85
04/13/94	33.79	1820.12
05/20/94	33.90	1820.01
06/29/94	33.81	1820.10
08/03/94	34.02	1819.89

147-080-15AAA2 MP Elev (msl,ft)=1879.05

Lake Nettie Aquifer SI (ft.)=43-48

Date	Depth to Water (ft)	WL Elev (msl. ft)
05/30/85	41.74	1837.46
07/11/85	40.46	1838.74
08/15/85	40.68	1838.52
09/12/85	40.74	1838.46
10/01/85	40.72	1838.48
11/05/85	40.84	1838.36
12/05/85	40.79	1838.41
03/11/86	40.69	1838.51
04/29/86	40.63	1838.57
06/03/86	40.65	1838.55
07/01/86	40.60	1838.60
07/29/86	40.50	1838.70
08/07/86	40.57	1838.63
09/10/86	40.58	1838.62
10/06/86	40.55	1838.65
12/02/86	40.56	1838.64
04/14/87	40.35	1838.85
05/18/87	40.30	1838.90
06/30/87	40.28	1838.92
08/06/87	40.40	1838.80
09/03/87	40.34	1838.86
10/15/87	40.32	1838.88
11/04/87	40.44	1838.76
12/07/87	40.29	1838.91
04/14/88	40.29	1838.91
08/22/88	40.62	1838.58
01/06/89	41.04	1838.16
05/02/89	41.06	1838.14
08/28/89	41.28	1837.92
12/14/89	41.54	1837.66
05/09/90	41.69	1837.51
07/01/90	41.67	1837.53
07/02/90	41.67	1837.53
08/27/90	41.78	1837.42
12/13/90	41.93	1837.27
04/01/91	42.03	1837.17
04/21/92	42.07	1837.13
05/04/93	42.37	1836.83
04/13/94	41.90	1837.15

147-080-16BCA
Lake Nettie Aquifer

MP Elev (msl,ft)=1903.65
SI (ft.)=115-120

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	37.67	1865.98
12/11/84	37.51	1866.14
03/13/85	37.61	1866.04
04/04/85	37.60	1866.05
04/29/85	37.65	1866.00
06/07/85	37.58	1866.07
07/03/85	37.55	1866.10
08/15/85	37.44	1866.21
09/16/85	37.41	1866.24
10/01/85	37.48	1866.17
11/05/85	37.48	1866.17
04/29/86	37.44	1866.21
06/03/86	37.34	1866.31
07/02/86	37.29	1866.36
08/07/86	37.21	1866.44
09/10/86	37.14	1866.51
10/07/86	37.15	1866.50
04/14/87	36.99	1866.66
05/19/87	36.82	1866.83
06/30/87	36.70	1866.95
08/06/87	36.67	1866.98
09/03/87	36.58	1867.07
10/15/87	36.60	1867.05
11/04/87	36.56	1867.09
12/07/87	36.50	1867.15
04/14/88	36.66	1866.99
08/23/88	36.86	1866.79
09/26/88	36.94	1866.71
11/01/88	36.97	1866.68
11/29/88	37.01	1866.64
01/06/89	36.99	1866.66
05/02/89	37.14	1866.51
08/28/89	37.31	1866.34
12/14/89	37.43	1866.22
05/09/90	37.63	1866.02
06/21/90	37.70	1865.95
07/01/90	37.70	1865.95
07/02/90	37.70	1865.95
08/27/90	37.79	1865.86
12/12/90	37.92	1865.73
04/01/91	38.07	1865.58
04/21/92	38.53	1865.12
05/04/93	38.87	1864.78
04/13/94	39.05	1864.60

147-080-21BAC
Lake Nettie Aquifer

MP Elev (msl,ft)=1856.49
SI (ft.)=37-42

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/19/84	28.14	1828.35
12/11/84	27.74	1828.75
01/16/85	27.75	1828.74
02/13/85	28.02	1828.47
03/13/85	27.77	1828.72
04/04/85	27.68	1828.81
04/29/85	27.85	1828.64
06/07/85	27.63	1828.86
07/03/85	27.52	1828.97
07/19/85	27.90	1828.59
08/15/85	27.50	1828.99
09/16/85	27.27	1829.22
10/01/85	27.34	1829.15
11/05/85	27.05	1829.44
12/05/85	27.36	1829.13
03/11/86	27.19	1829.30
04/29/86	26.83	1829.66
06/03/86	26.40	1830.09
07/02/86	26.72	1829.77
07/29/86	26.49	1830.00
08/07/86	26.67	1829.82
09/10/86	26.59	1829.90
10/06/86	26.77	1829.72
12/02/86	26.88	1829.61
04/14/87	26.42	1830.07
05/18/87	26.88	1829.61
06/30/87	26.98	1829.51
08/06/87	26.88	1829.61
09/03/87	26.63	1829.86
10/15/87	27.02	1829.47
11/04/87	27.26	1829.23
12/07/87	26.92	1829.57
04/14/88	27.59	1828.90
08/22/88	28.34	1828.15
01/06/89	28.15	1828.34
05/02/89	28.17	1828.32
08/28/89	28.38	1828.11
12/14/89	28.48	1828.01
05/09/90	28.67	1827.82
07/01/90	28.23	1828.26
07/02/90	28.23	1828.26
07/19/90	28.48	1828.01
08/27/90	28.49	1828.00
12/12/90	28.59	1827.90
04/01/91	28.58	1827.91
04/21/92	28.74	1827.75
05/04/93	27.97	1828.52
04/13/94	27.00	1829.49

147-080-22AAD
Lake Nettie Aquifer

MP Elev (msl,ft)=1833.88
SI (ft.)=38-43

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	9.32	1824.56
08/20/85	9.32	1824.56
09/16/85	9.27	1824.61
10/01/85	9.37	1824.51
11/05/85	9.23	1824.65
12/05/85	9.43	1824.45
03/11/86	9.13	1824.75
04/29/86	8.71	1825.17
06/03/86	8.60	1825.28
07/01/86	8.70	1825.18
07/29/86	8.63	1825.25
08/07/86	8.78	1825.10
09/10/86	8.78	1825.10
10/06/86	8.73	1825.15
12/02/86	8.80	1825.08
04/14/87	8.33	1825.55
05/18/87	8.44	1825.44
06/30/87	8.44	1825.44
08/06/87	8.40	1825.48
09/03/87	8.36	1825.52
10/15/87	8.54	1825.34
11/04/87	8.61	1825.27
12/07/87	8.56	1825.32
04/14/88	8.35	1825.53
08/22/88	9.61	1824.27
01/06/89	9.80	1824.08
05/02/89	9.59	1824.29
08/28/89	10.28	1823.60
12/14/89	10.45	1823.43
05/09/90	10.34	1823.54
07/01/90	10.47	1823.41
07/02/90	10.47	1823.41
08/27/90	10.72	1823.16
12/13/90	10.79	1823.09
04/01/91	10.67	1823.21
04/21/92	10.29	1823.59
05/04/93	10.49	1823.39
04/13/94	9.74	1824.14

147-080-22CDD1
Lake Nettie Aquifer

MP Elev (msl,ft)=1844.8
SI (ft.)=138-143

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	27.02	1817.78
09/16/85	26.70	1818.10
10/01/85	26.71	1818.09
11/05/85	26.53	1818.27
04/29/86	25.76	1819.04
06/03/86	25.88	1818.92
07/01/86	26.03	1818.77
08/07/86	26.15	1818.65
09/10/86	26.20	1818.60
10/06/86	26.09	1818.71
04/14/87	25.37	1819.43
05/18/87	25.71	1819.09
06/30/87	25.76	1819.04
08/06/87	25.79	1819.01
09/03/87	25.82	1818.98
10/15/87	25.99	1818.81
11/04/87	26.00	1818.80
12/07/87	25.94	1818.86
04/14/88	25.69	1819.11
08/22/88	26.99	1817.81
01/06/89	27.08	1817.72
05/02/89	26.59	1818.21
10/06/89	26.97	1817.83
12/14/89	26.63	1818.17
05/09/90	26.42	1818.38
07/01/90	26.32	1818.48
07/02/90	26.32	1818.48
07/19/90	26.46	1818.34
08/27/90	26.79	1818.01
12/13/90	26.62	1818.18
04/01/91	26.19	1818.61
06/15/92	26.78	1818.02
06/25/92	26.52	1818.28
07/22/92	26.54	1818.26
08/27/92	26.79	1818.01
09/22/92	26.58	1818.22
10/21/92	26.38	1818.42
11/16/92	26.28	1818.52
12/14/92	26.25	1818.55
04/05/93	25.76	1819.04
05/04/93	25.84	1818.96
06/01/93	25.90	1818.90
06/30/93	25.93	1818.87
08/04/93	25.39	1819.41
09/01/93	25.98	1818.82
10/11/93	25.65	1819.15
11/04/93	25.63	1819.17
04/13/94	24.95	1819.85
05/20/94	25.22	1819.58
06/29/94	25.18	1819.62
08/03/94	25.46	1819.34

147-080-22CDD2

MP Elev (msl,ft)=1845.9

Lake Nettie Aquifer

SI (ft.)=25-30

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	20.57	1825.33	09/03/87	19.72	1826.18	07/19/90	20.70	1825.20	12/14/92	20.91	1824.99
09/16/85	20.40	1825.50	10/15/87	20.16	1825.74	08/27/90	20.95	1824.95			
10/01/85	20.52	1825.38	11/04/87	20.56	1825.34	12/13/90	21.44	1824.46	04/05/93	20.74	1825.16
11/05/85	20.25	1825.65	12/07/87	20.37	1825.53				05/04/93	20.65	1825.25
						04/01/91	21.49	1824.41	06/01/93	20.60	1825.30
04/29/86	18.57	1827.33	04/14/88	20.81	1825.09				06/30/93	20.76	1825.14
06/03/86	18.79	1827.11	08/22/88	21.46	1824.44	04/21/92	21.02	1824.88	08/04/93	19.40	1826.50
07/01/86	19.35	1826.55				04/29/92	20.97	1824.93	09/01/93	19.92	1825.98
08/07/86	19.40	1826.50	01/06/89	21.48	1824.42	05/26/92	20.90	1825.00	10/11/93	20.19	1825.71
09/10/86	19.42	1826.48	05/02/89	20.99	1824.91	06/15/92	21.10	1824.80	11/04/93	20.58	1825.32
10/06/86	19.48	1826.42	10/06/89	21.23	1824.67	06/25/92	21.17	1824.73	12/09/93	20.39	1825.51
			12/14/89	21.09	1824.81	07/22/92	21.26	1824.64			
04/14/87	19.04	1826.86				08/27/92	21.43	1824.47	04/13/94	19.38	1826.52
05/18/87	19.45	1826.45	05/09/90	21.29	1824.61	09/22/92	21.57	1824.33	05/20/94	19.78	1826.12
06/30/87	19.39	1826.51	07/01/90	20.62	1825.28	10/21/92	21.03	1824.87	06/29/94	20.00	1825.90
08/06/87	19.80	1826.10	07/02/90	20.62	1825.28	11/16/92	21.10	1824.80	08/03/94	20.40	1825.50

147-080-23ADD

MP Elev (msl,ft)=1836.6

Lake Nettie Aquifer

SI (ft.)=98-103

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/85	16.36	1820.24	11/05/85	16.17	1820.43	06/03/86	15.71	1820.89	09/10/86	16.15	1820.45
09/16/85	16.26	1820.34				07/01/86	15.90	1820.70	10/06/86	16.06	1820.54
10/01/85	16.34	1820.26	04/29/86	15.47	1821.13	08/07/86	16.08	1820.52			

147-080-33DDD

MP Elev (msl,ft)=1826.53

Lake Nettie Aquifer

SI (ft.)=18-24

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
12/02/69	5.82	1820.71				08/07/86	3.60	1822.93			
12/18/69	5.67	1820.86	04/04/85	1.92	1824.61	09/10/86	3.67	1822.86	04/14/88	2.29	1824.24
			06/06/85	2.60	1823.93	10/06/86	3.04	1823.49	08/22/88	5.69	1820.84
01/21/70	5.89	1820.64	07/03/85	3.08	1823.45	12/02/86	2.69	1823.84			
02/18/70	5.92	1820.61	08/15/85	3.78	1822.75				01/06/89	5.01	1821.52
03/23/70	5.46	1821.07	09/16/85	3.37	1823.16	04/14/87	1.52	1825.01	05/03/89	3.15	1823.38
05/04/70	3.62	1822.91	10/01/85	3.40	1823.13	05/18/87	2.93	1823.60	08/28/89	5.92	1820.61
06/04/70	3.69	1822.84	11/05/85	2.84	1823.69	06/30/87	3.57	1822.96	12/14/89	3.99	1822.54
06/24/70	3.84	1822.69	12/05/85	2.90	1823.63	08/06/87	3.53	1823.00			
09/08/70	4.70	1821.83				09/03/87	2.57	1823.96	05/09/90	3.25	1823.28
11/30/70	5.56	1820.97	06/03/86	2.88	1823.65	10/15/87	3.84	1822.69	07/20/90	2.76	1823.77
			07/01/86	3.00	1823.53	11/04/87	3.53	1823.00	12/13/90	3.61	1822.92
12/11/84	3.05	1823.48	07/29/86	3.02	1823.51	12/07/87	3.09	1823.44			

147-081-03BBB

MP Elev (msl,ft)=1848.87

Lake Nettie Aquifer

SI (ft.)=16.2-17.6

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/26/87	9.92	1838.95	08/10/87	9.83	1839.04	09/18/87	9.90	1838.97	08/29/89	11.77	1837.10
07/01/87	9.99	1838.88	08/12/87	9.88	1838.99	09/21/87	9.95	1838.92	12/14/89	11.97	1836.90
07/03/87	10.03	1838.84	08/14/87	9.86	1839.01	09/23/87	9.95	1838.92			
07/06/87	10.05	1838.82	08/18/87	9.76	1839.11	09/25/87	9.97	1838.90	05/10/90	11.92	1836.95
07/08/87	10.09	1838.78	08/19/87	9.74	1839.13	09/29/87	10.02	1838.85	07/02/90	11.78	1837.09
07/10/87	10.08	1838.79	08/21/87	9.74	1839.13	10/02/87	10.05	1838.82	07/03/90	11.78	1837.09
07/13/87	10.07	1838.80	08/24/87	9.78	1839.09	10/05/87	10.05	1838.82	08/28/90	11.97	1836.90
07/15/87	10.04	1838.83	08/28/87	9.71	1839.16	10/12/87	10.10	1838.77	12/13/90	12.14	1836.73
07/17/87	10.09	1838.78	08/31/87	9.72	1839.15	11/03/87	10.23	1838.64			
07/20/87	9.98	1838.89	09/02/87	9.72	1839.15	12/08/87	10.38	1838.49	04/02/91	12.15	1836.72
07/24/87	9.80	1839.07	09/04/87	9.74	1839.13						
07/27/87	9.74	1839.13	09/07/87	9.79	1839.08	04/14/88	10.34	1838.53	04/23/92	11.62	1837.25
07/31/87	9.72	1839.15	09/09/87	9.80	1839.07	08/23/88	11.25	1837.62			
08/03/87	9.76	1839.11	09/11/87	9.83	1839.04				05/05/93	11.66	1837.21
08/05/87	9.74	1839.13	09/14/87	9.85	1839.02	01/13/89	11.52	1837.35			
08/07/87	9.81	1839.06	09/16/87	9.87	1839.00	05/03/89	11.20	1837.67	04/14/94	9.93	1838.94

147-081-04DAA MP Elev (msl,ft)=1847.88

Lake Nettie Aquifer SI (ft.)=16.1-17.9

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/87	10.68	1837.20	08/14/87	10.48	1837.40	09/23/87	10.58	1837.30			
07/06/87	10.70	1837.18	08/18/87	10.41	1837.47	09/25/87	10.60	1837.28	05/10/90	11.99	1835.89
07/08/87	10.74	1837.14	08/19/87	10.40	1837.48	09/29/87	10.66	1837.22	07/02/90	11.94	1835.94
07/10/87	10.71	1837.17	08/21/87	10.40	1837.48	10/02/87	10.70	1837.18	07/03/90	11.94	1835.94
07/13/87	10.66	1837.22	08/24/87	10.41	1837.47	10/05/87	10.69	1837.19	08/28/90	12.03	1835.85
07/15/87	10.69	1837.19	08/28/87	10.37	1837.51	10/12/87	10.79	1837.09	12/13/90	11.97	1835.91
07/17/87	10.72	1837.16	08/31/87	10.39	1837.49	11/03/87	10.92	1836.96			
07/20/87	10.60	1837.28	09/02/87	10.38	1837.50	12/08/87	11.07	1836.81	04/02/91	11.97	1835.91
07/24/87	10.46	1837.42	09/04/87	10.41	1837.47						
07/27/87	10.42	1837.46	09/07/87	10.44	1837.44	04/14/88	11.04	1836.84	04/23/92	11.62	1836.26
07/31/87	10.39	1837.49	09/09/87	10.44	1837.44	08/23/88	11.68	1836.20			
08/03/87	10.40	1837.48	09/11/87	10.46	1837.42				05/05/93	11.60	1836.28
08/05/87	10.39	1837.49	09/14/87	10.47	1837.41	01/13/89	11.48	1836.40			
08/07/87	10.45	1837.43	09/16/87	10.49	1837.39	05/03/89	11.46	1836.42	04/14/94	9.58	1838.30
08/10/87	10.46	1837.42	09/18/87	10.50	1837.38	08/29/89	11.92	1835.96			
08/12/87	10.51	1837.37	09/21/87	10.56	1837.32	12/14/89	11.93	1835.95			

147-081-07DDD MP Elev (msl,ft)=1915.37

Turtle Lake Aquifer SI (ft.)=118-138

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/24/70	76.50	1838.87	07/31/79	74.28	1841.09	04/25/82	74.15	1841.22	07/31/86	72.99	1842.38
09/09/70	77.27	1838.10	08/06/79	73.86	1841.51	05/30/82	73.78	1841.59	08/08/86	72.85	1842.52
12/01/70	77.46	1837.91	08/22/79	73.99	1841.38	06/27/82	73.65	1841.72	09/10/86	72.84	1842.53
			09/04/79	73.93	1841.44	07/25/82	73.70	1841.67	09/30/86	72.82	1842.55
06/01/77	75.30	1840.07	09/25/79	74.25	1841.12	08/02/82	73.58	1841.79	10/07/86	72.90	1842.47
06/15/77	75.30	1840.07	10/01/79	74.24	1841.13	08/23/82	73.60	1841.77	10/21/86	72.76	1842.61
06/29/77	75.09	1840.28	10/25/79	74.18	1841.19	09/10/82	72.98	1842.39	12/03/86	72.88	1842.49
07/11/77	75.17	1840.20	10/30/79	74.17	1841.20	09/26/82	73.35	1842.02			
07/26/77	75.39	1839.98	11/20/79	74.38	1840.99	10/20/82	73.38	1841.99	04/14/87	72.51	1842.86
08/08/77	75.43	1839.94	12/03/79	74.20	1841.17	11/16/82	73.14	1842.23	05/19/87	72.41	1842.96
08/24/77	75.40	1839.97				11/26/82	73.26	1842.11	06/26/87	72.50	1842.87
09/13/77	75.60	1839.77	01/02/80	74.30	1841.07	12/02/82	72.92	1842.45	06/29/87	72.58	1842.79
09/29/77	75.60	1839.77	01/28/80	74.13	1841.24	12/08/82	72.57	1842.80	06/30/87	72.52	1842.85
10/11/77	75.60	1839.77	02/20/80	73.93	1841.44	12/28/82	73.24	1842.13	07/03/87	72.42	1842.95
10/26/77	75.50	1839.87	02/26/80	74.11	1841.26				07/10/87	72.42	1842.95
11/15/77	75.34	1840.03	03/20/80	74.13	1841.24	01/13/83	72.58	1842.79	07/17/87	72.54	1842.83
12/02/77	74.66	1840.71	04/01/80	74.14	1841.23	03/29/83	72.80	1842.57	07/24/87	72.51	1842.86
12/12/77	74.89	1840.48	04/23/80	74.17	1841.20	05/05/83	72.80	1842.57	07/31/87	72.35	1843.02
12/28/77	75.29	1840.08	05/07/80	74.17	1841.20	06/30/83	72.65	1842.72	08/07/87	72.48	1842.89
			05/21/80	74.04	1841.33	07/27/83	72.80	1842.57	08/14/87	72.22	1843.15
01/11/78	74.80	1840.57	06/02/80	74.09	1841.28	09/26/83	72.90	1842.47	08/21/87	72.40	1842.97
01/31/78	75.45	1839.92	06/23/80	74.04	1841.33	11/16/83	72.65	1842.72	08/28/87	72.37	1843.00
02/14/78	75.65	1839.72	07/01/80	74.38	1840.99				09/02/87	72.28	1843.09
02/23/78	75.21	1840.16	07/21/80	74.53	1840.84	02/08/84	73.45	1841.92	09/04/87	72.38	1842.99
03/07/78	75.50	1839.87	08/12/80	74.28	1841.09	06/12/84	72.50	1842.87	09/11/87	72.39	1842.98
03/30/78	75.30	1840.07	08/25/80	74.58	1840.79	12/12/84	73.20	1842.17	09/18/87	72.36	1843.01
04/10/78	75.27	1840.10	09/09/80	74.39	1840.96				09/25/87	72.33	1843.04
04/27/78	75.16	1840.21	09/22/80	74.58	1840.79	01/16/85	72.77	1842.60	10/02/87	72.60	1842.77
05/10/78	74.95	1840.42	10/07/80	74.30	1841.07	01/30/85	72.95	1842.42	10/12/87	72.29	1843.08
05/23/78	75.04	1840.33	10/12/80	74.00	1841.37	02/06/85	73.09	1842.28	11/03/87	72.23	1843.14
06/05/78	74.98	1840.39	10/21/80	74.60	1840.77	02/13/85	73.09	1842.28	12/08/87	72.49	1842.88
06/27/78	75.08	1840.29	11/04/80	74.26	1841.11	02/20/85	72.81	1842.56			
07/12/78	74.92	1840.45	11/24/80	74.22	1841.15	02/27/85	73.03	1842.34	04/14/88	72.92	1842.45
07/25/78	74.89	1840.48	12/03/80	74.24	1841.13	03/06/85	72.78	1842.59	08/23/88	73.51	1841.86
08/07/78	74.87	1840.50				03/13/85	73.07	1842.30			
08/24/78	74.98	1840.39	01/27/81	74.12	1841.25	03/20/85	73.09	1842.28	01/13/89	74.03	1841.34
09/13/78	74.31	1841.06	02/23/81	74.03	1841.34	03/27/85	72.99	1842.38	05/03/89	74.20	1841.17
09/22/78	74.83	1840.54	03/04/81	74.45	1840.92	04/03/85	72.82	1842.55	08/29/89	74.75	1840.62
10/13/78	74.97	1840.40	04/07/81	74.53	1840.84	04/10/85	72.89	1842.48	12/14/89	75.20	1840.17
10/25/78	74.68	1840.69	04/29/81	74.43	1840.94	04/17/85	72.58	1842.79			
11/06/78	74.83	1840.54	05/06/81	74.63	1840.74	04/24/85	72.89	1842.48	07/02/90	75.08	1840.29
11/29/78	74.79	1840.58	06/04/81	73.92	1841.45	05/01/85	72.86	1842.51	07/03/90	75.08	1840.29
12/11/78	74.59	1840.78	06/21/81	74.09	1841.28	05/08/85	72.66	1842.71	08/28/90	75.37	1840.00
12/27/78	74.69	1840.68	06/29/81	74.04	1841.33	06/07/85	72.76	1842.61	12/13/90	75.70	1839.67
			07/26/81	74.25	1841.12	07/02/85	72.83	1842.54			
01/08/79	74.56	1840.81	07/27/81	74.27	1841.10	08/16/85	73.04	1842.33	04/02/91	75.67	1839.70
01/24/79	74.49	1840.88	08/23/81	74.33	1841.04	09/10/85	73.26	1842.11			
02/20/79	74.59	1840.78	08/25/81	74.35	1841.02	10/02/85	73.01	1842.36	04/23/92	75.76	1839.61
03/05/79	74.62	1840.75	09/21/81	74.30	1841.07	11/06/85	73.01	1842.36			
03/08/79	74.44	1840.93	09/27/81	74.45	1840.92	12/06/85	73.02	1842.35	05/05/93	76.00	1839.37
03/30/79	74.89	1840.48	10/31/81	74.55	1840.82				12/08/93	74.53	1840.84
05/07/79	74.23	1841.14	11/27/81	74.44	1840.93	03/13/86	73.19	1842.18			
05/22/79	74.50	1840.87	12/30/81	73.65	1841.72	04/22/86	72.77	1842.60	04/14/94	74.28	1841.09
06/04/79	74.36	1841.01				04/29/86	72.96	1842.41	05/20/94	73.92	1841.45
06/27/79	74.18	1841.19	03/24/82	74.25	1841.12	06/04/86	73.09	1842.28			
07/01/79	73.62	1841.75	04/19/82	74.23	1841.14	07/02/86	72.92	1842.45			

147-081-09AAA2

MP Elev (msl,ft)=1845.07

Lake Nettie Aquifer

SI (ft.)=5-10

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	8.62	1836.45
12/12/84	8.60	1836.47
01/17/85	8.68	1836.39
02/13/85	8.79	1836.28
03/13/85	8.40	1836.67
04/04/85	8.19	1836.88
04/29/85	7.98	1837.09
06/07/85	8.11	1836.96
07/02/85	8.32	1836.75
08/16/85	8.69	1836.38
09/16/85	8.67	1836.40
10/02/85	8.70	1836.37
11/06/85	8.60	1836.47
12/06/85	8.65	1836.42
03/14/86	8.05	1837.02
04/30/86	7.39	1837.68
06/04/86	7.61	1837.46
07/02/86	7.98	1837.09
07/31/86	8.41	1836.66
08/07/86	8.60	1836.47
09/10/86	9.16	1835.91
10/07/86	9.32	1835.75
10/21/86	9.38	1835.69
12/03/86	9.40	1835.67
04/14/87	8.16	1836.91
05/19/87	8.75	1836.32
06/15/87	8.85	1836.22
06/26/87	9.03	1836.04
07/01/87	9.07	1836.00
07/03/87	9.10	1835.97
07/06/87	9.15	1835.92
07/08/87	9.18	1835.89
07/10/87	9.18	1835.89
07/13/87	9.22	1835.85
07/15/87	9.22	1835.85
07/17/87	9.23	1835.84
07/20/87	9.20	1835.87
07/24/87	9.10	1835.97
07/27/87	9.02	1836.05
07/31/87	8.98	1836.09
08/03/87	8.98	1836.09
08/05/87	8.98	1836.09
08/07/87	9.04	1836.03
08/10/87	9.07	1836.00
08/12/87	9.10	1835.97
08/14/87	9.10	1835.97
08/18/87	9.07	1836.00
08/19/87	9.05	1836.02
08/21/87	9.06	1836.01
08/24/87	9.09	1835.98
08/28/87	9.05	1836.02
08/31/87	9.04	1836.03
09/02/87	9.04	1836.03
09/04/87	9.07	1836.00
09/07/87	9.09	1835.98
09/09/87	9.11	1835.96
09/11/87	9.13	1835.94
09/14/87	9.14	1835.93
09/16/87	9.16	1835.91
09/18/87	9.17	1835.90
09/21/87	9.20	1835.87
09/23/87	9.20	1835.87
09/25/87	9.21	1835.86
09/29/87	9.24	1835.83
10/02/87	9.27	1835.80
10/05/87	9.27	1835.80
10/12/87	9.31	1835.76
11/03/87	9.44	1835.63
12/08/87	9.61	1835.46
04/14/88	9.48	1835.59
05/23/88	9.65	1835.42
06/21/88	9.94	1835.13
07/21/88	10.09	1834.98
08/23/88	10.32	1834.75
09/27/88	10.45	1834.62
11/01/88	10.44	1834.63
11/30/88	10.39	1834.68
01/13/89	10.22	1834.85
05/03/89	9.76	1835.31
08/29/89	10.60	1834.47
12/14/89	10.59	1834.48
05/10/90	10.34	1834.73
07/02/90	10.39	1834.68
07/03/90	10.39	1834.68
08/28/90	10.61	1834.46
12/13/90	10.61	1834.46
04/02/91	10.36	1834.71
04/23/92	9.95	1835.12
05/05/93	9.85	1835.22
04/14/94	7.57	1837.50

147-081-22AAA

MP Elev (msl,ft)=1831.97

Turtle Lake Aquifer

SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/02/85	10.66	1821.31
07/11/85	11.03	1820.94
08/16/85	11.30	1820.67
09/16/85	11.10	1820.87
10/02/85	11.15	1820.82
11/06/85	10.96	1821.01
12/06/85	10.94	1821.03
03/13/86	9.93	1822.04
04/30/86	9.91	1822.06
06/04/86	10.36	1821.61
07/03/86	10.47	1821.50
08/08/86	10.75	1821.22
09/10/86	10.84	1821.13
10/07/86	10.64	1821.33
04/14/87	9.60	1822.37
05/19/87	10.28	1821.69
06/26/87	10.49	1821.48
07/01/87	10.56	1821.41
07/10/87	10.53	1821.44
07/17/87	10.52	1821.45
07/24/87	10.12	1821.85
07/31/87	10.18	1821.79
08/07/87	10.30	1821.67
08/14/87	10.28	1821.69
08/21/87	10.24	1821.73
08/28/87	10.12	1821.85
09/04/87	10.25	1821.72
09/11/87	10.29	1821.68
09/18/87	10.34	1821.63
09/25/87	10.40	1821.57
10/02/87	10.45	1821.52
10/12/87	10.51	1821.46
11/03/87	10.58	1821.39
12/08/87	10.64	1821.33
04/14/88	10.35	1821.62
05/23/88	10.60	1821.37
06/21/88	11.08	1820.89
07/21/88	11.52	1820.45
08/23/88	12.24	1819.73
09/26/88	11.92	1820.05
11/01/88	11.63	1820.34
11/30/88	11.60	1820.37
01/13/89	11.66	1820.31
05/03/89	10.75	1821.22
06/05/89	10.98	1820.99
07/06/89	11.32	1820.65
08/01/89	11.44	1820.53
08/29/89	11.42	1820.55
10/06/89	11.56	1820.41
11/03/89	11.49	1820.48
12/14/89	11.75	1820.22
04/02/90	11.39	1820.58
05/10/90	10.98	1820.99
06/08/90	10.68	1821.29
06/22/90	10.77	1821.20
07/02/90	10.68	1821.29
07/03/90	10.68	1821.29
08/03/90	10.79	1821.18
08/28/90	10.91	1821.06
09/28/90	11.07	1820.90
10/22/90	10.95	1821.02
11/23/90	11.00	1820.97
12/13/90	11.01	1820.96
04/02/91	10.61	1821.36
05/01/91	10.22	1821.75
05/22/91	10.28	1821.69
06/24/91	10.31	1821.66
07/23/91	10.15	1821.82
08/12/91	10.29	1821.68
08/28/91	10.35	1821.62
09/23/91	10.41	1821.56
11/06/91	10.67	1821.30
12/05/91	10.64	1821.33
02/05/92	10.39	1821.58
04/23/92	10.12	1821.85
05/26/92	10.33	1821.64
06/25/92	10.32	1821.65
07/22/92	10.30	1821.67
08/27/92	10.42	1821.55
09/22/92	10.56	1821.41
10/21/92	10.78	1821.19
11/16/92	10.70	1821.27
12/14/92	10.74	1821.23
04/05/93	9.99	1821.98
05/05/93	10.13	1821.84
06/01/93	10.05	1821.92
06/29/93	9.88	1822.09
08/04/93	8.69	1823.28
09/01/93	9.55	1822.42
10/11/93	10.18	1821.79
11/04/93	10.32	1821.65
04/14/94	9.39	1822.58
05/20/94	9.58	1822.39
06/29/94	9.73	1822.24
08/03/94	10.29	1821.68

147-081-23AAA1

Turtle Lake Aquifer

MP Elev (msl,ft)=1829.89

SI (ft.)=48-51

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	4.91	1824.98
09/15/67	5.20	1824.69
10/11/67	5.24	1824.65
11/17/67	5.24	1824.65
12/13/67	5.05	1824.84
05/16/68	4.55	1825.34
06/13/68	4.60	1825.29
07/15/68	4.77	1825.12
07/17/69	4.03	1825.86
07/25/69	3.85	1826.04
08/08/69	4.06	1825.83
08/15/69	4.15	1825.74
08/22/69	4.23	1825.66
08/28/69	4.26	1825.63
09/05/69	4.31	1825.58
09/12/69	4.35	1825.54
09/19/69	4.36	1825.53
09/26/69	4.41	1825.48
10/02/69	4.39	1825.50
10/10/69	4.35	1825.54
10/17/69	4.43	1825.46
10/24/69	4.45	1825.44
12/30/69	4.53	1825.36
03/24/70	4.47	1825.42
05/05/70	3.51	1826.38
06/05/70	3.21	1826.68
07/01/70	3.45	1826.44
09/10/70	3.87	1826.02
12/02/70	4.00	1825.89
06/02/77	2.90	1826.99
07/26/77	3.83	1826.06
08/09/77	3.89	1826.00
08/24/77	3.99	1825.90
09/13/77	3.94	1825.95
09/29/77	3.49	1826.40
10/13/77	3.40	1826.49
10/26/77	3.45	1826.44
11/15/77	3.46	1826.43
11/30/77	3.40	1826.49
04/27/78	3.36	1826.53
05/11/78	2.39	1827.50
05/23/78	2.45	1827.44
06/06/78	2.55	1827.34
06/27/78	2.70	1827.19
07/13/78	2.57	1827.32
07/25/78	2.69	1827.20
08/08/78	2.89	1827.00
08/24/78	3.14	1826.75
09/14/78	2.98	1826.91
09/22/78	3.04	1826.85
10/16/78	3.10	1826.79
10/25/78	3.08	1826.81
11/07/78	3.09	1826.80
04/26/79	2.91	1826.98
05/08/79	1.61	1828.28
05/22/79	1.70	1828.19
06/05/79	1.60	1828.29
06/27/79	2.11	1827.78
07/02/79	2.26	1827.63
07/31/79	2.50	1827.39
08/07/79	2.59	1827.30
08/22/79	2.56	1827.33
09/06/79	2.55	1827.34
09/25/79	2.57	1827.32
10/02/79	2.51	1827.38
10/25/79	2.47	1827.42
10/30/79	2.43	1827.46
11/20/79	2.45	1827.44
12/05/79	2.35	1827.54
04/23/80	1.80	1828.09
05/06/80	2.01	1827.88
05/21/80	2.19	1827.70
06/03/80	2.50	1827.39
06/23/80	2.47	1827.42
06/30/80	2.62	1827.27
07/21/80	2.87	1827.02
08/12/80	2.85	1827.04
08/25/80	2.58	1827.31
09/09/80	2.65	1827.24
09/22/80	2.54	1827.35
10/08/80	2.85	1827.04
10/21/80	2.41	1827.48
11/04/80	2.16	1827.73
02/25/81	2.09	1827.80
04/06/81	2.12	1827.77
04/29/81	1.55	1828.34
05/28/81	1.69	1828.20
06/03/81	1.57	1828.32
06/29/81	1.81	1828.08
07/26/81	2.14	1827.75
07/28/81	2.20	1827.69
08/23/81	2.40	1827.49
08/27/81	2.35	1827.54
09/22/81	2.28	1827.61
09/27/81	2.27	1827.62
10/31/81	2.15	1827.74
11/27/81	1.78	1828.11
04/25/82	1.75	1828.14
05/30/82	0.85	1829.04
06/27/82	0.85	1829.04
07/25/82	1.15	1828.74
08/23/82	1.20	1828.69
09/15/82	1.58	1828.31
09/26/82	1.35	1828.54
09/28/82	1.40	1828.49
10/20/82	0.75	1829.14
05/05/83	1.00	1828.89
09/26/83	1.34	1828.55
11/15/83	2.80	1827.09
06/12/84	1.95	1827.94
04/29/85	1.85	1828.04
06/07/85	2.10	1827.79
06/26/85	2.33	1827.56
07/02/85	2.36	1827.53
07/11/85	2.83	1827.06
08/16/85	2.82	1827.07
09/16/85	2.66	1827.23
10/02/85	2.72	1827.17
11/06/85	2.45	1827.44
04/30/86	1.43	1828.46
06/04/86	2.06	1827.83
07/03/86	2.25	1827.64
08/08/86	2.54	1827.35
09/10/86	2.58	1827.31
10/07/86	2.29	1827.60
04/14/87	1.45	1828.44
05/19/87	1.93	1827.96
06/30/87	2.25	1827.64
08/06/87	2.29	1827.60
09/03/87	2.22	1827.67
10/15/87	2.30	1827.59
11/04/87	2.35	1827.54
12/08/87	2.30	1827.59
04/14/88	2.31	1827.58
05/23/88	2.47	1827.42
06/21/88	3.06	1826.83
07/21/88	2.46	1827.43
08/23/88	3.77	1826.12
09/26/88	3.82	1826.07
11/01/88	3.68	1826.21
11/30/88	3.61	1826.28
05/02/89	3.10	1826.79
08/29/89	4.01	1825.88
12/14/89	3.95	1825.94
05/10/90	3.73	1826.16
06/22/90	3.43	1826.46
07/02/90	3.38	1826.51
07/03/90	3.38	1826.51
08/28/90	3.80	1826.09
12/13/90	3.60	1826.29
04/02/91	3.32	1826.57
04/23/92	2.80	1827.09
05/05/93	2.75	1827.14
04/14/94	2.02	1827.87

147-081-23AAA2

Turtle Lake Aquifer

MP Elev (msl,ft)=1829.65

SI (ft.)=23-28

Date	Depth to Water (ft)	WL Elev (msl, ft)
06/26/85	6.36	1823.29
07/02/85	6.20	1823.45
07/11/85	6.83	1822.82
07/19/85	6.56	1823.09
08/16/85	7.13	1822.52
09/16/85	6.88	1822.77
10/03/85	6.89	1822.76
11/06/85	6.48	1823.17
12/06/85	6.74	1822.91
03/13/86	5.88	1823.77
04/30/86	4.41	1825.24
06/04/86	5.90	1823.75
07/03/86	6.28	1823.37
08/08/86	6.80	1822.85
09/10/86	6.99	1822.66
10/07/86	6.49	1823.16
12/03/86	6.24	1823.41
04/14/87	4.54	1825.11
05/19/87	5.88	1823.77
06/30/87	6.49	1823.16
08/06/87	6.35	1823.30
09/03/87	6.27	1823.38
10/15/87	6.55	1823.10
11/04/87	6.48	1823.17
12/08/87	6.41	1823.24
04/14/88	5.88	1823.77
05/23/88	6.12	1823.53
06/21/88	7.10	1822.55
07/21/88	7.46	1822.19
08/23/88	7.96	1821.69
09/26/88	7.83	1821.82
11/01/88	7.55	1822.10
11/30/88	7.45	1822.20
01/13/89	7.36	1822.29
05/02/89	6.13	1823.52
08/29/89	7.84	1821.81
12/14/89	7.70	1821.95
05/10/90	6.88	1822.77
06/22/90	6.62	1823.03
07/02/90	6.83	1822.82
07/03/90	6.83	1822.82
08/28/90	7.40	1822.25
12/13/90	7.11	1822.54
04/02/91	6.71	1822.94
04/23/92	5.70	1823.95
05/05/93	5.67	1823.98
04/14/94	4.75	1824.90

147-081-24ADD MP Elev (msl,ft)=1844.15

Turtle Lake Aquifer SI (ft.)=98-103

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	17.27	1826.88				06/22/90	17.99	1826.16	06/25/92	17.66	1826.49
09/16/85	17.06	1827.09	04/14/88	16.73	1827.42	07/02/90	18.09	1826.06	07/22/92	17.80	1826.35
10/02/85	17.15	1827.00	05/23/88	16.94	1827.21	07/03/90	18.09	1826.06	08/27/92	18.02	1826.13
11/06/85	16.92	1827.23	06/21/88	17.58	1826.57	08/03/90	18.28	1825.87	09/22/92	18.00	1826.15
12/06/85	16.96	1827.19	07/21/88	17.90	1826.25	08/28/90	18.43	1825.72	10/21/92	17.97	1826.18
			08/23/88	18.17	1825.98	09/28/90	18.36	1825.79	11/16/92	17.89	1826.26
03/13/86	16.70	1827.45	09/26/88	18.83	1825.32	10/22/90	18.15	1826.00	12/14/92	17.85	1826.30
04/30/86	15.88	1828.27	11/01/88	18.09	1826.06	11/23/90	18.07	1826.08			
06/04/86	16.46	1827.69	11/30/88	18.06	1826.09	12/13/90	18.17	1825.98	04/05/93	17.48	1826.67
07/03/86	16.65	1827.50							05/05/93	17.34	1826.81
08/08/86	16.94	1827.21	01/13/89	17.96	1826.19	04/02/91	17.87	1826.28	06/01/93	17.31	1826.84
09/10/86	16.93	1827.22	05/02/89	17.59	1826.56	05/01/91	17.68	1826.47	06/29/93	17.37	1826.78
10/07/86	16.70	1827.45	06/05/89	17.73	1826.42	05/22/91	17.65	1826.50	08/04/93	16.53	1827.62
12/03/86	16.60	1827.55	07/06/89	18.51	1825.64	06/24/91	17.86	1826.29	09/01/93	16.90	1827.25
			08/01/89	18.65	1825.50	07/23/91	17.99	1826.16	10/11/93	17.16	1826.99
04/14/87	15.90	1828.25	08/29/89	18.57	1825.58	08/12/91	18.04	1826.11	11/04/93	17.22	1826.93
05/19/87	16.32	1827.83	10/06/89	18.55	1825.60	08/28/91	18.03	1826.12	12/08/93	17.18	1826.97
06/30/87	16.68	1827.47	11/03/89	18.38	1825.77	09/23/91	18.04	1826.11			
08/06/87	16.79	1827.36	12/14/89	18.47	1825.68	12/05/91	17.76	1826.39	04/14/94	16.57	1827.58
09/03/87	16.63	1827.52							05/20/94	16.77	1827.38
10/15/87	16.73	1827.42	04/02/90	18.26	1825.89	02/05/92	17.76	1826.39	06/29/94	16.85	1827.30
11/04/87	16.78	1827.37	05/10/90	18.23	1825.92	04/23/92	17.42	1826.73	08/03/94	17.30	1826.85
12/08/87	16.72	1827.43	06/08/90	18.06	1826.09	05/26/92	17.59	1826.56			

147-081-28ADD MP Elev (msl,ft)=1839.23

Turtle Lake Aquifer SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	8.39	1830.84	12/13/77	5.37	1833.86	06/30/80	4.22	1835.01	06/04/86	2.98	1836.25
09/15/67	8.99	1830.24	12/28/77	5.30	1833.93	08/12/80	4.44	1834.79	07/03/86	3.00	1836.23
10/11/67	8.05	1831.18				09/09/80	4.35	1834.88	08/08/86	3.18	1836.05
11/15/67	8.03	1831.20	01/10/78	5.45	1833.78	10/08/80	4.28	1834.95	09/10/86	3.26	1835.97
12/13/67	8.00	1831.23	02/14/78	5.37	1833.86	11/04/80	4.04	1835.19	10/07/86	3.15	1836.08
			02/23/78	5.36	1833.87	12/02/80	3.98	1835.25	12/03/86	3.07	1836.16
01/11/68	7.97	1831.26	03/07/78	5.35	1833.88						
02/13/68	8.03	1831.20	03/30/78	5.08	1834.15	04/06/81	3.62	1835.61	04/14/87	2.74	1836.49
03/14/68	7.84	1831.39	04/11/78	4.75	1834.48	04/29/81	3.75	1835.48	05/19/87	2.83	1836.40
04/11/68	7.73	1831.50	04/27/78	4.50	1834.73	05/06/81	3.84	1835.39	07/03/87	2.95	1836.28
05/16/68	7.59	1831.64	05/11/78	4.40	1834.83	05/28/81	3.79	1835.44	08/06/87	2.81	1836.42
06/12/68	7.69	1831.54	05/23/78	4.40	1834.83	06/03/81	3.75	1835.48	09/04/87	2.76	1836.47
07/15/68	7.76	1831.47	06/06/78	4.39	1834.84	06/29/81	3.80	1835.43	10/12/87	2.90	1836.33
			06/28/78	4.41	1834.82	07/26/81	3.40	1835.83	11/03/87	3.00	1836.23
01/16/69	7.65	1831.58	07/13/78	4.26	1834.97	08/23/81	4.05	1835.18	12/08/87	2.94	1836.29
07/17/69	7.09	1832.14	07/25/78	4.31	1834.92	09/27/81	4.05	1835.18			
08/27/69	7.15	1832.08	08/08/78	4.48	1834.75	11/27/81	4.00	1835.23	04/14/88	3.07	1836.16
10/02/69	7.16	1832.07	08/24/78	4.52	1834.71	12/01/81	3.93	1835.30	08/23/88	4.22	1835.01
12/30/69	7.19	1832.04	09/14/78	4.35	1834.88						
			09/22/78	4.37	1834.86	04/25/82	3.35	1835.88	01/13/89	4.46	1834.77
03/24/70	7.18	1832.05	10/16/78	4.41	1834.82	05/30/82	3.15	1836.08	05/03/89	4.29	1834.94
05/05/70	6.75	1832.48	10/25/78	4.37	1834.86	06/27/82	3.15	1836.08	08/29/89	5.02	1834.21
06/04/70	6.42	1832.81	11/07/78	4.41	1834.82	07/25/82	3.20	1836.03	12/14/89	5.20	1834.03
07/01/70	6.45	1832.78	11/29/78	2.49	1836.74	08/23/82	3.30	1835.93			
09/10/70	6.60	1832.63	12/13/78	2.57	1836.66	09/26/82	3.18	1836.05	05/10/90	5.16	1834.07
12/01/70	6.58	1832.65	12/27/78	2.55	1836.68	10/20/82	3.02	1836.21	05/17/90	5.16	1834.07
									07/02/90	5.08	1834.15
06/01/77	4.60	1834.63	05/22/79	3.67	1835.56	06/12/84	2.77	1836.46	07/03/90	5.08	1834.15
06/15/77	5.00	1834.23	06/27/79	3.71	1835.52	12/12/84	3.20	1836.03	08/28/90	5.11	1834.12
06/29/77	4.83	1834.40	07/05/79	3.83	1835.40				12/13/90	5.17	1834.06
07/11/77	5.17	1834.06	07/31/79	3.89	1835.34	04/29/85	3.05	1836.18			
07/26/77	5.22	1834.01	08/07/79	3.99	1835.24	06/07/85	2.99	1836.24	04/02/91	5.15	1834.08
08/08/77	5.38	1833.85	08/22/79	3.99	1835.24	07/02/85	3.10	1836.13			
08/24/77	5.50	1833.73	09/06/79	3.98	1835.25	08/16/85	3.44	1835.79	04/23/92	4.83	1834.40
09/13/77	5.48	1833.75	09/25/79	4.06	1835.17	09/16/85	3.50	1835.73			
09/29/77	4.98	1834.25	10/01/79	4.04	1835.19	10/02/85	3.54	1835.69	05/05/93	4.91	1834.32
10/13/77	5.16	1834.07	10/30/79	3.99	1835.24	11/06/85	3.38	1835.85	12/08/93	4.02	1835.21
10/26/77	5.12	1834.11									
11/15/77	5.12	1834.11	05/07/80	4.00	1835.23	04/30/86	2.78	1836.45	04/14/94	2.22	1837.01
12/02/77	5.37	1833.86	06/03/80	4.16	1835.07	05/01/86	2.88	1836.35			

147-081-30AAA MP Elev (msl,ft)=1847.71

Turtle Lake Aquifer SI (ft.)=88-93

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/28/85	4.23	1843.48	07/31/86	4.56	1843.15				07/03/90	6.92	1840.79
07/02/85	4.54	1843.17	08/08/86	4.60	1843.11	04/14/88	4.68	1843.03	08/28/90	7.08	1840.63
07/11/85	4.61	1843.10	09/10/86	4.58	1843.13	08/23/88	5.30	1842.41	12/13/90	7.26	1840.45
07/22/85	4.74	1842.97	10/07/86	4.57	1843.14						
08/16/85	4.82	1842.89	12/03/86	4.50	1843.21	01/13/89	5.87	1841.84	04/02/91	7.47	1840.24
09/10/85	4.92	1842.79				05/03/89	6.04	1841.67			
10/02/85	4.90	1842.81	04/14/87	4.34	1843.37	08/29/89	6.50	1841.21	04/23/92	7.22	1840.49
11/06/85	4.80	1842.91	05/19/87	4.22	1843.49	12/14/89	6.85	1840.86			
12/06/85	4.82	1842.89	06/30/87	4.22	1843.49				05/05/93	7.52	1840.19
			08/06/87	4.10	1843.61	05/10/90	6.95	1840.76	12/08/93	6.17	1841.54
05/01/86	4.71	1843.00	09/04/87	4.06	1843.65	05/17/90	6.95	1840.76			
06/04/86	4.54	1843.17	11/03/87	4.15	1843.56	06/22/90	6.96	1840.75	04/14/94	5.85	1841.86
07/02/86	4.56	1843.15	12/08/87	4.23	1843.48	07/02/90	6.92	1840.79			

147-082-02DCC MP Elev (msl,ft)=1880.2

Fort Union Aquifer SI (ft.)=113-118

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	34.69	1845.51	06/04/86	35.14	1845.06	07/06/89	37.00	1843.20	12/05/91	38.43	1841.77
12/12/84	34.76	1845.44	07/03/86	34.94	1845.26	08/01/89	37.05	1843.15			
			07/31/86	34.95	1845.25	08/29/89	37.12	1843.08	02/05/92	38.48	1841.72
01/17/85	34.86	1845.34	08/08/86	34.99	1845.21	10/06/89	37.38	1842.82	04/23/92	37.96	1842.24
01/23/85	35.03	1845.17	09/10/86	34.96	1845.24	11/03/89	37.42	1842.78	05/26/92	38.08	1842.12
01/30/85	35.24	1844.96	10/07/86	34.90	1845.30	12/15/89	37.65	1842.55	06/25/92	38.08	1842.12
02/06/85	35.34	1844.86	10/21/86	34.87	1845.33				07/22/92	38.27	1841.93
02/13/85	35.39	1844.81	12/03/86	34.84	1845.36	04/02/90	37.94	1842.26	08/27/92	38.32	1841.88
02/20/85	35.32	1844.88				05/10/90	37.68	1842.52	09/22/92	38.59	1841.61
02/27/85	35.42	1844.78	04/14/87	34.76	1845.44	06/08/90	37.65	1842.55	10/21/92	38.70	1841.50
03/06/85	35.40	1844.80	05/19/87	34.40	1845.80	07/02/90	37.59	1842.61	11/16/92	38.70	1841.50
03/13/85	35.45	1844.75	06/30/87	34.40	1845.80	07/03/90	37.59	1842.61	12/14/92	38.69	1841.51
03/20/85	35.45	1844.75	08/07/87	34.19	1846.01	08/03/90	37.82	1842.38			
03/27/85	34.89	1845.31	09/04/87	34.13	1846.07	08/28/90	37.89	1842.31	04/05/93	38.82	1841.38
04/03/85	34.78	1845.42	11/03/87	34.48	1845.72	09/28/90	38.10	1842.10	05/04/93	38.21	1841.99
04/10/85	34.92	1845.28	12/08/87	34.63	1845.57	10/22/90	38.09	1842.11	06/01/93	38.25	1841.95
04/17/85	34.92	1845.28				11/23/90	38.09	1842.11	06/29/93	38.06	1842.14
04/24/85	34.88	1845.32	04/14/88	35.08	1845.12	12/13/90	38.25	1841.95	08/04/93	37.62	1842.58
05/01/85	34.93	1845.27	05/20/88	34.99	1845.21				09/01/93	37.35	1842.85
06/07/85	34.94	1845.26	06/21/88	35.20	1845.00	04/02/91	38.59	1841.61	10/11/93	37.27	1842.93
07/03/85	34.99	1845.21	07/21/88	35.57	1844.63	05/01/91	38.12	1842.08	11/04/93	37.13	1843.07
08/16/85	35.18	1845.02	08/23/88	35.73	1844.47	05/22/91	38.23	1841.97	12/08/93	36.88	1843.32
09/11/85	35.39	1844.81	09/26/88	36.11	1844.09	05/30/91	38.24	1841.96			
10/02/85	35.25	1844.95	11/01/88	36.37	1843.83	06/24/91	38.27	1841.93	02/15/94	36.74	1843.46
11/06/85	35.23	1844.97	11/30/88	36.50	1843.70	07/23/91	38.27	1841.93	04/14/94	36.45	1843.75
12/06/85	35.30	1844.90				08/12/91	38.32	1841.88	05/20/94	35.84	1844.36
			01/13/89	36.59	1843.61	08/28/91	38.25	1841.95	06/29/94	35.72	1844.48
03/14/86	35.56	1844.64	05/03/89	36.58	1843.62	09/23/91	38.39	1841.81	08/03/94	35.73	1844.47
04/30/86	35.07	1845.13	06/05/89	36.43	1843.77	11/06/91	38.56	1841.64			

147-082-11BDB MP Elev (msl,ft)=1859.23

Turtle Lake Aquifer SI (ft.)=123-128

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
05/30/85	13.69	1845.54	09/04/87	13.14	1846.09	05/10/90	16.68	1842.55	04/23/92	16.88	1842.35
06/14/85	13.79	1845.44	11/03/87	13.50	1845.73	06/08/90	16.58	1842.65	05/26/92	17.03	1842.20
07/11/85	13.97	1845.26	12/08/87	13.65	1845.58	06/22/90	16.68	1842.55	06/25/92	17.00	1842.23
08/16/85	14.15	1845.08				07/02/90	16.59	1842.64	07/22/92	17.22	1842.01
09/11/85	14.37	1844.86	04/14/88	14.06	1845.17	07/03/90	16.59	1842.64	08/27/92	17.22	1842.01
10/02/85	14.27	1844.96	05/20/88	13.97	1845.26	08/03/90	16.78	1842.45	09/22/92	17.54	1841.69
11/06/85	14.20	1845.03	06/21/88	14.19	1845.04	08/28/90	16.84	1842.39	10/21/92	17.70	1841.53
12/06/85	14.27	1844.96	07/21/88	14.54	1844.69	09/28/90	17.04	1842.19	11/16/92	17.67	1841.56
			08/23/88	14.66	1844.57	10/22/90	17.05	1842.18	12/14/92	17.63	1841.60
03/14/86	14.56	1844.67	09/26/88	15.08	1844.15	11/23/90	17.05	1842.18			
04/30/86	14.04	1845.19	11/01/88	15.37	1843.86	12/13/90	17.15	1842.08	04/05/93	17.82	1841.41
06/04/86	14.10	1845.13	11/30/88	15.49	1843.74				05/04/93	17.16	1842.07
07/03/86	13.91	1845.32				04/02/91	17.60	1841.63	06/01/93	17.22	1842.01
07/31/86	13.92	1845.31	01/13/89	15.56	1843.67	05/01/91	17.05	1842.18	06/29/93	17.00	1842.23
08/08/86	13.97	1845.26	05/03/89	15.54	1843.69	05/22/91	17.16	1842.07	08/04/93	16.63	1842.60
09/10/86	13.97	1845.26	06/05/89	15.75	1843.48	06/24/91	17.24	1841.99	09/01/93	16.32	1842.91
10/07/86	13.92	1845.31	07/06/89	15.97	1843.26	07/23/91	17.20	1842.03	10/11/93	16.28	1842.95
10/21/86	13.85	1845.38	08/01/89	16.02	1843.21	08/12/91	17.27	1841.96	11/04/93	16.12	1843.11
12/03/86	13.80	1845.43	08/29/89	16.06	1843.17	08/28/91	17.20	1842.03	12/08/93	15.87	1843.36
			10/06/89	16.32	1842.91	09/23/91	17.37	1841.86			
04/14/87	13.74	1845.49	11/03/89	16.37	1842.86	11/06/91	17.54	1841.69	02/15/94	15.75	1843.48
05/19/87	13.39	1845.84	12/15/89	16.62	1842.61	12/05/91	17.40	1841.83	04/14/94	15.46	1843.77
06/30/87	13.39	1845.84							05/20/94	14.78	1844.45
08/07/87	13.19	1846.04	04/02/90	16.92	1842.31	02/05/92	17.47	1841.76	06/29/94	14.69	1844.54

147-083-12BAA

Wolf Creek Aquifer

MP Elev (msl,ft)=1861.1

SI (ft.)=48-53

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/02/85	13.79	1847.31
07/22/85	13.75	1847.35
08/16/85	13.92	1847.18
09/11/85	14.38	1846.72
10/02/85	14.01	1847.09
11/06/85	14.13	1846.97
12/05/85	14.30	1846.80
03/14/86	15.23	1845.87
04/30/86	13.96	1847.14
06/04/86	14.15	1846.95
07/03/86	13.43	1847.67
08/08/86	13.58	1847.52
09/10/86	13.75	1847.35
10/07/86	14.57	1846.53
12/03/86	14.54	1846.56
04/14/87	14.47	1846.63
05/19/87	13.47	1847.63
06/30/87	13.68	1847.42
08/07/87	13.35	1847.75
09/02/87	13.25	1847.85
11/03/87	14.49	1846.61
12/08/87	15.44	1845.66
04/14/88	16.52	1844.58
05/20/88	15.14	1845.96
06/21/88	15.23	1845.87
07/21/88	15.35	1845.75
08/23/88	15.45	1845.65
09/26/88	16.01	1845.09
11/01/88	16.27	1844.83
11/30/88	16.75	1844.35
05/03/89	16.12	1844.98
08/29/89	15.90	1845.20
12/15/89	17.37	1843.73
05/10/90	16.51	1844.59
07/03/90	15.85	1845.25
08/28/90	16.18	1844.92
12/13/90	17.41	1843.69
04/03/91	18.91	1842.19
04/23/92	17.02	1844.08
08/07/92	16.27	1844.83
05/04/93	17.85	1843.25
09/24/93	15.96	1845.14
04/14/94	16.12	1844.98

147-083-12CCC

Wolf Creek Aquifer

MP Elev (msl,ft)=1854.49

SI (ft.)=35-40

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/02/85	2.84	1851.65
07/22/85	4.25	1850.24
08/16/85	4.77	1849.72
09/11/85	4.64	1849.85
10/02/85	4.65	1849.84
04/30/86	2.92	1851.57
05/01/86	3.02	1851.47
06/04/86	3.26	1851.23
07/03/86	3.52	1850.97
08/08/86	3.88	1850.61
09/10/86	4.33	1850.16
10/07/86	4.08	1850.41
04/14/87	2.84	1851.65
05/19/87	3.22	1851.27
06/30/87	3.48	1851.01
08/07/87	3.01	1851.48
09/02/87	2.95	1851.54
11/03/87	3.27	1851.22
12/08/87	3.27	1851.22
04/14/88	3.16	1851.33
05/20/88	3.46	1851.03
06/21/88	4.33	1850.16
07/21/88	5.27	1849.22
08/23/88	6.46	1848.03
09/26/88	6.70	1847.79
11/01/88	6.50	1847.99
11/30/88	6.47	1848.02
05/03/89	5.20	1849.29
08/29/89	7.45	1847.04
12/15/89	7.70	1846.79
05/10/90	6.88	1847.61
07/02/90	6.11	1848.38
07/03/90	6.11	1848.38
08/28/90	7.67	1846.82
12/13/90	7.48	1847.01
04/03/91	7.10	1847.39
04/23/92	6.00	1848.49
05/04/93	7.00	1847.49
09/24/93	5.69	1848.80

147-083-14BCC

Wolf Creek Aquifer

MP Elev (msl,ft)=1858.96

SI (ft.)=144-147

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/13/70	12.07	1846.89
09/08/70	11.82	1847.14
06/15/77	8.40	1850.56
06/29/77	11.44	1847.52
07/11/77	8.65	1850.31
07/26/77	8.66	1850.30
08/09/77	8.67	1850.29
08/23/77	8.74	1850.22
09/12/77	8.80	1850.16
09/30/77	8.79	1850.17
10/27/77	8.37	1850.59
11/15/77	8.75	1850.21
11/28/77	8.15	1850.81
12/12/77	8.71	1850.25
12/27/77	8.62	1850.34
01/11/78	8.66	1850.30
01/23/78	8.55	1850.41
02/14/78	8.20	1850.76
02/23/78	7.62	1851.34
03/07/78	8.65	1850.31
04/10/78	7.41	1851.55
04/27/78	8.87	1850.09
05/11/78	8.88	1850.08
05/24/78	8.81	1850.15
06/05/78	8.80	1850.16
06/27/78	8.67	1850.29
06/28/78	8.67	1850.29
07/12/78	7.73	1851.23
07/26/78	7.88	1851.08
08/07/78	7.82	1851.14
08/25/78	7.72	1851.24
09/14/78	7.57	1851.39
09/27/78	7.52	1851.44
10/13/78	7.52	1851.44
10/26/78	7.48	1851.48
11/06/78	7.51	1851.45
11/24/78	7.49	1851.47
12/11/78	7.47	1851.49
01/08/79	7.48	1851.48
02/20/79	7.50	1851.46
04/25/79	7.74	1851.22
05/07/79	7.69	1851.27
05/23/79	7.60	1851.36
06/04/79	7.53	1851.43
06/28/79	6.99	1851.97
07/02/79	6.99	1851.97
07/31/79	6.86	1852.10
08/07/79	6.92	1852.04
09/04/79	6.85	1852.11
09/27/79	6.81	1852.15
10/02/79	6.78	1852.18
10/25/79	6.83	1852.13
10/30/79	6.77	1852.19
11/03/79	6.82	1852.14
11/19/79	6.88	1852.08
01/02/80	6.87	1852.09
01/28/80	6.35	1852.61
02/27/80	6.59	1852.37
04/01/80	6.77	1852.19
05/07/80	6.93	1852.03
06/02/80	7.02	1851.94
07/01/80	7.25	1851.71
08/12/80	7.43	1851.53
09/10/80	7.52	1851.44
10/08/80	7.53	1851.43
11/05/80	7.40	1851.56
12/04/80	7.59	1851.37
01/28/81	7.67	1851.29
02/23/81	7.55	1851.41
04/07/81	7.86	1851.10
05/06/81	7.90	1851.06
06/03/81	7.88	1851.08
06/29/81	8.05	1850.91
07/27/81	8.35	1850.61
09/14/82	7.03	1851.93
11/17/82	4.46	1854.50
12/09/82	6.40	1852.56
01/13/83	6.25	1852.71
11/16/83	5.65	1853.31
06/08/84	5.40	1853.56
12/12/84	5.28	1853.68
01/17/85	5.39	1853.57
02/14/85	5.48	1853.48
03/13/85	5.53	1853.43
04/04/85	5.68	1853.28
04/29/85	5.69	1853.27
06/07/85	5.22	1853.74
07/02/85	5.05	1853.91
08/16/85	5.20	1853.76
09/11/85	5.26	1853.70
10/02/85	5.36	1853.60
11/06/85	5.50	1853.46
12/05/85	5.57	1853.39
03/14/86	6.00	1852.96
04/30/86	5.89	1853.07
06/04/86	6.01	1852.95
07/03/86	5.84	1853.12
08/08/86	5.60	1853.36
09/10/86	5.65	1853.31
10/07/86	5.65	1853.31
12/03/86	5.61	1853.35
04/14/87	5.80	1853.16
05/19/87	5.56	1853.40
06/30/87	5.53	1853.43
08/07/87	5.20	1853.76
09/02/87	5.11	1853.85
11/03/87	5.45	1853.51
12/08/87	5.70	1853.26
04/14/88	6.65	1852.31
05/20/88	6.60	1852.36
06/21/88	6.78	1852.18
07/21/88	7.08	1851.88
08/23/88	7.42	1851.54
09/26/88	7.75	1851.21
11/01/88	8.13	1850.83
11/30/88	8.30	1850.66
01/13/89	8.32	1850.64
05/03/89	8.76	1850.20
08/29/89	9.04	1849.92
12/15/89	9.56	1849.40
05/10/90	9.90	1849.06
07/02/90	9.64	1849.32
07/03/90	9.64	1849.32
08/28/90	9.82	1849.14
12/13/90	10.21	1848.75
04/03/91	10.81	1848.15
04/23/92	9.91	1849.05
05/04/93	10.77	1848.19
09/24/93	8.67	1850.29
12/08/93	8.36	1850.60

147-083-15BBA MP Elev (msl,ft)=1859.05

Fort Union Aquifer SI (ft.)=57-61

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	11.61	1847.44
12/12/84	11.91	1847.14
01/17/85	11.97	1847.08
02/14/85	12.05	1847.00
03/13/85	11.81	1847.24
04/29/85	11.67	1847.38
06/07/85	11.73	1847.32
07/02/85	12.01	1847.04
07/23/85	12.18	1846.87
08/16/85	12.69	1846.36
09/11/85	13.05	1846.00
10/02/85	13.04	1846.01
11/06/85	12.93	1846.12
05/01/86	12.11	1846.94
06/04/86	11.74	1847.31
07/03/86	11.08	1847.97
08/08/86	10.58	1848.47
09/10/86	11.16	1847.89
10/07/86	11.12	1847.93
04/14/87	11.38	1847.67
05/19/87	11.27	1847.78
06/30/87	11.57	1847.48
08/07/87	11.09	1847.96
09/02/87	11.17	1847.88
11/03/87	11.87	1847.18
12/08/87	12.14	1846.91
04/14/88	13.50	1845.55
05/20/88	13.45	1845.60
06/21/88	13.94	1845.11
07/21/88	14.63	1844.42
08/23/88	15.34	1843.71
09/26/88	15.76	1843.29
11/01/88	15.99	1843.06
11/30/88	16.19	1842.86
05/03/89	16.18	1842.87
08/04/89	16.67	1842.38
08/29/89	17.11	1841.94
12/15/89	17.64	1841.41
05/10/90	17.92	1841.13
07/02/90	17.11	1841.94
07/03/90	17.11	1841.94
08/28/90	17.80	1841.25
12/13/90	18.25	1840.80
04/03/91	18.83	1840.22
04/23/92	16.88	1842.17
05/04/93	17.83	1841.22
09/24/93	14.57	1844.48
04/14/94	12.59	1846.46

148-078-20BBA MP Elev (msl,ft)=1911.95

Lake Nettie Aquifer SI (ft.)=35-41

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/13/78	17.84	1894.11
09/19/78	19.22	1892.73
10/17/78	19.23	1892.72
11/22/78	19.30	1892.65
12/11/84	16.94	1895.01
01/15/85	17.00	1894.95
02/13/85	16.98	1894.97
03/13/85	17.02	1894.93
04/04/85	16.56	1895.39
04/29/85	16.26	1895.69
06/06/85	16.28	1895.67
07/03/85	16.46	1895.49
08/15/85	16.73	1895.22
09/10/85	16.83	1895.12
10/01/85	16.84	1895.11
11/05/85	16.80	1895.15
04/22/86	15.79	1896.16
06/03/86	15.92	1896.03
07/01/86	16.15	1895.80
08/05/86	16.32	1895.63
09/10/86	16.49	1895.46
10/06/86	16.58	1895.37
04/14/87	15.49	1896.46
05/18/87	15.69	1896.26
06/30/87	15.97	1895.98
08/06/87	16.17	1895.78
09/03/87	16.20	1895.75
10/15/87	16.46	1895.49
11/04/87	16.52	1895.43
12/07/87	16.55	1895.40
04/14/88	16.63	1895.32
08/22/88	17.25	1894.70
10/31/88	17.69	1894.26
01/06/89	17.78	1894.17
05/02/89	17.47	1894.48
08/28/89	18.07	1893.88
12/14/89	18.45	1893.50
05/09/90	18.55	1893.40
07/01/90	18.43	1893.52
07/02/90	18.43	1893.52
08/27/90	18.72	1893.23
12/13/90	18.94	1893.01
04/01/91	18.90	1893.05
04/21/92	18.48	1893.47
05/04/93	18.56	1893.39

148-079-27ADD1 MP Elev (msl,ft)=1908.8

Lake Nettie Aquifer SI (ft.)=183-198

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	25.43	1884.10
10/13/67	25.43	1884.10
11/15/67	25.40	1884.13
12/13/67	25.99	1883.54
01/11/68	25.59	1883.94
02/13/68	25.83	1883.70
03/13/68	25.40	1884.13
04/11/68	25.19	1884.34
05/16/68	25.69	1883.84
06/12/68	25.64	1883.89
07/16/68	25.58	1883.95
01/16/69	25.78	1883.75
04/17/69	25.78	1883.75
07/17/69	25.75	1883.78
08/28/69	25.45	1884.08
10/02/69	25.22	1884.31
12/10/69	25.60	1883.93
03/25/70	26.77	1882.76
05/05/70	25.79	1883.74
06/04/70	25.52	1884.01
06/30/70	25.20	1884.33
09/08/70	25.35	1884.18
11/30/70	24.85	1884.68
12/11/84	20.69	1888.84
01/15/85	20.85	1888.68
02/13/85	21.19	1888.34
03/13/85	20.93	1888.60
04/04/85	20.76	1888.77
04/29/85	20.86	1888.67
06/06/85	20.65	1888.88
07/03/85	20.65	1888.88
08/15/85	20.80	1888.73
09/10/85	21.12	1888.41
10/01/85	20.90	1888.63
11/05/85	20.52	1889.01
12/05/85	20.95	1888.58
03/11/86	20.68	1888.85
04/22/86	20.40	1889.13
06/03/86	20.32	1889.21
07/01/86	20.43	1889.10
08/05/86	20.40	1889.13
09/10/86	20.30	1889.23
10/06/86	20.52	1889.01
12/02/86	20.48	1889.05
04/14/87	20.40	1889.13
05/18/87	20.13	1889.40
06/30/87	20.17	1889.36
08/06/87	20.22	1889.31
09/03/87	19.97	1889.56
10/15/87	20.25	1889.28
11/04/87	20.39	1889.14
12/07/87	20.13	1889.40
04/14/88	20.56	1888.97
08/22/88	20.75	1888.78
01/06/89	21.24	1888.29
05/02/89	21.36	1888.17
05/09/90	22.29	1887.24
07/01/90	22.14	1887.39
07/02/90	22.14	1887.39
07/18/90	22.36	1887.17
08/27/90	22.38	1887.15
12/13/90	22.77	1886.76
04/01/91	22.89	1886.64
09/30/93	23.24	1886.56
04/13/94	22.14	1886.66

148-079-27ADD2
Lake Nettie Aquifer

MP Elev (msl,ft)=1908.8
SI (ft.)=83-98

Date	Depth to Water (ft)	WL Elev (msl. ft)
09/14/67	20.16	1889.52
10/13/67	20.13	1889.55
11/15/67	20.16	1889.52
12/13/67	20.28	1889.40
01/11/68	20.28	1889.40
02/13/68	20.26	1889.42
03/13/68	20.18	1889.50
04/11/68	20.11	1889.57
05/16/68	20.19	1889.49
06/12/68	20.16	1889.52
07/16/68	20.24	1889.44
01/16/69	20.42	1889.26
04/17/69	20.30	1889.38
07/17/69	20.10	1889.58
08/28/69	20.10	1889.58
10/02/69	20.08	1889.60
12/10/69	20.17	1889.51
03/25/70	20.26	1889.42
05/05/70	20.08	1889.60
06/04/70	19.95	1889.73
06/30/70	19.92	1889.76
09/08/70	19.94	1889.74
11/30/70	19.84	1889.84
12/11/84	16.94	1892.74
01/15/85	16.90	1892.78
02/13/85	16.94	1892.74
03/13/85	16.81	1892.87
04/04/85	16.75	1892.93
04/29/85	16.72	1892.96
06/06/85	16.61	1893.07
07/03/85	16.67	1893.01
08/15/85	16.80	1892.88
09/10/85	16.85	1892.83
10/01/85	16.84	1892.84
11/05/85	16.80	1892.88
12/05/85	16.98	1892.70
03/11/86	16.70	1892.98
04/22/86	16.48	1893.20
06/03/86	16.40	1893.28
07/01/86	16.44	1893.24
08/05/86	16.44	1893.24
09/10/86	16.51	1893.17
10/06/86	16.56	1893.12
12/02/86	16.58	1893.10
04/14/87	16.55	1893.13
05/18/87	16.15	1893.53
06/30/87	16.20	1893.48
08/06/87	16.23	1893.45
09/03/87	16.19	1893.49
10/15/87	16.35	1893.33
11/04/87	16.40	1893.28
12/07/87	16.36	1893.32
04/14/88	16.40	1893.28
08/22/88	16.84	1892.84
01/06/89	17.24	1892.44
05/02/89	17.17	1892.51
08/28/89	17.54	1892.14
10/06/89	17.74	1891.94
12/14/89	17.84	1891.84
05/09/90	17.96	1891.72
07/01/90	17.94	1891.74
07/02/90	17.94	1891.74
07/18/90	18.04	1891.64
08/27/90	18.16	1891.52
12/13/90	18.40	1891.28
04/01/91	18.37	1891.31
04/21/92	18.55	1891.23
05/04/93	18.70	1891.08
08/27/93	18.80	1890.98
09/30/93	18.88	1890.92

148-079-32AAA
Lake Nettie Aquifer

MP Elev (msl,ft)=1950.13
SI (ft.)=108-111

Date	Depth to Water (ft)	WL Elev (msl. ft)
12/10/69	71.00	1879.13
01/21/70	70.56	1879.57
02/19/70	70.46	1879.67
03/25/70	70.38	1879.75
05/05/70	70.29	1879.84
06/04/70	69.65	1880.48
06/24/70	69.65	1880.48
09/08/70	69.51	1880.62
12/02/70	69.51	1880.62
12/11/84	65.17	1884.96
01/15/85	65.20	1884.93
02/13/85	65.38	1884.75
03/13/85	65.24	1884.89
04/04/85	65.08	1885.05
04/29/85	65.09	1885.04
06/06/85	64.97	1885.16
07/03/85	65.00	1885.13
08/15/85	65.10	1885.03
09/10/85	65.26	1884.87
10/01/85	65.18	1884.95
11/05/85	64.95	1885.18
12/05/85	65.16	1884.97
03/11/86	64.95	1885.18
04/22/86	64.74	1885.39
06/03/86	64.67	1885.46
07/01/86	64.73	1885.40
08/05/86	64.73	1885.40
09/10/86	64.64	1885.49
10/06/86	64.76	1885.37
12/02/86	64.70	1885.43
04/14/87	64.53	1885.60
05/18/87	64.37	1885.76
06/30/87	64.50	1885.63
08/06/87	64.50	1885.63
09/03/87	64.32	1885.81
10/15/87	64.48	1885.65
11/04/87	64.48	1885.65
12/07/87	64.40	1885.73
04/14/88	64.66	1885.47
08/22/88	64.90	1885.23
01/06/89	65.23	1884.90
05/02/89	65.40	1884.73
08/28/89	65.68	1884.45
12/14/89	66.08	1884.05
05/09/90	66.22	1883.91
07/01/90	66.22	1883.91
07/02/90	66.22	1883.91
08/27/90	66.44	1883.69
12/13/90	66.71	1883.42
04/01/91	66.89	1883.24
04/21/92	67.07	1883.06
05/04/93	67.47	1882.66

148-079-36CDC
Fort Union Aquifer

MP Elev (msl,ft)=1903.05
SI (ft.)=66-71

Date	Depth to Water (ft)	WL Elev (msl. ft)
07/11/85	14.42	1888.63
08/15/85	13.72	1889.33
09/10/85	13.86	1889.19
10/01/85	13.91	1889.14
11/05/85	13.54	1889.51
12/05/85	13.98	1889.07
03/11/86	13.67	1889.38
04/22/86	12.96	1890.09
04/29/86	12.87	1890.18
06/03/86	12.93	1890.12
07/01/86	13.03	1890.02
07/29/86	13.05	1890.00
08/05/86	13.18	1889.87
09/10/86	13.34	1889.71
10/06/86	13.35	1889.70
10/21/86	13.43	1889.62
12/02/86	13.52	1889.53
04/14/87	12.78	1890.27
05/18/87	12.96	1890.09
06/30/87	13.19	1889.86
08/06/87	13.19	1889.86
09/03/87	13.20	1889.85
10/15/87	13.69	1889.36
11/04/87	13.78	1889.27
12/07/87	13.89	1889.16
04/14/88	14.12	1888.93
05/19/88	14.13	1888.92
06/20/88	14.58	1888.47
07/21/88	14.89	1888.16
08/22/88	15.17	1887.88
09/26/88	15.50	1887.55
10/31/88	15.57	1887.48
11/29/88	15.69	1887.36
01/06/89	15.87	1887.18
05/02/89	15.71	1887.34
06/05/89	15.87	1887.18
07/06/89	16.15	1886.90
07/31/89	16.30	1886.75
08/28/89	16.37	1886.68
10/06/89	16.58	1886.47
11/03/89	16.67	1886.38
12/14/89	16.88	1886.17
04/02/90	17.35	1885.70
05/09/90	17.41	1885.64
06/07/90	17.43	1885.62
07/01/90	17.50	1885.55
07/02/90	17.50	1885.55
08/02/90	17.58	1885.47
08/27/90	17.65	1885.40
09/28/90	17.76	1885.29
10/22/90	17.79	1885.26
11/23/90	17.93	1885.12
12/13/90	18.00	1885.05
04/01/91	18.29	1884.76
05/01/91	18.30	1884.75
05/22/91	18.31	1884.74
05/23/91	18.35	1884.70
06/24/91	18.40	1884.65
07/23/91	18.47	1884.58
08/12/91	18.50	1884.55
08/28/91	18.54	1884.51
09/23/91	18.57	1884.48
11/07/91	18.60	1884.45
12/05/91	18.70	1884.35
02/05/92	18.85	1884.20
04/21/92	18.64	1884.41
05/26/92	18.72	1884.33
06/25/92	18.80	1884.25
07/22/92	18.90	1884.15
08/27/92	19.00	1884.05
09/22/92	19.05	1884.00
10/21/92	19.14	1883.91
11/16/92	19.18	1883.87
12/14/92	19.23	1883.82
04/05/93	19.00	1884.05
05/04/93	18.95	1884.10
06/01/93	18.94	1884.11
06/30/93	18.91	1884.14
08/04/93	18.63	1884.42
09/01/93	18.57	1884.48
10/11/93	18.57	1884.48
11/04/93	18.60	1884.45
12/09/93	18.63	1884.42
04/13/94	18.35	1884.70
05/20/94	18.02	1885.03
06/29/94	16.84	1886.21
08/03/94	16.77	1886.28

