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October 6, 1982
4410-82-L-0016

TMI Program Office
Attn: Mr. L. H. Barrett, Deputy Program Director
US Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, PA 17057-0191

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Radioactive Water Management Program

This is the periodic report presenting results of the program to detect radioactive water leakage to the groundwater of TMI-2.

Groundwater Monitoring

The following groundwater monitoring data is attached:

1. Individual computer graphs (Figure 1) of tritium concentrations for each monitoring station and the East Dike Catch Basin (EDCB) up to and including August 30, 1982.
2. Individual computer graphs (Figure 2) indicating water levels within the monitoring stations up to and including August 3, 1982.
3. Computer Tables (Table 1 and 2) of gamma scan data up to and including September 7, 1982.
4. A graph (Figure 3) indicating gamma scan data from Monitoring Station MS-2 sample analysis.
5. A composite drawing showing all monitoring locations with a graph of the tritium concentrations reported in each station.
6. Table (Table 3) of the first and second quarter strontium results (Sr-89 and Sr-90).

Tritium concentrations in the monitoring station during July and August remained within the range of previously reported values.

GPU Nuclear Corporation is a subsidiary of the General Public Utilities Corporation

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U.S. NUCLEAR
REGULATORY COMMISSION

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Gamma results (excluding MS-2) for July and August show only the naturally occurring isotopes Ra-226 and K-40 present in the samples. MS-2 results show positive Cs-137 concentrations of 11 ± 4.2 pCi/l on June 22, 1982, 14 ± 4.7 pCi/l on August 3, 1982, and 8.6 ± 4.7 pCi/l on August 10, 1982. Again, the presence of the cesium is attributed to the sediment content of the sample.

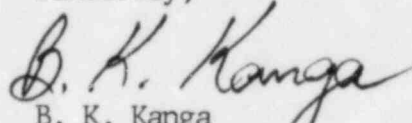
First and second quarter composite strontium results are included in this report. See Table 3.

A positive Sr-90 indication just above minimum detectable levels was reported for OS-16 during the first quarter of 1982. A reanalysis of the OS-16 sample is being performed and the results will be provided in a future report. No Sr-89 or Sr-90 was detected in any other first quarter monitoring station samples.

During the second quarter of 1982, four samples (MS-4, MS-5, MS-8, and OS-13B) indicated positive strontium concentrations. Again, all readings were just above minimum detectable levels. No Sr-89 or Sr-90 was detected in any other second quarter monitoring station sample (Note MS-2 sample has not been received to date.) Also, a reanalysis of the MS-8 sample is being performed and the results will be provided in a future report.

The detected levels of strontium in the above listed samples are just above detectable levels and possibly could be the result of small variations in background levels and/or sample processing uncertainties. We will continue to monitor groundwater samples for strontium.

Sincerely,


B. K. Kanga
Director, TMI-2

BKK/SWS/jep

Attachments

CC: Dr. B. J. Snyder, Program Director - TMI Program Office

LIST OF ATTACHMENTS

Figures

- Figure 1 Graphs of Tritium Concentrations of Monitoring Stations and East Dike Catch Basin Samples Versus Time
- Figure 2 Graphs of Water Levels in Monitoring Stations Versus Time

Tables

- Table 1 Cesium 137 Concentrations in Monitoring Stations MS-1 to MS-8
- Table 2 Cesium 134 Concentrations in Monitoring Stations MS-1 to MS-8
- Table 3 Composite Sr-89 and Sr-90 for the First and Second Quarters

Drawing

Groundwater Tritium Concentrations at Site Liquid Monitoring Stations

Figure 1
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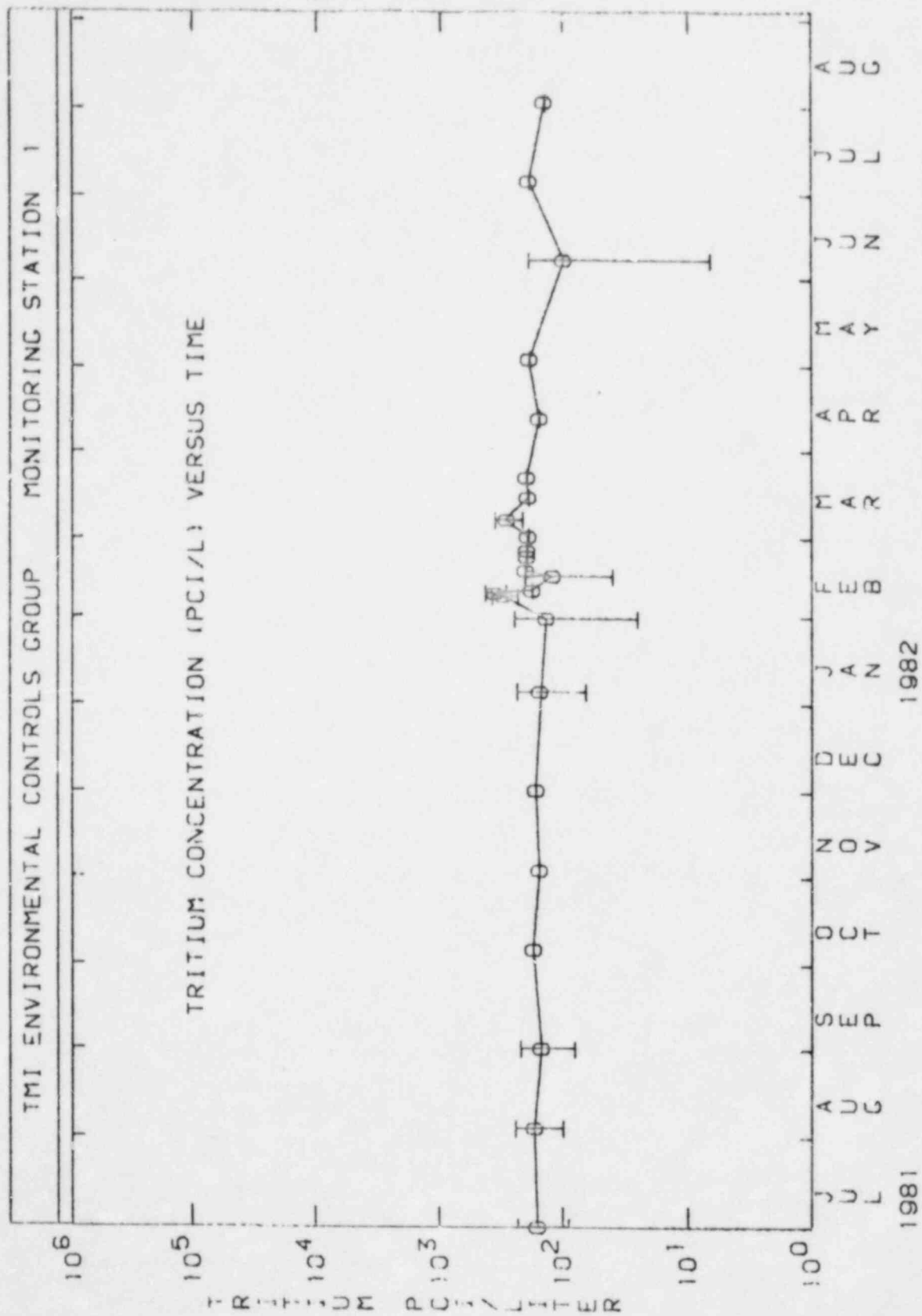


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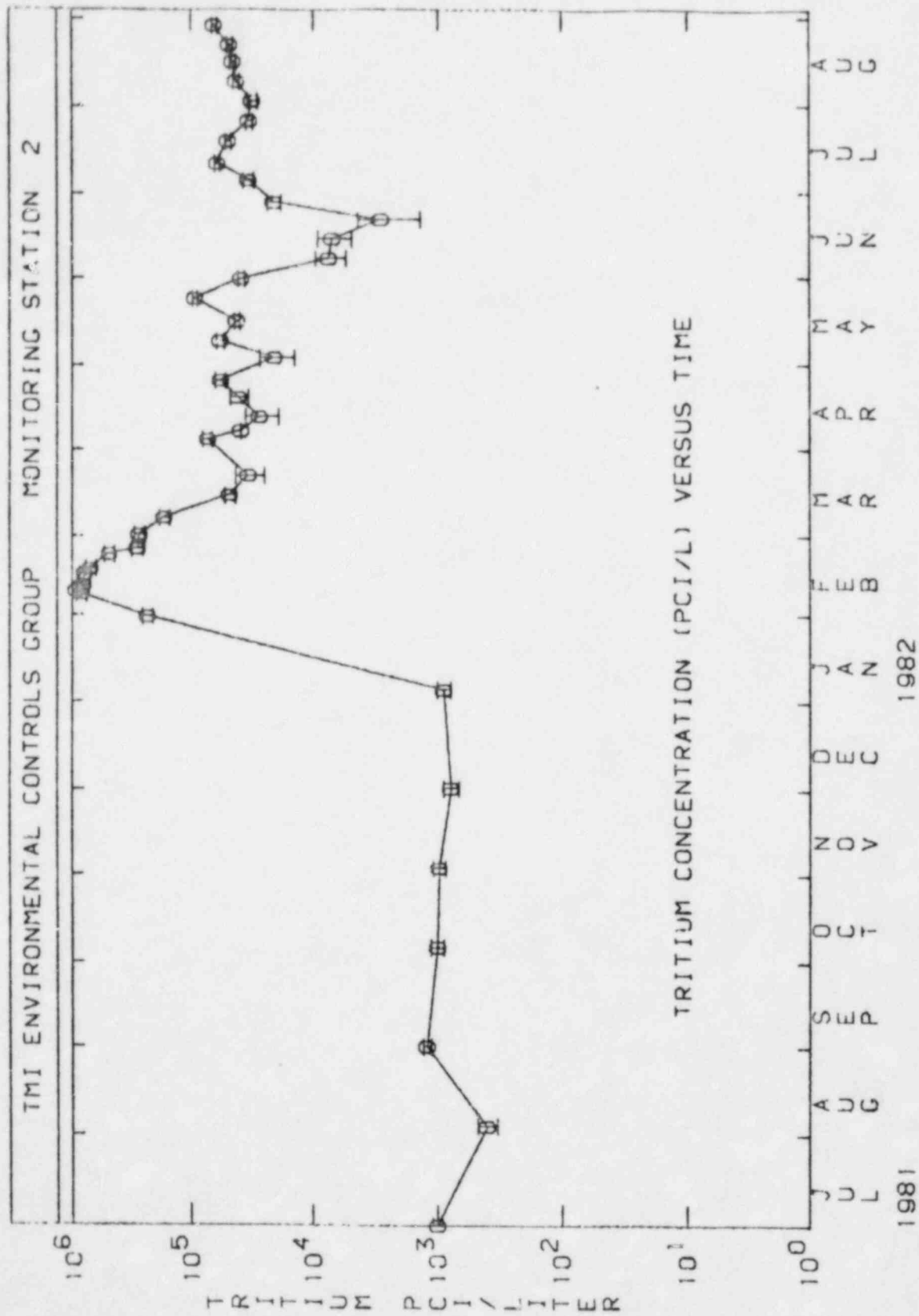


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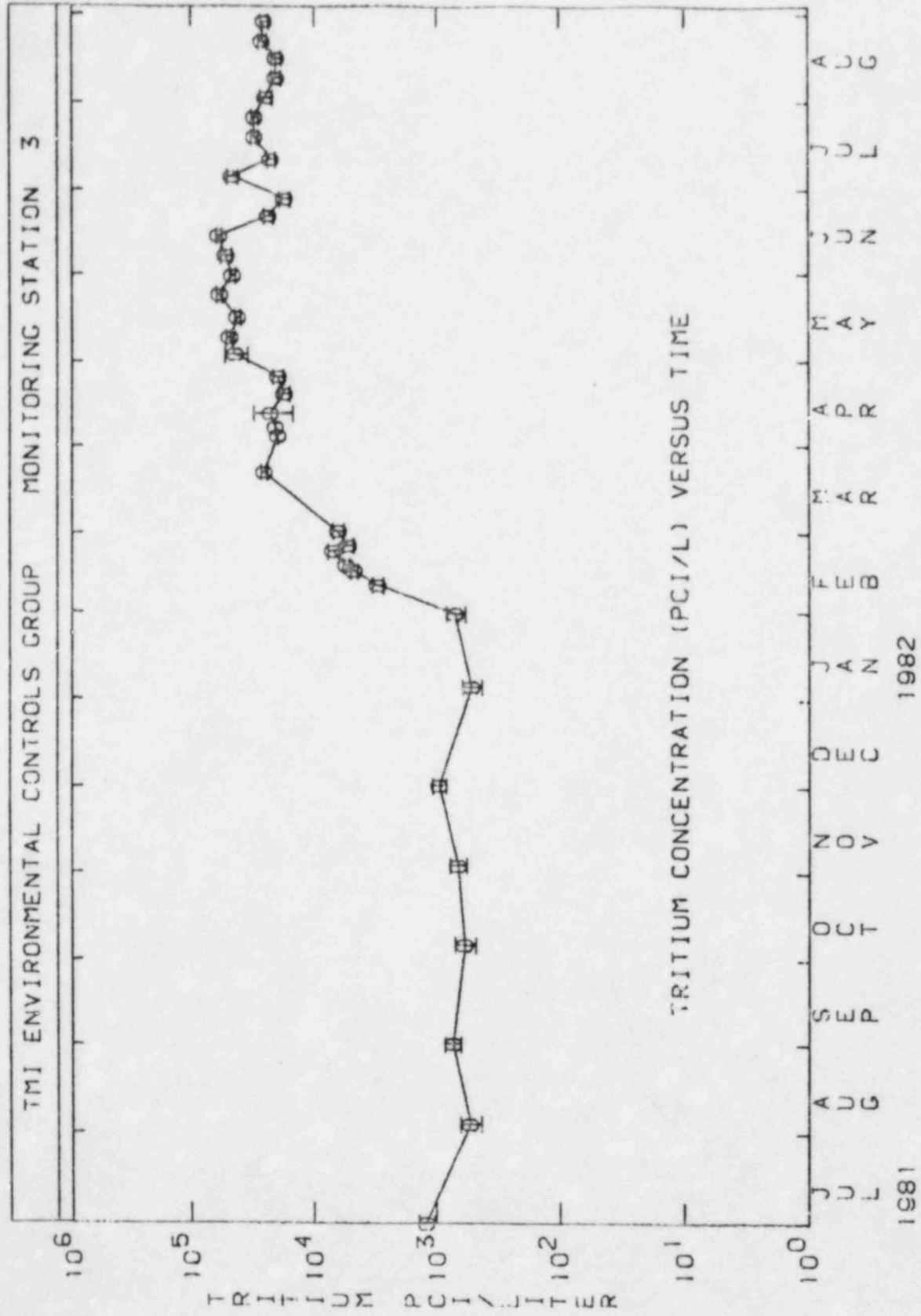


