QUARTERLY REPORT - 2nd QUARTER 1982

Q-Sand In-Situ Uranium Recovery R&D Project

Converse County, Wyoming

NRC Source Material License SUA-1387

NRC Docket No. 40-8768

Project Status

Leaching operations continued as scheduled. Fluid production and injection during the period totaled 12.62 million gallons and 12.33 million gallons, respectively. Over-recovery during the period totaled 0.29 million gallons (2.2 gpm). Waste water routed to the evaporation ponds during the quarter totaled 76,496 gallons.

Excursion Monitoring

There were no excursions or pond leaks detected during the quarter. Excursion monitoring data is presented in both tabular and graphical form in Attachment A. Monitor well fluid level data is presented in tabular and graphical form in Attachment B. The data continues to indicate confinement and control of the leach solutions, therefore, no significant changes in aquifer control techniques are anticipated.

The water sampling pump in the underlying aquifer well QMO-1 was inoperative on the scheduled monitoring day of 5/20/82. The pump was replaced and routine monitoring resumed 6/10/82.

Water Quality Data

Results of the quarterly monitor well analyses for the 2nd Quarter, 1982, are included as Attachment C. Also included in Attachment C are the required analyses for the evaporation ponds and bleed stream samples.

Radon Survey

The radon-222 levels determined by continuous passive radon detectors during the period are as follows:

	4/19/82	5/19/82	6/19/82
Upwind Location	< .01 pCi/L	.20 pCi/L	1.7 pCi/L
Downwind Location	.03 pCi/L	<.01 pCi/L	.9 pCi/L
Surge Tank Location	.90 pCi/L	.45 pCi/L	3.1 pCi/L

Direct Gamma Survey

Operational direct gamma surveys conducted for the 2nd Quarter, 1982, are as follows:

Upwind Radon Sample Location	20 μR/hr.
Downwind Radon Sample Location	30 μR/hr.
Pregnant Surge Tank Area	40 μR/hr.
Evaporation Pond Area	22 μR/hr.

The MESA-1 gamma survey meter was recalibrated on 3/15/82, and found to be delivering low readings. The meter was correctly calibrated for the 2nd Quarter 1982, and therefore produced somewhat higher readings than were reported in the 1st Quarter 1982, and 4th Quarter 1981.

Sediment/Soil Surveys

Operational surveys for Radium^{226} in the sediment in the Bill Smith Mine water treatment system drainage are as follows:

Outfall from Final Treatment	5.80 pCi/g
At Ross Road	1.10 pCi/g
1½ Miles below Discharge Point	4.64 pCi/g

Water Survey

The operational survey for Radium^{226} and Thorium^{230} at the outfall of the final treatment unit consist of composite samples for Radium^{226} and grab samples for Thorium^{230}. The Radium^{226}, as shown on the NPDES report, varied from a minimum of 0.85 pCi/L to a maximum 36.0 pCi/L, and averaged 6.8 pCi/L. Corrective measures were implemented to reduce Radium^{226} levels at the end of the reporting period.

A grab sample, taken at the outfall on 6/11/82, and analyzed for Thorium^{230}; contained 2.9 pCi/L Thorium^{230}.

NPDES

A copy of the quarterly report required under NPDES Permit No. WY-0022411 is included in Attachment D.

ATTACHMENT A

MONITOR WELL EXCURSION PARAMETERS ANALYSES

Monitor well excursion parameter analyses data and NRC upper control limit (UCL) values for the eleven monitor wells are presented in tabular form in Tables A-1 through A-11 and are presented in graphical form in Figures A-1 through A-22.

There were no excursions during the report period. The water sampling pump in the underlying aquifer well QMO-1 was inoperative on the scheduled monitoring day of 5/20/82. The pump was replaced and routine monitoring resumed 6/10/82.

Table A-1

Monitor Well QM - 1 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK(1)
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	239	6	.09	346	26	101	ND	3.9
10-17-81	ND	239	6	.09	352	--	--	--	
11-5-81	ND	234	6	.11	356	24	114	.018	3.8
11-19-81	ND	239	5	.12	316	--	--	--	
12-3-81	ND	244	10	.10	396	28	122	.014	4.0
12-17-81	ND	239	9	.11	260	--	--	--	
12-31-81	ND	234	11	.10	374	27	109	<.01	3.8
1-14-82	ND	244	6	.13	398	--	--	--	--
1-28-82	ND	259	10	.15	486	23	117	<.01	4.2
2-11-82	ND	264	9	.18	348	--	--	--	--
2-25-82	ND	298	11	.21	360	28	118	<.01	4.9
3-11-82	ND	288	7	.15	430	27	118	<.01	4.7
3-25-82	ND	244	8	.13	416	--	--	--	--
4-8-82	ND	239	7	.13	382	26	115	<.01	3.9
4-22-82	ND	244	5	.10	406	--	--	--	--
5-6-82	ND	250	5	.15	447	22	95	<.01	4.1
5-20-82	ND	244	4	.12	502	--	--	--	--
6-10-82	ND	244	7	.06	382	23	117	<.01	4.0
6-24-82	ND	245	10	.06	392	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-2

Monitor Well QM - 2 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK(1)
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	244	6	.02	322	26	98	ND	4.0
10-17-81	ND	234	7	.06	336	--	--	--	--
11-5-81	ND	242	7	.06	354	24	123	.011	4.0
11-19-81	ND	289	5	.07	336	--	--	--	--
12-3-81	ND	244	10	.07	402	27	119	.012	4.0
12-17-81	ND	242	7	.07	344	--	--	--	--
12-31-81	ND	234	10	.05	384	26	114	<.01	3.8
1-14-82	ND	224	8	.07	406	--	--	--	--
1-28-82	ND	239	6	.07	374	22	118	<.01	3.9
2-11-82	ND	234	7	.06	304	--	--	--	--
2-25-82	ND	224	7	.07	326	26	119	<.01	3.7
3-11-82	ND	239	7	.07	444	21	118	<.01	3.8
3-25-82	ND	234	6	.06	404	--	--	--	--
4-8-82	ND	239	7	.06	372	26	120	<.01	3.9
4-22-82	ND	250	5	.06	396	--	--	--	--
5-6-82	ND	241	4	.07	416	20	95	<.01	4.0
5-20-82	ND	244	4	.06	412	--	--	--	--
6-10-82	ND	244	6	.06	389	21	117	<.01	4.0
6-24-82	ND	222	7	.05	401	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-3

Monitor Well QM - 3 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	242	6	.06	352	26	108	ND	4.0
10-17-81	ND	234	6	.07	352	--	--	--	--
11-5-81	ND	242	7	.07	352	25	116	.009	4.0
11-19-81	ND	243	5	.07	346	--	--	--	--
12-3-81	ND	239	7	.07	388	27	122	.009	3.9
12-17-81	ND	239	9	.07	280	--	--	--	--
12-31-81	ND	234	9	.07	370	26	108	<.01	3.8
1-14-82	ND	229	6	.08	358	--	--	--	--
1-28-82	ND	239	6	.07	362	22	118	<.01	3.9
2-11-82	ND	244	7	.06	350	--	--	--	--
2-25-82	ND	239	6	.06	326	25	119	<.01	3.9
3-11-82	ND	244	7	.07	406	22	132	<.01	4.0
3-25-82	ND	234	6	.07	410	--	--	--	--
4-8-82	ND	234	7	.06	372	26	120	<.01	3.8
4-22-82	ND	244	5	.06	386	--	--	--	--
5-6-82	ND	247	4	.05	436	19	100	<.01	4.1
5-20-82	ND	244	4	.06	402	--	--	--	--
6-10-82	ND	236	6	.04	384	21	120	<.01	3.9
6-24-82	ND	241	7	.06	392	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-4

Monitor Well QM - 4 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	224	7	.08	316	29	95	ND	3.7
10-17-81	ND	210	8	.08	300	--	--	--	--
11-5-81	ND	225	7	.12	348	30	116	.006	3.7
11-19-81	14	5	17	.01	152	--	--	--	--
12-3-81	ND	98	11	.04	286	29	108	.009	1.6
12-17-81	ND	171	11	.03	210	--	--	--	--
12-31-81	ND	224	10	.13	370	27	105	<.01	3.7
1-14-82	ND	239	6	.04	362	--	--	--	--
1-28-82	ND	234	6	.14	376	24	112	<.01	3.8
2-11-82	ND	234	6	.12	278	--	--	--	--
2-25-82	ND	234	6	.12	328	27	113	<.01	3.8
3-11-82	ND	239	6	.13	402	22	117	<.01	3.9
3-25-82	ND	229	7	.12	408	--	--	--	--
4-8-82	ND	229	7	.09	356	27	113	<.01	3.8
4-22-82	ND	232	5	.10	386	--	--	--	--
5-6-82	ND	238	4	.05	486	21	95	<.01	3.9
5-20-82	ND	232	4	.13	384	--	--	--	--
6-10-82	ND	236	6	.15	380	22	119	<.01	3.9
6-24-82	ND	241	7	.06	394	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-5

Monitor Well QM - 5 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	224	6	.08	282	27	90	ND	3.7
10-17-81	ND	234	6	.07	298	--	--	--	--
11-5-81	ND	234	6	.09	316	25	112	.002	3.8
11-19-81	ND	229	5	.09	360	--	--	--	--
12-3-81	ND	234	9	.12	382	28	110	.007	3.8
12-17-81	ND	234	7	.08	316	--	--	--	--
12-31-81	ND	229	9	.07	366	25	116	<.01	3.8
1-14-82	ND	229	6	.09	332	--	--	--	--
1-28-82	ND	234	5	.07	408	22	100	<.01	3.8
2-11-82	ND	234	7	.07	284	--	--	--	--
2-25-82	ND	229	7	.07	308	26	111	<.01	3.8
3-11-82	ND	239	7	.07	393	22	128	<.01	3.9
3-25-82	ND	234	7	.06	384	--	--	--	--
4-8-82	ND	234	8	.06	366	26	112	< .01	3.8
4-22-82	ND	238	5	.06	374	--	--	--	--
5-6-82	ND	235	5	.04	424	20	100	< .01	3.9
5-20-82	ND	238	4	.05	402	--	--	--	--
6-10-82	ND	240	4	.08	380	21	110	< .01	3.9
6-24-82	ND	234	7	.03	404	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-6

Monitor Well QM - 6 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK(1)
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	229	6	.04	340	26	100	ND	3.8
10-17-81	ND	229	6	.05	340	--	--	--	--
11-5-81	ND	234	6	.05	354	26	108	.002	3.8
11-19-81	ND	229	6	.05	344	--	--	--	--
12-3-81	ND	234	9	.05	380	27	106	.003	3.8
12-17-81	ND	234	7	.05	240	--	--	--	--
12-31-81	ND	229	9	.05	388	25	100	<.01	3.8
1-14-82	ND	234	6	.06	354	--	--	--	--
1-28-82	ND	234	6	.05	344	21	104	<.01	3.8
2-11-82	ND	229	6	.05	344	--	--	--	--
2-25-82	ND	229	7	.05	266	26	113	<.01	3.8
3-11-82	ND	244	7	.05	384	22	126	<.01	4.0
3-25-82	ND	229	6	.05	384	--	--	--	--
4-8-82	ND	229	7	.05	356	25	110	<.01	3.8
4-22-82	ND	250	5	.05	382	--	--	--	--
5-6-82	ND	242	4	.04	407	20	90	<.01	4.0
5-20-82	ND	238	4	.05	396	--	--	--	--
6-10-82	ND	236	5	.05	365	21	121	<.01	3.9
6-24-82	ND	237	7	.03	413	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-7

Monitor Well QM - 7 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	229	7	.03	292	27	103	ND	3.8
10-17-81	ND	234	6	.05	320	--	--	--	--
11-5-81	ND	239	6	.06	336	26	112	.002	3.9
11-19-81	ND	234	6	.05	324	--	--	--	--
12-3-81	ND	234	9	.06	370	29	116	.002	3.8
12-17-81	ND	237	9	.06	332	--	--	--	--
12-31-81	ND	229	10	.05	372	27	110	<.01	3.8
1-14-82	ND	234	6	.07	344	--	--	--	--
1-28-82	ND	234	6	.06	364	22	110	<.01	3.8
2-11-82	ND	234	7	.06	352	--	--	--	--
2-25-82	ND	234	7	.06	290	25	113	<.01	3.8
3-11-82	ND	244	7	.06	372	23	107	<.01	4.0
3-25-82	ND	234	6	.06	394	--	--	--	--
4-8-82	ND	239	8	.06	366	26	118	<.01	3.9
4-22-82	ND	244	5	.05	428	--	--	--	--
5-6-82	ND	236	5	.07	481	20	95	<.01	3.9
5-20-82	ND	232	4	.05	382	--	--	--	--
6-10-82	ND	236	7	.08	379	21	120	<.01	3.9
6-24-82	ND	236	8	.02	419	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-8

Monitor Well QM - 8 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	43	289	71	0.48	494	65	240	.02	4.7
10-8-81	ND	234	6	.06	358	27	124	ND	3.8
10-17-81	ND	234	6	.06	290	--	--	--	--
11-5-81	ND	239	7	.07	370	26	112	.001	3.9
11-19-81	ND	234	6	.09	312	--	--	--	--
12-3-81	ND	234	9	.07	448	28	112	.001	3.8
12-17-81	ND	234	9	.07	306	--	--	--	--
12-31-81	ND	224	9	.08	360	27	112	<.01	3.7
1-14-82	ND	234	14	.10	416	--	--	--	--
1-28-82	ND	234	6	.08	348	22	112	<.01	3.8
2-11-82	ND	234	6	.08	292	--	--	--	--
2-25-82	ND	239	7	.09	312	24	113	<.01	3.9
3-11-82	ND	244	6	.08	404	22	111	<.01	4.0
3-25-82	ND	234	6	.07	392	--	--	--	--
4-8-82	ND	234	7	.08	370	26	113	<.01	3.8
4-22-82	ND	250	5	.08	402	--	--	--	--
5-6-82	ND	244	5	.07	481	20	100	<.01	4.0
5-20-82	ND	238	4	.08	396	--	--	--	--
6-10-82	ND	240	5	.10	379	20	120	<.01	3.9
6-24-82	ND	244	8	.03	443	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-9

Monitor Well QMO - 1 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	18	247	37	0.06	660	38	336	.005	3.8
10-8-81	ND	205	4	.01	454	32	216	ND	3.4
10-17-81	ND	215	4	.01	460	--	--	--	--
11-5-81	ND	220	5	.02	484	31	210	.001	3.6
11-19-81	ND	215	4	.02	482	--	--	--	--
12-3-81	ND	220	6	.02	532	33	220	.001	3.6
12-17-81	ND	217	6	.02	434	--	--	--	--
12-31-81	ND	215	6	.02	526	32	231	<.002	3.5
1-14-82	ND	215	4	.02	462	--	--	--	--
1-28-82	ND	210	4	.02	510	27	234	<.002	3.4
2-11-82	ND	215	4	.01	526	--	--	--	--
2-25-82	ND	215	4	.02	426	31	233	.002	3.5
3-11-82	ND	224	3	.02	522	26	229	<.001	3.7
3-25-82	ND	215	4	.02	528	--	--	--	--
4-8-82	ND	210	5	.02	492	30	234	<.001	3.4
4-22-82	ND	232	3	.02	524	--	--	--	--
5-6-82	ND	226	3	.02	599	23	200	<.001	3.7
5-20-82	No Sample. Pump Broken								
6-10-82	ND	224	4	.07	523	27	221	<.001	3.7
6-24-82	ND	232	5	.03	623	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-10

Monitor Well QMS - 1 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK[1]
NRC UCL	18	298	20	0.08	533	46.8	216	.003	4.3
10-8-81	ND	244	7	.07	394	27	120	ND	4.0
10-17-81	ND	249	7	.06	392	--	--	--	--
11-5-81	ND	249	8	.05	356	25	122	.001	4.1
11-19-81	ND	244	6	.05	334	--	--	--	--
12-3-81	ND	249	9	.05	430	28	135	.001	4.1
12-17-81	ND	242	9	.06	280	--	--	--	--
12-31-81	ND	234	10	.04	414	27	147	<.002	3.8
1-14-82	ND	244	6	.06	338	--	--	--	--
1-28-82	ND	244	7	.05	404	22	137	<.002	4.0
2-11-82	ND	249	8	.04	326	--	--	--	--
2-25-82	ND	239	8	.05	382	23	145	<.001	3.9
3-11-82	ND	249	7	.05	438	22	130	<.001	4.1
3-25-82	ND	244	8	.04	450	--	--	--	--
4-8-82	ND	244	3	.04	406	26	140	< .001	4.0
4-22-82	ND	250	6	.04	426	--	--	--	--
5-6-82	ND	250	5	.05	470	20	120	< .001	4.1
5-20-82	ND	256	5	.04	440	--	--	--	--
6-10-82	ND	244	6	.03	420	21	137	< .001	4.0
6-24-82	ND	249	7	.03	516	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Table A-11

Monitor Well QMW - 1 Excursion Parameter Data

Q-Sand ISL Project SPRB, Wyoming

Sample Date	CO_3	HCO_3	Cl	U	TDS	Na	SO_4	Mo	ALK(1)
NRC UCL	18	206	22	0.05	428	18	186	.003	2.6
10-8-81	ND	132	17	.04	298	9	113	ND	2.2
10-17-81	ND	146	15	.04	308	--	--	--	--
11-5-81	ND	137	15	.03	306	9	114	.001	2.2
11-19-81	ND	132	18	.03	312	--	--	--	--
12-3-81	ND	146	17	.04	366	10	119	.001	2.4
12-17-81	ND	149	15	.04	290	--	--	--	--
12-31-81	ND	142	17	.03	300	9	139	<.002	2.3
1-14-82	ND	142	15	.04	304	--	--	--	--
1-28-82	ND	132	17	.03	364	7	142	<.002	2.2
2-11-82	ND	134	17	.03	264	--	--	--	--
2-25-82	ND	132	18	.03	266	9	148	<.001	2.2
3-11-82	ND	137	17	.03	388	8	145	<.001	2.2
3-25-82	ND	132	17	.03	392	--	--	--	--
4-8-82	ND	132	19	.03	364	8	150	< .001	2.2
4-22-82	ND	159	16	.02	410	--	--	--	--
5-6-82	ND	134	15	.03	453	7	125	< .001	2.2
5-20-82	ND	140	14	.02	392	--	--	--	--
6-10-82	ND	142	17	.02	416	7	153	< .001	2.3
6-24-82	ND	148	18	.04	420	--	--	--	--

(1) ALK in meq/l; all others in mg/l.

