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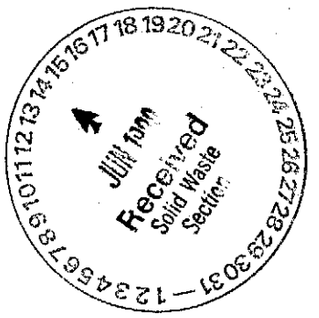
Engineering and Environmental Solutions



June 10, 1999

Mr. Mark Poindexter
Department of Environment and Natural Resources
Division of Waste Management
401 Oberlin Road, Suite 150
Raleigh, North Carolina 27065

Fac/Perm/Co ID #	Date	Doc ID#
60	6/14/99	DIN

Subject: Jackson County Landfill
Phase II Groundwater Quality Assessment

Dear Mr. Poindexter:

Thank you for meeting with us on May 19, 1999 to discuss the Jackson County (County) landfill project. As we discussed, The Fletcher Group, Inc. (The Fletcher Group), on behalf of the County, has completed the Phase II Groundwater Quality Assessment described in the February 10, 1999 correspondence from The Fletcher Group to the North Carolina Department of Environment and Natural Resources (DENR).

BACKGROUND

Data collected during Phase I of the Groundwater Quality Assessment was presented in the report dated March 3, 1999. The Phase I data indicated a strong correlation between the occurrence of landfill gas and the detection of groundwater contaminants. Based upon those data, The Fletcher Group recommended the following primary elements for the Phase II assessment:

- Installation of 11 sets of gas probes.
- Measurement of gas concentrations in the new and existing probes, and the groundwater monitoring wells screened across the water table.
- Collection and analyses of groundwater samples from the new probes that encountered water.

The Conclusions and Recommendations included in this letter report are intended to supplement those presented in the March 3, 1999 report.

FINDINGS

Phase II included installation of gas probes in nine locations: three north of the landfill and six generally south of the landfill. Probe installation and groundwater sample collection and analyses were conducted in accordance with the methods described in Tasks 3 and 4 of the March 11, 1999 workplan.

As anticipated and discussed in the February 10, 1999 letter, site conditions dictated actual probe locations and depths. The GeoProbe direct push drilling method was able to install probes at nine of the 11 proposed locations.

Residents in the William Wilkey household (on the Fowler property) would not grant access to the County during the Phase II field activities. Personnel from The Fletcher Group and the Jackson County manager made at least three attempts to gain access to the property. On each occasion the purpose (installation of a gas probe and collection of a groundwater sample) was described to the residents.

In summary, significant data were obtained regarding both gas distribution and groundwater flow direction. In addition to the recommended tasks, the following work was completed:

- The location of each well and probe at the site was surveyed by a North Carolina Registered Professional Land Surveyor to a common coordinate system and datum.
- Two springs, located north and east of the landfill, were incorporated into the site survey.
- The depth to water was measured in gas probes where groundwater was encountered.
- A groundwater contour map was created using the new water level data.

Concurrent with this investigation, the County expanded the landfill gas mitigation system at the landfill. The County retained McGill Associates (McGill) to design and oversee construction of six passive landfill gas recovery trenches. These trenches were completed in April 1999. Two drawings showing details of the gas venting system are enclosed as Attachment 1.

The data collected by The Fletcher Group during the Phase II investigation have been summarized in the tables and figures included as Attachment 2 to this letter report. The following tables and figures are included:

- ***Table 1:*** Gas probe construction details,
- ***Table 2:*** Landfill gas monitoring data from monitoring wells and gas probes, and
- ***Table 3:*** Groundwater elevation data.

- ***Figure 1:*** Monitoring well and gas probe locations based upon the new site survey,
- ***Figure 2:*** Groundwater elevation contour map, and
- ***Figure 3:*** Summary of landfill gas concentrations.

In addition, charts are enclosed as Attachment 3. The charts illustrate variations in landfill gas indicator parameters for wells and probes where landfill gas was detected.

All of the data obtained during this phase were collected using the methods described in the March 11, 1999 workplan. Quality Assurance and Quality Control (QA/QC) methodologies were conducted using protocols acceptable to DENR and in general accordance with those described in the US EPA Region 4 document titled "Environmental Investigations Standard Operating Procedures and Quality Assurance Manual;" (May 1996).

CONCLUSIONS

Data collected during the Phase II Groundwater Quality Assessment supports the following conclusions:

- Landfill gas has migrated offsite to the north and south of the landfill. Based upon the data included in this letter report, the extent of gas can be estimated to extend approximately 150 feet north and 250 feet south of the permitted boundary of the landfill.
- Installation of the six landfill gas mitigation trenches has affected the distribution of landfill gas. The concentration of gas at most monitored locations appears to have decreased since the gas venting system was modified. However, because the gas concentrations do not appear to have stabilized in either the gas probes or monitoring wells, the overall effectiveness of the gas mitigation system cannot be determined at this time.
- The understanding of groundwater flow characteristics at the site has been significantly improved by the work completed during Phase II. The additional water level data points south of the landfill (GP-13d, GP-14d, and GP-15d), the updated survey, and the incorporation of two springs into the site survey have provided the basis for development of a defensible groundwater contour map.
- The groundwater contour map developed using the recent data indicates that a hydraulic divide exists north of the landfill (see Figure 2).
- Considering the location of the hydraulic divide, the groundwater quality impacts observed in monitoring well MW-1 could be the result of waste deposited near the well.
- The groundwater contours indicate that groundwater in the vicinity of MW-1 would migrate west-northwest toward the Tuckasegee River.

W-SW →

- Data are insufficient to calculate the precise direction of groundwater flow in the vicinity of MW-1. However, previously collected data demonstrates that groundwater contamination has not impacted individual domestic wells in the vicinity of the landfill.
- Analyses of groundwater samples from gas probes GP-13d, GP-14d, and GP-15d did not detect volatile organic compounds. The laboratory data are included as Attachment 4. These data indicate that groundwater contamination extends no farther than approximately 150 feet south and southeast of the landfill.
- Evaluation of the recently collected landfill gas data (Table 2 and Figure 3) and the water quality data continues to show a correlation between the occurrence of landfill gas and the occurrence of groundwater contamination. An exception was noted in GP-15d, where indicators of landfill gas were detected but groundwater analysis did not detect contamination.
- The water quality data, when evaluated in conjunction with the groundwater contour map, suggest that, if groundwater contaminants have migrated beneath the Great Smokey Mountain Railroad property south of the landfill, only a small portion of the groundwater under the property would be expected to the impacted.
- Based upon the available data, the horizontal extent of groundwater contamination has been sufficiently delineated, with the possible exception of the area north and northwest of MW-1.
- Although the vertical extent of contamination has not been formally documented, the data collected to date suggest that all impacted groundwater is migrating toward the Tuckasegee River, not toward the beneficial users of groundwater identified during Phase I.

RECOMMENDATIONS

The purpose of the Phase II Groundwater Quality Assessment was to determine the need for, and locations of, additional monitoring wells at the site. In light of the conclusions included in this letter report, additional assessment or investigation of the vertical extent of groundwater contamination may not produce useful data.

Data collected during the Groundwater Quality Assessment indicate that landfill gas is prevalent at the perimeter of the landfill. Groundwater quality impacts may be associated, in part, with the landfill gas. The landfill gas mitigation system at the site has recently been expanded. However, the system has not been in place long enough to determine whether or not it will adequately control gas migration at the site.

Considering these facts and the discussions between DENR, Jackson County, and The Fletcher Group on May 19, 1999, The Fletcher Group makes the following recommendations:

- Postpone the installation of any additional groundwater monitoring wells until the effects of the newly installed gas mitigation system are better understood (fall or winter 1999).
- Continue to monitor landfill gas concentrations on a monthly basis to evaluate the effectiveness of the landfill gas mitigation system, assess whether gas is migrating away from the landfill, and identify health and safety concerns. This monthly gas monitoring should be conducted through September, 1999. Following collection of the September measurements, the landfill gas data should be evaluated to determine the effect of the gas mitigation system on landfill gas concentrations and the related necessity for additional groundwater monitoring wells.
- Monitor groundwater gradients on a quarterly basis during the next year to evaluate the seasonal variation in groundwater flow direction. Groundwater measurements should be collected in June, September, and December 1999 and in March 2000.
- Continue to collect groundwater samples from the site monitoring wells on the semi-annual basis described in the Transition Plan prepared by Law Engineering and McGill Associates.
- In the fall of each year, collect water quality samples from the domestic wells at the Frank Wilkie, Jack Bulla, and William Wilkey residences to document that the water quality has not been impacted.

During the meeting on May 19, 1999 DENR suggested that that a "marker" compound that could be measured during the monthly landfill gas monitoring program. Monitoring for this compound could be used to evaluate whether gas observed at the Western Builders site is associated with the landfill, or if there may be some other, offsite source of methane. In order for such an evaluation to be effective, a compound would need to be present in landfill gas on the landfill site but absent from the gas on the Western Builders site.

In evaluating the data collected to date, The Fletcher Group has found that the compound dichlorotetrafluoroethane (F114) is present in gas in GP-6, located near the southern boundary of the landfill property and in groundwater at the site. Dichlorotetrafluoroethane has not been detected in groundwater on the Western Builders site and it is not expected to be associated with sources other than the landfill. The Fletcher Group will determine whether field equipment can be used to measure this compound

at low concentrations. If field measurement of the compound is practical, the presence of the compound will be monitored during the July, August, and September landfill gas monitoring events.

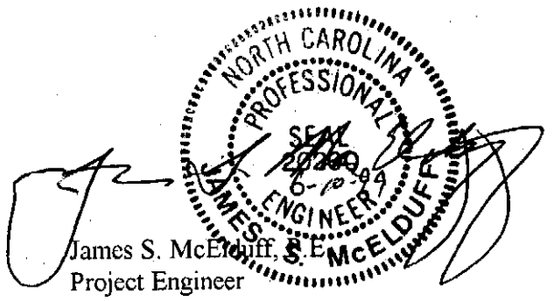
In accordance with the discussion on May 19, 1999 The Fletcher Group is proceeding with the landfill gas portion of the Groundwater Quality Assessment. These efforts include measuring landfill gas in the probes and wells at the site, as well as in the onsite buildings and offsite structures on the Webster Enterprises and Western Builders properties. The Fletcher Group will provide DENR with these findings in late September 1999. These tasks are separate from the landfill gas monitoring activities conducted quarterly by Jackson County as a normal part of the permitted onsite activities.