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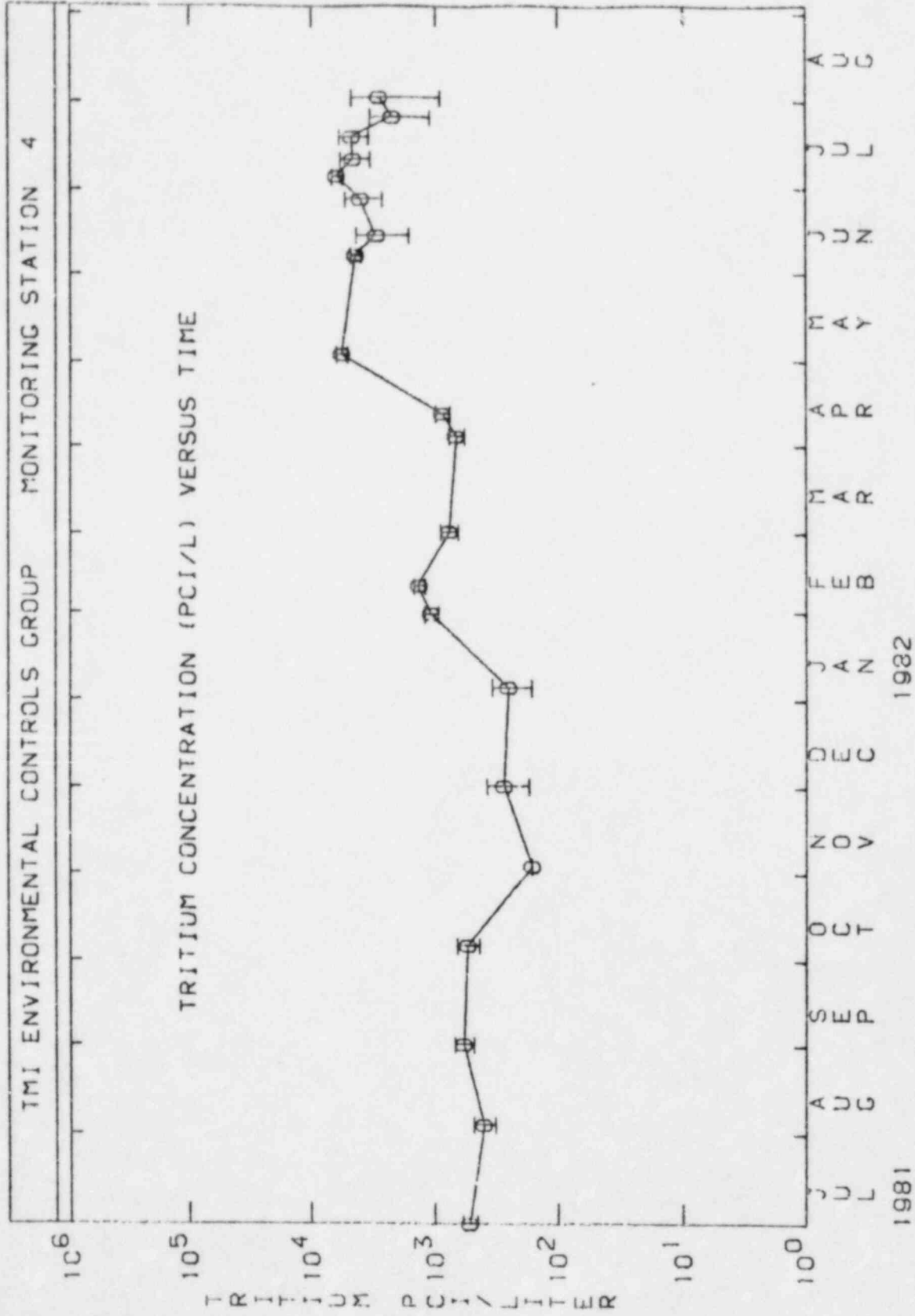


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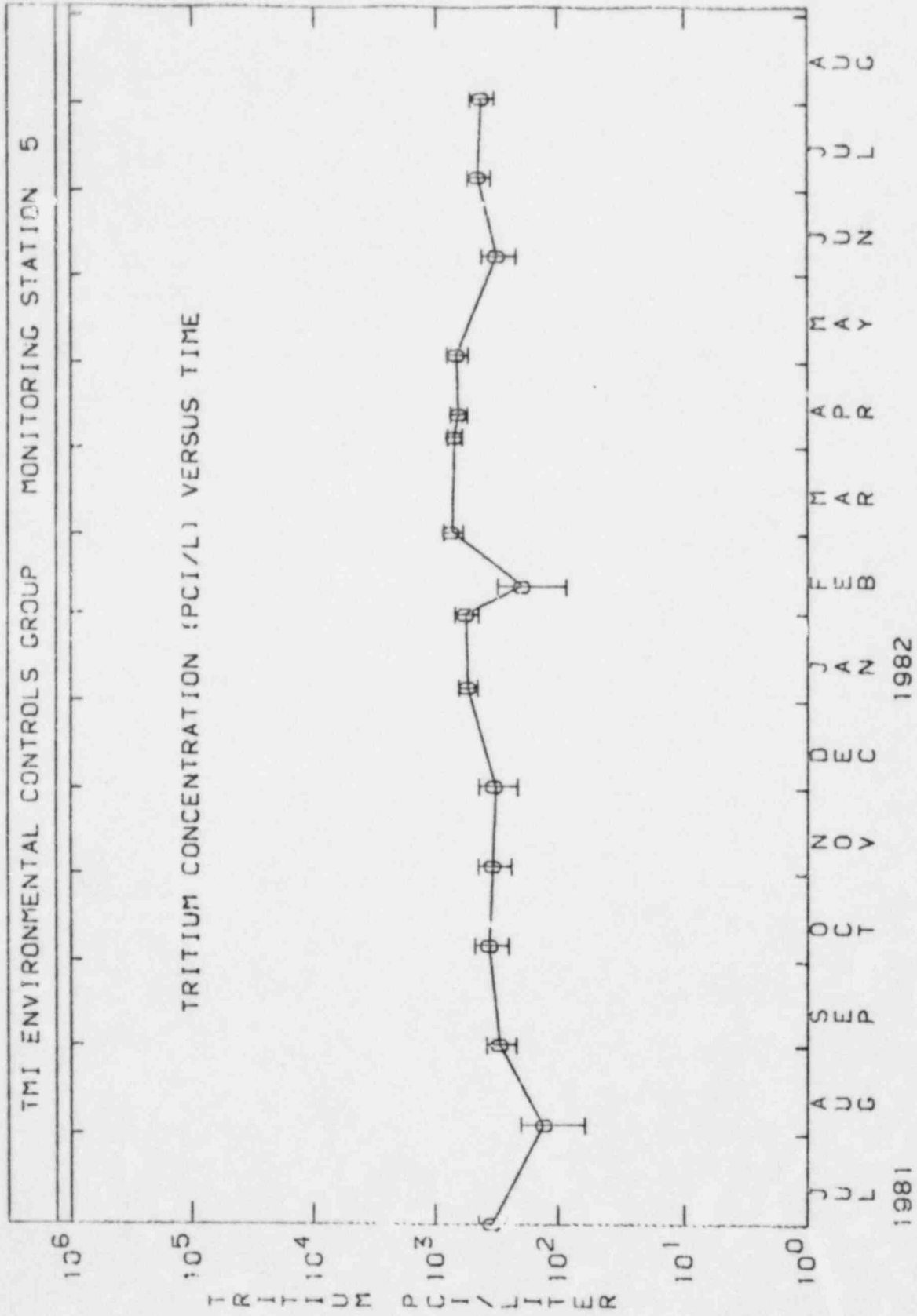


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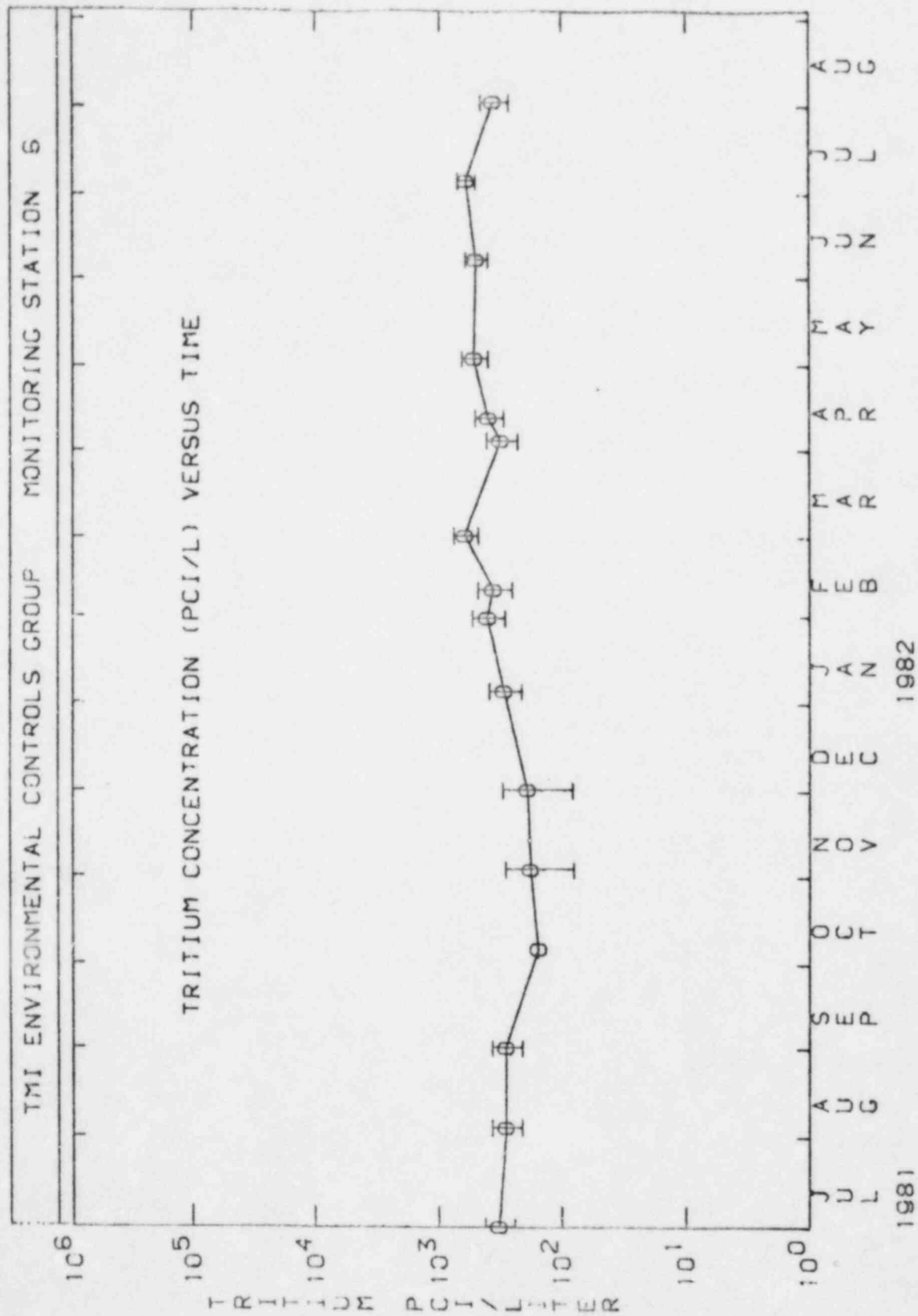


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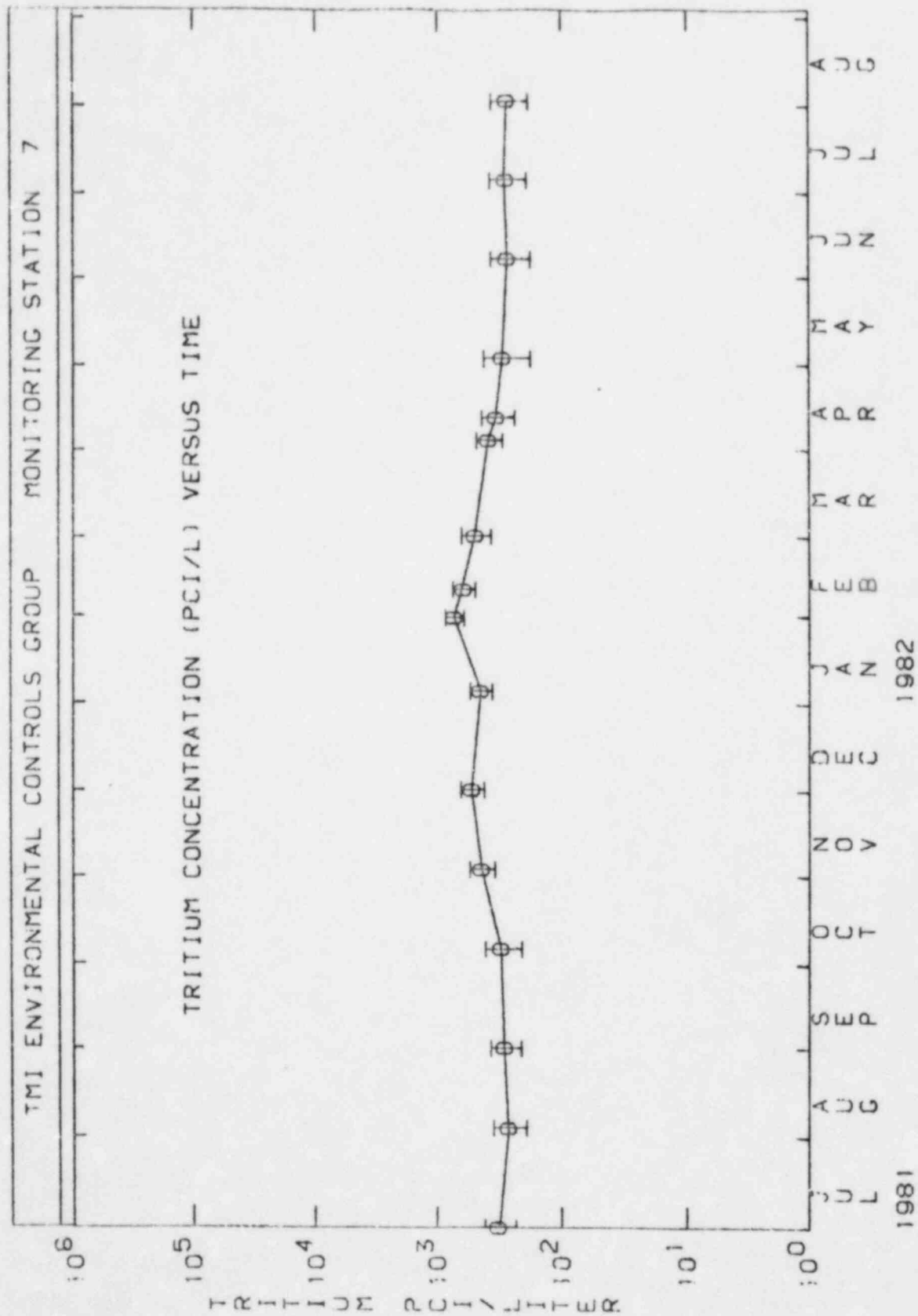
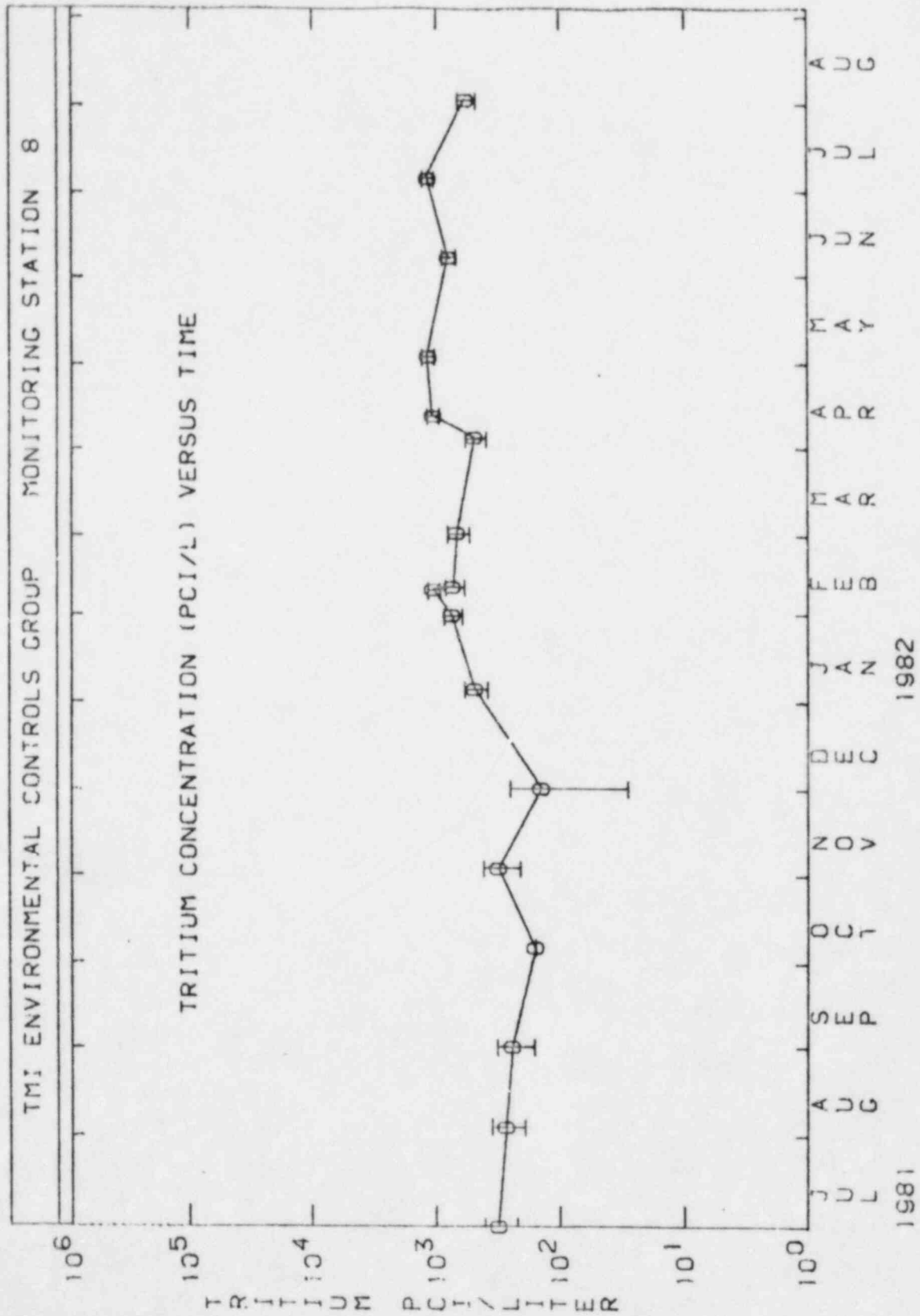