148-080-06AAB

Strawberry Lake Aquifer

MP Elev (msl,ft)=1954.35

SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)
05/29/85	63.62	1890.73
07/24/85	67.67	1886.68
08/15/85	67.79	1886.56
09/16/85	67.62	1886.73
10/01/85	67.59	1886.76
11/05/85	67.44	1886.91
12/05/85	67.45	1886.90
03/13/86	67.17	1887.18
04/29/86	67.12	1887.23
06/03/86	67.32	1887.03
07/02/86	67.47	1886.88
08/07/86	67.51	1886.84
09/10/86	67.46	1886.89
10/07/86	67.28	1887.07
12/02/86	67.18	1887.17
04/14/87	66.89	1887.46
05/19/87	67.04	1887.31
06/30/87	67.17	1887.18
08/06/87	67.06	1887.29
09/03/87	67.01	1887.34
10/15/87	67.07	1887.28
11/04/87	67.05	1887.30
12/07/87	66.96	1887.39
04/14/88	66.86	1887.49
08/23/88	67.90	1886.45
01/06/89	67.54	1886.81
05/02/89	67.82	1886.53
08/29/89	68.45	1885.90
12/14/89	67.83	1886.52
05/09/90	67.99	1886.36
06/21/90	67.98	1886.37
07/01/90	68.04	1886.31
07/02/90	68.04	1886.31
08/27/90	68.70	1885.65
12/12/90	68.53	1885.82
04/01/91	68.42	1885.93
04/22/92	68.55	1885.80
05/04/93	68.75	1885.60
04/13/94	68.00	1886.35

148-080-07AAA

Strawberry Lake Aquifer

MP Elev (msl,ft)=1948.74

SI (ft.)=149-154

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/20/84	64.29	1884.45
12/12/84	63.86	1884.88
01/16/85	63.69	1885.05
02/13/85	63.64	1885.10
03/13/85	63.58	1885.16
04/04/85	63.44	1885.30
04/29/85	63.43	1885.31
06/07/85	63.46	1885.28
07/03/85	63.61	1885.13
08/15/85	63.97	1884.77
09/16/85	63.94	1884.80
10/01/85	63.96	1884.78
11/05/85	63.80	1884.94
12/05/85	63.79	1884.95
03/13/86	63.54	1885.20
04/29/86	63.37	1885.37
06/03/86	63.44	1885.30
07/02/86	63.67	1885.07
08/07/86	63.74	1885.00
09/10/86	63.82	1884.92
10/07/86	63.67	1885.07
12/02/86	63.49	1885.25
04/14/87	63.26	1885.48
05/19/87	63.29	1885.45
06/30/87	63.37	1885.37
08/06/87	63.37	1885.37
09/03/87	63.38	1885.36
10/15/87	63.37	1885.37
11/04/87	63.34	1885.40
12/07/87	63.27	1885.47
04/14/88	63.16	1885.58
08/23/88	64.02	1884.72
01/06/89	63.86	1884.88
05/02/89	63.68	1885.06
08/29/89	64.58	1884.16
12/14/89	64.47	1884.27
05/09/90	64.30	1884.44
06/21/90	64.18	1884.56
07/01/90	64.24	1884.50
07/02/90	64.24	1884.50
08/27/90	64.89	1883.85
12/12/90	64.91	1883.83
04/01/91	64.92	1883.82
04/22/92	64.88	1883.86
05/04/93	65.15	1883.59
04/13/94	64.35	1884.39

148-080-12ADD

Lake Nettie Aquifer

MP Elev (msl,ft)=1959.82

SI (ft.)=23-28

Date	Depth to Water (ft)	WL Elev (msl, ft)
10/13/67	13.10	1946.72
11/15/67	11.77	1948.05
12/13/67	11.47	1948.35
01/11/68	11.61	1948.21
02/15/68	11.72	1948.10
03/13/68	11.36	1948.46
04/11/68	11.31	1948.51
05/16/68	11.26	1948.56
06/12/68	11.23	1948.59
07/16/68	11.46	1948.36
01/16/69	11.79	1948.03
04/17/69	9.68	1950.14
07/17/69	10.57	1949.25
08/19/69	10.64	1949.18
10/02/69	10.88	1948.94
12/19/69	11.20	1948.62
05/05/70	10.38	1949.44
06/04/70	9.88	1949.94
07/01/70	10.00	1949.82
09/10/70	10.21	1949.61
12/02/70	10.17	1949.65
12/11/84	9.24	1950.58
01/15/85	9.35	1950.47
02/13/85	9.47	1950.35
03/13/85	8.84	1950.98
04/04/85	8.75	1951.07
04/29/85	8.59	1951.23
06/06/85	8.70	1951.12
07/03/85	8.99	1950.83
08/15/85	9.39	1950.43
09/10/85	9.46	1950.36
10/01/85	9.46	1950.36
11/05/85	9.27	1950.55
12/05/85	9.47	1950.35
03/11/86	8.65	1951.17
04/22/86	8.33	1951.49
04/29/86	8.35	1951.47
06/03/86	8.66	1951.16
07/01/86	8.96	1950.86
07/29/86	9.07	1950.75
08/05/86	9.13	1950.69
08/07/86	9.14	1950.68
09/10/86	9.35	1950.47
09/30/86	9.39	1950.43
10/06/86	9.37	1950.45
10/21/86	9.40	1950.42
12/02/86	9.48	1950.34
04/14/87	8.39	1951.43
05/18/87	8.76	1951.06
06/30/87	9.12	1950.70
08/06/87	9.26	1950.56
09/03/87	9.12	1950.70
10/15/87	9.47	1950.35
11/04/87	9.51	1950.31
12/07/87	9.50	1950.32
04/14/88	9.45	1950.37
08/22/88	10.56	1949.26
01/06/89	10.90	1948.92
05/02/89	10.35	1949.47
08/28/89	11.34	1948.48
12/14/89	11.65	1948.17
05/09/90	11.78	1948.04
07/01/90	11.62	1948.20
07/02/90	11.62	1948.20
08/27/90	12.06	1947.76
12/13/90	12.38	1947.44
04/01/91	12.63	1947.19
04/21/92	12.55	1947.27
05/04/93	12.76	1947.06
04/13/94	11.32	1948.50

148-080-17CAB2

Strawberry Lake Aquifer

MP Elev (msl,ft)=1919.77

SI (ft.)=118-138

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/12/84	57.95	1861.82
01/17/85	55.86	1863.91
02/13/85	55.89	1863.88
03/14/85	58.07	1861.70
04/04/85	57.89	1861.88
04/29/85	57.88	1861.89
06/07/85	57.95	1861.82
07/03/85	58.04	1861.73
08/15/85	58.37	1861.40
09/16/85	58.18	1861.59
10/01/85	58.24	1861.53
11/05/85	58.08	1861.69
12/05/85	58.12	1861.65
03/13/86	58.02	1861.75
04/29/86	57.85	1861.92
06/03/86	57.87	1861.90
07/02/86	58.21	1861.56
08/08/86	58.01	1861.76
09/10/86	57.91	1861.86
10/07/86	57.80	1861.97
12/02/86	57.70	1862.07
04/14/87	57.52	1862.25
05/19/87	57.45	1862.32
06/30/87	57.74	1862.03
08/06/87	57.63	1862.14
09/03/87	57.41	1862.36
10/15/87	57.51	1862.26
11/04/87	57.47	1862.30
12/07/87	57.39	1862.38
04/14/88	57.63	1862.14
08/23/88	58.50	1861.27
01/06/89	58.38	1861.39
05/02/89	58.48	1861.29
08/29/89	59.15	1860.62
12/14/89	59.10	1860.67
05/09/90	59.31	1860.46
07/01/90	59.41	1860.36
07/02/90	59.41	1860.36
08/27/90	59.88	1859.89
12/12/90	59.73	1860.04
04/22/92	60.05	1859.72
05/04/93	60.41	1859.36
04/13/94	59.48	1860.29

148-080-19CCC1 MP Elev (msl,ft)=1864.12

Lake Nettie Aquifer SI (ft.)=198-201

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/10/67	23.48	1840.64
09/14/67	24.13	1839.99
10/13/67	24.04	1840.08
11/17/67	24.10	1840.02
12/15/67	24.03	1840.09
01/12/68	24.06	1840.06
02/15/68	23.96	1840.16
03/14/68	23.87	1840.25
04/11/68	23.45	1840.67
05/16/68	23.67	1840.45
06/13/68	23.68	1840.44
07/15/68	23.83	1840.29
01/15/69	23.82	1840.30
04/17/69	23.74	1840.38
07/16/69	23.34	1840.78
08/27/69	23.36	1840.76
10/02/69	23.46	1840.66
12/30/69	23.69	1840.43
03/24/70	23.80	1840.32
05/05/70	23.49	1840.63
06/05/70	23.20	1840.92
07/01/70	23.38	1840.74
09/10/70	23.58	1840.54
12/02/70	23.55	1840.57
06/15/77	21.91	1842.21
06/29/77	21.64	1842.48
07/11/77	22.09	1842.03
07/26/77	22.19	1841.93
08/08/77	22.31	1841.81
08/24/77	22.37	1841.75
09/12/77	22.43	1841.69
09/29/77	22.16	1841.96
10/11/77	22.13	1841.99
10/26/77	22.07	1842.05
11/15/77	22.03	1842.09
12/02/77	22.04	1842.08
12/12/77	22.03	1842.09
12/28/77	21.21	1842.91
01/09/78	21.95	1842.17
01/31/78	21.97	1842.15
02/13/78	21.89	1842.23
02/23/78	22.40	1841.72
03/06/78	22.10	1842.02
03/30/78	22.04	1842.08
04/10/78	21.86	1842.26
04/26/78	21.72	1842.40
05/10/78	21.54	1842.58
05/23/78	21.57	1842.55
06/05/78	21.47	1842.65
06/27/78	21.52	1842.60
07/12/78	21.30	1842.82
07/25/78	21.40	1842.72
08/07/78	21.57	1842.55
08/24/78	21.60	1842.52
09/13/78	21.51	1842.61
09/27/78	21.47	1842.65
10/13/78	21.57	1842.55
10/31/78	21.70	1842.42
11/06/78	21.40	1842.72
11/28/78	21.33	1842.79
12/11/78	21.37	1842.75
12/27/78	21.40	1842.72
01/08/79	21.31	1842.81
01/24/79	21.23	1842.89
02/20/79	21.25	1842.87
03/05/79	21.23	1842.89
03/06/79	21.20	1842.92
03/26/79	21.39	1842.73
04/23/79	21.17	1842.95
05/07/79	20.83	1843.29
05/22/79	20.76	1843.36
06/04/79	20.76	1843.36
06/27/79	20.79	1843.33
07/02/79	20.89	1843.23
07/31/79	21.08	1843.04
08/06/79	20.90	1843.22
08/22/79	20.85	1843.27
09/04/79	20.95	1843.17
09/25/79	21.11	1843.01
10/01/79	21.17	1842.95
10/25/79	21.07	1843.05
10/30/79	21.20	1842.92
11/20/79	21.09	1843.03
12/03/79	21.11	1843.01
01/02/80	21.10	1843.02
01/28/80	21.07	1843.05
02/20/80	20.51	1843.61
02/25/80	21.55	1842.57
03/20/80	21.05	1843.07
04/01/80	21.11	1843.01
04/23/80	20.98	1843.14
05/07/80	21.06	1843.06
05/20/80	21.06	1843.06
06/02/80	21.26	1842.86
06/23/80	21.21	1842.91
07/02/80	21.46	1842.66
07/21/80	21.61	1842.51
08/13/80	21.67	1842.45
08/25/80	21.56	1842.56
09/10/80	21.56	1842.56
09/22/80	21.41	1842.71
10/07/80	21.52	1842.60
10/21/80	21.41	1842.71
11/05/80	21.01	1843.11
11/24/80	21.18	1842.94
12/03/80	19.91	1844.21
01/27/81	21.10	1843.02
02/23/81	21.17	1842.95
03/04/81	21.19	1842.93
04/06/81	21.09	1843.03
04/29/81	21.05	1843.07
05/06/81	21.24	1842.88
05/28/81	21.46	1842.66
06/03/81	21.13	1842.99
06/21/81	21.16	1842.96
06/29/81	21.25	1842.87
07/26/81	21.43	1842.69
07/27/81	21.51	1842.61
08/23/81	20.57	1843.55
08/25/81	21.30	1842.82
09/21/81	21.38	1842.74
09/27/81	20.61	1843.51
10/31/81	21.39	1842.73
11/28/81	21.36	1842.76
12/01/81	21.18	1842.94
12/30/81	21.21	1842.91
03/24/82	21.21	1842.91
04/19/82	21.05	1843.07
04/25/82	20.66	1843.46
05/19/82	20.82	1843.30
05/30/82	20.66	1843.46
06/14/82	20.65	1843.47
06/27/82	19.86	1844.26
07/25/82	21.01	1843.11
08/02/82	20.58	1843.54
08/23/82	20.71	1843.41
09/10/82	20.66	1843.46
09/30/82	20.66	1843.46
10/12/82	20.57	1843.55
10/20/82	20.29	1843.83
11/16/82	20.37	1843.75
11/30/82	20.11	1844.01
12/02/82	20.03	1844.09
12/09/82	20.31	1843.81
12/30/82	20.06	1844.06
01/13/83	20.16	1843.96
03/29/83	19.81	1844.31
05/05/83	19.86	1844.26
06/30/83	19.76	1844.36
07/27/83	19.79	1844.33
09/26/83	20.11	1844.01
11/16/83	20.21	1843.91
02/08/84	19.69	1844.43
06/08/84	19.81	1844.31
12/12/84	20.01	1844.11
01/16/85	20.11	1844.01
01/23/85	20.08	1844.04
01/30/85	20.18	1843.94
02/06/85	20.21	1843.91
02/13/85	20.30	1843.82
02/14/85	20.30	1843.82
02/20/85	20.25	1843.87
02/27/85	20.33	1843.79
03/06/85	20.27	1843.85
03/13/85	20.32	1843.80
03/20/85	20.31	1843.81
03/27/85	20.30	1843.82
04/03/85	20.15	1843.97
04/10/85	20.10	1844.02
04/17/85	20.01	1844.11
04/24/85	19.93	1844.19
05/01/85	19.94	1844.18
05/08/85	19.91	1844.21
06/07/85	19.97	1844.15
07/03/85	20.09	1844.03
08/15/85	20.48	1843.64
09/10/85	20.50	1843.62
10/01/85	20.46	1843.66
11/06/85	20.31	1843.81
12/05/85	20.30	1843.82
03/13/86	20.31	1843.81
04/22/86	19.85	1844.27
04/29/86	19.86	1844.26
06/03/86	19.92	1844.20
07/02/86	20.16	1843.96
07/31/86	19.99	1844.13
08/07/86	20.02	1844.10
09/10/86	20.01	1844.11
09/30/86	19.78	1844.34
10/07/86	19.89	1844.23
10/21/86	19.91	1844.21
12/02/86	19.79	1844.33
04/14/87	19.49	1844.63
05/19/87	19.40	1844.72
06/26/87	19.57	1844.55
06/30/87	19.60	1844.52
07/03/87	19.65	1844.47
07/10/87	19.68	1844.44
07/17/87	19.72	1844.40
07/24/87	19.57	1844.55
07/31/87	19.52	1844.60
08/07/87	19.60	1844.52
08/14/87	19.57	1844.55
08/21/87	19.59	1844.53
08/28/87	19.54	1844.58
09/04/87	19.61	1844.51
09/11/87	19.65	1844.47
09/18/87	19.70	1844.42
09/25/87	19.74	1844.38
10/02/87	19.82	1844.30
11/03/87	19.89	1844.23
12/07/87	20.03	1844.09
04/14/88	20.24	1843.88
05/20/88	20.12	1844.00
06/20/88	20.47	1843.65
07/21/88	20.95	1843.17
08/23/88	21.34	1842.78
09/26/88	21.54	1842.58
11/01/88	21.64	1842.48
11/29/88	21.60	1842.52
01/06/89	21.67	1842.45
05/02/89	21.56	1842.56
06/05/89	21.51	1842.61
07/06/89	21.89	1842.23
08/01/89	22.10	1842.02
08/29/89	22.27	1841.85
10/06/89	22.40	1841.72
11/03/89	22.34	1841.78
12/14/89	22.43	1841.69
04/02/90	22.63	1841.49
05/09/90	22.46	1841.66
06/07/90	22.28	1841.84
07/01/90	22.29	1841.83
07/02/90	22.29	1841.83
08/02/90	22.58	1841.54
08/27/90	22.90	1841.22
09/28/90	23.03	1841.09
10/22/90	22.90	1841.22
11/23/90	22.92	1841.20
12/12/90	22.93	1841.19
04/01/91	23.15	1840.97
05/01/91	22.87	1841.25
05/22/91	22.80	1841.32
05/29/91	22.50	1841.62
06/24/91	22.87	1841.25
07/23/91	23.33	1840.79
08/12/91	23.82	1840.30
08/28/91	23.90	1840.22
09/23/91	23.82	1840.30
11/07/91	23.20	1840.92
12/05/91	23.02	1841.10
02/05/92	22.96	1841.16
04/22/92	22.64	1841.48
05/26/92	22.58	1841.54
06/25/92	23.06	1841.06
07/22/92	23.04	1841.08
08/27/92	24.03	1840.09
09/22/92	23.87	1840.25
10/21/92	23.58	1840.54
11/16/92	23.40	1840.72
12/14/92	23.25	1840.87
04/05/93	23.19	1840.93
05/04/93	22.94	1841.18
06/01/93	22.70	1841.42
06/30/93	22.55	1841.57
08/04/93	21.92	1842.20
09/01/93	22.32	1841.80
10/11/93	22.05	1842.07
11/04/93	21.94	1842.18
12/08/93	21.62	1842.50
02/15/94	21.44	1842.68
04/13/94	21.12	1843.00
05/20/94	20.95	1843.17
06/29/94	20.86	1843.26
08/03/94	21.45	1842.67

148-080-19CCC2 MP Elev (msl,ft)=1864.45

Lake Nettie Aquifer SI (ft.)=24-27

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	17.00	1847.45
10/13/67	17.18	1847.27
11/17/67	17.25	1847.20
12/15/67	16.93	1847.52
01/12/68	17.03	1847.42
02/15/68	17.02	1847.43
03/14/68	17.00	1847.45
04/11/68	16.88	1847.57
05/18/68	16.80	1847.65
06/13/68	16.70	1847.75
07/15/68	16.70	1847.75
01/15/69	17.08	1847.37
04/17/69	16.89	1847.56
07/16/69	16.39	1848.06
08/27/69	16.17	1848.28
10/02/69	16.42	1848.03
12/30/69	16.74	1847.71
03/24/70	16.97	1847.48
05/05/70	16.49	1847.96
06/05/70	15.86	1848.59
07/01/70	15.70	1848.75
09/10/70	16.00	1848.45
12/02/70	16.21	1848.24
06/02/77	16.00	1848.45
06/15/77	16.00	1848.45
06/29/77	16.00	1848.45
07/11/77	16.07	1848.38
08/08/77	16.23	1848.22
08/24/77	16.33	1848.12
08/26/77	16.19	1848.26
09/12/77	16.39	1848.06
09/29/77	16.08	1848.37
10/11/77	16.30	1848.15
10/26/77	16.20	1848.25
11/15/77	16.12	1848.33
12/02/77	16.73	1847.72
12/12/77	16.10	1848.35
12/28/77	16.14	1848.31
01/09/78	16.24	1848.21
01/31/78	16.17	1848.28
02/13/78	16.15	1848.30
02/23/78	16.33	1848.12
03/06/78	16.42	1848.03
03/30/78	15.98	1848.47
04/10/78	15.58	1848.87
04/26/78	15.37	1849.08
05/10/78	15.27	1849.18
05/23/78	15.21	1849.24
06/05/78	15.15	1849.30
06/27/78	15.24	1849.21
07/12/78	15.09	1849.36
07/25/78	14.97	1849.48
08/07/78	15.05	1849.40
08/25/78	15.28	1849.17
09/13/78	15.39	1849.06
09/22/78	15.36	1849.09
10/13/78	15.47	1848.98
10/31/78	15.53	1848.92
11/06/78	15.56	1848.89
11/28/78	15.48	1848.97
12/11/78	15.59	1848.86
12/27/78	15.66	1848.79
01/08/79	15.62	1848.83
01/24/79	15.69	1848.76
02/20/79	15.60	1848.85
03/05/79	16.04	1848.41
03/06/79	16.50	1847.95
03/26/79	15.96	1848.49
04/23/79	15.11	1849.34
05/07/79	14.31	1850.14
05/22/79	14.23	1850.22
06/04/79	14.26	1850.19
06/27/79	14.41	1850.04
07/02/79	14.46	1849.99
07/31/79	14.71	1849.74
08/06/79	14.74	1849.71
08/22/79	14.94	1849.51
09/04/79	14.97	1849.48
09/25/79	15.12	1849.33
10/01/79	15.15	1849.30
10/25/79	15.30	1849.15
10/30/79	15.27	1849.18
11/20/79	15.35	1849.10
12/03/79	15.36	1849.09
01/02/80	15.46	1848.99
01/28/80	15.64	1848.81
02/20/80	15.61	1848.84
02/25/80	15.66	1848.79
03/20/80	15.74	1848.71
04/01/80	15.66	1848.79
04/23/80	15.56	1848.89
05/07/80	15.46	1848.99
05/20/80	15.43	1849.02
06/02/80	15.40	1849.05
06/23/80	15.37	1849.08
07/02/80	15.45	1849.00
07/21/80	15.62	1848.83
08/13/80	15.71	1848.74
08/25/80	15.68	1848.77
09/10/80	15.69	1848.76
09/22/80	15.74	1848.71
10/07/80	15.69	1848.76
10/21/80	15.74	1848.71
11/05/80	15.42	1849.03
11/24/80	15.43	1849.02
12/03/80	15.02	1849.43
01/27/81	15.61	1848.84
02/23/81	15.69	1848.76
03/04/81	15.55	1848.90
04/06/81	15.38	1849.07
04/29/81	15.28	1849.17
05/06/81	15.40	1849.05
05/28/81	15.55	1848.90
06/04/81	15.24	1849.21
06/21/81	15.15	1849.30
06/29/81	15.08	1849.37
07/26/81	15.20	1849.25
07/27/81	16.25	1848.20
08/23/81	15.20	1849.25
08/25/81	15.32	1849.13
09/21/81	15.16	1849.29
09/27/81	15.15	1849.30
10/31/81	15.15	1849.30
11/28/81	15.25	1849.20
12/01/81	15.07	1849.38
12/30/81	15.19	1849.26
03/24/82	15.17	1849.28
04/19/82	14.63	1849.82
04/25/82	13.90	1850.55
05/19/82	14.28	1850.17
05/30/82	14.10	1850.35
06/14/82	14.00	1850.45
06/27/82	13.75	1850.70
07/25/82	14.16	1850.29
08/02/82	14.14	1850.31
08/23/82	14.30	1850.15
09/10/82	14.35	1850.10
09/30/82	14.58	1849.87
10/12/82	14.55	1849.90
10/25/82	14.15	1850.30
11/16/82	14.10	1850.35
11/26/82	13.90	1850.55
12/02/82	14.08	1850.37
12/09/82	14.20	1850.25
12/30/82	14.15	1850.30
01/13/83	14.30	1850.15
03/29/83	14.60	1849.85
05/05/83	13.45	1851.00
06/30/83	13.70	1850.75
07/27/83	13.37	1851.08
09/26/83	14.20	1850.25
11/16/83	14.45	1850.00
02/08/84	14.70	1849.75
06/08/84	13.70	1850.75
12/12/84	14.23	1850.22
01/16/85	14.46	1849.99
02/14/85	14.68	1849.77
03/13/85	14.58	1849.87
04/04/85	14.37	1850.08
04/29/85	14.14	1850.31
06/07/85	13.77	1850.68
07/03/85	13.91	1850.54
08/15/85	14.30	1850.15
09/10/85	14.44	1850.01
10/01/85	14.43	1850.02
11/06/85	14.32	1850.13
12/05/85	14.51	1849.94
03/13/86	14.38	1850.07
04/22/86	13.68	1850.77
04/29/86	13.59	1850.86
06/03/86	13.39	1851.06
07/02/86	13.77	1850.68
07/31/86	13.80	1850.65
08/07/86	13.84	1850.61
09/10/86	13.86	1850.59
09/30/86	13.83	1850.62
10/07/86	13.74	1850.71
10/21/86	13.72	1850.73
12/02/86	13.85	1850.60
04/14/87	12.70	1851.75
05/19/87	13.03	1851.42
06/26/87	13.32	1851.13
06/30/87	13.34	1851.11
07/03/87	13.38	1851.07
07/10/87	13.44	1851.01
07/17/87	13.57	1850.88
07/24/87	13.43	1851.02
07/31/87	13.37	1851.08
08/07/87	13.49	1850.96
08/14/87	13.48	1850.97
08/21/87	13.57	1850.88
08/28/87	13.52	1850.93
09/04/87	13.53	1850.92
09/11/87	13.60	1850.85
09/18/87	13.63	1850.82
09/25/87	13.66	1850.79
10/02/87	13.75	1850.70
11/03/87	13.80	1850.65
12/07/87	13.93	1850.52
04/14/88	14.29	1850.16
05/20/88	14.08	1850.37
06/20/88	14.15	1850.30
07/21/88	14.54	1849.91
08/23/88	14.86	1849.59
09/26/88	15.20	1849.25
11/01/88	15.36	1849.09
11/29/88	15.46	1848.99
01/06/89	15.55	1848.90
05/02/89	15.32	1849.13
06/05/89	15.20	1849.25
07/06/89	15.39	1849.06
08/01/89	15.55	1848.90
08/29/89	15.75	1848.70
10/06/89	15.93	1848.52
11/03/89	15.96	1848.49
12/14/89	16.11	1848.34
04/02/90	16.42	1848.03
05/09/90	16.34	1848.11
06/07/90	16.20	1848.25
07/01/90	16.13	1848.32
07/02/90	16.13	1848.32
08/02/90	16.11	1848.34
08/27/90	16.30	1848.15
09/28/90	16.42	1848.03
10/22/90	16.46	1847.99
11/23/90	16.53	1847.92
12/12/90	16.57	1847.88
04/01/91	16.82	1847.63
05/01/91	16.75	1847.70
05/22/91	16.60	1847.85
05/29/91	16.62	1847.83
06/24/91	16.57	1847.88
07/23/91	16.53	1847.92
08/12/91	16.65	1847.80
08/28/91	16.60	1847.85
09/23/91	16.71	1847.74
11/07/91	16.79	1847.66
12/05/91	16.74	1847.71
02/05/92	16.83	1847.62
04/22/92	16.48	1847.97
05/26/92	16.41	1848.04
06/25/92	16.48	1847.97
07/22/92	16.55	1847.90
08/27/92	16.70	1847.75
09/22/92	16.83	1847.62
10/21/92	16.89	1847.56
11/16/92	16.98	1847.47
12/14/92	16.98	1847.47
04/05/93	16.88	1847.57
05/04/93	16.67	1847.78
06/01/93	16.58	1847.87
06/30/93	16.46	1847.99
08/04/93	15.32	1849.13
09/01/93	15.30	1849.15
10/11/93	15.59	1848.86
11/04/93	15.68	1848.77
12/08/93	15.70	1848.75
02/15/94	15.90	1848.55
04/13/94	15.27	1849.18
05/20/94	15.10	1849.35
06/29/94	15.06	1849.39
08/03/94	15.33	1849.12

148-080-20CCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1891

SI (ft.)=98-103

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/15/85	41.65	1849.35
09/16/85	41.30	1849.70
10/01/85	41.33	1849.67
11/05/85	41.13	1849.87
12/05/85	41.20	1849.80
03/13/86	41.15	1849.85
04/29/86	40.82	1850.18
06/03/86	40.92	1850.08
07/02/86	41.82	1849.18
08/07/86	41.04	1849.96
09/10/86	40.80	1850.20
10/07/86	40.76	1850.24
12/02/86	40.69	1850.31
04/14/87	40.49	1850.51
05/19/87	40.32	1850.68
06/30/87	41.39	1849.61
08/06/87	40.70	1850.30
09/03/87	40.38	1850.62
10/15/87	40.47	1850.53
11/04/87	40.56	1850.44
12/07/87	40.46	1850.54
04/14/88	40.79	1850.21
05/20/88	40.79	1850.21
06/20/88	41.73	1849.27
07/21/88	42.70	1848.30
08/23/88	42.25	1848.75
09/26/88	41.77	1849.23
11/01/88	41.74	1849.26
11/29/88	41.78	1849.22
01/06/89	41.74	1849.26
05/02/89	41.81	1849.19
08/28/89	42.72	1848.28
12/14/89	42.55	1848.45
05/09/90	42.73	1848.27
07/01/90	42.86	1848.14
07/02/90	42.86	1848.14
08/27/90	43.86	1847.14
12/12/90	43.13	1847.87
04/01/91	43.27	1847.73
04/22/92	43.31	1847.69
05/04/93	43.53	1847.47
02/15/94	42.79	1848.21
04/13/94	42.46	1848.54

148-080-21CCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1917.2

SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl. ft)
12/30/69	70.43	1846.77
05/05/70	70.75	1846.45
06/05/70	70.94	1846.26
06/24/70	71.10	1846.10
09/09/70	71.18	1846.02
12/11/84	67.73	1849.47
01/16/85	67.64	1849.56
02/13/85	67.97	1849.23
03/13/85	67.76	1849.44
04/04/85	67.67	1849.53
04/29/85	67.88	1849.32
06/07/85	67.75	1849.45
07/03/85	67.58	1849.62
08/15/85	67.85	1849.35
09/16/85	67.43	1849.77
10/01/85	67.72	1849.48
11/05/85	67.70	1849.50
12/05/85	67.92	1849.28
03/13/86	67.89	1849.31
04/29/86	67.72	1849.48
06/03/86	67.61	1849.59
07/02/86	67.92	1849.28
08/07/86	67.67	1849.53
09/10/86	67.35	1849.85
10/07/86	67.49	1849.71
12/02/86	67.50	1849.70
04/14/87	67.44	1849.76
05/19/87	67.20	1850.00
06/30/87	67.38	1849.82
08/06/87	67.38	1849.82
09/03/87	66.89	1850.31
10/15/87	67.05	1850.15
11/04/87	67.07	1850.13
12/07/87	66.94	1850.26
04/14/88	67.39	1849.81
08/23/88	67.78	1849.42
01/06/89	67.86	1849.34
05/02/89	67.96	1849.24
08/04/89	68.03	1849.17
08/28/89	68.33	1848.87
12/14/89	68.67	1848.53
05/09/90	68.90	1848.30
07/01/90	68.49	1848.71
07/02/90	68.49	1848.71
08/27/90	68.99	1848.21
12/12/90	69.13	1848.07
04/01/91	69.27	1847.93
04/22/92	69.66	1847.54
05/04/93	69.73	1847.47
04/13/94	69.02	1848.18

148-080-23DCD

Lake Nettie Aquifer

MP Elev (msl,ft)=1885.63

SI (ft.)=25-30

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/15/85	9.57	1876.06
08/20/85	9.38	1876.25
09/12/85	9.63	1876.00
10/01/85	9.67	1875.96
11/05/85	9.02	1876.61
12/05/85	9.37	1876.26
03/11/86	8.71	1876.92
04/29/86	7.01	1878.62
06/03/86	7.65	1877.98
07/01/86	8.41	1877.22
07/29/86	8.22	1877.41
08/07/86	8.55	1877.08
09/10/86	9.18	1876.45
10/06/86	9.13	1876.50
12/02/86	9.04	1876.59
04/14/87	6.26	1879.37
05/18/87	7.46	1878.17
06/30/87	8.18	1877.45
08/06/87	8.40	1877.23
09/03/87	8.56	1877.07
10/15/87	9.10	1876.53
11/04/87	9.12	1876.51
12/07/87	9.11	1876.52
04/14/88	8.71	1876.92
05/19/88	9.38	1876.25
06/20/88	10.11	1875.52
07/21/88	10.91	1874.72
08/22/88	11.67	1873.96
09/26/88	12.19	1873.44
10/31/88	12.32	1873.31
11/29/88	12.42	1873.21
01/06/89	12.51	1873.12
05/02/89	11.50	1874.13
08/28/89	12.87	1872.76
12/14/89	13.37	1872.26
05/09/90	13.69	1871.94
07/01/90	13.63	1872.00
07/02/90	13.63	1872.00
08/27/90	14.05	1871.58
12/13/90	14.33	1871.30
04/01/91	14.37	1871.26
04/21/92	14.13	1871.50
05/04/93	14.62	1871.01

148-080-29DDD2

Lake Nettie Aquifer

MP Elev (msl,ft)=1873.62

SI (ft.)=98-103

Date	Depth to Water (ft)	WL Elev (msl. ft)
05/29/85	24.39	1849.23
05/30/85	24.53	1849.09
06/14/85	24.38	1849.24
07/11/85	26.06	1847.56
08/15/85	25.47	1848.15
09/16/85	24.94	1848.68
10/01/85	24.81	1848.81
11/05/85	24.47	1849.15
12/05/85	24.55	1849.07
03/13/86	24.44	1849.18
04/29/86	24.02	1849.60
06/03/86	24.27	1849.35
07/02/86	25.82	1847.80
08/07/86	24.48	1849.14
09/10/86	24.21	1849.41
10/07/86	24.14	1849.48
12/02/86	24.05	1849.57
04/14/87	23.77	1849.85
05/19/87	23.65	1849.97
06/30/87	25.53	1848.09
08/06/87	24.17	1849.45
09/03/87	23.79	1849.83
10/15/87	23.93	1849.69
11/04/87	23.97	1849.65
12/07/87	23.91	1849.71
04/14/88	24.17	1849.45
05/20/88	24.13	1849.49
06/20/88	26.01	1847.61
07/21/88	27.49	1846.13
08/23/88	26.21	1847.41
09/26/88	25.32	1848.30
11/01/88	25.29	1848.33
11/29/88	25.27	1848.35
01/06/89	25.26	1848.36
05/02/89	25.18	1848.44
08/28/89	26.47	1847.15
12/14/89	25.99	1847.63
05/09/90	26.10	1847.52
06/21/90	26.10	1847.52
07/01/90	26.62	1847.00
07/02/90	26.62	1847.00
08/27/90	28.01	1845.61
12/12/90	26.57	1847.05
04/01/91	26.66	1846.96
04/22/92	26.58	1847.04
05/04/93	26.76	1846.86
04/13/94	25.85	1847.77

148-080-31AAA1
Lake Nettie Aquifer

MP Elev (msl,ft)=1862.85
SI (ft.)=208-211

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/15/67	23.24	1839.61
10/13/67	23.17	1839.68
11/17/67	23.22	1839.63
12/15/67	23.11	1839.74
01/12/68	23.04	1839.81
02/15/68	22.89	1839.96
03/13/68	22.95	1839.90
04/12/68	22.87	1839.98
05/16/68	22.73	1840.12
06/13/68	22.73	1840.12
07/15/68	22.89	1839.96
01/15/69	22.85	1840.00
04/17/69	22.87	1839.98
07/17/69	22.42	1840.43
08/27/69	22.43	1840.42
10/02/69	22.54	1840.31
12/30/69	22.73	1840.12
03/24/70	22.92	1839.93
05/05/70	22.68	1840.17
06/05/70	22.40	1840.45
07/01/70	22.73	1840.12
09/10/70	22.95	1839.90
12/02/70	23.13	1839.72
12/01/71	22.83	1840.02
12/05/72	22.24	1840.61
12/03/73	22.87	1839.98
12/02/74	22.49	1840.36
05/16/75	21.79	1841.06
08/26/75	21.34	1841.51
12/02/75	20.95	1841.90
03/03/76	20.82	1842.03
05/21/76	20.42	1842.43
08/31/76	20.96	1841.89
12/02/76	21.23	1841.62
03/01/77	21.28	1841.57
05/26/77	21.19	1841.66
06/29/77	21.41	1841.44
07/11/77	21.47	1841.38
07/26/77	21.70	1841.15
08/08/77	21.65	1841.20
08/24/77	21.82	1841.03
09/12/77	21.45	1841.40
09/29/77	21.44	1841.41
10/11/77	21.35	1841.50
10/26/77	21.62	1841.23
11/15/77	21.44	1841.41
11/30/77	21.37	1841.48
12/12/77	21.31	1841.54
12/28/77	21.42	1841.43
01/09/78	21.41	1841.44
01/23/78	21.44	1841.41
02/13/78	20.89	1841.96
02/23/78	21.41	1841.44
03/06/78	21.51	1841.34
03/30/78	21.41	1841.44
04/10/78	21.27	1841.58
04/26/78	21.45	1841.40
05/10/78	20.95	1841.90
05/23/78	20.99	1841.86
06/05/78	20.85	1842.00
06/27/78	20.93	1841.92
07/12/78	20.62	1842.23
07/25/78	20.84	1842.01
08/07/78	20.70	1842.15
08/24/78	21.07	1841.78
09/13/78	20.87	1841.98
09/22/78	20.95	1841.90
10/13/78	20.93	1841.92
10/31/78	21.04	1841.81
11/06/78	20.19	1842.66
11/28/78	20.75	1842.10
12/11/78	20.76	1842.09
12/27/78	20.82	1842.03
01/08/79	20.74	1842.11
01/24/79	20.66	1842.19
02/20/79	20.69	1842.16
03/01/79	20.78	1842.07
03/06/79	20.95	1841.90
03/26/79	20.77	1842.08
04/23/79	20.62	1842.23
05/07/79	20.28	1842.57
05/22/79	20.22	1842.63
06/04/79	20.18	1842.67
06/27/79	20.19	1842.66
07/02/79	20.29	1842.56
07/31/79	20.45	1842.40
08/06/79	20.58	1842.27
08/22/79	20.52	1842.33
09/04/79	20.52	1842.33
09/25/79	20.53	1842.32
10/01/79	20.57	1842.28
10/25/79	20.54	1842.31
11/20/79	20.58	1842.27
12/03/79	20.41	1842.44
01/01/80	20.79	1842.06
01/28/80	20.37	1842.48
02/20/80	20.35	1842.50
02/25/80	20.53	1842.32
03/20/80	20.45	1842.40
04/01/80	20.45	1842.40
04/23/80	20.38	1842.47
05/07/80	20.42	1842.43
05/20/80	20.45	1842.40
06/02/80	20.65	1842.20
06/23/80	20.59	1842.26
07/02/80	20.83	1842.02
07/21/80	21.02	1841.83
08/03/80	21.06	1841.79
09/10/80	19.97	1842.88
10/07/80	20.82	1842.03
10/21/80	20.90	1841.95
11/05/80	20.64	1842.21
11/24/80	20.55	1842.30
12/03/80	19.80	1843.05
01/27/81	20.53	1842.32
02/23/81	20.57	1842.28
03/04/81	20.45	1842.40
04/07/81	20.28	1842.57
04/29/81	20.53	1842.32
05/06/81	20.61	1842.24
05/28/81	20.50	1842.35
06/03/81	20.53	1842.32
06/21/81	20.30	1842.55
06/29/81	20.66	1842.19
07/26/81	20.83	1842.02
07/27/81	20.90	1841.95
08/23/81	20.85	1842.00
08/25/81	20.94	1841.91
09/21/81	20.80	1842.05
10/31/81	20.80	1842.05
12/01/81	19.95	1842.90
12/30/81	20.55	1842.30
03/24/82	20.40	1842.45
04/19/82	20.45	1842.40
04/25/82	20.65	1842.20
05/19/82	20.23	1842.62
05/30/82	20.10	1842.75
06/14/82	20.05	1842.80
06/27/82	19.93	1842.92
07/25/82	20.05	1842.80
08/02/82	20.22	1842.63
08/23/82	20.05	1842.80
09/10/82	20.09	1842.76
09/30/82	20.10	1842.75
10/12/82	19.95	1842.90
10/20/82	19.65	1843.20
11/16/82	19.74	1843.11
11/26/82	19.55	1843.30
12/02/82	19.47	1843.38
12/09/82	19.75	1843.10
12/30/82	19.25	1843.60
01/13/83	19.50	1843.35
05/05/83	19.20	1843.65
07/27/83	19.22	1843.63
11/16/83	19.20	1843.65
02/08/84	19.60	1843.25
06/07/84	19.25	1843.60
12/12/84	19.59	1843.26
01/16/85	19.66	1843.19
01/23/85	19.30	1843.55
01/30/85	19.50	1843.35
02/06/85	19.51	1843.34
02/13/85	19.56	1843.29
02/20/85	19.55	1843.30
02/27/85	19.62	1843.23
03/06/85	19.58	1843.27
03/13/85	19.62	1843.23
03/20/85	19.66	1843.19
03/27/85	19.59	1843.26
04/03/85	19.46	1843.39
04/10/85	19.41	1843.44
04/17/85	19.31	1843.54
04/24/85	19.24	1843.61
05/01/85	19.25	1843.60
05/08/85	19.25	1843.60
06/07/85	19.57	1843.28
07/03/85	19.67	1843.18
08/15/85	19.76	1843.09
09/16/85	19.68	1843.17
10/01/85	19.79	1843.06
11/05/85	19.70	1843.15
12/05/85	19.61	1843.24
03/13/86	19.60	1843.25
04/29/86	19.19	1843.66
06/03/86	19.55	1843.30
07/02/86	19.49	1843.36
07/31/86	19.37	1843.48
08/07/86	19.39	1843.46
09/10/86	19.36	1843.49
10/07/86	19.30	1843.55
10/21/86	19.29	1843.56
12/02/86	19.40	1843.45
04/14/87	19.11	1843.74
05/19/87	18.80	1844.05
06/30/87	19.19	1843.66
08/06/87	18.96	1843.89
09/03/87	18.94	1843.91
10/15/87	19.21	1843.64
11/04/87	19.28	1843.57
12/07/87	19.37	1843.48
04/14/88	19.58	1843.27
05/20/88	19.46	1843.39
06/20/88	19.81	1843.04
07/21/88	20.23	1842.62
08/23/88	20.65	1842.20
09/26/88	20.89	1841.96
11/01/88	20.95	1841.90
11/29/88	20.97	1841.88
01/06/89	20.93	1841.92
05/02/89	20.89	1841.96
06/05/89	20.82	1842.03
07/06/89	21.16	1841.69
08/01/89	21.40	1841.45
08/28/89	21.54	1841.31
10/06/89	21.67	1841.18
11/03/89	21.63	1841.22
12/14/89	21.71	1841.14
04/02/90	21.87	1840.98
05/09/90	21.75	1841.10
06/07/90	21.57	1841.28
07/01/90	21.57	1841.28
07/02/90	21.57	1841.28
08/02/90	21.88	1840.97
08/27/90	22.17	1840.68
09/28/90	22.30	1840.55
10/22/90	22.19	1840.66
11/23/90	22.20	1840.65
12/12/90	22.21	1840.64
04/01/91	22.37	1840.48
05/01/91	22.15	1840.70
05/22/91	22.06	1840.79
05/29/91	22.15	1840.70
06/24/91	22.19	1840.66
07/23/91	22.58	1840.27
08/12/91	23.05	1839.80
08/28/91	23.18	1839.67
09/23/91	23.11	1839.74
11/07/91	22.50	1840.35
12/05/91	22.44	1840.41
02/05/92	22.26	1840.59
04/22/92	21.98	1840.87
05/26/92	21.90	1840.95
06/25/92	22.38	1840.47
07/22/92	22.34	1840.51
08/27/92	23.25	1839.60
09/22/92	23.14	1839.71
10/21/92	22.86	1839.99
11/16/92	22.69	1840.16
12/14/92	22.56	1840.29
04/05/93	22.51	1840.34
05/04/93	22.27	1840.58
06/01/93	22.04	1840.81
06/30/93	21.90	1840.95
08/04/93	21.31	1841.54
09/01/93	21.63	1841.22
10/11/93	21.42	1841.43
11/04/93	21.29	1841.56
12/08/93	20.95	1841.90
02/15/94	20.79	1842.06
04/13/94	20.56	1842.29
05/20/94	20.33	1842.52
06/29/94	20.23	1842.62
08/03/94	20.82	1842.03

148-080-31AAA2
Lake Nettie Aquifer

MP Elev (msl,ft)=1862.95
SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/10/67	19.41	1843.54
09/15/67	20.01	1842.94
10/13/67	20.04	1842.91
11/17/67	20.04	1842.91
12/15/67	19.95	1843.00
01/11/68	20.04	1842.91
02/15/68	19.88	1843.07
03/13/68	19.83	1843.12
04/12/68	19.69	1843.26
05/16/68	19.52	1843.43
06/13/68	19.58	1843.37
07/15/68	19.71	1843.24
01/15/69	19.84	1843.11
04/17/69	19.76	1843.19
07/16/69	19.29	1843.66
08/27/69	19.33	1843.62
10/02/69	19.40	1843.55
12/30/69	19.51	1843.44
03/24/70	19.52	1843.43
05/05/70	19.21	1843.74
06/05/70	18.79	1844.16
07/01/70	19.09	1843.86
09/10/70	19.32	1843.63
12/02/70	19.11	1843.84
12/03/71	19.16	1843.79
12/05/72	18.73	1844.22
12/03/73	19.38	1843.57
12/02/74	19.25	1843.70
05/16/75	18.59	1844.36
08/26/75	18.55	1844.40
12/02/75	18.47	1844.48
03/03/76	18.26	1844.69
03/18/76	18.16	1844.79
04/21/76	17.96	1844.99
05/06/76	17.76	1845.19
05/17/76	17.86	1845.09
05/21/76	17.76	1845.19
06/08/76	17.96	1844.99
07/13/76	18.06	1844.89
08/02/76	18.26	1844.69
08/23/76	18.46	1844.49
08/31/76	18.39	1844.56
09/07/76	18.56	1844.39
10/14/76	18.56	1844.39
10/28/76	18.46	1844.49
10/31/76	18.39	1844.56
11/24/76	18.56	1844.39
12/02/76	18.63	1844.32
12/16/76	18.56	1844.39
01/24/77	18.66	1844.29
02/17/77	18.66	1844.29
03/01/77	18.69	1844.26
03/04/77	18.76	1844.19
03/14/77	18.66	1844.29
04/01/77	18.66	1844.29
04/13/77	18.66	1844.29
04/25/77	18.96	1843.99
05/02/77	18.76	1844.19
05/10/77	18.66	1844.29
05/16/77	19.26	1843.69
05/24/77	19.26	1843.69
05/26/77	18.96	1843.99
06/16/77	19.86	1843.09
06/29/77	20.13	1842.82
07/11/77	20.53	1842.42
07/26/77	20.16	1842.79
08/08/77	19.26	1843.69
08/24/77	19.57	1843.38
09/12/77	19.32	1843.63
09/29/77	18.85	1844.10
10/11/77	19.66	1843.29
10/26/77	18.95	1844.00
11/15/77	18.81	1844.14
11/30/77	19.26	1843.69
12/12/77	18.70	1844.25
12/28/77	18.77	1844.18
01/09/78	18.82	1844.13
01/23/78	18.69	1844.26
02/13/78	18.19	1844.76
02/23/78	18.86	1844.09
03/06/78	18.89	1844.06
03/30/78	18.74	1844.21
04/10/78	18.54	1844.41
04/26/78	18.53	1844.42
05/10/78	18.36	1844.59
05/23/78	18.40	1844.55
06/05/78	18.53	1844.42
06/27/78	19.47	1843.48
07/12/78	18.74	1844.21
07/25/78	21.43	1841.52
08/07/78	20.99	1841.96
08/24/78	19.81	1843.14
09/13/78	19.17	1843.78
09/22/78	18.96	1843.99
10/13/78	18.68	1844.27
10/31/78	18.74	1844.21
11/06/78	18.55	1844.40
11/28/78	18.35	1844.60
12/11/78	18.40	1844.55
12/27/78	18.44	1844.51
01/08/79	18.34	1844.61
01/24/79	18.46	1844.49
02/20/79	18.29	1844.66
03/01/79	18.58	1844.37
05/07/79	18.00	1844.95
05/22/79	17.64	1845.31
06/04/79	17.62	1845.33
06/27/79	19.03	1843.92
07/02/79	20.96	1841.99
07/31/79	20.71	1842.24
08/06/79	19.58	1843.37
08/22/79	19.32	1843.63
09/04/79	18.88	1844.07
09/25/79	18.80	1844.15
10/01/79	18.53	1844.42
10/25/79	18.32	1844.63
10/30/79	18.25	1844.70
11/20/79	18.17	1844.78
12/03/79	18.07	1844.88
01/02/80	18.10	1844.85
01/28/80	18.06	1844.89
02/20/80	17.98	1844.97
02/25/80	18.16	1844.79
03/20/80	18.09	1844.86
04/01/80	18.08	1844.87
04/23/80	17.95	1845.00
05/07/80	18.85	1844.10
05/20/80	20.15	1842.80
06/02/80	20.78	1842.17
06/23/80	21.62	1841.33
07/02/80	21.66	1841.29
07/21/80	21.78	1841.17
08/13/80	20.06	1842.89
08/25/80	19.18	1843.77
09/10/80	18.96	1843.99
09/22/80	18.70	1844.25
10/07/80	18.61	1844.34
10/21/80	18.45	1844.50
11/24/80	18.20	1844.75
12/03/80	17.14	1845.81
01/27/81	18.09	1844.86
02/23/81	18.10	1844.85
03/04/81	18.71	1844.24
04/07/81	17.91	1845.04
04/29/81	18.08	1844.87
05/06/81	18.00	1844.95
05/28/81	19.11	1843.84
06/03/81	18.04	1844.91
06/21/81	19.11	1843.84
06/29/81	19.43	1843.52
07/26/81	19.21	1843.74
07/27/81	19.21	1843.74
08/23/81	20.41	1842.54
08/25/81	20.00	1842.95
09/21/81	18.46	1844.49
09/27/81	18.41	1844.54
10/31/81	18.21	1844.74
11/28/81	18.11	1844.84
12/01/81	18.16	1844.79
12/30/81	18.21	1844.74
03/24/82	18.05	1844.90
04/19/82	17.85	1845.10
04/25/82	17.76	1845.19
05/19/82	17.46	1845.49
05/30/82	17.51	1845.44
06/14/82	17.36	1845.59
06/27/82	17.41	1845.54
07/25/82	19.86	1843.09
08/02/82	20.82	1842.13
08/23/82	18.86	1844.09
09/10/82	17.88	1845.07
09/30/82	18.56	1844.39
10/12/82	17.50	1845.45
10/20/82	17.51	1845.44
11/16/82	17.24	1845.71
11/26/82	17.11	1845.84
12/02/82	17.36	1845.59
12/09/82	17.31	1845.64
12/30/82	16.86	1846.09
01/13/83	17.11	1845.84
05/05/83	16.61	1846.34
07/27/83	17.90	1845.05
11/16/83	17.11	1845.84
02/08/84	17.26	1845.69
06/07/84	16.76	1846.19
12/12/84	17.11	1845.84
01/16/85	17.17	1845.78
01/30/85	16.98	1845.97
02/06/85	16.97	1845.98
02/13/85	17.01	1845.94
02/20/85	16.98	1845.97
02/27/85	17.05	1845.90
03/06/85	16.98	1845.97
03/13/85	17.09	1845.86
03/20/85	16.98	1845.97
03/27/85	16.90	1846.05
04/03/85	16.81	1846.14
04/04/85	16.81	1846.14
04/10/85	16.81	1846.14
04/17/85	16.72	1846.23
04/24/85	16.66	1846.29
05/01/85	16.67	1846.28
05/08/85	16.76	1846.19
06/07/85	17.19	1845.76
07/03/85	17.47	1845.48
08/15/85	18.56	1844.39
09/16/85	17.63	1845.32
10/01/85	17.42	1845.53
11/05/85	17.00	1845.95
12/05/85	17.00	1845.95
03/13/86	16.87	1846.08
04/29/86	16.39	1846.56
06/03/86	16.90	1846.05
07/02/86	19.25	1843.70
07/31/86	17.42	1845.53
08/07/86	17.11	1845.84
09/10/86	16.75	1846.20
10/07/86	16.65	1846.30
10/21/86	16.62	1846.33
12/02/86	16.80	1846.15
04/14/87	16.44	1846.51
05/19/87	16.13	1846.82
06/30/87	16.68	1846.27
08/06/87	16.86	1846.09
09/03/87	16.39	1846.56
10/15/87	16.47	1846.48
11/04/87	16.50	1846.45
12/07/87	16.49	1846.46
04/14/88	16.67	1846.28
05/20/88	16.59	1846.36
06/20/88	19.92	1843.03
07/21/88	22.17	1840.78
08/23/88	19.60	1843.35
09/26/88	18.11	1844.84
11/01/88	18.00	1844.95
11/29/88	17.97	1844.98
01/06/89	17.92	1845.03
05/02/89	17.76	1845.19
06/05/89	17.91	1845.04
07/06/89	20.19	1842.76
08/01/89	20.84	1842.11
08/28/89	19.57	1843.38
10/06/89	18.92	1844.03
11/03/89	18.67	1844.28
12/14/89	18.68	1844.27
04/02/90	18.77	1844.18
05/09/90	18.69	1844.26
06/07/90	18.68	1844.27
07/01/90	19.65	1843.30
07/02/90	19.65	1843.30
08/02/90	21.58	1841.37
08/27/90	21.57	1841.38
09/28/90	20.42	1842.53
10/22/90	19.45	1843.50
11/23/90	19.26	1843.69
12/12/90	19.20	1843.75
04/01/91	19.27	1843.68
05/01/91	19.13	1843.82
05/22/91	19.00	1843.95
05/29/91	19.78	1843.17
06/24/91	19.97	1842.98
07/23/91	22.18	1840.77
08/12/91	21.59	1841.36
08/28/91	21.35	1841.60
09/23/91	19.94	1843.01
11/07/91	19.47	1843.48
12/05/91	19.55	1843.40
02/05/92	19.33	1843.62
04/22/92	19.00	1843.95
05/26/92	19.76	1843.19
06/25/92	21.06	1841.89
07/22/92	20.72	1842.23
08/27/92	21.26	1841.69
09/22/92	20.32	1842.63
10/21/92	19.80	1843.15
11/16/92	19.62	1843.33
12/14/92	19.58	1843.37
04/05/93	19.45	1843.50
05/04/93	19.20	1843.75
06/01/93	19.36	1843.59
06/30/93	19.27	1843.68
08/04/93	18.61	1844.34
09/01/93	19.10	1843.85
10/11/93	18.70	1844.25
11/04/93	18.63	1844.32
12/08/93	18.40	1844.55
02/15/94	18.39	1844.56
04/13/94	18.07	1844.88
05/20/94	18.08	1844.87
06/29/94	18.05	1844.90
08/03/94	20.28	1842.67

148-080-31AAA3

Lake Nettie Aquifer

MP Elev (msl,ft)=1861.09

SI (ft.)=28-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
10/17/88	14.71	1846.38
10/19/88	14.67	1846.42
10/31/88	14.70	1846.39
11/07/88	14.70	1846.39
11/23/88	14.64	1846.45
01/05/89	14.87	1846.22
01/11/89	14.89	1846.20
01/12/89	14.93	1846.16
01/13/89	14.83	1846.26
01/16/89	14.86	1846.23
01/18/89	14.88	1846.21
01/23/89	13.27	1847.82
05/02/89	12.67	1848.42
06/05/89	12.79	1848.30
07/06/89	13.19	1847.90
08/01/89	13.36	1847.73
10/06/89	13.73	1847.36
11/03/89	13.60	1847.49
12/15/89	13.84	1847.25
04/02/90	13.99	1847.10
05/09/90	13.98	1847.11
06/07/90	13.72	1847.37
07/01/90	13.77	1847.32
07/02/90	13.77	1847.32
08/02/90	14.01	1847.08
08/27/90	14.15	1846.94
09/28/90	14.25	1846.84
10/22/90	14.21	1846.88
11/23/90	14.26	1846.83
12/12/90	14.34	1846.75
04/01/91	14.40	1846.69
05/01/91	14.25	1846.84
05/22/91	14.23	1846.86
05/29/91	14.26	1846.83
06/24/91	14.26	1846.83
07/23/91	14.26	1846.83
08/12/91	14.35	1846.74
08/28/91	14.36	1846.73
09/23/91	14.46	1846.63
11/07/91	14.45	1846.64
12/05/91	14.40	1846.69
02/05/92	14.51	1846.58
04/22/92	14.15	1846.94
05/26/92	14.14	1846.95
06/25/92	14.33	1846.76
07/22/92	14.40	1846.69
08/27/92	14.60	1846.49
09/22/92	14.68	1846.41
10/21/92	14.70	1846.39
11/16/92	14.75	1846.34
12/14/92	14.56	1846.53
04/05/93	14.39	1846.70
05/04/93	14.32	1846.77
06/01/93	14.26	1846.83
06/30/93	14.20	1846.89
08/04/93	13.06	1848.03
09/01/93	13.43	1847.66
10/11/93	13.62	1847.47
11/04/93	13.74	1847.35
12/08/93	13.58	1847.51
04/13/94	13.01	1848.08
05/20/94	13.01	1848.08
06/29/94	13.00	1848.09
08/03/94	13.21	1847.88

148-080-33CCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1870.26

SI (ft.)=45-48

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/19/63	29.86	1840.40
11/20/63	29.58	1840.68
05/13/64	27.95	1842.31
10/08/64	28.19	1842.07
05/24/65	27.67	1842.59
09/15/65	27.86	1842.40
10/05/65	27.65	1842.61
11/04/65	27.58	1842.68
12/10/65	27.69	1842.57
05/12/66	28.14	1842.12
06/09/66	28.16	1842.10
07/14/66	27.12	1843.14
08/18/66	27.53	1842.73
09/29/66	27.47	1842.79
12/14/66	27.61	1842.65
04/04/67	27.82	1842.44
05/31/67	27.21	1843.05
07/10/67	26.81	1843.45
08/09/67	27.47	1842.79
09/14/67	27.66	1842.60
10/13/67	27.53	1842.73
11/17/67	27.44	1842.82
12/15/67	27.52	1842.74
03/13/68	27.44	1842.82
04/12/68	27.31	1842.95
05/16/68	27.19	1843.07
06/12/68	27.70	1842.56
07/15/68	27.13	1843.13
04/17/69	27.27	1842.99
07/17/69	27.26	1843.00
08/27/69	26.96	1843.30
10/02/69	26.41	1843.85
05/05/70	25.91	1844.35
06/05/70	26.60	1843.66
07/01/70	25.39	1844.87
09/10/70	26.44	1843.82
12/02/70	25.83	1844.43
05/25/71	25.66	1844.60
08/24/71	27.56	1842.70
12/03/71	26.30	1843.96
02/25/72	25.60	1844.66
12/03/73	27.57	1842.69
12/02/74	26.46	1843.80
12/02/75	26.77	1843.49
08/31/76	26.45	1843.81
10/31/76	26.45	1843.81
12/02/76	27.24	1843.02
06/29/77	26.64	1843.62
07/11/77	26.88	1843.38
07/26/77	27.17	1843.09
08/08/77	27.40	1842.86
08/24/77	27.52	1842.74
09/12/77	27.47	1842.79
09/30/77	27.37	1842.89
10/11/77	27.01	1843.25
10/26/77	26.90	1843.36
11/15/77	26.79	1843.47
12/12/77	26.72	1843.54
01/09/78	26.77	1843.49
02/13/78	26.85	1843.41
03/06/78	26.72	1843.54
04/10/78	25.85	1844.41
04/26/78	25.57	1844.69
05/10/78	25.39	1844.87
05/23/78	25.40	1844.86
06/05/78	25.41	1844.85
06/27/78	25.56	1844.70
07/12/78	25.46	1844.80
07/25/78	25.54	1844.72
08/07/78	25.73	1844.53
08/24/78	25.86	1844.40
09/13/78	25.88	1844.38
09/22/78	25.69	1844.57
10/13/78	25.80	1844.46
10/31/78	25.87	1844.39
11/06/78	25.84	1844.42
12/11/78	25.89	1844.37
01/08/79	24.95	1845.31
02/20/79	26.05	1844.21
03/06/79	26.87	1843.39
04/23/79	25.63	1844.63
05/07/79	24.55	1845.71
05/22/79	24.28	1845.98
06/04/79	24.25	1846.01
06/27/79	24.60	1845.66
07/02/79	24.67	1845.59
07/31/79	25.10	1845.16
08/06/79	25.12	1845.14
08/22/79	25.44	1844.82
09/04/79	25.29	1844.97
09/25/79	25.22	1845.04
10/01/79	25.28	1844.98
10/30/79	25.28	1844.98
12/03/79	25.35	1844.91
01/02/80	25.45	1844.81
01/28/80	25.53	1844.73
02/25/80	25.58	1844.68
03/04/80	25.56	1844.70
04/01/80	25.49	1844.77
05/07/80	25.40	1844.86
06/02/80	25.82	1844.44
07/02/80	25.99	1844.27
08/13/80	26.51	1843.75
09/10/80	26.29	1843.97
10/06/80	26.17	1844.09
11/05/80	25.95	1844.31
12/03/80	25.71	1844.55
01/27/81	25.71	1844.55
02/23/81	25.67	1844.59
03/04/81	25.56	1844.70
04/07/81	25.17	1845.09
04/29/81	25.18	1845.08
05/06/81	25.31	1844.95
05/28/81	25.17	1845.09
06/03/81	25.19	1845.07
06/21/81	25.06	1845.20
06/29/81	25.51	1844.75
07/26/81	25.97	1844.29
07/28/81	25.88	1844.38
08/23/81	25.97	1844.29
09/27/81	25.85	1844.41
10/31/81	25.83	1844.43
11/27/81	25.57	1844.69
12/01/81	26.39	1843.87
04/19/82	25.28	1844.98
04/25/82	24.59	1845.67
05/19/82	24.63	1845.63
05/30/82	24.57	1845.69
06/14/82	24.50	1845.76
06/27/82	24.29	1845.97
07/25/82	24.02	1846.24
08/02/82	24.92	1845.34
08/23/82	24.47	1845.79
09/10/82	25.25	1845.01
09/26/82	25.42	1844.84
10/12/82	24.64	1845.62
10/20/82	24.25	1846.01
11/16/82	24.44	1845.82
11/26/82	24.24	1846.02
12/02/82	24.94	1845.32
12/09/82	24.52	1845.74
12/30/82	24.25	1846.01
01/12/83	24.62	1845.64
05/05/83	23.62	1846.64
07/27/83	23.57	1846.69
11/16/83	24.42	1845.84
02/08/84	24.87	1845.39
06/07/84	24.07	1846.19
12/11/84	24.07	1846.19
03/13/85	23.35	1846.91
04/04/85	24.01	1846.25
04/29/85	24.54	1845.72
06/07/85	24.40	1845.86
07/03/85	23.55	1846.71
08/15/85	24.04	1846.22
09/16/85	23.99	1846.27
10/01/85	24.09	1846.17
11/05/85	23.90	1846.36
03/13/86	24.00	1846.26
04/29/86	23.38	1846.88
06/03/86	22.12	1848.14
07/02/86	23.30	1846.96
08/07/86	23.34	1846.92
09/10/86	23.49	1846.77
10/07/86	23.27	1846.99
04/14/87	22.52	1847.74
05/19/87	22.69	1847.57
06/30/87	22.95	1847.31
08/06/87	25.04	1845.22
09/03/87	23.02	1847.24
10/15/87	23.48	1846.78
11/04/87	23.34	1846.92
12/07/87	23.36	1846.90
04/14/88	23.52	1846.74
05/20/88	23.57	1846.69
06/20/88	24.14	1846.12
08/23/88	24.71	1845.55
09/26/88	24.22	1846.04
11/01/88	24.30	1845.96
11/29/88	24.25	1846.01
01/06/89	25.23	1845.03
05/02/89	24.74	1845.52
08/28/89	25.57	1844.69
12/14/89	25.89	1844.37
05/09/90	25.82	1844.44
07/01/90	25.71	1844.55
07/02/90	25.71	1844.55
08/27/90	26.09	1844.17
12/12/90	26.39	1843.87
04/01/91	26.52	1843.74
04/22/92	26.25	1844.01
05/04/93	26.55	1843.71
04/13/94	24.63	1845.63

148-080-34DCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1869.01

SI (ft.)=198-207

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/12/70	30.50	1838.51
09/10/70	31.59	1837.42
12/12/84	27.49	1841.52
01/15/85	27.52	1841.49
01/23/85	27.50	1841.51
01/30/85	27.53	1841.48
02/06/85	27.58	1841.43
02/13/85	27.71	1841.30
02/20/85	27.63	1841.38
02/27/85	27.72	1841.29
03/06/85	27.65	1841.36
03/13/85	27.70	1841.31
03/20/85	27.71	1841.30
03/27/85	27.69	1841.32
04/03/85	27.59	1841.42
04/04/85	27.56	1841.45
04/10/85	27.58	1841.43
04/17/85	27.46	1841.55
04/29/85	27.43	1841.58
05/01/85	27.41	1841.60
05/08/85	27.38	1841.63
06/06/85	27.37	1841.64
07/03/85	27.53	1841.48
08/15/85	27.90	1841.11
09/12/85	27.89	1841.12
10/01/85	27.90	1841.11
11/05/85	27.72	1841.29
03/11/86	27.68	1841.33
04/29/86	27.30	1841.71
06/03/86	27.34	1841.67
07/01/86	27.54	1841.47
08/07/86	27.51	1841.50
09/10/86	27.49	1841.52
10/06/86	27.42	1841.59
04/14/87	27.01	1842.00
05/18/87	26.93	1842.08
06/30/87	27.07	1841.94
08/06/87	27.10	1841.91
09/03/87	27.05	1841.96
10/15/87	27.79	1841.22
11/04/87	27.81	1841.20
12/07/87	27.39	1841.62
04/14/88	27.54	1841.47
05/19/88	27.49	1841.52
06/20/88	27.81	1841.20
07/21/88	28.19	1840.82
08/22/88	28.54	1840.47
09/26/88	28.77	1840.24
10/31/88	28.85	1840.16
11/29/88	28.89	1840.12
01/06/89	28.84	1840.17
05/02/89	28.81	1840.20
06/05/89	28.77	1840.24
07/06/89	29.08	1839.93
08/01/89	29.30	1839.71
08/28/89	29.45	1839.56
10/06/89	29.60	1839.41
11/03/89	29.54	1839.47
12/14/89	29.62	1839.39
04/02/90	29.76	1839.25
05/09/90	29.67	1839.34
06/07/90	29.48	1839.53
07/01/90	29.53	1839.48
07/02/90	29.53	1839.48
08/02/90	29.79	1839.22
08/27/90	30.02	1838.99
09/28/90	30.15	1838.86
10/22/90	30.11	1838.90
11/23/90	30.08	1838.93
12/13/90	30.09	1838.92
04/01/91	30.22	1838.79
05/01/91	30.01	1839.00
05/22/91	30.00	1839.01
05/23/91	30.00	1839.01
06/24/91	30.10	1838.91
07/23/91	30.39	1838.62
08/12/91	30.85	1838.16
08/28/91	30.89	1838.12
09/23/91	30.94	1838.07
12/05/91	30.24	1838.77
02/05/92	30.16	1838.85
04/21/92	29.97	1839.04
05/26/92	29.91	1839.10
06/25/92	30.28	1838.73
07/22/92	30.29	1838.72
08/27/92	31.06	1837.95
09/22/92	31.01	1838.00
10/21/92	30.80	1838.21
11/16/92	30.60	1838.41
12/14/92	30.50	1838.51
04/05/93	30.42	1838.59
05/04/93	30.23	1838.78
06/01/93	30.03	1838.98
06/30/93	29.90	1839.11
08/04/93	29.43	1839.58
09/01/93	29.65	1839.36
10/11/93	29.55	1839.46
11/04/93	29.44	1839.57
04/13/94	28.65	1840.36
05/20/94	28.54	1840.47
06/29/94	28.49	1840.52

148-080-35BBC

Lake Nettie Aquifer

MP Elev (msl,ft)=1862.45

SI (ft.)=38-41

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/11/67	18.41	1844.04
09/14/67	18.84	1843.61
10/13/67	18.92	1843.53
11/17/67	18.93	1843.52
12/15/67	19.00	1843.45
01/11/68	19.14	1843.31
02/15/68	19.14	1843.31
03/13/68	18.94	1843.51
04/12/68	18.83	1843.62
05/16/68	18.77	1843.68
06/12/68	18.89	1843.56
07/15/68	19.11	1843.34
01/16/69	19.60	1842.85
04/17/69	18.73	1843.72
07/17/69	18.49	1843.96
08/27/69	18.92	1843.53
10/02/69	18.87	1843.58
12/30/69	19.14	1843.31
03/25/70	19.35	1843.10
05/05/70	18.64	1843.81
06/04/70	18.25	1844.20
07/01/70	18.35	1844.10
09/10/70	18.06	1844.39
12/02/70	18.53	1843.92
12/11/84	16.26	1846.19
01/15/85	16.46	1845.99
02/13/85	16.63	1845.82
03/13/85	16.44	1846.01
04/04/85	15.81	1846.64
04/29/85	15.50	1846.95
06/06/85	15.61	1846.84
07/03/85	15.91	1846.54
08/15/85	16.64	1845.81
09/12/85	16.79	1845.66
10/01/85	16.81	1845.64
11/05/85	16.52	1845.93
12/05/85	16.75	1845.70
03/11/86	16.12	1846.33
04/29/86	15.39	1847.06
06/03/86	15.62	1846.83
07/01/86	15.86	1846.59
07/29/86	15.77	1846.68
08/07/86	15.93	1846.52
09/10/86	16.30	1846.15
10/06/86	16.16	1846.29
10/21/86	16.16	1846.29
12/02/86	16.15	1846.30
04/14/87	14.52	1847.93
05/18/87	14.81	1847.64
06/30/87	15.19	1847.26
08/06/87	15.53	1846.92
09/03/87	15.60	1846.85
10/15/87	15.88	1846.57
11/04/87	15.89	1846.56
12/07/87	15.92	1846.53
04/14/88	16.11	1846.34
05/19/88	16.00	1846.45
06/20/88	16.59	1845.86
07/21/88	17.11	1845.34
08/22/88	17.79	1844.66
09/26/88	18.15	1844.30
10/31/88	17.86	1844.59
11/29/88	17.97	1844.48
01/06/89	18.02	1844.43
05/02/89	17.34	1845.11
08/28/89	18.63	1843.82
12/14/89	18.74	1843.71
05/09/90	18.76	1843.69
07/01/90	18.70	1843.75
07/02/90	18.70	1843.75
08/27/90	19.34	1843.11
12/13/90	19.59	1842.86
04/01/91	19.72	1842.73
04/21/92	19.27	1843.18
05/04/93	19.59	1842.86
04/13/94	18.64	1843.81

148-081-03AAB

Horseshoe Valley Aquifer

MP Elev (msl,ft)=1884.8

SI (ft.)=32-37

Date	Depth to Water (ft)	WL Elev (msl, ft)
02/27/75	10.82	1873.98
06/06/75	10.40	1874.40
06/12/75	10.30	1874.50
07/01/75	10.56	1874.24
07/10/75	10.65	1874.15
07/23/75	10.88	1873.92
08/21/75	11.02	1873.78
09/15/75	11.19	1873.61
11/25/75	10.81	1873.99
02/24/76	10.30	1874.50
05/26/76	10.68	1874.12
06/25/76	9.92	1874.88
07/20/76	9.39	1875.41
08/05/76	11.54	1873.26
08/19/76	11.44	1873.36
08/31/76	11.63	1873.17
09/13/76	11.49	1873.31
09/28/76	11.67	1873.13
11/04/76	11.20	1873.60
12/16/76	11.06	1873.74
02/09/77	10.84	1873.96
03/22/77	10.42	1874.38
04/21/77	10.40	1874.40
05/24/77	10.89	1873.91
07/28/77	11.72	1873.08
08/24/77	11.95	1872.85
09/29/77	11.20	1873.60
11/04/77	11.05	1873.75
12/15/77	11.00	1873.80
02/17/78	10.88	1873.92
03/29/78	10.00	1874.80
06/02/78	10.37	1874.43
06/23/78	10.65	1874.15
08/18/78	11.40	1873.40
09/11/78	11.48	1873.32
10/10/78	11.09	1873.71
04/10/79	10.26	1874.54
05/07/79	9.96	1874.84
06/15/79	10.59	1874.21
07/13/79	10.75	1874.05
08/06/79	10.87	1873.93
09/14/79	11.03	1873.77
10/01/79	10.96	1873.84
10/29/79	10.88	1873.92
12/06/79	10.82	1873.98
03/24/80	10.03	1874.77
06/05/80	10.96	1873.84
07/17/80	11.94	1872.86
08/22/80	11.52	1873.28
11/13/80	10.77	1874.03
12/11/80	10.88	1873.92
04/02/81	10.32	1874.48
05/01/81	10.44	1874.36
06/23/81	10.65	1874.15
08/28/81	12.15	1872.65
03/30/82	10.07	1874.73
04/21/82	9.90	1874.90
05/11/82	10.18	1874.62
06/10/82	10.29	1874.51
07/09/82	10.50	1874.30
11/05/82	10.60	1874.20
12/08/82	10.67	1874.13
04/28/83	10.00	1874.80
06/03/83	10.36	1874.44
07/05/83	10.57	1874.23
08/23/83	11.43	1873.37
09/23/83	11.20	1873.60
10/20/83	10.90	1873.90
12/27/83	10.75	1874.05
04/05/84	9.95	1874.85
05/10/84	9.91	1874.89
06/06/84	10.46	1874.34
07/04/84	10.80	1874.00
07/30/84	12.37	1872.43
09/04/84	13.53	1871.27
10/05/84	11.78	1873.02
11/30/84	10.90	1873.90
07/03/85	10.91	1873.89
09/05/85	11.44	1873.36
09/11/85	11.27	1873.53
04/01/86	10.07	1874.73
07/10/86	11.12	1873.68
08/29/86	11.14	1873.66
04/28/87	10.15	1874.65
07/09/87	10.99	1873.81
09/17/87	10.58	1874.22
12/02/87	10.43	1874.37
04/13/88	10.03	1874.77
08/11/88	13.03	1871.77
11/25/88	11.10	1873.70
04/21/89	10.21	1874.59
07/14/89	12.53	1872.27
10/11/89	12.09	1872.71
12/06/89	11.26	1873.54
04/03/90	10.72	1874.08
05/09/90	10.72	1874.08
05/10/90	10.72	1874.08
06/07/90	10.65	1874.15
07/25/90	12.45	1872.35
08/23/90	13.55	1871.25
09/28/90	13.01	1871.79
10/23/90	12.12	1872.68
11/20/90	11.61	1873.19
12/26/90	11.55	1873.25
04/30/91	10.56	1874.24
05/28/91	10.76	1874.04
06/25/91	10.78	1874.02
07/24/91	14.38	1870.42
08/27/91	14.41	1870.39
09/23/91	12.79	1872.01
11/06/91	11.62	1873.18
12/04/91	11.32	1873.48
04/23/92	10.67	1874.13
05/27/92	10.89	1873.91
08/07/92	13.39	1871.41
11/30/92	11.69	1873.11
03/22/93	10.89	1873.91
06/18/93	11.00	1873.80
09/02/93	10.72	1874.08
12/08/93	10.42	1874.38
04/28/94	10.22	1874.58

148-081-03CCD

Horseshoe Valley Aquifer

MP Elev (msl,ft)=1866.61

SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	6.53	1860.08
08/23/85	4.92	1861.69
09/11/85	5.99	1860.62
10/01/85	5.73	1860.88
11/06/85	5.14	1861.47
04/29/86	4.25	1862.36
06/03/86	5.40	1861.21
07/02/86	5.69	1860.92
08/08/86	5.83	1860.78
09/10/86	5.70	1860.91
10/07/86	4.79	1861.82
04/15/87	4.17	1862.44
05/19/87	5.24	1861.37
06/26/87	5.70	1860.91
07/03/87	6.01	1860.60
07/10/87	5.82	1860.79
07/17/87	5.69	1860.92
07/24/87	4.75	1861.86
07/31/87	4.90	1861.71
08/07/87	5.35	1861.26
08/18/87	4.75	1861.86
08/21/87	4.98	1861.63
08/28/87	4.73	1861.88
09/04/87	5.13	1861.48
09/11/87	5.14	1861.47
09/18/87	5.25	1861.36
09/25/87	5.37	1861.24
11/03/87	5.17	1861.44
12/07/87	5.10	1861.51
04/14/88	4.58	1862.03
08/23/88	7.91	1858.70
05/03/89	4.86	1861.75
08/29/89	7.77	1858.84
12/14/89	7.02	1859.59
05/09/90	5.47	1861.14
06/21/90	5.43	1861.18
07/01/90	5.55	1861.06
07/02/90	5.55	1861.06
08/28/90	7.38	1859.23
12/12/90	6.81	1859.80
04/02/91	6.20	1860.41
04/22/92	4.85	1861.76
05/04/93	5.14	1861.47
04/14/94	4.35	1862.26
05/20/94	4.60	1862.01

148-081-04CBC

Lake Nettie Aquifer

MP Elev (msl,ft)=1915.88

SI (ft.)=49-54

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	39.37	1876.51
12/12/84	39.33	1876.55
01/16/85	39.32	1876.56
02/14/85	39.43	1876.45
03/13/85	39.39	1876.49
04/04/85	39.40	1876.48
04/29/85	39.38	1876.50
06/07/85	39.30	1876.58
07/03/85	39.31	1876.57
07/23/85	39.32	1876.56
08/21/85	39.33	1876.55
09/10/85	39.43	1876.45
10/02/85	39.38	1876.50
11/06/85	39.42	1876.46
12/06/85	39.44	1876.44
03/14/86	39.50	1876.38
04/22/86	39.24	1876.64
04/29/86	39.27	1876.61
06/04/86	39.27	1876.61
07/02/86	39.26	1876.62
07/31/86	39.27	1876.61
08/08/86	39.23	1876.65
09/10/86	39.24	1876.64
09/30/86	39.30	1876.58
10/07/86	39.31	1876.57
10/21/86	39.23	1876.65
12/03/86	39.28	1876.60
04/15/87	38.85	1877.03
05/19/87	38.93	1876.95
06/26/87	38.90	1876.98
06/30/87	38.86	1877.02
07/03/87	38.87	1877.01
07/10/87	38.87	1877.01
07/17/87	38.84	1877.04
07/24/87	38.92	1876.96
07/31/87	38.86	1877.02
08/07/87	38.88	1877.00
08/18/87	38.87	1877.01
08/21/87	38.87	1877.01
08/28/87	38.78	1877.10
09/04/87	38.78	1877.10
09/11/87	38.79	1877.09
09/18/87	38.79	1877.09
09/25/87	38.74	1877.14
10/02/87	38.80	1877.08
11/03/87	38.70	1877.18
12/07/87	38.72	1877.16
04/14/88	38.86	1877.02
08/23/88	38.94	1876.94
01/06/89	39.10	1876.78
05/03/89	39.20	1876.68
08/04/89	39.27	1876.61
08/29/89	39.34	1876.54
12/14/89	39.52	1876.36
05/09/90	39.64	1876.24
07/01/90	39.63	1876.25
07/02/90	39.63	1876.25
08/28/90	39.76	1876.12
12/12/90	40.00	1875.88
04/02/91	40.05	1875.83
04/22/92	40.35	1875.53
05/05/93	40.97	1874.91

