PDR 40-8728

UNC TETON EXPLORATION DRILLING, INC.

Subsidiary of United Nuclear Corporation
A UNC RESOURCES Company
PO Drawer A-1
Casper, Wyoming 82602
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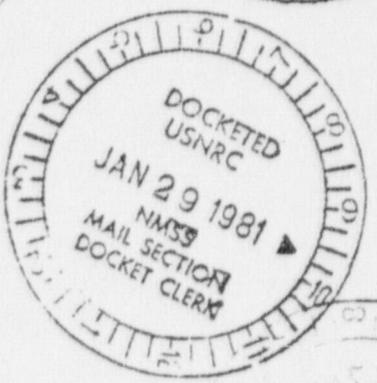
January 9, 1981



Mr. Ross Scarano
Uranium Recovery Licensing Branch
Division of Waste Management
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

and

Ms. Rebecca Mathison
Land Quality Division
Department of Environmental Quality
401 West Nineteenth Street
Cheyenne, Wyoming 82001

RE: Source Material License SUA-1373
Docket Number 040-~~8730~~ 8728

and

Research and Development License 2RD

SUBJECT: Quarterly Report — October 1, 1980 through December 31, 1980

Gentlemen:

In accordance with the referenced licenses, Teton-Nedco Joint Venture Partners herein presents the fourth Quarterly Report for its pilot in-situ uranium mining operation in the Powder River Basin area of Wyoming. This report covers the operational period from October 1, 1980 through December 31, 1980.

As indicated by the accompanying data, there have been no leach solution excursions detected during the quarter. In addition, radiation concentrations associated with the operations have remained at acceptable levels and well below maximum allowable concentrations. We have had minor problems during the quarter with leaks in the solar evaporation ponds. These problems and the action taken will be detailed later in this report.

1. Operational Summary

1.1 Mining

Mining of the M ore zone is proceeding according to schedule with quite favorable results. The ground water sweep phase of the N ore zone restoration test was discontinued on November 7 and the ground water chemical stability surveillance phase was begun.

During the month of October, the mining of the M ore zone continued with no discernable problems. Approximately 1,100 pounds of U_3O_8 were extracted from the ore zone with an average recovery grade concentration of 52.1 mg/l U_3O_8. Concentrations of dissolved oxygen and bicarbonate were increased to evaluate the effect upon grade recovery during the month. As expected, when the concentrations of oxidant and lixiviant increased so did the recovery grade of U_3O_8.

Approximately 1,200 pounds of U_3O_8 were extracted from the M ore zone during November with an average recovery grade concentration of 51.8 mg/l.

On November 7, the ground water sweep phase of the N ore zone restoration test was discontinued after the recovery of more than three million gallons of fluid since June 1, 1980. This phase was discontinued as concentrations of all lixiviant parameters approached the restoration goals that were established by the Wyoming Department of Environmental Quality or met the criteria of WS-11-103 (f) (iii) and Chapter XIV, Section 2.d.(1) of the DEQ-LQD regulations. An intial ground water restoration report has been forwarded to the Wyoming Department of Environmental Quality for their review in keeping with the requirements of the state and federal licenses.

At this time, the four month zone stability surveillance phase was begun with restoration monitor wells being sampled every four weeks.

During December, we recovered approximately 900 pounds of U_3O_8 at a reduced average recovery grade concentration of 37.95 mg/l U_3O_8. Mining and restoration of the respective ore zones was continuing as planned as of December 31, 1980.

1.2 Processing

During the month of October, Tatom-Medco completed three elutions which resulted in the precipitation and drumming of approximately 1,200 pounds of uranium slurry. The chloride control circuit was discontinued in October resulting in a slight increase in chloride concentration in the wellfield, but resin bed calciting problems have not occurred.

A low flow electrodialysis unit was installed to evaluate the performance and feasibility of this type of unit with respect to water treatment of a commercial project. No conclusive data was obtained, and a bigger unit has been ordered for use on a trail basis.

In November, three elutions were performed which resulted in the precipitation and drumming of approximately 1,300 pounds of uranium slurry.

In December, three elutions were completed which resulted in approximately 1,100 pounds of product being precipitated and drummed. A test using the low pregnant solution to soak the uranium loaded resin and compressed air to agitate the resin has been tried in an attempt to increase elution efficiency. Preliminary results indicate a definite increase in elution efficiency.

All facets of planning for a commercial operation are progressing in anticipation of being ready when the proper licenses and permits are obtained.

1.3 Well Fields

1.3.1 Well Field Flow Balance

Flow balance within the N and M well fields are listed in Table 1.3.1. Figure 1 shows the location of the injection and recovery wells used within the R&D License area.

The net well field flow balance for this reporting period is tabulated below:

	N-Zone	M-Zone
Injection (gallons)	0	8,202,280
Recovery (gallons)	1,388,040	8,459,990
Overrecovery (gallons)	1,388,040	257,710
Overrecovery (percent)	100%	3.05%

1.4 Waste Generation Volumes

The total volume of liquid waste effluent discharged from the process plant to the evaporation ponds during this reporting period is 1,611,343.0 gallons. The majority of this water was produced during ground water restoration.

1.5 Solar Evaporation Pond Leak Detection System

As required by the referenced licenses, the standpipes of the pond leak detection system are being monitored for fluid at least every two weeks. By the presence of fluid in the standpipe and the similarities of chemical constituents between the fluid in the solar pond and the fluid in the standpipe, it was confirmed on October 31 that we indeed had a leak in the south solar pond. A report describing the corrective action taken has been filed with the NRC and DEQ on December 4, 1980. Although some minor leak areas need repair at the upper levels of the south pond at the

present time, no leaks have been detected at the present water levels within the ponds as this repair work continues. A final report will be submitted to the regulatory authorities when the repair work is complete.

The chemical constituents of fluid contained in the solar ponds are also monitored at least every two weeks. Tables 1.5.2 and 1.5.3 list this monitoring data. Analyses for radionuclides normally require six weeks to complete. This data will be reported to the regulatory authorities during the quarter that it is received from the laboratory. The results from the previous quarter are listed in Tables 1.5.4 and 1.5.5.

2. Lixiviant Migration Control

The migration of lixiviant fluids is controlled by the use of a pressure gradient that induces the lixiviant fluids to flow from areas of high fluid levels and pressures around injection wells to an area of low fluid level and pressure that surrounds the recovery well. With reference to Table 1.3.1, "Well Field Flow", it is evident that more fluid is recovered from the ore zone than is injected into the ore zone. For this reporting period, the net overrecovery was 3.05% for the M ore zone and 100% for the N ore zone in that no fluid was pumped into this zone. The overrecovery rate for the M ore zone appears to have eliminated any problems with lixiviant migration.

3. Monitor Well Water Analysis

The excursion monitor wells for the Teton-Nedco in-situ uranium mine were sampled for the full suite of DEQ guideline 4 parameters between October 6 and October 8, 1980. These wells are now sampled early in the quarter so that all data is available by the reporting time. The information from this quarter's water samples is listed in Appendix A.

As required by the referenced licenses, these same monitor wells are also sampled every two weeks for: Conductivity, Chloride, Sulfate, Uranium, Sodium and Alkalinity. The information from these samples is listed in Appendix B. With respect to the information presented, there is nothing to indicate an excursion of lixiviant solution during the reporting period.

4. Hydrological Monitoring of Water Wells

The potentiometric levels of all monitor wells within the monitor well rings have been measured as required by the referenced Licenses. The results of the monitoring of these wells during this reporting period are listed in Appendix C. Barometric pressure for the monitoring periods is also listed in Appendix C. Net well field flow rates for the monitoring periods are listed in Table 1.3.1.

5. Radiation Safety

The radiological monitoring program is being performed as outlined in the Environmental Report and Stipulation 30 of the NRC License. Sampling points are those indicated in Figure III 2.1.02 of the Environmental Report and the Research and Development License Application.

Beta and Gamma radiation was monitored once this quarter on October 17, 1981. The highest gross Beta and Gamma concentration was 0.207 mrem/hr near the N ore zone cuno filters. The lowest concentration was 0.047 mrem/hr at the base of the precipitation tank. The average in-plant concentration was 0.087 mrem/hr.

Swipe sampling to detect removable surface contamination by Alpha emitting particles in the plant area was performed on a monthly basis. The average concentration for the process building during this reporting period was 20.80 dpm/100cm^2 near the injection pumps in October. The lowest concentration was 0.42 dpm/100cm^2 at the base of the low pregnant solution tank in December.

Alpha radiation concentrations were also monitored every month with an average in-plant concentration of 0.06 working levels. The concentrations ranged from a low of 0.002 working levels at the base of the ion exchange columns to a high of 0.17 working levels at the base of the recovery surge tank.

Radon gas concentrations are monitored on a monthly schedule with an average concentration for this reporting period of 1.4×10^{-8} uCi/ml. Concentrations ranged from a low of $2.78 \pm 0.23 \times 10^{-9}$ uCi/ml near the injection pumps to a high of $8.6 \pm 0.13 \times 10^{-8}$ uCi/ml below the sump grate. This is an area that has almost no personnel occupancy time.

Thermoluminescence dosimetry badges have been issued to all personnel and are read on a quarterly basis. The results from the third quarterly analyses have shown that all plant personnel have received radiation exposures well below the maximum allowable concentrations. Area monitor badges, which are also read every quarter, have shown results that are consistent with N.R.C.'s ALARA policy.

Urine analyses for uranium contamination of the plant personnel have been performed on a monthly schedule. Some anomolous results have appeared but were not substantiated by additional samples. There is no evidence of any discernable anomolous concentrations of uranium in these samples.

All other aspects of the radiation monitoring program are proceeding well with no cause for concern about radiation exposure.

Sincerely,

TETON EXPLORATION DRILLING, INC.

Steven N. Rieger

Steven N. Rieger
Environmental Coordinator

Report Reviewed: _____
Paul R. Hildenbrand
Project Manager

Report Reviewed: _____
Daniel M. Herling
Geohydrologist

TABLE 1.3.1

WELL FIELD FLOW

DATE	GALLONS PER DAY					
OCT.	M-1	M-R	M-BLEED	N-1	N-R	N-BLEED
1						
2						
3						
4						
5						
6	490,550	504,900	14,350	0	194,840	194,840
7						
8						
9						
10						
11						
12						
13						
14	703,440	670,210	33,230	0	268,680	268,860
15						
16						
17						
18						
19						
20	457,800	431,810	25,990	0	213,440	213,440
21						
22						
23						
24						
25						
26						
27	627,910	593,490	34,420	0	284,320	284,320
28						
29						
30						

TABLE 1.3.1

Continued

WELL FIELD FLOW

DATE	GALLONS PER DAY					
NOV.	M-1	M-R	M-BLEED	N-1	N-R	N-BLEED
1						
2						
3	636,160	605,820	30,340	0	297,280	297,280
4						
5						
6						
7						
8						
9						
10	631,800	613,800	18,590	0	128,980	128,980
11						
12						
13						
14						
15						
16						
17	661,230	645,540	15,690			
18						
19						
20						
21						
22						
23						
24	685,580	677,640	7,940			
25						
26						
27						
28						
29						
30						

TABLE 1.3.1

Continued

WELL FIELD FLOW

DATE	GALLONS PER DAY					
DEC.	M-1	M-R	M-BLEED	N-1	N-R	N-BLEED
1	677,821	662,370	15,451			
2						
3						
4						
5						
6						
7						
8	665,009	635,940	29,069			
9						
10						
11						
12						
13						
14						
15	670,640	652,930	17,710			
16						
17						
18						
19						
20						
21						
22	677,980	660,110	17,870			
23						
24						
25						
26						
27						
28						
29	679,800	658,650	21,150			
30						