Figure A-1

Q-Sand ISL Monitor Well QM-1

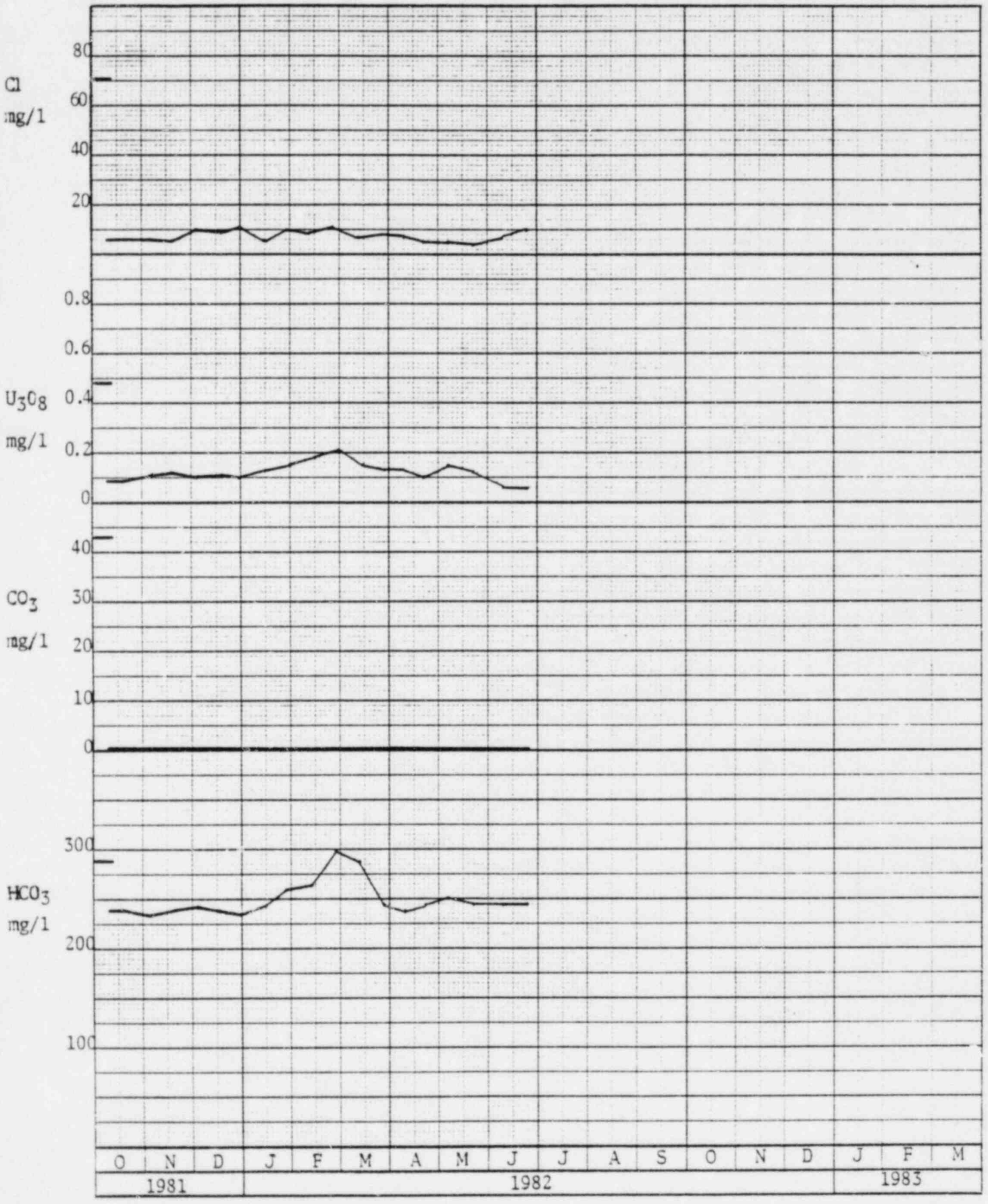


Figure A-2

Q-Sand ISL Monitor Well QM-1

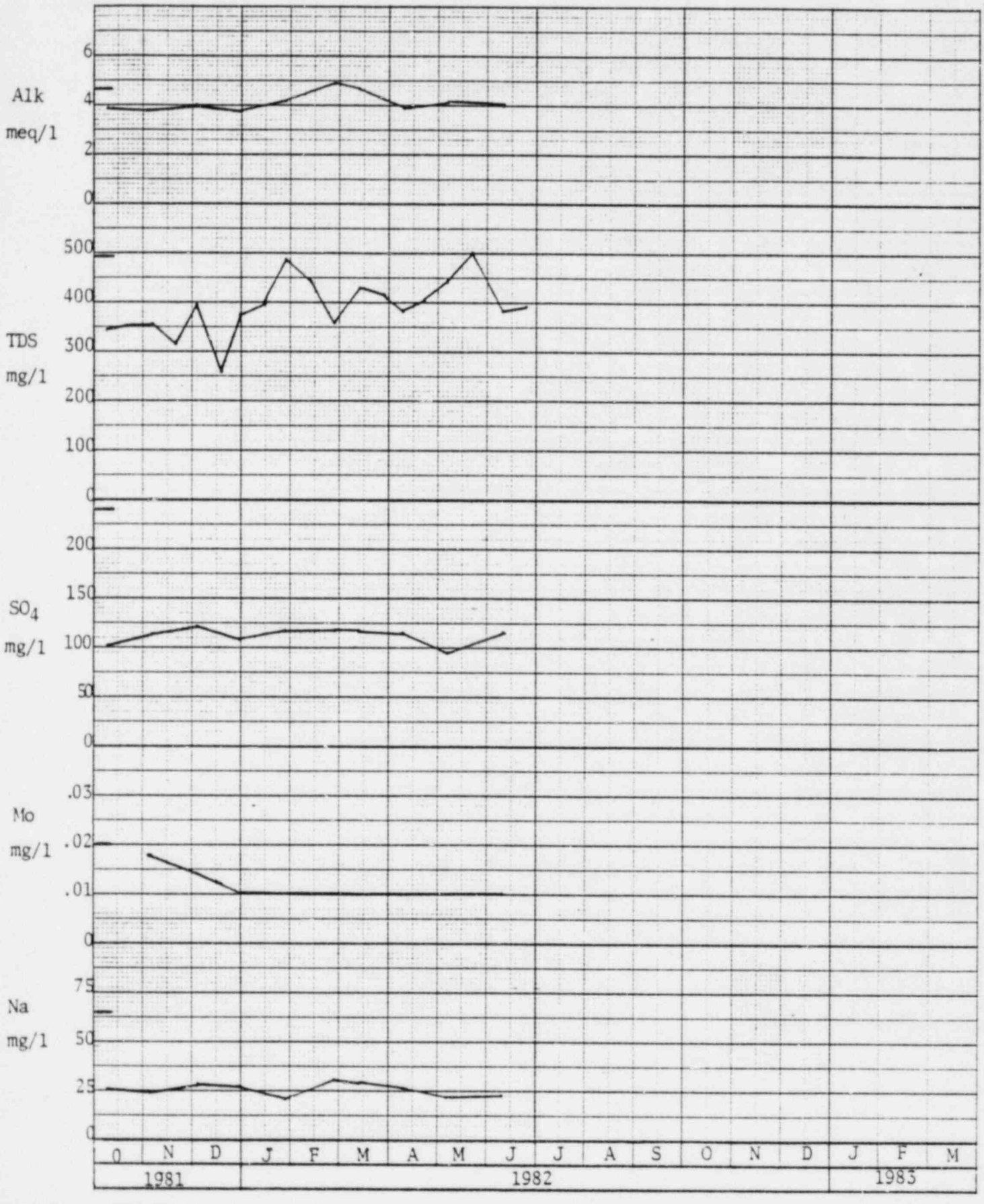


Figure A-3

Q-Sand ISL Monitor Well QM-2

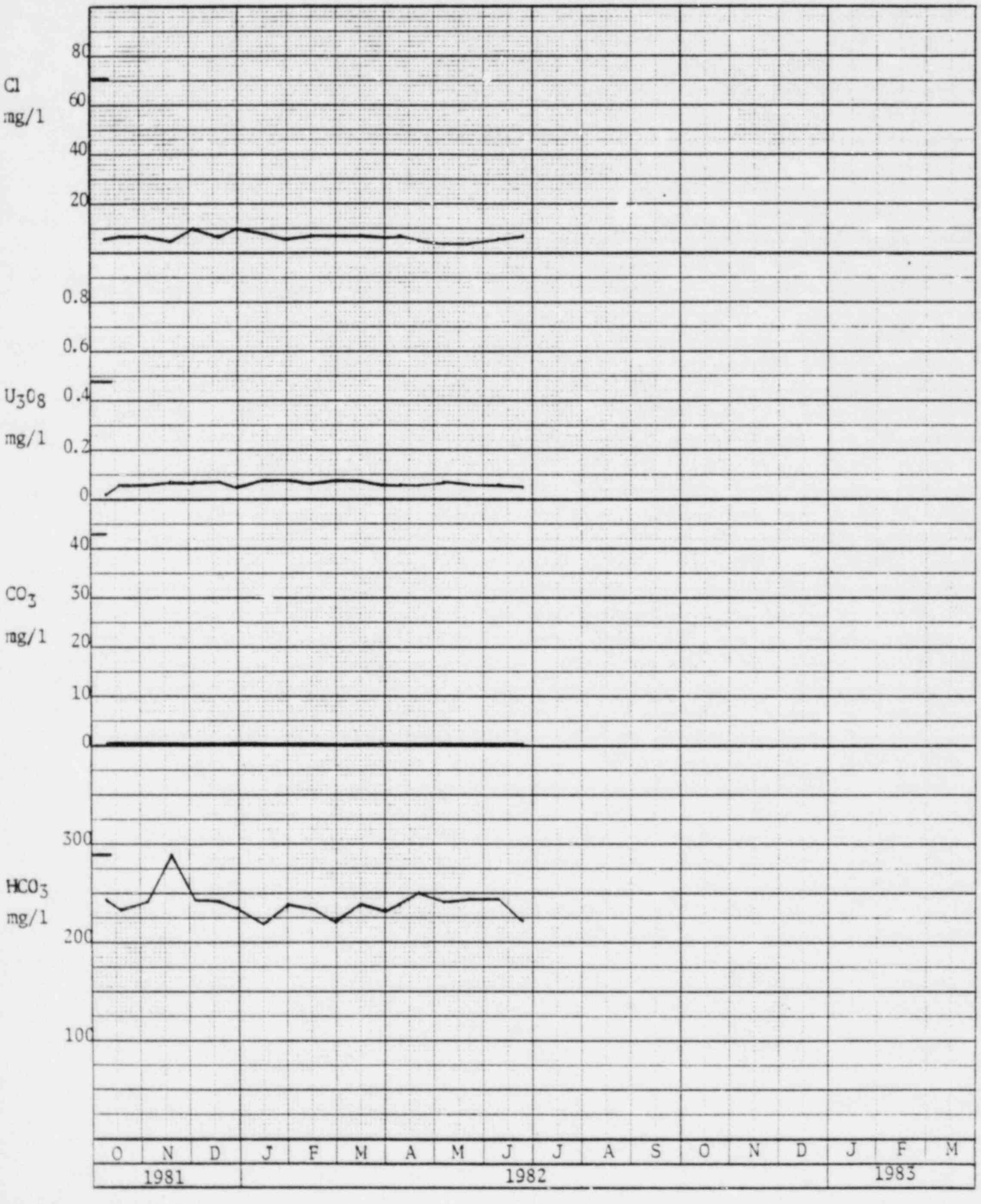


Figure A-4

Q-Sand ISL Monitor Well QM-2

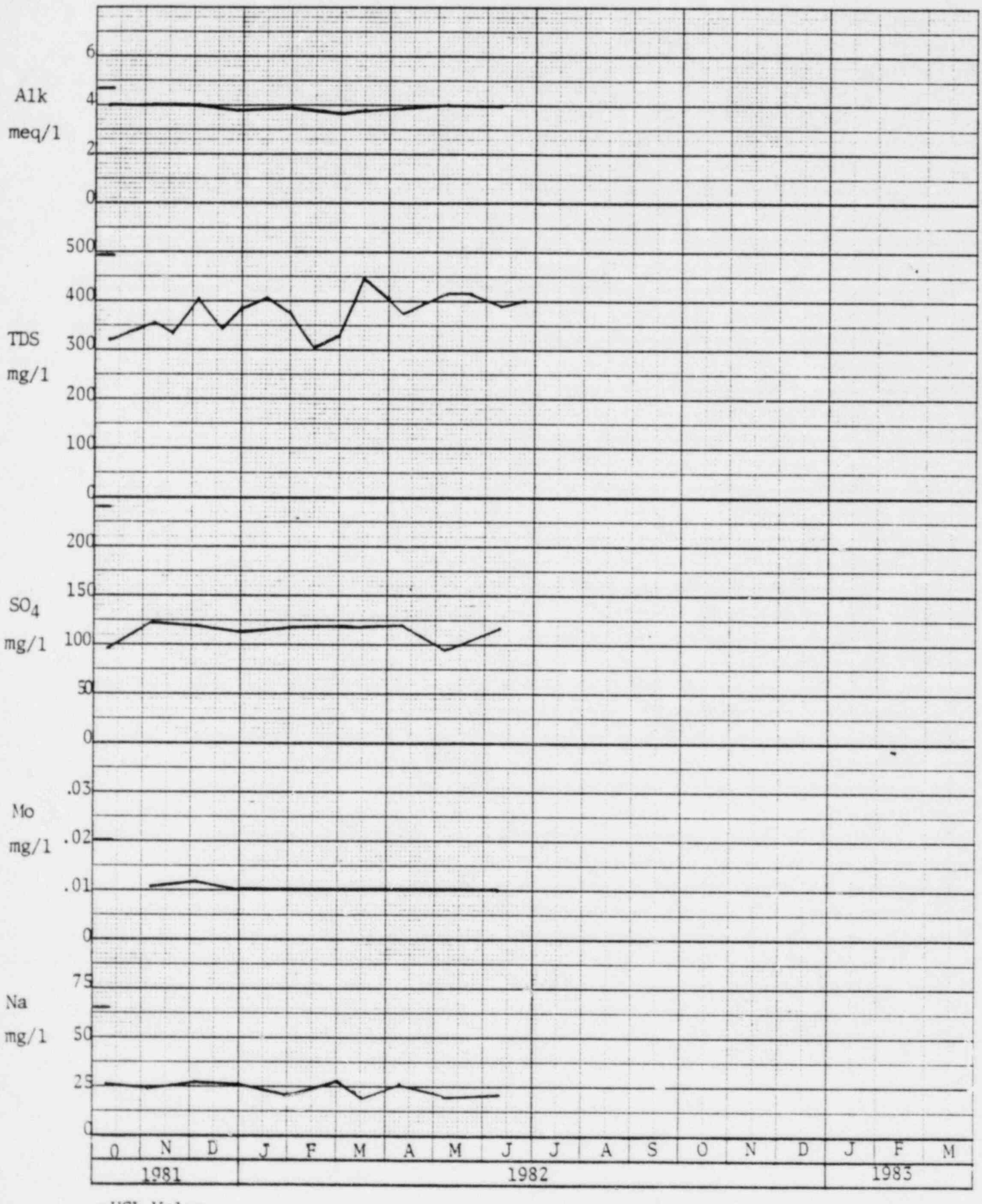
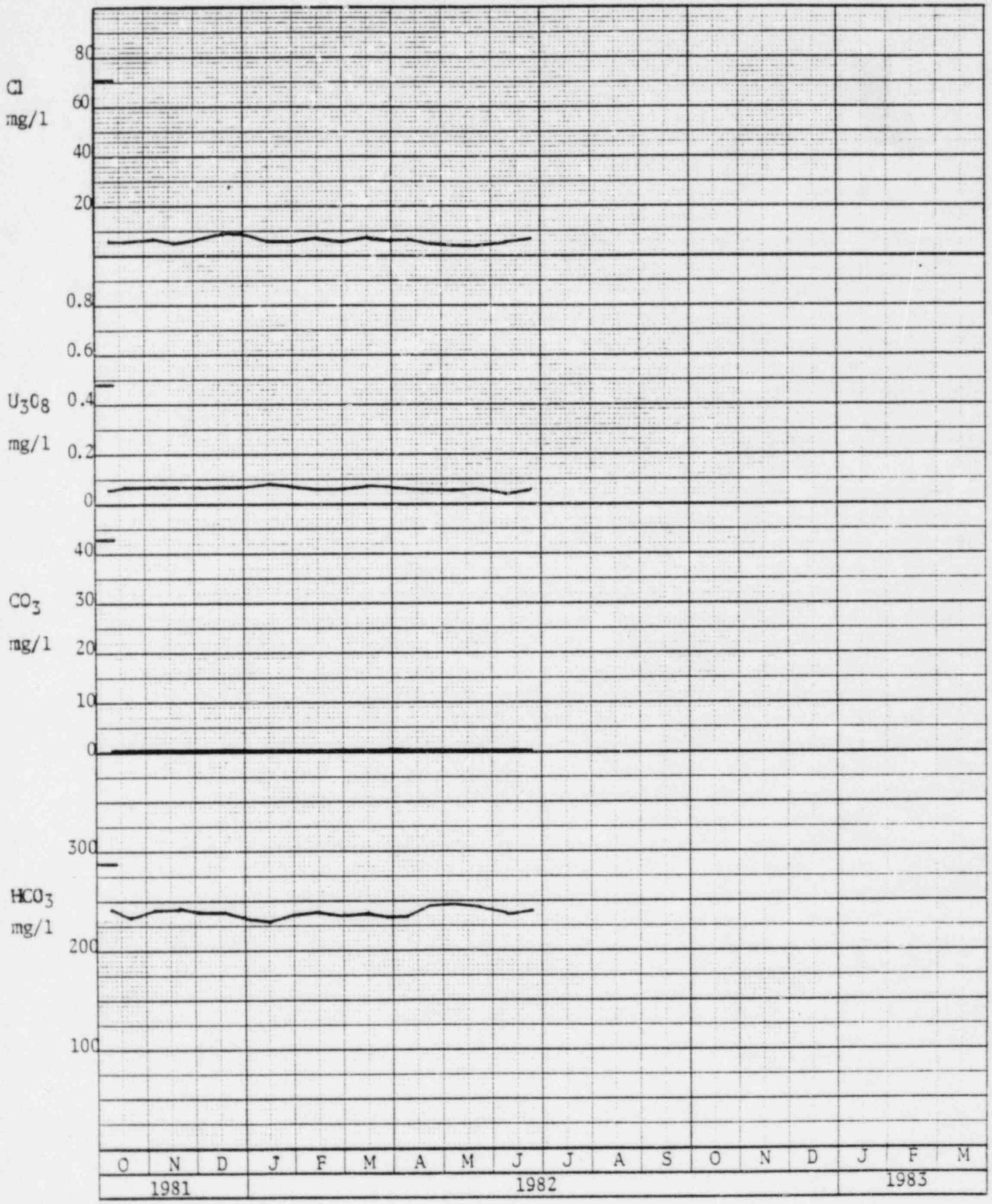