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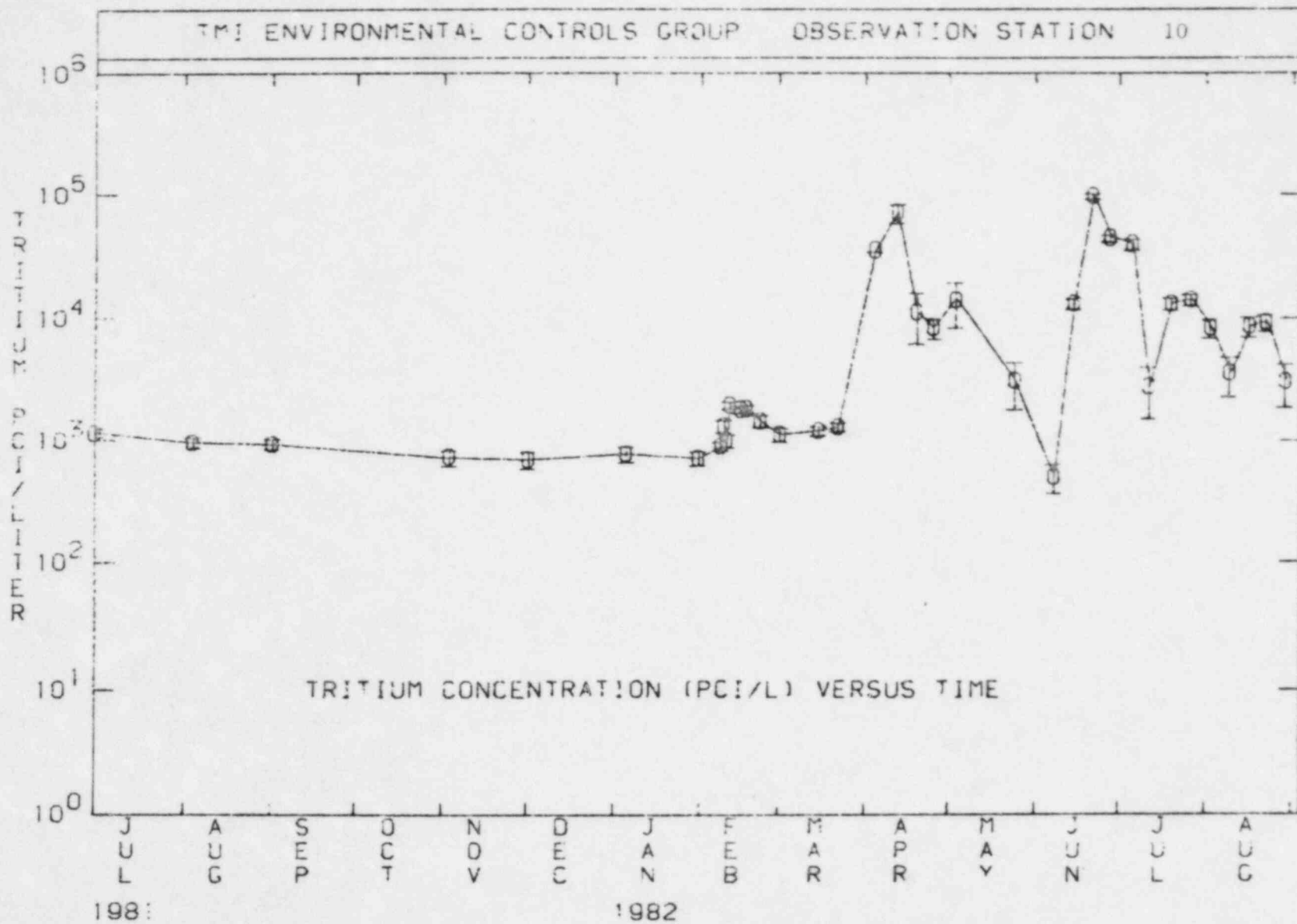
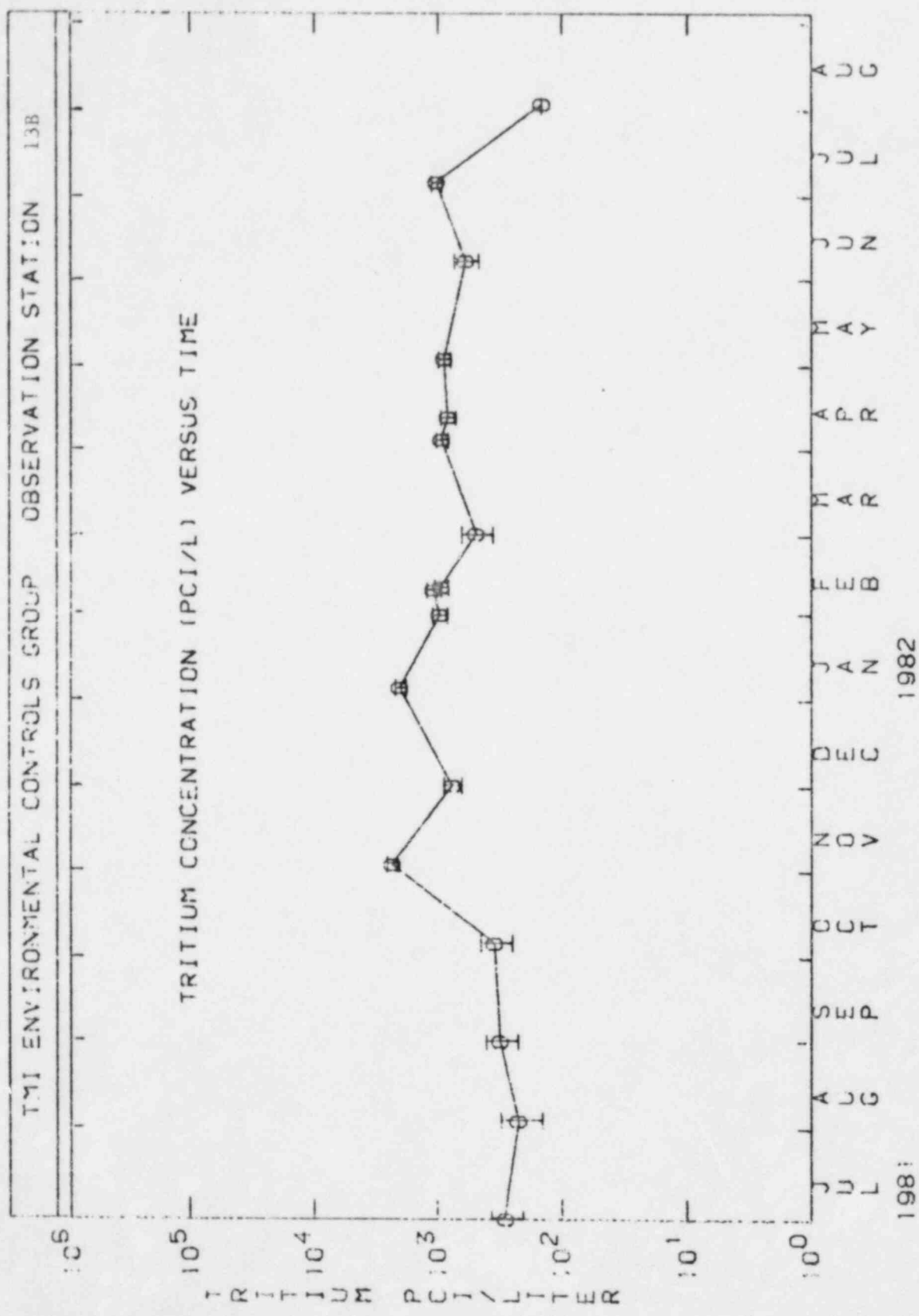
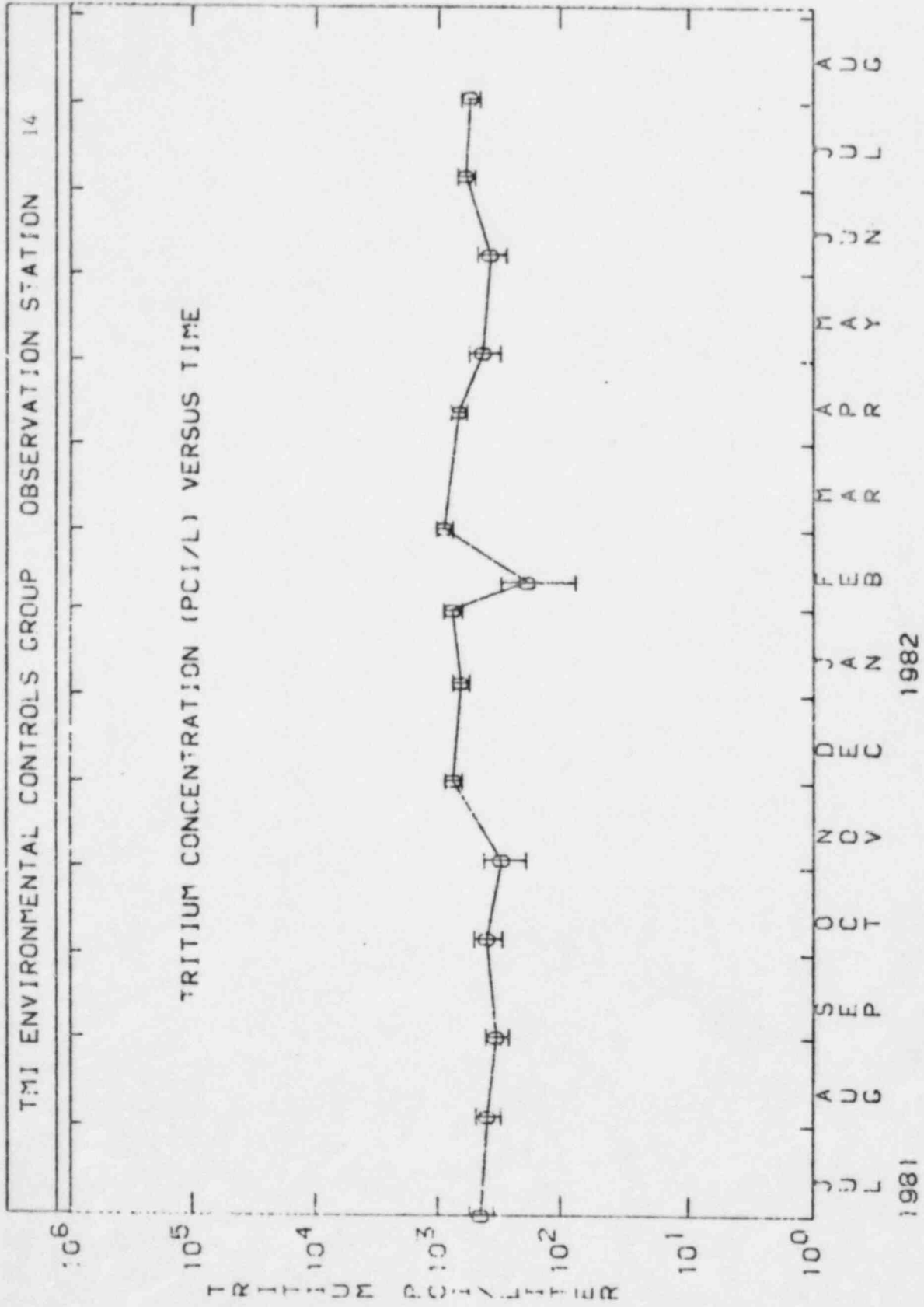


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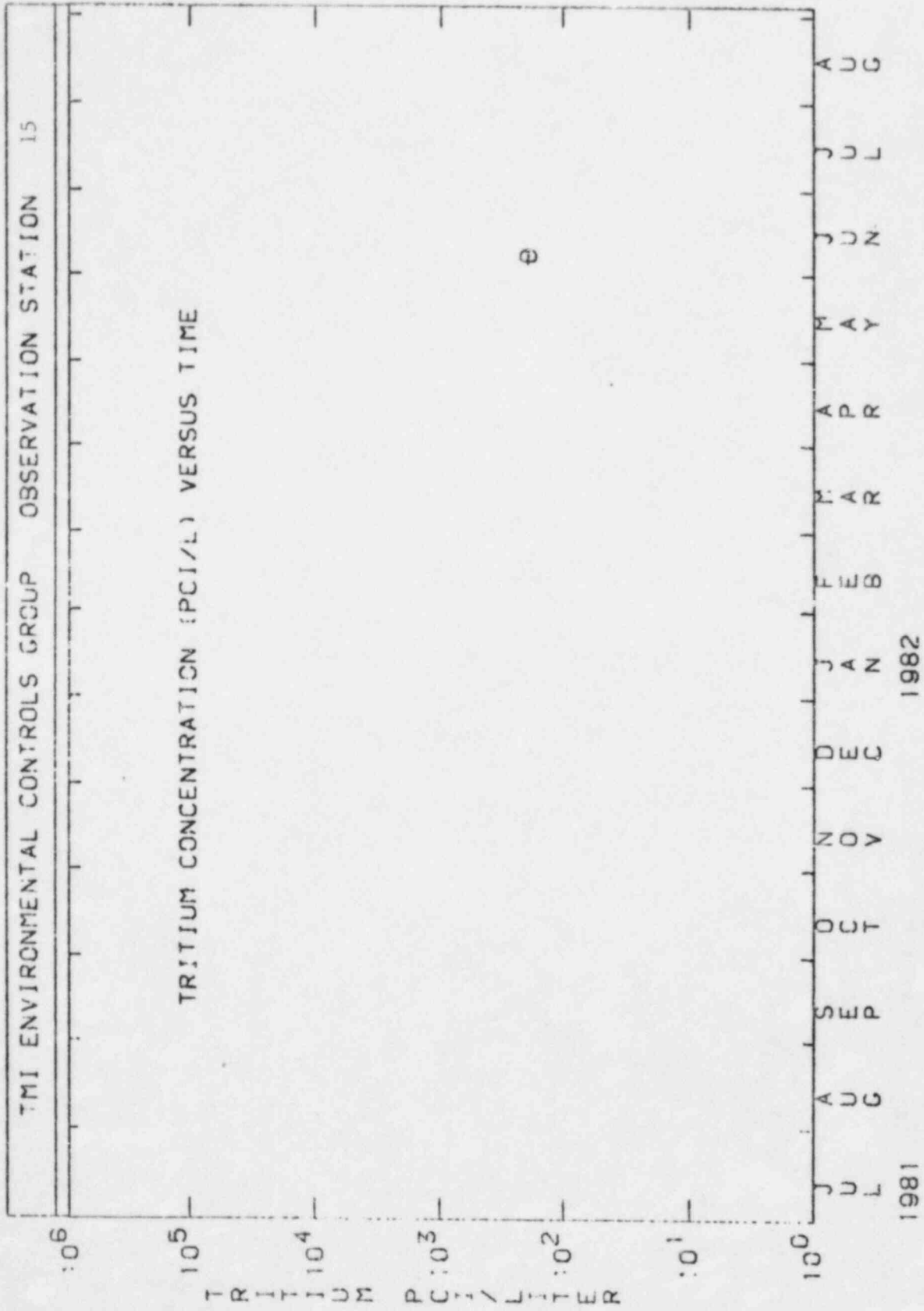