TABLE 1.5.2

NORTH SOLAR EVAPORATION POND

CHEMICAL CONSTITIUENTS

Date	10-14-80	10-27-80	10-31-80	11-21-80	12-3-80	12-16-80	12-29-80
Calcium (ppm)	42	108	62	30	37	42	34
Chloride (ppm)	1580	508	1100	605	590	665	620
Alkinity (as ppm $CaCO_3$)	680	512	576	520	500	520	520
Sodium (ppm)	1561	1440	948	620	1121	660	770
Sulfate (ppm)	390	328	-	356	359	368	325
Selenium (ppm)	0.206	0.093	0.21	0.144	0.154	0.165	0.103
Arsenic (ppm)	<0.005	0.008	0.016	<0.005	<.005	<.005	.007
Total Dissolved Solids (ppm)	3896	1673	2845	2049	2054	2070	2070
Radium (pci/l)	18.1 ± 2.6	736 ± 11	208 ± 8	192 ± 6			
Gross Alpha	99 ± 3	3832 ± 311	275 ± 10	385 ± 10	Analysis for these not complete at this time		
Gross Beta	408 ± 13	682 ± 124	277 ± 11	408 ± 11			
Uranium (ppm)	10.1	-	9.1	6.5	5.9	6.3	6.3

TABLE 1.5.3

SOUTH SOLAR EVAPORATION POND

CHEMICAL CONSTITUENTS

Date	10-14-80	10-27-80	10-31-80	11-21-80	12-3-80	12-16-80	12-29-80
Calcium (ppm)	40	46	44	37	33		
Chloride (ppm)	106	107	110	440	450		
Alkinity (as ppm $CaCO_3$)	482	500	516	420	460		
Sodium (ppm)	342	1000	314	420	800	No water in pond	No water in pond
Sulfate (ppm)	326	320	-	299	319		
Selenium (ppm)	0.008	.178	0.42	0.137	0.149		
Arsenic (ppm)	<0.005	.010	.010	<0.005	<0.005		
Total Dissolved Solids (ppm)	1160	1165	1156	1590	1635		
Radium (pci/l)	188 ± 8	372 ± 8	137 ± 7	131 ± 5	Analysis		
Gross Alpha	213 ± 9	2275 ± 132	183 ± 8	295 ± 8	not complete at this time		
Gross Beta	757 ± 16	483 ± 45	134 ± 7	277 ± 9			
Uranium (ppm)	3.8	-	3.5	5.1	4.9		

TABLE 1.5.4
NORTH SOLAR EVAPORATION POND

CHEMICAL CONSTITIUENTS

Date	7-8-80	7-23-80	8-7-80	8-21-80	9-3-80	9-16-80	9-29-80
Radium pci/L	417 ± 9	202 ± 5	313 ± 10	185 ± 5	165 ± 15	1245 ± 3.87	93.4 ± 8.11
Gross Alpha	4858 ± 554	6101 ± 428	5618 ± 594	5222 ± 577	4700 ± 200	3362 ± 467	5207 ± 403
Gross Beta	1512 ± 232	1582 ± 176	2970 ± 301	4408 ± 352	1800 ± 200	3231 ± 214	1161 ± 152

TABLE 1.5.5
SOUTH SOLAR EVAPORATION POND

CHEMICAL CONSTITIUENTS

Date	7-8-80	7-23-80	8-7-80	8-21-80	9-3-80	9-16-80	9-29-80
Radium	22 ± 2.2	3.65 ± 0.77	7.55 ± 0.70	18.3 ± 1.6	189 ± 15	351.8 ± 6.54	369.4 ± 15.7
Alpha	2098 ± 187	1879 ± 124	3263 ± 195	1866 ± 170	1500 ± 100	2051 ± 125	2023 ± 124
Beta	553 ± 68	1072 ± 63	1054 ± 94	907 ± 82	660 ± 40	497 ± 45	358 ± 40

APPENDIX A

TETON-NEDCO MONITOR
WELLS QUARTERLY ANALYSIS

WATER QUALITY
4th Quater Report 1980

(Chemical units in mg/L except as noted)

Well Name	570	304	309	313	319	320
Date Sampled	10-7-80	10-7-80	10-8-80	10-6-80	10-7-80	10-6-80
Alkalinity ppm as $CaCO_3$	192	192	180	162	156	162
pH (Units)	7.3	7.3	8.0	7.5	7.3	7.4
Conductivity (umhos/cm)	700	895	760	715	685	650
Ammonia (NH_3 as N)	ND	ND	ND	ND	ND	ND
Total NO_2/NO_3 (as N)	1.005	.102	0.1	ND	ND	ND
Bicarbonate (HCO_3)	234	234	220	198	190	198
Carbonate (CO_3)	0	0	0	0	0	0
Calcium (Ca)	114	131	100	90	88	87
Chloride (Cl)	6	4	18	4	3	4
Boron (B)	<.001	<.001	<.001	<.001	<.001	<.001
Fluoride (F)	.58	.55	.67	.45	.44	.46
Magnesium (Mg)	23	27	26	28	24	24
Potassium (K)	9.3	9.4	8.8	9.6	9.4	8.7
Sodium (Na)	33	34	42	37	35	36
Sulfate (SO_4)	314	359	247	267	253	250
Aluminum (Al)	<.05	<.05	.57	<.05	.23	<.05
Arsenic (As)	<.005	<.005	<.005	<.005	<.005	<.005
Barium (Ba)	<.1	<.1	<.1	<.1	<.1	.1
Cadmium (Cd)	<.01	<.01	<.01	<.01	<.01	<.01
Chromium (Cr)	<.05	<.05	<.05	<.05	<.05	<.05
Copper (Cu)	<.05	<.05	<.05	<.05	<.05	<.05
Iron (Fe)	1.40	.02	7.00	.83	.75	.63
Lead (Pb)	<.05	<.05	<.05	<.05	<.05	<.05
Manganese (Mn)	.051	<.05	.082	.072	.072	.072
Mercury (Hg)	<.25	<.25	<.25	<.25	<.25	<.25
Molybdenum (Mo)	<.05	<.05	<.05	<.10	<.05	<.05
Nickel (Ni)	<.05	<.05	<.05	<.05	<.05	<.05
Radium 226 (Ra) pCi/l	$1.9 \pm .8$	0.9 ± 0.6	25 ± 3	2.8 ± 1.0	377 ± 11	3.8 ± 1.1
Selenium (Se)	<.005	<.005	<.005	<.005	<.005	<.005
Thorium 230 (Th) pCi/l	1.0 ± 0.6	0.7 ± 0.6	2.2 ± 1.0	1.1 ± 0.7	16 ± 2	2.0 ± 0.9
Uranium (U)	<.1	<.1	.90	<.1	<.1	<.1
Vanadium (V)	<.10	<.10	<.10	<.10	<.10	<.10
Zinc (Zn)	<.05	<.05	<.05	<.05	<.05	<.05
TDS	684	752	611	560	568	538

WATER QUALITY
4th Quater Report 1980

(Chemical units in mg/L except as noted)

Well Name	MM1	305	575	576	MM1	MM2
Date Sampled	10-6-80	10-6-80	10-6-80	10-6-80	10-6-80	10-6-80
Alkalinity ppm as $CaCO_3$	176	182	158	182	184	180
pH (Units)	7.5	7.5	7.5	7.5	7.7	7.5
Conductivity (umhos/cm)	700	495	505	490	500	490
Ammonia (NH_3 as N)	ND	ND	ND	ND	ND	ND
Total NO_2/NO_3 (as N)	ND	ND	ND	ND	ND	.5
Bicarbonate (HCO_3)	215	222	193	222	224	220
Carbonate (CO_3)	0	0	0	0	0	0
Calcium (Ca)	90	61	57	59	58	59
Chloride (Cl)	3	6	9	7	7	7
Boron (B)	<.001	<.001	<.001	<.001	<.001	<.001
Fluoride (F)	.42	.46	.48	.48	.47	.48
Magnesium (Mg)	27	12	15	16	19	18
Potassium (K)	9.4	7.7	8.0	7.4	7.4	7.0
Sodium (Na)	37	28	27	24	28	28
Sulfate (SO_4)	268	103	104	102	105	97
Aluminum (Al)	<.05	<.05	<.05	<.05	.11	<.05
Arsenic (As)	<.005	<.005	<.005	<.005	<.005	.020
Barium (Ba)	<.1	<.1	<.1	<.1	<.1	<.1
Cadmium (Cd)	<.01	<.01	<.01	<.01	<.01	<.01
Chromium (Cr)	<.05	<.05	<.05	<.05	<.05	<.05
Copper (Cu)	<.05	<.05	<.05	<.05	<.05	<.05
Iron (Fe)	.61	.79	.23	.11	.44	.27
Lead (Pb)	<.05	<.05	<.05	<.05	<.05	<.05
Manganese (Mn)	.072	<.05	.072	<.05	<.05	<.05
Mercury (Hg)	<.25	<.25	<.25	<.25	<.25	<.25
Molybdenum (Mo)	<.05	<.05	.12	<.05	<.05	<.05
Nickel (Ni)	<.05	<.05	<.05	<.05	<.05	<.05
Radium 226 (Ra) pCi/l	1.0 ± 0.6	5.1 ± 1.3	3.9 ± 1.2	18.5 ± 2.5	7.6 ± 1.6	2.3 ± 0.9
Selenium (Se)	<.005	<.005	<.005	<.005	<.005	<.005
Thorium 230 (Th) pCi/l	$.7 \pm 0.6$	2.2 ± 1.0	3.1 ± 1.3	1.1 ± 0.7	2.5 ± 1.2	1.0 ± 0.6
Uranium (U)	<.1	<.1	<.1	<.1	<.1	<.1
Vanadium (V)	<.10	<.10	<.10	<.10	<.10	<.10
Zinc (Zn)	<.05	<.05	<.05	<.05	<.05	<.05
TDS	566	342	360	348	358	346

WATER QUALITY
4th Quater Report 1980

(Chemical units in mg/L except as noted)

Well Name	314					
Date Sampled	10-9-80					
Alkalinity ppm as $CaCO_3$	186					
pH (Units)	7.1					
Conductivity (umhos/cm)	425					
Ammonia (NH_3 as N)	ND					
Total NO_2/NO_3 (as N)	ND					
Bicarbonate (HCO_3)	227					
Carbonate (CO_3)	~~0~~					
Calcium (Ca)	37					
Chloride (Cl)	6					
Boron (B)	<.001					
Fluoride (F)	.52					
Magnesium (Mg)	20					
Potassium (K)	6.1					
Sodium (Na)	40					
Sulfate (SO_4)	59					
Aluminum (Al)	<.05					
Arsenic (As)	<.005					
Barium (Ba)	<.1					
Cadmium (Cd)	<.01					
Chromium (Cr)	<.05					
Copper (Cu)	<.05					
Iron (Fe)	.48					
Lead (Pb)	<.05					
Manganese (Mn)	.072					
Mercury (Hg)	<.25					
Molybdenum (Mo)	<.05					
Nickel (Ni)	<.05					
Radium 226 (Ra) pCi/l	3.1 ± 1.1					
Selenium (Se)	<.005					
Thorium 230 (Th) pCi/l	1.1 ± 0.6					
Uranium (U)	<.1					
Vanadium (V)	<.10					
Zinc (Zn)	<.05					
TDS	271					

