



KERR-McGEE CHEMICAL CORPORATION

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January 23, 1990

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ENVIRONMENTAL
PROTECTION

Mr. Joe Livak
State of Nevada
Division of Environmental Protection
201 So. Fall Street
Carson City, Nevada 89710

Dear Mr. Livak:

Subject: Fourth Quarter 1989 Performance Report
for the Chromium Mitigation Program

Enclosed are two copies of the fourth quarter 1989 Chromium Mitigation program for Kerr-McGee Chemical Corporation's Henderson facility.

Because of the effectiveness of chromium mitigation technology at the Henderson facility, Kerr-McGee Chemical Corporation proposes to reduce the frequency of the Performance Reports to a semi-annual basis as afforded in Section 6 of the Consent Order. The next report will cover January 1 through June 30 and will be received by you before July 28, 1990.

Should you have any questions or comments about the Fourth Quarter Performance Report or the frequency of performance reports, please contact me or Alan J. Gaddy at (702) 565-8901.

Sincerely,

Patrick S. Corbett
Plant Manager

PSC:j
LIVAK1.23

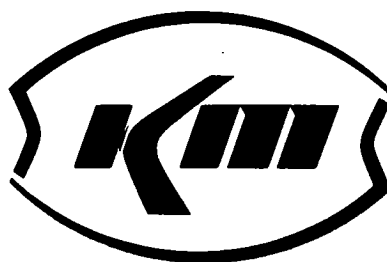
Attachments (2)

cc: AJGaddy
JCStauter

KERR-McGEE CORPORATION

**FOURTH QUARTER PERFORMANCE REPORT
CHROMIUM MITIGATION PROGRAM
KERR-McGEE CHEMICAL CORPORATION
HENDERSON, NEVADA**

OCTOBER - DECEMBER, 1989



Engineering Services

FOURTH QUARTER PERFORMANCE REPORT
CHROMIUM MITIGATION PROGRAM
KERR-McGEE CHEMICAL CORPORATION
HENDERSON, NEVADA

OCTOBER - DECEMBER, 1989

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JAN 25 1990

ENVIRONMENTAL
PROTECTION

Submitted in Accordance with:

Chromium Mitigation Program
Consent Order
September 9, 1986

Prepared by:

Jeff Lux
Senior Hydrologist
Hydrology Department
Engineering Services Division
Kerr-McGee Corporation

January 25, 1990

Alan J. Gaddy 1/23/90

A. J. Gaddy, Environmental Engineer
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Henderson, Nevada

TABLE OF CONTENTS

INTRODUCTION 1

GROUNDWATER SURFACE CONFIGURATION 2

CONTINUOUS WATER LEVEL RECORDERS 4

INTERCEPTOR SYSTEM PERFORMANCE 5

IMPACT OF DISPOSAL SYSTEM ON DOWNGRADIENT WATER LEVELS . . 12

CHROMIUM TREATMENT SYSTEM EFFECTIVENESS 13

ADDITIONAL WORK PERFORMED 15

CONCLUSIONS 16

APPENDIX A- GROUNDWATER ELEVATIONS

APPENDIX B- POTENTIOMETRIC SURFACE MAPS

INTERCEPTOR AREA CROSS SECTIONS

APPENDIX C- CONTINUOUS WATER LEVEL RECORDER CHARTS

APPENDIX D- CHROMIUM CONCENTRATIONS IN

APPENDIX J WELLS AND INTERCEPTOR WELLS

LIST OF FIGURES

FIGURE 1- CONSENT ORDER MONITORING AREA 3
FIGURE 2- LOCATION OF APPENDIX J WELLS 6

LIST OF TABLES

TABLE 1- TOTAL CHROMIUM CONCENTRATIONS IN APPENDIX J WELLS. 10
TABLE 2- INTERCEPTOR WELL DISCHARGE RATES 11
TABLE 3- GROUNDWATER TREATMENT ANALYSIS 14

FOURTH QUARTER 1989 PERFORMANCE REPORT
CHROMIUM MITIGATION PROGRAM
KERR-McGEE CHEMICAL CORPORATION
HENDERSON, NEVADA

INTRODUCTION

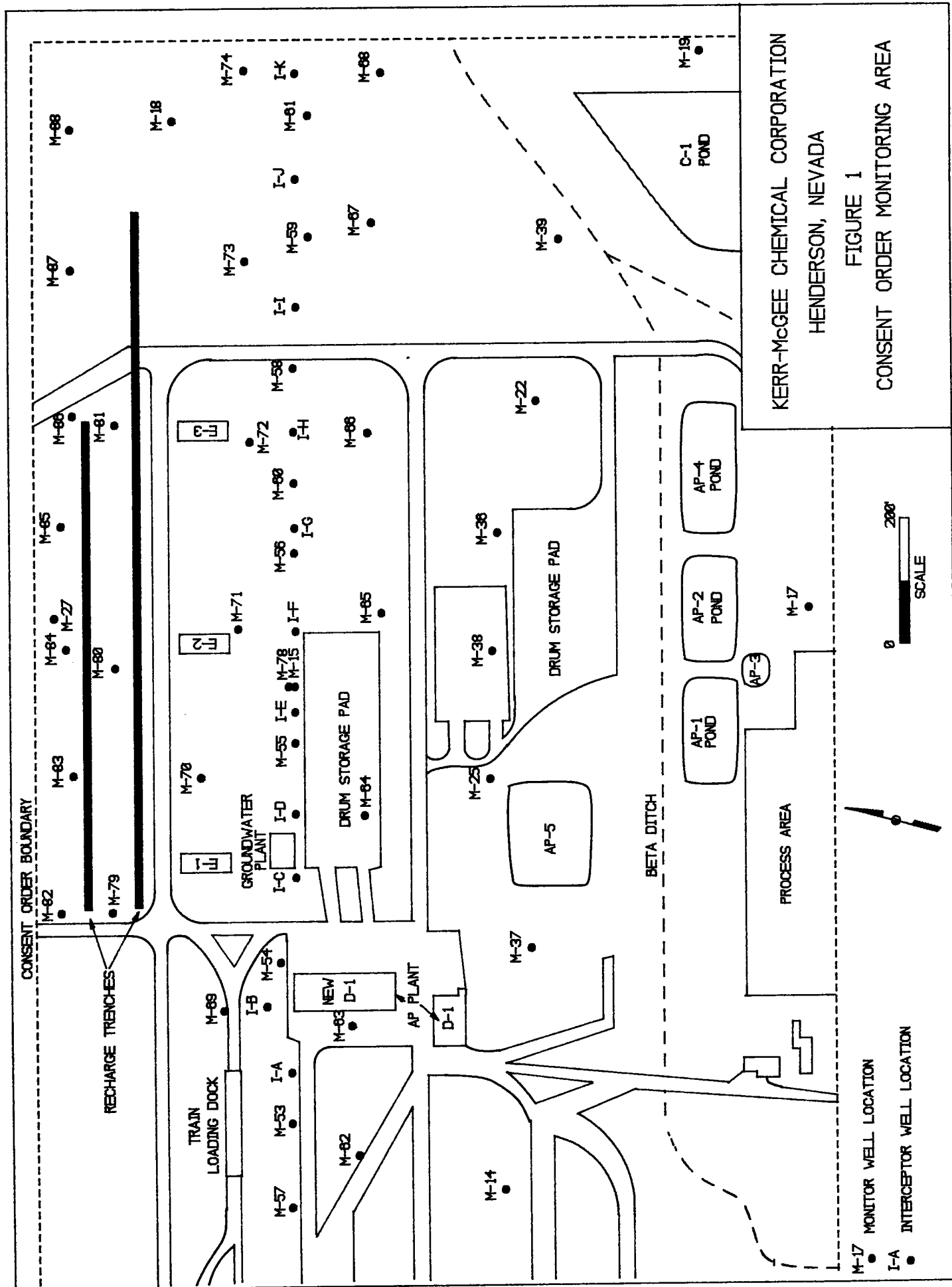
In accordance with the Consent Order for cleanup of chromium contaminated groundwater at the Henderson facility, finalized September 9, 1986, Kerr-McGee Chemical Corporation (KMCC) submits this quarterly performance report to the Nevada Department of Environmental Protection. This report, for the fourth quarter of 1989, summarizes performance data for the groundwater treatment plant and evaluates the effectiveness of the groundwater interception and treatment system installed to carry out the chromium mitigation program.

GROUNDWATER SURFACE CONFIGURATION

Figure 1 illustrates the chromium treatment system monitoring area as defined in Appendix D of the Consent Order, and shows the locations of all groundwater interceptor and monitor wells installed by KMCC within this area. Appendix A lists monthly groundwater elevations recorded since January 1988 in wells within the Consent Order area. Appendix B presents the water table configuration during the fourth quarter of 1989, reflecting each month's groundwater level measurements.

Figure B-1 of Appendix B illustrates the potentiometric surface within the consent order monitoring area on October 25, 1989. Figure B-2 presents a cross-section along the groundwater interceptor line, reflecting the pumping system drawdown on that date. The static water level shown on Figure B-2 represents the Consent Order reference groundwater elevation, established September 14, 1987, prior to startup of the interception system. Figures B-3 and B-4 present a potentiometric surface map and cross-section for data recorded November 17, 1989. Figures B-5 and B-6 present water level data recorded December 7, 1989.

Groundwater elevations, listed in Appendix A, show that water levels throughout the Consent Order monitoring area have stabilized since the discharge of cooling water to the beta ditch was discontinued in November, 1987. Figures B-1 through B-6 show the reconfiguration of the potentiometric surface as groundwater levels have dropped throughout the monitoring area.



KERR-McGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA

FIGURE 1

CONSENT ORDER MONITORING AREA

CONTINUOUS WATER LEVEL RECORDERS

Wells M-78 and M-80 (Figure 1) are equipped with continuous water level recorders. Appendix C contains copies of the recorder charts generated during the fourth quarter of 1989. During the fourth quarter of 1989, water levels throughout the consent order area showed negligible decline, indicating that the hydrologic environment has stabilized throughout both the interception and recharge areas.

On October 9, the pump in well I-F blew a seal. A temporary rise and subsequent change in the water level is shown on the chart for nearby well M-78. Since well M-78 is located in close proximity to this pumping well, this response is expected, and the chart reflects the short-term rise in groundwater elevation within the cone of depression. Other short-term rises and declines seen in the water level recorder chart for well M-78 are due to the fact that well I-E is pumping at capacity, and periodically shuts off to allow the well to partially recover.

INTERCEPTOR SYSTEM PERFORMANCE

Figures B-1 through B-6, attached as Appendix B, show the potentiometric surface configuration in the interceptor area during the fourth quarter. Figures B-2, B-4, and B-6 show that drawdown consistently exceeded the one foot below reference water level criterion across the entire interceptor well line.

The potentiometric surface maps (Figures B-1, B-3, and B-5) do not show overlapping drawdown cones along the interceptor line. However, the cross-section presented as Figure B-6 shows that interceptor wells are nearly all drawn down to the Muddy Creek Clay. The drawdowns indicated by Figure B-6 indicates that the alluvium is being depleted of water locally and production of groundwater has been maximized. Therefore, interception of groundwater passing this line has reached the maximum possible with this recovery system.

The effectiveness of the groundwater interception and treatment system in reducing chromium levels in the groundwater is further apparent from review of chemical analyses of treatment plant effluent and downgradient monitor well samples (wells M-86 and M-23). KMCC is monitoring chromium concentrations in five Consent Order Appendix J wells, located up and downgradient from the plume interceptor line (Figure 2). Hexavalent chromium concentrations in the five Appendix J wells sampled and analyzed for chromium are displayed in Table 1. Appendix D portrays this data graphically.

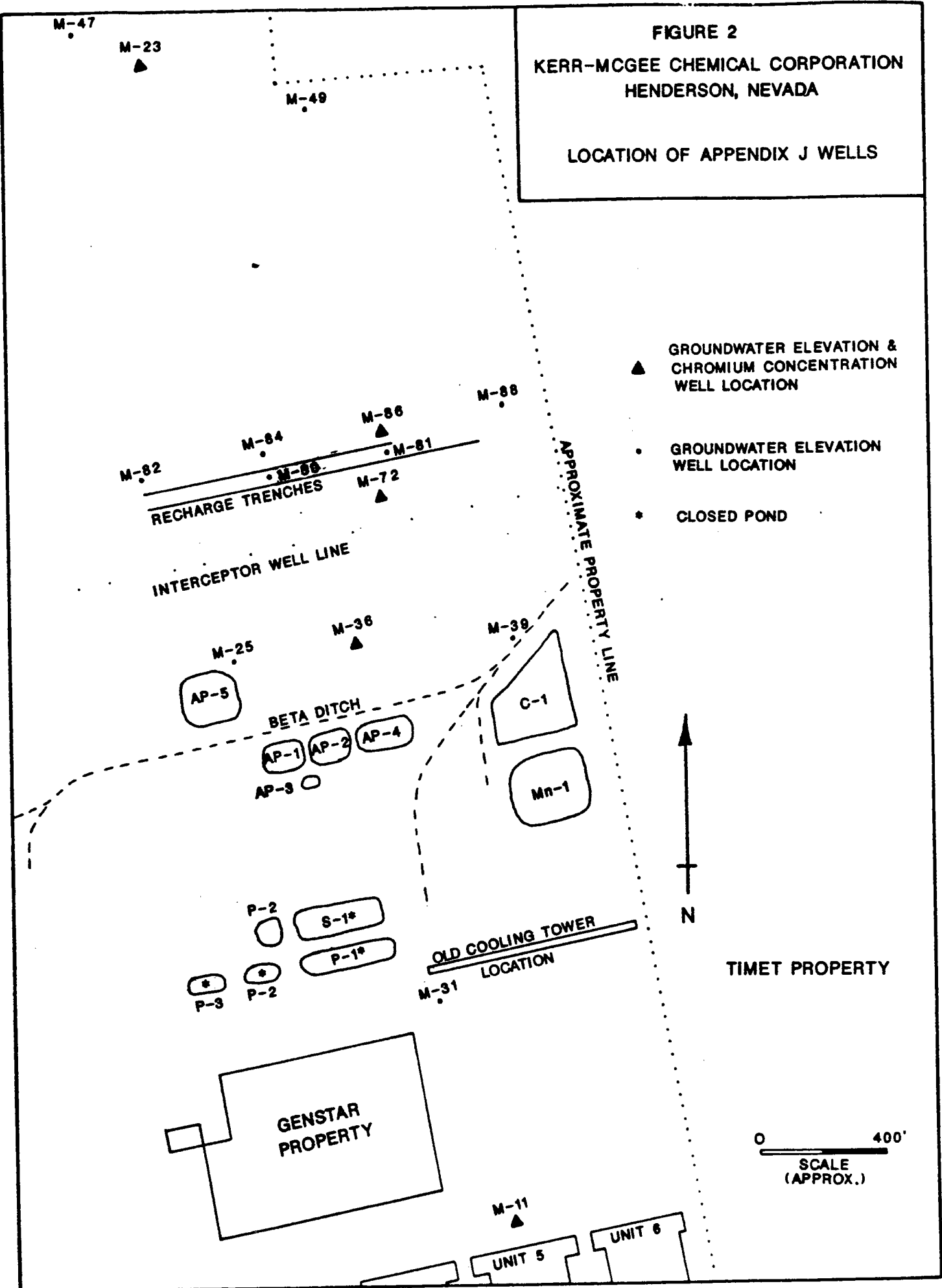


FIGURE 2
KERR-MCGEE CHEMICAL CORPORATION
HENDERSON, NEVADA
LOCATION OF APPENDIX J WELLS

- ▲ GROUNDWATER ELEVATION & CHROMIUM CONCENTRATION WELL LOCATION
- GROUNDWATER ELEVATION WELL LOCATION
- ◉ CLOSED POND



TIMET PROPERTY

0 400'
 SCALE (APPROX.)