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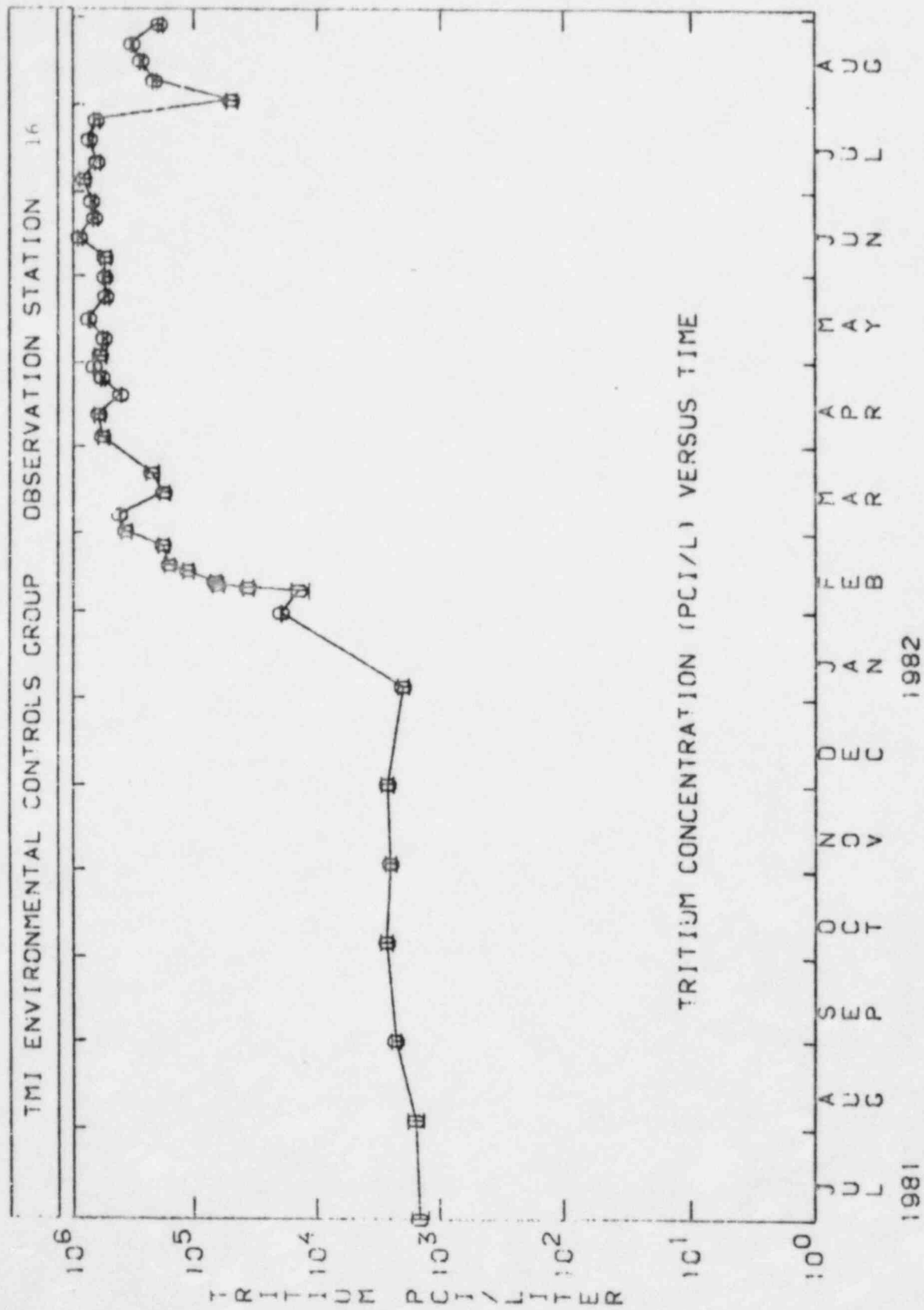


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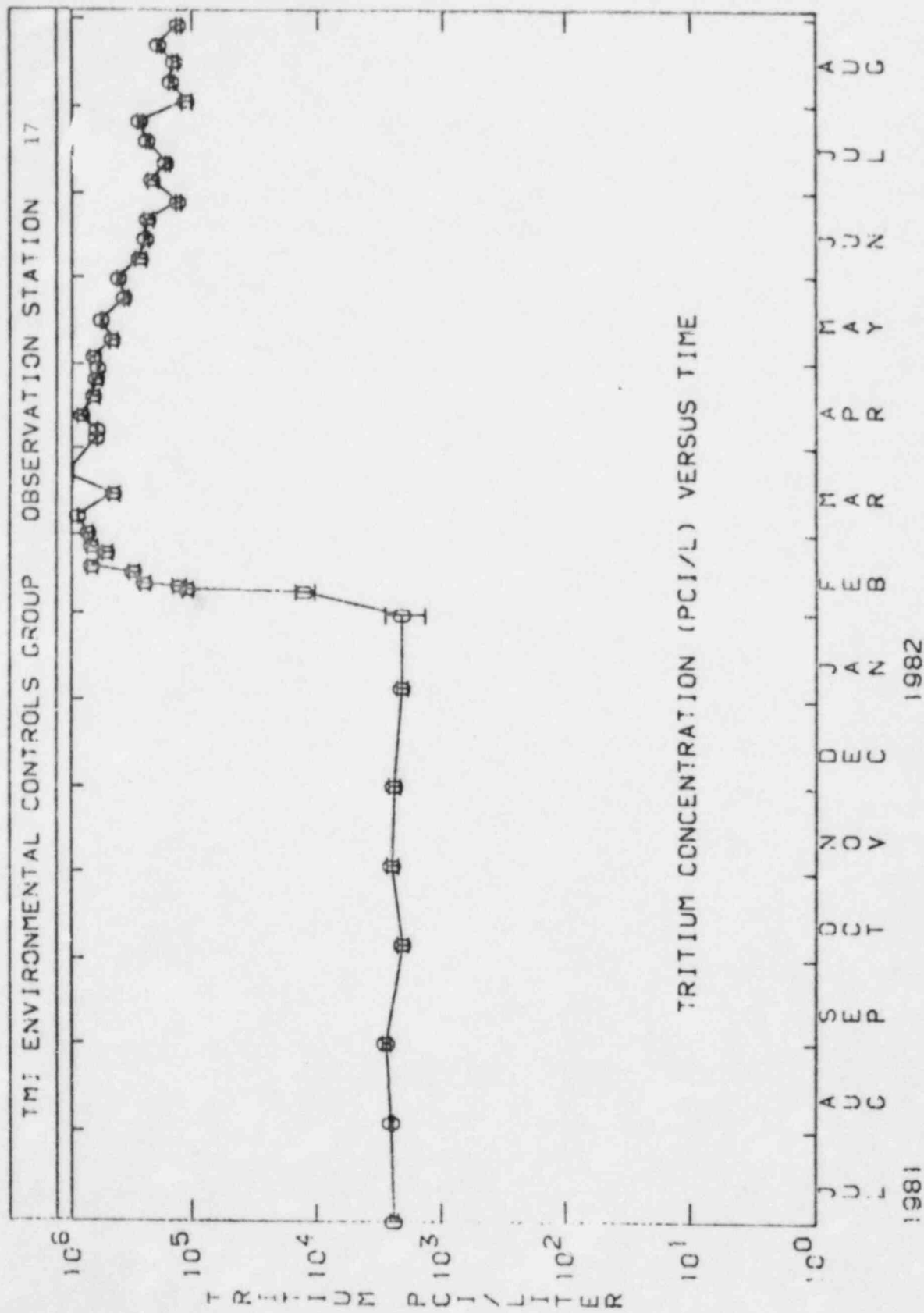


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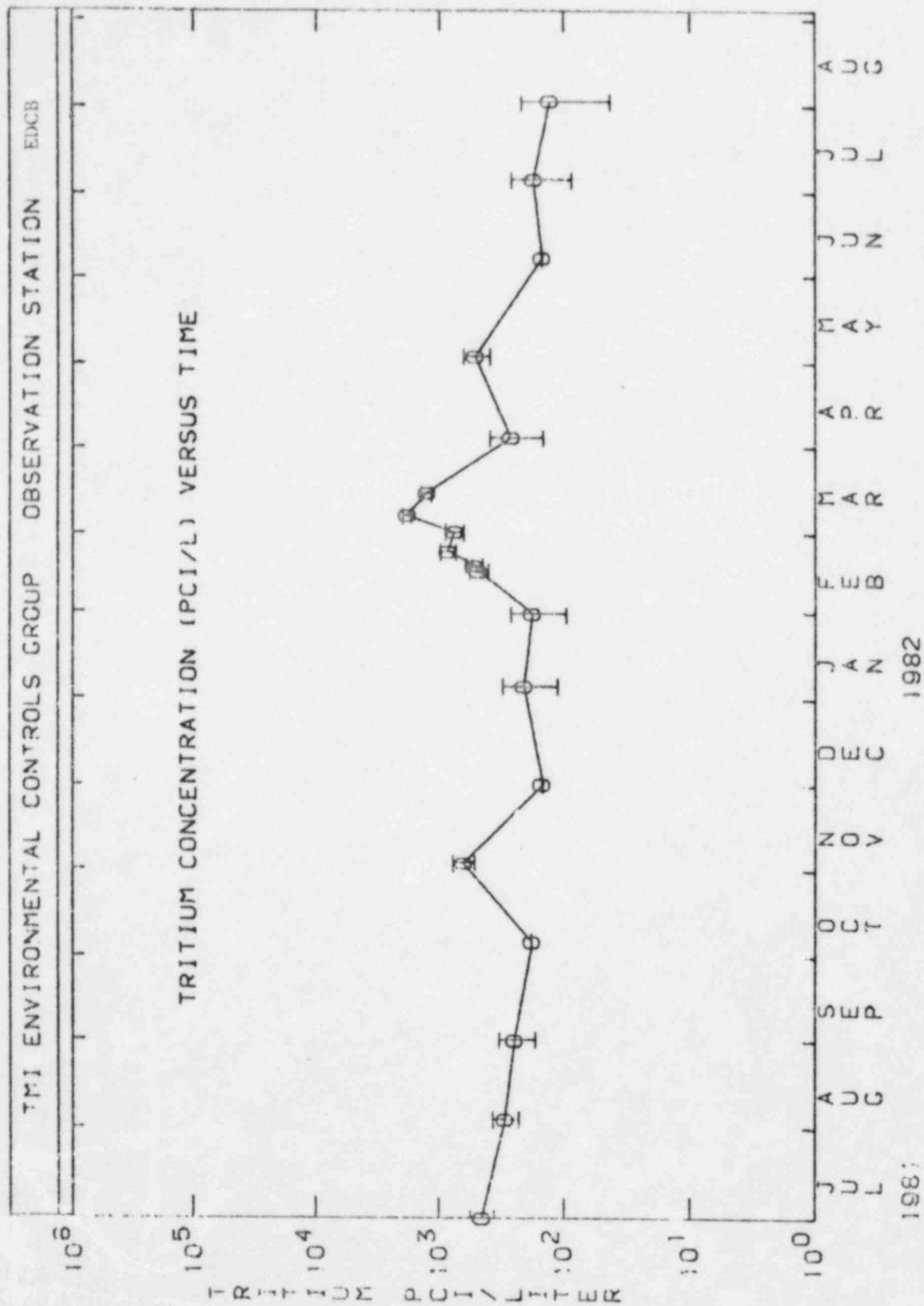


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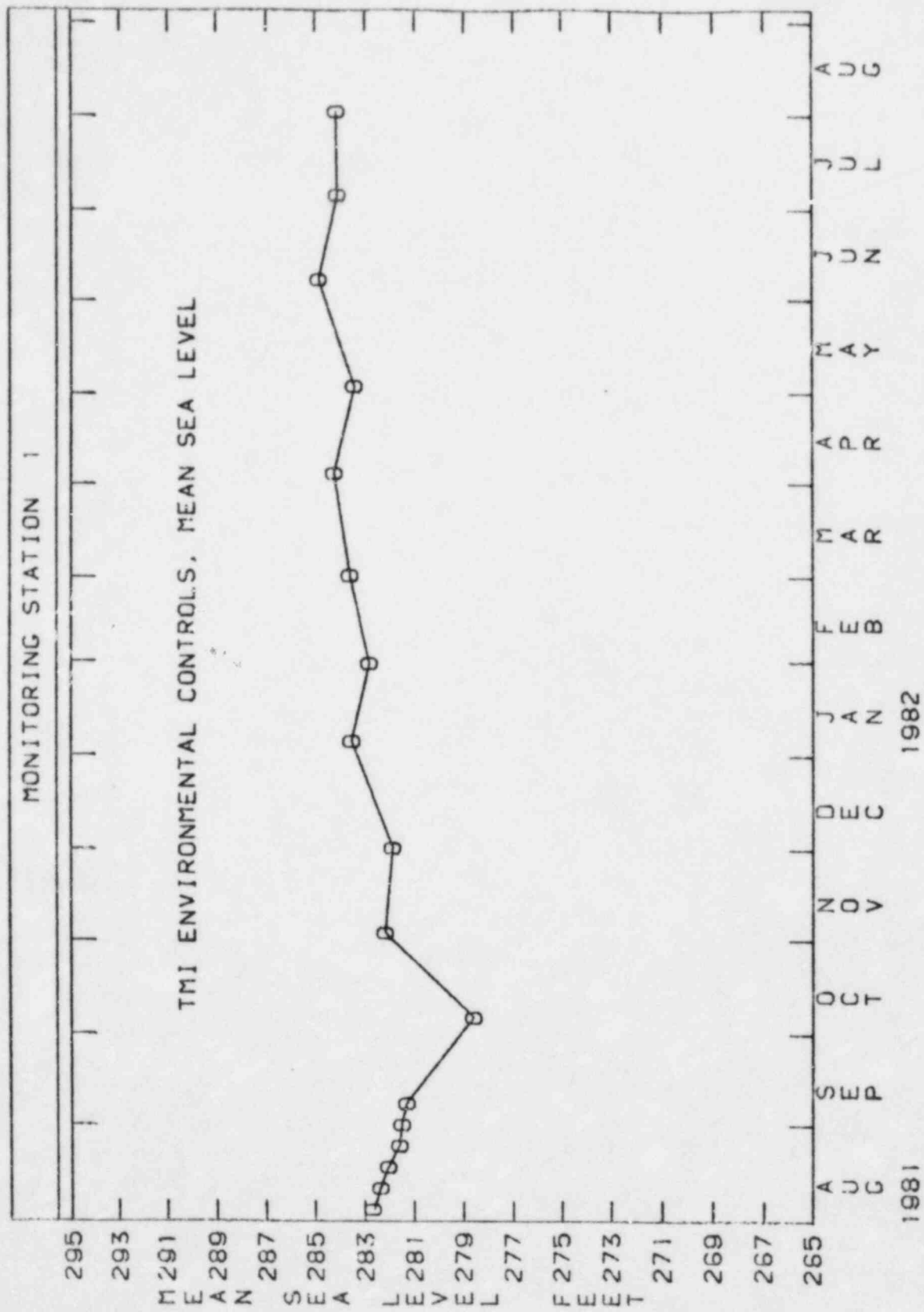


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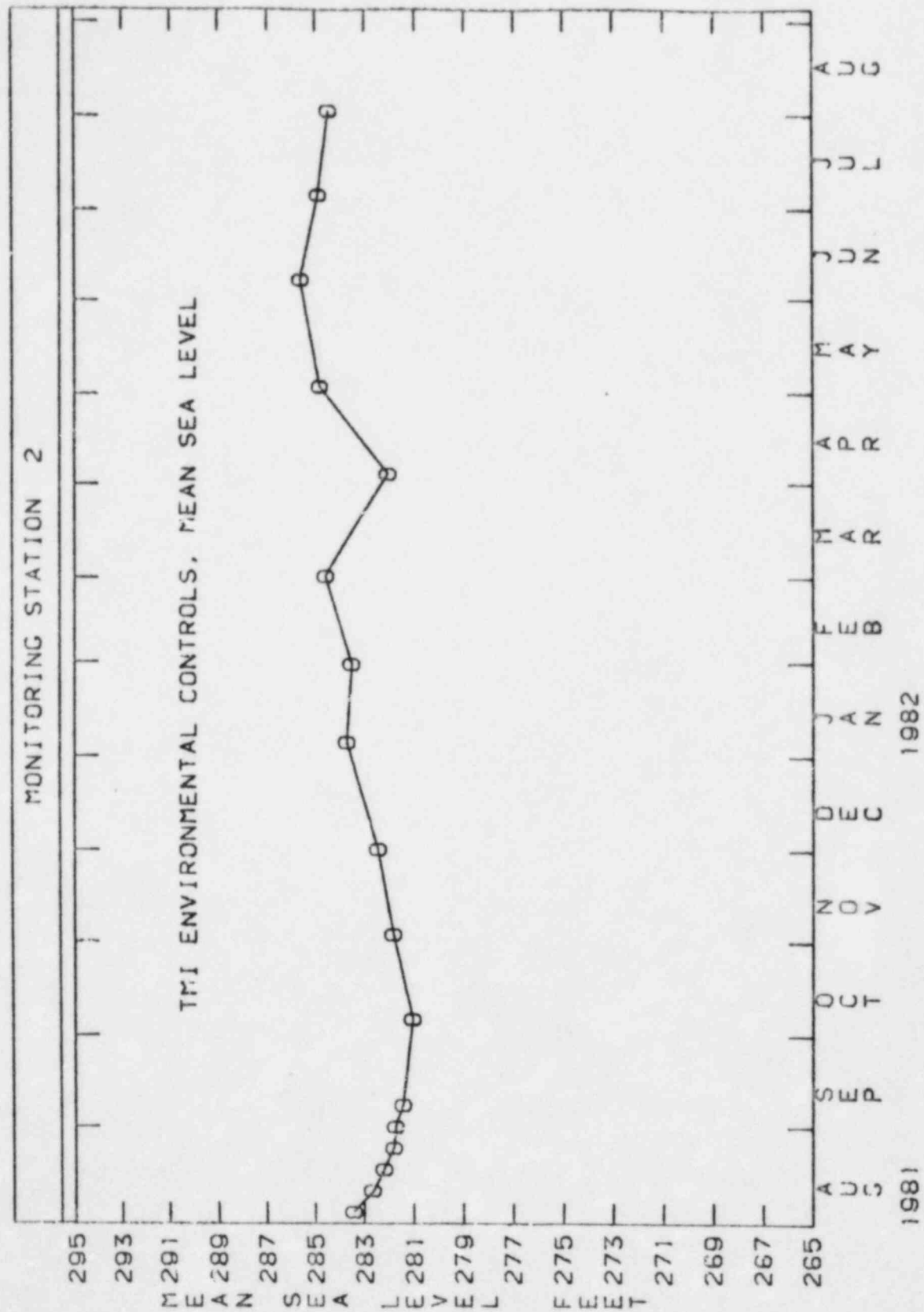