APPENDIX B

TETON-NEDCO MONITOR WELLS

BIWEEKLY WATER ANALYSIS

Bi-Weekly Water Quality
4th Quarter Report 1980

Well Name PN5-L570
Aquifer IDAHO

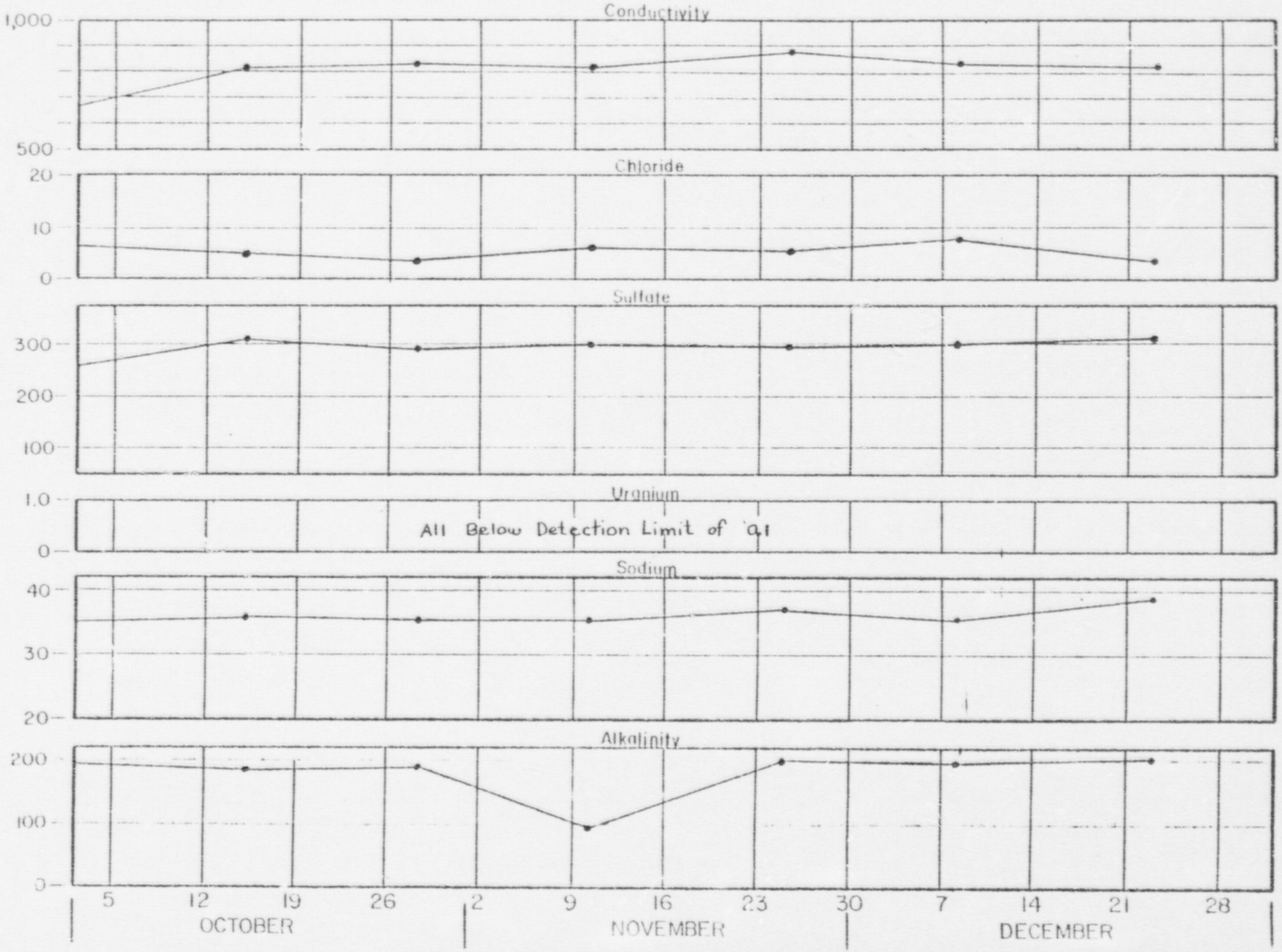
UCL	1,135	12	314	1	47	331
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-30-80	850	7	260	0.1	35	198
10-15-80	810	5	305	<.1	36	190
10-28-80	820	4	295	<.1	35	192
11-10-80	810	6	299	<.1	35	95
11-25-80	885	6	293	<.1	37	200
12-8-80	870	8	298	<.1	36	196
12-23-80	815	4	310	<.1	39	202

Well Name PN5-L304
Aquifer IDAHO

UCL	1,141	12	523	1	62	273
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	765	5	358	<.1	33	200
10-7-80	895	4	359	<.1	34	192
10-20-80	875	3	364	<.1	33	192
11-10-80	885	4	367	<.1	36	200
11-18-80	870	4	362	<.1	35	196
12-3-80	880	4	351	<.1	33	208
12-16-80	875	4	348	<.1	35	198
12-24-80	860	4	334	<.1	32	204

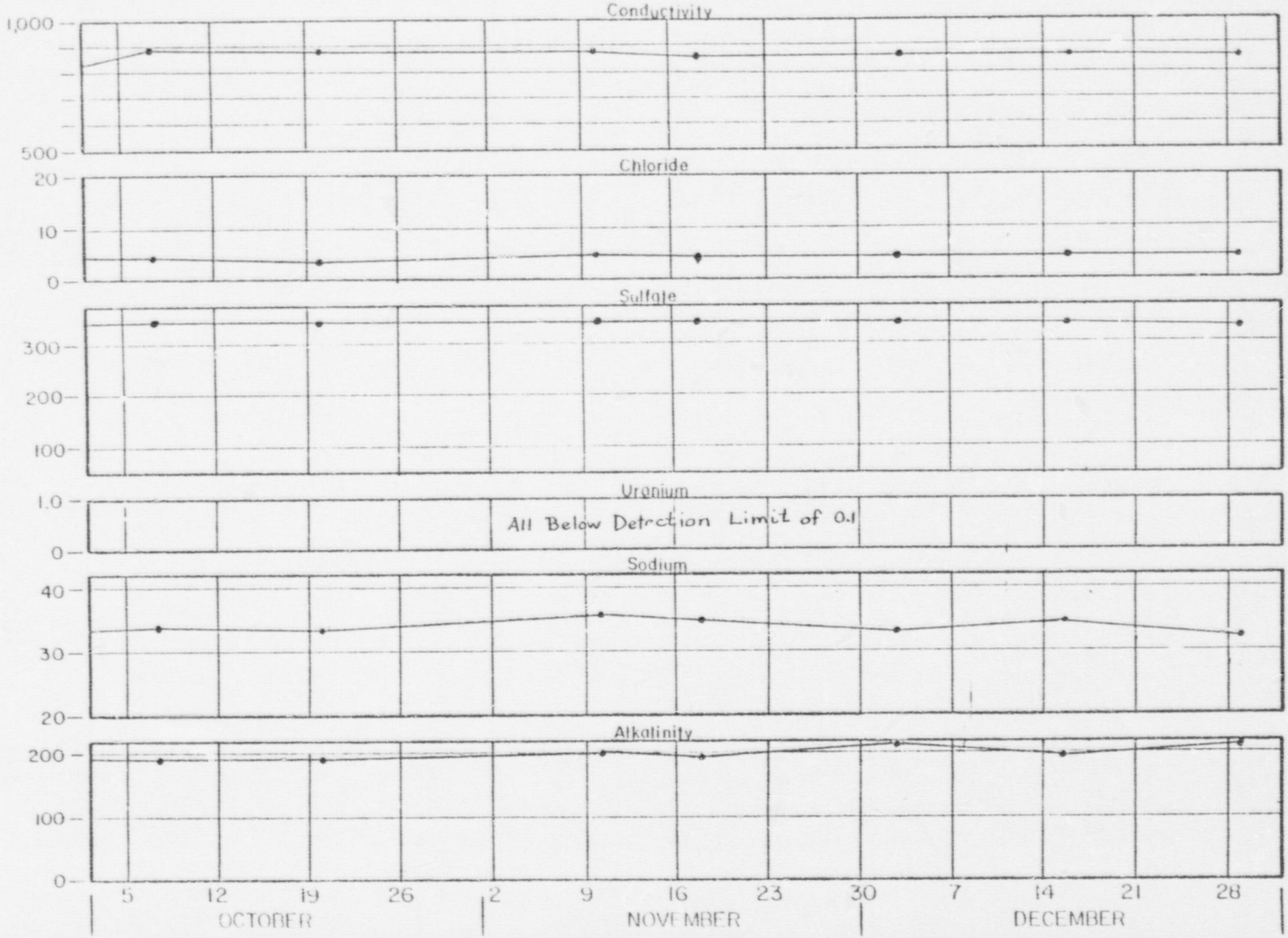
WATER QUALITY

Well name 570



WATER QUALITY

Well name 304



Bi-Weekly Water Quality
4th Quarter Report 1980

Well Name PN5-L309

Aquifer N

UCL	1,197	13	602	1	57	197
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-23-80	230	5	66	<.1	33	98
10-7-80	760	18	247	.90	42	180
10-21-80	715	8	265	.76	36	174
11-4-80	535	12	236	.70	42	52
11-17-80	720	6	251	.1	30	188
12-3-80	720	4	246	<.1	31	186
12-16-80	715	4	230	<.1	35	188
12-29-80	700	7	229	<.1	32	204