Mr. Poindexter, thank you for your assistance with this project. If you have any questions please contact either of us at (828) 281-3350.

Sincerely,

Mark Brooks
for

Stuart A. Ryman, P.G.
Project Geologist



James S. McElduff, S.E.
Project Engineer

attachments: Drawings of Gas Venting System
Tables (3) and Figures (3)
Gas Concentration Charts (21)
Analytical Laboratory Report

cc: Mr. Jay Denton/Jackson County

Attachment 1

Drawings of Gas Venting System

Attachment 2

Tables and Figures

Table 1

Jackson County Landfill

Gas Probe Construction Detail

Spring 1999

Identification	Date Installed	Depth	Screen Length
Gas Probe 10	3/17/99	21.5	2 feet
Gas Probe 11s	3/17/99	7.0	2 feet
Gas Probe 11i	3/17/99	30.0	2 feet
Gas Probe 11d	3/17/99	58.0	2 feet
Gas Probe 12s	3/16/99	7.0	2 feet
Gas Probe 12d	3/16/99	33.8	2 feet
Gas Probe 13s	3/15/99	7.0	2 feet
Gas Probe 13d	3/15/99	35.0	10 feet
Gas Probe 14s	3/15/99	7.0	2 feet
Gas Probe 14d	3/15/99	24.2	10 feet
Gas Probe 15s	3/19/99	7.0	2 feet
Gas Probe 15d	3/18/99	47.0	10 feet
Gas Probe 16s	3/19/99	7.0	2 feet
Gas Probe 16d	3/19/99	19.0	5 feet
Gas Probe 17	3/19/99	7.0	2 feet
Gas Probe 18	3/19/99	31.5	5 feet

