HYDROLOGIC MONITORING OF A DEEP-WELL WASTE-INJECTION SYSTEM NEAR PENSACOLA, FLORIDA, MARCH 1970–MARCH 1977

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations 78-27

Prepared in cooperation with the
FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

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ABSTRACT

This report presents the hydraulic and chemical data collected from March 1970 to March 1977 through a monitoring program at a deep-well waste-injection system at the Monsanto Company's plant near Pensacola, Florida. The injection system presently consists of injection well A, injection well B, and two deep monitor wells all completed open hole in the lower limestone of the Floridan aquifer and one shallow monitor well completed in the upper limestone of the Floridan aquifer. Two of the monitor wells are used to observe hydraulic and geochemical effects of waste injection in the injection zone at locations 1.5 miles south-southeast and 1.9 miles north-northwest of the center of the injection site. The shallow monitor well, used to observe any effects in the first permeable zone above the 220-foot-thick confining bed, is 100 feet northeast of injection well A.

Since injection began in July 1963, about 13.3 billion gallons of industrial acidic waste containing nitric acid, inorganic salts, and numerous organic compounds have been injected into a saline-water-filled limestone aquifer. From July 1963 to April 1968, the pH of the waste was raised to about 5.5 with aqueous ammonia before being injected into a saline-water-filled limestone aquifer, but since 1968 it has been injected unneutralized at a pH of about 2.3. Wellhead injection pressures at both injection wells in March 1977 averaged 180 pounds per square inch and the hydraulic pressure gradient was 0.53 pound per square inch per foot of depth to the top of the injection zone. Increases in pressures since 1970 at the north and south monitor wells have been about 22 and 29 pounds per square inch. The pressure in the shallow monitor well declined about 4 pounds per square inch. No changes were detected in the chemical character of water from the shallow monitor and the north monitor wells but since late 1973, concentrations of bicarbonate and dissolved organic carbon in water from the south monitor well have increased. These increases have also been accompanied by increases in gas content of water at the point of discharge from the well and a distinctive odor like that of the waste. In samples of water from the south monitor well, concentrations of nitrogen gas ranged from 6.0 to 12.7 milligrams per liter, methane from 24 to 70 milligrams per liter, and carbon dioxide from 14 to 53 milligrams per liter. The most probable number of denitrifying bacteria in water samples collected at the north and south monitor wells respectively, ranged from 13 colonies to 33 colonies per 100 milliliters.

INTRODUCTION

Purpose and Scope

This report presents the hydraulic and chemical data collected through a monitoring program conducted by the U.S. Geological Survey at a industrial liquid-waste injection site 13 mi north of Pensacola in Escambia County. The injection system is also briefly described. The monitoring program officially began July 1, 1970 and is in cooperation with the Bureau of Water Resources Management of the Florida Department of Environmental Regulation. It is supported by the Monsanto Co., owner of the injection system.

The data are presented in graphs and tables. These data include injection rates, volumes, and pressures; water-level data at three monitor wells, and field and laboratory analyses of water samples from the three wells.

Acknowledgments

The generous cooperation of Monsanto Co. in permitting access to the injection site and furnishing technical data about their injection facility is acknowledged.

Injection

At the Monsanto Co.'s plant site, industrial liquid waste has been injected underground since July 1963 as an alternate to discharging it into surface-water bodies. The acidic waste consists of nitric acid, inorganic salts, and numerous organic compounds. During the first 5 years of injection, the pH of the waste was raised to about 5.5 with aqueous ammonia before it was injected into the aquifer, but in April 1968, the composition of the waste was changed and since that time it has been injected unneutralized at a pH of about 2.3. The waste is injected through two wells into the saline-water-filled lower limestone of the Floridan aquifer between 1,400 and 1,700 ft below land surface. The lower limestone aquifer (injection zone) is overlain by the widespread Oligocene Bucatunna Clay Member of the Byram Formation, a clay confining bed. Overlying this 220-ft-thick confining bed is the upper limestone of the Floridan aquifer (Musgrove, Barraclough, and Marsh, 1961, p. 17). The upper limestone contains slightly brackish water at the injection site.

For use of those readers who may prefer to use metric units rather than U.S. customary units, the conversion factors for the terms used in this report are listed on the following page:

Multiply U.S. customary units	By	To obtain metric units
inch (in)	25.4	millimeter (mm)
foot (ft)	.3048	meter (m)
mile (mi)	1.609	kilometer (km)
gallon (gal)	3.785	liter (L)
	3.785×10^{-3}	cubic meter (m^3)
gallon per minute (gal/min)	.6309	liter per second (L/s)
pound per square inch (lb/in^2)	.07031	kilogram per square centimeter (kg/cm^2)

THE MONITORING PROGRAM

Objectives

The purpose of the monitoring program is to observe the effects of waste injection on the injection zone and to determine whether the injection system functions so that the waste moves within the injection zone rather than leak upward through the confining bed to contaminate shallower brackish and fresh ground water. Further, the monitoring program is a source of hydrologic and geochemical data for research investigations to predict the ultimate regional effects of the waste injection.

Description of the Injection System

Monsanto Co.'s present waste-injection system consists of injection well A, injection well B, two deep monitor wells referred to as the north and south monitor wells, and one shallow monitor well. Locations of the active wells are shown on figure 1.

Injection well A was drilled in early 1963 and soon after injection began, two monitor wells were constructed. One, a shallow monitor well 100 ft from well A, was drilled to the top of the confining bed and cased into the top of the upper limestone of the Floridan aquifer, thus providing a means to observe hydraulic and geochemical changes in the first permeable zone above the 220-ft-thick confining bed. The other, a deep monitor well about 1,300 ft south of well A, was drilled and cased into the lower limestone of the Floridan aquifer; providing means for observing pressure and water-quality changes in the injection zone. In 1965 a second injection well, injection well B, similar in construction to well A, was drilled 1,300 ft southwest of well A.

By January 1969, undiluted waste was detected in the deep monitor well and in February 1969 the well was plugged from bottom to top with cement because of concern that the casing would be corroded through and waste might leak upward to shallower zones containing potable water. To continue evaluation of the hydraulic and geochemical effects of injection,

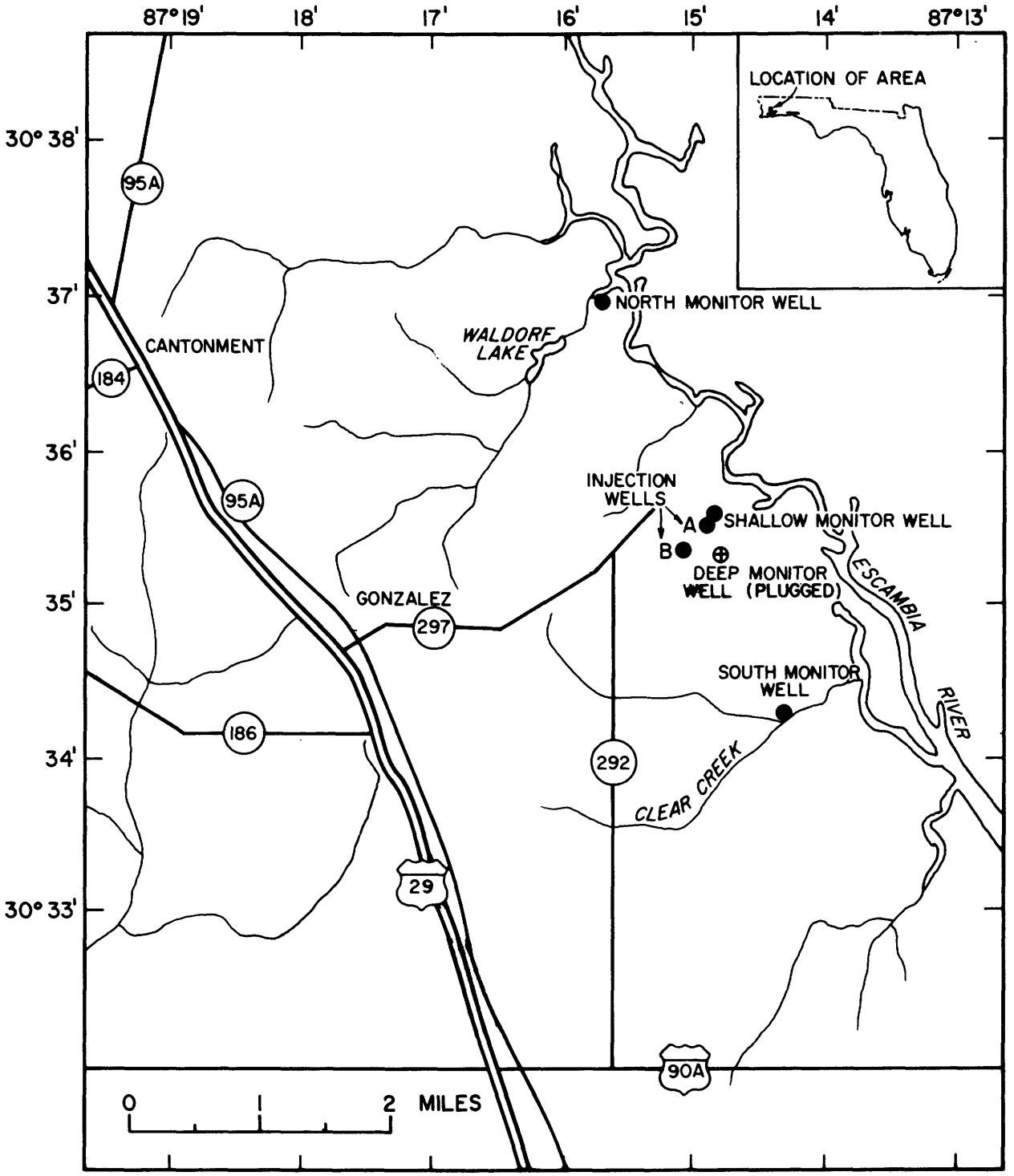

Figure 1.--Location of three monitors and two injection wells near Cantonment, Escambia County, Florida.

two more deep monitors were constructed in late 1969 and early 1970 by Monsanto Co., one 1.5 mi south-southeast of the injection site (south monitor well) and the other 1.9 mi north-northwest of the site (north monitor well).

The location and physical characteristics of the two injection wells and the three active monitor wells comprising the injection system are listed in table 1. The hydrogeology of the injection site and the construction and testing details of the injection and monitor wells are described by Barraclough (1966), Goolsby (1971), and by Foster and Goolsby (1972).

Data Collection

Data collected in the monitoring program include continuous records of: injection rates, wellhead injection pressures, wellhead pressures in the monitor wells, and analyses of water samples collected monthly from the monitor wells. The analyses include field determinations of pH, bicarbonate, temperature, and conductance, and laboratory determination of nitrogen, phosphorus, calcium, chloride, magnesium, and dissolved organic carbon. Samples collected semiannually are analyzed for boron, copper, iron, zinc, and all major cations and anions. Water samples are also collected intermittently for the determination of gases and bacteria.

HYDRAULIC AND CHEMICAL DATA

Injection Pressures and Rates

Static wellhead pressure at land surface in the lower limestone of the Floridan aquifer at injection well A in 1963, before injection began, was about 17 lb/in^2 or about 40 ft above land surface and by March 31, 1977 it had increased to about 130 lb/in^2 or about 300 ft above land surface. From July 1963 through March 31, 1977, the monthly average wellhead injection pressure ranged from 114 lb/in^2 in February 1975 to 237 lb/in^2 in June 1965. The individual wellhead pressures for both wells and the combined average monthly injection rates are shown in figure 2. The maximum one-day combined injection rate was 2,700 gal/min at an average wellhead pressure of 198 lb/in^2 during the almost 14 years of injection.

During March 1977 the injection rate averaged 2,395 gal/min and wellhead pressures in the injection wells averaged 180 lb/in^2. After correcting for head loss due to friction, the hydraulic pressure gradient was calculated at 0.53 lb/in^2 per foot of depth to the top of the injection zone. The aggregate volume of waste injected through March 1977, shown in figure 3, is about 13.3 billion gallons.

TABLE 1.--Descriptive data on two injection wells and three monitor wells

Well name	Latitude and longitude	Altitude of land surface (ft)	Well completion date	Depth of well below land surface (ft)	Casing record[1] (ft)
Injection well A	30°35'37" N 87°14'56" W	32	Mar. 1963	1,808	24-in steel, 0-86. 18-in steel, 0-982. 12-in steel, 872-1,370. 12-in stainless steel, 1,370-1,390. 6-in stainless steel liner, 0-1,396.
Injection well B	30°35'28" N 87°15'06" W	42	Aug. 1964	1,654	16-in steel, 0-110. 10-in steel, 0-1,395. 10-in stainless steel, 1,395-1,415. 6-in stainless steel liner, 0-1,417.
North monitor well	30°36'57" N 87°15'43" W	8	Feb. 1970	1,523	16-in steel, 0-100. 8-in steel, 0-1,320. 8-in stainless steel, 1,320-1,340.
South monitor well	30°34'17" N 87°14'17" W	15	Dec. 1969	1,596	16-in steel, 0-100. 8-in steel, 0-1,410. 8-in stainless steel, 1,410-1,430.
Shallow monitor well	30°35'38" N 87°14'55" W	38	Aug. 1963	1,140	16-in steel, 0-100. 8-in steel, 0-972.

[1] All but one well cased into top of lower limestone of Floridan aquifer; shallow monitor cased to top of upper limestone of the Floridan aquifer.

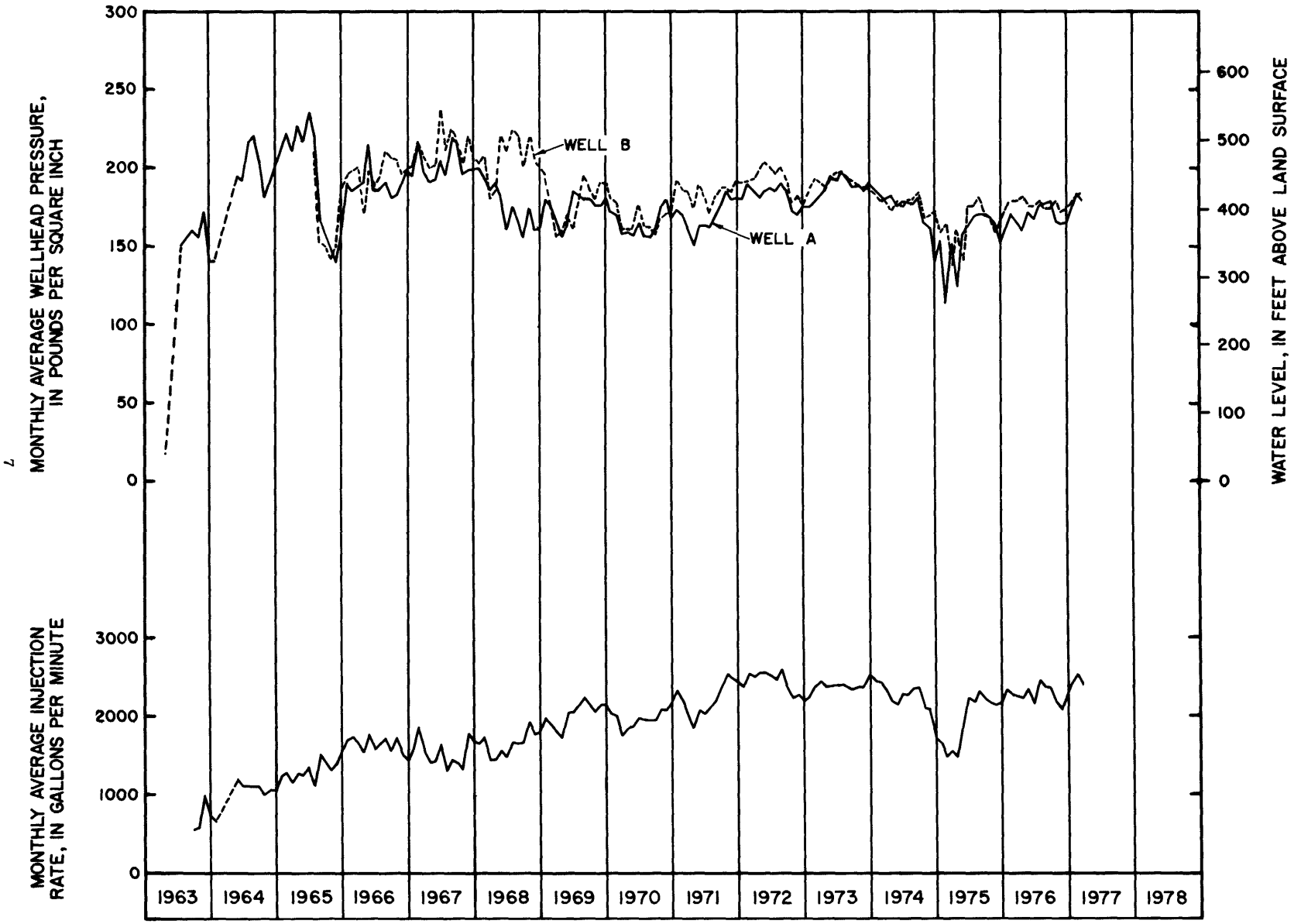

Figure 2.--Monthly average injection pressures and injection rates.

