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COMPANY

MOENCH, FISHER & GAENSSLEN, GOWANDA, N.Y.

465 PALMER STREET
GOWANDA, NEW YORK 14070

TEL. 716-532-2201

FAX 716-532-5518

Mr. Stan Radon
NYS Dept. of Environmental Conservation
270 Michigan Ave.
Buffalo, New York 14203-2999

15 January 2001

Re: Palmer Street Landfill & Former Plant Site; Annual 2000 Groundwater Summary.

Dear Mr. Radon:

Enclosed is the 2000 Annual Summary Report of the Palmer Street Landfill. Also, the first round of the sampling of the Former Plant Site wells is included. Due to significant rainfall during the year, the groundwater levels remained constant or increased slightly.

Two landfill sampling events occurred in 2000. A third event was scheduled for December, but extreme winter weather would not allow it, in safe conditions. As agreed, Moench will perform two events per year, starting in 2001. The Former Plant Site wells will be sampled concurrent with the landfill sampling.

No "metals of concern" were detected above the class "GA" standard at any of the landfill monitoring locations. A few slight detections did occur. Some detections of "guidance value" VOCs occurred, but not above the recommended level of concern.

The sampling of the recently installed, monitoring wells on the "Former Plant Site", took place in September. This was the first of four sampling events. There was slight detection of some metals but again, not above the class "GA" standard. There were no detections of VOCs.

These results, along with the "Cover System Evaluation", confirms the minimal impact of the landfill and former plant site, on the environment.

Moench will conduct one sample event in the wet weather (March-April) and another in a dry period (August-September), in 2001.

Please call me if you have and questions.

Sincerely,

Jeffrey Smith

Jeffrey Smith
Site Manager

Cc: Ed Miles-NYSDEC, Albany, NY
Lloyd Brunkhorst-Brown Shoe Company, St. Louis, Mo
Rick Frappa-Geomatrix Consultant, Buffalo, NY

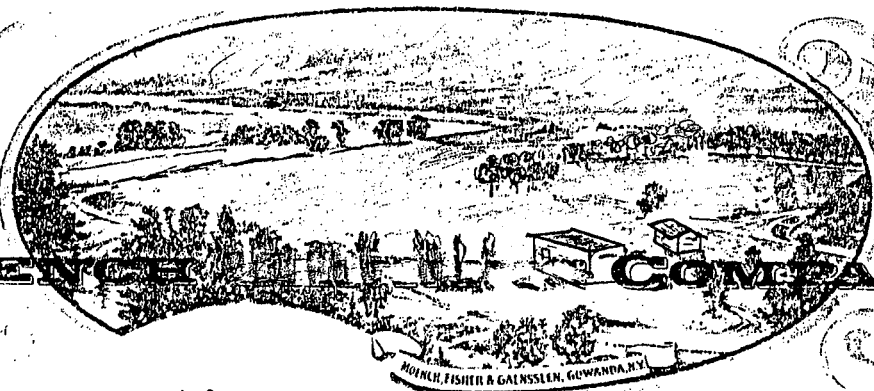
**ANNUAL GROUND WATER QUALITY MONITORING REPORT
FOR 2000 CALENDAR YEAR
AT PALMER STREET LANDFILL**

**MOENCH COMPANY
GOWANDA, NEW YORK**

January 2001
Jeffrey Smith
Site Manager

**C. Moench and Sons
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MOENCH COMPANY
PALMER STREET LANDFILL
 2000 ANNUAL GROUNDWATER MONITORING REPORT.....

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1.0 INTRODUCTION

1.1 BACKGROUND

THE MOENCH COMPANY, A DIVISION OF BROWN SHOE COMPANY, INC. IS LOCATED NEAR THE SOUTHEAST CORNER OF THE VILLAGE OF GOWANDA, CATTARAUGUS COUNTY, NEW YORK.

(FIGURE 1). THE PALMER STREET LANDFILL WHICH WAS OPERATED BY MOENCH TANNING FROM 1900 THROUGH JULY 1983, LIES IMMEDIATELY SOUTHWEST OF THE FORMER SITE COMPLEX ON AN APPROXIMATELY 25-ACRE PARCEL OF LAND. A VARIETY OF WASTE GENERATED BY MOENCH TANNING WERE DISPOSED OF AT THE PALMER STREET LANDFILL SITE. THESE WASTES INCLUDED SOLE LEATHER EXTRACT, RENDERING WASTE, SPRAY BOOTH CLEAN UP WASTE, WASTE FINISH, WASTE HAIR/LEATHER SCRAPS, WASTEWATER TREATMENT PLANT SLUDGE, AND OCCASIONAL CONSTRUCTION DEBRIS.

MOENCH TANNING HAS CLOSED THE PALMER STREET LANDFILL. ACCORDINGLY, THE CLOSURE/POST-CLOSURE PLAN (REFERENCE 1), IS BEING PERFORMED. THE LONG-TERM POST CLOSURE MONITORING PROGRAM HAS BEEN APPROVED & IMPLEMENTED.

(JULY 1993, REVISED MARCH 1994)

1.1A BACKGROUND-FORMER PLANT SITE.

THE MOENCH COMPANY (BROWN SHOE) OPERATED A TANNERY IN GOWNADA NEW YORK, AS SHOWN ON FIGURE 1, FROM THE LATE 1800'S UNTIL 1992. FOLLOWING A CORPORATE DECISION TO CLOSE THE TANNERY, THE PLANT WAS DEMOLISHED IN 1993. THIS WAS DONE TO REDUCE MAINTENANCE REQUIREMENTS AND PHYSICAL HAZARDS ASSOCIATED WITH THE SITE. NYSDEC SUBSEQUENTLY REQUIRED WATER QUALITY AND HYDRAULIC INFORMATION REGARDING THE UPPERMOST WATER BEARING ZONE TO EVALUATE IMPACTS, IF ANY, TO GROUNDWATER AND THE CATTARAUGUS CREEK FROM THE FORMER TANNERY OPERATION. SPECIFICALLY, THE NYSDEC REQUIRED INSTALLATION OF THREE MONITORING WELLS WITHIN THE UPPERMOST WATERBEARING ZONE. ADDITIONALLY, TO DETERMINE FLOW DIRECTION, THREE PIEZOMETERS WERE REQUIRED. THESE WERE INSTALLED IN JULY OF 2000.

1.2 PUPOSE AND SCOPE

SAMPLES ASSOCIATED WITH TWO ROUNDS OF WATER QUALITY MONITORING, FOR THE 2000 CALENDAR YEAR, WERE COLLECTED IN APRIL & SEPTEMBER OF 2000, FOR THE LANDFILL. A THIRD ROUND WAS TO BE ATTEMPTED IN DECEMBER, BUT EXTREME WINTER WEATHER CANCELED IT. THE FIRST SAMPLE OF THE FORMER PLANT SITE WAS PERFORMED IN SEPTEMBER. THREE MORE EVENTS WILL OCCUR OVER THE NEXT TWO YEARS. THE PURPOSE OF THIS DATA FOR THE LANDFILL AND FORMER PLANT SITE, IS TO PROVIDE A SUMMARY OF TRENDS.

2.0 MONITORING SYSTEM

LANDFILL- SEVEN (7) GROUNDWATER MONITORING WELLS AT THE PALMER STREET LANDFILL ARE MONITORED IN ACCORDANCE WITH THE LONG TERM POST CLOSURE MONITORING PLAN APPROVED FOR THE SITE.

THESE WELLS ARE DESIGNATED AS FOLLOWS:

UPGRADIANT UPPER BEDROCK	DOWN GRADIANT UPPER BEDROCK	UPPER BEDROCK PIEZOMETER P-6D
MW-1D	MW-3DR	LOWER OVERBURDEN
MW-7D	MW-4D	PIEZOMETER P-6B
MW-8D (ANNUAL)	MW-6D	

IN ADDITION TO THE WELLS, NYSDEC ALSO REQUIRES THE MONITORING OF TWO (2) BANK SEEPS DESIGNATED AS BS-1 AND BS-3, RESPECTIVELY. THE ABILITY TO OBTAIN SAMPLES FROM THESE BANKSEEPS VARIES DUE WET/DRY WEATHER CONDITIONS. CREEK SAMPLES ARE USUALLY OBTAINED IN THEIR PLACE.

TO AID IN THE EVALUATION OF COVER PERFORMANCE, LEVELS FROM FIVE (5) INFILTRMETERS, ARE ALSO MEASURED. LOCATIONS OF MONITORING POINTS ARE SHOWN ON FIGURE 2.

FORMER PLANT SITE- THREE (3) GROUNDWATER MONITORING WELLS AT THE SITE WERE INSTALLED IN JULY OF 2000. (REF #7) THESE WELLS ARE TO BE SAMPLED IN ACCORDANCE WITH THE PALMER STREET LANDFILL, POST CLOSURE MONITORING PLAN. FOUR (4) EVENTS ARE TO OCCUR OVER THE NEXT TWO YEARS. THESE WELLS ARE DESIGNATED AS FOLLOWS (FIG #2A).

DOWN GRADIENT UPPER BEDROCK	UPPER BEDROCK PIEZOMETERS
MWT-1	WP-10
MWT-2	WP-20
MWT-3	WP-30

THE PIEZOMETERS WILL BE USED TO HELP DETERMINE HYDRAULIC GRADIENT.

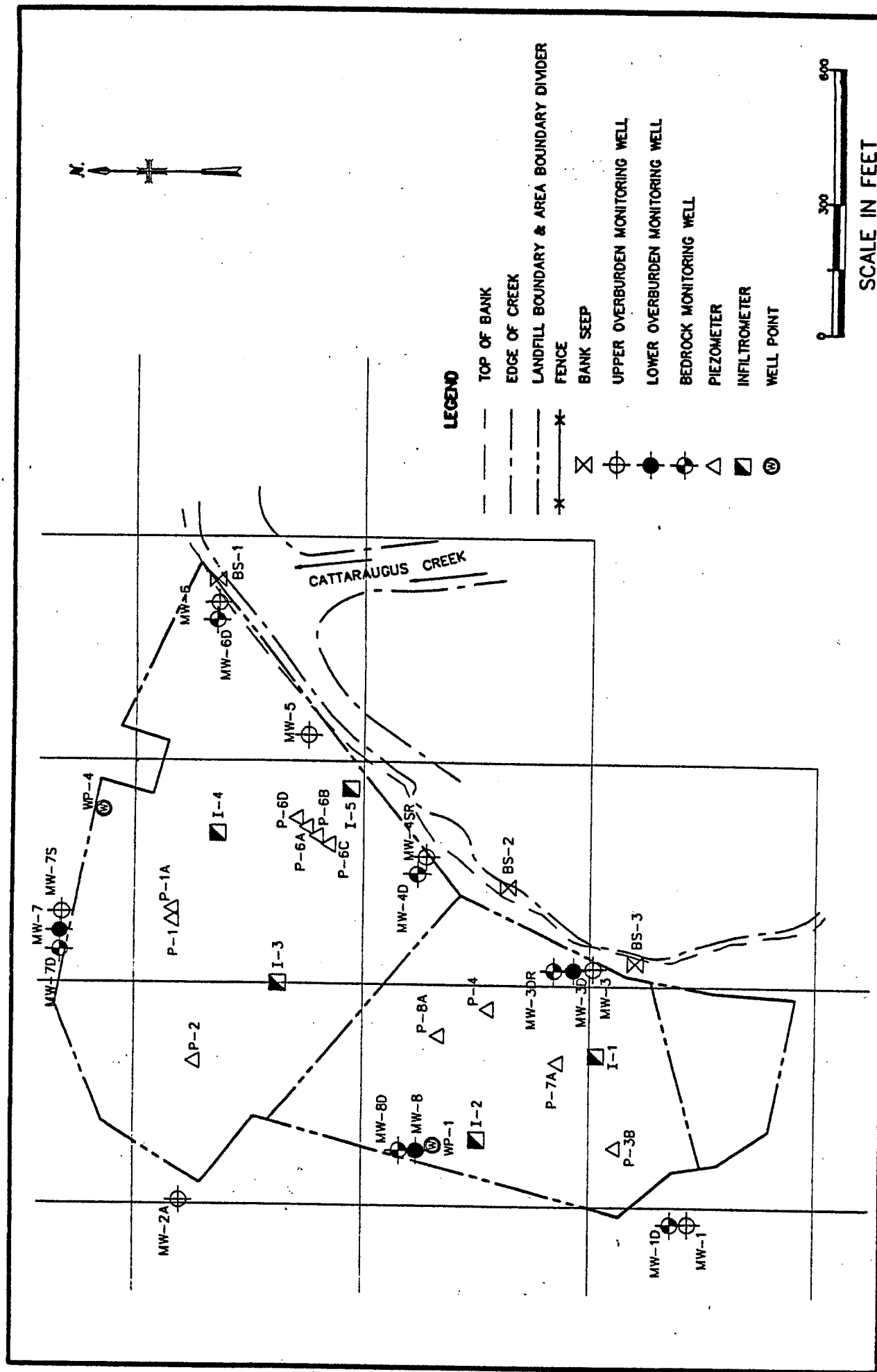


FIGURE #2

2000 ANNUAL
MONITORING LOCATIONS

PALMER STREET LANDFILL

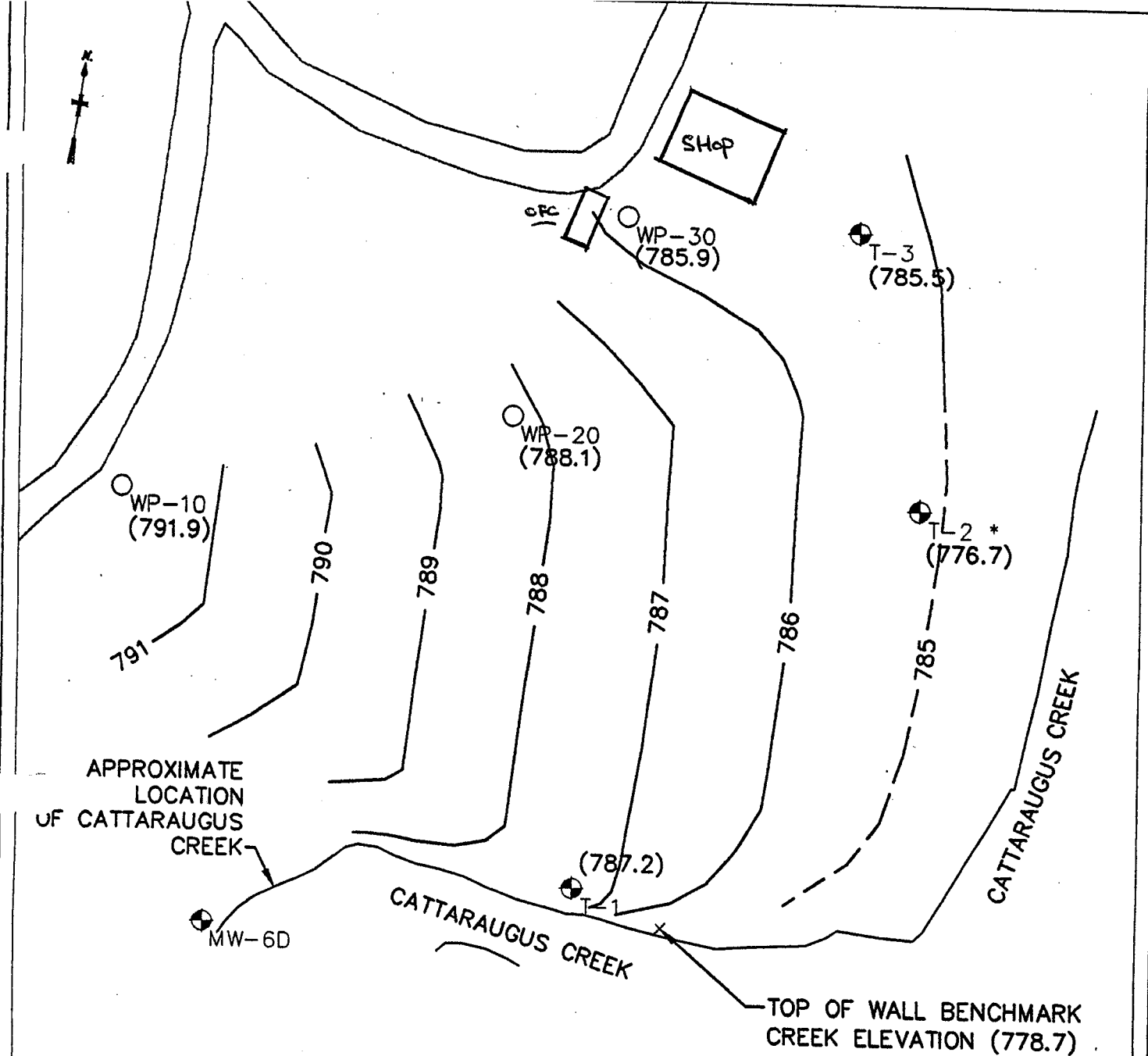


Fig. 2A

LEGEND

- (785.5) ELEVATION OF SHALLOW WATER-BEARING ZONE ON AUGUST 17, 2000
- ⊗ T-1 MONITORING WELL
- WELL POINT WP-10



APPROX. SCALE: 1 INCH = 150 FEET

* T-2 NOT USED TO DEVELOP ISOCONTOURS



MOENCH TANNING COMPANY
GOWANDA, NEW YORK
**TANNERY SITE WELL
INSTALLATION PROGRAM**
AUGUST 2000

**GROUNDWATER
ISOPOTENTIAL MAP**

3.0 MONITORING METHODS

3.1 GROUNDWATER MONITORING-LANDFILL & FORMER PLANT SITE.

SAMPLES COLLECTED DURING THE TWO MONITORING EVENTS, FOR THE LANDFILL, AND MOENCH CO. PERSONNEL COLLECTED ONE EVENT FOR THE FORMER PLANT SITE. IN 2000, THE ANALYTICAL WORK WAS PERFORMED BY PHILIPS ANALYTICAL SERVICES. (HAMILTON, ONTARIO). THE ANALYSIS WAS PERFORMED IN ACCORDANCE WITH THE SAMPLING PLAN/QUALITY

ASSURANCE PLAN FOR THE PALMER STREET LANDFILL (REFERENCE 3). LABORATORY ANALYSES WERE PERFORMED IN ACCORDANCE WITH THE USEPA SW-846, 3RD EDITION (REFERENCE 4). THE MONITORING PARAMETERS ARE LISTED IN TABLE 1. SAMPLES WERE COLLECTED FROM EACH OF THE TEN(10) MONITORING LOCATIONS IDENTIFIED IN SECTION 2.0.

PRIOR TO SAMPLING, STATIC WATER LEVEL ELEVATIONS WERE MEASURED IN THE MONITORING WELLS AND THE WELLS WERE PURGED (SEE TABLE 4). GROUNDWATER ELEVATIONS WERE ALSO MEASURED IN THE PIEZOMETERS, INFILTRMETERS, AND WELLS ON-SITE.

FIELD SAMPLES WERE COLLECTED AND MEASURED FOR THE FIELD PARAMETERS IDENTIFIED IN TABLE 1. THE FIELD MEASUREMENTS ARE SUMMARIZED IN TABLE 7.

