



**KERR-McGEE CHEMICAL CORPORATION**

POST OFFICE BOX 55 • HENDERSON, NEVADA 89009

July 28, 1992

Mr. Joe Livak  
State of Nevada  
Division of Environmental Protection  
333 West Nye Lane  
Carson City, Nevada 89710

Dear Mr. Livak:

SUBJECT: First Half 1992 Performance Report  
for the Chromium Mitigation Program

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

Should you have questions or comments about this Performance Report, please contact Alan J. Gaddy or me at 702-565-8901.

Sincerely,

A handwritten signature in cursive script, appearing to read "Patrick S. Corbett".

Patrick S. Corbett  
Plant Manager

PSC:j  
LIVAK7-28.92

cc: AJGaddy  
JCStauter

**SEMI-ANNUAL PERFORMANCE REPORT  
CHROMIUM MITIGATION PROGRAM  
KERR-McGEE CHEMICAL CORPORATION  
HENDERSON, NEVADA**

**JANUARY - JUNE 1992**

Submitted in Accordance with:


Chromium Mitigation Program  
Consent Order  
September 9, 1986

Prepared by:

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**JULY 24, 1992**

  
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**SEMI-ANNUAL PERFORMANCE REPORT  
CHROMIUM MITIGATION PROGRAM  
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HENDERSON, NEVADA**

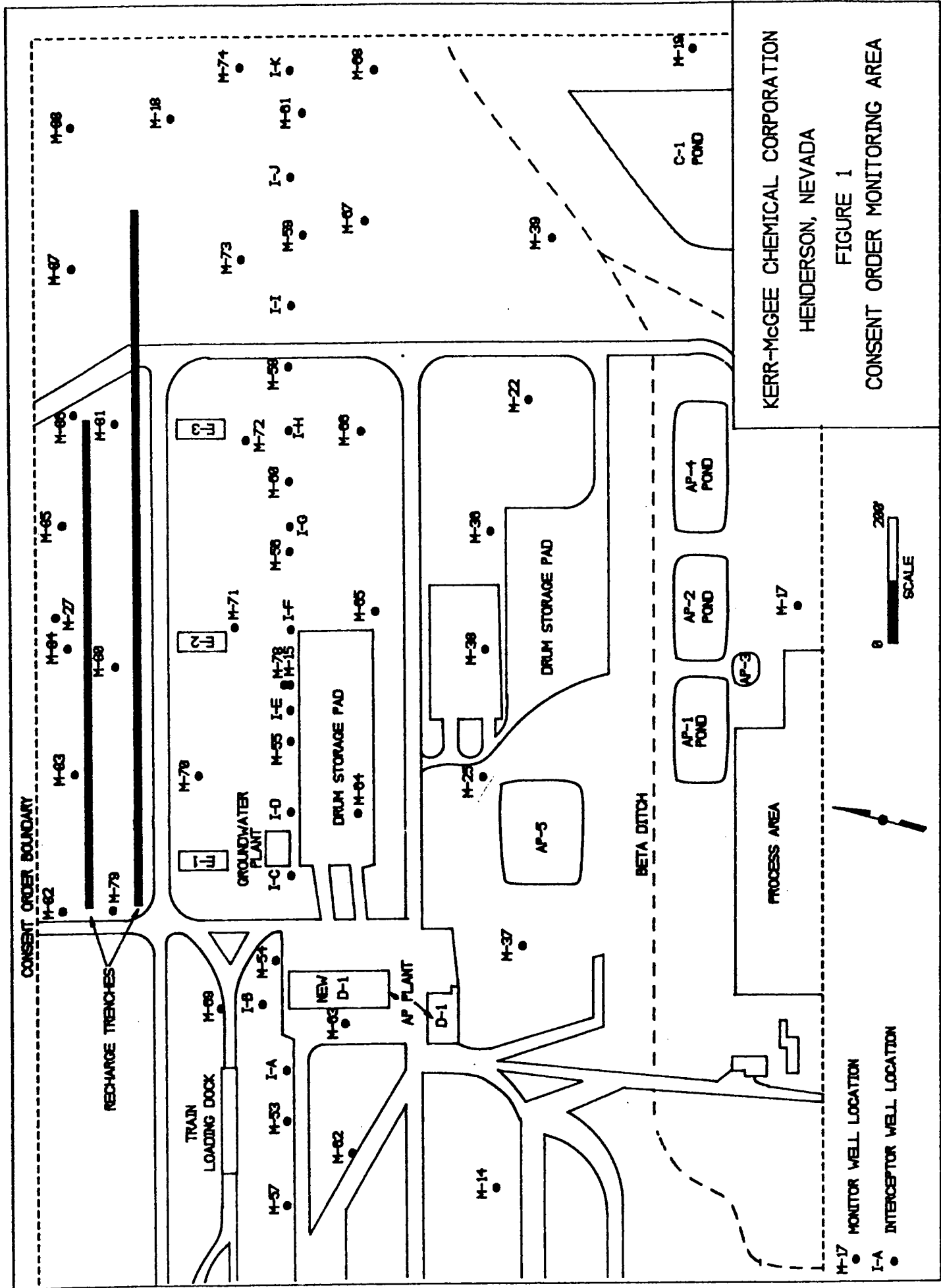
**INTRODUCTION**

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 semi-annual performance report to the Nevada Department of Environmental Protection. This report, covering the period January through June, 1992, 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 Consent Order 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 in two formats, potentiometric surface maps and cross-sections for the first half of 1992, reflecting quarterly groundwater level measurements.

Figure B-1 in Appendix B illustrates the potentiometric surface within the consent order monitoring area for the first quarter of 1992. Groundwater elevation data was recorded on February 28, 1992. Figure B-2 presents a cross-section of the groundwater interceptor line for the same date. Figures B-3 and B-4 present the same type maps for the second quarter of 1992, based on groundwater elevation data recorded June 24, 1992. The static water level shown on the cross-sections represents the Consent Order reference groundwater elevation, established September 14, 1987, prior to startup of the interception system. Groundwater elevations (Appendix A) continue to confirm that water levels in 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-4 show that groundwater interception has been optimized with the existing groundwater interception system.



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 first half of 1992. The current hydrologic configuration has stabilized throughout both the interception and recharge areas.

## *INTERCEPTOR SYSTEM PERFORMANCE*

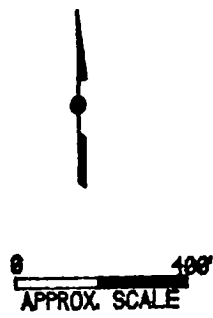
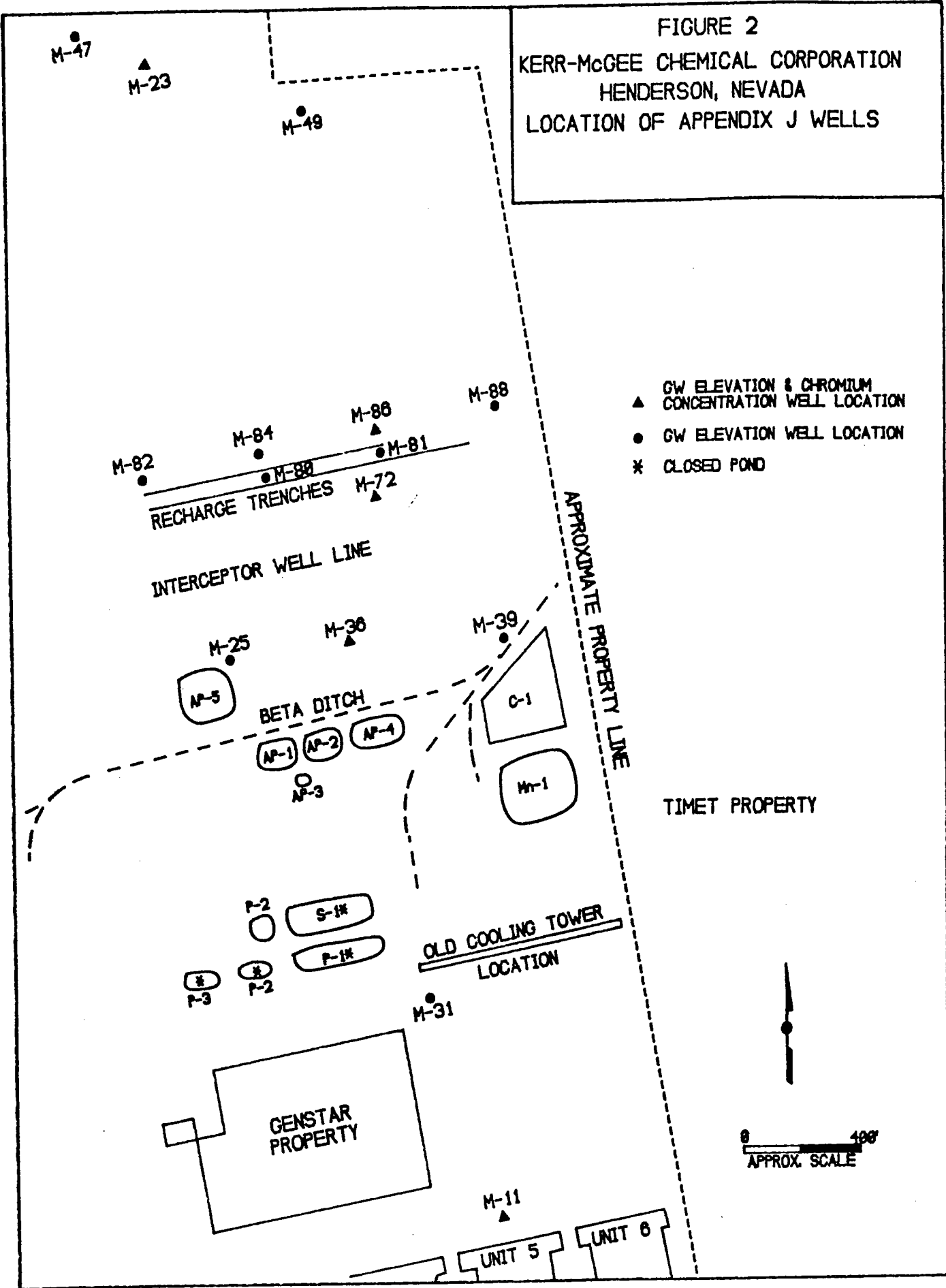
Appendix B Figures B-1 through B-4 show the potentiometric surface configuration in the interceptor area during the first half of 1992. Cross-sections show that drawdown consistently exceeded the one foot below reference water level criterion across the entire interceptor well line.

Although the potentiometric surface maps (Figures B-1 and B-3) do not generally appear to show overlapping drawdown cones along the interceptor line, the cross-sections show that all interceptor wells are drawn down to the Muddy Creek Clay. Drawdowns to this degree indicate that the alluvial aquifer is locally being depleted of water and that interception of groundwater has been maximized with this recovery system. Groundwater flow through the interceptor line would be minimal and be rapidly diluted. The result is that the downgradient recharge meets the release concentration limits at the recharge line.

The effectiveness of the groundwater interception and treatment system in reducing chromium levels in the groundwater is demonstrated by review of chemical analyses of groundwater samples taken from downgradient monitor wells (M-86 and M-23). Following an increase in well M-86, concentrations have consistently decreased downgradient of the recharge area. KMCC is monitoring chromium concentrations in five wells specified in Appendix J of the Consent Order. These wells are located both up and

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

- ▲ GW ELEVATION & CHROMIUM CONCENTRATION WELL LOCATION
- GW ELEVATION WELL LOCATION
- \* CLOSED POND



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. Figure D-1 in Appendix D portrays this data graphically.

KMCC instituted a management program to assure maximization of groundwater removal at the individual well locations along the interceptor line by focusing on those wells showing the highest chromium concentrations. Figure D-2 portrays historical chromium concentration for each interceptor well. Discharge rates for each well are monitored closely and adjusted to provide maximum recovery of chromium based on the potentiometric surface configuration, chromium concentration, and well production capability. Table 2 lists the pumping rate of each interceptor well, measured in December, 1990.

In May, 1990, KMCC began monthly analysis for chromium in several other wells located both upgradient and downgradient from the recharge trench. The data is shown in Table 3, and is presented graphically as Figures D-3 and D-4. The M-70 series wells presented in Figure D-3 are located upgradient from the recharge trench. The M-80 series wells presented in Figure D-4 are located downgradient from the recharge trench. These data show that, with the exception of wells M-72 and M-71, the groundwater interception and treatment system is reducing chromium concentrations in groundwater to well below discharge criteria.

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

MONTH	WELL #				
	M-11	M-36	M-72	M-86	M-23
DEC 1987	46.00	0.47	1.20	0.83	5.40
JAN 1988	20.00	0.65	1.20	0.40	5.50
FEB 1988	17.00	0.75	1.10	0.35	5.40
MAR 1988	55.00	1.00	1.10	0.17	5.10
APR 1988	55.00	1.80	1.00	0.29	5.00
MAY 1988	44.00	2.20	1.00	0.21	5.40
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 the interceptor line.  
M-36 is 550 ft. upgradient of the interceptor line.  
M-72 is between the interceptor line and the recharge trenches.  
M-86 is immediately downgradient of the recharge trenches.  
M-23 is 1350 ft. downgradient of the recharge trenches.

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

MONTH	WELL #				
	M-11	M-36	M-72	M-86	M-23
JAN 1990	34.00	4.50	2.60	0.14	2.00
FEB 1990	32.00	4.90	2.90	0.10	2.00
MAR 1990	31.00	5.00	3.00	0.25	1.80
APR 1990	30.00	5.10	3.20	0.12	1.70
MAY 1990	34.00	4.90	3.50	0.07	1.60
JUN 1990	33.00	5.10	3.50	0.06	1.50
JUL 1990	34.00	5.50	4.30	0.04	1.50
AUG 1990	37.00	5.20	4.60	0.19	1.40
SEP 1990	36.00	5.50	5.00	0.21	1.40
OCT 1990	36.00	5.40	5.30	0.12	1.30
NOV 1990	38.00	5.40	5.30	0.14	1.40
DEC 1990	37.00	5.50	5.30	0.13	1.30
JAN 1991	41.00	5.50	5.70	0.13	1.20
FEB 1991	42.00	11.60	6.20	0.20	1.10
MAR 1991	44.00	5.70	6.20	0.27	1.10
APR 1991	43.00	5.80	6.40	0.29	1.10
MAY 1991	36.00	5.40	6.40	0.32	1.00
JUN 1991	36.00	5.40	6.40	0.32	1.00
JUL 1991	42.00	5.60	5.50	0.46	0.94
AUG 1991	43.00	6.00	6.20	0.92	1.10
SEP 1991	41.00	6.20	6.60	1.80	1.30
OCT 1991	40.00	6.00	6.40	2.60	1.30
NOV 1991	40.00	6.20	6.60	3.40	1.30
DEC 1991	38.00	6.00	7.00	3.30	1.30
JAN 1992	38.00	6.80	7.00	3.30	1.40
FEB 1992	40.00	7.00	7.40	2.90	1.40
MAR 1992	48.00	11.00	13.00	1.40	1.30
APR 1992	40.00	8.60	8.50	1.20	1.50
MAY 1992	44.00	7.40	7.30	0.62	1.20
JUN 1992	42.00	6.40	5.70	1.10	1.20

M-11 is 2500 ft. upgradient of the interceptor line.  
M-36 is 550 ft. upgradient of the interceptor line.  
M-72 is between the interceptor line and the recharge trenches.  
M-86 is immediately downgradient of the recharge trenches.  
M-23 is 1350 ft. downgradient of the recharge trenches.