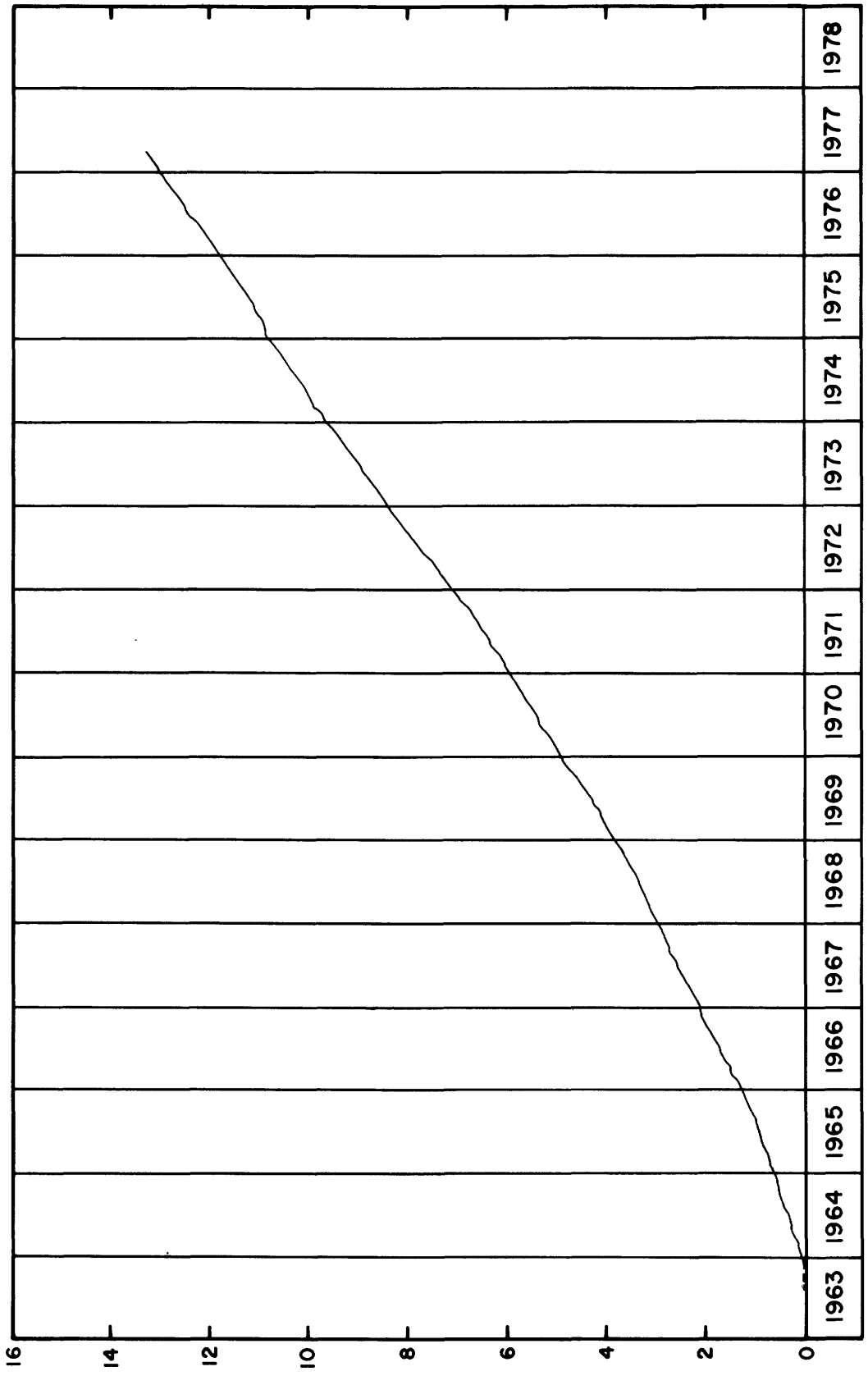

Figure 3.--Cumulative volume of waste injected.

Injection Index

The injection index is a measure of the ability of the well to accept waste. It is defined as:

$$\frac{\text{Injection Rate, Well "A" + Injection Rate, Well "B" (gal/min)}}{\frac{1}{2}\,(\Delta P \text{ Well "A"} + \Delta P \text{ Well "B"})\ (\text{lb/in}^2)}$$

where ΔP is the bottom-hole pressure increase. The injection index, as used here, is not for an individual well but for the system. The higher the injection index, the lower the pressure required to inject waste at a given rate. The monthly average injection index (I) through March 1977 ranged from about 7 to 23 $[(\text{gal/min})/\text{lb/in}^2]$ as shown in figure 4.

Water-Level Changes at the Monitor Wells

Pressure hydrographs for the two deep monitor wells in figure 5 show that since 1970, when the deep monitors were activated, pressures have increased by about 29 lb/in^2 at the south monitor and by about 22 lb/in^2 at the north monitor through March 1977. Pressure was on a rising trend until July 1973, increasing at both deep monitors during that time by about 23 lb/in^2. From mid-1973 to April 1975, the pressure declined about 19 lb/in^2. Since April 1975, pressure in the south monitor increased about 24 lb/in^2 and in the north monitor about 19 lb/in^2. The fluctuations in pressure at the two deep monitor wells roughly parallel the fluctuations in the daily average injection rate, which can range from zero on several consecutive days to about 2,700 gal/min or to about 1,350 gal/min to each injection well. The pressure decline at both deep monitors (fig. 5)--from September 1974 to April 1975--was accompanied by a decline in monthly average injection rate, from about 2,350 gal/min to 1,450 gal/min (fig. 2). Conversely, when the pressure rose in both deep monitors--from April 1975 to March 1977--the injection rate was increased from 1,450 gal/min to about 2,400 gal/min.

In contrast to the long-term pressure increase in the lower limestone of the Floridan aquifer, the injection zone, the hydrograph for the shallow monitor well in figure 5 shows that through the entire period, pressure declined by about 4 lb/in^2 in the upper limestone of the Floridan aquifer at the injection site. The overall decline in pressure is presumably the result of pumpage drawdown by coastal municipal users 25 to 35 mi southeast and irrigation users about 20 mi east of the injection site (Faulkner and Pascale, 1975).

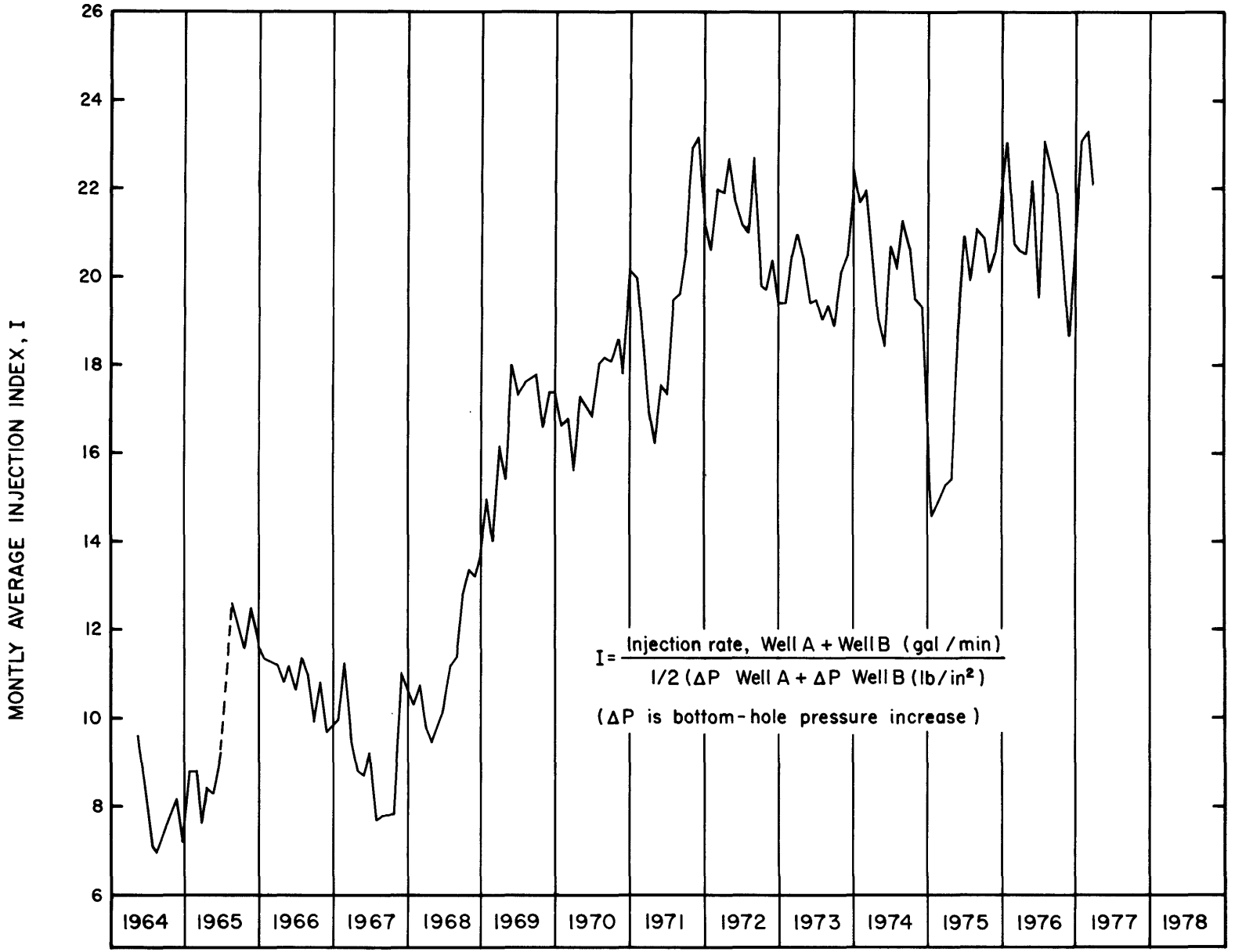

Figure 4.--Monthly average injection index.

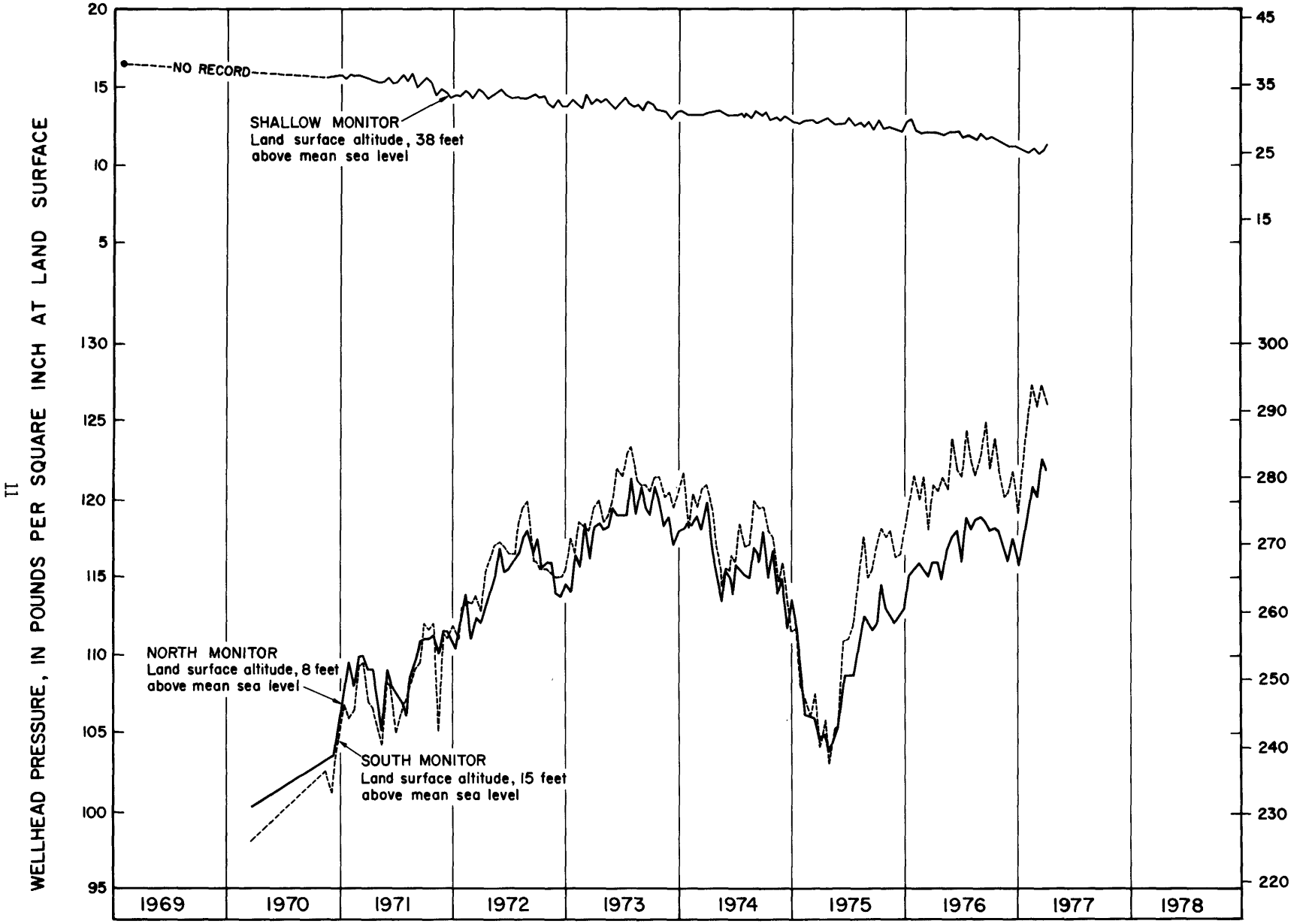

FIGURE 5.--HYDROGRAPHS OF THREE MONITOR WELLS.