Figure A-5

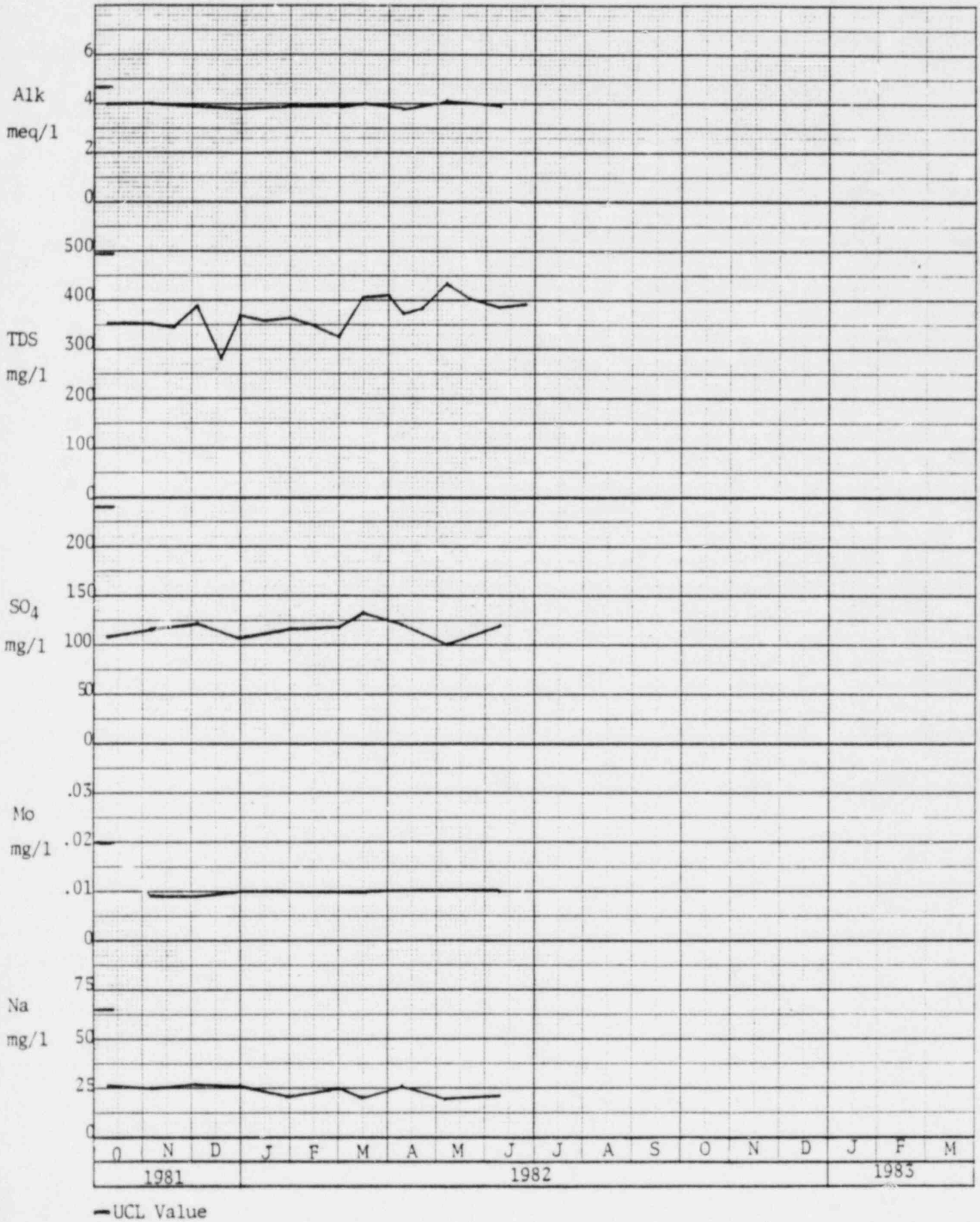
Q-Sand ISL Monitor Well QM-3



— UCL Value

Figure A-6

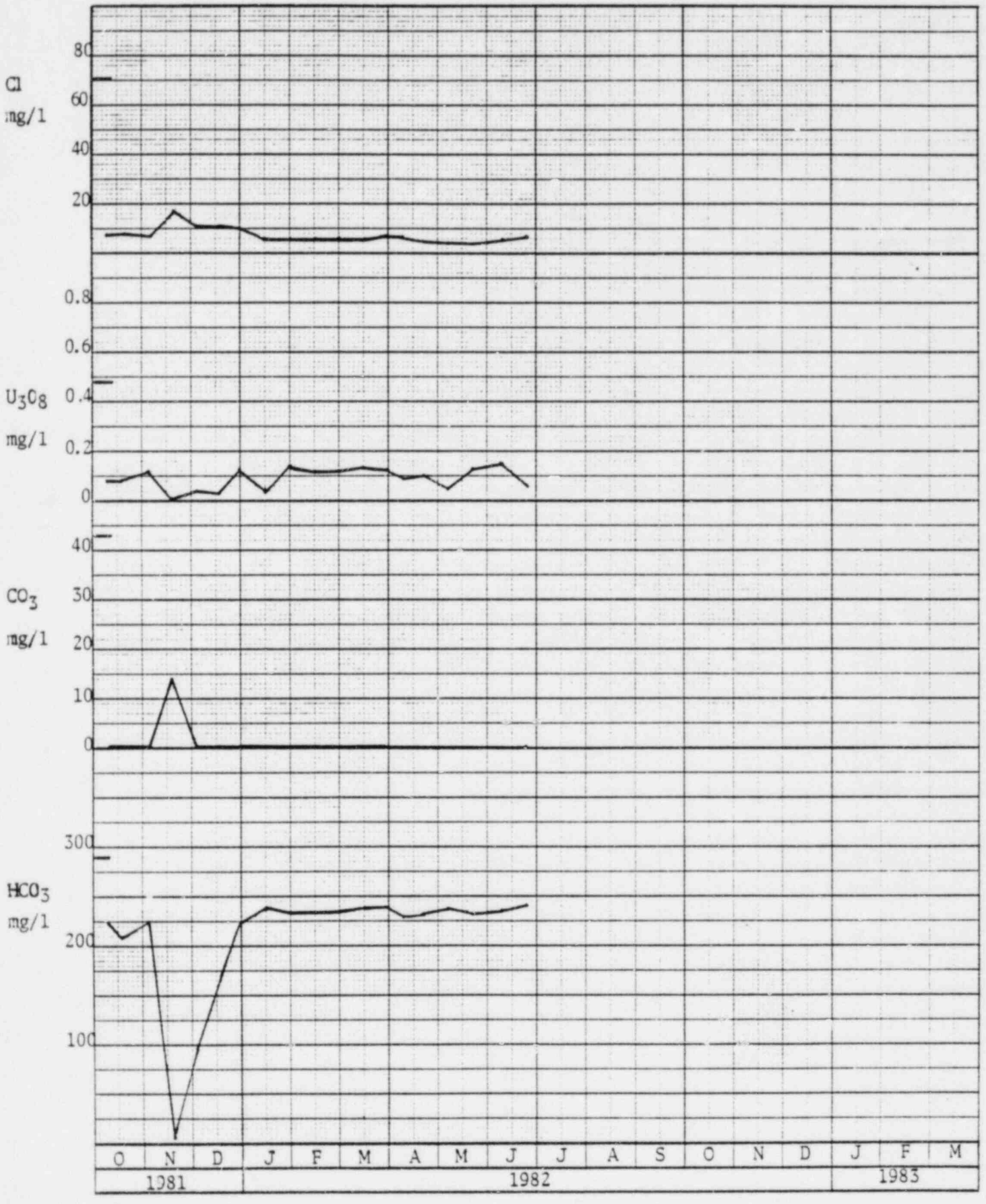
Q-Sand ISL Monitor Well QM-3



—UCL Value

Figure A-7

Q-Sand ISL Monitor Well QM-4



— UCL Value

Figure A-8

Q-Sand ISL Monitor Well QM-4

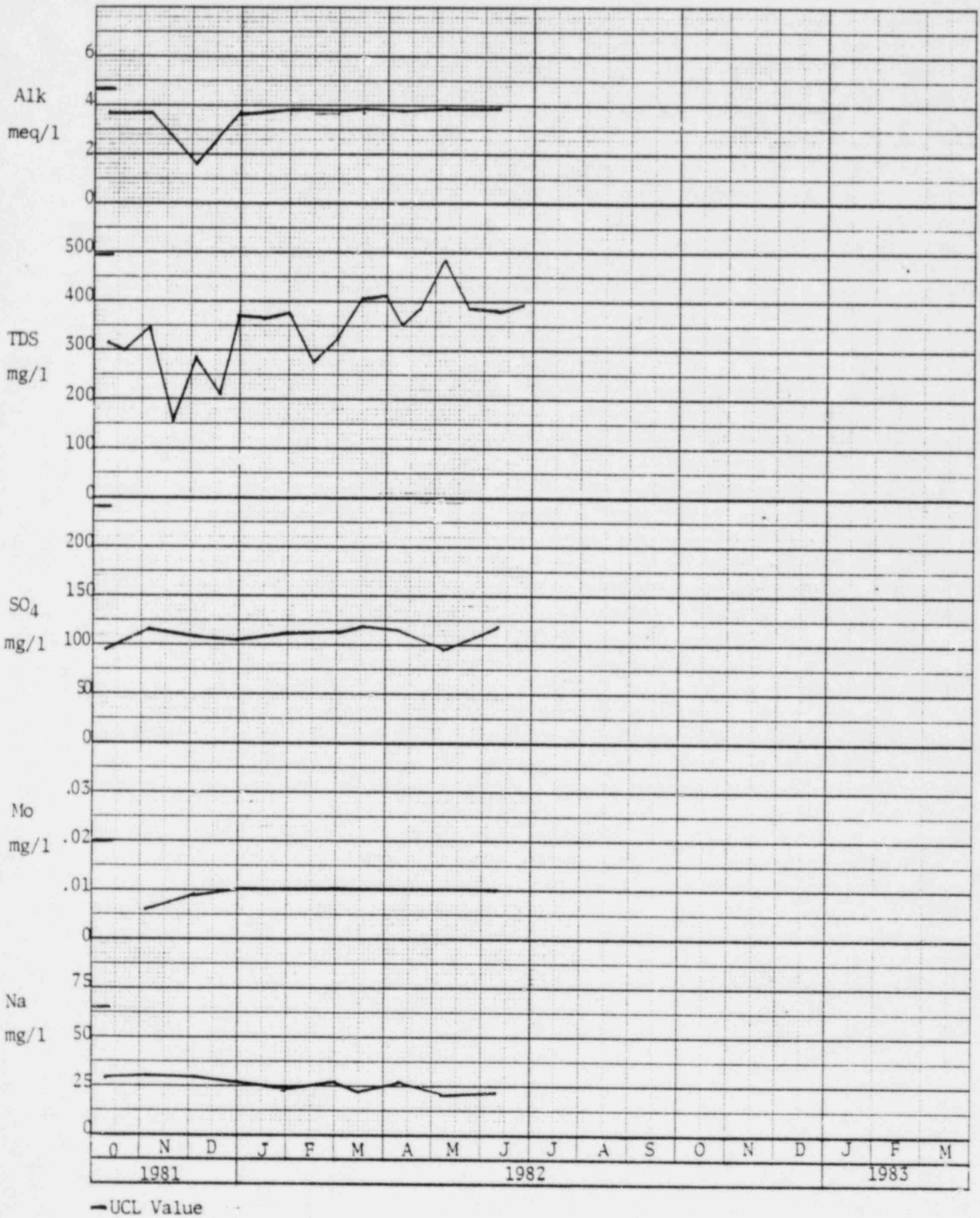
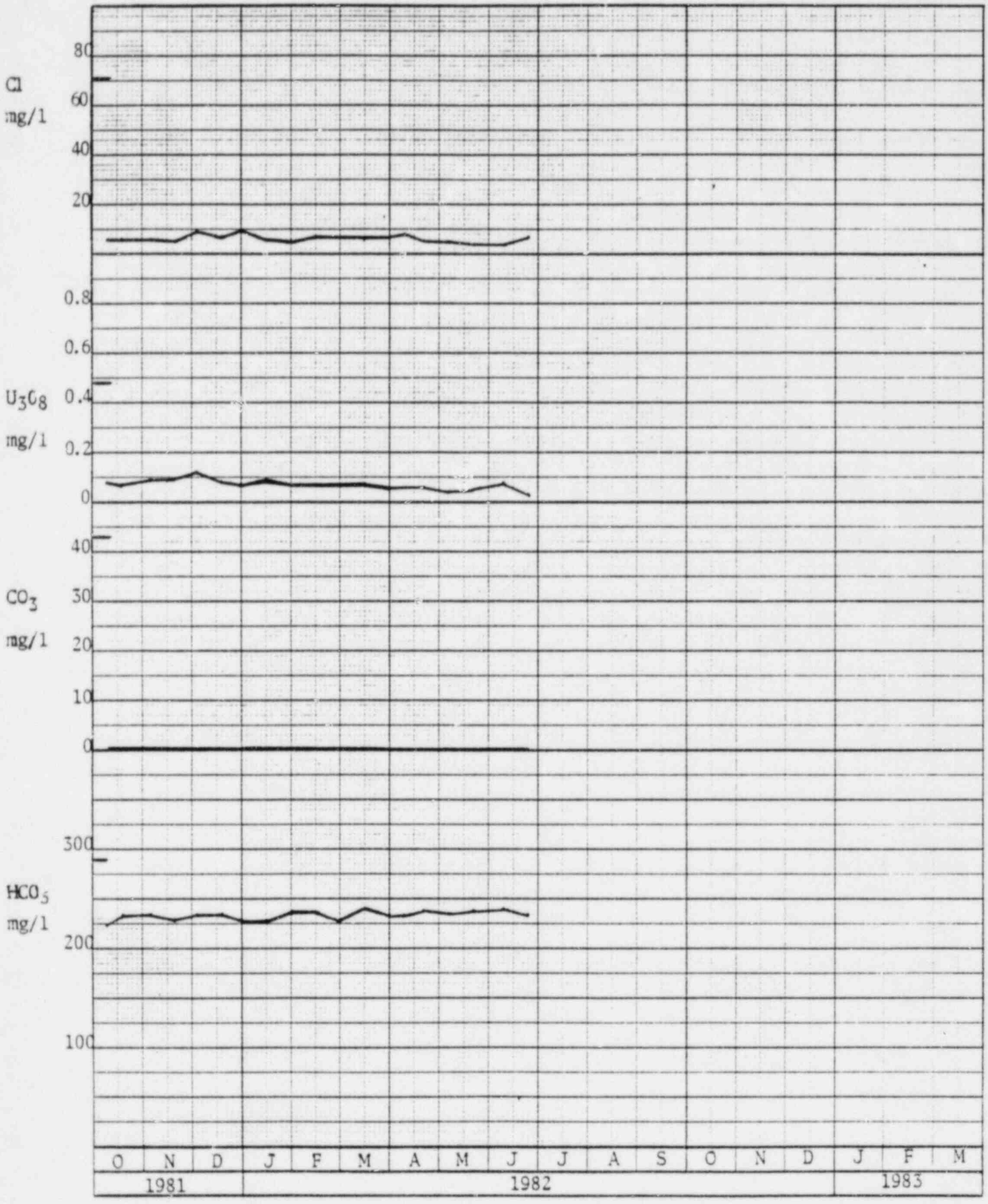