**TABLE 2**  
**TOTAL CHROMIUM CONCENTRATION (mg/l)**  
**IN SELECTED GROUNDWATER MONITOR WELLS**

DATE	M-71	M-73	M-84	M-88
MAY 1990	0.22	0.65	0.78	0.28
JUL 1990	0.18	0.64	0.78	0.28
AUG 1990	0.18	0.64	0.31	0.30
SEP 1990	0.19	0.64	0.21	0.33
OCT 1990	0.24	0.68	0.07	0.34
NOV 1990	0.24	0.69	0.14	0.36
DEC 1990	0.27	0.74	0.12	0.38
JAN 1991	0.30	0.67	0.09	0.32
FEB 1991	0.39	0.71	0.22	0.45
MAR 1991	0.44	0.71	0.23	0.38
APR 1991	0.59	0.72	0.27	0.43
MAY 1991	5.50	0.73	0.34	0.43
JUN 1991	6.88	0.73	0.34	0.43
JUL 1991	7.0	0.83	0.14	0.43
AUG 1991	9.8	0.84	0.24	0.55
SEP 1991	10.0	0.94	0.24	0.40
OCT 1991	10.2	0.90	0.29	0.61
NOV 1991	10.2	0.94	0.44	0.56
DEC 1991	11.2	0.97	0.45	0.58

**TABLE 2**  
**TOTAL CHROMIUM CONCENTRATION (mg/l)**  
**IN SELECTED GROUNDWATER MONITOR WELLS**

DATE	M-71	M-73	M-84	M-88
JAN 1992	12.00	1.00	0.27	0.72
FEB 1992	12.00	1.00	0.29	0.70
MAR 1992	16.00	1.10	0.30	0.80
APR 1992	10.60	0.84	0.21	0.80
MAY 1992	12.00	0.87	0.34	0.55
JUN 1992	11.00	0.89	0.43	0.39

**TABLE 3**  
**INTERCEPTOR WELL DISCHARGE RATES**

**DISCHARGE RATE (GPM)**

WELL #	SEP. 1987	DEC. 1988	DEC. 1989	DEC. 1990	DEC. 1991
I-A	2.0	3.0	3.0	2.1	2.5
I-B	2.0	3.0	2.9	2.0	2.0
I-C*	2.5	8.8	5.5	3.8	3.8
I-D*	20.0	18.0	8.0	1.2	1.0
I-E*	5.0	2.4	5.2	1.2	1.4
I-F*	30.0	26.0	13.4	12.6	11.7
I-G	7.0	5.0	4.0	3.1	1.1
I-H*	8.0	3.0	7.8	2.0	1.4
I-I	15.0	15.0	16.0	9.5	7.1
I-J	10.0	8.0	8.0	5.8	4.6
I-K	10.0	8.2	7.5	4.9	4.3
	-----	-----	-----	-----	-----
TOTAL	111.5	100.4	81.3	48.2	40.9

\* - Wells containing relatively high chromium concentrations (see Figure D-6 in Appendix D).

## *IMPACT OF DISPOSAL SYSTEM ON DOWNGRAIENT 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. 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. 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. KMCC is confident that no undesirable impact to groundwater levels exists 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 4 lists treatment plant feed and discharge chromium concentration data for January through June, 1992. Hexavalent Chromium in June, 1992 barely exceeded the 0.1 mg/l limit.

**TABLE 4**  
**GROUNDWATER TREATMENT ANALYSIS**

WEEK OF	VOLUME TREATED (M gal.)	FEED CHROMIUM (mg/l)	TREATED TOTAL (mg/l)	EFFLUENT HEXAVALENT (mg/l)
Jul. 1 - Jul. 7	392	no sample	1.26	0.027
Jul. 8 - Jul. 14	346	4.21	0.192	0.0018
Jul. 15 - Jul. 21	345	4.45	0.042	0.0072
Jul. 22 - Jul. 28	340	4.25	0.026	0.0022
July, 1991 Average	356	4.30	0.380	0.0096
Jul. 29 - Aug. 4	314	4.70	0.035	0.0015
Aug. 5 - Aug. 11	332	4.60	0.272	0.0126
Aug. 12 - Aug. 18	348	3.70	0.056	0.0038
Aug. 19 - Aug. 25	335	3.30	0.023	0.0023
Aug. 26 - Sep. 1	372	4.00	0.030	0.0023
August, 1991 Average	344	4.06	0.083	0.0045
Sept. 2 - Sept. 8	362	4.50	0.360	0.388
Sept. 9 - Sept. 15	352	4.10	0.084	0.0084
Sept. 16 - Sept. 22	338	3.90	0.044	0.0156
Sept. 23 - Sept. 29	333	3.75	0.024	0.0022
Sept., 1991 Average	346	4.06	0.128	0.1036

**TABLE 4 (cont.)**  
**GROUNDWATER TREATMENT ANALYSIS**

WEEK OF	VOLUME TREATED (M gal.)	FEED CHROMIUM (mg/l)	TREATED TOTAL (mg/l)	EFFLUENT HEXAVALENT (mg/l)
Sept. 29 - Oct. 6	348	4.35	0.028	0.0042
Oct. 7 - Oct. 13	357	4.10	0.030	0.0030
Oct. 14 - Oct. 20	349	4.00	0.023	0.0017
Oct. 21 - Oct. 27	302	4.00	0.045	0.011
Oct. 28 - Nov. 3	336	3.65	0.120	0.224
October, 1991 Average	339	4.12	0.049	0.0484
Nov. 4 - Nov. 10	317	4.60	0.037	0.010
Nov. 11 - Nov. 17	336	4.70	0.368	0.363
Nov. 18 - Nov. 24	353	4.35	0.030	0.002
Nov. 25 - Dec. 1	344	4.00	0.050	0.003
Nov., 1991 Average	338	4.41	0.121	0.0945
Dec. 2 - Dec. 8.	303	4.50	0.063	0.017
Dec. 9 - Dec. 15	305	5.15	0.484	0.481
Dec. 16 - Dec. 22	336	4.10	00.065	0.0475
Dec. 23 - Dec. 31	329	4.70	0.153	0.0517
Dec., 1991 Average	318	4.61	0.191	0.1493

*TABLE 4 (cont.)*

**GROUNDWATER TREATMENT ANALYSIS**

WEEK OF	VOLUME TREATED (M gal.)	FEED CHROMIUM (mg/l)	TREATED TOTAL (mg/l)	EFFLUENT HEXAVALENT (mg/l)
Jan. 1 - Jan. 5	195	4.3	0.033	0.0040
Jan. 6 - Jan. 12	331	4.6	0.134	0.0148
Jan. 13 - Jan. 19	332	4.4	0.232	0.0070
Jan. 20 - Jan. 26	323	3.90	0.028	0.0034
Jan. 27 - Feb. 2	238	4.2	0.0044	0.0038
Jan., 1992 Average	283.6	4.28	0.0942	0.0066
Feb. 3 - Feb. 9	343	6.1	0.040	0.0023
Feb. 10 - Feb. 16	336	3.35	0.030	0.0016
Feb. 17 - Feb. 23	338	4.35	0.117	0.182
Feb. 24 - Mar. 1	344	4.05	0.026	0.0010
Feb., 1992 Average	340	4.46	0.053	0.0467
Mar. 2 - Mar. 8	340	4.25	0.036	0.0050
Mar. 9 - Mar. 15	352	4.75	0.026	0.0010
Mar. 16 - Mar. 22	369	4.90	0.020	0.0043
Mar. 23 - Mar. 29	366	4.50	0.036	0.0118
Mar., 1992 Average	356.6	4.6	0.0295	0.0221

*TABLE 4 (cont.)*

**GROUNDWATER TREATMENT ANALYSIS**

WEEK OF	VOLUME TREATED (M gal.)	FEED CHROMIUM (mg/l)	TREATED TOTAL (mg/l)	EFFLUENT HEXAVALENT (mg/l)
Mar. 30 - Apr. 5	360	4.10	0.024	0.0026
Apr. 6 - Apr. 12	378	3.90	0.022	0.010
Apr. 13 - Apr. 19	409	4.45	0.015	0.0055
Apr. 20 - Apr. 26	399	4.55	0.018	0.0028
Apr. 27 - May 3	347	5.5	0.016	0.0052
Apr., 1992 Average	378	4.5	0.019	0.0034
May 4 - May 10	341	5.55	0.014	0.0116
May 11 - May 17	354	4.65	0.063	0.112
May 18 - May 24	338	5.35	0.228	0.103
May 25 - May 31	323	5.25	0.151	0.002
May, 1992 Average	339	5.2	0.114	0.0572
Jun. 1 - Jun. 7	314	4.7	0.010	0.0020
Jun. 8 - Jun 14	429	4.35	0.0636	0.0035
Jun. 15 - Jun. 21	456	4.15	0.0638	0.1085
Jun. 22 - Jun. 28	447	4.5	0.0436	0.0734
June, 1992 Average	412	4.425	0.0453	0.0224

## *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 first half of 1992, electrodes were replaced January 13, February 14, March 23, April 20, May 20, and June 11, 1992. Each time, the cell that was on standby replaced the disconnected cell in the treatment circuit.

A new recharge gallery was installed between the two recharge trenches. It is expected that the new gallery will permit an improvement in the rate of recharge.

Four exploratory borings were placed along a line between monitor wells M56 and M60 through interceptor well G. These borings were made to explore the top of the Muddy Creek. The four borings were converted to piezometers.

Several interceptor wells were repaired during the first half of 1992. Interceptor wells I-H and I-E were repaired in April. Interceptor well I-K was replaced in May. Interceptor well I-J was replaced in June.

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, recovery can be increased by decreasing the pump rate, allowing discharge to occur a greater percentage of the time. Well discharge rates are adjusted periodically, as engine hour meters show either continuous pumping or a low percentage of pumping time.

All interceptor wells are checked for operation each day; flow rates are recorded for each well twice weekly. Flowmeter readings (total volume) are recorded for each time-marking well twice weekly. These records indicate when a pump needs to be replaced or a flowrate adjusted. In addition, other maintenance associated with maintaining treatment plant operations were performed.

In October, 1991, electronic pressure transducers were placed in wells 53, 54, 55, 56, 58, 59, 60, 61, and 78. A telephone-addressable datalogger records the pressure head in each of the wells at a regular interval and converts 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.

## ***PROPOSED FUTURE ACTIVITIES***

KMCC will continue to record all water levels in the consent order area on a quarterly basis. Quarterly potentiometric surface maps and cross-sections will be developed, and the water level recorders on monitor wells M-78 and M-80 will continue to operate.

In addition, the KMCC is developing a program to address the increasing Chromium concentrations reported in the recharge trench areas. This program may include additional subsurface investigations.

## CONCLUSIONS

KMCC is confident that the groundwater interception and treatment systems have been maximized to provide system efficiency. 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 concentrated plume area interception.

Discharge chromium concentrations for the treatment facility are below established requirements. Groundwater samples obtained from monitor wells downgradient of the recharge trenches show that groundwater is being remediated. 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***