Chemical Analyses of Water Samples

No significant changes have been detected in the chemical characteristics of water from the shallow and north monitor wells in samples collected through March 22, 1977 (tables 2 and 3). In water samples from the south monitor well, however, bicarbonate concentrations increased from 282 mg/L to 636 mg/L and dissolved organic carbon increased from 9.0 mg/L to 47 mg/L between September 1973 and March 1977 (table 4). These increases at the south monitor have been accompanied by an increase in the dissolved gas concentration and a distinctive odor like that of the injected waste.

Dissolved gas concentration in water samples collected from the three monitor wells are as follows:

Well name	Date	Nitrogen (mg/L)	Oxygen (mg/L)	Methane (mg/L)	Carbon dioxide (mg/L)
South monitor	12/11/73	6.0	--	24	14
	2/19/75	10.3	0.2	50	27
	2/25/76	8.5	0.22	48	42
	8/17/76	12.7	.1	70	53
North monitor	2/18/75	18.6	--	21	15
	2/25/76	21.0	0.33	22	16
Shallow monitor	2/19/75	23.7	0.10	3.0	1.75
	2/25/76	26.0	0.41	3.0	1.30

Denitrifying bacteria were detected in water samples collected from the two deep monitor wells in August 1976. The most probable number of denitrifying bacteria in water samples ranged from 13 colonies per 100 mL (milliliter) at the north monitor to 33 per 100 mL at the south monitor well. Samples collected at the shallow monitor well yielded less than 2 per 100 mL.

Hydraulic and geochemical changes have been measured within the injection zone through the monitoring program since March 1970. Continued monitoring at the injection site will make it possible to observe hydraulic and biochemical effects and geochemical changes in the lead edge of the waste body as it passes through the monitoring sites. These effects and changes will help determine not only the ultimate quantity of waste that can be injected but also the ultimate fate of the waste as it moves within the injection zone.

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)	CARBONATE (CO3) (MG/L) (00445)
NOV , 1967												
01...	--	--	--	--	--	1.9	1.0	--	--	--	--	--
01...	--	--	--	--	--	--	--	270	--	--	--	--
DEC												
17...	--	2000	8.5	--	15	1.8	1.0	--	440	6.3	494	20
17...	--	--	--	--	--	--	--	250	--	--	--	--
JAN , 1969												
20...	--	2080	8.7	--	14	1.8	1.0	200	455	6.3	524	8
MAR , 1970												
12...	--	2000	8.6	--	15	2.4	1.0	250	450	5.6	496	24
12...	--	--	--	--	--	--	--	250	--	--	--	--
JUN												
05...	--	1980	8.8	--	16	1.9	1.0	180	444	5.8	522	38
05...	--	--	--	--	--	--	--	180	--	--	--	--
NOV												
04...	--	2050	8.4	29.5	16	--	1.3	--	450	6.0	538	16
JAN , 1971												
19...	--	2050	8.3	29.7	15	--	1.2	--	433	6.0	542	20
MAR												
15...	--	2050	8.7	30.0	16	1.8	.9	210	426	5.6	468	44
15...	--	--	--	--	--	--	--	210	--	--	--	--
APR												
15...	--	2020	8.6	30.0	14	2.1	1.1	--	--	--	520	24
MAY												
13...	--	2020	8.9	30.0	14	1.9	1.0	240	437	5.2	557	4
13...	--	--	--	--	--	--	--	240	--	--	--	--
JUN												
10...	--	2020	9.0	30.0	--	1.8	1.0	200	--	--	492	32
10...	--	--	--	--	--	--	--	200	--	--	--	--
JUL												
08...	--	2060	8.9	30.0	--	1.8	1.0	--	--	--	510	28
AUG												
08...	0835	--	--	--	--	--	--	--	--	--	--	--
12...	--	2120	8.9	30.0	14	2.0	1.0	--	--	--	503	32
SEP												
16...	--	2060	8.5	30.0	--	1.8	1.0	--	--	--	542	14
16...	1000	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	2060	8.7	30.0	--	1.8	1.0	--	--	--	518	18
14...	1045	--	--	--	--	--	--	--	--	--	--	--
16...	1000	--	--	--	--	--	--	--	--	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	DIS-SOLVED SULFATE (SO4) (MG/L) (00945)	DIS-SOLVED CHLO-RIDE (CL) (MG/L) (00940)	DIS-SOLVED FLUO-RIDE (F) (MG/L) (00950)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L) (70300)	HARD-NESS (CA,MG) (MG/L) (00900)	NON-CAR-BONATE HARD-NESS (MG/L) (00902)	ALKA-LINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITRO-GEN (N) (MG/L) (00610)	TOTAL ORGANIC NITRO-GEN (N) (MG/L) (00605)	TOTAL NITRO-GEN (N) (MG/L) (00600)
NOV , 1967												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
17...	4.4	402	3.4	--	9	0	439	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--	--
JAN , 1969												
20...	.0	400	3.2	1150	8	0	443	.03	.02	.34	.00	.34
MAR , 1970												
12...	.8	370	3.1	1120	11	0	447	.03	.00	1.3	.32	1.6
12...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
05...	.0	352	4.0	1130	9	0	491	.00	.01	1.3	.21	1.5
05...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
04...	4.0	400	2.9	1160	--	0	468	.00	.00	.62	1.0	1.6
JAN , 1971												
19...	4.0	375	3.2	1110	--	0	445	.00	.01	.90	1.0	1.9
MAR												
15...	.0	340	4.5	1070	8	0	457	.00	.00	.90	.18	1.1
15...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
15...	--	--	--	--	--	--	466	.00	.00	1.6	.22	1.8
MAY												
13...	--	380	3.7	1110	9	0	464	.00	.00	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	457	.00	.00	1.5	.24	1.7
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	--	--	--	--	--	--	465	.00	.00	.50	.93	1.4
AUG												
08...	--	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	466	.00	.00	--	--	--
SEP												
16...	--	--	--	--	--	--	468	.00	.00	.70	1.2	1.9
16...	--	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	--	--	--	--	--	455	.00	.00	.90	.80	1.7
14...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED ARSENIC (AS) (UG/L) (01000)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED LEAD (PB) (UG/L) (01049)	DISSOLVED LITHIUM (LI) (UG/L) (01130)	DISSOLVED MANGANESE (MN) (UG/L) (01056)	DISSOLVED ZINC (ZN) (UG/L) (01090)
NOV , 1967												
01...	--	--	--	--	--	--	--	--	--	--	--	--
01...	--	--	--	--	--	--	--	--	--	--	--	--
DEC												
17...	--	50	--	--	--	3000	0	--	--	--	--	0
17...	--	--	--	--	0	--	--	--	--	0	--	--
JAN , 1969												
20...	19	50	--	--	--	2500	--	0	--	--	0	--
MAR , 1970												
12...	4.0	60	.05	.07	--	2000	0	20	10	30	0	0
12...	--	--	--	--	0	--	--	--	--	0	--	--
JUN												
05...	--	40	.05	.06	--	2600	--	--	--	--	--	--
05...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
04...	11	50	.04	.05	--	2400	0	40	--	--	10	30
JAN , 1971												
19...	.0	30	.05	.09	--	2800	0	300	--	--	10	--
MAR												
15...	4.0	50	--	.06	--	3000	0	40	0	--	0	10
15...	--	--	--	--	0	--	--	--	--	--	--	--
APR												
15...	10	--	.05	.06	--	--	--	--	--	--	--	--
MAY												
13...	--	50	.06	.06	--	1000	0	30	--	--	0	10
13...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
10...	--	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
08...	1.0	--	--	--	--	2300	0	30	--	--	--	0
AUG												
08...	1.0	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	0	30	--	--	--	0
SEP												
16...	8.0	--	--	--	--	2400	0	20	--	--	--	0
16...	.0	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	1.0	--	--	--	--	2300	--	--	--	--	--	--
14...	1.0	--	--	--	--	--	--	--	--	--	--	--
16...	8.0	--	--	--	--	--	--	--	--	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
NOV , 1971											
11...	--	2060	8.8	29.0	--	1.8	1.0	--	--	--	498
DEC											
08...	--	1640	8.6	29.7	--	2.0	1.2	--	--	--	518
08...	1400	--	--	--	--	--	--	--	--	--	--
JAN , 1972											
03...	--	2000	8.7	29.5	14	1.8	1.0	--	--	--	516
FEB											
11...	0950	2100	8.7	30.0	--	2.1	1.1	--	--	--	506
11...	0950	--	8.7	30.0	--	--	--	--	--	--	506
MAR											
07...	0930	2040	8.7	30.0	14	1.8	1.0	220	430	5.0	504
07...	0930	--	8.6	30.0	--	--	--	--	--	--	504
APR											
11...	0855	2000	8.7	30.0	--	6.5	1.5	--	440	--	502
11...	0855	--	8.7	30.0	--	--	--	--	--	--	502
MAY											
15...	1745	2060	8.7	30.0	14	2.8	1.0	--	--	--	496
15...	1745	--	8.7	30.0	--	--	--	--	--	--	496
JUN											
13...	1540	2000	8.7	30.0	14	10	2.0	--	--	--	512
13...	1540	--	8.7	30.0	--	--	--	--	--	--	512
JUL											
12...	1620	2000	8.7	30.0	14	10	2.0	--	--	--	510
12...	1620	--	8.6	30.0	--	--	--	--	--	--	510
AUG											
09...	1245	2000	8.7	30.0	14	3.2	1.8	--	--	--	500
09...	1245	--	8.7	30.0	--	--	--	--	--	--	500
SEP											
13...	1525	2000	8.7	30.0	14	3.0	1.8	400	450	7.1	502
13...	1525	--	8.7	30.0	--	--	--	--	--	--	502
OCT											
18...	1350	2000	8.7	30.0	13	7.0	2.1	--	--	--	492
18...	1350	--	8.7	30.0	--	--	--	--	--	--	492
NOV											
15...	1250	2000	8.7	29.5	13	7.0	2.1	--	--	--	494
15...	1250	--	8.7	29.5	--	--	--	--	--	--	494
DEC											
14...	1330	2000	8.7	29.7	13	2.5	1.6	--	--	--	503
14...	1330	--	8.7	29.7	--	--	--	--	--	--	803
JAN , 1973											
17...	1350	2100	8.7	30.0	13	2.4	1.0	--	--	--	500

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED SULFATE (SO4) (MG/L) (00945)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
NOV , 1971											
11...	24	--	--	--	--	--	--	448	.00	.00	1.1
DEC											
08...	12	--	--	--	--	--	--	445	.00	.00	1.2
08...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1972											
03...	11	--	--	--	--	--	--	442	.00	.00	2.0
FEB											
11...	27	--	--	--	--	10	0	460	.00	.00	2.1
11...	27	--	--	--	--	--	--	460	--	--	--
MAR											
07...	22	2.2	370	1.7	1090	9	0	450	.00	.00	1.3
07...	22	--	--	--	--	--	--	450	--	--	--
APR											
11...	23	--	--	--	--	22	0	450	.00	.00	1.3
11...	23	--	--	--	--	--	--	450	--	--	--
MAY											
15...	20	--	--	--	--	11	0	440	.00	.00	.90
15...	20	--	--	--	--	--	--	440	--	--	--
JUN											
13...	20	--	--	--	--	33	0	453	.00	.00	1.2
13...	20	--	--	--	--	--	--	453	--	--	--
JUL											
12...	19	--	--	--	--	33	0	450	.00	.00	1.3
12...	19	--	--	--	--	--	--	450	--	--	--
AUG											
09...	20	--	--	--	--	15	0	443	.00	.00	1.3
09...	20	--	--	--	--	--	--	443	--	--	--
SEP											
13...	20	2.0	380	4.5	1100	8	0	445	.00	.00	1.3
13...	20	--	--	--	--	--	--	445	--	--	--
OCT											
18...	20	--	--	--	--	26	0	437	.00	.00	1.2
18...	20	--	--	--	--	--	--	437	--	--	--
NOV											
15...	23	--	--	--	--	26	0	443	.00	.00	1.3
15...	23	--	--	--	--	--	--	443	--	--	--
DEC											
14...	20	--	--	--	--	13	0	445	.00	.00	1.3
14...	20	--	--	--	--	--	--	692	--	--	--
JAN , 1973											
17...	28	--	--	--	--	10	0	457	.00	.00	1.2

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
NOV , 1971										
11...	.40	1.5	6.0	--	--	--	2300	0	30	20
DEC										
08...	.39	1.6	16	--	--	--	--	--	--	--
08...	--	--	16	--	--	--	--	--	--	--
JAN , 1972										
03...	.54	2.5	16	--	.05	.06	2300	0	20	10
FEB										
11...	.00	2.1	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
MAR										
07...	1.0	2.3	4.0	40	--	--	1800	0	50	0
07...	--	--	--	--	--	--	--	--	--	--
APR										
11...	.14	1.5	20	45	--	--	2300	--	--	0
11...	--	--	--	--	--	--	--	--	--	--
MAY										
15...	.63	1.6	3.0	--	.00	--	2200	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
JUN										
13...	.34	1.5	3.0	--	.06	--	2300	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
JUL										
12...	.46	1.8	3.0	--	--	--	2300	--	--	--
12...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	.15	1.5	5.0	--	.00	--	2500	--	--	--
09...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	.36	1.7	16	40	.05	.05	2400	0	40	60
13...	--	--	--	--	--	--	--	--	--	--
OCT										
18...	.27	1.5	29	--	--	--	2400	--	--	--
18...	--	--	--	--	--	--	--	--	--	--
NOV										
15...	.15	1.5	6.0	--	--	--	2400	--	--	--
15...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	.15	1.5	--	--	--	--	2300	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
JAN , 1973										
17...	.35	1.6	--	--	--	--	2200	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
JAN , 1973											
17...	1350	--	8.7	30.0	--	--	--	--	--	--	500
FEB											
14...	1300	2100	8.7	29.5	14	2.3	1.1	240	--	--	504
14...	1300	--	8.7	29.5	--	--	--	--	--	--	504
MAR											
14...	1300	2100	8.7	29.5	14	2.5	1.1	260	460	5.3	496
14...	1300	--	8.7	29.5	--	--	--	--	--	--	496
APR											
17...	1315	2000	8.7	29.5	14	1.6	1.0	--	--	--	508
17...	1315	--	8.7	29.5	--	--	--	--	--	--	508
MAY											
16...	1615	2030	8.7	30.0	15	2.7	1.5	--	--	--	511
16...	1615	--	8.7	30.0	--	--	--	--	--	--	511
JUN											
12...	1340	1950	--	29.5	--	2.5	1.5	--	--	--	--
12...	1340	--	8.7	29.5	--	--	--	--	--	--	530
12...	1355	1950	--	29.5	--	1.9	1.1	--	--	--	--
12...	1355	--	8.7	29.5	--	--	--	--	--	--	517
12...	1410	1950	--	30.0	--	2.1	1.1	--	--	--	--
12...	1410	--	8.7	30.0	--	--	--	--	--	--	508
12...	1415	2040	8.7	30.0	15	2.9	1.7	--	--	--	508
12...	1415	--	8.7	30.0	--	--	--	--	--	--	508
JUL											
18...	1300	2000	8.8	29.5	22	3.0	1.6	--	--	--	513
18...	1300	--	8.8	29.5	--	--	--	--	--	--	513
AUG											
22...	1345	2000	8.7	29.5	15	3.0	1.2	--	--	--	493
SEP											
12...	1645	2000	8.7	29.5	14	2.4	1.0	280	460	5.7	509
12...	1645	--	8.7	29.5	--	--	--	--	--	--	509
OCT											
10...	1310	2040	8.7	29.5	15	3.6	.8	--	--	--	500
NOV											
14...	1430	2010	8.7	29.5	--	3.5	1.2	--	--	--	502
DEC											
11...	1000	1970	8.8	30.0	--	4.7	1.3	--	--	--	506
JAN , 1974											
16...	1340	2000	8.7	29.5	--	2.4	1.0	--	--	--	508
FEB											
19...	1325	2020	8.7	29.5	--	2.6	.9	--	--	--	508