GENSTAR PROPERTY

UNIT 5 UNIT 6

RECHARGE TRENCHES

INTERCEPTOR WELL LINE

BETA DITCH

OLD COOLING TOWER LOCATION

APPROXIMATE PROPERTY LINE

Well M-11 was selected for monitoring the upgradient concentration of chromium because it is nearest the identified source. Figure D-1 shows that the chromium concentration in M-11 has not declined significantly. The slow rate of decline is due to the slow release of chromium laterally from the low permeability Muddy Creek Clay, the horizon surrounding the basement of the building that was the source of chromium.

Well M-36, located approximately 350 feet upgradient from the interceptor line, shows a gradual increase in chromium concentration with time (Figure D-2). This is due to the normal downgradient progression of chromium from the source, near M-11, to the interception line.

Well M-72 (Figure D-3), which is located between the interceptor line and the recharge trench, had exhibited a steady decline in chromium concentration until October, 1988. The concentration increase that began in October is approaching 2.0 mg/l and reflects what we believe to be some slight flowthrough of groundwater in the vicinity of well I-H. The drawdown at well I-H has been increased during the fourth quarter to reduce potential flowthrough. Figure B-6 shows well I-H is drawn down to the Muddy Creek Clay. The chromium concentration at well I-H has been declining through the fourth quarter of 1989, and both factors should result in a decline in chromium concentrations from well M-72 in the near future.

Well M-86 (Figure D-4), located immediately downgradient from the recharge trench, continues to show a decreasing trend in chromium concentration. Prior to the installation of the groundwater treatment system, the chromium concentration at well M-86 was near 5.0 mg/l. At no time since December 1987 has the chromium concentration at this location exceeded 0.5 mg/l. The consent order stipulates that treated water discharged to the ground must have an average chromium concentration of 1.7 mg/l or lower. Cleanup conditions are therefore being met or exceeded. With chromium levels in well M-86 typically below 0.3 mg/l, the interception and treatment system installed at the facility is effectively lowering the chromium concentration of the groundwater and is meeting the Chromium Mitigation Program objectives.

Well M-23 (Figure D-5), the farthest downgradient of the Appendix J wells, shows a continued decreasing trend in chromium concentration. The fact that the chromium concentration at well M-23 continues to decrease provides definitive evidence that groundwater quality is being restored. This trend, which is an indication of the overall effectiveness of the chromium mitigation program, is expected to continue.

KMCC instituted a mitigation program that provides maximization of groundwater removal at those locations along the interception line that exhibit the highest chromium concentrations. Figure D-6 presents the chromium concentration in each of the interceptor well discharges. On the basis of the potentiometric surface

configuration, individual well chromium concentrations, and well production capabilities, new pump rates for each recovery well were established in December, 1988 and March, 1989. KMCC now adjusts interceptor well discharges on a monthly basis to maintain maximum drawdown, resulting in maximum interception. Table 2 lists the pumping rate of each interceptor well as of December, 1989. Adjustments will continue to be made to maximize interception of the chromium plume as conditions warrant.

Figure B-6 shows that most of the interceptor wells are drawn down to the Muddy Creek Clay, so that both groundwater and chromium flow through the interceptor line has been minimized. Monitoring of downgradient wells M-23 and M-86 demonstrates the effectiveness of the interception system.

TABLE 1
TOTAL CHROMIUM CONCENTRATION (mg/l)
IN APPENDIX J WELLS

MONTH	WELL #				
	M-11	M-36	M-72	M-86	M-23
JUN 1988	44.00	2.50	1.00	0.21	5.40
JUL 1988	43.00	2.80	0.89	0.18	5.00
AUG 1988	39.00	2.80	0.91	0.21	5.10
SEP 1988	46.00	2.60	0.82	0.30	5.00
OCT 1988	46.00	8.80	1.00	0.31	4.60
NOV 1988	40.00	12.40	1.20	0.20	4.80
DEC 1988	54.00	2.90	1.40	0.12	4.90
JAN 1989	6.70	2.90	1.40	0.31	4.60
FEB 1989	40.00	3.10	1.20	0.06	4.10
MAR 1989	42.00	3.80	1.40	0.19	3.80
APR 1989	43.00	3.50	1.40	0.42	3.30
MAY 1989	44.00	3.60	1.40	0.27	3.20
JUN 1989	35.00	3.90	1.16	0.20	2.70
JUL 1989	34.00	4.00	1.28	0.13	2.70
AUG 1989	36.00	4.20	1.40	0.38	2.70
SEP 1989	35.00	3.80	1.30	0.17	2.30
OCT 1989	35.00	4.30	1.60	0.12	2.40
NOV 1989	33.00	4.00	1.80	0.13	2.30
DEC 1989	35.00	4.40	1.90	0.14	2.10

M-11 is 2500 ft. upgradient of interceptor line.
M-36 is 550 ft. upgradient of interceptor line.
M-72 is Between interceptor line and recharge trench.
M-86 is Immediately downgradient of recharge trench.
M-23 is 1350 ft. downgradient of recharge trench.

TABLE 2
INTERCEPTOR WELL DISCHARGE RATES

WELL #	DISCHARGE RATE (GPM)			
	SEP. 14 1987	DEC. 19 1988	SEP. 29 1989	DEC. 7 1989
I-A	2.0	3.0	6.9	3.0
I-B	2.0	3.0	7.3	2.9
I-C*	2.5	8.8	7.0	5.5
I-D*	20.0	18.0	7.9	8.0
I-E*	5.0	2.4	10.6	5.2
I-F*	30.0	26.0	23.0	13.4
I-G	7.0	5.0	5.6	4.0
I-H	8.0	3.0	8.5	7.8
I-I	15.0	15.0	16.8	16.0
I-J	10.0	8.0	5.0	8.0
I-K	10.0	8.2	9.0	7.5
	-----	-----	-----	-----
	111.5	100.4	107.6	81.3

* - Wells containing the highest chromium concentrations (see Figure D-6 in Appendix D).

IMPACT OF DISPOSAL SYSTEM ON DOWNGRAIDENT WATER LEVELS

Appendix J of the Consent Order, the Disposal System Contingency Plan, identifies specific monitor wells that are to be utilized to evaluate any impact from recharge of treated water into the alluvium. A total of fifteen wells are monitored monthly for groundwater levels. Kerr-McGee Chemical Corporation selected 5 of these wells in Appendix J of the Consent Order for quarterly chromium analysis. To date, these wells have been sampled and analyzed monthly. Figure 2 illustrates the location of the Consent Order Appendix J wells.

Appendix A of this report shows that groundwater elevations have stabilized in that portion of the facility that lies downgradient from the recharge system (evidenced by wells M-47, M-23, and M-49), and are lower than in January, 1988. No surface wetting downgradient from the recharge trenches has been observed. KMCC is confident that there exists no undesirable impact to groundwater levels downgradient from the recharge trench.

CHROMIUM TREATMENT SYSTEM EFFECTIVENESS

The Consent Order specifies the following effluent concentration limits for the treatment plant discharge water: Total Chromium 1.7 mg/l and Hexavalent Chromium 0.05 mg/l as a monthly average; Total Chromium 3.4 mg/l and Hexavalent Chromium 0.1 mg/l as a maximum single value on a composite sample.

Table 3 lists treatment plant feed and discharge chromium concentration data for September 30, 1989 through December 29, 1989. The discharge concentration of hexavalent chromium for the week of October 14 through October 20, 1989 was 0.645 mg/l. This value caused the October average to exceed the 0.05 mg/l limit, with a recorded 0.163 mg/l value.

This elevated concentration was caused by the need to replace the electrodes in one of the electrolytic cells. The standby electrolytic cell is placed into service when laboratory data shows an increase in discharge chromium concentration due to deteriorating electrodes within the cell. The laboratory results are not received for several days after discharge sampling. This can result in two or more samples displaying elevated chromium concentrations prior to switchover to the standby cell. If both samples occur the same week, a high weekly average value results.

Switchover to the standby cell occurs on a calendar basis to prevent occurrences of elevated chromium concentration. The normal period of efficient operation of the electrolytic cells is

TABLE 3
GROUNDWATER TREATMENT ANALYSIS

WEEK OF	VOLUME TREATED (M gal.)	FEED CHROMIUM (mg/l)	TREATED TOTAL (mg/l)	EFFLUENT HEXAVALENT (mg/l)
Sep. 30 - Oct. 6	522 ^A	2.65	0.030	0.0024
Oct. 7 - Oct. 13	662	2.75	0.028	0.0020
Oct. 14 - Oct. 20	570	3.15	0.730	0.645
Oct. 21 - Oct. 27	633	3.70	0.046	0.0028
October, 1989 Average		3.06	0.2085	0.163
Oct. 28 - Nov. 3	667	3.70	0.078	0.0026
Nov. 4 - Nov. 10	660 ^B	3.40	0.145	0.0010
Nov. 11 - Nov. 17	620 ^C	3.55	0.130	0.0020
Nov. 18 - Nov. 24	622	3.20	0.115	0.0030
Nov. 25 - Dec. 1	625	3.09	0.020	0.0025
November, 1989 Average		3.388	0.0976	0.0022
Dec. 2 - Dec. 8	669 ^D	3.05	0.040	0.0030
Dec. 9 - Dec. 16	766	3.025	0.438	0.085
Dec. 17 - Dec. 22	754	3.65	0.280	0.0308
Dec. 23 - Dec. 29	749	4.20	0.125	0.0260
December, 1989 Average		3.48	0.221	0.0362

A- Power failure for 2.0 hours.

B- Discharge from wells changed.

C- Plant shut down for 1 hr. for replacement of polymer.

D- Operator error allowed amperage to drop one night.

20 days. However, since the life of the electrodes is dependent upon several variables, such as temperature, flowrate, and adjusted amperage, it is not possible to accurately predict the life of the electrodes. To the extent possible, electrodes are replaced prior to receiving discharge data showing elevated concentrations.

The other elevated chromium concentration occurred the week of December 9 through December 16, 1989. Electrode current was not compensated adequately for an unexpectedly cold night, and abnormally high chromium concentrations for the next day skewed the weekly average.

ADDITIONAL WORK PERFORMED

Approximately every twenty days, the electrodes in the treatment plant's electrolytic cells deteriorate to the point they require replacement. During the fourth quarter of 1989, the standby cell was activated on October 17, November 9, December 4, and December 22. Each time, electrodes were replaced in the disconnected cell.

Engine hour meters are being used to determine the average number of hours per day individual pumps are running. Six of the interceptor wells utilize a time-marking device that shuts the pump off for a pre-determined amount of time if the well runs dry. If a pump spends a significant amount of time shut down, then recovery can be increased by slowing down the pump rate, allowing discharge to occur a greater percentage of the time. Facility personnel are utilizing the engine hour meters to maximize the total discharge from each of the wells that are time-marking. Well discharge rates were adjusted and recorded on November 7, and again on December 7, 1989.

Flowmeter readings (total volume) are recorded for each well on a daily basis. In addition, flow rates are recorded for each well every other day. These records indicate when a pump needs to be replaced or a flowrate adjusted. For example, the pump for well I-F failed on October 9, and was replaced October 10, 1989.

PROPOSED FUTURE ACTIVITIES

KMCC plans to discontinue the monthly manual water level monitoring, continuing to record all water levels in the consent order area on a semi-annual basis, according to the provisions of Section 6 of the Consent Order. Semi-annual potentiometric surface maps and cross-sections will be developed, and the water level recorders will continue to operate.

Electronic pressure transducers are being placed in a number of groundwater monitor wells stationed between recovery wells. A telephone-addressable datalogger will record the pressure head in each of the wells at a regular interval and convert the pressure head to groundwater elevation. KMCC anticipates that this format of groundwater elevation monitoring will provide more accurate data and will replace the continuous water level recorder currently used in well M-78. This water level monitoring system will also yield the same data as the current monthly manual recording of groundwater elevations throughout the consent order monitoring area. Provisions for discontinuing the use of the continuous water level recorder are given in Section 6 of the Consent Order.

KMCC proposes to submit Chromium Mitigation Program performance reports on a semi-annual basis instead of on a quarterly basis, beginning with the first half of 1990. The first performance report will be submitted July 28, 1990.

CONCLUSIONS

KMCC is confident that effective groundwater interception and treatment are being attained. The effect of changing the pumping rates of the interceptor wells will continue to be monitored, and appropriate responses (i.e.- future pump rate adjustments) will be taken to assure optimal drawdown and plume interception.

Treatment facility discharge chromium concentrations are consistently below established requirements. No adverse impacts to downgradient groundwater levels have been observed as a result of returning treated groundwater to the near-surface aquifer via the recharge trenches. No other design modifications to the treatment plant facility are contemplated at this time.