KERR-MCGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA FACILITY  
 GROUNDWATER ELEVATIONS

TOC-->	M-11 1813.46 DTW	ELEV.	M-14 1750.83 DTW	ELEV.	M-15 1749.89 DTW	ELEV.	M-17 1760.54 DTW	ELEV.	M-16 1735.28 DTW	ELEV.	M-19 1766.55 DTW	ELEV.	M-22R 1750.88 DTW	ELEV.	M-23 1712.78 DTW	ELEV.	M-25 1756.15 DTW	ELEV.	M-27 1740.47 DTW	ELEV.
20-Jan-88	44.78	1766.88	28.56	1730.27	23.28	1728.40	30.84	1738.80	11.73	1728.85	27.80	1738.85			14.58	1688.20	28.63	1731.52	15.36	1725.11
05-Feb-88	44.78	1768.88	28.70	1730.13	23.50	1728.10	31.12	1738.42	11.87	1728.41	27.88	1738.87			14.58	1688.20	27.07	1731.06	18.70	1724.77
01-Mar-88	44.78	1768.70	28.36	1728.47	24.03	1725.86	31.72	1737.82	12.13	1728.15	28.36	1738.19			14.82	1688.28	27.86	1730.48	15.88	1724.56
19-Apr-88	45.17	1768.29	30.14	1728.86	24.92	1725.07	32.42	1737.12	12.73	1725.55	28.92	1737.83			14.67	1688.11	28.33	1729.82	16.45	1724.02
18-May-88	45.13	1768.33	30.48	1728.35	25.05	1724.64	32.80	1736.64	13.08	1725.20	29.34	1737.21			14.94	1687.54	28.75	1729.40	16.95	1723.52
07-Jun-88	45.30	1768.07	30.67	1728.16	25.24	1724.51	33.03	1736.51	13.30	1724.88	29.64	1736.91			15.06	1687.73	29.00	1728.15	17.21	1723.28
14-Jul-88	46.16	1767.30	31.06	1727.77	25.83	1723.86	33.86	1735.56	13.73	1724.55	29.88	1738.57			15.28	1687.48	28.80	1728.55	17.82	1722.95
08-Aug-88	46.20	1767.28	31.36	1727.47	25.84	1723.75	34.16	1735.36	13.81	1724.37	29.24	1737.31			15.73	1687.05	28.85	1728.50	17.87	1722.80
03-Sep-88	46.12	1767.34	31.32	1727.51	25.95	1723.74	34.30	1735.24	13.40	1724.88	29.75	1736.80			15.45	1687.33	30.10	1728.05	18.06	1723.81
10-Oct-88	45.40	1768.08	31.50	1727.33	26.00	1723.89	34.40	1735.14	14.30	1723.88	29.70	1736.85			15.50	1687.28	30.15	1728.05	18.30	1722.17
28-Nov-88	41.85	1771.81	31.85	1727.18	27.10	1722.89	34.30	1735.24	14.40	1723.88	29.80	1736.85			15.55	1687.28	30.70	1727.45	18.60	1721.87
15-Dec-88	46.10	1767.36	37.70	1721.13	30.18	1719.81	33.75	1735.78	14.00	1724.28	29.40	1736.15			16.05	1686.93	30.70	1727.48	19.30	1721.17
19-Jan-89	46.15	1767.31	31.80	1727.03	25.05	1724.84	34.75	1734.78	14.80	1723.48	30.60	1736.95			15.10	1687.88	30.85	1727.20	18.75	1721.72
23-Feb-89	45.27	1768.19	32.15	1726.88	28.36	1721.34	36.00	1734.54	15.35	1722.83	30.80	1735.75			16.45	1688.33	32.10	1728.05	19.75	1720.72
23-Mar-89	48.80	1767.56	32.20	1728.83	28.40	1721.28	35.10	1734.44	15.70	1722.88	31.00	1736.55			16.50	1688.28	32.10	1728.05	19.75	1720.72
23-Apr-89	46.10	1767.36	32.30	1728.53	28.40	1721.28	35.10	1734.44	15.85	1722.43	31.00	1736.55			16.60	1688.18	32.20	1728.05	19.65	1720.82
06-May-89	44.85	1768.51	32.40	1728.43	27.80	1721.89	35.00	1734.54	16.00	1722.28	31.00	1736.55			16.00	1688.78	32.00	1728.15	19.80	1720.87
01-Jun-89	45.50	1767.86	32.50	1728.33	28.50	1721.18	35.25	1734.28	16.25	1722.03	31.30	1736.28			16.10	1688.68	32.30	1728.85	19.70	1720.77
03-Jul-89	45.00	1768.46	32.60	1728.23	27.80	1722.08	35.35	1734.18	16.55	1721.73	31.45	1736.10			16.20	1688.58	32.10	1728.05	19.85	1720.82
16-Aug-89	46.00	1767.46	32.70	1728.13	28.30	1721.39	36.50	1734.04	16.85	1721.43	34.55	1732.00			21.70	1681.06	36.00	1722.15	20.25	1720.22
12-Sep-89	45.30	1768.16	32.85	1728.28	28.55	1721.14	36.55	1733.88	16.80	1721.46	36.80	1729.75			21.90	1680.88	32.85	1728.50	20.50	1719.97
25-Oct-89	45.00	1768.46	32.80	1728.23	28.40	1721.28	36.35	1734.18	17.10	1721.18	31.80	1734.85			21.30	1681.48	32.80	1728.55	20.75	1718.72
17-Nov-89	44.10	1768.36	32.00	1728.83	30.00	1719.86	35.15	1734.38	17.10	1721.16	31.20	1735.36			16.85	1685.93	32.80	1728.36	21.10	1719.37
07-Dec-89	45.00	1768.46	32.85	1728.86	28.30	1721.39	36.35	1734.18	17.25	1721.03	31.85	1734.70			16.95	1685.83	32.85	1728.60	20.80	1719.87
12-Jan-90	45.05	1768.41	32.95	1728.88	28.40	1721.29	35.55	1733.88	17.55	1720.73	31.70	1734.85			17.10	1685.88	32.75	1728.40	21.00	1719.47
23-Feb-90	45.30	1768.16	32.80	1728.83	28.50	1721.18	34.90	1734.84	17.80	1720.86	31.15	1735.11			17.00	1685.88	32.80	1728.28	21.00	1719.37
11-Jul-90	44.70	1768.86	33.45	1728.38	28.45	1720.24	37.00	1732.84	18.20	1720.06	32.20	1734.08			16.65	1685.13	33.30	1724.85	22.05	1716.42
11-Aug-90	44.70	1768.76	33.50	1728.33	30.20	1719.49	36.15	1733.36	18.40	1719.86	32.40	1733.88			16.70	1685.08	33.70	1724.45	22.30	1716.17
02-Nov-90	44.90	1768.56	33.70	1728.13	31.00	1718.88	36.10	1733.44	18.75	1719.53	32.80	1733.36			16.35	1684.43	34.10	1724.08	23.50	1716.97
15-Feb-91	44.50	1768.86	33.65	1728.18	31.40	1718.28	36.70	1733.84	19.50	1718.78	33.35	1732.81			16.85	1683.83	33.80	1724.28	24.40	1719.07
28-Jun-91	44.00	1714.53	33.85	1728.18	31.85	1717.84	36.20	1733.34	19.80	1718.38	34.50	1731.78			19.35	1683.43	34.00	1724.15	25.00	1718.47
08-Jan-92	42.85	1770.51	33.20	1728.83	32.30	1717.39	36.80	1733.74	20.80	1717.36	34.00	1732.28			20.35	1682.43	33.80	1724.28	28.85	1714.52
25-Feb-92	42.85	1770.51	33.20	1728.83	32.30	1717.39	36.80	1733.74	20.80	1717.36	34.00	1732.28			20.35	1682.43	33.80	1724.28	28.85	1714.52
20-Mar-92	43.75	1768.71	33.90	1728.76	29.35	1728.33	39.50	1732.76	29.35	1728.33	39.50	1732.76			21.00	1681.78	33.00	1724.85	22.05	1716.42
29-Apr-92	42.70	1770.78	33.35	1732.81	28.90	1728.78	38.90	1732.91	28.90	1728.78	38.90	1732.91			18.00	1683.88	33.70	1724.45	22.30	1716.17
28-May-92	43.88	1769.81	33.55	1732.71	28.90	1728.78	38.90	1732.91	28.90	1728.78	38.90	1732.91			18.00	1683.88	33.70	1724.45	22.30	1716.17
24-Jun-92	43.90	1769.56	32.45	1728.38	31.15	1718.54	36.35	1734.18	19.85	1718.43	33.70	1732.56			16.80	1683.98	33.10	1725.05	25.10	1715.37

KERR-McGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA FACILITY  
 GROUNDWATER ELEVATIONS

DATE	M-31 1750.36 DTW ELEV.	M-36 1767.04 DTW ELEV.	M-37 1756.26 DTW ELEV.	M-38 1767.06 DTW ELEV.	M-39 1756.31 DTW ELEV.	M-47 1716.51 DTW ELEV.	M-49 1716.76 DTW ELEV.	M-53 1751.56 DTW ELEV.	M-54 1748.63 DTW ELEV.	M-55 1749.36 DTW ELEV.
05-Feb-86	36.53	25.96	27.26	26.37	24.32	13.04	12.46	26.73	22.31	23.74
19-Apr-86	40.06	27.14	28.62	27.90	25.42	13.10	12.60	26.75	23.50	24.75
18-May-86	40.36	27.50	28.90	28.00	25.53	13.29	12.94	27.06	23.80	25.05
07-Jun-86	40.50	27.73	29.16	28.27	26.07	13.47	13.06	27.25	23.83	25.27
14-Jul-86	40.70	28.00	29.60	28.76	26.50	13.72	13.35	27.84	24.50	25.78
06-Aug-86	40.53	28.45	29.86	28.94	26.77	14.07	13.81	27.90	24.52	25.91
03-Sep-86	40.52	28.50	29.90	29.20	26.71	13.72	13.35	26.12	24.46	26.20
10-Oct-86	40.15	28.60	30.10	29.50	26.80	13.85	13.60	26.30	24.90	26.40
26-Nov-86	40.30	29.00	29.90	29.30	26.90	13.80	13.10	26.10	25.10	26.80
15-Dec-86	39.83	29.40	31.90	29.70	26.75	13.75	13.75	26.90	26.90	26.75
19-Jan-86	40.15	29.60	30.40	29.90	26.85	14.10	14.10	26.85	24.45	24.20
23-Feb-86	40.47	29.80	30.65	32.70	27.65	14.45	14.23	26.90	25.90	27.90
23-Mar-86	40.60	30.50	30.70	30.30	27.85	14.06	14.30	20.40	26.30	26.80
23-Apr-86	40.80	30.30	31.75	30.40	27.90	14.70	14.40	29.40	26.40	27.85
09-May-86	39.90	30.20	30.70	30.40	28.05	14.80	14.50	29.75	26.40	27.85
01-Jun-86	40.35	30.35	14.80	30.45	28.20	14.80	14.85	29.75	26.80	27.90
03-Jul-86	40.30	31.70	30.80	30.40	28.30	15.00	14.60	30.00	26.95	27.85
16-Aug-86	41.00	30.50	30.90	30.85	28.30	20.50	20.25	30.10	26.20	26.20
12-Sep-86	40.55	30.70	30.90	30.65	28.50	19.50	20.30	30.10	26.35	26.35
25-Oct-86	39.20	30.80	31.00	30.55	28.50	26.50	20.80	30.35	27.25	26.45
07-Dec-86	40.25	30.85	31.05	30.80	28.60	15.70	15.50	30.50	27.40	26.45
12-Jan-86	41.05	30.60	31.10	30.65	28.75	15.65	15.65	30.80	26.50	26.55
23-Feb-86	40.75	31.50	31.20	30.70	28.50	15.90	15.85	30.85	27.60	26.65
11-Jul-86	41.10	32.20	31.60	31.10	28.30	16.35	16.05	31.05	26.30	26.45
11-Aug-86	41.15	32.00	31.70	31.10	29.45	16.35	16.10	31.15	26.30	26.70
02-Nov-86	41.30	32.00	31.90	31.25	29.50	16.80	16.75	31.40	26.65	30.25
15-Feb-81	41.60	32.40	31.70	31.30	30.10	17.50	17.45	31.45	26.90	30.65
25-Jun-81	41.25	30.80	31.71	31.40	30.35	18.85	17.85	31.50	26.05	31.05
15-Jan-82	40.10	33.00	31.25	31.35	30.80	18.65	16.50	31.15	26.35	30.80
28-Feb-82	39.60	31.30	31.60	31.35	30.60	18.80	18.65	31.30	26.65	31.20
19-Mar-82	39.55	31.50	31.25	31.35	30.20	18.90	18.80	31.50	26.35	30.00
28-Apr-82	40.15	31.40	31.25	31.35	29.90	17.35	16.90	31.15	26.65	31.20
26-May-82	40.45	32.00	31.00	30.65	30.05	17.40	17.45	30.40	27.40	26.30
24-Jun-82	40.60	32.00	31.00	30.65	30.05	17.40	17.45	30.40	27.40	26.30