3.2 INFILTRMETER MONITORING

FIVE INFILTRMETERS HAVE BEEN INSTALLED BENEATH THE LANDFILL CAP TO AID IN THE ASSESSMENT OF PERFORMANCE OF THE CAP. DURING EACH SEMIANNUAL EVENT, WATER LEVELS IN THE INFILTRMETER ARE MEASURED AND THE AMOUNT OF WATER INFILTRATING IS CALCULATED.

THE CALCULATED INFILTRATION RATES ARE PRESENTED ON TABLE 2 & 3. CALCULATED INFILTRATION RATES ARE USUALLY WITHIN THE DESIGNED INFILTRATION RATE OF 1×10^{-7} CM/SEC, EXCEPT ARE NOTED ON THE TABLE. A SCHEMATIC SHOWING THE DESIGN AND DIMENSIONS OF THE INFILTRMETERS IS PRESENTED IN ATTACHMENT A.

DUE TO WET CONDITIONS, AND NEIGHBORING SPRINGS, INFILTRMETER #1 IN AREA #2, IS FREQUENTLY FLOODED.

TABLE 1

**MOENCH COMPANY
PALMER STREET LANDFILL**

ROUTINE GROUNDWATER QUALITY MONITORING PARAMETERS

Soluble Arsenic
Soluble Chromium
Soluble Lead
Volatile Organics⁽²⁾⁽³⁾
pH⁽¹⁾
Conductivity⁽¹⁾
Turbidity⁽¹⁾ *VISUAL ONLY*
Groundwater Elevation⁽¹⁾
Temperature⁽¹⁾

All samples collected for analysis of soluble metals will be pressure-filtered in the field immediately upon sample collection.

NOTES:

1. All field parameters (i.e., pH, specific conductance, temperature and turbidity) will be measured in the field. No analysis of these parameters will be required by the laboratory.
2. Volatile organic compounds will be those compounds determined by SW-846, Method 8260.

TABLE 2

MOENCH COMPANY
PALMER STREET LANDFILL
A-13-00 MONITORING EVENT

INFILTROMETER MEASUREMENTS

Infiltrometer	Static Water Level (ft) 4-13-00	Static Water Level (ft) 11-1-99	Δ Depth (ft)	# Days Between Readings (#)	Infiltration Rate		Approx. Total Rainfall This Period (ft)	Infiltration (%)
					gal/day.ft ²	(cm/sec)		
I-1	* 4.62	7.00	2.38	164	*	*	—	—
I-2	7.95	8.01	.06	"	.0004	2.0×10^{-8}	1.81 ft.	.34
I-3	7.20	7.51	.31	"	.0014	8.4×10^{-8}	"	1.7
I-4	7.95	7.89	**	"	**	**	"	—
I-5	6.30	7.20	.90	"	.0041	2.3×10^{-7}	"	5.1

Note:

** Negative ΔD precludes calculation of meaningful data.

* FREQUENTLY FLOODED

TABLE 3

MOENCH COMPANY
PALMER STREET LANDFILL
9-14-00 MONITORING EVENT

INFILTROMETER MEASUREMENTS

Infiltrometer	Static Water Level 9-14-00 (ft)	Static Water Level 4-13-00 (ft)	Δ Depth (ft)	# Days Between Readings (#)	Infiltration Rate		Approx. Total Rainfall This Period (ft)	Infiltration (%)
					gal/day.ft ²	(cm/sec)		
* I-1	4.67	4.62	NEG.	153	**	**	1.74'	**
I-2	7.85	7.95	.10	"	.0005	2.2×10^{-8}	"	.6
I-3	7.10	7.20	.10	"	.0005	2.2×10^{-8}	"	.6
I-4	8.80	7.95	NEG.	"	**	**	"	**
I-5	6.85	6.30	NEG.	"	**	**	"	**

Note:

** Negative ΔD precludes calculation of meaningful data.

* FREQUENTLY FLOODED

TABLE 4

PALMER STREET LANDFILL
SUMMARY OF GROUNDWATER ELEVATIONS⁽¹⁾

Location	Dates of Measurement	
	4-13-00	9-14-00
MW-1	821.70	820.55
MW-1D	815.52	816.42
MW-2A	806.77	808.02
MW-3	794.41	794.41
MW-3D	799.08	799.83
MW-3DR	801.67	802.47
MW-4SR	794.05	792.15
MW-4D	794.78	795.13
MW-5	DRY	DRY
MW-6	784.58	784.28
MW-6D	783.28	782.73
MW-7S	794.17	792.03
MW-7	793.54	795.30
MW-7D	795.34	795.69
MW-8D	807.54	808.19
P-1	794.30	794.15
P-1A	DRY	795.31
P-2	800.51	801.14
P-3B	817.53	817.67
P-4	797.34	797.84
P-6A	791.51	791.97
P-6B	791.67	790.80
P-6C	792.53	792.31
P-6D	791.72	792.00
P-7A	796.39	796.42
P-8A	DRY	DRY
WP-1	- RUSTED	" -
WP-4	- SHUT	" -

Notes:

(1) Measured in feet; distance above sea level.

• Well locked; unable to open.

** Wells added to program prior to November 1993 event.

MW = Monitoring Well P = Piezometer WP = Well Point

4.0 GROUNDWATER QUALITY MONITORING RESULTS

4.1 EVALUATION OF GROUNDWATER ELEVATION DATA:

GROUNDWATER ELEVATION MEASUREMENTS WERE TAKEN AT EACH OF THE ACCESSIBLE ONSITE MONITORING WELLS, PIEZOMETERS AND WELL POINTS DURING THE ANNUAL 2000, MONITORING EVENTS. THE DATA IS SUMMARIZED ON TABLE #4.

PLOTS OF THE GROUNDWATER ELEVATIONS MEASURED IN THE MONITORING WELLS WITH RESPECT TO TIME, ARE PRESENTED IN FIGURE 3, 4, & 5, FOR THE "SHALLOW OVERBURDEN, DEEP OVERBURDEN AND BEDROCK WELLS, RESPECTIVELY. AS SHOWN IN FIGURES 3, AND 4, OVERBURDEN GROUNDWATER ELEVATIONS WERE GENERALLY CONSISTENT THROUGHOUT THE MONITORING PERIOD. WATER LEVELS HAVE STABILIZED, AFTER THREE YEARS OF INCREASE('92-'94). THIS OCCURRED DUE TO CESSATION OF VILLAGE AND TANNERY PUMPING OF THE DEEP AQUIFERS. SOME SLIGHT SEASONAL FLUCTUATION STILL OCCURS.

4.2 THE GROUNDWATER AND SURFACE WATER QUALITY RESULTS FOR THE TWO SEMIANNUAL MONITORINGS AT THE PALMER STREET LANDFILL, AND ONE SAMPLE AT THE FORMER PLANT SITE, ARE PRESENTED IN TABLES #5 THROUGH #7.

IT SHOULD BE NOTED THAT THESE TABLES INCLUDES ONLY THOSE PARAMETERS WHICH WERE DETECTED ABOVE ANALYTICAL DETECTION LIMITS AT A MINIMUM OF ONE LOCATION. COMPARISON OF THE MONITORING DATA TO THE NYSDEC CLASS "GA" GROUNDWATER QUALITY STANDARDS/GUIDANCE VALUES IS ALSO PRESENTED IN THE TABLES.

BOTH THE SOIL AND WASTE AT THE PALMER STREET LANDFILL CONTAIN METALS-OF-INTEREST AS A COMPONENT OF THE SOIL OR WASTE PARTICLES (REFERENCE 5). THEREFORE, THE SEDIMENT (OR TURBIDITY) CONTENT OF ANY GROUNDWATER OR SURFACE WATER QUALITY SAMPLES WILL DIRECTLY IMPACT THE TOTAL METAL CONCENTRATION OF THE SAMPLES. THE TURBIDITY CONTENT OF THE GROUNDWATER SAMPLES COLLECTED AT THE SITE IS EXTREMELY VARIABLE AND RELATIVELY HIGH BECAUSE THE SOIL AND WASTE FILL BOTH CONTAIN HIGH PERCENTAGES OF FINE-GRAINED PARTICLES. AS NYSDEC HAS PREVIOUSLY AGREED, IN ORDER TO AVOID MIS-INTERPRETATION OF WATER QUALITY DATA, TOTAL METALS WILL NO LONGER SAMPLED FOR GROUNDWATER QUALITY STANDARDS OR EVALUATION OF GROUNDWATER QUALITY. IMPACTS WILL BE BASED ON SOLUBLE METALS CONCENTRATION. THIS APPLIES TO THE FORMER PLANT SITE WELLS, ALSO.

ALSO TOTAL NOR SOLUABLE BARIUM WILL NO LONGER BE SAMPLED FOR IN THE AGREEMENT WITH NYSDEC, AS THE ELEMENT IS NATURALLY HIGH IN CONCENTRATION IN NATIVE SOIL. 2000 ANNUAL SUMMARIES AS FOLLOWS:

- NO METALS OF CONCERN WERE DETECTED ABOVE THE CLASS "GA" STANDARD, AT ANY OF THE MONITORING LOCATIONS. SOME SLIGHT DETECTIONS OCCURRED IN THE LANDFILL SAMPLES. ARSENIC AND CHROME WERE DETECTED IN THE FIRST SAMPLE OF THE FORMER PLANAT SITE WELLS, BUT AGAIN, BELOW THE CLASS "GA" STANDARD.
- SLIGHT DETECTIONS OF ACETONE AND MEK OCCURRED IN SEVERAL WELLS IN THE PALMER STREET LANDFILL, BUT NOT ABOVE "GUIDANCE VALUES". NO VOCs WERE DETECTED IN THE FORMER PLANT SITE WELLS.
- CARBON DISULFIDE WAS DETECTED IN THE BLIND DUPLICATE(MW4D) BUT NOT IN THE MW4D WELL. CS2 IS AN UNUSUAL CONTAMINANT AT OUR SITE.

TABLE 7

MOENCH COMPANY
PALMER STREET LANDFILL
9/18 - 9/29/00 MONITORING EVENT

SUMMARY OF FIELD MEASUREMENTS

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance ⁽¹⁾ (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
(2) MW-1D *	9-19-00	13:32	14.6	7.91	810	—	CLEAR	NONE
MW-3DR ***	9-18-00	13:30	16.6	8.22	420	—	CLEAR	NONE
MW-4D	9-18-00	11:25	14.8	8.20	570	—	CLEAR	NONE
(3) MW-6D	9-18-00	7:50	14.5	8.13	1100	—	SLIGHT TUR.	NONE
MW-7D ***	9-20-00	8:55	16.9	8.12	600	—	CLEAR	NONE
MW-8D ***	ANNUAL	—	—	—	—	—	—	—
P-6B	9-18-00	9:10	18.7	8.32	440	—	CLEAR	NONE
P-6D	9-18-00	9:40	13.8	8.36	580	—	CLEAR	NONE
(4) BS-1	9-18-00	8:45	18.1	7.87	520	—	SLIGHT TUR.	NONE
(5) BS-3	9-19-00	13:10	23.1	7.42	1100	—	TURBID	NONE

NOTES:

- (1) Conductivity readings corrected to 25°C.
 (2) MW-1 is hydraulically upgradient shallow overburden well.
 (3) MW-7D is apparent hydraulically upgradient bedrock well.

(4) NO SEEP - TOO DRY - TOOK CREEK SAMPLE
 (5) " " " " " " POOL BELOW BANK.

* Shallow Overburden Well
 *** Bedrock Well

** Deep Overburden Well
 BS Bank Seep

TABLE 7

MOENCH COMPANY
PALMER STREET LANDFILL
4/17 - 4/19/00 MONITORING EVENT

SUMMARY OF FIELD MEASUREMENTS

Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance ⁽¹⁾ (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
MW-1D*	4/18/00	945	6.7	8.07	800	NOT REP	CLEAR	NO
MW-3DR**	4/18/00	805	10.3	8.21	400	"	CLEAR	NO
MW-4D	4/17/00	1148	11.6	8.29	800	"	CLEAR	NO
MW-6D	4/17/00	811	11.8	7.93	1250	"	CLEAR	NO
MW-7D***	4/19/00	920	8.2	8.32	700	"	CLEAR	NO
MW-8D***	4/18/00							
P-6B	4/17/00	1050	8.1	8.44	400	"	CLEAR	NO
P-6D	4/17/00	1055	10.0	8.41	600	"	CLEAR	NO
BS-1	4/17/00	945	12.3	8.31	700	"	SLIGHT TURBID	NO
BS-3	4/17/00	907	11.9	7.47	1050	"	SLIGHT IRON	NO
	4/18/00	920	10.2	7.76	800	"	SLIGHT IRON	NO

NOTES:

- (1) Conductivity readings corrected to 25°C.
 (2) MW-1 is hydraulically upgradient shallow overburden well.
 (3) MW-7D is apparent hydraulically upgradient bedrock well.

* Shallow Overburden Well
 *** Bedrock Well

** Deep Overburden Well
 BS Bank Seep

BLIND DUPLICATE MW-4D

MOENCH COMPANY
PALMER STREET LANDFILL
4/17-4/19/00 MONITORING EVENT⁽¹⁾

[illegible]

GUIDANCE
VALUANCE
GUIDANCE
VALUANCE

TABLE 5 (Continued)

MOENCH COMPANY
PALMER STREET LANDFILL
4/17 - 4/19/00 MONITORING EVENT⁽¹⁾

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MW-7D	ANNUAL MW-8D	BS-1	BS-3	Equipment Trip Blank ⁽³⁾	Class "GA" Std. ⁽²⁾
Metals (mg/l):							
Arsenic - Soluble	0.005	<.002	<.002	<.002	<.002	<.002	0.025
							1.0
Chromium - Soluble	0.005	<.004	<.004	.006	.004	<.004	0.05
Lead - Soluble	0.005	<.020	<.020	<.020	<.020	<.020	0.025
Volatiles (mg/l):							
ACETONE		.016	<.005	<.005	<.005	<.005	.05

GUARANTEE
VALUE

NOTES:

- (1) Only those parameters found at a concentration above laboratory detection limits at a minimum of one location are shown.
 (2) NYSDC Class "GA" Ground Water Quality Standards, 6NYCRR Part 703, Revised October 1993.
 (3) Trip blanks were analyzed for only volatile organic compounds.
 (4) MW-8D sampled only once annually (Reference 6).
 (5) Monitor wells 3D and 7 are monitored quarterly, sampled annually.
 (6) Estimated value due to limitations identified in the quality control review.

BLIND DUPLICATE - MW-4D

(B) LIKELY LAB CONTAMINATION.

**MOENCH & SONS COMPANY
PALMER STREET LANDFILL**

9/18 - 9/20/00 PALMER STREET LANDFILL MONITORING EVENT⁽¹⁾

SUMMARY OF ANALYTICAL RESULTS

[illegible]

TABLE 6 (Continued)

MOENCH COMPANY
PALMER STREET LANDFILL

9/18 - 9/29/00 MONITORING EVENT⁽¹⁾

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MW-7D	ANNUAL 4/00 MW-8D	BS-1	BS-3	Trip Blank ⁽³⁾	Class "GA" Std. ⁽²⁾
Metals (mg/l):							
Arsenic - Soluble	0.005	<.002	—	<.002	.004	<.002	0.025
Chromium - Soluble	0.005	<.004	—	.005	.009	<.004	0.05
Lead - Soluble	0.005	<.02	—	<.02	<.02	<.02	0.025
Volatiles (mg/l):							
		<.005	—	<.005	<.005	<.005	
		—	—				

NOTES:

- (1) Only those parameters found at a concentration above laboratory detection limits at a minimum of one location are shown.
 (2) NYSDEC Class "GA" Ground Water Quality Standards, 6NYCRR Part 703, Revised October 1993.
 (3) Trip blanks were analyzed for only volatile organic compounds.
 (4) MW-8D sampled only once annually (Reference 6).
 (5) Monitor-wells 3D and 7 are monitored quarterly, sampled annually.
 (6) Estimated value due to limitations identified in the quality control review.

MW-1D BLIND DUPLICATE

(B) LIKELY LAB CONTAMINATION.

TABLE 6

***FORMER TANNERY
SITE MONITORING
WELLS.

MOENCH COMPANY
PALMER STREET LANDFILL
MONITORING EVENT⁽¹⁾

9/20/00

SUMMARY OF ANALYTICAL RESULTS

Parameter	Quantitation Limit	MWT-1	MWT-2	MWT-3	Class "GA" Std. ⁽²⁾
Metals (mg/l):					
Arsenic - Soluble	0.005	.004	.004	.008	0.025
Chromium - Soluble	0.005	<.004	.015	.012	0.05
Lead - Soluble	0.005	<.02	<.02	<.02	0.025
Volatiles (mg/l):					
		<.005	<.005	<.005	