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED SULFATE (SO4) (MG/L) (00945)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
JAN , 1973											
17...	28	--	--	--	--	--	--	457	--	--	--
FEB											
14...	23	--	--	--	--	11	0	452	.00	.00	1.1
14...	23	--	--	--	--	--	--	452	--	--	--
MAR											
14...	20	1.6	380	3.6	1100	11	0	440	.00	.00	1.3
14...	20	--	--	--	--	--	--	440	--	--	--
APR											
17...	13	--	--	--	--	8	0	438	.00	.00	1.2
17...	13	--	--	--	--	--	--	438	--	--	--
MAY											
16...	13	--	360	--	--	13	0	441	.00	.00	1.4
16...	13	--	--	--	--	--	--	441	--	--	--
JUN											
12...	--	--	370	--	--	12	0	--	--	--	1.2
12...	18	--	--	--	--	--	--	465	--	--	--
12...	--	--	370	--	--	9	0	--	--	--	1.2
12...	22	--	--	--	--	--	--	461	--	--	--
12...	--	--	370	--	--	10	0	--	--	--	1.2
12...	22	--	--	--	--	--	--	453	--	--	--
12...	22	--	320	--	--	14	0	453	.00	.00	1.3
12...	22	--	--	--	--	--	--	453	--	--	--
JUL											
18...	21	--	380	--	--	14	0	456	.00	.00	1.3
18...	21	--	--	--	--	--	--	456	--	--	--
AUG											
22...	17	--	410	--	--	--	--	433	.00	.01	1.2
SEP											
12...	20	.8	380	3.5	1100	10	0	451	.00	.00	1.3
12...	20	--	--	--	--	--	--	451	--	--	--
OCT											
10...	23	--	370	--	--	12	0	448	.00	.00	1.3
NOV											
14...	23	--	380	--	--	14	0	450	.00	.01	1.2
DEC											
11...	23	--	380	--	--	17	0	453	.00	.01	1.2
JAN , 1974											
16...	22	--	360	--	--	10	0	453	.00	.01	1.3
FEB											
19...	22	--	370	--	--	10	0	453	.00	.00	1.3

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	DISSOLVED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
JAN , 1973											
17...	--	--	--	--	--	--	--	--	--	--	--
FEB											
14...	.25	1.4	26	--	--	--	--	2300	--	--	--
14...	--	--	--	--	--	--	--	--	--	--	--
MAR											
14...	.36	1.7	32	--	45	--	--	2200	0	30	10
14...	--	--	--	--	--	--	--	--	--	--	--
APR											
17...	.48	1.7	7.5	7.0	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--
MAY											
16...	.16	1.6	5.5	3.0	--	--	--	1700	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--
JUN											
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
12...	.28	1.6	5.0	9.5	--	.05	.06	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
JUL											
18...	.46	1.8	6.0	5.5	--	.06	.06	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
22...	.28	1.5	--	--	--	.05	.05	--	--	--	--
SEP											
12...	.45	1.7	--	6.0	45	.06	.08	--	10	10	0
12...	--	--	--	--	--	--	--	--	--	--	--
OCT											
10...	.07	1.3	--	5.5	--	.06	.06	--	--	--	--
NOV											
14...	.55	1.7	--	6.0	--	.07	.07	--	--	--	--
DEC											
11...	.15	1.3	--	4.0	--	.06	.06	--	--	--	--
JAN , 1974											
16...	.46	1.7	--	5.0	--	.05	.06	--	--	--	--
FEB											
19...	.52	1.8	--	--	--	.06	.07	--	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
MAR , 1974											
18...	1355	2000	8.7	29.5	15	2.0	.9	190	450	7.2	511
APR											
16...	1330	1990	8.6	29.5	--	1.7	1.0	--	--	--	516
MAY											
21...	1530	2010	8.7	29.5	--	3.3	1.3	--	--	--	506
JUN											
19...	1440	2020	8.7	29.5	--	4.2	1.1	--	--	--	513
JUL											
29...	1315	1980	8.7	30.0	--	2.8	.8	--	--	--	521
AUG											
15...	1310	1930	8.7	29.5	--	1.6	1.1	--	--	--	504
SEP											
18...	1335	1970	8.6	29.5	15	5.1	.9	240	450	6.1	522
OCT											
14...	1330	1920	8.7	29.5	--	2.8	1.0	--	--	--	506
NOV											
19...	1410	1940	8.6	29.5	--	2.3	1.2	--	--	--	514
DEC											
18...	0920	2060	8.6	29.5	--	1.8	1.0	300	--	--	494
JAN , 1975											
15...	1055	2100	8.7	29.5	--	--	.9	--	--	--	480
FEB											
19...	1440	2050	8.6	29.5	--	3.0	1.2	--	--	--	509
MAR											
12...	1600	2100	8.7	29.5	15	2.1	1.3	120	440	5.6	526
APR											
16...	1410	2100	8.6	29.5	--	2.3	1.0	--	--	--	546
MAY											
13...	1055	2100	8.6	29.5	--	2.7	1.0	--	--	--	555
JUN											
18...	1320	2200	8.6	29.5	--	1.9	1.0	--	--	--	555
JUL											
17...	1205	2050	8.6	29.5	15	2.5	1.0	--	--	--	592
AUG											
19...	1345	2100	8.6	29.5	--	1.7	.9	--	--	--	559
SEP											
15...	1625	2200	8.7	30.0	14	2.9	1.3	170	420	6.2	502
OCT											
14...	1555	2150	8.7	30.0	--	1.9	1.0	--	--	--	502
NOV											
17...	1600	1900	8.6	30.0	--	2.1	1.0	--	--	--	502

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED SULFATE (SO4) (MG/L) (00945)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
MAR , 1974											
18...	21	1.9	360	--	1130	9	0	454	.00	.01	1.2
APR											
16...	18	--	370	--	--	8	0	453	.00	.00	.92
MAY											
21...	19	--	380	--	--	14	0	447	.00	.01	1.2
JUN											
19...	20	--	380	--	--	15	0	454	.00	.01	1.2
JUL											
29...	20	--	390	--	--	10	0	461	.00	.01	1.2
AUG											
15...	20	--	380	--	--	9	0	447	.00	.00	1.2
SEP											
18...	19	2.6	380	5.0	1130	17	0	460	.00	.00	1.2
OCT											
14...	19	--	390	--	--	11	0	447	.00	.01	1.2
NOV											
19...	19	--	350	--	--	11	0	453	.00	.01	1.2
DEC											
18...	24	--	380	--	--	9	0	445	.00	.01	1.2
JAN , 1975											
15...	15	--	360	--	--	--	--	420	.00	.01	1.3
FEB											
19...	20	--	370	--	--	12	0	451	.00	.00	1.2
MAR											
12...	19	--	360	3.1	1090	11	0	463	.00	.01	1.2
APR											
16...	19	--	330	--	--	10	0	479	.00	.01	1.2
MAY											
13...	16	--	380	--	--	11	0	482	.00	.01	1.1
JUN											
18...	16	--	360	--	--	9	0	482	.00	.02	1.3
JUL											
17...	17	--	360	3.9	--	10	0	514	.00	.00	1.2
AUG											
19...	14	--	340	4.0	--	8	0	482	.00	.00	1.3
SEP											
15...	18	--	350	3.0	1110	13	0	442	.00	.01	1.2
OCT											
14...	18	--	360	--	--	9	0	442	.00	.00	1.2
NOV											
17...	18	--	370	--	--	9	0	442	.01	.02	1.2

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	DISSOLVED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
MAR , 1974										
18...	.25	1.4	2.0	40	.05	.05	4000	1	50	30
APR										
16...	.47	1.3	8.0	--	.05	.05	--	--	--	--
MAY										
21...	.30	1.5	5.0	--	.07	.07	--	--	--	--
JUN										
19...	.20	1.4	3.0	--	.06	.06	--	--	--	--
JUL										
29...	.20	1.4	2.0	--	.07	.08	--	--	--	--
AUG										
15...	.20	1.4	2.0	--	.06	.07	--	--	--	--
SEP										
18...	.30	1.5	1.0	70	.07	.10	2600	3	30	30
OCT										
14...	.28	1.4	.0	--	.06	.06	--	--	--	--
NOV										
19...	.27	1.4	4.0	--	.07	.07	--	--	--	--
DEC										
18...	.21	1.4	4.0	--	.06	.06	--	--	--	--
JAN , 1975										
15...	.23	1.5	3.0	--	.06	.06	--	--	--	--
FEB										
19...	.29	1.4	2.0	--	.06	.06	--	--	--	--
MAR										
12...	.30	1.5	3.0	50	.06	.07	2800	0	70	0
APR										
16...	.40	1.6	3.0	--	.06	.07	--	--	--	--
MAY										
13...	.34	1.4	3.0	--	.06	.06	--	--	--	--
JUN										
18...	.37	1.6	2.0	--	.06	.07	--	--	--	--
JUL										
17...	.30	1.5	3.0	50	.06	.06	--	--	--	--
AUG										
19...	.21	1.5	2.0	--	.06	.06	--	--	--	--
SEP										
15...	.31	1.5	2.0	40	.06	.06	2000	0	50	8
OCT										
14...	.20	1.2	2.0	--	.07	.07	--	--	--	--
NOV										
17...	.24	1.4	3.0	--	.07	.07	--	--	--	--

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
DEC , 1975											
16...	1240	1920	8.6	30.0	--	2.3	1.1	--	--	--	508
JAN , 1976											
22...	1245	2050	8.6	30.0	--	2.0	1.0	--	--	--	510
FEB											
25...	1450	2100	8.6	30.0	--	2.1	1.0	--	--	--	511
MAR											
19...	1640	2050	8.6	30.0	14	2.2	.9	200	442	5.7	513
APR											
26...	1600	2050	8.7	30.0	--	2.0	1.0	--	--	--	495
MAY											
20...	1100	2050	8.6	30.0	--	2.3	1.0	--	--	--	514
JUN											
23...	1250	2030	8.7	30.0	--	2.3	1.0	--	--	--	516
JUL											
19...	1650	2100	8.6	30.0	--	2.0	1.1	--	--	--	517
AUG											
17...	1440	2010	8.7	30.0	--	2.2	1.0	--	--	--	514
SEP											
14...	1320	2050	8.6	30.0	17	2.1	1.2	220	440	6.5	514
OCT											
20...	1345	2000	8.6	30.0	--	1.7	1.1	--	--	--	519
NOV											
17...	1400	2000	8.7	30.0	--	2.0	1.0	--	--	--	513
DEC											
16...	1230	2000	8.7	30.0	--	1.6	1.1	--	--	--	507
JAN , 1977											
20...	1100	2050	8.4	30.0	--	1.9	1.1	--	--	--	523
FEB											
24...	1330	2000	8.8	30.5	--	2.0	1.1	--	--	--	498
MAR											
22...	1640	2000	8.5	30.0	15	1.9	1.0	260	440	5.8	508

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)
DEC , 1975											
16...	15	380	--	--	10	0	442	.02	.03	1.3	.20
JAN , 1976											
22...	16	370	--	--	9	0	445	.03	.01	1.3	.19
FEB											
25...	18	370	--	--	9	0	449	.00	.01	1.3	.14
MAR											
19...	17	340	3.6	1120	9	0	449	.00	.00	1.3	.20
APR											
26...	19	400	--	--	9	0	438	.00	.01	1.2	.27
MAY											
20...	20	370	--	--	10	0	455	.00	.01	1.3	.18
JUN											
23...	19	380	--	--	10	0	455	.00	.01	1.3	.17
JUL											
19...	17	370	--	--	10	0	452	.00	.01	1.2	.37
AUG											
17...	19	370	--	--	10	0	453	.00	.00	1.4	.07
SEP											
14...	19	380	3.5	1130	10	0	453	.00	.01	1.3	.07
OCT											
20...	17	370	--	--	9	0	454	.00	.01	1.3	.17
NOV											
17...	19	380	--	--	9	0	452	.00	.00	1.3	.17
DEC											
16...	19	370	--	--	9	0	447	.01	.00	1.3	.17
JAN , 1977											
20...	3	380	--	--	9	0	434	.01	.00	1.3	.17
FEB											
24...	23	380	--	--	10	0	447	.00	.01	1.3	.17
MAR											
22...	12	370	3.3	1120	9	0	437	.00	.01	1.3	.07

TABLE 2.--Chemical analyses of water from the shallow monitor well, November 1967 - March 1977--Continued

DATE	TOTAL NITRO-GEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L) (70507)	TOTAL PHOS-PHORUS (P) (MG/L) (00665)	DIS-SOLVED BORON (B) (UG/L) (01020)	DIS-SOLVED COPPER (CU) (UG/L) (01040)	DIS-SOLVED IRON (FE) (UG/L) (01046)	DIS-SOLVED ZINC (ZN) (UG/L) (01090)	DENSITY (GM/ML AT 20 C) (71820)
DEC • 1975											
16...	1.5	--	3.0	--	.07	.07	--	--	--	--	--
JAN • 1976											
22...	1.5	--	3.0	--	.06	.06	--	--	--	--	--
FEB											
25...	1.4	--	3.0	--	.06	.07	--	--	--	--	--
MAR											
19...	1.5	--	5.0	60	.06	.07	2100	0	0	0	--
APR											
26...	1.4	--	1.0	--	.07	.07	--	--	--	--	--
MAY											
20...	1.4	--	2.0	--	.06	.06	--	--	--	--	--
JUN											
23...	1.4	--	3.0	--	.07	.07	--	--	--	--	--
JUL											
19...	1.5	--	3.0	--	.06	.07	--	--	--	--	--
AUG											
17...	1.4	--	3.0	--	.07	.07	--	--	--	--	--
SEP											
14...	1.3	--	3.0	40	.07	.08	2800	1	40	10	--
OCT											
20...	1.4	--	2.0	--	.06	.06	--	--	--	--	--
NOV											
17...	1.4	1.0	--	--	.06	.09	--	--	--	--	--
DEC											
16...	1.4	--	1.0	--	.06	.06	--	--	--	--	--
JAN • 1977											
20...	1.4	--	3.0	--	.07	.07	--	--	--	--	--
FEB											
24...	1.4	--	5.0	--	.05	.05	--	--	--	--	--
MAR											
22...	1.3	--	3.0	45	.05	.05	2600	0	30	0	0.999