These probes installed by The Fletcher Group in the Spring of 1999

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
MW-1	1/27/99	11:50	24	1.10	1.40	20.4	did not check	
	2/3/99	14:45	0	0.00	0.00	20.4	did not check	No cap due to pumping test
	3/25/99	11:35					did not check	Needs pressure cap
	3/31/99	14:10	210	10.50	7.80	17.2	0.125	Pressure cap installed, Readings recorded at 180 seconds, DTW = 94.60' TOC
	4/8/99	10:00	>1000 @ 26 secs	Peaked@ 65.00@60secs57.00 @180secs	39.10	5.5	0.110	Readings recorded at 180 seconds
	5/6/99	9:45	>1000 @ 30 secs	68.00	32.00	6.3	0.000	Readings recorded at 180 seconds
MW-2	1/27/99	16:30	0	0.00	0.00	20.8	did not check	
	2/3/99	13:46	0	0.00	0.00	19.8	did not check	
	3/25/99	13:16					did not check	Needs pressure cap
	4/1/99	10:30	did not record	0.00	0.00	20.6	0.650	Pressure cap installed (3/31/99), Readings stable at 120 seconds, DTW = 25.70' TOC
	4/8/99	14:20	did not record	0.00	0.00	20.6	-0.010	Slight vacuum--readings recorded at 180 seconds
	5/6/99	14:20	did not record	0.00	0.40	19.9	0.000	Readings recorded at 180 seconds
MW-3	1/27/99	16:10	>1000	64.60	26.60	0.6	did not check	
	2/3/99	13:53	>1000	68.50	27.70	0.0	did not check	
	3/25/99	13:00	>1000 @ 15 seconds	95.40	33.10	0.9	0.225	High pressure - peak reading recorded at 24 seconds
	4/1/99	10:00	>1000 @ 20 seconds	95.00	34.90	0.2	0.150	Readings recorded at 180 seconds, DTW = 51.61' TOC
	4/8/99	13:50	>1000 @15 secs	70.10	26.80	4.4	0.300	Readings recorded at 180 seconds
	5/6/99	13:50	850	42.50	15.90	7.2	0.150	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
MW-4	1/27/99	16:35	34	1.70	2.40	19.5	did not check	
	2/3/99	15:50	286	14.50	17.00	12.1	did not check	
	3/25/99	14:05	748 @ 30 seconds - 680 steady	35.00 + @ 30 secs - 33.00 +/- steady	40.80	4.6	0.015	Can watch pressure fluctuate - peak gas reading recorded at 30 seconds then drops
	4/1/99	11:15	400	20.00	27.90	9.6	0.300	Readings recorded at 180 seconds, DTW = 22.90' TOC
	4/8/99	15:10	Peaked @ 520 @ 40 secs, 350 @ 180 sec	17.70	23.40	11.4	0.000	Readings recorded at 180 seconds
	5/6/99	14:50	178	8.70	7.80	15.4	0.000	Readings recorded at 180 seconds
MW-5	1/27/99	15:40	2	0.10	0.20	20.3	did not check	Screened entirely below the water table
	2/3/99	14:24	0	0.00	0.00	21.0	did not check	
	3/25/99	14:20					did not check	Needs pressure cap
	3/31/99	16:20	Peaked @ 66 @ 20 secs	0.10	0.60	20.2	0.100	Pressure cap installed
	4/1/99	9:30	6	0.30	0.40	20.3	0.120	Readings recorded at 180 seconds, DTW=48.24'TOC
	4/8/99	12:40	16	0.80	0.50	20.0	0.160	Readings recorded at 180 seconds
	5/6/99	12:45	24	1.20	1.50	19.5	0.000	Readings recorded at 180 seconds
	6/4/99	10:55	Peaked @ 118 @ 20secs, 24 @ 180 secs	1.20	0.90	19.6	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 1	1/27/99	14:20	0	0.00	8.40	3.1	did not check	
	2/3/99	14:51	0	0.00	5.80	10.6	did not check	
	3/25/99						did not check	Did not check
	3/31/99	11:44	246	12.80	15.50	0.0	0.000	Readings recorded @ 180 secs, locked 3/31/99
	4/8/99	9:45	428	21.20	17.30	0.0	0.010	Readings recorded at 180 seconds
	5/6/99	9:30	440	22.00	18.00	0.0	0.000	Readings recorded at 180 seconds
Gas Probe 2	1/27/99	14:50	>1000	63.50	39.80	0.0	did not check	
	2/3/99	15:00	>1000	64.00	40.60	0.0	did not check	
	3/25/99	11:42	>1000 @ 20 secs	83.00	53.50	0.0	0.000	Peak at 40 seconds - then stable
	3/31/99	12:05	>1000 @ 18 secs	85.00	55.60	0.0	0.000	Checked for vacuum, readings recorded at 180 secs, locked on 3/31/99
	4/8/99	10:10	>1000 @ 25 secs	82.00	58.00	0.0	0.000	Readings recorded at 180 seconds
	5/6/99	10:00	>1000 @ 40 secs	61.00	44.70	0.0	0.000	Readings recorded at 180 seconds
Gas Probe 3	1/27/99	15:00	766	38.20	29.80	0.0	did not check	
	2/3/99	15:07	282	14.20	9.50	13.8	did not check	
	3/25/99	11:53	>1000 @ 60 secs	50.70	41.00	1.1	-0.015	Vacuum - peak @ 70 seconds - then stable
	3/31/99	12:20	>1000 @ 48 secs	Peaked @ 53.50 @ 110 secs, 51.20 @ 180 secs	37.60	1.9	0.000	Readings recorded at 180 seconda. Locked on 3/31/99.
	4/8/99	10:20	>1000 @ 40 secs	50.40	40.80	2.0	0.100	Readings recorded at 180 seconds
	5/6/99	10:15	940	47.00	36.50	0.0	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 4	1/27/99	15:10	0	0.00	0.50	20.0	did not check	
	2/3/99	15:15	0	0.00	0.60	19.8	did not check	
	3/25/99							did not check
	3/31/99	12:35	did not record	1.80 @ 20 secs 0.00 @ 160 secs	0.60	20.6	0.000	Reading recorded at 160 seconds
	4/8/99	10:30	Peaked @ 34 @ 20 secs	0.00	0.90	19.7	0.000	Readings recorded at 180 seconds
	5/6/99	10:30	16	0.80	1.10	9.2	0.000	Readings recorded at 180 seconds
Gas Probe 5	1/27/99	15:20	480	23.3	6.40	4.7	did not check	
	2/3/99	14:27	50	3.4	0.70	19.0	did not check	
	3/23/99	16:00	386	19.10 / 17.00	5.00	7.1	did not check	50 seconds peak / steady
	3/25/99	15:25					-0.240	Strong vacuum
	3/31/99	15:15	did not record				-0.900	Strong vacuum
	4/1/99	9:00	536	26.70	7.20	2.7	2.000	Readings recorded at 180 seconds
	4/8/99	12:30	484	24.00	8.80	0.4	-0.260	Vacuum - readings recorded at 180 secs
	5/6/99	12:35	900	45.00	11.20	0.0	>5.000	Pressure, readings recorded at 180 seconds
Gas Probe 6	1/27/99	16:00	>1000	50.5	25.20	1.9	did not check	
	2/3/99	14:07	562	28.1	23.10	1.7	did not check	
	3/23/99	16:17	>1000 @ 19 secs	67.20	42.90	0.9	did not check	Over 1000% LEL in 19 seconds - peak reading recorded at 60 seconds
	3/25/99	15:55					0.000	GP-6 checked twice - no pressure or vacuum
	3/31/99	16:10	>1000 @ 26 secs	81.40	37.70	0.1	0.000	Readings recorded at 180 seconds
	4/8/99	12:50	>1000 @ 20 secs	67.80	44.00	0.1	0.000	Readings recorded at 180 seconds
	5/6/99	12:50	>1000 @ 36 secs	58.60	34.40	0.0	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 7	1/27/99	16:05	0	0.00	0.90	19.8	did not check	
	2/3/99	14:00	0	0.00	1.00	18.6	did not check	
	3/23/99	16:08	did not record	0.00	2.20	18.5	did not check	Steady at 60 seconds
	3/25/99						0.000	No pressure or vacuum
	4/1/99	9:45	did not record	0.00	Peaked @ 0.20 @ 60 secs	20.5	0.000	Readings recorded at 120 seconds
	4/8/99	13:40	Peaked @ 6 @ 20 secs	0.00	3.80	16.2	0.000	Readings recorded at 180 seconds
	5/6/99	13:40	Peaked @ 60 @ 20 secs	3.00	0.00	19.5	0.060	Readings recorded at 180 seconds
Gas Probe 8	1/27/99	16:15	0	0	1.40	19.3	did not check	
	2/3/99	13:37	0	0	2.40	15.6	did not check	
	3/23/99	16:22	26.0 / 0.0	1.30 / 0.00	0.40	20.6	did not check	Peak reading at 20 seconds - drops back to 0 methane by 45 seconds
	3/25/99						did not check	Did not check
	4/1/99	10:10	did not record	2.20 @ 20secs	2.00	11.3	0.000	Readings recorded at 180 seconds
	4/8/99	14:00	Peaked @ 18 @ 11 secs	0.00	0.00	20.6	0.000	Readings recorded at 180 seconds
	5/6/99	14:00	2	0.10	3.20	9.2	0.000	Readings recorded at 180 seconds
Gas Probe 9	1/27/99	16:25	0	0.00	0.00	20.4	did not check	
	2/3/99	13:33	0	0.00	0.10	20.3	did not check	
	3/23/99	16:30	did not record	0.00	0.00	20.8	did not check	60 seconds - steady
	3/25/99						did not check	Did not check
	4/1/99	10:20	did not record	0.00	0.20	20.5	0.000	Stable at 120 seconds
	4/8/99	14:10	did not record	Peaked@ 0.20 @ 10 secs	0.20	20.2	0.000	Readings recorded at 180 seconds
	5/6/99	14:10	did not record	0.00	0.70	18.5	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 10	3/17/99	15:00	did not record	0.00	0.00	19.8	did not check	Reading collected during installatio
	3/25/99	14:40	did not record	0.01 @ 20 sec	1.40	20.3	did not record	No pressure - peak @ 20 seconds - record LEL
	4/1/99	11:35	did not record	0.00	0.00	20.3	0.000	Stable at 120 seconds
	4/8/99	11:40	did not record	0.00	Peaked@0.20@20secs	20.0	0.000	Stable at 120 seconds
	5/6/99	11:30	did not record	Peaked @ 0.10 @ 20 secs	0.00	19.9	0.000	Readings recorded at 180 seconds
Gas Probe 11s	3/16/99	15:05	6	0.30	0.30	20.2	---	Reading collected during installation of the deep probe GP-11d
	3/25/99	11:26	did not record	0.00	0.00	20.6	0.010+/-	Readings recorded @180 seconds
	3/31/99	13:45	12	6.00	8.00	19.5	0.000	Readings recorded at 180 seconds
	4/8/99	11:00	16	0.80	0.60	19.4	0.000	Readings recorded at 180 seconds
	5/6/99	11:00	36	1.80	0.80	18.9	0.000	Readings recorded at 180 seconds
Gas Probe 11i	3/16/99	16:30	10	0.50	0.60	20.0	---	Readings collected during installation of the deep probe GP-11d
	3/25/99	11:15	20	1.00	0.50	19.8	0.000	LEL begins climbling @ 60 secs - 180 seconds climbing slowly
	3/31/99	13:50	42	2.00	1.00	19.1	0.170	Readings recorded at 180 seconds
	4/8/99	11:05	24	1.20	0.50	19.3	0.000	Readings recorded at 180 seconds
	5/6/99	11:10	20	1.00	0.00	18.9	0.000	Readings recorded at 180 seconds
Gas Probe 11d	3/17/99	8:30	0	0.00	0.20	20.9	---	Readings collected during installation of the deep probe GP-11d
	3/25/99	11:03	0	0.00	0.00	20.8	-0.020	Vacuum -reading recorded at 180 seconds
	3/31/99	13:55	did not record	0.00	0.10	20.6	0.250	Readings recorded at 180 seconds
	4/8/99	11:15	did not record	0.00	0.00	20.6	0.000	Readings recorded at 180 seconds
	5/6/99	11:20	10	0.50	0.00	20.2	0.130	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 12s	3/17/99	9:45	0	0.00	0.00	20.0	did not check	Installed on 3/16/99
	3/25/99	14:55	0	0.00	0.00	20.5	did not check	Readings recorded @120 seconds - very steady
	4/1/99	11:50	did not record	0.00	0.10@60 secs	20.5	0.000	Readings recorded at 180 seconds
	4/8/99	10:40	did not record	0.00	0.00	20.6	0.000	Stable at 120 seconds
	5/6/99	10:40	2	0.10	0.00	20.2	0.000	Readings recorded at 180 seconds
Gas Probe 12d	3/17/99	9:50	0	0.00	0.40	19.7	did not check	Installed on 3/16/99
	3/25/99	14:50	0	0.00	0.06 @ 10 sec	19.2	did not check	Readings recorded at 180 seconds
	4/1/99	11:55	did not record	0.00	0.40	19.2	0.300	Readings recorded at 180 seconds
	4/8/99	10:55	did not record	0.00	0.60	18.7	-0.300	Vacuum----readings stable at 120 secs
	5/6/99	10:50	did not record	0.00	0.10	19.3	0.000	Readings recorded at 180 seconds
Gas Probe 13s	3/16/99	8:00	0	0.00	0.20	20.6	did not check	Installed on 3/15/99
	3/23/99	15:45	0	0.00	0.00	20.6	did not check	120 seconds
	3/25/99	15:40					0.040	Pressure
	3/31/99	14:50	did not record	0.00	0.50	20.0	0.010	Readings recorded at 180 seconds
	4/8/99	12:10	did not record	Peaked @ 0.50 @ 5 secs	0.30	20.1	0.060	Readings recorded at 180 seconds
	5/6/99	12:25	4	0.20	0.50	19.5	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 13d	3/16/99	8:05	0	0.00	0.00	20.9	did not check	installed on 3/15/99
	3/23/99	15:48	0	0.00	0.10	20.4	did not check	120 seconds
	3/25/99	15:50					0.165	Pressure
	3/31/99	14:45	did not record	0.00	0.30	20.2	0.060	Readings recorded at 180 seconds, DTW reading taken 4/1/99 = 32.25' TOC
	4/8/99	12:15	2	0.10	0.20	20.1	0.250	Readings recorded at 180 seconds
	5/6/99	12:20	2	0.10	0.20	19.9	0.200	Readings recorded at 180 seconds
Gas Probe 14s	3/16/99	8:20	0	0.00	1.80	19.1	did not check	Installed on 3/15/99
	3/23/99	15:21	0	0.00	1.70	18.8	did not check	120 seconds
	3/25/99	13:15					-0.010	Slight vacuum
	3/31/99	15:30	did not record	0.00	2.43	17.3	0.000	Readings recorded at 180 seconds
	4/8/99	13:00	Peaked @ 26 @ 20 secs	0.00	1.90	18.8	0.000	Readings recorded at 180 seconds
	5/6/99	13:00	Peaked @ 200 @ 25 secs	Peaked @ 10.00 @ 25 secs	1.60	17.9	0.000	Readings recorded at 180 seconds
Gas Probe 14d	3/16/99	8:15	0	0.00	4.00	16.3	did not check	Installed on 3/15/99 - reading collected at 330 seconds
	3/23/99	14:05	0	0.00	3.80	15.5	did not check	250 seconds
	3/25/99	13:12					0.030	
	3/31/99	15:35	did not record	0.00	3.40	17.1	0.000	Readings recorded at 180 seconds, DTW reading taken 4/1/99 = 21.80' TOC
	4/8/99	13:10	did not record	0.00	3.00	17.2	0.000	Readings recorded at 180 seconds
	5/6/99	13:10	2	0.10	2.50	17.7	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Gas Probe 15s	3/19/99	9:40	470	23.00	11.90	10.6	did not check	Installed on 3/19/99 - checked one hour after installation
	3/23/99	15:30	784	38.70	24.80	2.8	did not check	120 seconds - methane still increasing
	3/25/99	15:07					0.205	
	3/31/99	16:05	>1000 @ 20 secs	57.90	28.60	0.0	0.220	Readings recorded at 180 seconds
	4/8/99	13:15	>1000 @ 62 secs	54.00	31.20	0.2	0.180	Readings recorded at 180 seconds
	5/6/99	13:15	872	43.60	27.90	0.2	0.150	Readings recorded at 180 seconds
Gas Probe 15d	3/19/99	9:30	314	15.60	1.50	7.9	did not check	Installed on 3/18/99
	3/23/99	15:35	264	13.00	1.70	11.0	did not check	120 seconds
	3/25/99	15:05					0.215	24 @ 120 seconds
	3/31/99	16:00	422	20.70	13.60	3.7	0.200	Readings recorded at 180 seconds, DTW reading taken 4/1/99 = 46.28' TOC
	4/8/99	13:20	300	15.00	12.40	6.2	0.140	Readings recorded at 180 seconds
	5/6/99	13:20	280	14.00	10.20	6.5	0.020	Readings recorded at 180 seconds
Gas Probe 16s	3/23/99	16:50	390	19.70 / 23.30	21.50	2.3		80 seconds / peak at 130 seconds
	3/25/99	13:45	444	22.20 @ 45 secs	20.90	2.6	0.000	No pressure - peak @ 45 seconds - then still up slowly
	4/1/99	10:55	522	26.30	24.10	0.1	0.000	Readings recorded at 180 seconds
	4/8/99	14:50	530	26.80	25.20	0.0	0.000	Readings recorded at 180 seconds
	5/6/99	14:35	570	28.50	28.30	0.0	0.000	Readings recorded at 180 seconds
Gas Probe 16d	3/23/99	16:44	242	12.10 / 14.50	3.30	8.8		94 seconds / peak at 150 seconds
	3/25/99	13:50	190.0/236.0	9.50/11.80	6.50	6.8	0.000	60 seconds = 9.5 - readings recorded at 100 seconds
	4/1/99	11:00	150	7.50	11.60	7.6	0.000	Readings recorded at 180 seconds, DTW reading taken 4/1/99 = 21.90' TOC
	4/8/99	15:00	194	9.60	5.70	11.1	-0.100	Vacuum, readings recorded at 180 seconds
	5/6/99	14:45	142	7.10	13.10	7.7	0.000	Readings recorded at 180 seconds