Figure A-9

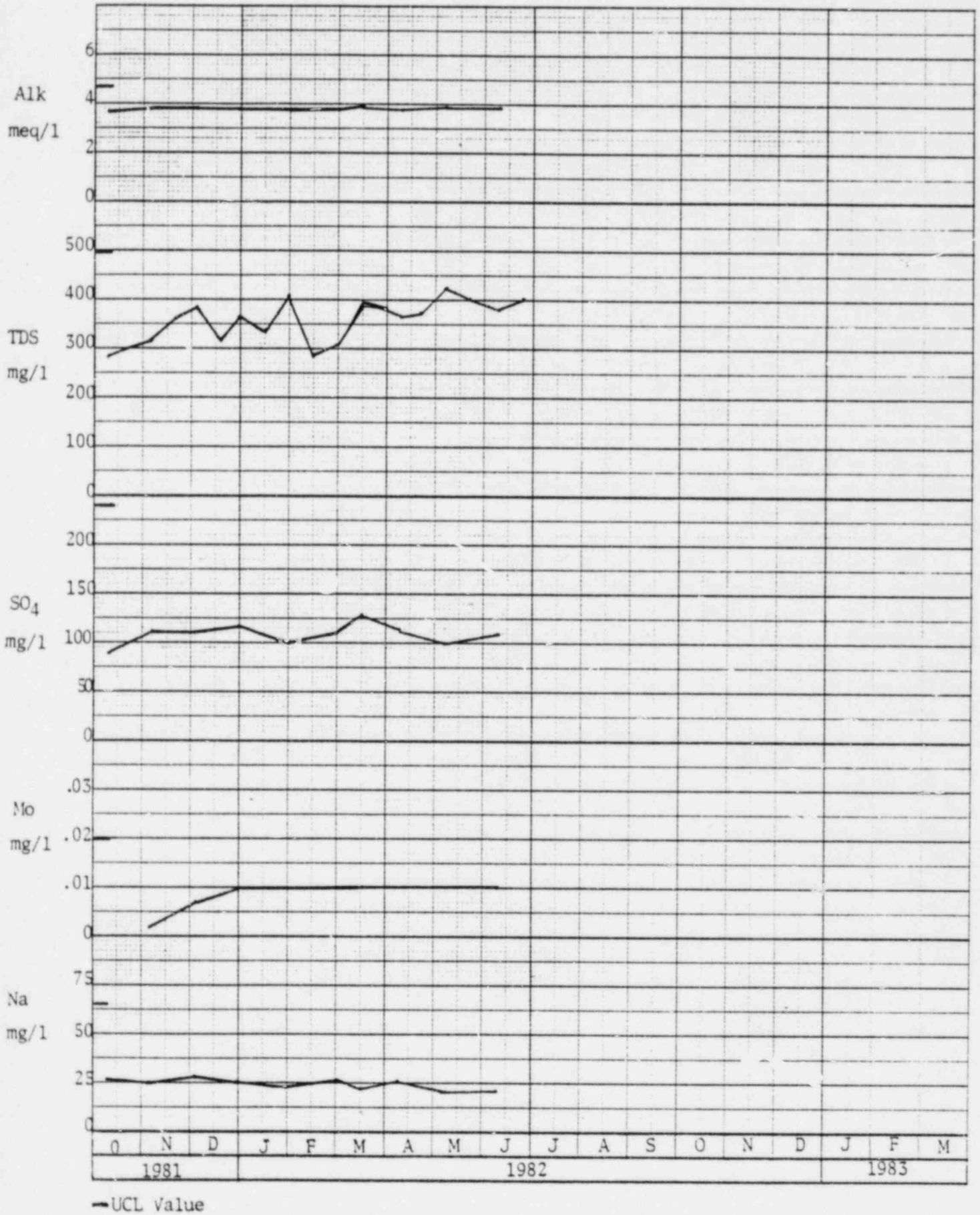
Q-Sand ISL Monitor Well QM-5



— UCL Value

Figure A-10

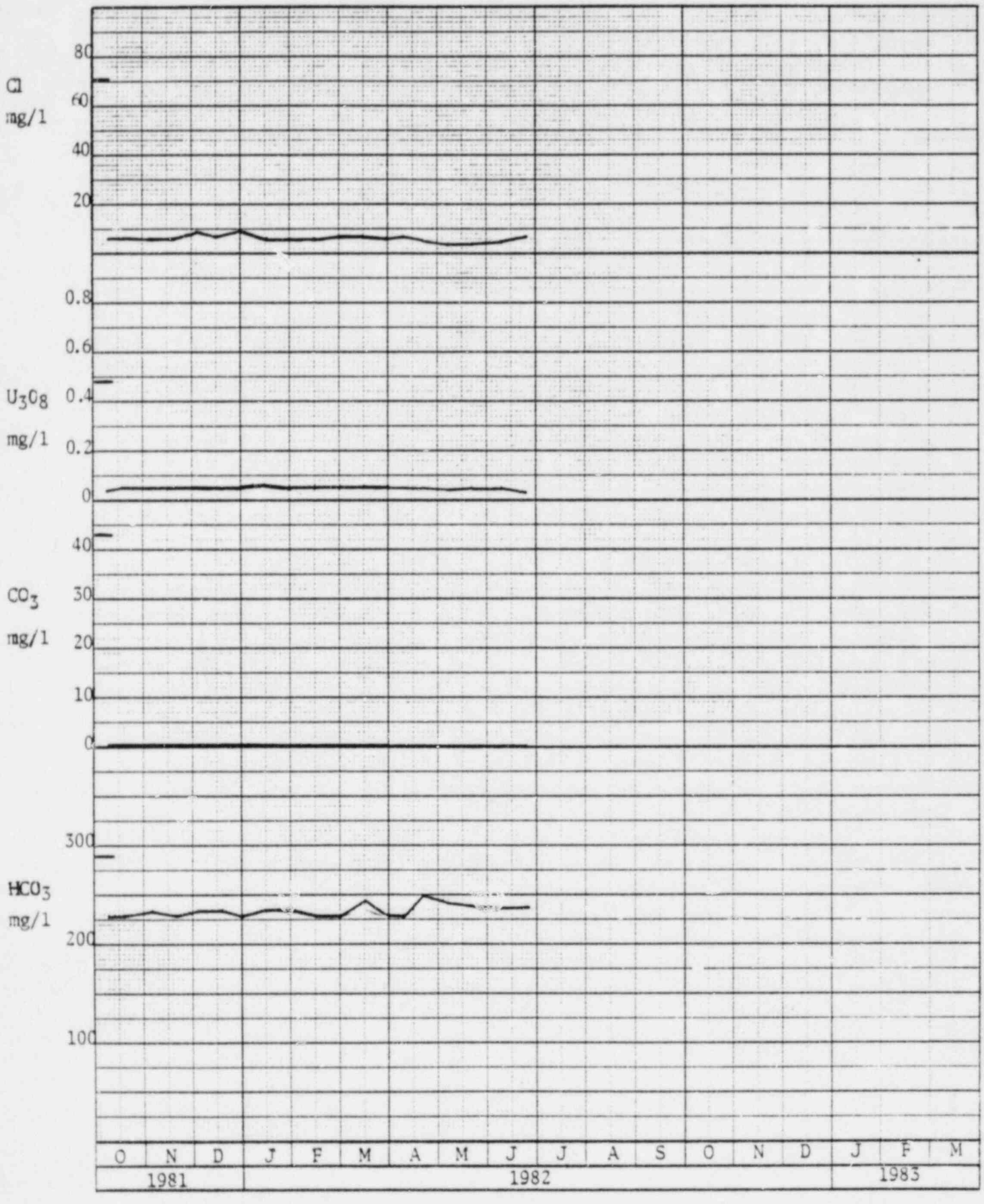
Q-Sand ISL Monitor Well QM-5



—UCL Value

Figure A-11

Q-Sand ISL Monitor Well QM-6



— UCL Value

Figure A-12

Q-Sand ISL Monitor Well QM-6

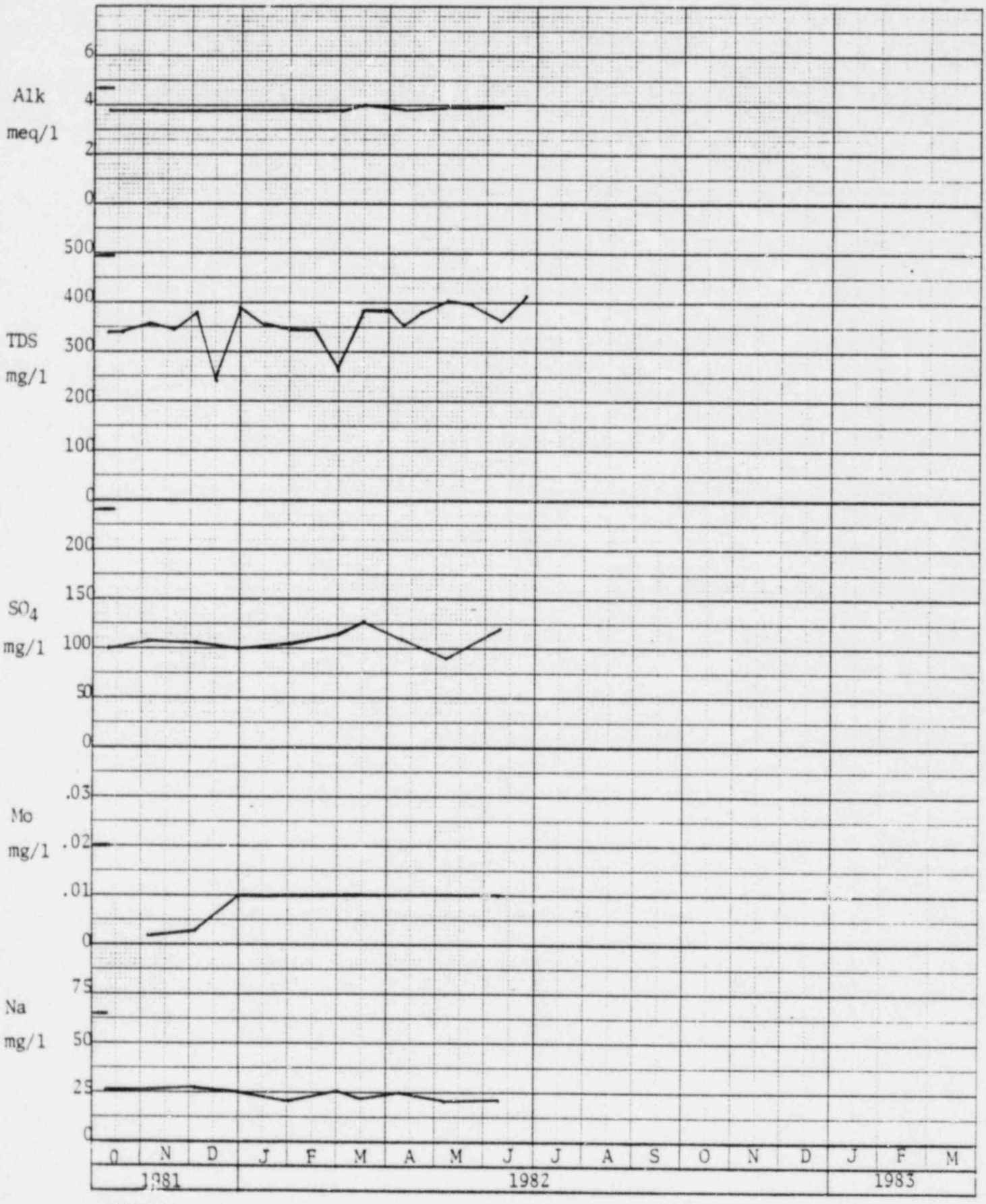


Figure A-13

Q-Sand ISL Monitor Well QM-7

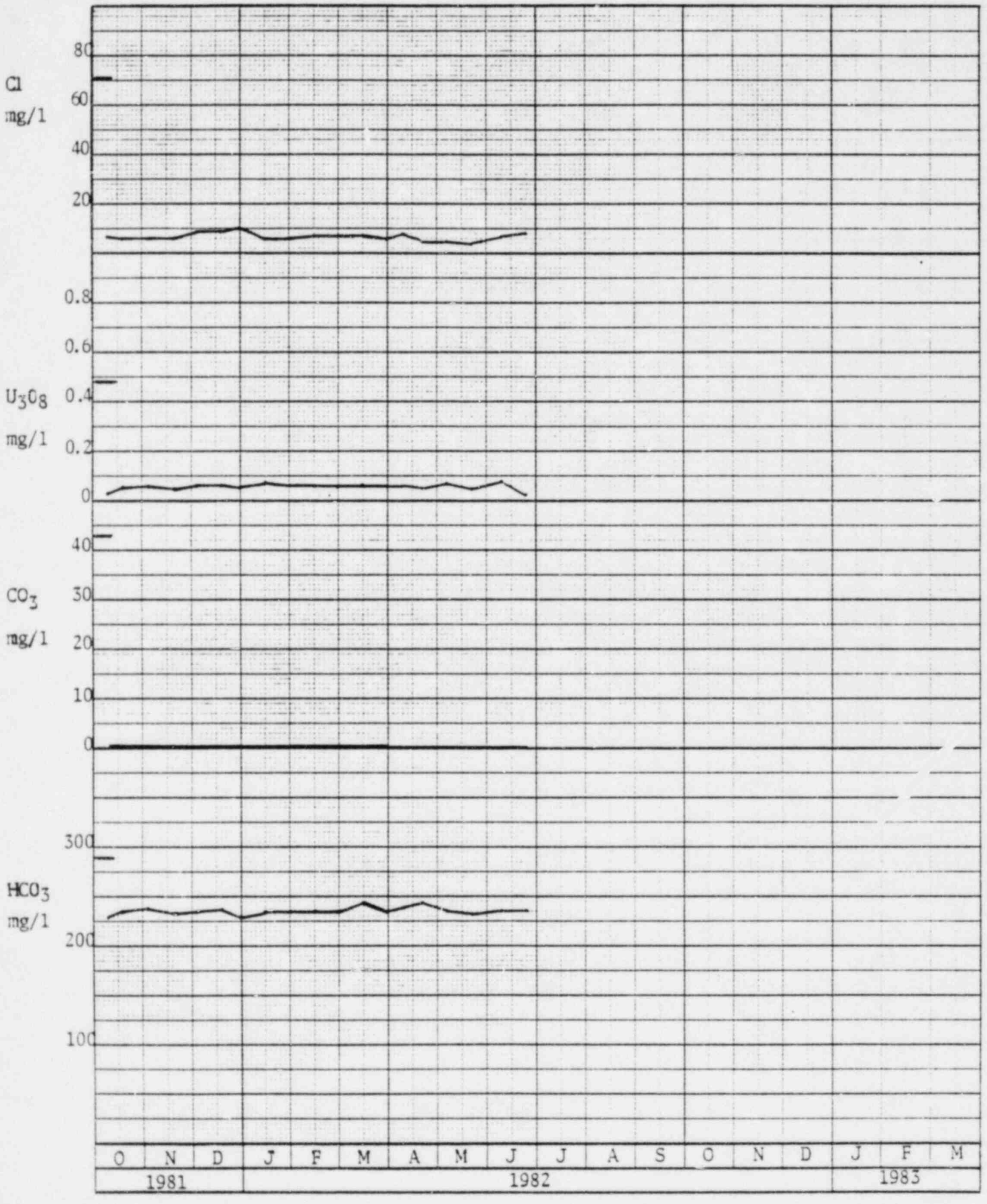


Figure A-14

Q-Sand ISL Monitor Well QM-7

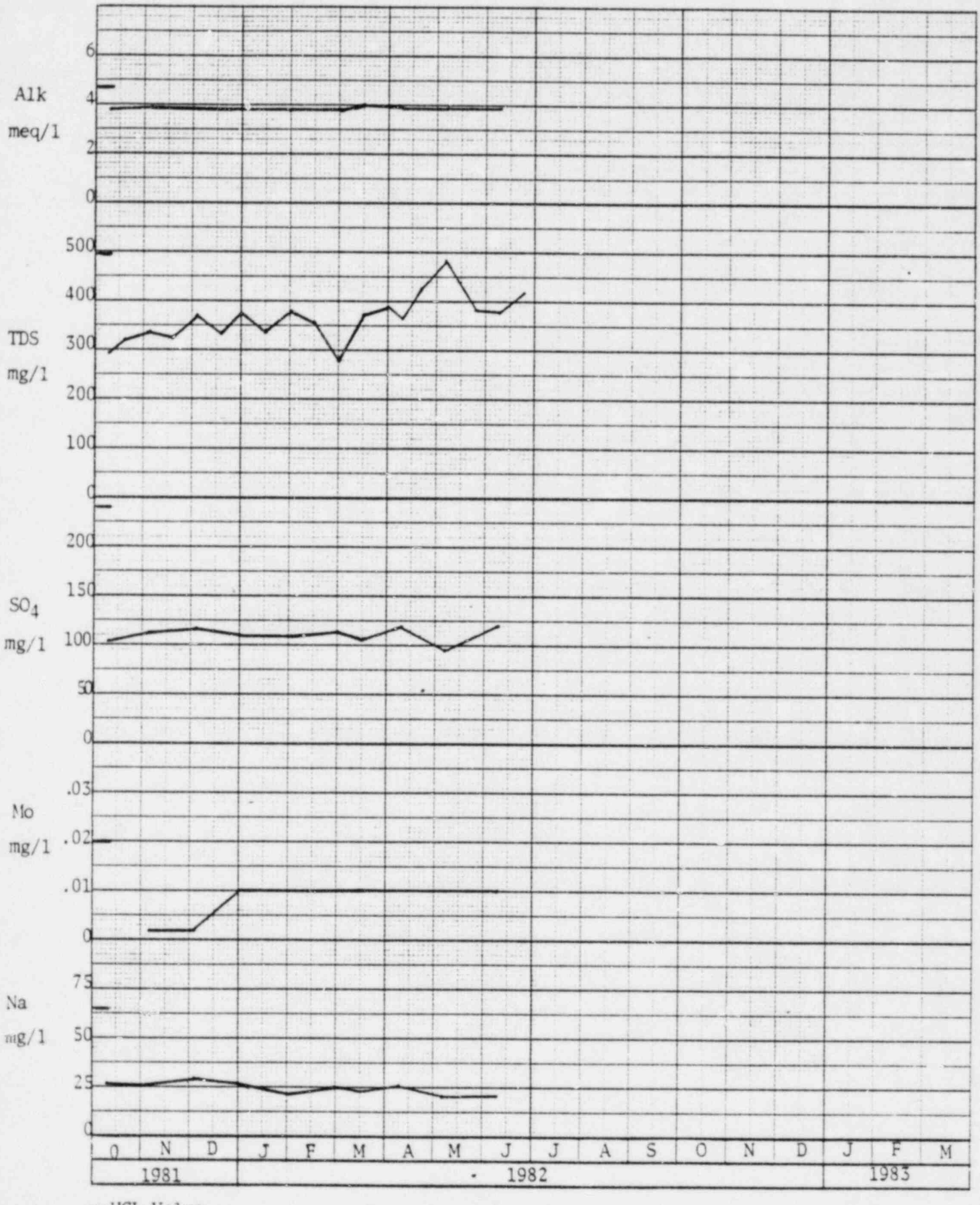
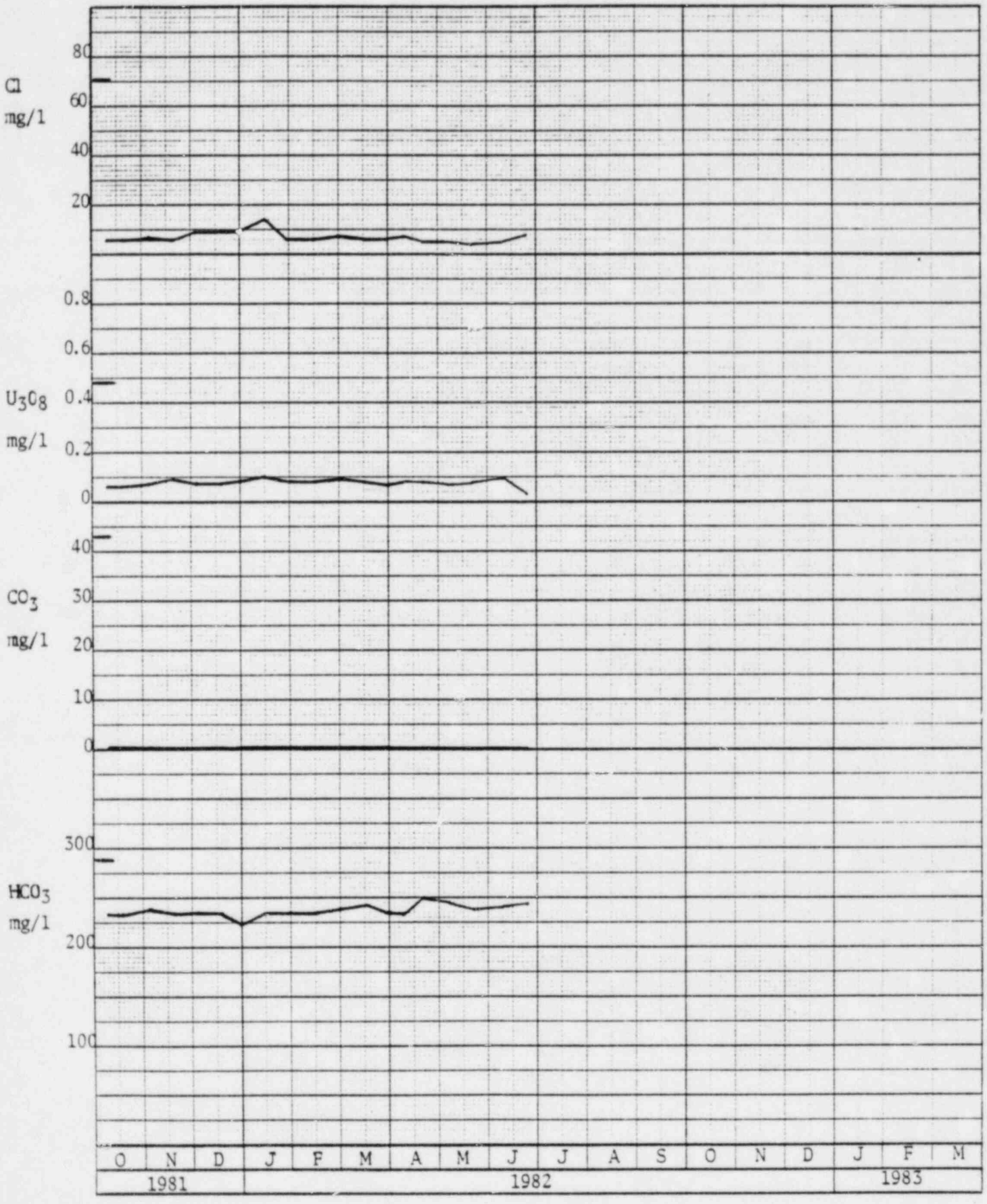