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)	CARBONATE (CO3) (MG/L) (00445)
FEB , 1970												
02...	--	17000	6.9	34.4	--	101	95	--	3290	50	328	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
03...	--	19900	--	35.3	18	149	126	22000	4000	58	292	0
03...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	--	20800	7.4	34.8	18	159	132	19000	4280	55	302	0
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	--	16800	--	34.6	18	102	85	12000	3520	57	316	0
NOV												
04...	--	17300	7.2	34.3	18	105	96	14000	3630	61	320	0
JAN , 1971												
18...	--	17500	7.4	34.4	17	108	98	15000	3410	62	315	0
MAR												
16...	--	17300	7.3	34.0	18	106	96	12000	3490	54	318	0
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	--	17200	7.5	34.5	15	85	93	--	--	--	320	0
MAY												
13...	--	17200	7.5	34.5	18	100	89	14000	3370	52	316	0
JUN												
09...	--	17300	7.6	34.5	--	104	84	14000	--	--	322	0
09...	--	--	--	--	--	--	--	140	--	--	--	--
JUL												
07...	--	17400	7.5	34.5	--	94	100	--	--	--	319	0
07...	1435	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	23500	7.5	34.5	16	82	170	--	--	--	326	0
SEP												
15...	--	17500	7.2	34.5	--	79	98	--	--	--	328	0
15...	1710	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	17400	7.5	34.5	--	97	94	--	--	--	330	0
15...	1710	--	--	--	--	--	--	--	--	--	--	--
NOV												
12...	--	17500	7.5	33.5	--	103	96	--	--	--	318	0
DEC												
09...	--	16600	7.5	34.6	--	134	110	--	--	--	304	0
09...	1230	--	--	--	--	--	--	--	--	--	--	--
JAN , 1972												
04...	--	20200	7.4	34.5	16	150	132	--	--	--	290	0

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	DIS-SOLVED SULFATE (SO4) (MG/L) (00945)	DIS-SOLVED CHLO-RIDE (CL) (MG/L) (00940)	DIS-SOLVED FLUO-RIDE (F) (MG/L) (00950)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L) (70300)	HARD-NESS (CA,MG) (MG/L) (00900)	NON-CAR-BONATE HARD-NESS (MG/L) (00902)	ALKA-LINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITRO-GEN (N) (MG/L) (00610)	TOTAL ORGANIC NITRO-GEN (N) (MG/L) (00605)	TOTAL NITRO-GEN (N) (MG/L) (00600)
FEB , 1970												
02...	--	5700	--	--	659	390	269	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	--	--	--
03...	.0	6700	3.1	11200	916	676	239	.00	.00	7.9	.94	8.8
03...	--	--	--	--	--	--	--	--	--	--	--	--
MAR												
12...	.0	7100	3.1	11900	962	726	248	.00	.00	7.0	1.5	8.5
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
02...	.0	5750	3.4	9700	618	359	259	.00	.01	4.8	--	--
NOV												
04...	--	5700	2.5	9810	674	418	262	.00	.00	5.3	4.9	10
JAN , 1971												
18...	--	5800	3.1	9710	690	431	258	.00	.00	5.4	3.8	9.2
MAR												
16...	.0	5750	3.4	9690	674	413	261	.00	.00	5.9	.44	6.3
16...	--	--	--	--	--	--	--	--	--	--	--	--
APR												
16...	--	--	--	--	--	--	262	.00	.00	7.5	.93	8.4
MAY												
13...	--	5800	3.2	9590	632	399	259	.00	.00	--	--	--
JUN												
09...	--	--	--	--	--	--	264	.00	.00	7.5	.43	7.9
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	--	--	--	--	--	--	262	.00	.00	7.8	1.6	9.4
07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	267	.00	.00	--	--	--
SEP												
15...	--	--	--	--	--	--	269	.00	.00	8.4	1.6	10
15...	--	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	--	--	--	--	--	271	.00	.00	11	.00	11
15...	--	--	--	--	--	--	--	--	--	--	--	--
NOV												
12...	--	--	--	--	--	--	261	.00	.00	8.5	.00	8.5
DEC												
09...	--	--	--	--	--	--	249	.00	.00	10	3.9	14
09...	--	--	--	--	--	--	--	--	--	--	--	--
JAN , 1972												
04...	--	--	--	--	--	--	238	.00	.00	16	3.1	19

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED ARSENIC (AS) (UG/L) (01000)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED LEAD (PB) (UG/L) (01049)	DISSOLVED LITHIUM (LI) (UG/L) (01130)	DISSOLVED MANGANESE (MN) (UG/L) (01056)	DISSOLVED ZINC (ZN) (UG/L) (01090)
FEB , 1970												
02...	--	--	--	--	--	--	--	--	--	--	--	--
02...	--	--	--	--	--	--	--	--	--	0	--	--
03...	1.0	10	.00	.01	--	5400	--	--	--	200	--	--
03...	--	--	--	--	--	--	--	--	--	0	--	--
MAR												
12...	2.0	0	.00	.00	--	4500	20	1600	0	280	10	20
12...	--	--	--	--	10	--	--	--	--	0	--	--
SEP												
02...	--	5	.00	--	--	4400	--	--	--	--	--	--
NOV												
04...	4.0	0	.00	.02	--	4600	0	940	--	--	20	30
JAN , 1971												
18...	2.0	5	.00	--	--	4700	0	1000	--	--	20	--
MAR												
16...	2.0	0	.00	.02	--	5200	0	1200	0	--	10	30
16...	--	--	--	--	0	--	--	--	--	--	--	--
APR												
16...	1.0	--	.00	.01	--	--	--	--	--	--	--	--
MAY												
13...	--	0	--	.01	--	5000	0	470	--	--	0	60
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	1.0	--	--	--	--	4300	0	760	--	--	--	10
07...	1.0	--	--	--	--	--	--	--	--	--	--	--
AUG												
12...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
15...	5.0	--	--	--	--	4100	0	840	--	--	--	10
15...	20	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	--	--	--	--	3800	--	--	--	--	--	--
15...	5.0	--	--	--	--	--	--	--	--	--	--	--
NOV												
12...	2.0	--	--	--	--	4600	0	1300	--	--	--	20
DEC												
09...	1.0	--	--	--	--	--	--	--	--	--	--	--
09...	1.0	--	--	--	--	--	--	--	--	--	--	--
JAN , 1972												
04...	10	--	.00	.00	--	4400	0	1100	--	--	--	20

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
FEB , 1972											
11...	1310	21400	7.5	35.0	--	152	143	--	--	--	286
11...	1310	--	7.4	35.0	--	--	--	--	--	--	286
MAR											
07...	1420	--	--	--	--	--	--	--	--	--	--
07...	1430	--	--	--	--	--	--	--	--	--	--
07...	1440	--	--	--	--	--	--	--	--	--	--
07...	1450	--	--	--	--	--	--	--	--	--	--
07...	1500	--	--	--	--	--	--	--	--	--	--
07...	1510	22000	7.5	35.0	17	170	140	16000	4400	62	284
07...	1510	--	7.5	35.0	--	--	--	--	--	--	284
APR											
11...	1425	22000	7.6	35.0	--	150	150	18000	--	--	283
11...	1425	--	7.6	35.0	--	--	--	--	--	--	283
MAY											
16...	1412	22500	7.6	35.0	16	157	150	--	--	--	279
16...	1412	--	7.6	35.0	--	--	--	--	--	--	279
JUN											
14...	1012	22000	7.5	35.0	16	200	150	--	--	--	277
14...	1012	--	7.5	35.0	--	--	--	--	--	--	277
JUL											
13...	1040	22000	7.5	35.0	16	200	150	--	--	--	274
13...	1040	--	7.5	35.0	--	--	--	--	--	--	274
AUG											
10...	1020	23000	7.5	35.0	16	210	180	--	--	--	272
10...	1020	--	7.5	35.0	--	--	--	--	--	--	272
SEP											
14...	1330	22000	7.5	35.0	16	200	170	25000	5000	110	272
14...	1330	--	7.5	35.0	--	--	--	--	--	--	272
OCT											
19...	1000	23000	7.5	35.0	15	210	180	--	--	--	269
19...	1000	--	7.5	35.0	--	--	--	--	--	--	269
NOV											
16...	1000	23000	7.6	35.0	16	210	180	--	--	--	272
16...	1000	--	7.5	35.0	--	--	--	--	--	--	272
DEC											
14...	1000	23000	7.6	35.0	16	200	160	--	--	--	270
14...	1000	--	7.5	35.0	--	--	--	--	--	--	270
JAN , 1973											
18...	0935	24000	7.6	35.0	15	200	160	--	--	--	267
18...	0935	--	7.5	35.0	--	--	--	--	--	--	267

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED SULFATE (SO4) (MG/L) (00945)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
FEB , 1972											
11...	0	--	--	--	--	970	--	235	.00	.00	16
11...	0	--	--	--	--	--	--	235	--	--	--
MAR											
07...	--	--	--	--	--	--	--	--	--	--	9.6
07...	--	--	--	--	--	--	--	--	--	--	9.4
07...	--	--	--	--	--	--	--	--	--	--	9.4
07...	--	--	--	--	--	--	--	--	--	--	10
07...	--	--	--	--	--	--	--	--	--	--	10
07...	0	.7	7500	3.1	12400	1020	788	233	.00	.01	9.0
07...	0	--	--	--	--	--	--	233	--	--	--
APR											
11...	0	--	--	--	--	990	--	232	.00	.00	7.6
11...	0	--	--	--	--	--	--	232	--	--	--
MAY											
16...	0	--	--	--	--	1000	--	229	.00	.00	6.4
16...	--	--	--	--	--	--	--	229	--	--	--
JUN											
14...	0	--	--	--	--	1100	--	227	.00	.00	9.0
14...	0	--	--	--	--	--	--	227	--	--	--
JUL											
13...	0	--	--	--	--	1100	--	225	.00	.00	9.0
13...	0	--	--	--	--	--	--	225	--	--	--
AUG											
10...	0	--	--	--	--	1300	--	223	.00	.00	10
10...	0	--	--	--	--	--	--	223	--	--	--
SEP											
14...	0	.0	7900	3.6	14000	1230	1000	223	.00	.00	8.8
14...	0	--	--	--	--	--	--	223	--	--	--
OCT											
19...	0	--	--	--	--	1300	--	221	.00	.00	9.2
19...	0	--	--	--	--	--	--	221	--	--	--
NOV											
16...	0	--	--	--	--	1300	--	223	.00	.00	8.7
16...	0	--	--	--	--	--	--	223	--	--	--
DEC											
14...	0	--	--	--	--	1200	--	221	.00	.00	9.0
14...	--	--	--	--	--	--	--	221	--	--	--
JAN , 1973											
18...	0	--	--	--	--	1200	--	219	.00	.00	9.2
18...	--	--	--	--	--	--	--	219	--	--	--

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
FEB , 1972										
11...	.00	16	--	--	--	--	--	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
MAR										
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	--	--	--	--	--	--	--	--	--	--
07...	1.0	10	4.0	5	--	--	4600	20	1600	10
07...	--	--	--	--	--	--	--	--	--	--
APR										
11...	.34	8.0	.0	0	--	--	4300	--	--	--
11...	--	--	--	--	--	--	--	--	--	--
MAY										
16...	1.8	8.2	5.0	--	.00	--	4300	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
JUN										
14...	.14	9.1	12	--	.02	--	4600	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
JUL										
13...	5.0	14	20	--	--	--	4600	--	--	--
13...	--	--	--	--	--	--	--	--	--	--
AUG										
10...	.00	10	6.0	--	--	--	5100	--	--	--
10...	--	--	--	--	--	--	--	--	--	--
SEP										
14...	.00	8.8	10	5	.00	.01	4800	10	300	40
14...	--	--	--	--	--	--	--	--	--	--
OCT										
19...	.37	9.6	9.0	--	--	--	5200	--	--	--
19...	--	--	--	--	--	--	--	--	--	--
NOV										
16...	.00	8.7	8.0	--	--	--	5200	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
DEC										
14...	.45	9.4	--	--	--	--	5200	--	--	--
14...	--	--	--	--	--	--	--	--	--	--
JAN , 1973										
18...	.00	9.2	3.0	--	--	--	4700	--	--	--
18...	--	--	--	--	--	--	--	--	--	--

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)
FEB , 1973										
15...	1000	24000	7.6	34.8	16	240	180	27000	--	--
15...	1000	--	7.6	34.8	--	--	--	--	--	--
MAR										
15...	0950	23000	7.6	35.0	16	300	250	36000	5000	110
15...	0950	--	7.6	35.0	--	--	--	--	--	--
APR										
18...	1430	24000	7.6	34.5	15	240	190	--	--	--
18...	1430	--	7.6	34.5	--	--	--	--	--	--
MAY										
17...	1010	23400	7.6	34.5	17	220	170	--	--	--
17...	1010	--	7.6	34.5	--	--	--	--	--	--
JUN										
13...	1630	23700	7.5	35.0	18	240	180	--	--	--
13...	1630	--	7.5	35.0	--	--	--	--	--	--
JUL										
19...	1000	22500	7.5	35.0	--	200	160	--	--	--
19...	1000	--	7.5	35.0	--	--	--	--	--	--
AUG										
23...	1030	18400	7.4	35.0	17	125	105	--	--	--
SEP										
13...	1050	23900	7.6	35.0	17	200	160	21000	4800	78
13...	1050	--	7.6	35.0	--	--	--	--	--	--
OCT										
11...	0935	23600	7.4	35.0	18	160	130	--	--	--
NOV										
15...	0950	23800	7.4	35.0	--	240	220	--	--	--
DEC										
12...	1200	23800	7.4	35.2	18	220	220	20000	5800	170
JAN , 1974										
17...	1110	18200	7.4	35.0	--	100	95	--	--	--
FEB										
20...	1020	24300	7.6	35.0	--	210	190	--	--	--
MAR										
19...	0930	24100	7.5	34.5	18	200	170	21000	5400	120
APR										
17...	0950	22200	7.5	35.0	--	180	155	--	--	--
MAY										
22...	1010	17700	7.5	35.0	--	100	95	--	--	--
JUN										
20...	1050	23900	7.5	34.5	--	200	170	--	--	--

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	BICARBONATE (HCO3) (MG/L) (00440)	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)
FEB , 1973									
15...	268	0	--	--	--	1400	--	220	.00
15...	268	--	--	--	--	--	--	220	--
MAR									
15...	266	0	8100	3.0	14100	1800	1600	218	.00
15...	266	0	--	--	--	--	--	218	--
APR									
18...	266	0	--	--	--	1400	--	218	.00
18...	266	0	--	--	--	--	--	218	--
MAY									
17...	267	0	8100	--	--	1200	--	219	.00
17...	267	0	--	--	--	--	--	219	--
JUN									
13...	264	0	8300	--	--	1300	--	217	.00
13...	264	0	--	--	--	--	--	217	--
JUL									
19...	268	0	8000	--	--	1200	--	220	.00
19...	268	0	--	--	--	--	--	220	--
AUG									
23...	270	0	6300	--	--	740	520	221	.00
SEP									
13...	272	0	8200	3.3	13500	1200	960	223	.00
13...	272	0	--	--	--	--	--	223	--
OCT									
11...	272	0	8300	--	--	940	720	223	.00
NOV									
15...	271	0	8400	--	--	1500	1300	222	.00
DEC									
12...	261	0	8900	2.7	14500	1500	--	214	.00
JAN , 1974									
17...	266	0	6300	--	--	640	420	218	.00
FEB									
20...	266	0	8400	--	--	1300	--	218	.00
MAR									
19...	265	0	8700	--	14800	1200	1000	217	.00
APR									
17...	272	0	8200	--	--	1100	--	223	.00
MAY									
22...	271	0	6100	--	--	640	420	222	.01
JUN									
20...	272	0	8700	--	--	1200	980	223	.01