TABLE 6

MOENCH COMPANY
PALMER STREET LANDFILL
MONITORING EVENT

9-20-00

SUMMARY OF FIELD MEASUREMENTS

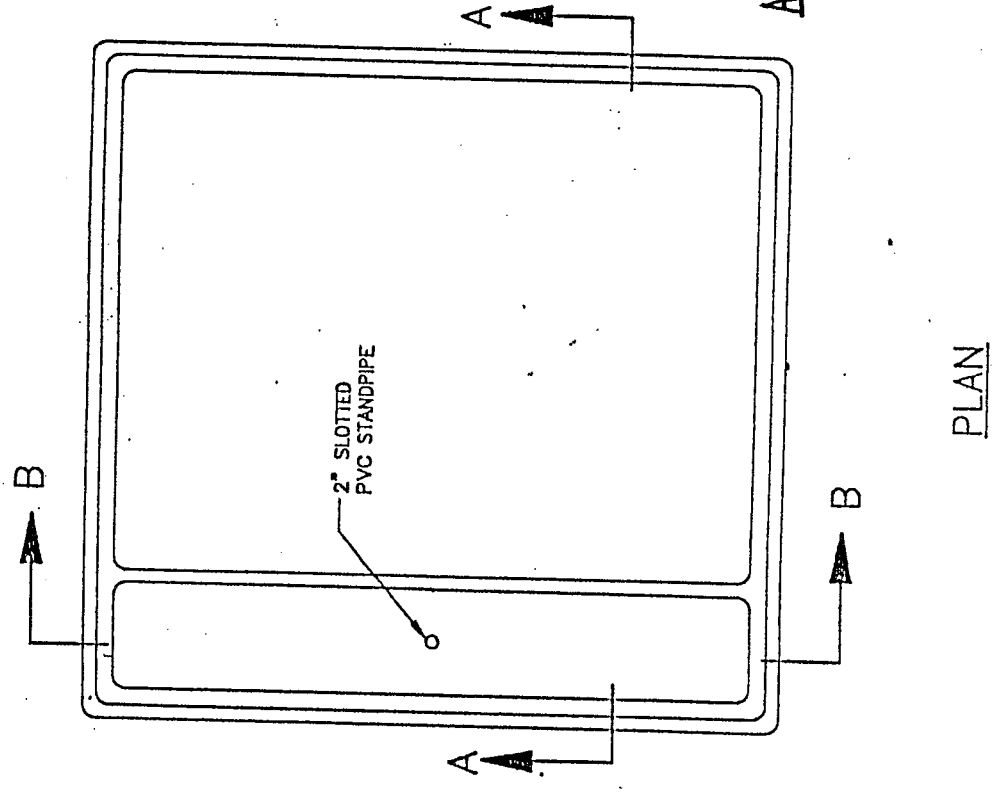
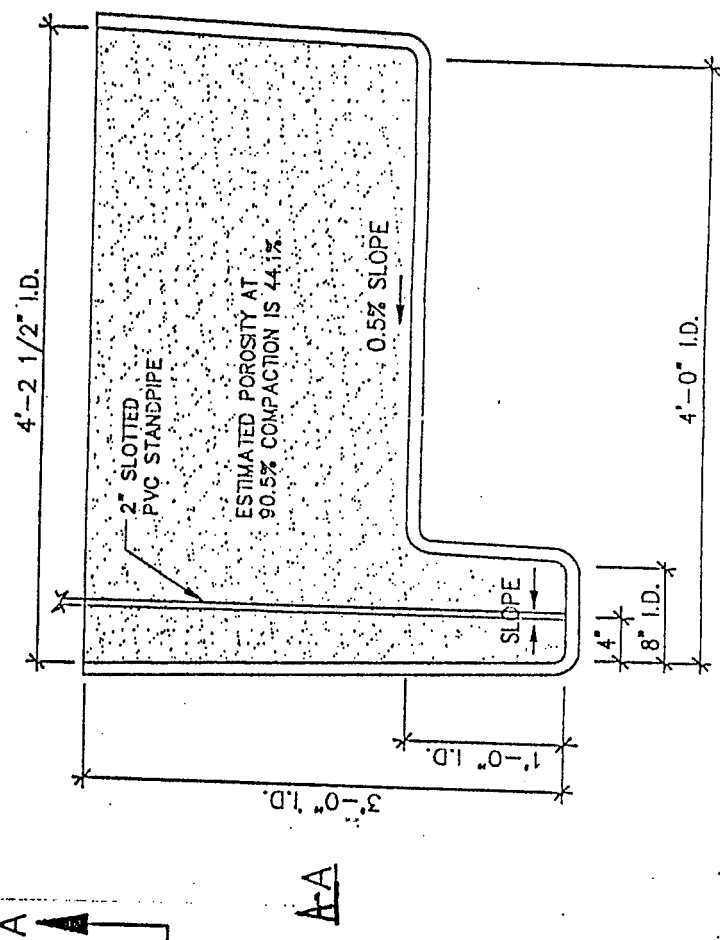
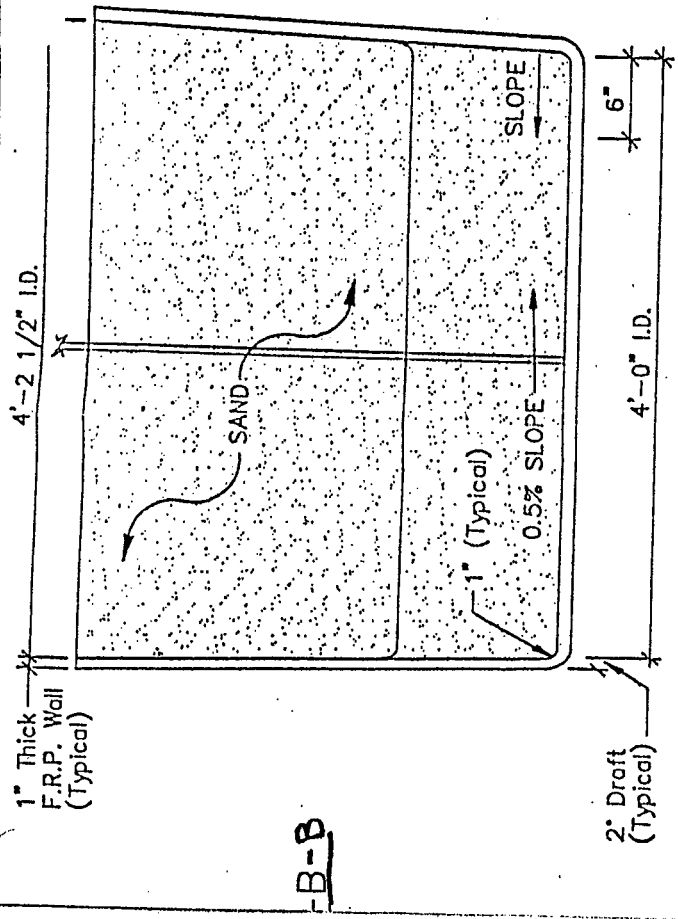
Location	Sampling Date	Sampling Time	Temp. (°C)	pH (units)	Conductance ⁽¹⁾ (umhos/cm)	Turbidity (NTU)	Sample Appearance	Sample Odor
MWT-1	9-20-00	10:50	19.7	7.28	2000	-	CLEAR	NONE
MWT-2	9-20-00	10:28	16.2	7.35	2500	-	CLEAR	NONE
MWT-3	9-20-00	10:00	18.1	7.16	1400	-	CLEAR	NONE

ATTACHMENT A

INFILTROMETER DESIGN

PALMER STREET LANDFILL
GROUNDWATER MONITORING REPORT...

4/00 + 9/00 SAMPLING EVENT..



TYPICAL INFILTRATER BY HEY'S ENTERPRISES
AS INSTALLED AT PALMER STREET LANDFILL

INFILTRATER

ATTACHMENT B

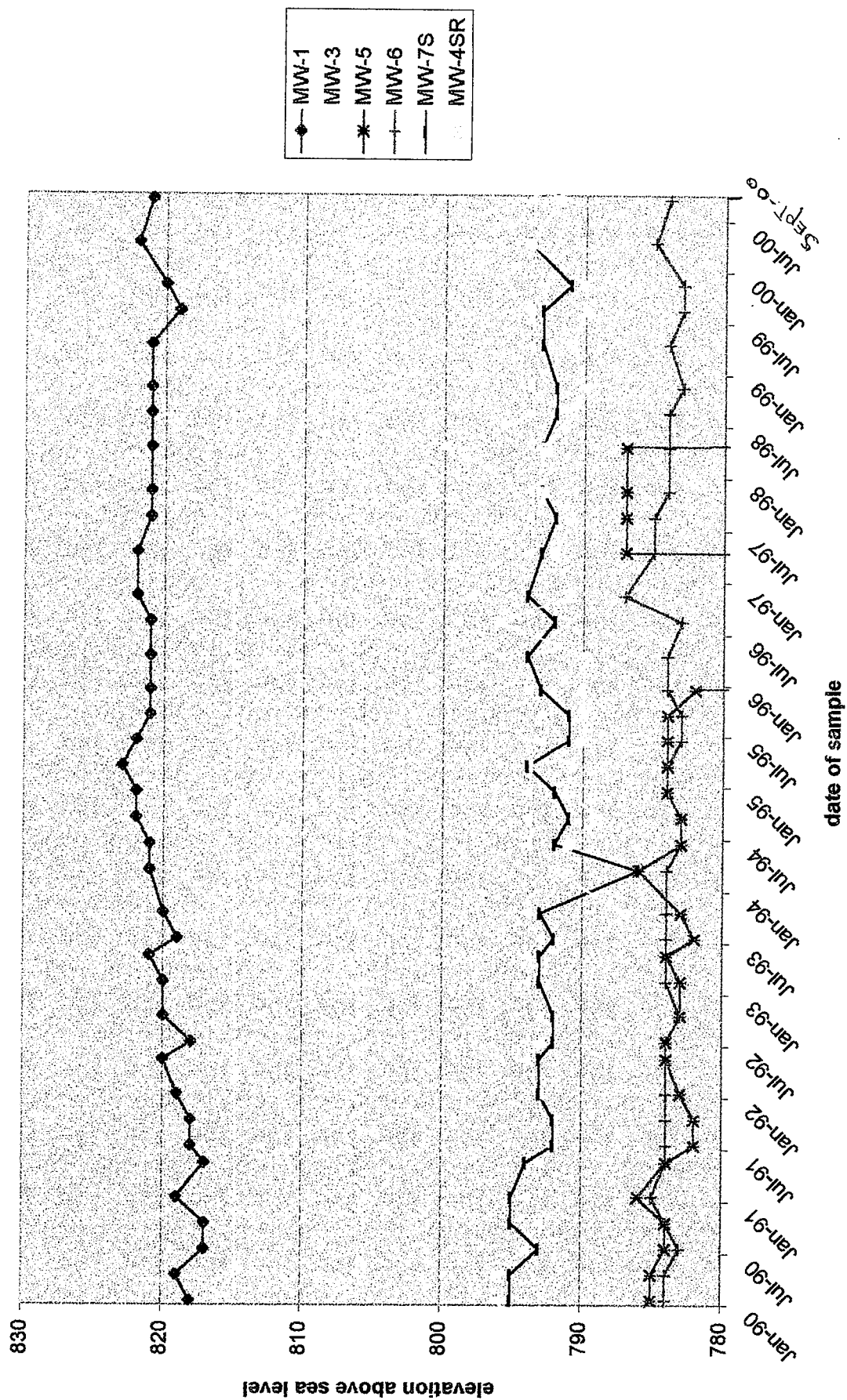
GROUNDWATER ELEVATION DATA & GRAPHS

MONITORING EVENTS 4/13/00 to 9/14/00

[illegible]

Palmer st l/fill; shallow GW water elev.

Fig. # 3



Plmrgw2

[illegible]

Palmer St. L/fill: Deep overburden GW elevation

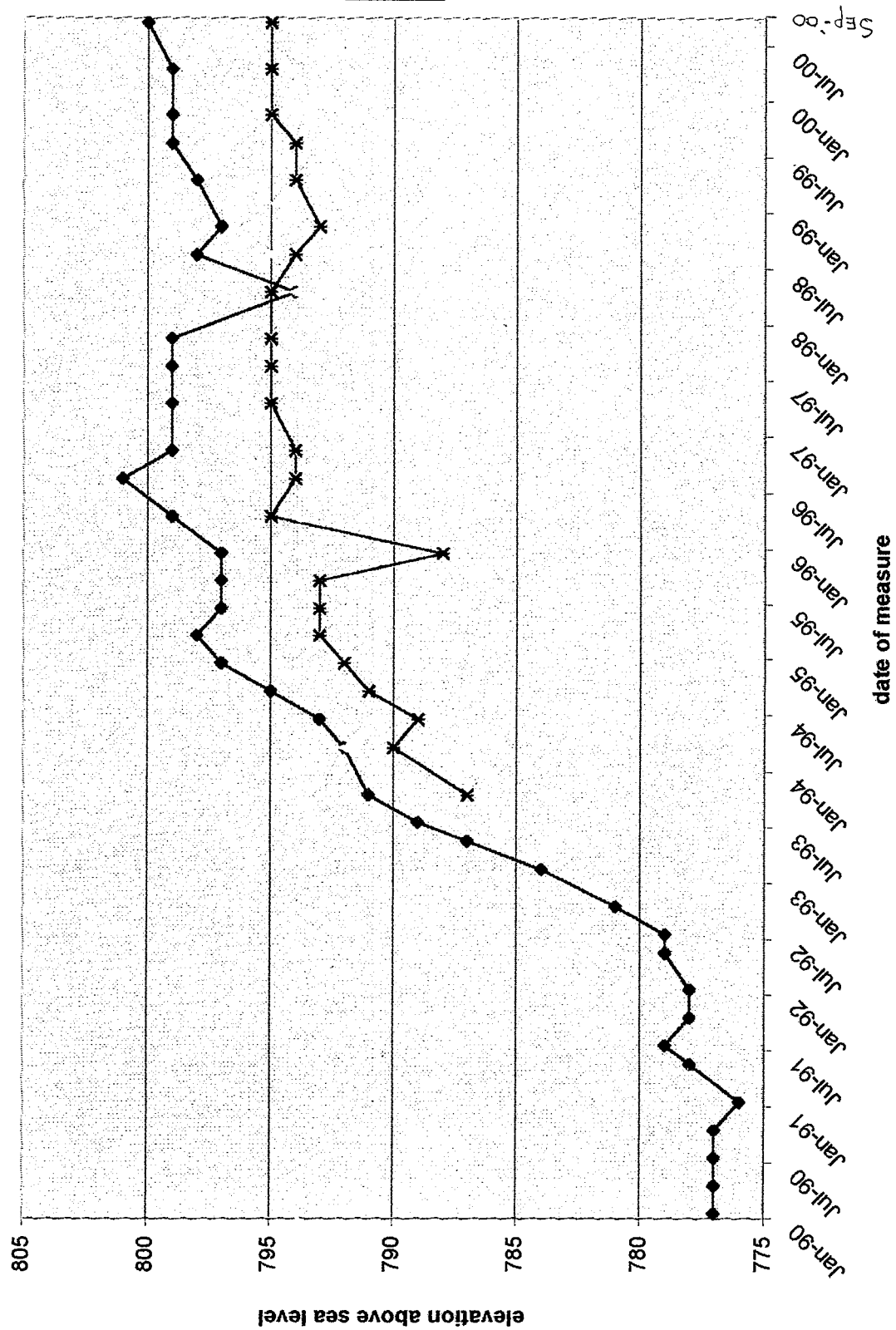
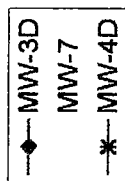


fig. #4

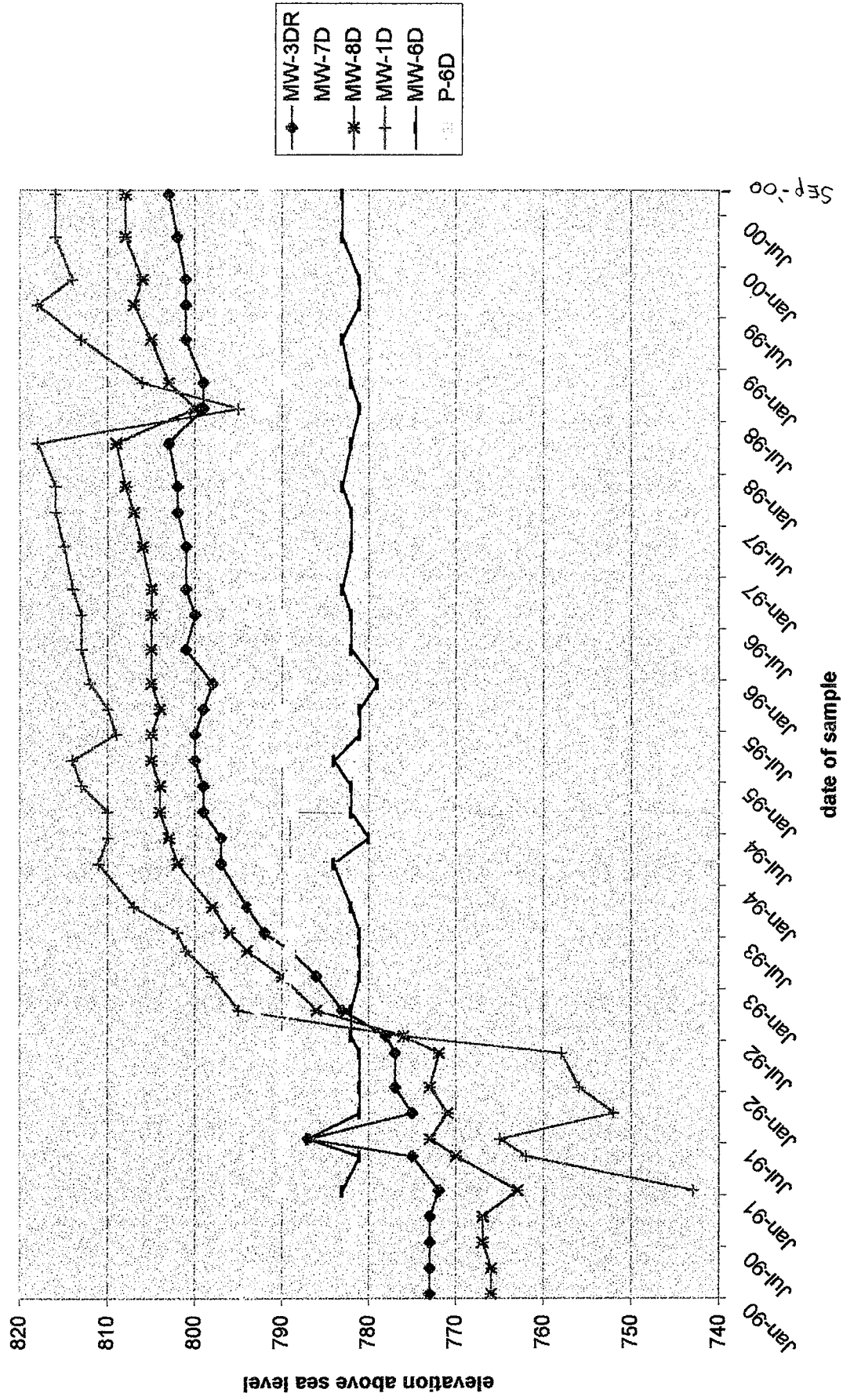


Plmrgw3

1

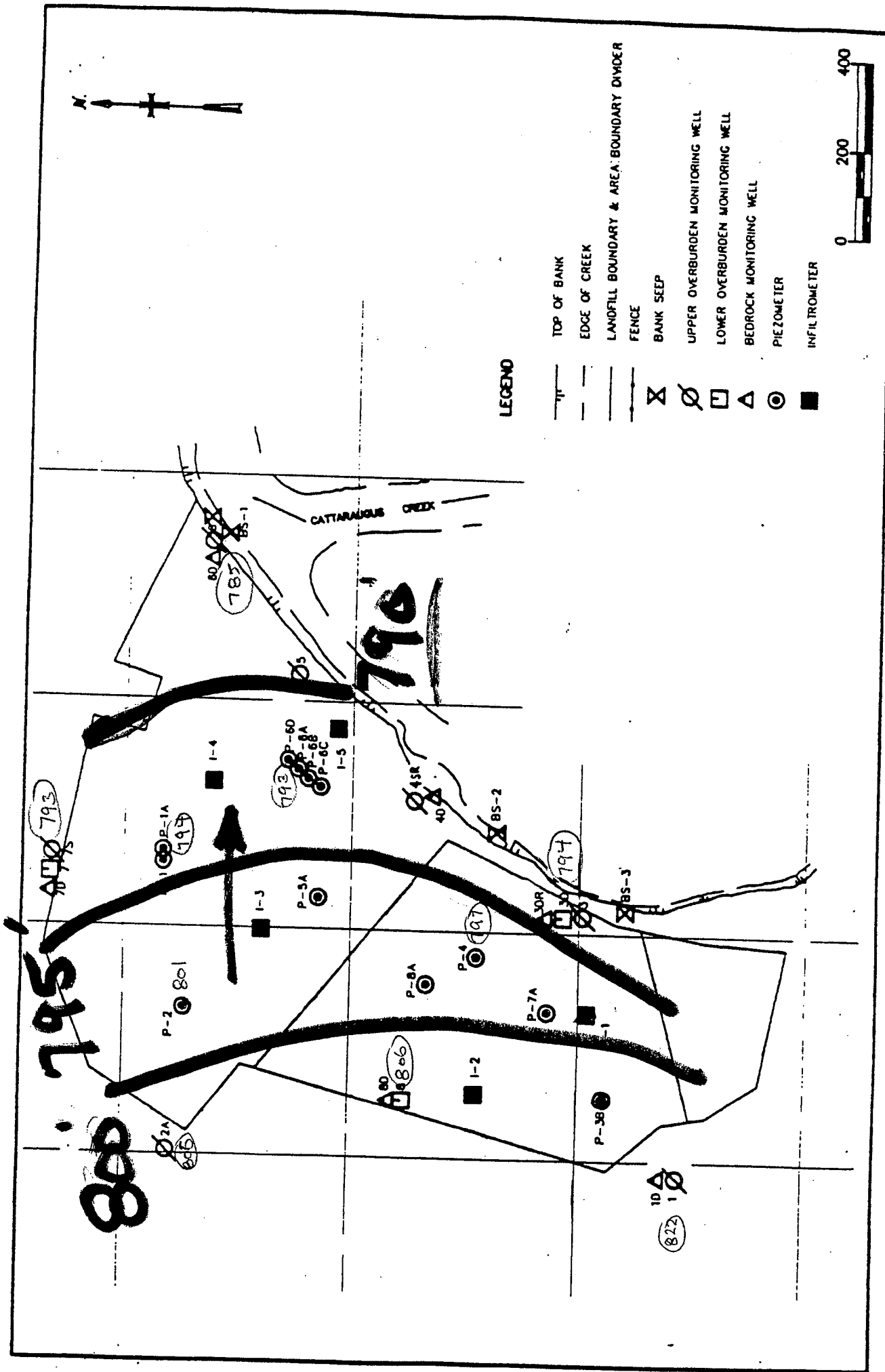
Palmer St. I/fill: Bedrock GW elevation

figure #5



5.0 GROUNDWATER FLOW

A WATER TABLE ISOPOTENTIAL MAP, BEDROCK ISOPOTENTIAL MAP AND A BEDROCK WATER LEVEL HYDROGRAPH HAVE BEEN PREPARED FOR THE PALMER STREET LANDFILL AND ARE PRESENTED IN FIGURES 3,4 AND 5, RESPECTIVELY. GROUNDWATER ELEVATIONS MEASURED THROUGH 2000 WERE USED IN PREPARING THE WATER TABLE AND BEDROCK ISO-POTENTIAL MAP INDICATED THAT THE SHALLOW GROUNDWATER FLOW IS PRIMARILY TO THE EAST TOWARD CATTARAUGUS CREEK. THE BEDROCK ISOPOTENTIAL MAP AND THE BEDROCK WATER LEVEL HYDROGRAPH ILLUSTRATE A "LEVELING OFF" AFTER THREE YEARS ('92-'94) OF RISING LEVELS AT WELLS MW-1D, MW-3DR AND MW-8D. MW-1D AND MW-8D, WHICH WERE FORMERLY DOWNGRADIENT WELLS ARE NOW UPGRADIENT OF THE LAND-FILL.