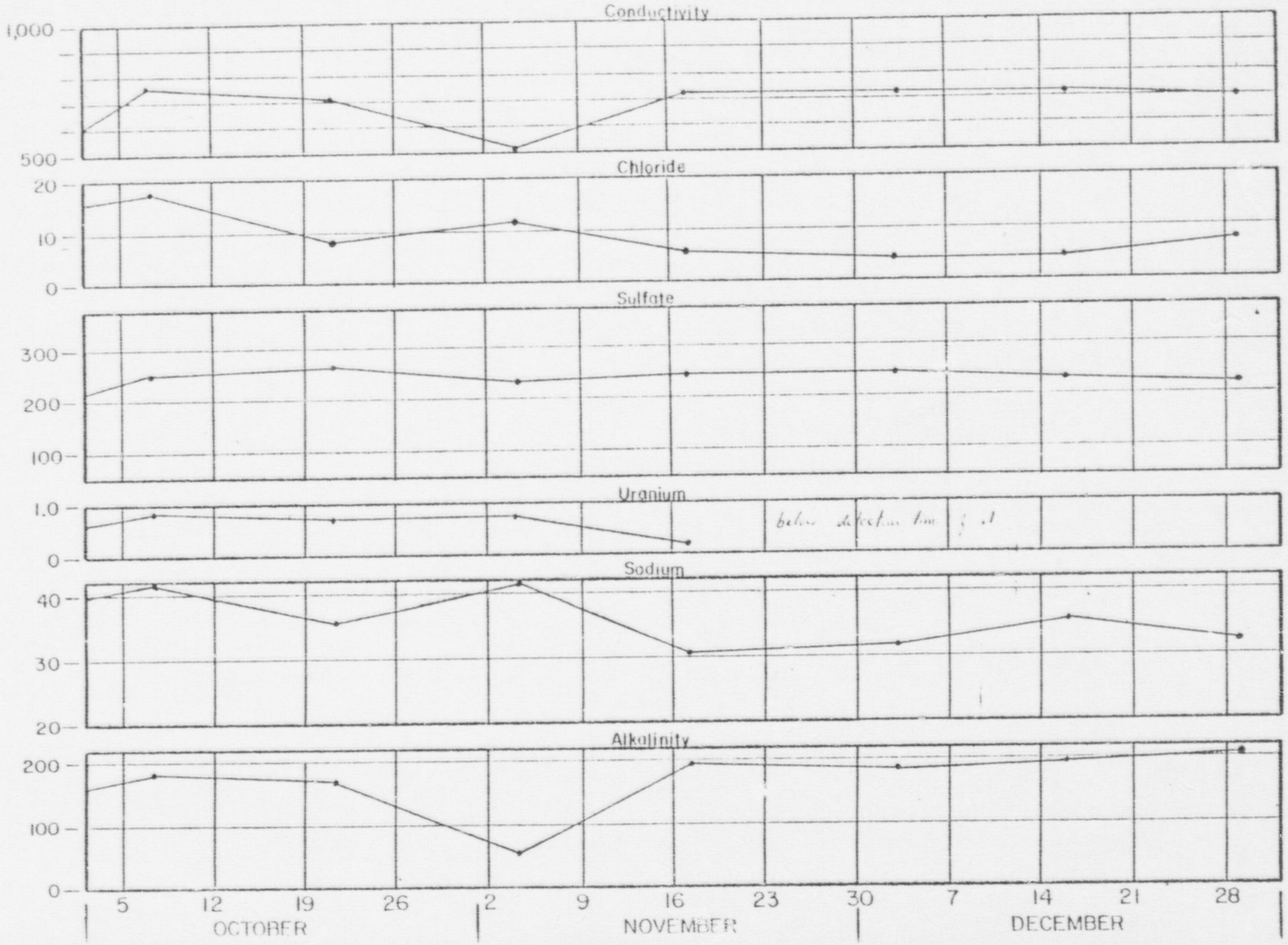
Well Name PN5-L313

Aquifer N

UCL	865	8	307	1	48	201
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-23-80	610	4	273	<.1	37	156
10-7-80	715	4	267	<.1	37	162
10-21-80	705	4	268	<.1	33	156
11-5-80	705	6	281	<.1	36	162
11-18-80	700	4	274	<.1	37	158
12-2-80	695	4	263	<.1	37	160
12-15-80	715	3	260	<.1	38	160
12-29-80	700	6	272	<.1	34	170

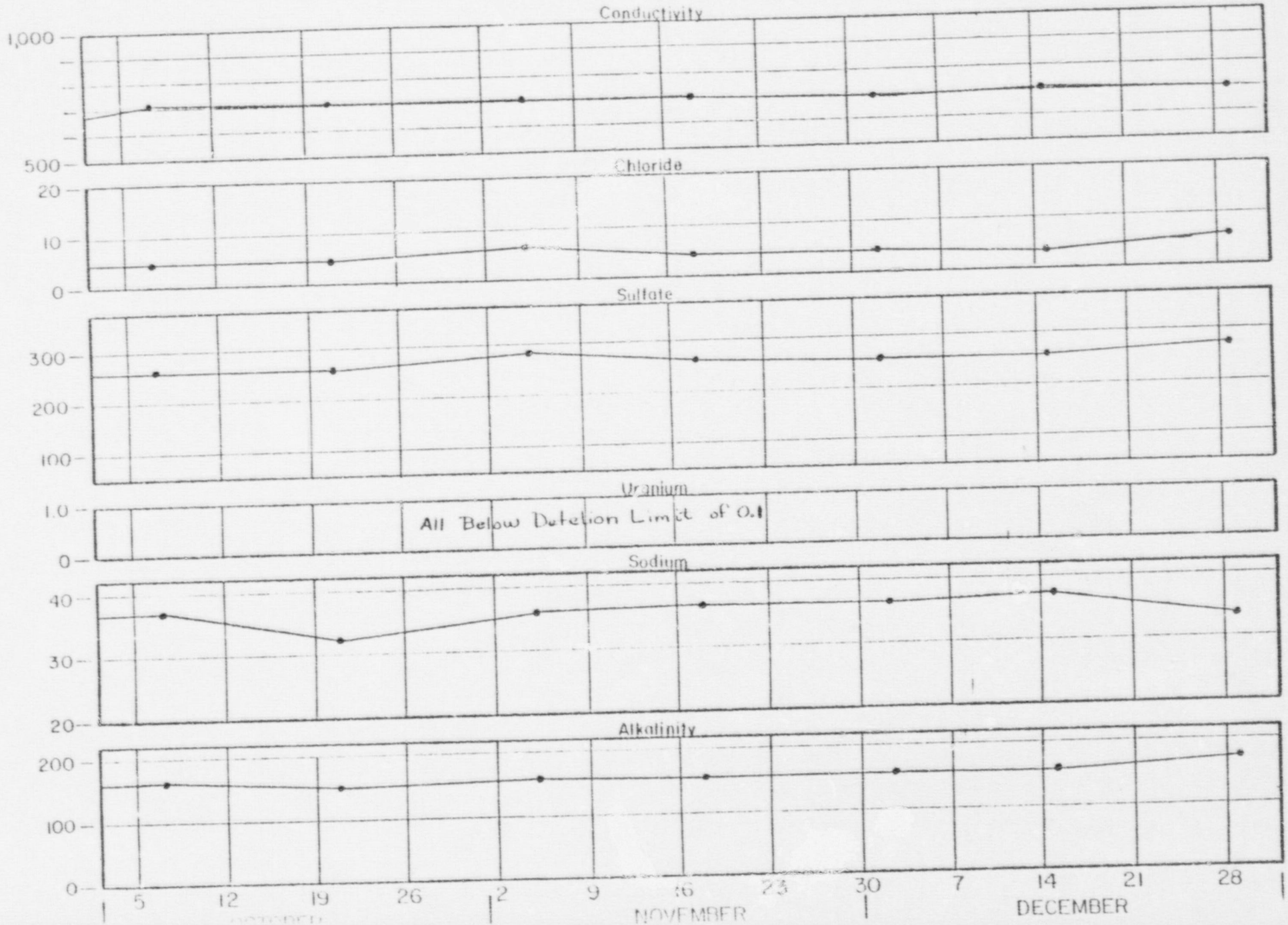
WATER QUALITY

Well name 309



WATER QUALITY

Well name 313



Bi-Weekly Water Quality

4th Quarter Report 1980

Well Name PN5-L319

Aquifer N

UCL	1,095	22	459	1	50	172
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	575	4	252	<.1	32	160
10-7-80	685	3	253	<.1	35	156
10-21-80	690	4	253	<.1	37	154
11-5-80	665	5	245	<.1	36	160
11-18-80	675	6	251	<.1	36	158
12-2-80	665	4	234	<.1	36	158
12-16-80	670	4	240	<.1	37	164
12-30-80	690	5	241	<.1	35	172

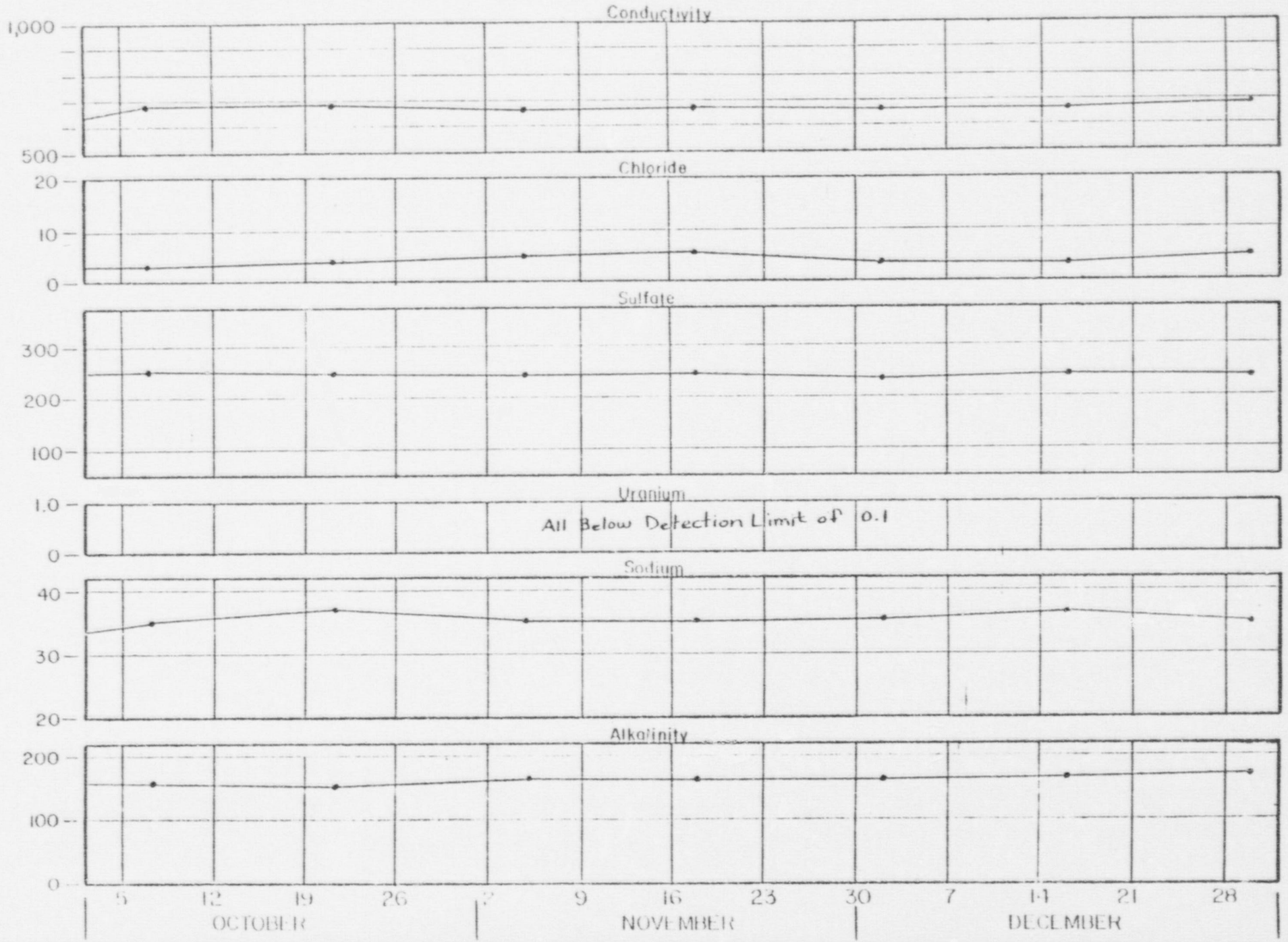
Well Name PN5-L320

Aquifer N

UCL	899	15	271	1	52	225
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	595	4	250	<.1	34	160
10-6-80	680	4	250	<.1	36	162
10-20-80	685	2	250	<.1	35	158
11-5-80	675	4	250	<.1	35	160
11-18-80	670	4	248	<.1	36	158
12-2-80	665	4	237	<.1	36	162
12-16-80	685	4	236	<.1	37	164
12-30-80	670	6	239	<.1	34	168

WATER QUALITY

Well name 319



Bi-Weekly Water Quality

4th Quarter Report 1980

Well Name PN5-LNMI

Aquifer N

UCL	887	22	462	1	43	187
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	605	4	267	<.1	35	156
10-7-80	700	3	268	<.1	37	176
10-20-80	705	3	260	<.1	36	152
11-5-80	695	6	268	<.1	36	154
11-18-80	685	4	268	<.1	36	156
12-2-80	690	4	256	<.1	37	156
12-15-80	710	4	253	<.1	37	158
12-30-80	690	4	251	<.1	34	164