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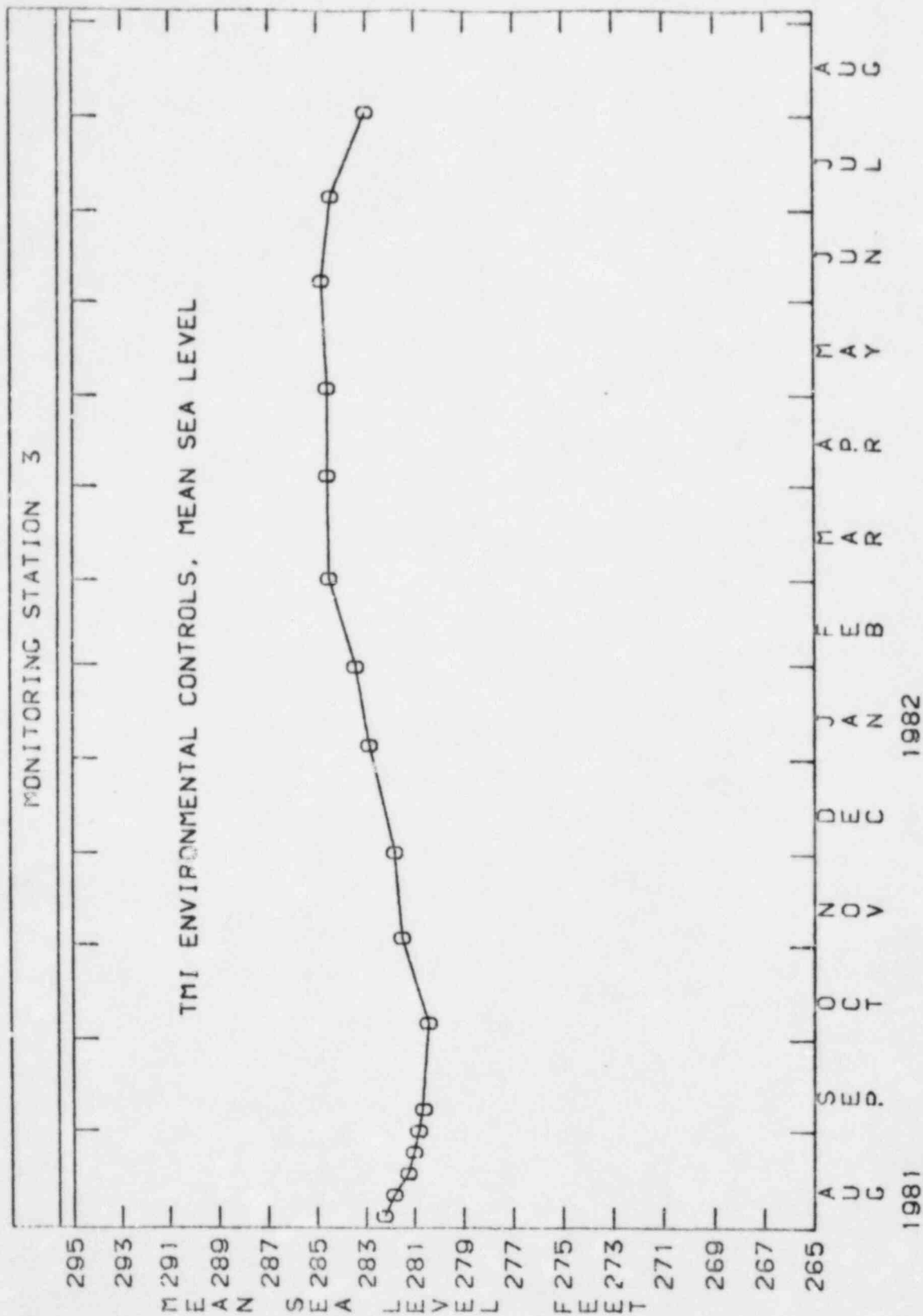


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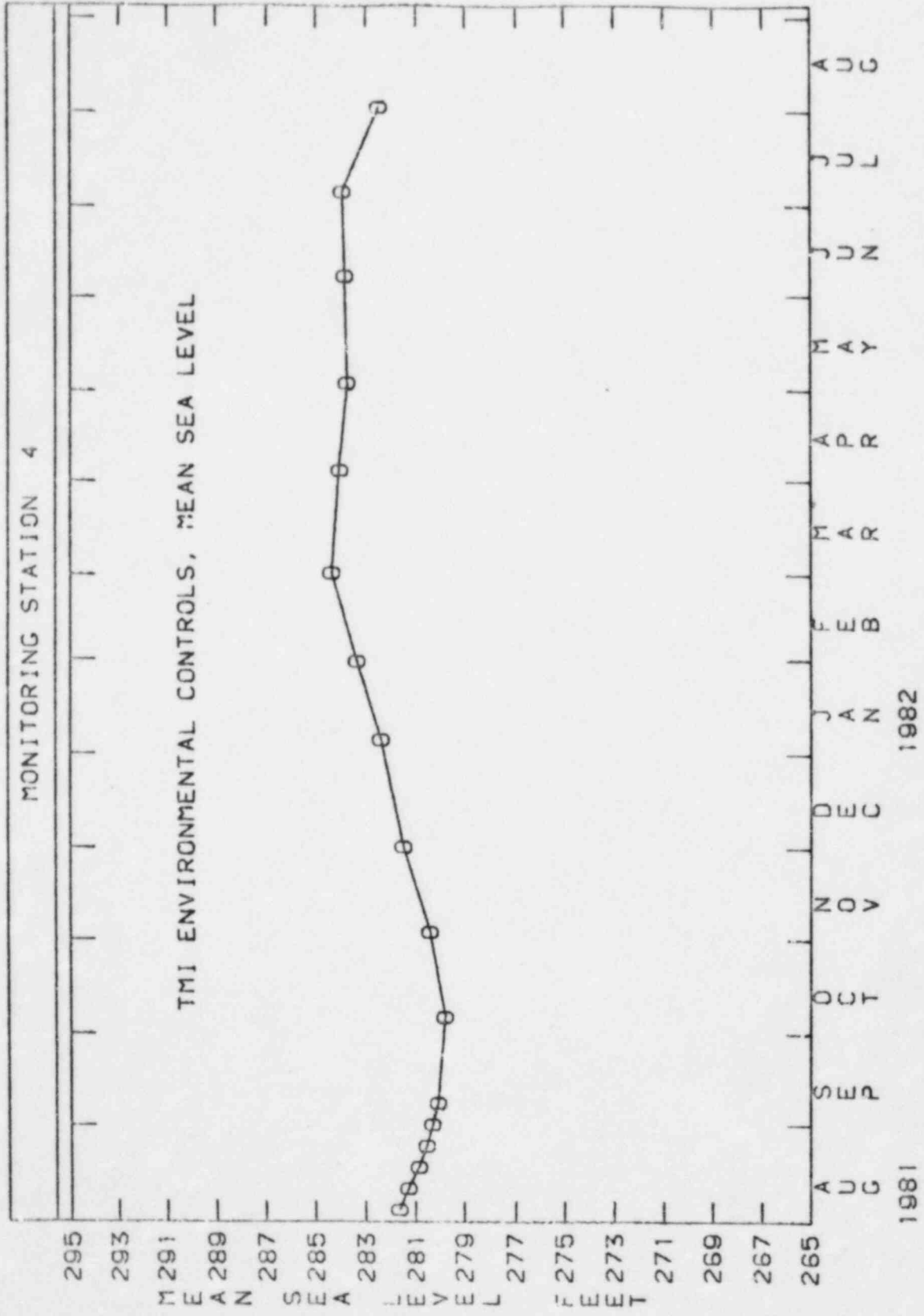
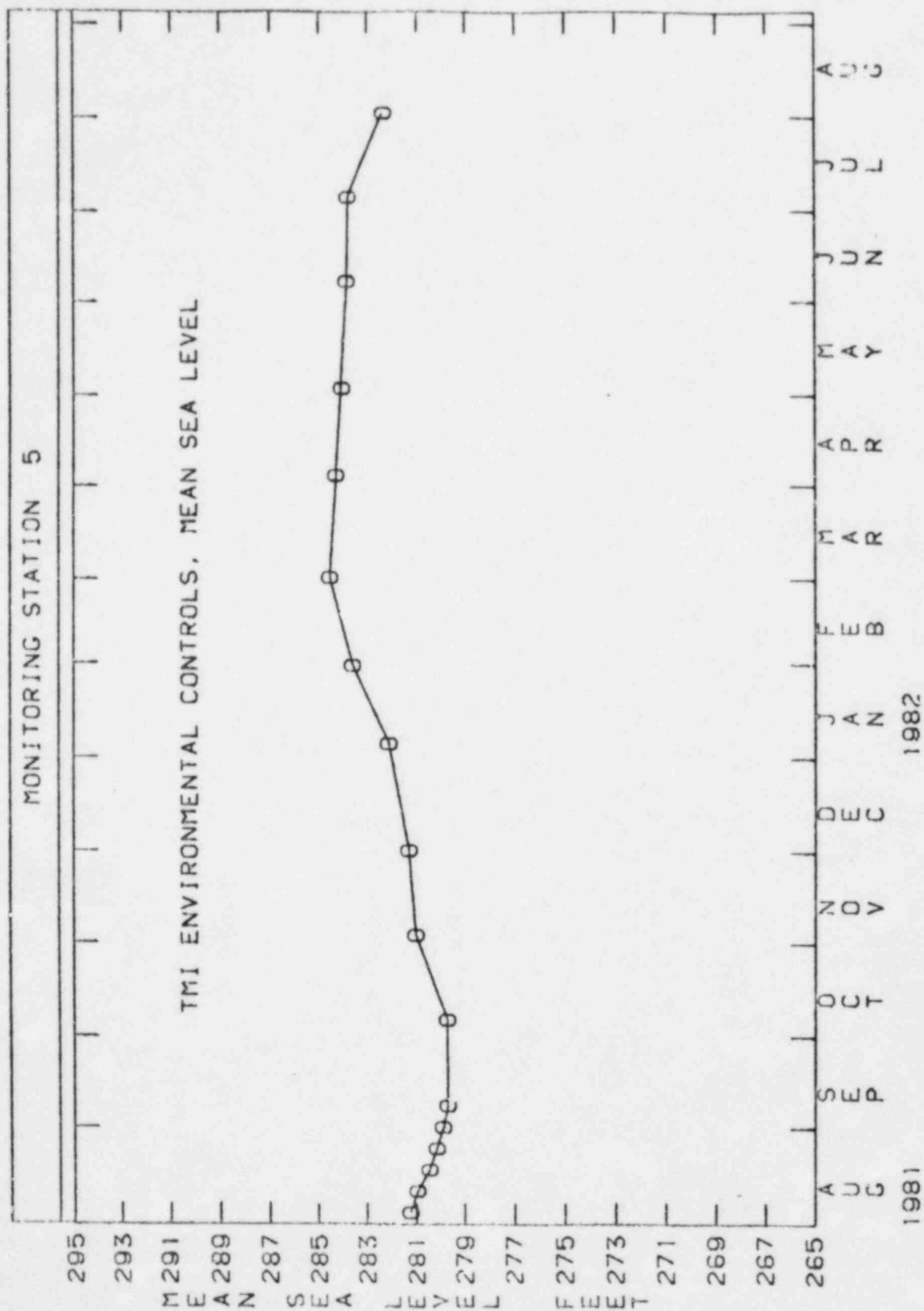


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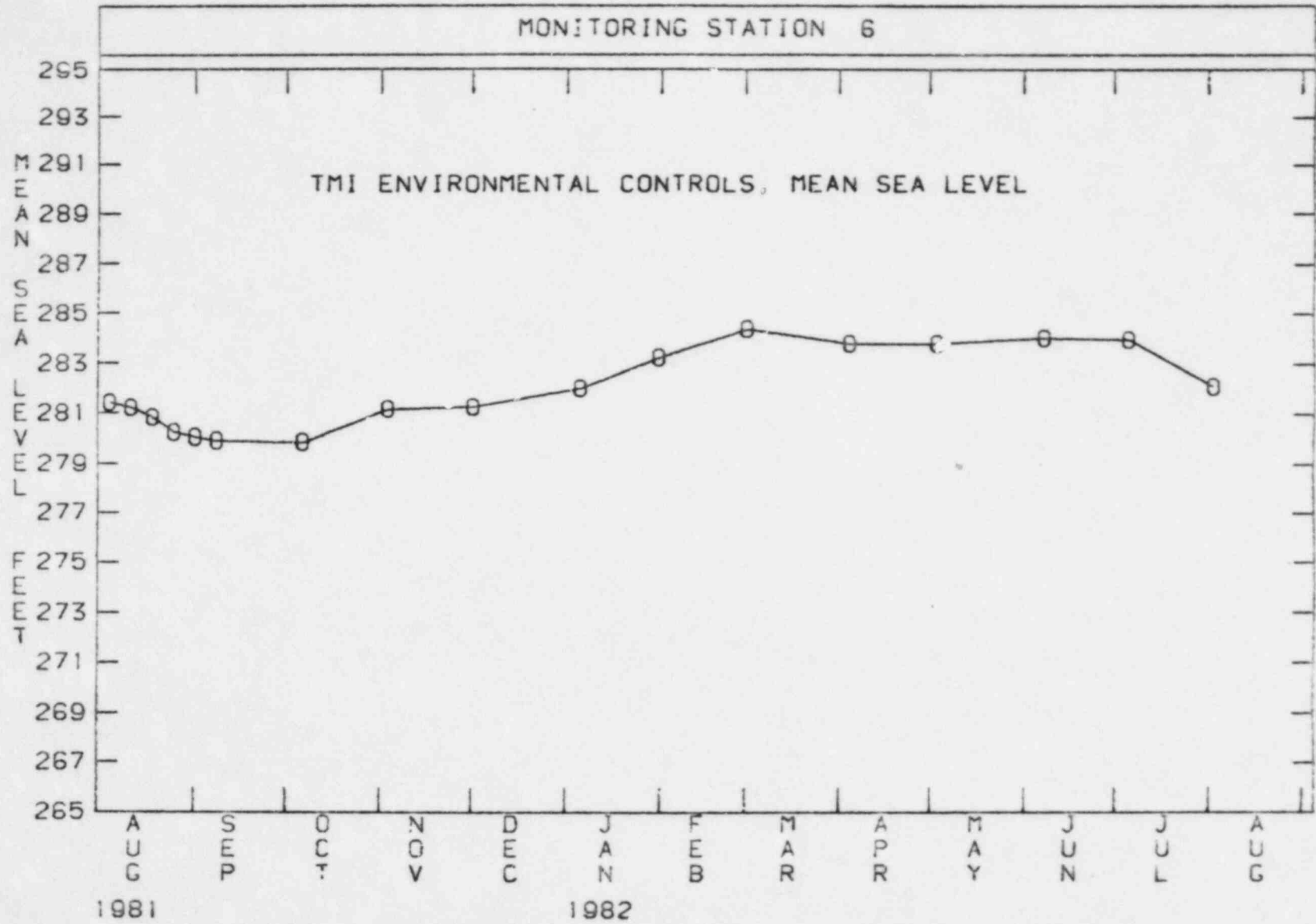