KERR-MCGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA FACILITY  
 GROUNDWATER ELEVATIONS

TOC-->	M-56 1749.60 DTW ELEV.	M-57 1752.29 DTW ELEV.	M-58 1749.25 DTW ELEV.	M-59 1743.01 DTW ELEV.	M-60 1750.13 DTW ELEV.	M-61 1745.55 DTW ELEV.	M-62 1752.92 DTW ELEV.	M-63 1750.59 DTW ELEV.	M-64 1749.76 DTW ELEV.	M-65 1752.88 DTW ELEV.										
20-Jan-88	22.48	1727.12	26.44	1725.85	20.58	1728.67	14.22	1728.79	22.08	1728.07	16.60	1728.95	25.51	1727.41	22.54	1728.05	22.91	1728.85	24.97	1727.91
05-Feb-88	22.87	1726.73	26.67	1725.82	20.80	1728.45	14.48	1728.53	22.38	1727.75	17.12	1728.43	25.74	1727.18	22.78	1727.81	23.15	1726.61	25.24	1727.64
01-Mar-88	23.35	1726.25	27.10	1725.19	21.09	1728.16	14.86	1728.15	22.80	1727.33	17.34	1728.21	26.18	1726.74	23.43	1727.16	23.87	1725.88	25.89	1726.98
19-Apr-88	24.04	1725.58	27.58	1724.71	21.67	1727.58	15.54	1727.47	23.54	1728.59	17.81	1727.74	28.77	1726.15	24.08	1726.51	24.52	1725.24	28.58	1726.30
18-May-88	24.57	1725.03	27.88	1724.41	22.12	1727.13	15.83	1727.18	23.82	1728.31	18.16	1727.38	27.05	1725.87	24.40	1726.19	24.74	1725.02	27.00	1725.88
07-Jun-88	24.98	1724.92	27.97	1724.32	22.35	1726.90	16.08	1726.83	24.01	1728.12	18.35	1727.20	27.25	1725.87	24.55	1726.04	25.00	1724.76	27.24	1725.64
14-Jul-88	25.14	1724.46	28.32	1723.97	22.90	1726.35	16.57	1726.44	24.48	1725.85	18.78	1726.77	27.63	1725.29	24.88	1725.71	25.50	1724.26	27.85	1725.03
06-Aug-88	25.33	1724.27	28.61	1723.68	23.24	1726.01	16.78	1726.23	24.69	1725.44	19.05	1726.50	27.99	1724.93	25.20	1725.39	25.86	1724.10	27.97	1724.91
03-Sep-88	25.30	1724.30	28.62	1723.67	23.15	1726.10	16.57	1726.44	24.80	1726.33	18.50	1726.05	28.10	1724.82	25.30	1725.29	25.80	1723.98	28.25	1724.23
10-Oct-88	25.65	1723.95	28.75	1723.54	23.30	1725.95	16.60	1726.41	25.00	1725.13	18.20	1726.35	28.10	1724.62	25.15	1725.44	25.90	1723.86	28.65	1724.23
26-Nov-88	25.80	1723.80	28.85	1723.44	23.30	1725.95	16.90	1726.11	25.00	1725.13	19.60	1725.95	28.20	1724.72	25.20	1725.39	26.20	1723.56	28.90	1723.96
15-Dec-88	31.00	1718.60	29.10	1723.19	26.90	1722.35	17.30	1725.71	26.40	1723.73	19.25	1726.30	28.60	1724.32	31.50	1719.09	29.45	1720.31	28.75	1726.13
19-Jan-89	26.50	1723.10	29.10	1723.19	24.10	1725.15	17.70	1725.31	25.00	1725.13	19.70	1725.85	28.75	1724.17	25.85	1724.74	26.85	1723.11	30.00	1722.88
23-Feb-89	26.95	1722.65	29.40	1722.88	24.75	1724.50	18.40	1724.61	26.15	1723.98	22.50	1723.05	28.80	1724.12	26.15	1724.44	27.35	1722.41	30.40	1722.48
23-Mar-89	27.00	1722.80	29.60	1722.89	25.00	1724.25	18.60	1724.41	26.30	1723.83	20.60	1724.95	29.00	1723.92	28.55	1724.04	27.40	1722.36	30.30	1722.58
23-Apr-89	27.15	1722.45	29.65	1722.64	24.95	1724.30	18.80	1724.21	26.40	1723.73	20.70	1724.85	29.10	1723.82	26.40	1724.19	27.50	1722.26	30.55	1722.33
06-May-89	26.80	1723.00	29.80	1722.49	25.10	1724.15	18.70	1724.31	26.40	1723.73	20.60	1724.95	28.25	1723.87	26.65	1723.84	27.45	1722.31	30.35	1722.53
01-Jun-89	27.15	1722.45	29.85	1722.44	25.50	1723.76	19.10	1723.91	26.00	1723.83	21.05	1724.50	29.30	1723.82	26.70	1723.99	27.60	1722.16	30.50	1722.36
03-Jul-89	27.15	1722.45	30.00	1722.29	25.75	1723.50	19.40	1723.61	26.70	1723.43	21.35	1724.20	29.30	1723.82	26.65	1723.84	27.50	1722.26	30.55	1722.33
16-Aug-89	27.60	1722.00	30.15	1722.14	25.80	1723.45	19.55	1723.48	26.95	1723.18	21.50	1724.05	29.55	1723.87	26.95	1723.84	27.80	1721.98	30.95	1721.83
12-Sep-89	27.70	1721.90	30.15	1722.14	25.90	1723.35	19.50	1723.51	27.05	1723.08	20.80	1724.75	29.55	1723.97	26.90	1723.69	27.90	1721.86	31.10	1721.78
25-Oct-89	27.65	1721.95	30.25	1722.04	26.10	1723.15	19.65	1723.36	27.15	1722.98	21.55	1724.00	28.70	1723.22	27.15	1723.44	28.05	1721.71	29.00	1723.28
17-Nov-89	27.20	1722.40	31.00	1721.29	26.10	1723.15	19.50	1723.51	26.90	1723.23	21.40	1724.15	30.20	1722.72	27.10	1723.49	28.00	1721.76	30.70	1722.18
07-Dec-89	27.75	1721.85	30.40	1721.88	26.15	1723.10	19.80	1723.11	27.30	1722.83	21.85	1723.70	29.85	1723.07	27.30	1723.29	28.10	1721.68	30.70	1722.18
12-Jan-90	27.65	1721.95	30.50	1721.79	26.30	1722.95	20.15	1722.88	27.30	1722.83	22.15	1723.40	29.95	1722.97	27.40	1723.19	28.20	1721.58	30.75	1722.13
23-Feb-90	28.00	1721.60	30.55	1721.74	26.40	1722.85	20.05	1722.98	27.50	1722.83	21.85	1723.70	30.00	1722.92	27.50	1723.09	28.35	1721.41	30.95	1721.83
11-Jul-90	28.80	1721.00	30.90	1721.39	26.95	1722.30	20.80	1722.41	26.15	1721.98	22.55	1723.00	30.40	1722.52	28.00	1722.59	29.00	1720.76	31.80	1721.08
11-Aug-90	28.95	1720.85	31.05	1721.24	27.10	1722.15	20.75	1722.26	26.25	1721.88	22.70	1722.85	30.50	1722.42	28.10	1722.49	29.10	1720.66	32.40	1720.48
02-Nov-90	28.40	1720.20	31.30	1720.99	27.40	1721.85	21.00	1722.01	26.80	1721.53	23.00	1722.55	30.75	1722.17	28.30	1722.29	29.45	1720.31	32.90	1719.88
15-Feb-91	28.90	1719.70	31.30	1720.99	27.65	1721.40	21.50	1721.51	26.10	1721.03	23.45	1722.10	30.75	1722.12	28.30	1722.29	29.50	1720.28	33.10	1719.78
28-Jun-91	30.40	1719.20	31.30	1720.99	26.20	1721.05	21.75	1721.29	26.50	1720.83	23.65	1721.90	30.80	1722.12	28.40	1722.12	28.85	1719.91	33.30	1719.58
28-Feb-92	31.10	1718.50	31.00	1721.29	28.80	1720.45	35.00	1708.01	30.10	1720.03	24.20	1721.35	30.50	1722.42	28.15	1722.44	28.75	1720.01	33.50	1719.38
24-Jun-92	30.45	1719.15	30.15	1722.14	26.00	1721.26	29.40	1713.61	26.20	1720.83	23.35	1722.20	29.65	1723.27	27.25	1723.34	28.50	1721.26	32.70	1720.18

KERR-McGEE CHEMICAL CORPORATION  
HENDERSON, NEVADA FACILITY  
GROUNDWATER ELEVATIONS

TOC-->	M-66 1752.33 DTW ELEV.	M-67 1744.96 DTW ELEV.	M-68 1747.44 DTW ELEV.	M-69 1749.77 DTW ELEV.	M-70 1749.99 DTW ELEV.	M-71 1749.88 DTW ELEV.	M-72 1748.49 DTW ELEV.	M-73 1749.06 DTW ELEV.	M-74 1749.42 DTW ELEV.	M-76 1751.01 DTW ELEV.										
20-Jan-85	22.69	1729.64	14.59	1730.39	16.12	1731.32	23.81	1725.16	21.61	1723.35	19.37	1728.51	17.22	1728.27	12.02	1728.03	15.40	1728.02	24.84	1728.07
05-Feb-85	22.97	1729.36	14.90	1730.06	16.53	1730.91	23.84	1724.83	21.97	1724.99	19.77	1729.11	17.46	1728.03	12.27	1727.76	15.63	1727.79	25.24	1725.77
01-Mar-85	23.54	1728.79	15.33	1729.65	16.96	1730.48	24.31	1724.46	22.53	1724.43	20.11	1725.37	17.77	1727.72	12.50	1727.85	16.00	1727.42	25.68	1725.33
18-Apr-85	23.92	1728.41	16.81	1729.17	17.50	1729.94	24.82	1723.95	23.10	1723.96	20.75	1725.13	16.31	1727.12	13.12	1728.63	16.56	1728.56	24.75	1728.28
18-May-85	24.33	1728.00	16.16	1728.80	17.84	1729.60	25.07	1723.62	23.34	1723.62	21.30	1724.56	16.73	1728.76	13.95	1728.50	16.90	1728.62	26.23	1724.78
07-Jun-85	24.52	1727.81	16.44	1728.54	18.06	1729.36	25.34	1723.43	23.55	1723.41	21.95	1724.33	16.97	1728.52	13.82	1728.23	17.06	1728.37	26.23	1724.78
14-Jul-85	25.05	1727.26	16.93	1728.05	18.46	1728.96	24.54	1724.23	23.95	1723.01	22.04	1723.84	19.49	1728.00	14.30	1725.75	17.47	1725.95	26.80	1724.21
06-Aug-85	25.20	1727.13	17.20	1727.76	18.76	1728.66	26.02	1722.76	24.26	1722.70	22.25	1723.63	16.40	1728.06	14.51	1725.54	17.71	1725.71	26.97	1724.04
03-Sep-85	25.36	1726.96	17.00	1727.96	17.95	1729.49	26.90	1722.87	24.40	1722.86	22.19	1723.73	19.70	1726.79	14.30	1725.75	17.00	1726.42	27.10	1723.91
10-Oct-85	25.40	1726.83	17.10	1727.88	18.90	1730.64	26.00	1722.77	24.50	1722.16	22.80	1723.08	20.25	1725.24	14.85	1725.20	18.00	1725.42	27.62	1723.36
28-Nov-85	25.70	1726.63	17.80	1727.16	19.00	1729.44	26.25	1722.82	25.35	1721.61	23.20	1722.66	20.10	1725.39	15.00	1725.05	16.30	1725.12	23.20	1727.81
15-Dec-85	25.95	1726.36	17.90	1727.36	19.75	1728.69	29.55	1719.22	26.65	1720.31	24.10	1721.78	21.55	1723.94	14.80	1725.45	17.90	1725.52	26.85	1722.36
19-Jan-86	26.10	1726.23	18.00	1728.96	19.00	1728.44	28.00	1722.77	26.55	1721.41	24.10	1721.78	20.00	1725.49	14.70	1725.36	18.00	1725.42	26.05	1721.86
23-Feb-86	26.70	1725.63	18.45	1728.53	19.40	1728.04	26.50	1722.27	26.90	1721.06	24.75	1721.13	21.40	1724.09	16.30	1723.75	18.90	1724.52	29.40	1721.81
23-Mar-86	26.90	1725.43	18.70	1728.26	19.65	1727.59	26.35	1720.42	26.00	1720.96	24.65	1721.23	21.70	1723.79	16.60	1723.45	19.30	1724.12	29.40	1721.81
23-Apr-86	27.00	1725.33	18.80	1728.16	20.00	1727.44	27.40	1721.37	26.00	1720.99	24.70	1721.18	21.80	1723.69	16.80	1723.25	19.40	1724.02	29.50	1721.81
09-May-86	27.15	1725.16	18.90	1728.16	20.15	1727.29	27.70	1721.07	26.10	1720.86	24.85	1721.23	22.00	1723.49	16.80	1723.25	19.50	1723.92	29.40	1721.81
01-Jun-86	27.35	1724.96	19.10	1728.03	20.35	1727.09	27.75	1721.02	26.15	1720.81	24.70	1721.16	22.20	1723.29	17.10	1722.86	19.75	1723.67	29.40	1721.81
03-Jul-86	27.55	1724.78	19.35	1728.63	20.90	1728.94	27.95	1720.92	26.15	1720.81	24.75	1721.13	22.55	1722.94	17.50	1722.55	20.00	1723.42	29.50	1721.81
16-Aug-86	27.70	1724.63	19.45	1728.53	20.70	1728.74	28.20	1720.57	26.35	1720.61	25.25	1720.93	22.85	1722.84	17.60	1722.45	20.25	1723.17	30.05	1720.86
12-Sep-86	27.75	1724.56	19.45	1728.53	20.30	1727.14	28.00	1720.77	26.55	1720.41	25.90	1720.38	22.85	1722.64	17.70	1722.35	19.80	1723.62	30.10	1720.81
25-Oct-86	PLUGGED		19.55	1725.43	20.65	1728.59	28.65	1720.12	26.90	1720.06	25.25	1720.63	23.05	1722.44	17.90	1722.15	20.50	1722.92	29.80	1721.21
17-Nov-86	PLUGGED		19.40	1725.56	20.85	1728.59	28.00	1720.77	26.80	1721.16	25.00	1720.66	23.80	1721.69	17.85	1722.20	20.40	1723.02	30.20	1720.81
07-Dec-86	27.60	1724.73	19.65	1725.33	21.00	1728.44	28.65	1719.82	26.85	1720.11	25.25	1720.63	23.15	1722.34	18.05	1722.00	20.65	1722.77	29.00	1722.01
12-Jan-87	27.75	1724.56	20.00	1724.98	21.20	1728.24	28.10	1719.67	27.00	1719.96	25.25	1720.63	23.30	1722.19	16.30	1721.75	20.95	1722.47	30.00	1721.01
23-Feb-87	27.80	1724.53	19.75	1725.23	20.70	1728.74	29.30	1719.47	27.10	1719.86	25.40	1720.48	23.90	1721.99	16.36	1721.70	20.75	1722.67	30.10	1720.81
23-Feb-87	28.40	1723.93	20.40	1724.58	21.70	1728.74	30.15	1718.62	27.90	1719.06	26.45	1719.43	24.15	1721.34	16.90	1721.15	21.45	1721.97	31.40	1719.81
11-Aug-87	28.50	1723.83	20.55	1724.43	21.85	1728.59	30.25	1718.82	27.90	1719.06	27.30	1718.55	24.30	1721.19	19.10	1720.95	21.85	1721.77	31.80	1719.41
02-Nov-87	28.60	1723.53	20.70	1724.28	22.15	1728.29	30.75	1718.02	26.30	1718.66	26.30	1717.55	24.70	1720.79	19.40	1720.65	21.95	1721.47	32.45	1718.56
15-Feb-88	29.10	1723.23	21.20	1723.76	22.70	1724.74	31.05	1717.72	26.00	1717.96	26.00	1716.88	25.40	1720.09	19.80	1720.15	22.50	1720.92	32.90	1718.11
28-Jun-81	29.55	1722.76	21.45	1722.53	22.90	1724.54	31.35	1717.42	26.80	1717.36	26.50	1716.38	25.75	1719.74	20.20	1719.05	22.80	1720.62	33.30	1717.71
15-Jan-92			22.00	1722.98	23.60	1723.84					30.25	1716.63			20.90	1719.15				
28-Feb-92	30.00	1722.33	21.90	1723.06	23.50	1723.94	31.20	1717.57	26.60	1717.36	30.25	1715.83	26.50	1718.99	20.90	1719.15	23.55	1718.57	33.80	1717.21
20-Mar-92			21.50	1723.45	22.85	1724.56					29.05	1716.33			20.45	1719.60				
29-Apr-92			21.00	1723.98	22.45	1724.99					29.30	1716.35			19.90	1720.15				
28-May-92	30.00	1722.33	21.90	1723.06	20.80	1728.64					29.70	1716.16			20.00	1720.05				
24-Jun-92	29.15	1723.16	21.00	1723.98	22.80	1724.64	29.65	1719.12	27.10	1719.66	29.60	1716.26	26.90	1719.59	20.10	1719.95	22.65	1720.77	32.85	1718.36