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_2O)	Notes
Gas Probe 17	3/23/99	17:05	0	0.00	0.00	20.6	did not check	80 seconds
	3/25/99	13:40	0	0.00	0.10	20.0	-0.020	Vacuum of 0.02 - readings recorded at 90 seconds - peak CH4 of 0.1% @ 20 secs
	4/1/99	10:45	did not record	0.00	0.30	19.4	0.000	Readings recorded at 180 seconds, DTW reading taken 4/1/99 = 10.00' TOC *(No H2O)
	4/8/99	14:40	did not record	0.00	0.30	20.1	0.000	Readings stable at 120 seconds
	5/6/99	14:30	did not record	0.00	0.70	19.2	0.000	Readings stable at 120 seconds
Gas Probe 18	3/23/99	16:57	0	0.00	0.10	20.6	did not check	60 seconds - steady
	3/25/99	13:20					did not check	Needs gas cap -- check for water DTW = 30.99 TOC / DTB = 32.79 TOC
	4/1/99	10:40	did not record	0.00	0.10	20.6	0.000	Fitted with pressure cap, readings stable at 120 seconds
	4/8/99	14:30	did not record	0.00	0.30	20.5	-0.100	Vacuum stable at 120 seconds
	5/6/99	14:25	did not record	0.00	0.40	19.7	0.020	Readings stable at 120 seconds
Western Builders Monitoring Well (PMW-01)	1/27/99	15:50	586	26.6	11.50	13.6	did not check	Loose Cap
	2/3/99	14:18	950	46.9	23.90	6.7	did not check	Tight Cap
	4/1/99	12:30					did not check	DTW=41.00'TOC
Bulla Spring	1/27/99	13:50	0	0	0.00	20.2	did not check	
Underneath the Scale House	2/3/99	15:20	0	0	0.00	20.9	did not check	
Underneath the Scale	2/3/99	15:25	0	0	0.00	21.2	did not check	

Location of Bulla Spring?

Table 2

Jackson County Landfill
Gas Measurements in Wells and Probes

Spring 1999

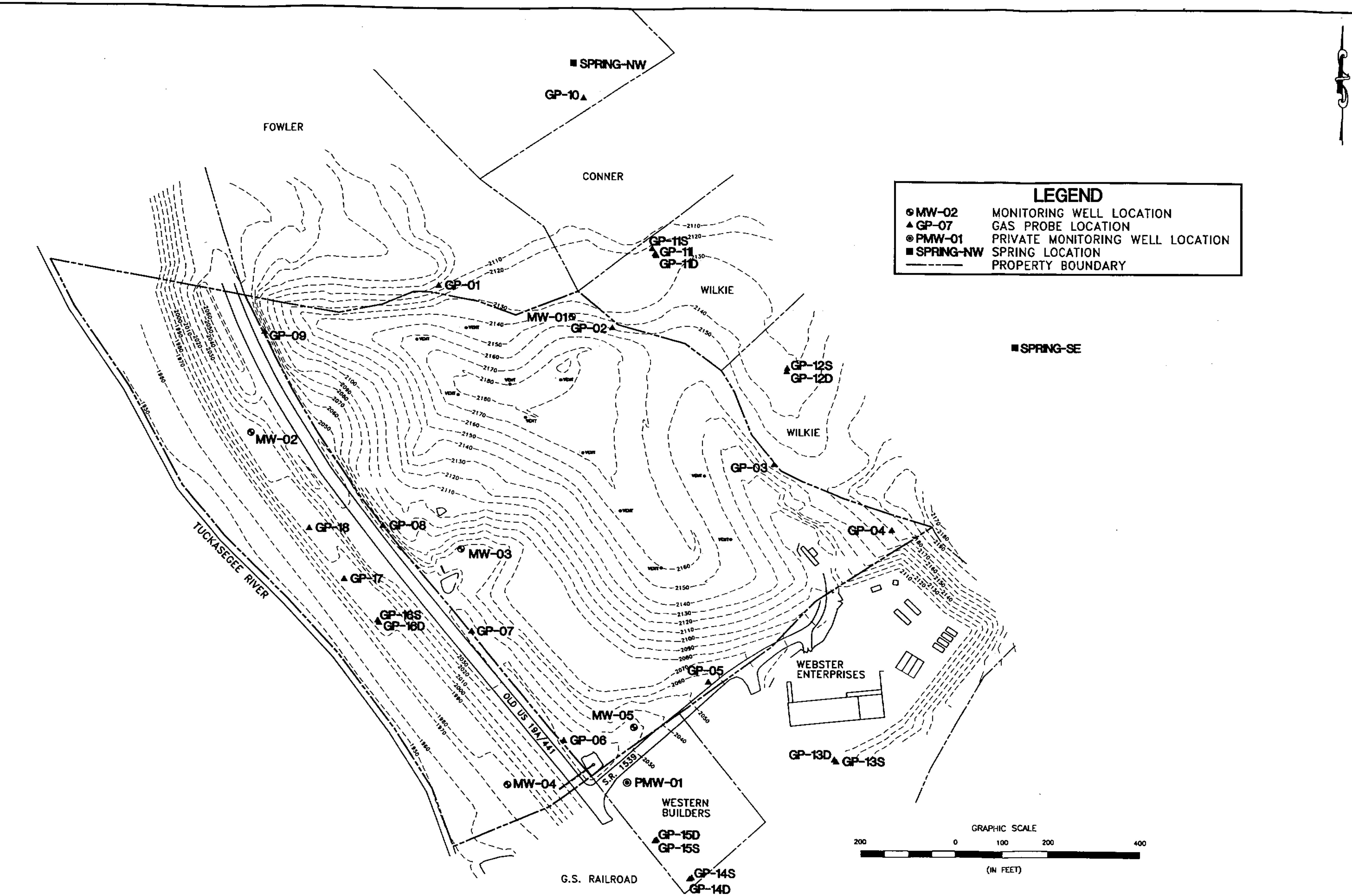
Well	Date	Time	LEL Meter % LEL	% Methane	% CO2	% O2	Atmospheric Pressure ("H_20)	Notes
Webster Enterprise Outside	2/3/99	16:00	0	0	0.00	20.8	did not check	
Webster Enterprise Inside	2/3/99	16:05	0	0	0.00	20.8	did not check	
Mr. Johnny Conner (under house)	2/3/99	15:40	0	0	0.00	21.1	did not check	
Frank Wilkie's Well	2/3/99	16:20	0	0	0.00	21.0	did not check	
Frank Wilkie's Basement	2/3/99	16:15	0	0	0.00	20.7	did not check	
Frank Wilkie's Garage	2/3/99	16:15	0	0	0.00	20.7	did not check	

Table 3

Jackson County Landfill
Groundwater Elevation Data
April 1, 1999

Well	Date	Time	Reference Point Elevation	Depth to Water	Groundwater Elevation	Notes
MW-1	3/31/99	14:10	2171.42	94.60	2076.82	
MW-2	4/1/99	10:30	2015.38	25.70	1989.68	
MW-3	4/1/99	10:00	2045.53	51.61	1993.92	
MW-4	4/1/99	11:15	1980.77	22.90	1957.87	
MW-5	4/1/99	9:30	2028.97	48.24	1980.73	
GP-13d	3/31/99	14:45	2092.47	32.25	2060.22	
GP-14d	3/31/99	15:35	2026.69	21.80	2004.89	
GP-15d	3/31/99	16:00	2026.79	46.28	1980.51	
GP-16d	4/1/99	11:00	NS	21.90		
Gas Probe 18	3/25/99	13:20	NS	30.99	---	
PMW-01	4/1/99	12:30	2023.45	41.0	1982.45	
Spring - NW					2039.64	Water elevation based on survey
Spring - SE					2086.98	Water elevation based on survey

Note: Only those wells or probes that encountered groundwater are listed.

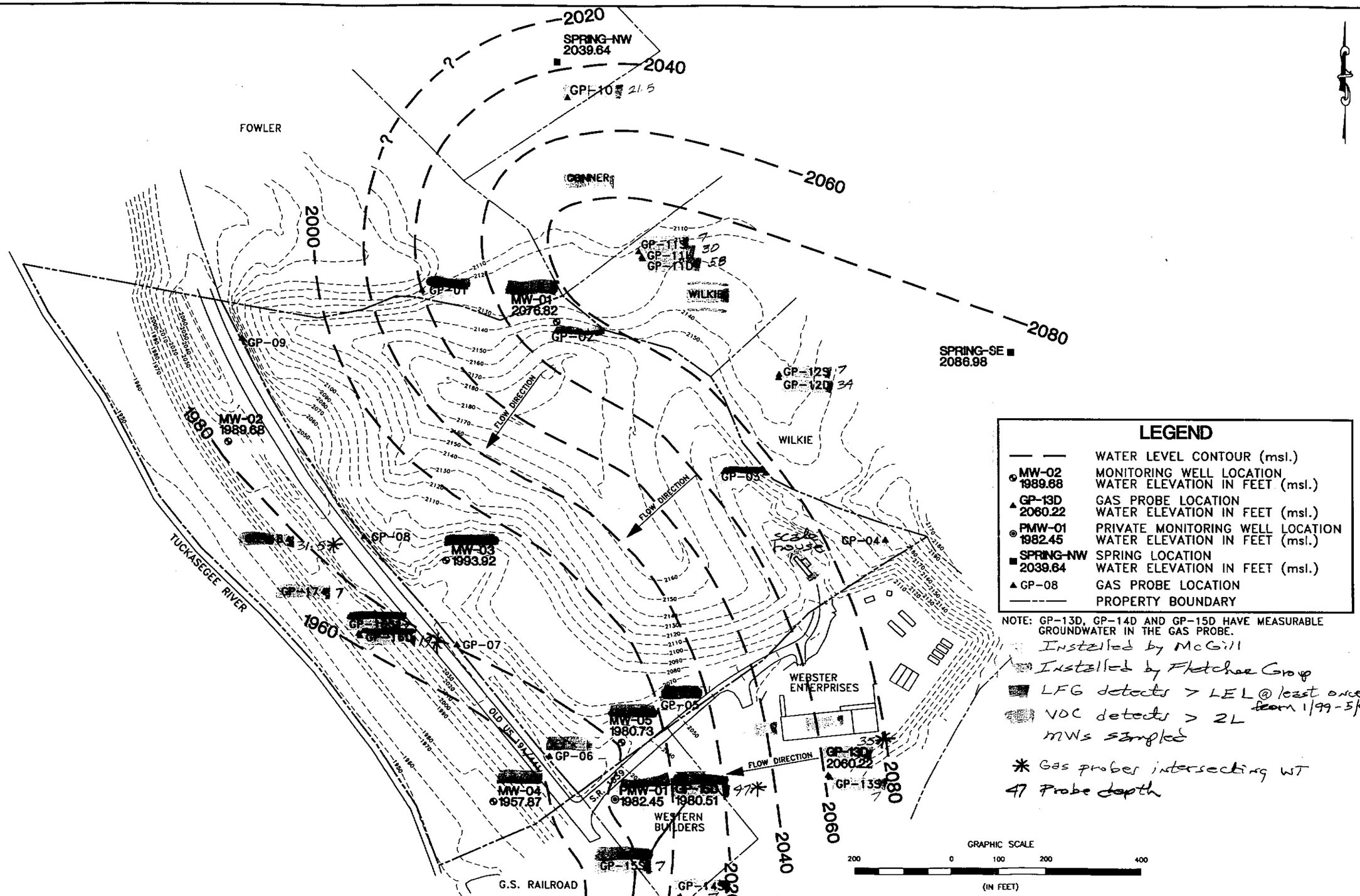


NOTES:

1. TOPOGRAPHY IS FOR REPRESENTATIVE PURPOSES ONLY AND NOT FOR CONSTRUCTION. THIS TOPOGRAPHY WAS OBTAINED FROM McGILL ASSOCIATES AND IS BASED ON A COMPILATION OF AN AERIAL SURVEY AND SEVERAL LAND SURVEYS.

THE FLETCHER GROUP
Engineering and Environmental Solutions
ASHEVILLE, NORTH CAROLINA

FIGURE 1
MONITORING WELL AND GAS PROBE LOCATION MAP
JACKSON COUNTY LANDFILL
JACKSON COUNTY, NORTH CAROLINA



LEGEND

— —	WATER LEVEL CONTOUR (msl.)
MW-02 1989.68	MONITORING WELL LOCATION WATER ELEVATION IN FEET (msl.)
GP-13D 2060.22	GAS PROBE LOCATION WATER ELEVATION IN FEET (msl.)
PMW-01 1982.45	PRIVATE MONITORING WELL LOCATION WATER ELEVATION IN FEET (msl.)
SPRING-NW 2039.64	SPRING LOCATION WATER ELEVATION IN FEET (msl.)
GP-08	GAS PROBE LOCATION
———	PROPERTY BOUNDARY

NOTE: GP-13D, GP-14D AND GP-15D HAVE MEASURABLE GROUNDWATER IN THE GAS PROBE.

Installed by McGill

Installed by Fletcher Group

LFG detects > LEL @ least once from 1/99-5/99

VOC detects > 2L

MWs sampled

* Gas probes intersecting WT

47 Probe depth

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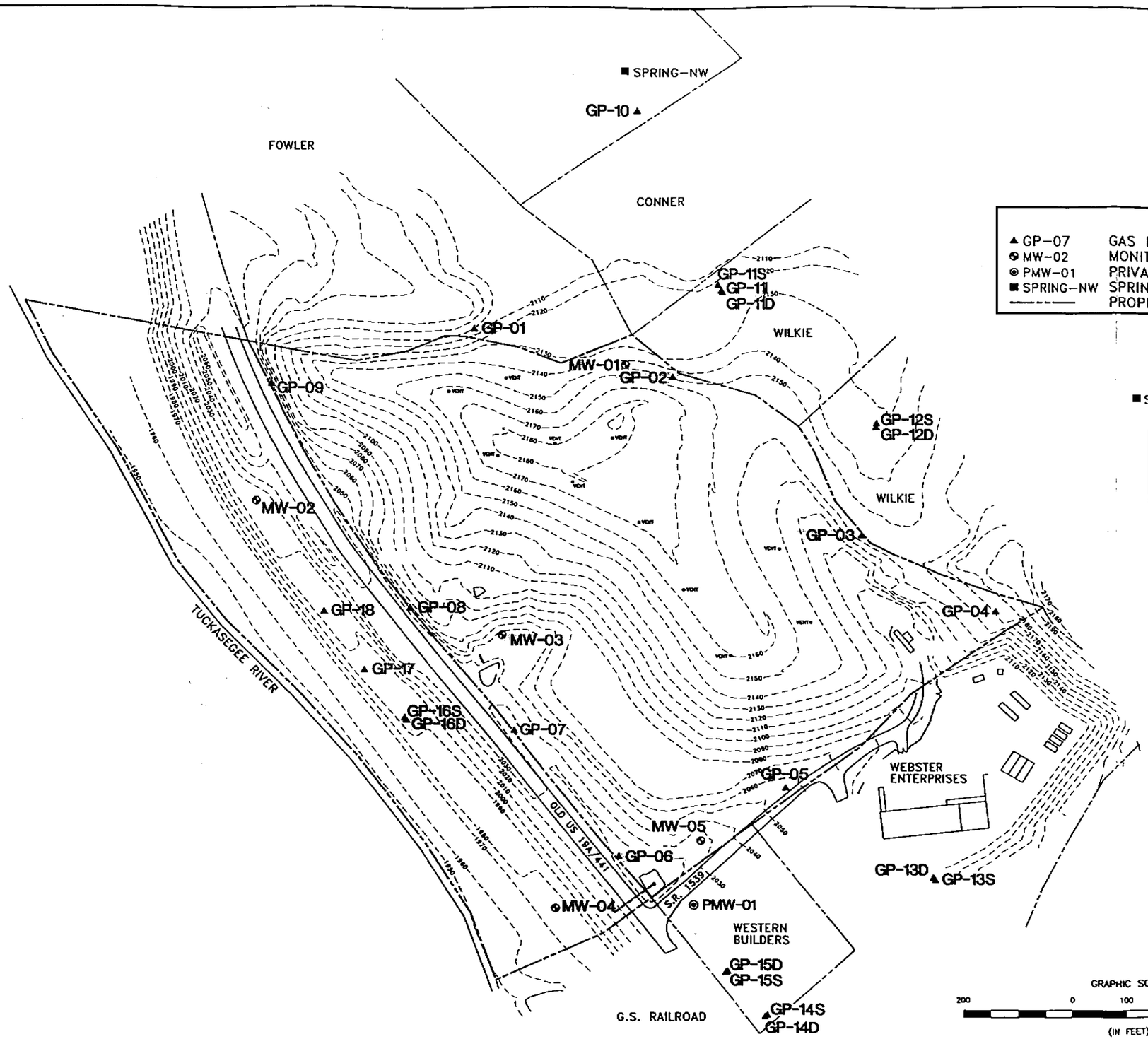
Engineering and Environmental Solutions
ASHEVILLE, NORTH CAROLINA

FIGURE 2
GROUNDWATER ELEVATION MAP - APRIL 1, 1999
JACKSON COUNTY LANDFILL
JACKSON COUNTY, NORTH CAROLINA

DRAWN BY: JOHNC. PROJ MAN: SR DATE: 05-18-99 CADD FILENAME: P:\OASHVIL\JACKSON CO.040\GWASSREP.03\204003LF2.DWG



LEGEND

▲ GP-07	GAS PROBE LOCATION
⊙ MW-02	MONITORING WELL LOCATION
◉ PMW-01	PRIVATE MONITORING WELL LOCATION
■ SPRING-NW	SPRING LOCATION
———	PROPERTY BOUNDARY

■ SPRING-SE

GAS MEASUREMENTS IN WELLS AND PROBES

WELL OR PROBE	% LEL	% CH_4	% CO_2	% O_2
GP-01	440.0	22.00	18.00	0.0
GP-02	>1000	61.00	44.70	0.0
GP-03	940.0	47.00	36.50	0.0
GP-04	16.0	0.08	1.10	9.2
GP-05	900.0	45.00	11.20	0.0
GP-06	>1000	58.60	34.40	0.0
GP-07	60.0	3.00	0.00	19.5
GP-08	2.0	0.10	3.20	9.2
GP-09	DNR	0.00	0.70	18.5
GP-10	DNR	0.10	0.00	19.9
GP-11S	36.0	1.80	0.80	18.9
GP-11I	20.0	1.00	0.00	18.9
GP-11D	10.0	0.50	0.00	20.2
GP-12S	2.0	0.10	0.00	20.2
GP-12D	DNR	0.00	0.10	19.3
GP-13S	4.0	0.20	0.50	19.5
GP-13D	2.0	0.10	0.20	19.9
GP-14S	200.0	10.00	1.60	17.9
GP-14D	2.0	0.10	2.50	17.7
GP-15S	872.0	43.60	27.90	0.2
GP-15D	280.0	14.00	10.20	6.5
GP-16S	570.0	28.50	28.30	0.0
GP-16D	142.0	7.10	13.10	7.7
GP-17	DNR	0.00	0.70	19.2
GP-18	DNR	0.00	0.40	19.7
MW-01	>1000	68.00	32.00	6.3
MW-02	DNR	0.00	0.00	20.6
MW-03	850.0	42.50	15.90	7.2
MW-04	178.0	8.70	7.80	15.4
MW-05	24.0	1.20	1.50	19.5

GRAPHIC SCALE

200 0 100 200 400

(IN FEET)