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITRO-GEN (N) (MG/L) (00610)	TOTAL ORGANIC NITRO-GEN (N) (MG/L) (00605)	TOTAL NITRO-GEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L) (70507)	TOTAL PHOS-PHORUS (P) (MG/L) (00665)
FEB , 1973									
15...	.00	9.0	.00	9.0	12	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
MAR									
15...	.00	7.9	.36	8.3	10	--	5	--	--
15...	--	--	--	--	--	--	--	--	--
APR									
18...	.00	9.1	.00	9.1	6.0	6.5	--	--	--
18...	--	--	--	--	--	--	--	--	--
MAY									
17...	.00	9.8	.00	9.8	3.5	2.5	--	--	--
17...	--	--	--	--	--	--	--	--	--
JUN									
13...	.00	7.8	1.2	9.0	2.0	--	--	.00	.01
13...	--	--	--	--	--	--	--	--	--
JUL									
19...	.00	8.8	.00	8.8	5.0	5.0	--	--	--
19...	--	--	--	--	--	--	--	--	--
AUG									
23...	.00	7.4	.48	7.9	--	--	--	.00	.00
SEP									
13...	.00	9.7	.45	10	--	5.0	20	.00	.01
13...	--	--	--	--	--	--	--	--	--
OCT									
11...	.00	9.0	.17	9.1	--	2.5	--	.00	.02
NOV									
15...	.00	9.6	1.2	11	--	5.0	--	.01	.05
DEC									
12...	.01	9.5	.02	9.5	--	--	2	.02	.03
JAN , 1974									
17...	.01	7.4	.16	7.5	--	2.0	--	.00	.03
FEB									
20...	.00	10	1.2	11	--	8.0	--	.00	.02
MAR									
19...	.01	10	.45	10	--	.0	50	.01	.02
APR									
17...	.00	9.4	.79	10	--	3.0	--	.01	.01
MAY									
22...	.00	9.6	.00	9.6	--	1.0	--	.01	.02
JUN									
20...	.00	7.1	.00	7.1	--	1.0	--	.01	.02

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	DIS-SOLVED ARSENIC (AS) (UG/L) (01000)	DIS-SOLVED BORON (B) (UG/L) (01020)	DIS-SOLVED CHRO-MIUM (CR) (UG/L) (01030)	DIS-SOLVED COPPER (CU) (UG/L) (01040)	DIS-SOLVED IRON (FE) (UG/L) (01046)	DIS-SOLVED LEAD (PB) (UG/L) (01049)	DIS-SOLVED LITHIUM (LI) (UG/L) (01130)	DIS-SOLVED MAN-GANESE (MN) (UG/L) (01056)	DIS-SOLVED ZINC (ZN) (UG/L) (01090)
FEB , 1973									
15...	--	7000	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--
MAR									
15...	--	7000	--	40	620	--	--	--	20
15...	--	--	--	--	--	--	--	--	--
APR									
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
MAY									
17...	--	3000	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
JUN									
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
JUL									
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
AUG									
23...	--	--	--	--	--	--	--	--	--
SEP									
13...	--	--	--	20	1600	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
OCT									
11...	--	--	--	--	--	--	--	--	--
NOV									
15...	--	--	--	--	--	--	--	--	--
DEC									
12...	0	--	0	0	1800	0	280	29	10
JAN , 1974									
17...	--	--	--	--	--	--	--	--	--
FEB									
20...	--	--	--	--	--	--	--	--	--
MAR									
19...	--	5500	--	2	1600	--	--	--	30
APR									
17...	--	--	--	--	--	--	--	--	--
MAY									
22...	--	--	--	--	--	--	--	--	--
JUN									
20...	--	--	--	--	--	--	--	--	--

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
JUL , 1974											
30...	0920	17300	7.4	35.0	--	110	98	--	--	--	269
AUG											
16...	0955	23700	--	34.5	--	160	150	--	--	--	--
16...	1010	17200	7.5	35.0	--	100	97	--	--	--	268
16...	1100	21200	--	34.0	--	170	140	--	--	--	--
SEP											
19...	0940	23100	7.4	35.0	18	170	180	23000	5000	95	268
OCT											
15...	1005	22400	7.4	35.5	--	190	170	--	--	--	269
NOV											
20...	1050	16600	7.4	34.5	--	100	83	--	--	--	270
DEC											
18...	1340	24100	7.4	35.0	--	231	160	23000	--	--	270
JAN , 1975											
16...	0940	26000	7.6	35.0	--	210	190	--	--	--	257
FEB											
18...	1542	25600	7.4	34.0	--	220	180	--	--	--	254
18...	1552	25800	7.6	35.5	--	200	190	--	--	--	254
MAR											
12...	1315	25300	7.4	34.0	18	230	180	20000	5000	100	260
APR											
17...	1450	25800	7.5	34.5	--	230	180	--	--	--	260
MAY											
14...	1645	24800	7.5	34.5	--	240	170	--	--	--	259
JUN											
18...	1600	25000	7.4	34.5	--	220	180	--	--	--	263
JUL											
17...	0935	25000	7.5	34.5	18	210	170	--	--	--	258
AUG											
20...	1030	24500	7.6	35.0	--	220	170	--	--	--	261
SEP											
15...	1435	24000	7.5	35.0	17	230	170	24000	5200	100	262
OCT											
14...	1355	25000	7.6	35.0	--	190	180	--	--	--	264
NOV											
17...	1410	25900	7.5	35.0	--	210	170	--	--	--	265
DEC											
16...	1000	25600	7.5	35.0	--	200	180	--	--	--	264
JAN , 1976											
22...	1030	25000	7.4	35.0	--	210	180	--	--	--	263

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
JUL , 1974										
30...	0	4800	--	--	680	460	221	.02	.00	7.8
AUG										
16...	--	3400	--	--	1000	--	--	--	--	--
16...	0	6100	--	--	650	430	220	.00	.00	7.3
16...	--	7400	--	--	1000	--	--	--	--	--
SEP										
19...	0	8700	3.2	16400	1200	950	220	.00	.00	7.6
OCT										
15...	0	8800	--	--	1200	950	221	.00	.01	6.8
NOV										
20...	0	6000	--	--	590	370	221	.00	.00	7.3
DEC										
18...	0	8700	--	--	1300	1000	221	.00	.00	9.9
JAN , 1975										
16...	0	9000	--	--	1300	1100	211	.00	.00	9.6
FEB										
18...	0	9100	--	--	1300	1100	208	.00	.00	9.3
18...	0	9200	--	--	1300	1100	208	.00	.00	9.6
MAR										
12...	0	8800	2.8	15200	1300	1100	213	.00	.01	9.4
APR										
17...	0	8600	--	--	1300	1100	213	.00	.00	11
MAY										
14...	0	8700	--	--	1300	1100	212	.00	.01	8.9
JUN										
18...	0	8600	--	--	1300	1100	216	.00	.01	10
JUL										
17...	0	8900	3.3	--	1200	1000	212	.00	.00	9.5
AUG										
20...	0	8700	3.3	--	1200	1000	214	.00	.00	9.0
SEP										
15...	0	8700	3.0	16600	1300	1100	215	.00	.00	9.1
OCT										
14...	0	8700	--	--	1200	1000	217	.00	.00	8.7
NOV										
17...	0	8800	--	--	1200	1000	217	.02	.01	10
DEC										
16...	0	8700	--	--	1200	1000	217	.03	.02	8.9
JAN , 1976										
22...	0	8800	--	--	1300	1100	216	.00	.01	8.9

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

WATER QUALITY DATA

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	DISSOLVED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
JUL , 1974										
30...	1.5	9.3	1.0	--	.00	.04	--	--	--	--
AUG										
16...	--	--	--	--	--	--	--	--	--	--
16...	.10	7.4	1.0	--	.01	.04	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--
SEP										
19...	.00	7.6	.0	2	.00	.02	4500	2	1600	50
OCT										
15...	.06	6.8	.0	--	.01	.02	--	--	--	--
NOV										
20...	.06	7.4	1.0	--	.01	.01	--	--	--	--
DEC										
18...	.00	9.9	3.0	--	.00	.01	--	--	--	--
JAN , 1975										
16...	.20	9.8	.0	--	.00	.00	--	--	--	--
FEB										
18...	.40	9.7	.0	--	.00	.02	--	--	--	--
18...	.60	10	.0	--	.00	.02	--	--	--	--
MAR										
12...	.50	9.9	.0	60	.00	.01	3200	0	1300	10
APR										
17...	.60	11	.0	--	.00	.01	--	--	--	--
MAY										
14...	.20	9.1	1.0	--	.00	.01	--	--	--	--
JUN										
18...	.20	10	.0	--	.00	.01	--	--	--	--
JUL										
17...	.60	10	.0	2	.00	.00	--	--	--	--
AUG										
20...	.70	9.7	.0	--	.00	.00	--	--	--	--
SEP										
15...	.40	9.5	.0	10	.00	.00	2900	--	550	--
OCT										
14...	.20	8.9	--	--	.00	.01	--	--	--	--
NOV										
17...	.20	10	1.0	--	.01	.01	3500	5	590	10
DEC										
16...	.20	9.1	2.0	--	.01	.03	--	--	--	--
JAN , 1976										
22...	.50	9.4	.0	--	.01	.02	--	--	--	--

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
FEB . 1976											
25...	1335	28000	7.6	35.0	--	190	190	--	--	--	264
MAR											
19...	1455	26000	7.5	35.0	17	220	170	24000	5300	88	263
APR											
26...	1415	24800	7.6	35.0	--	220	180	--	--	--	266
MAY											
20...	0910	24500	7.4	34.5	--	230	180	--	--	--	264
JUN											
23...	1005	27500	7.5	34.5	--	220	170	--	--	--	266
JUL											
19...	1505	29000	7.5	34.5	--	220	180	--	--	--	266
AUG											
17...	1200	28000	7.4	35.0	--	240	170	--	--	--	264
SEP											
14...	1045	26300	7.4	35.0	--	210	180	24000	5200	96	266
OCT											
20...	1100	25000	7.5	35.0	--	220	170	--	--	--	265
NOV											
17...	1555	23200	7.5	35.0	--	220	170	--	--	--	267
DEC											
16...	1015	24000	7.6	35.0	--	210	180	--	--	--	266
JAN . 1977											
20...	1455	24000	7.3	35.5	--	200	170	--	--	--	258
FEB											
24...	1035	25000	7.4	35.0	--	220	180	--	--	--	268
MAR											
23...	0950	25000	7.4	35.5	17	190	180	28000	5200	85	263

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)
FEB , 1976											
25...	0	8600	--	--	1300	1000	217	.00	.01	9.2	1.0
MAR											
19...	0	8700	3.2	15000	1300	1100	216	.00	.00	9.1	.30
APR											
26...	0	8800	--	--	1300	1100	218	.00	.00	9.4	.10
MAY											
20...	0	8800	--	--	1300	1100	217	.00	.01	9.1	.10
JUN											
23...	0	8800	--	--	1200	1000	218	.00	.00	9.4	.10
JUL											
19...	0	8900	--	--	1300	1100	218	.00	.00	9.4	.60
AUG											
17...	0	8900	--	--	1300	1100	217	.00	.00	9.7	.10
SEP											
14...	0	8600	3.4	18400	1300	1100	218	.00	.01	9.2	.47
OCT											
20...	0	8900	--	--	1200	1000	217	.00	.01	9.0	.37
NOV											
17...	0	8700	--	--	1200	1000	219	.00	.01	9.4	.50
DEC											
16...	0	8600	--	--	1300	1000	218	.00	.00	9.1	.30
JAN , 1977											
20...	0	9100	--	--	1200	990	212	.00	.01	8.4	.30
FEB											
24...	0	8700	--	--	1300	1100	220	.00	.01	9.5	.10
MAR											
23...	0	8900	3.1	15100	1200	1000	216	.00	.01	9.4	.40

TABLE 3.--Chemical analyses of water from the north monitor well, February 1970 - March 1977--Continued

DATE	TOTAL NITRO-GEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L) (70507)	TOTAL PHOS-PHORUS (P) (MG/L) (00665)	DIS-SOLVED BORON (B) (UG/L) (01020)	DIS-SOLVED COPPER (CU) (UG/L) (01040)	DIS-SOLVED IRON (FE) (UG/L) (01046)	DIS-SOLVED ZINC (ZN) (UG/L) (01090)	DENSITY (GM/ML AT 20 C) (71820)
FEB , 1976											
25...	10	--	.0	--	.00	.00	--	--	--	--	--
MAR											
19...	9.4	--	2.0	70	.00	.01	3400	0	590	0	--
APR											
26...	9.5	--	.0	--	.00	.01	--	--	--	--	--
MAY											
20...	9.2	--	.0	--	.01	.01	--	--	--	--	--
JUN											
23...	9.5	--	1.0	--	.02	.02	--	--	--	--	--
JUL											
19...	10	--	4.0	--	.00	.01	--	--	--	--	--
AUG											
17...	9.8	--	2.0	--	.00	.02	--	--	--	--	--
SEP											
14...	9.6	--	3.0	10	.00	.02	6000	0	370	10	--
OCT											
20...	9.3	--	2.0	--	.00	.01	--	--	--	--	--
NOV											
17...	9.9	1.0	--	--	.01	.01	--	--	--	--	--
DEC											
16...	9.4	--	1.0	--	.00	.00	--	--	--	--	--
JAN , 1977											
20...	8.7	--	2.0	--	.01	.01	--	--	--	--	--
FEB											
24...	9.6	--	2.0	--	.00	.00	--	--	--	--	--
MAR											
23...	9.8	--	1.0	5	.01	.01	--	--	--	--	1.009