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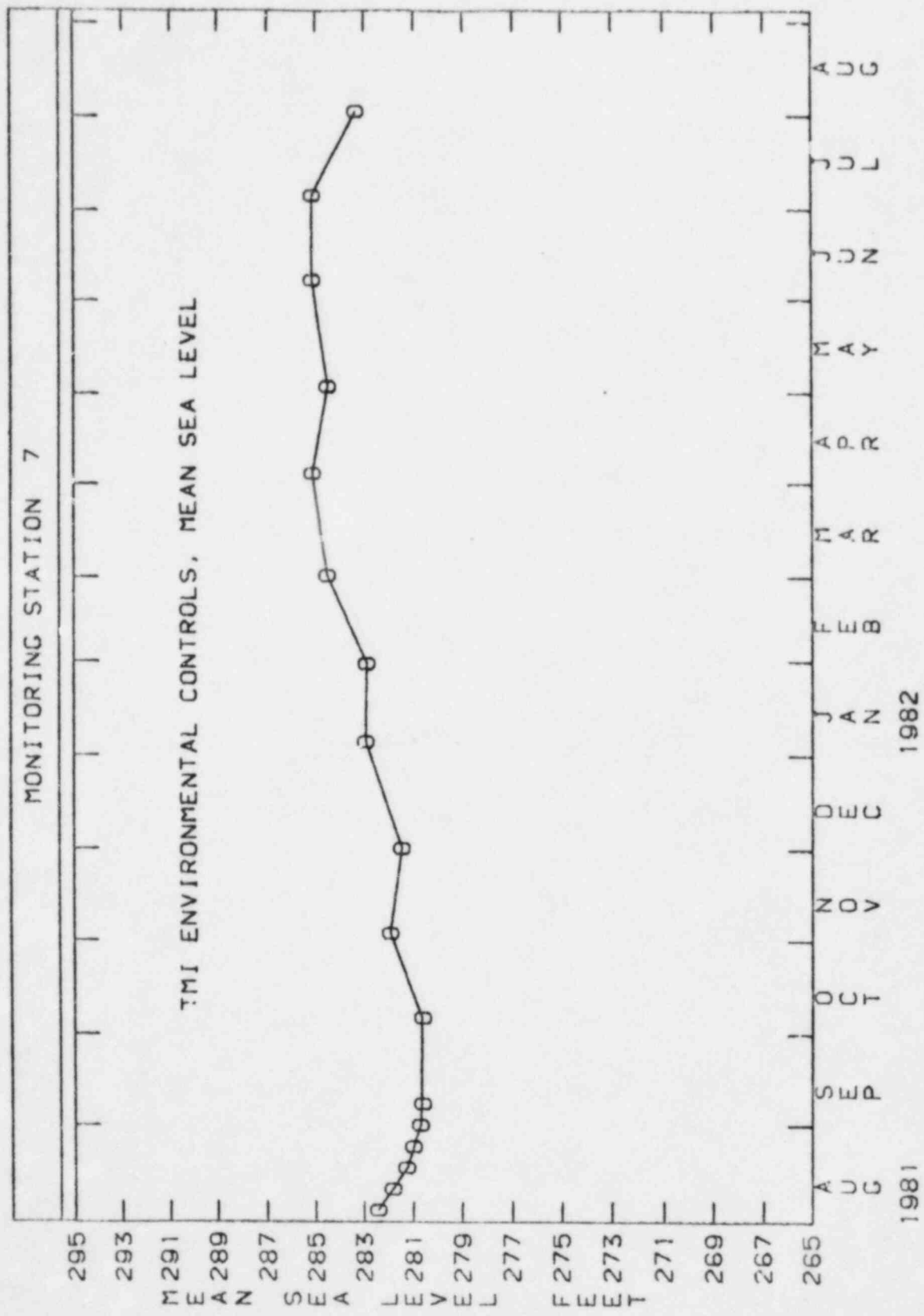


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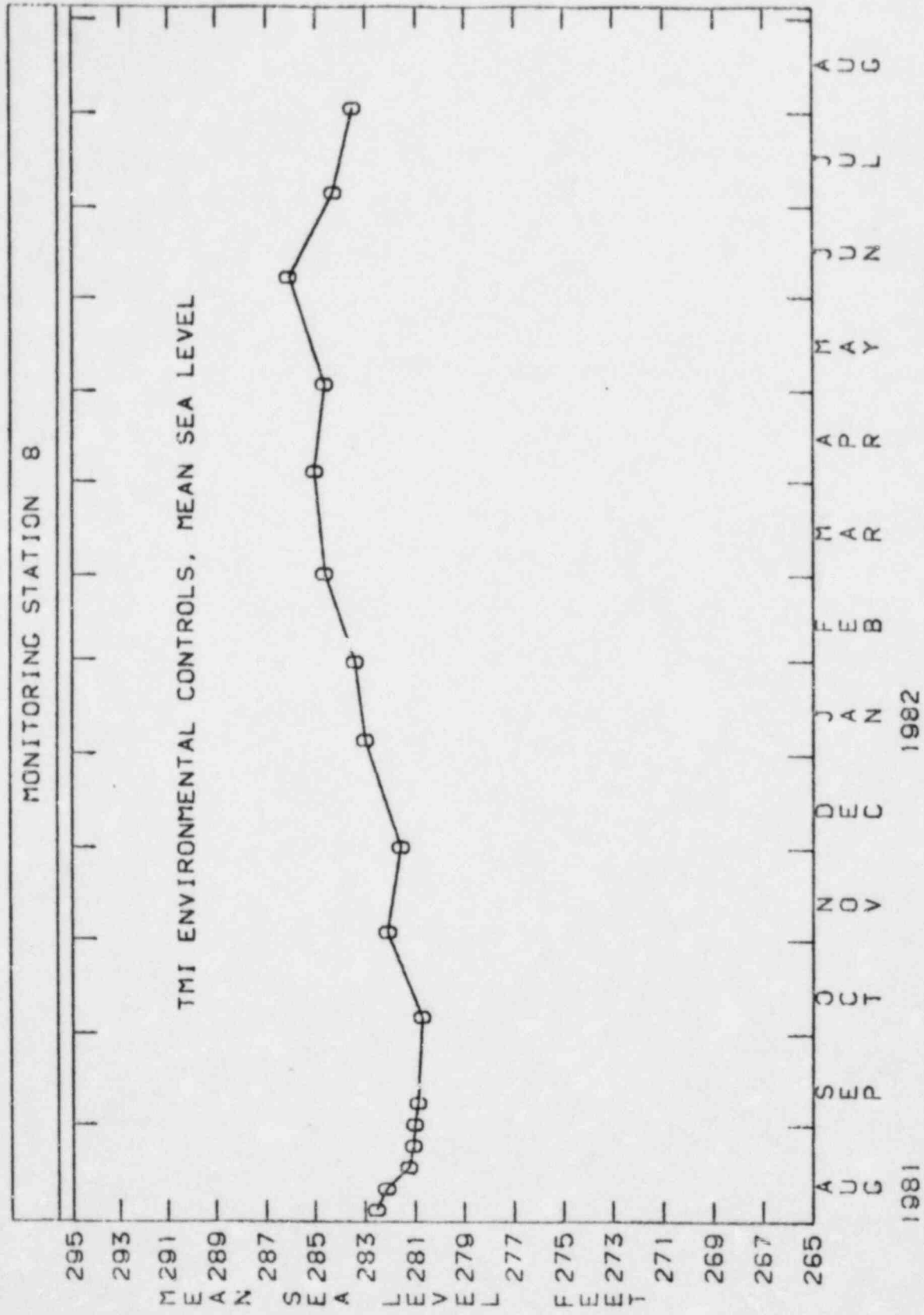


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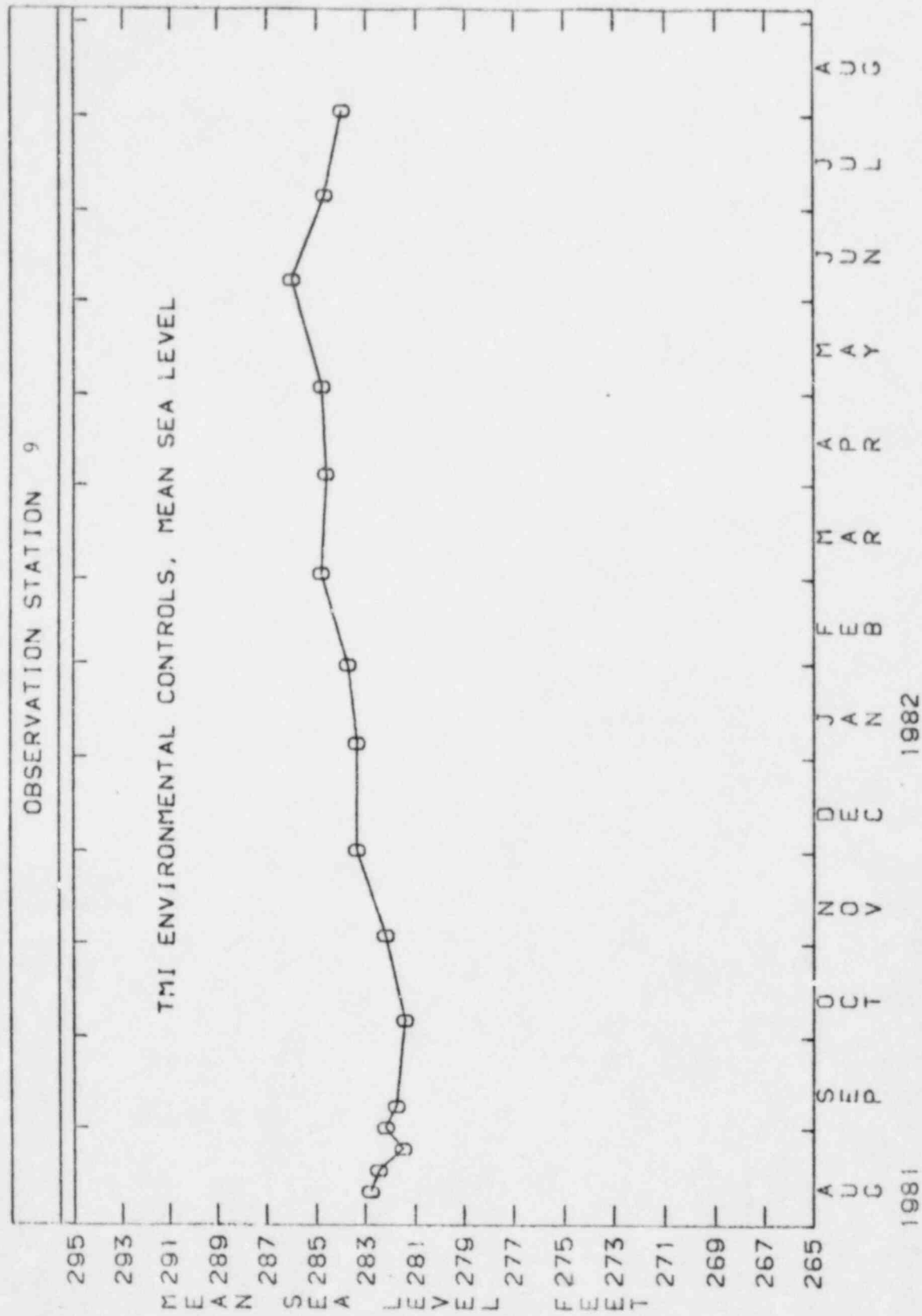


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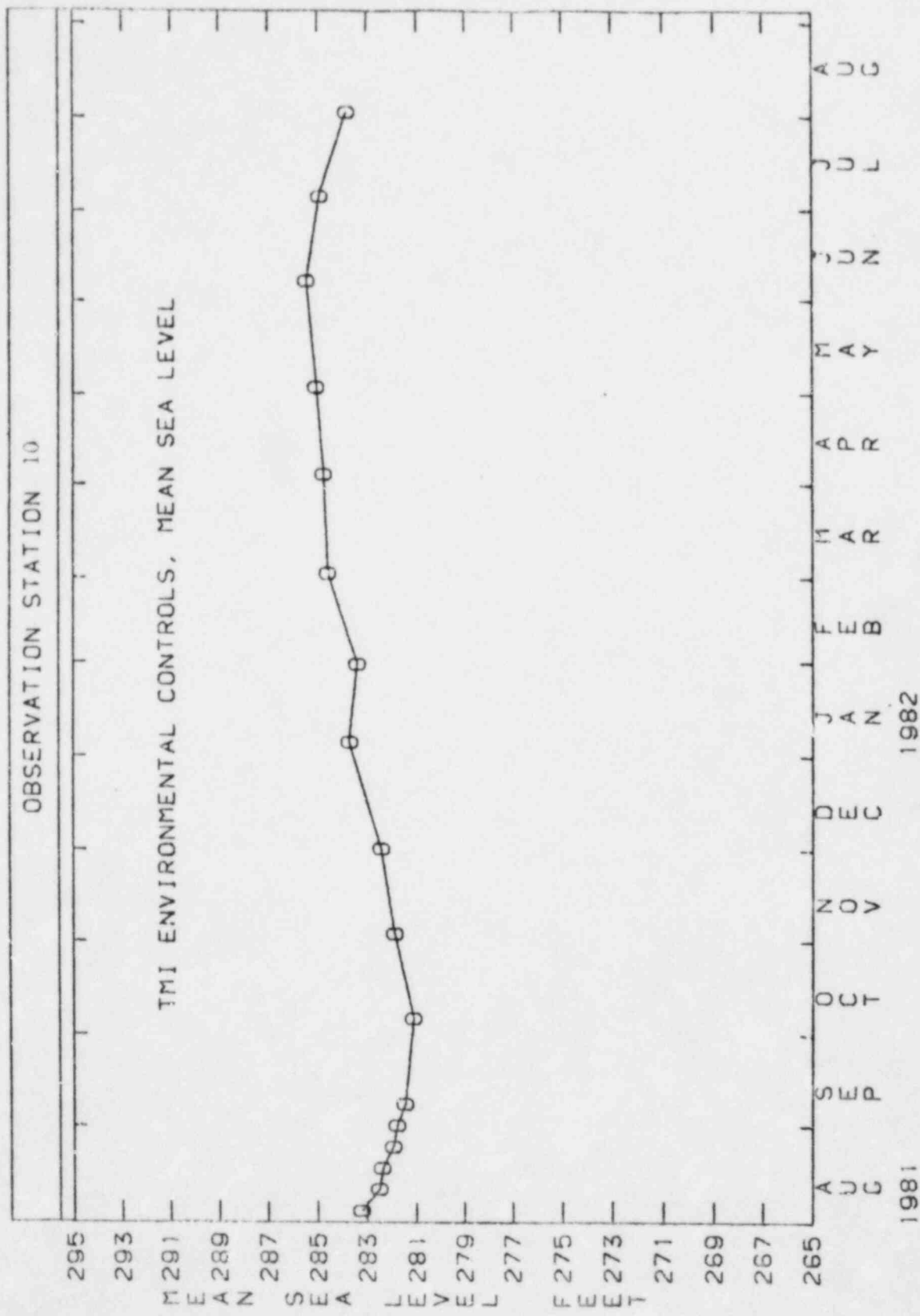