148-081-08DAA MP Elev (msl,ft)=1875.61

Lake Nettie Aquifer SI (ft.)=19-20.9

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/87	12.59	1863.02	08/12/87	12.40	1863.21	09/18/87	12.47	1863.14	08/29/89	13.91	1861.70
07/06/87	12.63	1862.98	08/18/87	11.99	1863.62	09/21/87	12.51	1863.10	12/14/89	14.09	1861.52
07/08/87	12.67	1862.94	08/19/87	12.00	1863.61	09/23/87	12.53	1863.08			
07/10/87	12.49	1863.12	08/21/87	12.09	1863.52	09/25/87	12.54	1863.07	05/09/90	13.67	1861.94
07/13/87	12.33	1863.28	08/24/87	12.19	1863.42	09/29/87	12.55	1863.06	07/01/90	13.72	1861.89
07/15/87	12.41	1863.20	08/26/87	12.06	1863.55	10/02/87	12.58	1863.03	07/02/90	13.72	1861.89
07/17/87	12.51	1863.10	08/28/87	12.11	1863.50	10/05/87	12.59	1863.02	08/28/90	14.17	1861.44
07/20/87	12.29	1863.32	08/31/87	12.24	1863.37	11/03/87	12.60	1863.01	12/12/90	14.20	1861.41
07/24/87	11.92	1863.69	09/02/87	12.27	1863.34	12/07/87	12.69	1862.92			
07/27/87	11.97	1863.64	09/04/87	12.34	1863.27				04/02/91	14.10	1861.51
07/31/87	11.94	1863.67	09/07/87	12.38	1863.23	04/14/88	12.65	1862.96			
08/03/87	12.07	1863.54	09/09/87	12.42	1863.19	08/23/88	13.68	1861.93	04/22/92	13.76	1861.85
08/05/87	12.12	1863.49	09/11/87	12.41	1863.20						
08/07/87	12.24	1863.37	09/14/87	12.45	1863.16	01/06/89	13.75	1861.86	05/05/93	13.92	1861.69
08/10/87	12.33	1863.28	09/16/87	12.46	1863.15	05/03/89	13.04	1862.57			

148-081-08DDA MP Elev (msl,ft)=1861.65

Lake Nettie Aquifer SI (ft.)=13-18

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	6.65	1855.00	10/21/86	6.23	1855.42	08/19/87	6.12	1855.53	06/20/88	6.44	1855.21
12/12/84	6.79	1854.86				08/21/87	6.15	1855.50	07/21/88	7.03	1854.62
			04/15/87	5.71	1855.94	08/24/87	6.20	1855.45	08/23/88	7.73	1853.92
01/16/85	7.37	1854.28	05/19/87	6.14	1855.51	08/26/87	6.01	1855.64	09/25/88	7.55	1854.10
02/14/85	7.55	1854.10	06/26/87	6.44	1855.21	08/28/87	6.06	1855.59	10/31/88	7.29	1854.36
03/13/85	6.96	1854.69	06/29/87	6.46	1855.19	08/31/87	6.11	1855.54	11/29/88	7.19	1854.46
04/04/85	6.51	1855.14	06/30/87	6.48	1855.17	09/02/87	6.13	1855.52			
04/29/85	6.04	1855.61	07/01/87	6.52	1855.13	09/04/87	6.18	1855.47	01/06/89	7.37	1854.28
06/07/85	6.20	1855.45	07/03/87	6.62	1855.03	09/07/87	6.18	1855.47	05/03/89	6.20	1855.45
07/03/85	6.45	1855.20	07/06/87	6.72	1854.93	09/09/87	6.20	1855.45	08/29/89	7.79	1853.86
07/23/85	6.87	1854.78	07/08/87	6.78	1854.87	09/11/87	6.16	1855.49	12/14/89	7.65	1854.00
08/21/85	6.69	1854.96	07/10/87	6.51	1855.14	09/14/87	6.18	1855.47			
09/11/85	6.88	1854.77	07/13/87	6.31	1855.34	09/16/87	6.17	1855.48	05/09/90	6.82	1854.83
10/02/85	6.71	1854.94	07/15/87	6.33	1855.32	09/18/87	6.16	1855.49	06/21/90	6.47	1855.18
11/06/85	6.43	1855.22	07/17/87	6.43	1855.22	09/21/87	6.19	1855.46	07/01/90	6.59	1855.06
12/06/85	6.65	1855.00	07/20/87	6.19	1855.46	09/23/87	6.19	1855.46	07/02/90	6.59	1855.06
			07/24/87	6.08	1855.57	09/25/87	6.19	1855.46	08/28/90	7.92	1853.73
03/14/86	6.11	1855.54	07/27/87	6.18	1855.47	09/29/87	6.16	1855.49	12/12/90	7.48	1854.17
04/23/86	5.63	1856.02	07/31/87	6.08	1855.57	10/02/87	6.18	1855.47			
06/04/86	6.28	1855.37	08/03/87	6.17	1855.48	10/05/87	6.18	1855.47	04/02/91	7.45	1854.20
07/02/86	6.47	1855.18	08/05/87	6.17	1855.48	11/03/87	6.12	1855.53			
07/31/86	6.30	1855.35	08/07/87	6.24	1855.41	12/07/87	6.05	1855.60	04/22/92	6.42	1855.23
08/08/86	6.56	1855.09	08/10/87	6.35	1855.30						
09/10/86	6.58	1855.07	08/12/87	6.41	1855.24	04/14/88	5.98	1855.67	05/05/93	6.58	1855.07
10/07/86	6.20	1855.45	08/18/87	6.10	1855.55	05/20/88	5.90	1855.75			

148-081-09BAA MP Elev (msl,ft)=1899.04

Horseshoe Valley Aquifer SI (ft.)=25.1-27

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/87	23.47	1875.57	09/04/87	23.11	1875.93				12/12/90	24.77	1874.27
07/10/87	23.49	1875.55	09/11/87	23.13	1875.91	05/03/89	24.08	1874.96			
07/17/87	23.51	1875.53	09/18/87	23.13	1875.91	08/29/89	24.52	1874.52	04/02/91	25.05	1873.99
07/24/87	23.39	1875.65	09/25/87	23.14	1875.90	12/14/89	24.64	1874.40			
07/31/87	23.28	1875.76	11/03/87	23.26	1875.78				04/22/92	24.87	1874.17
08/07/87	23.27	1875.77	12/07/87	23.42	1875.62	05/09/90	24.56	1874.48			
08/18/87	23.16	1875.88				07/01/90	24.48	1874.56	05/05/93	25.74	1873.30
08/21/87	23.13	1875.91	04/14/88	23.73	1875.31	07/02/90	24.48	1874.56			
08/28/87	23.10	1875.94	08/23/88	24.07	1874.97	08/28/90	24.70	1874.34	04/14/94	24.95	1874.09

148-081-10AAA MP Elev (msl,ft)=1913.11
Horseshoe Valley Aquifer SI (ft.)=20.5-22.4

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/26/87	16.50	1896.61	09/04/87	16.21	1896.90	05/03/89	17.57	1895.54	04/02/91	18.82	1894.29
07/03/87	16.53	1896.58	09/11/87	16.22	1896.89	08/29/89	18.06	1895.05			
07/10/87	16.59	1896.52	09/18/87	16.24	1896.87	12/14/89	18.26	1894.85	04/22/92	18.42	1894.69
07/17/87	16.61	1896.50	09/25/87	16.27	1896.84						
07/24/87	16.51	1896.60	11/03/87	16.47	1896.64	05/09/90	18.48	1894.63	05/04/93	18.26	1894.85
07/31/87	16.39	1896.72	12/07/87	16.65	1896.46	07/01/90	18.52	1894.59			
08/07/87	16.35	1896.76				07/02/90	18.52	1894.59	04/14/94	16.64	1896.47
08/18/87	16.27	1896.84	04/14/88	17.26	1895.85	08/28/90	18.61	1894.50	05/20/94	16.67	1896.44
08/21/87	16.24	1896.87	08/23/88	17.65	1895.46	12/12/90	18.64	1894.47			
08/28/87	16.21	1896.90									

148-081-10ABB MP Elev (msl,ft)=1881.61
Horseshoe Valley Aquifer SI (ft.)=21.1-23

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/87	12.14	1869.47	09/04/87	11.73	1869.88				12/12/90	13.30	1868.31
07/10/87	12.14	1869.47	09/11/87	11.80	1869.81	05/03/89	11.88	1869.73			
07/17/87	12.09	1869.52	09/18/87	11.87	1869.74	08/29/89	13.75	1867.86	04/02/91	12.86	1868.75
07/24/87	11.72	1869.89	09/25/87	11.92	1869.69	12/14/89	13.32	1868.29			
07/31/87	11.65	1869.96	11/03/87	11.98	1869.63				04/22/92	12.22	1869.39
08/07/87	11.77	1869.84	12/07/87	12.02	1869.59	05/09/90	12.58	1869.03			
08/18/87	11.63	1869.98				07/01/90	12.69	1868.92	05/04/93	12.32	1869.29
08/21/87	11.64	1869.97	04/14/88	11.63	1869.98	07/02/90	12.69	1868.92			
08/28/87	11.59	1870.02	08/23/88	13.39	1868.22	08/28/90	13.48	1868.13	04/14/94	11.08	1870.53

148-081-10DDC MP Elev (msl,ft)=1884.41
Lake Nettie Aquifer SI (ft.)=150-155

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	33.73	1850.68	07/17/87	32.77	1851.64	12/14/89	35.46	1848.95	09/22/92	41.07	1843.34
09/11/85	33.63	1850.78	07/24/87	32.63	1851.78				10/21/92	37.12	1847.29
10/01/85	33.60	1850.81	07/31/87	32.61	1851.80	05/09/90	35.49	1848.92	11/16/92	36.67	1847.74
11/06/85	33.47	1850.94	08/07/87	32.70	1851.71	06/21/90	35.30	1849.11	12/14/92	36.43	1847.98
12/06/85	33.43	1850.98	08/18/87	32.64	1851.77	07/01/90	35.30	1849.11			
			08/21/87	32.66	1851.75	07/02/90	35.30	1849.11	04/05/93	36.34	1848.07
03/14/86	33.49	1850.92	08/28/87	32.63	1851.78	08/28/90	35.75	1848.66	05/04/93	36.07	1848.34
04/29/86	33.09	1851.32	09/04/87	32.68	1851.73	12/12/90	35.95	1848.46	06/01/93	35.84	1848.57
06/03/86	33.10	1851.31	09/11/87	32.70	1851.71				06/30/93	35.67	1848.74
07/02/86	33.24	1851.17	09/18/87	32.73	1851.68	04/02/91	36.13	1848.28	08/04/93	35.10	1849.31
08/08/86	33.20	1851.21	09/25/87	32.77	1851.64	08/12/91	47.13	1837.28	09/01/93	39.70	1844.71
09/10/86	33.18	1851.23	11/03/87	32.86	1851.55	08/28/91	47.52	1836.89	10/11/93	35.55	1848.86
10/07/86	33.06	1851.35	12/07/87	32.98	1851.43	09/23/91	38.99	1845.42	11/04/93	35.14	1849.27
12/02/86	32.91	1851.50									
			04/14/88	33.27	1851.14	02/05/92	36.07	1848.34	04/14/94	34.30	1850.11
04/15/87	32.68	1851.73	08/23/88	34.24	1850.17	04/22/92	35.82	1848.59	05/20/94	34.39	1850.02
05/19/87	32.66	1851.75				05/26/92	35.67	1848.74	06/29/94	34.53	1849.88
06/26/87	32.67	1851.74	01/06/89	34.64	1849.77	06/25/92	36.94	1847.47	08/03/94	42.38	1842.03
07/03/87	32.70	1851.71	05/03/89	34.61	1849.80	07/22/92	43.00	1841.41			
07/10/87	32.74	1851.67	08/29/89	35.18	1849.23	08/27/92	41.38	1843.03			

148-081-12DAA MP Elev (msl,ft)=1896.23
Strawberry Lake Aquifer SI (ft.)=38-41

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/05/70	7.32	1888.91	10/01/85	10.37	1885.86	08/06/87	4.24	1891.99	05/09/90	16.89	1879.34
09/10/70	8.55	1887.68	11/05/85	11.04	1885.19	09/03/87	4.00	1892.23	07/01/90	17.08	1879.15
						10/15/87	4.20	1892.03	07/02/90	17.08	1879.15
12/12/84	8.87	1887.36	03/13/86	11.25	1884.98	11/04/87	4.21	1892.02	08/27/90	17.38	1878.85
			04/29/86	4.63	1891.60	12/07/87	6.25	1889.98	12/12/90	18.11	1878.12
01/16/85	9.59	1886.64	06/03/86	3.90	1892.33						
02/13/85	9.52	1886.71	07/02/86	3.99	1892.24	04/14/88	3.75	1892.48	04/01/91	18.79	1877.44
03/13/85	10.62	1885.61	08/07/86	5.27	1890.96	08/23/88	8.98	1887.25			
04/04/85	10.60	1885.63	09/10/86	6.84	1889.39				04/22/92	18.78	1877.45
04/29/85	9.31	1886.92	10/07/86	7.86	1888.37	01/06/89	12.72	1883.51			
06/07/85	6.24	1889.99				05/02/89	12.95	1883.28	05/04/93	19.49	1876.74
07/03/85	6.61	1889.62	04/14/87	3.15	1893.08	08/29/89	14.42	1881.81			
08/15/85	8.81	1887.42	05/19/87	3.64	1892.59	12/14/89	15.70	1880.53	04/13/94	13.78	1882.45
09/16/85	9.89	1886.34	06/30/87	3.63	1892.60						

148-081-14CDD MP Elev (msl,ft)=1860.55

Lake Nettie Aquifer SI (ft.)=136-141

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/67	15.09	1845.46
09/14/67	14.99	1845.56
10/13/67	15.06	1845.49
11/17/67	15.27	1845.28
12/15/67	15.10	1845.45
01/12/68	15.08	1845.47
02/15/68	15.03	1845.52
03/13/68	15.01	1845.54
04/11/68	14.90	1845.65
05/16/68	14.77	1845.78
06/13/68	14.78	1845.77
07/15/68	14.92	1845.63
01/15/69	15.00	1845.55
04/17/69	14.94	1845.61
07/11/69	14.43	1846.12
08/27/69	14.52	1846.03
10/02/69	14.60	1845.95
12/19/69	14.84	1845.71
03/24/70	14.90	1845.65
05/05/70	14.62	1845.93
06/05/70	14.36	1846.19
07/01/70	14.45	1846.10
09/09/70	14.63	1845.92
12/02/70	14.87	1845.68
06/29/77	13.13	1847.42
07/11/77	13.19	1847.36
07/26/77	13.42	1847.13
08/08/77	13.44	1847.11
08/23/77	13.57	1846.98
09/12/77	13.57	1846.98
09/29/77	13.31	1847.24
10/11/77	13.29	1847.26
10/26/77	13.30	1847.25
11/15/77	13.24	1847.31
12/02/77	13.20	1847.35
12/27/77	13.11	1847.44
01/09/78	13.20	1847.35
01/31/78	13.20	1847.35
02/13/78	13.14	1847.41
02/23/78	13.24	1847.31
03/06/78	13.33	1847.22
03/30/78	13.28	1847.27
04/10/78	13.16	1847.39
04/27/78	12.98	1847.57
05/10/78	13.81	1846.74
05/23/78	12.84	1847.71
06/05/78	12.75	1847.80
06/27/78	12.73	1847.82
07/12/78	12.53	1848.02
07/25/78	12.61	1847.94
08/07/78	12.74	1847.81
08/24/78	12.78	1847.77
09/13/78	12.63	1847.92
09/25/78	12.68	1847.87
10/13/78	12.75	1847.80
10/25/78	12.68	1847.87
11/06/78	12.72	1847.83
11/28/78	12.48	1848.07
12/27/78	12.57	1847.98
01/08/79	12.52	1848.03
01/24/79	12.47	1848.08
02/20/79	12.54	1848.01
03/05/79	12.35	1848.20
03/06/79	12.62	1847.93
04/23/79	12.32	1848.23
05/07/79	12.02	1848.53
05/22/79	11.93	1848.62
06/04/79	11.90	1848.65
06/27/79	11.89	1848.66
07/02/79	11.95	1848.60
07/31/79	12.10	1848.45
08/06/79	12.02	1848.53
09/04/79	12.10	1848.45
09/22/79	12.11	1848.44
09/25/79	12.17	1848.38
10/01/79	12.21	1848.34
10/30/79	12.21	1848.34
12/03/79	12.14	1848.41
01/02/80	12.17	1848.38
01/28/80	12.12	1848.43
04/01/80	12.12	1848.43
05/07/80	12.12	1848.43
06/02/80	12.23	1848.32
07/02/80	12.43	1848.12
08/13/80	12.56	1847.99
09/10/80	12.59	1847.96
10/07/80	12.58	1847.97
11/05/80	12.33	1848.22
12/03/80	12.26	1848.29
01/27/81	12.22	1848.33
02/23/81	12.09	1848.46
03/04/81	12.22	1848.33
04/07/81	12.39	1848.16
04/29/81	12.23	1848.32
05/06/81	12.30	1848.25
05/28/81	12.19	1848.36
06/04/81	12.21	1848.34
06/21/81	12.09	1848.46
06/29/81	13.32	1847.23
07/26/81	12.42	1848.13
07/27/81	12.52	1848.03
08/25/81	12.49	1848.06
09/21/81	12.41	1848.14
09/27/81	12.40	1848.15
10/31/81	11.54	1849.01
11/28/81	10.94	1849.61
12/01/81	11.26	1849.29
12/30/81	11.64	1848.91
02/25/82	12.15	1848.40
03/24/82	12.09	1848.46
04/19/82	12.21	1848.34
04/30/82	12.04	1848.51
05/19/82	11.99	1848.56
05/30/82	11.79	1848.76
06/14/82	11.70	1848.85
06/27/82	11.39	1849.16
07/25/82	10.69	1849.86
08/02/82	11.88	1848.67
08/23/82	11.24	1849.31
09/09/82	11.73	1848.82
09/30/82	10.64	1849.91
10/12/82	11.59	1848.96
10/25/82	11.44	1849.11
11/16/82	11.51	1849.04
11/30/82	11.29	1849.26
12/02/82	11.20	1849.35
12/09/82	11.44	1849.11
12/30/82	11.19	1849.36
01/13/83	11.29	1849.26
05/05/83	10.99	1849.56
07/27/83	11.00	1849.55
11/16/83	11.34	1849.21
02/08/84	11.34	1849.21
06/08/84	10.94	1849.61
12/12/84	11.18	1849.37
01/16/85	11.29	1849.26
01/23/85	11.26	1849.29
01/30/85	11.37	1849.18
02/06/85	11.37	1849.18
02/13/85	11.43	1849.12
02/20/85	11.43	1849.12
02/27/85	11.50	1849.05
03/06/85	11.46	1849.09
03/13/85	11.49	1849.06
03/20/85	11.54	1849.01
03/27/85	11.51	1849.04
04/03/85	11.42	1849.13
04/10/85	11.37	1849.18
04/17/85	11.29	1849.26
04/24/85	11.19	1849.36
05/01/85	11.21	1849.34
05/08/85	11.21	1849.34
06/07/85	11.17	1849.38
07/03/85	11.27	1849.28
08/16/85	11.65	1848.90
09/11/85	11.67	1848.88
10/01/85	11.64	1848.91
11/06/85	11.52	1849.03
12/05/85	11.48	1849.07
03/13/86	11.48	1849.07
04/29/86	11.11	1849.44
06/03/86	11.12	1849.43
07/02/86	11.27	1849.28
07/31/86	11.19	1849.36
08/08/86	11.20	1849.35
09/10/86	11.17	1849.38
10/07/86	11.07	1849.48
12/02/86	10.95	1849.60
04/15/87	10.72	1849.83
05/19/87	10.65	1849.90
06/26/87	10.68	1849.87
07/03/87	10.79	1849.76
07/10/87	10.78	1849.77
07/17/87	10.82	1849.73
07/24/87	10.68	1849.87
07/31/87	10.68	1849.87
08/07/87	10.73	1849.82
08/18/87	10.67	1849.88
08/21/87	10.69	1849.86
08/28/87	10.66	1849.89
09/04/87	10.73	1849.82
09/11/87	10.78	1849.77
09/18/87	10.83	1849.72
09/25/87	10.86	1849.69
10/02/87	10.92	1849.63
11/03/87	10.96	1849.59
12/07/87	11.04	1849.51
04/14/88	11.32	1849.23
05/20/88	11.20	1849.35
06/20/88	11.48	1849.07
07/21/88	11.88	1848.67
08/23/88	12.30	1848.25
09/26/88	12.52	1848.03
10/31/88	12.64	1847.91
11/29/88	12.68	1847.87
01/06/89	12.66	1847.89
05/03/89	12.66	1847.89
08/29/89	13.25	1847.30
12/14/89	13.48	1847.07
05/09/90	13.54	1847.01
07/01/90	13.37	1847.18
07/02/90	13.37	1847.18
08/27/90	13.82	1846.73
12/12/90	13.97	1846.58
04/01/91	14.19	1846.36
04/22/92	13.82	1846.73
05/04/93	14.14	1846.41

148-081-15DBB MP Elev (msl,ft)=1863.75

Lake Nettie Aquifer SI (ft.)=16.2-18.2

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/87	16.94	1846.81
07/10/87	17.10	1846.65
07/17/87	17.23	1846.52
07/24/87	17.16	1846.59
07/31/87	16.29	1847.46
08/07/87	15.86	1847.89
08/18/87	15.69	1848.06
08/21/87	15.58	1848.17
08/28/87	15.53	1848.22
09/04/87	15.62	1848.13
09/11/87	15.77	1847.98
09/18/87	15.91	1847.84
09/25/87	16.04	1847.71
11/03/87	16.76	1846.99
12/07/87	17.25	1846.50

148-081-16BCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1862.11

Sl (ft.)=20-21.9

Date	Depth to Water (ft)	WL Elev (msl. ft)
06/15/87	16.71	1845.40
06/24/87	16.82	1845.29
06/26/87	16.83	1845.28
06/29/87	16.73	1845.38
06/30/87	16.87	1845.24
07/01/87	16.87	1845.24
07/03/87	16.89	1845.22
07/06/87	16.93	1845.18
07/08/87	16.96	1845.15
07/10/87	16.99	1845.12
07/13/87	16.94	1845.17
07/15/87	16.94	1845.17
07/17/87	16.96	1845.15
07/20/87	16.94	1845.17
07/24/87	16.77	1845.34
07/27/87	16.74	1845.37
07/31/87	16.74	1845.37
08/03/87	16.76	1845.35
08/05/87	16.75	1845.36
08/07/87	16.81	1845.30
08/10/87	16.81	1845.30
08/12/87	16.87	1845.24
08/18/87	16.83	1845.28
08/19/87	16.82	1845.29
08/21/87	16.81	1845.30
08/24/87	16.83	1845.28
08/26/87	16.83	1845.28
08/28/87	16.78	1845.33
08/31/87	16.79	1845.32
09/02/87	16.78	1845.33
09/04/87	16.81	1845.30
09/07/87	16.85	1845.26
09/09/87	16.86	1845.25
09/11/87	16.87	1845.24
09/14/87	16.88	1845.23
09/16/87	16.90	1845.21
09/18/87	16.91	1845.20
09/21/87	16.93	1845.18
09/23/87	16.94	1845.17
09/25/87	16.95	1845.16
09/29/87	16.98	1845.13
10/02/87	16.99	1845.12
10/05/87	17.00	1845.11
11/03/87	17.00	1845.11
12/07/87	17.05	1845.06
04/14/88	17.47	1844.64
08/23/88	18.32	1843.79
01/06/89	19.53	1842.58
05/03/89	19.35	1842.76
08/29/89	19.64	1842.47
12/14/89	20.22	1841.89
05/10/90	20.50	1841.61
07/02/90	19.64	1842.47
07/03/90	19.64	1842.47
08/28/90	20.34	1841.77
12/12/90	20.66	1841.45
04/02/91	21.03	1841.08
04/22/92	20.39	1841.72
05/05/93	19.97	1842.14
04/14/94	18.10	1844.01

148-081-16DDD

Lake Nettie Aquifer

MP Elev (msl,ft)=1853.77

Sl (ft.)=18-21

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/09/67	11.46	1842.31
09/14/67	12.44	1841.33
10/13/67	12.67	1841.10
11/17/67	12.72	1841.05
12/15/67	12.68	1841.09
01/12/68	12.84	1840.93
02/15/68	12.97	1840.80
03/14/68	12.70	1841.07
04/11/68	12.29	1841.48
05/16/68	11.75	1842.02
06/13/68	11.56	1842.21
07/15/68	11.82	1841.95
01/15/69	12.78	1840.99
04/17/69	12.42	1841.35
07/11/69	10.98	1842.79
08/27/69	11.39	1842.38
10/02/69	12.01	1841.76
12/19/69	12.43	1841.34
03/24/70	12.77	1841.00
05/05/70	11.44	1842.33
06/05/70	10.30	1843.47
07/01/70	10.60	1843.17
09/09/70	11.84	1841.93
12/02/70	11.81	1841.96
06/15/77	11.15	1842.62
06/29/77	11.66	1842.11
07/11/77	11.87	1841.90
07/26/77	12.08	1841.69
08/08/77	12.30	1841.47
08/23/77	12.50	1841.27
09/12/77	12.68	1841.09
09/29/77	12.45	1841.32
10/11/77	12.19	1841.58
10/26/77	11.93	1841.84
11/15/77	11.80	1841.97
12/02/77	11.73	1842.04
12/12/77	11.78	1841.99
12/27/77	11.77	1842.00
01/09/78	11.82	1841.95
01/31/78	12.10	1841.67
02/13/78	11.85	1841.92
02/23/78	11.69	1842.08
03/06/78	12.21	1841.56
03/30/78	11.54	1842.23
04/10/78	10.86	1842.91
04/27/78	10.19	1843.58
05/10/78	9.94	1843.83
05/23/78	9.88	1843.89
06/05/78	9.61	1844.16
06/27/78	9.81	1843.96
07/12/78	9.60	1844.17
07/25/78	9.95	1843.82
08/07/78	10.13	1843.64
08/24/78	10.50	1843.27
09/13/78	10.96	1842.81
09/25/78	11.07	1842.70
10/13/78	11.22	1842.55
10/25/78	11.29	1842.48
11/06/78	11.34	1842.43
11/28/78	11.32	1842.45
12/11/78	11.37	1842.40
12/27/78	10.04	1843.73
01/08/79	11.41	1842.36
01/24/79	11.50	1842.27
02/20/79	11.63	1842.14
03/05/79	11.67	1842.10
03/07/79	11.83	1841.94
03/30/79	11.38	1842.39
04/23/79	10.68	1843.09
05/07/79	9.78	1843.99
05/22/79	9.49	1844.28
06/04/79	9.09	1844.68
06/27/79	9.83	1843.94
07/02/79	9.89	1843.88
07/31/79	10.40	1843.37
08/06/79	10.42	1843.35
08/22/79	10.67	1843.10
09/04/79	10.67	1843.10
09/25/79	10.91	1842.86
10/01/79	9.95	1843.82
10/30/79	11.13	1842.64
12/03/79	11.20	1842.57
01/02/80	11.37	1842.40
01/28/80	11.39	1842.38
02/25/80	11.66	1842.11
04/01/80	11.61	1842.16
05/07/80	10.90	1842.87
06/02/80	10.83	1842.94
07/02/80	11.12	1842.65
08/13/80	11.80	1841.97
09/10/80	11.58	1842.19
10/07/80	11.52	1842.25
11/05/80	11.02	1842.75
12/03/80	10.54	1843.23
01/27/81	11.22	1842.55
02/23/81	11.22	1842.55
04/07/81	10.98	1842.79
05/06/81	10.48	1843.29
06/03/81	10.33	1843.44
06/29/81	10.24	1843.53
07/27/81	10.79	1842.98
08/25/81	11.05	1842.72
09/21/81	11.15	1842.62
04/19/82	10.44	1843.33
05/19/82	9.66	1844.11
06/14/82	9.35	1844.42
08/02/82	10.01	1843.76
09/09/82	10.39	1843.38
10/12/82	10.40	1843.37
11/16/82	9.87	1843.90
12/09/82	10.00	1843.77
01/13/83	10.35	1843.42
05/05/83	9.35	1844.42
07/27/83	8.70	1845.07
11/16/83	10.95	1842.82
02/08/84	11.30	1842.47
06/08/84	9.70	1844.07
12/12/84	11.07	1842.70
01/16/85	11.40	1842.37
02/14/85	11.57	1842.20
03/13/85	11.36	1842.41
04/04/85	11.11	1842.66
04/29/85	10.55	1843.22
06/07/85	10.14	1843.63
07/03/85	10.36	1843.41
08/16/85	11.07	1842.70
09/11/85	11.16	1842.61
10/02/85	11.20	1842.57
11/06/85	10.70	1843.07
12/06/85	10.85	1842.92
03/14/86	10.63	1843.14
04/30/86	9.34	1844.43
06/04/86	9.43	1844.34
07/02/86	9.93	1843.84
07/31/86	10.04	1843.73
08/08/86	10.14	1843.63
09/10/86	10.49	1843.28
10/07/86	10.20	1843.57
10/21/86	10.09	1843.68
12/02/86	10.01	1843.76
04/15/87	9.15	1844.62
05/19/87	9.49	1844.28
06/26/87	9.76	1844.01
07/03/87	9.84	1843.93
07/10/87	9.97	1843.80
07/17/87	9.92	1843.85
07/24/87	9.65	1844.12
07/31/87	9.54	1844.23
08/07/87	9.65	1844.12
08/14/87	9.78	1843.99
08/21/87	9.69	1844.08
08/28/87	9.64	1844.13
09/04/87	9.69	1844.08
09/11/87	9.81	1843.96
09/18/87	9.87	1843.90
09/25/87	9.92	1843.85
10/02/87	9.99	1843.78
11/03/87	10.04	1843.73
12/07/87	10.06	1843.71
04/14/88	10.36	1843.41
05/20/88	9.93	1843.84
06/20/88	10.44	1843.33
07/21/88	11.05	1842.72
08/23/88	11.85	1841.92
09/26/88	12.44	1841.33
10/31/88	12.62	1841.15
11/29/88	12.62	1841.15
01/06/89	12.73	1841.04
05/03/89	11.88	1841.89
08/29/89	12.61	1841.16
12/14/89	13.17	1840.60
05/09/90	13.06	1840.71
07/01/90	12.26	1841.51
07/02/90	12.26	1841.51
08/28/90	12.83	1840.94
12/12/90	13.42	1840.35
04/02/91	13.60	1840.17
04/22/92	13.35	1840.42
05/04/93	12.22	1841.55
02/15/94	10.75	1843.02
04/14/94	9.68	1844.09
05/20/94	9.88	1843.89

148-081-17BCB1

MP Elev (msl,ft)=1887.72

Lake Nettie Aquifer

SI (ft.)=188-193

Date	Depth to Water (ft)	WL Elev (msl. ft)
07/18/85	42.15	1845.57
08/16/85	42.31	1845.41
08/23/85	42.27	1845.45
09/11/85	42.37	1845.35
10/02/85	42.35	1845.37
11/06/85	42.26	1845.46
03/12/86	42.32	1845.40
04/23/86	41.82	1845.90
06/04/86	41.89	1845.83
07/02/86	41.99	1845.73
07/31/86	41.82	1845.90
08/08/86	41.84	1845.88
09/10/86	41.81	1845.91
10/07/86	41.79	1845.93
04/15/87	41.37	1846.35
05/19/87	41.24	1846.48
06/26/87	41.33	1846.39
06/30/87	41.35	1846.37
07/03/87	41.39	1846.33
07/10/87	41.40	1846.32
07/17/87	41.43	1846.29
07/24/87	41.26	1846.46
07/31/87	41.22	1846.50
08/07/87	41.33	1846.39
08/18/87	41.31	1846.41
08/21/87	41.35	1846.37
08/28/87	41.32	1846.40
09/04/87	41.40	1846.32
09/11/87	41.34	1846.38
09/18/87	41.53	1846.19
09/25/87	41.57	1846.15
10/02/87	41.65	1846.07
11/03/87	41.82	1845.90
12/07/87	41.98	1845.74
04/14/88	42.34	1845.38
05/20/88	42.11	1845.61
06/20/88	42.43	1845.29
07/21/88	42.85	1844.87
08/23/88	43.25	1844.47
09/26/88	43.55	1844.17
10/31/88	43.72	1844.00
11/29/88	43.80	1843.92
05/03/89	43.73	1843.99
08/29/89	44.31	1843.41
12/14/89	44.64	1843.08
05/09/90	44.67	1843.05
06/21/90	44.49	1843.23
07/02/90	44.45	1843.27
07/03/90	44.45	1843.27
08/28/90	44.96	1842.76
12/12/90	45.11	1842.61
04/02/91	45.44	1842.28
04/22/92	44.79	1842.93
05/05/93	45.20	1842.52
04/14/94	43.10	1844.62

148-081-17BCB2

MP Elev (msl,ft)=1887.83

Lake Nettie Aquifer

SI (ft.)=113-118

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/16/85	40.20	1847.63
09/11/85	40.23	1847.60
10/02/85	40.25	1847.58
11/06/85	40.11	1847.72
03/12/86	40.06	1847.77
04/23/86	39.64	1848.19
06/04/86	39.66	1848.17
07/02/86	39.77	1848.06
07/31/86	39.68	1848.15
08/08/86	39.72	1848.11
09/10/86	39.71	1848.12
10/07/86	39.62	1848.21
04/15/87	39.38	1848.45
05/19/87	39.09	1848.74
06/26/87	39.13	1848.70
06/30/87	39.14	1848.69
07/03/87	39.18	1848.65
07/10/87	39.18	1848.65
07/17/87	39.22	1848.61
07/24/87	39.09	1848.74
07/31/87	39.07	1848.76
08/07/87	39.18	1848.65
08/18/87	39.18	1848.65
08/21/87	39.21	1848.62
08/28/87	39.18	1848.65
09/04/87	39.25	1848.58
09/11/87	39.30	1848.53
09/18/87	39.36	1848.47
09/25/87	39.40	1848.43
10/02/87	39.48	1848.35
11/03/87	39.57	1848.26
12/07/87	39.70	1848.13
04/14/88	39.97	1847.86
05/20/88	39.83	1848.00
06/20/88	40.09	1847.74
07/21/88	40.49	1847.34
08/23/88	40.91	1846.92
09/26/88	41.19	1846.64
10/31/88	41.34	1846.49
11/29/88	41.38	1846.45
05/03/89	41.30	1846.53
08/29/89	41.89	1845.94
12/14/89	42.19	1845.64
05/09/90	42.19	1845.64
06/21/90	42.02	1845.81
07/02/90	42.01	1845.82
07/03/90	42.01	1845.82
08/28/90	42.48	1845.35
12/12/90	42.70	1845.13
04/02/91	42.84	1844.99
04/22/92	42.44	1845.39
05/05/93	42.75	1845.08
04/14/94	40.73	1847.10

148-081-17BCB3

MP Elev (msl,ft)=1887.68

Lake Nettie Aquifer

SI (ft.)=23-28

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/16/85	21.00	1866.68
09/11/85	21.84	1865.84
10/02/85	21.94	1865.74
11/06/85	22.00	1865.68
03/12/86	22.10	1865.58
04/23/86	20.24	1867.44
06/04/86	20.98	1866.70
07/02/86	21.25	1866.43
07/31/86	20.84	1866.84
08/08/86	20.87	1866.81
09/10/86	20.90	1866.78
10/07/86	21.02	1866.66
04/15/87	19.94	1867.74
05/19/87	19.95	1867.73
06/26/87	20.08	1867.60
06/30/87	20.08	1867.60
07/03/87	20.08	1867.60
07/10/87	20.09	1867.59
07/17/87	20.17	1867.51
07/24/87	19.98	1867.70
07/31/87	19.60	1868.08
08/07/87	19.49	1868.19
08/18/87	19.42	1868.26
08/21/87	19.43	1868.25
08/28/87	19.40	1868.28
09/04/87	19.46	1868.22
09/11/87	19.49	1868.19
09/18/87	19.53	1868.15
09/25/87	19.55	1868.13
10/02/87	19.66	1868.02
11/03/87	19.73	1867.95
12/07/87	19.99	1867.69
04/14/88	20.87	1866.81
05/20/88	21.08	1866.60
06/20/88	21.18	1866.50
07/21/88	21.36	1866.32
08/23/88	21.57	1866.11
09/26/88	21.73	1865.95
10/31/88	21.80	1865.88
11/29/88	21.94	1865.74
05/03/89	22.41	1865.27
08/29/89	22.89	1864.79
12/14/89	23.12	1864.56
05/09/90	23.48	1864.20
06/21/90	23.61	1864.07
07/02/90	23.66	1864.02
07/03/90	23.66	1864.02
08/28/90	23.87	1863.81
12/12/90	23.89	1863.79
04/02/91	24.22	1863.46
04/22/92	23.78	1863.90
05/05/93	24.13	1863.55
04/14/94	21.85	1865.83

148-081-18DCD1 MP Elev (msl,ft)=1846.17

Lake Nettie Aquifer SI (ft.)=178-181

Date	Depth to Water (ft)	WL Elev (msl, ft)
09/14/67	3.60	1841.87
10/13/67	3.66	1841.81
11/17/67	3.61	1841.86
04/11/68	3.52	1841.95
05/16/68	3.68	1841.79
06/13/68	3.78	1841.69
07/15/68	3.85	1841.62
04/17/69	3.59	1841.88
08/27/69	3.60	1841.87
10/02/69	3.57	1841.90
12/19/69	3.25	1842.22
03/24/70	3.43	1842.04
05/05/70	3.08	1842.39
06/05/70	2.95	1842.52
07/01/70	3.06	1842.41
09/09/70	3.47	1842.00
06/15/77	1.40	1844.07
06/20/77	1.35	1844.12
06/29/77	1.50	1843.97
07/11/77	1.60	1843.87
07/26/77	1.77	1843.70
08/08/77	1.78	1843.69
08/23/77	2.05	1843.42
09/12/77	1.75	1843.72
09/29/77	1.62	1843.85
10/11/77	1.69	1843.78
10/26/77	1.70	1843.77
11/15/77	1.68	1843.79
11/30/77	2.20	1843.27
03/30/78	1.71	1843.76
04/27/78	1.29	1844.18
05/10/78	1.57	1843.90
05/23/78	1.13	1844.34
06/05/78	1.05	1844.42
06/27/78	0.99	1844.48
07/12/78	0.74	1844.73
07/25/78	0.77	1844.70
08/07/78	0.77	1844.70
08/24/78	0.88	1844.59
09/13/78	0.84	1844.63
09/25/78	0.77	1844.70
10/13/78	0.82	1844.65
11/06/78	0.09	1845.38
11/28/78	0.41	1845.06
12/27/78	0.18	1845.29
06/27/79	0.09	1845.38
07/01/79	0.25	1845.22
07/31/79	0.10	1845.37
08/06/79	0.10	1845.37
08/22/79	0.29	1845.18
09/04/79	0.30	1845.17
09/25/79	0.41	1845.06
10/01/79	0.44	1845.03
10/25/79	0.53	1844.94
10/30/79	0.47	1845.00
04/23/80	0.78	1844.69
05/21/80	0.40	1845.07
06/23/80	0.69	1844.78
07/21/80	1.04	1844.43
10/07/80	0.92	1844.55
10/21/80	0.84	1844.63
11/24/80	0.60	1844.87
04/29/81	0.74	1844.73
05/28/81	0.89	1844.58
06/21/81	0.90	1844.57
07/27/81	1.20	1844.27
08/23/81	1.05	1844.42
09/29/81	0.95	1844.52
10/31/81	1.17	1844.30
04/30/82	0.65	1844.82
05/30/82	0.35	1845.12
06/27/82	0.15	1845.32
07/31/82	0.06	1845.41
08/29/82	0.20	1845.27
09/30/82	0.15	1845.32
10/25/82	0.05	1845.42
12/02/82	-0.10	1845.57
09/26/83	0.10	1845.37
04/29/85	-0.33	1845.80
06/07/85	-0.31	1845.78
07/03/85	-0.30	1845.77
08/21/85	0.02	1845.45
09/11/85	0.20	1845.27
10/02/85	0.12	1845.35
03/14/86	0.51	1844.96
04/23/86	-0.13	1845.60
06/04/86	-0.25	1845.72
07/02/86	0.16	1845.31
07/31/86	0.02	1845.45
08/08/86	0.06	1845.41
09/10/86	0.04	1845.43
10/07/86	0.02	1845.45
10/21/86	-0.24	1845.71
04/15/87	-0.51	1845.98
05/19/87	-0.40	1845.87
06/26/87	-0.34	1845.81
07/01/87	-0.38	1845.85
07/03/87	-0.29	1845.76
07/08/87	-0.27	1845.74
07/10/87	-0.36	1845.83
07/13/87	-0.39	1845.86
07/15/87	-0.42	1845.89
07/17/87	-0.38	1845.85
07/20/87	-0.50	1845.97
07/24/87	-0.56	1846.03
07/27/87	-0.57	1846.04
07/31/87	-0.61	1846.08
08/07/87	-0.55	1846.02
08/10/87	-0.53	1846.00
08/12/87	-0.49	1845.96
08/19/87	-0.55	1846.02
08/21/87	-0.55	1846.02
08/28/87	-0.60	1846.07
08/31/87	-0.54	1846.01
09/02/87	-0.57	1846.04
09/04/87	-0.60	1846.07
09/07/87	-0.61	1846.08
09/09/87	-0.62	1846.09
09/11/87	-0.61	1846.08
09/14/87	-0.63	1846.10
09/16/87	-0.61	1846.08
09/18/87	-0.61	1846.08
09/21/87	-0.55	1846.02
09/23/87	-0.55	1846.02
09/25/87	-0.54	1846.01
09/29/87	-0.52	1845.99
10/02/87	-0.52	1845.99
11/03/87	-0.41	1845.88
04/14/88	0.39	1845.08
05/20/88	0.30	1845.17
06/21/88	0.57	1844.90
07/21/88	0.88	1844.59
09/27/88	1.65	1843.82
10/31/88	1.82	1843.65
05/03/89	1.85	1843.62
06/05/89	1.81	1843.66
07/06/89	1.99	1843.48
08/01/89	2.19	1843.28
08/29/89	2.31	1843.16
10/06/89	2.52	1842.95
11/03/89	2.51	1842.96
05/10/90	3.23	1842.24
06/07/90	3.11	1842.36
07/02/90	3.16	1842.31
07/03/90	3.16	1842.31
08/02/90	3.33	1842.14
08/28/90	3.27	1842.20
09/28/90	3.34	1842.13
10/22/90	3.19	1842.28
11/23/90	3.20	1842.27
12/12/90	3.23	1842.24
04/02/91	3.55	1841.92
05/01/91	3.24	1842.23
05/22/91	3.22	1842.25
05/29/91	3.30	1842.17
06/24/91	3.55	1841.92
07/23/91	3.74	1841.73
08/12/91	3.87	1841.60
08/28/91	3.93	1841.54
09/23/91	3.80	1841.67
11/06/91	3.45	1842.02
04/22/92	3.14	1842.33
05/26/92	3.15	1842.32
06/25/92	3.32	1842.15
07/22/92	3.27	1842.20
08/27/92	3.99	1841.48
09/22/92	3.94	1841.53
10/21/92	3.77	1841.70
11/16/92	3.61	1841.86
04/05/93	3.62	1841.85
05/05/93	3.45	1842.02
06/01/93	3.08	1842.39
06/30/93	2.83	1842.64
08/04/93	2.34	1843.13
09/01/93	2.62	1842.85
10/11/93	2.52	1842.95
04/14/94	2.00	1843.47
05/26/94	1.22	1844.95
06/29/94	1.15	1845.02
08/03/94	1.86	1844.31

Depth to water data prior to 5/26/94 for this well are referenced to an MP elevation (top of well casing elevation) of 1845.47, rather than the current 1846.17. Between 4/14/94 and 5/26/94 the well casing was cut from an elevation of 1845.474 and repaired to a new elevation of 1846.17 (from a casing stick up of 4.3 ft to 5.0 ft above land surface).

The negative water levels (1982 - 1987) indicate that the water level in the casing was above the top of the casing when it was at an elevation of 1845.47 (i.e., the well had a higher MP during that time period). Prior to 1994, when a well casing was broken off and then repaired to a new height, the historic depth to water data stored in the SWC digital data base was rectified to the changed MP elevation, which in this case resulted in the negative "apparent" depths to water (the "apparent" depth to water was changed but the elevation calculated from the reference elevation and depth to water would be unaffected). Note that the water level in this well is above ground surface.

148-081-18DCD2 MP Elev (msl,ft)=1843.17

Lake Nettie Aquifer SI (ft.)=18-21

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/67	5.77	1839.36
09/14/67	5.30	1839.83
10/13/67	5.43	1839.70
11/17/67	5.38	1839.75
12/15/67	5.78	1839.35
01/12/68	5.78	1839.35
02/15/68	5.63	1839.50
03/14/68	5.07	1840.06
04/11/68	4.92	1840.21
05/16/68	5.09	1840.04
06/13/68	5.37	1839.76
07/15/68	6.07	1839.06
01/15/69	5.93	1839.20
04/17/69	4.59	1840.54
07/11/69	5.20	1839.93
08/27/69	5.92	1839.21
10/02/69	5.65	1839.48
12/19/69	5.78	1839.35
03/24/70	5.09	1840.04
05/05/70	4.29	1840.84
06/05/70	4.70	1840.43
07/01/70	5.10	1840.03
09/09/70	4.99	1840.14
12/02/70	5.05	1840.08
12/03/71	5.18	1839.95
12/05/72	5.02	1840.11
12/03/73	5.09	1840.04
06/01/77	4.40	1840.73
06/15/77	4.40	1840.73
06/29/77	4.73	1840.40
07/11/77	4.48	1840.65
07/26/77	5.05	1840.08
08/08/77	4.20	1840.93
08/23/77	5.05	1840.08
09/12/77	4.74	1840.39
09/29/77	4.15	1840.98
10/11/77	4.32	1840.81
10/26/77	4.46	1840.67
11/15/77	4.46	1840.67
11/30/77	3.60	1841.53
12/12/77	4.69	1840.44
12/27/77	4.58	1840.55
01/09/78	4.69	1840.44
01/31/78	4.65	1840.48
02/13/78	4.46	1840.67
03/06/78	4.46	1840.67
03/30/78	3.52	1841.61
04/10/78	3.53	1841.60
04/27/78	3.65	1841.48
05/10/78	3.74	1841.39
05/23/78	3.72	1841.41
06/05/78	3.68	1841.45
06/27/78	3.40	1841.73
07/12/78	3.04	1842.09
07/25/78	2.96	1842.17
08/07/78	2.74	1842.39
08/24/78	2.59	1842.54
09/13/78	2.62	1842.51
09/25/78	2.61	1842.52
10/13/78	2.78	1842.35
10/25/78	2.63	1842.50
11/06/78	2.51	1842.62
11/28/78	1.98	1843.15
06/27/79	3.26	1841.87
07/01/79	3.10	1842.03
07/31/79	3.26	1841.87
08/06/79	3.48	1841.65
08/22/79	3.22	1841.91
09/04/79	3.80	1841.33
09/25/79	3.51	1841.62
10/01/79	3.89	1841.24
10/25/79	3.84	1841.29
10/30/79	3.86	1841.27
11/20/79	4.54	1840.59
12/03/79	4.00	1841.13
04/23/80	3.44	1841.69
05/07/80	3.65	1841.48
05/21/80	3.99	1841.14
06/02/80	3.26	1841.87
06/23/80	4.39	1840.74
07/02/80	4.50	1840.63
07/21/80	4.50	1840.63
07/27/80	4.34	1840.79
08/13/80	4.49	1840.64
08/25/80	4.35	1840.78
09/10/80	4.39	1840.74
09/22/80	4.25	1840.88
10/07/80	4.42	1840.71
10/21/80	4.19	1840.94
11/05/80	4.03	1841.10
11/24/80	4.01	1841.12
12/03/80	4.06	1841.07
02/23/81	3.78	1841.35
04/07/81	3.84	1841.29
04/27/81	3.53	1841.60
04/29/81	4.53	1840.60
05/06/81	4.11	1841.02
05/28/81	4.18	1840.95
06/03/81	4.05	1841.08
06/21/81	3.68	1841.45
06/29/81	4.25	1840.88
08/25/81	4.54	1840.59
09/21/81	4.48	1840.65
09/29/81	4.08	1841.05
10/31/81	4.08	1841.05
11/28/81	4.18	1840.95
12/01/81	3.94	1841.19
12/30/81	4.33	1840.80
04/19/82	2.81	1842.32
04/30/82	3.03	1842.10
05/30/82	2.99	1842.14
06/14/82	2.88	1842.25
06/27/82	2.78	1842.35
07/31/82	3.33	1841.80
08/02/82	3.80	1841.33
08/29/82	3.28	1841.85
09/09/82	3.90	1841.23
09/30/82	3.38	1841.75
10/25/82	3.03	1842.10
11/16/82	3.30	1841.83
05/05/83	3.05	1842.08
06/30/83	2.83	1842.30
07/27/83	2.37	1842.76
09/26/83	3.53	1841.60
11/16/83	3.85	1841.28
04/04/85	1.94	1843.19
04/29/85	4.21	1843.04
06/07/85	4.49	1842.76
07/03/85	4.73	1842.52
08/21/85	4.81	1842.44
09/11/85	4.98	1842.27
10/02/85	5.00	1842.25
11/06/85	4.80	1842.45
04/23/86	4.17	1843.08
06/04/86	4.45	1842.80
07/02/86	4.47	1842.78
07/31/86	4.60	1842.65
08/08/86	4.69	1842.56
09/10/86	4.75	1842.50
10/07/86	4.50	1842.75
10/21/86	4.47	1842.78
04/15/87	3.47	1843.78
05/19/87	3.79	1843.46
06/26/87	3.90	1843.35
07/01/87	3.93	1843.32
07/03/87	4.00	1843.25
07/08/87	4.10	1843.15
07/10/87	3.97	1843.28
07/13/87	3.97	1843.28
07/15/87	4.01	1843.24
07/17/87	4.10	1843.15
07/20/87	3.98	1843.27
07/24/87	3.72	1843.53
07/27/87	4.04	1843.21
07/31/87	4.04	1843.21
08/07/87	4.24	1843.01
08/10/87	4.29	1842.96
08/12/87	4.34	1842.91
08/19/87	3.51	1843.74
08/21/87	4.36	1842.89
08/28/87	4.27	1842.98
08/31/87	4.36	1842.89
09/02/87	3.93	1843.32
09/04/87	4.39	1842.86
09/07/87	4.44	1842.81
09/09/87	4.45	1842.80
09/11/87	4.40	1842.85
09/14/87	4.48	1842.77
09/16/87	4.45	1842.80
09/18/87	4.48	1842.77
09/21/87	4.53	1842.72
09/23/87	4.55	1842.70
09/25/87	4.56	1842.69
09/29/87	4.58	1842.67
10/02/87	4.61	1842.64
11/03/87	4.75	1842.50
12/08/87	4.82	1842.43
04/14/88	4.85	1842.40
05/20/88	5.25	1842.00
06/21/88	5.83	1841.42
07/21/88	6.14	1841.11
08/23/88	6.62	1840.63
09/26/88	6.58	1840.67
10/31/88	6.42	1840.83
11/29/88	6.29	1840.96
01/06/89	6.18	1841.07
05/03/89	5.81	1841.44
06/05/89	6.48	1840.77
07/06/89	6.99	1840.26
08/01/89	7.21	1840.04
08/29/89	6.98	1840.27
10/06/89	7.06	1840.19
11/03/89	6.93	1840.32
12/14/89	7.15	1840.10
05/10/90	6.93	1840.32
06/07/90	7.09	1840.16
07/02/90	7.22	1840.03
07/03/90	7.22	1840.03
08/02/90	8.12	1839.13
08/28/90	8.21	1839.04
09/28/90	8.13	1839.12
10/22/90	7.79	1839.46
11/23/90	7.75	1839.50
12/12/90	7.70	1839.55
04/02/91	7.60	1839.65
05/01/91	7.58	1839.67
05/22/91	6.98	1840.27
05/29/91	8.09	1839.16
06/24/91	8.05	1839.20
07/23/91	8.80	1838.45
08/12/91	8.77	1838.48
08/28/91	8.97	1838.28
09/23/91	8.26	1838.99
11/06/91	8.22	1839.03
12/05/91	7.73	1839.52
02/05/92	8.11	1839.14
04/22/92	7.91	1839.34
05/26/92	8.42	1838.83
06/25/92	8.52	1838.73
07/22/92	8.67	1838.58
08/27/92	9.07	1838.18
09/22/92	9.15	1838.10
10/21/92	8.96	1838.29
11/16/92	8.70	1838.55
12/14/92	8.72	1838.53
04/05/93	8.16	1839.09
05/05/93	8.30	1838.95
06/01/93	8.28	1838.97
06/30/93	8.04	1839.21
08/04/93	7.26	1839.99
09/01/93	7.76	1839.49
10/11/93	7.85	1839.40
11/04/93	7.83	1839.42
12/08/93	7.69	1839.56
02/15/94	7.30	1839.95
04/14/94	6.82	1840.43
05/26/94	2.82	1840.35
06/29/94	2.93	1840.24
08/03/94	3.44	1839.73

148-081-19BBB MP Elev (msl,ft)=1850.86

Lake Nettie Aquifer SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/02/86	5.04	1845.82	07/17/87	4.50	1846.36	04/14/88	4.93	1845.93	07/02/90	7.74	1843.12
07/16/86	4.40	1846.46	07/24/87	4.52	1846.34	05/20/88	5.18	1845.68	07/03/90	7.74	1843.12
07/31/86	5.04	1845.82	07/31/87	3.74	1847.12	06/21/88	5.62	1845.24	08/28/90	8.02	1842.84
08/08/86	5.20	1845.66	08/07/87	4.10	1846.76	07/21/88	5.87	1844.99	12/12/90	8.38	1842.48
09/10/86	5.30	1845.56	08/18/87	4.00	1846.86	08/23/88	6.21	1844.65			
10/07/86	5.13	1845.73	08/21/87	4.14	1846.72	09/26/88	6.38	1844.48	04/02/91	8.50	1842.36
10/21/86	5.10	1845.76	08/28/87	3.97	1846.89	10/31/88	6.46	1844.40			
12/03/86	5.19	1845.67	09/04/87	4.21	1846.65	11/29/88	6.59	1844.27	04/22/92	8.64	1842.22
			09/11/87	4.26	1846.60						
04/15/87	4.17	1846.69	09/18/87	4.30	1846.56	01/06/89	6.68	1844.18	05/05/93	9.00	1841.86
05/19/87	4.59	1846.27	09/25/87	4.38	1846.48	05/03/89	6.24	1844.62	12/08/93	7.65	1843.21
06/26/87	4.53	1846.33	10/02/87	4.48	1846.38	08/29/89	7.15	1843.71			
07/01/87	4.52	1846.34	11/03/87	4.54	1846.32	12/14/89	7.56	1843.30	02/15/94	7.88	1842.98
07/03/87	4.59	1846.27	12/08/87	4.74	1846.12				04/14/94	7.02	1843.84
07/10/87	4.42	1846.44				05/10/90	7.71	1843.15	05/20/94	6.70	1844.16

148-081-20AAA2 MP Elev (msl,ft)=1849.25

Lake Nettie Aquifer SI (ft.)=148-153

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/21/85	4.30	1844.95	08/24/87	3.49	1845.76				09/23/91	7.91	1841.34
09/11/85	4.44	1844.81	08/31/87	3.48	1845.77	01/06/89	5.87	1843.38	11/06/91	7.44	1841.81
10/02/85	4.59	1844.66	09/01/87	3.48	1845.77	05/03/89	5.72	1843.53	12/05/91	7.24	1842.01
11/06/85	4.32	1844.93	09/02/87	3.47	1845.78	06/05/89	5.67	1843.58			
			09/04/87	3.50	1845.75	07/06/89	5.99	1843.26	02/05/92	7.23	1842.02
04/23/86	3.83	1845.42	09/07/87	3.54	1845.71	08/01/89	6.20	1843.05	04/22/92	6.79	1842.46
06/04/86	3.96	1845.29	09/08/87	3.54	1845.71	08/29/89	6.39	1842.86	05/26/92	6.76	1842.49
07/02/86	4.06	1845.19	09/09/87	3.53	1845.72	10/06/89	6.57	1842.68	06/25/92	7.19	1842.06
07/31/86	3.88	1845.37	09/11/87	3.56	1845.69	11/03/89	6.56	1842.69	07/22/92	7.21	1842.04
08/08/86	3.92	1845.33	09/14/87	3.57	1845.68	12/14/89	6.71	1842.54	08/27/92	8.10	1841.15
09/10/86	3.91	1845.34	09/16/87	3.59	1845.66				09/22/92	8.01	1841.24
10/07/86	3.85	1845.40	09/18/87	3.61	1845.64	04/02/90	6.96	1842.29	10/21/92	7.77	1841.48
10/21/86	3.83	1845.42	09/21/87	3.67	1845.58	05/10/90	6.68	1842.57	11/16/92	7.59	1841.66
12/03/86	3.74	1845.51	09/23/87	3.68	1845.57	06/07/90	6.51	1842.74	12/14/92	7.49	1841.76
			09/25/87	3.67	1845.58	07/02/90	6.49	1842.76			
04/15/87	3.39	1845.86	09/29/87	3.73	1845.52	07/03/90	6.49	1842.76	04/05/93	7.47	1841.78
05/19/87	3.29	1845.96	10/02/87	3.77	1845.48	08/02/90	6.77	1842.48	05/05/93	7.16	1842.09
06/15/87	3.28	1845.97	10/05/87	3.76	1845.49	08/28/90	7.05	1842.20	06/01/93	6.85	1842.40
06/16/87	3.28	1845.97	10/07/87	3.78	1845.47	09/28/90	7.20	1842.05	06/30/93	6.68	1842.57
06/23/87	3.34	1845.91	10/12/87	3.79	1845.46	10/22/90	7.15	1842.10	08/04/93	5.93	1843.32
06/24/87	3.35	1845.90	11/03/87	3.90	1845.35	11/23/90	7.15	1842.10	09/01/93	6.34	1842.91
06/26/87	3.43	1845.82	12/08/87	4.05	1845.20	12/12/90	7.10	1842.15	10/11/93	6.03	1843.22
06/29/87	3.43	1845.82							11/04/93	5.89	1843.36
07/06/87	3.52	1845.73	04/14/88	4.36	1844.89	04/02/91	7.45	1841.80	12/08/93	5.58	1843.67
07/13/87	3.49	1845.76	05/23/88	4.18	1845.07	05/01/91	7.07	1842.18			
07/20/87	3.41	1845.84	06/20/88	4.53	1844.72	05/22/91	7.05	1842.20	02/15/94	5.43	1843.82
07/27/87	3.35	1845.90	07/21/88	4.92	1844.33	05/29/91	6.59	1842.66	04/14/94	5.06	1844.19
08/03/87	3.38	1845.87	08/23/88	5.36	1843.89	06/24/91	7.12	1842.13	05/20/94	4.68	1844.57
08/05/87	3.35	1845.90	09/26/88	5.63	1843.62	07/23/91	7.65	1841.60	06/29/94	4.65	1844.60
08/10/87	3.43	1845.82	10/31/88	5.80	1843.45	08/12/91	8.00	1841.25	08/03/94	5.40	1843.85
08/18/87	3.41	1845.84	11/29/88	5.86	1843.39	08/28/91	8.15	1841.10			

148-081-20AAA3

MP Elev (msl,ft)=1848.42

Lake Nettie Aquifer

SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/21/85	7.38	1841.04
09/11/85	7.55	1840.87
10/02/85	7.43	1840.99
11/06/85	7.49	1840.93
12/06/85	7.45	1840.97
02/06/86	7.38	1841.04
03/14/86	6.77	1841.65
04/23/86	6.35	1842.07
06/04/86	6.66	1841.76
07/02/86	6.97	1841.45
07/31/86	6.98	1841.44
08/08/86	7.12	1841.30
09/10/86	7.20	1841.22
10/07/86	6.89	1841.53
10/21/86	6.90	1841.52
12/03/86	6.82	1841.60
04/15/87	5.64	1842.78
05/19/87	6.12	1842.30
06/15/87	6.19	1842.23
06/16/87	6.20	1842.22
06/23/87	6.23	1842.19
06/24/87	6.21	1842.21
06/26/87	6.29	1842.13
06/29/87	6.35	1842.07
07/06/87	6.48	1841.94
07/13/87	6.33	1842.09
07/20/87	6.29	1842.13
07/27/87	6.24	1842.18
07/31/87	6.32	1842.10
08/03/87	6.39	1842.03
08/05/87	6.43	1841.99
08/10/87	6.60	1841.82
08/14/87	6.68	1841.74
08/18/87	6.49	1841.93
08/24/87	6.66	1841.76
08/31/87	6.59	1841.83
09/01/87	6.63	1841.79
09/02/87	6.64	1841.78
09/04/87	6.70	1841.72
09/07/87	6.74	1841.68
09/09/87	6.77	1841.65
09/11/87	6.80	1841.62
09/14/87	6.81	1841.61
09/16/87	6.84	1841.58
09/18/87	6.86	1841.56
09/21/87	6.90	1841.52
09/23/87	6.90	1841.52
09/29/87	6.95	1841.47
10/01/87	6.92	1841.50
10/02/87	6.98	1841.44
10/05/87	6.99	1841.43
10/07/87	7.00	1841.42
10/12/87	6.99	1841.43
11/03/87	6.99	1841.43
12/08/87	7.01	1841.41
04/14/88	6.86	1841.56
05/23/88	6.92	1841.50
06/20/88	7.51	1840.91
07/21/88	7.85	1840.57
08/23/88	8.56	1839.86
09/26/88	8.85	1839.57
10/31/88	8.87	1839.55
11/29/88	8.78	1839.64
01/06/89	8.81	1839.61
05/03/89	7.95	1840.47
06/05/89	7.91	1840.51
07/06/89	8.39	1840.03
08/01/89	8.92	1839.50
08/29/89	9.30	1839.12
10/06/89	9.48	1838.94
11/03/89	9.40	1839.02
12/14/89	9.47	1838.95
04/02/90	9.33	1839.09
05/10/90	9.02	1839.40
06/07/90	8.57	1839.85
07/02/90	8.62	1839.80
07/03/90	8.62	1839.80
08/02/90	9.12	1839.30
08/28/90	9.65	1838.77
09/28/90	9.89	1838.53
10/22/90	9.78	1838.64
11/23/90	9.73	1838.69
12/12/90	9.74	1838.68
04/02/91	9.68	1838.74
05/01/91	9.28	1839.14
05/22/91	9.11	1839.31
05/29/91	9.59	1838.83
06/24/91	8.99	1839.43
07/23/91	9.37	1839.05
08/12/91	9.66	1838.76
08/28/91	9.80	1838.62
09/23/91	9.94	1838.48
11/06/91	9.82	1838.60
12/05/91	9.62	1838.80
02/05/92	9.75	1838.67
04/22/92	8.88	1839.54
05/26/92	8.79	1839.63
06/25/92	8.87	1839.55
07/22/92	9.12	1839.30
08/27/92	9.67	1838.75
09/22/92	9.84	1838.58
10/21/92	9.92	1838.50
11/16/92	9.75	1838.67
12/14/92	9.71	1838.71
04/05/93	9.18	1839.24
05/05/93	8.73	1839.69
06/01/93	8.53	1839.89
06/30/93	8.48	1839.94
08/04/93	6.67	1841.75
09/01/93	7.65	1840.77
10/11/93	8.12	1840.30
11/04/93	8.19	1840.23
12/08/93	8.02	1840.40
02/15/94	8.08	1840.34
04/14/94	7.11	1841.31
05/20/94	7.32	1841.10
06/29/94	7.25	1841.17
08/03/94	7.82	1840.60

148-081-20BAA

MP Elev (msl,ft)=1844.73

Lake Nettie Aquifer

SI (ft.)=148-151

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/67	3.35	1841.38
09/14/67	3.59	1841.14
10/13/67	3.56	1841.17
11/17/67	3.63	1841.10
04/11/68	3.98	1840.75
05/16/68	3.27	1841.46
06/13/68	3.31	1841.42
07/15/68	3.43	1841.30
04/17/69	3.32	1841.41
07/11/69	2.50	1842.23
08/27/69	3.00	1841.73
10/02/69	3.05	1841.68
12/19/69	3.48	1841.25
03/24/70	3.44	1841.29
05/05/70	3.12	1841.61
06/05/70	2.90	1841.83
07/01/70	3.17	1841.56
09/09/70	3.34	1841.39
06/29/77	1.20	1843.53
07/11/77	1.43	1843.30
07/26/77	1.46	1843.27
08/08/77	1.42	1843.31
08/23/77	1.74	1842.99
09/12/77	1.74	1842.99
09/29/77	2.35	1842.38
10/11/77	1.44	1843.29
10/26/77	1.40	1843.33
11/15/77	1.42	1843.31
03/30/78	1.96	1842.77
04/10/78	1.79	1842.94
04/27/78	1.40	1843.33
05/10/78	1.43	1843.30
05/23/78	1.30	1843.43
06/05/78	1.30	1843.43
06/27/78	1.05	1843.68
07/12/78	0.95	1843.78
07/25/78	1.00	1843.73
08/07/78	1.05	1843.68
08/24/78	1.01	1843.72
09/13/78	0.99	1843.74
09/25/78	0.93	1843.80
10/13/78	1.14	1843.59
10/25/78	0.10	1844.63
11/06/78	0.23	1844.50
11/28/78	0.53	1844.20
12/27/78	0.53	1844.20
05/22/79	2.10	1842.63
06/28/79	2.39	1842.34
07/31/79	3.69	1841.04
08/06/79	3.75	1840.98
08/22/79	3.45	1841.28
09/04/79	3.45	1841.28
09/25/79	3.05	1841.68
10/01/79	2.95	1841.78
10/30/79	2.55	1842.18
04/01/80	3.32	1841.41
05/07/80	3.28	1841.45
06/02/80	3.29	1841.44
07/02/80	3.45	1841.28
08/13/80	3.37	1841.36
09/10/80	3.07	1841.66
10/07/80	2.56	1842.17
11/05/80	2.56	1842.18
02/23/81	3.26	1841.37
04/07/81	3.23	1841.50
05/06/81	3.54	1841.19
06/03/81	3.42	1841.31
06/29/81	3.73	1841.00
07/27/81	3.78	1840.95
08/25/81	3.64	1841.09
09/21/81	3.77	1840.96
09/09/82	3.74	1840.99
10/12/82	3.66	1841.07
12/09/82	3.60	1841.13
07/02/85	3.36	1841.37
09/10/85	3.60	1841.13
10/02/85	3.55	1841.18
06/05/86	3.26	1841.47
07/02/86	3.36	1841.37
09/10/86	3.55	1841.18
10/07/86	3.54	1841.19
12/03/86	3.48	1841.25
04/15/87	2.39	1842.34
05/19/87	2.68	1842.05
07/03/87	2.70	1842.03
08/07/87	2.98	1841.75
09/04/87	3.09	1841.64
06/21/88	3.29	1841.44
07/21/88	2.93	1841.80
08/23/88	2.91	1841.82
09/26/88	2.84	1841.89
10/31/88	2.67	1842.06
05/03/89	3.10	1841.63
08/29/89	2.96	1841.77
05/10/90	3.77	1840.96
07/02/90	3.29	1841.44
08/03/90	3.29	1841.44
08/28/90	3.53	1841.20
12/12/90	3.24	1841.49
05/05/93	2.93	1841.80

148-081-21ADD

MP Elev (msl,ft)=1851.08

Lake Nettie Aquifer

SI (ft.)=16.7-19

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/06/87	10.45	1840.63
07/10/87	10.28	1840.80
07/17/87	10.09	1840.99
07/24/87	9.56	1841.52
07/31/87	9.70	1841.38
08/07/87	9.95	1841.13
08/14/87	10.00	1841.08
08/21/87	9.81	1841.27
08/28/87	9.63	1841.45
09/04/87	9.94	1841.14
09/11/87	9.90	1841.18
09/18/87	9.94	1841.14
09/25/87	10.11	1840.97
10/02/87	10.23	1840.85
12/07/87	10.18	1840.90
04/14/88	9.67	1841.41
05/20/88	9.84	1841.24
06/20/88	10.80	1840.28
07/21/88	11.77	1839.31
08/23/88	12.94	1838.14
09/26/88	12.93	1838.15
10/31/88	12.56	1838.52
05/03/89	10.48	1840.60
08/29/89	13.10	1837.98
12/14/89	13.06	1838.02
05/09/90	11.85	1839.23
07/01/90	12.26	1838.82
07/02/90	12.26	1838.82
08/28/90	13.34	1837.74
12/12/90	12.98	1838.10
04/02/91	12.93	1838.15

148-081-21BCC

Lake Nettie Aquifer

MP Elev (msl,ft)=1844.43

SI (ft.)=0.4-3.4

Date	Depth to Water (ft)	WL Elev (msl, ft)
06/12/87	2.71	1841.72
06/15/87	2.76	1841.67
06/16/87	2.81	1841.62
06/26/87	2.90	1841.53
06/29/87	2.92	1841.51
06/30/87	2.94	1841.49
07/01/87	3.02	1841.41
07/03/87	3.11	1841.32
07/06/87	3.16	1841.27
07/08/87	3.28	1841.15
07/10/87	3.25	1841.18
07/13/87	3.34	1841.09
07/15/87	3.37	1841.06
07/17/87	3.48	1840.95
07/20/87	3.42	1841.01
07/23/87	3.34	1841.09
07/24/87	3.36	1841.07
07/27/87	3.49	1840.94
07/30/87	3.42	1841.01
07/31/87	3.53	1840.90
08/03/87	3.53	1840.90
08/05/87	3.70	1840.73
08/07/87	3.79	1840.64
08/10/87	3.89	1840.54
08/12/87	4.00	1840.43
08/14/87	3.99	1840.44
08/18/87	3.98	1840.45
08/19/87	4.03	1840.40
08/21/87	4.11	1840.32
08/24/87	4.19	1840.24
08/26/87	3.99	1840.44
08/27/87	4.02	1840.41
08/28/87	4.15	1840.28
08/31/87	4.22	1840.21
09/02/87	4.25	1840.18
09/04/87	4.30	1840.13
09/07/87	4.37	1840.06
09/09/87	4.40	1840.03
09/11/87	4.38	1840.05
09/14/87	4.48	1839.95
09/16/87	4.48	1839.95
09/18/87	4.49	1839.94
09/21/87	4.57	1839.86
09/23/87	4.58	1839.85
09/25/87	4.58	1839.85
09/29/87	4.60	1839.83
10/02/87	4.63	1839.80
10/05/87	4.64	1839.79
10/08/87	4.65	1839.78
10/12/87	4.66	1839.77
11/03/87	4.66	1839.77
12/08/87	4.60	1839.83
04/14/88	4.24	1840.19
05/23/88	4.48	1839.95
06/20/88	4.92	1839.51
07/21/88	5.32	1839.11
08/23/88	6.00	1838.43
05/03/89	5.38	1839.05
04/14/94	4.47	1839.96

148-081-21CAB

Lake Nettie Aquifer

MP Elev (msl,ft)=1847.18

SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	6.45	1840.73
07/31/86	6.29	1840.89
08/08/86	6.48	1840.70
09/10/86	6.70	1840.48
09/30/86	6.25	1840.93
10/10/86	6.24	1840.94
10/21/86	6.25	1840.93
04/15/87	5.18	1842.00
05/19/87	5.61	1841.57
06/15/87	5.65	1841.53
06/16/87	5.70	1841.48
06/18/87	5.75	1841.43
06/24/87	5.70	1841.48
06/26/87	5.77	1841.41
06/29/87	5.77	1841.41
07/06/87	5.94	1841.24
07/13/87	5.89	1841.29
07/20/87	5.91	1841.27
07/23/87	5.79	1841.39
07/24/87	5.85	1841.33
07/27/87	5.90	1841.28
07/30/87	5.94	1841.24
08/03/87	6.05	1841.13
08/10/87	6.23	1840.95
08/18/87	6.24	1840.94
08/24/87	6.41	1840.77
08/31/87	6.45	1840.73
09/01/87	6.50	1840.68
09/02/87	6.48	1840.70
09/04/87	6.53	1840.65
09/07/87	6.59	1840.59
09/09/87	6.63	1840.55
09/11/87	6.65	1840.53
09/14/87	6.71	1840.47
09/16/87	6.74	1840.44
09/18/87	6.77	1840.41
09/21/87	6.84	1840.34
09/23/87	6.87	1840.31
09/29/87	6.93	1840.25
10/05/87	6.97	1840.21
10/08/87	6.97	1840.21
10/12/87	6.95	1840.23
11/03/87	6.86	1840.32
12/08/87	6.80	1840.38
04/14/88	6.43	1840.75
05/23/88	6.48	1840.70
06/20/88	6.09	1841.09
07/21/88	7.70	1839.48
08/23/88	8.53	1838.65
09/26/88	8.70	1838.48
10/31/88	8.60	1838.58
11/29/88	8.51	1838.67
01/06/89	8.53	1838.65
05/03/89	7.14	1840.04
08/29/89	8.99	1838.19
12/14/89	9.20	1837.98
05/10/90	8.57	1838.61
07/02/90	8.00	1839.18
07/03/90	8.00	1839.18
08/28/90	9.45	1837.73
12/12/90	9.32	1837.86
04/02/91	9.15	1838.03
04/22/92	7.90	1839.28
05/05/93	7.83	1839.35

148-081-21CDA

Lake Nettie Aquifer

MP Elev (msl,ft)=1861.94

SI (ft.)=23.5-28.5

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	21.20	1840.74
07/31/86	21.08	1840.86
08/08/86	21.26	1840.68
09/10/86	21.49	1840.45
10/10/86	21.07	1840.87
10/21/86	21.09	1840.85
04/15/87	19.96	1841.98
05/19/87	20.42	1841.52
06/15/87	20.45	1841.49
06/16/87	20.48	1841.46
06/18/87	20.54	1841.40
06/23/87	20.51	1841.43
06/26/87	20.57	1841.37
06/29/87	20.62	1841.32
07/06/87	20.70	1841.24
07/13/87	20.64	1841.30
07/20/87	20.67	1841.27
07/24/87	20.61	1841.33
07/27/87	20.67	1841.27
07/30/87	20.72	1841.22
08/03/87	20.81	1841.13
08/10/87	20.99	1840.95
08/12/87	21.06	1840.88
08/18/87	21.05	1840.89
08/24/87	21.19	1840.75
08/31/87	21.25	1840.69
09/01/87	21.27	1840.67
09/02/87	21.26	1840.68
09/04/87	21.33	1840.61
09/07/87	21.38	1840.56
09/09/87	21.43	1840.51
09/11/87	21.47	1840.47
09/14/87	21.53	1840.41
09/16/87	21.57	1840.37
09/18/87	21.61	1840.33
09/21/87	21.69	1840.25
09/23/87	21.73	1840.21
09/28/87	21.81	1840.13
09/29/87	21.77	1840.17
10/05/87	21.79	1840.15
10/07/87	21.83	1840.11
10/12/87	21.84	1840.10
11/03/87	21.77	1840.17
12/08/87	21.70	1840.24
04/14/88	21.29	1840.65
05/23/88	21.36	1840.58
06/20/88	21.86	1840.08
07/21/88	22.46	1839.48
08/23/88	23.29	1838.65
09/26/88	23.52	1838.42
10/31/88	23.47	1838.47
11/29/88	23.37	1838.57
01/06/89	23.37	1838.57
05/03/89	22.22	1839.72
08/29/89	23.88	1838.06
12/14/89	24.24	1837.70
05/10/90	23.67	1838.27
05/17/90	23.59	1838.35
07/02/90	23.14	1838.80
07/03/90	23.14	1838.80
08/28/90	24.37	1837.57
12/12/90	24.39	1837.55
04/02/91	24.18	1837.76
04/22/92	23.09	1838.85
05/05/93	23.06	1838.88
04/14/94	21.49	1840.45

148-081-21DCC1

MP Elev (msl,ft)=1852.59

Lake Nettie Aquifer

SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	11.79	1840.80
07/31/86	11.86	1840.73
08/08/86	12.04	1840.55
09/10/86	12.23	1840.36
10/10/86	11.85	1840.74
10/21/86	11.82	1840.77
04/15/87	10.72	1841.87
05/19/87	11.23	1841.36
06/15/87	11.29	1841.30
06/16/87	11.31	1841.28
06/18/87	11.38	1841.21
06/24/87	11.37	1841.22
06/26/87	11.41	1841.18
06/29/87	11.45	1841.14
07/06/87	11.49	1841.10
07/13/87	11.36	1841.23
07/20/87	11.39	1841.20
07/23/87	11.29	1841.30
07/27/87	11.37	1841.22
07/30/87	11.42	1841.17
08/03/87	11.51	1841.08
08/10/87	11.70	1840.89
08/14/87	11.74	1840.85
08/18/87	11.72	1840.87
08/24/87	11.84	1840.75
08/28/87	11.77	1840.82
08/31/87	11.88	1840.71
09/01/87	11.92	1840.67
09/02/87	11.93	1840.66
09/04/87	11.97	1840.62
09/07/87	12.02	1840.57
09/09/87	12.04	1840.55
09/11/87	12.07	1840.52
09/14/87	12.11	1840.48
09/16/87	12.18	1840.41
09/18/87	12.22	1840.37
09/21/87	12.30	1840.29
09/23/87	12.35	1840.24
09/29/87	12.44	1840.15
10/05/87	12.49	1840.10
10/08/87	12.53	1840.06
10/12/87	12.52	1840.07
11/03/87	12.48	1840.11
12/08/87	12.40	1840.19
04/14/88	11.99	1840.60
05/23/88	12.02	1840.57
06/20/88	12.60	1839.99
07/21/88	13.22	1839.37
08/23/88	14.06	1838.53
09/26/88	14.29	1838.30
10/31/88	14.20	1838.39
11/29/88	14.09	1838.50
01/06/89	14.12	1838.47
05/03/89	12.90	1839.69
08/29/89	14.65	1837.94
12/14/89	14.83	1837.76
05/10/90	14.29	1838.30
07/02/90	13.78	1838.81
07/03/90	13.78	1838.81
08/28/90	15.05	1837.54
12/12/90	15.01	1837.58
04/02/91	14.85	1837.74
04/22/92	13.73	1838.86
05/05/93	13.69	1838.90