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)	CARBONATE (CO3) (MG/L) (00445)
DEC , 1969												
23...	--	29900	8.0	35.0	26	302	234	--	6540	90	216	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
24...	--	23200	--	--	20	172	146	16000	5030	75	264	0
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR , 1970												
11...	--	23500	7.3	35.2	18	181	142	22000	4920	65	270	0
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
23...	--	23100	--	34.9	16	170	143	20000	4870	73	190	0
SEP												
02...	--	23100	--	34.5	18	176	146	20000	4850	72	264	0
NOV												
04...	--	23800	7.3	34.9	18	210	146	24000	5000	80	275	0
JAN , 1971												
19...	--	23800	7.4	35.0	17	180	145	25000	4700	80	266	0
MAR												
16...	--	23200	7.3	34.0	17	178	137	20000	4720	72	266	0
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	1201	--	--	--	--	--	--	--	--	--	--	--
16...	1202	--	--	--	--	--	--	--	--	--	--	--
16...	1203	23200	8.0	34.0	17	178	137	--	4720	72	266	0
APR												
16...	--	23300	7.4	35.0	15	170	146	--	--	--	277	0
MAY												
13...	--	23300	7.5	35.0	18	173	147	22000	4660	65	271	0
JUN												
09...	--	23400	7.4	35.0	--	173	147	22000	--	--	272	0
09...	--	--	--	--	--	--	--	220	--	--	--	--
JUL												
07...	--	23500	7.4	35.5	--	169	144	--	--	--	274	0
07...	1835	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	17500	7.5	35.0	16	158	130	--	--	--	268	0
SEP												
16...	--	22700	7.1	35.5	--	168	144	--	--	--	282	0
16...	1310	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	23500	7.1	35.5	--	162	146	--	--	--	271	0
14...	1400	--	--	--	--	--	--	--	--	--	--	--
16...	1310	--	--	--	--	--	--	--	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	DIS-SOLVED SULFATE (SO4) (MG/L) (00945)	DIS-SOLVED CHLO-RIDE (CL) (MG/L) (00940)	DIS-SOLVED FLUO-RIDE (F) (MG/L) (00950)	DIS-SOLVED SOLIDS (RESI-DUE AT 180 C) (MG/L) (70300)	HARD-NESS (CA,MG) (MG/L) (00900)	NON-CAR-BONATE HARD-NESS (MG/L) (00902)	ALKA-LINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITRO-GEN (N) (MG/L) (00610)	TOTAL ORGANIC NITRO-GEN (N) (MG/L) (00605)	TOTAL NITRO-GEN (N) (MG/L) (00600)
DEC , 1969												
23...	.0	10900	3.0	--	1750	1580	177	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	--	--	--
24...	.0	8200	3.0	13800	1050	832	217	.00	.00	8.0	2.7	10
24...	--	--	--	--	--	--	--	--	--	--	--	--
MAR , 1970												
11...	.0	8150	2.9	13700	1060	843	221	.00	.00	7.7	2.1	9.8
11...	--	--	--	--	--	--	--	--	--	--	--	--
JUN												
23...	.0	8200	3.7	13600	1040	880	156	.00	.00	--	--	--
SEP												
02...	.0	8250	3.7	13700	1060	847	217	.00	.00	5.0	--	--
NOV												
04...	--	8000	2.4	13700	1150	933	226	.00	.00	7.4	6.6	14
JAN , 1971												
19...	--	8100	2.9	13500	1070	858	218	.00	.00	7.5	4.5	12
MAR												
16...	.0	8100	3.3	13400	1030	813	218	.00	.00	7.1	2.0	9.1
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	218	--	--	--	--	--
16...	--	--	3.3	--	1030	813	218	--	--	--	--	--
16...	.0	8100	3.3	--	1030	813	--	--	--	--	--	--
APR												
16...	--	--	--	--	--	--	227	.00	.00	5.9	5.1	11
MAY												
13...	--	8200	3.0	13400	1100	840	222	.00	.00	--	--	--
JUN												
09...	--	--	--	--	--	--	223	.00	.00	7.0	5.0	12
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	--	--	--	--	--	--	225	.00	.00	13	.78	14
07...	--	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	220	.00	.00	--	--	--
SEP												
16...	--	--	--	--	--	--	231	.00	.00	12	.00	12
16...	--	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	--	--	--	--	--	--	222	.00	.00	12	.00	12
14...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED ARSENIC (AS) (UG/L) (01000)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED LEAD (PB) (UG/L) (01049)	DISSOLVED LITHIUM (LI) (UG/L) (01130)	DISSOLVED MANGANESE (MN) (UG/L) (01056)	DISSOLVED ZINC (ZN) (UG/L) (01090)
DEC , 1969												
23...	--	5	--	--	--	7100	--	--	--	--	--	--
23...	--	--	--	--	--	--	--	--	--	0	--	--
24...	--	5	.00	--	--	--	--	--	--	290	--	--
24...	--	--	--	--	--	--	--	--	--	0	--	--
MAR , 1970												
11...	3.0	0	.00	.00	--	5100	30	1700	10	310	10	30
11...	--	--	--	--	0	--	--	--	--	0	--	--
JUN												
23...	--	5	.00	.01	--	5500	--	--	--	--	--	--
SEP												
02...	--	5	--	--	--	5900	--	--	--	--	--	--
NOV												
04...	6.0	0	.00	.01	--	5400	0	1200	--	--	20	30
JAN , 1971												
19...	3.0	0	.00	.02	--	5500	0	1300	--	--	20	--
MAR												
16...	3.0	0	--	.01	--	6300	0	1500	--	--	10	30
16...	--	--	--	--	0	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--	--	--	--
16...	--	0	--	--	--	6300	0	--	0	--	--	30
16...	--	0	--	--	--	6300	0	--	0	--	--	30
APR												
16...	7.0	--	.01	.01	--	--	--	--	--	--	--	--
MAY												
13...	--	5	.00	.01	--	6100	0	630	--	--	10	60
JUN												
09...	--	--	--	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--	--
JUL												
07...	4.0	--	--	--	--	5100	0	880	--	--	--	10
07...	4.0	--	--	--	--	--	--	--	--	--	--	--
AUG												
11...	--	--	--	--	--	--	--	--	--	--	--	--
SEP												
16...	15	--	--	--	--	5200	0	1000	--	--	--	10
16...	4.0	--	--	--	--	--	--	--	--	--	--	--
OCT												
14...	3.0	--	--	--	--	5100	--	--	--	--	--	--
14...	3.0	--	--	--	--	--	--	--	--	--	--	--
16...	15	--	--	--	--	--	--	--	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
NOV , 1971											
11...	--	24000	7.6	35.0	--	168	144	--	--	--	266
DEC											
09...	--	19900	7.4	35.3	--	168	148	--	--	--	268
09...	0930	--	--	--	--	--	--	--	--	--	--
JAN , 1972											
04...	--	23100	--	35.5	16	169	144	--	--	--	--
04...	0930	23100	7.3	35.5	16	169	144	--	--	--	266
FEB											
10...	1600	23500	7.3	35.5	--	166	147	--	--	--	261
10...	1600	--	7.2	35.5	--	--	--	--	--	--	261
MAR											
06...	1520	28000	7.3	35.0	16	170	155	18000	4700	68	267
06...	1520	--	7.3	35.0	--	--	--	--	--	--	267
APR											
10...	1600	23000	7.3	35.0	--	160	150	--	4800	--	262
10...	1600	--	7.3	35.0	--	--	--	--	--	--	262
MAY											
15...	1445	23500	7.4	35.5	16	168	150	--	--	--	269
15...	1445	--	7.3	35.5	--	--	--	--	--	--	269
JUN											
13...	1325	23000	7.3	35.0	16	190	140	--	--	--	266
13...	1325	--	7.2	35.0	--	--	--	--	--	--	266
JUL											
12...	1345	23000	7.3	35.0	16	190	150	--	--	--	266
12...	1345	--	7.2	35.0	--	--	--	--	--	--	266
AUG											
09...	1624	23400	7.4	35.0	14	210	180	--	--	--	267
09...	1624	--	7.3	35.0	--	--	--	--	--	--	267
SEP											
14...	0900	23000	7.3	35.0	16	170	150	23000	5200	110	268
14...	0900	--	7.2	35.0	--	--	--	--	--	--	268
OCT											
18...	1625	23000	7.2	35.0	15	200	170	--	--	--	269
18...	1625	--	7.2	35.0	--	--	--	--	--	--	269
NOV											
15...	1535	22900	7.3	35.0	16	190	170	--	--	--	274
15...	1535	--	7.3	35.0	--	--	--	--	--	--	274
DEC											
13...	1310	23000	7.3	35.0	15	189	150	--	--	--	268
13...	1310	--	7.3	35.0	--	--	--	--	--	--	268

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED SULFATE (SO4) (MG/L) (00945)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
NOV , 1971											
11...	0	--	--	--	--	--	--	218	.00	.00	12
DEC											
09...	0	--	--	--	--	--	--	220	.00	.00	13
09...	--	--	--	--	--	--	--	--	--	--	--
JAN , 1972											
04...	--	--	--	--	--	--	--	--	--	--	--
04...	0	--	--	--	--	1000	800	218	.00	.00	15
FEB											
10...	0	--	--	--	--	1000	--	214	.00	.00	15
10...	0	--	--	--	--	--	--	214	--	--	--
MAR											
06...	0	.4	8100	2.7	13400	1080	867	219	.00	.00	11
06...	0	--	--	--	--	--	--	219	--	--	--
APR											
10...	0	--	--	--	--	1000	--	215	.00	.00	8.4
10...	0	--	--	--	--	--	--	215	--	--	--
MAY											
15...	0	--	--	--	--	1000	--	221	.00	.00	8.4
15...	--	--	--	--	--	--	--	221	--	--	--
JUN											
13...	0	--	--	--	--	1100	--	218	.00	.00	9.2
13...	0	--	--	--	--	--	--	218	--	--	--
JUL											
12...	0	--	--	--	--	1100	--	218	.00	.00	9.5
12...	0	--	--	--	--	--	--	218	--	--	--
AUG											
09...	0	--	--	--	--	1300	--	219	.00	.00	9.4
09...	0	--	--	--	--	--	--	219	--	--	--
SEP											
14...	0	.5	7900	3.6	14000	1100	850	220	.00	.00	9.3
14...	0	--	--	--	--	--	--	220	--	--	--
OCT											
18...	0	--	--	--	--	1200	--	221	.00	.00	9.5
18...	0	--	--	--	--	--	--	221	--	--	--
NOV											
15...	0	--	--	--	--	1200	--	225	.00	.00	9.2
15...	0	--	--	--	--	--	--	225	--	--	--
DEC											
13...	0	--	--	--	--	1100	870	220	.00	.00	8.5
13...	--	--	--	--	--	--	--	220	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED MANGANESE (MN) (UG/L) (01056)	DISSOLVED ZINC (ZN) (UG/L) (01090)
NOV , 1971											
11...	.00	12	2.0	--	--	--	4600	0	630	20	20
DEC											
09...	.78	14	.0	--	--	--	--	--	--	--	--
09...	--	--	.0	--	--	--	--	--	--	--	--
JAN , 1972											
04...	--	--	3.0	--	--	--	5100	0	--	--	10
04...	5.4	21	7.0	--	.00	.01	5100	0	1000	--	10
FEB											
10...	.00	15	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
MAR											
06...	.00	10	4.0	20	--	--	4800	20	1300	--	20
06...	--	--	--	--	--	--	--	--	--	--	--
APR											
10...	.14	8.5	11	5	--	--	5400	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
MAY											
15...	.43	9.0	2.0	--	.00	--	5100	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
13...	.54	9.8	.0	--	.01	--	5100	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--
JUL											
12...	1.5	10	1.0	--	--	--	5200	--	--	--	--
12...	--	--	--	--	--	--	--	--	--	--	--
AUG											
09...	.63	10	5.0	--	.00	--	5500	--	--	--	--
09...	--	--	--	--	--	--	--	--	--	--	--
SEP											
14...	.00	9.3	.0	5	.00	.01	5200	20	1100	--	40
14...	--	--	--	--	--	--	--	--	--	--	--
OCT											
18...	.00	9.5	6.0	--	--	--	5200	--	--	--	--
18...	--	--	--	--	--	--	--	--	--	--	--
NOV											
15...	.00	9.2	10	--	--	--	5200	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
DEC											
13...	.56	9.1	11	--	--	--	5200	--	--	--	--
13...	--	--	--	--	--	--	--	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)
JAN , 1973										
17...	1650	24000	7.3	35.0	15	190	150	--	--	--
17...	1650	--	7.3	35.0	--	--	--	--	--	--
FEB										
14...	1640	24000	7.3	35.0	16	220	160	--	--	--
14...	1640	--	7.3	35.0	--	--	--	--	--	--
MAR										
14...	1640	24000	7.3	35.0	16	270	220	32000	5000	110
14...	1640	--	7.3	35.0	--	--	--	--	--	--
APR										
18...	0950	23000	7.3	35.0	15	190	160	--	--	--
18...	0950	--	7.3	35.0	--	--	--	--	--	--
MAY										
16...	0945	23300	7.4	35.0	17	200	160	--	--	--
16...	0945	--	7.4	35.0	--	--	--	--	--	--
JUN										
13...	0915	23800	7.3	35.0	18	200	160	--	--	--
13...	0915	--	7.3	35.0	--	--	--	--	--	--
JUL										
18...	1740	22100	7.3	35.0	--	180	140	--	--	--
18...	1740	--	7.3	35.0	--	--	--	--	--	--
AUG										
22...	1720	23000	7.3	35.0	17	205	170	--	--	--
SEP										
12...	1055	23000	7.3	35.0	17	170	130	19000	4600	74
12...	1055	--	7.3	35.0	--	--	--	--	--	--
OCT										
10...	1650	23300	7.4	35.0	12	180	160	--	--	--
NOV										
14...	1010	22900	7.4	35.0	--	200	190	--	--	--
DEC										
11...	1330	22600	--	34.6	18	180	180	20000	5700	140
11...	1530	22700	7.2	34.6	18	180	180	20000	5700	200
JAN , 1974										
16...	1640	23100	7.4	35.0	--	180	160	--	--	--
FEB										
19...	1640	23000	7.4	35.0	--	170	150	--	--	--
MAR										
18...	1710	22700	7.4	35.0	18	160	140	--	4800	100
APR										
17...	1420	21800	7.3	35.0	--	170	130	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	BICARBONATE (HCO3) (MG/L) (00440)	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)
JAN , 1973									
17...	278	0	--	--	--	1100	--	228	.00
17...	278	0	--	--	--	--	--	228	--
FEB									
14...	280	0	--	--	--	1200	--	230	.00
14...	280	--	--	--	--	--	--	230	--
MAR									
14...	280	0	8100	2.9	14000	1600	1400	230	.00
14...	280	0	--	--	--	--	--	230	--
APR									
18...	282	0	--	--	--	1100	--	231	.00
18...	282	0	--	--	--	--	--	231	--
MAY									
16...	276	0	8400	--	--	1200	--	226	.00
16...	276	0	--	--	--	--	--	226	--
JUN									
13...	281	0	8000	--	--	1200	--	230	.00
13...	281	0	--	--	--	--	--	230	--
JUL									
18...	282	0	7800	--	--	1000	--	231	.00
18...	282	0	--	--	--	--	--	231	--
AUG									
22...	285	0	8100	--	--	1200	980	234	.00
SEP									
12...	282	0	7900	3.0	13000	980	750	231	.00
12...	282	0	--	--	--	--	--	231	--
OCT									
10...	284	0	8000	--	--	1100	880	233	.00
NOV									
14...	284	0	8300	--	--	1300	1100	233	.00
DEC									
11...	--	--	8200	4.5	13600	1200	--	--	.00
11...	290	0	8100	2.6	13700	1200	--	238	.00
JAN , 1974									
16...	294	0	8200	--	--	1100	860	241	.00
FEB									
19...	300	0	7900	--	--	1000	--	246	.01
MAR									
18...	306	0	8000	--	13600	990	730	251	.00
APR									
17...	315	0	7700	--	--	960	700	258	.01