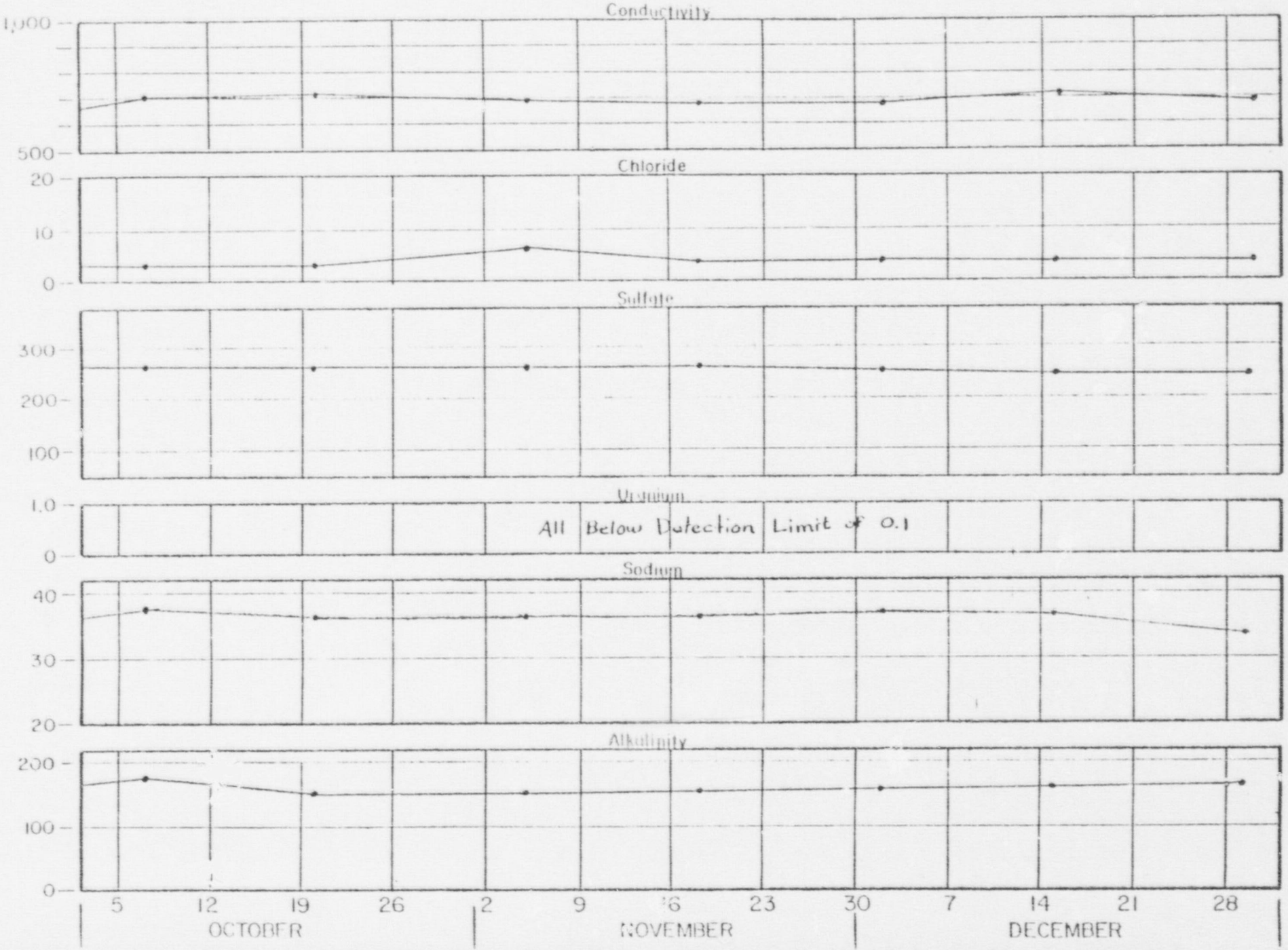
Well Name PN5-L305

Aquifer M

UCL	636	32	344	1	51	496
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	420	9	104	<.1	26	178
10-7-80	495	6	103	<.1	28	182
10-20-80	435	6	104	<.1	27	178
11-5-80	490	8	107	<.1	27	184
11-18-80	475	8	105	<.1	29	178
12-2-80	475	8	98	<.1	25	184
12-15-80	490	6	95	<.1	28	190
12-29-80	485	6	99	<.1	26	172

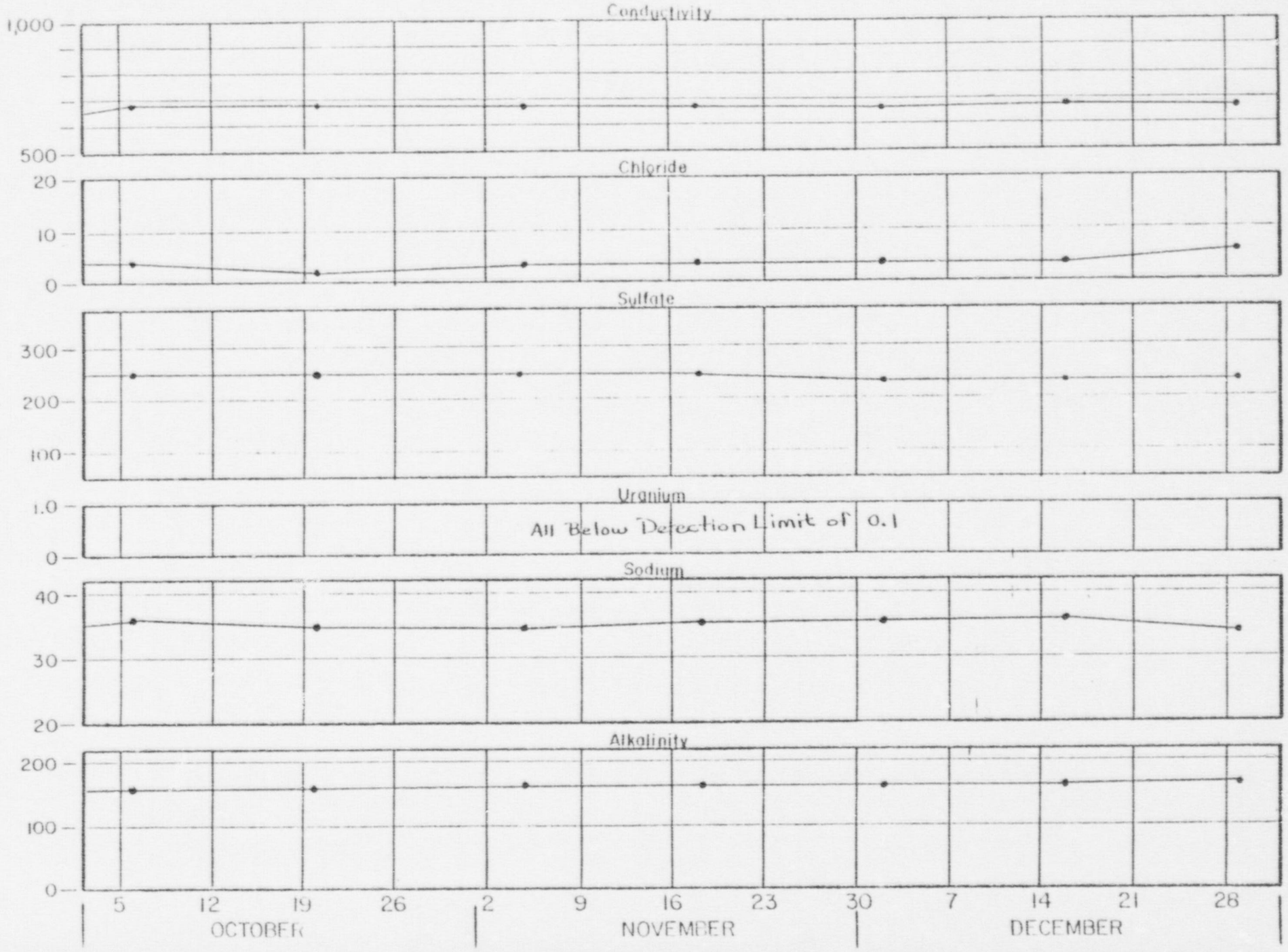
WATER QUALITY

Well name N-M-1



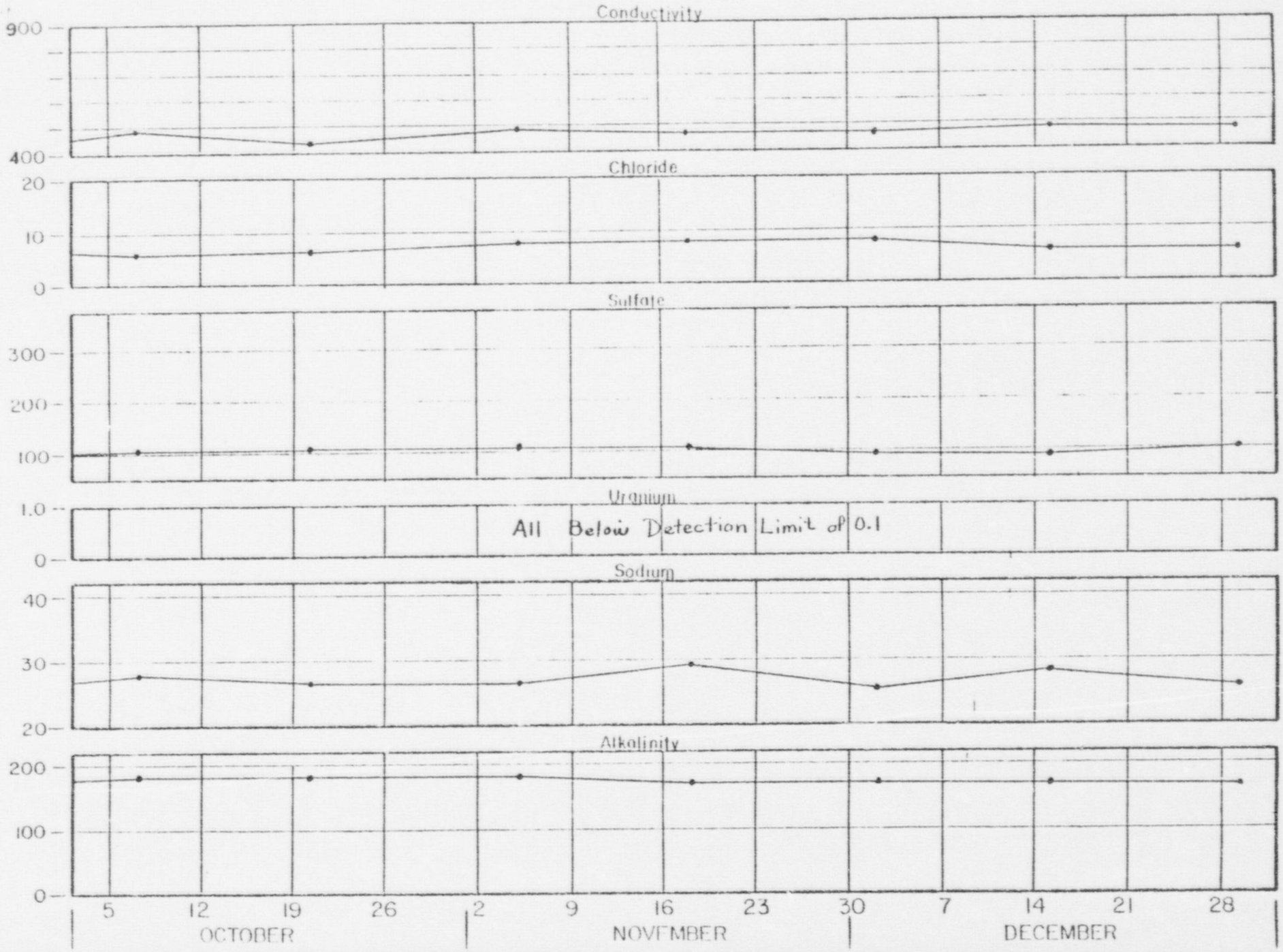
WATER QUALITY

Well name 320



WATER QUALITY

Well name 305



Bi-Weekly Water Quality

4th Quarter Report 1980

Well Name PN5-L575

Aquifer M

UCL	962	24	327	1	46	209
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	435	6	100	<.1	26	176
10-7-80	505	9	104	<.1	27	158
10-20-80	485	7	104	<.1	26	178
11-5-80	485	8	106	<.1	26	180
11-18-80	485	8	103	<.1	27	180
12-2-80	475	10	101	<.1	27	184
12-15-80	485	6	97	<.1	27	180
12-30-80	490	7	97	<.1	25	184