Figure A-15

Q-Sand ISL Monitor Well QM-8



— UCL Value

Figure A-16

Q-Sand ISL Monitor Well QM-8

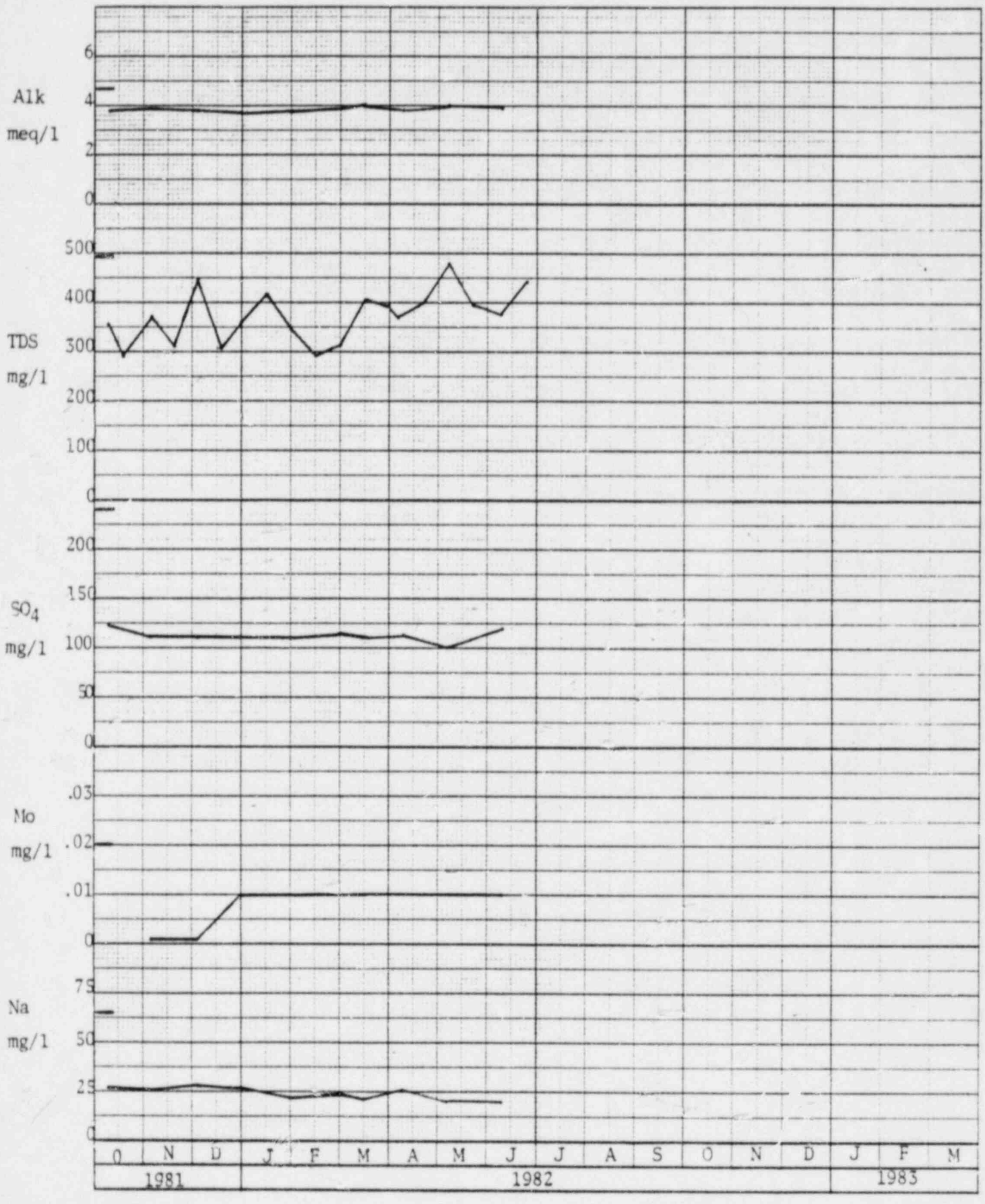


Figure A-17

Q-Sand ISL Monitor Well QMO-1

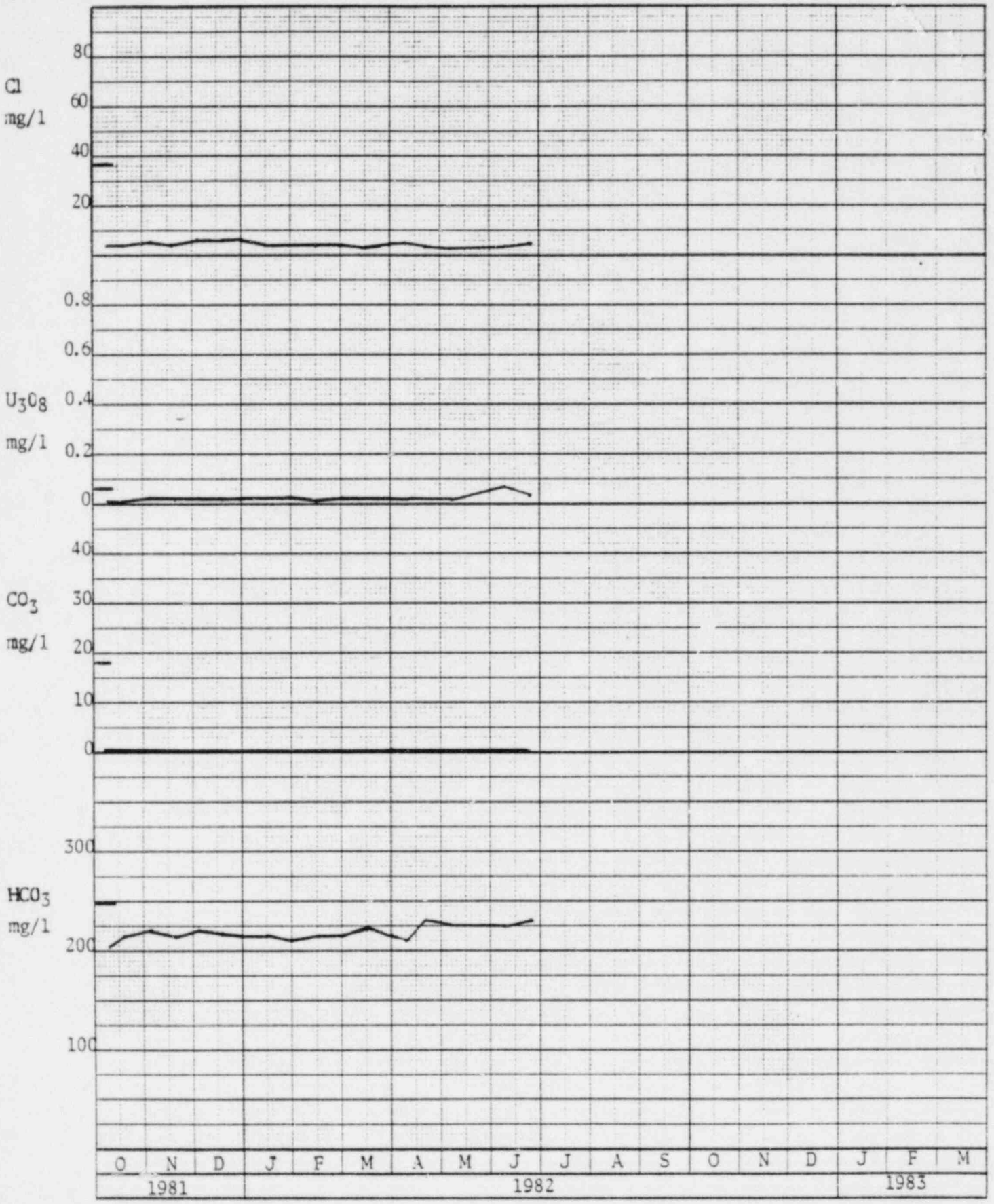


Figure A-18

Q-Sand ISL Monitor Well QMO-1

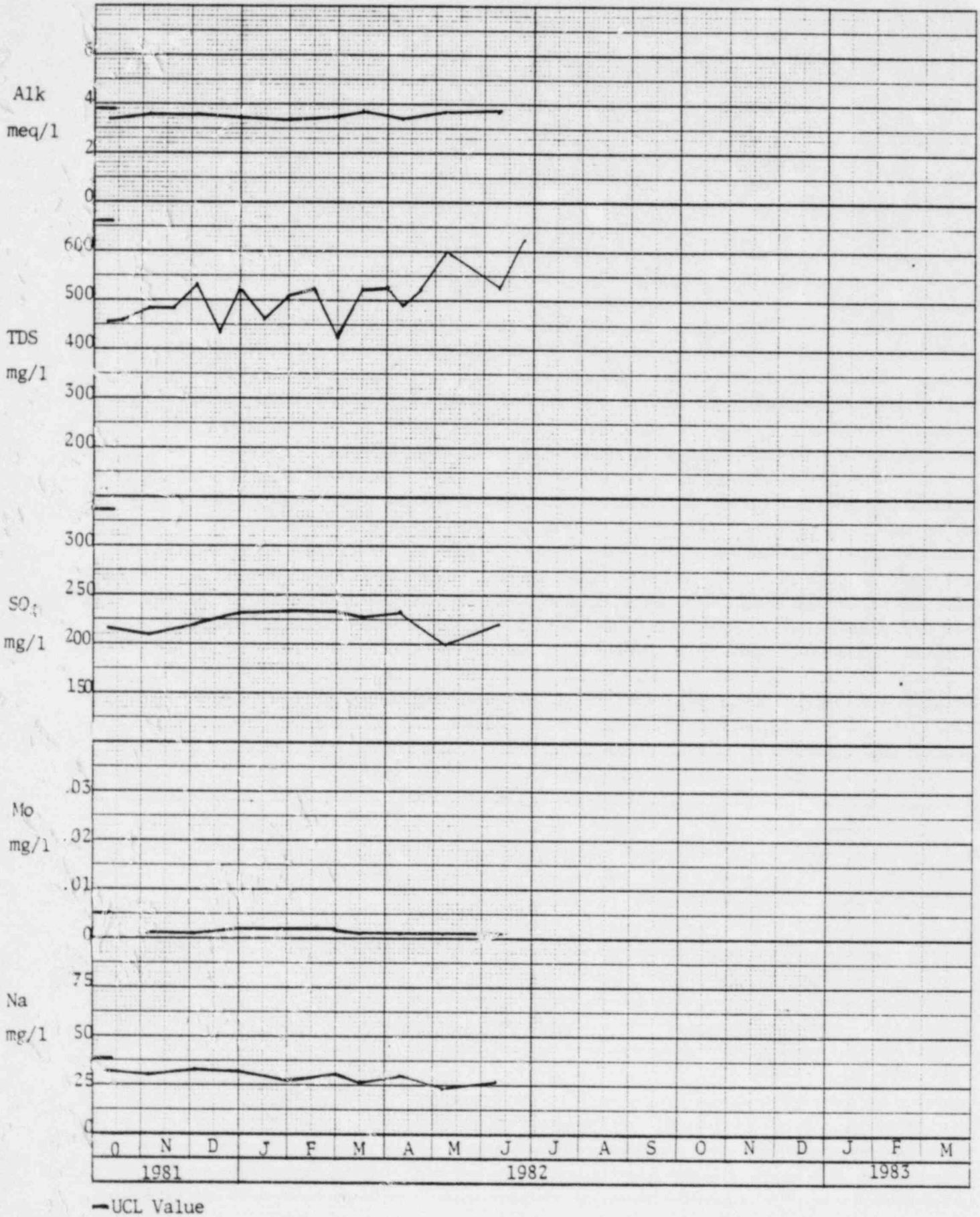


Figure A-19

Q-Sand ISL Monitor Well QMS-1

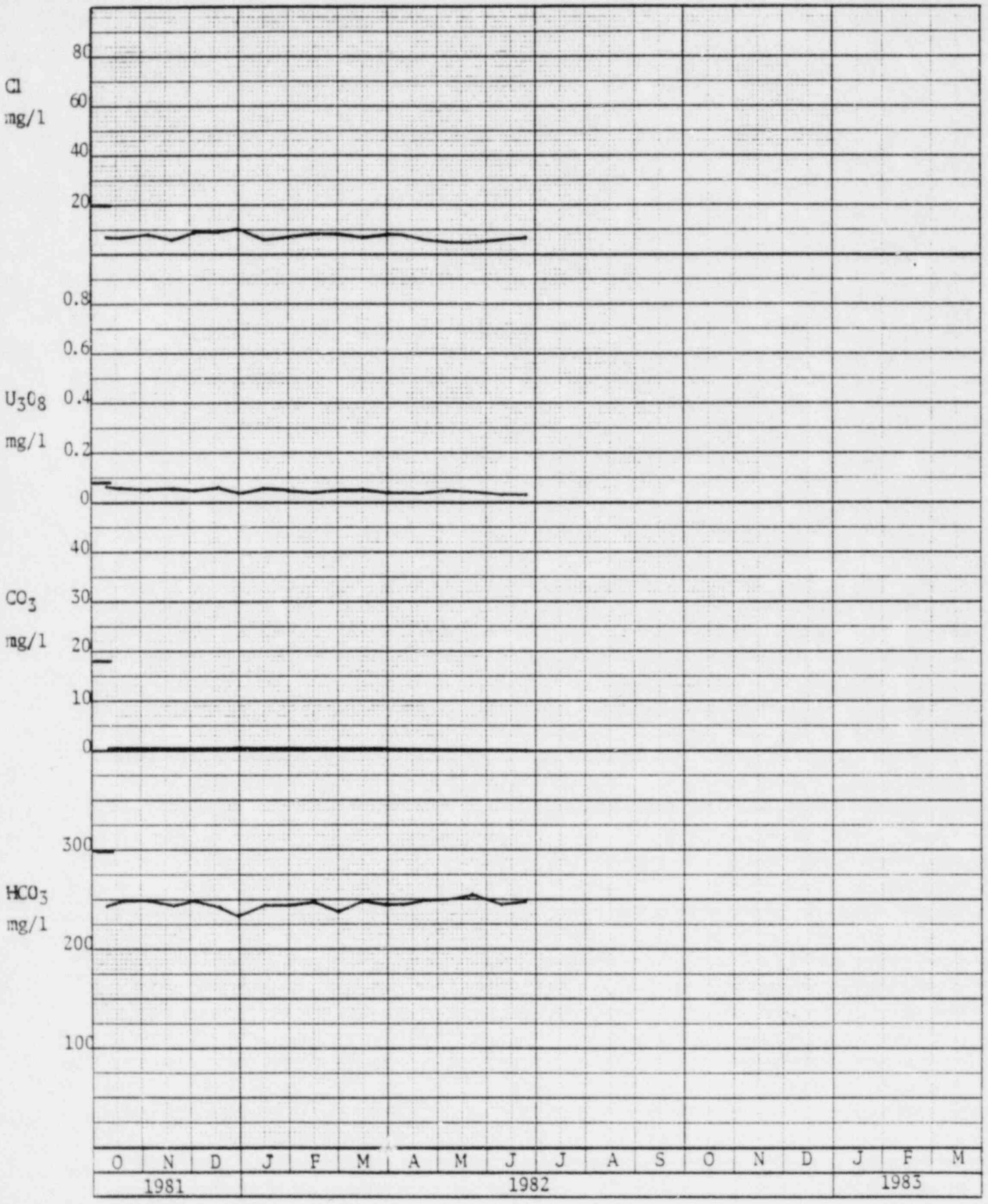


Figure A-20

Q-Sand ISL Monitor Well QMS-1

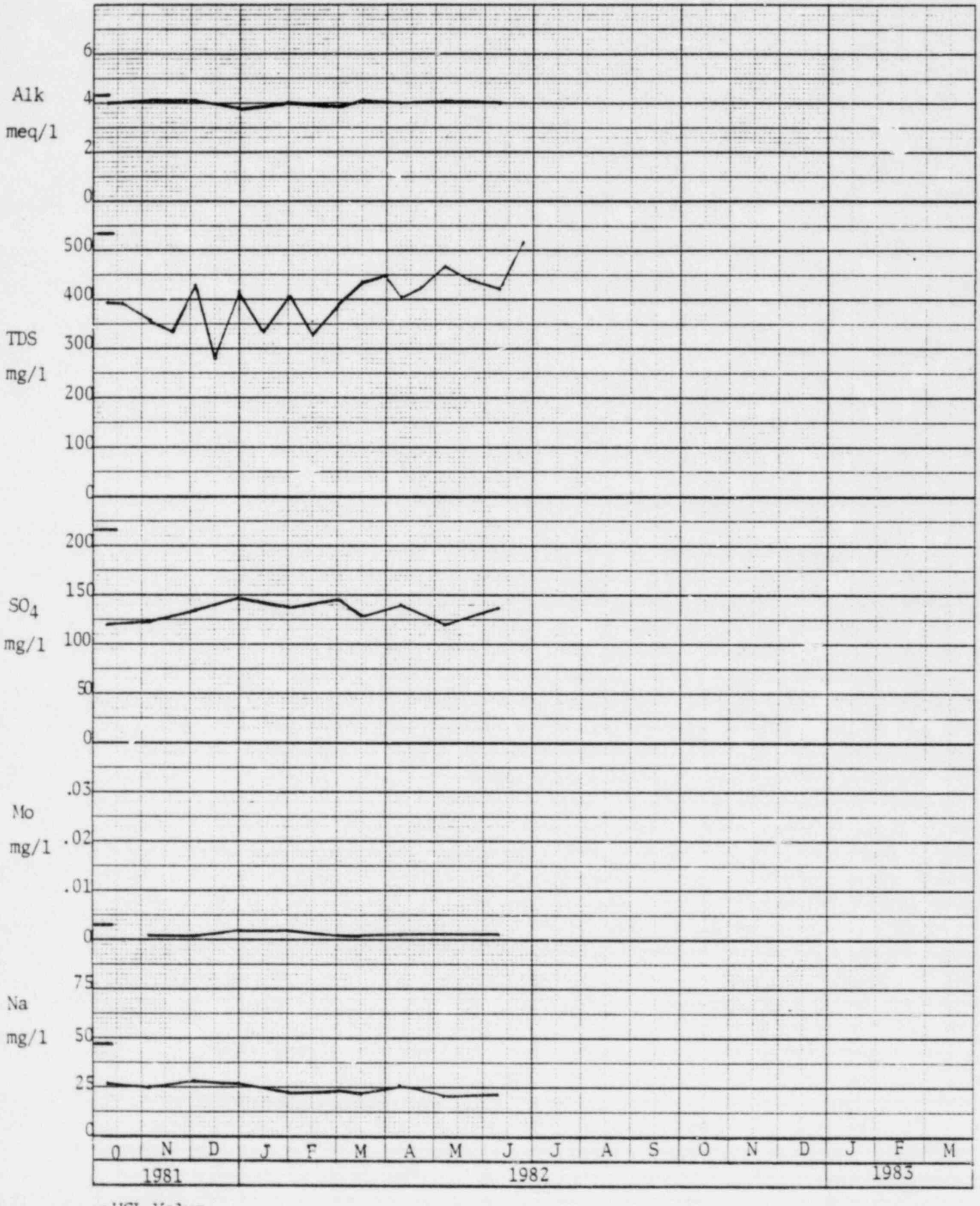
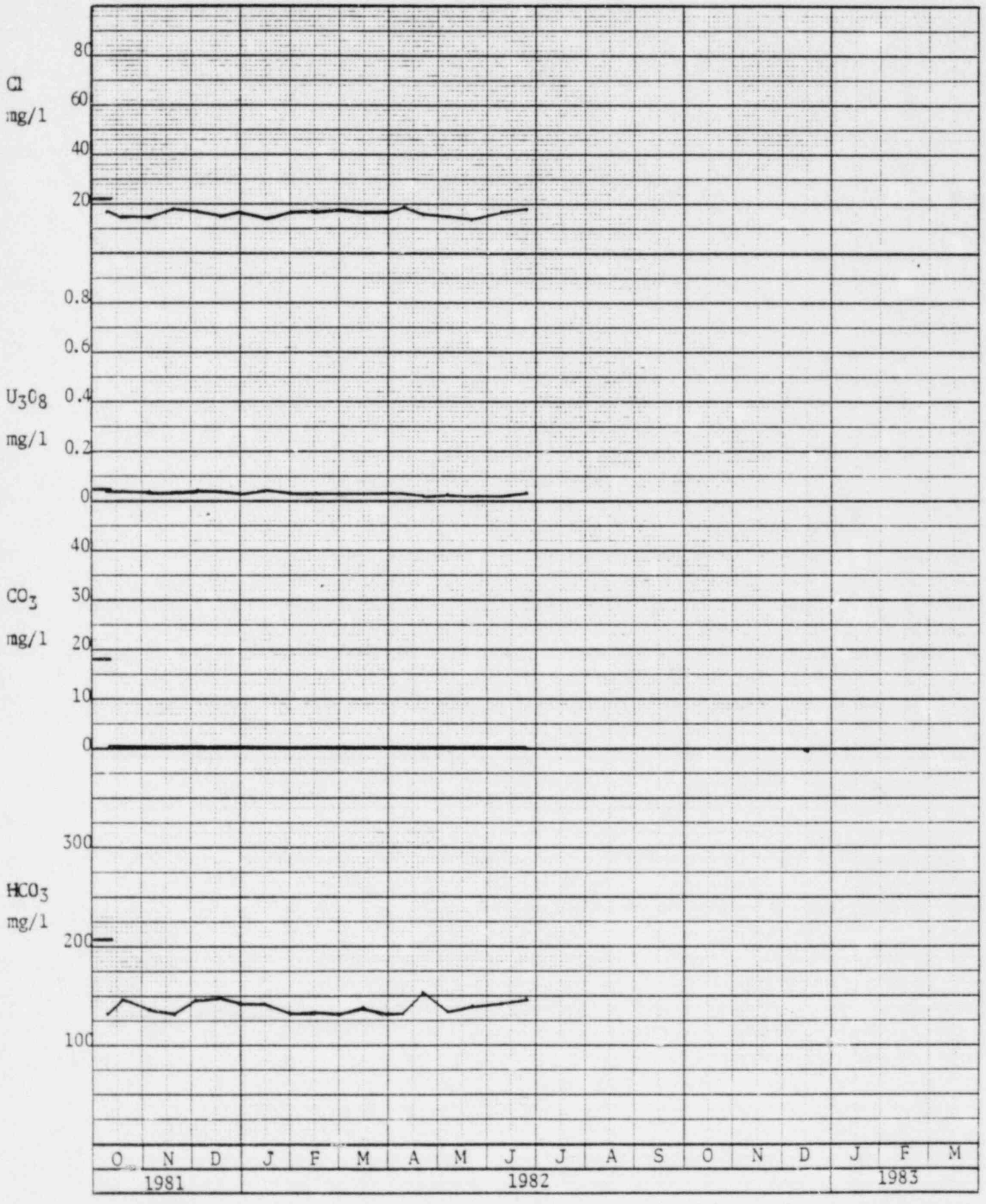


Figure A-21

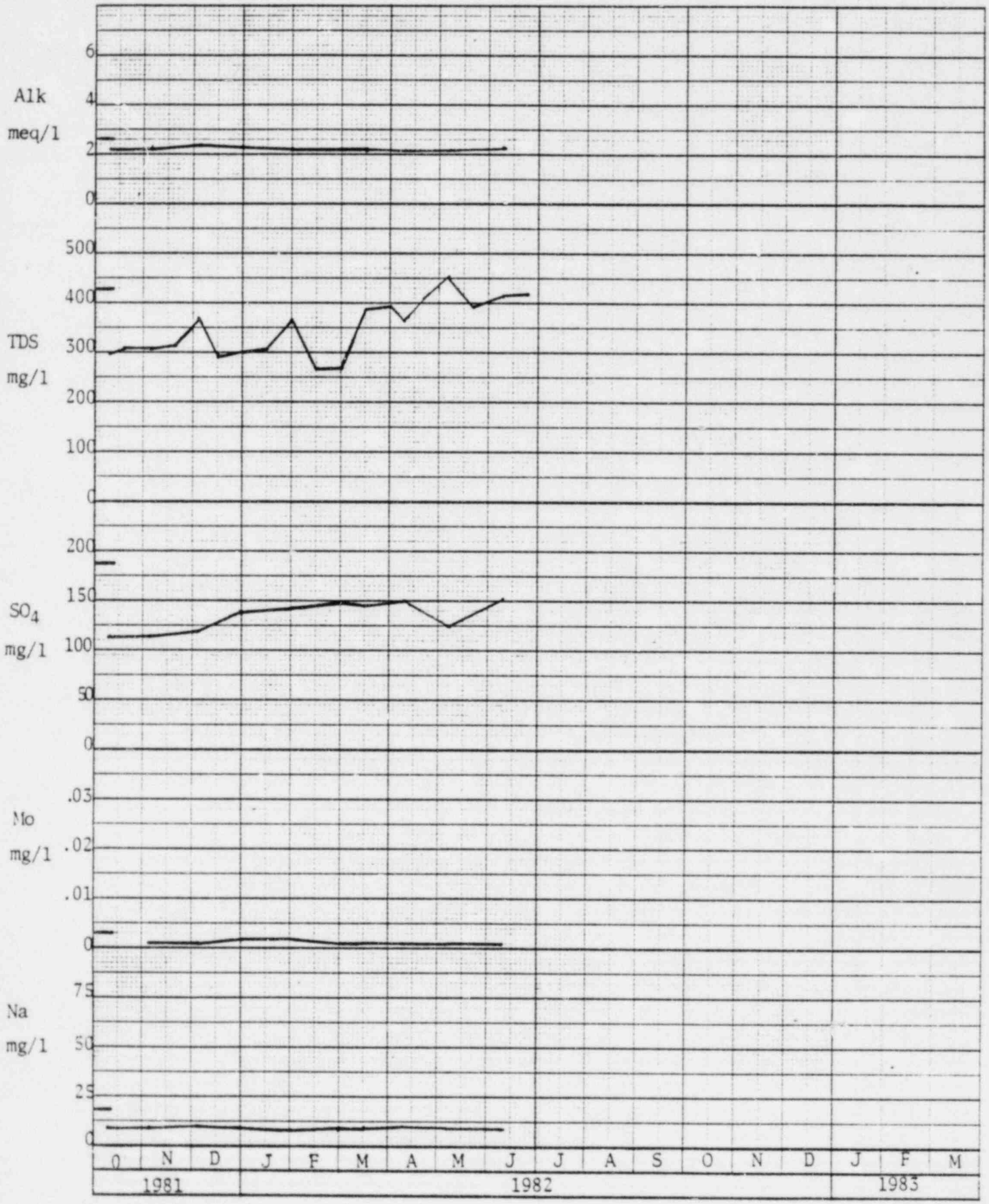
Q-Sand ISL Monitor Well QMW-1



— UCL Value

Figure A-22

Q-Sand ISL Monitor Well QMW-1



ATTACHMENT B

MONITOR WELL FLUID LEVEL DATA

Monitor well fluid level data, barometric pressure data, and net production from the well field are presented in tabular form in Table B-1 and in graphical form on Figures B-1, B-2, and B-3. Background water levels are recorded in parentheses next to the well title. The fluid level data indicates that the cone of depression generated by the net production (bleed stream) from the Q-Sand aquifer typically varies between six and eleven feet of negative head at the ring of monitor wells.

The overlying and underlying aquifer monitor well data, Figure B-3, does not exhibit any significant trend or pattern.

The attached data indicates good confinement and control of the leach solutions, therefore, no significant changes in the excursion control program are anticipated at this time.

Table B-1

Q-Sand ISL Monitor Well Fluid Level Data

Feet Above MSL

Date	QM-1	QM-2	QM-3	QM-4	QM-5	QM-6	QM-7	QM-8
09-11-80	5174.8	5174.5	5173.5	5172.6	5171.8	5172.5	5173.3	5176.7
10-08-82	5172.0	5168.8	5168.2	5168.1	5168.3	5168.3	5171.2	5171.8
10-09-82	5172.5	5169.4	5168.7	5166.0	5167.9	5167.6	5171.7	5174.5
10-10-82	5173.5	5170.5	5170.0	5168.9	5168.2	5169.0	5172.8	5175.0
10-11-82	5172.3	5169.7	5169.7	5167.9	5168.4	5168.3	5172.0	5174.4
10-12-82	5172.5	5170.1	5169.5	5167.5	5168.7	5168.6	5172.0	5174.6
10-13-82	5172.6	5169.6	5169.4	5168.0	5168.4	5168.1	5171.9	5174.4
10-14-82	5170.8	5168.3	5168.2	5166.4	5166.0	5166.6	5170.2	5173.6
10-15-82	5170.0	5167.6	5167.7	5165.8	5166.3	5166.0	5169.5	5172.2
10-16-82	5171.5	5170.3	5168.7	5164.8	5168.1	5167.6	5172.7	5174.8
10-17-82	5171.9	5168.5	5168.0	5165.0	5166.9	5166.9	5171.0	5174.9
10-18-82	5171.3	5169.6	5168.0	5165.8	5165.8	5166.3	5170.4	5173.8
10-19-82	5171.2	5168.7	5168.5	5166.0	5166.7	5166.8	5170.6	5173.8
10-20-82	5171.7	5169.1	5168.7	5167.2	5167.3	5167.4	5170.7	5173.8