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITRO-GEN (N) (MG/L) (00610)	TOTAL ORGANIC NITRO-GEN (N) (MG/L) (00605)	TOTAL NITRO-GEN (N) (MG/L) (00600)	TOTAL ORGANIC CARBON (C) (MG/L) (00680)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L) (70507)	TOTAL PHOS-PHORUS (P) (MG/L) (00665)
JAN , 1973									
17...	.00	9.4	.00	9.4	29	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
FEB									
14...	.00	8.3	.15	8.4	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
MAR									
14...	.00	9.0	.06	9.1	28	--	5	--	--
14...	--	--	--	--	--	--	--	--	--
APR									
18...	.00	9.5	.28	9.8	12	12	--	--	--
18...	--	--	--	--	--	--	--	--	--
MAY									
16...	.00	9.4	.00	9.4	8.0	4.5	--	--	--
16...	--	--	--	--	--	--	--	--	--
JUN									
13...	.00	9.1	.08	9.2	6.0	6.0	--	.00	.01
13...	--	--	--	--	--	--	--	--	--
JUL									
18...	.00	9.6	.00	9.6	6.0	4.0	--	--	--
18...	--	--	--	--	--	--	--	--	--
AUG									
22...	.00	11	.58	11	--	--	--	.00	.02
SEP									
12...	.00	11	.45	11	--	9.0	10	.00	.01
12...	--	--	--	--	--	--	--	--	--
OCT									
10...	.01	9.6	.07	9.6	--	8.0	--	.00	.03
NOV									
14...	.01	9.4	.68	10	--	16	--	.01	.02
DEC									
11...	.01	9.0	.12	9.1	--	--	2	.01	.02
11...	.01	8.5	.12	8.6	--	--	2	.01	.02
JAN , 1974									
16...	.01	10	.36	10	--	13	--	.00	.02
FEB									
19...	.00	10	.20	10	--	27	--	.02	.02
MAR									
18...	.03	11	.30	11	--	12	6	.00	.02
APR									
17...	.00	9.7	.59	10	--	20	--	.00	.00

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	DIS-SOLVED ARSENIC (AS) (UG/L) (01000)	DIS-SOLVED BORON (B) (UG/L) (01020)	DIS-SOLVED CHRO-MIUM (CR) (UG/L) (01030)	DIS-SOLVED COPPER (CU) (UG/L) (01040)	DIS-SOLVED IRON (FE) (UG/L) (01046)	DIS-SOLVED LEAD (PB) (UG/L) (01049)	DIS-SOLVED LITHIUM (LI) (UG/L) (01130)	DIS-SOLVED MAN-GANESE (MN) (UG/L) (01056)	DIS-SOLVED ZINC (ZN) (UG/L) (01090)
JAN , 1973									
17...	--	5000	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--
FEB									
14...	--	5100	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
MAR									
14...	--	4900	--	50	1300	--	--	--	540
14...	--	--	--	--	--	--	--	--	--
APR									
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
MAY									
16...	--	5200	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
JUN									
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
JUL									
18...	--	--	--	--	--	--	--	--	--
18...	--	--	--	--	--	--	--	--	--
AUG									
22...	--	--	--	--	--	--	--	--	--
SEP									
12...	--	--	--	--	--	--	--	--	--
12...	--	--	--	--	--	--	--	--	--
OCT									
10...	--	--	--	--	--	--	--	--	--
NOV									
14...	--	--	--	--	--	--	--	--	--
DEC									
11...	0	--	0	0	2000	0	270	29	10
11...	0	--	0	0	1900	6	270	29	50
JAN , 1974									
16...	--	--	--	--	--	--	--	--	--
FEB									
19...	--	--	--	--	--	--	--	--	--
MAR									
18...	--	6000	--	1	1700	--	--	--	260
APR									
17...	--	--	--	--	--	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
MAY , 1974											
22...	1340	22700	7.3	35.0	--	140	130	--	--	--	329
JUN											
20...	1410	21800	7.3	35.0	--	160	130	--	--	--	342
JUL											
30...	1310	22400	7.3	35.0	--	150	140	--	--	--	357
AUG											
15...	0950	21800	7.3	35.0	--	150	120	--	--	--	360
SEP											
18...	1000	22300	7.3	35.0	19	130	140	23000	4600	90	372
OCT											
15...	1310	21800	7.3	35.0	--	150	140	--	--	--	397
NOV											
19...	0940	21600	7.3	35.0	--	150	140	--	--	--	412
DEC											
17...	1540	22700	7.3	35.0	--	160	130	20000	--	--	421
JAN , 1975											
15...	1525	23000	7.3	35.0	--	150	140	--	--	--	442
FEB											
19...	0925	22800	7.3	34.5	--	160	140	--	--	--	445
19...	0935	22600	7.4	35.0	--	150	140	--	--	--	442
MAR											
12...	0915	23200	7.3	34.5	20	160	140	17000	4700	100	448
APR											
17...	0910	23100	7.3	35.0	--	160	134	--	--	--	462
MAY											
13...	0830	22900	7.3	34.5	--	152	128	--	--	--	466
JUN											
18...	0945	22400	7.2	35.0	--	160	140	--	--	--	479
JUL											
16...	1520	19500	7.3	35.0	20	150	130	--	--	--	491
AUG											
19...	1610	21700	7.2	35.0	--	160	140	--	--	--	502
SEP											
16...	0950	22000	7.3	35.0	20	170	130	18000	4700	81	512
OCT											
15...	1000	21000	7.3	35.0	--	140	140	--	--	--	524
NOV											
18...	0855	21900	7.2	35.0	--	140	130	--	--	--	529
DEC											
16...	1515	20800	7.3	35.0	--	150	130	--	--	--	542

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)
MAY , 1974										
22...	0	8100	--	--	880	--	270	.00	.01	9.6
JUN										
20...	0	8100	--	--	930	650	281	.01	.00	9.6
JUL										
30...	0	7900	--	--	950	660	293	.02	.00	9.7
AUG										
15...	0	8000	--	--	870	570	295	.00	.00	9.9
SEP										
18...	0	8000	2.9	15600	930	620	305	.00	.00	10
OCT										
15...	0	8200	--	--	950	630	326	.00	.01	9.4
NOV										
19...	0	7800	--	--	950	610	338	.00	.00	10
DEC										
17...	0	8000	--	--	960	610	345	.00	.00	10
JAN , 1975										
15...	0	7800	--	--	950	590	363	.00	.00	9.2
FEB										
19...	0	7800	--	--	980	610	365	.00	.00	8.9
19...	0	7800	--	--	950	590	363	.00	.00	9.5
MAR										
12...	0	7700	2.8	13500	1000	630	367	.00	.01	8.8
APR										
17...	0	7600	--	--	950	570	379	.01	.00	8.9
MAY										
13...	0	7800	--	--	910	520	382	.00	.01	8.7
JUN										
18...	0	7700	--	--	980	580	393	.00	.01	10
JUL										
16...	0	7700	2.8	--	910	510	403	.00	.00	9.5
AUG										
19...	0	7600	2.8	--	980	560	412	.01	.00	8.7
SEP										
16...	0	7600	3.0	15000	980	560	420	.00	.00	9.6
OCT										
15...	0	7600	--	--	930	500	430	.00	.00	9.3
NOV										
18...	0	7700	--	--	890	450	434	.01	.02	10
DEC										
16...	0	7500	--	--	910	470	445	.02	.03	9.3

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)	TOTAL NITROGEN (N) (MG/L) (00600)	DISSOLVED ORGANIC CARBON (C) (MG/L) (00681)	COLOR (PLATINUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOSPHORUS (P) (MG/L) (70507)	TOTAL PHOSPHORUS (P) (MG/L) (00665)	DISSOLVED BORON (B) (UG/L) (01020)	DISSOLVED COPPER (CU) (UG/L) (01040)	DISSOLVED IRON (FE) (UG/L) (01046)	DISSOLVED ZINC (ZN) (UG/L) (01090)
MAY , 1974										
22...	.01	9.6	21	--	.01	.02	--	--	--	--
JUN										
20...	.10	9.7	19	--	.01	.02	--	--	--	--
JUL										
30...	1.7	11	22	--	.00	.04	--	--	--	--
AUG										
15...	.10	10	22	--	.01	.04	--	--	--	--
SEP										
18...	.00	10	21	3	.00	.01	6000	2	1400	40
OCT										
15...	.59	10	27	--	.01	.02	--	--	--	--
NOV										
19...	.87	10	26	--	.01	.01	--	--	--	--
DEC										
17...	.00	10	28	--	.00	.01	--	--	--	--
JAN , 1975										
15...	.70	9.9	28	--	.01	.01	--	--	--	--
FEB										
19...	.60	9.5	30	--	.01	.02	--	--	--	--
19...	.90	10	30	--	.01	.02	--	--	--	--
MAR										
12...	1.4	10	29	10	.00	.02	--	0	1200	20
APR										
17...	1.0	9.9	33	--	.00	.02	10000	--	--	--
MAY										
13...	.60	9.3	28	--	.00	.01	--	--	--	--
JUN										
18...	.90	10	23	--	.00	.01	--	--	--	--
JUL										
16...	1.1	10	23	10	.00	.01	--	--	--	--
AUG										
19...	1.1	9.8	23	--	.00	.00	--	--	--	--
SEP										
16...	.80	10	41	20	.00	.01	2900	0	930	10
OCT										
15...	.90	10	44	--	.02	.02	--	--	--	--
NOV										
18...	.37	10	37	--	.01	.02	--	--	--	--
DEC										
16...	.80	10	40	--	.01	.03	--	--	--	--

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TIME	SPECIFIC CONDUCTANCE (MICROMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	DISSOLVED SILICA (SIO2) (MG/L) (00955)	DISSOLVED CALCIUM (CA) (MG/L) (00915)	DISSOLVED MAGNESIUM (MG) (MG/L) (00925)	DISSOLVED STRONTIUM (SR) (UG/L) (01080)	DISSOLVED SODIUM (NA) (MG/L) (00930)	DISSOLVED POTASSIUM (K) (MG/L) (00935)	BICARBONATE (HCO3) (MG/L) (00440)
JAN , 1976											
22...	1520	24500	7.3	35.0	--	150	130	--	--	--	559
FEB											
25...	1640	24000	7.3	35.0	--	150	140	--	--	--	574
MAR											
20...	0840	24500	7.2	35.0	20	160	140	19000	4800	78	584
APR											
27...	0905	22500	7.2	35.0	--	150	140	--	--	--	594
MAY											
14...	0955	21200	7.3	35.0	--	150	140	--	--	--	599
JUN											
22...	1325	26000	7.3	35.0	--	140	130	--	--	--	605
JUL											
20...	0925	25700	7.2	35.0	--	150	140	--	--	--	614
AUG											
18...	0945	24500	7.2	35.0	--	130	130	--	--	--	622
SEP											
14...	1630	25000	7.2	35.0	14	160	140	16000	4800	120	630
OCT											
20...	1630	24000	7.3	35.0	--	150	140	--	--	--	639
NOV											
18...	0950	21000	7.3	35.0	--	150	140	--	--	--	638
DEC											
16...	1425	24100	7.3	35.0	--	150	140	--	--	--	628
JAN , 1977											
19...	1115	19800	7.2	34.0	--	140	130	--	--	--	610
FEB											
23...	1400	22800	7.3	35.0	--	140	140	--	--	--	639
MAR											
22...	1415	23600	7.3	35.0	21	140	140	19000	4700	74	636

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	CARBONATE (CO3) (MG/L) (00445)	DISSOLVED CHLORIDE (CL) (MG/L) (00940)	DISSOLVED FLUORIDE (F) (MG/L) (00950)	DISSOLVED SOLIDS (RESIDUE AT 180 C) (MG/L) (70300)	HARDNESS (CA,MG) (MG/L) (00900)	NONCARBONATE HARDNESS (MG/L) (00902)	ALKALINITY AS CACO3 (MG/L) (00410)	TOTAL NITRATE (N) (MG/L) (00620)	TOTAL NITRITE (N) (MG/L) (00615)	TOTAL AMMONIA NITROGEN (N) (MG/L) (00610)	TOTAL ORGANIC NITROGEN (N) (MG/L) (00605)
JAN , 1976											
22...	0	7600	--	--	910	450	458	.00	.01	9.0	1.1
FEB											
25...	0	7600	--	--	950	480	471	.00	.01	10	1.5
MAR											
20...	0	7600	3.0	13200	1000	520	479	.00	.00	9.3	.60
APR											
27...	0	8200	--	--	950	460	487	.00	.01	10	.70
MAY											
14...	0	7800	--	--	950	460	491	.00	.00	8.9	.40
JUN											
22...	0	7700	--	--	890	390	496	.00	.00	9.5	.50
JUL											
20...	0	7600	--	--	950	450	504	.00	.00	9.4	.30
AUG											
18...	0	7700	--	--	860	350	510	.00	.00	10	.30
SEP											
14...	0	7900	3.3	13500	990	480	517	.00	.01	10	.87
OCT											
20...	0	7600	--	--	950	430	524	.00	.01	9.3	.17
NOV											
18...	0	7600	--	--	950	430	523	.00	.02	9.8	.20
DEC											
16...	0	7500	--	--	950	440	515	.01	.00	9.5	.50
JAN , 1977											
19...	0	7700	--	--	890	390	500	.00	.01	9.3	.70
FEB											
23...	0	7600	--	--	930	400	524	.00	.01	9.8	.40
MAR											
22...	0	7600	2.9	13400	950	430	522	.01	.01	9.8	.20

TABLE 4.--Chemical analyses of water from the south monitor well, December 1969 - March 1977--Continued

DATE	TOTAL NITRO-GEN (N) (MG/L) (00600)	DIS-SOL-VED ORGANIC CARBON (C) (MG/L) (00681)	CHEM-ICAL OXYGEN DEMAND (HIGH LEVEL) (MG/L) (00340)	COLOR (PLAT-INUM-COBALT UNITS) (00080)	TOTAL ORTHO PHOS-PHORUS (P) (MG/L) (70507)	TOTAL PHOS-PHORUS (P) (MG/L) (00665)	DIS-SOLVED BORON (B) (UG/L) (01020)	DIS-SOLVED COPPER (CU) (UG/L) (01040)	DIS-SOLVED IRON (FE) (UG/L) (01046)	DIS-SOLVED ZINC (ZN) (UG/L) (01090)	DENSITY (GM/ML AT 20 C) (71820)
JAN , 1976											
22...	10	38	--	--	.01	.03	--	--	--	--	--
FEB											
25...	11	46	--	--	.01	.01	--	--	--	--	--
MAR											
20...	9.9	49	--	70	.01	.02	3800	0	1500	10	--
APR											
27...	10	48	--	--	.01	.02	--	--	--	--	--
MAY											
14...	9.3	51	--	--	.01	.02	--	--	--	--	--
JUN											
22...	10	51	--	--	.02	.02	--	--	--	--	--
JUL											
20...	9.7	51	--	--	.01	.01	--	--	--	--	--
AUG											
18...	10	50	--	--	.01	.03	--	--	--	--	--
SEP											
14...	10	53	320	5	.01	.02	9600	1	1100	10	--
OCT											
20...	9.4	71	350	--	.00	.02	--	--	--	--	--
NOV											
18...	--	--	320	--	.02	.02	--	--	--	--	--
DEC											
16...	10	41	200	--	.01	.01	--	--	--	--	--
JAN , 1977											
19...	10	44	240	--	.02	.02	--	--	--	--	--
FEB											
23...	10	48	--	--	.01	.02	--	--	--	--	--
MAR											
22...	10	47	--	5	.02	.02	12000	0	--	10	1.008

SUMMARY

Hydraulic and geochemical effects of the waste-injection system at the Monsanto Co.'s plant as of March 31, 1977 have been detected only in the injection zone, the lower limestone of the Floridan aquifer. Increased pressures are evident at the two wells used to monitor the injection zone. Geochemical changes have been noted only at the south monitor well closest to the injection site.

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