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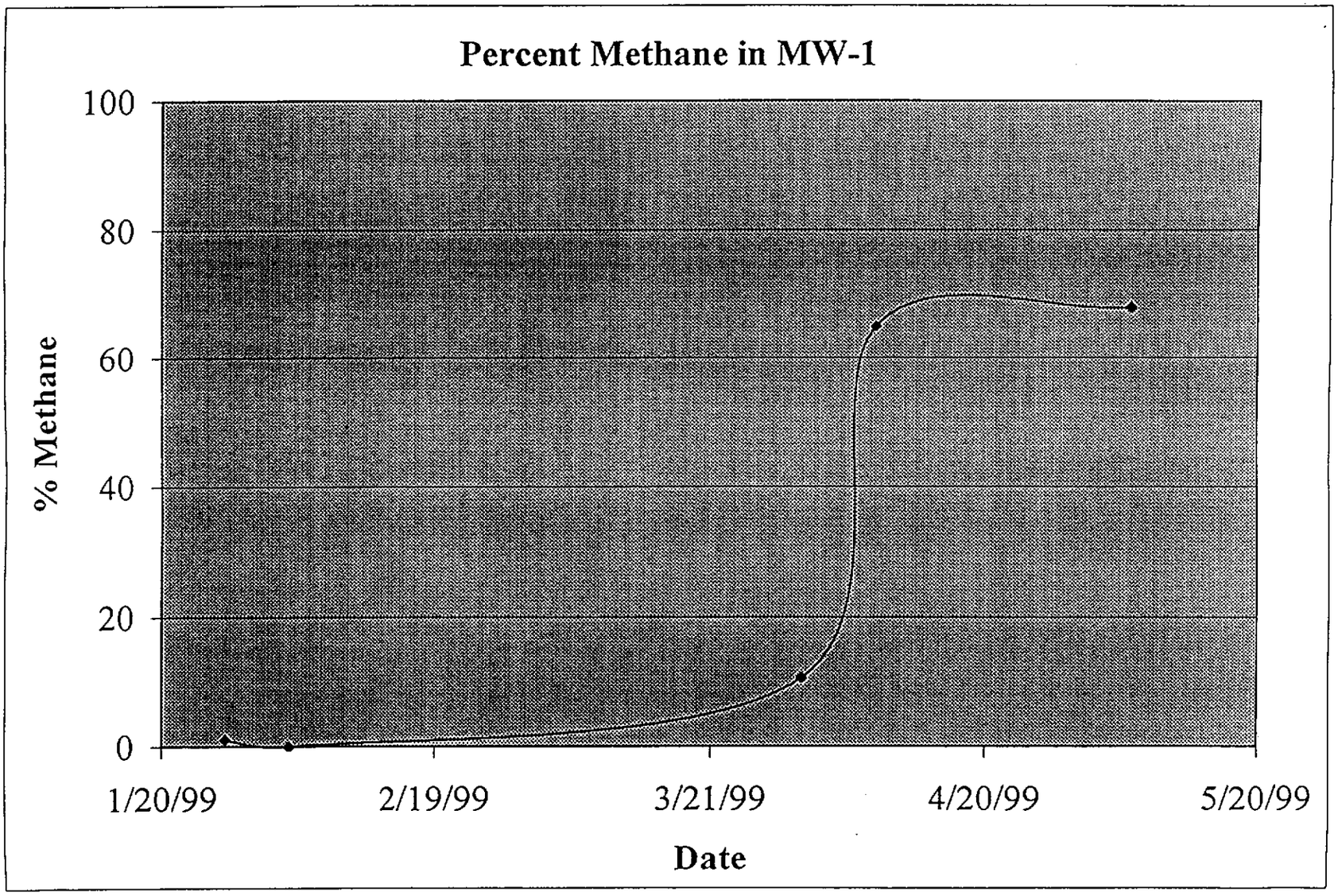
ASHEVILLE, NORTH CAROLINA

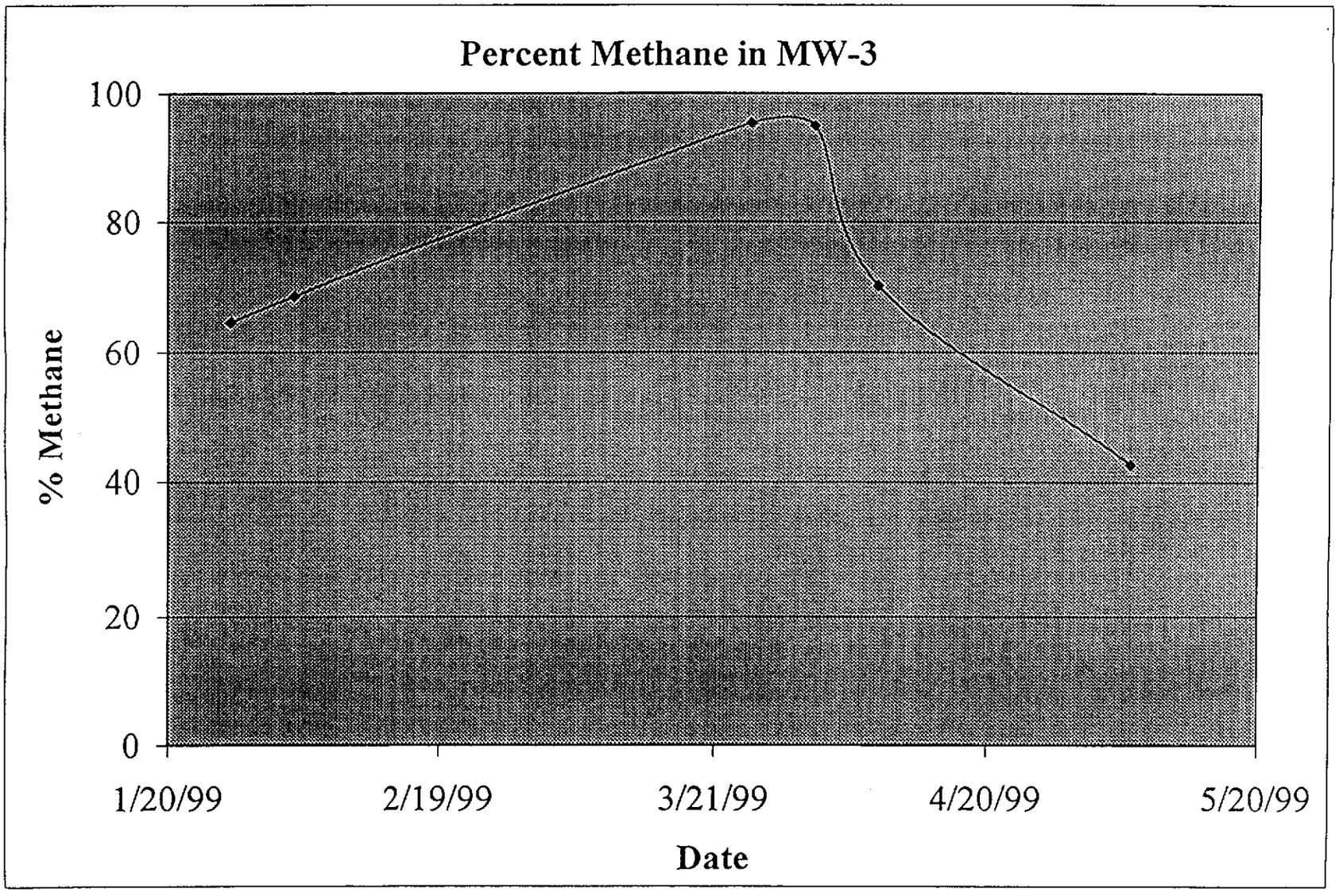
FIGURE 3
% LEL, % METHANE, % CO_2 AND %O_2 READINGS
MAY 6, 1999
JACKSON COUNTY LANDFILL
JACKSON COUNTY, NORTH CAROLINA

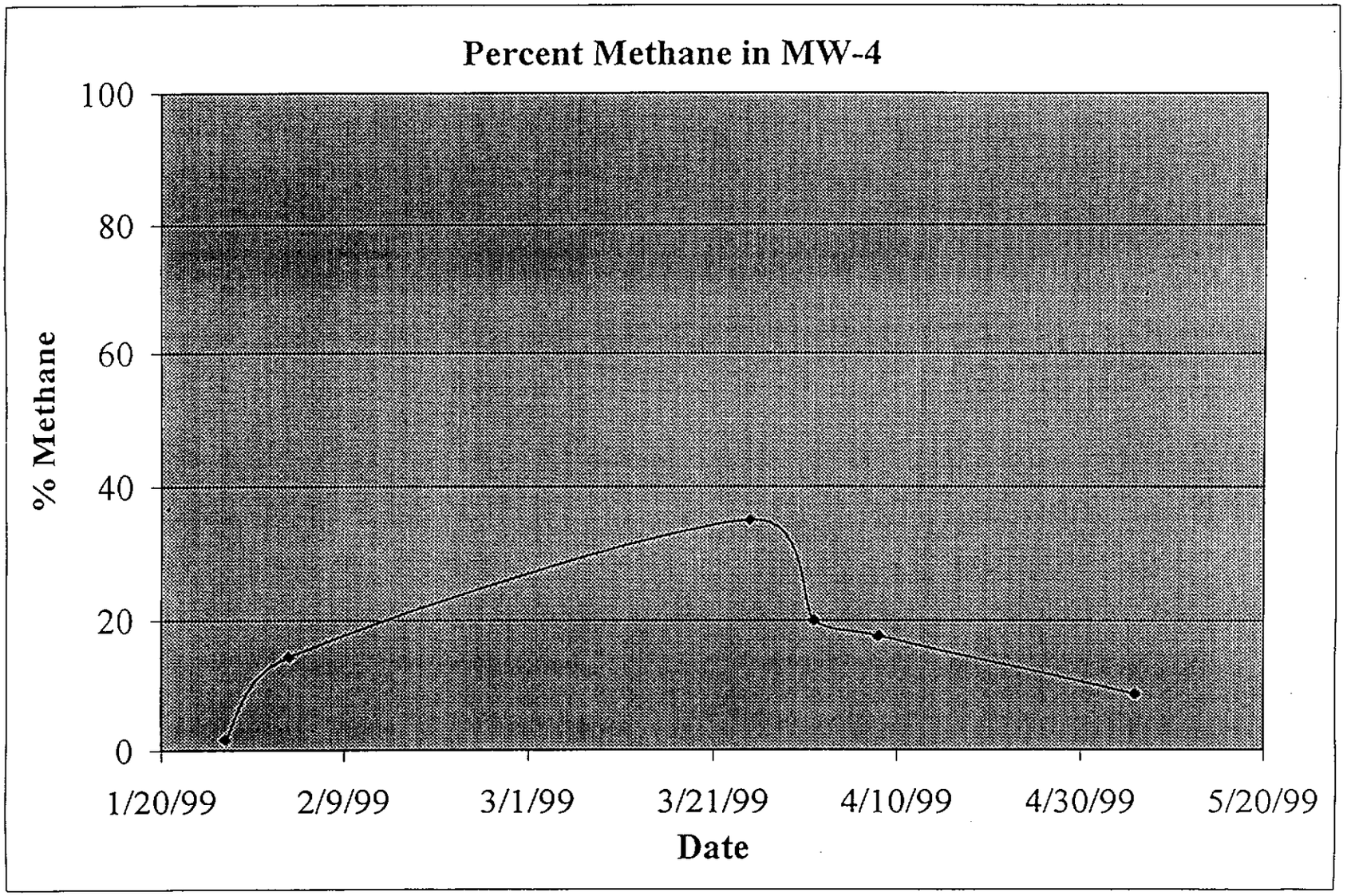
DRAWN BY: JOHNC. PROJ MAN: SR DATE: 05-18-99 CADD FILENAME: P:\OASHVIL\JACKSON CO.040\GWASSREP.03\20400LF1.DWG