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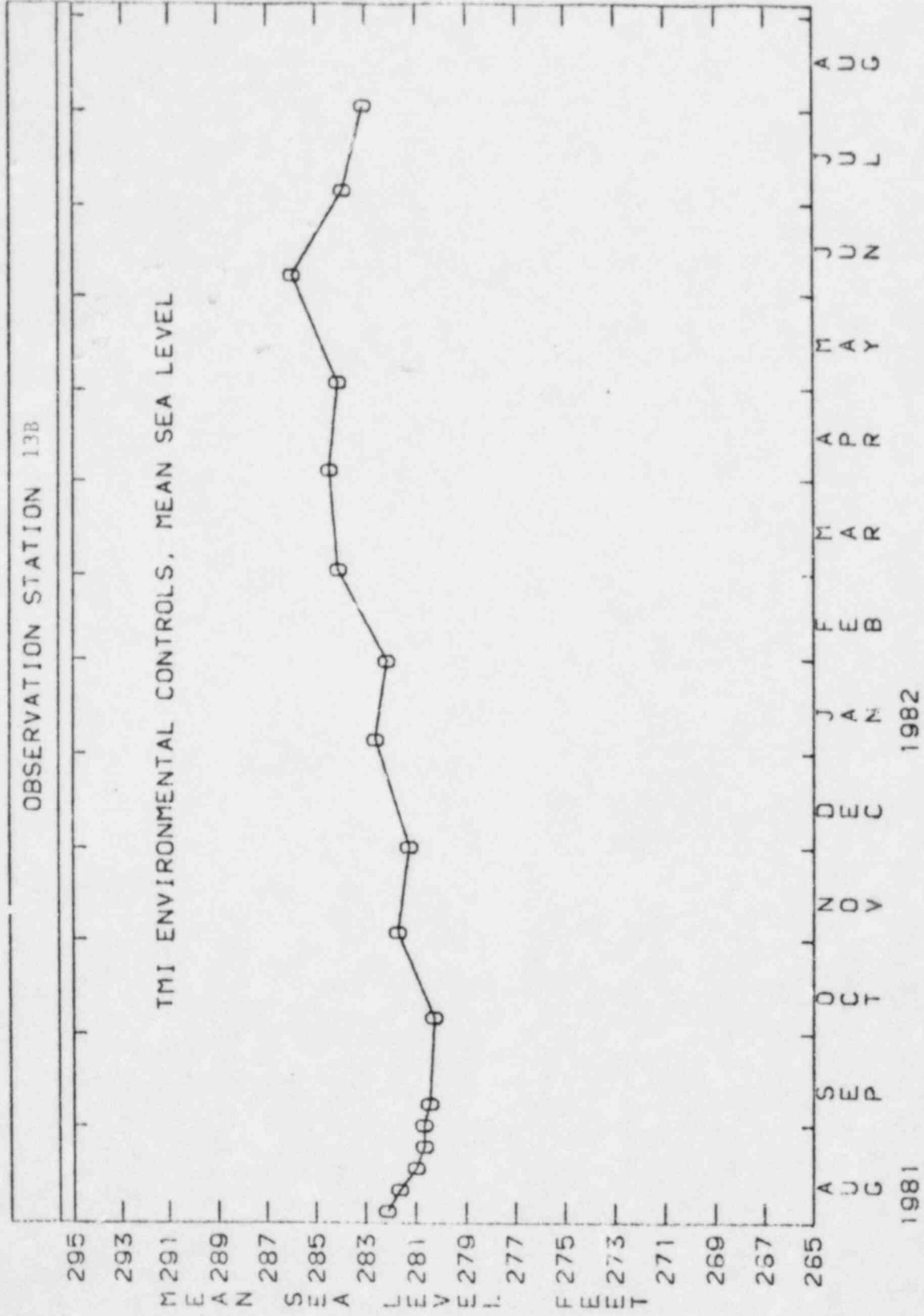


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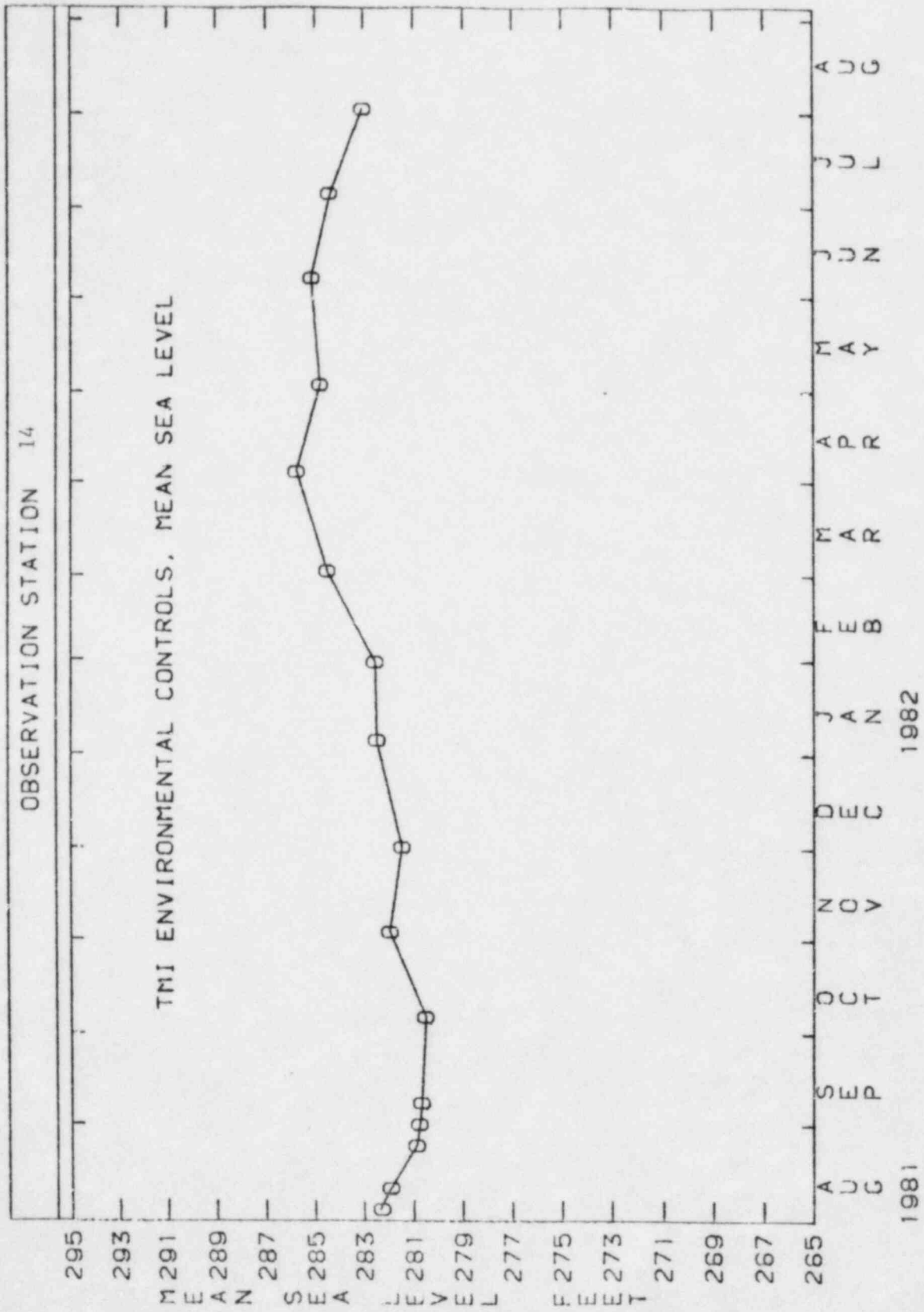
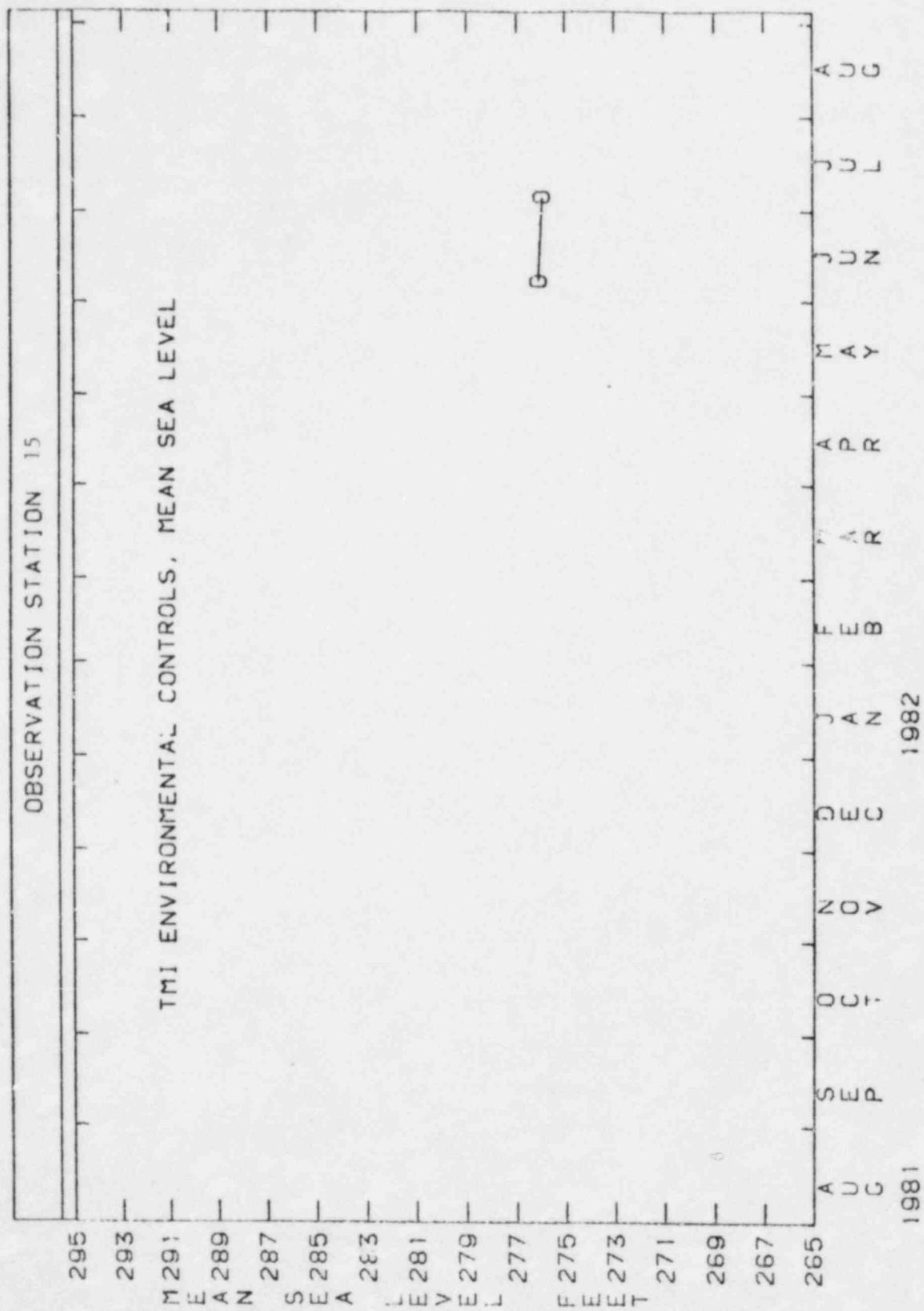


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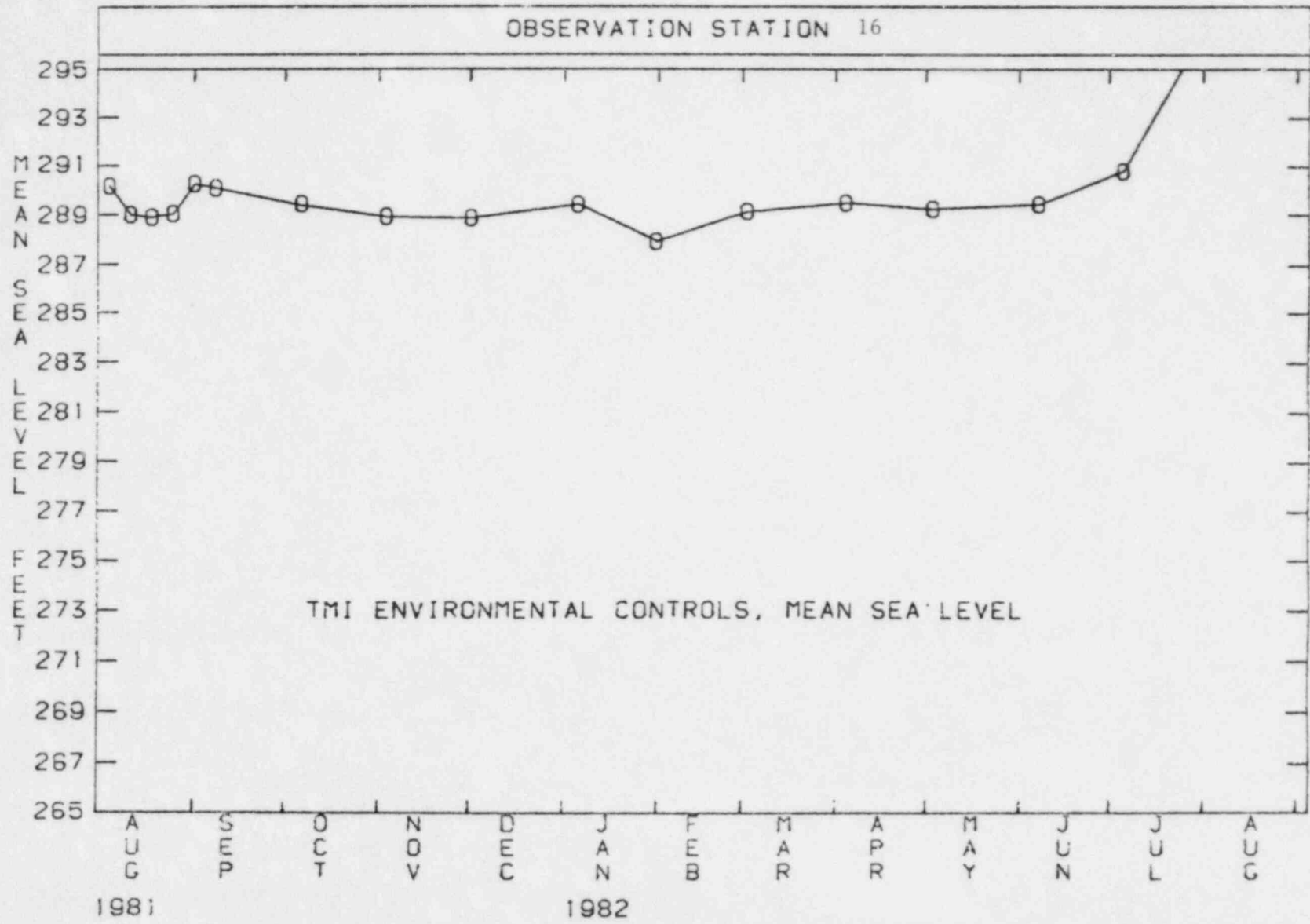


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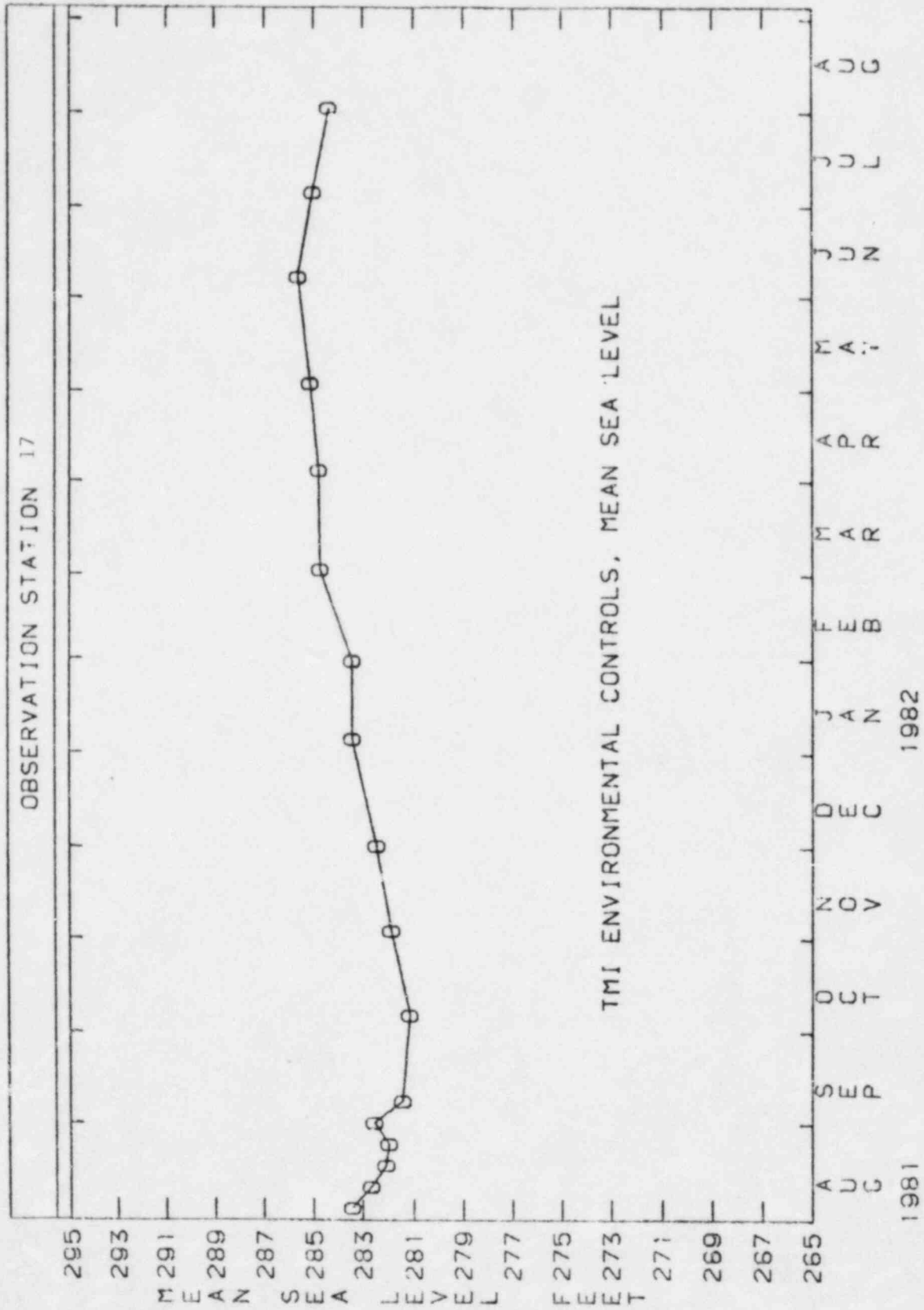