APPENDIX A
GROUNDWATER ELEVATIONS

APPENDIX A
 KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TOC-->	M-11 DTM	M-11 ELEV.	M-14 DTM	M-14 ELEV.	M-15 DTM	M-15 ELEV.	M-17 DTM	M-17 ELEV.	M-18 DTM	M-18 ELEV.	M-19 DTM	M-19 ELEV.	M-22 DTM	M-22 ELEV.	M-23 DTM	M-23 ELEV.	M-25 DTM	M-25 ELEV.
20-Jan-88	44.78	1768.68	28.56	1730.27	23.29	1726.40	30.64	1738.90	11.73	1726.55	27.60	1738.95	23.78	1734.35	14.58	1698.20	26.63	1731.52
05-Feb-88	44.78	1768.68	28.70	1730.13	23.59	1726.10	31.12	1738.42	11.87	1726.41	27.88	1738.67	24.20	1733.93	14.52	1698.26	27.07	1731.08
01-Mar-88	44.76	1768.70	29.36	1729.47	24.03	1725.66	31.72	1737.82	12.13	1726.15	28.36	1738.19	24.65	1733.48	14.67	1698.11	28.33	1729.82
19-Apr-88	45.17	1768.29	30.14	1728.69	24.62	1725.07	32.42	1737.12	12.73	1725.55	28.92	1737.63	25.25	1732.88	14.94	1697.84	28.75	1729.40
18-May-88	45.13	1768.33	30.48	1728.35	25.05	1724.64	32.90	1736.64	13.08	1725.20	29.34	1737.21	25.61	1732.52	15.05	1697.73	29.00	1729.15
07-Jun-88	45.39	1768.07	30.67	1728.16	25.24	1724.45	33.03	1736.51	13.30	1724.98	29.64	1736.91	26.19	1731.94	15.29	1697.49	29.60	1728.55
14-Jul-88	46.16	1767.30	31.06	1727.77	25.83	1723.86	33.96	1735.38	13.73	1724.55	29.98	1736.37			15.73	1697.05	29.65	1728.50
06-Aug-88	46.20	1767.26	31.36	1727.47	25.94	1723.75	34.18	1735.36	13.91	1724.37	29.24	1737.31			15.45	1697.33	30.10	1728.05
03-Sep-88	46.12	1767.34	31.32	1727.51	25.95	1723.74	34.30	1735.24	13.40	1724.88	29.79	1736.80			15.50	1697.28	30.15	1728.00
10-Oct-88	45.40	1768.06	31.50	1727.33	26.00	1723.69	34.40	1735.14	14.30	1723.98	29.70	1736.85	26.50	1732.18	15.50	1697.23	30.70	1727.45
26-Nov-88	41.65	1771.81	31.65	1727.18	27.10	1722.59	34.30	1735.24	14.40	1723.88	29.90	1736.63	36.20	1722.48	15.55	1697.23	30.70	1727.45
19-Dec-88	46.10	1767.36	37.70	1721.13	30.18	1719.51	33.75	1735.79	14.00	1724.28	30.40	1736.15	26.90	1731.78	16.85	1695.93	30.93	1727.45
19-Jan-89	46.15	1767.31	31.80	1727.03	25.05	1724.64	34.75	1734.79	14.80	1723.48	30.60	1735.95	26.90	1731.78	15.10	1697.68	30.93	1727.20
23-Feb-89	45.27	1768.19	32.15	1726.68	28.35	1721.34	35.00	1734.94	15.35	1722.93	30.80	1735.75	27.13	1731.55	16.45	1696.33	32.10	1726.05
23-Mar-89	45.90	1767.56	32.20	1726.63	28.40	1721.29	35.10	1734.44	15.70	1722.58	31.00	1735.55	27.75	1730.93	16.50	1696.28	32.10	1726.05
23-Apr-89	46.10	1767.36	32.30	1726.53	28.40	1721.29	35.10	1734.44	15.85	1722.43	31.00	1735.55	27.85	1730.83	16.60	1696.18	32.20	1725.95
09-May-89	44.95	1768.51	32.40	1726.43	27.80	1721.89	35.00	1734.54	16.00	1722.28	31.00	1735.35	27.95	1730.73	16.00	1696.78	32.00	1726.15
01-Jun-89	45.30	1767.96	32.50	1726.33	28.50	1721.19	35.25	1734.29	16.25	1722.03	31.30	1735.25	28.05	1730.63	16.10	1696.68	32.30	1725.85
03-Jul-89	45.00	1768.46	32.60	1726.23	27.60	1722.09	35.35	1734.19	16.55	1721.73	31.45	1735.10	29.35	1729.33	16.20	1696.58	32.10	1726.05
16-Aug-89	46.00	1767.46	32.70	1726.13	28.30	1721.39	35.50	1734.04	16.85	1721.43	34.35	1732.00	28.30	1730.38	21.70	1691.08	36.00	1722.15
12-Sep-89	45.30	1768.16	32.55	1726.28	28.53	1721.14	35.55	1733.99	16.80	1721.48	36.80	1729.75	28.60	1730.08	21.90	1690.88	32.65	1725.50
25-Oct-89	45.00	1768.46	32.60	1726.23	28.40	1721.29	35.35	1734.19	17.10	1721.18	31.60	1734.95	28.55	1730.13	21.30	1691.48	32.60	1725.55
17-Nov-89	44.10	1769.36	32.00	1726.83	30.00	1719.69	35.15	1734.39	17.10	1721.18	31.20	1735.35	28.70	1729.98	16.85	1695.93	32.80	1725.35
07-Dec-89	45.00	1768.46	32.85	1725.98	28.30	1721.39	35.35	1734.19	17.25	1721.03	31.85	1734.70	28.65	1730.03	16.95	1695.83	32.55	1725.60

APPENDIX A
 KERR-McBEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TOC-->	N-55	N-56	N-57	N-58	N-59	N-60	N-61	N-62	N-63	N-64
	DIN	DIN	DIN	DIN	DIN	DIN	DIN	DIN	DIN	DIN
	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.
20-Jan-88	23.27	22.48	26.44	20.58	14.22	22.06	16.60	25.51	22.34	22.91
05-Feb-88	23.74	22.87	26.67	20.80	14.48	22.38	17.12	25.74	22.78	23.15
01-Mar-88	24.15	23.35	27.10	21.09	14.86	22.80	17.34	26.18	23.43	23.87
19-Apr-88	24.75	24.04	27.58	21.67	15.34	23.54	17.81	26.77	24.08	24.52
18-May-88	25.05	24.57	27.88	22.12	15.83	23.82	18.16	27.05	24.40	24.74
07-Jun-88	25.27	24.68	27.97	22.35	16.08	24.01	18.35	27.25	24.53	25.00
14-Jul-88	25.78	25.14	28.32	22.90	16.57	24.48	18.78	27.63	24.88	25.66
06-Aug-88	25.91	25.33	28.61	23.24	16.78	24.69	19.05	27.99	25.20	25.66
03-Sep-88	26.20	25.30	28.62	23.15	16.57	20.80	16.50	28.10	25.30	25.80
10-Oct-88	26.40	25.65	28.75	23.30	16.60	25.00	19.20	28.10	25.15	25.90
26-Nov-88	26.80	25.80	28.85	23.30	16.90	25.00	19.60	28.20	25.20	26.20
15-Dec-88	28.75	31.00	29.10	26.90	17.30	26.40	19.25	28.60	31.50	29.45
19-Jan-89	24.20	26.50	29.10	24.10	17.70	25.00	19.70	28.75	25.85	26.65
23-Feb-89	27.80	26.95	29.40	24.75	18.40	26.15	22.30	28.80	26.15	27.35
23-Mar-89	26.80	27.00	29.60	25.00	18.60	26.30	20.60	29.00	26.55	27.40
23-Apr-89	27.85	27.15	29.65	24.95	18.80	26.40	20.70	29.10	26.40	27.50
09-May-89	27.85	26.60	29.80	25.10	18.70	26.40	20.60	29.25	26.65	27.45
01-Jun-89	27.90	27.15	29.85	25.50	19.10	26.60	21.05	29.30	26.70	27.60
03-Jul-89	27.85	27.15	30.00	25.75	19.40	26.70	21.35	29.30	26.65	27.50
16-Aug-89	28.20	27.60	30.15	25.80	19.55	26.90	21.50	29.55	26.95	27.80
12-Sep-89	28.35	27.70	30.15	25.90	19.50	27.05	20.80	29.55	26.90	27.90
25-Oct-89	28.45	27.65	30.25	26.10	19.65	27.15	21.55	29.70	27.15	28.05
17-Nov-89	28.30	27.20	31.00	26.10	19.50	26.90	21.40	30.20	27.10	28.00
07-Dec-89	28.45	27.75	30.40	26.15	19.90	27.30	21.85	29.85	27.30	28.10

APPENDIX A
 KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TOC-->	N-65	N-66	N-67	N-68	N-69	N-70	N-71	N-72	N-73	N-74				
	D/W	D/W	D/W	D/W	D/W	D/W	D/W	D/W	D/W	D/W				
	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.				
20-Jan-88	24.97	1752.88	14.59	1730.39	23.61	1725.16	19.37	1726.51	17.22	1728.27	12.02	1728.03	15.40	1728.02
05-Feb-88	25.24	1727.64	14.90	1730.08	23.84	1724.93	19.77	1726.11	17.46	1728.03	12.27	1727.78	15.63	1727.79
01-Mar-88	25.89	1726.99	15.33	1729.65	24.31	1724.46	20.11	1725.77	17.77	1727.72	12.50	1727.55	16.00	1727.42
19-Apr-88	26.58	1726.30	15.81	1729.17	24.82	1723.95	23.10	1723.86	18.31	1727.18	13.12	1726.93	16.56	1726.86
18-May-88	27.00	1725.88	16.18	1728.80	25.07	1723.70	23.34	1723.62	18.73	1726.76	13.55	1726.30	16.80	1726.62
07-Jun-88	27.24	1725.64	16.44	1728.54	25.34	1723.43	23.55	1723.41	18.97	1726.52	13.82	1726.23	17.05	1726.37
14-Jul-88	27.85	1725.03	16.93	1728.05	24.54	1724.23	23.95	1723.01	19.49	1726.00	14.30	1725.75	17.47	1725.95
06-Aug-88	27.97	1724.91	17.20	1727.78	26.02	1722.75	24.26	1722.70	19.40	1726.09	14.51	1725.54	17.71	1725.71
03-Sep-88	28.25	1724.63	17.00	1727.98	25.90	1722.87	24.40	1722.56	19.70	1725.79	14.30	1725.75	17.00	1726.42
10-Oct-88	28.65	1724.23	17.10	1727.88	26.00	1722.77	24.80	1722.16	20.25	1725.24	14.85	1725.20	18.00	1725.42
26-Nov-88	28.90	1723.98	17.80	1727.18	26.25	1722.52	23.53	1721.61	20.10	1725.39	15.00	1725.05	18.30	1725.12
15-Dec-88	26.75	1726.13	17.60	1727.38	29.55	1719.22	24.10	1721.78	21.55	1723.94	14.60	1723.45	17.90	1723.52
19-Jan-89	30.00	1722.88	18.00	1726.98	26.00	1722.77	25.55	1721.41	20.00	1725.49	14.70	1725.35	18.00	1725.42
23-Feb-89	30.40	1722.48	18.45	1726.53	26.50	1722.27	25.90	1721.06	21.40	1724.09	16.30	1723.75	18.90	1724.52
23-Mar-89	30.30	1722.58	18.70	1726.28	28.35	1720.42	26.00	1720.96	21.70	1723.79	16.60	1723.45	19.30	1724.12
23-Apr-89	30.55	1722.33	18.80	1726.18	27.40	1721.37	26.00	1720.96	21.80	1723.69	16.80	1723.25	19.40	1724.02
09-May-89	30.55	1722.53	18.80	1726.18	27.70	1721.07	26.10	1720.86	22.00	1723.49	16.80	1723.25	19.50	1723.92
01-Jun-89	30.50	1722.38	19.10	1725.88	27.75	1721.02	26.15	1720.81	22.20	1723.29	17.10	1722.95	19.75	1723.67
03-Jul-89	30.55	1722.33	19.35	1725.63	27.95	1720.82	26.35	1720.81	22.55	1722.94	17.50	1722.55	20.00	1723.42
16-Aug-89	30.95	1721.93	19.45	1725.53	28.20	1720.57	26.55	1720.61	22.65	1722.84	17.60	1722.45	20.25	1723.17
12-Sep-89	31.10	1721.78	19.45	1725.53	28.00	1720.77	26.55	1720.41	22.85	1722.64	17.70	1722.33	19.80	1723.62
25-Oct-89	29.60	1723.28	19.55	1725.43	28.65	1720.12	26.90	1720.06	23.05	1722.44	17.90	1722.15	20.50	1722.92
17-Nov-89	30.70	1722.18	19.40	1725.58	28.00	1720.77	25.80	1721.16	23.80	1721.69	17.85	1722.20	20.40	1723.02
07-Dec-89	30.70	1722.18	19.65	1725.33	28.95	1719.82	26.85	1720.11	23.15	1722.34	18.05	1722.00	20.65	1722.77

APPENDIX A
 KERR-McGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TOC-->	M-78		M-79		M-80		M-81		M-82		M-83	
	DTM	ELEV.	DTM	ELEV.	DTM	ELEV.	DTM	ELEV.	DTM	ELEV.	DTM	ELEV.
20-Jan-88	24.94	1726.07	17.54	1725.39	20.80	1724.93	15.13	1728.60	15.74	1723.64	16.52	1724.31
05-Feb-88	25.24	1725.77	17.88	1725.05	21.23	1724.50	15.18	1728.55	15.98	1723.40	16.64	1724.19
01-Mar-88	25.68	1725.33	18.37	1724.56	19.72	1726.01	15.46	1728.27	16.37	1723.01	17.05	1723.78
19-Apr-88	24.75	1726.26	18.87	1724.06	20.41	1725.32	16.08	1727.65	16.85	1722.53	17.54	1723.29
18-May-88	26.23	1724.78	19.47	1723.46	21.05	1724.68	16.80	1726.93	17.28	1722.10	18.00	1722.83
07-Jun-88	26.23	1724.78	19.70	1723.23	21.20	1724.53	17.11	1726.62	17.47	1721.91	18.24	1722.59
14-Jul-88	26.80	1724.21	20.00	1722.93	21.50	1724.23	17.55	1726.18	17.67	1721.71	18.45	1722.38
06-Aug-88	26.97	1724.04	20.42	1722.51	21.53	1724.20	17.79	1725.94	18.07	1721.31	19.00	1721.83
03-Sep-88	27.10	1723.91	20.10	1722.83	21.02	1724.71	17.40	1726.33	17.50	1721.88	17.87	1722.96
10-Oct-88	27.62	1723.39	20.50	1722.43	22.50	1723.23	18.15	1725.58	18.30	1721.08	19.20	1721.63
26-Nov-88	23.20	1727.81	20.75	1722.18	28.10	1717.63	17.75	1725.98	18.50	1720.88	19.30	1721.53
15-Dec-88	28.65	1722.36	22.45	1720.48	23.60	1722.13	18.25	1725.48	23.40	1715.98	24.10	1716.73
19-Jan-89	29.05	1721.96	20.15	1722.78	23.50	1722.23	18.80	1724.93	17.90	1721.48	19.85	1720.98
23-Feb-89	29.40	1721.61	20.20	1722.73	23.83	1721.90	19.90	1723.83	18.70	1720.68	20.25	1720.58
23-Mar-89	29.40	1721.61	21.20	1721.73	23.85	1721.88	20.00	1723.73	18.85	1720.53	20.30	1720.53
23-Apr-89	29.50	1721.51	21.25	1721.68	23.90	1721.83	19.80	1723.93	18.70	1720.68	20.20	1720.63
09-May-89	29.40	1721.61	21.85	1721.08	24.00	1721.73	20.35	1723.38	19.30	1720.08	20.45	1720.38
01-Jun-89	29.40	1721.61	22.00	1720.93	23.85	1721.88	20.50	1723.23	19.40	1719.98	20.40	1720.43
03-Jul-89	29.50	1721.51	22.25	1720.68	24.10	1721.63	20.55	1723.18	19.60	1719.78	20.35	1720.48
16-Aug-89	30.05	1720.96	22.50	1720.43	24.50	1721.23	21.00	1722.73	19.85	1719.53	20.75	1720.08
12-Sep-89	30.10	1720.91	22.85	1720.08	24.70	1721.03	21.40	1722.33	20.15	1719.23	21.00	1719.83
25-Oct-89	29.80	1721.21	23.00	1719.93	25.10	1720.63	21.70	1722.03	20.35	1719.03	21.40	1719.43
17-Nov-89	30.20	1720.81	23.00	1719.93	24.50	1721.23	22.00	1721.73	20.00	1719.38	21.90	1718.93
07-Dec-89	29.00	1722.01	23.15	1719.78	25.15	1720.58	21.75	1721.98	20.50	1718.88	21.55	1719.28