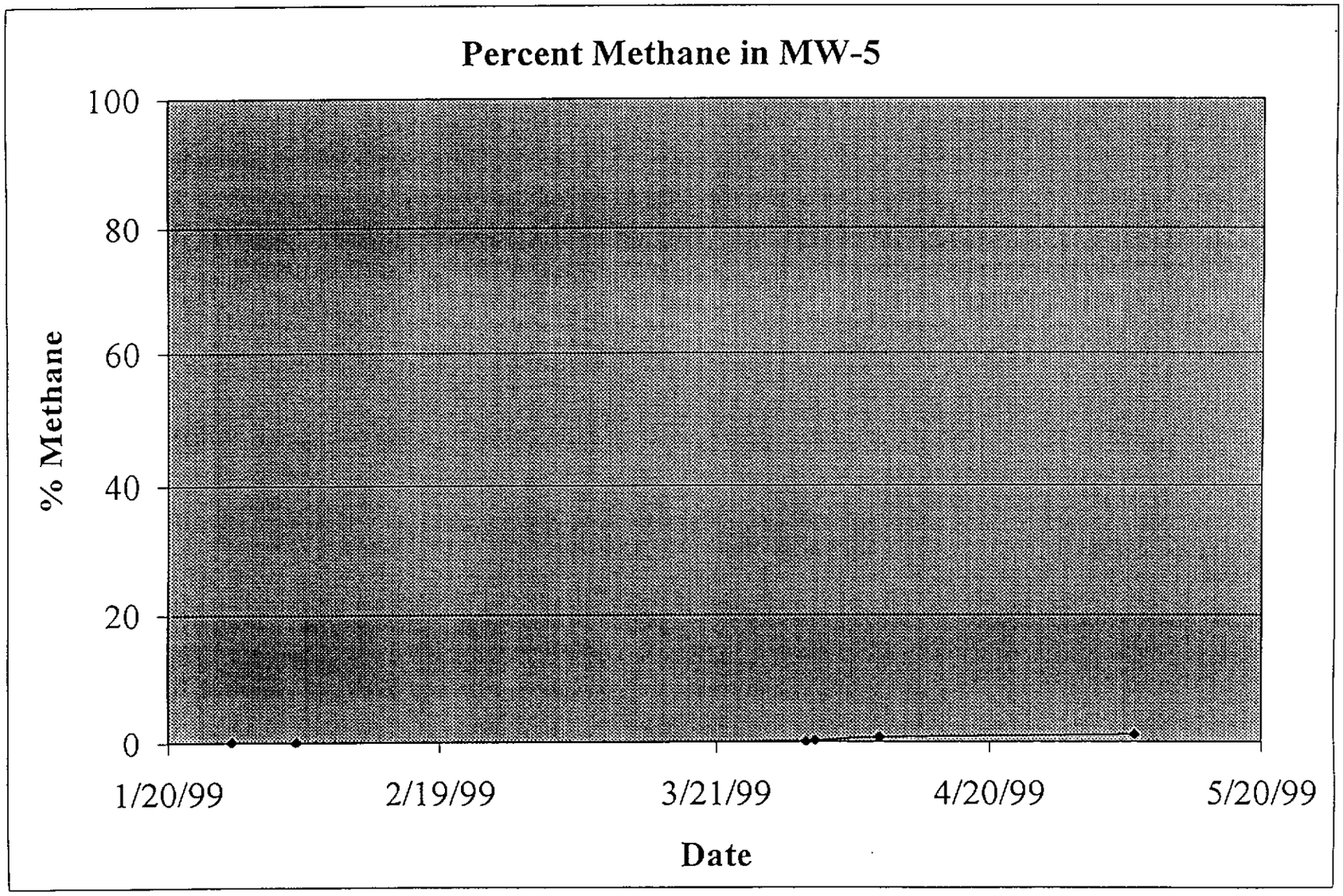
Attachment 3

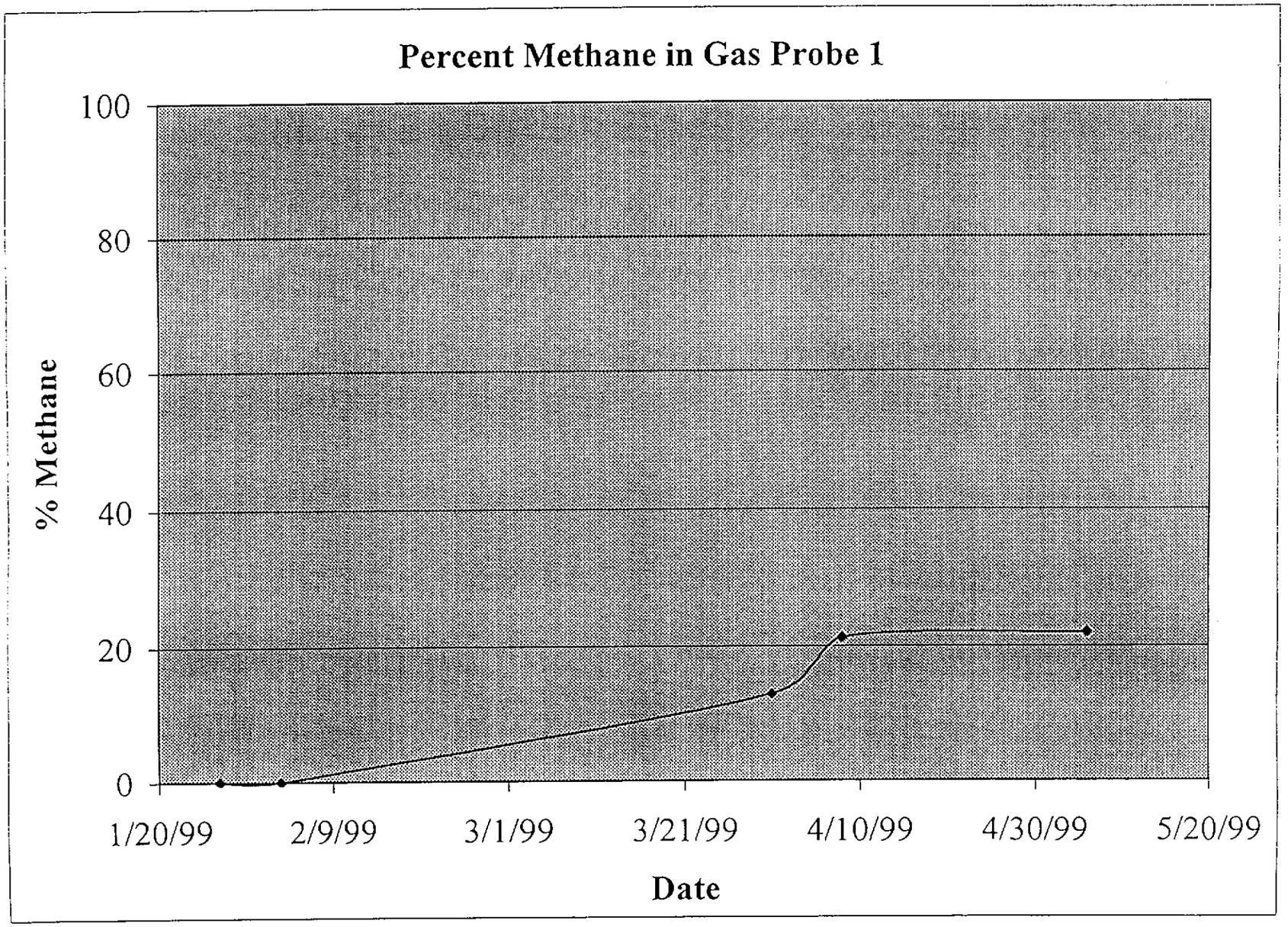
Gas Concentration Charts

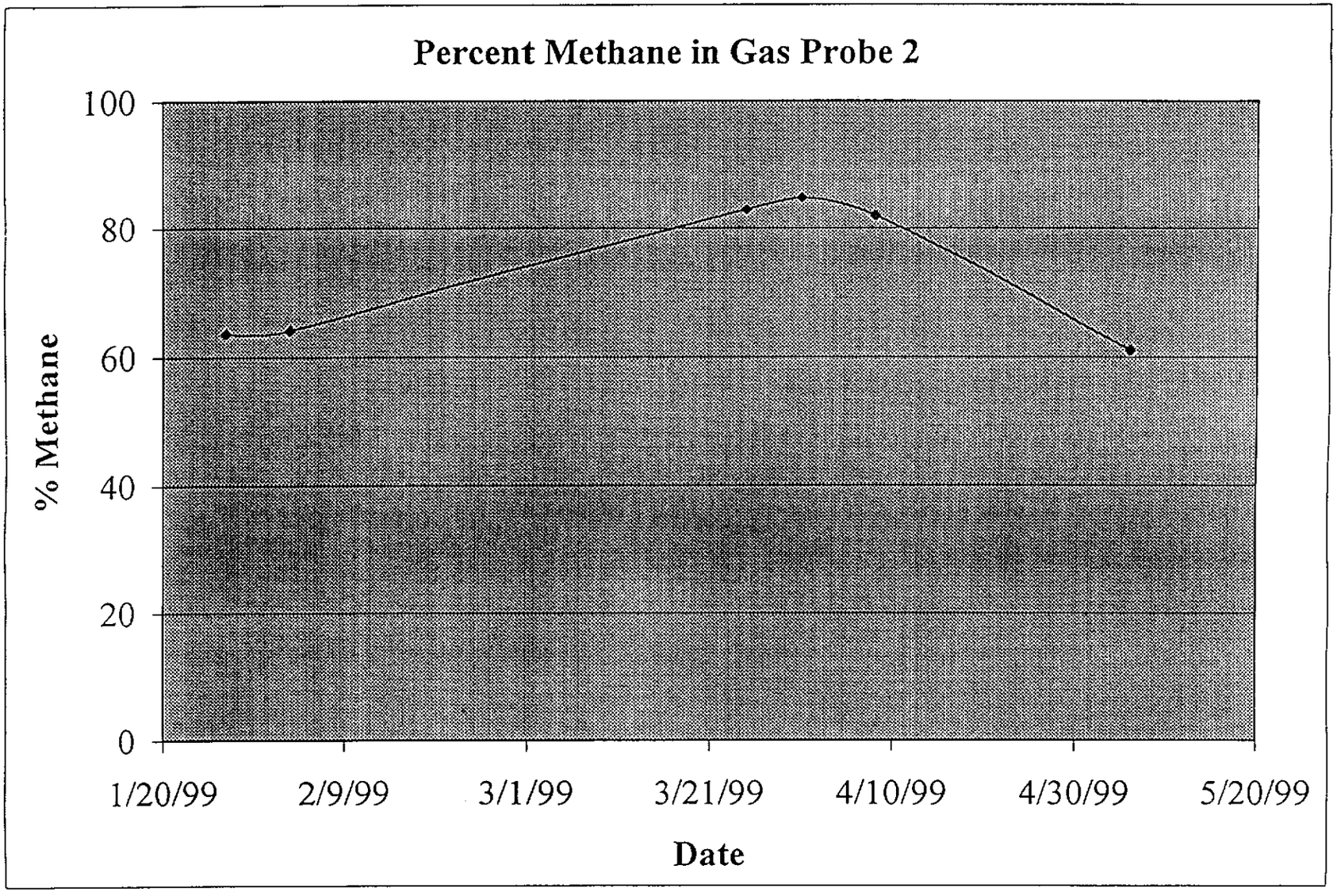

Percent Methane in MW-1
100
80
60
40
20
0
% Methane
1/20/99
2/19/99
3/21/99
4/20/99
5/20/99
Date