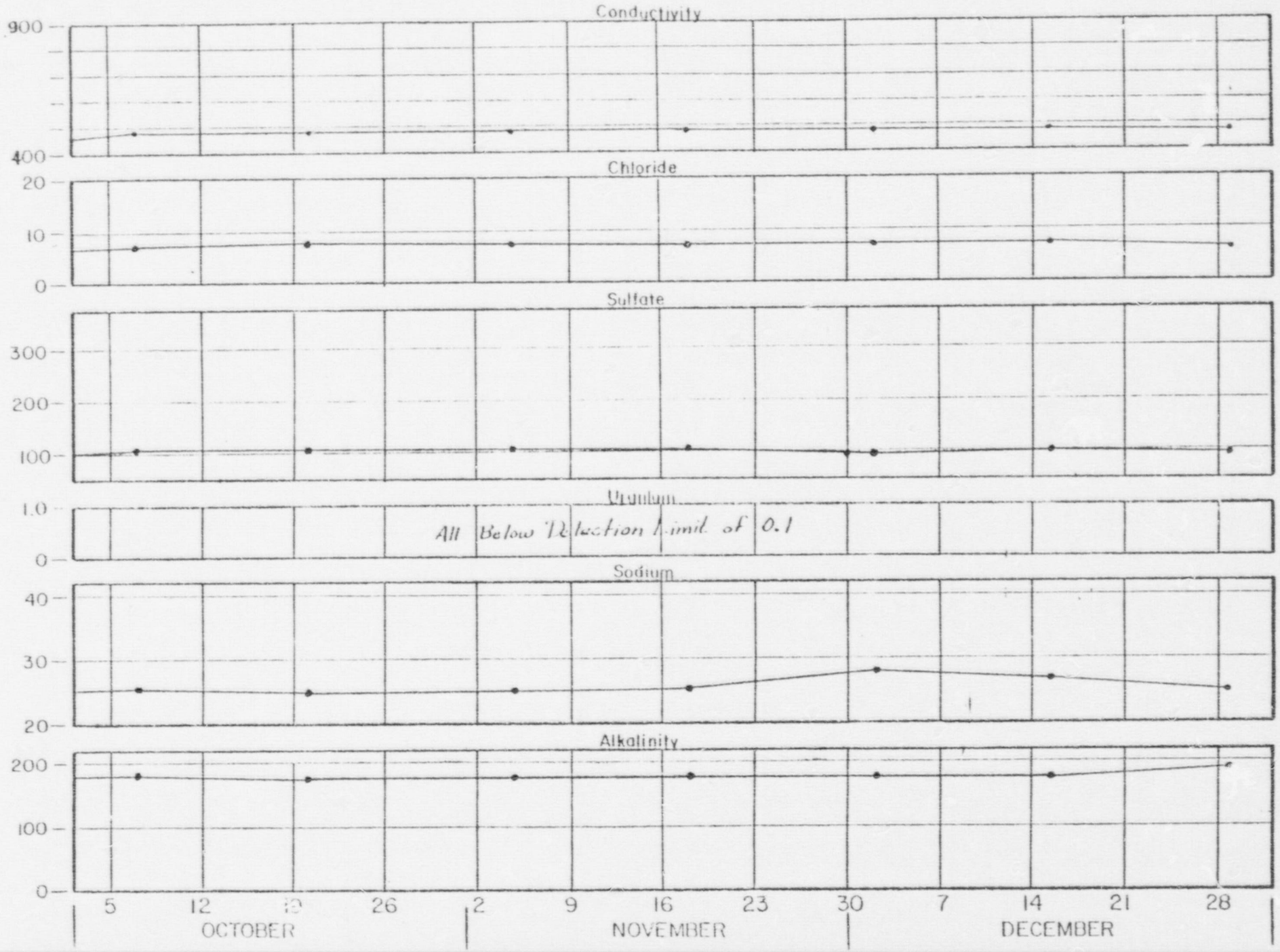
Well Name PN5-L576

Aquifer M

UCL	835	19	153	1	37	231
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	435	7	99	<.1	25	180
10-7-80	490	7	102	<.1	26	182
10-20-80	490	8	102	<.1	26	180
11-5-80	485	8	104	<.1	25	180
11-18-80	490	8	102	<.1	26	184
12-2-80	480	8	98	<.1	28	184
12-15-80	490	8	99	<.1	27	182
12-29-80	485	6	98	<.1	25	194

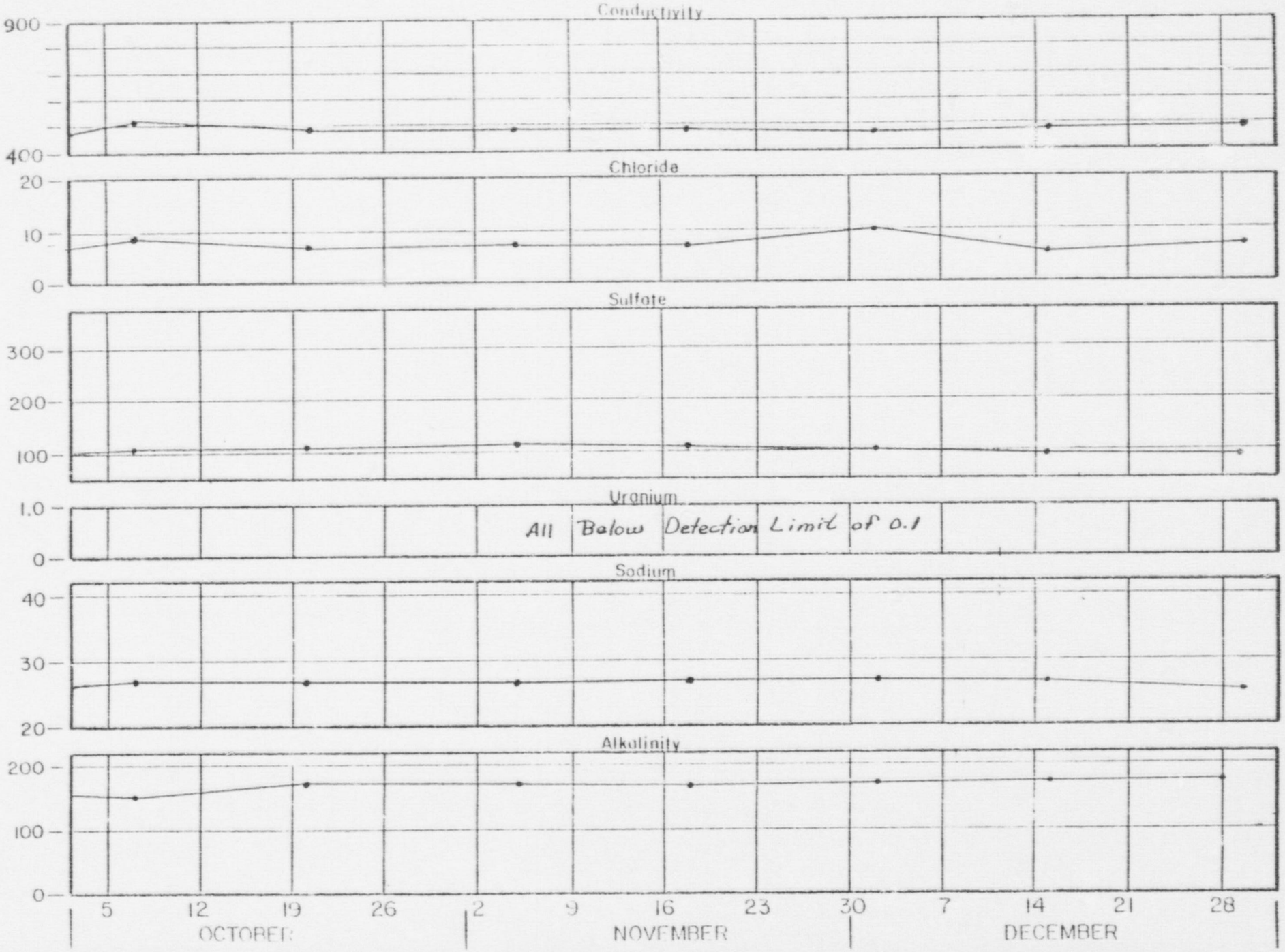
WATER QUALITY

Well name 576



WATER QUALITY

Well name 575



Bi-Weekly Water Quality
4th Quarter Report 1980

Well Name PN5-LMM1

Aquifer M

UCL	727	10	140	1	28	250
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-24-80	425	6	101	<.1	26	174
10-7-80	500	7	105	<.1	28	184
10-20-80	495	7	105	<.1	27	178
11-5-80	490	8	102	<.1	26	178
11-18-80	490	6	102	<.1	28	176
12-2-80	475	8	102	<.1	36	182
12-15-80	490	5	102	<.1	27	178
12-29-80	485	7	100	<.1	26	186