148-081-21DCC2

MP Elev (msl,ft)=1846.91

Lake Nettie Aquifer

SI (ft.)=30-35

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	6.52	1840.39
07/31/86	6.39	1840.52
08/08/86	6.59	1840.32
09/10/86	6.76	1840.15
10/10/86	6.30	1840.61
10/21/86	6.32	1840.59
04/15/87	5.29	1841.62
05/19/87	5.84	1841.07
06/15/87	5.94	1840.97
06/16/87	5.99	1840.92
06/18/87	6.07	1840.84
06/23/87	5.94	1840.97
06/24/87	5.98	1840.93
06/26/87	6.05	1840.86
06/29/87	6.08	1840.83
07/06/87	6.02	1840.89
07/13/87	5.80	1841.11
07/20/87	5.78	1841.13
07/23/87	5.71	1841.20
07/27/87	5.78	1841.13
07/30/87	5.79	1841.12
08/03/87	5.90	1841.01
08/10/87	6.10	1840.81
08/12/87	6.11	1840.80
08/18/87	6.01	1840.90
08/24/87	6.13	1840.78
08/31/87	6.19	1840.72
09/01/87	6.24	1840.67
09/02/87	6.22	1840.69
09/04/87	6.25	1840.66
09/07/87	6.28	1840.63
09/09/87	6.32	1840.59
09/11/87	6.32	1840.59
09/14/87	6.37	1840.54
09/16/87	6.41	1840.50
09/18/87	6.42	1840.49
09/21/87	6.54	1840.37
09/23/87	6.62	1840.29
09/29/87	6.76	1840.15
10/05/87	6.83	1840.08
10/08/87	6.87	1840.04
10/12/87	6.87	1840.04
11/03/87	6.83	1840.08
12/08/87	6.78	1840.13
04/14/88	6.35	1840.56
05/23/88	6.39	1840.52
06/20/88	6.97	1839.94
07/21/88	7.71	1839.20
08/23/88	8.65	1838.26
09/26/88	8.84	1838.07
10/31/88	8.69	1838.22
11/29/88	8.59	1838.32
01/06/89	8.65	1838.26
05/03/89	7.22	1839.69
08/29/89	9.14	1837.77
12/14/89	9.30	1837.61
05/10/90	8.68	1838.23
05/17/90	8.56	1838.35
07/02/90	8.05	1838.86
07/03/90	8.05	1838.86
08/28/90	9.53	1837.38
12/12/90	9.47	1837.44
04/02/91	9.28	1837.63
04/22/92	7.97	1838.94
05/05/93	7.91	1839.00
04/14/94	6.39	1840.52

148-081-21DCD

MP Elev (msl,ft)=1846.06

Lake Nettie Aquifer

SI (ft.)=23-28

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	6.03	1840.03
07/31/86	5.87	1840.19
08/08/86	6.22	1839.84
09/10/86	6.28	1839.78
10/10/86	5.67	1840.39
10/21/86	5.71	1840.35
04/15/87	4.92	1841.14
05/19/87	5.55	1840.51
06/15/87	5.73	1840.33
06/16/87	5.85	1840.21
06/23/87	5.54	1840.52
06/24/87	5.64	1840.42
06/26/87	5.77	1840.29
06/29/87	5.81	1840.25
07/06/87	5.54	1840.52
07/13/87	5.15	1840.91
07/20/87	5.04	1841.02
07/27/87	5.08	1840.98
07/30/87	5.04	1841.02
08/03/87	5.19	1840.87
08/10/87	5.40	1840.66
08/18/87	5.08	1840.98
08/21/87	5.21	1840.85
08/24/87	5.23	1840.83
08/31/87	5.31	1840.75
09/01/87	5.39	1840.67
09/02/87	5.32	1840.74
09/04/87	5.30	1840.76
09/07/87	5.27	1840.79
09/09/87	5.32	1840.74
09/11/87	5.26	1840.80
09/14/87	5.33	1840.73
09/16/87	5.36	1840.70
09/18/87	5.32	1840.74
09/21/87	5.53	1840.53
09/23/87	5.66	1840.40
09/29/87	5.85	1840.21
10/05/87	6.01	1840.05
10/08/87	6.09	1839.97
10/12/87	6.12	1839.94
11/03/87	6.05	1840.01
12/08/87	6.10	1839.96
04/14/88	5.55	1840.51
05/23/88	5.66	1840.40
06/20/88	6.71	1839.35
07/21/88	7.37	1838.69
08/23/88	8.43	1837.63
09/26/88	8.42	1837.64
10/31/88	8.12	1837.94
11/29/88	7.97	1838.09
01/06/89	8.12	1837.94
05/03/89	6.28	1839.78
08/29/89	8.71	1837.35
12/14/89	8.75	1837.31
05/10/90	7.74	1838.32
07/02/90	6.98	1839.08
07/03/90	6.98	1839.08
08/28/90	9.01	1837.05
12/12/90	8.82	1837.24
04/02/91	8.60	1837.46
04/22/92	6.90	1839.16
05/05/93	6.92	1839.14
04/14/94	5.53	1840.53

148-081-22AAB

Lake Nettie Aquifer

MP Elev (msl,ft)=1850.26

SI (ft.)=85-87

Date	Depth to Water (ft)	WL Elev (msl, ft)
05/11/64	8.23	1842.03
10/08/64	8.50	1841.76
05/24/65	7.88	1842.38
09/15/65	8.22	1842.04
10/05/65	7.85	1842.41
11/04/65	7.96	1842.30
12/10/65	8.05	1842.21
01/04/66	9.21	1841.05
01/31/66	9.37	1840.89
03/14/66	9.41	1840.85
04/12/66	8.98	1841.28
05/12/66	8.54	1841.72
06/09/66	8.23	1842.03
07/14/66	7.56	1842.70
08/18/66	8.03	1842.23
09/29/66	8.37	1841.89
12/14/66	8.58	1841.68
03/02/67	8.88	1841.38
04/04/67	8.33	1841.93
05/04/67	7.20	1843.06
05/31/67	6.97	1843.29
07/10/67	8.38	1841.88
08/08/67	7.92	1842.34
09/14/67	8.29	1841.97
10/13/67	8.28	1841.98
11/17/67	8.10	1842.16
12/15/67	8.27	1841.99
01/12/68	8.39	1841.87
02/15/68	8.43	1841.83
03/13/68	8.12	1842.14
04/11/68	7.66	1842.60
05/16/68	7.39	1842.87
06/13/68	7.40	1842.86
07/15/68	7.82	1842.44
01/15/69	8.40	1841.86
04/17/69	7.66	1842.60
07/11/69	6.90	1843.36
08/27/69	7.44	1842.82
10/02/69	7.81	1842.45
12/19/69	8.03	1842.23
03/20/70	7.94	1842.32
05/05/70	6.91	1843.35
06/05/70	6.53	1843.73
07/01/70	6.44	1843.82
09/09/70	7.70	1842.56
12/02/70	7.65	1842.61
06/03/77	6.79	1843.47
06/29/77	7.32	1842.94
07/06/77	7.50	1842.76
07/11/77	7.50	1842.76
07/26/77	7.77	1842.49
08/08/77	7.81	1842.45
08/23/77	7.98	1842.28
09/12/77	7.81	1842.45
09/29/77	7.34	1842.92
10/11/77	7.12	1843.14
10/26/77	7.04	1843.22
11/15/77	7.05	1843.21
12/02/77	7.28	1842.98
12/12/77	7.19	1843.07
12/27/77	7.08	1843.18
01/09/78	7.25	1843.01
01/31/78	7.32	1842.94
02/13/78	7.23	1843.03
02/23/78	7.43	1842.83
03/06/78	7.52	1842.74
03/30/78	6.74	1843.52
04/10/78	6.20	1844.06
04/27/78	6.10	1844.16
05/10/78	5.98	1844.28
05/23/78	6.06	1844.20
06/05/78	5.97	1844.29
06/27/78	6.29	1843.97
07/12/78	6.02	1844.24
07/25/78	6.39	1843.87
08/07/78	6.82	1843.44
08/24/78	6.93	1843.33
09/13/78	6.74	1843.52
09/25/78	6.69	1843.57
10/13/78	6.75	1843.51
10/25/78	6.68	1843.58
11/06/78	6.70	1843.56
11/28/78	6.54	1843.72
12/11/78	6.64	1843.62
12/27/78	6.65	1843.61
01/08/79	6.69	1843.57
01/24/79	6.29	1843.97
02/20/79	6.82	1843.44
03/05/79	6.48	1843.78
03/06/79	6.72	1843.54
03/30/79	6.79	1843.47
04/23/79	6.06	1844.20
05/07/79	5.41	1844.85
05/22/79	5.41	1844.85
06/04/79	5.48	1844.78
06/27/79	5.92	1844.34
07/02/79	6.05	1844.21
07/31/79	6.14	1844.12
08/06/79	6.38	1843.88
08/22/79	6.40	1843.86
09/04/79	6.32	1843.94
09/25/79	6.49	1843.77
10/01/79	6.46	1843.80
10/30/79	6.40	1843.86
12/03/79	6.39	1843.87
01/02/80	6.52	1843.74
01/28/80	6.60	1843.66
02/25/80	6.75	1843.51
04/01/80	6.59	1843.67
05/07/80	6.10	1844.16
06/02/80	6.78	1843.48
07/02/80	7.00	1843.26
08/13/80	7.21	1843.05
09/10/80	7.10	1843.16
10/07/80	6.96	1843.30
11/05/80	6.48	1843.78
12/03/80	6.37	1843.89
01/27/81	6.70	1843.56
02/23/81	6.59	1843.67
04/07/81	6.13	1844.13
05/06/81	6.09	1844.17
06/03/81	6.05	1844.21
06/29/81	6.24	1844.02
07/27/81	6.66	1843.60
08/25/81	6.95	1843.31
09/21/81	6.75	1843.51
04/19/82	5.81	1844.45
05/19/82	5.45	1844.81
06/14/82	5.33	1844.93
08/02/82	6.22	1844.04
09/09/82	5.72	1844.54
10/12/82	5.62	1844.64
11/16/82	5.39	1844.87
12/09/82	5.45	1844.81
01/13/83	5.55	1844.71
05/05/83	4.85	1845.41
07/27/83	5.50	1844.76
11/16/83	5.85	1844.41
02/08/84	6.05	1844.21
06/08/84	4.90	1845.36
12/12/84	5.87	1844.39
01/16/85	6.22	1844.04
01/23/85	6.22	1844.04
01/30/85	6.19	1844.07
02/06/85	6.31	1843.95
02/13/85	6.39	1843.87
02/20/85	6.36	1843.90
02/27/85	6.34	1843.92
03/06/85	6.20	1844.06
03/13/85	6.15	1844.11
03/20/85	6.09	1844.17
03/27/85	5.98	1844.28
04/03/85	5.83	1844.43
04/04/85	5.83	1844.43
04/10/85	5.74	1844.52
04/17/85	5.60	1844.66
04/24/85	5.43	1844.83
04/29/85	5.40	1844.86
05/01/85	5.40	1844.86
05/08/85	5.44	1844.82
06/07/85	5.55	1844.71
07/03/85	5.77	1844.49
08/16/85	6.52	1843.74
09/11/85	6.44	1843.82
10/01/85	6.30	1843.96
11/06/85	5.91	1844.35
12/06/85	5.99	1844.27
05/01/86	5.87	1844.39
06/04/86	4.20	1846.06
07/02/86	5.99	1844.27
07/31/86	5.61	1844.65
08/08/86	5.69	1844.57
09/10/86	5.75	1844.51
10/07/86	5.46	1844.80
10/21/86	5.44	1844.82
12/02/86	5.34	1844.92
04/15/87	4.77	1845.49
05/19/87	5.04	1845.22
06/26/87	5.62	1844.64
07/03/87	5.78	1844.48
07/10/87	5.78	1844.48
07/17/87	5.64	1844.62
07/24/87	5.30	1844.96
07/31/87	5.19	1845.07
08/07/87	5.26	1845.00
08/14/87	5.29	1844.97
08/21/87	5.16	1845.10
08/28/87	5.07	1845.19
09/04/87	5.14	1845.12
09/11/87	5.20	1845.06
09/18/87	5.24	1845.02
09/25/87	5.29	1844.97
10/02/87	5.36	1844.90
11/03/87	5.39	1844.87
12/07/87	5.41	1844.85
04/14/88	5.55	1844.71
05/20/88	5.42	1844.84
06/20/88	6.30	1843.96
07/21/88	7.19	1843.07
08/23/88	7.62	1842.64
09/26/88	7.48	1842.78
10/31/88	7.46	1842.80
11/29/88	7.45	1842.81
01/06/89	7.51	1842.75
05/03/89	6.76	1843.50
08/29/89	8.17	1842.09
12/14/89	8.17	1842.09
05/09/90	8.00	1842.26
07/01/90	7.58	1842.68
07/02/90	7.58	1842.68
08/28/90	8.81	1841.45
12/12/90	8.53	1841.73
04/02/91	8.60	1841.66
04/22/92	7.52	1842.74
05/04/93	5.59	1844.67
04/14/94	4.38	1845.88

148-081-22AAD

Lake Nettie Aquifer

MP Elev (msl,ft)=1857.15

SI (ft.)=63-81

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	13.90	1843.25
09/11/85	13.82	1843.33
10/01/85	13.65	1843.50
11/06/85	13.30	1843.85
12/05/85	13.36	1843.79
03/13/86	13.05	1844.10
04/29/86	12.79	1844.36
06/03/86	12.72	1844.43
07/02/86	13.54	1843.61
07/31/86	13.06	1844.09
08/08/86	13.11	1844.04
09/10/86	13.12	1844.03
10/07/86	12.86	1844.29
10/21/86	12.85	1844.30
12/02/86	12.75	1844.40
04/15/87	12.15	1845.00
05/19/87	12.40	1844.75
06/26/87	13.10	1844.05
07/03/87	13.29	1843.86
07/10/87	13.28	1843.87
07/17/87	13.11	1844.04
07/24/87	12.77	1844.38
07/31/87	12.65	1844.50
08/07/87	12.70	1844.45
08/14/87	12.71	1844.44
08/21/87	12.59	1844.56
08/28/87	12.51	1844.64
09/04/87	12.58	1844.57
09/11/87	12.62	1844.53
09/18/87	12.66	1844.49
09/25/87	12.73	1844.42
10/02/87	12.79	1844.36
11/03/87	12.82	1844.33
12/07/87	12.83	1844.32
04/14/88	12.95	1844.20
05/20/88	12.85	1844.30
06/20/88	13.84	1843.31
07/21/88	14.81	1842.34
08/23/88	15.13	1842.02
09/26/88	14.87	1842.28
10/31/88	14.83	1842.32
11/29/88	14.75	1842.40
01/06/89	14.86	1842.29
05/03/89	14.14	1843.01
08/29/89	15.63	1841.52
12/14/89	15.52	1841.63
05/09/90	15.29	1841.86
07/01/90	15.03	1842.12
07/02/90	15.03	1842.12
08/28/90	16.33	1840.82
12/12/90	15.92	1841.23
04/01/91	15.98	1841.17
04/22/92	15.14	1842.01
05/04/93	15.21	1841.94
04/13/94	13.52	1843.63

148-081-22BAB

Lake Nettie Aquifer

MP Elev (msl,ft)=1848.16

SI (ft.)=91-94

Date	Depth to Water (ft)	WL Elev (msl, ft)
03/14/68	6.30	1841.86
04/11/68	5.90	1842.26
05/16/68	5.51	1842.65
06/13/68	5.45	1842.71
07/15/68	5.69	1842.47
01/15/69	6.23	1841.93
04/17/69	6.19	1841.97
07/11/69	4.99	1843.17
08/27/69	5.31	1842.85
10/02/69	5.68	1842.48
12/19/69	5.98	1842.18
01/21/70	6.04	1842.12
03/24/70	6.18	1841.98
05/05/70	5.40	1842.76
06/05/70	4.71	1843.45
07/01/70	4.83	1843.33
09/09/70	5.59	1842.57
12/02/70	5.71	1842.45
06/03/77	4.66	1843.50
06/29/77	4.81	1843.35
07/06/77	4.96	1843.20
07/11/77	4.97	1843.19
07/26/77	5.26	1842.90
08/08/77	5.29	1842.87
08/23/77	5.54	1842.62
09/12/77	5.54	1842.62
09/29/77	5.25	1842.91
10/11/77	5.06	1843.10
10/26/77	4.91	1843.25
11/15/77	4.83	1843.33
12/02/77	5.34	1842.82
12/12/77	4.96	1843.20
12/27/77	4.88	1843.28
01/09/78	4.97	1843.19
01/31/78	5.01	1843.15
02/13/78	4.90	1843.26
02/23/78	5.12	1843.04
03/06/78	5.21	1842.95
03/30/78	5.04	1843.12
04/10/78	4.63	1843.53
04/27/78	3.81	1844.35
05/10/78	3.97	1844.19
11/28/78	2.94	1845.22
12/11/78	3.03	1845.13
12/27/78	3.09	1845.07
07/02/79	3.35	1844.81
07/31/79	3.92	1844.24
08/06/79	3.95	1844.21
08/22/79	3.90	1844.26
09/04/79	3.85	1844.31
09/25/79	4.03	1844.13
10/01/79	4.05	1844.11
10/30/79	4.09	1844.07
12/03/79	3.99	1844.17
05/07/80	3.90	1844.26
06/02/80	4.14	1844.02
06/03/80	3.68	1844.48
07/02/80	4.40	1843.76
07/27/80	4.28	1843.88
08/13/80	4.97	1843.19
08/25/80	4.51	1843.65
09/10/80	4.70	1843.46
09/21/80	4.33	1843.83
10/07/80	4.53	1843.63
11/05/80	4.14	1844.02
12/03/80	4.11	1844.05
04/07/81	3.92	1844.24
05/06/81	3.78	1844.38
04/19/82	3.90	1844.26
05/19/82	3.20	1844.96
06/14/82	3.02	1845.14
08/02/82	3.43	1844.73
09/09/82	3.63	1844.53
10/12/82	3.41	1844.75
11/16/82	3.00	1845.16
05/05/83	2.56	1845.60
07/27/83	2.87	1845.29
11/16/83	3.46	1844.70
06/08/84	2.76	1845.40
12/12/84	3.50	1844.66
04/29/85	3.28	1844.88
06/07/85	3.16	1845.00
07/03/85	3.33	1844.83
08/16/85	4.01	1844.15
09/11/85	3.98	1844.18
10/02/85	3.93	1844.23
11/06/85	3.60	1844.56
12/06/85	3.55	1844.61
06/04/86	2.87	1845.29
07/02/86	3.34	1844.82
07/31/86	3.22	1844.94
08/08/86	3.31	1844.85
09/10/86	3.37	1844.79
10/07/86	3.15	1845.01
10/21/86	3.12	1845.04
12/02/86	2.97	1845.19
04/15/87	2.50	1845.66
05/19/87	2.60	1845.56
06/26/87	2.86	1845.30
07/03/87	2.99	1845.17
07/10/87	3.10	1845.06
07/17/87	3.10	1845.06
07/24/87	2.91	1845.25
07/31/87	2.83	1845.33
08/07/87	2.88	1845.28
08/14/87	2.85	1845.31
08/21/87	2.81	1845.35
08/28/87	2.72	1845.44
09/04/87	2.78	1845.38
09/11/87	2.82	1845.34
09/18/87	2.85	1845.31
09/25/87	2.89	1845.27
10/02/87	2.96	1845.20
11/03/87	3.01	1845.15
12/07/87	3.06	1845.10
04/14/88	3.16	1845.00
05/20/88	3.06	1845.10
06/20/88	3.61	1844.55
07/21/88	4.25	1843.91
08/23/88	4.98	1843.18
09/26/88	5.10	1843.06
01/06/89	5.15	1843.01
05/03/89	4.71	1843.45
08/29/89	5.70	1842.46
12/14/89	5.83	1842.33
05/09/90	5.94	1842.22
07/01/90	5.14	1843.02
07/02/90	5.14	1843.02
08/28/90	6.16	1842.00
12/12/90	6.16	1842.00
04/02/91	6.40	1841.76
04/22/92	5.59	1842.57
05/04/93	5.66	1842.50
04/14/94	3.77	1844.39

148-081-22DDD1

Lake Nettie Aquifer

MP Elev (msl,ft)=1861.06

SI (ft.)=188-193

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	16.72	1844.34
09/11/85	16.75	1844.31
10/01/85	16.73	1844.33
11/06/85	16.59	1844.47
03/13/86	16.55	1844.51
04/29/86	16.07	1844.99
06/03/86	16.15	1844.91
07/02/86	16.37	1844.69
07/31/86	16.11	1844.95
08/08/86	16.23	1844.83
09/10/86	16.23	1844.83
10/07/86	16.16	1844.90
10/21/86	16.13	1844.93
12/02/86	16.03	1845.03
04/15/87	15.65	1845.41
05/19/87	15.61	1845.45
06/26/87	15.77	1845.29
07/03/87	15.85	1845.21
07/10/87	15.90	1845.16
07/17/87	15.89	1845.17
07/24/87	15.74	1845.32
07/31/87	15.69	1845.37
08/07/87	15.78	1845.28
08/14/87	15.78	1845.28
08/21/87	15.78	1845.28
08/28/87	15.75	1845.31
09/04/87	15.81	1845.25
09/11/87	15.85	1845.21
09/18/87	15.83	1845.23
09/25/87	15.99	1845.07
10/02/87	16.07	1844.99
11/03/87	16.16	1844.90
12/07/87	16.30	1844.76
04/14/88	16.54	1844.52
05/20/88	16.37	1844.69
06/20/88	16.79	1844.27
07/21/88	17.25	1843.81
08/23/88	17.68	1843.38
09/26/88	17.85	1843.21
10/31/88	17.98	1843.08
11/29/88	18.00	1843.06
05/03/89	17.86	1843.20
06/05/89	17.85	1843.21
07/06/89	18.19	1842.87
08/01/89	18.45	1842.61
08/29/89	18.62	1842.44
10/06/89	18.75	1842.31
11/03/89	18.68	1842.38
12/14/89	18.84	1842.22
04/02/90	19.01	1842.05
05/09/90	18.80	1842.26
06/07/90	18.71	1842.35
06/21/90	18.63	1842.43
07/01/90	18.64	1842.42
07/02/90	18.64	1842.42
08/02/90	18.74	1842.32
08/28/90	19.25	1841.81
10/22/90	19.25	1841.81
11/23/90	19.27	1841.79
12/12/90	19.26	1841.80
04/01/91	19.48	1841.58
05/01/91	19.14	1841.92
05/22/91	19.09	1841.97
06/24/91	19.20	1841.86
07/23/91	19.74	1841.32
08/12/91	20.18	1840.88
08/28/91	20.32	1840.74
09/23/91	20.11	1840.95
12/05/91	19.33	1841.73
02/05/92	19.33	1841.73
04/22/92	18.90	1842.16
05/26/92	18.89	1842.17
06/25/92	19.35	1841.71
07/22/92	19.34	1841.72
08/27/92	20.34	1840.72
09/22/92	20.18	1840.88
10/21/92	19.89	1841.17
11/16/92	19.71	1841.35
12/14/92	19.57	1841.49
04/05/93	19.52	1841.54
05/04/93	19.23	1841.83
06/01/93	18.97	1842.09
06/30/93	18.81	1842.25
08/04/93	18.08	1842.98
09/01/93	18.56	1842.50
10/11/93	18.26	1842.80
11/04/93	18.13	1842.93
04/13/94	17.32	1843.74
05/20/94	17.06	1844.00
06/29/94	17.03	1844.03
08/03/94	17.75	1843.31

148-081-22DDD2

Lake Nettie Aquifer

MP Elev (msl,ft)=1860.28

SI (ft.)=88-93

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	18.46	1841.82
09/11/85	18.31	1841.97
10/01/85	18.15	1842.13
11/06/85	17.82	1842.46
03/13/86	17.50	1842.78
04/29/86	16.88	1843.40
06/03/86	17.28	1843.00
07/02/86	18.38	1841.90
07/31/86	17.63	1842.65
08/08/86	17.63	1842.65
09/10/86	17.62	1842.66
10/07/86	17.40	1842.88
10/21/86	17.37	1842.91
12/02/86	17.29	1842.99
04/15/87	16.67	1843.61
05/19/87	16.87	1843.41
06/26/87	17.89	1842.39
07/03/87	18.16	1842.12
07/10/87	18.08	1842.20
07/17/87	17.83	1842.45
07/24/87	17.46	1842.82
07/31/87	17.28	1843.00
08/07/87	17.28	1843.00
08/14/87	17.25	1843.03
08/21/87	17.16	1843.12
08/28/87	17.08	1843.20
09/04/87	17.14	1843.14
09/11/87	17.19	1843.09
09/18/87	17.24	1843.04
09/25/87	17.30	1842.98
10/02/87	17.36	1842.92
11/03/87	17.41	1842.87
12/07/87	17.47	1842.81
04/14/88	17.47	1842.81
05/20/88	17.39	1842.89
06/20/88	18.69	1841.59
07/21/88	19.95	1840.33
08/23/88	19.85	1840.43
09/26/88	19.33	1840.95
10/31/88	19.27	1841.01
11/29/88	19.17	1841.11
05/03/89	18.62	1841.66
06/05/89	18.74	1841.54
07/06/89	19.79	1840.49
08/01/89	20.34	1839.94
08/29/89	20.21	1840.07
10/06/89	20.04	1840.24
11/03/89	19.84	1840.44
12/14/89	19.94	1840.34
04/02/90	19.94	1840.34
05/09/90	19.67	1840.61
06/07/90	19.44	1840.84
06/21/90	19.40	1840.88
07/01/90	19.67	1840.61
07/02/90	19.67	1840.61
08/02/90	20.60	1839.68
08/28/90	21.09	1839.19
09/28/90	20.81	1839.47
10/22/90	20.33	1839.95
11/23/90	20.18	1840.10
12/12/90	20.28	1840.00
04/01/91	20.25	1840.03
05/01/91	19.88	1840.40
05/22/91	19.76	1840.52
06/24/91	20.11	1840.17
07/23/91	21.05	1839.23
08/12/91	21.16	1839.12
08/28/91	21.10	1839.18
09/23/91	20.70	1839.58
12/05/91	20.08	1840.20
02/05/92	20.22	1840.06
04/22/92	19.55	1840.73
05/26/92	19.65	1840.63
06/25/92	20.47	1839.81
07/22/92	20.36	1839.92
08/27/92	21.17	1839.11
09/22/92	20.84	1839.44
10/21/92	20.60	1839.68
11/16/92	20.38	1839.90
12/14/92	20.32	1839.96
04/05/93	20.04	1840.24
05/04/93	19.69	1840.59
06/01/93	19.63	1840.65
06/30/93	19.35	1840.93
08/04/93	18.45	1841.83
09/01/93	18.98	1841.30
10/11/93	18.93	1841.35
11/04/93	18.86	1841.42
04/13/94	18.03	1842.25
05/20/94	18.17	1842.11
06/29/94	18.17	1842.11

148-081-22DDD3

Lake Nettie Aquifer

MP Elev (msl,ft)=1860.95

SI (ft.)=28-33

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	15.13	1845.82
09/11/85	15.17	1845.78
10/01/85	15.22	1845.73
11/06/85	15.28	1845.67
03/13/86	14.92	1846.03
04/29/86	14.91	1846.04
06/03/86	14.63	1846.32
07/02/86	14.67	1846.28
07/31/86	14.57	1846.38
08/08/86	14.57	1846.38
09/10/86	14.57	1846.38
10/07/86	14.62	1846.33
10/21/86	14.63	1846.32
12/02/86	14.77	1846.18
04/15/87	14.12	1846.83
05/19/87	14.18	1846.77
06/26/87	14.23	1846.72
07/03/87	14.23	1846.72
07/10/87	14.26	1846.69
07/17/87	14.30	1846.65
07/24/87	14.28	1846.67
07/31/87	14.18	1846.77
08/07/87	14.16	1846.79
08/14/87	14.12	1846.83
08/21/87	14.15	1846.80
08/28/87	14.15	1846.80
09/04/87	14.14	1846.81
09/11/87	14.16	1846.79
09/18/87	14.17	1846.78
09/25/87	14.19	1846.76
10/02/87	14.26	1846.69
11/03/87	14.33	1846.62
12/07/87	14.48	1846.47
04/14/88	15.01	1845.94
05/20/88	14.99	1845.96
06/20/88	14.99	1845.96
07/21/88	15.14	1845.81
08/23/88	15.32	1845.63
09/26/88	15.54	1845.41
10/31/88	15.75	1845.20
11/29/88	15.88	1845.07
05/03/89	16.08	1844.87
06/05/89	16.13	1844.82
07/06/89	16.21	1844.74
08/01/89	16.28	1844.67
08/29/89	16.38	1844.57
10/06/89	16.51	1844.44
11/03/89	16.57	1844.38
12/14/89	16.75	1844.20
04/02/90	17.04	1843.91
05/09/90	17.12	1843.83
06/07/90	17.12	1843.83
06/21/90	17.07	1843.88
07/01/90	17.07	1843.88
07/02/90	17.07	1843.88
08/02/90	17.07	1843.88
08/28/90	17.09	1843.86
09/28/90	17.14	1843.81
10/22/90	17.16	1843.79
11/23/90	17.25	1843.70
12/12/90	17.27	1843.68
04/01/91	17.41	1843.54
05/01/91	17.47	1843.48
05/22/91	17.44	1843.51
06/24/91	17.42	1843.53
07/23/91	17.42	1843.53
08/12/91	17.45	1843.50
08/28/91	17.45	1843.50
09/23/91	17.51	1843.44
12/05/91	17.56	1843.39
02/05/92	17.58	1843.37
04/22/92	17.27	1843.68
05/26/92	17.27	1843.68
06/25/92	17.27	1843.68
07/22/92	17.35	1843.60
08/27/92	17.38	1843.57
09/22/92	17.47	1843.48
10/21/92	17.56	1843.39
11/16/92	17.63	1843.32
12/14/92	17.61	1843.34
04/05/93	17.24	1843.71
05/04/93	17.27	1843.68
06/01/93	17.25	1843.70
06/30/93	17.20	1843.75
08/04/93	16.75	1844.20
09/01/93	16.40	1844.55
10/11/93	16.31	1844.64
11/04/93	16.32	1844.63
04/13/94	16.28	1844.67
05/20/94	16.10	1844.85
06/29/94	16.04	1844.91

148-081-26DBC

Lake Nettie Aquifer

MP Elev (msl,ft)=1862.45

SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	22.46	1839.99
09/15/67	22.50	1839.95
10/13/67	22.44	1840.01
12/15/67	22.26	1840.19
03/14/68	21.11	1841.34
04/12/68	21.82	1840.63
05/21/68	21.60	1840.85
07/15/68	21.90	1840.55
04/17/69	21.78	1840.67
10/02/69	21.64	1840.81
05/05/70	21.10	1841.35
07/01/70	21.07	1841.38
09/10/70	21.48	1840.97
12/12/84	19.35	1843.10
01/23/85	19.53	1842.92
01/30/85	19.54	1842.91
02/06/85	19.61	1842.84
02/13/85	19.66	1842.79
02/20/85	19.64	1842.81
02/27/85	19.64	1842.81
03/06/85	19.55	1842.90
03/13/85	19.50	1842.95
03/20/85	19.46	1842.99
03/27/85	19.36	1843.09
04/03/85	18.98	1843.47
04/10/85	19.15	1843.30
04/17/85	19.07	1843.38
04/24/85	18.97	1843.48
05/01/85	18.97	1843.48
05/08/85	18.98	1843.47
06/07/85	19.24	1843.21
07/03/85	19.51	1842.94
08/16/85	20.42	1842.03
09/11/85	20.21	1842.24
10/02/85	19.90	1842.55
11/06/85	19.54	1842.91
03/14/86	19.30	1843.15
04/30/86	18.68	1843.77
06/04/86	19.13	1843.32
07/02/86	18.62	1843.83
07/31/86	19.58	1842.87
08/07/86	19.50	1842.95
09/10/86	19.38	1843.07
10/07/86	19.19	1843.26
10/21/86	19.19	1843.26
04/14/87	18.54	1843.91
05/19/87	18.66	1843.79
06/26/87	20.07	1842.38
07/03/87	20.51	1841.94
07/10/87	20.30	1842.15
07/17/87	19.96	1842.49
07/24/87	19.51	1842.94
07/31/87	19.26	1843.19
08/07/87	19.20	1843.25
08/14/87	19.14	1843.31
08/21/87	19.01	1843.44
08/28/87	18.94	1843.51
09/04/87	18.97	1843.48
09/11/87	19.01	1843.44
09/18/87	19.05	1843.40
09/25/87	19.10	1843.35
10/02/87	19.15	1843.30
10/12/87	19.18	1843.27
11/03/87	19.20	1843.25
12/08/87	19.23	1843.22
04/14/88	19.26	1843.19
05/23/88	19.22	1843.23
06/21/88	21.07	1841.38
07/21/88	22.60	1839.85
08/23/88	21.86	1840.59
09/27/88	21.05	1841.40
11/01/88	20.95	1841.50
11/30/88	20.90	1841.55
05/03/89	20.43	1842.02
08/29/89	22.05	1840.40
12/14/89	21.64	1840.81
05/10/90	21.39	1841.06
07/02/90	21.62	1840.83
07/03/90	21.62	1840.83
08/28/90	23.22	1839.23
12/13/90	21.97	1840.48
04/02/91	21.98	1840.47
04/23/92	21.39	1841.06
05/05/93	21.54	1840.91
04/14/94	20.02	1842.43

148-081-28BDB1

Lake Nettie Aquifer

MP Elev (msl,ft)=1843.97

SI (ft.)=23-28

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	3.53	1840.44
07/31/86	3.53	1840.44
08/08/86	3.73	1840.24
09/10/86	3.84	1840.13
10/10/86	3.45	1840.52
10/21/86	3.48	1840.49
04/15/87	2.29	1841.68
05/19/87	2.86	1841.11
06/15/87	2.97	1841.00
06/16/87	3.07	1840.90
06/18/87	3.06	1840.91
06/23/87	2.68	1841.29
06/24/87	2.86	1841.11
06/26/87	2.98	1840.99
06/29/87	3.04	1840.93
07/06/87	3.28	1840.69
07/13/87	3.11	1840.86
07/20/87	3.10	1840.87
07/24/87	3.10	1840.87
07/27/87	3.32	1840.65
08/03/87	3.49	1840.48
08/04/87	3.52	1840.45
08/10/87	3.78	1840.19
08/18/87	3.68	1840.29
08/19/87	3.69	1840.28
08/21/87	3.85	1840.12
08/24/87	3.97	1840.00
08/31/87	3.98	1839.99
09/01/87	4.04	1839.93
09/02/87	4.05	1839.92
09/04/87	4.16	1839.81
09/07/87	4.28	1839.69
09/09/87	4.34	1839.63
09/11/87	4.34	1839.63
09/14/87	4.48	1839.49
09/16/87	4.52	1839.45
09/18/87	4.56	1839.41
09/21/87	4.65	1839.32
09/23/87	4.66	1839.31
09/29/87	4.64	1839.33
10/05/87	4.70	1839.27
10/07/87	4.68	1839.29
10/12/87	4.65	1839.32
11/03/87	4.52	1839.45
12/08/87	4.38	1839.59
04/14/88	3.93	1840.04
05/23/88	3.99	1839.98
06/20/88	4.69	1839.28
07/21/88	5.12	1838.85
08/23/88	5.83	1838.14
09/26/88	6.10	1837.87
10/31/88	6.07	1837.90
11/29/88	6.03	1837.94
01/06/89	5.99	1837.98
05/03/89	5.04	1838.93
08/29/89	6.50	1837.47
12/14/89	6.78	1837.19
05/10/90	6.44	1837.53
07/02/90	5.96	1838.01
07/03/90	5.96	1838.01
08/28/90	6.98	1836.99
12/12/90	7.06	1836.91
04/02/91	6.87	1837.10
04/22/92	6.15	1837.82
05/05/93	6.07	1837.90
04/14/94	3.98	1839.99

148-081-28BDB2

Lake Nettie Aquifer

MP Elev (msl,ft)=1844.37

SI (ft.)=0.5-3.5

Date	Depth to Water (ft)	WL Elev (msl, ft)
06/12/87	2.69	1841.68
06/15/87	2.77	1841.60
06/16/87	2.83	1841.54
06/18/87	2.86	1841.51
06/23/87	2.76	1841.61
06/24/87	2.80	1841.57
06/26/87	2.88	1841.49
06/29/87	2.81	1841.56
07/01/87	3.04	1841.33
07/03/87	3.08	1841.29
07/06/87	3.22	1841.15
07/08/87	3.34	1841.03
07/10/87	3.36	1841.01
07/13/87	3.41	1840.96
07/15/87	3.47	1840.90
07/17/87	3.59	1840.78
07/20/87	3.53	1840.84
07/23/87	3.43	1840.94
07/24/87	3.49	1840.88
07/27/87	3.64	1840.73
07/31/87	3.69	1840.68
08/03/87	3.81	1840.56
08/04/87	3.83	1840.54
08/05/87	3.89	1840.48
08/07/87	4.02	1840.35
08/10/87	4.13	1840.24
08/12/87	4.24	1840.13
08/14/87	4.30	1840.07
08/18/87	4.31	1840.06
08/19/87	4.34	1840.03
08/21/87	4.43	1839.94
08/24/87	4.59	1839.78
08/27/87	4.56	1839.81
08/28/87	4.60	1839.77
08/31/87	4.68	1839.69
09/02/87	4.70	1839.67
09/04/87	4.80	1839.57
09/07/87	4.94	1839.43
09/09/87	5.03	1839.34
09/11/87	5.10	1839.27
09/14/87	5.25	1839.12
09/16/87	5.30	1839.07
09/18/87	5.37	1839.00
09/21/87	5.47	1838.90
09/23/87	5.45	1838.92
09/25/87	5.42	1838.95
09/29/87	5.38	1838.99
10/02/87	5.38	1838.99
10/05/87	5.35	1839.02
10/07/87	5.32	1839.05
10/08/87	5.32	1839.05
10/12/87	5.32	1839.05
11/03/87	5.15	1839.22
12/08/87	4.94	1839.43
04/14/88	4.45	1839.92
05/23/88	4.49	1839.88
06/20/88	4.89	1839.48
07/21/88	5.29	1839.08
08/23/88	5.91	1838.46
05/03/89	5.74	1838.63

148-081-28BDB3

MP Elev (msl,ft)=1843.88

Lake Nettie Aquifer

Sl (ft.)=2-5

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
06/12/87	2.25	1841.63	08/03/87	3.31	1840.57	09/11/87	4.56	1839.32			
06/15/87	2.38	1841.50	08/04/87	3.34	1840.54	09/14/87	4.69	1839.19	04/14/88	3.92	1839.96
06/16/87	2.40	1841.48	08/10/87	3.63	1840.25	09/16/87	4.76	1839.12	05/23/88	3.85	1840.03
06/18/87	2.42	1841.46	08/18/87	3.75	1840.13	09/18/87	4.82	1839.06	06/20/88	4.36	1839.52
06/23/87	2.25	1841.63	08/24/87	4.05	1839.83	09/21/87	4.93	1838.95	07/21/88	4.77	1839.11
06/24/87	2.34	1841.54	08/27/87	4.00	1839.88	09/23/87	4.92	1838.96	08/23/88	5.33	1838.55
06/26/87	2.43	1841.45	08/28/87	4.07	1839.81	09/29/87	4.86	1839.02	09/26/88	5.77	1838.11
06/29/87	2.46	1841.42	08/31/87	4.14	1839.74	10/05/87	4.81	1839.07	10/31/88	5.88	1838.00
07/06/87	2.74	1841.14	09/02/87	4.17	1839.71	10/08/87	4.80	1839.08	11/29/88	5.86	1838.02
07/13/87	2.91	1840.97	09/04/87	4.26	1839.62	10/12/87	4.80	1839.08			
07/20/87	3.01	1840.87	09/07/87	4.40	1839.48	11/03/87	4.63	1839.25	01/06/89	5.74	1838.14
07/27/87	3.16	1840.72	09/09/87	4.48	1839.40	12/08/87	4.42	1839.46	05/03/89	5.17	1838.71

148-081-28CAB

MP Elev (msl,ft)=1844.77

Lake Nettie Aquifer

Sl (ft.)=32-37

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	4.77	1840.00	07/24/87	4.14	1840.63	09/25/87	5.16	1839.61	05/03/89	5.98	1838.79
07/31/86	4.85	1839.92	07/27/87	4.27	1840.50	09/29/87	5.21	1839.56	08/29/89	7.42	1837.35
08/08/86	5.03	1839.74	08/03/87	4.43	1840.34	10/02/87	5.25	1839.52	12/14/89	7.70	1837.07
09/10/86	5.10	1839.67	08/04/87	4.43	1840.34	10/05/87	5.28	1839.49			
10/10/86	4.74	1840.03	08/10/87	4.62	1840.15	10/07/87	5.30	1839.47	05/10/90	7.22	1837.55
10/21/86	4.75	1840.02	08/18/87	4.49	1840.28	10/12/87	5.29	1839.48	07/02/90	6.85	1837.92
			08/24/87	4.68	1840.09	11/03/87	5.30	1839.47	07/03/90	6.85	1837.92
04/15/87	3.68	1841.09	08/31/87	4.64	1840.13	12/08/87	5.26	1839.51	08/28/90	7.84	1836.93
05/19/87	4.30	1840.47	09/01/87	4.70	1840.07				12/12/90	7.94	1836.83
06/15/87	4.40	1840.37	09/02/87	4.69	1840.08	04/14/88	4.87	1839.90			
06/16/87	4.46	1840.31	09/04/87	4.79	1839.98	05/23/88	4.77	1840.00	04/02/91	7.76	1837.01
06/18/87	4.51	1840.26	09/07/87	4.87	1839.90	06/20/88	5.54	1839.23			
06/24/87	4.22	1840.55	09/09/87	4.90	1839.87	07/21/88	6.01	1838.76	04/22/92	6.92	1837.85
06/26/87	4.33	1840.44	09/11/87	4.92	1839.85	08/23/88	6.75	1838.02			
06/29/87	4.38	1840.39	09/14/87	4.98	1839.79	09/26/88	6.95	1837.82	05/05/93	6.91	1837.86
07/06/87	4.55	1840.22	09/16/87	5.01	1839.76	10/31/88	6.93	1837.84			
07/13/87	4.29	1840.48	09/18/87	5.05	1839.72	11/29/88	6.92	1837.85	04/14/94	4.83	1839.94
07/20/87	4.18	1840.59	09/21/87	5.13	1839.64						
07/23/87	4.04	1840.73	09/23/87	5.15	1839.62	01/06/89	6.91	1837.86			

148-081-28CCC

MP Elev (msl,ft)=1849.06

Lake Nettie Aquifer

Sl (ft.)=42-47

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
10/25/84	9.09	1839.97	09/10/86	8.96	1840.10	09/02/87	8.53	1840.53	09/27/88	10.83	1838.23
12/12/84	9.16	1839.90	10/07/86	8.80	1840.26	09/04/87	8.58	1840.48	11/01/88	10.95	1838.11
			10/21/86	8.81	1840.25	09/07/87	8.64	1840.42	11/30/88	11.00	1838.06
01/17/85	9.17	1839.89	12/03/86	8.78	1840.28	09/09/87	8.67	1840.39			
02/14/85	9.33	1839.73				09/11/87	8.71	1840.35	01/13/89	10.95	1838.11
03/13/85	9.15	1839.91	04/15/87	7.84	1841.22	09/14/87	8.76	1840.30	05/03/89	10.59	1838.47
04/04/85	9.03	1840.03	05/19/87	8.05	1841.01	09/16/87	8.80	1840.26	08/29/89	11.42	1837.64
04/29/85	8.80	1840.26	06/15/87	7.96	1841.10	09/18/87	8.84	1840.22	12/14/89	11.82	1837.24
06/07/85	8.92	1840.14	06/16/87	7.97	1841.09	09/21/87	8.90	1840.16			
07/03/85	9.04	1840.02	06/24/87	8.00	1841.06	09/23/87	8.92	1840.14	05/10/90	11.80	1837.26
07/23/85	9.28	1839.78	06/26/87	8.04	1841.02	09/29/87	9.00	1840.06	07/02/90	11.54	1837.52
08/16/85	9.41	1839.65	06/29/87	8.06	1841.00	10/01/87	8.99	1840.07	07/03/90	11.54	1837.52
09/11/85	9.45	1839.61	07/06/87	8.16	1840.90	10/02/87	9.06	1840.00	08/28/90	11.99	1837.07
10/02/85	9.48	1839.58	07/13/87	8.14	1840.92	10/05/87	9.08	1839.98	12/13/90	12.17	1836.89
11/06/85	9.37	1839.69	07/20/87	8.12	1840.94	10/08/87	9.09	1839.97			
12/06/85	9.37	1839.69	07/27/87	7.98	1841.08	10/12/87	9.15	1839.91	04/02/91	12.07	1836.99
			07/31/87	8.08	1840.98	11/03/87	9.27	1839.79			
03/14/86	9.00	1840.06	08/03/87	8.16	1840.90	12/08/87	9.37	1839.69	04/23/92	11.60	1837.46
04/22/86	8.57	1840.49	08/05/87	8.18	1840.88						
04/30/86	8.55	1840.51	08/10/87	8.29	1840.77	04/14/88	9.37	1839.69	05/05/93	11.58	1837.48
06/04/86	8.54	1840.52	08/18/87	8.37	1840.69	05/23/88	9.44	1839.62			
07/02/86	8.70	1840.36	08/24/87	8.48	1840.58	06/21/88	9.77	1839.29	04/14/94	9.39	1839.67
07/31/86	8.69	1840.37	08/27/87	8.44	1840.62	07/21/88	10.08	1838.98			
08/08/86	8.84	1840.22	08/31/87	8.50	1840.56	08/23/88	10.56	1838.50			

148-081-29BAA1 MP Elev (msl,ft)=1858.94

Lake Nettie Aquifer SI (ft.)=158-178

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/14/70	17.90	1841.04
09/09/70	18.06	1840.88
12/02/70	18.25	1840.69
06/01/77	16.00	1842.94
06/15/77	15.65	1843.29
06/29/77	15.80	1843.14
07/11/77	15.88	1843.06
08/08/77	16.10	1842.84
08/23/77	16.24	1842.70
09/12/77	16.24	1842.70
09/30/77	16.00	1842.94
10/11/77	15.97	1842.97
10/26/77	16.00	1842.94
11/15/77	15.85	1843.09
12/02/77	15.80	1843.14
12/12/77	15.70	1843.24
12/28/77	15.87	1843.07
01/09/78	15.89	1843.05
01/31/78	15.79	1843.15
02/13/78	15.75	1843.19
03/07/78	16.09	1842.85
03/30/78	15.89	1843.05
04/10/78	15.53	1843.41
04/27/78	15.55	1843.39
05/10/78	15.36	1843.58
05/23/78	15.28	1843.66
06/05/78	15.28	1843.66
06/27/78	15.40	1843.54
07/12/78	14.97	1843.97
07/25/78	15.03	1843.91
08/07/78	15.09	1843.85
08/24/78	15.17	1843.77
09/13/78	15.11	1843.83
09/25/78	15.15	1843.79
10/13/78	14.86	1844.08
10/25/78	15.29	1843.65
11/06/78	15.23	1843.71
11/29/78	14.88	1844.06
12/11/78	15.10	1843.84
12/27/78	15.03	1843.91
01/08/79	15.05	1843.89
01/24/79	15.04	1843.90
02/20/79	15.05	1843.89
03/05/79	15.22	1843.72
03/08/79	15.08	1843.86
03/30/79	15.32	1843.62
04/24/79	14.84	1844.10
05/07/79	14.56	1844.38
05/22/79	14.60	1844.34
06/04/79	14.40	1844.54
06/27/79	14.30	1844.64
07/01/79	14.15	1844.79
07/31/79	14.63	1844.31
08/06/79	14.62	1844.32
08/22/79	14.70	1844.24
09/04/79	14.69	1844.25
09/25/79	14.68	1844.26
10/01/79	14.90	1844.04
10/30/79	14.82	1844.12
12/03/79	14.81	1844.13
01/02/80	14.67	1844.27
01/28/80	14.80	1844.14
02/25/80	14.72	1844.22
04/01/80	14.83	1844.11
05/07/80	14.65	1844.29
06/02/80	15.00	1843.94
07/02/80	15.12	1843.82
08/13/80	15.36	1843.58
09/10/80	15.35	1843.59
10/07/80	15.25	1843.69
11/05/80	14.75	1844.19
12/03/80	14.86	1844.08
01/27/81	14.94	1844.00
02/23/81	14.98	1843.96
03/04/81	14.89	1844.05
04/07/81	14.95	1843.99
04/29/81	14.87	1844.07
05/06/81	14.97	1843.97
05/28/81	14.99	1843.95
06/03/81	14.98	1843.96
06/21/81	14.98	1843.96
06/29/81	15.09	1843.85
07/26/81	15.13	1843.81
07/27/81	15.24	1843.70
08/23/81	15.45	1843.49
08/25/81	15.34	1843.60
09/21/81	15.23	1843.71
09/27/81	15.05	1843.89
10/31/81	15.20	1843.74
11/27/81	15.15	1843.79
12/01/81	15.11	1843.83
12/30/81	15.00	1843.94
04/19/82	14.77	1844.17
04/25/82	14.80	1844.14
05/19/82	14.50	1844.44
05/30/82	14.35	1844.59
06/14/82	14.28	1844.66
06/27/82	14.25	1844.69
07/25/82	14.25	1844.69
08/02/82	14.45	1844.49
08/23/82	14.35	1844.59
09/09/82	14.34	1844.60
09/26/82	14.35	1844.59
10/12/82	14.03	1844.91
10/25/82	13.90	1845.04
11/16/82	13.83	1845.11
11/26/82	13.90	1845.04
12/02/82	13.78	1845.16
12/09/82	13.85	1845.09
12/28/82	13.70	1845.24
01/13/83	13.75	1845.19
05/05/83	13.35	1845.59
11/16/83	13.85	1845.09
06/08/84	13.40	1845.54
12/12/84	13.65	1845.29
01/17/85	13.72	1845.22
01/23/85	13.87	1845.07
01/30/85	13.95	1844.99
02/06/85	14.00	1844.94
02/13/85	14.09	1844.85
02/20/85	14.04	1844.90
02/27/85	14.10	1844.84
03/06/85	14.08	1844.86
03/13/85	14.10	1844.84
03/20/85	14.11	1844.83
03/27/85	14.00	1844.94
04/03/85	13.80	1845.14
04/10/85	13.69	1845.25
04/17/85	13.64	1845.30
04/24/85	13.54	1845.40
05/01/85	13.59	1845.35
05/08/85	13.58	1845.36
06/07/85	13.64	1845.30
07/03/85	13.73	1845.21
08/16/85	14.11	1844.83
09/10/85	14.18	1844.76
10/02/85	14.13	1844.81
11/06/85	14.02	1844.92
12/06/85	13.98	1844.96
02/06/86	14.12	1844.82
03/14/86	14.07	1844.87
04/30/86	13.57	1845.37
06/04/86	13.64	1845.30
07/02/86	13.76	1845.18
07/31/86	13.60	1845.34
08/08/86	13.63	1845.31
09/10/86	13.62	1845.32
10/07/86	13.59	1845.35
10/21/86	13.54	1845.40
12/03/86	13.42	1845.52
04/15/87	13.08	1845.86
05/19/87	13.01	1845.93
06/15/87	12.98	1845.96
06/16/87	12.99	1845.95
06/18/87	13.05	1845.89
06/26/87	13.11	1845.83
06/29/87	13.14	1845.80
06/30/87	13.15	1845.79
07/01/87	13.13	1845.81
07/03/87	13.19	1845.75
07/06/87	13.21	1845.73
07/08/87	13.26	1845.68
07/13/87	13.19	1845.75
07/20/87	13.13	1845.81
07/24/87	13.05	1845.89
07/27/87	13.06	1845.88
07/31/87	13.04	1845.90
08/03/87	13.09	1845.85
08/05/87	13.07	1845.87
08/10/87	13.15	1845.79
08/12/87	13.20	1845.74
08/18/87	13.14	1845.80
08/24/87	13.22	1845.72
08/31/87	13.20	1845.74
09/01/87	13.21	1845.73
09/02/87	13.21	1845.73
09/04/87	13.23	1845.71
09/07/87	13.28	1845.66
09/09/87	13.28	1845.66
09/11/87	13.30	1845.64
09/14/87	13.31	1845.63
09/16/87	13.34	1845.60
09/18/87	13.37	1845.57
09/21/87	13.43	1845.51
09/23/87	13.42	1845.52
09/25/87	13.43	1845.51
09/29/87	13.47	1845.47
10/02/87	13.51	1845.43
10/05/87	13.51	1845.43
10/08/87	13.49	1845.45
10/12/87	13.54	1845.40
11/03/87	13.65	1845.29
12/08/87	13.80	1845.14
04/14/88	14.08	1844.86
05/23/88	13.76	1845.18
06/21/88	14.26	1844.68
07/21/88	14.67	1844.27
08/23/88	15.07	1843.87
09/27/88	15.40	1843.54
11/01/88	15.55	1843.39
11/30/88	15.59	1843.35
01/13/89	15.58	1843.36
05/03/89	15.46	1843.48
08/01/89	15.96	1842.98
08/29/89	16.12	1842.82
10/06/89	16.32	1842.62
11/03/89	16.29	1842.65
12/14/89	16.44	1842.50
04/02/90	16.60	1842.34
05/10/90	16.41	1842.53
06/08/90	16.22	1842.72
07/02/90	16.25	1842.69
07/03/90	16.25	1842.69
08/03/90	16.52	1842.42
08/28/90	16.77	1842.17
09/28/90	16.94	1842.00
10/22/90	16.87	1842.07
11/23/90	16.88	1842.06
12/13/90	16.91	1842.03
04/02/91	17.19	1841.75
05/01/91	16.80	1842.14
05/22/91	16.79	1842.15
05/30/91	16.81	1842.13
06/24/91	16.81	1842.13
07/23/91	17.27	1841.67
08/12/91	17.60	1841.34
08/28/91	17.76	1841.18
09/23/91	17.60	1841.34
11/06/91	17.15	1841.79
12/05/91	16.96	1841.98
02/05/92	16.97	1841.97
04/23/92	16.52	1842.42
05/26/92	16.50	1842.44
06/25/92	16.87	1842.07
07/22/92	16.91	1842.03
08/27/92	18.75	1840.19
09/22/92	17.67	1841.27
10/21/92	17.49	1841.45
11/16/92	17.32	1841.62
12/14/92	17.20	1841.74
04/05/93	17.18	1841.76
05/05/93	16.90	1842.04
06/01/93	16.57	1842.37
06/29/93	16.35	1842.59
08/04/93	15.62	1843.32
09/01/93	15.99	1842.95
10/11/93	15.76	1843.18
11/04/93	15.63	1843.31
12/08/93	15.30	1843.64
02/15/94	15.13	1843.81
04/14/94	14.78	1844.16
05/20/94	14.40	1844.54
06/29/94	14.37	1844.57
08/03/94	15.00	1843.94

148-081-29BAA2
Lake Nettie Aquifer

MP Elev (msl,ft)=1858.79
SI (ft.)=54-59

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	18.84	1839.95
09/10/85	18.89	1839.90
10/02/85	18.90	1839.89
11/06/85	18.76	1840.03
12/06/85	18.69	1840.10
02/06/86	18.56	1840.23
03/14/86	18.10	1840.69
04/30/86	17.65	1841.14
06/04/86	17.87	1840.92
07/02/86	18.11	1840.68
07/31/86	18.05	1840.74
08/08/86	18.17	1840.62
09/10/86	18.34	1840.45
10/07/86	18.15	1840.64
10/21/86	18.13	1840.66
12/03/86	18.02	1840.77
04/15/87	16.79	1842.00
05/19/87	17.10	1841.69
06/15/87	17.08	1841.71
06/16/87	17.10	1841.69
06/18/87	17.19	1841.60
06/23/87	17.09	1841.70
06/26/87	17.19	1841.60
06/29/87	17.23	1841.56
07/03/87	17.30	1841.49
07/06/87	17.36	1841.43
07/13/87	17.31	1841.48
07/20/87	17.33	1841.46
07/27/87	17.39	1841.40
08/03/87	17.53	1841.26
08/05/87	17.56	1841.23
08/10/87	17.69	1841.10
08/18/87	17.87	1840.92
08/24/87	18.02	1840.77
08/31/87	17.95	1840.84
09/01/87	18.13	1840.66
09/02/87	18.15	1840.64
09/04/87	18.18	1840.61
09/07/87	18.30	1840.49
09/09/87	18.34	1840.45
09/11/87	18.40	1840.39
09/14/87	18.46	1840.33
09/16/87	18.50	1840.29
09/18/87	18.56	1840.23
09/21/87	18.65	1840.14
09/23/87	18.67	1840.12
09/29/87	18.79	1840.00
10/01/87	18.77	1840.02
10/02/87	18.85	1839.94
10/05/87	18.86	1839.93
10/08/87	18.88	1839.91
10/12/87	18.94	1839.85
11/03/87	18.94	1839.85
12/08/87	18.90	1839.89
04/14/88	18.53	1840.26
05/23/88	18.69	1840.10
06/21/88	19.11	1839.68
07/21/88	19.47	1839.32
08/23/88	20.03	1838.76
09/27/88	20.44	1838.35
11/01/88	20.55	1838.24
11/30/88	20.60	1838.19
01/13/89	20.40	1838.39
05/03/89	19.84	1838.95
07/06/89	20.38	1838.41
08/01/89	20.67	1838.12
08/29/89	20.99	1837.80
10/06/89	21.25	1837.54
11/03/89	21.26	1837.53
12/14/89	21.37	1837.42
04/02/90	21.14	1837.65
05/10/90	21.22	1837.57
06/08/90	21.10	1837.69
07/02/90	21.07	1837.72
07/03/90	21.07	1837.72
08/03/90	21.35	1837.44
08/28/90	21.60	1837.19
09/28/90	21.81	1836.98
10/22/90	21.80	1836.99
11/23/90	21.86	1836.93
12/13/90	21.79	1837.00
04/02/91	21.47	1837.32
05/01/91	21.47	1837.32
05/22/91	21.45	1837.34
05/30/91	21.50	1837.29
06/24/91	21.40	1837.39
07/23/91	21.54	1837.25
08/12/91	21.69	1837.10
08/28/91	21.75	1837.04
09/23/91	21.89	1836.90
11/06/91	21.85	1836.94
12/05/91	21.62	1837.17
02/05/92	21.53	1837.26
04/23/92	21.10	1837.69
05/26/92	21.25	1837.54
06/25/92	21.34	1837.45
07/22/92	21.45	1837.34
08/27/92	21.73	1837.06
09/22/92	21.88	1836.91
10/21/92	22.01	1836.78
11/16/92	21.92	1836.87
12/14/92	21.82	1836.97
04/05/93	21.27	1837.52
05/05/93	21.17	1837.62
06/01/93	21.05	1837.74
06/29/93	20.92	1837.87
08/04/93	19.40	1839.39
09/01/93	19.66	1839.13
10/11/93	19.92	1838.87
11/04/93	20.00	1838.79
12/08/93	18.74	1840.05
02/15/94	19.47	1839.32
04/14/94	18.80	1839.99
05/20/94	18.90	1839.89
06/29/94	18.86	1839.93

148-081-29CAA
Lake Nettie Aquifer

MP Elev (msl,ft)=1852.78
SI (ft.)=38-48

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/14/70	14.42	1838.36
09/09/70	14.73	1838.05
12/02/70	14.91	1837.87
06/01/77	14.60	1838.18
06/29/77	14.80	1837.98
07/11/77	14.91	1837.87
07/26/77	16.10	1836.68
08/08/77	15.27	1837.51
08/23/77	15.43	1837.35
09/12/77	15.45	1837.33
09/30/77	15.09	1837.69
10/11/77	14.80	1837.98
10/26/77	14.88	1837.90
11/15/77	14.94	1837.84
12/02/77	14.91	1837.87
12/12/77	14.87	1837.91
12/28/77	14.79	1837.99
01/09/78	14.79	1837.99
01/31/78	14.95	1837.83
02/13/78	14.60	1838.18
03/07/78	14.71	1838.07
04/10/78	13.52	1839.26
04/27/78	13.57	1839.21
05/10/78	13.57	1839.21
05/23/78	13.65	1839.13
06/05/78	13.36	1839.42
06/27/78	13.47	1839.31
07/12/78	13.31	1839.47
07/25/78	13.42	1839.36
08/07/78	13.68	1839.10
08/24/78	13.99	1838.79
09/13/78	14.03	1838.75
09/25/78	14.07	1838.71
10/13/78	14.19	1838.59
10/25/78	14.18	1838.60
11/06/78	14.24	1838.54
11/29/78	14.04	1838.74
12/11/78	14.31	1838.47
12/27/78	14.12	1838.66
01/08/79	13.50	1839.28
01/24/79	13.80	1838.98
02/20/79	13.92	1838.86
03/05/79	13.98	1838.80
03/07/79	13.91	1838.87
03/30/79	13.67	1839.11
04/24/79	11.48	1841.30
05/07/79	11.98	1840.80
05/22/79	12.62	1840.16
06/04/79	12.75	1840.03
06/27/79	12.96	1839.82
07/01/79	12.86	1839.92
07/31/79	13.28	1839.50
08/06/79	13.23	1839.55
08/22/79	13.44	1839.34
09/04/79	13.54	1839.24
09/25/79	13.70	1839.08
10/01/79	13.71	1839.07
10/25/79	13.89	1838.89
10/30/79	13.88	1838.90
11/20/79	13.89	1838.89
12/03/79	13.83	1838.95
01/02/80	13.89	1838.89
01/28/80	13.30	1839.48
02/20/80	13.71	1839.07
02/25/80	13.80	1838.98
03/20/80	13.67	1839.11
04/01/80	13.54	1839.24
04/23/80	13.39	1839.39
05/07/80	13.50	1839.28
05/21/80	13.47	1839.31
06/02/80	13.84	1838.94
06/23/80	13.89	1838.89
07/02/80	14.09	1838.69
07/21/80	14.38	1838.40
08/13/80	14.41	1838.37
08/25/80	14.34	1838.44
09/10/80	14.33	1838.45
09/22/80	14.32	1838.46
10/07/80	14.33	1838.45
10/21/80	14.26	1838.52
11/05/80	13.97	1838.81
12/03/80	13.72	1839.06
01/27/81	13.80	1838.98
02/23/81	13.68	1839.10
04/07/81	13.33	1839.45
04/29/81	13.37	1839.41
05/06/81	13.54	1839.24
05/28/81	13.65	1839.13
06/04/81	13.53	1839.25
06/21/81	13.43	1839.35
06/29/81	13.54	1839.24
07/26/81	13.75	1839.03
08/23/81	13.90	1838.88
08/25/81	14.94	1837.84
09/21/81	13.97	1838.81
09/27/81	13.90	1838.88
10/31/81	14.05	1838.73
11/27/81	13.90	1838.88
12/01/81	13.84	1838.94
12/30/81	13.75	1839.03
03/24/82	13.15	1839.63
04/19/82	12.34	1840.44
04/25/82	13.45	1839.33
05/19/82	12.53	1840.25
05/30/82	13.45	1839.33
06/14/82	12.41	1840.37
06/27/82	12.48	1840.30
07/25/82	12.75	1840.03
08/02/82	12.89	1839.89
08/23/82	12.90	1839.88
09/09/82	12.70	1840.08
09/26/82	12.85	1839.93
10/12/82	12.87	1839.91
10/25/82	12.66	1840.12
11/16/82	12.63	1840.15
11/26/82	12.56	1840.22
12/02/82	12.43	1840.35
12/09/82	12.50	1840.28
12/28/82	12.60	1840.18
01/13/83	12.60	1840.18
05/05/83	11.50	1841.28
07/27/83	11.74	1841.04
11/16/83	12.75	1840.03
02/08/84	12.69	1840.09
06/08/84	11.80	1840.98
12/12/84	12.78	1840.00
01/17/85	12.71	1840.07
01/23/85	12.74	1840.04
01/30/85	12.77	1840.01
02/06/85	12.83	1839.95
02/13/85	12.84	1839.94
02/20/85	12.76	1840.02
02/27/85	12.78	1840.00
03/06/85	12.68	1840.10
03/13/85	12.65	1840.13
03/20/85	12.58	1840.20
03/27/85	12.55	1840.23
04/03/85	12.44	1840.34
04/10/85	12.40	1840.38
04/17/85	12.32	1840.46
04/24/85	12.23	1840.55
05/01/85	12.24	1840.54
05/08/85	12.29	1840.49
06/07/85	12.40	1840.38
07/03/85	12.55	1840.23
08/16/85	13.08	1839.70
09/10/85	13.11	1839.67
10/02/85	13.15	1839.63
11/06/85	13.00	1839.78
12/06/85	12.95	1839.83
02/06/86	12.85	1839.93
03/14/86	12.30	1840.48
04/30/86	11.83	1840.95
06/04/86	12.05	1840.73
07/02/86	12.35	1840.43
07/31/86	12.29	1840.49
08/08/86	12.38	1840.40
09/10/86	12.58	1840.20
10/07/86	12.35	1840.43
10/21/86	12.34	1840.44
12/03/86	12.24	1840.54
04/15/87	10.84	1841.94
05/19/87	11.28	1841.50
06/15/87	11.24	1841.54
06/16/87	11.26	1841.52
06/18/87	11.39	1841.39
06/23/87	11.40	1841.38
06/26/87	11.40	1841.38
06/29/87	11.46	1841.32
07/06/87	11.62	1841.16
07/13/87	11.72	1841.06
07/20/87	11.78	1841.00
07/27/87	11.76	1841.02
08/03/87	11.94	1840.84
08/04/87	11.99	1840.79
08/10/87	12.20	1840.58
08/18/87	12.43	1840.35
08/24/87	12.59	1840.19
08/27/87	12.62	1840.16
08/31/87	12.70	1840.08
09/02/87	12.72	1840.06
09/04/87	12.79	1839.99
09/07/87	12.90	1839.88
09/09/87	12.97	1839.81
09/11/87	13.05	1839.73
09/14/87	13.14	1839.64
09/16/87	13.21	1839.57
09/18/87	13.29	1839.49
09/21/87	13.40	1839.38
09/23/87	13.43	1839.35
09/29/87	13.52	1839.26
10/02/87	13.56	1839.22
10/05/87	13.56	1839.22
10/08/87	13.54	1839.24
10/12/87	13.56	1839.22
11/03/87	13.50	1839.28
12/08/87	13.33	1839.45
04/14/88	12.88	1839.90
05/23/88	12.95	1839.83
06/21/88	13.38	1839.40
07/21/88	13.74	1839.04
08/23/88	14.29	1838.49
09/27/88	14.72	1838.06
11/01/88	14.83	1837.95
11/30/88	14.84	1837.94
01/13/89	14.67	1838.11
05/03/89	14.12	1838.66
08/29/89	15.23	1837.55
12/14/89	15.61	1837.17
05/10/90	15.49	1837.29
07/02/90	15.34	1837.44
07/03/90	15.34	1837.44
08/28/90	15.80	1836.98
12/13/90	16.03	1836.75
04/02/91	15.81	1836.97
04/23/92	15.36	1837.42
05/05/93	15.36	1837.42
02/15/94	13.65	1839.13
04/14/94	12.90	1839.88
05/20/94	13.13	1839.65

148-081-33CDD MP Elev (msl,ft)=1853.73

Lake Nettie Aquifer SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	14.59	1839.14
09/15/67	14.80	1838.93
10/13/67	14.89	1838.84
11/17/67	15.70	1838.03
12/15/67	15.80	1837.93
01/15/68	15.94	1837.79
01/20/68	15.94	1837.79
01/25/68	15.94	1837.79
01/30/68	15.92	1837.81
02/05/68	16.00	1837.73
02/10/68	15.99	1837.74
02/15/68	15.99	1837.74
02/20/68	16.03	1837.70
02/25/68	16.04	1837.69
02/29/68	16.05	1837.68
03/05/68	15.98	1837.75
03/10/68	15.80	1837.93
03/14/68	15.79	1837.94
05/21/68	16.84	1836.89
05/25/68	16.85	1836.88
05/30/68	16.82	1836.91
06/05/68	16.82	1836.91
06/10/68	16.80	1836.93
06/15/68	16.83	1836.90
06/20/68	16.80	1836.93
06/25/68	16.83	1836.90
06/30/68	16.80	1836.93
07/05/68	16.83	1836.90
07/10/68	16.82	1836.91
07/15/68	16.81	1836.92
07/20/68	16.83	1836.90
07/25/68	16.86	1836.87
07/30/68	16.87	1836.86
08/05/68	16.88	1836.85
08/10/68	16.95	1836.78
08/15/68	16.90	1836.83
08/20/68	16.96	1836.77
08/25/68	16.98	1836.75
08/30/68	16.98	1836.75
09/05/68	16.98	1836.75
09/10/68	16.99	1836.74
09/15/68	16.95	1836.78
09/20/68	16.99	1836.74
09/25/68	17.00	1836.73
09/30/68	17.00	1836.73
10/05/68	16.99	1836.74
10/10/68	17.02	1836.71
10/15/68	17.01	1836.72
10/20/68	17.03	1836.70
10/25/68	17.04	1836.69
11/05/68	15.98	1837.75
11/10/68	15.99	1837.74
11/15/68	15.97	1837.76
11/20/68	15.98	1837.75
11/25/68	16.01	1837.72
11/30/68	15.98	1837.75
12/05/68	16.00	1837.73
12/10/68	16.01	1837.72
01/15/69	16.15	1837.58
01/20/69	16.17	1837.56
01/24/69	16.20	1837.53
02/15/69	16.26	1837.47
02/20/69	16.27	1837.46
02/25/69	16.27	1837.46
03/01/69	16.30	1837.43
03/13/69	16.31	1837.42
04/20/69	15.62	1838.11
04/25/69	15.59	1838.14
04/30/69	15.57	1838.16
05/05/69	15.57	1838.16
05/10/69	15.57	1838.16
05/15/69	15.55	1838.18
05/20/69	15.51	1838.22
05/25/69	15.50	1838.23
06/05/69	15.47	1838.26
06/15/69	15.43	1838.30
06/20/69	15.45	1838.28
06/25/69	15.40	1838.33
07/16/69	15.35	1838.38
07/25/69	15.32	1838.41
07/30/69	15.30	1838.43
08/05/69	15.29	1838.44
08/10/69	15.28	1838.45
08/15/69	15.26	1838.47
08/20/69	15.25	1838.48
08/25/69	15.24	1838.49
08/30/69	15.26	1838.47
09/05/69	15.28	1838.45
09/10/69	15.34	1838.39
09/15/69	15.35	1838.38
09/20/69	15.34	1838.39
09/25/69	15.37	1838.36
09/30/69	15.40	1838.33
10/05/69	15.39	1838.34
10/10/69	15.42	1838.31
10/15/69	15.43	1838.30
10/20/69	15.44	1838.29
10/25/69	15.49	1838.24
10/30/69	15.50	1838.23
11/05/69	15.46	1838.27
11/10/69	15.52	1838.21
11/15/69	15.51	1838.22
11/20/69	15.57	1838.16
11/25/69	15.58	1838.15
11/30/69	15.55	1838.18
12/05/69	15.57	1838.16
12/10/69	15.59	1838.14
12/15/69	15.61	1838.12
12/20/69	15.60	1838.13
12/25/69	15.63	1838.10
12/30/69	15.64	1838.09
01/05/70	15.68	1838.05
01/10/70	15.65	1838.08
01/15/70	15.71	1838.02
01/20/70	15.72	1838.01
01/25/70	15.70	1838.03
01/30/70	15.74	1837.99
02/05/70	15.76	1837.97
02/10/70	15.78	1837.95
02/15/70	15.78	1837.95
02/20/70	15.82	1837.91
02/25/70	15.83	1837.90
03/01/70	15.83	1837.90
03/05/70	15.83	1837.90
03/10/70	15.84	1837.89
03/15/70	15.85	1837.88
03/20/70	15.83	1837.90
03/25/70	15.72	1838.01
03/30/70	15.73	1838.00
04/05/70	15.61	1838.12
04/10/70	15.51	1838.22
04/15/70	15.51	1838.22
04/20/70	15.49	1838.24
04/25/70	15.50	1838.23
04/30/70	15.38	1838.35
05/05/70	15.30	1838.43
05/10/70	15.19	1838.54
05/15/70	15.14	1838.59
05/20/70	15.02	1838.71
05/25/70	14.87	1838.86
05/30/70	14.75	1838.98
06/05/70	14.62	1839.11
06/10/70	14.58	1839.15
06/15/70	14.58	1839.15
06/20/70	14.58	1839.15
06/25/70	14.58	1839.15
07/01/70	14.31	1839.42
07/05/70	14.29	1839.44
07/10/70	14.27	1839.46
07/11/70	14.30	1839.43
07/15/70	14.28	1839.45
07/20/70	14.29	1839.44
07/25/70	14.30	1839.43
07/30/70	14.32	1839.41
08/05/70	14.38	1839.35
08/10/70	14.42	1839.31
08/15/70	14.46	1839.27
08/20/70	14.49	1839.24
08/25/70	14.52	1839.21
08/30/70	14.57	1839.16
09/05/70	14.55	1839.18
09/10/70	14.63	1839.10
09/15/70	14.65	1839.08
09/20/70	14.65	1839.08
09/25/70	14.92	1838.81
09/30/70	14.94	1838.79
10/01/70	14.93	1838.80
10/05/70	14.90	1838.83
10/10/70	14.99	1838.74
10/15/70	15.03	1838.70
10/20/70	15.03	1838.70
10/25/70	15.06	1838.67
10/30/70	15.11	1838.62
11/05/70	15.12	1838.61
11/10/70	15.17	1838.56
11/15/70	15.16	1838.57
11/20/70	15.20	1838.53
11/25/70	15.19	1838.54
12/05/70	15.30	1838.43
12/10/70	15.32	1838.41
12/15/70	15.32	1838.41
12/20/70	15.35	1838.38
12/25/70	15.36	1838.37
12/30/70	15.38	1838.35
01/27/71	15.34	1838.39
02/24/71	15.34	1838.39
03/25/71	15.34	1838.39
05/03/71	15.30	1838.43
05/25/71	15.02	1838.71
06/28/71	15.20	1838.53
07/22/71	15.22	1838.51
08/24/71	15.17	1838.56
09/23/71	15.54	1838.19
10/20/71	15.58	1838.15
12/03/71	15.59	1838.14
12/23/71	15.45	1838.28
02/01/72	15.40	1838.33
03/02/72	15.57	1838.16
04/04/72	15.01	1838.72
05/25/72	14.82	1838.91
06/22/72	14.59	1839.14
07/27/72	14.38	1839.35
08/22/72	14.37	1839.36
09/20/72	14.52	1839.21
10/26/72	14.65	1839.08
12/05/72	14.86	1838.87
02/21/73	15.04	1838.69
03/21/73	14.78	1838.95
04/24/73	14.79	1838.94
05/22/73	14.71	1839.02
06/21/73	14.86	1838.87
07/25/73	14.98	1838.75
08/31/73	15.10	1838.63
09/26/73	15.31	1838.42
10/23/73	15.37	1838.36
12/03/73	15.46	1838.27
01/22/74	13.66	1840.07
02/27/74	15.70	1838.03
03/27/74	15.35	1838.38
05/04/74	15.17	1838.56
05/23/74	15.08	1838.65
06/27/74	14.83	1838.90
07/24/74	14.77	1838.96
08/22/74	14.93	1838.80
09/23/74	15.00	1838.73
10/23/74	15.18	1838.55
12/02/74	15.36	1838.37
12/26/74	15.35	1838.38
01/31/75	15.49	1838.24
02/25/75	15.59	1838.14
04/01/75	15.58	1838.15
05/16/75	15.14	1838.59
07/01/75	14.26	1839.47
07/21/75	13.88	1839.85
08/26/75	14.00	1839.73
12/02/75	14.52	1839.21
03/03/76	14.78	1838.95
05/21/76	13.74	1839.99
06/29/76	13.74	1839.99
07/30/76	13.96	1839.77
08/31/76	14.10	1839.63
10/12/76	14.56	1839.17
10/23/76	14.62	1839.11
12/02/76	14.93	1838.80
12/28/76	15.05	1838.68
02/01/77	15.25	1838.48
03/01/77	15.32	1838.41
03/26/77	15.32	1838.41
04/23/77	15.33	1838.40
05/26/77	15.22	1838.51
06/29/77	15.39	1838.34
07/26/77	15.49	1838.24
08/23/77	15.58	1838.15
09/29/77	15.72	1838.01
10/26/77	15.63	1838.10
11/30/77	15.55	1838.18
12/28/77	15.53	1838.20
02/23/78	15.59	1838.14
05/23/78	14.39	1839.34
08/24/78	14.39	1839.34
11/29/78	14.91	1838.82
03/07/79	15.16	1838.57
05/22/79	11.20	1842.53
08/22/79	13.43	1840.30
03/04/81	14.47	1839.26
04/29/81	14.39	1839.34
05/28/81	14.32	1839.41
06/21/81	14.20	1839.53
07/26/81	13.69	1840.04
08/23/81	14.35	1839.38
09/27/81	14.45	1839.28
10/31/81	14.55	1839.18
11/27/81	14.65	1839.08
12/01/81	14.81	1838.92
12/30/81	14.75	1838.98
03/24/82	14.85	1838.88
04/25/82	13.72	1840.01
05/30/82	13.55	1840.18
06/27/82	13.35	1840.38
07/25/82	13.25	1840.48
08/23/82	13.05	1840.68
09/26/82	13.45	1840.28
10/20/82	13.35	1840.38
11/26/82	12.76	1840.97
12/02/82	13.32	1840.41
12/28/82	13.35	1840.38
12/12/84	13.95	1839.78
01/17/85	14.14	1839.59
02/14/85	14.31	1839.42
03/14/85	13.98	1839.75
04/04/85	14.16	1839.57
04/29/85	14.11	1839.62
06/07/85	13.84	1839.89
07/03/85	13.85	1839.88
08/16/85	14.00	1839.73
09/11/85	14.14	1839.59
10/02/85	14.20	1839.53
11/06/85	14.32	1839.41
12/06/85	14.32	1839.41
03/14/86	14.05	1839.68
04/30/86	13.44	1840.29
06/04/86	13.00	1840.73
07/02/86	12.90	1840.83