11-04-82	5170.0	5166.6	5165.6	5163.7	5164.7	5163.4	5168.2	5171.8
11-18-82	5171.5	5167.8	5169.2	5166.7	5166.7	5167.6	5170.2	5173.8
12-02-82	5173.5	5166.8	5165.2	5166.7	5164.7	5163.6	5169.2	5172.8
12-16-82	5172.5	5167.8	5170.2	5166.7	5166.7	5165.6	5172.2	5171.8
12-30-82	5171.5	5168.8	5171.2	5166.7	5168.7	5168.6	5173.2	5173.8
1-13-82	5171.5	5167.8	5166.2	5163.7	5162.7	5164.6	5173.2	5173.8
1-27-82	5170.7	5166.8	5165.1	5164.8	5164.5	5164.1	5170.8	5172.3
2-10-82	5161.7	5166.7	5165.4	5166.0	5165.9	5165.1	5169.0	5172.8
2-24-82	5169.5	5166.5	5164.1	5162.4	5162.1	5162.6	5167.7	5171.5
3-10-82	5163.3	5161.6	5161.8	5160.5	5161.5	5161.0	5164.8	5167.1
3-24-82	5164.9	5164.8	5163.1	5161.1	5162.0	5162.1	5163.9	5169.4
4-07-82	5166.0	5163.8	5164.1	5163.7	5163.7	5162.5	5164.7	5169.3
4-21-82	5166.5	5162.0	5161.4	5160.7	5161.2	5160.6	5164.0	5170.0
5-05-82	5163.6	5161.3	5160.7	5160.0	5159.8	5159.1	5161.2	5168.3
5-19-82	5161.3	5159.4	5160.2	5157.2	5158.7	5159.8	5165.7	5163.3
6-09-82	5161.5	5159.8	5159.2	5156.7	5157.7	5158.6	5159.2	5162.8
6-23-82	5159.3	5161.8	5161.8	5160.7	5164.6	5160.3	5162.0	5166.1

Table B-1

Date	QMO-1	QMS-1	QMW-1	Barometric Pressure In Hg	Net Production gpm
09-11-80	4966.1	5238.3	5370.2	--	--
10-08-82	4981.5(1)	5240.1	5369.0	29.33	0.8
10-09-82	4961.5	5239.8	5371.5	29.59	0.9
10-10-82	4961.7	5240.1	5371.5	29.60	0.5
10-11-82	4961.7	5240.4	5371.7	29.39	0.2
10-12-82	4962.0	5240.3	5371.7	29.46	1.2
10-13-82	4962.3	5240.1	5371.5	29.67	1.4
10-14-82	4961.5	5240.1	5371.6	29.77	0.9
10-15-82	4961.4	5239.8	5371.2	29.91	1.2
10-16-82	4961.5	5240.1	5371.7	29.63	1.4
10-17-82	4961.7	5239.0	5371.5	29.84	1.7
10-18-82	4961.5	5239.8	5371.5	30.00	1.2
10-19-82	4961.5	5239.9	5371.4	29.80	1.4
10-20-82	4961.0	5239.8	5371.4	29.71	1.3
11-04-82	4960.8	5239.1	5370.7	29.75	4.0
11-18-82	4960.5	5239.6	5371.7	29.74	1.0
12-02-82	4961.5	5239.6	5360.7(2)	29.28	1.4
12-16-82	4961.5	5238.6	5370.7	29.68	1.2
12-30-82	4961.5	5240.6	5371.7	29.16	2.3
1-13-82	4961.5	5240.6	5371.7	29.93	3.4
1-27-82	4956.8	5240.3	5371.5	29.88	2.0
2-10-82	4961.3	5240.9	5371.4	29.73	1.3
2-24-82	4961.3	5240.1	5370.8	30.19	2.6
3-10-82	4961.2	5240.4	5371.9	29.85	2.9
3-24-82	4960.7	5240.8	5372.5	29.97	4.5
4-07-82	4960.5	5240.6	5372.3	29.63	1.0
4-21-82	4959.5	5239.5	5371.7	30.29	4.0
5-05-82	4961.2	5240.2	5371.9	30.04	1.3
5-19-82	4961.5	5240.1	5372.3	29.82	-0.5
6-09-82	4961.3	5241.1	5371.7	30.12	-1.5
6-23-82	4960.0	5239.6	5372.2	30.10	3.5

(1) Apparent error in reference point on tape. Data plotted as 4961.5.