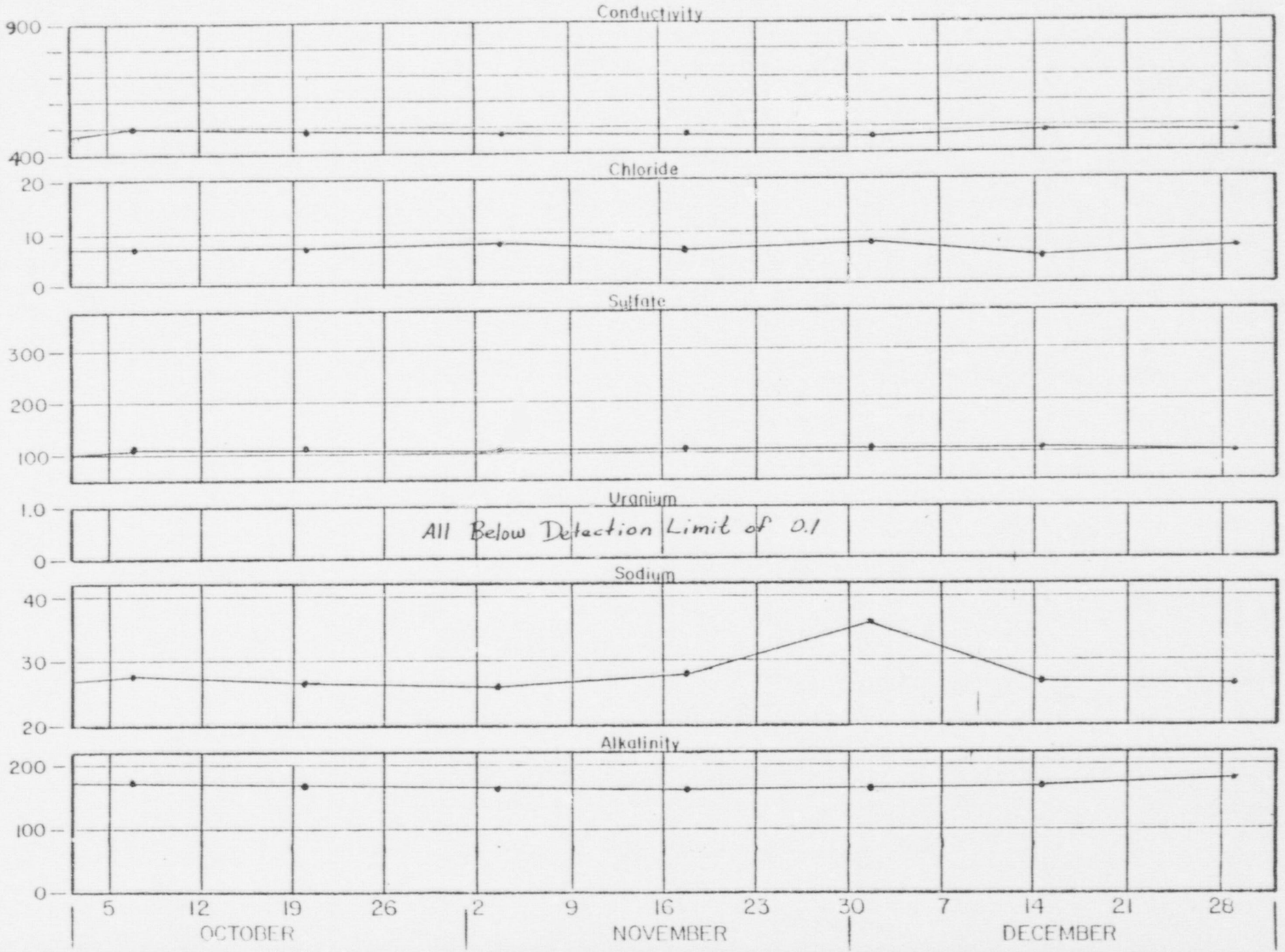
Well Name PN5-MM2

Aquifer M

UCL	585	12	105	1	31	181
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-23-80	415	5	95	<.1	26	184
10-7-80	490	7	97	<.1	28	180
10-21-80	480	8	98	<.1	20	180
11-5-80	480	6	101	<.1	26	180
11-18-80	475	8	97	<.1	27	180
12-2-80	475	7	93	<.1	26	182
12-15-80	485	6	97	<.1	28	178
2-29-80	475	6	96	<.1	26	184

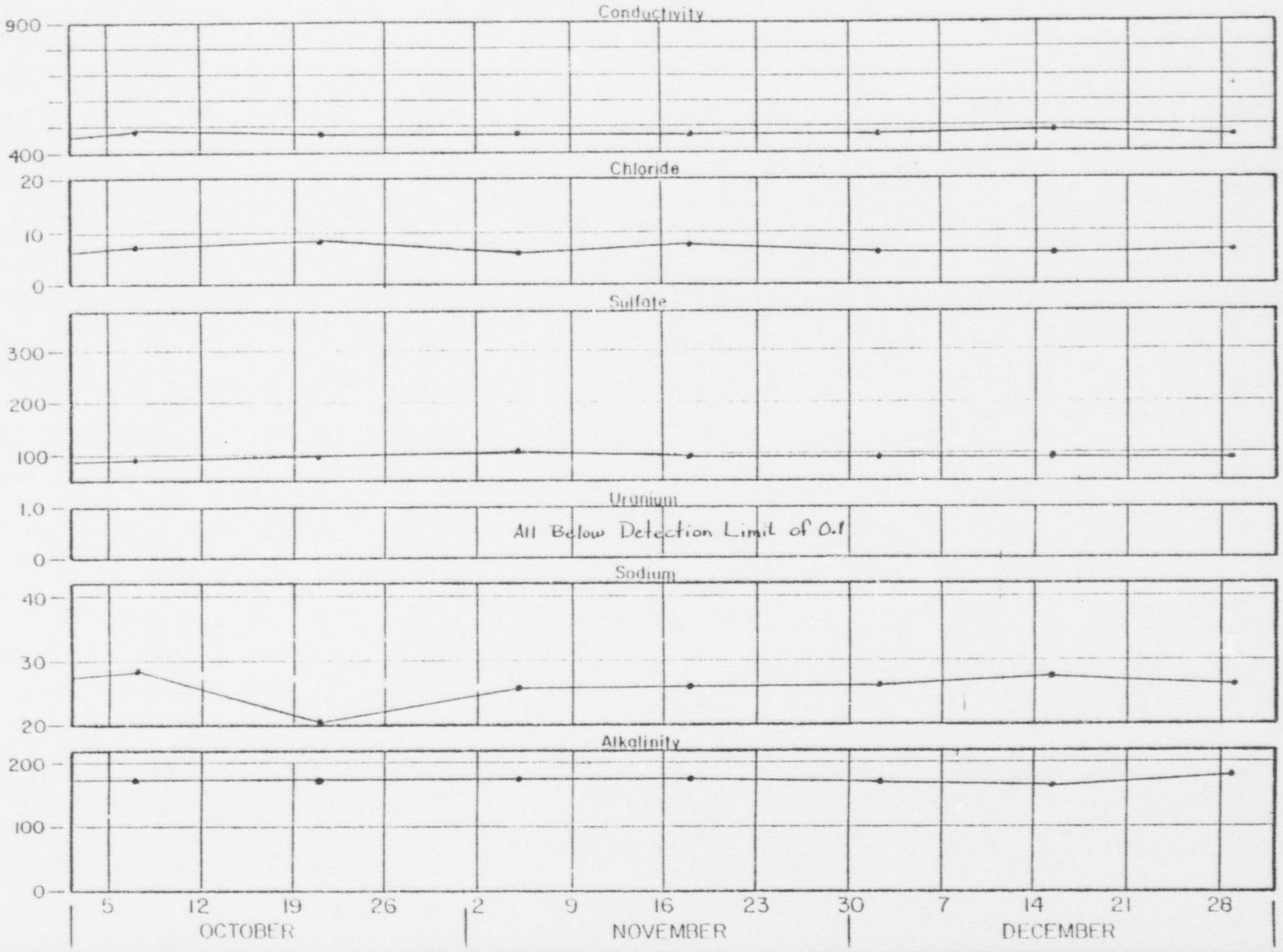
WATER QUALITY

Well name MM1



WATER QUALITY

Well name M-M-2



Bi-Weekly Water Quality

4th Quarter Report 1980

Well Name PN5-L314

Aquifer BASAL

UCL	590	8.7	158	1	58	203
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)
9-23-80	395	7	54	<.1	41	190
10-9-80	425	6	59	<.1	40	186
10-21-80	430	8	60	<.1	25	188
11-6-80	430	8	61	<.1	41	190
11-19-80	420	8	59	<.1	42	188
12-3-80	440	8	61	<.1	40	194
12-15-80	425	7	56	<.1	42	188
12-29-80	425	7	59	<.1	39	196

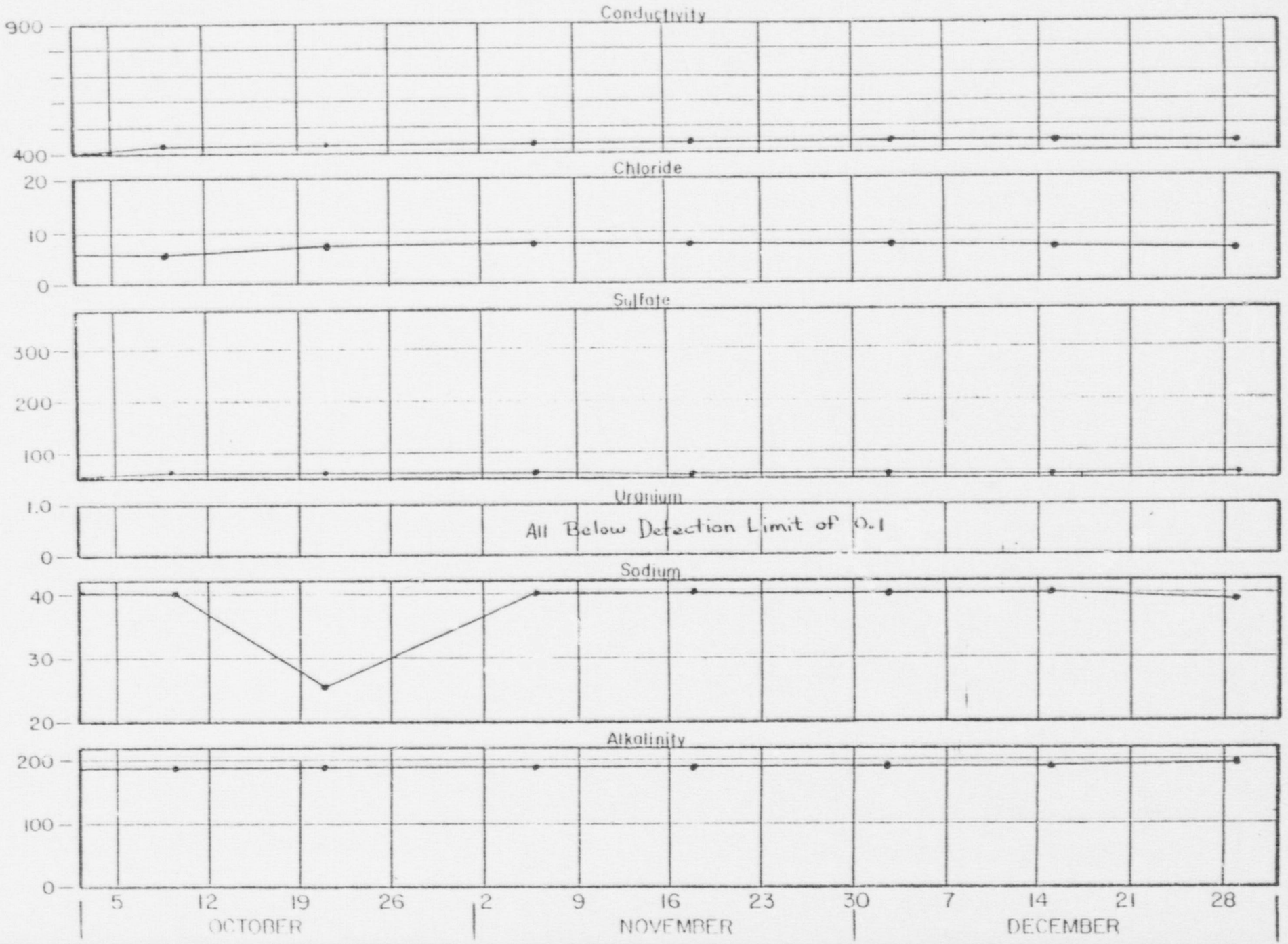
Well Name _____

Aquifer _____

UCL						
Sample Date	Conductivity umhos/cm	Cl^- (ppm)	$SO_4^=$ (ppm)	U (ppm)	Na^+ (ppm)	Alkalinity (as ppm $CaCO_3$)