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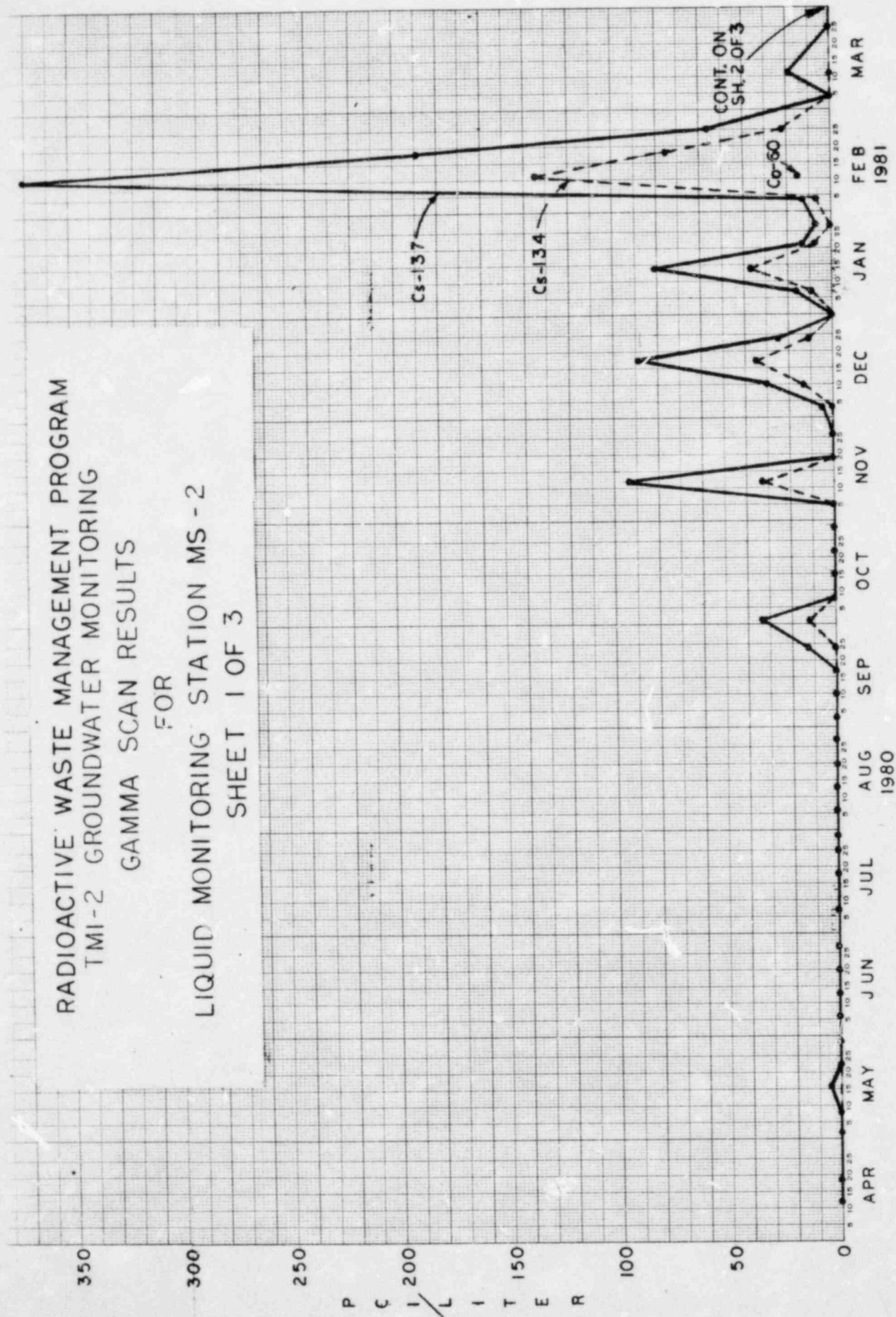


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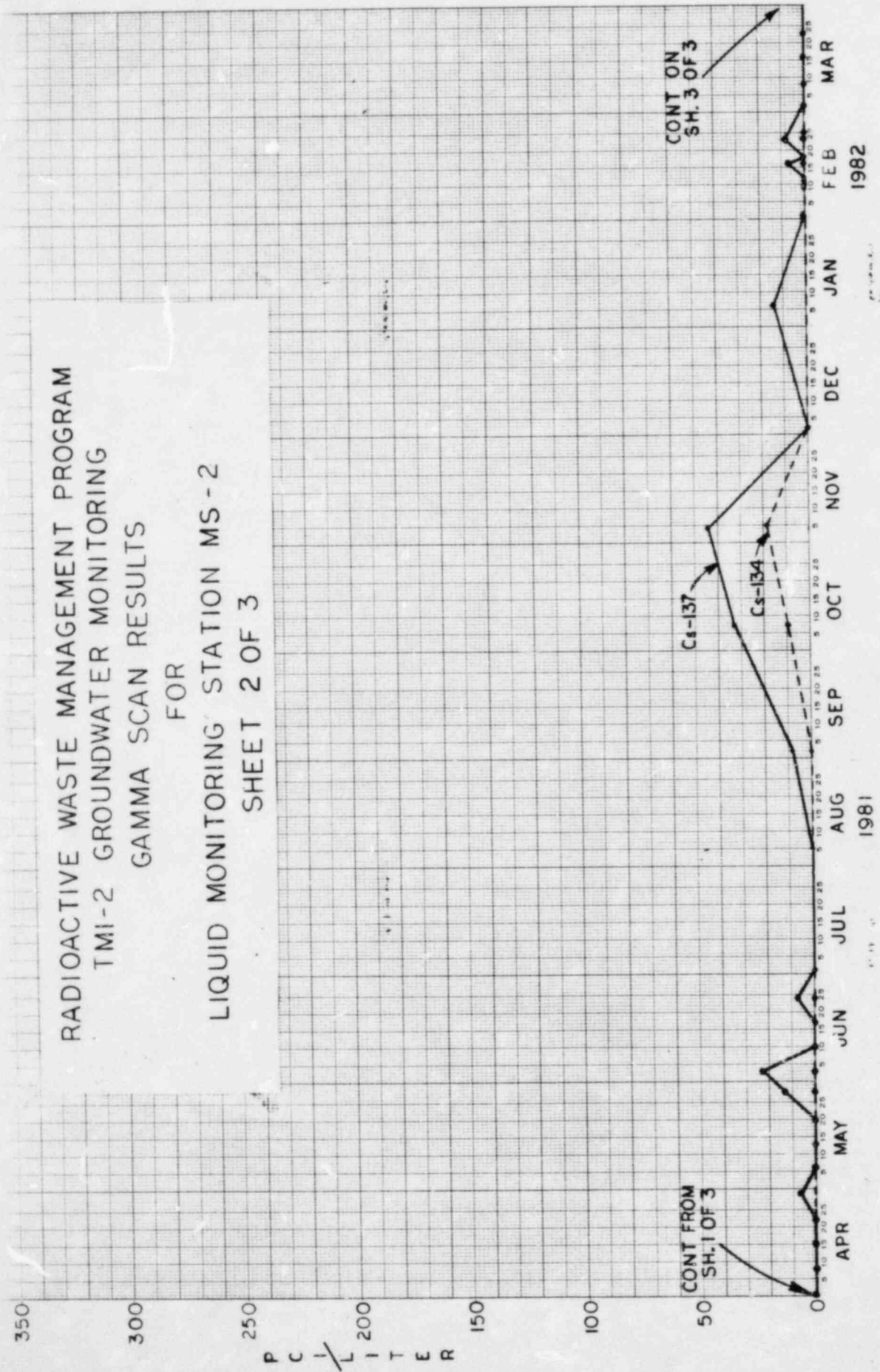


Figure 3
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RADIOACTIVE WASTE MANAGEMENT PROGRAM
TMI-2 GROUNDWATER MONITORING
GAMMA SCAN RESULTS
FOR
LIQUID MONITORING STATION MS - 2
SHEET 3 OF 3

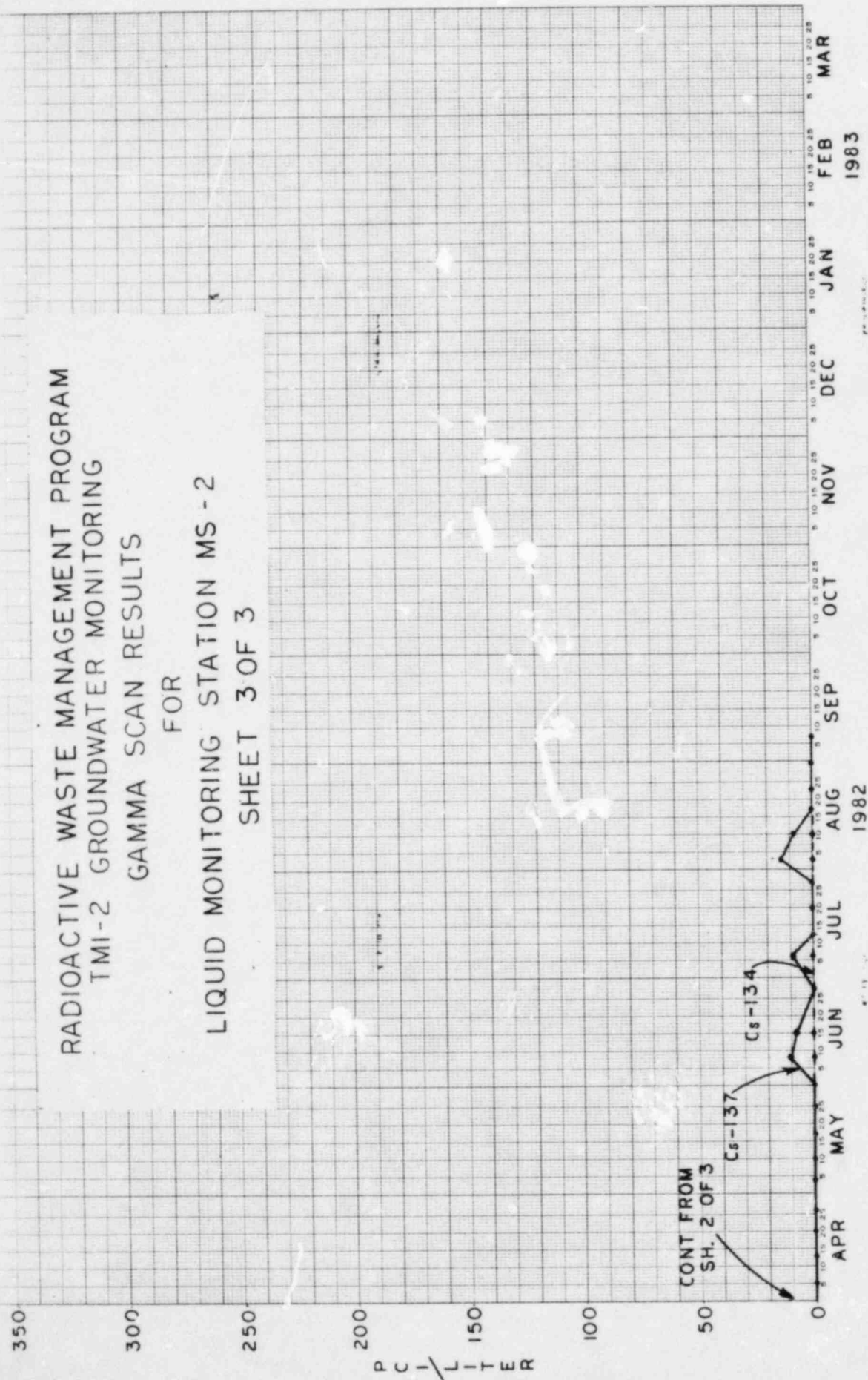


Table 1
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REPORT NO. 32	DATE, September 9, 1982	CPU ENVIRONMENTAL CONTROLS GROUP CESIUM-137 CONCENTRATION (PCI/L)	
DATE	N.V. 1	N.V. 2	N.V. 3
OF SAMPLE	CS-137	CS-137	CS-137
May 4, 1982	<	<	<
May 10, 1982	<	<	<
May 17, 1982	<	<	<
May 25, 1982	<	<	<
June 1, 1982	<	<	<
June 8, 1982	10	4.5	<
June 15, 1982	8.1	5.1	<
June 22, 1982	11	4.2	<
June 28, 1982	<	<	<
July 6, 1982	9.2	5.0	<
July 12, 1982	<	<	<
July 20, 1982	<	<	<
July 27, 1982	<	<	<
August 3, 1982	14	4.7	<
August 10, 1982	8.6	4.7	<
August 17, 1982	<	<	<
August 23, 1982	<	<	<
August 30, 1982	<	<	<
September 7, 1982	<	<	<

Table 2
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REPORT NO. 32	DATE, September 0, 1982	GPU ENVIRONMENTAL CONTROLS GROUP CESIUM-134 CONCENTRATION (PCI/L)
DATE	M.V. 1	M.V. 2
OF SAMPLE	CS-134	CS-134
May 4, 1982	<	<
May 10, 1982	<	<
May 17, 1982	<	<
May 25, 1982	<	<
June 1, 1982	<	<
June 8, 1982	<	<
June 15, 1982	<	<
June 22, 1982	<	<
June 28, 1982	<	<
July 6, 1982	<	<
July 12, 1982	<	<
July 20, 1982	<	<
July 27, 1982	<	<
August 3, 1982	<	<
August 10, 1982	<	<
August 17, 1982	<	<
August 23, 1982	<	<
August 30, 1982	<	<
September 7, 1982	<	<

7

Sr-89 and Sr-90 Groundwater Results (pCi/l)
1982 1st Quarter Composite

<u>STATION NO.</u>	<u>Sr-89</u>	<u>Sr-90</u>
1	< 1.20	< .646
2	< 2.34	< .569
3	< 1.80	< .641
4	< 1.40	< .502
5	< 1.31	< .457
6	< 1.57	< .629
7	< 1.70	< .696
8	< 1.53	< .826
9	No sample	No sample
10	< 1.34	< .524
13B	< 2.05	< .967
14	< 1.42	< .397
15	No sample	No sample
16	< 6.9	2.06 ± .94
17	< 2.50	< .667
EDCB	< 1.86	< .525

Sr-89 AND Sr-90 GROUNDWATER RESULTS (p Ci/l)
1982 2ND QUARTER COMPOSITE

<u>STATION NO.</u>	<u>Sr-89</u>	<u>Sr-90</u>
1	<1.209	<.713
2		
3	< .911	<.512
4	1.13±.75	.617±.45
5	.814±.65	.532±.34
6	<1.160	<.601
7	< .794	<.417
8	<1.969	1.42±.89
9	No Sample	No Sample
10	<1.736	<.984
13B	< .818	.564±.330
14	< .818	<.481
15*	< .797	<.490
16	<3.18	<1.97
17	<1.190	<.688
EDCB	<1.214	<.749

*June 8 sample only (no other samples were available).