KERR-MCGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA FACILITY  
 GROUNDWATER ELEVATIONS

TOC-->	M-70	M-80	M-81	M-82	M-83	M-84	M-85	M-86	M-87	M-88
	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW
	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.	ELEV.
20-Jan-88	17.54	20.80	15.13	18.74	16.52	14.42	16.14	15.71	16.10	13.02
06-Feb-88	17.86	21.23	15.16	19.66	16.64	14.82	15.36	15.96	16.15	13.19
01-Mar-88	18.37	19.72	15.46	18.37	17.05	15.00	15.63	16.00	16.32	13.41
19-Apr-88	18.87	20.41	16.06	16.85	17.54	15.56	16.23	16.62	16.87	13.93
16-May-88	19.47	21.05	16.80	17.28	18.00	16.00	16.80	16.23	17.31	14.41
07-Jun-88	19.70	21.20	17.11	17.87	18.24	16.32	17.11	17.50	17.63	14.57
14-Jul-88	20.00	21.50	17.56	17.47	18.45	16.92	17.42	17.93	18.15	14.97
06-Aug-88	20.42	21.83	17.79	18.07	19.00	17.03	17.90	18.21	18.20	15.06
03-Sep-88	20.10	21.53	17.28	18.07	18.87	16.80	17.83	17.74	17.80	14.56
10-Oct-88	20.50	22.50	18.15	18.30	19.20	17.30	18.30	18.90	18.60	15.60
26-Nov-88	20.75	23.10	17.75	18.50	19.30	17.95	18.35	18.10	18.25	15.75
15-Dec-88	22.45	23.80	18.25	23.40	24.10	23.90	19.05	18.85	18.85	16.80
19-Jan-89	20.15	23.90	18.80	17.90	19.85	18.30	19.10	18.30	19.35	16.30
23-Feb-89	20.20	23.85	19.90	18.70	20.20	18.75	19.45	20.15	20.75	16.70
23-Mar-89	21.25	23.90	19.80	18.70	20.60	18.75	19.45	20.15	20.75	17.00
23-Apr-89	21.25	23.90	19.80	18.70	20.60	18.75	19.45	20.15	20.75	17.00
09-May-89	21.85	24.00	20.35	19.30	20.45	18.90	19.75	20.00	20.70	17.25
01-Jun-89	22.00	23.85	20.50	19.40	20.40	18.75	19.65	20.50	21.20	17.95
03-Jul-89	22.25	24.10	20.55	19.60	20.35	18.90	19.60	20.75	21.55	17.85
16-Aug-89	22.50	24.50	21.00	19.85	20.75	19.30	20.15	21.00	21.70	18.10
12-Sep-89	22.85	24.70	21.40	20.15	21.00	19.55	20.50	21.50	21.95	18.20
25-Oct-89	23.00	25.10	21.70	20.35	21.40	19.80	20.75	21.85	22.30	18.40
17-Nov-89	23.00	24.90	22.00	20.00	21.90	20.00	20.50	22.00	22.30	18.50
07-Dec-89	23.15	25.15	21.75	20.50	21.55	19.90	20.70	21.75	22.45	18.60
12-Jan-90	23.35	25.25	22.00	20.70	21.65	20.05	20.85	22.00	22.65	18.85
23-Feb-90	23.15	25.30	22.10	20.80	21.65	20.05	21.00	22.10	22.75	18.95
11-Jul-90	24.80	28.15	23.10	22.00	22.80	21.10	21.85	22.90	23.40	19.75
11-Aug-90	24.60	28.45	22.95	22.00	22.85	21.35	22.20	22.90	23.60	19.75
02-Nov-90	24.90	27.70	24.35	22.30	23.40	22.35	23.65	24.00	24.10	20.05
15-Feb-91	26.00	28.45	25.25	23.35	24.45	23.35	24.75	25.00	24.85	21.00
28-Jun-91	26.15	28.20	26.00	23.50	25.15	24.00	25.50	25.70	25.25	21.40
20-Jan-92	26.20	30.05	26.55	23.90	26.25	24.50	26.40	27.15	26.45	22.55
28-Feb-92	26.20	30.05	26.55	23.90	26.25	24.50	26.40	27.15	26.45	22.55
20-Mar-92	26.20	30.05	26.55	23.90	26.25	24.50	26.40	27.15	26.45	22.55
28-Apr-92	26.20	30.05	26.55	23.90	26.25	24.50	26.40	27.15	26.45	22.55
26-May-92	26.20	30.05	26.55	23.90	26.25	24.50	26.40	27.15	26.45	22.55
24-Jun-92	24.10	28.90	27.15	21.60	22.30	23.90	26.15	28.75	25.70	21.65

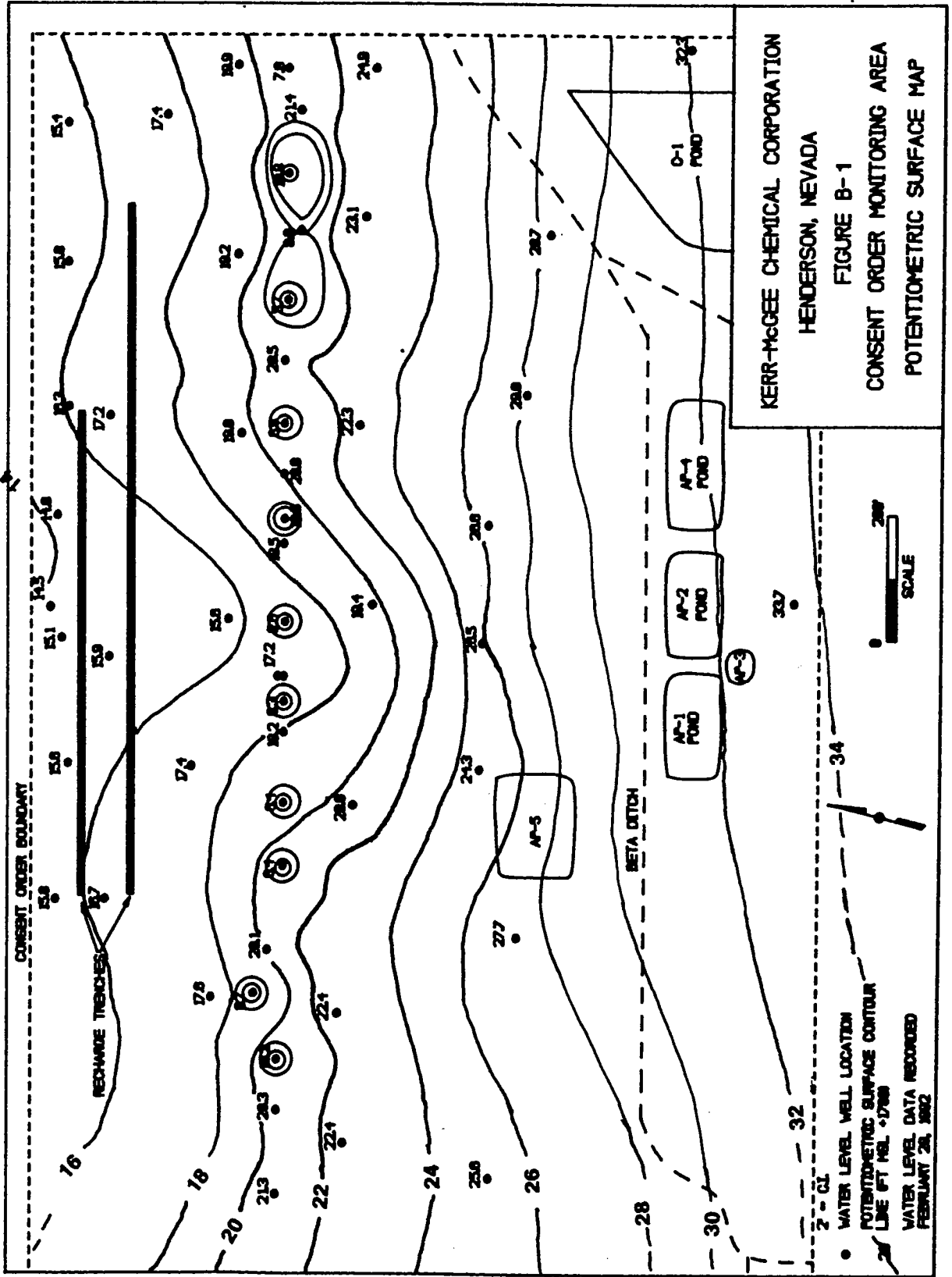
KERR-MCGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA FACILITY  
 GROUNDWATER ELEVATIONS

TOC-->	I-A	I-B	I-C	I-D	I-E	I-F	I-G	I-H	I	I-J	I-K
	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW	DTW
20-Jan-88	28.63	28.66	28.06	28.29	45.76	23.81	25.92	30.07	18.65	22.62	21.46
05-Feb-88	25.42	25.40	26.46	28.72	48.20	23.99	26.06	33.00	16.87	22.90	22.75
01-Mar-88	27.70	27.30	26.90	29.16	45.66	24.55	26.56	33.20	19.30	23.36	24.02
19-Apr-88	28.42	27.89	27.75	29.79	29.96	25.21	27.83	28.54	20.02	23.50	22.17
18-May-88	28.83	28.07	28.03	30.06	32.22	25.74	29.13	30.12	20.30	23.62	22.79
07-Jun-88	29.12	28.30	28.25	30.43	32.76	25.87	37.40	30.85	19.80	23.87	25.20
14-Jul-88	29.99	27.02	28.37	33.12	34.80	26.50	37.50	32.97	21.40	23.87	25.00
06-Aug-88	29.80	28.94	28.46	32.06	33.10	26.80	36.01	31.45	21.46	24.66	27.40
03-Sep-88	31.10	28.90	28.60	35.10	32.70	26.75	40.00	36.80	21.12	23.54	23.75
10-Oct-88	28.78	27.80	28.60	27.35	29.00	26.80	30.30	27.90	20.26	24.00	24.25
26-Nov-88	25.80	28.40	36.20	32.20	36.10	27.80	27.50	26.70	21.60	25.60	26.00
15-Dec-88	30.00	28.65	37.75	41.50	41.50	33.85	40.85	34.90	21.60	26.70	22.35
19-Jan-89	28.10	27.70	42.90	39.55	46.70	28.20	37.00	29.65	25.40	28.00	22.95
23-Feb-89	28.20	28.00	44.10	44.55	46.70	31.00	26.00	31.00	25.40	26.57	25.35
22-Mar-89	31.00	30.60	41.00	42.20	42.90	29.10	29.00	28.90	26.00	26.50	26.35
29-Apr-89	30.70	29.00	28.90	40.00	35.70	29.90	28.00	22.00	24.90	24.00	29.50
08-May-89	36.70	28.60	28.60	37.20	36.10	29.00	27.60	42.00	26.40	22.00	30.50
01-Jun-89	28.25	29.00	29.10	39.40	40.35	29.00	27.90	26.90	27.80	26.50	30.50
03-Jul-89	29.30	29.10	29.10	40.30	42.90	28.10	27.95	28.80	27.50	26.50	34.20
16-Aug-89	30.30	28.60	28.60	44.20	33.55	30.85	29.70	28.20	28.00	28.00	34.00
12-Sep-89	30.70	42.00	43.85	44.20	34.00	30.85	30.45	29.00	30.00	27.36	18.55
25-Oct-89	31.25	42.00	42.00	44.20	36.25	28.75	30.25	28.65	28.80	28.30	31.10
17-Nov-89	32.00	41.00	42.00	41.95	37.00	29.00	32.80	31.85	26.00	24.20	32.60
07-Dec-89	42.00	48.00	50.00	31.60	39.00	28.80	37.00	43.30	28.10	36.10	34.40
12-Jan-90	44.00	38.00	38.20	31.60	45.50	26.45	28.40	42.60	34.00	36.00	33.00
23-Feb-90	44.00	46.00	44.00	36.55	34.85	26.85	35.00	37.45	32.10	41.60	32.20
11-Jul-90	46.00	47.00	37.20	34.20	40.00	29.00	35.10	44.50	32.90	36.20	36.00
11-Aug-90	44.15	49.00	44.05	44.15	45.30	44.80	36.65	44.50	33.10	45.10	37.00
02-Nov-90	43.05	40.00	39.90	44.15	45.85	45.10	30.70	33.45	30.50	48.00	36.80
15-Feb-91	41.10	42.05	44.00	44.15	45.25	44.50	40.50	40.10	31.00	38.30	36.80
26-Jun-91	41.00	42.00	44.00	44.15	38.00	42.80	39.50	40.10	31.00	42.10	33.00
20-Jan-92	40.90	44.00	44.00	44.20	45.35	45.00	31.50	44.50	41.70	37.50	36.80
25-Feb-92	40.90	44.00	44.00	44.15	41.80	45.00	36.50	44.50	37.70	37.20	37.00
28-Mar-92	42.00	44.00	44.80	44.00	39.00	45.00	40.40	44.60	37.90	38.10	36.70
29-Apr-92	42.00	44.00	44.50	44.40	45.35	42.00	36.80	37.00	26.00	36.50	36.00
28-May-92	42.00	44.00	43.50	44.10	44.80	42.00	39.00	36.50	22.90	22.50	35.00
24-Jun-92	41.50	43.00	44.10	46.00	34.90	40.00	40.00	44.30	25.20	31.50	36.50

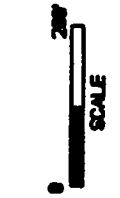
*APPENDIX B*

*POTENTIOMETRIC SURFACE MAPS*

*INTERCEPTOR AREA CROSS-SECTIONS*



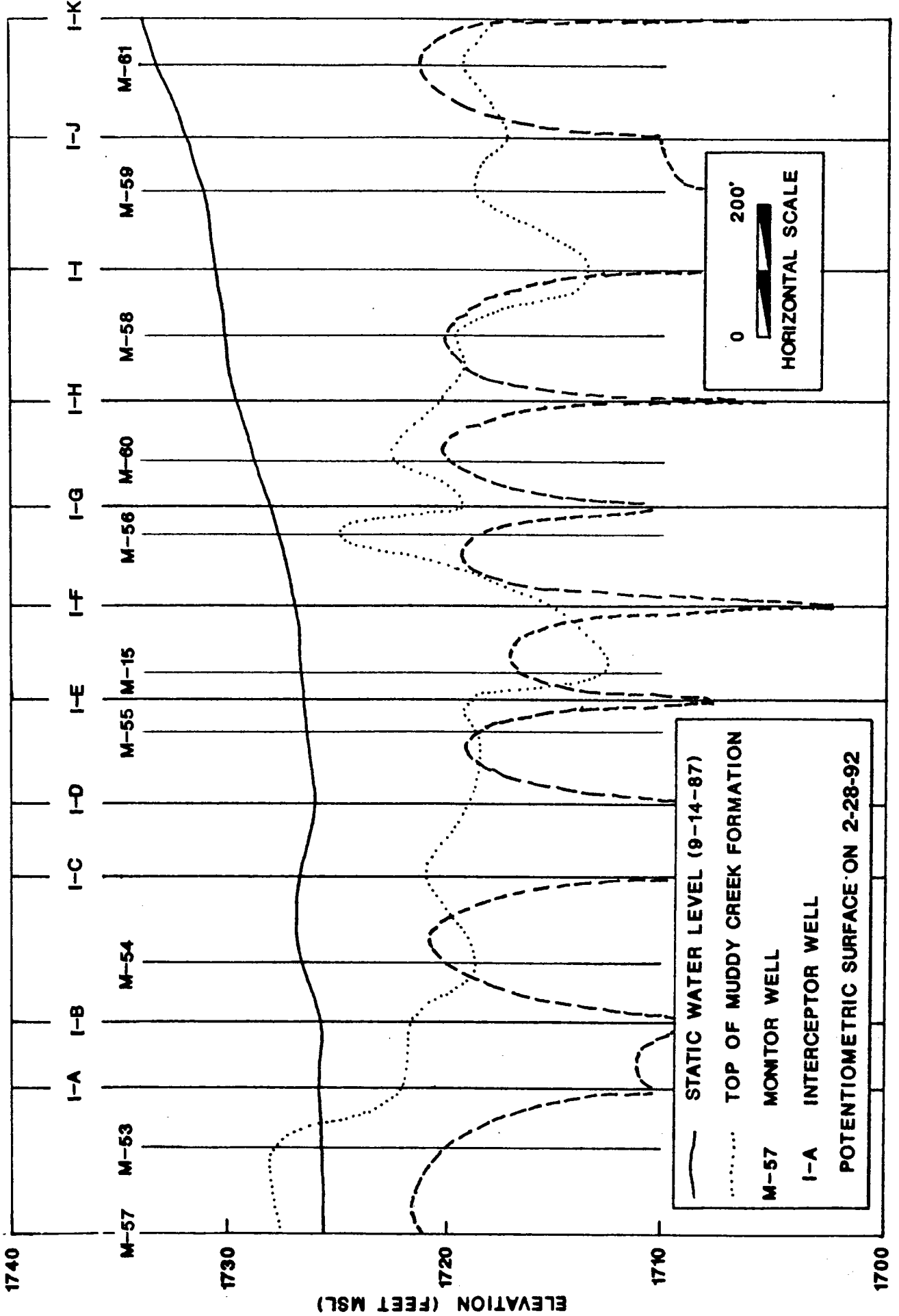
KERR-McGEE CHEMICAL CORPORATION  
 HENDERSON, NEVADA  
 FIGURE B-1  
 CONSENT ORDER MONITORING AREA  
 POTENTIOMETRIC SURFACE MAP