WATER QUALITY

Well name 314



APPENDIX C

TETON-NEDCO MONITOR WELLS

WEEKLY WATER LEVELS

Weekly Water Levels
4th Quarter Report

Well Name 304
Aquifer Idaho
MP Elev 5201.0
Baseline Elev 5170.98

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	11:50	30.34	5170.66
10-6-80	18:00	30.32	5170.77
10-15-80	10:00	30.59	5170.41
10-22-80	8:50	30.72	5170.28
10-29-80	10:35	31.08	5169.92
11-4-80	9:00	30:86	5170.14
11-10-80	11:30	30.83	5170.17
11-17-80	11:00	30.72	5170.28
11-24-80	14:00	31.01	5169.99
12-1-80	14:20	31.15	5169.85
12-8-80	14:20	30.60	5170.40
12-15-80	10:05	31.00	5170.00
12-22-80	11:20	30.93	5170.07
12-29-80	15:05	31.27	5169.73

Well Name 570
Aquifer Idaho
MP Elev 5207.0
Baseline 5173.85

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	13.55	36.13	5170.87
10-6-80	9:40	36.62	5170.38
10-13-80	pump	down	well
10-21-80	8:45	37.95	5169.05
10-28-80	10:45	37.25	5169.75
11-3-80	sounder blocked		
11-10-80	11:55	37.15	5169.85
11-17-80	pump	down	well
11-24-80	15:00	42.53	5164.47
12-2-80	13:30	37.03	5169.97
12-8-80	14:10	37.04	5169.96
12-15-80	13:30	37.51	5169.49
12-22-80	pump	down	well
12-29-80	10:45	37.03	5169.97

Weekly Water Levels
4th Quarter Report

Well Name N-M-1
Aquifer N
MP Elev 5224.40
Baseline Elev —

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	9:50	119.52	5104.88
10-6-80	11:25	120.05	5104.36
10-15-80	11:00	128.30	5096.10
10-20-80	11:30	128.24	5095.82
10-28-80	15:00	130.01	5094.39
11-3-80	11:45	132.48	5091.92
11-10-80	9:15	108.11	5116.29
11-17-80	11:45	101.87	5122.53
11-24-80	11:25	97.97	5126.43
12-1-80	13:00	92.47	5131.93
12-8-80	15:30	93.45	5130.95
12-15-80	9:35	93.51	5130.89
12-22-80	14:35	86.78	5137.62
12-29-80	10:00	92.08	5132.32

Well Name 309
Aquifer N
MP Elev 5203.78
Baseline 5151.46

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	11:45	96.52	5107.26
10-7-80	18:00	100.50	5103.28
10-15-80	10:00	106.90	5096.88
10-20-80	10:40	105.59	5098.19
10-29-80	10:40	108.02	5095.76
11-4-80	9:00	113.02	5090.76
11-11-80	Air Lifting well		
11-17-80	10:55	76.11	5127.67
11-24-80	14:30	74.57	5129.21
12-1-80	14:20	72.38	5131.40
12-8-80	14:20	72.08	5131.70
12-15-80	10:05	69.05	5134.73
12-22-80	11:05	69.74	5134.04
12-29-80	15:00	69.54	5134.24

Weekly Water Levels
4th Quarter Report

Well Name 313
Aquifer N
MP Elev 5207.50
Baseline Elev 5135.70

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	14:15	100.61	5106.86
10-6-80	11:18	103.92	5103.58
10-15-80	10:00	110.32	5097.18
10-20-80	11:40	109.95	5097.55
10-28-80	14:50	114.79	5092.71
11-3-80	11:15	117.35	5090.15
11-10-80	9:00	92.75	5117.75
11-17-80	11:15	83.79	5123.71
11-24-80	11:20	79.48	5128.05
12-1-80	12:55	76.77	5130.73
12-8-80	13:10	75.59	5131.91
12-15-80	10:00	75.49	5132.01
12-22-80	14:55	73.77	5133.73
12-29-80	11:50	74.46	5133.04

Well Name 319
Aquifer N
MP Elev 5212.2
Baseline 5135.18

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	10:00	112.01	5100.19
10-6-80	11:30	110.61	5101.51
10-15-80	10:00	123.05	5089.15
10-20-80	11:20	117.42	5094.78
10-28-80	11:30	122.12	5090.08
11-4-80	8:30	122.49	5089.71
11-10-80	10:25	95.52	5116.68
11-17-80	11:40	87.73	5124.77
11-24-80	15:00	83.89	5128.61
12-1-80	13:15	81.05	5131.15
12-8-80	13:20	82.57	5129.63
12-15-80	9:30	79.80	5132.40
12-22-80	14:30	77.45	5134.75
12-29-80	8:30	79.53	5132.67

Weekly Water Levels
4th Quarter Report

Well Name 320
Aquifer N
MP Elev 5198.30
Baseline Elev 5135.45

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	10:15	96.01	5102.29
10-6-80	11:20	96.72	5101.59
10-15-80	9:15	103.29	5095.01
10-20-80	9:00	105.37	5092.93
10-28-80	11:25	109.91	5088.39
11-4-80	8:40	112.87	5085.43
11-10-80	10:50	82.29	5116.01
11-17-80	11:50	73.54	5124.76
11-24-80	15:00	69.37	5128.93
12-2-80	11:00	67.00	5131.30
12-8-80	15:15	70.95	5127.35
12-15-80	9:25	66.22	5132.08
12-22-80	14:15	64.68	5133.62
12-29-80	10:35	64.57	5133.72

Well Name 305
Aquifer M
MP Elev 5218.9
Baseline 5157.25

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	11:35	87.54	5131.06
10-6-80	9:10	64.07	5154.83
10-15-80	9:30	99.96	5118.90
10-20-80	9:30	102.98	5115.96
10-28-80	11:10	96.52	5122.38
11-3-80	11:10	92.75	5126.15
11-10-80	10:25	96.76	5122.14
11-17-80	10:20	94.51	5124.39
11-24-80	13:20	94.21	5124.64
12-1-80	13:30	92.58	5126.32
12-8-80	11:30	94.14	5124.76
12-15-80	8:09	90.76	5128.14
12-22-80	11:05	90.68	5128.22
12-29-80	10:10	90.26	5128.64

Weekly Water Levels
4th Quarter Report

Well Name 307
Aquifer N1
MP Elev 5201.1
Baseline Elev 5138.81

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	13:40	73.02	5128.08
10-6-80	9:30	109.74	5091.36
10-15-80	10:00	75.29	5125.81
10-20-80	11:10	101.77	5099.33
10-29-80	10:00	77.58	5123.52
11-4-80	9:00	76.34	5124.76
11-10-80	12:00	78.63	5122.47
11-17-80	11:25	76.16	5124.94
11-24-80	14:45	74.77	5126.33
12-1-80	13:40	71.99	5129.11
12-8-80	14:05	73.13	5127.97
12-15-80	13:20	71.76	5129.34
12-22-80	14:15	69.73	5131.37
12-29-80	10:45	69.08	5132.02

Well Name 575
Aquifer N1
MP Elev 5213.2
Baseline 5137.65

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	9:55	89.23	5123.97
10-6-80	11:20	88.91	5124.29
10-15-80	11:05	89.13	5124.07
10-20-80	11:35	107.70	5105.50
10-28-80	15:00	101.89	5111.31
11-3-80	11:45	91.42	5121.78
11-10-80	9:10	90.12	5123.08
11-17-80	11:50	89.11	5124.09
11-24-80	11:25	79.15	5134.05
12-1-80	13:05	86.69	5126.51
12-8-80	9:00	87.44	5125.76
12-15-80	9:40	86.05	5127.15
12-22-80	11:30	84.01	5129.19
12-29-80	9:00	84.13	5129.07

Weekly Water Levels
4th Quarter Report

Well Name 576
Aquifer M
MP Elev 5196.30
Baseline Elev 5137.93

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	10:10	72.74	5123.56
10-6-80	9:25	71.79	5124.51
10-15-80	9:15	73.10	5123.20
10-30-80	12:00	72.52	5123.78
10-28-80	11:25	73.36	5122.94
11-4-80	8:45	74.36	5121.94
11-10-80	10:50	76.85	5120.45
11-17-80	11:45	73.31	5122.99
11-24-80	15:00	72.28	5121.02
12-2-80	11:00	72.16	5124.14
12-8-80	15:10	71.48	5124.82
12-15-80	9:25	69.87	5126.43
12-22-80	15:00	70.94	5125.36
12-29-80	10:35	71.55	5124.76

Well Name M-M-1
Aquifer M
MP Elev 5201.0
Baseline

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	11:40	74.07	5126.93
10-6-80	9:15	75.47	5125.53
10-15-80	10:00	88.70	5112.30
10-20-80	9:25	88.73	5112.27
10-28-80	11:15	77.41	5123.59
11-5-80	14:10	75.97	5125.03
11-10-80	10:30	86.30	5114.70
11-17-80	10:25	77.84	5123.16
11-24-80	13:25	75.27	5125.73
12-1-80	13:35	72.18	5128.82
12-8-80	11:30	73.46	5147.54
12-15-80	9:15	71.13	5129.87
12-22-80	11:00	70.65	5130.35
12-29-80	10:10	70.64	5130.36

Weekly Water Levels
4th Quarter Report

Well Name M-M-2
Aquifer M
MP Elev 5212.20
Baseline Elev

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	14:20	87.82	5124.38
10-6-80	11:15	88.99	5123.21
10-15-80	9:35	74.37	5137.83
10-20-80	11:40	104.05	5108.15
10-29-80	14:45	91.73	5120.47
11-5-80	9:10	90.84	5121.36
11-10-80	9:00	88.88	5123.32
11-17-80	11:50	90.73	5121.47
11-24-80	11:15	87.93	5124.27
12-2-80	12:05	88.50	5123.70
12-8-80	13:05	87.90	5124.30
12-15-80	9:45	86.23	5125.97
12-22-80	14:55	85.42	5126.78
12-29-80	12:05	83.99	5128.21

Well Name 314
Aquifer Basal
MP Elev 5201.2
Baseline 5102.25

TIME		SWL	
Date	Hour	Depth	Elev.
9-29-80	13:30	106.02	5095.18
10-6-80	18:00	106.71	5094.49
10-15-80	10:00	107.50	5093.70
10-20-80	10:40	107.59	5093.61
10-29-80	11:00	107.97	5093.23
11-4-80	8:50	107.14	5094.05
11-10-80	11:40	112.94	5088.26
11-17-80	11:00	107.30	5093.90
11-24-80	14:20	113.04	5088.16
12-1-80	14:45	107.37	5093.83
12-8-80	14:30	106.50	5094.70
12-15-80	10:00	106.42	5094.78
12-22-80	11:25	112.78	5088.42
12-29-80	15:20	107.07	5094.13

BAROMETRIC PRESSURE TRENDS

Day of Month	Pressure for Month of October	Pressure for Month of November	Pressure for Month of December	
1			29.90	
2			29.75	
3		30.09		
4		30.12		
5				
6	30.18			
7	30.12			
8			29.91	
9				
10		29.80		
11		29.89		
12				
13	29.78			
14				
15	29.53		30.03	
16				
17		30.02		
18				
19				
20	30.03			
21	29.92			
22	29.80		29.93	
23				
24		29.96		
25				
26				
27				
28	30.20			
29	30.10		30.12	
30				
31				

(Pressures were taken at 12:00 noon)