148-081-33CDD (Continued) MP Elev (msl,ft)=1853.73

Lake Nettie Aquifer SI (ft.)=33-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/31/86	13.56	1840.17
08/07/86	13.58	1840.15
09/10/86	13.59	1840.14
10/07/86	13.83	1839.90
10/21/86	13.90	1839.83
12/03/86	14.03	1839.70
04/15/87	13.23	1840.50
05/19/87	13.44	1840.29
06/15/87	13.45	1840.28
06/26/87	13.52	1840.21
07/01/87	13.53	1840.20
07/03/87	13.55	1840.18
07/06/87	13.56	1840.17
07/08/87	13.60	1840.13
07/10/87	13.30	1840.43
07/13/87	13.39	1840.34
07/15/87	13.41	1840.32
07/17/87	13.42	1840.31
07/20/87	13.68	1840.05
07/24/87	13.49	1840.24
07/27/87	13.40	1840.33
07/31/87	13.36	1840.37
08/03/87	13.35	1840.38
08/05/87	13.30	1840.43
08/07/87	13.36	1840.37
08/10/87	13.32	1840.41
08/12/87	13.37	1840.36
08/14/87	13.34	1840.39
08/18/87	13.35	1840.38
08/19/87	13.36	1840.37
08/21/87	13.34	1840.39
08/24/87	13.37	1840.36
08/28/87	13.40	1840.33
08/31/87	13.43	1840.30
09/02/87	13.41	1840.32
09/04/87	13.43	1840.30
09/07/87	13.45	1840.28
09/09/87	13.45	1840.28
09/11/87	13.48	1840.25
09/14/87	13.48	1840.25
09/16/87	13.49	1840.24
09/18/87	13.51	1840.22
09/21/87	13.56	1840.17
09/23/87	13.54	1840.19
09/25/87	13.55	1840.18
09/29/87	13.62	1840.11
10/02/87	13.64	1840.09
10/05/87	13.64	1840.09
10/12/87	13.66	1840.07
11/03/87	13.82	1839.91
12/08/87	14.10	1839.63
04/14/88	14.73	1839.00
05/23/88	14.54	1839.19
06/21/88	14.60	1839.13
07/21/88	14.89	1838.84
08/23/88	15.12	1838.61
09/27/88	15.38	1838.35
11/01/88	15.60	1838.13
11/30/88	15.55	1838.18
01/13/89	15.93	1837.80
05/03/89	15.79	1837.94
07/06/89	15.72	1838.01
08/01/89	15.90	1837.83
08/29/89	16.00	1837.73
10/06/89	16.15	1837.58
11/03/89	16.22	1837.51
12/14/89	16.39	1837.34
04/02/90	16.72	1837.01
05/10/90	16.65	1837.08
06/08/90	16.59	1837.14
07/02/90	16.55	1837.18
07/03/90	16.55	1837.18
08/03/90	16.47	1837.26
08/28/90	16.53	1837.20
09/28/90	16.63	1837.10
10/22/90	16.63	1837.10
11/23/90	16.72	1837.01
12/13/90	16.73	1837.00
04/02/91	16.89	1836.84
05/01/91	16.88	1836.85
05/22/91	16.84	1836.89
05/30/91	16.77	1836.96
06/24/91	16.72	1837.01
07/23/91	16.52	1837.21
08/12/91	16.50	1837.23
08/28/91	16.50	1837.23
09/23/91	16.59	1837.14
11/06/91	16.67	1837.06
12/05/91	16.67	1837.06
02/05/92	16.66	1837.07
04/23/92	16.36	1837.37
05/26/92	16.34	1837.39
06/25/92	16.32	1837.41
07/22/92	16.32	1837.41
08/27/92	16.36	1837.37
09/22/92	16.50	1837.23
10/21/92	16.57	1837.16
11/16/92	16.67	1837.06
12/14/92	16.67	1837.06
04/05/93	16.52	1837.21
05/05/93	16.42	1837.31
06/01/93	16.38	1837.35
06/29/93	16.33	1837.40
08/04/93	15.16	1838.57
09/01/93	14.54	1839.19
10/11/93	14.55	1839.18
11/04/93	14.67	1839.06
12/08/93	14.78	1838.95
04/14/94	14.40	1839.33
05/20/94	14.23	1839.50
06/29/94	13.89	1839.84
08/03/94	13.96	1839.77

148-081-34CBB MP Elev (msl,ft)=1846.85

Lake Nettie Aquifer SI (ft.)=18-23

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	7.85	1839.00
09/11/85	7.85	1839.00
10/02/85	7.80	1839.05
11/06/85	7.58	1839.27
12/06/85	7.61	1839.24
03/14/86	6.99	1839.86
04/30/86	5.98	1840.87
06/04/86	6.66	1840.19
07/02/86	6.85	1840.00
07/31/86	7.10	1839.75
08/07/86	7.27	1839.58
09/10/86	7.53	1839.32
10/07/86	7.30	1839.55
10/21/86	7.34	1839.51
12/03/86	7.29	1839.56
04/14/87	6.39	1840.46
05/19/87	7.08	1839.77
06/15/87	7.19	1839.66
06/26/87	7.30	1839.55
07/01/87	7.40	1839.45
07/03/87	7.45	1839.40
07/06/87	7.51	1839.34
07/08/87	7.56	1839.29
07/10/87	7.46	1839.39
07/13/87	7.29	1839.56
07/15/87	7.29	1839.56
07/17/87	7.36	1839.49
07/20/87	7.04	1839.81
07/24/87	6.82	1840.03
07/27/87	6.87	1839.98
07/31/87	6.90	1839.95
08/03/87	6.98	1839.87
08/05/87	6.94	1839.91
08/07/87	7.08	1839.77
08/10/87	7.09	1839.76
08/12/87	7.20	1839.65
08/14/87	7.13	1839.72
08/18/87	6.86	1839.99
08/19/87	6.86	1839.99
08/21/87	6.91	1839.94
08/24/87	6.97	1839.88
08/28/87	6.69	1840.16
08/31/87	6.82	1840.03
09/02/87	6.84	1840.01
09/04/87	6.94	1839.91
09/07/87	7.00	1839.85
09/09/87	7.03	1839.82
09/11/87	7.06	1839.79
09/14/87	7.08	1839.77
09/16/87	7.09	1839.76
09/18/87	7.10	1839.75
09/21/87	7.16	1839.69
09/23/87	7.17	1839.68
09/25/87	7.18	1839.67
09/29/87	7.24	1839.61
10/02/87	7.29	1839.56
10/05/87	7.29	1839.56
10/12/87	7.30	1839.55
11/03/87	7.41	1839.44
12/08/87	7.54	1839.31
04/14/88	7.40	1839.45
05/23/88	7.50	1839.35
06/21/88	7.99	1838.86
07/21/88	8.36	1838.49
08/23/88	8.95	1837.90
09/27/88	9.17	1837.68
11/01/88	9.18	1837.67
11/30/88	9.21	1837.64
01/13/89	9.29	1837.56
05/03/89	8.55	1838.30
08/29/89	9.62	1837.23
12/14/89	9.90	1836.95
05/10/90	9.65	1837.20
06/22/90	9.28	1837.57
07/02/90	9.32	1837.53
07/03/90	9.32	1837.53
08/28/90	9.86	1836.99
12/13/90	10.07	1836.78
04/02/91	10.07	1836.78
04/23/92	9.18	1837.67
05/05/93	9.27	1837.58
04/14/94	7.03	1839.82

148-081-34DDD MP Elev (msl,ft)=1845.38

Lake Nettie Aquifer Sl (ft.)=18-21

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/15/67	7.25	1838.13
09/15/67	7.57	1837.81
10/13/67	7.42	1837.96
11/17/67	7.39	1837.99
12/15/67	7.55	1837.83
01/12/68	7.75	1837.63
02/15/68	7.82	1837.56
03/14/68	7.07	1838.31
04/12/68	6.81	1838.57
05/16/68	6.10	1839.28
06/13/68	6.29	1839.09
07/15/68	7.06	1838.32
01/15/69	7.69	1837.69
04/17/69	5.72	1839.66
07/16/69	5.91	1839.47
08/27/69	6.65	1838.73
10/02/69	7.03	1838.35
12/30/69	7.18	1838.20
03/24/70	7.05	1838.33
05/05/70	4.56	1840.82
06/05/70	4.81	1840.57
07/01/70	5.79	1839.59
09/10/70	6.92	1838.46
12/01/70	6.75	1838.63
12/12/84	6.15	1839.23
01/17/85	6.84	1838.54
02/14/85	7.01	1838.37
03/13/85	6.46	1838.92
04/04/85	5.52	1839.86
04/29/85	4.35	1841.03
06/07/85	4.95	1840.43
07/03/85	5.52	1839.86
08/16/85	6.64	1838.74
09/11/85	6.67	1838.71
10/02/85	6.50	1838.88
11/06/85	5.70	1839.68
12/06/85	6.24	1839.14
03/14/86	5.25	1840.13
04/30/86	3.59	1841.79
06/04/86	4.89	1840.49
07/02/86	5.32	1840.06
07/31/86	5.58	1839.80
08/07/86	5.97	1839.41
09/10/86	6.45	1838.93
10/07/86	5.59	1839.79
10/21/86	5.62	1839.76
12/03/86	5.37	1840.01
04/14/87	3.92	1841.46
05/19/87	5.00	1840.38
06/15/87	5.15	1840.23
06/26/87	5.19	1840.19
07/01/87	5.44	1839.94
07/03/87	5.59	1839.79
07/06/87	5.77	1839.61
07/08/87	5.88	1839.50
07/10/87	5.73	1839.65
07/13/87	5.26	1840.12
07/15/87	5.33	1840.05
07/17/87	5.57	1839.81
07/20/87	4.81	1840.57
07/24/87	4.51	1840.87
07/27/87	4.80	1840.58
07/31/87	4.86	1840.52
08/03/87	5.09	1840.29
08/05/87	5.16	1840.22
08/07/87	5.37	1840.01
08/10/87	5.59	1839.79
08/12/87	5.74	1839.64
08/14/87	5.71	1839.67
08/18/87	5.22	1840.16
08/19/87	5.23	1840.15
08/21/87	5.36	1840.02
08/24/87	5.59	1839.79
08/28/87	4.91	1840.47
08/31/87	5.10	1840.28
09/02/87	5.21	1840.17
09/04/87	5.38	1840.00
09/07/87	5.51	1839.87
09/09/87	5.60	1839.78
09/11/87	5.64	1839.74
09/14/87	5.70	1839.68
09/16/87	5.76	1839.62
09/18/87	5.76	1839.62
09/21/87	5.89	1839.49
09/23/87	5.92	1839.46
09/25/87	5.96	1839.42
09/29/87	5.93	1839.45
10/02/87	6.01	1839.37
10/05/87	6.03	1839.35
10/12/87	6.03	1839.35
11/03/87	5.86	1839.52
12/08/87	5.81	1839.57
04/14/88	5.40	1839.98
05/23/88	5.12	1840.26
06/21/88	6.55	1838.83
07/21/88	7.25	1838.13
08/28/88	7.89	1837.49
09/27/88	8.09	1837.29
11/01/88	8.00	1837.38
11/30/88	7.90	1837.48
01/13/89	8.01	1837.37
05/03/89	6.71	1838.67
07/06/89	7.43	1837.95
08/01/89	7.96	1837.42
08/29/89	8.37	1837.01
10/06/89	8.45	1836.93
11/03/89	8.39	1836.99
12/14/89	8.44	1836.94
04/02/90	8.33	1837.05
05/10/90	7.93	1837.45
06/08/90	7.54	1837.84
07/02/90	7.43	1837.95
07/03/90	7.43	1837.95
08/03/90	7.87	1837.51
08/28/90	8.26	1837.12
09/28/90	8.57	1836.81
10/22/90	8.60	1836.78
11/23/90	8.52	1836.86
12/13/90	8.53	1836.85
04/02/91	8.42	1836.96
05/01/91	7.97	1837.41
05/22/91	7.80	1837.58
05/30/91	7.93	1837.45
06/24/91	7.84	1837.54
07/23/91	7.75	1837.63
08/12/91	8.08	1837.30
08/28/91	8.22	1837.16
09/23/91	8.43	1836.95
11/06/91	8.36	1837.02
12/05/91	8.02	1837.36
02/05/92	8.26	1837.12
04/23/92	7.26	1838.12
05/26/92	7.37	1838.01
06/25/92	7.74	1837.64
07/22/92	7.99	1837.39
08/27/92	8.39	1836.99
09/22/92	8.50	1836.88
10/21/92	8.58	1836.80
11/16/92	8.54	1836.84
12/14/92	8.46	1836.92
04/05/93	7.94	1837.44
05/05/93	7.33	1838.05
06/01/93	7.13	1838.25
06/29/93	6.89	1838.49
08/04/93	4.85	1840.53
09/01/93	6.03	1839.35
10/11/93	6.72	1838.66
11/04/93	6.78	1838.60
12/08/93	6.61	1838.77
02/15/94	7.14	1838.24
04/14/94	4.55	1840.83
05/20/94	5.06	1840.32
06/29/94	4.93	1840.45
08/03/94	6.32	1839.06

148-081-35DDD MP Elev (msl,ft)=1849.76

Lake Nettie Aquifer Sl (ft.)=63-68

Date	Depth to Water (ft)	WL Elev (msl. ft)
08/16/85	7.59	1842.17
08/21/85	7.37	1842.39
09/11/85	7.19	1842.57
10/02/85	6.73	1843.03
11/06/85	6.30	1843.46
12/06/85	6.24	1843.52
03/14/86	6.12	1843.64
04/30/86	5.51	1844.25
06/04/86	6.00	1843.76
07/02/86	8.22	1841.54
07/31/86	6.58	1843.18
08/07/86	6.36	1843.40
09/10/86	6.10	1843.66
10/07/86	5.93	1843.83
10/21/86	5.91	1843.85
12/03/86	5.93	1843.83
04/14/87	5.38	1844.38
05/19/87	5.40	1844.36
06/26/87	7.51	1842.25
07/03/87	8.43	1841.33
07/10/87	7.90	1841.86
07/17/87	7.29	1842.47
07/24/87	6.66	1843.10
07/31/87	6.30	1843.46
08/07/87	6.11	1843.65
08/14/87	5.97	1843.79
08/21/87	5.83	1843.93
08/28/87	5.74	1844.02
09/04/87	5.71	1844.05
09/11/87	5.74	1844.02
09/18/87	5.76	1844.00
09/25/87	5.80	1843.96
10/02/87	5.82	1843.94
10/12/87	5.86	1843.90
11/03/87	5.85	1843.91
12/08/87	5.89	1843.87
04/14/88	5.97	1843.79
05/23/88	5.92	1843.84
06/21/88	8.81	1840.95
07/21/88	11.20	1838.56
08/23/88	9.09	1840.67
09/27/88	7.70	1842.06
11/01/88	7.55	1842.21
11/30/88	7.48	1842.28
01/13/89	7.45	1842.31
05/03/89	7.13	1842.63
08/29/89	8.98	1840.78
12/14/89	8.23	1841.53
05/10/90	8.12	1841.64
06/22/90	8.02	1841.74
07/02/90	8.66	1841.10
07/03/90	8.66	1841.10
08/28/90	10.60	1839.16
12/13/90	8.68	1841.08
04/02/91	8.65	1841.11
04/23/92	8.21	1841.55
05/05/93	8.37	1841.39
04/14/94	6.97	1842.79

148-081-36DDD

Lake Nettie Aquifer

MP Elev (msl,ft)=1852.9

SI (ft.)=78-81

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/15/67	11.87	1841.03
09/15/67	11.34	1841.56
10/13/67	11.48	1841.42
11/17/67	11.52	1841.38
12/15/67	11.65	1841.25
01/12/68	11.77	1841.13
02/15/68	11.77	1841.13
03/14/68	11.56	1841.34
04/12/68	11.45	1841.45
05/16/68	11.20	1841.70
06/13/68	11.25	1841.65
07/15/68	11.43	1841.47
01/15/69	11.65	1841.25
04/17/69	11.50	1841.40
07/16/69	10.92	1841.98
08/27/69	11.00	1841.90
10/02/69	11.14	1841.76
12/30/69	11.25	1841.65
03/24/70	11.30	1841.60
05/05/70	10.86	1842.04
06/05/70	10.50	1842.40
07/01/70	10.55	1842.35
09/10/70	10.90	1842.00
12/01/70	10.90	1842.00
12/12/84	8.73	1844.17
01/17/85	8.85	1844.05
01/23/85	8.85	1844.05
01/30/85	8.85	1844.05
02/06/85	8.88	1844.02
02/13/85	8.90	1844.00
02/20/85	8.91	1843.99
02/27/85	8.94	1843.96
03/06/85	8.93	1843.97
03/13/85	8.88	1844.02
03/20/85	8.87	1844.03
03/27/85	8.85	1844.05
04/03/85	8.77	1844.13
04/10/85	8.74	1844.16
04/17/85	8.69	1844.21
04/24/85	8.73	1844.17
05/01/85	8.53	1844.37
05/08/85	8.52	1844.38
06/07/85	8.90	1844.00
07/03/85	9.24	1843.66
08/16/85	10.75	1842.15
09/11/85	10.23	1842.67
10/02/85	9.55	1843.35
11/06/85	9.01	1843.89
12/06/85	8.91	1843.99
03/14/86	8.78	1844.12
04/30/86	7.89	1845.01
06/04/86	9.09	1843.81
07/02/86	11.68	1841.22
07/31/86	8.55	1844.35
08/07/86	8.69	1844.21
09/10/86	8.78	1844.12
10/07/86	8.21	1844.69
10/21/86	8.34	1844.56
12/03/86	8.43	1844.47
04/14/87	4.88	1848.02
05/19/87	7.04	1845.86
06/26/87	9.85	1843.05
07/03/87	11.22	1841.68
07/10/87	11.31	1841.59
07/17/87	10.14	1842.76
07/24/87	5.11	1847.79
07/31/87	6.78	1846.12
08/07/87	7.36	1845.54
08/14/87	7.61	1845.29
08/21/87	7.29	1845.61
08/28/87	6.48	1846.42
09/04/87	7.00	1845.90
09/11/87	7.21	1845.69
09/18/87	7.35	1845.55
09/25/87	7.48	1845.42
10/02/87	7.59	1845.31
10/12/87	7.74	1845.16
11/03/87	7.95	1844.95
12/08/87	8.16	1844.74
04/14/88	6.04	1846.86
05/23/88	7.51	1845.39
06/21/88	8.93	1843.97
07/21/88	10.80	1842.10
08/23/88	11.83	1841.07
09/27/88	10.45	1842.45
11/01/88	10.25	1842.65
11/30/88	10.16	1842.74
01/13/89	10.03	1842.87
05/02/89	9.86	1843.04
08/29/89	12.09	1840.81
12/14/89	10.84	1842.06
05/10/90	10.75	1842.15
07/02/90	11.13	1841.77
07/03/90	11.13	1841.77
08/28/90	12.56	1840.34
12/13/90	11.42	1841.48
04/02/91	11.29	1841.61
04/23/92	10.97	1841.93
05/05/93	11.08	1841.82
04/14/94	9.88	1843.02

148-082-03CDC

Lake Nettie Aquifer

MP Elev (msl,ft)=1855.3

SI (ft.)=53-58

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	3.54	1851.76
07/16/86	3.60	1851.70
07/31/86	3.72	1851.58
08/08/86	3.71	1851.59
09/10/86	3.72	1851.58
10/07/86	3.99	1851.31
10/21/86	3.96	1851.34
04/15/87	3.59	1851.71
05/19/87	3.43	1851.87
07/01/87	3.46	1851.84
09/09/87	3.05	1852.25
09/11/87	3.10	1852.20
11/03/87	3.66	1851.64

148-082-07AAD3

Lake Nettie Aquifer

MP Elev (msl,ft)=1857.78

SI (ft.)=67-72

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/09/84	8.85	1848.93
12/12/84	9.03	1848.75
01/17/85	9.25	1848.53
01/23/85	9.49	1848.29
01/30/85	10.21	1847.57
02/06/85	10.78	1847.00
02/13/85	10.96	1846.82
02/20/85	10.96	1846.82
02/27/85	11.17	1846.61
03/06/85	11.19	1846.59
03/13/85	11.28	1846.50
03/20/85	11.14	1846.64
03/27/85	11.19	1846.59
04/03/85	8.91	1848.87
04/04/85	8.94	1848.84
04/10/85	8.94	1848.84
04/17/85	8.80	1848.98
04/24/85	8.84	1848.94
04/29/85	8.78	1849.00
05/01/85	8.79	1848.99
05/08/85	8.76	1849.02
06/07/85	8.73	1849.05
07/03/85	8.65	1849.13
08/21/85	8.73	1849.05
09/11/85	9.04	1848.74
10/02/85	8.83	1848.95
11/06/85	8.90	1848.88
12/06/85	8.89	1848.89
03/14/86	9.52	1848.26
04/22/86	8.51	1849.27
06/04/86	8.79	1848.99
07/02/86	8.53	1849.25
07/31/86	8.46	1849.32
08/08/86	8.52	1849.26
09/10/86	8.77	1849.01
10/07/86	9.27	1848.51
10/21/86	9.16	1848.62
12/03/86	9.30	1848.48
04/15/87	9.08	1848.70
05/19/87	8.37	1849.41
07/01/87	8.36	1849.42
08/07/87	7.97	1849.81
09/04/87	7.97	1849.81
11/03/87	9.17	1848.61
12/08/87	10.00	1847.78
04/14/88	10.42	1847.36
05/20/88	8.98	1848.80
06/21/88	9.03	1848.75
07/21/88	9.28	1848.50
08/23/88	9.18	1848.60
09/27/88	9.60	1848.18
11/01/88	9.82	1847.96
11/29/88	9.98	1847.80
01/06/89	10.05	1847.73
05/03/89	9.47	1848.31
06/05/89	9.40	1848.38
07/06/89	9.65	1848.13
08/01/89	9.59	1848.19
08/04/89	9.52	1848.26
08/29/89	9.59	1848.19
10/06/89	9.82	1847.96
11/03/89	9.90	1847.88
12/15/89	10.04	1847.74
04/02/90	10.73	1847.05
05/10/90	9.78	1848.00
06/08/90	9.49	1848.29
07/02/90	9.41	1848.37
07/03/90	9.41	1848.37
08/03/90	9.63	1848.15
08/28/90	9.73	1848.05
09/28/90	10.06	1847.72
10/22/90	10.02	1847.76
11/23/90	10.27	1847.51
12/12/90	10.33	1847.45
04/02/91	11.48	1846.30
05/01/91	9.98	1847.80
05/22/91	9.75	1848.03
06/24/91	9.70	1848.08
07/23/91	10.00	1847.78
08/12/91	9.82	1847.96
08/28/91	9.88	1847.90
09/23/91	10.04	1847.74
11/06/91	11.34	1846.44
12/05/91	11.37	1846.41
02/05/92	11.54	1846.24
04/23/92	10.06	1847.72
05/26/92	9.83	1847.95
06/25/92	9.81	1847.97
07/22/92	9.89	1847.89
08/27/92	9.97	1847.81
09/22/92	10.41	1847.37
10/21/92	11.19	1846.59
11/16/92	11.10	1846.68
12/14/92	11.20	1846.58
04/05/93	11.33	1846.45
05/05/93	10.43	1847.35
06/01/93	9.84	1847.94
06/29/93	9.55	1848.23
08/04/93	8.94	1848.84
08/27/93	9.04	1848.74
09/01/93	9.00	1848.78
10/11/93	9.96	1847.82
11/04/93	10.26	1847.52
12/08/93	10.26	1847.52
02/15/94	10.42	1847.36
04/14/94	9.96	1847.82
05/20/94	8.59	1849.19
06/29/94	8.54	1849.24
08/03/94	8.78	1849.00

148-082-08CDC1 MP Elev (msl,ft)=1856.72

Lake Nettie Aquifer SI (ft.)=151-154

Date	Depth to Water (ft)	WL Elev (msl, ft)
03/05/81	10.59	1846.13
04/29/81	10.86	1845.86
05/28/81	10.94	1845.78
06/21/81	10.64	1846.08
07/27/81	10.87	1845.85
08/23/81	10.84	1845.88
09/29/81	10.74	1845.98
10/31/81	10.54	1846.18
11/28/81	10.84	1845.88
12/30/81	10.84	1845.88
03/25/82	10.89	1845.83
04/19/82	10.82	1845.90
04/30/82	10.74	1845.98
05/19/82	10.56	1846.16
05/30/82	10.34	1846.38
06/14/82	10.24	1846.48
06/27/82	10.09	1846.63
07/31/82	9.99	1846.73
08/02/82	10.04	1846.68
08/29/82	9.84	1846.88
09/30/82	9.74	1846.98
10/12/82	9.55	1847.17
10/25/82	9.43	1847.29
11/16/82	9.36	1847.36
11/30/82	9.19	1847.53
12/02/82	9.16	1847.56
12/09/82	9.39	1847.33
12/30/82	9.09	1847.63
01/13/83	9.34	1847.38
03/31/83	8.99	1847.73
05/05/83	9.09	1847.63
06/30/83	9.09	1847.63
07/27/83	8.89	1847.83
09/26/83	9.29	1847.43
11/16/83	9.29	1847.43
02/08/84	9.24	1847.48
06/08/84	8.89	1847.83
12/12/84	9.18	1847.54
01/17/85	9.30	1847.42
01/23/85	9.39	1847.33
01/30/85	9.62	1847.10
02/06/85	9.90	1846.82
02/13/85	9.96	1846.76
02/20/85	9.92	1846.80
02/27/85	10.03	1846.69
03/06/85	9.97	1846.75
03/13/85	10.05	1846.67
03/20/85	10.05	1846.67
03/27/85	9.48	1847.24
04/03/85	9.19	1847.53
04/10/85	9.16	1847.56
04/17/85	9.19	1847.53
04/24/85	9.19	1847.53
05/01/85	9.11	1847.61
05/08/85	9.24	1847.48
06/07/85	9.29	1847.43
07/03/85	9.31	1847.41
08/21/85	9.51	1847.21
09/11/85	9.65	1847.07
10/02/85	9.60	1847.12
11/06/85	9.58	1847.14
12/06/85	9.59	1847.13
03/14/86	10.00	1846.72
04/22/86	9.35	1847.37
06/04/86	9.42	1847.30
07/02/86	9.22	1847.50
07/31/86	9.03	1847.69
08/08/86	9.05	1847.67
09/10/86	9.07	1847.65
10/07/86	9.10	1847.62
10/21/86	8.98	1847.74
12/03/86	8.95	1847.77
04/15/87	8.90	1847.82
05/19/87	8.56	1848.16
06/26/87	8.63	1848.09
07/01/87	8.62	1848.10
07/03/87	8.68	1848.04
07/06/87	8.69	1848.03
07/08/87	8.75	1847.97
07/10/87	8.70	1848.02
07/13/87	8.67	1848.05
07/15/87	8.62	1848.10
07/17/87	8.62	1848.10
07/20/87	8.50	1848.22
07/24/87	8.41	1848.31
07/27/87	8.43	1848.29
07/31/87	8.40	1848.32
08/05/87	8.40	1848.32
08/07/87	8.49	1848.23
08/10/87	8.49	1848.23
08/12/87	8.57	1848.15
08/19/87	8.49	1848.23
08/21/87	8.53	1848.19
08/26/87	8.51	1848.21
08/28/87	8.50	1848.22
08/31/87	8.55	1848.17
09/02/87	8.55	1848.17
09/04/87	8.58	1848.14
09/07/87	8.63	1848.09
09/09/87	8.63	1848.09
09/11/87	8.64	1848.08
09/14/87	8.65	1848.07
09/16/87	8.66	1848.06
09/18/87	8.69	1848.03
09/21/87	8.76	1847.96
09/23/87	8.74	1847.98
09/25/87	8.75	1847.97
09/29/87	8.80	1847.92
10/02/87	8.84	1847.88
11/03/87	9.20	1847.52
12/08/87	9.43	1847.29
04/14/88	9.94	1846.78
05/20/88	9.62	1847.10
06/21/88	9.95	1846.77
07/21/88	10.25	1846.47
08/23/88	10.55	1846.17
09/27/88	11.05	1845.67
11/01/88	11.32	1845.40
11/29/88	11.43	1845.29
01/06/89	11.52	1845.20
05/03/89	11.41	1845.31
06/05/89	11.44	1845.28
07/06/89	11.61	1845.11
08/01/89	11.70	1845.02
08/29/89	11.81	1844.91
10/06/89	12.10	1844.62
11/03/89	12.15	1844.57
12/15/89	12.34	1844.38
04/02/90	12.79	1843.93
05/10/90	12.37	1844.35
06/08/90	12.26	1844.46
06/22/90	12.31	1844.41
07/02/90	12.26	1844.46
07/03/90	12.26	1844.46
08/03/90	12.38	1844.34
08/28/90	12.54	1844.18
09/28/90	12.79	1843.93
10/22/90	12.82	1843.90
11/23/90	12.84	1843.88
12/12/90	12.84	1843.88
04/02/91	13.48	1843.24
05/01/91	12.83	1843.89
05/22/91	12.93	1843.79
05/30/91	12.96	1843.76
06/24/91	12.93	1843.79
07/23/91	13.00	1843.72
08/12/91	13.04	1843.68
08/28/91	13.09	1843.63
09/23/91	13.18	1843.54
11/06/91	13.32	1843.40
12/05/91	12.83	1843.89
02/05/92	13.00	1843.72
04/23/92	12.29	1844.43
05/26/92	12.46	1844.26
06/25/92	12.70	1844.02
07/22/92	12.73	1843.99
08/27/92	13.16	1843.56
09/22/92	13.38	1843.34
10/21/92	13.52	1843.20
11/16/92	13.38	1843.34
12/14/92	13.27	1843.45
04/05/93	13.56	1843.16
05/05/93	12.91	1843.81
06/01/93	12.62	1844.10
06/29/93	12.36	1844.36
08/04/93	11.69	1845.03
09/01/93	11.60	1845.12
10/11/93	11.63	1845.09
11/04/93	11.49	1845.23
12/08/93	11.11	1845.61
02/15/94	10.83	1845.89
04/14/94	10.57	1846.15
05/20/94	9.85	1846.87
06/29/94	9.80	1846.92
08/03/94	10.07	1846.65

148-082-08CDC2 MP Elev (msl,ft)=1856.69

Lake Nettie Aquifer SI (ft.)=53-56

Date	Depth to Water (ft)	WL Elev (msl. ft)
03/05/81	8.96	1847.73
04/29/81	8.72	1847.97
05/28/81	8.77	1847.92
06/21/81	8.54	1848.15
07/27/81	8.87	1847.82
08/23/81	8.81	1847.88
09/29/81	8.77	1847.92
10/31/81	8.87	1847.82
11/28/81	8.77	1847.92
12/30/81	8.92	1847.77
03/25/82	8.77	1847.92
04/19/82	8.47	1848.22
04/30/82	8.07	1848.62
05/19/82	8.37	1848.32
05/30/82	8.32	1848.37
06/14/82	8.03	1848.66
06/27/82	8.27	1848.42
07/31/82	8.37	1848.32
08/02/82	8.39	1848.30
08/29/82	8.12	1848.57
09/30/82	8.62	1848.07
10/12/82	8.36	1848.33
10/25/82	8.17	1848.52
11/16/82	8.19	1848.50
11/30/82	8.12	1848.57
12/09/82	8.42	1848.27
12/30/82	9.02	1847.67
01/13/83	8.32	1848.37
03/31/83	8.42	1848.27
05/05/83	7.77	1848.92
06/30/83	7.92	1848.77
07/27/83	7.76	1848.93
09/26/83	8.07	1848.62
11/16/83	8.32	1848.37
02/08/84	8.52	1848.17
06/08/84	7.72	1848.97
12/12/84	8.30	1848.39
01/17/85	8.47	1848.22
02/06/85	9.40	1847.29
02/13/85	9.56	1847.13
02/20/85	9.59	1847.10
02/27/85	9.80	1846.89
03/06/85	9.80	1846.89
03/13/85	9.83	1846.86
03/20/85	9.79	1846.90
03/27/85	8.96	1847.73
04/03/85	8.42	1848.27
04/10/85	8.26	1848.43
04/17/85	8.16	1848.53
04/24/85	8.16	1848.53
05/01/85	8.11	1848.58
05/08/85	8.11	1848.58
06/07/85	8.06	1848.63
07/03/85	8.02	1848.67
08/21/85	8.12	1848.57
09/11/85	8.31	1848.38
10/02/85	8.19	1848.50
11/06/85	8.24	1848.45
12/06/85	8.27	1848.42
03/14/86	8.67	1848.02
04/22/86	7.95	1848.74
06/04/86	8.01	1848.68
07/02/86	7.88	1848.81
07/31/86	7.83	1848.86
08/08/86	7.88	1848.81
09/10/86	8.04	1848.65
10/07/86	8.42	1848.27
10/21/86	8.38	1848.31
12/03/86	8.48	1848.21
04/15/87	8.22	1848.47
05/19/87	7.73	1848.96
06/26/87	7.76	1848.93
07/01/87	7.76	1848.93
07/03/87	7.82	1848.87
07/06/87	7.85	1848.84
07/08/87	7.89	1848.80
07/10/87	7.85	1848.84
07/13/87	7.74	1848.95
07/15/87	7.68	1849.01
07/17/87	7.66	1849.03
07/20/87	7.50	1849.19
07/24/87	7.39	1849.30
07/27/87	7.40	1849.29
07/31/87	7.29	1849.40
08/05/87	7.27	1849.42
08/07/87	7.37	1849.32
08/10/87	7.38	1849.31
08/12/87	7.43	1849.26
08/19/87	7.27	1849.42
08/21/87	7.30	1849.39
08/26/87	7.28	1849.41
08/28/87	7.27	1849.42
08/31/87	7.35	1849.34
09/02/87	7.35	1849.34
09/04/87	7.37	1849.32
09/07/87	7.44	1849.25
09/09/87	7.43	1849.26
09/11/87	7.46	1849.23
09/14/87	7.46	1849.23
09/16/87	7.48	1849.21
09/18/87	7.52	1849.17
09/21/87	7.59	1849.10
09/23/87	7.56	1849.13
09/25/87	7.57	1849.12
09/29/87	7.64	1849.05
10/02/87	7.68	1849.01
11/03/87	8.28	1848.41
12/08/87	8.85	1847.84
04/14/88	9.32	1847.37
05/20/88	8.32	1848.37
06/21/88	8.41	1848.28
07/21/88	8.57	1848.12
08/23/88	8.56	1848.13
09/27/88	8.89	1847.80
11/01/88	9.08	1847.61
11/29/88	9.20	1847.49
01/06/89	9.26	1847.43
05/03/89	8.71	1847.98
06/05/89	8.77	1847.92
07/06/89	8.90	1847.79
08/01/89	8.97	1847.72
08/29/89	8.97	1847.72
10/06/89	9.16	1847.53
11/03/89	8.29	1848.40
12/15/89	9.59	1847.10
04/02/90	9.89	1846.80
05/10/90	9.23	1847.46
06/08/90	8.72	1847.97
06/22/90	8.78	1847.91
07/02/90	8.47	1848.22
07/03/90	8.47	1848.22
08/03/90	8.87	1847.82
08/28/90	9.23	1847.46
09/28/90	9.44	1847.25
10/22/90	9.42	1847.27
11/23/90	9.56	1847.13
12/12/90	9.64	1847.05
04/02/91	10.50	1846.19
05/01/91	9.43	1847.26
05/22/91	9.07	1847.62
05/30/91	9.15	1847.54
06/24/91	9.11	1847.58
07/23/91	9.22	1847.47
08/12/91	9.28	1847.41
08/28/91	9.28	1847.41
09/23/91	9.33	1847.36
11/06/91	9.63	1847.06
12/05/91	9.75	1846.94
02/05/92	10.45	1846.24
04/23/92	9.43	1847.26
05/26/92	9.34	1847.35
06/25/92	9.40	1847.29
07/22/92	9.27	1847.42
08/27/92	9.58	1847.11
09/22/92	9.69	1847.00
10/21/92	10.10	1846.59
11/16/92	10.27	1846.42
12/14/92	10.34	1846.35
04/05/93	10.39	1846.30
05/05/93	9.84	1846.85
06/01/93	9.30	1847.39
06/29/93	8.94	1847.75
08/04/93	8.28	1848.41
09/01/93	8.36	1848.33
10/11/93	8.92	1847.77
11/04/93	9.19	1847.50
12/08/93	9.36	1847.33
02/15/94	9.42	1847.27
04/14/94	9.02	1847.67
05/20/94	8.25	1848.44
06/29/94	7.95	1848.74

148-082-11CBC MP Elev (msl,ft)=1877.95

Lake Nettie Aquifer SI (ft.)=3.3-8.3

Date	Depth to Water (ft)	WL Elev (msl. ft)
07/03/86	9.74	1868.21
07/16/86	9.63	1868.32
07/31/86	9.54	1868.41
08/08/86	9.57	1868.38
09/10/86	9.74	1868.21
10/07/86	9.83	1868.12
10/21/86	9.82	1868.13
12/03/86	9.90	1868.05
04/15/87	9.90	1868.05
05/19/87	9.89	1868.06
06/26/87	9.70	1868.25
07/01/87	9.73	1868.22
07/03/87	9.76	1868.19
07/10/87	9.74	1868.21
07/17/87	9.77	1868.18
07/24/87	9.24	1868.71
07/31/87	9.35	1868.60
08/07/87	9.28	1868.67
08/18/87	9.16	1868.79
08/21/87	9.14	1868.81
08/28/87	9.13	1868.82
09/04/87	9.10	1868.85
09/11/87	9.15	1868.80
09/18/87	9.20	1868.75
09/25/87	9.28	1868.67
10/02/87	9.35	1868.60
11/03/87	9.62	1868.33
12/08/87	9.89	1868.06
05/03/89	9.95	1868.00
08/29/89	10.19	1867.76
04/23/92	10.04	1867.91
05/05/93	10.05	1867.90
12/08/93	9.80	1868.15
04/14/94	9.74	1868.21
05/20/94	9.37	1868.58

148-082-11DCC1

Lake Nettie Aquifer

MP Elev (msl,ft)=1877.31

SI (ft.)=38-43

Date	Depth to Water (ft)	WL Elev (msl, ft)
01/14/86	22.99	1854.32
01/20/86	22.91	1854.40
02/05/86	23.12	1854.19
03/14/86	22.92	1854.39
04/22/86	22.37	1854.94
06/04/86	22.48	1854.83
07/02/86	22.50	1854.81
07/16/86	22.43	1854.88
07/31/86	22.35	1854.96
08/08/86	22.29	1855.02
09/10/86	22.18	1855.13
10/07/86	22.36	1854.95
10/21/86	22.33	1854.98
12/03/86	22.53	1854.78
04/15/87	21.80	1855.51
05/19/87	21.78	1855.53
06/26/87	21.85	1855.46
07/01/87	21.73	1855.58
07/03/87	21.80	1855.51
07/10/87	21.84	1855.47
07/17/87	21.92	1855.39
07/24/87	21.75	1855.56
07/31/87	21.47	1855.84
08/07/87	21.53	1855.78
08/18/87	21.49	1855.82
08/21/87	21.49	1855.82
08/28/87	21.30	1856.01
09/04/87	21.35	1855.96
09/11/87	21.40	1855.91
09/18/87	21.40	1855.91
09/25/87	21.36	1855.95
10/02/87	21.60	1855.71
11/03/87	21.55	1855.76
12/08/87	21.90	1855.41
04/14/88	22.64	1854.67
05/20/88	22.55	1854.76
06/21/88	22.48	1854.83
07/21/88	22.69	1854.62
08/23/88	22.95	1854.36
09/27/88	23.18	1854.13
11/01/88	23.22	1854.09
11/29/88	23.48	1853.83
01/06/89	23.47	1853.84
05/03/89	23.40	1853.91
08/29/89	23.87	1853.44
12/15/89	24.24	1853.07
05/01/90	24.59	1852.72
05/02/90	24.49	1852.82
05/03/90	25.63	1851.68
05/04/90	24.91	1852.40
05/08/90	24.44	1852.87
05/10/90	24.33	1852.98
07/02/90	24.27	1853.04
07/03/90	24.27	1853.04
08/03/90	26.65	1850.66
08/28/90	25.37	1851.94
09/28/90	25.02	1852.29
10/22/90	25.07	1852.24
11/23/90	24.72	1852.59
12/12/90	24.77	1852.54
04/02/91	24.97	1852.34
05/01/91	24.98	1852.33
05/22/91	24.75	1852.56
05/30/91	24.63	1852.68
06/24/91	24.68	1852.63
07/23/91	26.44	1850.87
08/12/91	26.04	1851.27
08/28/91	25.83	1851.48
09/23/91	25.31	1852.00
11/06/91	25.34	1851.97
12/05/91	25.25	1852.06
02/05/92	25.26	1852.05
04/23/92	25.25	1852.06
05/26/92	25.70	1851.61
06/25/92	25.32	1851.99
07/22/92	26.00	1851.31
08/27/92	26.70	1850.61
09/22/92	27.49	1849.82
10/21/92	25.56	1851.75
11/16/92	25.61	1851.70
12/14/92	25.41	1851.90
04/05/93	25.39	1851.92
05/05/93	25.48	1851.83
06/01/93	25.17	1852.14
06/29/93	24.84	1852.47
08/04/93	23.35	1853.96
09/01/93	23.20	1854.11
10/11/93	23.48	1853.83
11/04/93	23.74	1853.57
12/08/93	23.59	1853.72
02/15/94	23.95	1853.36
04/14/94	23.28	1854.03
05/20/94	23.12	1854.19
06/29/94	22.74	1854.57
08/03/94	24.40	1852.91

148-082-11DCC2

Lake Nettie Aquifer

MP Elev (msl,ft)=1877.5

SI (ft.)=14-19

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	17.92	1859.58
07/16/86	18.07	1859.43
07/31/86	18.07	1859.43
08/08/86	18.09	1859.41
09/10/86	18.18	1859.32
10/07/86	18.25	1859.25
10/21/86	18.26	1859.24
12/03/86	18.25	1859.25
04/15/87	17.47	1860.03
05/19/87	17.53	1859.97
06/26/87	17.61	1859.89
07/01/87	17.62	1859.88
07/03/87	17.63	1859.87
07/10/87	17.67	1859.83
07/17/87	17.72	1859.78
07/24/87	17.68	1859.82
07/31/87	17.53	1859.97
08/07/87	17.50	1860.00
08/18/87	17.47	1860.03
08/21/87	17.46	1860.04
08/28/87	17.45	1860.05
09/04/87	17.46	1860.04
09/11/87	17.47	1860.03
09/18/87	17.50	1860.00
09/25/87	17.52	1859.98
10/02/87	17.57	1859.93
11/03/87	17.68	1859.82
12/08/87	17.83	1859.67
04/14/88	18.30	1859.20
05/20/88	18.30	1859.20
06/21/88	18.40	1859.10
07/21/88	18.50	1859.00
08/23/88	18.74	1858.76
09/27/88	18.99	1858.51
11/01/88	19.16	1858.34
11/29/88	19.27	1858.23
01/06/89	19.38	1858.12
05/03/89	19.23	1858.27
08/29/89	19.61	1857.89
12/15/89	19.88	1857.62
05/01/90	20.01	1857.49
05/02/90	20.02	1857.48
05/03/90	20.02	1857.48
05/04/90	20.02	1857.48
05/08/90	20.02	1857.48
05/10/90	20.02	1857.48
07/02/90	19.87	1857.63
07/03/90	19.87	1857.63
08/03/90	19.82	1857.68
08/28/90	19.98	1857.52
09/28/90	20.03	1857.47
10/22/90	19.67	1857.83
11/23/90	20.08	1857.42
12/12/90	20.12	1857.38
04/02/91	20.20	1857.30
05/01/91	20.20	1857.30
05/22/91	20.15	1857.35
05/30/91	20.15	1857.35
06/24/91	20.12	1857.38
07/23/91	20.03	1857.47
08/12/91	20.05	1857.45
08/28/91	20.07	1857.43
09/23/91	20.15	1857.35
11/06/91	20.19	1857.31
12/05/91	20.19	1857.31
02/05/92	20.22	1857.28
04/23/92	19.90	1857.60
05/26/92	19.90	1857.60
06/25/92	19.95	1857.55
07/22/92	19.67	1857.83
08/27/92	19.61	1857.89
09/22/92	19.69	1857.81
10/21/92	19.84	1857.66
11/16/92	19.90	1857.60
12/14/92	19.98	1857.52
04/05/93	19.76	1857.74
05/05/93	19.60	1857.90
06/01/93	19.58	1857.92
06/29/93	19.35	1858.15
08/04/93	17.35	1860.15
08/27/93	16.98	1860.52
09/01/93	16.94	1860.56
10/11/93	17.16	1860.34
11/04/93	17.30	1860.20
12/08/93	17.54	1859.96
02/15/94	17.85	1859.65
04/14/94	17.47	1860.03
05/20/94	17.49	1860.01
06/29/94	17.27	1860.23
08/03/94	17.49	1860.01

148-082-12DDD2

Lake Nettie Aquifer

MP Elev (msl,ft)=1882.95

SI (ft.)=53-58

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	33.04	1849.91
09/11/85	33.26	1849.69
10/02/85	33.08	1849.87
11/06/85	33.10	1849.85
04/22/86	32.43	1850.52
06/04/86	32.70	1850.25
07/02/86	32.79	1850.16
07/31/86	32.78	1850.17
08/08/86	32.68	1850.27
09/10/86	32.69	1850.26
10/07/86	32.74	1850.21
04/15/87	31.87	1851.08
05/19/87	31.98	1850.97
06/26/87	32.15	1850.80
07/01/87	31.98	1850.97
07/03/87	32.08	1850.87
07/10/87	32.08	1850.87
07/17/87	32.18	1850.77
07/24/87	32.17	1850.78
07/31/87	31.90	1851.05
08/07/87	32.02	1850.93
08/19/87	32.05	1850.90
08/21/87	32.08	1850.87
08/28/87	31.92	1851.03
09/04/87	31.96	1850.99
09/11/87	32.02	1850.93
09/18/87	31.99	1850.96
09/25/87	31.93	1851.02
10/02/87	32.21	1850.74
11/03/87	31.95	1851.00
12/08/87	32.09	1850.86
04/14/88	32.26	1850.69
08/23/88	33.23	1849.72
01/06/89	33.75	1849.20
05/03/89	33.41	1849.54
08/29/89	34.34	1848.61
12/15/89	34.86	1848.09
05/10/90	34.68	1848.27
07/02/90	34.71	1848.24
07/03/90	34.71	1848.24
08/28/90	35.14	1847.81
12/12/90	35.63	1847.32
04/02/91	35.48	1847.47
04/23/92	35.96	1846.99

148-082-13BAB

Lake Nettie Aquifer

MP Elev (msl,ft)=1866.06

SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	20.18	1845.88
09/11/85	20.38	1845.68
10/02/85	20.34	1845.72
11/06/85	20.29	1845.77
12/06/85	20.27	1845.79
01/20/86	20.37	1845.69
02/05/86	20.45	1845.61
03/14/86	20.50	1845.56
04/22/86	19.95	1846.11
06/04/86	20.03	1846.03
07/02/86	20.00	1846.06
07/31/86	19.84	1846.22
08/08/86	19.86	1846.20
09/10/86	19.81	1846.25
10/07/86	19.84	1846.22
10/21/86	19.89	1846.17
12/03/86	19.70	1846.36
04/15/87	19.51	1846.55
05/19/87	19.30	1846.76
06/26/87	19.36	1846.70
07/01/87	19.35	1846.71
07/03/87	19.41	1846.65
07/06/87	19.43	1846.63
07/08/87	19.48	1846.58
07/10/87	19.42	1846.64
07/13/87	19.39	1846.67
07/15/87	19.39	1846.67
07/17/87	19.44	1846.62
07/20/87	19.30	1846.76
07/24/87	19.24	1846.82
07/27/87	19.24	1846.82
07/31/87	19.20	1846.86
08/05/87	19.22	1846.84
08/07/87	19.30	1846.76
08/10/87	19.30	1846.76
08/12/87	19.36	1846.70
08/19/87	19.29	1846.77
08/21/87	19.33	1846.73
08/26/87	19.30	1846.76
08/28/87	19.30	1846.76
08/31/87	19.34	1846.72
09/02/87	19.35	1846.71
09/04/87	19.38	1846.68
09/07/87	19.42	1846.64
09/09/87	19.42	1846.64
09/11/87	19.43	1846.63
09/14/87	19.44	1846.62
09/16/87	19.46	1846.60
09/18/87	19.49	1846.57
09/21/87	19.55	1846.51
09/23/87	19.54	1846.52
09/25/87	19.54	1846.52
09/29/87	19.59	1846.47
10/02/87	19.62	1846.44
11/03/87	19.85	1846.21
12/08/87	20.05	1846.01
04/14/88	20.50	1845.56
05/20/88	20.21	1845.85
06/21/88	20.54	1845.52
07/21/88	20.90	1845.16
08/23/88	21.23	1844.83
09/27/88	21.63	1844.43
10/31/88	21.85	1844.21
11/29/88	21.91	1844.15
01/06/89	21.98	1844.08
05/03/89	21.94	1844.12
08/29/89	22.39	1843.67
12/15/89	22.80	1843.26
05/10/90	22.82	1843.24
06/21/90	22.69	1843.37
07/02/90	22.69	1843.37
07/03/90	22.69	1843.37
08/28/90	23.07	1842.99
12/12/90	23.33	1842.73
04/02/91	23.74	1842.32
04/23/92	22.93	1843.13
05/05/93	23.46	1842.60
04/14/94	21.18	1844.88

148-082-13BBA1

Lake Nettie Aquifer

MP Elev (msl,ft)=1860.88

SI (ft.)=217-222

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	15.05	1845.83
09/11/85	15.14	1845.74
10/02/85	15.10	1845.78
11/06/85	15.09	1845.79
12/06/85	15.06	1845.82
02/05/86	15.20	1845.68
03/14/86	15.25	1845.63
04/22/86	14.69	1846.19
06/04/86	14.77	1846.11
07/02/86	14.76	1846.12
07/31/86	14.56	1846.32
08/08/86	14.58	1846.30
09/10/86	14.56	1846.32
10/07/86	14.56	1846.32
10/21/86	14.50	1846.38
12/03/86	14.45	1846.43
04/15/87	14.20	1846.68
05/19/87	14.00	1846.88
06/26/87	14.07	1846.81
07/01/87	14.06	1846.82
07/03/87	14.13	1846.75
07/06/87	14.15	1846.73
07/08/87	14.19	1846.69
07/10/87	14.15	1846.73
07/13/87	14.13	1846.75
07/15/87	14.11	1846.77
07/17/87	14.13	1846.75
07/20/87	14.01	1846.87
07/24/87	13.94	1846.94
07/27/87	13.95	1846.93
07/31/87	13.91	1846.97
08/05/87	13.92	1846.96
08/07/87	14.01	1846.87
08/10/87	14.01	1846.87
08/12/87	14.07	1846.81
08/19/87	13.99	1846.89
08/21/87	14.03	1846.85
08/26/87	14.01	1846.87
08/28/87	14.01	1846.87
08/31/87	14.05	1846.83
09/02/87	14.05	1846.83
09/04/87	14.08	1846.80
09/07/87	14.12	1846.76
09/09/87	14.12	1846.76
09/11/87	14.14	1846.74
09/14/87	14.15	1846.73
09/16/87	14.17	1846.71
09/18/87	14.20	1846.68
09/21/87	14.26	1846.62
09/23/87	14.25	1846.63
09/25/87	14.25	1846.63
09/29/87	14.30	1846.58
10/02/87	14.34	1846.54
11/03/87	14.56	1846.32
12/08/87	14.79	1846.09
04/14/88	15.22	1845.66
05/20/88	14.94	1845.94
06/21/88	15.24	1845.64
07/21/88	15.62	1845.26
08/23/88	15.98	1844.90
09/27/88	16.38	1844.50
10/31/88	16.58	1844.30
11/29/88	16.67	1844.21
01/06/89	16.72	1844.16
05/03/89	16.67	1844.21
06/05/89	16.62	1844.26
07/06/89	16.85	1844.03
08/01/89	17.00	1843.88
08/29/89	17.15	1843.73
10/06/89	17.38	1843.50
11/03/89	17.40	1843.48
12/15/89	17.57	1843.31
04/02/90	17.89	1842.99
05/01/90	17.53	1843.35
05/02/90	17.52	1843.36
05/03/90	17.54	1843.34
05/04/90	17.55	1843.33
05/08/90	17.52	1843.36
05/10/90	17.58	1843.30
06/08/90	17.55	1843.33
06/21/90	17.46	1843.42
07/02/90	17.50	1843.38
07/03/90	17.50	1843.38
08/02/90	17.65	1843.23
08/28/90	17.85	1843.03
09/28/90	18.06	1842.82
10/22/90	18.03	1842.85
11/23/90	18.07	1842.81
12/12/90	18.07	1842.81
04/02/91	18.52	1842.36
05/01/91	18.36	1842.52
05/22/91	18.06	1842.82
06/24/91	18.10	1842.78
07/23/91	19.30	1841.58
08/12/91	18.58	1842.30
08/28/91	18.65	1842.23
09/23/91	18.66	1842.22
11/06/91	17.90	1842.98
12/05/91	18.20	1842.68
02/05/92	18.22	1842.66
04/23/92	17.69	1843.19
05/26/92	17.75	1843.13
06/25/92	18.07	1842.81
07/22/92	18.07	1842.81
08/27/92	18.72	1842.16
09/22/92	18.74	1842.14
10/21/92	18.76	1842.12
11/16/92	18.55	1842.33
12/14/92	18.50	1842.38
04/05/93	18.59	1842.29
05/05/93	18.20	1842.68
06/01/93	17.85	1843.03
06/29/93	17.60	1843.28
08/04/93	16.89	1843.99
09/01/93	17.01	1843.87
10/11/93	16.90	1843.98
11/04/93	16.80	1844.08
12/08/93	16.41	1844.47
04/14/94	15.90	1844.98
05/20/94	15.36	1845.52
06/29/94	15.35	1845.53
08/03/94	15.75	1845.13

148-082-13BBA2

MP Elev (msl,ft)=1861.21

Lake Nettie Aquifer

SI (ft.)=22-27

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	7.66	1853.55
07/16/86	7.64	1853.57
07/31/86	7.76	1853.45
08/08/86	7.86	1853.35
09/10/86	8.01	1853.20
10/07/86	7.74	1853.47
10/21/86	7.74	1853.47
12/03/86	7.64	1853.57
04/15/87	6.72	1854.49
05/19/87	6.98	1854.23
06/26/87	7.10	1854.11
07/01/87	7.14	1854.07
07/03/87	7.17	1854.04
07/06/87	7.21	1854.00
07/08/87	7.24	1853.97
07/10/87	7.20	1854.01
07/13/87	7.12	1854.09
07/15/87	7.12	1854.09
07/17/87	7.18	1854.03
07/20/87	7.02	1854.19
07/24/87	6.85	1854.36
07/27/87	6.88	1854.33
07/31/87	6.83	1854.38
08/05/87	6.84	1854.37
08/07/87	6.94	1854.27
08/10/87	6.93	1854.28
08/12/87	7.02	1854.19
08/19/87	6.89	1854.32
08/21/87	6.94	1854.27
08/26/87	6.86	1854.35
08/28/87	6.85	1854.36
08/31/87	6.88	1854.33
09/02/87	6.88	1854.33
09/04/87	6.94	1854.27
09/07/87	6.95	1854.26
09/09/87	6.96	1854.25
09/11/87	6.97	1854.24
09/14/87	6.97	1854.24
09/16/87	6.97	1854.24
09/18/87	6.97	1854.24
09/21/87	7.00	1854.21
09/23/87	7.00	1854.21
09/25/87	6.99	1854.22
09/29/87	7.03	1854.18
10/02/87	7.04	1854.17
11/03/87	7.08	1854.13
12/08/87	7.08	1854.13
04/14/88	7.03	1854.18
05/20/88	7.32	1853.89
06/21/88	7.77	1853.44
07/21/88	8.06	1853.15
08/23/88	8.65	1852.56
09/27/88	8.98	1852.23
10/31/88	9.07	1852.14
11/29/88	9.04	1852.17
01/06/89	8.91	1852.30
05/03/89	8.60	1852.61
06/05/89	8.89	1852.32
07/06/89	9.24	1851.97
08/01/89	9.52	1851.69
08/29/89	9.85	1851.36
10/06/89	10.06	1851.15
11/03/89	10.04	1851.17
12/15/89	10.07	1851.14
04/02/90	9.93	1851.28
05/01/90	10.14	1851.07
05/02/90	10.14	1851.07
05/03/90	10.16	1851.05
05/04/90	10.15	1851.06
05/08/90	10.18	1851.03
05/10/90	10.15	1851.06
06/08/90	10.13	1851.08
06/21/90	10.23	1850.98
07/02/90	10.23	1850.98
07/03/90	10.23	1850.98
08/02/90	10.57	1850.64
08/28/90	10.89	1850.32
09/28/90	11.15	1850.06
10/22/90	11.13	1850.08
11/23/90	11.17	1850.04
12/12/90	11.16	1850.05
04/02/91	10.88	1850.33
05/01/91	11.00	1850.21
05/22/91	11.00	1850.21
06/24/91	11.07	1850.14
07/23/91	11.39	1849.82
08/12/91	11.57	1849.64
08/28/91	11.70	1849.51
09/23/91	11.79	1849.42
11/06/91	11.72	1849.49
12/05/91	11.56	1849.65
02/05/92	11.35	1849.86
04/23/92	11.29	1849.92
05/26/92	11.58	1849.63
06/25/92	11.84	1849.37
07/22/92	11.79	1849.42
08/27/92	12.15	1849.06
09/22/92	12.33	1848.88
10/21/92	12.45	1848.76
11/16/92	12.30	1848.91
12/14/92	12.22	1848.99
04/05/93	11.73	1849.48
05/05/93	11.76	1849.45
06/01/93	11.83	1849.38
06/29/93	11.69	1849.52
08/04/93	10.45	1850.76
09/01/93	10.49	1850.72
10/11/93	10.48	1850.73
11/04/93	10.45	1850.76
12/08/93	10.09	1851.12
04/14/94	9.18	1852.03
05/20/94	9.16	1852.05
06/29/94	8.90	1852.31
08/03/94	9.15	1852.06

148-082-13BBB1

MP Elev (msl,ft)=1855.09

Lake Nettie Aquifer

SI (ft.)=18-38

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/03/69	5.73	1849.36
05/05/70	5.73	1849.36
06/05/70	5.03	1850.06
06/23/70	4.60	1850.49
09/09/70	4.85	1850.24
06/29/77	2.94	1852.15
07/11/77	3.10	1851.99
07/26/77	3.27	1851.82
08/08/77	3.40	1851.69
08/23/77	3.35	1851.74
09/12/77	3.38	1851.71
09/29/77	3.35	1851.74
10/26/77	3.25	1851.84
11/15/77	3.30	1851.79
12/11/77	3.45	1851.64
04/27/78	2.78	1852.31
05/23/78	2.64	1852.45
06/27/78	2.79	1852.30
07/25/78	2.60	1852.49
08/24/78	2.75	1852.34
09/25/78	2.70	1852.39
10/25/78	2.70	1852.39
07/31/79	2.21	1852.88
08/22/79	2.25	1852.84
03/20/80	4.08	1851.01
04/23/80	3.31	1851.78
05/21/80	2.89	1852.20
06/23/80	2.87	1852.22
07/21/80	3.25	1851.84
08/25/80	4.24	1850.85
09/22/80	3.36	1851.73

148-082-13BBB2

MP Elev (msl,ft)=1865.32

Lake Nettie Aquifer

SI (ft.)=28-33

Date	Depth to Water (ft)	WL Elev (msl, ft)
01/14/86	11.10	1854.22
01/20/86	11.06	1854.26
02/05/86	11.21	1854.11
03/14/86	11.03	1854.29
04/22/86	10.52	1854.80
06/04/86	10.56	1854.76
07/02/86	10.64	1854.68
07/31/86	10.54	1854.78
08/08/86	10.49	1854.83
09/10/86	10.42	1854.90
10/07/86	10.55	1854.77
10/21/86	10.51	1854.81
12/03/86	10.66	1854.66
04/15/87	9.87	1855.45
05/19/87	9.88	1855.44
06/26/87	9.96	1855.36
07/01/87	9.87	1855.45
07/03/87	9.94	1855.38
07/10/87	9.98	1855.34
07/17/87	10.02	1855.30
07/24/87	9.84	1855.48
07/31/87	9.64	1855.68
08/07/87	9.69	1855.63
08/18/87	9.66	1855.66
08/21/87	9.65	1855.67
08/28/87	9.51	1855.81
09/04/87	9.55	1855.77
09/11/87	9.59	1855.73
09/18/87	9.59	1855.73
09/25/87	9.57	1855.75
10/02/87	9.77	1855.55
11/03/87	9.74	1855.58
12/08/87	10.01	1855.31
04/14/88	10.60	1854.72
05/20/88	10.56	1854.76
06/21/88	10.57	1854.75
07/21/88	10.86	1854.46
08/23/88	11.10	1854.22
09/27/88	11.37	1853.95
10/31/88	11.47	1853.85
11/29/88	11.63	1853.69
01/06/89	11.60	1853.72
05/03/89	11.54	1853.78
06/05/89	11.60	1853.72
07/06/89	11.94	1853.38
08/01/89	11.88	1853.44
08/29/89	12.11	1853.21
10/06/89	12.29	1853.03
11/03/89	12.09	1853.23
12/15/89	12.46	1852.86
04/02/90	12.62	1852.70
05/01/90	12.71	1852.61
05/02/90	12.75	1852.57
05/03/90	13.24	1852.08
05/04/90	12.95	1852.37
05/08/90	12.66	1852.66
05/10/90	12.63	1852.69
06/08/90	12.51	1852.81
07/02/90	12.52	1852.80
07/03/90	12.52	1852.80
08/02/90	13.67	1851.65
08/28/90	13.55	1851.77
09/28/90	13.31	1852.01
10/22/90	13.13	1852.19
11/23/90	13.05	1852.27
12/12/90	13.15	1852.17
04/02/91	13.26	1852.06
05/01/91	13.27	1852.05
05/22/91	13.12	1852.20
05/30/91	13.01	1852.31
06/24/91	13.08	1852.24
07/23/91	14.43	1850.89
08/12/91	14.06	1851.26
08/28/91	14.05	1851.27
09/23/91	13.65	1851.67
11/06/91	13.69	1851.63
12/05/91	13.58	1851.74
02/05/92	13.59	1851.73
04/23/92	13.49	1851.83
05/26/92	13.78	1851.54
06/25/92	13.69	1851.63
07/22/92	13.92	1851.40
08/27/92	14.80	1850.52
09/22/92	15.19	1850.13
10/21/92	13.99	1851.33
11/16/92	13.98	1851.34
12/14/92	13.82	1851.50
04/05/93	13.73	1851.59
05/05/93	13.78	1851.54
06/01/93	13.56	1851.76
06/30/93	13.31	1852.01
08/04/93	11.82	1853.50
09/01/93	11.65	1853.67
10/11/93	11.80	1853.52
11/04/93	12.04	1853.28
12/08/93	11.90	1853.42
02/15/94	12.18	1853.14
04/14/94	11.52	1853.80
05/20/94	11.40	1853.92
06/29/94	11.00	1854.32

148-082-13BBB3

MP Elev (msl,ft)=1865.54

Lake Nettie Aquifer

Sl (ft.)=17-23

Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	11.62	1853.92
07/31/86	11.63	1853.91
08/08/86	11.67	1853.87
09/10/86	11.64	1853.90
10/07/86	11.65	1853.89
10/21/86	11.58	1853.96
12/03/86	11.59	1853.95
04/15/87	10.89	1854.65
05/19/87	10.90	1854.64
06/26/87	11.00	1854.54
07/01/87	10.99	1854.55
07/03/87	11.04	1854.50
07/10/87	11.04	1854.50
07/17/87	11.06	1854.48
07/24/87	10.82	1854.72
07/31/87	10.72	1854.82
08/07/87	10.81	1854.73
08/18/87	10.79	1854.75
08/21/87	10.80	1854.74
08/28/87	10.72	1854.82
09/04/87	10.77	1854.77
09/11/87	10.80	1854.74
09/18/87	10.80	1854.74
09/25/87	10.81	1854.73
10/02/87	10.91	1854.63
11/03/87	10.94	1854.60
12/08/87	11.02	1854.52
04/14/88	11.23	1854.31
05/20/88	11.40	1854.14
06/21/88	11.65	1853.89
07/21/88	11.93	1853.61
08/23/88	12.31	1853.23
09/27/88	12.59	1852.95
10/31/88	12.70	1852.84
11/29/88	12.73	1852.81
01/06/89	12.65	1852.89
05/03/89	12.48	1853.06
06/05/89	12.70	1852.84
07/06/89	13.00	1852.54
08/01/89	13.05	1852.49
08/29/89	13.29	1852.25
10/06/89	13.46	1852.08
11/03/89	13.42	1852.12
12/15/89	13.60	1851.94
04/02/90	13.66	1851.88
05/01/90	13.73	1851.81
05/02/90	13.74	1851.80
05/03/90	13.95	1851.59
05/04/90	13.84	1851.70
05/08/90	13.72	1851.82
05/10/90	13.74	1851.80
06/08/90	13.65	1851.89
07/02/90	13.74	1851.80
07/03/90	13.74	1851.80
08/02/90	14.40	1851.14
08/28/90	14.55	1850.99
09/28/90	14.54	1851.00
10/22/90	14.28	1851.26
11/23/90	14.33	1851.21
12/12/90	14.35	1851.19
04/02/91	14.37	1851.17
05/01/91	14.39	1851.15
05/22/91	14.35	1851.19
05/30/91	14.31	1851.23
06/24/91	14.30	1851.24
07/23/91	15.21	1850.33
08/12/91	15.09	1850.45
08/28/91	15.14	1850.40
09/23/91	14.95	1850.59
11/06/91	14.94	1850.60
12/05/91	14.89	1850.65
02/05/92	14.86	1850.68
04/23/92	14.74	1850.80
05/26/92	15.04	1850.50
06/25/92	15.08	1850.46
07/22/92	15.19	1850.35
08/27/92	15.87	1849.67
09/22/92	16.11	1849.43
10/21/92	15.55	1849.99
11/16/92	15.52	1850.02
12/14/92	15.41	1850.13
04/05/93	15.26	1850.28
05/05/93	15.24	1850.30
06/01/93	15.15	1850.39
06/30/93	14.92	1850.62
08/04/93	13.52	1852.02
09/01/93	13.40	1852.14
10/11/93	13.48	1852.06
11/04/93	13.56	1851.98
12/08/93	13.45	1852.09
02/15/94	13.40	1852.14
04/14/94	12.87	1852.67
05/20/94	12.77	1852.77
06/29/94	12.24	1853.30
08/03/94	13.11	1852.43

148-082-15BBB

MP Elev (msl,ft)=1847.81

Lake Nettie Aquifer

Sl (ft.)=178-198

Date	Depth to Water (ft)	WL Elev (msl, ft)
12/03/69	6.99	1840.82
12/30/69	6.64	1841.17
01/21/70	6.79	1841.02
02/18/70	6.97	1840.84
03/24/70	7.19	1840.62
04/22/70	6.87	1840.94
06/05/70	6.65	1841.16
06/23/70	6.49	1841.32
09/09/70	6.59	1841.22
12/02/70	6.85	1840.96
06/07/77	3.37	1844.44
06/15/77	3.27	1844.54
06/29/77	3.41	1844.40
07/11/77	3.44	1844.37
07/26/77	3.63	1844.18
08/08/77	3.67	1844.14
08/23/77	3.78	1844.03
09/12/77	3.85	1843.96
09/29/77	3.64	1844.17
10/11/77	3.62	1844.19
10/26/77	3.63	1844.18
11/15/77	3.67	1844.14
11/30/77	4.15	1843.66
12/12/77	3.78	1844.03
12/27/77	3.61	1844.20
01/09/78	3.71	1844.10
01/23/78	3.65	1844.16
02/13/78	3.50	1844.31
04/10/78	3.71	1844.10
04/27/78	3.48	1844.33
05/10/78	3.31	1844.50
05/23/78	3.22	1844.59
06/05/78	3.18	1844.63
06/28/78	2.99	1844.82
07/12/78	2.72	1845.09
07/26/78	2.70	1845.11
08/07/78	2.58	1845.23
08/24/78	2.64	1845.17
09/13/78	2.57	1845.24
09/25/78	2.55	1845.26
10/13/78	2.70	1845.11
10/25/78	2.60	1845.21
11/06/78	2.71	1845.10
05/22/79	2.09	1845.72
06/04/79	2.02	1845.79
06/27/79	1.94	1845.87
07/01/79	1.98	1845.83
07/31/79	2.00	1845.81
08/06/79	2.12	1845.69
08/22/79	2.16	1845.65
09/04/79	2.13	1845.68
09/25/79	2.16	1845.65
10/01/79	2.27	1845.54
10/30/79	2.28	1845.53
04/01/80	2.17	1845.64
05/07/80	2.38	1845.43
06/02/80	2.50	1845.31
07/02/80	2.66	1845.15
08/13/80	2.76	1845.05
09/10/80	2.70	1845.11
10/07/80	2.76	1845.05
11/05/80	2.52	1845.29
02/23/81	2.51	1845.30
04/07/81	2.69	1845.12
04/29/81	2.73	1845.08
05/06/81	2.79	1845.02
05/28/81	2.82	1844.99
06/11/81	2.74	1845.07
06/21/81	2.52	1845.29
06/29/81	2.76	1845.05
07/27/81	2.85	1844.96
07/29/81	2.92	1844.89
08/23/81	2.90	1844.91
08/25/81	2.90	1844.91
09/29/81	2.82	1844.99
10/31/81	2.92	1844.89
11/28/81	2.87	1844.94
04/19/82	2.67	1845.14
04/30/82	2.52	1845.29
05/30/82	2.32	1845.49
06/27/82	2.07	1845.74
07/31/82	2.02	1845.79
08/02/82	1.99	1845.82
08/29/82	1.57	1846.24
09/09/82	1.80	1846.01
09/30/82	1.27	1846.54
10/12/82	1.50	1846.31
10/25/82	1.42	1846.39
11/16/82	1.25	1846.56
12/01/82	1.62	1846.19
05/05/83	1.02	1846.79
07/27/83	0.87	1846.94
11/16/83	1.17	1846.64
06/08/84	0.77	1847.04
04/04/85	1.23	1846.58
04/29/85	1.19	1846.62
06/07/85	1.25	1846.56
07/03/85	1.29	1846.52
08/21/85	1.53	1846.28
09/11/85	1.73	1846.08
10/02/85	1.67	1846.14
11/06/85	1.63	1846.18
04/22/86	1.15	1846.66
06/04/86	1.42	1846.39
07/02/86	1.33	1846.48
07/31/86	1.13	1846.68
08/08/86	1.15	1846.66
09/10/86	1.15	1846.66
10/07/86	1.17	1846.64
10/21/86	1.09	1846.72
04/15/87	0.91	1846.90
05/19/87	0.64	1847.17
06/26/87	0.70	1847.11
07/01/87	0.68	1847.13
07/03/87	0.70	1847.11
07/06/87	0.76	1847.05
07/08/87	0.80	1847.01
07/10/87	0.75	1847.06
07/13/87	0.72	1847.09
07/15/87	0.71	1847.10
07/17/87	0.72	1847.09
07/20/87	0.59	1847.22
07/24/87	0.52	1847.29
07/27/87	0.53	1847.28
07/31/87	0.50	1847.31
08/05/87	0.51	1847.30
08/07/87	0.59	1847.22
08/10/87	0.59	1847.22
08/12/87	0.66	1847.15
08/19/87	0.59	1847.22
08/21/87	0.61	1847.20
08/26/87	0.60	1847.21
08/28/87	0.60	1847.21
08/31/87	0.65	1847.16
09/02/87	0.64	1847.17
09/04/87	0.67	1847.14
09/07/87	0.71	1847.10
09/09/87	0.72	1847.09
09/11/87	0.73	1847.08
09/14/87	0.73	1847.08
09/16/87	0.76	1847.05
09/18/87	0.78	1847.03
09/21/87	0.81	1847.00
09/23/87	0.82	1846.99
09/25/87	0.83	1846.98
09/29/87	0.88	1846.93
10/02/87	0.93	1846.88
04/14/88	1.93	1845.88
05/20/88	1.61	1846.20
06/21/88	1.93	1845.88
07/21/88	2.27	1845.54
08/23/88	2.60	1845.21
09/27/88	3.03	1844.78
11/01/88	3.29	1844.52
11/29/88	3.39	1844.42
01/06/89	3.46	1844.35
05/03/89	3.42	1844.39
06/05/89	3.36	1844.45
07/06/89	3.56	1844.25
08/01/89	3.69	1844.12
08/29/89	3.83	1843.98
10/06/89	4.09	1843.72
11/03/89	4.13	1843.68
12/15/89	4.29	1843.52
04/02/90	4.66	1843.15
05/10/90	4.32	1843.49
06/08/90	4.21	1843.60
07/02/90	4.20	1843.61
07/03/90	4.20	1843.61
08/03/90	4.37	1843.44
08/28/90	4.52	1843.29
09/28/90	4.74	1843.07
10/22/90	4.72	1843.09
11/23/90	4.79	1843.02
12/12/90	4.82	1842.99
04/02/91	5.33	1842.48
05/01/91	4.79	1843.02
05/22/91	4.82	1842.99
05/30/91	4.85	1842.96
06/24/91	4.83	1842.98
07/23/91	4.91	1842.90
08/12/91	5.12	1842.69
08/28/91	5.18	1842.63
09/23/91	5.23	1842.58
11/06/91	5.10	1842.71
12/05/91	4.89	1842.92
02/05/92	4.95	1842.86
04/23/92	4.36	1843.45
05/26/92	4.40	1843.41
06/25/92	4.72	1843.09
07/22/92	4.73	1843.08
08/27/92	5.31	1842.50
09/22/92	5.40	1842.41
10/21/92	5.45	1842.36
11/16/92	5.34	1842.47
12/14/92	5.23	1842.58
04/05/93	5.42	1842.39
05/05/93	4.93	1842.88
06/01/93	4.58	1843.23
06/29/93	4.35	1843.46
08/04/93	3.67	1844.14
09/01/93	3.65	1844.16
10/11/93	3.64	1844.17
11/04/93	3.49	1844.32
12/08/93	3.14	1844.67
02/15/94	2.99	1844.82
04/14/94	2.63	1845.18
05/20/94	1.97	1845.84
06/29/94	1.72	1846.09
08/03/94	2.25	1845.56

148-082-21DDD MP Elev (msl,ft)=1871.23

Lake Nettie Aquifer SI (ft.)=168-173

Date	Depth to Water (ft)	WL Elev (msl, ft)
10/25/84	24.50	1846.73
12/12/84	24.60	1846.63
01/17/85	24.71	1846.52
01/23/85	24.80	1846.43
01/30/85	25.00	1846.23
02/06/85	25.24	1845.99
02/13/85	25.32	1845.91
02/20/85	25.29	1845.94
02/27/85	25.36	1845.87
03/06/85	25.34	1845.89
03/13/85	25.40	1845.83
03/20/85	25.41	1845.82
03/27/85	24.98	1846.25
04/03/85	24.62	1846.61
04/10/85	24.66	1846.57
04/17/85	24.66	1846.57
04/24/85	24.66	1846.57
05/01/85	24.66	1846.57
05/08/85	24.70	1846.53
06/07/85	24.73	1846.50
07/03/85	24.76	1846.47
08/16/85	25.04	1846.19
09/11/85	25.17	1846.06
10/02/85	25.12	1846.11
11/06/85	25.10	1846.13
12/06/85	25.11	1846.12
03/14/86	25.45	1845.78
04/23/86	24.87	1846.36
06/04/86	24.92	1846.31
07/02/86	24.76	1846.47
07/31/86	24.59	1846.64
08/08/86	24.61	1846.62
09/10/86	24.59	1846.64
10/07/86	24.63	1846.60
10/21/86	24.54	1846.69
12/03/86	24.48	1846.75
04/15/87	24.39	1846.84
05/19/87	24.10	1847.13
06/26/87	24.14	1847.09
07/01/87	24.14	1847.09
07/03/87	24.19	1847.04
07/06/87	24.21	1847.02
07/08/87	24.26	1846.97
07/10/87	24.19	1847.04
07/13/87	24.16	1847.07
07/15/87	24.14	1847.09
07/17/87	24.16	1847.07
07/20/87	24.04	1847.19
07/24/87	23.97	1847.26
07/27/87	23.98	1847.25
07/31/87	23.95	1847.28
08/05/87	23.96	1847.27
08/07/87	24.04	1847.19
08/10/87	24.03	1847.20
08/12/87	24.10	1847.13
08/19/87	24.02	1847.21
08/21/87	24.07	1847.16
08/26/87	24.04	1847.19
08/28/87	24.04	1847.19
08/31/87	24.08	1847.15
09/02/87	24.08	1847.15
09/04/87	24.11	1847.12
09/07/87	24.15	1847.08
09/09/87	24.15	1847.08
09/11/87	24.17	1847.06
09/14/87	24.18	1847.05
09/16/87	24.19	1847.04
09/18/87	24.22	1847.01
09/21/87	24.28	1846.95
09/23/87	24.26	1846.97
09/25/87	24.28	1846.95
09/29/87	24.33	1846.90
10/02/87	24.36	1846.87
11/03/87	24.67	1846.56
12/08/87	24.88	1846.35
04/14/88	25.41	1845.82
05/20/88	25.12	1846.11
06/21/88	25.44	1845.79
07/21/88	25.76	1845.47
08/23/88	26.05	1845.18
09/27/88	26.52	1844.71
11/01/88	26.79	1844.44
11/29/88	26.93	1844.30
01/06/89	26.99	1844.24
05/03/89	26.91	1844.32
08/04/89	27.18	1844.05
08/29/89	27.34	1843.89
12/15/89	27.85	1843.38
05/10/90	27.87	1843.36
07/02/90	27.76	1843.47
07/03/90	27.76	1843.47
08/28/90	28.06	1843.17
12/12/90	28.15	1843.08
04/02/91	28.93	1842.30
04/23/92	27.93	1843.30
05/05/93	28.44	1842.79
12/08/93	26.64	1844.59
02/15/94	26.35	1844.88
04/14/94	26.10	1845.13
05/20/94	25.45	1845.78

148-082-22BBB MP Elev (msl,ft)=1877.7

Lake Nettie Aquifer SI (ft.)=125-130

Date	Depth to Water (ft)	WL Elev (msl, ft)
10/25/84	30.97	1846.73
12/12/84	31.06	1846.64
01/17/85	31.14	1846.56
01/23/85	31.23	1846.47
01/30/85	31.46	1846.24
02/06/85	31.65	1846.05
02/13/85	31.72	1845.98
02/20/85	31.70	1846.00
02/27/85	31.81	1845.89
03/06/85	31.77	1845.93
03/13/85	31.83	1845.87
03/20/85	31.85	1845.85
03/27/85	31.46	1846.24
04/03/85	31.11	1846.59
04/10/85	31.10	1846.60
04/17/85	31.08	1846.62
04/24/85	31.11	1846.59
05/01/85	31.10	1846.60
05/08/85	31.11	1846.59
06/07/85	31.06	1846.64
07/03/85	31.20	1846.50
08/16/85	31.40	1846.30
09/11/85	31.51	1846.19
10/02/85	31.48	1846.22
11/06/85	31.46	1846.24
04/23/86	31.20	1846.50
06/04/86	31.25	1846.45
07/02/86	31.12	1846.58
07/31/86	30.94	1846.76
08/08/86	30.96	1846.74
09/10/86	30.96	1846.74
10/07/86	31.00	1846.70
10/21/86	30.89	1846.81
12/03/86	30.84	1846.86
04/15/87	30.72	1846.98
05/19/87	30.29	1847.41
06/26/87	30.48	1847.22
07/01/87	30.49	1847.21
07/03/87	30.54	1847.16
07/06/87	30.55	1847.15
07/08/87	30.60	1847.10
07/10/87	30.56	1847.14
07/13/87	30.53	1847.17
07/15/87	30.50	1847.20
07/17/87	30.50	1847.20
07/20/87	30.40	1847.30
07/24/87	30.33	1847.37
07/27/87	30.33	1847.37
07/31/87	30.30	1847.40
08/05/87	30.32	1847.38
08/07/87	30.39	1847.31
08/10/87	30.40	1847.30
08/12/87	30.45	1847.25
08/19/87	30.39	1847.31
08/21/87	30.43	1847.27
08/28/87	30.41	1847.29
08/31/87	30.46	1847.24
09/02/87	30.45	1847.25
09/04/87	30.48	1847.22
09/07/87	30.52	1847.18
09/09/87	30.51	1847.19
09/11/87	30.54	1847.16
09/14/87	30.54	1847.16
09/16/87	30.56	1847.14
09/18/87	30.59	1847.11
09/21/87	30.65	1847.05
09/23/87	30.64	1847.06
09/25/87	30.65	1847.05
09/29/87	30.68	1847.02
10/02/87	30.72	1846.98
11/03/87	31.04	1846.66
12/08/87	31.27	1846.43
04/14/88	31.77	1845.93
05/20/88	31.47	1846.23
06/21/88	31.77	1845.93
07/21/88	32.10	1845.60
08/23/88	32.42	1845.28
09/27/88	32.89	1844.81
11/01/88	33.13	1844.57
11/29/88	33.24	1844.46
05/03/89	33.27	1844.43
08/04/89	33.51	1844.19
08/29/89	33.71	1843.99
12/15/89	34.23	1843.47
05/10/90	34.04	1843.66
07/02/90	34.12	1843.58
07/03/90	34.12	1843.58
08/28/90	34.42	1843.28
12/12/90	34.78	1842.92
04/02/91	35.30	1842.40
04/23/92	34.26	1843.44