(2) Apparent error in reference point on tape. Data plotted as 5370.7.

Figure B-1

Q-Sand ISL Monitor Well Fluid Level Data

Feet Above MSL

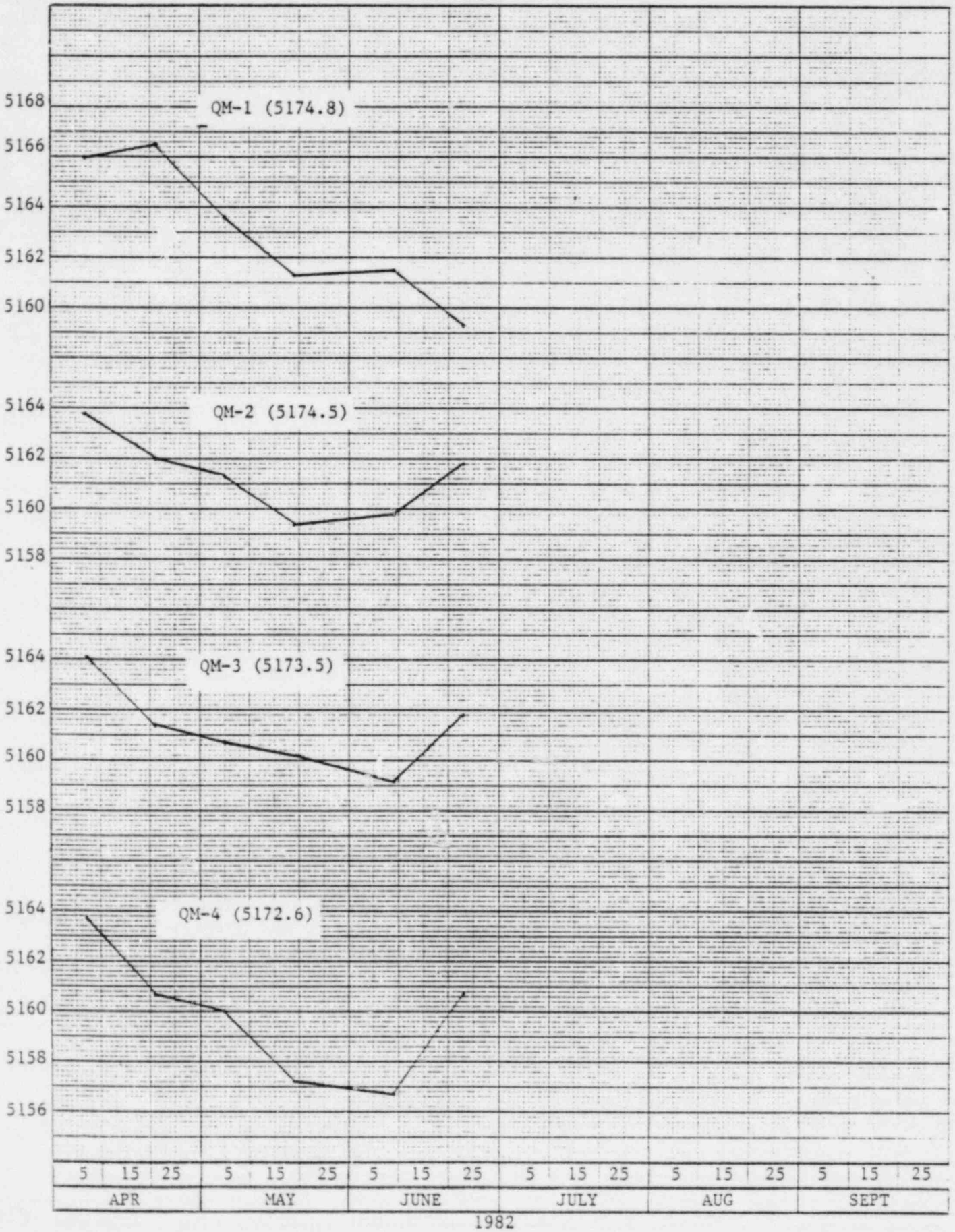


Figure B-2

Q-Sand ISL Monitor Well Fluid Level Data

Feet Above MSL

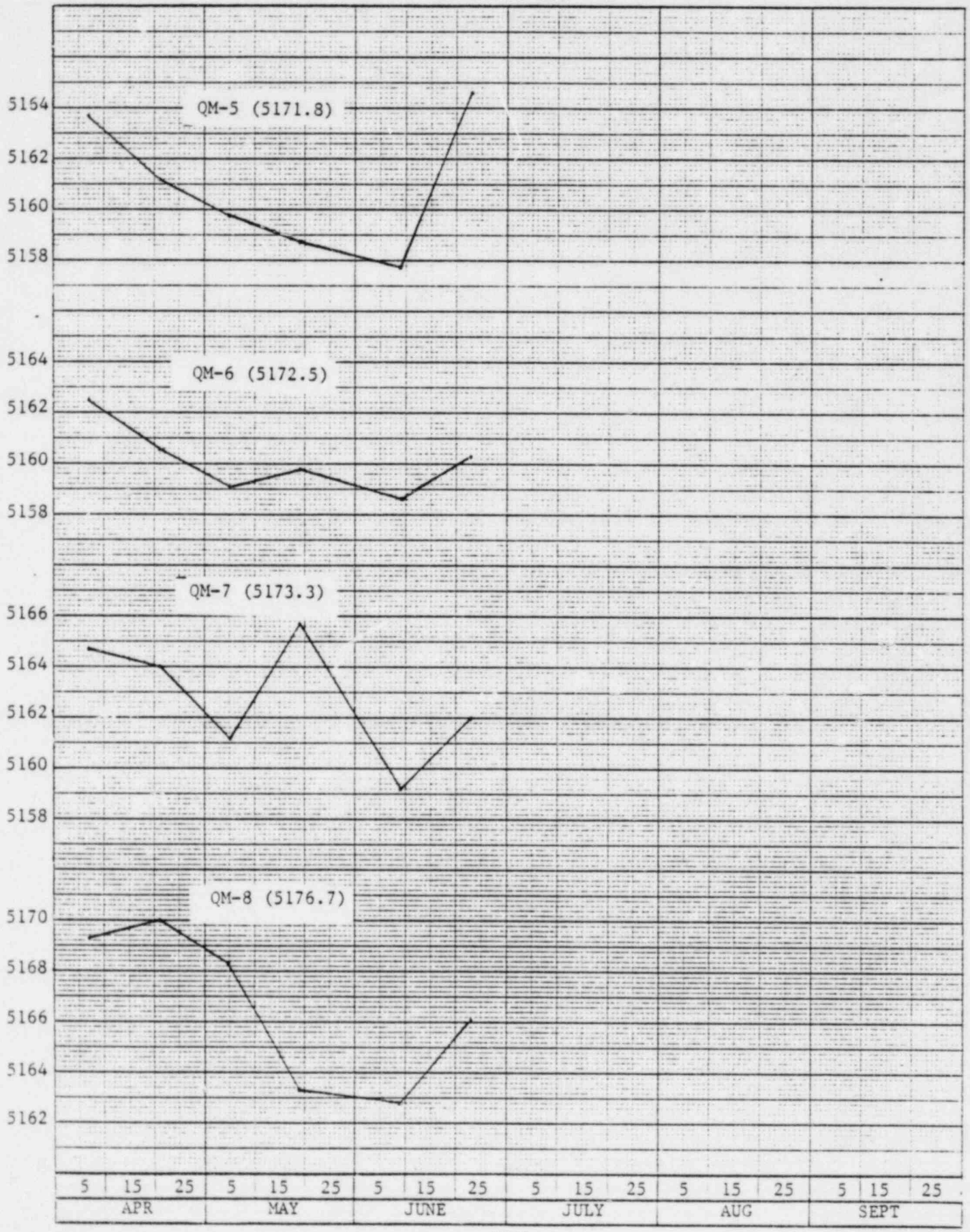


Figure B-3

Q-Sand ISL Monitor Well Fluid Level Data

Feet Above MSL

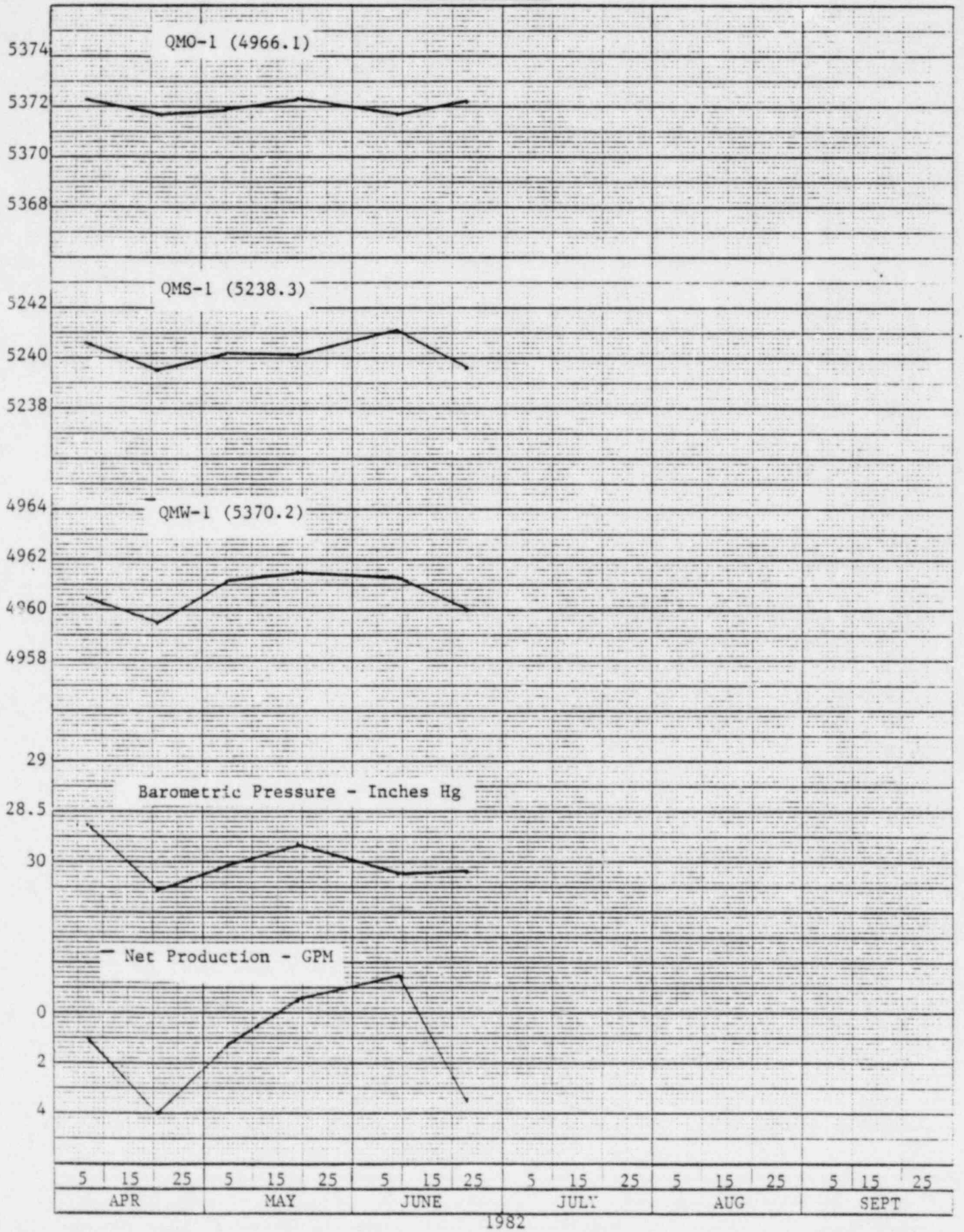
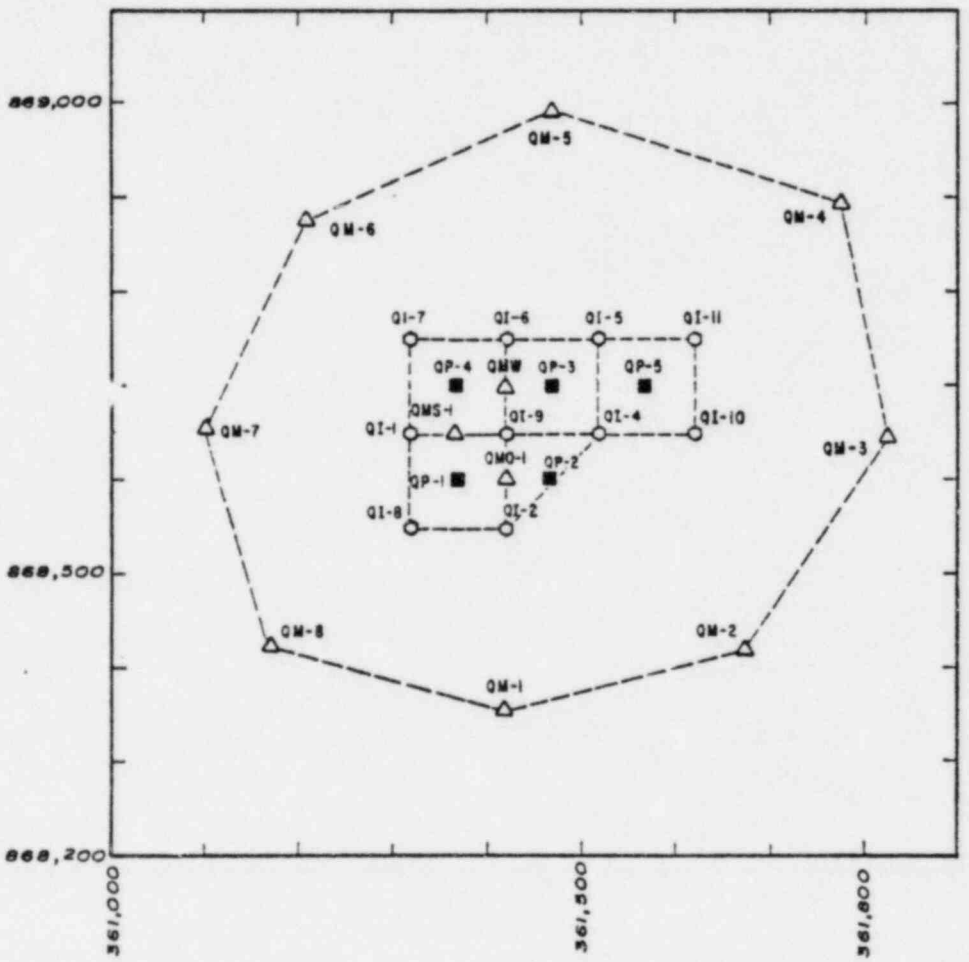


Figure B-4

IN SITU R&D PROJECT WELL PATTERN
"Q" SAND DEPOSIT
SECTION 36-T36N, R74W
CONVERSE COUNTY, WYOMING



LEGEND

△ MONITOR WELL

■ PRODUCTION WELL

○ INJECTION WELL

SCALE 1" = 200'

FEB. 1980
REV. JULY 1980

KERR-McGEE NUCLEAR CORPORATION

ATTACHMENT C

WATER QUALITY DATA

Results of quarterly water analysis on the eleven monitor wells for the 2nd Quarter, 1982, are listed in Tables C-1 and C-2. Analyses of the evaporation pond water samples are shown on Table C-3 and analyses of the bleed stream samples are shown on Table C-4.