FIGURE

PALMER STREET LANDFILL
 WATER TABLE ISOPOTENTIAL MAP
 4/13/00 MONITORING EVENT

MOENCH & COMPANY JULY 1992

 FIG. 8

FIGURE

PALMER STREET LANDFILL
 WATER TABLE ISOPOTENTIAL MAP
 9-14-00 MONITORING EVENT

MOENCH COMPANY JULY 1992

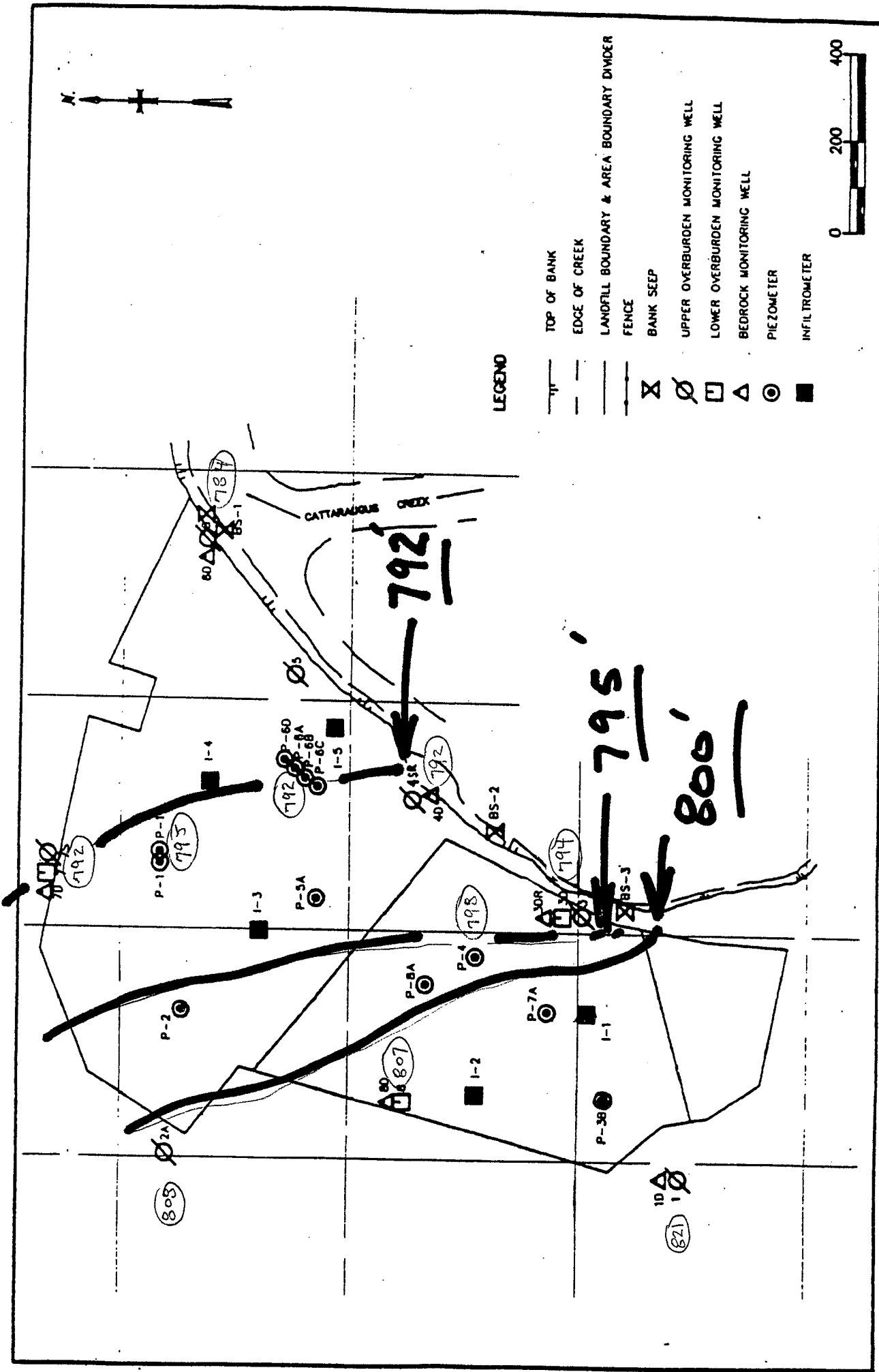
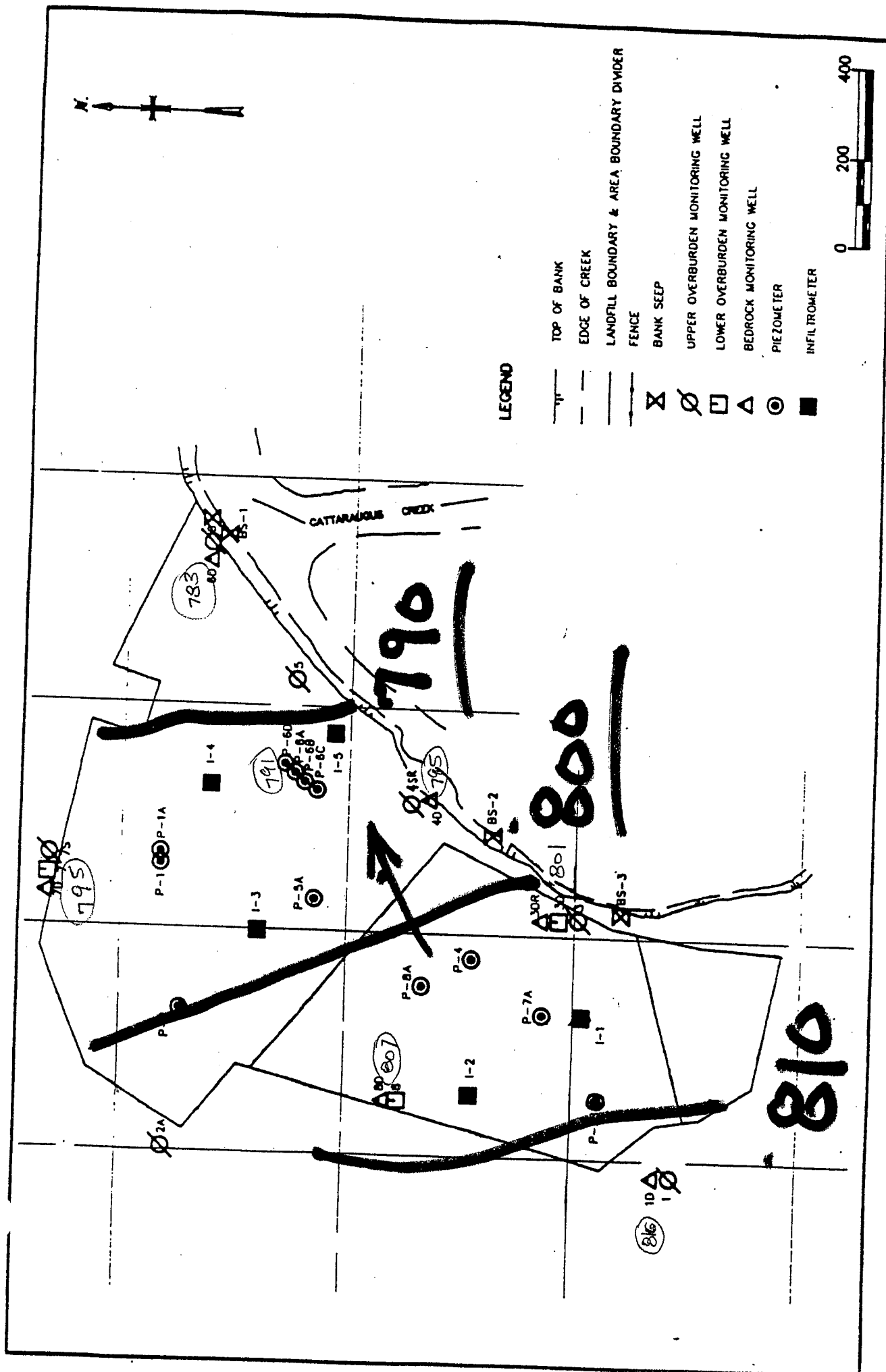