WATER LEVEL WELL LOCATION  
 POTENTIOMETRIC SURFACE CONTOUR  
 LINE (FT. MSL. +1700)  
 WATER LEVEL DATA RECORDED  
 FEBRUARY 28, 1992

KERR-McGEE CHEMICAL CORPORATION - HENDERSON, NEVADA  
 GROUNDWATER INTERCEPTOR LINE CROSS-SECTION

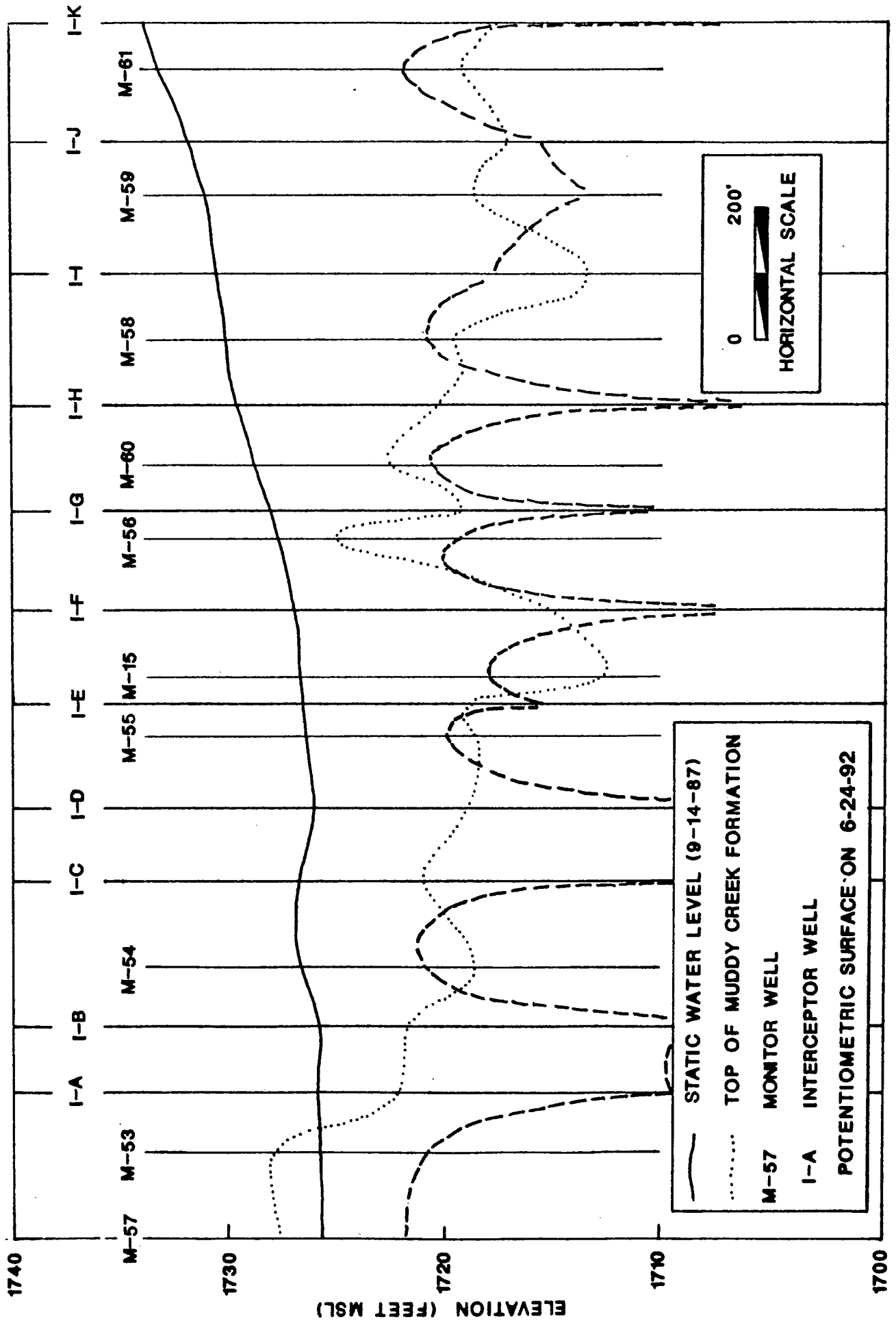
FIGURE B-2





KERR-McGEE CHEMICAL CORPORATION - HENDERSON, NEVADA  
 GROUNDWATER INTERCEPTOR LINE CROSS-SECTION

FIGURE B-4



***APPENDIX C***

***CONTINUOUS WATER LEVEL RECORDER CHARTS***

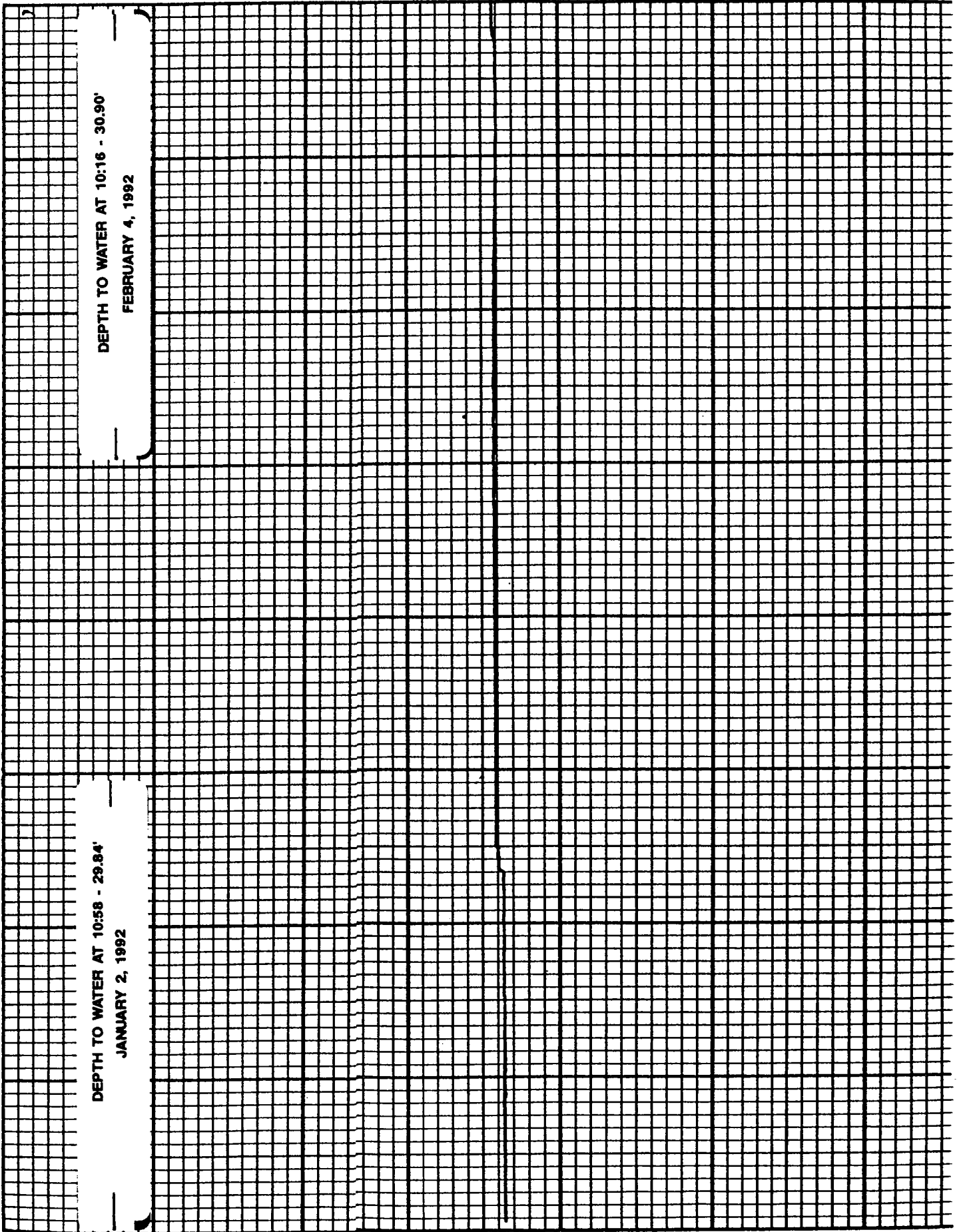
# CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-80