148-082-23BBB MP Elev (msl,ft)=1885.51

Lake Nettie Aquifer SI (ft.)=198-204

Date	Depth to Water (ft)	WL Elev (msl. ft)
12/03/69	43.87	1841.64
12/30/69	43.91	1841.60
01/21/70	40.93	1844.58
02/18/70	41.30	1844.21
03/23/70	41.41	1844.10
04/22/70	41.50	1844.01
06/05/70	41.43	1844.08
06/23/70	42.13	1843.38
09/09/70	44.02	1841.49
12/02/70	44.30	1841.21
12/03/71	43.90	1841.61
12/05/72	43.16	1842.35
12/05/73	43.74	1841.77
12/02/74	43.15	1842.36
12/02/75	40.61	1844.90
08/31/76	40.48	1845.03
10/31/76	40.48	1845.03
12/02/76	40.85	1844.66
03/01/77	41.00	1844.51
05/26/77	40.93	1844.58
06/29/77	41.09	1844.42
07/11/77	40.83	1844.68
07/26/77	41.30	1844.21
08/08/77	41.30	1844.21
09/12/77	41.48	1844.03
09/29/77	41.32	1844.19
10/11/77	41.23	1844.28
10/26/77	41.08	1844.43
11/15/77	41.24	1844.27
11/30/77	41.23	1844.28
12/02/77	41.30	1844.21
12/12/77	41.16	1844.35
12/27/77	41.21	1844.30
01/09/78	41.29	1844.22
02/23/78	41.38	1844.13
03/06/78	41.49	1844.02
03/30/78	41.50	1844.01
04/10/78	41.34	1844.17
04/27/78	41.19	1844.32
05/10/78	40.93	1844.58
05/23/78	40.96	1844.55
06/05/78	40.82	1844.69
06/27/78	40.66	1844.85
07/12/78	40.24	1845.27
07/25/78	40.33	1845.18
08/07/78	40.23	1845.28
08/24/78	40.38	1845.13
09/13/78	40.24	1845.27
09/25/78	40.32	1845.19
10/25/78	40.37	1845.14
11/06/78	40.24	1845.27
11/29/78	40.34	1845.17
12/27/78	40.27	1845.24
01/08/79	40.23	1845.28
01/24/79	40.12	1845.39
02/20/79	40.14	1845.37
03/07/79	40.27	1845.24
04/24/79	40.09	1845.42
05/07/79	39.79	1845.72
05/22/79	39.81	1845.70
06/04/79	39.60	1845.91
06/27/79	39.61	1845.90
07/01/79	39.66	1845.85
07/31/79	39.83	1845.68
08/06/79	39.88	1845.63
08/22/79	39.84	1845.67
09/11/79	39.76	1845.75
09/25/79	40.09	1845.42
10/01/79	39.97	1845.54
10/25/79	39.96	1845.55
10/30/79	39.96	1845.55
11/20/79	39.85	1845.66
12/03/79	39.75	1845.76
01/02/80	39.81	1845.70
01/28/80	39.84	1845.67
02/20/80	39.94	1845.57
02/25/80	39.74	1845.77
03/20/80	39.94	1845.57
04/01/80	39.93	1845.58
04/23/80	39.95	1845.56
05/07/80	40.07	1845.44
05/21/80	40.12	1845.39
06/02/80	40.13	1845.38
06/23/80	40.18	1845.33
07/02/80	39.96	1845.55
07/21/80	40.39	1845.12
08/13/80	39.88	1845.63
08/25/80	40.30	1845.21
09/10/80	40.34	1845.17
09/22/80	40.36	1845.15
10/07/80	40.50	1845.01
10/21/80	40.30	1845.21
11/05/80	39.24	1846.27
11/24/80	40.16	1845.35
12/03/80	39.77	1845.74
01/27/81	39.81	1845.70
02/02/81	40.35	1845.16
03/04/81	40.29	1845.22
04/07/81	40.67	1844.84
04/29/81	40.31	1845.20
05/06/81	40.54	1844.97
05/28/81	39.45	1846.06
06/03/81	40.47	1845.04
06/21/81	40.35	1845.16
06/29/81	40.40	1845.11
07/27/81	40.25	1845.26
07/29/81	40.63	1844.88
08/23/81	40.95	1844.56
08/25/81	40.58	1844.93
09/21/81	39.83	1845.68
09/29/81	39.95	1845.56
10/31/81	40.52	1844.99
11/28/81	40.42	1845.09
12/01/81	40.39	1845.12
12/30/81	40.40	1845.11
03/25/82	40.55	1844.96
04/30/82	40.15	1845.36
05/19/82	40.11	1845.40
05/30/82	39.45	1846.06
06/14/82	39.67	1845.84
06/27/82	39.75	1845.76
07/31/82	39.60	1845.91
08/02/82	39.80	1845.71
08/29/82	39.50	1846.01
09/09/82	39.49	1846.02
09/30/82	39.45	1846.06
10/12/82	39.41	1846.10
10/25/82	39.13	1846.38
11/16/82	39.23	1846.28
12/02/82	39.14	1846.37
12/09/82	39.14	1846.37
12/30/82	38.83	1846.68
01/13/83	39.00	1846.51
03/31/83	38.50	1847.01
05/05/83	38.85	1846.66
06/30/83	38.60	1846.91
07/27/83	38.52	1846.99
09/26/83	38.85	1846.66
11/16/83	39.15	1846.36
02/08/84	39.22	1846.29
06/08/84	38.70	1846.81
12/12/84	38.84	1846.67
01/17/85	38.94	1846.57
01/23/85	39.00	1846.51
01/30/85	39.17	1846.34
02/06/85	39.37	1846.14
02/13/85	39.46	1846.05
02/20/85	39.43	1846.08
02/27/85	39.49	1846.02
03/06/85	39.48	1846.03
03/13/85	39.53	1845.98
03/20/85	39.56	1845.95
03/27/85	39.27	1846.24
04/03/85	38.97	1846.54
04/10/85	38.90	1846.61
04/17/85	38.85	1846.66
04/24/85	38.82	1846.69
05/01/85	38.85	1846.66
05/08/85	38.84	1846.67
06/07/85	38.87	1846.64
07/03/85	38.98	1846.53
08/21/85	39.18	1846.33
09/11/85	39.39	1846.12
10/02/85	39.34	1846.17
11/06/85	39.30	1846.21
12/06/85	39.27	1846.24
03/14/86	39.56	1845.95
04/23/86	39.01	1846.50
06/04/86	39.10	1846.41
07/02/86	39.01	1846.50
07/31/86	38.82	1846.69
08/08/86	38.84	1846.67
09/10/86	38.81	1846.70
10/07/86	38.84	1846.67
10/21/86	38.74	1846.77
12/03/86	38.67	1846.84
04/15/87	38.52	1846.99
05/19/87	38.27	1847.24
06/26/87	38.32	1847.19
07/01/87	38.33	1847.18
07/03/87	38.39	1847.12
07/06/87	38.40	1847.11
07/08/87	38.46	1847.05
07/10/87	38.41	1847.10
07/13/87	38.37	1847.14
07/15/87	38.36	1847.15
07/17/87	38.37	1847.14
07/20/87	38.26	1847.25
07/24/87	38.18	1847.33
07/27/87	38.19	1847.32
07/31/87	38.16	1847.35
08/05/87	38.18	1847.33
08/07/87	38.26	1847.25
08/10/87	38.25	1847.26
08/12/87	38.31	1847.20
08/19/87	38.25	1847.26
08/21/87	38.28	1847.23
08/26/87	38.25	1847.26
08/28/87	38.25	1847.26
08/31/87	38.29	1847.22
09/02/87	38.29	1847.22
09/04/87	38.33	1847.18
09/07/87	38.36	1847.15
09/09/87	38.36	1847.15
09/11/87	38.38	1847.13
09/14/87	38.39	1847.12
09/16/87	38.40	1847.11
09/18/87	38.43	1847.08
09/21/87	38.49	1847.02
09/23/87	38.48	1847.03
09/25/87	38.64	1846.87
09/29/87	38.69	1846.82
10/02/87	38.73	1846.78
11/03/87	38.99	1846.52
12/08/87	39.22	1846.29
04/14/88	39.70	1845.81
05/20/88	39.36	1846.15
06/21/88	39.71	1845.80
07/21/88	40.08	1845.43
08/23/88	40.39	1845.12
09/27/88	40.82	1844.69
11/01/88	41.05	1844.46
11/29/88	41.15	1844.36
01/06/89	41.20	1844.31
05/03/89	41.15	1844.36
06/05/89	41.11	1844.40
07/06/89	41.35	1844.16
08/01/89	41.49	1844.02
08/29/89	41.62	1843.89
10/06/89	41.85	1843.66
11/03/89	41.88	1843.63
12/15/89	42.08	1843.43
04/02/90	42.36	1843.15
05/10/90	42.05	1843.46
06/08/90	41.96	1843.55
07/02/90	41.94	1843.57
07/03/90	41.94	1843.57
08/03/90	42.13	1843.38
08/28/90	42.27	1843.24
09/28/90	42.50	1843.01
10/22/90	42.54	1842.97
11/23/90	42.51	1843.00
12/12/90	42.54	1842.97
04/02/91	43.04	1842.47
05/01/91	42.51	1843.00
05/22/91	42.57	1842.94
05/30/91	42.62	1842.89
06/24/91	42.59	1842.92
07/23/91	42.70	1842.81
08/12/91	42.84	1842.67
08/28/91	43.02	1842.49
09/23/91	43.05	1842.46
11/06/91	42.85	1842.66
12/05/91	42.63	1842.88
02/05/92	42.69	1842.82
04/23/92	42.18	1843.33
05/26/92	42.20	1843.31
06/25/92	42.47	1843.04
07/22/92	42.51	1843.00
08/27/92	43.14	1842.37
09/22/92	43.15	1842.36
10/21/92	43.20	1842.31
11/16/92	43.05	1842.46
12/14/92	42.98	1842.53
04/05/93	43.15	1842.36
05/05/93	42.68	1842.83
06/01/93	42.35	1843.16
06/29/93	42.13	1843.38
08/04/93	41.43	1844.08
09/01/93	41.50	1844.01
10/11/93	41.41	1844.10
11/04/93	41.30	1844.21
12/08/93	40.93	1844.58
02/15/94	40.77	1844.74
04/14/94	40.43	1845.08
05/20/94	39.75	1845.76
06/29/94	39.75	1845.76
08/03/94	40.07	1845.44

148-082-24ABB1
Lake Nettie Aquifer

MP Elev (msl,ft)=1858.1
SI (ft.)=198-201

Date	Depth to Water (ft)	WL Elev (msl, ft)
08/08/67	16.64	1841.46
09/14/67	16.93	1841.17
10/13/67	16.93	1841.17
11/17/67	17.00	1841.10
12/15/67	16.89	1841.21
01/12/68	16.91	1841.19
02/15/68	16.84	1841.26
03/14/68	16.78	1841.32
04/11/68	16.70	1841.40
05/16/68	16.65	1841.45
06/13/68	16.68	1841.42
07/15/68	16.76	1841.34
01/15/69	16.66	1841.44
04/17/69	16.67	1841.43
07/11/69	16.19	1841.91
08/27/69	16.17	1841.93
10/02/69	16.30	1841.80
12/19/69	16.72	1841.38
03/24/70	16.96	1841.14
05/05/70	16.70	1841.40
06/05/70	16.50	1841.60
07/01/70	16.63	1841.47
09/09/70	16.74	1841.36
12/02/70	16.99	1841.11
06/15/77	14.00	1844.10
06/29/77	14.09	1844.01
07/11/77	14.15	1843.95
07/26/77	14.37	1843.73
08/08/77	14.35	1843.75
08/23/77	14.10	1844.00
09/12/77	14.55	1843.55
09/29/77	14.60	1843.50
10/11/77	14.28	1843.82
10/26/77	14.30	1843.80
11/15/77	14.27	1843.83
12/02/77	13.98	1844.12
12/12/77	14.18	1843.92
12/27/77	13.90	1844.20
01/09/78	14.09	1844.01
01/31/78	14.36	1843.74
02/13/78	14.29	1843.81
02/28/78	14.43	1843.67
03/06/78	14.39	1843.71
03/30/78	14.43	1843.67
04/10/78	14.24	1843.86
04/27/78	14.10	1844.00
05/10/78	13.86	1844.24
05/23/78	13.90	1844.20
06/05/78	13.79	1844.31
06/27/78	13.46	1844.64
07/12/78	13.40	1844.70
07/25/78	13.37	1844.73
08/07/78	13.34	1844.76
08/24/78	13.37	1844.73
09/13/78	13.36	1844.74
09/25/78	13.39	1844.71
10/13/78	13.42	1844.68
10/25/78	13.40	1844.70
11/06/78	13.44	1844.66
11/28/78	13.08	1845.02
12/27/78	13.05	1845.05
01/08/79	13.28	1844.82
01/24/79	13.30	1844.80
02/20/79	13.34	1844.76
03/05/79	13.54	1844.56
03/07/79	13.27	1844.83
03/30/79	13.39	1844.71
04/24/79	13.17	1844.93
05/07/79	12.89	1845.21
05/22/79	12.76	1845.34
06/04/79	12.26	1845.84
06/27/79	12.68	1845.42
07/01/79	12.69	1845.41
07/31/79	12.77	1845.33
08/06/79	12.87	1845.23
08/22/79	12.91	1845.19
09/25/79	12.96	1845.14
10/01/79	13.07	1845.03
10/30/79	13.10	1845.00
12/03/79	12.92	1845.18
01/02/80	12.97	1845.13
01/28/80	12.99	1845.11
02/25/80	12.97	1845.13
04/01/80	13.09	1845.01
05/07/80	13.10	1845.00
06/02/80	13.25	1844.85
07/02/80	13.43	1844.67
08/13/80	13.56	1844.54
09/10/80	13.48	1844.62
10/07/80	13.45	1844.65
11/05/80	13.05	1845.05
12/03/80	12.14	1845.96
01/27/81	13.26	1844.84
02/23/81	13.33	1844.77
03/04/81	13.67	1844.43
04/07/81	13.38	1844.72
04/29/81	13.29	1844.81
05/06/81	13.42	1844.68
05/28/81	13.40	1844.70
06/04/81	13.39	1844.71
06/21/81	13.25	1844.85
06/29/81	13.44	1844.66
07/27/81	13.55	1844.55
08/23/81	13.36	1844.74
08/25/81	13.59	1844.51
09/21/81	13.28	1844.82
09/29/81	13.45	1844.65
10/31/81	13.55	1844.55
11/28/81	13.62	1844.48
12/30/81	13.35	1844.75
03/25/82	12.86	1845.24
04/19/82	13.28	1844.82
04/30/82	13.15	1844.95
05/19/82	12.99	1845.11
05/30/82	12.85	1845.25
06/14/82	12.74	1845.36
06/27/82	12.65	1845.45
07/31/82	12.65	1845.45
08/02/82	12.70	1845.40
08/29/82	12.59	1845.51
09/09/82	12.56	1845.54
09/30/82	12.30	1845.80
10/12/82	12.31	1845.79
10/25/82	12.14	1845.96
11/16/82	12.41	1845.69
11/30/82	12.50	1845.60
12/02/82	12.12	1845.98
12/09/82	12.12	1845.98
12/30/82	12.00	1846.10
01/13/83	12.00	1846.10
05/05/83	11.70	1846.40
07/27/83	11.57	1846.53
11/16/83	12.10	1846.00
02/08/84	12.10	1846.00
06/08/84	11.80	1846.30
12/12/84	11.87	1846.23
01/17/85	11.96	1846.14
01/23/85	12.09	1846.01
01/30/85	12.16	1845.94
02/06/85	12.34	1845.76
02/13/85	12.43	1845.67
02/20/85	12.40	1845.70
02/27/85	12.43	1845.67
03/06/85	12.44	1845.66
03/13/85	12.50	1845.60
03/20/85	12.53	1845.57
03/27/85	12.31	1845.79
04/03/85	11.98	1846.12
04/10/85	12.02	1846.08
04/17/85	11.88	1846.22
04/24/85	11.84	1846.26
05/01/85	11.88	1846.22
05/08/85	11.88	1846.22
06/07/85	11.94	1846.16
07/03/85	12.01	1846.09
08/21/85	12.23	1845.87
09/11/85	12.41	1845.69
10/02/85	12.37	1845.73
11/06/85	12.32	1845.78
12/06/85	12.29	1845.81
03/14/86	12.50	1845.60
04/23/86	11.97	1846.13
06/04/86	12.02	1846.08
07/02/86	12.06	1846.04
07/31/86	11.89	1846.21
08/08/86	11.91	1846.19
09/10/86	11.88	1846.22
10/07/86	11.89	1846.21
10/21/86	11.81	1846.29
12/03/86	11.78	1846.32
04/15/87	11.50	1846.60
05/19/87	11.32	1846.78
06/26/87	11.38	1846.72
07/01/87	11.39	1846.71
07/03/87	11.44	1846.66
07/06/87	11.46	1846.64
07/08/87	11.51	1846.59
07/10/87	11.45	1846.65
07/13/87	11.43	1846.67
07/15/87	11.43	1846.67
07/17/87	11.46	1846.64
07/20/87	11.34	1846.76
07/24/87	11.27	1846.83
07/27/87	11.27	1846.83
07/31/87	11.24	1846.86
08/05/87	11.26	1846.84
08/07/87	11.33	1846.77
08/10/87	11.34	1846.76
08/12/87	11.39	1846.71
08/19/87	11.32	1846.78
08/21/87	11.35	1846.75
08/26/87	11.34	1846.76
08/28/87	11.34	1846.76
08/31/87	11.38	1846.72
09/02/87	11.38	1846.72
09/04/87	11.41	1846.69
09/07/87	11.46	1846.64
09/09/87	11.45	1846.65
09/11/87	11.46	1846.64
09/14/87	11.49	1846.61
09/16/87	11.49	1846.61
09/18/87	11.53	1846.57
09/21/87	11.59	1846.51
09/23/87	11.58	1846.52
09/25/87	11.59	1846.51
09/29/87	11.63	1846.47
10/02/87	11.67	1846.43
11/03/87	11.88	1846.22
12/08/87	12.08	1846.02
04/14/88	12.51	1845.59
05/20/88	12.24	1845.86
06/21/88	12.57	1845.53
07/21/88	12.92	1845.18
08/23/88	13.28	1844.82
09/27/88	13.67	1844.43
10/31/88	13.88	1844.22
11/29/88	13.96	1844.14
01/06/89	14.00	1844.10
05/03/89	13.96	1844.14
08/29/89	14.45	1843.65
12/14/89	14.86	1843.24
05/10/90	14.86	1843.24
07/02/90	14.71	1843.39
07/03/90	14.71	1843.39
08/28/90	15.14	1842.96
12/12/90	15.35	1842.75
04/02/91	15.77	1842.33
04/22/92	14.97	1843.13
05/05/93	15.48	1842.62
12/08/93	13.74	1844.36
02/15/94	13.59	1844.51

148-082-24ABB2 MP Elev (msl,ft)=1858.09

Lake Nettie Aquifer SI (ft.)=32-37

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
07/03/86	6.65	1851.44	07/20/87	5.75	1852.34	09/18/87	5.64	1852.45	08/29/89	9.75	1848.34
07/16/86	5.80	1852.29	07/24/87	5.20	1852.89	09/21/87	5.70	1852.39	12/14/89	10.08	1848.01
07/31/86	6.09	1852.00	07/27/87	5.23	1852.86	09/23/87	5.69	1852.40			
08/08/86	6.35	1851.74	07/31/87	5.18	1852.91	09/25/87	5.67	1852.42	05/10/90	9.91	1848.18
09/10/86	6.72	1851.37	08/05/87	5.20	1852.89	09/29/87	5.83	1852.26	07/02/90	9.88	1848.21
10/07/86	6.30	1851.79	08/07/87	5.47	1852.62	10/02/87	5.84	1852.25	07/03/90	9.88	1848.21
10/21/86	6.49	1851.60	08/10/87	5.44	1852.65	11/03/87	5.98	1852.11	08/28/90	10.52	1847.57
12/03/86	6.96	1851.13	08/12/87	5.69	1852.40	12/08/87	6.12	1851.97	12/12/90	10.85	1847.24
			08/19/87	5.43	1852.66						
04/15/87	4.80	1853.29	08/21/87	5.54	1852.55	04/14/88	6.67	1851.42	04/02/91	10.83	1847.26
05/19/87	5.40	1852.69	08/26/87	5.41	1852.68	05/20/88	6.66	1851.43			
06/26/87	6.00	1852.09	08/28/87	5.23	1852.86	06/21/88	7.21	1850.88	04/22/92	10.32	1847.77
07/01/87	6.05	1852.04	08/31/87	5.36	1852.73	07/21/88	7.48	1850.61			
07/03/87	6.16	1851.93	09/02/87	5.33	1852.76	08/23/88	8.29	1849.80	05/05/93	10.42	1847.67
07/06/87	6.25	1851.84	09/04/87	5.51	1852.58	09/27/88	8.62	1849.47	12/08/93	7.45	1850.64
07/08/87	6.33	1851.76	09/07/87	5.56	1852.53	10/31/88	8.70	1849.39			
07/10/87	6.27	1851.82	09/09/87	5.55	1852.54	11/29/88	8.84	1849.25	02/15/94	8.78	1849.31
07/13/87	6.07	1852.02	09/11/87	5.60	1852.49				04/14/94	6.03	1852.06
07/15/87	6.03	1852.06	09/14/87	5.60	1852.49	01/06/89	9.02	1849.07			
07/17/87	6.25	1851.84	09/16/87	5.61	1852.48	05/03/89	7.65	1850.44			

148-082-26BBB MP Elev (msl,ft)=1882.3

Lake Nettie Aquifer SI (ft.)=139-143

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	36.52	1845.78	07/03/87	35.47	1846.83	09/07/87	35.44	1846.86			
09/11/85	36.44	1845.86	07/06/87	35.48	1846.82	09/09/87	35.44	1846.86	01/06/89	38.15	1844.15
10/02/85	36.44	1845.86	07/08/87	35.55	1846.75	09/11/87	35.45	1846.85	05/03/89	38.12	1844.18
11/06/85	36.40	1845.90	07/10/87	35.48	1846.82	09/14/87	35.46	1846.84	08/29/89	38.56	1843.74
12/06/85	36.40	1845.90	07/13/87	35.47	1846.83	09/16/87	35.47	1846.83	12/15/89	39.06	1843.24
			07/15/87	35.46	1846.84	09/18/87	35.50	1846.80			
03/14/86	36.67	1845.63	07/17/87	35.47	1846.83	09/21/87	35.57	1846.73	05/10/90	39.04	1843.26
04/23/86	36.62	1845.68	07/20/87	35.34	1846.96	09/23/87	35.55	1846.75	06/22/90	38.98	1843.32
06/04/86	36.16	1846.14	07/24/87	35.27	1847.03	09/25/87	35.55	1846.75	07/02/90	38.94	1843.36
07/02/86	36.10	1846.20	07/27/87	35.28	1847.02	09/29/87	35.60	1846.70	07/03/90	38.94	1843.36
07/31/86	35.93	1846.37	07/31/87	35.24	1847.06	10/02/87	35.64	1846.66	08/28/90	39.27	1843.03
08/08/86	35.94	1846.36	08/05/87	35.25	1847.05	11/03/87	35.90	1846.40	12/13/90	39.60	1842.70
09/10/86	35.94	1846.36	08/07/87	35.33	1846.97	12/08/87	36.11	1846.19			
09/30/86	35.95	1846.35	08/10/87	35.32	1846.98				04/02/91	40.02	1842.28
10/07/86	35.93	1846.37	08/12/87	35.39	1846.91	04/14/88	36.61	1845.69			
10/21/86	35.85	1846.45	08/19/87	35.33	1846.97	05/20/88	36.32	1845.98	04/23/92	39.17	1843.13
12/03/86	35.78	1846.52	08/21/87	35.35	1846.95	06/21/88	36.65	1845.65			
			08/26/87	35.33	1846.97	07/21/88	36.99	1845.31	05/05/93	39.63	1842.67
04/15/87	35.65	1846.65	08/28/87	35.33	1846.97	08/23/88	37.29	1845.01	12/08/93	37.86	1844.44
05/19/87	35.38	1846.92	08/31/87	35.36	1846.94	09/27/88	37.76	1844.54			
06/26/87	35.42	1846.88	09/02/87	35.37	1846.93	11/01/88	38.00	1844.30	04/14/94	37.37	1844.93
07/01/87	35.43	1846.87	09/04/87	35.40	1846.90	11/30/88	38.12	1844.18	05/20/94	36.71	1845.59

148-082-26DAA MP Elev (msl,ft)=1870.5

Fort Union Aquifer SI (ft.)=113-118

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
08/16/85	24.58	1845.92	07/06/87	23.49	1847.01	09/09/87	23.30	1847.20	01/06/89	26.05	1844.45
09/11/85	24.63	1845.87	07/08/87	23.55	1846.95	09/11/87	23.29	1847.21	05/03/89	26.22	1844.28
10/02/85	24.62	1845.88	07/10/87	23.49	1847.01	09/14/87	23.29	1847.21	08/29/89	26.62	1843.88
11/06/85	24.59	1845.91	07/13/87	23.44	1847.06	09/16/87	23.30	1847.20	12/14/89	27.10	1843.40
12/06/85	24.59	1845.91	07/15/87	23.46	1847.04	09/18/87	23.32	1847.18			
			07/17/87	23.47	1847.03	09/21/87	23.38	1847.12	05/10/90	27.17	1843.33
03/14/86	24.87	1845.63	07/20/87	23.34	1847.16	09/23/87	23.37	1847.13	06/22/90	27.15	1843.35
04/23/86	24.38	1846.12	07/24/87	23.29	1847.21	09/25/87	23.36	1847.14	07/02/90	27.12	1843.38
06/04/86	24.35	1846.15	07/27/87	23.29	1847.21	09/29/87	23.40	1847.10	07/03/90	27.12	1843.38
07/02/86	24.30	1846.20	07/31/87	23.26	1847.24	10/02/87	23.44	1847.06	08/28/90	27.40	1843.10
07/31/86	24.20	1846.30	08/05/87	23.24	1847.26	11/03/87	23.63	1846.87	12/13/90	27.71	1842.79
08/08/86	24.21	1846.29	08/07/87	23.30	1847.20	12/08/87	23.88	1846.62			
09/10/86	24.09	1846.41	08/10/87	23.29	1847.21				04/02/91	28.07	1842.43
10/07/86	24.08	1846.42	08/12/87	23.33	1847.17	04/14/88	24.52	1845.98			
10/21/86	24.03	1846.47	08/19/87	23.25	1847.25	05/20/88	24.29	1846.21	04/23/92	27.44	1843.06
12/03/86	23.97	1846.53	08/21/87	23.28	1847.22	06/21/88	24.56	1845.94			
			08/26/87	23.23	1847.27	07/21/88	24.92	1845.58	05/05/93	27.95	1842.55
04/15/87	23.81	1846.69	08/28/87	23.24	1847.26	08/23/88	25.22	1845.28	12/08/93	26.03	1844.47
05/19/87	23.52	1846.98	08/31/87	23.27	1847.23	09/27/88	25.61	1844.89			
06/26/87	23.45	1847.05	09/02/87	23.27	1847.23	11/01/88	25.86	1844.64	04/14/94	25.59	1844.91
07/01/87	23.45	1847.05	09/04/87	23.28	1847.22	11/30/88	25.99	1844.51	05/20/94	24.85	1845.65
07/03/87	23.49	1847.01	09/07/87	23.30	1847.20						

149-080-20AAA2 MP Elev (msl,ft)=1925.2

Horseshoe Valley Aquifer SI (ft.)=43-46

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
03/30/82	15.21	1909.99	06/06/84	12.78	1912.42				04/30/91	15.97	1909.23
04/21/82	13.55	1911.65	07/04/84	12.94	1912.26	04/13/88	13.02	1912.18	05/28/91	16.03	1909.17
05/11/82	14.10	1911.10	07/30/84	13.03	1912.17	08/11/88	13.42	1911.78	06/25/91	16.07	1909.13
06/10/82	14.33	1910.87	09/04/84	13.24	1911.96	11/25/88	13.83	1911.37	07/24/91	16.14	1909.06
07/09/82	14.24	1910.96	09/18/84	13.29	1911.91				08/27/91	16.20	1909.00
08/25/82	14.36	1910.84	10/05/84	13.39	1911.81	04/21/89	13.85	1911.35	09/23/91	16.28	1908.92
09/14/82	14.46	1910.74	11/30/84	13.50	1911.70	07/14/89	14.19	1911.01	11/06/91	16.34	1908.86
11/05/82	14.37	1910.83				10/11/89	14.52	1910.68	12/04/91	16.40	1908.80
12/08/82	14.42	1910.78	04/04/85	13.37	1911.83	12/06/89	14.71	1910.49			
			07/03/85	13.55	1911.65				04/23/92	16.13	1909.07
04/28/83	13.49	1911.71	09/05/85	13.77	1911.43	04/03/90	15.04	1910.16	05/27/92	16.26	1908.94
06/03/83	13.64	1911.56	12/03/85	13.93	1911.27	05/10/90	15.34	1909.86	08/07/92	16.44	1908.76
07/05/83	13.76	1911.44				06/07/90	15.22	1909.98	11/30/92	16.74	1908.46
07/27/83	13.82	1911.38	04/01/86	13.25	1911.95	06/21/90	15.24	1909.96			
08/23/83	13.92	1911.28	07/10/86	13.27	1911.93	07/25/90	15.29	1909.91	03/22/93	16.98	1908.22
09/23/83	14.04	1911.16	08/29/86	13.37	1911.83	08/23/90	15.34	1909.86	06/18/93	16.82	1908.38
10/20/83	14.13	1911.07	12/05/86	13.59	1911.61	09/28/90	15.47	1909.73	09/02/93	15.07	1910.13
11/17/83	14.17	1911.03				10/23/90	15.49	1909.71	12/08/93	15.17	1910.03
12/27/83	14.27	1910.93	04/27/87	12.21	1912.99	11/20/90	15.60	1909.60			
			07/09/87	12.58	1912.62	12/26/90	15.67	1909.53	04/28/94	14.91	1910.29
04/05/84	12.80	1912.40	09/17/87	12.47	1912.73				07/12/94	14.70	1910.50
05/10/84	12.69	1912.51	12/02/87	12.65	1912.55	04/02/91	15.91	1909.29			

149-080-20BBB MP Elev (msl,ft)=1913

Horseshoe Valley Aquifer SI (ft.)=43-46

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
04/02/81	8.12	1904.88				09/17/87	6.12	1906.88			
05/01/81	8.20	1904.80	04/05/84	7.15	1905.85	12/02/87	6.28	1906.72	04/02/91	8.56	1904.44
06/23/81	8.14	1904.86	05/10/84	6.52	1906.48				04/30/91	8.61	1904.39
08/28/81	8.73	1904.27	06/06/84	6.51	1906.49	04/13/88	6.32	1906.68	05/28/91	8.60	1904.40
12/09/81	8.80	1904.20	07/30/84	6.82	1906.18	08/11/88	7.00	1906.00	06/25/91	8.63	1904.37
			09/04/84	7.22	1905.78	11/25/88	7.24	1905.76	07/24/91	8.72	1904.28
03/30/82	7.74	1905.26	09/18/84	7.19	1905.81				08/27/91	8.76	1904.24
04/21/82	7.61	1905.39	10/05/84	7.20	1905.80	04/21/89	7.07	1905.93	09/23/91	8.83	1904.17
05/11/82	7.85	1905.15	11/30/84	7.20	1905.80	07/14/89	7.40	1905.60	11/06/91	8.89	1904.11
06/10/82	7.74	1905.26				10/11/89	7.78	1905.22	12/04/91	8.92	1904.08
09/14/82	8.15	1904.85	04/04/85	7.03	1905.97	12/06/89	7.89	1905.11			
11/05/82	7.99	1905.01	07/03/85	6.93	1906.07				04/23/92	8.69	1904.31
			09/05/85	7.38	1905.62	04/03/90	8.05	1904.95	05/27/92	8.76	1904.24
04/28/83	7.00	1906.00	12/03/85	7.34	1905.66	05/10/90	8.08	1904.92	08/07/92	8.84	1904.16
06/03/83	7.07	1905.93				06/07/90	7.93	1905.07	11/30/92	9.14	1903.86
07/01/83	7.15	1905.85	04/01/86	6.88	1906.12	06/22/90	7.97	1905.03			
07/28/83	7.23	1905.77	07/10/86	6.70	1906.30	07/25/90	8.03	1904.97	03/22/93	9.30	1903.70
08/23/83	7.40	1905.60	08/29/86	6.78	1906.22	08/23/90	8.24	1904.76	06/18/93	8.97	1904.03
09/23/83	7.50	1905.50	12/05/86	6.98	1906.02	09/28/90	8.37	1904.63	09/02/93	6.98	1906.02
10/20/83	7.75	1905.25				10/23/90	8.40	1904.60	12/08/93	7.48	1905.52
11/17/83	7.80	1905.20	04/27/87	6.20	1906.80	11/20/90	8.39	1904.61			
12/27/83	7.64	1905.36	07/09/87	6.38	1906.62	12/26/90	8.50	1904.50	04/28/94	6.93	1906.07

149-080-23DDC MP Elev (msl,ft)=1953.6

Strawberry Lake Aquifer SI (ft.)=108-111

Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)	Date	Depth to Water (ft)	WL Elev (msl, ft)
03/30/82	34.54	1919.06	06/06/84	34.10	1919.50				05/28/91	34.96	1918.64
04/21/82	34.80	1918.80	07/04/84	34.27	1919.33	04/13/88	33.75	1919.85	06/25/91	34.90	1918.70
05/11/82	34.75	1918.85	07/30/84	34.30	1919.30	08/11/88	33.97	1919.63	07/24/91	35.05	1918.55
06/10/82	34.62	1918.98	09/04/84	34.38	1919.22	11/25/88	33.96	1919.64	08/27/91	35.07	1918.53
07/09/82	34.67	1918.93	10/05/84	34.30	1919.30				09/23/91	35.09	1918.51
08/25/82	34.71	1918.89	12/03/84	34.21	1919.39	04/21/89	35.07	1918.53	11/06/91	35.10	1918.50
09/14/82	34.78	1918.82				07/14/89	34.22	1919.38	12/04/91	35.10	1918.50
11/05/82	34.11	1919.49	04/03/85	34.10	1919.50	10/11/89	34.28	1919.32			
12/08/82	34.61	1918.99	07/03/85	34.20	1919.40	12/06/89	34.33	1919.27	04/23/92	35.20	1918.40
			09/05/85	34.14	1919.46				05/27/92	35.30	1918.30
04/28/83	34.44	1919.16	12/03/85	34.18	1919.42	04/03/90	34.42	1919.18	08/07/92	35.41	1918.19
06/03/83	34.41	1919.19				05/10/90	34.52	1919.08	11/30/92	35.42	1918.18
07/05/83	34.39	1919.21	04/01/86	34.26	1919.34	06/07/90	34.46	1919.14			
07/28/83	34.44	1919.16	07/10/86	34.07	1919.53	07/25/90	34.59	1919.01	03/22/93	35.55	1918.05
08/23/83	34.50	1919.10	08/29/86	34.20	1919.40	08/23/90	34.65	1918.95	06/18/93	35.58	1918.02
09/23/83	34.44	1919.16	10/30/86	34.09	1919.51	09/28/90	34.80	1918.80	09/02/93	35.50	1918.10
10/20/83	34.47	1919.13	12/05/86	35.06	1918.54	10/23/90	34.79	1918.81	12/08/93	35.29	1918.31
11/17/83	34.32	1919.28				11/20/90	34.73	1918.87			
12/28/83	34.40	1919.20	04/27/87	34.09	1919.51	12/26/90	34.80	1918.80	04/28/94	35.31	1918.29
			07/09/87	33.84	1919.76				07/12/94	35.21	1918.39
04/05/84	34.34	1919.26	09/17/87	33.83	1919.77	04/02/91	34.87	1918.73			
05/11/84	34.22	1919.38	12/02/87	33.66	1919.94	04/30/91	34.80	1918.80			

149-080-26ABA MP Elev (msl,ft)=1933.3

Strawberry Lake Aquifer SI (ft.)=77-80

Date	Depth to Water (ft)	WL Elev (msl, ft)
03/30/82	16.68	1916.62
04/21/82	16.89	1916.41
05/11/82	16.78	1916.52
06/10/82	16.75	1916.55
07/09/82	16.71	1916.59
08/25/82	16.67	1916.63
09/14/82	16.78	1916.52
11/05/82	16.65	1916.65
12/08/82	16.79	1916.51
04/28/83	16.62	1916.68
06/03/83	16.60	1916.70
07/05/83	16.63	1916.67
07/28/83	16.53	1916.77
08/23/83	16.54	1916.76
09/23/83	16.50	1916.80
10/20/83	16.54	1916.76
11/17/83	16.46	1916.84
12/28/83	16.53	1916.77
04/05/84	16.55	1916.75
05/11/84	16.49	1916.81
06/06/84	16.36	1916.94
07/04/84	16.35	1916.95
07/30/84	16.32	1916.98
09/04/84	16.36	1916.94
10/05/84	16.32	1916.98
12/03/84	16.34	1916.96
04/03/85	16.33	1916.97
07/03/85	16.38	1916.92
09/05/85	16.34	1916.96
12/03/85	16.37	1916.93
04/01/86	16.40	1916.90
07/10/86	16.21	1917.09
08/29/86	16.39	1916.91
10/30/86	16.23	1917.07
12/05/86	16.19	1917.11
04/27/87	16.15	1917.15
07/09/87	15.97	1917.33
09/17/87	15.90	1917.40
12/02/87	15.88	1917.42
04/13/88	15.96	1917.34
08/11/88	16.01	1917.29
11/25/88	16.12	1917.18
04/21/89	16.37	1916.93
10/11/89	16.36	1916.94
12/06/89	16.45	1916.85
04/03/90	16.52	1916.78
05/10/90	16.60	1916.70
06/07/90	16.64	1916.66
07/25/90	16.69	1916.61
08/23/90	16.71	1916.59
09/28/90	16.79	1916.51
10/23/90	16.77	1916.53
11/20/90	16.78	1916.52
12/26/90	16.85	1916.45
04/02/91	16.97	1916.33
04/30/91	16.95	1916.35
05/28/91	16.98	1916.32
06/25/91	16.99	1916.31
07/24/91	17.06	1916.24
08/27/91	17.13	1916.17
09/23/91	17.07	1916.23
11/06/91	17.08	1916.22
12/04/91	17.14	1916.16
04/23/92	17.23	1916.07
05/27/92	17.26	1916.04
08/07/92	17.30	1916.00
11/30/92	17.40	1915.90
03/22/93	17.53	1915.77
06/18/93	17.55	1915.75
09/02/93	17.52	1915.78
12/08/93	17.49	1915.81
04/28/94	17.30	1916.00

149-081-25CCD MP Elev (msl,ft)=1907.64

Horseshoe Valley Aquifer SI (ft.)=47-50

Date	Depth to Water (ft)	WL Elev (msl, ft)
04/02/81	20.02	1887.62
05/01/81	20.04	1887.60
06/23/81	20.02	1887.62
08/28/81	20.08	1887.56
12/09/81	20.08	1887.56
03/30/82	19.96	1887.68
04/21/82	20.03	1887.61
05/11/82	20.01	1887.63
06/10/82	20.00	1887.64
07/09/82	19.96	1887.68
08/25/82	19.89	1887.75
09/14/82	19.95	1887.69
11/05/82	19.83	1887.81
12/08/82	19.89	1887.75
04/28/83	19.67	1887.97
06/03/83	19.60	1888.04
07/05/83	19.62	1888.02
07/28/83	19.56	1888.08
08/23/83	19.54	1888.10
09/23/83	19.50	1888.14
10/20/83	19.50	1888.14
11/17/83	19.42	1888.22
12/27/83	19.38	1888.26
04/05/84	19.35	1888.29
05/10/84	19.32	1888.32
06/06/84	19.15	1888.49
07/04/84	19.23	1888.41
07/30/84	19.17	1888.47
09/04/84	19.23	1888.41
09/18/84	19.21	1888.43
10/05/84	19.26	1888.38
11/30/84	19.15	1888.49
04/04/85	19.18	1888.46
07/03/85	19.27	1888.37
09/05/85	19.29	1888.35
09/11/85	19.37	1888.27
12/03/85	19.34	1888.30
04/01/86	19.38	1888.26
07/10/86	19.23	1888.41
08/29/86	19.19	1888.45
12/05/86	19.19	1888.45
04/27/87	19.17	1888.47
07/09/87	18.98	1888.66
09/17/87	18.79	1888.85
12/02/87	18.38	1889.26
04/13/88	18.58	1889.06
08/11/88	18.75	1888.89
11/25/88	18.96	1888.68
04/21/89	19.18	1888.46
07/14/89	19.29	1888.35
10/11/89	19.44	1888.20
12/06/89	19.48	1888.16
04/03/90	19.55	1888.09
05/10/90	19.63	1888.01
06/07/90	19.65	1887.99
06/22/90	19.71	1887.93
07/25/90	19.74	1887.90
08/23/90	19.76	1887.88
09/28/90	19.88	1887.76
10/23/90	19.87	1887.77
11/20/90	19.80	1887.84
12/26/90	19.90	1887.74
04/02/91	20.02	1887.62
04/30/91	20.05	1887.59
05/28/91	20.06	1887.58
06/25/91	20.06	1887.58
07/24/91	20.14	1887.50
08/27/91	20.15	1887.49
09/23/91	20.21	1887.43
11/06/91	20.26	1887.38
12/04/91	20.26	1887.38
04/23/92	20.43	1887.21
05/27/92	20.44	1887.20
08/07/92	20.53	1887.11
11/30/92	20.66	1886.98
03/22/93	20.82	1886.82
06/18/93	20.90	1886.74
09/02/93	20.81	1886.83
12/08/93	20.32	1887.32
04/28/94	20.14	1887.50
07/12/94	20.00	1887.64

149-081-34DDD MP Elev (msl,ft)=1929.45

Lake Nettie Aquifer SI (ft.)=78-83

Date	Depth to Water (ft)	WL Elev (msl, ft)
11/20/84	50.94	1878.51
12/12/84	50.87	1878.58
01/17/85	50.75	1878.70
02/14/85	50.93	1878.52
03/13/85	50.86	1878.59
04/04/85	50.90	1878.55
04/29/85	50.95	1878.50
06/07/85	50.86	1878.59
07/03/85	50.87	1878.58
10/02/85	50.97	1878.48
11/06/85	50.99	1878.46
12/06/85	51.00	1878.45
03/14/86	51.05	1878.40
04/23/86	50.98	1878.47
06/04/86	50.92	1878.53
07/02/86	50.90	1878.55
08/08/86	50.86	1878.59
09/10/86	50.86	1878.59
10/07/86	50.90	1878.55
12/03/86	50.91	1878.54
04/15/87	50.79	1878.66
05/19/87	50.64	1878.81
06/30/87	50.54	1878.91
08/07/87	50.50	1878.95
09/04/87	50.46	1878.99
11/03/87	50.29	1879.16
12/07/87	50.31	1879.14
04/14/88	50.36	1879.09
08/23/88	50.49	1878.96
01/06/89	50.65	1878.80
05/03/89	50.73	1878.72
08/04/89	50.88	1878.57
08/29/89	50.94	1878.51
12/14/89	51.16	1878.29
05/09/90	51.28	1878.17
07/01/90	51.29	1878.16
07/02/90	51.29	1878.16
08/28/90	51.44	1878.01
12/12/90	51.68	1877.77
04/02/91	51.75	1877.70
04/22/92	52.33	1877.12
05/05/93	52.70	1876.75

Table 4. Partial Record of Water Surface Elevations for Lakes Audubon and Sakakawea

Data Recorded by USBR at Snake Creek Pumping Plant Elevations reported in ft above mean sea level.

Date	Audubon	Sakwea
7/8/66	1831.60	
7/15/66		1844.00
12/15/66		1834.50
12/30/66	1830.40	
1/15/67		1832.10
1/20/67	1830.40	
7/15/67		1849.50
7/31/67	1835.10	
5/15/68		1836.70
5/27/68	1834.50	
12/6/68	1832.80	
12/15/68		1842.60
1/3/69	1832.80	
1/15/69		1840.30
12/15/69		1840.70
12/19/69	1835.60	
5/15/70		1846.10
5/22/70	1836.00	
12/11/70	1834.50	
12/15/70		1839.90
10/15/71		1846.60
10/29/71	1833.40	
11/8/71	1835.10	
11/15/71		1845.40
6/15/72		1848.80
6/16/72	1835.60	
8/11/72	1835.20	
8/15/72		1848.70
8/15/73		1847.20
8/28/73	1833.40	
9/15/73		1846.80
9/20/73	1834.50	
5/15/74		1840.50
5/29/74	1835.40	
8/15/74		1847.90
8/29/74	1834.40	
4/15/75		1842.70
4/16/75	1834.20	
5/15/75		1846.20
6/15/75		1851.30
7/7/75	1835.82	1852.00
7/8/75	1836.19	
7/9/75	1836.56	
7/10/75	1836.99	
7/11/75	1837.27	
7/15/75	1837.20	1853.64
7/18/75	1837.20	
7/21/75	1837.20	
7/23/75	1837.20	1854.48
7/29/75	1838.21	
7/30/75	1838.50	1854.17
7/31/75	1838.85	
8/1/75	1839.23	1854.38
8/4/75	1840.25	
8/5/75	1840.58	
8/6/75	1840.94	1853.66
8/7/75	1841.19	
8/8/75	1841.47	1854.12
8/11/75	1842.24	
8/12/75	1842.49	
8/13/75	1842.75	
8/14/75	1842.98	
8/15/75	1843.21	
8/18/75	1843.90	1853.24
8/19/75	1844.02	
8/20/75	1844.10	
8/21/75	1844.30	
8/22/75	1844.50	1851.14
8/25/75	1844.90	
8/26/75	1845.15	
8/27/75	1845.30	
8/28/75	1845.45	1850.91
8/29/75	1845.65	
9/2/75	1846.23	
9/3/75	1846.40	1850.61
9/4/75	1846.45	
9/5/75	1846.51	
9/8/75	1846.72	
9/9/75	1846.77	
9/10/75	1846.87	
9/11/75	1847.00	
9/12/75	1847.13	
9/15/75	1847.23	
9/16/75	1847.30	1849.30
9/17/75	1847.37	
9/18/75	1847.31	1850.03
9/19/75	1847.54	
9/22/75	1847.73	1848.97
9/23/75	1847.78	1849.05
9/26/75	1847.95	
9/29/75	1848.05	
9/30/75	1848.05	
10/8/75	1847.90	1847.25
10/13/75	1847.93	1846.68
10/17/75	1847.93	1846.58
10/22/75	1847.90	1846.40
10/30/75	1847.95	1846.10
11/7/75	1847.91	1845.72
11/17/75	1847.89	1845.12
11/28/75	1847.95	1844.13
12/4/75	1848.09	1843.27
12/8/75	1848.12	1842.93
12/12/75	1848.12	1842.22
12/15/75	1848.13	1842.41
12/23/75	1848.12	1841.89
12/31/75	1848.14	1841.73
1/5/76	1848.19	1842.07
1/15/76	1848.20	1841.58
1/22/76	1848.21	1841.16
1/30/76	1848.20	1840.82
2/18/76	1848.20	1840.03
2/27/76	1848.21	1840.26
3/8/76	1848.26	1840.44
3/15/76	1848.26	1840.60
3/19/76	1848.30	1840.71
3/22/76	1848.32	1841.20
3/31/76	1848.37	1842.43
4/6/76	1848.36	1842.48
4/13/76	1848.35	1842.20
4/16/76	1848.39	1842.09
4/20/76	1848.50	1842.42
4/26/76	1848.61	1842.22
4/30/76	1848.54	1842.40
5/7/76	1848.49	1842.18
5/11/76	1848.52	1841.88
5/18/76	1848.41	1841.94
5/27/76	1848.27	1842.94
6/4/76	1848.30	1843.62
6/11/76	1848.29	1844.41
6/21/76	1848.15	1846.60
6/29/76	1848.13	1847.64
7/1/76	1848.18	1847.47
7/6/76	1848.03	1848.11
7/15/76	1847.92	1848.73
7/29/76	1847.79	1847.79
8/5/76	1847.68	1847.37
8/10/76	1847.58	1847.46
8/18/76	1847.47	1847.00
8/31/76	1847.11	1847.22
9/3/76	1847.08	1846.23
9/8/76	1847.00	1845.90
9/16/76	1846.94	1845.15
9/20/76	1846.88	1845.38
10/1/76	1846.74	1844.78
10/7/76	1846.64	1844.52
10/12/76	1846.59	1844.35
10/20/76	1846.40	1844.04
10/26/76	1846.42	1843.35
11/2/76	1846.28	1843.78
11/9/76	1846.26	1843.17
11/18/76	1846.24	1842.93
12/2/76	1846.25	1841.01
12/14/76	1846.26	1840.43
12/30/76	1846.26	1840.03
1/7/77	1846.27	1839.18
1/17/77	1846.29	1838.23
1/27/77	1846.31	1837.59
2/4/77	1846.31	1836.98
2/9/77	1846.31	1836.52
2/25/77	1846.30	1836.21
3/9/77	1846.30	1835.90
3/15/77	1846.33	1835.98
3/22/77	1846.32	1835.84
3/29/77	1846.35	1836.15
4/1/77	1846.81	1835.96
4/6/77	1847.35	1835.87
4/15/77	1848.00	1835.95
4/22/77	1847.97	1835.91
4/29/77	1847.92	1835.68
5/4/77	1847.96	1835.35
5/11/77	1847.87	1835.50
5/18/77	1847.83	1835.31
5/26/77	1847.74	1835.58
6/1/77	1847.71	1835.87
6/9/77	1847.63	1835.71
6/17/77	1847.58	1836.90
6/23/77	1847.54	1837.51
6/30/77	1847.33	1837.98
7/12/77	1847.30	1837.51
7/19/77	1847.25	1837.24
7/28/77	1847.07	1836.93
8/3/77	1846.92	1836.62
8/12/77	1846.75	1836.34
8/29/77	1846.66	1836.36
8/31/77	1846.64	1836.56
9/7/77	1846.64	1835.30
9/9/77	1846.55	1835.67
9/15/77	1846.58	1835.20
9/21/77	1846.53	1835.25
9/23/77	1846.64	1835.03
9/26/77	1846.73	1835.34
10/3/77	1846.71	1834.98
10/7/77	1846.76	1834.72
10/12/77	1846.67	1834.99
10/17/77	1846.55	1835.46
10/19/77	1846.62	1834.98
10/28/77	1846.60	1834.63
11/1/77	1846.53	1835.00
11/8/77	1846.48	1834.82
11/11/77	1846.46	1834.39
11/23/77	1846.47	1833.71
11/29/77	1846.46	1832.76
12/5/77	1846.48	1832.61
12/9/77	1846.48	1832.20
12/22/77	1846.55	1831.46
1/3/78	1846.56	1830.76
1/10/78	1846.56	1830.30
1/20/78	1846.56	1829.07
1/25/78	1846.56	1828.72
2/3/78	1846.56	1827.68
2/10/78	1846.56	1827.03
2/17/78	1846.50	1826.54
2/28/78	1846.55	1825.75
3/3/78	1846.55	1825.60
3/8/78	1846.55	1825.11
3/16/78	1846.58	1825.23
3/20/78	1846.58	1825.45
3/24/78	1846.67	1826.04
3/27/78	1846.70	1828.42
3/30/78	1846.75	1830.66
4/3/78	1846.79	1832.63
4/7/78	1846.83	1835.50
4/13/78	1846.82	1834.32
4/20/78	1846.85	1835.22
4/28/78	1846.90	1835.80
5/18/78	1846.92	1837.90
5/22/78	1846.91	1838.85
5/31/78	1846.91	1841.92
6/9/78	1846.82	1843.77
6/20/78	1846.69	1846.10
6/26/78	1846.73	1846.88
7/10/78	1846.85	1848.19
7/21/78	1847.13	1849.19

Table 4. Water Surface Elevations for Lakes Audubon and Sakakawea (continued)

Date	Audubon	Sakwea
7/25/78	1847.38	1849.27
7/31/78	1847.65	1849.16
8/11/78	1848.02	1848.40
8/16/78	1847.95	1848.12
8/22/78	1847.83	1847.24
8/31/78	1847.69	1846.72
9/8/78	1847.60	1845.94
9/12/78	1847.78	1845.43
9/18/78	1847.64	1845.67
9/20/78	1847.55	1845.98
9/23/78	1847.55	1845.91
9/29/78	1847.45	1845.90
10/4/78	1847.33	1846.27
10/13/78	1847.30	1845.13
10/18/78	1847.26	1844.75
10/31/78	1847.13	1843.93
11/6/78	1847.12	1843.67
11/16/78	1847.60	1842.49
11/24/78	1847.98	1841.58
11/30/78	1847.99	1840.88
12/8/78	1847.98	1840.55
12/18/78	1847.97	1840.29
12/29/78	1847.97	1840.00
1/5/79	1847.79	1839.42
1/12/79	1847.98	1838.71
1/22/79	1847.98	1837.25
1/31/79	1847.98	1836.95
2/5/79	1847.98	1836.53
2/14/79	1847.98	1835.93
2/22/79	1847.98	1835.41
2/28/79	1847.98	1835.03
3/7/79	1847.98	1834.85
3/15/79	1848.15	1834.39
3/21/79	1848.16	1834.92
3/30/79	1848.18	1836.92
4/6/79	1848.18	1837.59
4/9/79	1848.17	1837.88
4/20/79	1848.40	1842.02
4/30/79	1848.48	1843.94
5/4/79	1848.48	1844.42
5/14/79	1848.54	1845.50
5/31/79	1848.51	1844.99
6/6/79	1848.47	1845.28
6/12/79	1848.44	1844.54
6/21/79	1848.44	1844.90
6/28/79	1848.42	1845.56
7/13/79	1848.30	1846.14
7/20/79	1848.18	1846.01
7/25/79	1848.11	1846.15
7/30/79	1848.21	1846.71
8/3/79	1848.15	1846.03
8/8/79	1848.08	1845.92
8/15/79	1847.92	1845.55
8/28/79	1847.86	1845.55
8/30/79	1847.86	1845.24
9/7/79	1847.74	1845.04
9/11/79	1847.69	1845.27
9/14/79	1847.65	1845.10
9/18/79	1847.60	1845.00
9/24/79	1847.51	1844.79
10/5/79	1847.25	1844.66
10/9/79	1847.22	1844.33
10/16/79	1847.14	1844.15
10/19/79	1847.11	1844.38
10/23/79	1847.11	1843.77
11/1/79	1847.40	1843.98
11/5/79	1847.72	1843.58
11/15/79	1847.96	1843.42
11/28/79	1847.91	1843.79
12/3/79	1847.92	1843.93
12/14/79	1847.92	1842.55
12/20/79	1847.92	1842.08
12/30/79	1847.92	1842.03
1/4/80	1847.92	1841.87
1/9/80	1847.93	1841.79
1/17/80	1847.93	1841.23
1/23/80	1847.93	1840.95
1/31/80	1847.93	1840.50
2/5/80	1847.93	1840.11
2/8/80	1847.92	1839.92
2/15/80	1847.92	1839.45
2/22/80	1847.92	1839.06
2/29/80	1847.93	1838.51
3/7/80	1847.93	1838.10
3/14/80	1847.93	1837.53
3/21/80	1847.97	1837.17
3/27/80	1847.98	1837.25
4/4/80	1848.01	1837.32
4/8/80	1848.06	1837.65
4/23/80	1848.06	1837.34
4/29/80	1848.05	1837.19
5/7/80	1847.97	1837.30
5/15/80	1847.87	1837.17
5/28/80	1847.91	1837.28
6/6/80	1847.85	1838.06
6/13/80	1847.87	1838.53
6/25/80	1847.68	1839.38
6/30/80	1847.54	1839.77
7/1/80	1847.54	1839.99
7/11/80	1847.94	1840.51
7/17/80	1847.79	1840.04
7/24/80	1847.72	1839.81
7/30/80	1847.53	1839.60
8/8/80	1848.00	1839.23
8/15/80	1848.00	1838.69
8/22/80	1848.03	1838.84
8/29/80	1847.93	1838.48
9/5/80	1847.93	1838.38
9/12/80	1847.89	1838.21
9/30/80	1847.66	1837.98
10/3/80	1847.60	1838.24
10/8/80	1847.59	1837.72
10/18/80	1847.94	1837.42
10/29/80	1848.06	1837.32
11/7/80	1848.02	1836.92
11/14/80	1848.03	1836.55
11/21/80	1848.00	1836.06
11/25/80	1847.98	1835.76
12/5/80	1847.94	1835.09
12/12/80	1847.93	1834.22
12/19/80	1847.94	1833.86
12/31/80	1847.95	1833.54
1/9/81	1847.96	1833.26
1/21/81	1847.95	1832.70
1/30/81	1847.99	1832.23
2/9/81	1847.99	1831.46
2/18/81	1847.99	1830.57
2/27/81	1848.03	1830.55
3/6/81	1848.07	1830.08
3/20/81	1848.06	1829.80
3/27/81	1848.06	1829.76
4/8/81	1848.04	1829.55
4/16/81	1848.00	1829.40
4/22/81	1847.93	1829.00
4/30/81	1847.94	1828.80
5/6/81	1847.95	1828.25
5/15/81	1847.80	1828.44
5/22/81	1847.71	1828.70
5/29/81	1847.69	1829.87
6/5/81	1848.00	1831.41
6/12/81	1847.96	1832.57
6/15/81	1848.02	1833.62
6/24/81	1848.00	1835.18
6/29/81	1847.96	1835.55
7/2/81	1847.97	1835.84
7/6/81	1847.93	1836.86
7/10/81	1847.75	1836.35
7/16/81	1847.79	1836.26
7/22/81	1847.82	1836.02
7/31/81	1847.68	1835.57
8/7/81	1847.68	1835.50
8/18/81	1847.52	1834.86
8/28/81	1847.70	1834.28
9/3/81	1847.69	1834.05
9/10/81	1847.87	1833.73
9/28/81	1847.69	1832.84
9/30/81	1847.61	1833.19
10/2/81	1847.61	1832.87
10/8/81	1847.54	1833.00
10/15/81	1847.46	1833.18
10/23/81	1847.56	1833.20
10/28/81	1847.51	1833.24
11/6/81	1847.57	1833.52
11/10/81	1847.55	1833.73
11/13/81	1847.55	1833.65
11/19/81	1847.55	1833.99
11/23/81	1847.56	1834.10
12/10/81	1847.55	1833.57
12/15/81	1847.55	1833.77
12/21/81	1847.56	1833.52
12/31/81	1847.56	1832.98
1/15/82	1847.58	1831.92
1/29/82	1847.58	1830.85
2/12/82	1847.58	1829.58
2/24/82	1847.60	1828.86
3/2/82	1847.63	1829.16
3/11/82	1847.69	1828.47
3/19/82	1847.73	1829.15
3/29/82	1847.75	1829.50
4/2/82	1847.81	1830.77
4/9/82	1847.82	1831.52
4/16/82	1847.91	1832.86
4/23/82	1847.94	1834.00
5/11/82	1847.91	1834.15
5/21/82	1848.05	1834.04
5/26/82	1848.07	1834.35
6/5/82	1847.98	1835.30
6/11/82	1848.17	1836.70
6/16/82	1848.22	1837.41
7/2/82	1848.14	1840.90
7/12/82	1848.11	1843.16
7/23/82	1847.93	1844.53
7/30/82	1847.84	1844.82
8/4/82	1847.74	1845.33
8/13/82	1847.80	1845.43
8/25/82	1847.67	1845.55
9/1/82	1847.55	1845.28
9/10/82	1847.15	1845.15
9/16/82	1847.32	1844.95
9/27/82	1847.20	1844.60
9/29/82	1847.18	1845.25
10/1/82	1847.20	1844.84
10/6/82	1847.33	1845.11
10/8/82	1847.54	1845.45
10/22/82	1847.54	1845.32
10/29/82	1847.57	1845.65
11/3/82	1847.49	1845.68
11/9/82	1847.50	1844.77
11/12/82	1847.43	1844.84
12/1/82	1847.38	1842.60
12/3/82	1847.40	1842.86
12/20/82	1847.41	1842.19
12/23/82	1847.40	1841.99
1/3/83	1847.41	1841.73
1/6/83	1847.45	1841.89
1/20/83	1847.45	1841.94
1/28/83	1847.45	1841.81
2/2/83	1847.45	1841.63
2/15/83	1847.45	1840.80
3/7/83	1847.65	1841.37
3/14/83	1847.67	1840.91
3/16/83	1847.67	1841.11
3/30/83	1847.68	1840.61
4/1/83	1847.69	1840.75
4/14/83	1847.74	1840.14
4/22/83	1847.76	1839.75
4/29/83	1847.71	1839.53
5/6/83	1847.74	1839.07
5/13/83	1847.59	1839.51
5/26/83	1847.64	1839.50
6/10/83	1847.46	1840.80
6/17/83	1847.35	1841.44

Table 4. Water Surface Elevations for Lakes Audubon and Sakakawea (continued)

Date	Audubon	Sakwea
6/22/83	1847.41	1842.38
6/30/83	1847.66	1843.08
7/8/83	1847.91	1844.24
7/22/83	1847.78	1845.98
8/2/83	1847.58	1846.40
8/15/83	1847.92	1845.79
9/2/83	1847.71	1844.62
9/14/83	1847.50	1843.44
9/30/83	1847.25	1842.77
10/5/83	1847.22	1843.19
10/7/83	1847.26	1842.80
10/12/83	1847.17	1843.13
10/19/83	1847.14	1842.04
10/24/83	1847.08	1843.43
10/26/83	1847.11	1843.09
11/8/83	1847.10	1843.33
11/16/83	1847.22	1843.16
11/21/83	1847.43	1843.27
11/29/83	1847.40	1843.26
12/9/83	1847.40	1842.33
12/30/83	1847.40	1841.32
1/12/84	1847.45	1840.97
1/31/84	1847.50	1839.83
2/16/84	1847.49	1839.26
2/29/84	1847.51	1838.91
3/16/84	1847.53	1838.74
3/23/84	1847.59	1839.00
4/4/84	1847.80	1839.43
4/9/84	1847.89	1839.35
4/13/84	1848.14	1839.56
4/20/84	1848.14	1839.20
4/24/84	1848.13	1839.40
4/26/84	1848.16	1839.27
4/30/84	1848.25	1839.54
5/8/84	1848.24	1840.00
5/16/84	1848.23	1840.42
5/22/84	1848.11	1841.34
6/8/84	1848.03	1843.66
6/20/84	1847.51	1844.85
7/5/84	1847.75	1848.53
7/17/84	1847.92	1849.58
7/26/84	1847.86	1849.25
7/30/84	1847.80	1849.08
8/10/84	1847.77	1848.88
8/24/84	1847.67	1847.93
9/14/84	1847.40	1846.09
9/20/84	1847.20	1845.85
9/27/84	1847.53	1845.43
10/1/84	1847.11	1845.10
10/11/84	1847.30	1844.88
10/26/84	1847.15	1844.44
10/30/84	1847.14	1844.12
11/5/84	1847.19	1843.59
11/8/84	1847.50	
11/14/84	1847.03	1843.50
11/19/84	1847.04	
11/20/84	1847.17	1843.09
11/26/84	1846.90	
11/28/84	1847.20	
11/30/84	1847.39	1843.01
12/3/84	1846.95	
12/5/84	1846.80	
12/10/84	1846.73	
12/12/84	1846.70	1842.14
12/14/84	1846.68	
12/17/84	1846.64	
12/19/84	1846.61	
12/21/84	1846.59	
12/26/84	1846.54	
12/31/84	1846.51	
1/2/85	1846.50	1841.32
1/3/85	1846.46	
1/7/85	1846.44	
1/11/85	1846.44	
1/14/85	1846.20	
1/15/85	1846.19	1840.70
1/17/85	1846.16	
1/18/85	1846.16	
1/21/85	1846.10	
1/22/85	1845.95	
1/23/85	1845.78	
1/24/85	1845.62	
1/25/85	1845.45	
1/28/85	1844.97	
1/29/85	1844.82	
1/30/85	1844.72	
1/31/85	1844.62	1839.87
2/1/85	1844.33	
2/4/85	1843.80	
2/6/85	1843.79	
2/9/85	1843.76	
2/11/85	1843.74	
2/13/85	1843.67	
2/15/85	1843.66	1838.51
2/19/85	1843.58	
2/21/85	1843.55	
2/25/85	1843.59	1837.95
2/27/85	1843.56	
2/28/85	1843.54	1837.91
3/1/85	1843.53	
3/7/85	1843.46	
3/11/85	1843.42	1838.13
3/14/85	1843.39	
3/18/85	1843.39	
3/19/85	1843.39	
3/20/85	1843.82	
3/21/85	1844.26	
3/22/85	1844.71	
3/23/85	1845.15	
3/24/85	1845.54	
3/25/85	1845.93	
3/26/85	1846.30	
3/27/85	1846.67	
3/28/85	1847.11	
3/29/85	1847.48	1838.54
3/30/85	1847.60	
4/1/85	1847.51	
4/2/85	1847.60	
4/3/85	1847.73	
4/4/85	1847.88	
4/5/85	1847.99	
4/8/85	1847.90	
4/9/85	1847.88	
4/10/85	1847.87	
4/11/85	1847.85	
4/15/85	1847.81	1838.99
4/18/85	1847.74	
4/23/85	1847.77	
4/26/85	1847.75	
4/27/85	1847.85	
4/29/85	1847.90	1839.32
5/1/85	1847.99	
5/2/85	1847.84	
5/3/85	1847.86	
5/4/85	1847.90	
5/6/85	1847.70	
5/7/85	1847.74	
5/8/85	1847.80	
5/9/85	1847.80	1839.53
5/11/85	1847.90	
5/13/85	1847.85	
5/14/85	1847.66	1839.96
5/16/85	1847.78	
5/18/85	1847.87	
5/20/85	1847.73	
5/22/85	1847.79	
5/24/85	1847.87	
5/25/85	1847.92	
5/27/85	1847.77	
5/28/85	1847.87	1839.82
6/6/85	1847.64	1840.55
6/14/85	1847.92	1840.71
6/22/85	1847.90	1841.23
6/28/85	1848.03	1841.25
7/3/85	1847.87	
7/6/85	1847.70	1841.25
7/13/85	1847.80	
7/19/85	1847.93	1840.67
7/26/85	1847.83	
7/30/85	1847.52	1840.00
8/3/85	1847.74	
8/6/85	1847.68	1840.08
8/11/85	1847.99	
8/15/85	1847.71	1839.76
8/20/85	1847.68	
8/23/85	1847.73	1839.68
8/27/85	1847.67	
8/31/85	1847.59	1839.58
9/4/85	1847.27	1839.41
9/10/85	1847.30	
9/14/85	1847.31	1838.75
9/18/85	1847.35	
9/21/85	1847.60	1838.70
9/25/85	1847.41	1838.48
9/30/85	1847.38	
10/4/85	1847.48	1838.48
10/7/85	1847.36	
10/10/85	1847.41	1838.20
10/14/85	1847.32	
10/17/85	1847.45	1838.22
10/21/85	1847.30	
10/24/85	1847.30	1838.23
10/28/85	1847.18	
11/1/85	1847.41	1838.20
11/5/85	1847.29	1838.08
11/9/85	1847.54	
11/14/85	1847.26	1837.74
11/19/85	1847.21	
11/22/85	1847.44	1837.56
11/27/85	1847.47	1836.98
12/7/85	1847.36	
12/14/85	1847.25	1835.97
12/19/85	1847.21	
12/23/85	1847.16	1835.82
12/30/85	1847.06	
1/6/86	1846.98	
1/10/86	1846.92	1835.01
1/15/86	1846.84	
1/23/86	1846.73	
1/28/86	1846.67	
1/31/86	1846.63	1834.04
2/7/86	1846.53	1833.90
2/12/86	1846.47	
2/18/86	1846.39	
2/26/86	1846.28	1832.55
3/7/86	1846.27	
3/14/86	1846.26	
3/19/86	1846.24	1837.06
3/24/86	1846.21	
3/27/86	1846.68	1836.65
4/1/86	1847.28	1836.44
4/4/86	1847.96	
4/8/86	1847.88	1836.03
4/11/86	1847.84	
4/14/86	1847.77	
4/18/86	1847.84	1836.03
4/23/86	1847.87	1836.16
4/28/86	1847.80	
5/2/86	1847.82	1836.41
5/7/86	1847.79	
5/9/86	1847.86	1836.91
5/13/86	1847.77	
5/16/86	1847.64	1838.51
5/20/86	1847.65	
5/23/86	1847.60	
5/28/86	1847.56	
5/30/86	1847.52	1840.14
6/4/86	1847.45	
6/9/86	1848.00	
6/13/86	1847.88	1843.10
6/18/86	1847.85	
6/23/86	1847.77	
6/26/86	1847.78	1845.60
6/30/86	1847.70	

Table 4. Water Surface Elevations for Lakes Audubon and Sakakawea (continued)

Date	Audubon	Sakwea
7/3/86	1847.99	
7/8/86	1847.89	
7/11/86	1847.90	1847.22
7/16/86	1847.98	
7/21/86	1847.93	1848.24
7/25/86	1847.89	
8/1/86	1847.74	1848.36
8/8/86	1847.60	1848.05
8/13/86	1847.52	
8/18/86	1847.64	
8/23/86	1847.80	
8/29/86	1847.78	1846.42
9/5/86	1847.38	1846.13
9/11/86	1846.90	1845.91
9/16/86	1846.58	
9/19/86	1846.42	1845.35
9/24/86	1846.17	
9/29/86	1846.09	1846.05
10/4/86	1846.11	
10/8/86	1846.12	
10/11/86	1846.20	1846.58
10/16/86	1846.37	
10/21/86	1846.53	
10/23/86	1846.55	1846.63
10/28/86	1846.56	
11/1/86	1846.52	
11/5/86	1846.50	1846.05
11/10/86	1846.49	
11/14/86	1846.49	
11/19/86	1846.45	
11/24/86	1846.39	1844.73
11/28/86	1846.38	
12/4/86	1846.38	1844.44
12/10/86	1846.38	
12/15/86	1846.38	
12/23/86	1846.38	
12/30/86	1846.38	1843.33
1/2/87	1846.38	1843.09
1/9/87	1846.38	1842.80
1/15/87	1846.38	1842.50
1/22/87	1846.37	1842.00
1/28/87	1846.37	1841.40
2/4/87	1846.37	1841.02
2/11/87	1846.36	1840.61
2/18/87	1846.37	1840.29
2/24/87	1846.16	1839.96
3/2/87	1846.10	1839.76
3/6/87	1846.08	1839.75
3/12/87	1846.08	1839.89
3/18/87	1846.07	1839.99
3/24/87	1846.22	1840.40
3/30/87	1846.25	1840.63
4/7/87	1846.28	1841.22
4/13/87	1846.27	1841.71
4/17/87	1846.83	1841.92
4/22/87	1847.58	1841.96
4/28/87	1847.92	1842.02
5/4/87	1847.95	1842.21
5/8/87	1847.94	1842.47
5/14/87	1847.83	1842.68
5/20/87	1847.99	1842.45
5/27/87	1848.20	1842.63
6/2/87	1848.10	1843.14
6/8/87	1848.09	1843.10
6/12/87	1848.00	1843.18
6/18/87	1847.91	1843.30
6/24/87	1847.83	1843.35
6/30/87	1847.63	1843.18
7/7/87	1847.46	1842.90
7/13/87	1847.49	1842.78
7/17/87	1847.96	1842.42
7/23/87	1848.17	1842.85
7/29/87	1848.16	1842.62
8/4/87	1848.13	1842.73
8/10/87	1848.03	1842.30
8/14/87	1847.90	1842.35
8/20/87	1847.94	1842.00
8/26/87	1847.91	1841.66
9/1/87	1847.81	1841.55
9/9/87	1847.68	1841.27
9/15/87	1847.60	1840.97
9/21/87	1847.53	1840.76
9/25/87	1847.47	1840.57
10/5/87	1847.19	1840.56
10/9/87	1847.21	1839.40
10/16/87	1846.93	1839.36
10/26/87	1846.28	1839.41
10/30/87	1846.11	1838.91
11/5/87	1845.90	1838.82
11/12/87	1845.51	1838.86
11/18/87	1845.11	1838.94
11/25/87	1844.93	1838.46
12/4/87	1844.88	1838.15
12/14/87	1844.80	1837.48
12/22/87	1844.74	1837.19
1/4/88	1844.61	1837.08
1/14/88	1844.65	1836.13
1/21/88	1844.70	1835.73
2/1/88	1844.56	1833.24
2/5/88	1844.54	1834.94
2/11/88	1844.55	1834.27
2/18/88	1844.61	1833.65
2/26/88	1844.63	1833.13
3/4/88	1844.68	1832.88
3/10/88	1844.70	1832.95
3/16/88	1844.71	1832.86
3/23/88	1844.72	1832.72
3/29/88	1844.08	1832.72
4/8/88	1844.09	1832.42
4/14/88	1844.65	1831.76
4/19/88	1845.88	1831.44
4/23/88	1847.17	1831.04
4/28/88	1847.48	1830.86
5/4/88	1847.41	1830.71
5/10/88	1847.45	1830.38
5/16/88	1847.35	1830.34
5/20/88	1847.34	1830.52
5/26/88	1847.40	1830.70
6/2/88	1847.38	1831.23
6/8/88	1847.24	1831.56
6/14/88	1847.40	1832.07
6/20/88	1847.28	1832.29
6/29/88	1847.34	1831.81
7/6/88	1847.38	1831.77
7/13/88	1847.27	1831.74
7/19/88	1847.09	1831.47
7/28/88	1847.28	1830.59
8/8/88	1847.38	1829.53
8/15/88	1847.25	1829.00
8/19/88	1847.39	1828.61
8/24/88	1847.32	1828.20
8/30/88	1847.17	1827.37
9/6/88	1846.90	1826.90
9/12/88	1846.79	1826.47
9/19/88	1846.66	1826.44
9/26/88	1846.54	1826.04
9/30/88	1846.54	1825.87
10/6/88	1846.42	1825.71
10/13/88	1846.30	1825.47
10/19/88	1846.22	1825.35
10/25/88	1846.10	1825.11
10/31/88	1846.00	1825.03
11/9/88	1845.99	1824.91
11/18/88	1845.91	1824.69
11/29/88	1845.82	1824.79
12/5/88	1845.79	1824.46
12/13/88	1845.74	1824.01
12/19/88	1845.72	1823.79
12/23/88	1845.71	1823.71
1/3/89	1845.69	1822.82
1/12/89	1845.71	1822.50
1/19/89	1845.68	1822.22
1/25/89	1845.64	1821.94
1/31/89	1845.61	1821.71
2/6/89	1845.58	1821.26
2/10/89	1845.56	1821.00
2/21/89	1845.49	1820.17
2/27/89	1845.46	1819.20
3/3/89	1845.46	1819.95
3/13/89	1845.40	1820.18
3/20/89	1845.37	1820.75
3/24/89	1845.36	1820.93
3/31/89	1845.41	1821.71
4/6/89	1845.45	1822.90
4/12/89	1845.46	1823.50
4/18/89	1845.43	1823.55
4/24/89	1845.38	1823.45
4/28/89	1846.53	1823.24
5/3/89	1847.19	1823.50
5/9/89	1847.11	1823.83
5/13/89	1847.16	1823.52
5/18/89	1847.14	1824.10
5/24/89	1847.21	1824.58
5/31/89	1847.09	1824.78
6/5/89	1847.14	1824.97
6/13/89	1846.95	1825.36
6/19/89	1847.10	1825.80
6/23/89	1847.02	1826.20
6/28/89	1847.13	1826.55
7/6/89	1847.03	1826.75
7/11/89	1847.12	1826.81
7/17/89	1846.95	1826.49
7/21/89	1847.14	1826.51
7/27/89	1847.20	1826.10
8/2/89	1846.99	1825.72
8/8/89	1847.01	1825.28
8/14/89	1847.08	1824.76
8/18/89	1847.17	1824.50
8/24/89	1847.09	1823.79
8/30/89	1847.13	1823.38
9/6/89	1847.11	1823.41
9/12/89	1847.09	1823.09
9/18/89	1846.99	1822.94
9/28/89	1846.74	1822.94
10/4/89	1846.65	1822.79
10/11/89	1846.48	1823.33
10/17/89	1846.38	1823.17
10/23/89	1846.27	1823.46
10/27/89	1846.16	1824.47
11/2/89	1846.16	1823.51
11/8/89	1846.06	1823.57
11/15/89	1846.00	1823.67
11/21/89	1845.95	1822.97
11/27/89	1845.90	1823.01
12/1/89	1845.87	1822.49
12/12/89	1845.80	1822.43
12/21/89	1845.75	1821.80
12/29/89	1845.69	1821.04
1/5/90	1845.64	1820.75
1/11/90	1845.60	1820.48
1/18/90	1845.54	1820.16
1/24/90	1845.50	1819.94
1/30/90	1845.44	1819.62
2/9/90	1845.42	1819.49
2/15/90	1845.43	1819.37
2/23/90	1845.42	1819.25
3/5/90	1845.36	1819.06
3/9/90	1845.28	1819.31
3/19/90	1845.16	1819.93
3/23/90	1845.08	1820.20
4/2/90	1844.89	1820.14
4/6/90	1845.05	1820.02
4/10/90	1845.76	1819.75
4/18/90	1846.38	1819.20
4/22/90	1847.08	1818.97
4/26/90	1847.15	1819.07
5/2/90	1847.14	1819.27
5/8/90	1847.06	1819.57
5/14/90	1847.01	1819.35
5/18/90	1847.15	1819.44
5/24/90	1847.14	1819.25
5/31/90	1847.14	1819.31
6/6/90	1847.21	1819.69