 FIG. 9



FIGURE

PALMER STREET LANDFILL
BEDROCK ISOPOTENTIAL MAP
4-13-00 MONITORING EVENT

MOENCH TANNING COMPANY JULY 1992

Fig. 10

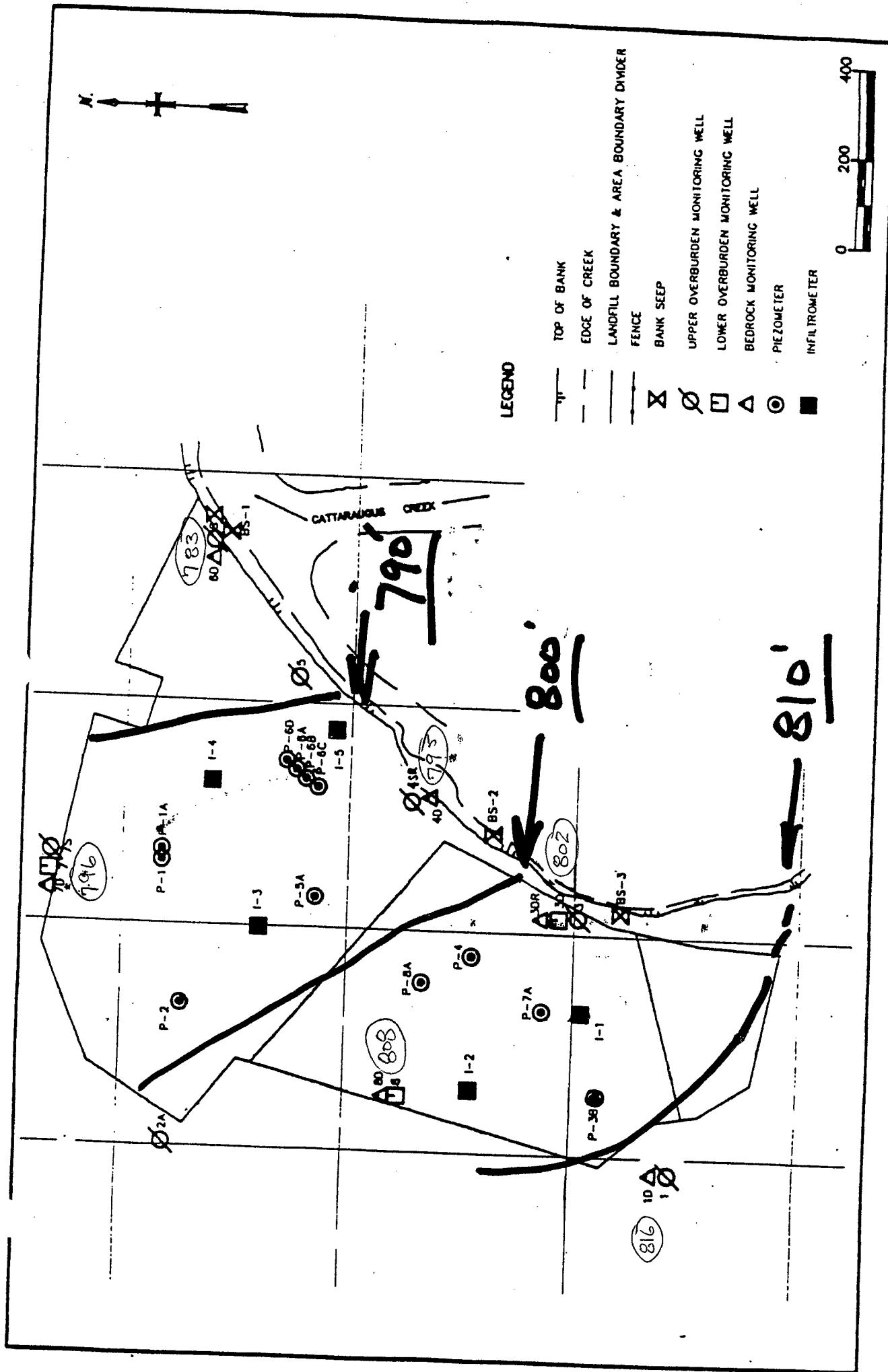


FIGURE
PALMER STREET LANDFILL
BEDROCK ISOPOTENTIAL MAP
9-14-00 MONITORING EVENT
MOENCH TANNING COMPANY JULY 1992

Fig. 11

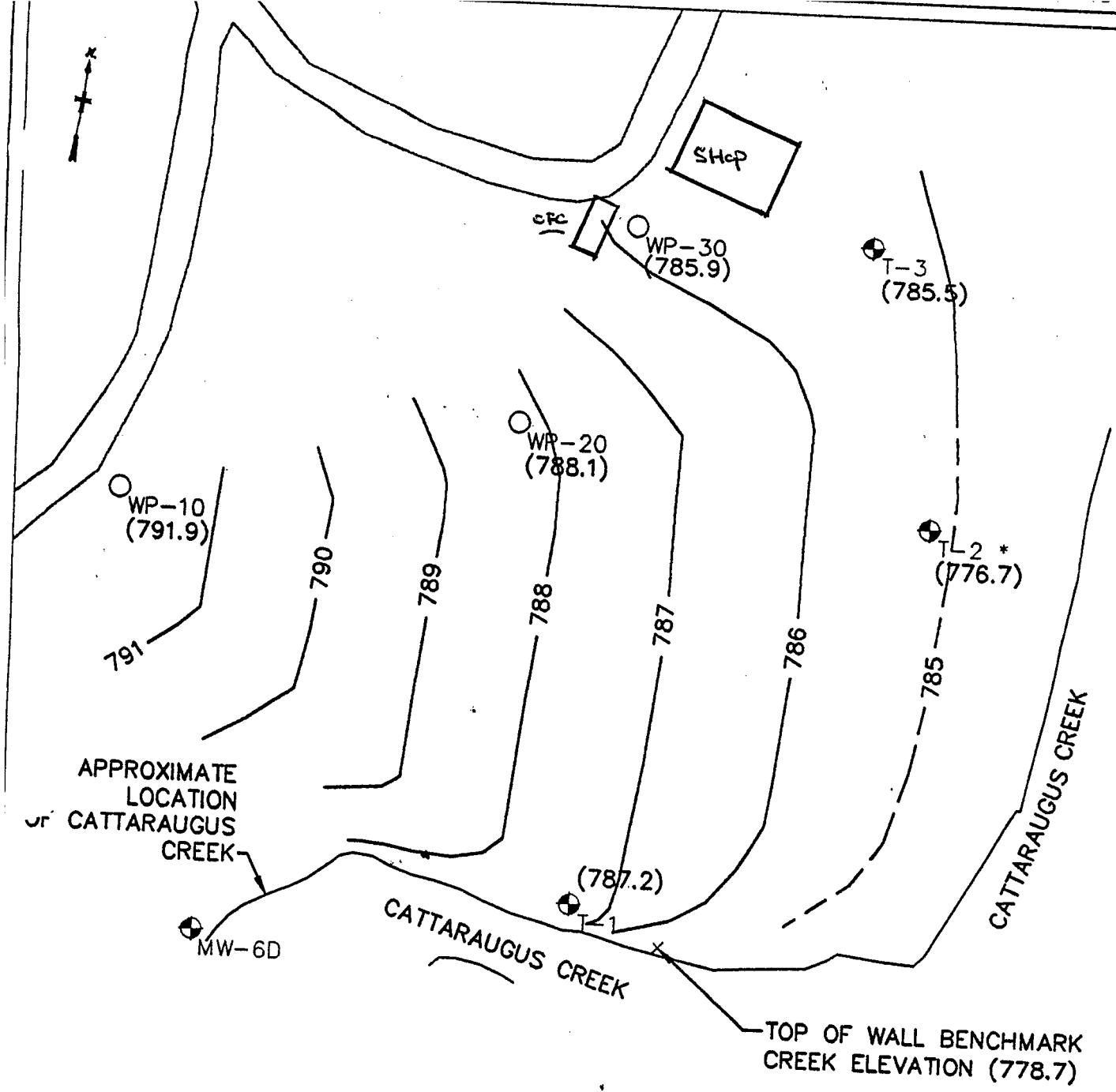


Fig. 12

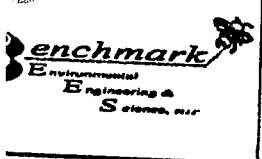
LEGEND

- (785.5) ELEVATION OF SHALLOW WATER-BEARING ZONE ON AUGUST 17, 2000
- ⊕ T-1 MONITORING WELL
- WP-10 WELL POINT



APPROX. SCALE: 1 INCH = 150 FEET

* T-2 NOT USED TO DEVELOP ISOCONTOURS



MOENCH TANNING COMPANY
GOWANDA, NEW YORK
**TANNERY SITE WELL
INSTALLATION PROGRAM**
-AUGUST 2000-

**GROUNDWATER
ISOPOTENTIAL MAP**
9-14-00 *sample*

P1mrgw4

figure #6

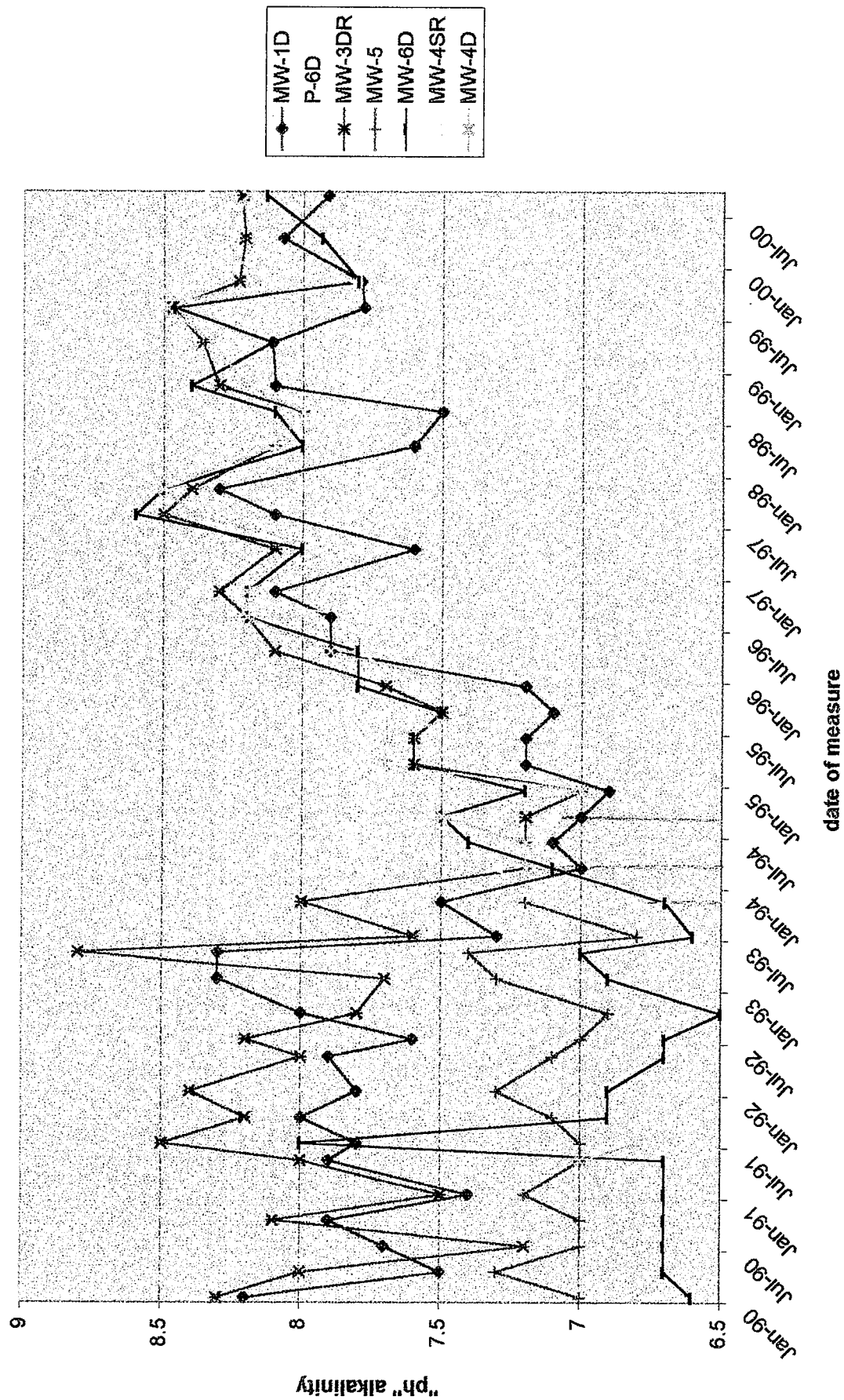
	PALMER ST L/F, MOENCH COMPANY																			
	"PH" vs TIME																			
	MONITOR POINTS & BANK SEEP																			
	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93	Mar-94	Jun-94	Sep-94	Dec-94
MW-1D	8.2	7.5	7.7	7.9	7.4	7.9	7.8	8	7.8	7.9	7.6	8	8.3	8.3	7.3	7.5	7	7.1	7	6.9
P-6D	START 94																7.3		7.1	7
MW-3DR	8.3	8	7.2	8.1	7.5	8	8.5	8.2	8.4	8	8.2	7.8	7.7	8.8	7.6	8	7.2	7.2	7.2	7
MW-5	7	7.3	7	7	7.2	7	7	7.1	7.3	7.1	7	6.9	7.3	7.4	6.8	7.2				
MW-6D	6.6	6.7	6.7	6.7	6.7	6.7	8	6.9	6.9	6.7	6.7	6.5	6.9	7	6.6	6.7	7.1	7.4	7.5	7.2
MW-4SR	START93															6.8				
MW-4D	6.8				6.9	7	6.8										7.2	7.2	7.5	7

P1mrgw4

	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98	Apr-99	Aug-99	Nov-99	Apr-00	Sep-00
MW-1D	7.2	7.2	7.1	7.2	7.9	7.9	8.1	7.6	8.1	8.3	7.6	7.5	8.1	8.11	7.78	7.79	8.07	7.91
P-6D	7.7	7.7	7.7	7.6	7.8	7.8	8.4	7.8	8.5	8.4	8.1	7.8	8.3	8.22	8.5	7.81	8.31	8.36
MW-3DR	7.6	7.6	7.5	7.7	8.1	8.2	8.3	8.1	8.5	8.4	8.1	8	8.3	8.36	8.47	8.23	8.21	8.22
MW-5																		
MW-6D	7.6	7.6	7.5	7.8	7.8	8.2	8.2	8	8.6	8.5	8	8.1	8.4	8.11	8.46	7.8	7.93	8.13
MW-4SR																		
MW-4D	7.7	7.7	7.4	7.4	7.9	8.2	8.2	7.9	8.4	8.5	8.1	8	8.2	8.33	8.49	8.17	8.29	8.2

Palmer St. I/fill: "ph" vs. time

figure #6



Plm5ph

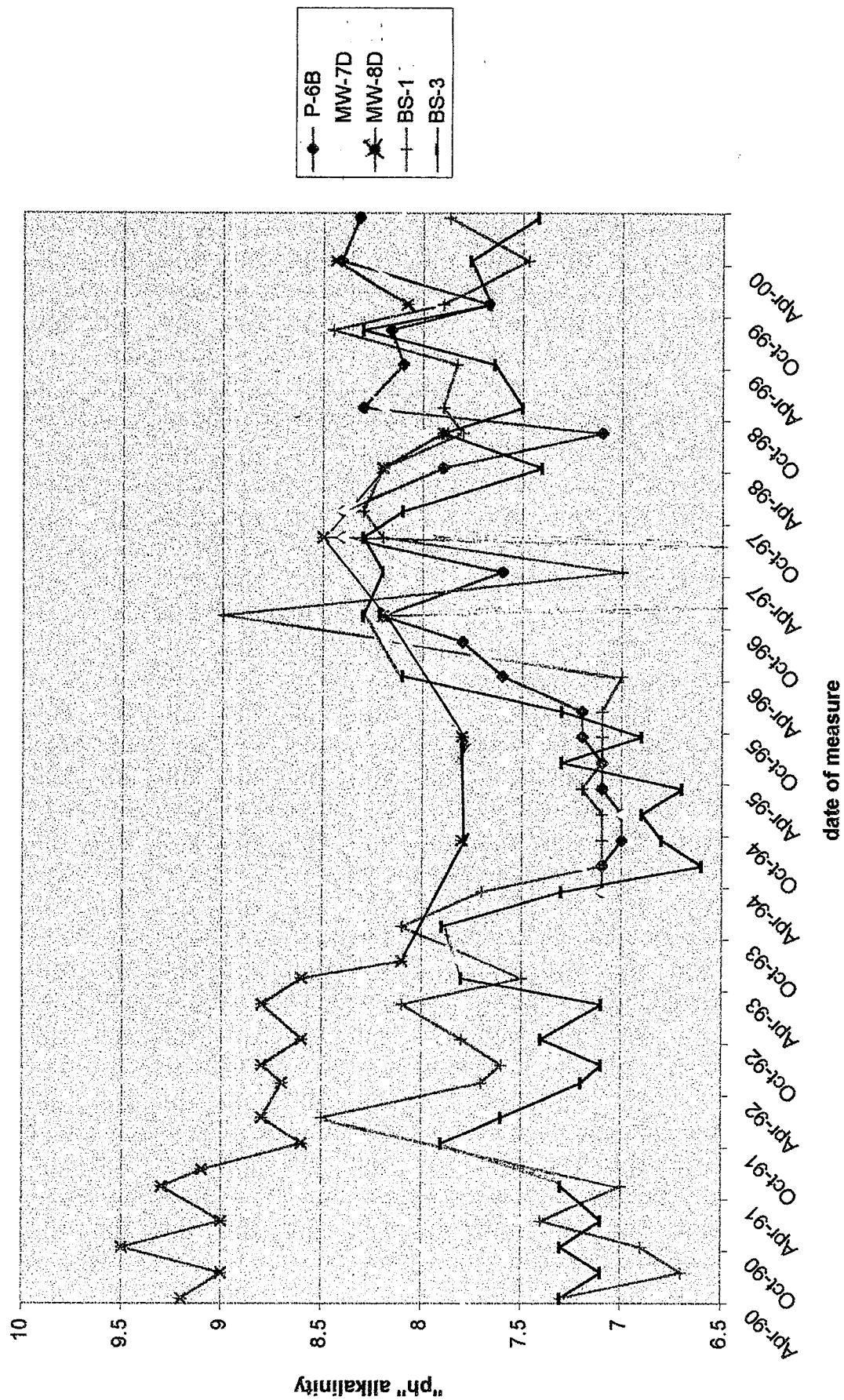
figure #6

		PALMER ST L/F, MOENCH COMPANY																		
		"PH" vs TIME																		
		MONITOR POINTS & BANK SEEPS																		
		Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93	May-93	Jul-93	Nov-93	Mar-94	Jun-94	Sep-94	Dec-94
P-6B	START94																			
MW-7D		7.7	7.8	7.9	8	7.5	7.8	7.8	7.8	8.2	8.2	7.9	7.8	8.3	7.8	8.3	7.1	7.2	7.1	7
MW-8D		10	9.2	9	9.5	9	9.3	9.1	8.6	8.8	8.8	8.6	8.8	8.6	8.1				7.8	
BS-1		7.1	7.3	6.7	6.9	7.4	7		8.5	7.7	7.6	7.8	8.1	7.5		8.1	7.7	7.1	7.1	7.1
BS-3		7	7.3	7.1	7.3	7.1	7.3		7.9	7.6	7.2	7.1	7.4	7.1	7.8		7.9	7.3	6.6	6.9

Plm5ph

Palmer St. I/fill: "ph" vs. time

fig. #6



Plmrsci

PALMER ST. LANDFILL: MOENCH CO.; Specific Conductivity vs. Time; Monitoring Wells & Bank Seeps

	Jan-90	Apr-90	Jul-90	Oct-90	Jan-91	May-91	Jul-91	Oct-91	Jan-92	May-92	Jul-92	Oct-92	Feb-93
MW-1D	0.6	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
P-6B	START94												
MW-3DR	0.6	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
MW-5	3.8	2.7	1.5	1.7	1.9	5	3	4.2	5.8	4.2	4.1	4.2	4
MW-6D	5.3	5.4	4.9	3.1	3.5	3.6	3.2	4.9	4.1	3.3	2.8	2.8	2.7
MW-4SR	ONLY93												
MW-4D													

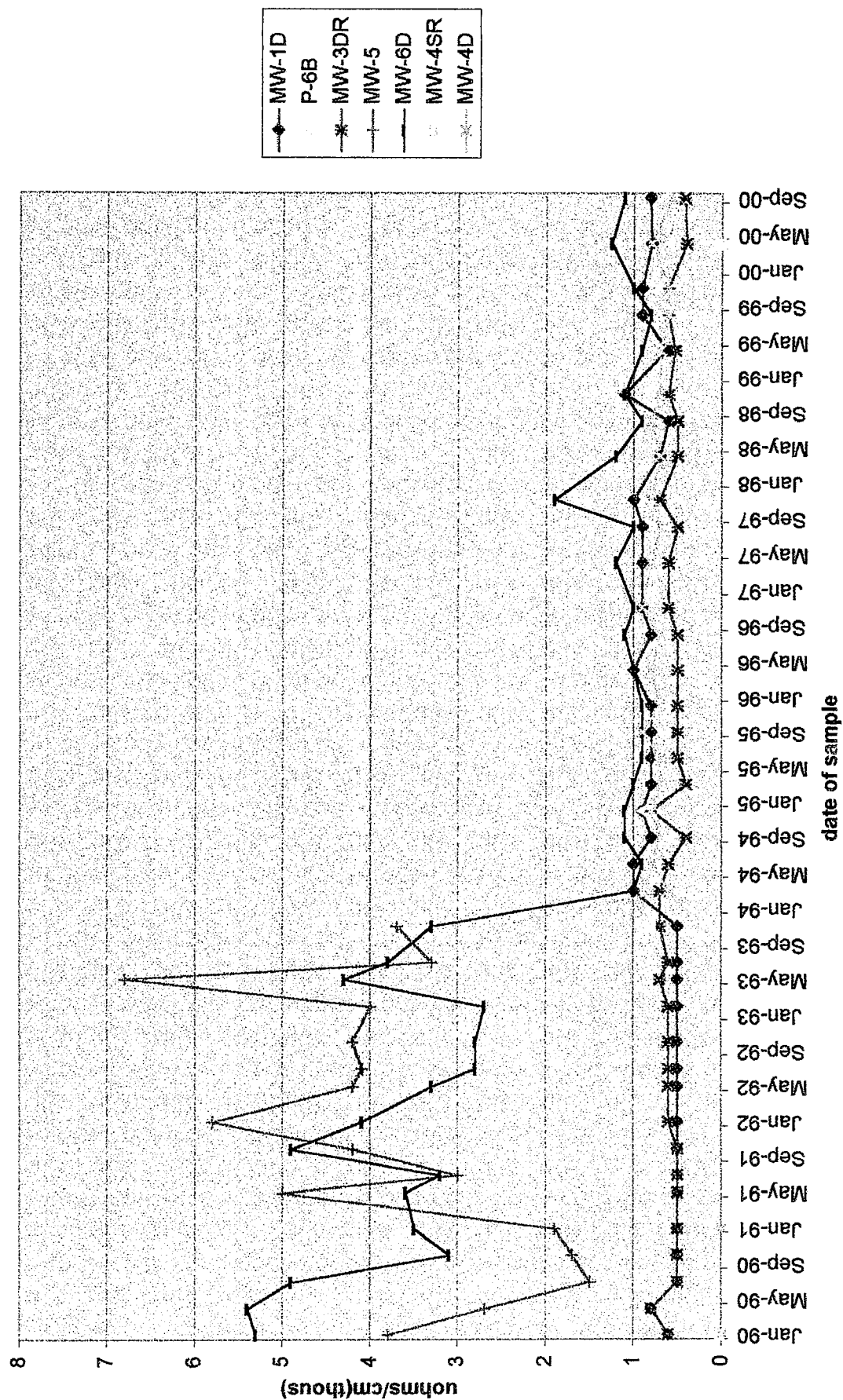
	May-93	Jul-93	Nov-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96
MW-1D	0.5	0.5	0.5	1	1	0.8	0.9	0.8	0.8	0.8	0.8	1	0.8
P-6B				0.7	0.6	0.6	0.9	0.4	0.7	0.6	0.6	0.4	0.5
MW-3DR	0.7	0.6	0.7	0.7	0.6	0.4	0.8	0.4	0.5	0.5	0.5	0.5	0.5
MW-5	6.8	3.3	3.7										
MW-6D	4.3	3.8	3.3	1	0.9	1.1	1.1	1	0.9	0.9	0.9	1	1.1
MW-4SR			0.8										
MW-4D			2.6	0.6	0.8	0.7	0.8	0.7	0.7	0.9	0.7	0.8	0.7

	Nov-96	Apr-97	Aug-97	Nov-97	Apr-98	Aug-98	Nov-98	Apr-99	Aug-99	Nov-99	Apr-00	Sep-00
MW-1D	0.9	0.9	0.9	1	0.7	0.6	1.1	0.62	0.9	0.9	0.8	0.81
P-6B	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.7	0.6	0.44
MW-3DR	0.6	0.6	0.5	0.7	0.5	0.5	0.6	0.53	0.6	0.6	0.4	0.42
MW-5												
MW-6D	1	1.2	1	1.9	1.2	0.9	1.1	0.9	0.8	1	1.25	1.1
MW-4SR												
MW-4D	0.9	0.8	0.7	0.8	0.7	0.8	0.7	0.7	0.6	0.6	0.8	0.57

fig.
#7

Fig. # 7

Palmer St. I/fill; Specific Conductiv. vs Time



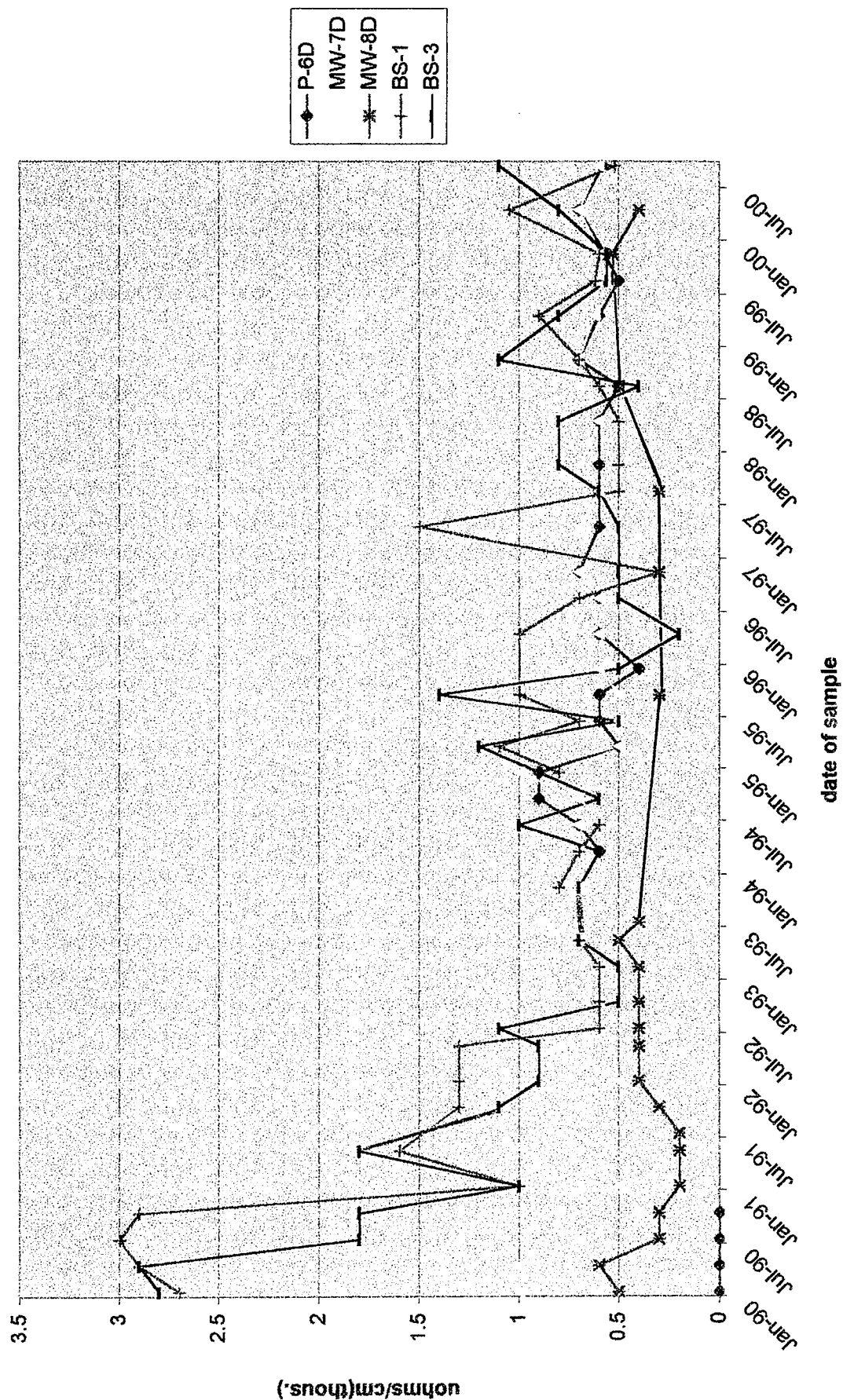
		PALMER ST. LANDFILL, MOENCH COMPANY													
		SPECIFIC CONDUCTIVITY vs TIME													
		MONITOR WELLS & BANK SEEPS													
		(umhos/CM)(THOUSANDS)													