APPENDIX A
 KERR-McBEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TUC-->	M-84 DTM	ELEV.	M-85 DTM	ELEV.	M-86 DTM	ELEV.	M-87 DTM	ELEV.	M-88 DTM	ELEV.
20-Jan-88	14.42	1725.21	15.14	1726.05	15.71	1727.02	16.10	1726.17	13.02	1724.97
05-Feb-88	14.82	1724.81	15.36	1725.83	15.96	1726.77	16.15	1726.12	13.19	1724.80
01-Mar-88	15.00	1724.63	15.63	1725.36	16.00	1726.73	16.32	1725.95	13.41	1724.38
19-Apr-88	15.56	1724.07	16.23	1724.96	16.62	1726.11	16.87	1725.40	13.93	1724.06
18-May-88	16.00	1723.63	16.80	1724.39	16.23	1726.50	17.31	1724.96	14.41	1723.58
07-Jun-88	16.32	1723.31	17.11	1724.08	17.50	1725.23	17.63	1724.64	14.57	1723.42
14-Jul-88	16.62	1723.01	17.42	1723.77	17.93	1724.80	18.15	1724.12	14.97	1723.02
06-Aug-88	17.03	1722.60	17.80	1723.39	18.21	1724.52	18.20	1724.07	15.08	1722.91
03-Sep-88	15.80	1723.83	16.90	1724.29	17.74	1724.99	17.80	1724.47	14.56	1723.43
10-Oct-88	17.30	1722.33	18.30	1722.89	18.90	1723.83	18.60	1723.67	15.60	1722.39
26-Nov-88	17.95	1721.68	18.35	1722.84	18.10	1724.63	18.25	1724.02	15.75	1722.24
15-Dec-88	23.80	1715.83	19.05	1722.14	18.55	1724.18	18.85	1723.42	15.60	1722.39
19-Jan-89	18.30	1721.33	19.10	1722.09	16.30	1726.43	19.35	1722.92	15.30	1722.69
23-Feb-89	18.77	1720.86	19.60	1721.59	20.15	1722.58	24.35	1717.92	16.70	1721.29
23-Mar-89	18.75	1720.88	19.55	1721.64	21.50	1721.23	20.60	1721.67	17.00	1720.99
23-Apr-89	18.75	1720.88	19.45	1721.74	20.15	1722.58	20.75	1721.52	17.10	1720.89
09-May-89	18.90	1720.73	19.75	1721.44	20.60	1722.13	20.70	1721.57	17.25	1720.74
01-Jun-89	18.75	1720.88	19.65	1721.54	20.50	1722.23	21.20	1721.07	17.55	1720.44
03-Jul-89	18.90	1720.73	19.60	1721.59	20.75	1721.98	21.55	1720.72	17.85	1720.14
16-Aug-89	19.30	1720.33	20.15	1721.04	21.00	1721.73	21.70	1720.57	18.10	1719.89
12-Sep-89	19.55	1720.08	20.50	1720.69	21.50	1721.23	21.95	1720.32	18.20	1719.79
25-Oct-89	19.80	1719.83	20.75	1720.44	21.65	1721.08	22.35	1719.92	18.40	1719.59
17-Nov-89	20.00	1719.63	20.50	1720.69	22.00	1720.73	22.30	1719.97	18.50	1719.49
07-Dec-89	19.90	1719.73	20.70	1720.49	21.75	1720.98	22.45	1719.82	18.60	1719.39

APPENDIX A
 KERR-McGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

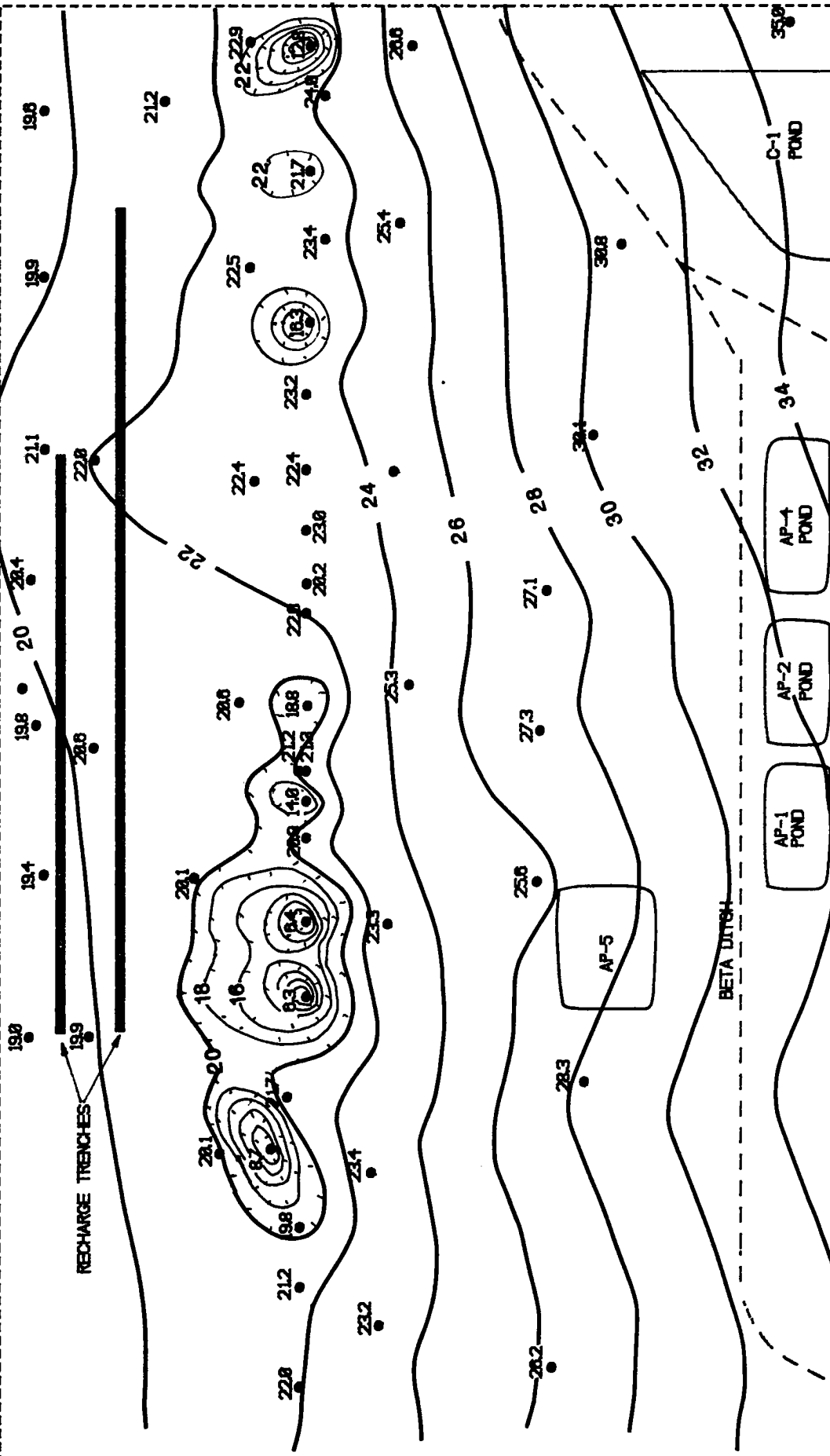
TOC-->	I-A DTW ELEV.	I-B DTW ELEV.	I-C DTW ELEV.	I-D DTW ELEV.	I-E DTW ELEV.	I-F DTW ELEV.						
20-Jan-88	26.63	1724.43	26.66	1724.03	26.06	1724.38	28.29	1722.25	45.76	1704.46	23.81	1723.77
05-Feb-88	25.42	1725.64	25.40	1725.29	26.46	1723.98	28.72	1721.82	46.20	1704.02	23.99	1723.59
01-Mar-88	27.70	1723.36	27.38	1723.31	26.99	1723.45	29.16	1721.38	45.68	1704.54	24.55	1723.03
19-Apr-88	28.42	1722.64	27.89	1722.80	27.75	1722.69	29.79	1720.75	29.69	1720.53	25.21	1722.37
18-May-88	28.83	1722.23	28.07	1722.62	26.03	1724.41	30.06	1720.48	32.22	1718.00	25.74	1721.84
07-Jun-88	29.12	1721.94	28.30	1722.39	26.25	1724.19	30.43	1720.11	32.76	1717.46	25.87	1721.71
14-Jul-88	29.69	1721.37	27.02	1723.67	26.37	1724.07	33.12	1717.42	34.60	1715.62	26.50	1721.08
06-Aug-88	29.80	1721.26	28.94	1721.75	26.49	1723.95	32.06	1718.48	33.10	1717.12	26.60	1720.98
03-Sep-88	31.10	1719.96	28.90	1721.79	26.60	1723.84	35.10	1715.44	32.70	1717.52	26.75	1720.83
10-Oct-88	26.75	1724.31	27.60	1723.09	26.80	1723.64	27.35	1723.19	29.00	1721.22	26.80	1720.78
26-Nov-88	25.60	1725.46	29.40	1721.29	36.20	1714.24	32.20	1718.34	38.10	1712.12	27.80	1719.78
15-Dec-88	30.00	1721.06	29.65	1721.04	37.75	1712.69	45.40	1705.14	41.50	1708.72	33.65	1713.93
19-Jan-89	28.10	1722.96	27.70	1722.99	42.90	1707.54	39.55	1710.99	40.65	1709.57	28.20	1719.38
23-Feb-89	28.20	1722.86	28.00	1722.69	44.10	1706.34	44.55	1705.99	45.70	1704.52	31.00	1716.58
23-Mar-89	31.00	1720.06	30.60	1720.09	41.00	1709.44	32.20	1718.34	30.80	1719.42	29.10	1718.48
23-Apr-89	30.70	1720.36	29.00	1721.69	28.90	1721.54	40.00	1710.54	35.70	1714.52	29.90	1717.68
09-May-89	38.70	1712.36			28.60	1721.84	37.20	1713.34	39.10	1711.12	29.00	1718.58
01-Jun-89	29.25	1721.81			29.00	1721.44	39.40	1711.14	40.35	1709.87	29.00	1718.58
03-Jul-89	29.30	1721.76			29.10	1721.34	40.30	1710.24	42.90	1707.32	29.10	1718.48
16-Aug-89	30.30	1720.76			28.60	1721.84	44.10	1706.44	33.55	1716.67	30.60	1716.98
12-Sep-89	30.70	1720.36			29.00	1721.44	44.20	1706.34	34.00	1716.22	30.85	1716.73
25-Oct-89	31.25	1719.81			43.85	1706.59	44.20	1706.34	36.25	1713.97	28.75	1718.83
17-Nov-89	32.00	1719.06			41.00	1709.69	42.00	1708.44	37.00	1713.22	29.00	1718.38
07-Dec-89	42.00	1709.06			48.00	1702.69	50.00	1700.44	39.00	1711.22	28.80	1718.78

APPENDIX A
 KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA FACILITY
 GROUNDWATER ELEVATIONS

TOC-->	1-G	1-H	1-I	1-J	1-K					
	DTM ELEV.	DTM ELEV.	DTM ELEV.	DTM ELEV.	DTM ELEV.					
20-Jan-88	25.62	1724.80	30.07	1721.00	18.65	1724.71	22.62	1725.33	21.48	1722.49
05-Feb-88	26.06	1724.36	33.08	1717.99	18.87	1724.49	22.90	1725.05	22.75	1721.22
01-Mar-88	26.59	1723.83	33.20	1717.87	19.30	1724.06	23.39	1724.56	24.02	1719.95
19-Apr-88	27.83	1722.59	28.54	1722.53	20.02	1723.34	23.50	1724.45	22.17	1721.80
18-May-88	29.13	1721.29	30.12	1720.95	20.30	1723.06	23.62	1724.33	22.79	1721.18
07-Jun-88	37.40	1713.02	30.85	1720.22	19.80	1723.56	23.87	1724.08	25.20	1718.77
14-Jul-88	37.50	1712.92	32.97	1718.10	21.40	1721.96			25.00	1718.97
06-Aug-88	38.01	1712.41	31.45	1719.62	21.48	1721.88	24.65	1723.30	27.40	1716.57
03-Sep-88	40.50	1709.92	38.80	1712.27	21.12	1722.24	23.54	1724.41	23.75	1720.22
10-Oct-88	30.30	1720.12	27.90	1723.17	20.25	1723.11	24.00	1723.95	24.25	1719.72
26-Nov-88	27.50	1722.92	26.70	1724.37	21.60	1721.76	25.60	1722.35	28.00	1715.97
15-Dec-88	40.65	1709.77	34.90	1716.17	21.60	1721.76	26.70	1721.25	22.35	1721.62
19-Jan-89	37.00	1713.42	29.65	1721.42	25.40	1717.96	26.00	1721.95	22.95	1721.02
23-Feb-89	28.00	1722.42	31.00	1720.07	28.00	1715.36	26.57	1721.38	25.35	1718.62
23-Mar-89	29.00	1721.42	30.60	1720.47	24.80	1718.56	25.20	1722.75	27.00	1716.97
23-Apr-89	28.00	1722.42	22.00	1729.07	29.80	1713.56	24.00	1723.95	29.50	1714.47
09-May-89	27.60	1722.82	42.00	1709.07	28.40	1714.96	22.00	1725.95	30.50	1713.47
01-Jun-89	27.90	1722.52	28.90	1722.17	27.80	1715.56	26.80	1721.15	30.50	1713.47
03-Jul-89	27.95	1722.47	28.80	1722.27	28.80	1714.56	28.00	1719.95	34.20	1709.77
16-Aug-89	29.70	1720.72	29.20	1721.87	31.00	1712.36	29.35	1718.60	34.00	1709.97
12-Sep-89	30.45	1719.97	29.00	1722.07	30.00	1713.36	27.35	1720.60	18.55	1725.42
25-Oct-89	30.25	1720.17	28.65	1722.42	26.80	1716.56	26.30	1721.65	31.10	1712.87
17-Nov-89	32.80	1717.62	31.85	1719.22	25.00	1718.36	24.20	1723.75	32.60	1711.37
07-Dec-89	37.00	1713.42	43.30	1707.77	28.10	1715.26	36.10	1711.85	34.40	1709.57

APPENDIX B
POTENTIOMETRIC SURFACE MAPS
INTERCEPTOR AREA CROSS-SECTIONS

CONSENT ORDER BOUNDARY



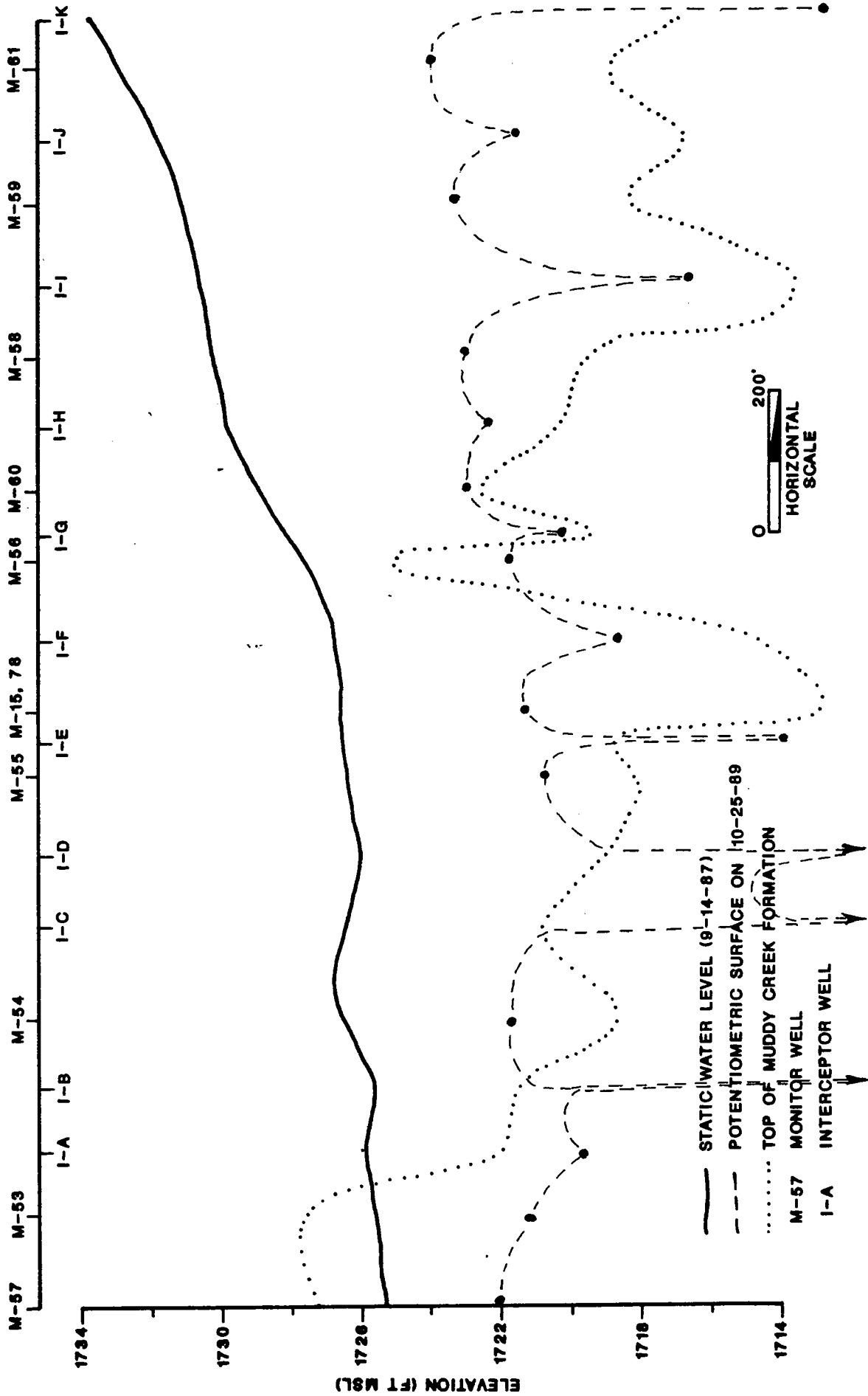
KERR-McGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA

FIGURE B- 1
 CONSENT ORDER MONITORING AREA
 POTENTIOMETRIC SURFACE MAP

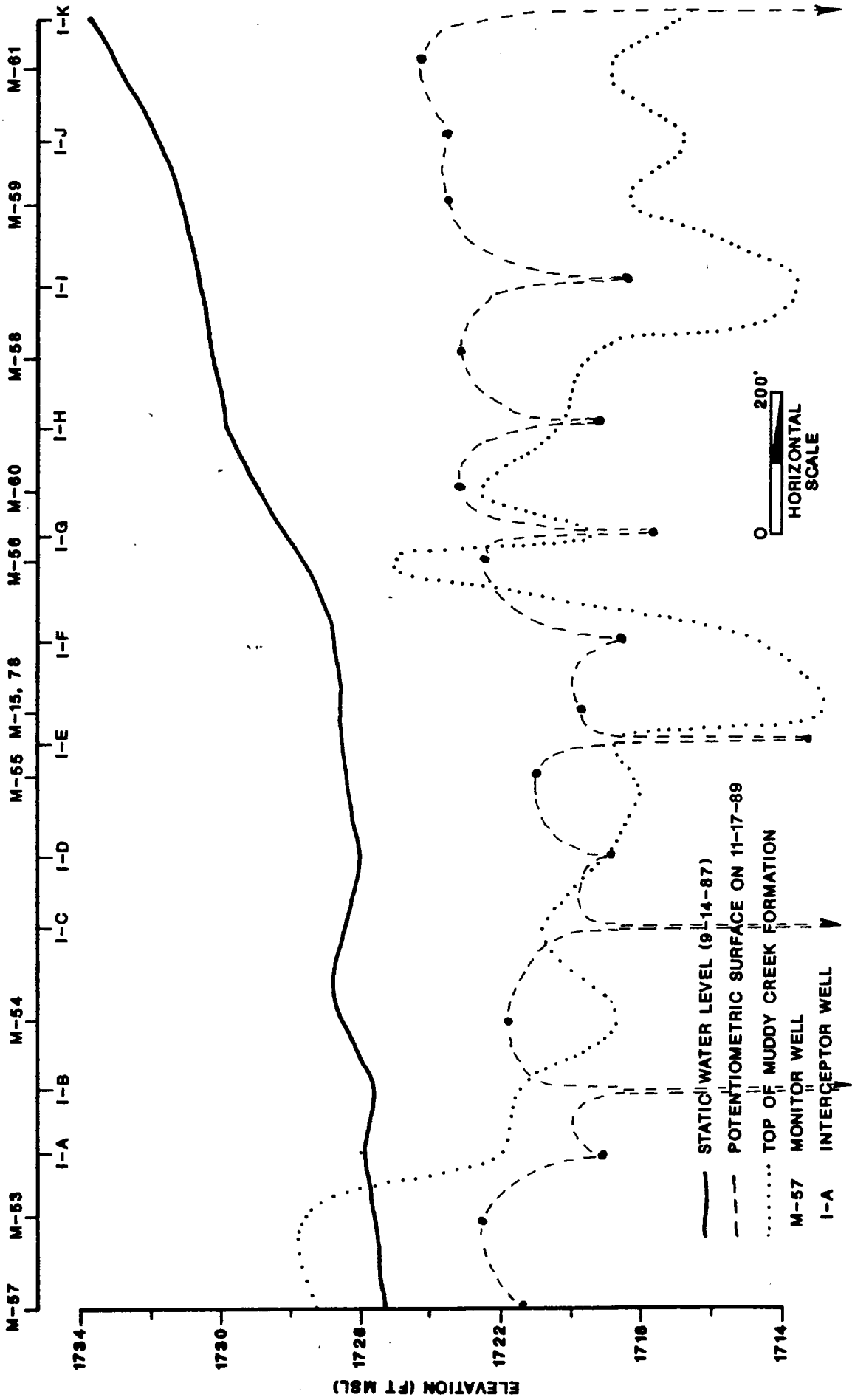


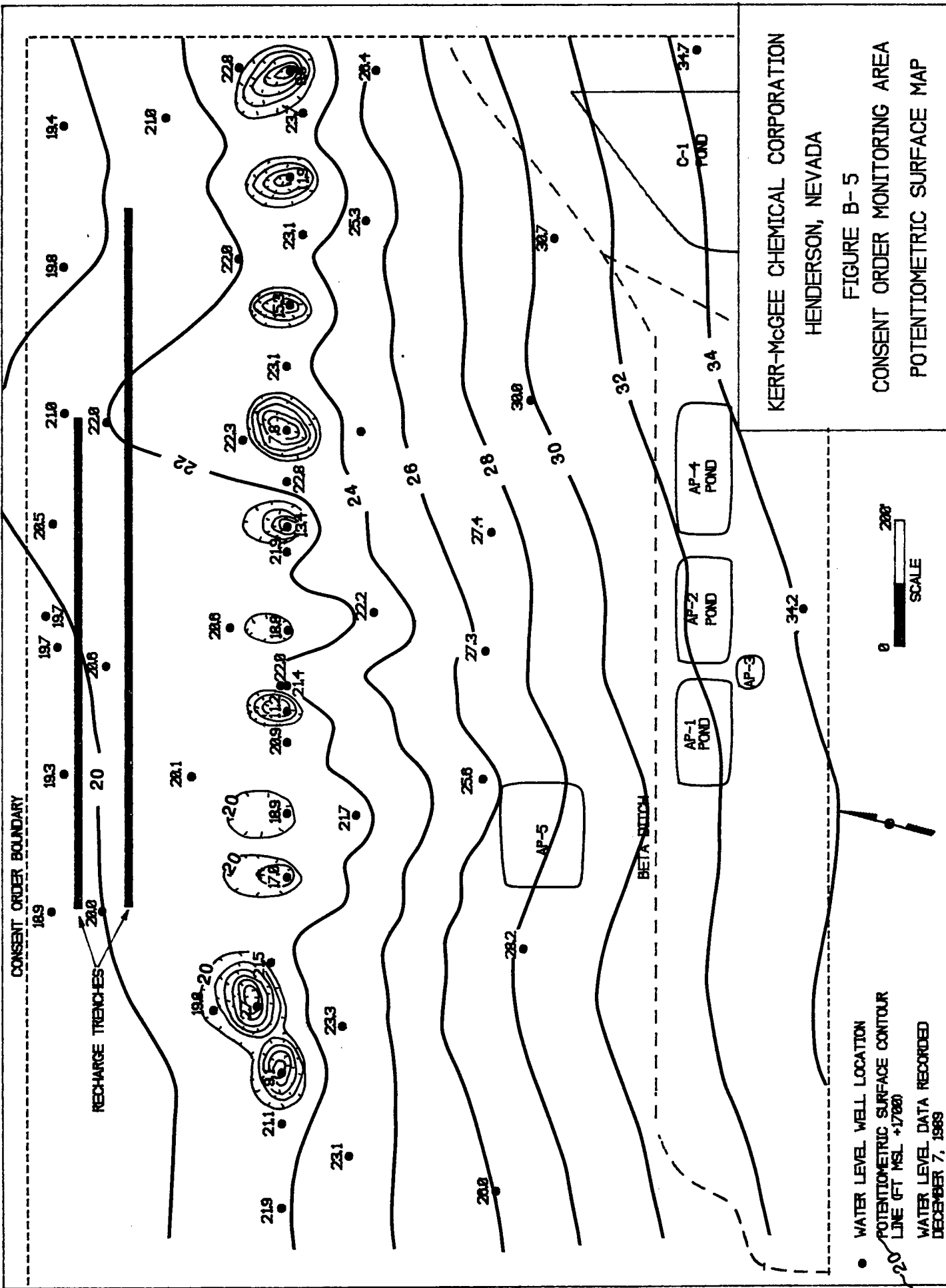
● WATER LEVEL WELL LOCATION
 — 20' POTENTIOMETRIC SURFACE CONTOUR
 LINE (FT MSL +1700)
 WATER LEVEL DATA RECORDED
 OCTOBER 25, 1989

KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA
 GROUNDWATER INTERCEPTOR LINE CROSS-SECTION
 FIGURE B-2



KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA
 GROUNDWATER INTERCEPTOR LINE CROSS-SECTION
 FIGURE B-4

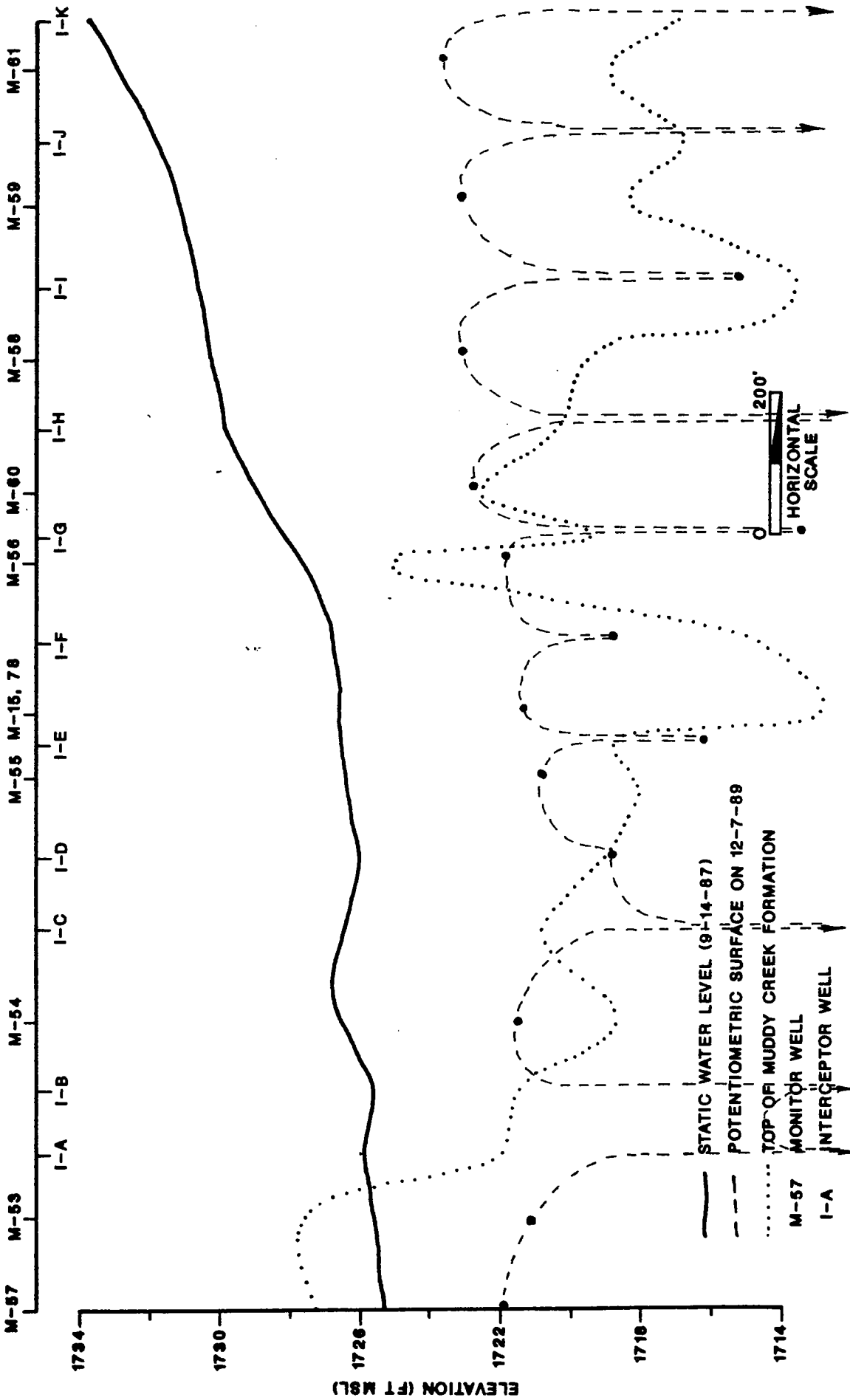




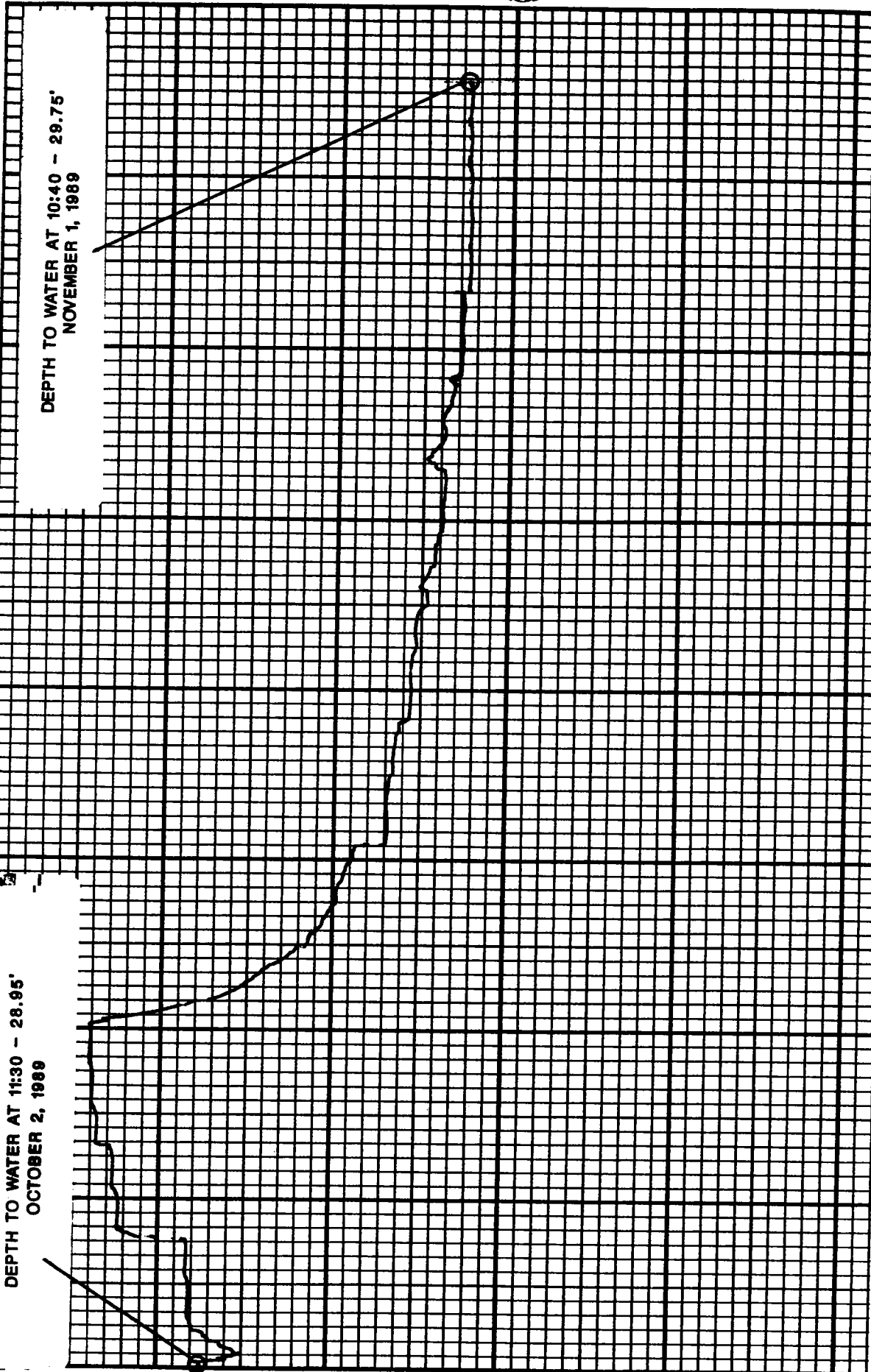
KERR-McGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA
 FIGURE B-5
 CONSENT ORDER MONITORING AREA
 POTENTIOMETRIC SURFACE MAP