Table 4. Water Surface Elevations for Lakes Audubon and Sakakawea (continued)

Date	Audubon	Sakwea
6/14/90	1847.16	1820.20
6/20/90	1847.20	1821.20
6/26/90	1847.14	1821.41
7/2/90	1847.22	1822.34
7/9/90	1847.12	1823.16
7/13/90	1847.16	1823.33
7/19/90	1847.05	1823.42
7/25/90	1847.23	1822.85
7/31/90	1847.12	1822.95
8/6/90	1846.99	1822.73
8/10/90	1847.07	1822.35
8/16/90	1847.13	1821.99
8/23/90	1847.00	1821.62
8/29/90	1846.99	1821.46
9/5/90	1847.02	1821.10
9/11/90	1846.87	1821.12
9/17/90	1846.69	1821.01
9/27/90	1846.49	1821.16
10/3/90	1846.34	1821.30
10/10/90	1846.26	1821.01
10/16/90	1846.17	1821.24
10/24/90	1846.11	1821.53
11/1/90	1846.01	1821.81
11/8/90	1845.91	1821.79
11/15/90	1845.84	1821.77
11/21/90	1845.77	1822.28
11/28/90	1845.73	1822.13
12/5/90	1845.70	1821.49
12/12/90	1845.66	1820.28
12/18/90	1845.52	1820.56
12/27/90	1845.14	1819.85
1/3/91	1843.95	1819.38
1/9/91	1843.92	1818.98
1/15/91	1843.90	1818.55
1/22/91	1843.89	1818.18
1/28/91	1843.88	1817.82
2/5/91	1843.88	1817.08
2/11/91	1843.93	1816.69
2/15/91	1843.95	1816.40
2/22/91	1843.86	1815.96
2/28/91	1843.83	1815.64
3/7/91	1843.83	1815.48
3/13/91	1843.85	1815.57
3/19/91	1843.80	1815.68
3/25/91	1843.74	1816.33
4/1/91	1843.72	1816.60
4/5/91	1843.97	1816.60
4/10/91	1844.65	1816.62
4/14/91	1846.05	1816.44
4/18/91	1846.80	1815.67
4/24/91	1847.06	1815.30
5/3/91	1847.14	1815.15
5/9/91	1847.19	1815.19
5/15/91	1847.18	1815.15
5/22/91	1847.03	1815.53
5/29/91	1846.96	1816.89
6/7/91	1846.73	1818.82
6/13/91	1846.85	1820.66
6/19/91	1846.76	1822.81
6/28/91	1846.90	1825.42
7/8/91	1846.75	1828.23
7/15/91	1846.91	1828.91
7/23/91	1846.74	1829.22
7/29/91	1846.90	1828.84
8/2/91	1846.93	1828.65
8/12/91	1846.88	1827.95
8/16/91	1847.00	1827.86
8/27/91	1846.85	1826.86
9/3/91	1846.63	1826.54
9/9/91	1846.49	1826.22
9/17/91	1846.48	1826.64
9/23/91	1846.40	1826.24
9/30/91	1846.24	1826.70
10/4/91	1846.20	1826.83
10/15/91	1845.15	1826.85
10/21/91	1843.70	1826.73
10/31/91	1843.84	1826.76
11/6/91	1843.82	1826.58
11/13/91	1843.81	1826.36
11/21/91	1843.80	1826.80
11/27/91	1843.75	1826.53
12/5/91	1843.71	1825.81
12/11/91	1843.68	1825.31
12/17/91	1843.65	1825.28
12/23/91	1843.60	1825.00
12/30/91	1843.57	1824.70
1/15/92	1843.54	1823.60
1/22/92	1843.56	1822.96
1/28/92	1843.50	1822.50
2/3/92	1843.60	1822.13
2/7/92	1843.58	1821.91
2/13/92	1843.56	1821.66
2/20/92	1843.54	1821.21
2/26/92	1843.53	1820.80
3/4/92	1843.49	1820.61
3/12/92	1843.46	1821.31
3/20/92	1843.43	1821.57
3/26/92	1843.41	1821.66
4/1/92	1843.95	1821.59
4/7/92	1843.93	1821.41
4/11/92	1845.05	1821.42
4/15/92	1846.23	1821.20
4/17/92	1846.89	1820.78
4/28/92	1846.81	1821.21
5/4/92	1847.17	1821.06
5/15/92	1847.02	1821.35
5/21/92	1847.20	1821.46
6/2/92	1847.06	1821.64
6/9/92	1846.99	1821.60
6/17/92	1846.73	1821.88
6/23/92	1847.07	1822.32
6/29/92	1847.16	1822.99
7/8/92	1847.05	1824.09
7/14/92	1847.06	1824.57
7/21/92	1846.95	1824.82
7/28/92	1846.81	1824.75
8/3/92	1846.76	1824.70
8/10/92	1846.90	1824.50
8/20/92	1846.75	1823.82
8/27/92	1847.00	1823.25
9/4/92	1846.87	1822.74
9/15/92	1846.54	1821.80
9/25/92	1845.75	1821.69
10/1/92	1845.31	1821.59
10/7/92	1844.92	1821.57
10/16/92	1844.75	1821.35
10/30/92	1844.60	1820.80
11/10/92	1844.49	1821.19
11/19/92	1844.48	1820.98
11/30/92	1844.40	1820.98
12/7/92	1844.35	1820.20
12/11/92	1844.32	1819.98
12/24/92	1844.26	1819.07
1/5/93	1844.27	1818.24
1/13/93	1844.28	1817.59
1/20/93	1844.29	1817.05
1/26/93	1844.36	1816.88
2/1/93	1844.40	1816.78
2/5/93	1844.43	1816.73
2/11/93	1844.45	1816.87
2/18/93	1844.45	1816.71
2/24/93	1844.46	1816.74
4/2/93	1844.70	1819.48
4/8/93	1844.70	1819.71
4/14/93	1844.72	1820.13
4/20/93	1844.72	1820.30
4/26/93	1844.63	1820.46
4/30/93	1845.20	1820.43
5/4/93	1846.39	1820.40
5/10/93	1847.21	1820.53
5/14/93	1847.13	1820.65
5/20/93	1847.17	1820.81
5/26/93	1847.20	1821.76
6/2/93	1847.18	1823.23
6/14/93	1847.28	1825.96
6/21/93	1847.24	1827.18
6/28/93	1847.35	1828.14
7/2/93	1847.18	1828.98
7/12/93	1847.03	1831.41
7/19/93	1847.00	1832.74
7/26/93	1847.20	1834.00
8/2/93	1847.21	1836.23
8/6/93	1847.12	1836.49
8/13/93	1846.95	1836.73
8/23/93	1846.87	1837.18
8/30/93	1846.73	1837.19
9/3/93	1846.69	1837.03
9/10/93	1846.48	1837.00
9/17/93	1846.11	1836.96
9/28/93	1845.56	1837.05
10/4/93	1845.26	1836.98
10/8/93	1845.09	1836.86
10/15/93	1845.00	1836.92
10/25/93	1844.70	1837.80
11/1/93	1844.62	1837.52
11/9/93	1844.51	1837.47
11/18/93	1844.45	1837.54
11/24/93	1844.50	1837.60
11/30/93	1844.54	1837.08
1/3/94	1844.52	1836.97
1/7/94	1844.53	1837.13
1/13/94	1844.51	1836.92
1/19/94	1844.50	1836.84
1/24/94	1844.49	1836.67
1/27/94	1844.49	1836.61
2/1/94	1844.47	1836.61
2/9/94	1844.48	1836.48
2/16/94	1844.46	1836.31
2/23/94	1844.47	1836.24
2/28/94	1844.47	1836.25
3/3/94	1844.48	1836.24
3/8/94	1844.55	1836.63
3/14/94	1844.58	1838.51
3/17/94	1844.61	1839.14
3/22/94	1844.62	1840.44
3/28/94	1844.62	1841.00
3/31/94	1844.63	1841.28
4/5/94	1844.62	1841.40
4/8/94	1844.63	1841.50
4/13/94	1844.65	1841.71
4/18/94	1844.63	1841.87
4/21/94	1844.63	1841.79
4/24/94	1845.17	
4/25/94	1845.79	1841.70
4/26/94	1846.13	1841.95
4/28/94	1847.04	1841.94
5/5/94	1847.14	1842.22
5/11/94	1847.02	1842.26
5/16/94	1847.26	1842.20
5/19/94	1847.21	1842.92
5/24/94	1847.32	1843.57
6/2/94	1847.04	1843.62
6/7/94	1847.02	1843.78
6/10/94	1846.98	1844.45
6/16/94	1847.05	1844.48
6/21/94	1847.03	1844.83
6/24/94	1847.00	1844.87
6/29/94	1846.99	1844.82

Table 5. Water Surface Elevations of Selected Lakes and Sloughs - Staff Gage Data

147-79-17DCD BLUE LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1821.44	6/30/87	1821.70	10/6/89	1818.64	4/29/92	1818.69
5/22/85	1821.52	8/6/87	1821.64	11/3/89	1818.60	5/18/92	1818.52
6/6/85	1821.46	9/3/87	1821.49	11/21/89	1818.56	5/26/92	1818.42
6/26/85	1821.26	10/15/87	1821.16			6/15/92	1818.22
7/2/85	1821.28	11/4/87	1821.15	4/19/90	1818.89	6/25/92	1818.18
8/16/85	1820.92	11/13/87	1821.10	5/9/90	1818.82	7/22/92	1818.02
9/10/85	1820.76			6/7/90	1818.82	8/27/92	1817.69
10/1/85	1820.72	5/17/88	1821.18	7/2/90	1818.81	9/22/92	1817.64
11/5/85	1820.86	6/20/88	1820.72	8/2/90	1818.57	10/21/92	1817.52
		7/27/88	1820.15	8/27/90	1818.33		
4/30/86	1821.79	8/2/88	1820.04	9/28/90	1818.05	5/3/93	1818.37
6/3/86	1821.71	8/15/88	1819.89	10/22/90	1818.02	6/1/93	1818.35
7/1/86	1821.53	8/22/88	1819.72	11/16/90	1818.01	6/30/93	1818.39
7/29/86	1821.53	9/26/88	1819.37			8/4/93	1818.81
8/7/86	1821.33	10/31/88	1819.29	6/24/91	1818.57	9/1/93	1818.61
9/9/86	1821.13	11/29/88	1819.33	7/23/91	1818.47	10/11/93	1818.35
10/6/86	1821.17			8/12/91	1818.31	10/25/93	1818.33
10/21/86	1821.15	6/13/89	1819.86	8/28/91	1818.17		
		7/6/89	1819.56	9/23/91	1818.07	5/26/94	1819.39
5/6/87	1822.15	8/1/89	1819.23			6/29/94	1819.32
5/18/87	1821.96	8/28/89	1818.94			8/3/94	1819.22

147-79-19ADD PELICAN LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/7/85	1818.96	4/30/86	1819.15	5/6/87	1819.23
5/22/85	1818.99	6/3/86	1819.07	5/18/87	1819.07
6/6/85	1818.90	7/1/86	1818.89	6/30/87	1818.85
7/1/85	1818.88	8/7/86	1818.73	8/6/87	1818.85
7/2/85	1818.84	8/13/86	1818.73	9/3/87	1818.77
8/16/85	1818.62	9/9/86	1818.71	10/15/87	1818.63
9/10/85	1818.54	10/6/86	1818.81	11/4/87	1818.55
10/1/85	1818.50			11/13/87	1818.61
11/5/85	1818.44				

147-79-19DAB PETERSON LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/9/85	1817.66	4/30/86	1818.46	5/6/87	1818.32
5/22/85	1817.99	6/3/86	1818.38	5/18/87	1818.05
6/6/85	1817.92	7/1/86	1818.20	6/30/87	1817.85
7/1/85	1817.82	8/7/86	1817.74	8/6/87	1817.85
7/2/85	1817.86	8/13/86	1817.70	9/3/87	1817.76
8/16/85	1817.68	9/9/86	1817.58	10/15/87	1817.47
9/10/85	1817.33	10/6/86	1817.78	11/4/87	1817.39
10/1/85	1817.32			11/13/87	1817.47
11/5/85	1817.84				

Table 5. Water Surface Elevations - Staff Gage Data (continued)

147-79-27DAB BRUSH LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1826.17	5/22/87	1826.69	7/6/89	1823.75	4/29/92	1822.44
5/22/85	1826.28	6/30/87	1826.33	7/31/89	1823.40	5/18/92	1822.29
6/6/85	1826.24	7/3/87	1826.27	8/28/89	1823.09	5/26/92	1822.20
6/26/85	1825.94	8/6/87	1826.17	10/6/89	1822.77	6/15/92	1821.96
7/2/85	1825.98	9/3/87	1825.95	11/3/89	1822.69	6/25/92	1821.96
8/16/85	1825.56	10/15/87	1825.57	11/21/89	1822.69	7/22/92	1821.82
9/12/85	1825.35	11/4/87	1825.51			8/27/92	1821.42
10/1/85	1825.24	11/13/87	1825.48	4/19/90	1822.74	9/22/92	1821.37
11/5/85	1825.48	12/7/87	1825.50	5/9/90	1822.62	10/21/92	1821.23
				6/7/90	1822.62		
4/29/86	1827.19	5/17/88	1825.53	7/2/90	1822.66	5/3/93	1822.37
6/3/86	1826.61	5/19/88	1825.55	8/2/90	1822.62	6/1/93	1822.29
7/1/86	1826.40	6/20/88	1825.08	8/27/90	1822.12	6/30/93	1822.35
7/29/86	1826.37	7/27/88	1824.51	9/28/90	1821.30	8/4/93	1822.73
8/5/86	1826.23	8/2/88	1824.41			9/1/93	1822.49
9/9/86	1825.85	8/15/88	1824.20	5/6/91	1822.60	10/11/93	1822.19
9/30/86	1825.87	8/22/88	1824.11	6/24/91	1822.38	10/25/93	1822.17
10/6/86	1825.85	9/26/88	1823.76	7/23/91	1822.35		
10/21/86	1825.80	10/31/88	1823.63	8/12/91	1822.08	5/26/94	1823.73
		11/29/88	1823.65	8/28/91	1821.96	6/29/94	1823.59
5/4/87	1826.92			9/23/91	1821.82	8/3/94	1823.33
5/18/87	1826.65	6/13/89	1824.07				

147-80-07DDD KASPER SLOUGH

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/7/85	1841.40	4/29/86	1841.87	5/4/87	1841.96
6/6/85	1841.54	6/3/86	1841.71	5/19/87	1841.73
6/20/85	1841.47	7/2/86	1841.54	5/22/87	1841.84
7/2/85	1841.40	8/7/86	1841.37	6/30/87	1841.50
8/16/85	1840.90	9/9/86	1841.14	8/6/87	1841.40
9/11/85	1840.82	10/7/86	1841.29	9/3/87	1841.37
10/1/85	1840.80	10/21/86	1841.29	10/15/87	1841.12
11/5/85	1841.00			11/4/87	1841.10
				11/13/87	1841.12
				12/7/87	1841.19

147-80-15DBB LAKE MARGARET

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1831.37	4/29/86	1832.26	5/4/87	1831.90
5/22/85	1831.52	6/3/86	1832.18	5/18/87	1831.76
6/6/85	1831.50	7/1/86	1832.08	6/30/87	1831.78
6/24/85	1831.32	8/7/86	1832.00	8/6/87	1831.76
7/2/85	1831.38	9/9/86	1831.83	9/3/87	1831.75
8/16/85	1831.05	10/6/86	1832.12	10/15/87	1831.60
9/16/85	1831.20			11/4/87	1831.60
10/1/85	1831.16			11/13/87	1831.71
11/5/85	1831.46				

147-80-23BDB UNNAMED SLOUGH

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1822.80	4/29/86	1823.11	5/6/87	1823.81
5/22/85	1822.91	6/3/86	1822.87	5/18/87	1823.56
6/6/85	1822.79	7/1/86	1822.55	5/22/87	1823.64
7/1/85	1822.78	7/29/86	1822.49	6/30/87	1823.38
7/2/85	1822.75	8/7/86	1822.27	8/6/87	1823.22
8/16/85	1822.02	9/9/86	1822.03	9/3/87	1823.09
9/16/85	1821.56	10/6/86	1822.27	10/15/87	1822.70
10/1/85	1821.84	10/21/86	1822.26	11/4/87	1822.64
11/15/85	1821.92			11/13/87	1822.64

Table 5. Water Surface Elevations - Staff Gage Data (continued)

147-81-20ABB NYGAARD SLOUGH

Date	Water Elev.
5/7/85	1824.68
6/6/85	1824.67
6/12/85	1824.62
7/2/85	1824.50
8/10/85	1823.92
9/16/85	1823.86

147-81-26BDAC TURTLE LAKE

Date	Water Elev.
6/6/85	1820.62
6/13/85	1820.50
7/2/85	1820.40
8/10/85	1820.02
9/16/85	1820.09
10/2/85	1820.10
11/6/85	1820.20

147-81-2ABB UNNAMED SLOUGH

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/7/85	1843.40	9/9/86	1842.64	7/27/87	1843.21	9/4/87	1842.96
5/22/85	1843.78	10/7/86	1842.84	7/31/87	1843.19	9/7/87	1842.93
6/6/85	1843.76	10/21/86	1842.89	8/3/87	1843.15	9/9/87	1842.91
6/12/85	1843.74			8/5/87	1843.11	9/11/87	1842.90
7/2/85	1843.62	5/5/87	1843.71	8/7/87	1843.06	9/14/87	1842.87
8/16/85	1842.83	5/19/87	1843.49	8/10/87	1843.00	9/16/87	1842.86
9/11/85	1842.62	6/26/87	1843.24	8/12/87	1842.90	9/18/87	1842.84
10/2/85	1842.56	7/3/87	1843.13	8/14/87	1842.94	9/21/87	1842.81
11/6/85	1842.84	7/6/87	1843.00	8/18/87	1843.02	9/23/87	1842.80
		7/10/87	1843.00	8/19/87	1843.02	9/25/87	1842.77
4/30/86	1843.84	7/13/87	1843.07	8/21/87	1842.97	9/29/87	1842.77
6/4/86	1843.48	7/15/87	1843.05	8/24/87	1842.92	10/2/87	1842.75
7/2/86	1843.26	7/17/87	1842.99	8/28/87	1843.07	10/12/87	1842.67
7/31/86	1843.16	7/20/87	1843.17	8/31/87	1843.02	11/3/87	1842.64
8/7/86	1843.00	7/24/87	1843.26	9/2/87	1843.01	11/13/87	1842.67

147-81-35AAA LAKE ORDWAY

Date	Water Elev.
5/8/85	1819.00
6/6/85	1818.84
6/13/85	1818.80
7/2/85	1818.70
8/10/85	1818.22
9/16/85	1818.20
11/6/85	1818.34

148-79-36DCC NORTH PELICAN LAKE

Date	Water Elev.
5/8/85	1892.06
5/10/85	1892.08
5/22/85	1892.11
6/6/85	1892.00
7/2/85	1891.86
8/10/85	1891.18
9/10/85	1890.85
10/1/85	1890.56
11/5/85	1891.02

148-80-26BAD COTTONWOOD LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1870.10	4/29/86	1870.44	5/4/87	1870.68
5/22/85	1870.14	6/3/86	1870.24	5/18/87	1870.44
6/6/85	1870.04	7/1/86	1869.98	6/30/87	1870.28
6/20/85	1869.88	7/29/86	1870.08	8/6/87	1870.14
7/2/85	1869.82	8/7/86	1869.94	9/3/87	1870.00
8/16/85	1869.32	9/9/86	1869.59	10/15/87	1869.68
9/12/85	1869.18	10/6/86	1869.60	11/4/87	1869.56
10/1/85	1869.12			11/13/87	1869.54
11/5/85	1869.21				

Table 5. Water Surface Elevations - Staff Gage Data (continued)

148-80-33DDB NELSON LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/7/85	1844.13	5/1/86	1844.40	5/5/87	1845.13
6/6/85	1844.07	6/3/86	1844.21	5/19/87	1844.93
6/20/85	1843.98	7/2/86	1844.11	6/30/87	1844.75
7/2/85	1843.86	8/7/86	1844.08	8/6/87	1844.67
8/16/85	1843.52	9/9/86	1843.88	9/3/87	1844.63
9/16/85	1843.53	10/6/86	1844.04	10/15/87	1844.39
10/1/85	1843.46			11/4/87	1844.33
11/5/85	1843.54			11/13/87	1844.40

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148-80-5ACC BIG CROOKED LAKE

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/8/85	1916.87	4/30/86	1917.37	5/6/87	1917.76
6/6/85	1916.85	5/1/86	1917.35	5/19/87	1917.53
6/19/85	1916.70	6/3/86	1917.17	6/30/87	1917.28
7/2/85	1916.68	7/2/86	1916.78	8/6/87	1917.18
8/16/85	1916.08	8/7/86	1916.59	9/3/87	1917.13
9/16/85	1915.98	9/9/86	1916.26	10/15/87	1916.70
10/1/85	1915.84	10/7/86	1916.29	11/4/87	1916.66
11/6/85	1915.92				

148-81-21CAB LAKE NETTIE (1976-1981 Data from USGS)

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
3/30/76	1840.62	8/6/79	1839.68	7/6/87	1841.20	9/14/87	1839.13
4/21/76	1840.51	8/22/79	1839.57	7/8/87	1841.09	9/16/87	1839.07
5/6/76	1840.66	9/4/79	1839.46	7/10/87	1841.08	9/18/87	1839.00
6/1/76	1839.85	9/25/79	1839.23	7/13/87	1840.98	9/21/87	1838.89
6/8/76	1839.80	10/1/79	1839.25	7/15/87	1840.92	9/23/87	1838.92
6/25/76	1839.74	10/30/79	1839.15	7/17/87	1840.83	9/25/87	1838.94
7/13/76	1839.51	11/20/79	1839.37	7/20/87	1840.86	9/29/87	1838.99
8/2/76	1839.27			7/23/87	1840.93	10/2/87	1839.02
8/23/76	1838.99	5/7/80	1839.50	7/24/87	1840.91	10/7/87	1839.02
9/7/76	1838.67	6/2/80	1839.16	7/27/87	1840.77	10/12/87	1839.05
9/20/76	1838.55	7/2/80	1838.84	7/30/87	1840.72	10/30/87	1839.16
10/14/76	1838.29	8/13/80	1838.37	7/31/87	1840.71	11/3/87	1839.21
		9/10/80	1838.55	8/3/87	1840.60	11/11/87	1839.26
4/20/77	1838.61	10/7/80	1838.50	8/5/87	1840.50	11/13/87	1839.31
4/25/77	1838.61	11/5/80	1838.89	8/7/87	1840.38		
5/2/77	1838.61			8/10/87	1840.37	5/23/88	1840.09
5/10/77	1838.51	4/7/81	1839.69	8/12/87	1840.16	6/21/88	1839.72
5/16/77	1838.41			8/14/87	1840.10	7/26/88	1839.02
5/24/77	1838.41	8/8/86	1840.50	8/18/87	1840.07	8/15/88	1838.72
6/16/77	1838.31	10/10/86	1840.50	8/19/87	1840.03	8/23/88	1838.46
6/29/77	1838.19	10/21/86	1840.50	8/21/87	1839.94	9/26/88	1838.10
7/11/77	1838.09			8/24/87	1839.81	10/31/88	1838.22
7/26/77	1837.97	5/22/87	1841.69	8/26/87	1839.82	11/29/88	1838.28
8/8/77	1837.81	6/11/87	1841.73	8/27/87	1839.79		
8/23/77	1837.64	6/12/87	1841.70	8/28/87	1839.78	7/6/89	1838.28
9/12/77	1837.76	6/15/87	1841.62	8/31/87	1839.73	8/1/89	1838.08
		6/16/87	1841.60	9/2/87	1839.72	8/29/89	1837.68
5/7/79	1840.11	6/23/87	1841.61	9/4/87	1839.58	10/6/89	1837.36
5/22/79	1840.19	6/24/87	1841.60	9/7/87	1839.41	11/3/89	1837.36
6/4/79	1840.11	6/26/87	1841.52	9/8/87	1839.38		
6/27/79	1839.98	6/29/87	1841.49	9/9/87	1839.37	5/10/90	1837.98
7/1/79	1839.99	7/1/87	1841.38	9/10/87	1839.28		
7/31/79	1839.57	7/3/87	1841.26	9/11/87	1839.25	8/12/91	1837.50

Table 5. Water Surface Elevations - Staff Gage Data (continued)

148-81-20BAB CROOKED LAKE - NORTH END (1976-1983 Data from USGS)

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
4/21/76	1840.15	6/27/79	1839.91	7/27/83	1840.81	8/21/87	1840.84
5/6/76	1840.15	7/1/79	1840.03	11/16/83	1840.26	8/24/87	1840.80
5/17/76	1840.05	7/31/79	1839.67			8/26/87	1840.87
6/8/76	1839.85	8/6/79	1839.60	4/30/86	1841.09	8/28/87	1840.88
6/29/76	1839.85	8/22/79	1839.61	6/4/86	1841.04	8/31/87	1840.80
7/13/76	1839.55	9/4/79	1839.37	7/2/86	1840.75	9/2/87	1840.79
8/3/76	1839.45	9/25/79	1839.16	7/31/86	1840.77	9/4/87	1840.71
8/23/76	1838.85	10/1/79	1839.14	8/8/86	1840.65	9/7/87	1840.67
9/7/76	1838.65	10/30/79	1839.07	9/5/86	1840.55	9/8/87	1840.66
9/20/76	1838.55	11/20/79	1839.06			9/9/87	1840.65
10/14/76	1838.35			5/5/87	1841.88	9/11/87	1840.62
10/28/76	1838.45	4/1/80	1839.89	5/19/87	1841.64	9/14/87	1840.60
		5/7/80	1839.22	5/22/87	1841.74	9/16/87	1840.58
3/14/77	1838.65	6/2/80	1838.91	6/15/87	1841.70	9/18/87	1840.54
4/1/77	1838.75	7/2/80	1838.71	6/24/87	1841.66	9/21/87	1840.51
4/13/77	1838.75	8/13/80	1838.31	6/26/87	1841.54	9/23/87	1840.48
4/20/77	1838.53	9/10/80	1838.48	6/29/87	1841.52	9/25/87	1840.47
4/25/77	1838.51	10/7/80	1838.46	6/30/87	1841.54	9/29/87	1840.43
5/2/77	1838.46	11/5/80	1838.79	7/1/87	1841.48	10/2/87	1840.42
5/10/77	1838.41			7/6/87	1841.31	10/29/87	1840.20
5/16/77	1838.31	4/7/81	1839.26	7/8/87	1841.28	11/3/87	1840.21
5/24/77	1838.21	5/6/81	1839.18	7/10/87	1841.30	11/13/87	1840.18
6/16/77	1838.11	6/3/81	1839.17	7/13/87	1841.36		
6/29/77	1838.00	6/29/81	1839.09	7/15/87	1841.30	5/17/88	1841.18
7/11/77	1837.98	7/27/81	1838.83	7/17/87	1841.22	6/21/88	1840.43
7/26/77	1838.00	8/25/81	1838.62	7/20/87	1841.32	7/21/88	1840.05
8/8/77	1838.15	9/21/81	1838.65	7/24/87	1841.37	8/12/88	1839.54
8/23/77	1837.16			7/27/87	1841.27	8/23/88	1839.32
9/12/77	1837.51	4/19/82	1840.03	7/31/87	1841.24	9/26/88	1838.98
		5/19/82	1840.11	8/3/87	1841.14	10/31/88	1838.88
11/28/78	1839.19	6/14/82	1840.29	8/5/87	1841.13	11/29/88	1838.96
		8/2/82	1839.97	8/7/87	1841.02		
4/24/79	1840.13	9/9/82	1839.92	8/10/87	1841.00	6/13/89	1839.33
5/7/79	1840.15	10/12/82	1840.03	8/12/87	1840.85	7/6/89	1839.17
5/22/79	1840.08			8/18/87	1840.92	8/1/89	1838.84
6/4/79	1840.05	5/5/83	1841.06	8/19/87	1840.91	8/29/89	1838.37
						10/6/89	1837.79

148-81-30ADD CROOKED LAKE - SOUTH END

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
5/7/85	1840.52	7/10/87	1841.33	9/23/87	1840.52	5/6/91	1836.64
6/6/85	1840.52	7/13/87	1841.34	9/24/87	1840.48	6/24/91	1836.66
6/12/85	1840.48	7/15/87	1841.32	9/29/87	1840.46	7/23/91	1836.74
7/2/85	1840.36	7/17/87	1841.26	10/2/87	1840.40	8/12/91	1836.52
8/16/85	1839.84	7/20/87	1841.33			8/28/91	1836.50
9/11/85	1839.84	7/24/87	1841.38	8/12/88	1838.65	9/23/91	1836.40
10/2/85	1839.86	7/27/87	1841.30	8/23/88	1838.48		
11/6/85	1839.00	7/31/87	1841.26	9/27/88	1838.06	4/30/92	1837.06
		8/3/87	1841.18	11/1/88	1837.98	5/18/92	1836.91
4/30/86	1841.00	8/5/87	1841.09	11/30/88	1837.88	5/26/92	1836.82
6/4/86	1840.86	8/7/87	1841.02			6/16/92	1836.55
7/2/86	1840.63	8/10/87	1840.80	6/13/89	1838.70	6/25/92	1836.74
8/8/86	1840.57	8/12/87	1840.89	7/6/89	1838.42	7/22/92	1836.66
9/9/86	1840.40	8/19/87	1840.92	8/1/89	1838.04	8/27/92	1836.32
10/7/86	1840.64	8/21/87	1840.94	8/29/89	1837.74	9/22/92	1836.20
10/21/86	1840.57	8/24/87	1840.78	10/6/89	1837.46	10/21/92	1836.04
		8/28/87	1840.83	11/3/89	1837.40		
5/5/87	1841.90	8/31/87	1840.79	11/22/89	1837.40	5/3/93	1837.05
5/19/87	1841.68	9/2/87	1840.74			6/1/93	1837.09
5/22/87	1841.77	9/4/87	1840.74	4/19/90	1836.97	6/29/93	1837.34
6/15/87	1841.64	9/7/87	1840.72	5/10/90	1836.86	8/4/93	1839.94
6/26/87	1841.60	9/8/87	1840.67	6/12/90	1836.96	9/1/93	1839.41
6/29/87	1841.57	9/9/87	1840.64	8/3/90	1836.76		
6/30/87	1841.52	9/11/87	1840.66	8/28/90	1836.46	5/26/94	1839.91
7/1/87	1841.50	9/14/87	1840.62	9/28/90	1836.28	6/29/94	1839.93
7/3/87	1841.42	9/16/87	1840.60	10/22/90	1836.26	8/3/94	1839.48
7/6/87	1841.40	9/18/87	1840.58	11/16/90	1836.22		
7/8/87	1841.30	9/21/87	1840.54				

Table 5. Water Surface Elevations - Staff Gage Data (continued)

148-81-34BBA MUD LAKE - NORTH END

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
7/3/87	1839.37	7/31/87	1840.18	8/28/87	1840.13	9/23/87	1839.78
7/6/87	1839.39	8/3/87	1840.09	8/31/87	1840.04	9/25/87	1839.69
7/8/87	1839.41	8/4/87	1840.06	9/2/87	1839.94	9/29/87	1839.61
7/10/87	1839.53	8/7/87	1840.02	9/4/87	1839.92	10/2/87	1839.50
7/13/87	1839.80	8/10/87	1839.88	9/7/87	1839.94	10/12/87	1839.32
7/15/87	1839.84	8/12/87	1839.89	9/9/87	1839.92	11/3/87	1839.26
7/17/87	1839.82	8/14/87	1839.88	9/11/87	1839.92	11/13/87	1839.24
7/20/87	1840.07	8/18/87	1840.08	9/14/87	1839.91		
7/23/87	1840.22	8/19/87	1840.08	9/16/87	1839.90	5/23/88	1839.58
7/24/87	1840.29	8/21/87	1840.09	9/18/87	1839.89	8/15/88	1837.98
7/27/87	1840.27	8/24/87	1840.00	9/21/87	1839.84	8/23/88	1837.78
						9/27/88	1837.00

148-81-34CBA MUD LAKE - SOUTH END

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
6/26/87	1839.42	7/24/87	1840.10	8/21/87	1840.04	9/16/87	1839.83
7/1/87	1839.37	7/27/87	1840.08	8/24/87	1839.93	9/18/87	1839.82
7/3/87	1839.35	7/31/87	1840.08	8/28/87	1840.04	9/21/87	1839.77
7/6/87	1839.41	8/3/87	1840.02	8/31/87	1839.96	9/23/87	1839.70
7/8/87	1839.40	8/7/87	1839.94	9/2/87	1839.86	9/25/87	1839.64
7/10/87	1839.50	8/10/87	1839.86	9/4/87	1839.87	9/29/87	1839.57
7/13/87	1839.74	8/12/87	1839.84	9/7/87	1839.86	10/2/87	1839.48
7/15/87	1839.77	8/14/87	1839.82	9/9/87	1839.84	10/12/87	1839.34
7/17/87	1839.79	8/18/87	1840.00	9/11/87	1839.85	11/3/87	1839.28
7/20/87	1839.99	8/19/87	1839.99	9/14/87	1839.83	11/13/87	1839.27

148-82-13BBA McLEAN SLOUGH #1

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
4/30/86	1853.64	8/21/87	1853.26	11/2/88	1852.23	4/29/92	1849.87
6/4/86	1853.51	8/26/87	1853.33			5/18/92	1849.73
7/2/86	1853.34	8/28/87	1853.34	6/13/89	1852.18	5/26/92	1849.59
7/31/86	1853.42	8/31/87	1853.30	7/6/89	1851.98	6/16/92	1849.33
8/8/86	1853.32	9/2/87	1853.27	8/1/89	1851.64	6/25/92	1849.36
9/9/86	1853.18	9/4/87	1853.27	8/29/89	1851.36	7/22/92	1849.40
10/7/86	1853.44	9/7/87	1853.26	10/6/89	1851.12	8/27/92	1849.02
10/21/86	1853.42	9/9/87	1853.24	11/3/89	1851.08	9/22/92	1848.86
		9/11/87	1853.24	11/22/89	1851.07	10/21/92	1848.72
5/5/87	1853.37	9/14/87	1853.22				
5/19/87	1853.18	9/16/87	1853.23	4/19/90	1851.07	5/3/93	1849.47
5/22/87	1853.26	9/18/87	1853.20	5/1/90	1851.01	6/1/93	1849.40
6/26/87	1853.09	9/21/87	1853.20	5/4/90	1851.00	6/29/93	1849.52
7/1/87	1853.04	9/23/87	1853.20	5/10/90	1850.97	8/4/93	1850.62
7/3/87	1853.00	9/25/87	1853.18	6/12/90	1850.99	9/1/93	1850.70
7/6/87	1852.99	9/29/87	1853.17	7/3/90	1850.95	10/11/93	1850.74
7/8/87	1852.96	10/2/87	1853.15	8/2/90	1850.61	10/25/93	1850.76
7/10/87	1853.03	11/3/87	1853.06	8/28/90	1850.29		
7/13/87	1853.09	11/13/87	1853.07	9/28/90	1850.03	5/26/94	1852.10
7/15/87	1853.09			10/22/90	1850.03	6/10/94	1852.09
7/17/87	1853.05	5/16/88	1853.88	11/16/90	1849.99	6/29/94	1852.33
7/20/87	1853.19	5/20/88	1853.86				
7/24/87	1853.35	6/21/88	1853.39	5/6/91	1850.24	5/26/94	1852.10
7/27/87	1853.32	7/21/88	1853.09	6/24/91	1850.14	6/10/94	1852.09
7/31/87	1853.38	7/26/88	1852.96	7/23/91	1849.82	6/29/94	1852.33
8/5/87	1853.33	8/2/88	1852.83	8/12/91	1849.60	8/3/94	1852.07
8/7/87	1853.28	8/16/88	1852.72	8/28/91	1849.52		
8/10/87	1853.18	8/23/88	1852.57	9/23/91	1849.42		
8/12/87	1853.21	9/27/88	1852.27				
8/19/87	1853.32	10/31/88	1852.19				

Table 5. Water Surface Elevations - Staff Gage Data (continued)

148-82-17ABB SIEDLER SLOUGH

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
7/20/88	1843.78	11/3/89	1841.43	6/24/91	1842.35	5/3/93	1841.47
7/26/88	1843.66	11/22/89	1841.39	7/23/91	1842.11	6/1/93	1841.37
8/2/88	1843.45			8/12/91	1841.81	6/29/93	1843.09
8/15/88	1843.21	4/19/90	1841.31	8/28/91	1841.55	8/4/93	1845.05
8/23/88	1843.04	5/10/90	1841.25	9/23/91	1841.33	9/1/93	1844.80
9/27/88	1842.64	6/12/90	1842.07			10/25/93	1844.35
11/1/88	1842.50	7/3/90	1842.45	5/18/92	1841.69		
11/30/88	1842.54	8/2/90	1842.41	5/26/92	1841.56	5/26/94	1845.20
		8/28/90	1841.97	6/16/92	1841.22	6/29/94	1845.46
6/13/89	1842.55	9/28/90	1841.57	6/25/92	1841.14	8/3/94	1844.99
7/6/89	1842.61	10/22/90	1841.49	7/22/92	1841.72		
8/1/89	1842.25	11/16/90	1841.41	8/27/92	1841.13		
8/29/89	1841.81			9/22/92	1840.82		
10/6/89	1841.51			10/21/92	1840.56		

148-82-23BCB UNNAMED SLOUGH

Date	Water Elev.	Date	Water Elev.	Date	Water Elev.	Date	Water Elev.
4/30/86	1866.82	7/10/87	1865.86	8/28/87	1866.29	5/16/88	1866.44
6/4/86	1866.44	7/13/87	1865.93	8/31/87	1866.24	6/21/88	1865.74
7/2/86	1866.12	7/15/87	1865.93	9/2/87	1866.23	7/21/88	1865.21
7/31/86	1866.13	7/17/87	1865.86	9/4/87	1866.18	7/26/88	1865.05
8/8/86	1865.94	7/20/87	1866.09	9/7/87	1866.15	8/2/88	1864.86
8/12/86	1865.82	7/24/87	1866.43	9/9/87	1866.11	8/16/88	1864.63
9/9/86	1865.74	7/27/87	1866.37	9/11/87	1866.11	8/23/88	1864.41
10/7/86	1865.88	7/31/87	1866.41	9/14/87	1866.08	9/27/88	1863.99
10/21/86	1865.83	8/3/87	1866.37	9/16/87	1866.11	11/1/88	1863.75
		8/5/87	1866.33	9/18/87	1866.12	11/29/88	1863.63
5/5/87	1866.45	8/7/87	1866.27	9/21/87	1866.13		
5/19/87	1866.17	8/10/87	1866.23	9/23/87	1866.14	6/13/89	1863.62
6/26/87	1866.03	8/12/87	1866.15	9/25/87	1866.11	7/6/89	1863.34
7/1/87	1865.95	8/19/87	1866.31	9/29/87	1866.08	8/1/89	1862.85
7/3/87	1865.92	8/21/87	1866.26	10/2/87	1866.05	8/29/89	1862.30
7/6/87	1865.86	8/24/87	1866.21	11/3/87	1865.81		
7/8/87	1865.81	8/26/87	1866.30	11/13/87	1865.74		

Table 6. Chemical Analyses of Ground Water in East Central McLean County

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
146-078-08BBB	120-123	5/29/86	10	0.04	0.05	32	16	170	7.5	462	0	150	5.5	0.2	1	0.82	621	150	0	70	6.1	1020	8		8.2
146-078-30DDD	317-323	5/14/71	27	1.9	0.13	162	66	111	11	716	0	306	17	0	2.5	0.38	1060	675	88	26	1.9	1850	10		7.4
146-079-06AAA1	220-225	6/13/85	28	0.57	0.1	79	36	280	7.6	816	0	240	22	0.3	1	0.19	1100	350	0	63	6.5	1280	8		8.0
146-079-06AAA1	220-225	7/19/90	35	0.51	0.1	79	36	270	6.9	844	0	250	24	0.2	0.7	0.44	1120	350	0	62	6.3	1944	7		8.1
146-079-06AAA2	155-160	9/18/85	26	2.6	0.23	110	50	300	13	959	0	240	16	0.3	7.5	0.27	1240	480	0	57	6	1950	7		8.0
146-079-06AAA2	155-160	7/19/90	28	1.1	0.25	110	51	290	11	1070	0	240	15	0.3	1	0.26	1270	480	0	56	5.7	1960	8		7.9
146-079-10DAD	198-203	8/29/85	26	0.69	0.41	160	69	210	17	756	0	290	12	0.2	1	0.24	1160	680	64	39	3.5				7.9
146-079-10DAD	198-203	5/28/86	27	3.48	0.37	160	68	200	15	946	0	270	15	0.2	1	0.24	1230	680	0	38	3.3	2050	8		7.9
146-079-10DAD	198-203	8/27/93	24	4	0.4	160	70	200	19	1020	0	280	15	0.2	5.3	0.14	1280	690	0	38	3.3	1730			7.8
146-079-15ADD	21-24	10/13/67	24	0.26		82	18	7.7	3.5	269	0	57	1.9	0.6	16	0.15	344	280	59	6	0.2		8		8.0
146-079-15ADD	21-24	5/27/86	25	0.01	0.31	79	28	6.5	3	268	0	31	3.4	0.1	54	0.01	362	310	93	4	0.2	440	6		8.0
146-079-15ADD	21-24	8/27/93	25	0.01	0.31	73	27	9	2.6	281	0	49	4.6	0.1	29	0.02	358	290	63	6	0.2	527			7.9
146-080-01BBB	63-68	9/17/85	29	2.6	0.17	94	28	400	9.6	759	0	540	13	0.2	5.6	0.68	1500	350	0	71	9.3	2350	8		8.1
146-080-01BBB	63-68	7/20/90	32	2	0.24	95	28	390	7.7	823	0	550	15	0.3	0.5	0.66	1530	350	0	70	9	2180	8		8.0
146-080-06CBB2	48-53	5/30/86	12	0.08	0.05	22	11	440	9.7	902	0	320	11	0.3	1	0.97	1270	100	0	90	19.1	2100	10		8.0
146-080-17AAA	58-63	6/11/85	20	2.5	0.24	81	38	210	7.5	533	3	330	14	0.1	0	0.37	970	360	0	55	4.8	940	11		8.3
146-080-17AAA	58-63	7/20/90	30	3	0.22	100	45	200	6	661	0	340	15	0.1	1	0.38	1070	430	0	50	4.2	1578	7		7.8
146-080-19BAA	20-25	9/17/85	16	0.24	0.29	91	51	180	7.7	671	0	210	25	0.2	46	0.58	961	440	0	47	3.7	1550	7		7.9
146-080-19BAA	20-25	8/11/89	16	0.1	0.43	96	52	180	7.3	682	0	220	28	0.2	58	0.49	990	450	0	46	3.7				7.9
146-080-35DDC	48-51	5/3/68	24	1.8	0.46	110	41	28	4.4	336	0	218	5.4	0.2	0	0	599	443	167	12	0.6	850	7		8.1
146-081-18CDD	188-191	10/4/67	26	0.9		107	51	58	7.3	546	0	144	0.9		0	0.2	664	479	31	21	1.2		7		7.9
147-078-06BBB	20-40	5/19/70	28	0.78	0.28	107	36	46	5.7	458	0	132	2.2	0.6	1	0.3	586	414	38	19	1	850	7		7.8
147-078-06BBB	20-40	6/28/78	28	1.34	0.68	62	16	35	4.9	242	0	100	2.3	0.2	1	0.1	370	220	22	25	1	750	9	7.4	8.1
147-078-06BBB	20-40	12/1/78	21	0.08	0.72	55	25	29	4.1	267	0	68	2.8	0.3	6.6	0.09	344	240	21	20	0.8	600	3	7.2	8.1
147-078-06BBB	20-40	5/29/86	28	0.09	0.65	73	23	27	4.8	320	0	66	3.3	0.3	2.4	0.22	387	280	15	17	0.7	650	8		8.1
147-078-06BBB	20-40	5/23/91	26	0.11	0.91	110	33	32	4	386	0	130	2.3	0.2	5.3	0.18	534	410	94	14	0.7	862	11		7.7
147-078-30BCC1	148-168	5/18/70	29	0.12	0.33	103	26	52	6.5	454	0	117	2.8	0.5	1	0.26	562	364	0	23	1.2		7		7.9
147-078-30BCC2	39-59	5/18/70	29	0.05	0.05	66	20	5.6	2.9	282	0	33	1.5	0.4	1	0	298	248	17	5	0.2	400	7		8.1
147-078-30BCC2	39-59	7/10/78	24	0.59	0.72	64	22	4.3	2	260	0	41	1.2	0.1	1	0	289	250	37	4	0.1	480	7	7.7	8.0
147-078-30BCC2	39-59	5/27/86	27	0.38	0.7	61	20	4	2	271	0	15	2.4	0.1	1	0.04	268	230	13	4	0.1	400	7		8.0
147-079-11BCB	28-33	8/29/67	23	2.1		78	29	43	5.3	394	0	76	4	0.2	0	0.14	455	315	0	23	1.1	620	7		7.9
147-079-11BCB	28-33	5/29/86	27	0.02	0.96	80	30	34	4.7	390	0	71	4.6	0.2	1	0.21	446	320	4	18	0.8	780	8		8.1
147-079-11BCB	28-33	5/23/91	25	0.04	1	78	29	35	3.4	392	0	70	2.5	0.2	1	0.16	438	310	0	19	0.9	690	10		7.9
147-079-14CCC	31-36	6/13/85	22	0.2	0.55	74	32	68	6.8	407	0	130	3.3	0.2	1	0.07	538	320	0	31	1.7	400	8		8.0
147-079-14CCC	31-36	6/22/90	25	0.31	0.69	82	36	55	5.1	415	0	120	7.4	0.1	2	0.17	538	350	13	25	1.3				7.4
147-079-18ADD	173-178	6/12/85	20	0.96	0.31	86	30	250	8.8	571	4	320	14	0.3	1	0.44	1020	340	0	61	5.9	930	10		8.3
147-079-18ADD	173-178	7/19/90	30	0.36	0.05	31	13	380	5.9	817	0	300	20	0.5	1	0.83	1180	130	0	86	14	1768	7		7.7
147-079-18DCC	178-183	9/18/85	29	0.23	0.06	25	11	410	6.1	786	6	300	21	0.6	1	0.93	1200	110	0	89	17.2	1400	7		8.6
147-079-18DCC	178-183	7/19/90	30	0.46	0.07	25	11	410	4.9	794	4	310	26	0.7	1	1	1220	110	0	89	17	1830	8		8.3
147-079-19BAA2	118-121	8/15/67	25	3.56		90	30	207	8.6	584	0	313	15	0.3	0.5	0.35	981	347	0	56	4.8		8		7.8
147-079-19BAA2	118-121	7/17/79	23	1.34	0.44	98	28	180	8.7	587	0	250	8.2	0.2	1	0.8	889	360	0	51	4.1	1300	8		7.9
147-079-19BAA2	118-121	5/28/86	28	0.92	0.24	88	30	190	7.6	608	0	250	9.4	0.3	1	0.59	906	340	0	54	4.5	1460	8		8.1
147-079-19BAA2	118-121	5/23/91	26	0.68	0.15	83	28	200	6.7	612	0	250	8.4	0.4	1	0.39	906	320	0	57	4.9	1379	10		8.0
147-079-19BAA3	39-42	8/16/67	24	3.94		116	31	122	10	484	0	291	12	0.3	2	0.23	850	418	22	38	2.6		8		7.9
147-079-19BAA3	39-42	7/19/79	28	3.95	0.4	95	27	77	6.7	465	0	130	1.7	0.3	1	1.37	602	350	0	32	1.8	900	9		7.7

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
147-079-19BAA3	39-42	5/28/86	27	3.42	0.59	92	27	73	7.1	460	0	120	3.7	0.3	1	0.36	582	340	0	31	1.7	990	8		7.9
147-079-19BAA3	39-42	5/23/91	25	2.6	0.4	91	28	73	5.7	465	0	130	2.7	0.2	1	0.23	589	340	0	31	1.7	902	10		7.9
147-079-20ABD	138-143	6/12/85	18	0.04	0.12	48	24	490	11	850	20	490	54	0.6	1	1.32	1580	220	0	82	14.4	1410	10		8.5
147-079-20ABD	138-143	7/19/90	29	0.15	0.1	38	20	460	9.2	951	0	350	51	0.7	0.4	1.6	1430	180	0	84	15	2160	8		8.2
147-079-22CBB	68-73	6/13/85	26	0.03	0.45	70	23	120	6.9	457	0	131	4.7	0.2	1	0.17	607	270	0	48	3.2	550	8		8.0
147-079-22CBB	68-73	6/22/90	27	0.04	0.51	68	23	99	5.3	430	0	110	8.1	0.3	2.3	0.29	556	260	0	44	2.7				7.5
147-079-24DDD	152-157	5/29/86	10	0.07	0.11	26	7	5	5.8	132	0	15	3.3	0.1	1	0.05	138	94	0	10	0.2	260	10		7.9
147-079-26DDA	168-173	6/13/85	26	0.84	1.51	150	38	36	7.9	476	0	170	0.7	0.2	1	0.1	666	530	140	13	0.7	490	7		7.7
147-079-26DDA	168-173	6/22/90	28	0.12	1.5	140	37	36	6.2	453	0	160	5.1	0.2	1	0.25	638	500	130	13	0.7				7.2
147-079-27AAA	38-48	8/12/70	24	12	0.06	75	20	38	4	334	0	84	2.6	0.1	0	0.18	425	271	0	23	1	570	8		7.9
147-079-27AAA	38-48	5/27/86	26	0.03	0.88	70	28	26	3.9	288	0	100	5	0.2	1.5	0.19	404	290	54	16	0.7	570	7		8.1
147-079-27ADA1	168-178	8/29/67	28	0.13		62	20	282	6.5	697	0	267	6.6	0.3	3	0.78	1020	235	0	72	8	1400	9		8.0
147-079-27ADA1	168-178	9/8/82	29	0.26	0.4	62	21	290	9.3	690	0	250	9.1	0.3	1	0.68	1010	240	0	71	8.1	1490	8		8.1
147-079-27ADA1	168-178	5/27/86	30	0.21	0.48	64	20	280	6.2	711	0	260	7	0.3	0.2	1.2	1020	240	0	71	7.8	1420	7		8.0
147-079-27ADA1	168-178	5/23/91	27	0.13	0.36	62	19	280	5.8	715	0	250	5.3	0.3	0.1	0.96	1000	230	0	72	8	1542	9		7.8
147-079-27ADA2	57-60	8/29/67	27	0.7		85	26	27	4.8	379	0	56	2.4	0.2	0	0.1	416	320	10	15	0.7	600	8		7.9
147-079-27ADA2	57-60	5/27/86	28	1.14	1.18	84	26	28	4.9	385	0	61	3.2	0.2	1	0.17	429	320	1	16	0.7	670	7		8.0
147-079-27ADA2	57-60	5/23/91	27	0.41	0.9	85	25	28	3.1	384	0	60	1.4	0.2	1	0.15	421	320	1	16	0.7	673	10		8.0
147-079-29BBB	43-48	6/13/85	26	0.86	0.26	76	29	330	8.9	941	0	230	17	0.5	1	0.3	1180	310	0	69	8.2	1500	8		8.0
147-079-29BBB	43-48	7/19/90	28	0.72	0.23	78	31	330	8.2	979	0	260	21	0.4	1	0.62	1240	320	0	68	8	1910	8		8.1
147-079-35BCC	218-224	5/29/86	25	0.03	0.15	100	60	200	14	906	0	150	7.9	0.1	1	0.6	1000	500	0	46	3.9	1600	10		7.9
147-079-35CBB	136-141	9/17/85	26	0.34	1.2	150	44	120	12	574	0	280	5.5	0.2	1	0.43	924	560	85	31	2.2	1080	7		7.7
147-079-35CBB	136-141	6/22/90	27	0.07	1.3	150	44	110	8.6	532	0	290	9.3	0.2	1	0.39	904	560	120	30	2				7.2
147-080-01CCC2	48-53	12/3/69	30	0.24	0.04	71	25	72	6.2	324	0	175		0.1	0	0	540	281	15	35	1.9		7		7.9
147-080-01CCC2	48-53	9/19/79	26	0.81	1.62	31	76	64	63	505	0	150	6.4	0.2	24	0.23	692	390	0	23	1.4		9		7.8
147-080-01CCC2	48-53	6/11/86	25	3.2	1.15	120	43	73	11	511	0	200	7.2	0.2	1	0.26	737	480	58	25	1.5	1200	8		7.8
147-080-03CCC	48-51	8/16/67	24	3.76		47	14	164	8.2	343	0	254	5.8		0	0.07	690	177	0	66	5.4		8		8.0
147-080-03CCC	48-51	5/28/86	27	0.27	0.67	72	22	7.5	2.8	252	0	77	2.5	0.1	1	0.04	337	270	64	6	0.2	580	8		8.1
147-080-03CCC	48-51	5/23/91	26	0.53	0.56	82	26	6	1.9	293	0	88	1.4	0.1	4.1	0.04	381	310	72	4	0.1	624	10		8.0
147-080-03DAA	78-83	8/13/85	26	0.05	0.61	82	31	23	4.3	281	0	110	13	0.1	1	0.05	429	330	102	13	0.5	730	7		8.1
147-080-03DAA	78-83	7/19/90	31	0.09	0.72	94	35	15	2.7	390	0	120	9.3	0.1	2.3	0.06	502	380	59	8	0.3	746	7		7.7
147-080-05BBB	83-93	8/27/93	28	2.1	0.93	99	36	110	9.2	511	0	220	4.8	0.2	3.5	0.25	766	400	0	37	2.4	1000			7.7
147-080-05CCC	80-90	8/27/93	28	2	0.79	100	39	110	10	522	0	250	4.5	0.2	3.1	0.26	805	410	0	36	2.4	960			7.7
147-080-05DDA	107-112	11/19/84	28	0.4	0.05	58	27	490	10	902	0	610	8.9	0.2	1	0.56	1680	260	0	80	13.3	2100	7		7.8
147-080-05DDA	107-112	8/28/85	26	0.08	0.14	58	28	500	8.1	729	29	620	6.8	0.2	5	0.9	1640	260	0	80	13.5				8.7
147-080-05DDA	107-112	6/21/90	24	0.41	0.08	55	27	490	6.2	898	0	590	12	0.1	1	0.6	1650	250	0	81	13	2500	8		8.0
147-080-05DDD	58-68	8/27/93	27	6	0.58	200	64	130	14	741	0	460	6.3	0.2	4.5	0.36	1280	760	160	27	2.1	960			7.5
147-080-08CCC	58-63	8/30/85	28	1.6	0.49	88	31	130	8.4	442	0	230	1.4	0.2	11	0.43	749	350	0	44	3				8.1
147-080-08CCC	58-63	9/18/85	28	1.2	0.44	86	29	130	8	451	0	200	1	0.2	4.1	0.38	710	330	0	45	3.1	1160	7		8.1
147-080-08CCC	58-63	6/21/90	26	1	0.55	90	30	140	6.4	515	0	230	5.8	0.2	1	0.32	785	350	0	46	3.2	1205	8		7.6
147-080-09CBB	26-29	8/16/67	23	3.48		33	10	448	9	393	0	774	16		0	0.17	1510	124	0	88	17.6		9		8.2
147-080-09CBB	26-29	5/6/68	25	0	0.21	28	8.8	103	5.4	305	0	68	5.7	0.2	1	0	395	106	0	67	4.3	550	7		7.9
147-080-09CBB	26-29	5/28/86	27	1.03	0.87	79	21	6	4	275	0	68	2.9	0.1	1.3	0.05	346	280	58	4	0.2	590	8		8.0
147-080-09CBB	26-29	5/23/91	27	1.4	0.64	77	20	5	2.7	281	0	62	1.8	0.1	1	0.04	337	270	44	4	0.1	560	9		8.0
147-080-13CCC	128-131	8/10/67	28	1.44		69	20	222	7.3	605	0	239	8.8	0.3	0.5	0.39	895	255	0	65	6		8		7.9

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
147-080-13CCC	128-131	5/28/86	30	0.24	0.08	60	23	230	7.4	605	0	220	9.7	0.3	1	0.69	880	240	0	66	6.4	1440	9		8.1
147-080-13CCC	128-131	5/23/91	28	0.03	0.02	17	23	240	7.8	651	0	140	9	0.2	1	0.48	788	140	0	78	8.8	1288	11		8.4
147-080-15AAA2	43-48	5/30/86	27	0.3	0.67	230	65	30	5.9	577	0	410	17	0.2	1	0.12	1070	840	370	7	0.5	1650	10		7.4
147-080-16BCA	115-120	11/19/84	29	1.3	0.65	100	43	48	7.6	546	0	84	2.3	0.4	1	0.11	586	430	0	19	1	880	7		8.0
147-080-16BCA	115-120	8/28/85	26	0.74	0.73	100	45	75	8	486	0	160	2.4	0.4	1.5	0.2	659	440	36	27	1.6		9		8.1
147-080-16BCA	115-120	6/21/90	27	0.69	0.7	96	43	34	4.5	539	0	50	4.8	0.3	1	0.13	528	420	0	15	0.7	885	8		7.3
147-080-19BCC	148-151	8/18/67	25	2.16		80	29	178	8.3	560	0	241	4.2	0.2	0	0.24	844	320	0	54	4.3	1180	9		8.0
147-080-19DAA	57-60	8/18/67	25	1.44		107	34	131	8.2	535	0	238	4.3	0.2	3	0.24	816	410	0	41	2.8		8		7.9
147-080-19DAA	57-60	4/9/68	28	2.18	0	107	25	70	5.6	502	0	124	3.4	0.2	1	0.29	614	370	0	29	1.6		7		7.8
147-080-21BAC	37-42	11/19/84	29	0.04	0.07	330	90	310	15	535	0	1100	52	0.2	130	0.15	2320	1200	760	36	3.9	2600	6		7.4
147-080-21BAC	37-42	8/28/85	28	0.06	0.11	330	94	300	13	371	0	1200	49	0.2	120	0.36	2320	1210	907	35	3.7		8		7.7
147-080-21BAC	37-42	7/19/90	30	0.06	0.18	380	120	290	11	552	0	1300	56	0.2	120	0.35	2580	1400	990	30	3.4	3350	8		7.4
147-080-22AAD	38-43	8/13/85	26	0.09	0.66	150	89	100	12	428	0	440	22	0.2	3.2	0.17	1050	740	390	22	1.6	1550	8		8.0
147-080-22AAD	38-43	5/28/86	28	0.62	0.89	180	99	110	12	618	0	520	21	0.1	1	0.37	1280	860	350	22	1.6	1950	9		7.9
147-080-22BBB	128-131	12/3/69	27	0.72	0.01	110	42	199	8.5	404	0	525	6.2	0.6	2.5	0.34	1120	446	115	49	4.1		7		7.8
147-080-22CDD1	138-143	8/13/85	32	0.29	0.23	420	340	13000	68	4690	0	21000	2300	0.1	1	0.54	39500	2500	0	92	114	2600	8		8.0
147-080-22CDD1	138-143	7/19/90	27	1.5	0.21	400	330	10000	50	4390	0	18000	1900	0.1	1	0.69	33000	2400	0	90	89	34500	8		7.1
147-080-22CDD1	138-143	6/15/92	23	2.9	0.21	390	320	9500	53	4130	0	17000	1700	0.2	0	0.6	31000	2300	0	90	86	45800	9		7.9
147-080-22CDD2	25-30	8/13/85	25	0.04	0.01	150	50	490	21	561	0	1100	49	0.2	3.2	0.36	2170	580	121	64	8.8	2700	8		8.2
147-080-22CDD2	25-30	7/19/90	30	0.06	0.03	280	210	430	20	627	0	2000	95	0.1	1	0.35	3380	1600	1000	37	4.7	3900	10		7.2
147-080-22CDD2	25-30	6/15/92	24	0.04	0.04	300	250	530	27	646	0	2000	90	0.3	0.7	0.28	3540	1800	1200	39	5.4	6500	14		7.8
147-080-23ADD	98-103	9/17/85	27	2.4	0.22	68	26	210	9.3	605	0	200	16	0.2	5.2	0.4	863	280	0	61	5.5	1500	7		8.3
147-080-33DDD	18-24	12/2/69	26	0.12	0.07	137	47	147	9.5	444	0	505		0.5	1	0.15	1090	535	171	37	2.8	1480	7		7.9
147-080-33DDD	18-24	5/27/86	26	1.38	0.59	120	59	130	6.5	526	0	380	9.3	0.1	1	1.07	994	540	110	34	2.4	1260	8		7.9
147-081-07DDD	118-138	8/24/70	24	0.18	0.01	63	25	397	6.6	761	0	447	4.5	0.2	0.4	1.05	1340	261	0	76	10.7	1710	8		7.8
147-081-07DDD	118-138	5/30/86	27	0.14	0.12	68	28	400	7.4	819	0	480	6.8	0.2	1	1.3	1420	280	0	75	10.3	2200	9		8.2
147-081-09AAA2	5/10/94	9/6/85	22	0.02	0.1	45	30	70	5.2	350	0	93	2.7	0.2	3.5	0.22	444	240	0	39	2	580	12		8.0
147-081-19AAA	94-97	8/15/67	20	0.34		23	6.4	417	5.9	950	0	221	4.7	0.2	0	0.54	1170	84	0	91	19.7		8		8.0
147-081-19AAA	94-97	6/1/77	12	0.49	0.1	22	6.6	410	4.9	914	11	210	6	0.4	3.5	0.8	1140	82	0	91	19.6	1700	9		8.5
147-081-19AAA	94-97	6/8/78	24	1.58	0.06	22	6.6	410	4.8	943	0	200	3.9	0.3	1	0.88	1140	82	0	91	19.6	1700	9		7.8
147-081-21DAA	81-86	10/24/84	30	1.4	0.07	26	8	450	5.7	986	0	260	5.2	0.4	1	0.51	1270	98	0	90	19.8	2100	7		7.8
147-081-21DAA	81-86	8/28/85	29	0.52	0.06	26	9	450	6.6	961	20	270	3.5	0.4	3.8	0.78	1290	100	0	90	19.4		9		8.5
147-081-22AAA	18-23	7/2/85	19	0.02	0.07	53	28	140	5.6	237	0	436	4.6	0.2	10	0.38	814	250	53	55	3.9				8.3
147-081-22AAA	18-23	6/22/90	20	0.06	0.15	57	29	150	3.8	482	0	180	7.7	0.2	6.6	0.29	692	260	0	55	4.1	1095	8		7.8
147-081-23AAA1	48-51	8/18/67	26	0.44		61	17	26	3.3	284	0	37	3	0.1	0	0.14	314	220	0	20	0.8		8		8.0
147-081-23AAA1	48-51	5/30/86	26	1.13	0.3	60	20	27	3.1	270	0	63	4.2	0.1	1	0.06	339	230	11	20	0.8	570	8		8.1
147-081-23AAA1	48-51	6/22/90	26	1	0.34	64	21	26	2.2	284	0	90	6.8	0.1	1	0.05	378	250	14	18	0.7	595	8		7.2
147-081-23AAA2	23-28	7/2/85	22	1.5	0.41	95	35	29	5.1	437	0	71	2.3	0.2	1	0.1	478	380	23	14	0.6				8.1
147-081-23AAA2	23-28	6/22/90	24	2.3	0.49	100	39	42	4.6	468	0	140	5.7	0.1	1	0.07	590	410	27	18	0.9	932	8		7.6
147-081-24ADD	98-103	8/29/85	28	0.68	0.53	84	32	130	8.6	469	0	200	1.5	0.2	3.2	0.38	720	340	0	45	3.1				8.2
147-081-24ADD	98-103	6/22/90	26	2.1	0.54	80	30	120	6.2	511	0	190	5.3	0.2	1	0.27	714	320	0	44	2.9	1140	8		7.4
147-081-28ADD	78-81	8/22/67	25	5.04		57	26	385	7.9	888	0	354	4	0.1	4.9	0.75	1310	250	0	76	10.6		8		7.9
147-081-28ADD	78-81	6/1/77	12	2.01	0.12	71	20	390	6.7	933	10	350	4.7	0.3	1	1.08	1330	260	0	76	10.5	1750	8		8.4
147-081-28ADD	78-81	5/27/86	28	0.52	0.13	70	26	370	8	929	0	330	5.4	0.2	3.3	0.19	1300	280	0	73	9.6		7		7.9
147-081-30AAA	88-93	7/2/85	25	1.74	0.13	89	29	120	11	489	0	190	9.3	0.1	1	0.33	718	340	0	42	2.8				8.0

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
147-081-30AAA	88-93	6/22/90	25	2	0.19	100	34	140	8.8	555	0	250	5.1	0	1	0.26	839	390	0	43	3.1	1285	8		7.6
147-081-30ADD	78-81	8/24/70	23	4.32	0.33	146	45	56	5.3	558	0	187	2.2	0.3	0.1	0.12	744	551	93	18	1	1000	7		7.8
147-081-35ABB	18-21	8/22/67	19	1.56		51	19	165	4.6	529	0	126	4	0.2	0	0.24	652	205	0	63	5	875	8		8.1
147-082-02DCC	113-118	5/30/86	18	0.04	0.08	17	7	370	5.6	768	0	270	5.3	0.3	1	0.84	1070	72	0	91	18.9	1750	10		8.3
147-082-02DCC	113-118	5/30/91	23	0.1	0.06	18	6	370	4.2	771	0	270	2.1	0.2	3.2	0.78	1080	70	0	91	19	1610	10		8.2
147-082-11BBB	98-104	12/2/69	27	0	0.03	16	23	387	6.7	620	15	415	1.3	0.2	2.5	0.97	1200	135	0	85	14.5		7		8.5
147-082-11BDB	123-128	6/14/85	26	0.14	0.14	54	20	450	8.7	1030	0	340	4.7	0.3	1	0.31	1410	220	0	81	13.3	1490	8		8.1
147-082-11BDB	123-128	6/22/90	25	0.45	0.1	47	17	450	7.2	1030	0	290	7.8	0.3	1	0.72	1350	190	0	83	14	2000	8		8.2
147-083-12BAA	48-53	7/2/85	24	2.29	0.41	73	26	340	7.8	756	0	420	4.8	0.2	3.4	0.68	1280	290	0	71	8.7				8.0
147-083-12BAA	48-53	8/7/92	24	2.6	0.46	85	31	370	7.3	804	0	540	5.5	0.2	5.3	0.55	1470	340	0	70	8.7				7.7
147-083-12CCC	35-40	7/2/85	28	0.03	0.42	100	29	45	6.1	392	0	70	1.2	0.2	1	0.14	474	370	47	19	1				8.1
147-083-12CCC	35-40	5/30/86	35	0.14	0.58	87	28	46	5.7	437		62	3.2	0.1	1	0.15	484	330		23	1.1	820	8		8.2
147-083-14BCC	144-147	7/9/70	23	4.64	0.04	47	51	539	8	1110	0	583	14	0.4	0	0.69	1820	326	0	78	13	2100	10		8.1
147-083-14BCC	144-147	5/30/86	29	0.11	0.16	52	53	520	8.5	1210	0	490	13	0.4	1	0.76	1760	350	0	76	12.2	2650	9		8.1
147-083-15BBA	57-61	11/9/84	22	1.8	0.49	120	46	79	5.7	637	0	140	2.9	0.3	2.1	0.26	735	490	0	26	1.6	1020	7		7.7
147-083-15BBA	57-61	8/4/89	22	1.3	0.49	110	45	80	5.8	627	0	120	2.4	0.3	1	0.34	698	460	0	27	1.6	1135	8		8.0
147-083-22DCB	14-18	12/8/66	23	1.1		129	34	21	6.4	397	0	161	12	0.2	0	0.12	584	463	138	9	0.4				7.9
147-083-34ABB	198-204	11/20/69	31	4.2	0.05	57	42	457	8.1	919	6.1	561	0	0.2	19	0	1640	315	0	75	11	2200	7		8.3
148-078-20BBA	35-41	9/14/78	27	0	0.72	59	25	49	4.9	301	0	110	2	0.2	1	0	427	250	4	29	1.3	600	8	8.1	8.1
148-078-20BBA	35-41	5/29/86	24	0.03	0.36	53	18	120	7.8	403	0	110	4	0.2	1	0.43	538	210	0	55	3.6	910	11		7.7
148-079-27ADD1	183-198	8/30/67	27	0.06		85	40	49	6.8	349	0	182	2.4	0.1	0	0.29	565	376	90	22	1.1	910	9		7.8
148-079-27ADD1	183-198	5/29/86	29	0.18	0.96	110	39	50	6.3	451	0	180	3.9	0.2	1	0.16	643	440	66	20	1	1060	8		8.1
148-079-27ADD1	183-198	5/3/90	27	0.24	1	110	39	50	6.9	399	0	180	3.9	0.2	1	0.13	616	440	110	20	1	975	8		7.0
148-079-27ADD2	83-98	8/30/67	26	0.07		62	45	20	5.7	252	0	164	2.1	0.2	0	0	449	338	131	11	0.5	800	8		8.0
148-079-27ADD2	83-98	5/29/86	28	0.03	1.44	150	52	20	5.1	461	0	250	4.6	0.3	1	0.07	740	590	210	7	0.4	1160	8		8.0
148-079-27ADD2	83-98	5/3/90	27	0.02	1.3	140	54	18	5.9	466	0	240	4.6	0.3	1	0.1	722	570	190	6	0.3	1045	8		7.0
148-079-27ADD2	83-98	8/27/93	26	0.04	1.4	150	53	20	5.9	471	0	230	5.2	0.2	0	0.07	724	590	210	7	0.4	960			7.9
148-079-32AAA	108-111	5/19/70	27	3.36	0.04	113	45	31	6.4	401	0	215	1	0.1	0	0	640	466	137	13	0.6	980	7		7.8
148-079-32AAA	108-111	5/28/86	27	1.08	0.92	140	53	28	6.8	446	0	220	5.8	0.3	1	0.14	704	570	200	10	0.5	1160	8		7.9
148-079-36CDC	66-71	5/29/86	21	0.19	0.35	71	48	340	12	719	0	500	15	0.2	1	0.67	1360	370	0	66	7.6	2100	10		8.0
148-079-36CDC	66-71	5/29/91	18	0.02	0.29	66	44	340	6.2	721	0	500	13	0.2	1	0.42	1340	350	0	68	7.9	2030	10		7.8
148-080-06AAB	168-173	9/18/85	28	0.04	0.13	47	20	260	7.2	588	0	240	1.3	0.2	4	0.75	899	200	0	73	8	1260	7		8.2
148-080-06AAB	168-173	6/21/90	25	0.15	0.12	45	20	260	5.4	624	0	230	4.6	0.2	1	0.62	899	200	0	74	8	1380	8		8.1
148-080-07AAA	149-154	11/20/84	27	1.8	0.22	210	80	510	16	775	0	1300	2.6	0.2	1	0.48	2480	850	220	56	7.6	2800	6		7.9
148-080-07AAA	149-154	8/28/85	26	1.6	0.31	300	130	380	15	537	0	1500	0.9	0.1	1	0.72	2620	1280	844	39	4.6				7.9
148-080-07AAA	149-154	6/21/90	24	2.5	0.31	300	140	370	12	691	0	1500	5.2	0.1	1	0.49	2700	1300	760	38	4.5	3400	8		7.6
148-080-12ADD	23-28	5/6/68	24	1.7	0.39	66	17	3.9	4.2	246	0	36	2.1	0.1	0	0	276	235	34	3	0.1	400	6		8.1
148-080-12ADD	23-28	5/29/86	27	0.05	0.28	72	23	3	3.9	245	0	79	5	0.1	1	0.01	335	270	73	2	0.1	570	10		8.3
148-080-17CAB2	118-138	8/7/70	27	0.24	0.02	60	24	295	6.7	676	0	346	7.2	0.6	0	0.39	1100	247	0	72	8.2	1380	10		7.9
148-080-17CAB2	118-138	5/29/86	31	0.27	0.11	70	29	380	7.4	783	0	480	7.2	0.2	1	1	1390	290	0	73	9.7	2200	10		8.2
148-080-19CCC1	198-201	9/21/70	25	2.8	0.17	67	22	200	5.7	601	0	182	0.8	0.2	2.5	0.34	804	256	0	62	5.4	1200	7		7.9
148-080-19CCC1	198-201	5/30/86	29	0.53	0.11	50	24	180	6.5	590	0	140	4.4	0.2	1	0.76	728	220	0	63	5.3	1240	8		8.1
148-080-19CCC1	198-201	5/29/91	26	0.08	0.1	48	23	180	5.6	598	0	130	2.1	0.2	1	0.55	712	210	0	64	5.4	1124	10		8.0
148-080-19CCC2	24-27	8/9/67	25	1.48		109	32	10	4.8	286	0	156	14	0.1	0	0.07	493	404	170	5	0.2		8		7.7
148-080-19CCC2	24-27	9/21/70	24	4.4	0.37	128	36	8.9	4	497	0	76	2.3		1	0	530	469	61	4	0.2	860	7		7.7

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-080-19CCC2	24-27	5/30/86	28	1.55	0.72	130	43	9	4.4	548	0	68	3.6	0.1	1	0.07	559	500	53	4	0.2	970	8		7.9
148-080-19CCC2	24-27	5/29/91	26	0.18	0.73	130	41	8.5	3.1	515	0	69	1.9	0.1	1	0.07	536	490	71	4	0.2	918	9		7.8
148-080-20CCC	98-103	8/13/85	27	0.12	0.87	100	47	400	10	673	0	560	10	0.1	4	0.65	1490	440	0	66	8.3	2500	7		8.3
148-080-20CCC	98-103	5/29/86	28	0.49	0.79	99	47	400	8.7	849	0	610	8.3	0.2	1	1	1620	440	0	66	8.3	2500	8		8.1
148-080-23DCD	25-30	8/14/85	22	0.03	0.35	84	36	18	6.2	290	0	67	7.5	0.1	1.9	0.04	386	360	120	10	0.4	720	8		8.2
148-080-23DCD	25-30	5/28/86	26	0.04	0.67	91	36	12	5.3	390	0	77	6.4	0.1	1	0.09	448	380	56	6	0.3	750	9		8.1
148-080-29DDD2	98-103	6/14/85	26	0.11	1.36	110	43	100	8.5	526	0	250	1.9	0.2	1	0.1	801	450	21	32	2.1	875	8		8.0
148-080-29DDD2	98-103	6/21/90	27	0.1	1.4	100	44	100	6.8	516	0	240	5.9	0.2	1	0.22	781	430	8	33	2.1	1180	8		7.8
148-080-31AAA1	208-211	8/10/67	24	4.02		37	26	355	8	679	0	400	6	0.1	3	0.48	1200	198	0	79	11		9		8.1
148-080-31AAA1	208-211	9/23/70	26	1.56	0.04	72	22	370	6.9	833	0	413	3.9	0.3	1	0.4	1330	270	0	74	9.8	1400	7		7.8
148-080-31AAA1	208-211	5/29/86	29	0.69	0.06	59	27	350	7.7	780	0	400	7.6	0.3	1	0.76	1270	260	0	74	9.5	2000	9		8.3
148-080-31AAA1	208-211	5/29/91	24	0.04	0.08	57	26	350	7.4	780	0	380	4.7	0.3	1	0.61	1240	250	0	75	9.6	1930	9		8.0
148-080-31AAA2	78-81	8/9/67	27	0.28		52	25	200	6.5	580	0	181	3.2	0.2	0	0.41	782	233	0	64	5.7		8		8.0
148-080-31AAA2	78-81	9/23/70	24	5.4	0.8	111	35	188	6.9	622	0	316	2.2	0.4	0	0.31	995	422	0	49	4	1440	7		8.0
148-080-31AAA2	78-81	5/29/86	29	0.56	1.06	99	39	190	7.5	606	0	320	5.9	0.2	1	0.56	993	410	0	50	4.1	1600	8		8.2
148-080-31AAA2	78-81	5/29/91	27	0.1	1.1	94	38	190	7.3	612	0	310	3.9	0.2	0.3	0.46	973	390	0	51	4.2	1530	8		7.9
148-080-31AAA3	28-38	10/18/88		0.39	0.6	86.4	37.5	18	3.7	384		52	3.9	0.2			391	370		10	0.4				7.9
148-080-31AAA3	28-38	5/29/91	27	0.91	0.63	91	39	22	3.3	415	0	94	5.1	0.2	1	0.12	488	390	48	11	0.5	772	11		7.8
148-080-33CBC1	41-51	7/13/62		0.2						288	0	258	6		0			330							7.8
148-080-33CBC2	39-49	7/13/62		0.3						324	0	84	2		0			330							7.9
148-080-33CBC3	42-48	8/27/70	24	1.4	0.69	100	36	36	5.6	457	0	87	0.6	0.2	1	0	517	398	23	16	0.8	840	8		8.0
148-080-33CCA1	43-53	7/13/62		0.6						464	0	202	2		0			510							7.6
148-080-33CCA2	40-43	8/27/70	26	0.58	0.3	147	60	73	7.2	608	0	240	2.1	0.1	1	0.06	857	613	114	20	1.3	1200	8		7.5
148-080-33CCB	47-53	8/27/70	27	6.8	0.16	100	39	45	5.6	475	0	102	0.9	0.2	1	0	562	410	20	19	1	900	8		7.7
148-080-33CCC	45-48	7/13/62		0.3						428	0	31	2		0			370							8.1
148-080-33CCC	45-48	5/28/86	27	0.86	0.16	44	32	27	9	328	0	31	5.7	0.2	1	0.19	340	240	0	19	0.8	600	9		8.1
148-080-34DCC	198-207	8/11/70	25	0.32	0.08	53	20	306	7.4	708	0	292	4.5	0.1	0	0.57	1060	216	0	75	9.1	1340	8		8.0
148-080-34DCC	198-207	5/28/86	28	0.45	0.08	39	24	300	7.4	699	0	270	6.5	0.3	1	0.88	1020	200	0	76	9.3	1700	8		8.3
148-080-34DCC	198-207	5/23/91	26	0.08	0.06	38	25	300	7.1	715	0	280	4.8	0.3	0.5	0.61	1030	200	0	76	9.2	1552	10		8.1
148-080-35BBC	38-41	8/10/67	24	3.58		75	23	8.9	2.6	275	0	23	1.5	0	54	0	349	283	58	6	0.2		9		7.7
148-080-35BBC	38-41	5/28/86	25	0.03	0.05	81	28	7	2.5	294	0	37	3.2	0.1	31	0.06	360	320	76	5	0.2	740	10		8.2
148-081-03AAB	32-37	9/7/67	20	1.94		88	35	20	4.8	414	0	53	2.2	0.1	1	0.22	430	363	23	11	0.5	650	8		8.0
148-081-03AAB	32-37	8/19/69	22	2.8	0.04	115	28	10	3.2	472	0	44	1	0.6	0	0.04	460	402	15	5	0.2		8		7.9
148-081-03AAB	32-37	8/26/80	22	1.95	0.4	100	41	9.1	1.9	490	0	48	3.1	0.2	1.3	0.31	470	420	18	5	0.2	760	8		8.0
148-081-03AAB	32-37	5/21/85	22	0.04	0.41	110	42	10	4.8	473	0	55	0.2	0.2	1	0.09	479	450	60	5	0.2	820	10	7.7	7.9
148-081-03AAB	32-37	9/21/87	23	1.2	0.44	120	46	11	5.3	481	0	81	1.9	0	1	0.12	528	490	95	5	0.2	890	9	7.8	7.9
148-081-03CCD	33-38	9/18/85	26	2.2	0.47	95	36	36	4.2	436	0	92	1.1	0.1	1	0.18	509	390	28	17	0.8	880	5		8.2
148-081-03CCD	33-38	6/21/90	25	2.8	0.39	78	30	27	2.5	387	0	68	4.5	0.1	1	0.13	430	320	1	15	0.7	710	7		7.3
148-081-04CBC	49-54	11/9/84	26	0.16	0.56	160	53	51	6.3	493	0	260	2.4	0.2	1	0.16	804	620	210	15	0.9	1120	6		7.5
148-081-04CBC	49-54	8/4/89	26	0.21	0.82	180	61	51	6.4	488	0	360	4.3	0.1	1	0.29	950	700	300	14	0.8	1466	8		7.8
148-081-08DDA	13-18	11/9/84	26	0.22	0.13	120	38	36	5.3	487	0	130	3.6	0.2	1	0.13	601	460	57	14	0.7	870	7		7.7
148-081-08DDA	13-18	8/25/85	23	0.24	0.15	120	40	36	5.3	498	0	130	1.4	0.2	1	0.17	602	460	56	14	0.7				8.1
148-081-08DDA	13-18	6/21/90	23	0.25	0.13	120	40	34	3.4	444	0	130	5	0.1	1	0.14	576	460	100	14	0.7	970	7		7.3
148-081-10DDC	150-155	9/18/85	27	0.67	0.16	68	31	92	7.4	455	0	97	0.8	0.2	7.9	0.54	557	300	0	40	2.3	970	7		8.2
148-081-10DDC	150-155	6/21/90	25	0.9	0.17	68	30	85	5.5	477	0	99	4.6	0.2	1	0.4	555	290	0	38	2.2	900	8		7.4