		Jul-93	Nov-93	Mar-94	Jun-94	Sep-94	Dec-94	Mar-95	Jun-95	Sep-95	Dec-95	Apr-96	Aug-96	Nov-96	Apr-97
P-6D				0.6	0.7	0.9	0.9	0.5	0.6	0.6	0.4	0.6	0.6	0.7	0.6
MW-7D		0.9	0.7	0.7	0.7	0.7	1	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7
MW-8D		0.4								0.3				0.3	
BS-1			0.8	0.7	0.6		0.8	1.1	0.7	1		1	0.7	0.3	1.5
BS-3			0.7	0.6	1	0.6	0.9	1.2	0.5	1.4	0.5	0.2	0.5	0.5	0.5

		Aug-97	Nov-97	Apr-98	Aug-98	Nov-98	Apr-99	Aug-99	Nov-99	Apr-00	Sep-00
P-6D		0.6	0.6	0.6	0.5	0.7	0.6	0.5	0.57	0.7	0.58
MW-7D		0.6	0.7	0.6	0.7	0.7	0.62	0.61	0.59	0.7	0.6
MW-8D		0.3			0.5				0.53	0.4	
BS-1		0.5	0.5	0.5	0.6	0.7	0.9	0.62	0.6	1.05	0.52
BS-3		0.6	0.8	0.8	0.4	1.1	0.8	0.56	0.56	0.8	1.1

fig. #7

Palmer St. I/fill; specific conductiv. vs. time



4.3 RATE OF CONTAMINANT MIGRATION

Contaminant migration and potential environmental impacts for the Palmer Street Landfill are discussed in detail in the report entitled "Palmer Street Landfill - Evaluation of Alternative Cover Systems" prepared by Malcolm Pirnie, Inc., January 1989 (Reference 7). As described in the above-mentioned report, groundwater migrates from the landfill through the shallow water-bearing zone along both the eastern and northern boundaries of the waste/fill area. A reasonable assumption in determining the rate of contaminant migration across the site is the rate of contaminant migration is equivalent to the rate at which groundwater leaves the site. This latter calculation can be performed through the application of Darcy's Law which is expressed as:

$$V = \frac{ki}{\theta}$$

where: V = velocity of shallow groundwater flow (feet/day)
 k = hydraulic conductivity of the shallow water bearing zone (feet/day)
 i = hydraulic gradient (dimensionless)
 θ = average porosity of the shallow water bearing zone (dimensionless)

Values for k and θ were previously determined (see Reference 2) as 4.1 ft/day and 0.35, respectively. The hydraulic gradient (i) is measured perpendicular to the primary direction of groundwater flow (viz., to the east toward Cattaraugus Creek - see Section 5.0) using average water level elevations as measured in MW-1 and MW-3 and elevation as measured in MW-2A and MW-5 during the 1993 monitoring year. The hydraulic gradient for MW-1 and MW-3 is thus:

$$\frac{\Delta H}{\Delta X} = \frac{26.3}{600} = 0.044$$

where

ΔH = difference in average groundwater elevations between MW-1 and MW-3 (feet)

ΔX = distance between MW-1 and MW-3 (feet)

Upon inserting this value into the Darcy's Law expression for velocity, the following result is obtained:

$$V = \frac{K_i}{\theta} \frac{(4.1)(0.044)}{0.35} = 0.52 \text{ ft/day}$$

Thus, the rate of contaminant migration across the site is approximately 0.52 feet/day between monitoring wells MW-1 and MW-3.

The hydraulic gradient for MW-2A and MW-5 is as follows:

$$\frac{\Delta H}{\Delta X} = \frac{24.5}{1085} = 0.022$$

ΔH = difference in average groundwater elevations between MW-2A and MW-5 (feet)

ΔX = distance between MW-2A and MW-5 (feet)

$$V = \frac{K_i}{\theta} \frac{(4.1)(0.022)}{0.35} = 0.26 \text{ ft/day}$$

The rate of contaminant migration across the site is approximately 0.26 ft/day between monitoring wells MW-2A and MW-5.

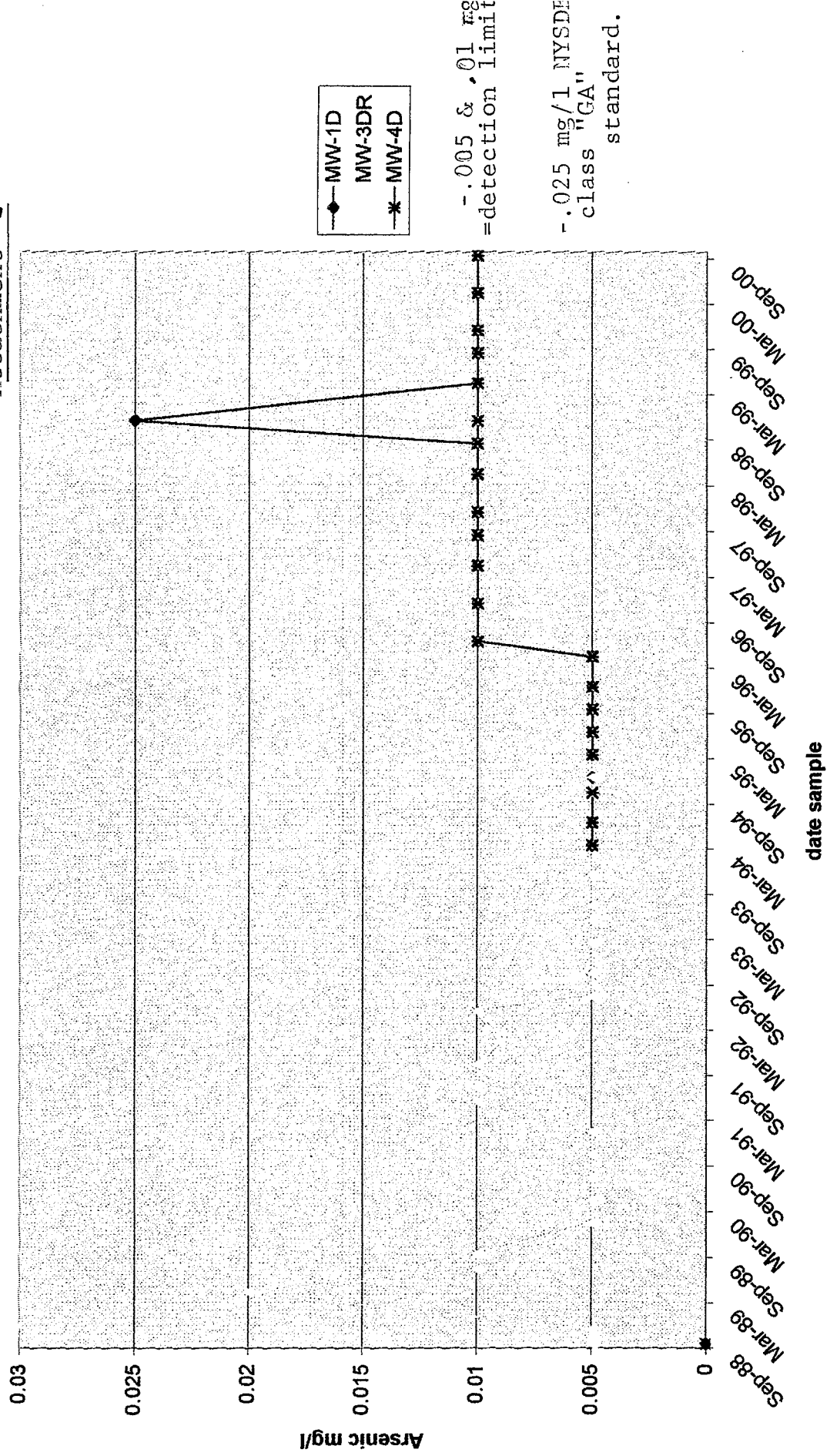
ATTACHMENT C

SOLUBLE METALS CONCENTRATION VS. TIME

MONITORING EVENTS: 4-00
9-00

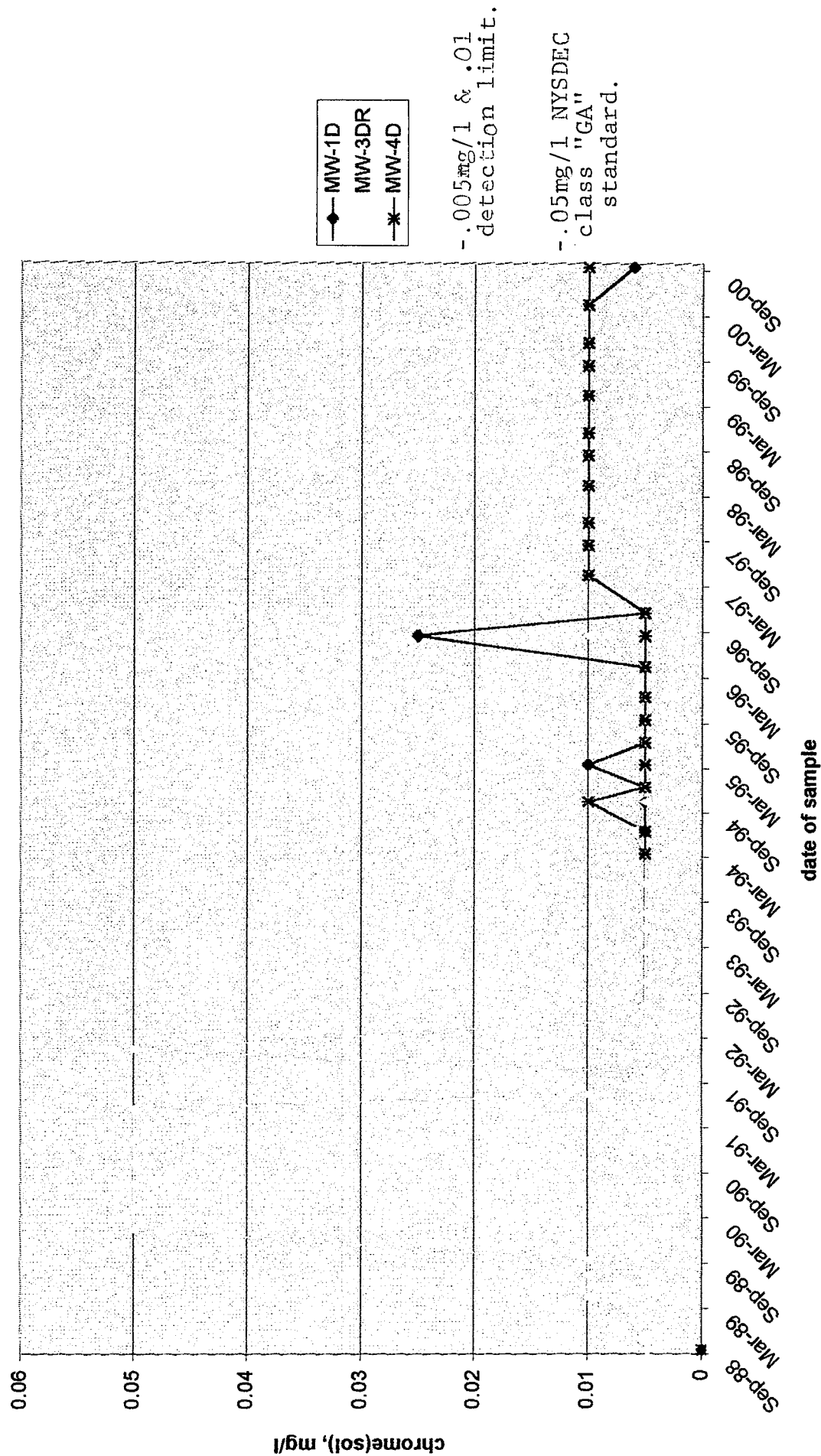
Palmer st. I/fill; Arsenic(sol)

Attachment "C"



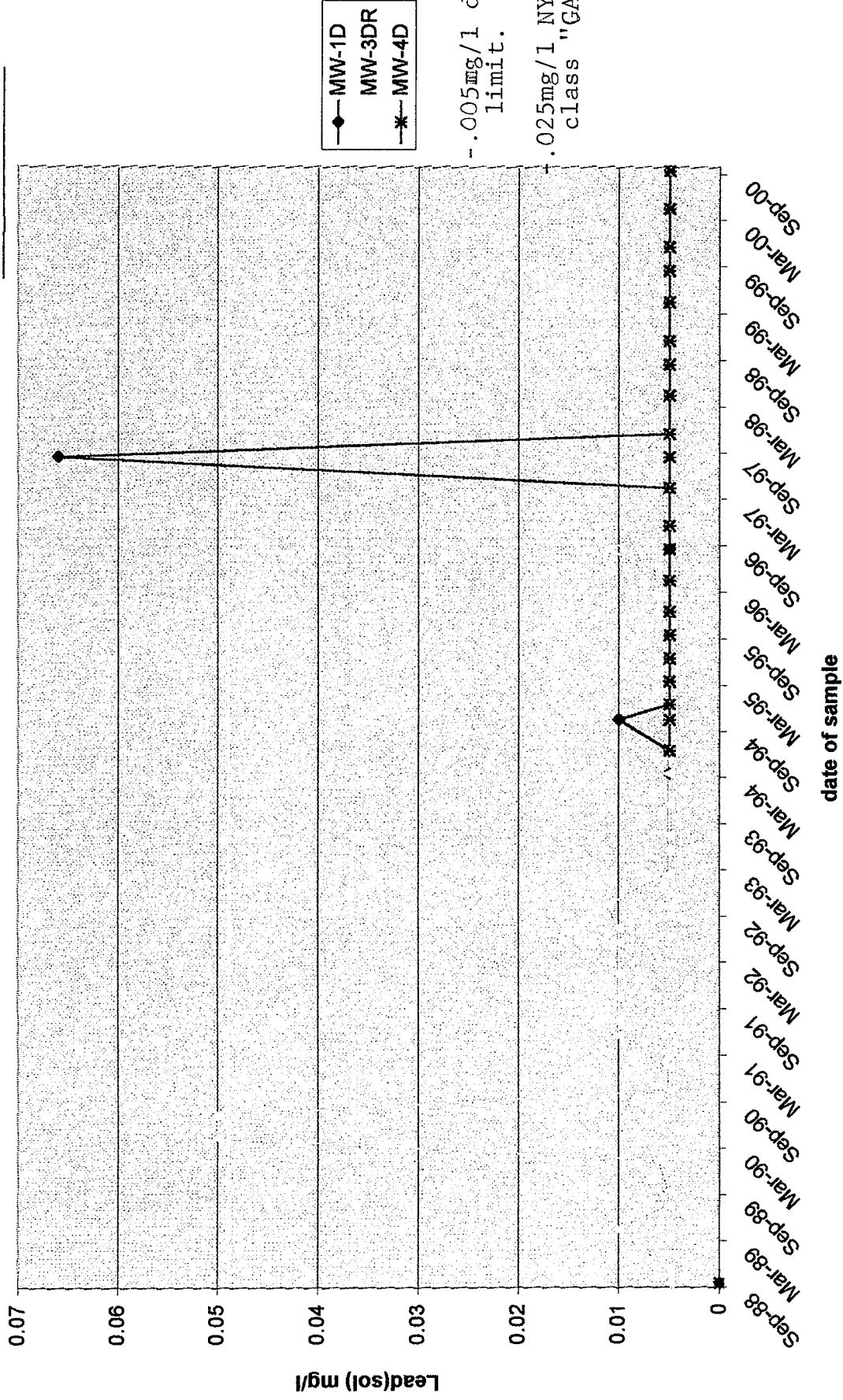
Palmer ST. I/fill; chrome(sol) vs time

Attachment "C"



Palmer St. I/fill; Lead(sol) vs time

Attachment "c"

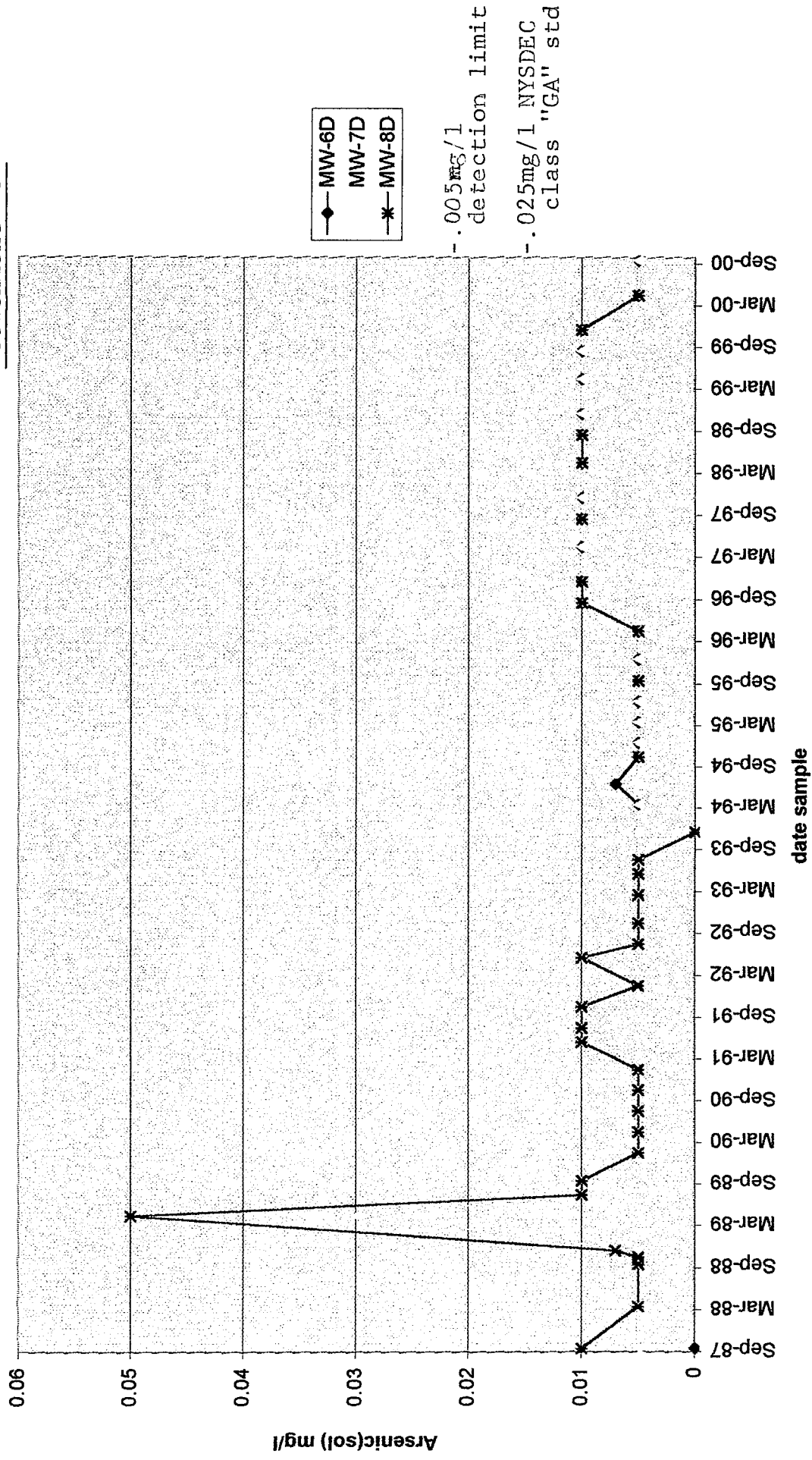


-.005mg/l detection limit.