● WATER LEVEL WELL LOCATION
 ○ POTENTIOMETRIC SURFACE CONTOUR
 LINE (FT MSL +1700)
 WATER LEVEL DATA RECORDED
 DECEMBER 7, 1989

KERR-MCGEE CHEMICAL CORPORATION
 HENDERSON, NEVADA
 GROUNDWATER INTERCEPTOR LINE CROSS-SECTION
 FIGURE B-6



APPENDIX C
CONTINUOUS WATER LEVEL RECORDER CHARTS

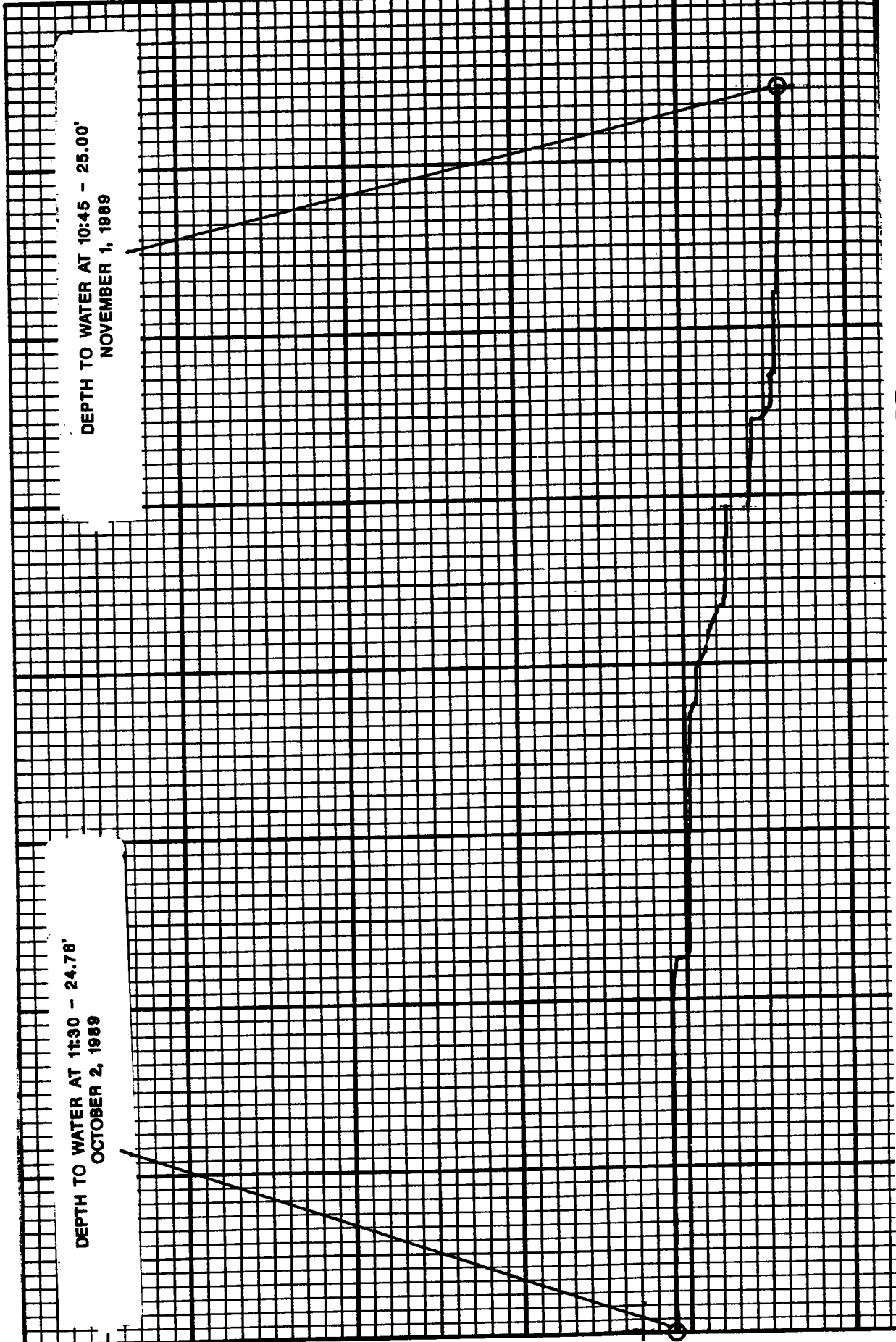


CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-78

10-02-89 TO 11-01-89

FIGURE C-1

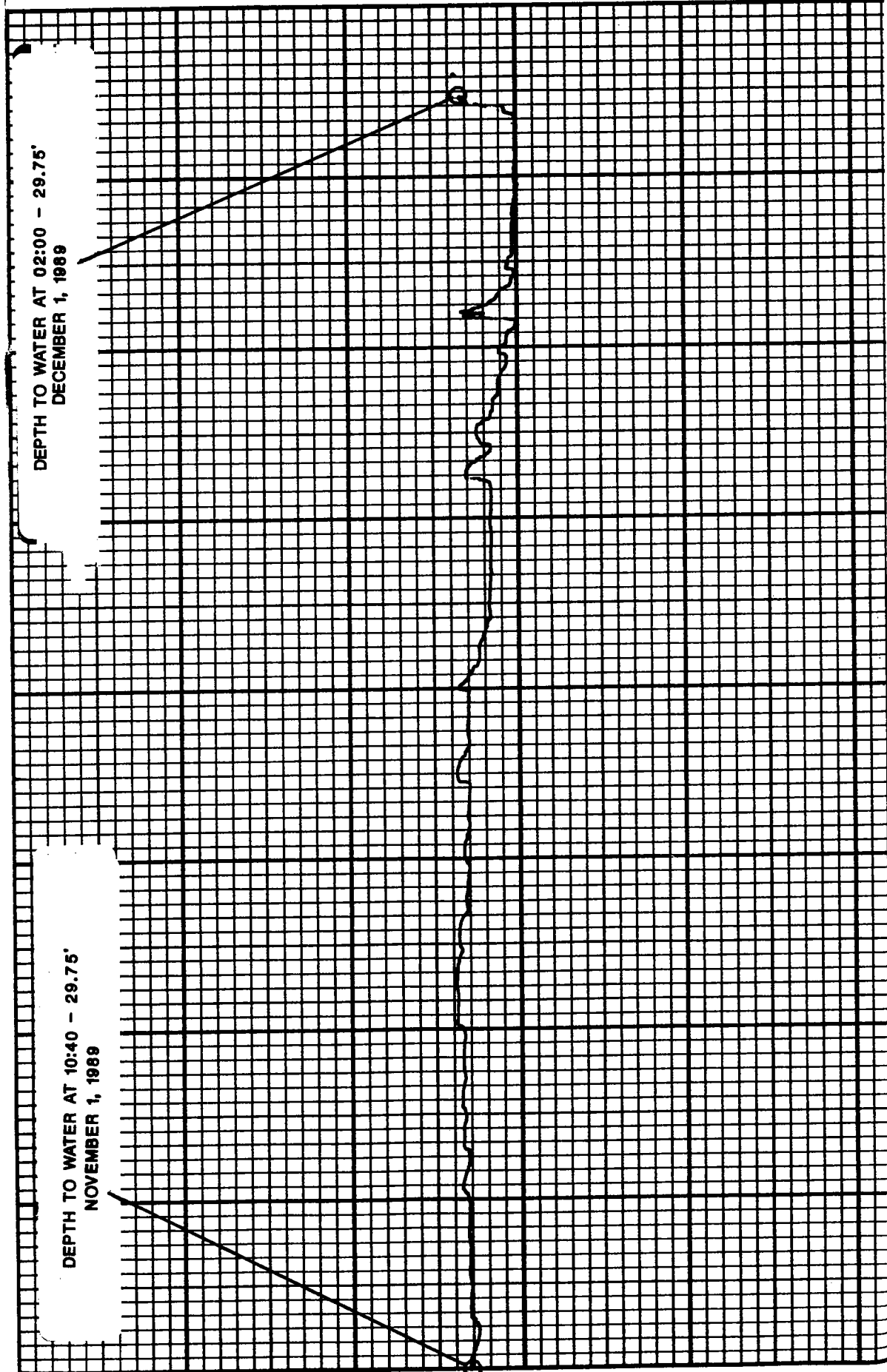


CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-80

10-02-89 TO 11-01-89

FIGURE C-2



DEPTH TO WATER AT 10:40 - 29.75'
NOVEMBER 1, 1989

DEPTH TO WATER AT 02:00 - 29.75'
DECEMBER 1, 1989

Printed in U.S.A.

Inc., Beaverton, Ore.

CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-78
11-01-89 TO 12-01-89

FIGURE C-3



FIGURE C-4
CONTINUOUS WATER LEVEL RECORDER CHART
WELL M-80
11-01-89 TO 12-01-89

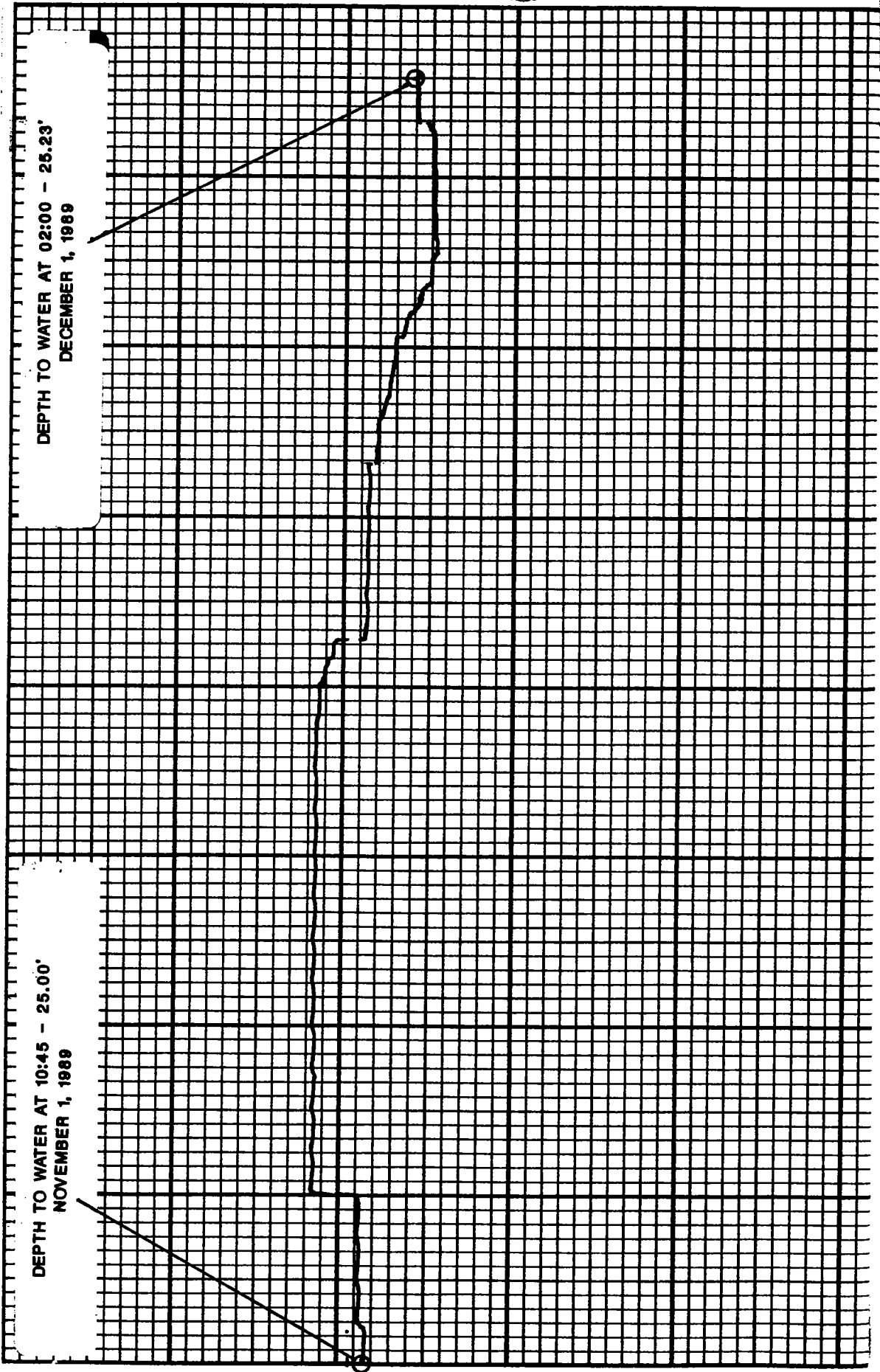


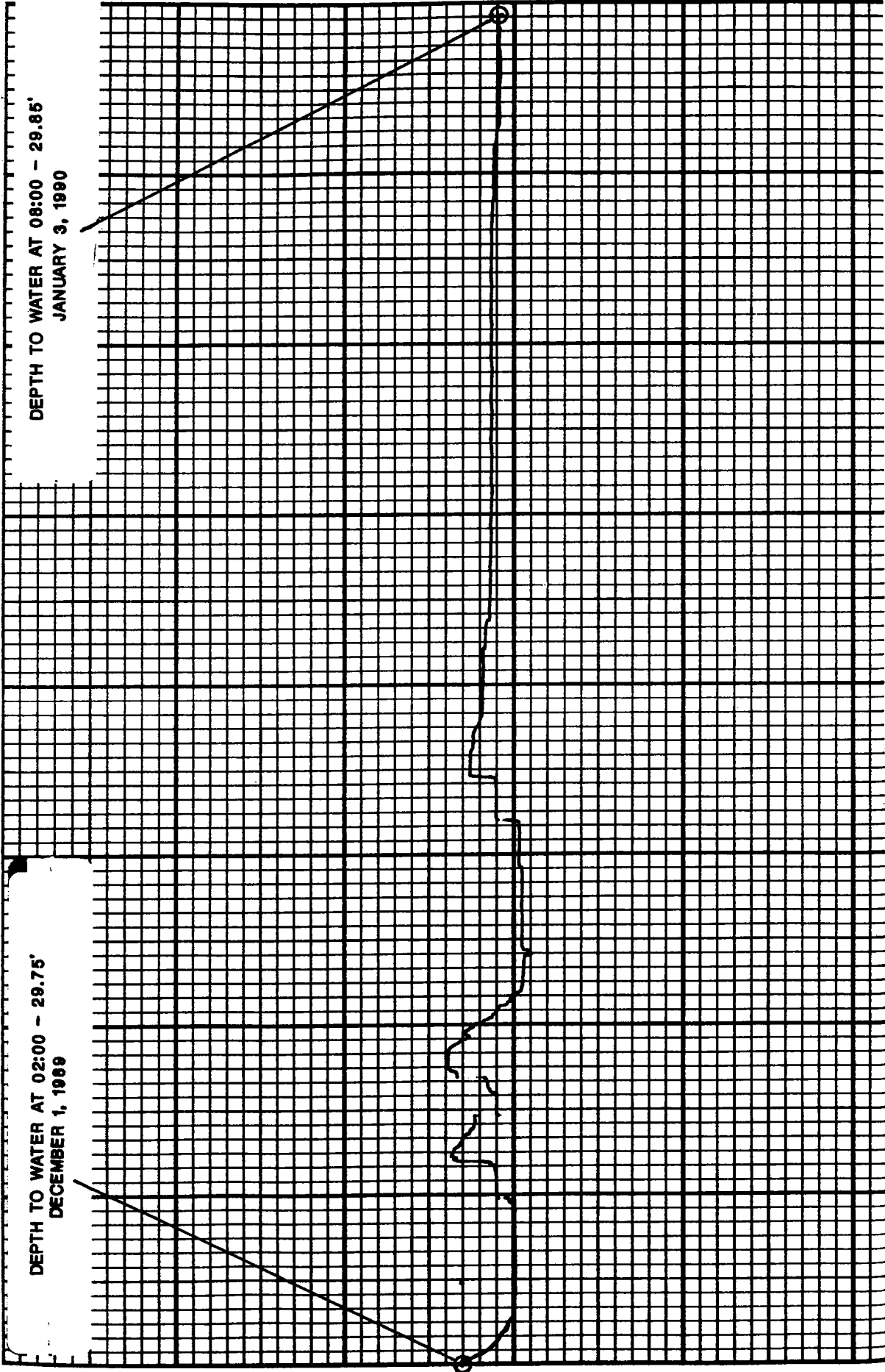
Chart F-1



Type F

Printed in U.S.A.

Inc., Beaverton, Ore.



DEPTH TO WATER AT 02:00 - 29.75'
DECEMBER 1, 1989

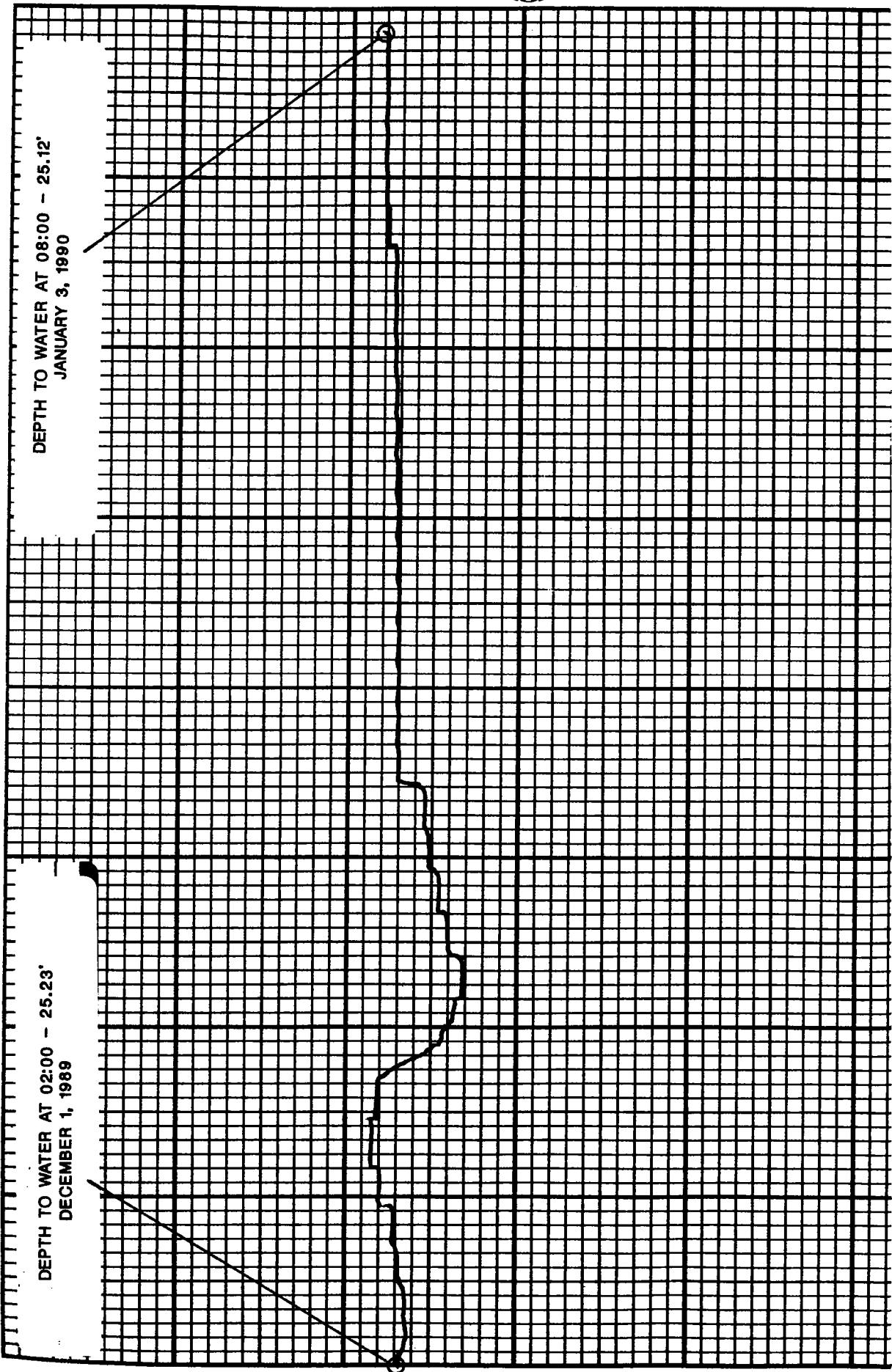
DEPTH TO WATER AT 08:00 - 29.85'
JANUARY 3, 1990

CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-78

12-01-89 TO 1-03-90

FIGURE C-5



DEPTH TO WATER AT 02:00 - 25.23'
DECEMBER 1, 1989

DEPTH TO WATER AT 08:00 - 25.12'
JANUARY 3, 1990

CONTINUOUS WATER LEVEL RECORDER CHART

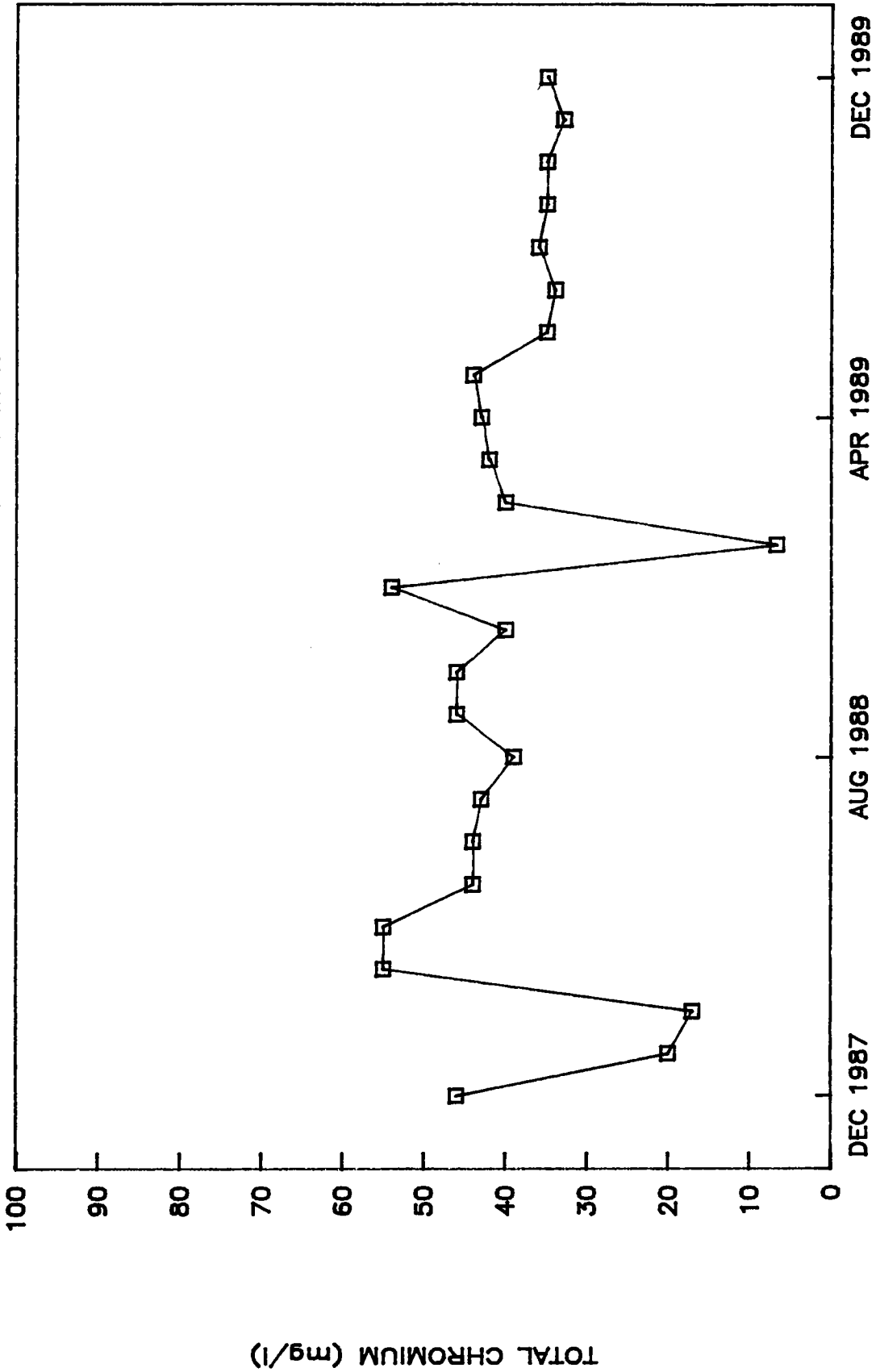
WELL M-80
12-01-89 TO 1-03-90

FIGURE C-6

APPENDIX D
CHROMIUM CONCENTRATIONS IN
APPENDIX J AND INTERCEPTOR WELLS

FIGURE D-1

APPENDIX J WELL CHROMIUM CONCENTRATION

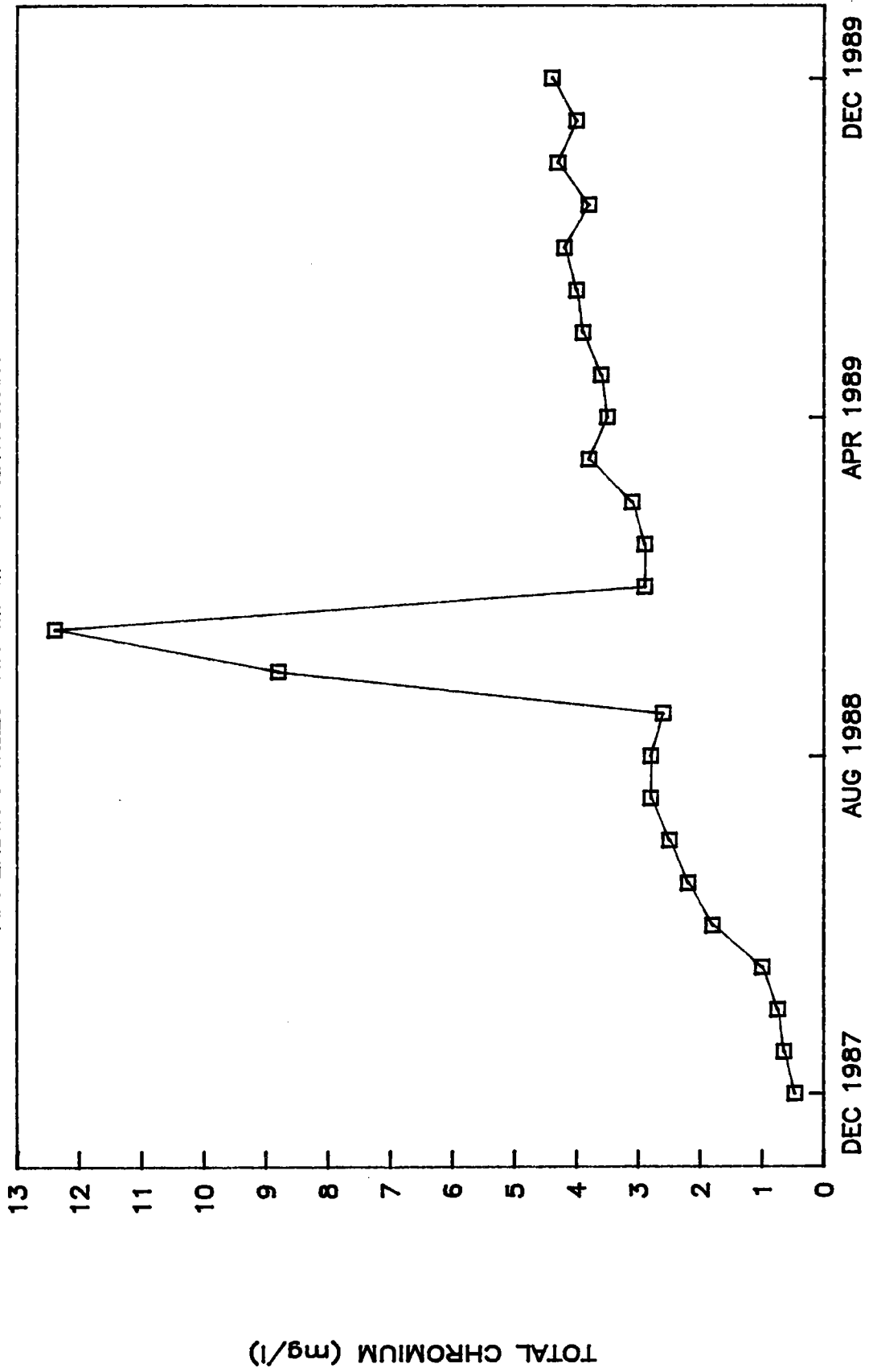


DATE

□ WELL M-11

FIGURE D-2

APPENDIX J WELL CHROMIUM CONCENTRATION



DATE

□ WELL M-36

FIGURE D-3

APPENDIX J WELL CHROMIUM CONCENTRATION

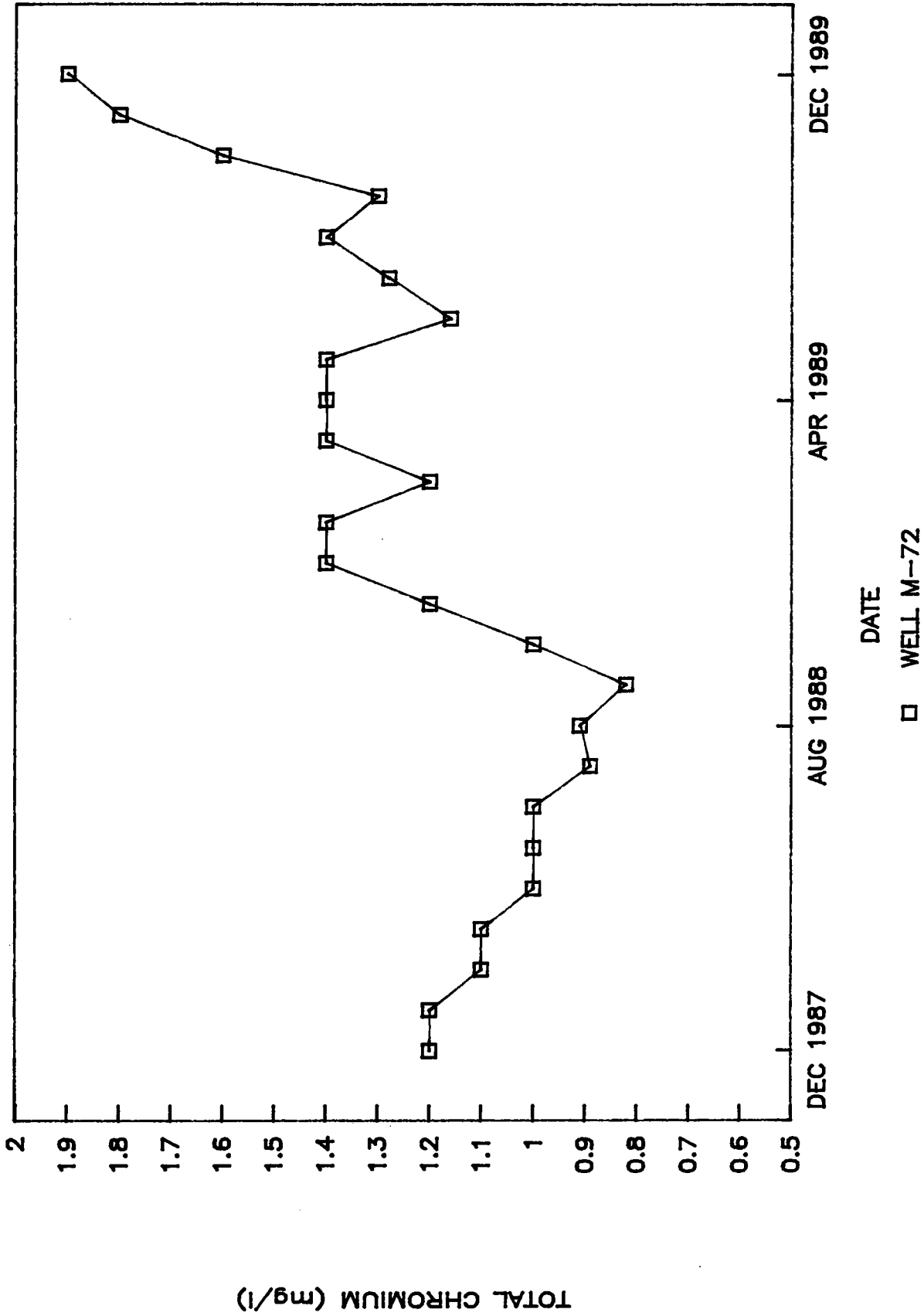


FIGURE D-4

APPENDIX J WELL CHROMIUM CONCENTRATION

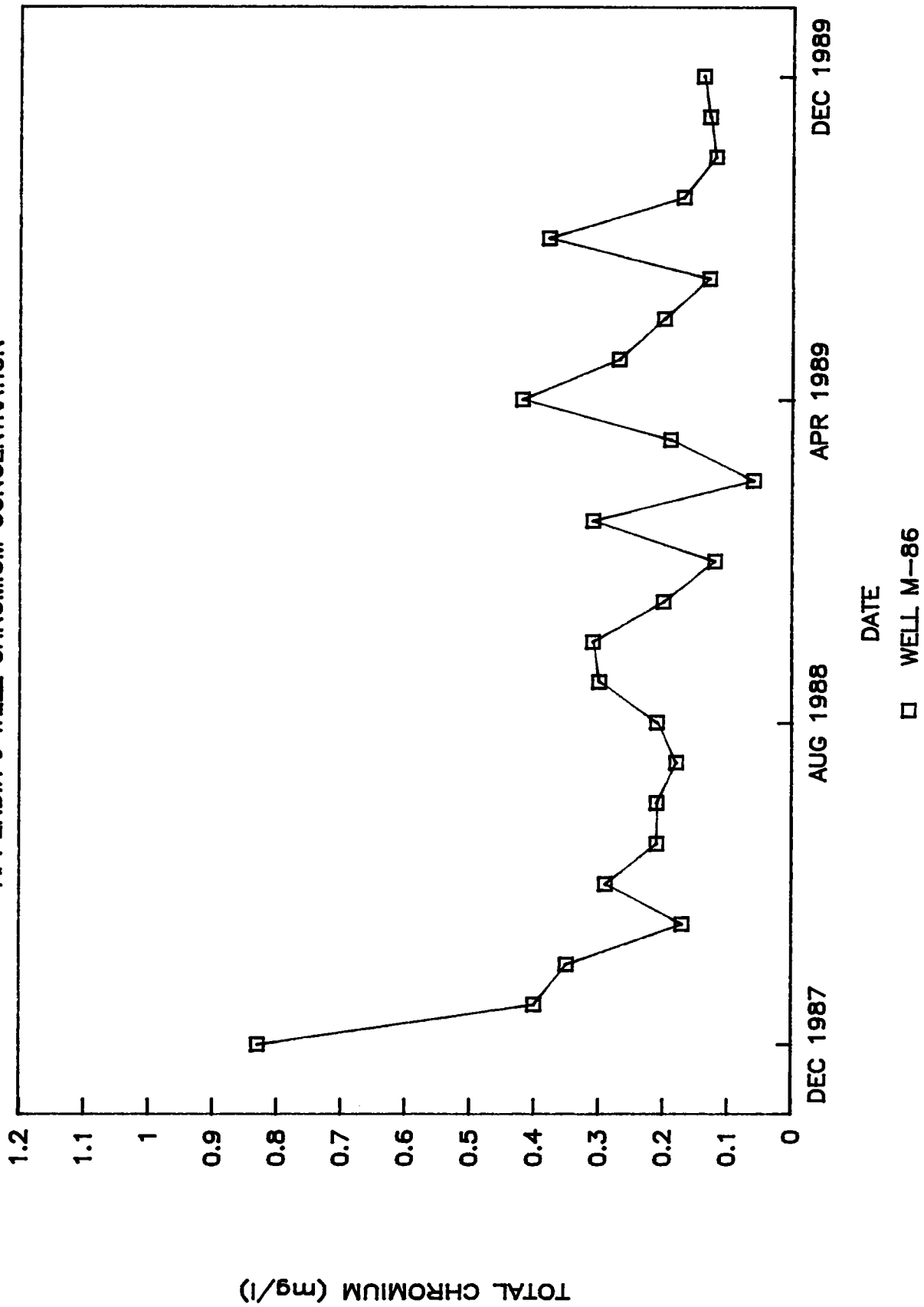
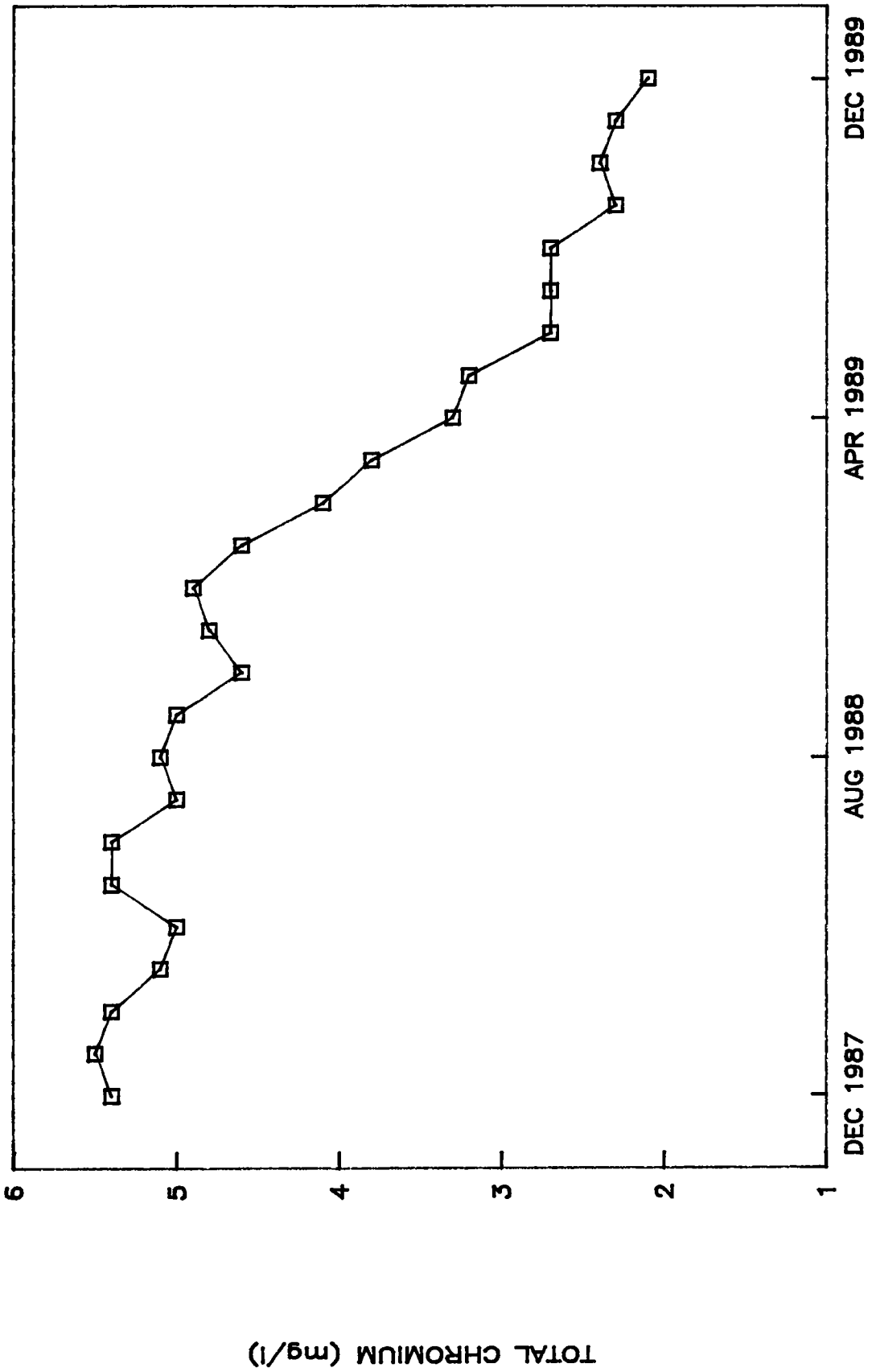


FIGURE D-5

APPENDIX J WELL CHROMIUM CONCENTRATION

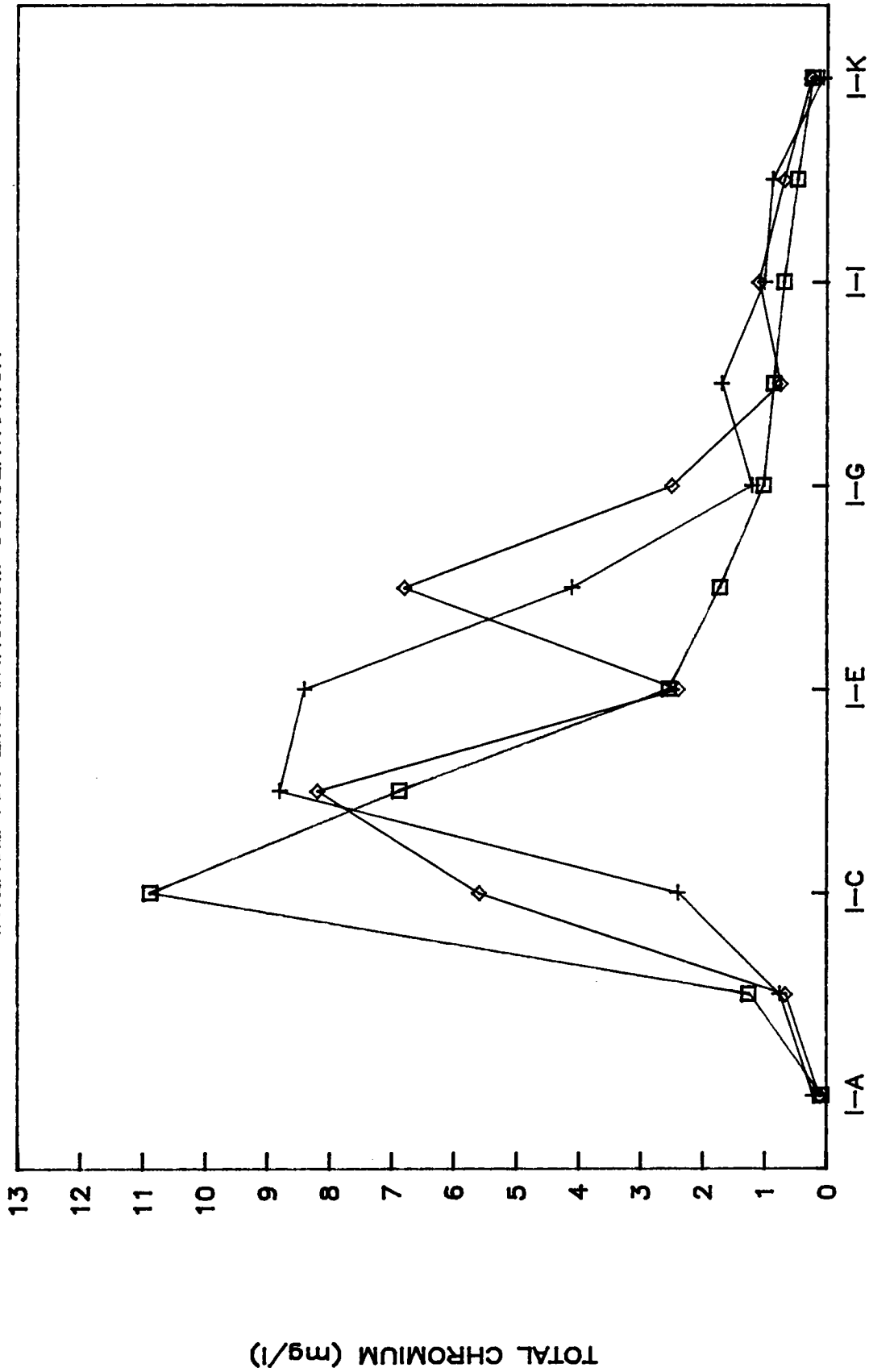


DATE

□ WELL M-23

FIGURE D-6

INTERCEPTOR LINE CHROMIUM CONCENTRATION



INTERCEPTOR WELL NUMBER

□ JAN 1988 + DEC 1988 ◇ DEC 1989