Table C-1

Monitor Well Quarterly Analyses

Q-Sand ISL Pilot

Parameter	Units	Wells Sampled 6-10-82					
		QM-1	QM-2	QM-3	QM-4	QM-5	QM-6
Aluminum	mg/l	<.1	<.1	<.1	<.1	<.1	<.1
Arsenic	mg/l	<.001	<.001	<.001	<.001	<.001	<.001
Barium	mg/l	<.1	<.1	<.1	<.1	<.1	<.1
Boron	mg/l	<.1	.18	<.1	.25	<.1	<.1
Cadmium	mg/l	<.01	<.01	<.01	<.01	<.01	<.01
Chromium	mg/l	<.01	<.01	<.01	<.01	<.01	<.01
Cobalt	mg/l	<.05	<.05	<.05	<.05	<.05	<.05
Copper	mg/l	<.01	<.01	<.01	<.01	<.01	<.01
Fluoride	mg/l	.3	.4	.4	.3	.4	.4
Iron	mg/l	.04	.03	.05	.08	.02	.04
Lead Total	mg/l	<.05	<.05	<.05	<.05	<.05	<.05
Lead 210	pCi/l	1.1	1.2	.9	1.0	1.5	1.3
Manganese	mg/l	.05	.05	.04	.03	.03	.02
Mercury	mg/l	<.001	<.001	<.001	<.001	<.001	<.001
Molybdenum	mg/l	<.01	<.01	<.01	<.01	<.01	<.01
Nickel	mg/l	<.05	<.05	<.05	<.05	<.05	<.05
Polonium 210	pCi/l	.7	1.3	1.2	1.1	2.6	1.3
Radium 226	pCi/l	10.7	7.9	11.0	7.1	481	2.2
Selenium	mg/l	<.001	<.001	<.001	<.001	<.001	<.001
Thorium 230	pCi/l	1.2	.6	2.1	1.2	2.4	2.6
Uranium	mg/l	.07	.06	.04	.15	.08	.05
Vanadium	mg/l	<.1	<.1	<.1	<.1	<.1	<.1
Zinc	mg/l	.11	.13	.34	.22	.43	.33
Bicarbonate	mg/l	244	244	236	236	240	236
Calcium	mg/l	63	64	80	80	76	74
Carbonate	mg/l	ND	ND	ND	ND	ND	ND
Chloride	mg/l	7	6	6	6	4	5
Magnesium	mg/l	26	28	15	16	20	21
Nitrate (N)	mg/l	<1	<1	<1	<1	<1	<1
Potassium	mg/l	11	11	11	12	11	11
Sodium	mg/l	23	21	21	22	21	21
Sulfate	mg/l	117	117	120	119	110	121
Specific Cond	µMHO	559	561	560	552	542	543
pH	Units	8.0	8.0	8.1	8.0	8.0	8.0
Gross Alpha	pCi/l	57	32	32	30	209	35
Gross Beta	pCi/l	94	22	<20	<20	121	20
TDS	mg/l	382	389	384	380	378	365

Table C-2

Monitor Well Quarterly Analyses

Q-Sand ISL Pilot

Parameter	Units	Wells Sampled 6-10-82				
		QM-7	QM-8	QMO-1	QMS-1	QMW-1
Aluminum	mg/l	<.1	<.1	<.1	<.1	<.1
Arsenic	mg/l	<.001	<.001	<.001	<.001	<.001
Barium	mg/l	<.1	<.1	<.1	<.1	<.1
Boron	mg/l	<.1	<.1	.13	<.1	.14
Cadmium	mg/l	<.01	<.01	<.01	<.01	<.01
Chromium	mg/l	<.01	<.01	<.01	<.01	<.01
Cobalt	mg/l	<.05	<.05	<.05	<.05	<.05
Copper	mg/l	<.01	<.01	<.01	<.01	<.01
Fluoride	mg/l	.4	.4	.5	.3	.5
Iron	mg/l	.08	.10	.06	.04	.06
Lead Total	mg/l	<.05	<.05	<.05	<.05	<.05
Lead 210	pCi/l	1.0	1.0	1.3	.9	1.4
Manganese	mg/l	.04	.03	.08	.04	.03
Mercury	mg/l	<.001	<.001	<.001	<.001	<.001
Molybdenum	mg/l	<.01	<.01	<.001	<.001	<.001
Nickel	mg/l	<.05	<.05	<.05	<.05	<.05
Polonium 210	pCi/l	1.3	1.3	1.6	1.1	2.0
Radium 226	pCi/l	30.5	11.0	52.0	2.1	3.0
Selenium	mg/l	<.001	<.001	<.001	<.001	<.001
Thorium 230	pCi/l	2.2	.9	2.8	.9	3.3
Uranium	mg/l	.08	.10	.07	.03	.02
Vanadium	mg/l	<.1	<.1	<.1	<.1	<.1
Zinc	mg/l	.64	.39	1.14	.67	.54
Bicarbonate	mg/l	236	240	224	224	142
Calcium	mg/l	76	78	100	84	82
Carbonate	mg/l	ND	ND	ND	ND	ND
Chloride	mg/l	7	5	4	6	17
Magnesium	mg/l	18	17	24	21	18
Nitrate (N)	mg/l	<1	<1	<1	<1	<1
Potassium	mg/l	11	11	14	12	9
Sodium	mg/l	21	20	27	21	7
Sulfate	mg/l	120	120	221	137	153
Specific Cond	µMHO	541	549	705	603	553
pH	Units	8.0	8.0	8.0	8.0	7.9
Gross Alpha	pCi/l	57	33	66	<20	<20
Gross Beta	pCi/l	<20	<20	37	22	32
TDS	mg/l	379	379	523	420	416

Table C-3

Evaporation Pond Water Analyses
Q-Sand ISL Pilot

Parameter	Units	West Pond 6/11/82	East Pond 6/11/82
Chloride	g/L	18.0	20.3
Sodium	g/L	6.4	6.8
TDS	g/L	24.1	32.3
Arsenic	mg/L	1.33	.96
Calcium	mg/L	224	91
Selenium	mg/L	.039	.020
Sulfate	mg/L	456	590
Uranium	mg/L	49	784
Alkalinity	meq/L	15.6	26.8
Radium^{226}	pCi/L	1,804	456
Gross Alpha	pCi/L	7,087	76,712
Gross Beta	pCi/L	3,378	65,009

Table C-4

Bleed Stream Water Analyses
Q-Sand ISL Pilot

Parameter[1]	4/8/82	5/7/82	6/10/82
Bicarbonate	1,537	869	647
Carbonate	ND	ND	ND
Chloride	199	234	185
Selenium	.03	.02	.03
Sodium	280	266	201
Sulfate	280	246	252
Uranium	2.65	.17	0.11
TDS	2,012	1,260	1,342
Alkalinity	25.2	14.2	10.6

(1) All units are mg/L, except for alkalinity which is meg/L.

ATTACHMENT D

NPDES PERMIT NO. WY-0022411

Attached are copies of the discharge monitoring reports submitted to the Wyoming Department of Environmental Quality for the 2nd Quarter, 1982. The report titled 5RD "Q" Sand Project (Location 003) shows an average flow of 0.002 million gallons per day (MGD) or 1.4 gpm from the Q-Sand Project to the mine water treatment system. All parameters for this flow are well within the control limits.

KERR-McGEE NUCLEAR CORPORATION
P.O. BOX 1329 • GLENROCK, WYOMING 82637

July 26, 1982

Mr. John Wagner
Wyoming Department of
Environmental Quality
Water Quality Division
1111 East Lincolnway
Cheyenne, WY 82002

Re: Discharge Monitoring Reports
Permit WY 0022411

Dear Mr. Wagner:

Enclosed are the discharge monitoring reports for the Bill Smith Mine, Permit WY 0022411, for the quarterly report period ending July 1, 1982.

On July 23, our analytical laboratory notified us by telephone that analysis of a water sample taken on June 17, 1982, indicated a concentration of 36 pCi/liter of radium-226. A secondary treatment system has been set up which should prevent any further excursions.

A noncompliance notification is attached.

Sincerely,

Calvin D. Fletcher
Wyoming Uranium Operations

CDF/lw

Encl. Discharge Monitoring Reports

cc: U. S. Environmental Protection Agency
Suite 900
1860 Lincoln Street
Denver, CO 80295

Attn: Enforcement-Permits

[illegible]

July 26, 1982

Mr. John Wagner
Wyoming Department of
Environmental Quality
Water Quality Division
1111 East Lincolnway
Cheyenne, WY 82002

Re: Noncompliance Notification
Permit No. WY 0022411

Dear Mr. Wagner:

On July 23, 1982, our analytical laboratory notified us that analysis of a composite water sample from the Bill Smith Mine discharge point 001, taken on June 17, indicated a concentration of 36 pCi/liter of radium^{226}. A sample taken one week later on June 25, contained 4½ pCi/liter of radium^{226}. In order to prevent future excursions of this nature, a dual treatment system has been initiated at the treatment plant. A second metering pump has been installed which operates simultaneously with the first pump and treats minewater after $BaSO_4$ precipitate has dropped out in the first pond. This secondary system should remove most of the radium^{226} that remains after the initial treatment.

Sincerely,

Calvin D. Fletcher
Wyoming Uranium Operations

CDF/dw

cc: U. S. Environmental Protection Agency
Suite 900
1860 Lincoln Street
Denver, CO 80295

Attn: Enforcement-Permits

Kerr-McGee Nuclear Corp.
P. O. Box 1120
Cimarron, NM

Gil South Mine

PERMIT NUMBER	OUTFALL NUMBER		LATITUDE	LONGITUDE
00.2411	001	1993	43°03'10"	105°41'00"

REPORTING PERIOD FROM 8' 20' 40 1 (YEAR MO DAY) TO 8 20 70 1 (YEAR MO DAY)

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual time discharge is occurring. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that served the maximum feasible minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as the analyses/No. days (i.e., "1/7" is equivalent to 1 analysis performed every 7 days). If cont... enter "CONT".
5. Specify sample type ("grab" or "__-hr. composite") as applicable. If frequency was continuous, enter "RA".
6. Appropriate signature is required at bottom of this form.
7. Prepare carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail original to office specified in permit.

PARAMETER		QUANTITY MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	UNITS	No. Ex.	CONCENTRATION MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	UNITS	No. Ex.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Pond #4 Conduit	REPORTED	2.2	2.3	2.5	MGD		****	****	****				****
	PERMIT CONDITION	*****	****	****	MGD		****	****	****				****
[illegible] Dissolved)	REPORTED	*****	****	****			0.85	6.8	36.0	PC/L	2	13/90	Co
	PERMIT CONDITION	*****	****	****			****	2.0	10.0	PC/L		3/30	Co
[illegible], Total (as Sr)	REPORTED	*****	****	****			****	.004	.005	MG/L	0	5/90	Co
	PERMIT CONDITION	*****	****	****			****	0.5	1.0	MG/L		3/90	Co
[illegible], Tot. Sus. (Insoluble)	REPORTED	*****	****	****			LT2	2.5	5	MG/L	0	12/90	Gr
	PERMIT CONDITION	*****	****	****			****	20.0	30.0	MG/L		3/30	Co
Uranium, Total	REPORTED	*****	****	****			0.33	0.43	0.65	MG/L	0	30/90	Co
A0002	PERMIT CONDITION	*****	****	****			****	2.0	4.0	MG/L		3/30	Co
[illegible]	REPORTED	*****	****	****			None Visible				0	3/90	Visu.
	PERMIT CONDITION	*****	****	****			****	****	10.0	MG/L		3/30	Visu.
[illegible], Total (as Ra)	REPORTED	*****	****	****			8.0	****	8.0	PC/L	0	2/90	Gr
	PERMIT CONDITION	*****	****	****			6.0		9.0	SU		3/90	Gr
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER | TITLE OF PRINCIPAL EXECUTIVE OFFICER | DATE

Dennis Cope | [illegible] | 8 20 7 26 (YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

DATE

KERR-McGEE NUCLEAR CORPORATION
P.O. BOX 1130 • GLENROCK, WYOMING 82637

July 28, 1982

Mr. John Wagner
Wyoming Department of
Environmental Quality
Water Quality Division
1111 East Lincolnway
Cheyenne, WY 82002

Re: Discharge Monitoring Report
Permit WY 0022411
Discharge 002

Dear Mr. Wagner:

Enclosed is the discharge monitoring report for the Bill Smith Mine R&D project, Permit 0022411 - Discharge 002, for the quarterly report period ending July 1, 1982.

Due to an oversight, analyses for sodium were not obtained at this discharge point for the months of April and May. A notice of non-compliance is enclosed.

Sincerely,

Calvin Fletcher

Calvin Fletcher
Wyoming Uranium Operations

CF/dw

cc: U. S. Environmental Protection Agency
Suite 900
1860 Lincoln Street
Denver, CO 80295

Attn: Enforcement-Permits

Kerr-McGee Nuclear Corp.
P. O. Box 1120
Glenrock, WY 82637

4 RD.
Bill Smith Mine J

WY | 0022411 (PERMIT NUMBER) | 002 (OUTFALL) | 1094 (SIC) | 43°03'10" (LATITUDE) | 105°41'00" (LONGITUDE)

REPORTING PERIOD FROM 82 04 01 (YEAR MO DAY) TO 82 07 01 (YEAR MO DAY)

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in spaces containing asterisks. "AVERAGE" is average computed over actual time discharge is occurring. "MINIMUM" and "MAXIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days (e.g., "3/7" is equivalent to 3 analyses performed every 7 days.) If continuous enter "CONT."
5. Specify sample type ("grab" or "___ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. Appropriate signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

PARAMETER		QUANTITY (If specified) MINIMUM	QUANTITY AVERAGE	QUANTITY MAXIMUM	QUANTITY UNITS	QUANTITY NO. EX.	CONCENTRATION (If specified) MINIMUM	CONCENTRATION AVERAGE	CONCENTRATION MAXIMUM	CONCENTRATION UNITS	CONCENTRATION NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow in Conduit	REPORTED	0	.015	0.07	MGD		****	****	****			Da Tot	****
56050	PERMIT CONDITION	****	****	0.12	MGD		****	****	****			Da Tot	****
	REPORTED	****	****	****			31	31	31	MG/L	0	1/90	Gr
Sodium	PERMIT CONDITION	****	****	****			****	****	1000	MG/L		3/90	Gr
	REPORTED	****	****	****			205	218	220	MG/L	0	6/90	Gr
Bicarbonate	PERMIT CONDITION	****	****	****			****	****	3000			3/90	Gr
	REPORTED	****	****	****			3	4.4	5	MG/L	0	5/90	Gr
Chloride	PERMIT CONDITION	****	****	****			****	****	500			3/90	Gr
	REPORTED	****	****	****			LT .002	LT .002	LT .002	MG/L	0	1/90	G
Arsenic	PERMIT CONDITION	****	****	****			****	****	****			1/90	Gr
	REPORTED	****	****	****			LT .002	LT .002	LT .002	MG/L	0	1/90	Gr
Selenium	PERMIT CONDITION	****	****	****			****	****	****			1/90	Gr
	REPORTED	****	****	****			7.8	****	7.8	SU		1/90	Gr
pH, Field	PERMIT CONDITION	****	****	****			6.0		9.0	SU		1/90	Gr
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER	TITLE OF THE OFFICER	DATE
Owens Bill	President	82 07 28
FIRST MI	TITLE	YEAR MO DAY

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

[signature]
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

ORIGINAL

PAGE 1 OF 1

Kerr-McGee Nuclear Corp.
P. O. Box 1120
Henrock, WY 82637

5 RD
"Q" Sand Project
Bill Smith Mine

PERMIT NUMBER	OUTFALL		LATITUDE	LONGITUDE
0022411	003	1094	43°03'10"	105°41'00"

REPORTING PERIOD FROM 91 06 01 TO 92 05 31
(YEAR MO DAY)

INSTRUCTIONS

1. Provide dates for period covered by this report in spaces marked "REPORTING PERIOD".
2. Enter reported minimum, average and maximum values under "QUANTITY" and "CONCENTRATION" in the units specified for each parameter as appropriate. Do not enter values in boxes containing asterisks. "AVERAGE" is average computed over actual (not monthly) reporting period. "MAXIMUM" and "MINIMUM" are extreme values observed during the reporting period.
3. Specify the number of analyzed samples that exceed the maximum (and/or minimum as appropriate) permit conditions in the columns labeled "No. Ex." If none, enter "0".
4. Specify frequency of analysis for each parameter as No. analyses/No. days (e.g., "1/7" to express test as 1 each, one performed every 7 days.) If continuous enter "CONT".
5. Specify a sample type ("grab" or "__ hr. composite") as applicable. If frequency was continuous, enter "NA".
6. A responsible signature is required on bottom of this form.
7. Remove carbon and retain copy for your records.
8. Fold along dotted lines, staple and mail Original to office specified in permit.

PARAMETER		QUANTITY (lbs/day) MINIMUM	QUANTITY (lbs/day) AVERAGE	QUANTITY (lbs/day) MAXIMUM	QUANTITY (lbs/day) UNITS	No. Ex.	CONCENTRATION (mg/l) MINIMUM	CONCENTRATION (mg/l) AVERAGE	CONCENTRATION (mg/l) MAXIMUM	CONCENTRATION (mg/l) UNITS	No. Ex.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
Flow in Conduit or Thru Treatment	REPORTED	.0004	.002	.007	MGD	0	****	****	****			Da Rec	****
50050	PERMIT CONDITION	****	****	0.12	MGD		****	****	****			Da Rec	****
Sodium	REPORTED	****	****	****			201	249	280	MG/L	0	3/90	Gr
	PERMIT CONDITION	****	****	****			****	****	1000	MG/L		3/90	Gr
Bicarbonate	REPORTED	****	****	****			647	1018	1537		0	3/90	Gr
	PERMIT CONDITION	****	****	****			****	****	3000			3/90	Gr
Chloride	REPORTED	****	****	****			185	206	234		0	3/90	Gr
	PERMIT CONDITION	****	****	****			****	****	500			3/90	Gr
Arsenic	REPORTED	****	****	****			.030	.030	.030		0	1/90	Gr
	PERMIT CONDITION	****	****	****			****	****	****			1/90	Gr
Selenium	REPORTED	****	****	****			.018	.025	.030		0	3/90	Gr
	PERMIT CONDITION	****	****	****			****	****	****			1/90	Gr
Oil, Field	REPORTED	****	****	****			7.5	****	7.5		0	1/90	Gr
	PERMIT CONDITION	****	****	****			6.0		9.0			1/90	Gr
	REPORTED												
	PERMIT CONDITION												

NAME OF PRINCIPAL EXECUTIVE OFFICER: Bill
TITLE OF THE OFFICER: President
DATE: 92 07 21
(YEAR MO DAY)

I certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief such information is true, complete, and accurate.

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

ORIGINAL

PAGE 1 OF