.025mg/l NYSDEC class "GA" std.

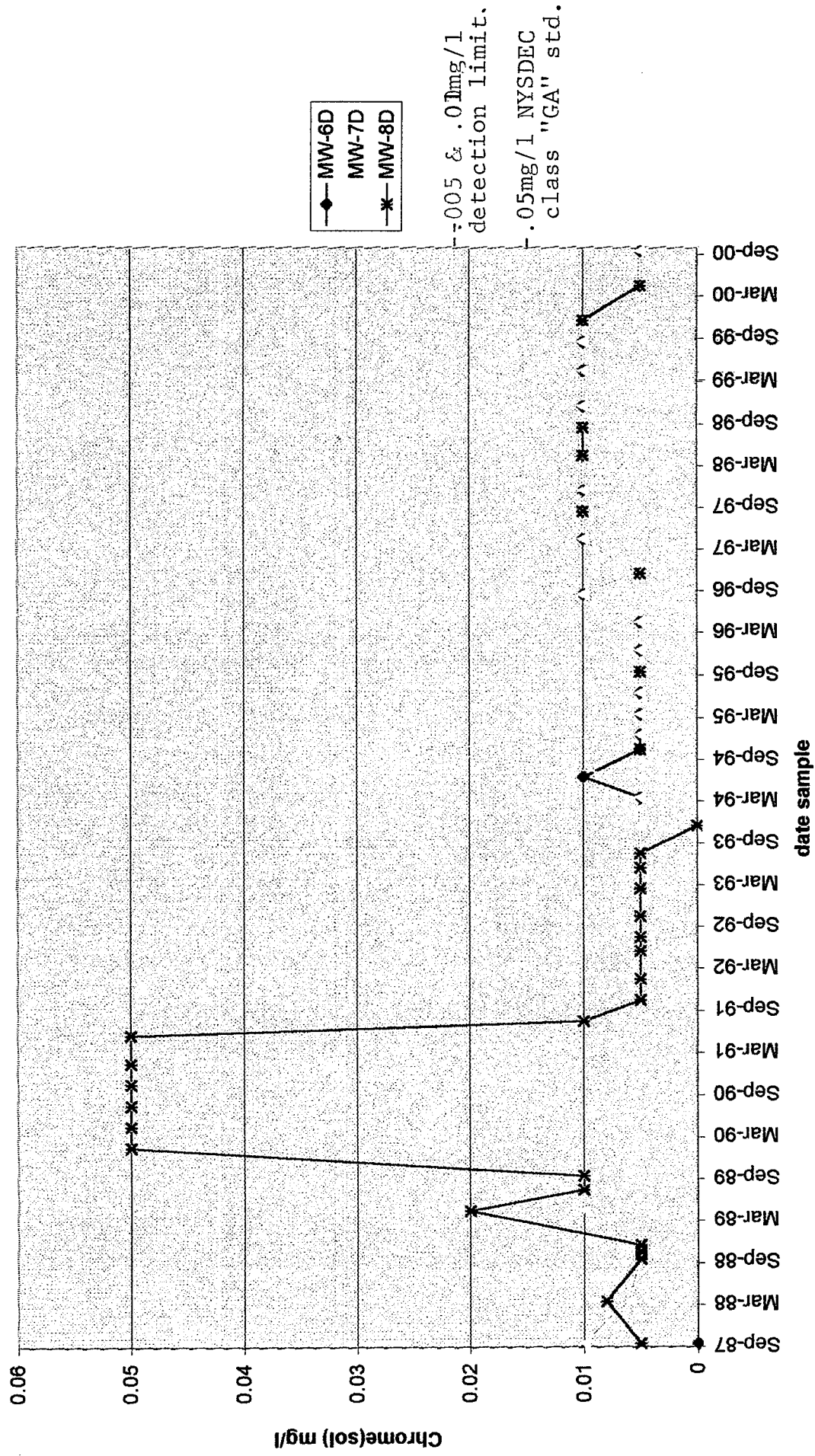
Palmer st. I/fill; Arsenic(sol)

Attachment "C"



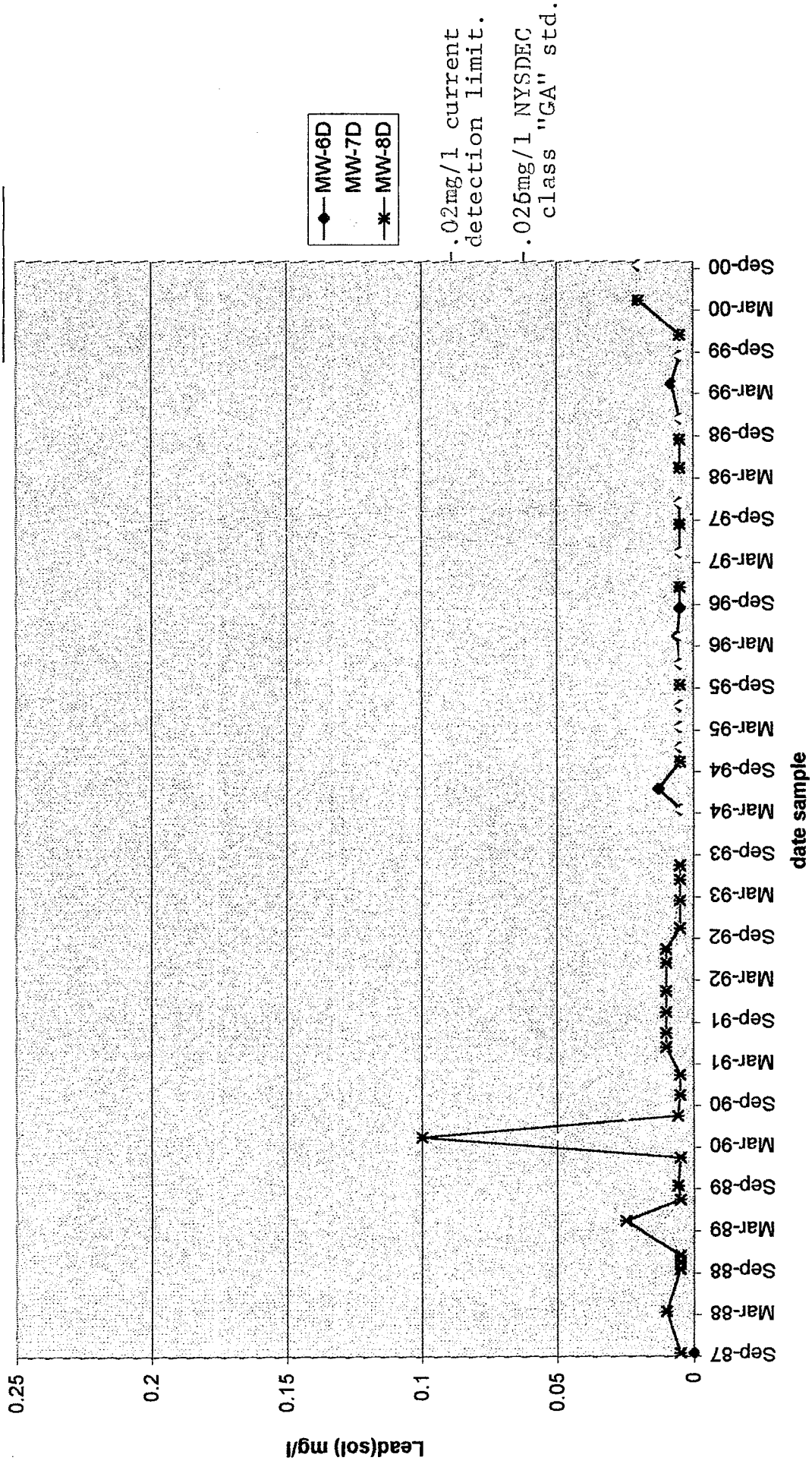
Palmer st. I/fill; Chrome(sol)

Attachment "C"

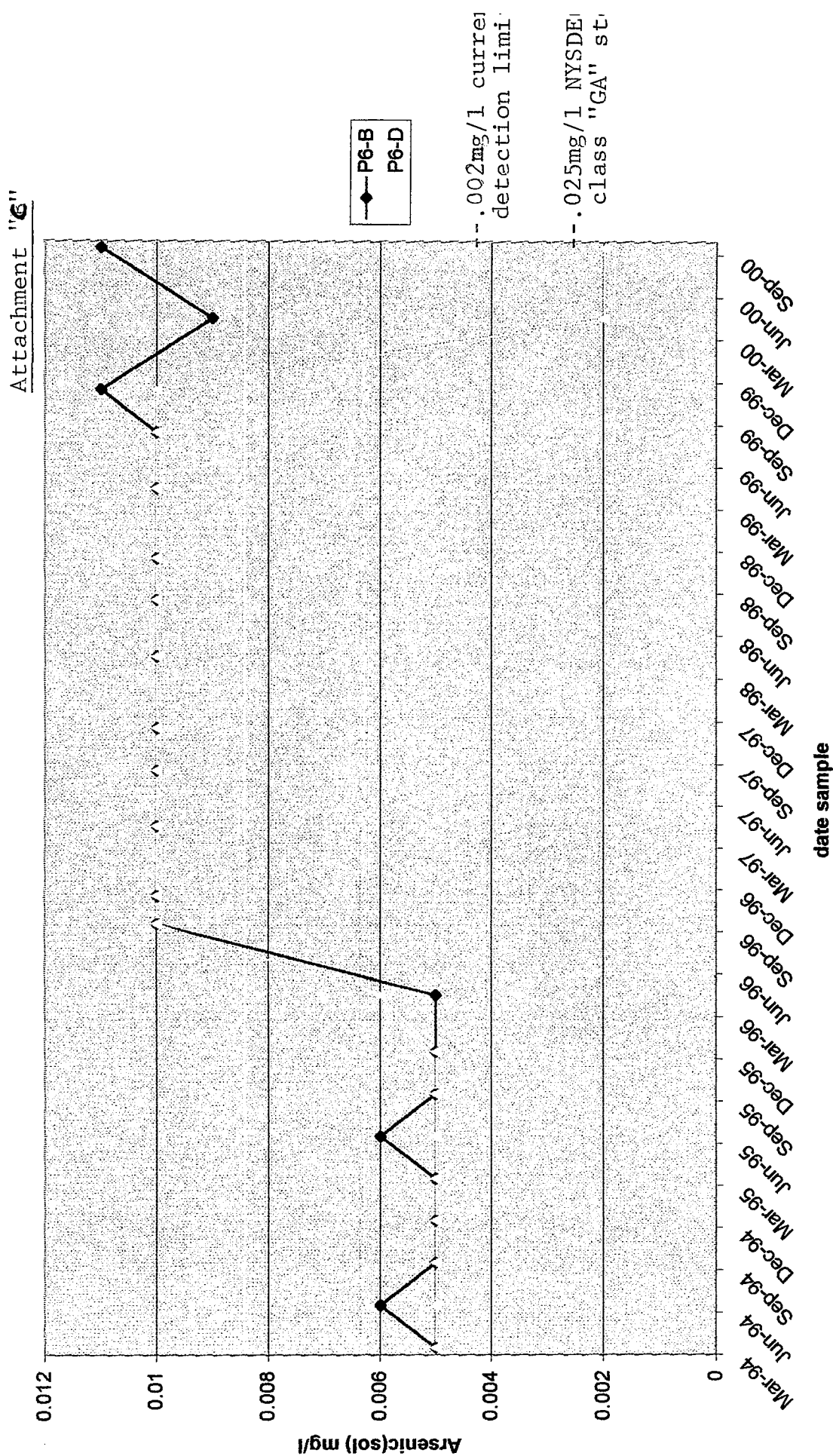


Palmer st. I/fill; Lead(sol)

Attachment "C"

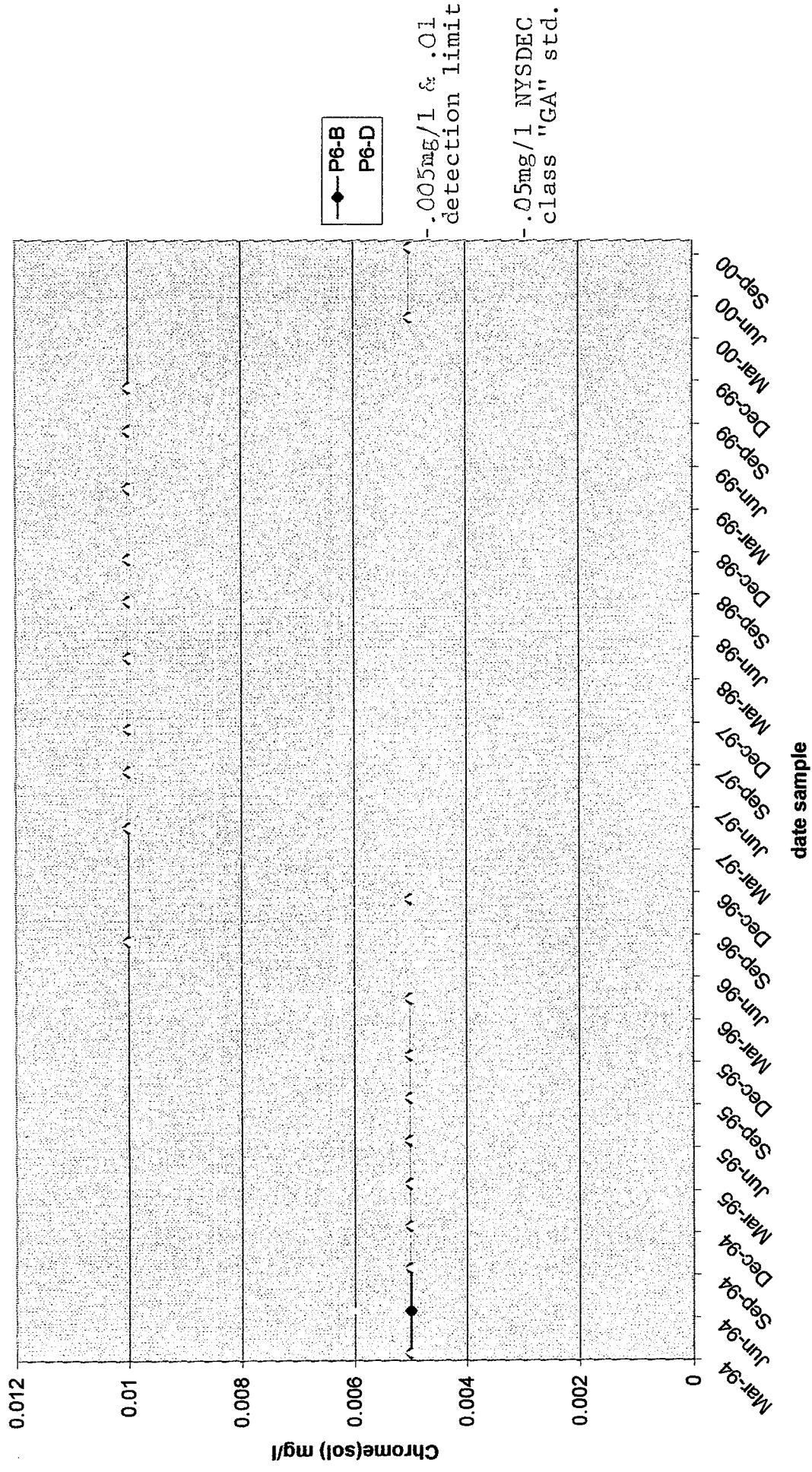


Palmer st. I/fill; Arsenic(sol)



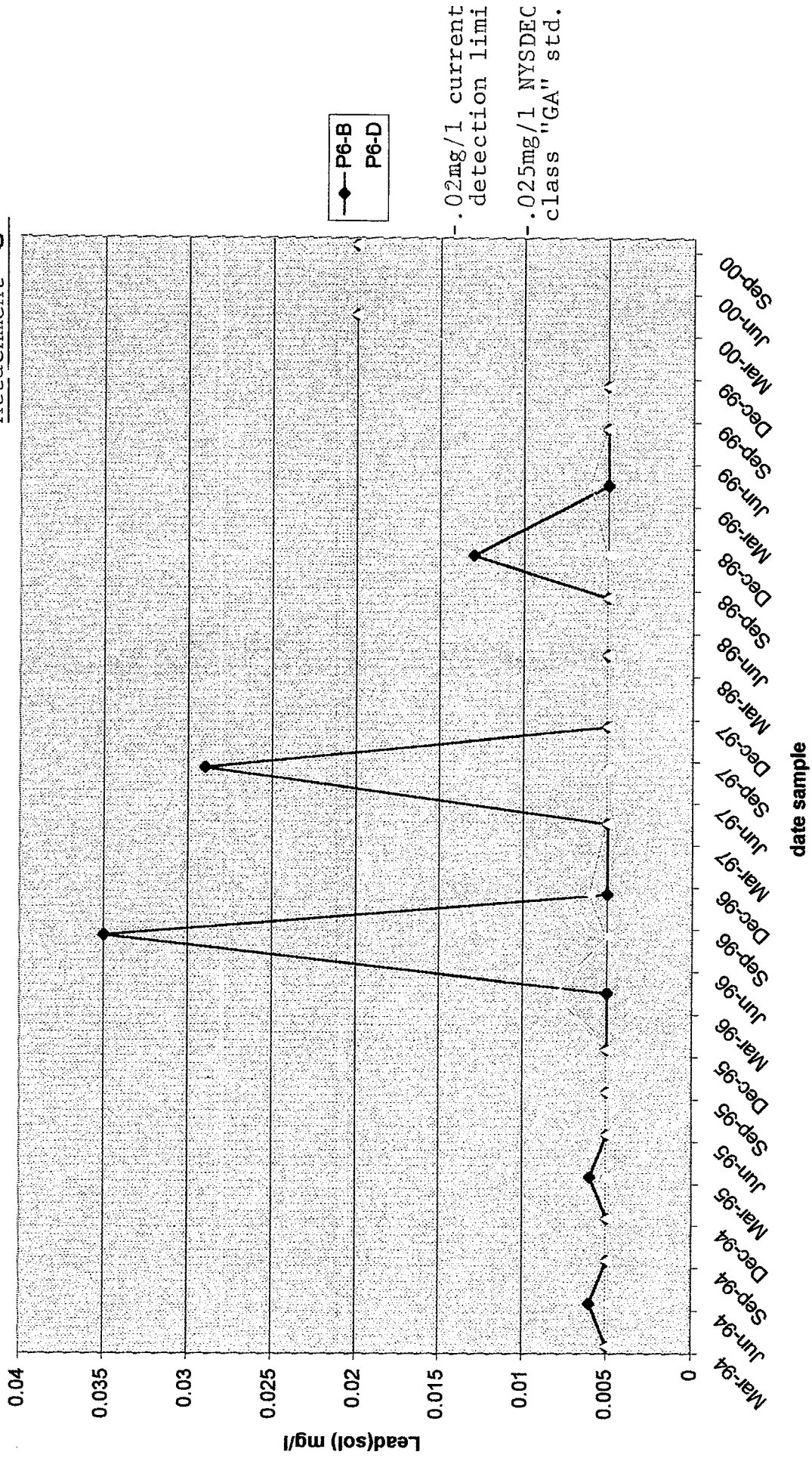
Palmer st. I/fill; Chrome(sol)