1-2-92 TO 2-4-92

DEPTH TO WATER AT 10:58 - 29.84'  
JANUARY 2, 1992

DEPTH TO WATER AT 10:16 - 30.90'  
FEBRUARY 4, 1992



DEPTH TO WATER AT 10:16 - 30.30

FEBRUARY 4, 1992

DEPTH TO WATER AT 08:50 - 30.00

MARCH 3, 1992

**CONTINUOUS WATER LEVEL RECORDER CHART**

**WELL M-80**

**2-4-92 TO 3-3-92**



Stevens Water Level Recorder - Type F

DEPTH TO WATER AT 10:45 - 29.85

APRIL 1, 1992

DEPTH TO WATER AT 8:50 - 30.00

MARCH 3, 1992

**CONTINUOUS WATER LEVEL RECORDER CHART**

**WELL M-80**

**3-3-92 TO 4-1-92**



Stevens Water Level Recorder — Type F

CONTINUOUS WATER LEVEL RECORDER CHART  
WELL M-80

4-1-92 TO 5-1-92

DEPTH TO WATER AT 10:45 - 29.85

APRIL 1, 1992

DEPTH TO WATER AT 13:00 - 29.40

MAY 1, 1992



CONTINUOUS WATER LEVEL RECORDER CHART

WELL M-80

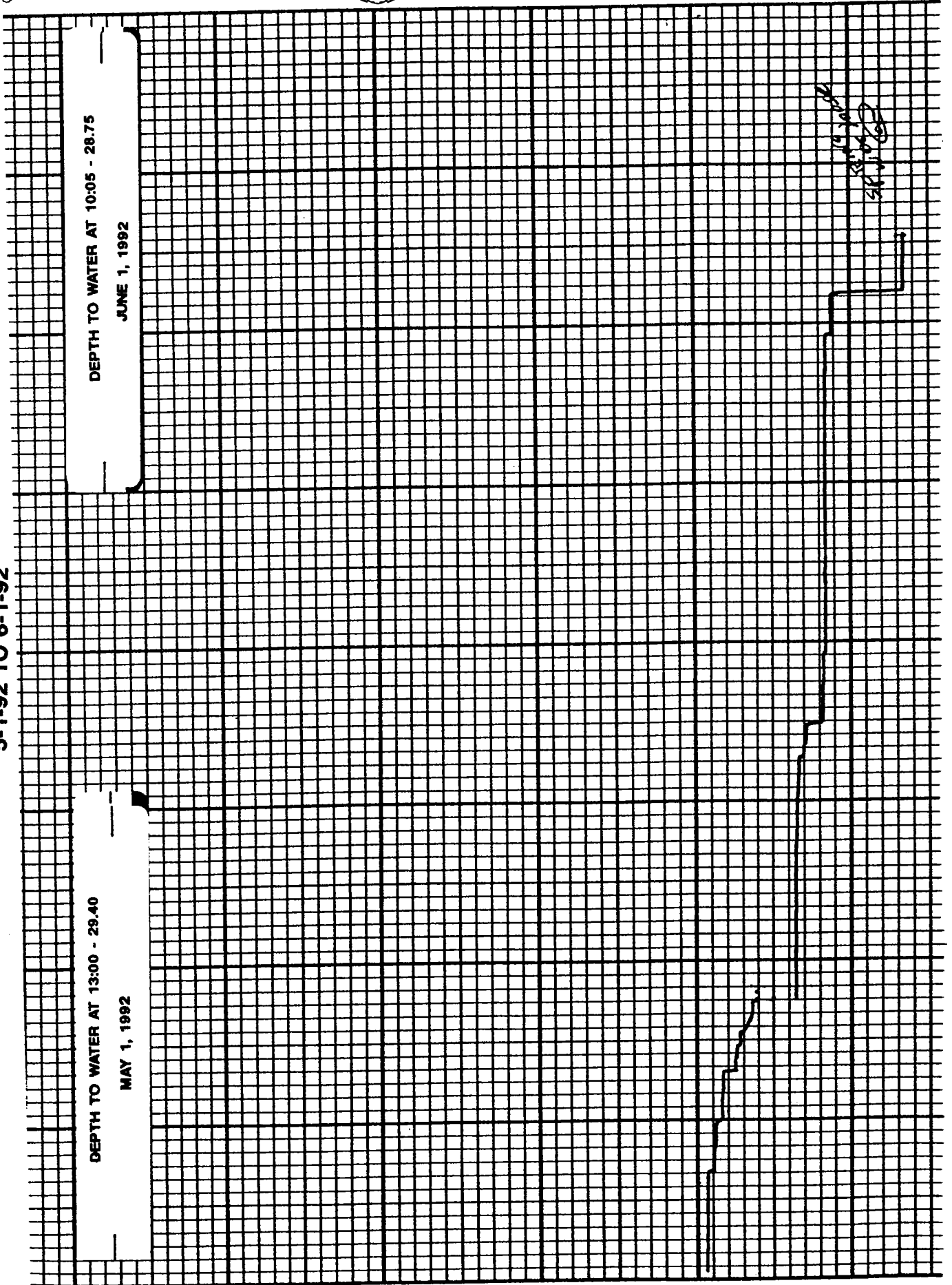
5-1-92 TO 6-1-92

DEPTH TO WATER AT 13:00 - 29.40

MAY 1, 1992

DEPTH TO WATER AT 10:05 - 28.75

JUNE 1, 1992



E. J. M. S.  
28.75



DEPTH TO WATER AT 10:05 - 28.75'  
JUNE 1, 1992

DEPTH TO WATER AT 09:10 - 28.80  
JULY 1, 1992

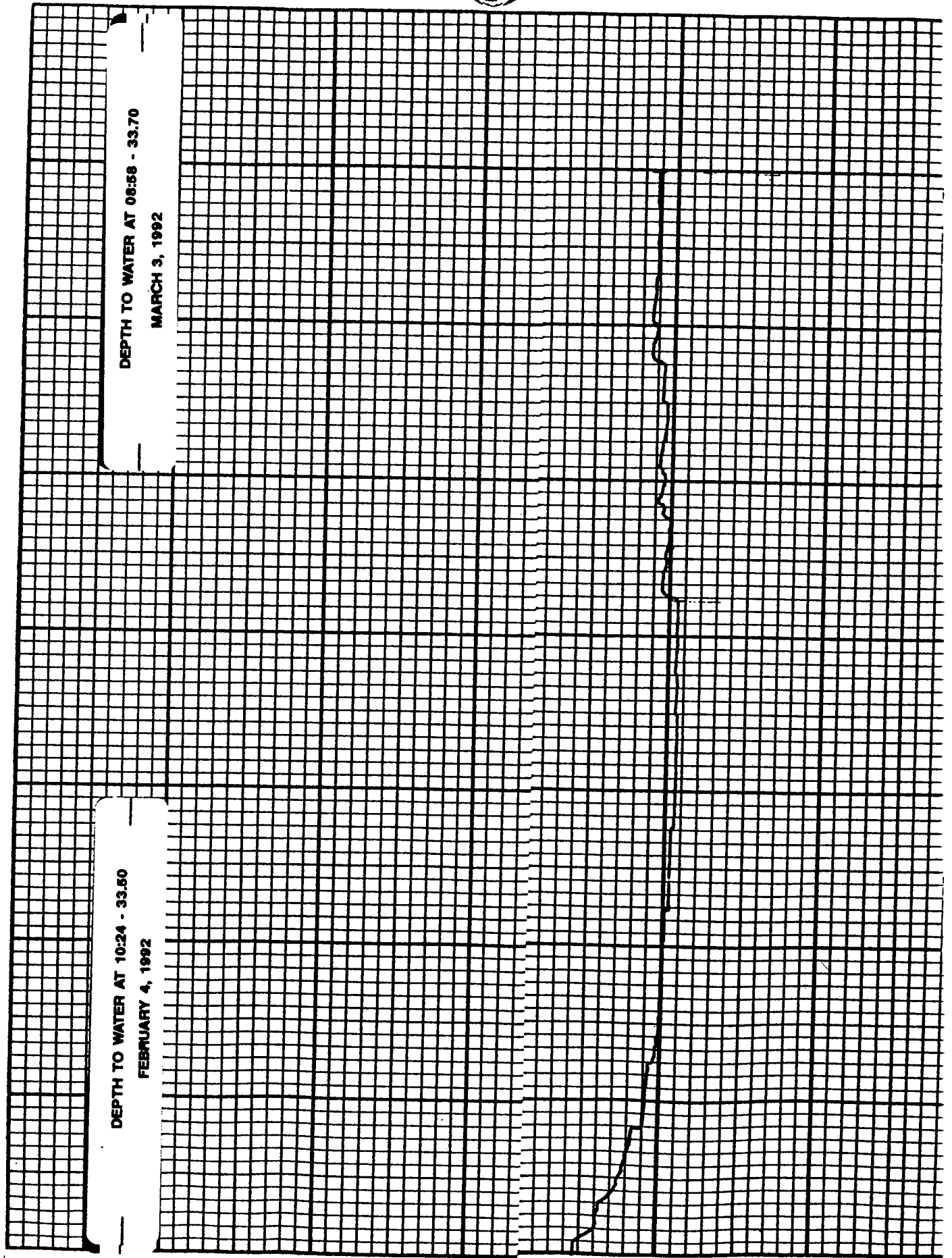
**CONTINUOUS WATER LEVEL RECORDER CHART**  
**WELL M-80**  
**JUNE 1, 1992 TO JULY 1, 1992**