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-081-12DAA	38-41	5/30/86	20	0.47	0.54	91	79	66	17	556	0	260	11	0.1	1	0.26	820	550	97	20	1.2	1320	9		8.0
148-081-14CDD	136-141	00/00/62														0.9	827	140		78	8.8				
148-081-14CDD	136-141	9/24/70	25	2.58	0.16	48	12	234	5.1	618	0	176	1	0.2	1	0.4	809	171	0	74	7.8		7		8.0
148-081-14CDD	136-141	6/5/86	28	0.12	0.15	35	14	230	5.8	607	0	150	3.7	0.2	1	0.73	768	150	0	77	8.3	1260	8		8.1
148-081-15DDB	77-80	8/10/62														1.33	807	220		65	5.5				
148-081-16DDD	18-21	9/21/70	23	4.76	0.62	71	30	86	6.1	519	0	66	0.2		1	0.25	544	300	0	38	2.2	810	8		8.0
148-081-16DDD	18-21	6/5/86	25	2.45	0.58	67	37	88	6.9	578	0	39	3.5	0.1	1	0.51	556	320	0	37	2.1	880	8		8.1
148-081-17BCB1	188-193	8/14/85	25	0.47	0.52	130	62	220	12	482	0	510	11	0.1	3.7	0.43	1210	580	190	45	4	1900	7		8.2
148-081-17BCB1	188-193	6/10/86	30	0.89	0.35	140	63	220	8.7	656	0	510	9.4	0.1	1	0.68	1310	610	71	44	3.9	1950	8		8.0
148-081-17BCB1	188-193	6/21/90	25	0.54	0.39	140	60	220	8	615	0	530	11	0.1	1	0.47	1300	600	93	44	3.9	2000	7		7.6
148-081-17BCB2	113-118	8/14/85	27	0.51	0.73	110	53	94	9.5	419	0	240	5.8	0.2	3.1	0.41	750	500	150	29	1.8	1200	7		8.2
148-081-17BCB2	113-118	6/10/86	29	2.4	0.73	120	52	91	7.5	574	0	220	3.5	0.2	1	0.62	811	510	43	27	1.8	1280	8		7.9
148-081-17BCB2	113-118	6/21/90	27	2.3	0.78	120	51	86	6.2	568	0	230	5.1	0.2	1	0.44	810	510	44	27	1.7	1275	7		7.8
148-081-17BCB3	23-28	9/6/85	22	0.02	0.1	87	31	11	5.5	379	0	84	8.3	0.1	4.6	0.06	441	340	34	6	0.3	690	10		7.8
148-081-18DCD1	178-181	8/7/67	26	0.52		58	29	109	6.1	418	0	143	3	0.2	0	0.26	581	264	0	47	2.9		7		8.0
148-081-18DCD1	178-181	9/17/70	25	0.68	0.28	91	29	115	5.3	509	0	158	1.8	0.1	1	0.15	678	348	0	41	2.7	1040	7		7.8
148-081-18DCD1	178-181	6/10/86	28	1.81	0.22	81	31	150	6.2	554	0	190	5.1	0.2	1	0.44	768	330	0	49	3.6	1220	8		7.9
148-081-18DCD1	178-181	5/29/91	25	1.1	0.25	79	30	160	5.7	576	0	210	2.9	0.2	0.3	0.3	799	320	0	51	3.9	1232	9		8.0
148-081-18DCD2	18-21	8/8/67	24	3.42		120	59	78	9.4	384	0	381	4.4	0.1	0	0.3	869	541	227	24	1.5		7		7.7
148-081-18DCD2	18-21	9/17/70	25	3.24	0.27	200	61	80	8.9	602	0	391	2.4	0.1	1	0.18	1070	749	255	19	1.3	1550	7		7.6
148-081-18DCD2	18-21	6/10/86	27	0.06	0.7	210	73	100	9.6	586	0	470	7	0.2	1	0.35	1190	820	340	21	1.5	1900	10		7.8
148-081-18DCD2	18-21	5/29/91	23	0.56	0.64	180	61	86	7.7	579	0	360	3.5	0.2	1	0.29	1010	700	230	21	1.4	1545	9		7.6
148-081-19BBB	18-23	6/11/86	24	0.59	0.15	86	28	12	3.6	348	0	54	1.4	0.1	1	0.08	382	330	45	7	0.3	680	7		8.1
148-081-20AAA2	148-153	8/14/85	27	0.05	0.1	42	19	210	5.1	534	11	160	7.3	0.3	3.3	0.46	749	180	0	71	6.8	1180	8		8.5
148-081-20AAA2	148-153	6/16/87	28	0.12	0.09	38	18	210	6	563	0	150	3.7	0.2	4.3	0.45	736	170	0	72	7				8.3
148-081-20AAA2	148-153	8/5/87	27	0.04	0.08	37	17	200	7.4	567	0	150	4.9	0.3	1	0.49	724	160	0	72	6.9		8		8.3
148-081-20AAA2	148-153	9/1/87	26	0.15	0.09	37	17	200	5.9	543	11	150	0	0.2	3.2	0.42	718	160	0	72	6.9				8.4
148-081-20AAA2	148-153	10/7/87	25	0.08	0.09	38	17	200	6.8	544	9	150	3.9	0.4	3.2	0.27	722	170	0	72	6.8				8.4
148-081-20AAA2	148-153	5/29/91	25	0.05	0.11	37	16	200	4.9	559	0	140	2.3	0.3	2	0.53	703	160	0	73	6.9	1108	10		8.2
148-081-20AAA3	18-23	8/14/85	25	1.4	0.21	71	28	22	5.1	291	0	54	7.8	0.2	1	0.09	359	290	54	14	1	670	7		8.3
148-081-20AAA3	18-23	6/5/86	24	1.66	0.24	76	29	16	4.1	347	0	61	6.8	0.1	1	0.11	391	310	25	10	0.4	690	7		8.1
148-081-20AAA3	18-23	6/16/87	28	1.35	0.24	86	32	16	4.5	354	0	72	6.9	0.1	1.5	0.08	423	350	56	9	0.4				8.1
148-081-20AAA3	18-23	8/5/87	28	1.1	0.24	84	31	16	4.8	353	0	70	8.2	0.2	1	0.1	419	340	48	9	0.4		8		8.1
148-081-20AAA3	18-23	9/1/87	26	1.2	0.2	86	32	17	4.4	321	0	80	6.5	0.2	1	0.06	413	350	83	10	0.4				7.9
148-081-20AAA3	18-23	10/7/87	26	1.4	0.25	87	32	17	4.9	343	0	84	9	0.2	1	0.06	432	350	68	9	0.4				8.0
148-081-20AAA3	18-23	5/29/91	24	1.3	0.27	95	35	17	3.1	389	0	96	6.7	0.2	1	0.1	472	380	62	9	0.4	761	9		7.9
148-081-20ADC	138-178	8/14/70	25	0.32	0.03	46	18	189	6.1	517	33	120	2.5	0.1	0	0.42	695	191	0	67	6	990	7		8.3
148-081-20BAA	148-151	8/8/67	26	0.28		46	23	142	5.8	457	0	139	2.9	0.2	0	0.37	611	210	0	59	4.3		8		8.1
148-081-20BAA	148-151	9/16/70	25	0.12	0.15	64	23	129	5	510	0	109	0.3	0.1	0	0.15	607	255	0	52	3.5	960	7		7.7
148-081-20BAA	148-151	6/5/86	28	0.6	0.17	70	29	130	6.1	516	0	150	4.6	0.2	1	0.58	674	290	0	48	3.3	1080	9		8.2
148-081-20BAA	148-151	7/28/86	28	1.6	0.18	73	30	120	6.9	517	0	150	2.5	0.2	1	0.51	669	310	0	45	3	1100	11		7.7
148-081-20CAA	178-184	8/27/70	24	0.92	0.04	39	14	232	5.7	636	0	148	3.2	0.5	0	0.82	781	154	0	76	8.1		7		8.1
148-081-20CCA	149-155	00/00/77	12	0.45	0.07	32	15	230	4.7	625	0	130	3.8	0.4	3.8	0.84	741	140	0	77	8.4	1200	12		8.3
148-081-20CCA	149-155	8/25/70	25	1.2	0.07	55	22	199	7.7	614	0	138	2.7	0.5	0	0.52	754	229	0	64	5.7	1180	7		8.0
148-081-20CCD1	169-175	8/25/70	26	0.9	0.07	64	32	175	9	606	0	168	1.8	0.1	0	0.33	776	291	0	56	4.5	1180	9		8.0

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-081-20CCD2	179-185	8/26/70	24	2.4	0.1	95	36	235	9	712	0	321	3.4	0.2	1	0.34	1080	387	0	56	5.2	1530	8		7.8
148-081-20CCD3	99-105	8/26/70	26	1.8	0.11	53	104	419	35	1090	0	609	25	0.2	0	1	1810	559	0	60	7.7	2550	7		8.0
148-081-20CCD4	49-55	8/26/70	24	0.88	0.03	23	114	616	87	1180	0	983	43	0.1	0	2.4	2470	527	0	68	12	3400	7		8.1
148-081-20CDC1	179-185	8/26/70	26	2.8	0.1	65	30	172	9.1	604	0	170	2.3	0.3	0	0.71	776	285	0	56	4.4	1280	23		7.5
148-081-20CDC2	99-105	8/26/70	26	1.2	0.23	65	85	197	24	787	0	315	12	0.2	1	0.79	1120	514	0	44	3.8	1610	7		7.9
148-081-20CDC3	54-60	8/26/70	24	0.66	0.03	29	90	189	51	806	0	255	10	0.1	1	1.3	1050	444	0	45	3.9	1580	7		8.1
148-081-21ABB	0-12	10/8/87	25	1.4	0.8	80	39	76	4.5	533	0	70	15	0.1	1	0.18	576	360	0	31	1.7				8.0
148-081-21BCC	0.4-3.4	6/16/87	26	0.09	0.09	55	83	78	5.3	627	0	110	4.3	0.8	1.5	0.22	673	480	0	26	1.5		16		7.8
148-081-21BCC	0.4-3.4	7/30/87	30	0.14	0.27	62	92	89	7.7	757	0	110	4.7	0.9	1	0.3	771	530	0	26	1.7		18		7.7
148-081-21BCC	0.4-3.4	8/27/87	27	0.19	0.2	60	89	98	6.6	760	0	120	2.5	1	1	0.21	780	520	0	29	1.9				8.2
148-081-21BCC	0.4-3.4	10/8/87	24	0.07	0.17	51	80	78	5.8	625	0	110	3.4	0.8	1	0.17	662	460	0	27	1.6				8.2
148-081-21CAB	33-38	6/12/86	26	3.22	0.47	84	42	56	5.8	481	0	96	2.6	0.1	1	0.31	554	380	0	24	1.3	920	8		7.9
148-081-21CAB	33-38	6/16/87	27	1.9	0.48	84	42	52	6.1	479	0	96	4.9	0.1	2.3	0.17	553	380	0	23	1.2				8.0
148-081-21CAB	33-38	7/30/87	26	1.8	0.5	84	42	50	6.8	482	0	95	5.9	0.2	1	0.17	550	380		22	1.1		8		8.0
148-081-21CAB	33-38	9/1/87	24	2.3	0.41	85	43	52	6.2	457	0	100	2.7	0.2	1	0.13	542	390	15	22	1.1				8.0
148-081-21CAB	33-38	10/8/87	23	3	0.49	85	43	50	6.4	473	0	99	4.1	0.3	1	0.16	548	390	2	22	1.1				8.1
148-081-21CDA	23-28	6/17/86	17	0.02	0.97	76	43	67	7.2	511	0	87	3.3	0.2	1	0.43	575	370	0	28	1.5	920	12		8.1
148-081-21CDA	23-28	6/16/87	18	0.05	1.28	78	45	64	6.7	485	0	100	4.2	0.1	4.8	0.21	561	380	0	26	1.4	1080	9		8.0
148-081-21CDA	23-28	7/30/87	19	0.02	1.1	77	45	60	7.7	506	0	97	5.8	0.2	0.3	0.24	562	380	0	25	1.3		9		8.2
148-081-21CDA	23-28	9/1/87	17	0.02	1.1	83	49	65	7.3	447	0	110	4	0.2	6	0.19	563	410	42	25	1.4				8.0
148-081-21DCC1	33-38	6/12/86	28	1.9	0.3	71	35	85	6.2	497	0	83	3.2	0.2	1	0.42	560	320	0	36	2.1	950	8		8.0
148-081-21DCC1	33-38	6/16/87	28	3.07	0.33	74	35	81	6.1	495	0	91	4.6	0.1	2.3	0.25	570	330	0	34	1.9	980	9		8.0
148-081-21DCC1	33-38	7/30/87	27	2.6	0.34	74	36	76	7.2	500	0	94	4.8	0.2	1	0.26	569	330	0	33	1.8		8		8.1
148-081-21DCC1	33-38	9/1/87	25	2	0.29	74	36	78	6.5	475	0	96	1.6	0.2	1	0.2	555	330	0	33	1.9				8.1
148-081-21DCC1	33-38	10/8/87	25	3	0.33	73	36	76	6.8	499	0	94	3.5	0.2	1.4	0.21	565	330	0	33	1.8				8.2
148-081-21DCC2	30-35	6/12/86	30	1.44	0.4	74	45	69	7.3	510	0	85	2.9	0.2	1	0.43	568	370	0	28	1.6	980	7		7.9
148-081-21DCC2	30-35	6/16/87	29	2.23	0.39	78	42	66	6.7	507	0	87	3.7	0.1	8.7	0.22	574	370	0	28	1.5	980	7		8.0
148-081-21DCC2	30-35	7/30/87	41	1.2	0.38	76	43	63	7.7	512	0	88	5	0.2	0.3	0.24	578	370	0	27	1.4		7		8.1
148-081-21DCC2	30-35	9/1/87	28	1.6	0.32	77	43	65	7.2	505	0	94	1.8	0.1	2.9	0.19	570	370	0	27	1.5				8.3
148-081-21DCC2	30-35	10/8/87	28	1.9	0.39	75	42	66	7.8	509	0	89	3.9	0.2	3	0.2	568	360	0	28	1.5				8.3
148-081-21DCD	23-28	6/12/86	30	3.25	0.43	73	42	78	7.7	513	0	88	2.6	0.2	1	0.44	580	350	0	32	1.8	1000	7		7.8
148-081-21DCD	23-28	6/16/87	30	4.55	0.38	74	41	72	7.7	504	0	88	4.3	0.1	5.8	0.23	576	350	0	30	1.7	990	7		7.9
148-081-21DCD	23-28	7/30/87	40	3.1	0.4	73	42	68	8.8	511	0	91	5.1	0.2	1	0.26	585	350	0	29	1.6		7		8.0
148-081-21DCD	23-28	9/1/87	28	3.6	0.35	77	45	75	8.5	523	0	110	2.5	0.1	4.2	0.21	612	380	0	30	1.7				8.2
148-081-21DCD	23-28	10/8/87	28	5	0.59	110	61	98	11	746	0	94	7.9	0.2	3.9	0.24	787	530	0	28	1.9				8.2
148-081-22AAB	85-87	00/00/62															1297	220		78	11				
148-081-22AAB	85-87	6/5/86	28	0.62	0.51	73	28	38	3.9	349	0	85	5.4	0.2	1	0.52	436	300	11	22	1	720	9		8.2
148-081-22AAD	63-81	6/5/86	28	1.02	0.54	59	20	82	6	399	0	72	6.2	0.3	1	0.52	474	230	0	43	2.4	800	8		8.1
148-081-22BAB	91-94	00/00/62														0.81	755	190		67	5.8				
148-081-22BAB	91-94	6/5/86	25	0.1	0.27	34	18	180	6.3	556	10	92	3.6	0.2	1	0.58	645	160	0	70	6.2	1060	8		8.4
148-081-22DDD1	188-193	8/13/85	26	0.22	0.07	33	15	240	6.6	586	9	140	6.9	0.2	1.1	0.46	768	140	0	77	8.7	1250	8		8.4
148-081-22DDD1	188-193	6/21/90	26	0.26	0.07	33	14	240	5.1	634	0	140	5.1	0.2	0.7	0.53	777	140	0	78	8.8	1240	8		8.0
148-081-22DDD2	88-93	8/13/85	28	1	0.49	60	36	120	11	451	4	110	7.1	0.3	3.1	0.43	603	300	0	46	3	1040	7		8.3
148-081-22DDD2	88-93	6/5/86	30	0.65	0.53	59	35	120	9.8	543	0	100	3.6	0.3	1	0.67	628	290	0	46	3.1	1040	8		8.1
148-081-22DDD2	88-93	6/21/90	27	0.92	0.49	58	35	110	8.1	536	0	100	4.7	0.3	1	0.43	610	290	0	44	2.8	1000	8		7.8

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-081-22DDD3	28-33	8/13/85	27	0.05	0.26	67	32	18	4.6	304	0	60	4.9	0.2	3.2	0.08	367	300	50	11	0.5	660	8		8.3
148-081-22DDD3	28-33	6/21/90	27	0.26	0.24	69	33	13	2.8	337	0	70	4.3	0.2	1	0.06	387	310	32	8	0.3	645	8		7.5
148-081-26DBC	78-81	8/17/67	27	1.2		57	48	231	11	542	0	394	4.4	0.1	0	0.4	1040	339		59	5.5		8		7.9
148-081-26DBC	78-81	6/4/86	29	0.31	1.2	120	52	230	11	767	0	390	6	0.2	1	0.71	1220	510	0	49	4.4	1900	8		8.1
148-081-28BDB1	23-28	6/17/86	28	5.53	0.25	100	50	96	7.7	552	0	190	7.2	0.2	1	0.36	758	460	3	31	2	1240	7		7.8
148-081-28BDB1	23-28	6/16/87	28	7.3	0.29	120	57	100	8.6	582	0	260	9.9	0.1	4.9	0.14	883	530	57	29	1.9	1400	7		8.0
148-081-28BDB1	23-28	8/4/87	40	3.7	0.28	110	56	100	9.5	589	0	240	11	0.2	1	0.22	862	510	23	30	1.9		7		7.9
148-081-28BDB1	23-28	9/1/87	26	5.1	0.27	130	64	110	9.8	572	0	300	9.7	0.2	2.8	0.17	940	590	120	29	2				7.9
148-081-28BDB1	23-28	10/7/87	27	5.4	0.27	110	56	99	9.5	562	0	240	9.1	0.2	2.5	0.19	836	510	45	29	1.9				8.1
148-081-28BDB2	0.5-3.5	6/16/87	33	0.23	0.3	41	90	410	56	1640	0	92	23	0.2	2.1	2.4	1560	470	0	62	8.2	2450	20		8.0
148-081-28BDB2	0.5-3.5	8/4/87	41	0.38	0.29	40	89	410	66	1560	0	160	25	0.2	1	2.3	1600	470	0	62	8.3		18		7.8
148-081-28BDB2	0.5-3.5	8/27/87	36	0.42	0.25	43	100	410	62	1550	0	200	20	0.3	7.7	2	1650	520	0	60	7.8				8.3
148-081-28BDB2	0.5-3.5	10/8/87	32	1.3	0.45	40	90	400	50	1450	0	200	24	0.2	6.6	2	1560	470	0	62	8				7.4
148-081-28BDB3	2/5/94	6/16/87	24	0.07	0.33	34	100	360	40	1280	0	280	22	0.2	1	1.4	1490	500	0	59	7	2400	15		7.4
148-081-28BDB3	2/5/94	8/4/87	25	0.05	0.45	33	110	360	47	1350	0	250	24	0.2	1	2.4	1520	540	0	57	6.8		16		7.8
148-081-28BDB3	2/5/94	8/27/87	22	0.04	0.35	35	110	350	46	1370	0	260	19	0.2	1	1.3	1520	540	0	56	6.6				8.3
148-081-28BDB3	2/5/94	10/8/87	23	0.51	0.43	30	90	380	45	1250	35	250	21	0.2	1	1.7	1490	450	0	62	7.8				8.4
148-081-28CAB	32-37	6/12/86	31	0.3	0.05	92	190	440	44	1170	0	1000	23	0.1	1	0.68	2400	1000	52	47	6	3400	8		8.2
148-081-28CAB	32-37	6/16/87	30	0.43	0.03	95	200	470	46	1290	0	1000	25	0.1	10	0.89	2510	1100	3	48	6.3	3700	7		8.2
148-081-28CAB	32-37	8/4/87	33	0.1	0.04	90	200	460	47	1300	21	1000	28	0.1	1	1.2	2520	1000	0	48	6.2		7		8.4
148-081-28CAB	32-37	9/1/87	29	0.24	0.04	92	200	460	43	1260	0	1100	23	0.1	6	0.85	2580	1100	20	48	6.2				8.3
148-081-28CAB	32-37	10/7/87	28	0.18	0.05	90	200	460	49	1130	0	1000	25	0.1	6.8	0.86	2420	1000	120	47	6.2				7.3
148-081-28CCC	42-47	10/25/84	26	1.5	0.24	43	43	99	12	475	0	100	7	0.2	1	0.18	567	280	0	42	2.6		8		7.9
148-081-28CCC	42-47	6/16/87	27	1.3	0.23	41	43	99	12	465	0	110	8.3	0.2	1	0.2	572	280	0	42	2.6				8.1
148-081-28CCC	42-47	8/5/87	24	0.09	0.22	40	43	96	13	462	0	120	8.5	0.2	4.3	0.18	577	280	0	42	2.5		8		8.0
148-081-28CCC	42-47	8/27/87	24	1.4	0.23	42	44	98	13	457	7	120	8.4	0.1	3.5	0.16	587	290	0	41	2.5				8.4
148-081-28CCC	42-47	10/8/87	24	0.78	0.24	47	50	110	14	489	9	150	11	0.2	1.9	0.18	659	320	0	41	2.7				8.4
148-081-29BAA1	158-178	8/14/70	26	0.7	0.13	73	33	171	11	626	0	192	2.6	0.1	1	0.33	819	317	0	53	4.2	1120	8		7.9
148-081-29BAA1	158-178	6/5/86	29	0.82	0.08	54	32	170	9.7	610	0	160	4.8	0.2	1	0.63	762	270	0	57	4.5	1220	9		8.1
148-081-29BAA1	158-178	6/16/87	29	0.22	0.05	56	31	180	9.9	602	0	170	2.5	0.2	1	0.39	777	270	0	58	4.8				8.2
148-081-29BAA1	158-178	8/5/87	29	0.09	0.07	55	32	170	12	612	0	170	5	0.2	1	0.41	776	270	0	57	4.5		9		8.3
148-081-29BAA1	158-178	9/1/87	27	0.37	0.07	55	32	170	11	570	0	170	1	0.2	4	0.37	752	270	0	57	4.5				8.2
148-081-29BAA1	158-178	10/8/87	27	0.42	0.06	55	32	180	11	549	0	170	4.9	0.3	2.3	0.28	753	270	0	58	4.8				8.1
148-081-29BAA1	158-178	5/30/91	24	0.23	0.08	54	30	180	8.3	621	0	160	3.7	0.3	0.4	0.44	767	260	0	59	4.9	1189	10		8.1
148-081-29BAA2	54-59	8/14/85	24	0.07	0.02	10	40	920	140	918	400	780	38	0.1	1.2	3.42	2810	190	0	84	29	3400	8		8.8
148-081-29BAA2	54-59	6/16/87	25	0.14	0.01	7.5	30	780	106	1520	39	670	31	0.1	4.9	0.39	2450	140	0	86	28.5				8.6
148-081-29BAA2	54-59	8/5/87	23	0.19	0.07	7.5	30	710	107	1420	29	630	29	0.1	15	4.4	2290	140	0	85	26		9		8.5
148-081-29BAA2	54-59	9/1/87	23	0.09	0.02	5	27	670	110	1310	50	600	25	0.1	12	3.8	2170	120	0	85	26.3				8.7
148-081-29BAA2	54-59	10/8/87	23	0.1	0.01	5	24	640	83	1220	47	550	26	0.1	1.2	4.4	2000	110	0	87	26.5				8.7
148-081-29BAA2	54-59	5/30/91	21	0.09	0.02	10	20	570	77	1040	53	480	21	0.1	1.1	2.5	1770	110	0	86	24	2730	9		8.8
148-081-29CAA	38-48	8/14/70	24	3.32	0.07	67	222	638	55	1940	1.7	869	44	0.1	1	0.75	2880	1080	0	55	8.5	3400	7		8.3
148-081-29CAA	38-48	6/5/86	28	0.28	0.06	53	190	680	63	1880	0	870	45	0.1	1.3	1.3	2860	910	0	60	9.8	4200	8		8.3
148-081-29CAA	38-48	6/16/87	28	0.28	0.03	55	180	670	59	1790	0	860	43	0.1	1.3	0.77	2780	880	0	61	9.8				8.3
148-081-29CAA	38-48	8/4/87	29	0.13	0.03	53	190	740	75	2010	5	960	49	0.1	1	1	3090	910	0	62	10.7		8		8.3
148-081-29CAA	38-48	8/27/87	25	0.13	0.04	49	170	610	58	1650	32	820	38	0.1	17	0.73	2630	820	0	60	9.2				8.4

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-081-29CAA	38-48	10/8/87	25	0.17	0.05	40	140	550	56	1560	0	700	34	0.1	15	0.59	2330	680	0	62	9.2				7.5
148-081-33CDD	33-38	8/20/69	26	1.46	0.25	70	18	9.6	2.7	266	0	57	1.7	0.5	0		318	247	29	8	0.3		10		8.0
148-081-33CDD	33-38	6/11/86	25	1.39	0.5	100	34	14	4.8	305	0	160	4.6	0.1	1	0	495	390	140	7	0.3	800	9		8.0
148-081-33CDD	33-38	5/30/91	23	0.98	0.38	96	32	14	3.4	283	0	160	4.8	0.1	1	0.04	475	370	140	8	0.3	744	10		7.4
148-081-34CBB	18-23	8/14/85	27	1.5	0.16	56	49	49	7.8	400	9	92	9.1	0.2	4.6	0.21	503	340	0	15	0.7	740	6		8.5
148-081-34CBB	18-23	6/22/90	28	1.3	0.16	53	45	32	4.8	391	0	71	7.7	0.2	1	0.21	437	320	0	18	0.8	717	8		7.5
148-081-34DDD	18-21	8/17/67	23	5.22		67	22	18	3.1	276	0	59	2.1	0.1	0.2	0.07	336	260	34	13	0.5		7		8.1
148-081-34DDD	18-21	6/5/86	25	1.89	0.33	69	26	13	2.4	268	0	84	2.3	0.1	1	0.05	357	280	60	9	0.3	615	6		8.0
148-081-34DDD	18-21	5/30/91	22	1.5	0.35	76	29	14	1.5	290	0	110	1.2	0.1	1	0.07	400	310	72	9	0.3	620	9		8.0
148-081-35DDD	63-68	8/13/85	28	0.03	1.1	83	30	230	9.3	500	0	330	6.3	0.2	4.2	0.42	969	330	0	59	5.5	1500	7		8.1
148-081-35DDD	63-68	6/22/90	27	0.06	1.1	80	29	220	7.7	609	0	310	5.9	0.2	1	0.45	982	320	0	59	5.3	1515	8		7.6
148-081-36DDD	78-81	8/17/67	27	1.2		71	32	201	7.7	504	0	320	4.3	0.1	2	0.52	915	308		58	5		8		7.9
148-082-03CDC	53-58	6/11/86	27	0.89	0.61	160	59	140	7.2	610	0	430	4.8	0.2	1	0.48	1130	640	140	32	2.4	1700	8		7.8
148-082-07AAD3	67-72	11/9/84	28	5	0.44	200	58	100	9.2	512	0	290	7.1	0.2	1	0.22	1100	740	72	23	1.6	1420	7		7.7
148-082-07AAD3	67-72	8/4/89	25	3.5	0.45	190	59	160	11	852	0	340	7.6	0.2	1	0.3	1220	720	19	32	2.6	1830	8		7.7
148-082-07AAD3	67-72	8/27/93	25	4.1	0.41	170	53	220	14	935	0	360	13	0.2	2.3	0.26	1320	640	0	42	3.8	1550			7.8
148-082-08CDC1	151-154	3/17/81	34	0.04	0.1	57	26	430	9	819	0	470	10	0.1	1	0.26	1440	250	0	78	11.8	2250	7		8.0
148-082-08CDC1	151-154	8/29/85	17	0.07	0.04	31	21	410	11	847	0	350	3.7	0.2	1.7	0.48	1260	160	0	83	13.9				8.3
148-082-08CDC1	151-154	6/22/90	33	0.47	0.06	54	26	430	8.8	851	0	480	9.6	0.2	1	0.36	1460	240	0	79	12	2100	8		8.1
148-082-08CDC1	151-154	5/30/91	31	0.48	0.07	52	26	420	8.6	852	0	470	6.6	0.2	0.6	0.36	1440	240	0	79	12	2160	9		8.0
148-082-08CDC2	53-56	3/17/81	26	2	0.37	140	71	190	8	671	0	450	8.8	0.1	1	0.61	1230	640	90	39	3.3	1900	7		7.5
148-082-08CDC2	53-56	8/29/85	26	2.7	0.4	110	54	300	12	677	0	520	4.7	0.2	3	0.58	1370	500	0	56	5.9				8.1
148-082-11DCC1	38-43	6/11/86	27	1.56	0.74	110	39	48	5.5	498	0	120	3.2	0.1	1	0.29	601	440	27	19	1	980	9		8.0
148-082-11DCC1	38-43	5/30/91	26	1	0.69	110	38	44	4.3	488	0	130	0.7	0.2	0.4	0.25	596	430	31	18	0.9	995	9		7.9
148-082-11DCC2	14-19	7/28/86	20	0.11	0.13	55	31	26	3.2	307	0	120	19	0.1	14	0.16	440	260	13	17	0.7	880	10		7.6
148-082-12BBC	0-100	00/00/62														0.18	654	412		19	0.9				
148-082-12DDD2	53-58	8/14/85	27	2.5	0.93	180	59	58	8.4	394	0	310	7.9	0.1	1	0.22	849	690	370	10	1	1440	7		8.0
148-082-12DDD2	53-58	6/10/86	28	2.39	0.87	170	60	55	7.7	574	0	320	6.3	0.2	1	0.3	935	670	200	15	0.9	1420	8		7.9
148-082-13BAB	168-173	8/14/85	27	1.5	0.11	95	40	380	10	776	0	590	8.6	0.2	1	0.61	1540	400	0	67	8.3	2250	7		7.9
148-082-13BAB	168-173	6/21/90	27	1.5	0.11	84	40	390	7.6	767	0	590	12	0.2	1	0.72	1530	370	0	69	8.8	2400	7		7.7
148-082-13BBA1	217-222	8/14/85	26	0.02	0.14	81	37	370	11	629	0	530	11	0.2	2.5	0.56	1380	350	0	69	8.6	2250	9		8.2
148-082-13BBA1	217-222	6/22/90	25	0.03	0.13	76	37	390	7.6	704	0	560	12	0.2	1	0.69	1460	340	0	71	9.2	2200	9		7.9
148-082-13BBA2	22-27	6/11/86	22	0.03	0.43	210	74	33	4.4	384	0	210	43	0.1	280	0.05	1070	830	510	8	0.5	1700	8		7.8
148-082-13BBA2	22-27	6/21/90	24	0.12	0.82	180	67	42	4.7	554	0	330	7	0.1	1	0.22	930	730	270	11	0.7	1400	7		7.5
148-082-13BBB1	18-38	12/2/69	33	1.96	0.03	92	34	47	5.9	443	0	119	2.5	0.1	0	0	554	370	0	21	1.1		7		7.8
148-082-13BBB2	28-33	6/10/86	28	1.24	0.72	120	39	45	5.5	506	0	120	3	0.2	1	0.31	613	460	46	17	0.9	990	8		7.8
148-082-13BBB2	28-33	5/30/91	28	0.88	0.72	110	37	45	4.7	510	0	130	0.9	0.2	1	0.26	610	430	9	18	0.9	955	10		7.8
148-082-13BBB3	17-23	6/12/86	27	1.08	0.71	120	39	41	5.8	505	0	110	1.7	0.2	1	0.24	597	460	46	16	0.8	990	8		7.9
148-082-13BBB3	17-23	5/30/91	27	0.05	0.69	110	37	44	4.6	457	0	130	1.1	0.2	1	0.26	581	430	52	18	0.9	954	10		7.8
148-082-15BBB	178-198	12/2/69	29	0.12	0.34	47	29	444	9.1	702	0	576	3.9	0.1	5.7	0	1490	236	0	80	12.5		7		8.1
148-082-15BBB	178-198	8/29/85	28	0.36	0.11	63	27	440	9	768	0	550	2.9	0.2	6	0.84	1500	270	0	77	11.7				8.3
148-082-15BBB	178-198	6/10/86	28	1.8	0.09	63	26	420	7.1	830	0	520	6.7	0.2	1	1	1480	260	0	77	11.3	2350	8		8.0
148-082-15BBB	178-198	5/30/91	26	0.72	0.1	50	25	420	6.9	829	0	500	4.3	0.2	1	0.74	1440	230	0	79	12	2250	9		8.0
148-082-21DDD	168-173	10/25/84	29	0.11	0.06	41	24	230	9.2	625	0	190	4.2	0.3	1	0.45	837	200	0	70	7		7		8.1
148-082-21DDD	168-173	8/4/89	25	0.31	0.11	39	23	220	8.9	611	0	200	5.3	0.4	1	0.55	825	190	0	70	6.9	1330	8		8.0

Table 6. Chemical Analyses of Ground Water in East Central McLean County (continued)

See text for explanation of chemical symbols

Location	Screened Interval(ft)	Sample Date	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	Hardness as $CaCO_3$	NCH	%Na	SAR	Spec Cond (µmho)	Temp (°C)	Field pH	Lab pH
148-082-22BBB	125-130	10/25/84	29	0.23	0.41	63	30	190	7.8	595	0	200	3.8	0.2	1	0.42	819	280	0	59	4.9		7		8.0
148-082-22BBB	125-130	8/4/89	30	0.73	0.62	110	34	100	8.5	556	0	190	3.3	0.2	2.5	0.42	754	410	0	34	2.2				7.9
148-082-23BBB	198-204	12/2/69	28		0.01	54	23	168	7.8	489	0	179	2.5	0.1	0.9	0.6	705	231	0	60	4.8		7		8.0
148-082-23BBB	198-204	9/18/70	26	1.9	0.1	71	25	169	5.8	554	0	175	2	0.1	0	0.31	749	279	0	56	4.4	1140	6		7.8
148-082-23BBB	198-204	3/29/85	26	0.4	0.08	47	30	180	8.1	507	12	190	0.8	0.2	4.1	0.54	749	240	0	61	5.1				8.5
148-082-23BBB	198-204	6/10/86	28	1.12	0.08	57	29	180	6.5	560	0	190	5	0.2	1	0.55	774	260	0	59	4.8	1260	8		8.1
148-082-23BBB	198-204	5/30/91	25	0.57	0.1	58	29	180	5.9	579	0	190	4.2	0.3	0.3	0.39	779	260	0	59	4.9	1213	9		8.0
148-082-24ABB1	198-201	8/7/67	24	3.24		17	24	159	6.3	340	17	177	3.6	0.2	2	0.33	601	140	0	70	5.9		10		8.7
148-082-24ABB1	198-201	9/17/70	26	1.52	0.14	77	24	164	5.6	536	0	186	1.7	0.1	0	0.31	750	292	0	54	4.2	1150	7		8.0
148-082-24ABB1	198-201	6/1/77	12	0.63	0.16	64	29	170	5.4	539	5	190	6.2	0.3	2.5	0	751	280	0	56	4.4	1200	8		8.4
148-082-24ABB1	198-201	6/10/86	29	0.7	0.11	64	30	180	6.3	568	0	200	5.4	0.2	1	0.51	797	280	0	57	4.7	1260	9		8.1
148-082-24ABB2	32-37	6/11/86	25	4.72	1.53	330	90	55	7.4	401	0	910	3.2	0.1	1	0.08	1630	1200	870	9	0.7	2150	8		7.9
148-082-26BBB	139-143	9/19/85	24	0.01	0.07	41	23	280	10	687	0	210	3.6	0.3	3.7	0.64	934	200	0	74	8.7	1440	7		8.3
148-082-26BBB	139-143	6/22/90	25	0.24	0.06	49	29	270	8.4	723	0	250	8.4	0.2	5.3	0.63	1000	240	0	70	7.6	1535	8		8.1
148-082-26DAA	113-118	8/14/85	23	0.46	0.06	88	35	350	11	873	0	400	6.5	0.3	0.5	0.49	1350	360	0	67	8	2250	7		7.7
148-082-26DAA	113-118	6/22/90	21	0.39	0.06	80	34	370	7.9	878	0	410	10	0.2	2.6	0.52	1370	340	0	70	8.7	2000	8		7.8
149-079-26CDC	37-40	5/19/70	28	0	0.46	74	18	6.3	2.8	301	0	35	0.5	0.1	0	0.15	313	260	13	5	0.2	420	7		7.9
149-080-19AAA	33-38	9/7/67	22	2		107	38	127	7.5	512	0	267	2.3	0.1	6	0.24	831	423	3	39	2.7	1100	8		7.9
149-080-20AAA2	43-46	6/30/75	17	0.6	0.24	68	22	5.8	2.1	274	0	49	2.1	0.1	1	0.67	304	260	35	5	0.2				7.9
149-080-20AAA2	43-46	9/18/84	21	0.81	0.23	69	23	5	2.4	278	0	49	3.3	0.1	1	0.05	312	270	39	4	0.1	560	8		7.8
149-080-20AAA2	43-46	6/21/90	23	0.84	0.23	66	23	5	1.5	286	0	44	4.6	0.1	1	0.05	310	260	23	4	0.1				6.9
149-080-20BBB	43-46	9/18/84	21	2.4	0.17	110	47	130	8.9	558	0	290	4.5	0.1	1	0.4	890	470	11	37	2.6	1440	7		7.8
149-080-20BBB	43-46	6/22/90	21	1.6	0.16	100	46	130	6.1	530	0	280	5.8	0.1	1	0.35	853	440	4	39	2.7				7.2
149-080-26ABA	77-80	12/5/69	26	0	0.01	106	36	138	7.7	432	0	355	0	0.2	3	0.41	885	415	61	41	2.9				7.7
149-081-23BB	0-82	00/00/62														0	597	412		11	0.5				
149-081-25CCD	47-50	5/19/70	27	0.36	0.2	175	70	144	9	518	0	621	3.6	0.2	0	0.41	1310	724	299	30	2.3	1500	6		7.7
149-081-25CCD	47-50	9/18/84	24	4	0.89	210	93	170	12	575	0	790	5	0.2	1	0.28	1590	910	440	29	2.4	2225	7		7.6
149-081-25CCD	47-50	6/22/90	25	1.4	0.91	190	91	170	9.2	560	0	740	6.6	0.2	1	0.34	1510	850	390	30	2.5				7.4
149-081-34DDD	78-83	11/20/84	24	0.84	0.31	100	39	47	7.1	464	0	130	4.2	0.2	1	0.19	583	410	30	20	1	890	6		7.8
149-081-34DDD	78-83	8/4/89	23	0.01	0.58	110	41	41	5.7	463	0	140	7.9	0.2	1	0.23	599	440	64	16	0.8	975	8		8.0
149-082-36ABA	32-38.8	9/3/67	25	1.6		96	44	177	8.2	473	0	407	2.4	0.1	1	0.34	996	420	32	47	3.8	1400	6		7.9

Table 7. Chemical Analyses of Selected Surface Water Bodies in East Central McLean County

See text for explanation of chemical symbols

NAME	Sample Location	Sample Date	Depth (ft)	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	SAR	Cond (µmho)	Temp (°C)	Lab pH
BIG CROOKED LAKE	14808017	7/9/68	5	9.9	0.32	0.01	26	104	120	34	589	17	248	15	0.2	0	0.44	865	2.4	1220	20	8.4
	14808017	7/9/68	10	9.7	0.24	0.01	27	104	120	34	594	13	252	14	0.2	1	0.05	868	2.4		20	8.4
BLUE LAKE	14707917ACD	6/15/92	2	2.4	0.08	0.02	15	170	3000	200	2320	1000	3400	190	0.5	0.04	8.3	8230	48	17500	18	9.6
	14707917CA	8/28/86	2	3	0.04	0.02	7.5	98	1600	110	1470	509	2000	110	0.3	1	6.36	5160	34	7100	19	9.4
	14707917CA	8/28/86	9	3.5	0.1	0.02	5	95	1600	110	1460	506	2000	110	0.3	1	5.97	5150	34.6	7100	19	9.4
	14707921BD	8/28/86	2	4	0.04	0.02	5	95	1600	110	1430	505	2000	110	0.3	1	6.06	5140	34.6	7000	19	9.4
	14707921BD	8/28/86	9	3.5	0.04	0.02	5	95	1600	110	1450	506	2000	110	0.3	1	6	5140	34.6	7000	19	9.4
BRUSH LAKE	14707927	6/10/68	5	12	0.44	0.04	15	77	158	27	520	31	240	13	0.2	2.7	0.63	833	3.7	1100	21.1	8.4
	14707927	6/10/68	15	12	0.2	0.04	15	77	159	25	564	13	236	13	0.2	2.2	0.63	831	3.7		21.1	8.7
	14707927	11/4/74	0	4.3	0.06	0.02	29	70	130	21	530	17	170	10	0.5	1	0.43	714	3	1110	4.5	8.5
	14707922C	3/29/78	0	27	0.08	0.02	22	89	180	30	724	9	230	19	0.4	2.5	1.5	968	3.8			8.4
	14707922CC	8/29/86	2	13	0.02	0.01	34	61	99	25	477	12	140	9.3	0.2	1	0.4	630	2.4	950	19	8.5
	14707922CC	8/29/86	11	13	0.01	0.01	34	61	90	24	474	13	140	9.3	0.2	1	0.4	619	2.1	960	19	8.5
	14707927AD	8/29/86	2	15	0.01	0.01	34	61	90	22	485	8	140	9.4	0.2	1	0.41	620	2.1	950	19	8.4
	14707927AD	8/29/86	5	15	0.01	0.02	35	61	91	22	484	8	140	9.2	0.2	1	0.41	621	2.2	960	19	8.4
	14707927DBC	6/15/92	2	1.4	0.02	0.01	20	91	150	26	550	50	250	15	0.2	0.0	0.4	875	3.2	1900	19	8.9
	14707927DBC	6/15/92	8	1.5	0.02	0.01	20	92	160	23	554	48	250	16	0.2	0.04	0.45	884	3.4	2000	19	8.9
COTTONWOOD LAKE	14808026AB	8/29/86	2	35	0.01	0.01	17	100	64	42	439	58	170	16	0.1	1	0.26	719	1.3	1080	20	8.9
	14808026AB	8/29/86	10	35	0.01	0.01	17	100	67	42	462	52	170	16	0.1	1	0.25	728	1.4	1080	21	9.0
KASPER SLOUGH	14708008CC	9/3/86	1	22	0.03	0.08	43	150	52	24	1010	4	9.1	12	0.2	1	0.17	816	0.8	1350	18	8.3
LAKE BREKKEN	14708020	00/00/68	0	1.2	5.4	0.3	6.4	31	28000	429	3470	3950	49900	937	94	0	12.2	85100	1023			9.5
LAKE MARGARET	14708010	6/11/68	1	0.8	0.22	0.01	9.6	96	79	14	414	58	167	7.2	0.2	0	0.44	636	1.7	950	22.8	9.0
	14708015AC	8/29/86	2	33	0.01	0.02	34	72	51	16	387	0	160	9.2	0.1	1	0.26	568	1.1	870	19	8.3
	14708015AC	8/29/86	6	34	0.01	0.02	33	70	49	15	387	0	170	9.4	0.2	1	0.26	573	1.1	870	19	8.3
	14708015DBB	6/15/92	5	28	0.01	0.01	34	85	62	19	342	5	300	18	0.2	0.03	0.15	719	1.3	1615	18	8.4

Table 7. Chemical Analyses of Selected Surface Water Bodies in East Central McLean County (continued)

See text for explanation of chemical symbols

NAME	Sample Location	Sample Date	Depth (ft)	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	SAR	Cond (µmho)	Temp (°C)	Lab pH
LAKE NETTIE	14808120D	6/24/87	8	5.3	0.01	0.01	11	110	390	73	906	149	380	25	0.1	1	1.4	1590	7.7	1975	23	9.2
	14808120D	8/4/87	0	5.4	0.01	0.01	10	100	390	70	771	200	390	25	0.1	0.5	0.93	1570	8.1	2000	22	9.4
	14808120D	9/1/87	5	3.9	0.03	0.01	10	100	370	67	746	207	390	23	0.1	1	1.1	1540	7.7	2100	17	9.3
	14808120D	10/7/87	4	7.5	0.02	0	10	110	400	71	765	210	410	24	0.1	1	1	1620	7.9	2300	10	9.3
	14808121C	6/24/87	7.5	5.3	0.01	0.01	11	110	400	73	890	154	380	25	0.1	1	1.3	1600	7.9	2000	23	9.2
	14808121C	8/4/87	0	10	0.02	0.01	13	100	370	68	812	163	380	25	0.1	1	0.98	1530	7.6	2000	22	9.3
	14808121C	9/1/87	5	6.6	0.03	0.01	12	100	360	65	747	183	370	23	0.1	1	1	1490	7.5	2050	17.5	9.2
	14808121C	10/7/87	3.5	8.4	0.02		11	100	380	67	759	210	400	22	0.1	1	0.97	1570	7.9	2300	10	9.3
	14808128BBA	6/16/92	2	2.1	0.04	0.01	13	180	830	150	1390	400	900	49	0.1	0.01	2.6	3210	13	6500	17	9.4
	14808128BBB	6/16/92	4	2.3	0.03	0.01	13	190	830	140	1400	400	900	49	0.1	0.01	3	3220	13	6700	17	9.4
	14808128BC	9/3/86	2	5.6	0.02		6	130	490	82	822	300	480	26	0.1	1	1.8	1930	9.1	2750	18	9.5
	14808128BC	9/5/86	6	5.8	0.02		6	120	480	80	829	300	490	27	0.1	1	2.3	1920	9.3	2720	14	9.5
	14808129	6/10/68	2	6.3	0.03	0.01	6.6	98	530	91	950	146	633	26	0.1	0	2.83	2010	11.2	2600	21.1	9.2
	14808129AA	9/5/86	2	6.1	0.03	0	6	130	500	81	831	300	470	26	0.1	1	1.9	1930	9.3	2720	14	9.5
	14808129AA	9/5/86	6	5.9	0.02	0	6	130	490	82	850	300	480	26	0.1	1	2.2	1940	9.1	2720	14	9.4
	14808129AAA	00/00/77	0	12	1.99	0.1	61	36	170	8.7	612	0	180	3.7	0.2	1.8	1.22	778	4.3	1200	8.5	8.3
LAKE WILLIAMS	14708027AA	9/2/86	0	12	0.3	0.03	20	20	17200	350	4380	6000	22000	2100	1.2	1	30	44490	660	39000	16	9.9
	14708023DC	9/2/86	2	12	0.3	0.04	20	20	17500	350	4350	6000	23000	2200	1.3	1	29.27	45880	662	39000	16	9.9
LITTLE CROOKED LAKE	14808119A	6/24/87	6.5	18	0.02	0.01	17	120	390	71	932	100	460	37	0.1	1	1.1	1670	7.3			9.0
	14808119A	7/28/87	0	6.9	0.03	0.01	13	110	380	67	830	143	460	36	0.1	1.1	0.89	1630	7.5	2400	26.5	9.2
	14808119A	9/1/87	0	1.3	0.02	0.01	11	110	370	67	851	131	450	34	0.2	1	0.87	1600	7.4	2250	15.5	9.0
	14808119A	10/7/87	2.5	3.7	0.02	0	11	120	400	68	859	150	470	37	0.1	1	0.81	1680	7.6	2450	9	9.1
	14808120A	6/24/87	5	21	0.01	0.01	18	110	390	71	956	89	450	37	0.1	0.6	1.1	1660	7.6		23	8.9
	14808120A	7/28/87	0	7.3	0.01	0.01	14	110	380	74	850	134	460	35	0.1	0.8	0.77	1630	7.5	2200	25.5	9.2
	14808120A	9/1/87	2.5	3.4	0.02	0.01	14	110	380	73	897	109	440	33	0.1	1	0.93	1610	7.5	2200	16	9.0
	14808120A	10/7/87	2	7.5	0.03	0	14	120	400	71	977	110	490	37	0.1	1	0.83	1730	7.6	2500	11	8.9
	14808120BA	9/5/86	2	10	0.02	0	9	130	500	80	811	300	610	43	0.1	1	1.6	2080	9.2	2850	14	9.4
	14808120CC	9/5/86	5	9.7	0.01	0	7	140	520	82	785	300	610	42	0.1	0.3	1.6	2100	9.3	2900	14	9.5
	14808120CCB	6/16/92	1	5.2	0.07	0.01	20	310	1700	300	1860	600	2500	150	0.1	0.01	4.5	6510	21	12400	18	9.4
McLEAN Co. SLOUGH #1	14808213BB	8/28/86	2	32	0.02	0.01	21	66	29	13	366	29	47	8.9	0.1	1	0.2	427	0.7	670	18	8.8
	14808213BB	8/28/86	10	33	0.03	0.01	20	66	28	13	355	32	47	8.6	0.2	1	0.2	424	0.7	670	21	8.8
	14808213BBA	6/16/92	2	23	0.01	0.01	21	100	59	24	545	31	110	15	0.2	0	0.18	651	1.2	1630	19	8.7
	14808213BBA	6/16/92	5	23	0.01	0.01	21	100	57	23	551	30	120	16	0.1	0	0.22	661	1.2	1630	19	8.7
MUD LAKE	14808127C	6/24/87	3	14	0.02		29	100	170	26	749	45	190	7.9	0.1	1	0.49	953	3.4	1205	23.5	8.7
	14808127C	8/4/87	0	24	0.03	0.01	26	93	280	52	987	21	280	19	0.1	1	0.68	1280	5.7	1750	22.5	8.5
	14808127C	9/1/87	3	7.5	0.03	0.01	22	95	310	54	943	40	310	20	0.1	1	1	1330	6.4	1900	18	8.6
	14808127C	10/7/87	2.5	7.8	0.04	0	25	120	350	61	1090	53	380	19	0.1	1	0.85	1550	6.5	2100	8.5	8.6

Table 7. Chemical Analyses of Selected Surface Water Bodies in East Central McLean County (continued)

See text for explanation of chemical symbols

NAME	Sample Location	Sample Date	Depth (ft)	(milligrams per liter) SiO_2	Fe	Mn	Ca	Mg	Na	K	HCO_3	CO_3	SO_4	Cl	F	NO_3	B	TDS	SAR	Cond (µmho)	Temp (°C)	Lab pH
MUD LAKE (cont)	14808128D	6/24/87	2	17	0.03	0.01	29	200	500	66	1440	61	750	15	0.1	1	1.1	2350	7.3	2830	24.5	8.6
	14808128D	8/4/87	0	27	0.04	0.01	25	160	380	54	1240	29	530	13	0.1	1	0.84	1830	6.2	2500	22.5	8.5
	14808128D	9/1/87	2.5	26	0.04	0.02	25	160	400	58	1270	29	530	13	0.1	1	0.9	1870	6.5	2700	20	8.5
	14808128D	10/7/87	1.5	37	0.07	0.01	27	190	460	66	1420	65	650	14	0.1	1	0.89	2210	6.9	3400	9	8.6
NELSON LAKE	14808034	6/11/68	0	13	0.46	0	24	262	1240	147	712	38	3230	75		0	3.95	5380	16	6000	23.9	8.6
	14808034CC	8/29/86	2	16	0.03	0.01	20	240	940	110	657	200	2200	60	0.1	1	3.2	4110	12.7	5200	20	9.2
	14808034CC	8/29/86	5	16	0.03	0.01	20	230	920	110	674	200	2200	61	0.1	1	3.55	4090	12.7	5300	20	9.3
PELICAN LAKE (W. of Brush Lake)	14707920	8/28/69	0	0.3	10.0	0.18	9	5.7	8780	338	5020	3990	7200	1180	3.4	6	17.41	24000	562		27.2	9.7
	14707929AA	8/28/86	2	13	0.12	0.01	10	45	3500	150	2900	1400	3000	380	0.7	1	10.41	9540	105	15000	18	9.5
PELICAN LAKE (7 mi. N. of Mercer)	14807936	7/11/68	1	4.6	0.12	0.01	8.4	77	1460	126	1650	426	1470	103	0.2	1	4.88	4490	34.5	5600	20.6	9.4
	14807936AA	9/2/86	2	18	0.03	0.01	8	55	710	64	852	300	680	54	0.1	1	3.42	2310	19.7	3350	17	9.5
	14807936AA	9/2/86	9	18	0.02	0.01	8	53	670	61	850	300	630	50	0.1	1	3.53	2210	18.9	3350	17	9.5
	14807936AD	9/2/86	2	18	0.03	0.01	8	51	730	60	911	300	650	52	0.1	1	3.39	2320	20.9	3400	17	9.5
	14807936AD	9/2/86	9	18	0.02	0.01	8	53	670	64	838	300	620	51	0.1	1	1.9	2200	18.9	3350	17	9.5
PETERSON LAKE	14707930	6/11/68	0	0.1	0.2	0.05	4	23	4600	136	3600	1750	3800	426	0.5	0	8.83	12500	194		26.7	9.6
POSTEL LAKE	14807926	6/11/68	0	2.8	0.12	0.02	5.3	279	691	112	1020	217	1560	30	0.1	0	1.95	3400	8.8	3900	20	9.2
	14807926	7/11/68	10	2.9	0.14	0.02	9.8	276	688	110	1020	223	1560	30	0.1	0	1.95	3400	8.8	3900		9.2
SIEDLER SLOUGH	14808217ABB	6/16/92	2	0.3	0.01	0.01	25	110	370	30	521	57	830	9.9	0.2	0	0.45	1690	7.1	3750	19	9.0
TURTLE CREEK	14608019	4/18/72	0	6.5	0.7	0.12	10	11	527	8.1	755	83	447	12	0.1	1	0.11	1480	27		12	9.1
	14608019	4/24/73	0	6.4	0.44	0.02	14	26	942	22	1450	100	735	22	0.3	2.5	0.85	2630	34	3800	11.5	9.0
	14608019	6/21/73	0	43	36	0.48	79	25	920	26	1310	31	1100	12	0.4	1	0.25	2920	23	3900	20	8.5
	14608019	4/21/75	0	4.7	1.8	0.08	28	12	90	6.6	225	0	120	5.9	0.1	1.5	0.08	383	3.6	600	5	7.8
	14608019	3/31/76	0	11	0.73	0.06	14	12	370	12	648	0	330	8.5	0.1	3.6	0.44	1080	18	1600	5	8.1
TURTLE LAKE	14708123	7/9/68	2	12	0	0.02	12	79	1240	92	1370	246	1530	47	0.1	0	3.3	3940	29	4900	20	9.2
UNNAMED SLOUGH	14708023BA	9/2/86	2	48	0.05	0.06	46	160	520	67	1220	44	800	24	0.1	1	0.32	2310	8.1	3400	16	8.5
UNNAMED SLOUGH	14808223BC	9/3/86	3	12	0.01	0.15	43	25	14	34	302	0	11	7.2	0.1	1	0.11	297	0.4	510	18	7.7

Table 8. Summary of NOAA Precipitation Data (in inches) at Turtle Lake, McLean County, ND.

Year	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual Total	Annual Departure
1912	0.28	0.20	0.24	1.42	3.96	1.98	2.26	2.32	2.21	0.78	0.00	0.25	15.90	-1.13
1913	0.30	0.00	0.77	0.53	1.58	1.94	2.14	2.52	1.19	1.84	0.18	0.11	13.10	-3.93
1914	0.47	0.55	1.82	1.00	4.21	7.73	0.82	3.51	0.99	1.14	0.05	0.22	22.51	5.48
1915	0.02	0.00	0.00	0.98	3.30	8.50	2.85	2.05	2.26	0.68	0.87	0.45	21.96	4.93
1916	1.10	0.40	1.50	1.05	1.35	5.15	1.95	1.85	0.35	1.15	0.35	1.20	17.40	0.37
1917	0.20	0.40	0.24	1.60	0.46	0.90	0.72	0.70	0.78	0.50	0.10	0.82	7.42	-9.61
1918	0.60	0.13	0.45	1.94	2.91	1.26	4.65	3.74	0.54	0.20	0.54	0.65	17.61	0.58
1919	0.04	0.77	0.67	1.13	3.37	2.98	0.51	0.59	0.82	0.51	0.90	0.79	13.08	-3.95
1920	0.75	0.33	1.17	1.02	0.98	2.99	2.23	1.09	1.74	0.34	0.45	0.60	13.69	-3.34
1921	0.64	0.54	2.05	1.68	1.66	6.58	3.92	0.63	3.24	0.63	0.40	0.25	22.22	5.19
1922	0.28	1.23	0.46	0.70	1.98	2.69	2.04	1.59	1.77	0.33	1.55	0.96	15.58	-1.45
1923	0.26	0.67	0.31	1.31	1.52	1.45	5.37	1.97	1.40	1.08	0.54	0.37	16.25	-0.78
1924	0.04	0.30	0.87	1.38	0.51	6.59	2.23	0.68	1.58	1.29	0.03	0.78	16.28	-0.75
1925	0.05	0.42	0.80	1.59	1.05	5.63	1.07	1.09	1.33	0.48	0.06	0.42	13.99	-3.04
1926	0.22	0.56	0.15	0.24	2.60	2.69	4.07	4.06	1.42	0.28	0.42	0.40	17.11	0.08
1927	1.05	0.34	0.74	1.56	7.41	2.78	3.58	5.56	0.26	0.59	0.41	0.28	24.56	7.53
1928	0.15	0.16	0.35	1.16	0.48	5.83	8.89	5.96	0.20	0.18	0.00	0.70	24.06	7.03
1929	0.48	0.30	0.75	1.95	3.65	1.30	0.56	1.40	2.05					
1930			0.01											
1931	0.05	0.30	1.20	0.10	0.92	1.14	3.74	0.32	2.83	1.08	0.00	0.00	11.68	-5.35
1932	0.53	0.09	0.42	1.15	2.69	2.83	2.34	1.27						
1933	0.62	0.13	0.42	0.48	3.96	1.63	1.11	0.41	0.24	0.82	0.51	0.64	10.97	-6.06
1934	0.05	0.00	0.59	0.29	0.68	2.94	2.13	1.99	0.92	0.00	0.08	0.16	9.83	-7.20
1935	0.20	0.15	1.16	1.17	2.62	3.16	4.59	1.40	0.33	0.07	0.98	0.33	16.16	-0.87
1936	0.42	0.96	0.66	0.05	0.30	0.54	0.31	0.54	0.75	0.22	0.26	0.19	5.20	-11.83
1937	0.50	0.20	0.02	0.86	1.56	5.52	1.18	1.84	0.90	0.81	0.09	0.44	13.92	-3.11
1938	0.37	0.34	0.34	0.72	1.37	3.35	5.44	1.32	0.18	0.19	1.24	0.15	15.01	-2.02
1939	0.07	0.61	0.12	0.55	2.31	3.65	1.97	2.24	0.21	0.49	0.00	0.31	12.53	-4.50
1940	0.00	0.37	0.28	2.37	2.58	1.15	4.54	0.82	0.66	0.82	0.47	0.15	14.21	-2.82
1941	0.46	0.13	0.78	2.45	1.90	3.67	0.82	1.65	2.65	1.86	0.27	0.14	16.78	-0.25
1942	0.00	0.10	1.62	1.95	2.14	3.26	3.36	2.60	1.82	0.39	0.00	0.57	17.81	0.78
1943	0.61	0.29	1.47	2.27	2.05	4.79	3.00	1.44	0.33	0.52	0.23	0.10	17.10	0.07
1944	0.11	0.30	0.25	0.74	2.17	7.48	0.60	1.88	2.09	0.00	2.11	0.00	17.73	0.70
1945	0.21	0.15	1.17	0.74	2.46	1.15	3.35	2.42	1.65	0.53	0.62	0.62	15.07	-1.96
1946	0.03	0.70	0.80	0.25	0.73	5.13	1.46	2.17	1.97	3.08	0.13	0.38	16.83	-0.20
1947	0.09	0.12	0.27	0.86	0.84	6.28	1.62	2.87	2.09	1.27	0.80	0.36	17.47	0.44
1948	0.20	0.51	0.83	3.57	0.84	2.54	3.35	1.42	0.00	1.32	0.76	0.48	15.82	-1.21
1949	1.70	0.93	0.83	2.03	2.77	2.86	3.28	0.50	0.48	1.46	0.30	0.00	17.14	0.11
1950		0.00			1.41	3.60	1.42	1.65	1.96	0.36	1.17	0.79		
1951	1.53	1.50	0.72	0.73	1.32	3.06	1.40	4.81	2.47	0.23	0.24	0.41	18.42	1.39
1952	0.82	0.74	0.61	0.04	0.36	5.76	2.80	1.91	0.61	0.16	0.21	0.21	14.23	-2.80
1953	0.44	0.39	1.54	1.95	3.03	3.99	0.59	2.39	1.23	1.03	0.54	0.64	17.76	0.73
1954	1.01	0.05	0.79	0.91	2.17	5.35	1.03	2.83	3.33	0.39	0.23	0.05	18.14	1.11
1955	0.69	0.32	0.30	2.16	3.40	3.30	2.11	3.25	2.03	0.96	1.76	0.61	20.89	3.86
1956	0.72	0.25	1.41	0.06			3.32	1.27	0.95	0.25	1.36	0.51		
1957	0.30	0.11	0.20	0.88	1.60	2.65	4.88	1.04	0.71	1.12	0.29	0.13	13.91	-3.12
1958	0.37	0.56	0.15	0.58	0.40	3.54	4.60	0.27	0.17	0.74	0.56	0.16	12.10	-4.93
1959	0.21	0.46	0.00	0.62	1.29	4.01	0.70	1.10	1.78	1.26	1.07	0.13	12.63	-4.40
1960	0.68	0.11	0.24	0.57	3.66	4.41	0.49	4.14	0.18	0.62	0.12	0.48	15.70	-1.33
1961	0.00	0.92	0.03	1.96	1.34	0.70	2.53	0.17	3.44	0.06	0.00	0.47	11.62	-5.41
1962	0.67	0.34	0.60	0.52	5.34	3.28	3.83	2.19	1.13	0.55	0.19	0.08	18.72	1.69
1963	0.11	0.43	0.58	4.90	3.11	5.03	2.17	2.36	0.45	0.55	0.00	0.37	20.06	3.03
1964	0.13	0.47	0.40	2.65	1.43	6.32	1.45	1.72	1.15	0.33	0.58	0.91	17.54	0.51
1965	0.58	0.20	0.47	1.40	2.63	4.16	3.89	2.49	3.72	0.00	0.34	0.35	20.23	3.20
1966	0.28	0.22	2.92	1.90	1.48	5.43	2.84	3.94	0.61	1.10	0.19	0.29	21.20	4.17
1967	1.30	0.86	0.32	4.05	1.02	3.22	0.81	1.38	2.02	1.40	0.21	1.32	17.91	0.88
1968	0.60	0.10	0.78	0.88	2.49	3.75	0.94	4.89	2.73	0.32	0.19	0.96	18.63	1.60
1969	1.22	1.31	0.53	0.26	1.05	3.58	3.96	2.28	0.81	0.59	0.02	0.84	16.45	-0.58
1970	0.60	0.28	0.78	4.70	2.99	2.77	5.16	0.52	2.38	0.52	0.83	0.39	21.92	4.89
1971	0.91	0.16	1.03	1.44	0.87	4.97	1.38	0.03	2.13	3.84	0.45	0.34	17.55	0.52
1972	0.70	1.19	1.44	0.74	3.11	5.18	3.15	1.42	1.65	2.08	0.29	1.01	21.96	4.93
1973	0.07	0.13	0.29	0.59	0.77	1.81	1.87	1.63	2.26	1.56	0.79	0.88	12.65	-4.38
1974	0.19	0.56	0.47	3.45	4.12	0.67	0.89	1.62	0.98	0.43	0.52	0.68	14.58	-2.45
1975	0.83	0.29	1.36	4.15	2.46	6.65	1.03	0.71	1.62	1.37	0.34	0.73	21.54	4.51
1976	0.67	0.54	0.90	3.24	0.45	3.55	1.30	2.64	0.38	0.13	0.22	0.47	14.49	-2.54
1977	0.93	0.34	0.78	0.02	3.19	1.73	2.68	1.95	5.16	0.99	1.14	1.78	20.69	3.66
1978	0.29	0.19	0.20	1.54	2.53	3.57	3.23	0.62	3.40	0.22	1.50	0.73	18.02	0.99
1979	0.35	1.52	0.70	1.61	1.57	2.03	2.66	1.64	0.94	0.35	0.10	0.20	13.67	-3.36
1980	1.17	0.47	0.21	0.28	0.37	3.91	1.54	5.05	2.10	2.77	0.62	0.36	18.85	1.82
1981	0.13	0.80	0.02	0.51	1.18	4.22	2.85	3.20	2.38	0.52	1.01	0.28	17.10	0.07
1982	1.90	0.49	1.29	0.34	3.28	4.62	1.93	3.96	0.98	4.10	0.34	0.54	23.77	6.74
1983	0.58	0.25	1.08	0.64	1.40	4.10	3.37	0.96	1.41	0.76	0.98	0.57	16.10	-0.93
1984	0.93	0.23	1.70	3.15	0.39	3.05	0.31	1.97	0.99	2.37	0.40	0.66	16.15	-0.88
1985	0.14	0.10	1.28	1.57	4.54	2.09	1.98	2.88	1.53	1.00	0.90	0.30	18.31	1.28
1986	0.49	0.82	0.15	4.15	1.61	2.40	4.95	1.66	2.25	0.34	1.15	0.00	19.97	2.94
1987	0.28	1.06	1.31	0.06	3.98	1.49	4.41	2.93	0.47	0.04	0.01	0.12	16.16	-0.87
1988	0.55	0.12	1.13	0.02	1.53	2.12	0.64	0.11	0.58	0.07	0.58	1.00	8.45	-8.58
1989	0.89		0.58	1.71	2.09	2.24	1.58	1.23	0.40	0.15	0.40	0.13	11.40	-5.63
1990	0.02	0.18	0.81	0.80	2.13	5.56	4.73	1.93	0.90	1.11	0.02	0.58	18.77	1.74
1991	0.15	0.55	0.21	2.04	1.70	4.81	2.21	3.90	1.85	1.98	0.61	0.32	20.33	3.30
1992	0.16	0.14	0.91	0.84	1.08	3.25	3.50	0.95	1.17	0.26	1.09	0.73	14.08	-2.95
1993	0.70	0.17	0.33	2.03	2.39	3.45	6.73	1.39	0.33	0.20	1.78		19.50	2.47
average 1912-1992	0.48	0.42	0.72	1.39	2.07	3.59	2.51	2.00	1.44	0.85	0.50	0.47	16.45	
average 1940-1992	0.54	0.45	0.76	1.57	2.01	3.66	2.42	2.03	1.57	0.95	0.55	0.48	17.03	

FIGURE 3. Location of Rain Gages Monitored 1985-1987.

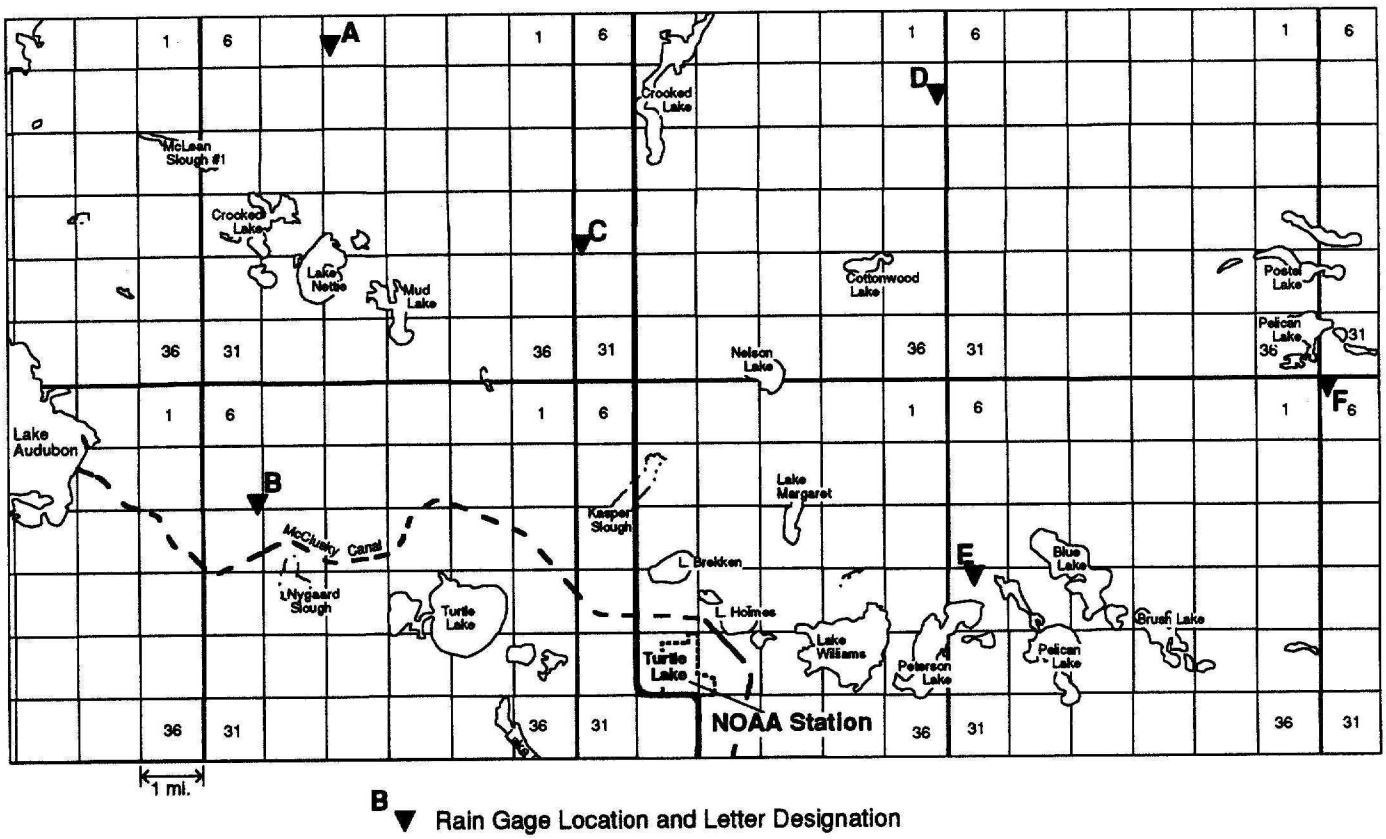


Table 9. Precipitation (inches) measured at six rain gage locations in the study area vs precipitation at Turtle Lake NOAA station (1985-1987). Rain Gage Locations are shown above in Figure 3.

Year	1985	1986	1987
Time Period	5/10-11/6	4/10-10/21	4/14-12/8
Gage A	9.54	15.00	16.08
Gage B	10.88	15.07	15.05
Gage C	10.23	16.27	13.96
Gage D	11.43	13.98	12.99
Gage E	12.69	14.00	12.73
Gage F	11.16	12.77	12.37
Turtle Lake NOAA	14.02	16.59	13.38

NOAA = National Oceanic and Atmospheric Administration; Data from NOAA station includes precipitation which occured only during the time period in which the standard rain gages were measured.

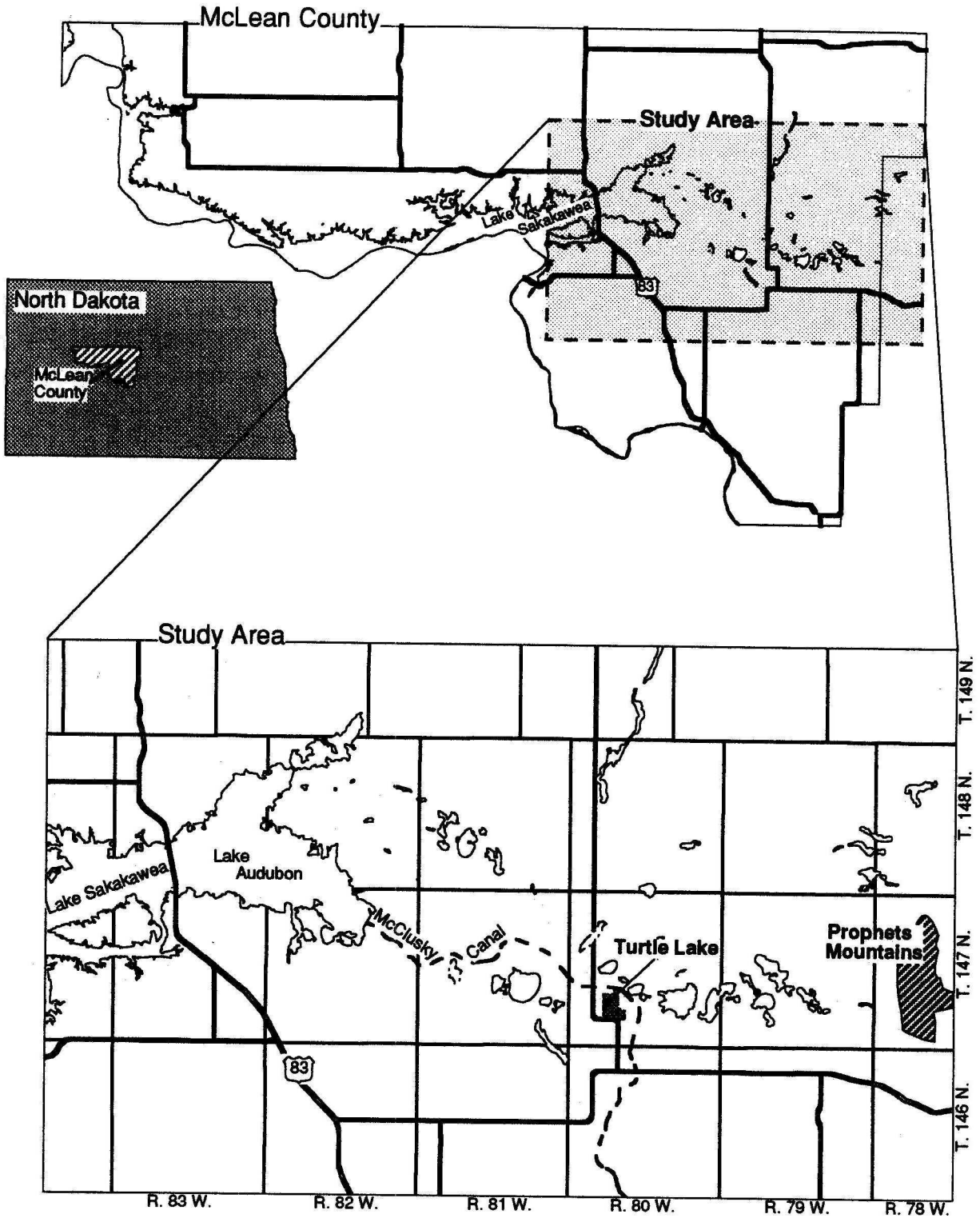


Figure1. Location of McLean County, North Dakota and the East-Central McLean County Hydrologic Systems Study Area.

INTRODUCTION

The investigation of the hydrologic system of East-Central McLean County was conducted cooperatively by the North Dakota State Water Commission (SWC) and the McLean County Water Resource District. Results of the investigation are presented in two parts. Part I is a compilation of the hydrologic data and part II is an interpretive report describing the dynamics of the of the hydrologic system in East-Central McLean County. This report (part I) makes available the hydrologic and geologic data collected during the investigation and serves as a reference for part II.

The investigation was initiated in response to reports from area residents regarding water logging of agricultural land, deterioration and flooding of county and township roads, and an increase in size of some lakes and sloughs in Eastern McLean County in the area from Lake Audubon eastward to Brush Lake. Rising water levels in some observation wells in this area had been noted when the water-level record of the late 1960's to early 1970's was compared to that of the 1980's (Armstrong, 1983).

The probable cause of these conditions was uncertain. It had been variously attributed to the presence of the McClusky Canal and Lakes Audubon and Sakakawea reservoirs, as well as to the 13 ft increase in operating surface elevation of Lake Audubon during 1975. Climatic patterns have also influenced surface water and ground water levels. The primary goal of this investigation was to develop an hydrologic data base sufficient to allow assessment of the relative importance of the man-made perturbations and climatic patterns on the changes in water levels in the study area.

Purpose, Objectives, And Scope

The primary purpose of this study is to develop an information base necessary for managing the ground-water resources of eastern McLean County. The information base provides the framework necessary to:

- better interpret the ground-water flow system in the glacial-drift aquifers;
- examine the interaction between ground water and surface water systems;
- evaluate the propagation of climatic patterns through other components of the hydrologic system; and
- to assess the degree to which anthropogenic activities may have influenced components of the hydrologic system.