Attachment "C"



Palmer st. I/fill; Lead(sol)

Attachment "C"



Page 2

FORMER TANNERY SITE MONITORING WELLS
MOENCH COMPANY METALS(SOLUBLE) & VOCs

ATT. "C"

ARSENIC	Sep-00
MWT-1	0.004
MWT-2	0.004
MWT-3	0.008

CHROME	Sep-00
MWT-1	<.004
MWT-2	0.015
MWT-3	0.012

**no graphes due to initial sample.

LEAD	Sep-00
MWT-1	<.02
MWT-2	<.02
MWT-3	<.02

TOTAL VOCs	Sep-00
MWT-1	<.005
MWT-2	<.005
MWT-3	<.005

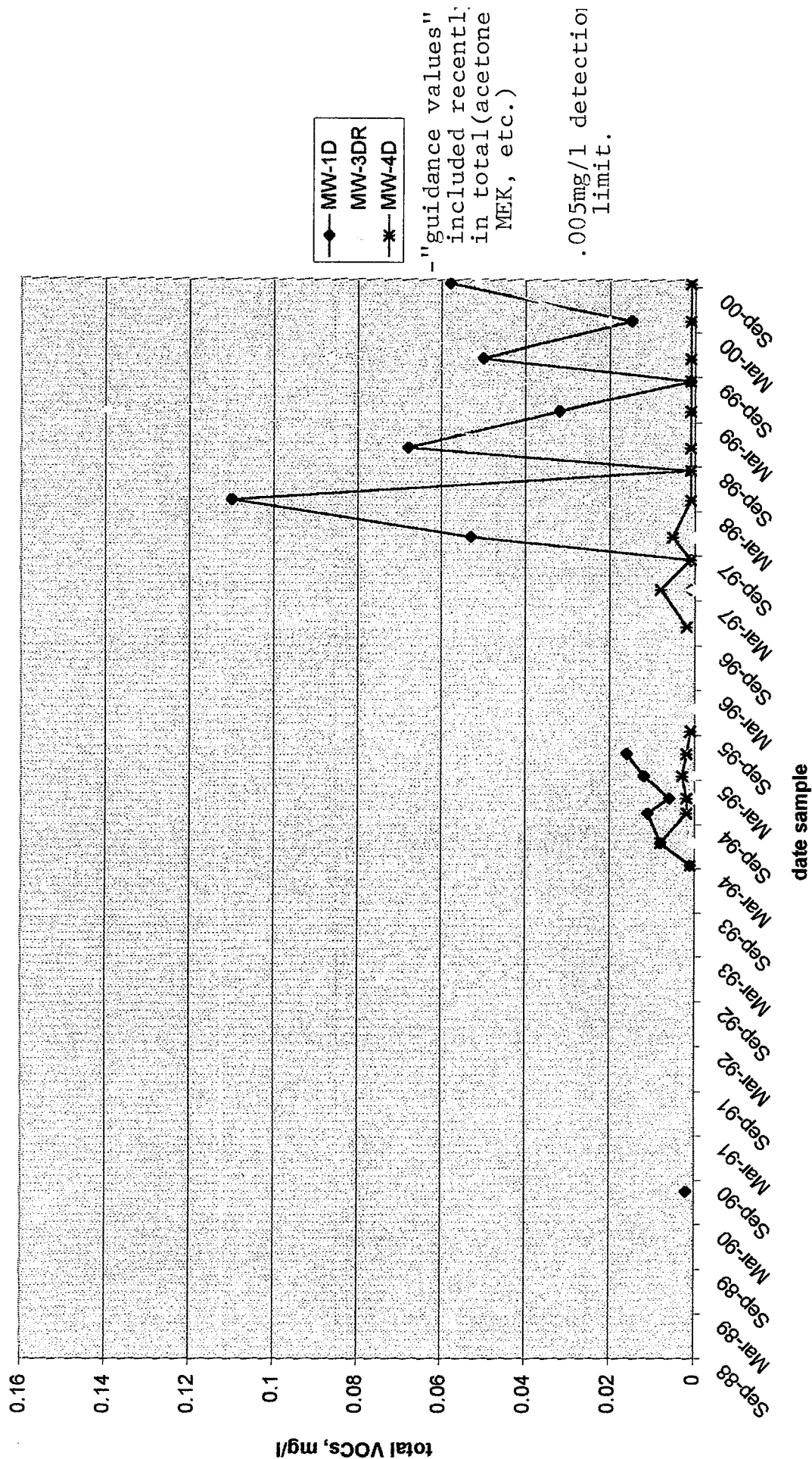
ATTACHMENT "D"

TOTAL VOLATILES vs TIME
(grouped by monitoring point)

MONITORING EVENTS: 4-00
9-00

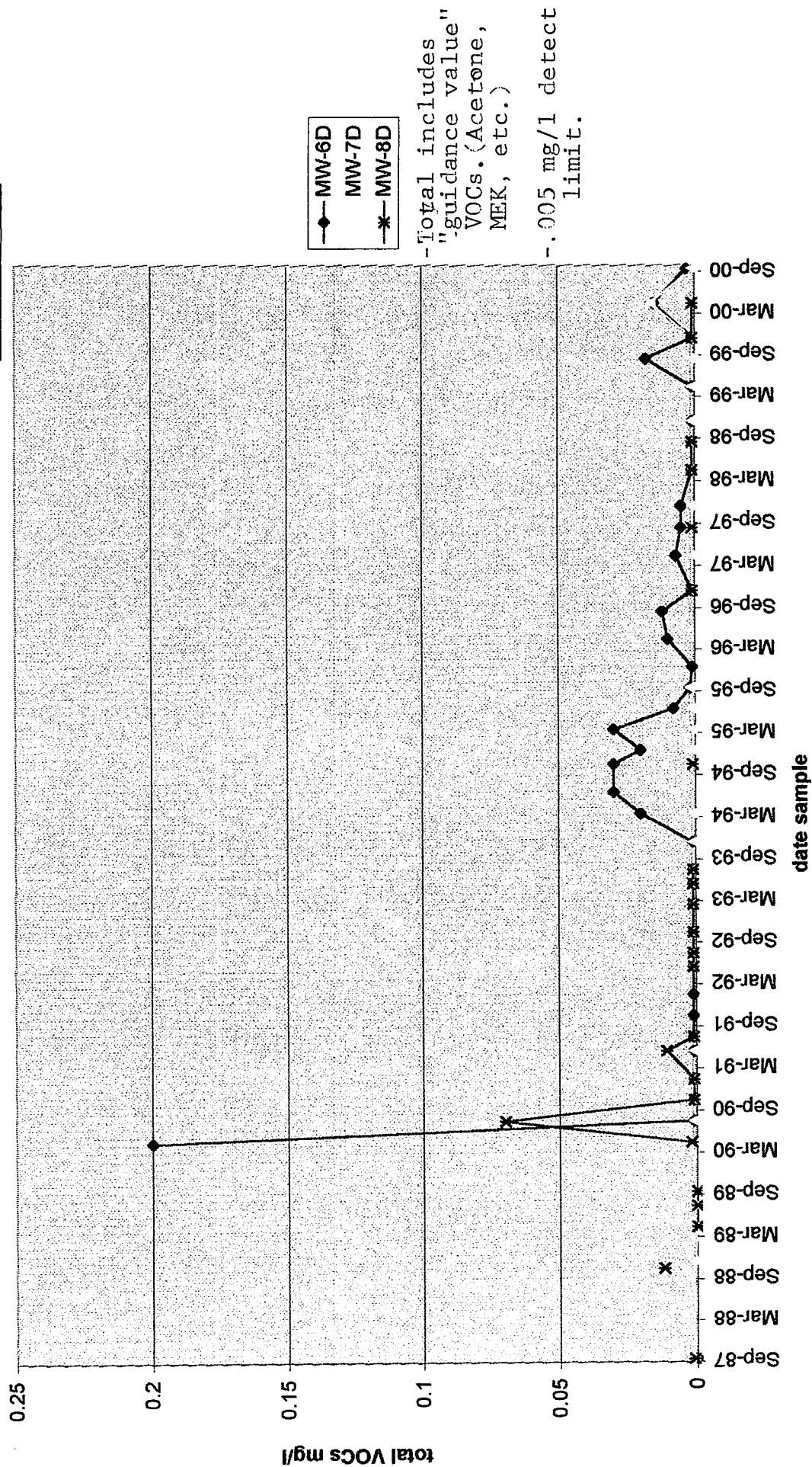
Palmer st. I/fill; Total volatile organics

Attachment "D"

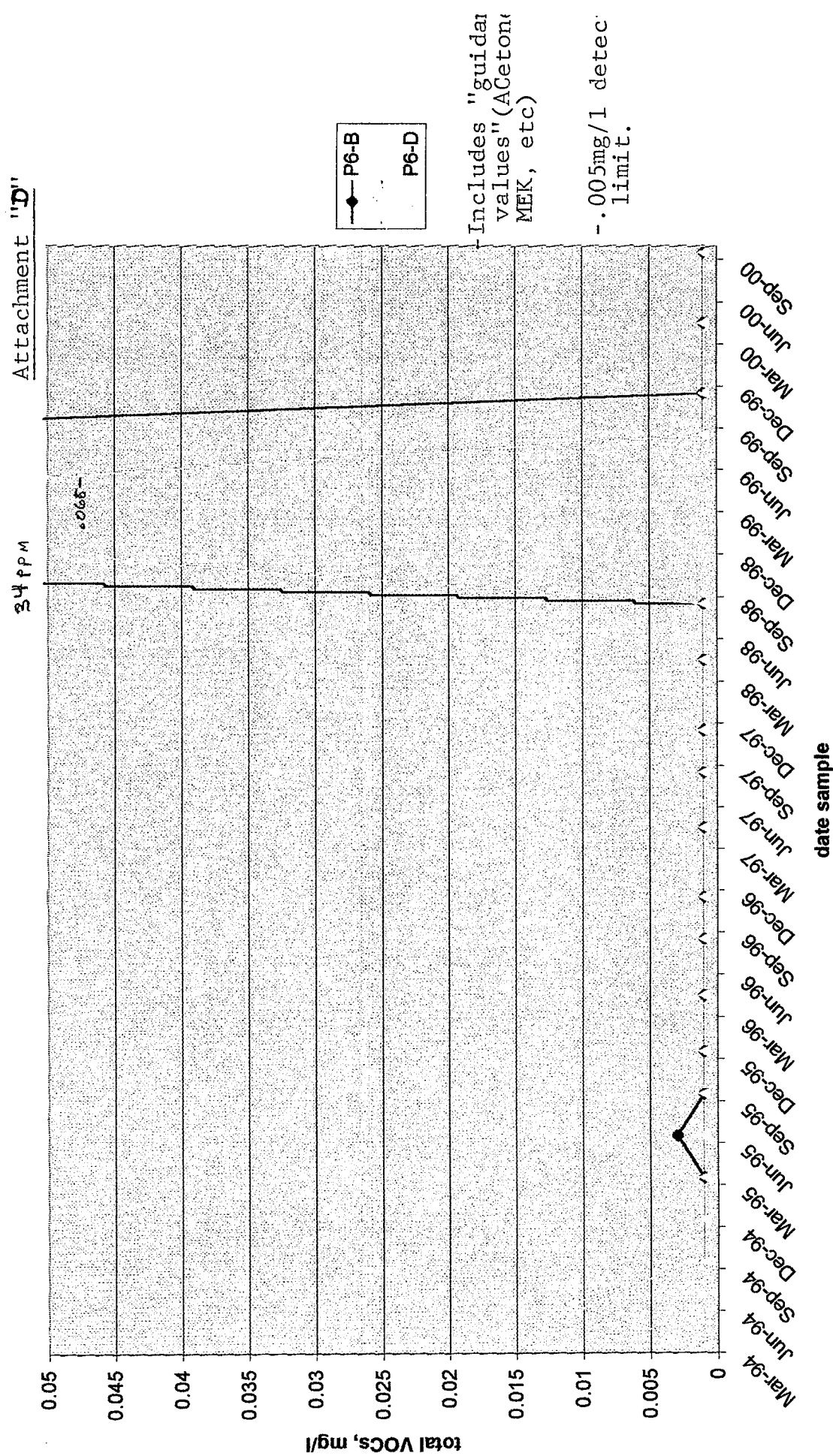


Palmer st. I/fill; Total volatile organics

Attachment "D"

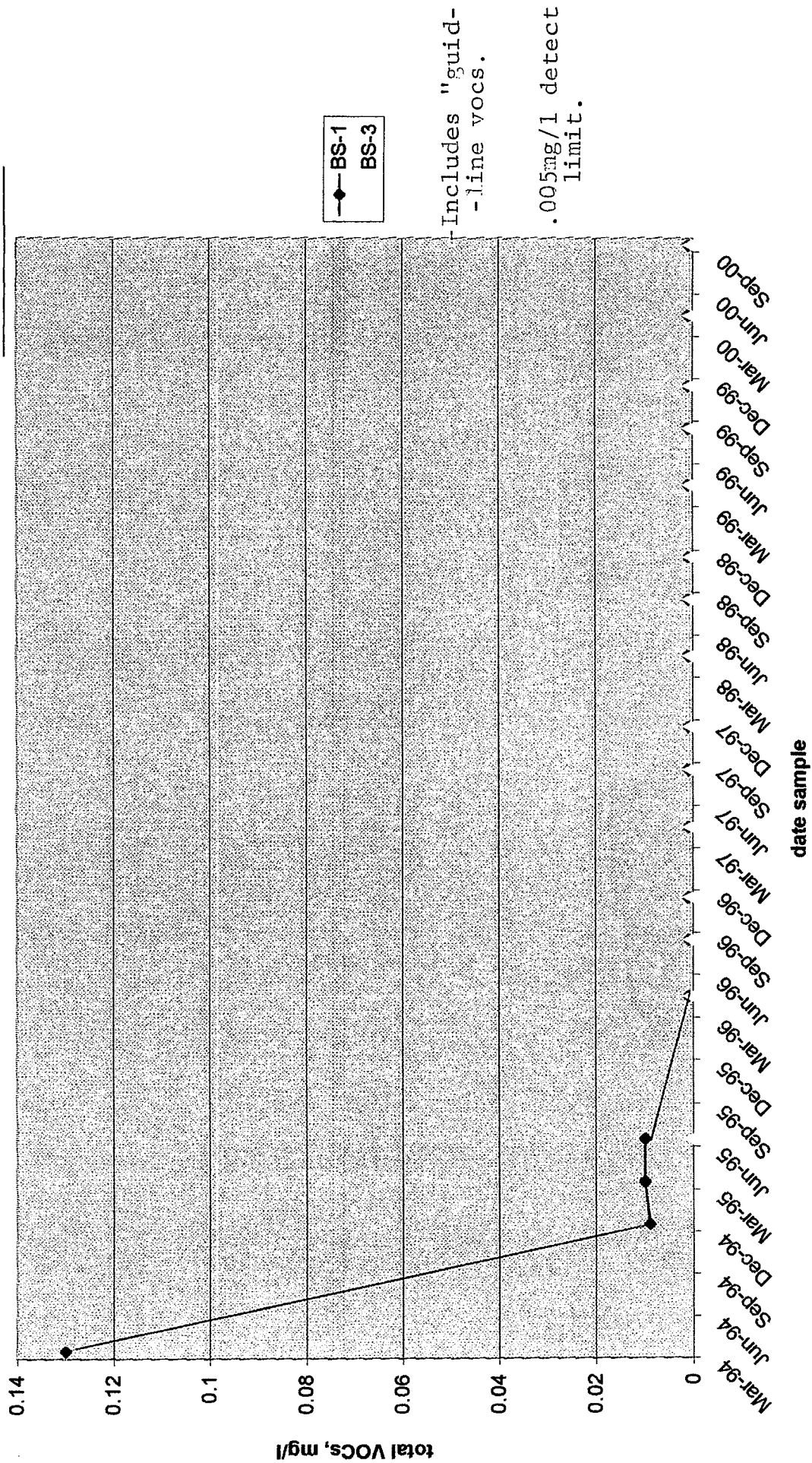


Palmer st. I/fill; total volatiles(organic)



Palmer st. I/fill; total volatile organics

Attachment "D"



ATTACHMENT "E"

* FIELD MEASUREMENT DATA SHEETS;

SAMPLE EVENTS: 4/00 + 9/00

*Individual "field data sheets" were submitted with prior actual sample event reports. Contact Moench if you require them.

ATTACHMENT "F"

ANALYTICAL DATA; EVENTS: 4/00 & 9/00

*Analytical data from Phillips Analytical Services, of Hamilton, Ontario, was submitted in the prior individual semiannual reports. Please contact Moench if you require them.

6.0 REFERENCES

1. PALMER STREET LANDFILL CLOSURE/POST CLOSURE PLAN (EPA ID. NYDOO2126910), PREPARED BY MALCOLM PIRNIE, INC. REVISED FEBRUARY 1989.
2. PALMER STREET LANDFILL, SUPPLEMENTAL HYDROGEOLOGIC INVESTIGATION, PREPARED BY MALCOLM PIRNIE, INC. JANUARY 1989.
3. SAMPLING PLAN/QUALITY ASSURANCE PLAN FOR GROUNDWATER MONITORING - PALMER STREET LANDFILL. PREPARED BY MALCOLM PIRNIE, INC., AUGUST 1989. REVISED-7/93, 8/94.
4. TEST METHODS FOR EVALUATING SOLID WASTE, PHYSICAL/CHEMICAL METHODS, THIRD EDITION, USEPA OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, NOVEMBER 1986.
5. PALMER STREET LANDFILL, EVALUATION OF ALTERNATIVE COVER SYSTEMS, PREPARED BY MALCOLM PIRNIE, INC., JANUARY 1989.
6. COVER SYSTEM PERFORMANCE EVALUATION, PALMER STREET LANDFILL; PREPARED BY MALCOLM PIRNIE, INC. OCTOBER 1995 & FEBRUARY 1999.
7. FORMER TANNERY PLANT SITE, WELL INSTALLATION REPORT; PREPARED BY BENCHMARK ENVIRONMENTAL ENGINEERING SCIENCE CO., AUGUST 2000.