**CONTINUOUS WELL  
MONITOR FLOAT  
DISENGAGED  
(REPLACED 7-1-92)**



WELL M-78

2-4-92 TO 3-3-92

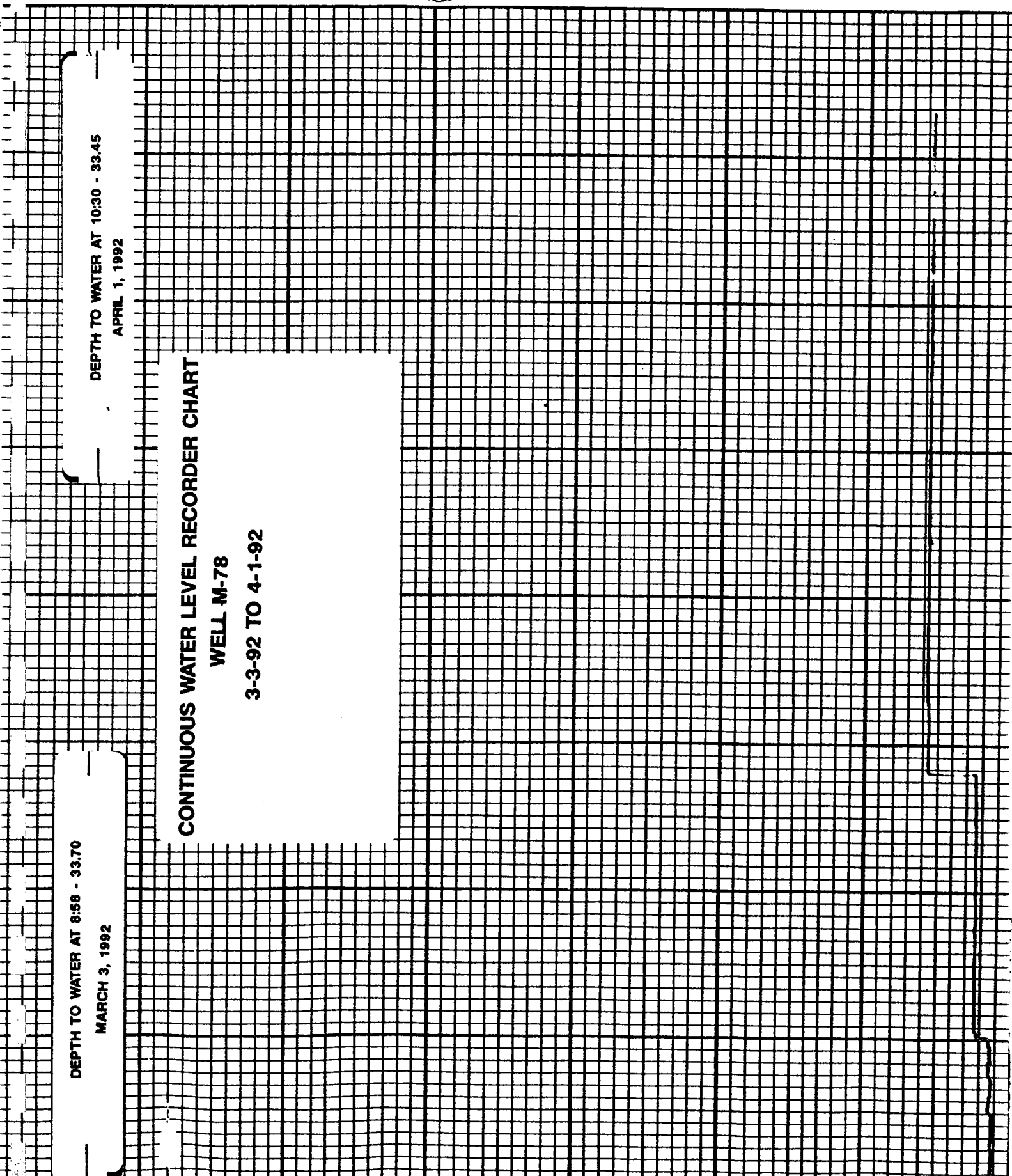




DEPTH TO WATER AT 8:58 - 33.70  
MARCH 3, 1992

DEPTH TO WATER AT 10:30 - 33.45  
APRIL 1, 1992

**CONTINUOUS WATER LEVEL RECORDER CHART**  
**WELL M-78**  
**3-3-92 TO 4-1-92**





DEPTH TO WATER AT 13:00 - 32.85

MAY 1, 1992

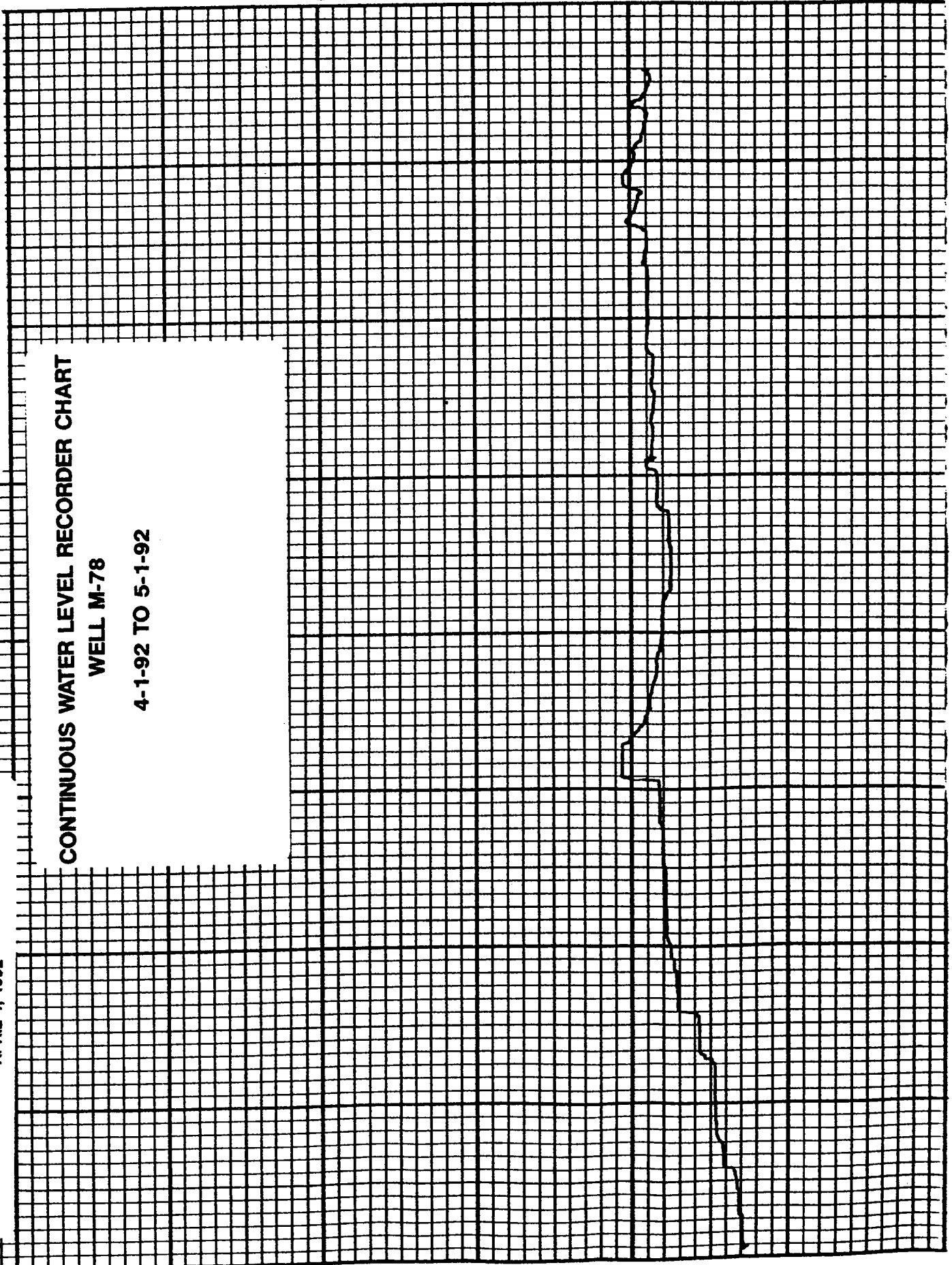
DEPTH TO WATER AT 10:30 - 33.45

APRIL 1, 1992

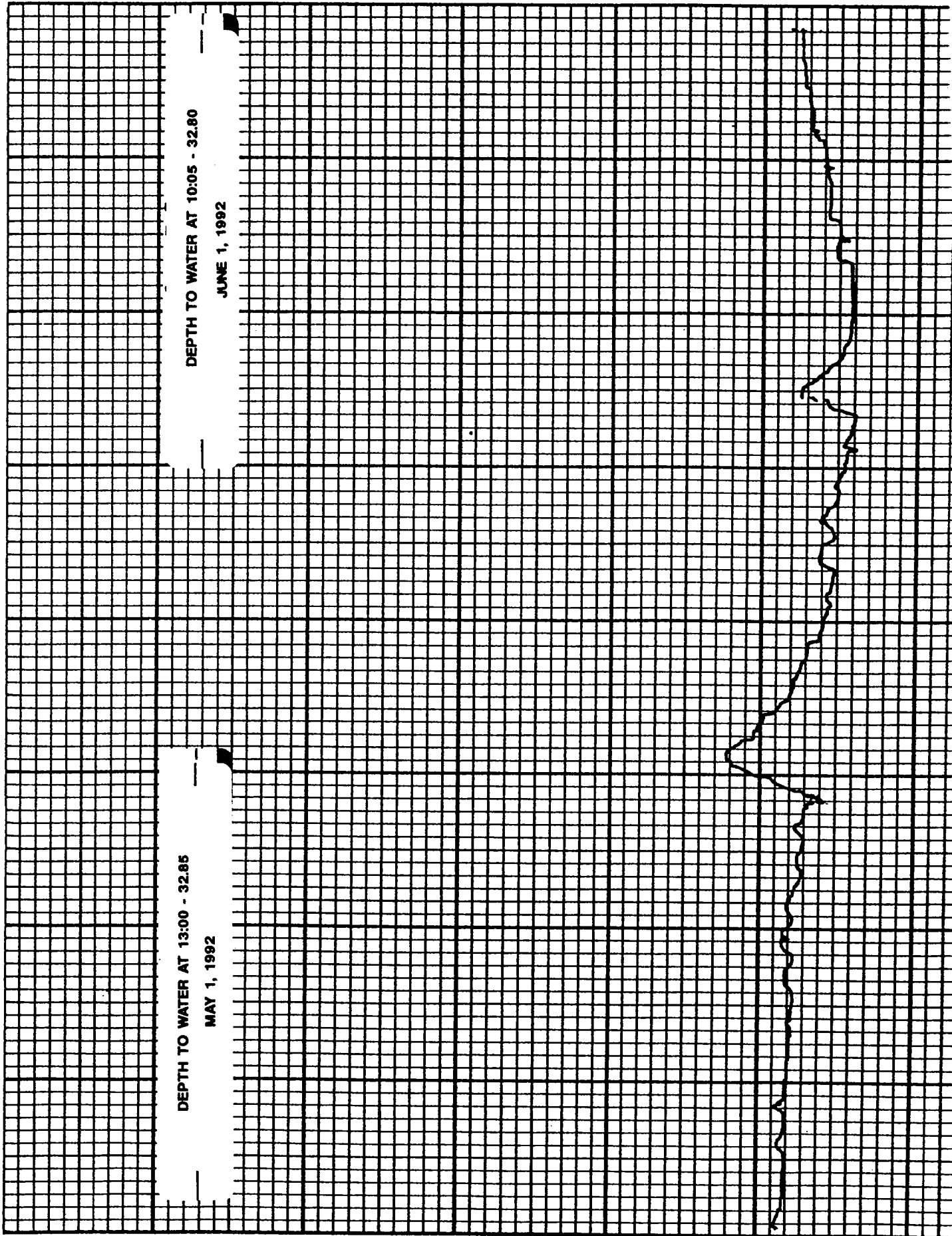
**CONTINUOUS WATER LEVEL RECORDER CHART**

**WELL M-78**

**4-1-92 TO 5-1-92**



CONTINUOUS WATER LEVEL RECORDER CHART  
WELL M-78  
5-1-92 TO 6-1-92





DEPTH TO WATER AT 08:10 - 32.70  
JULY 1, 1992

DEPTH TO WATER AT 10:05 - 32.85  
JUNE 1, 1992

**CONTINUOUS WATER LEVEL RECORDER CHART**  
**WELL M-78**  
**6-1-92 TO 7-1-92**



CONTINUOUS WATER LEVEL RECORD CHART

WELL M-79

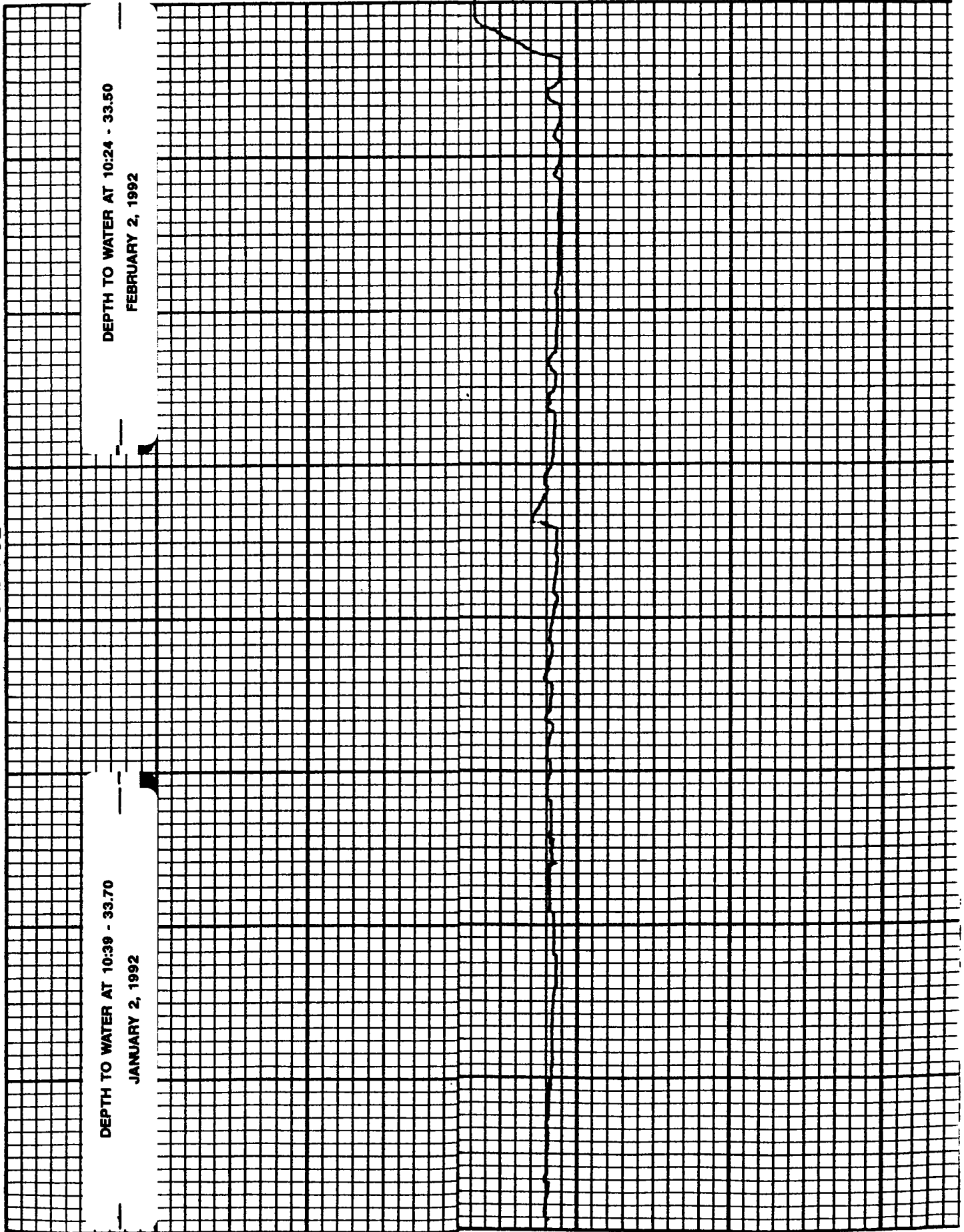
1-2-92 TO 2-4-92

DEPTH TO WATER AT 10:39 - 33.70

JANUARY 2, 1992

DEPTH TO WATER AT 10:24 - 33.50

FEBRUARY 2, 1992



*APPENDIX D*

*CHROMIUM CONCENTRATIONS IN*

*MONITOR WELLS AND INTERCEPTOR WELLS*

FIGURE D-1  
APPENDIX J WELL CHROMIUM CONCENTRATION

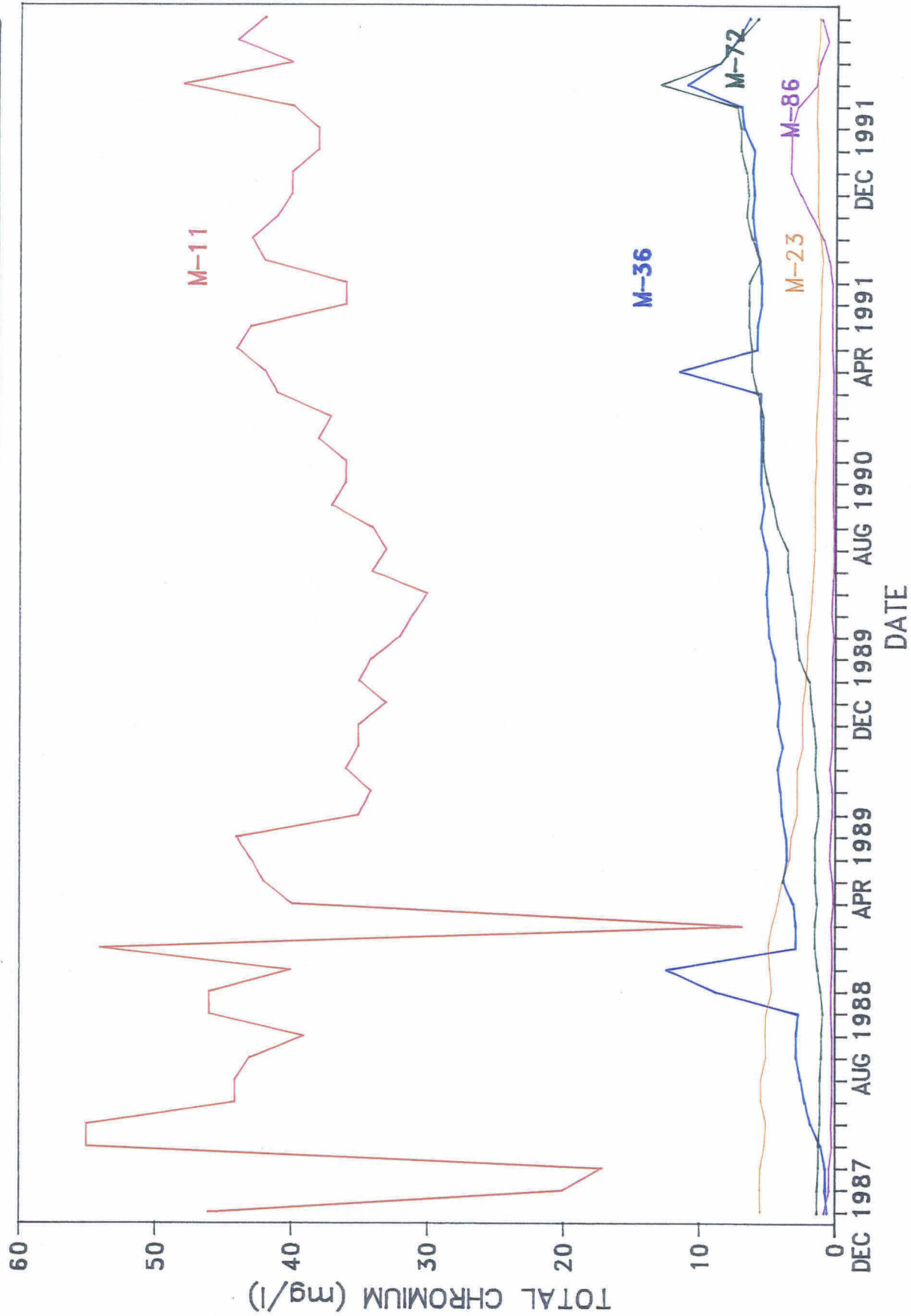


FIGURE D-2  
INTERCEPTOR LINE CHROMIUM CONCENTRATION

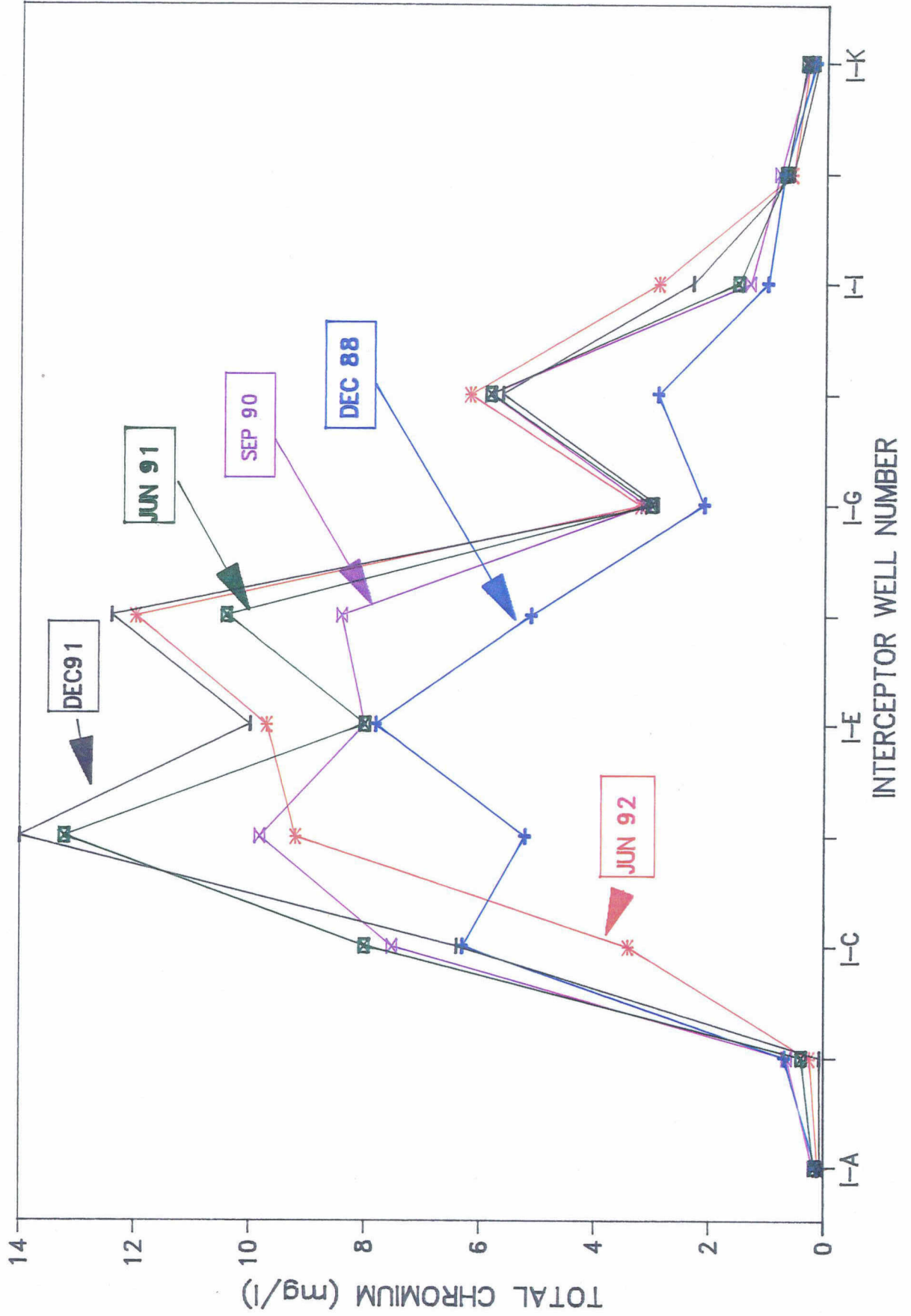


FIGURE D-3  
MONITOR WELL CHROMIUM CONCENTRATION