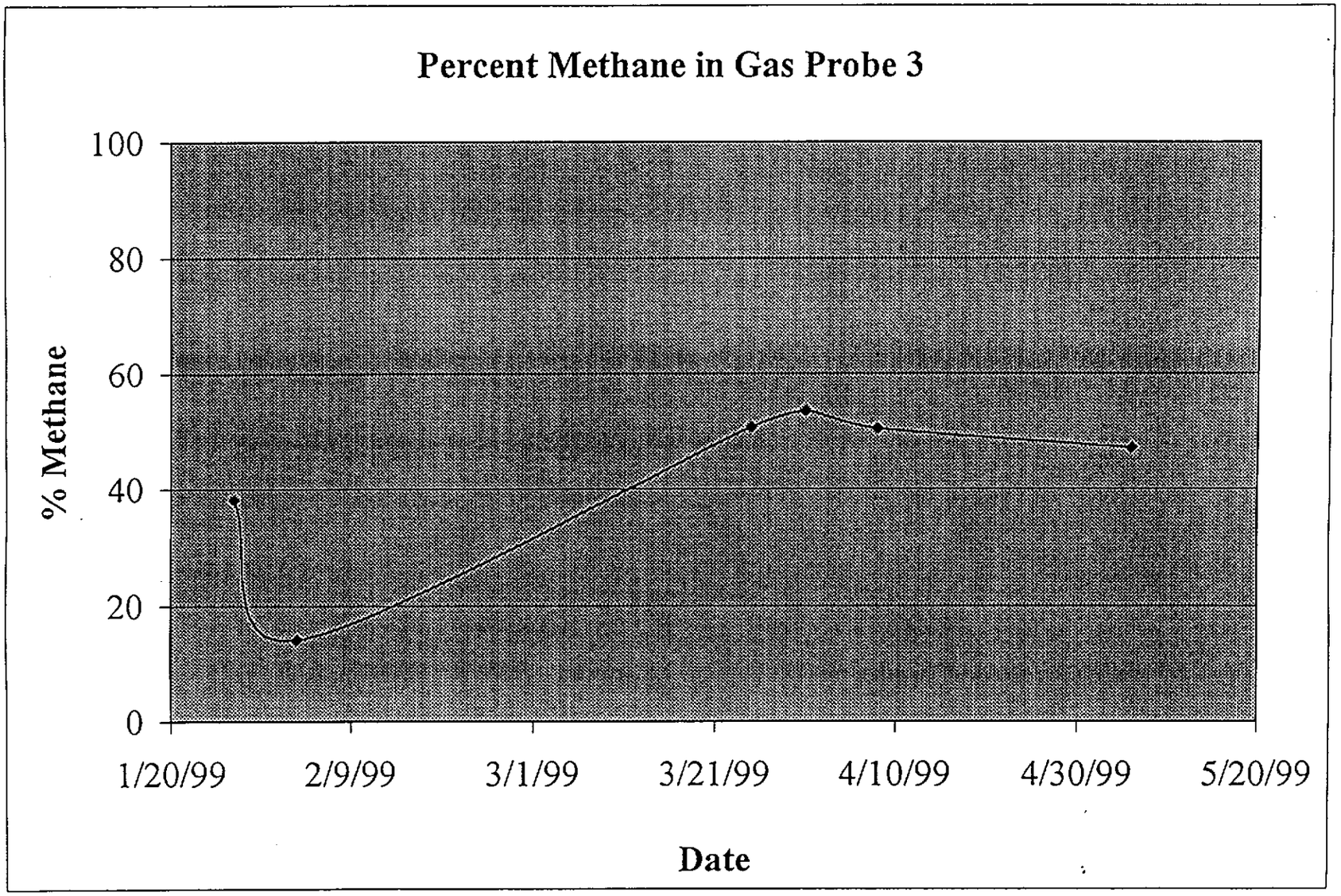

Percent Methane in MW-3
100
80
60
40
20
0
% Methane
1/20/99
2/19/99
3/21/99
4/20/99
5/20/99
Date

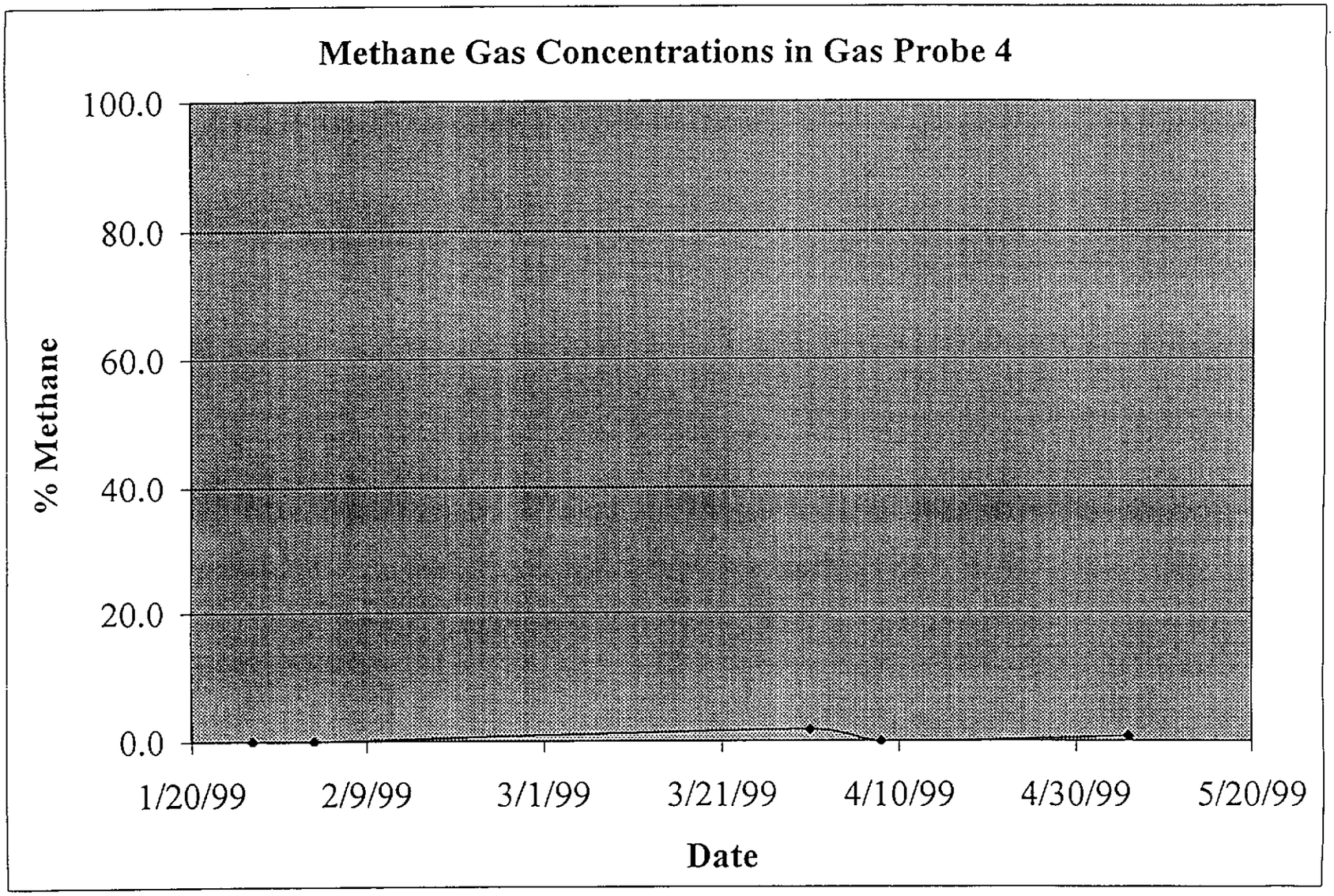

Percent Methane in MW-4
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

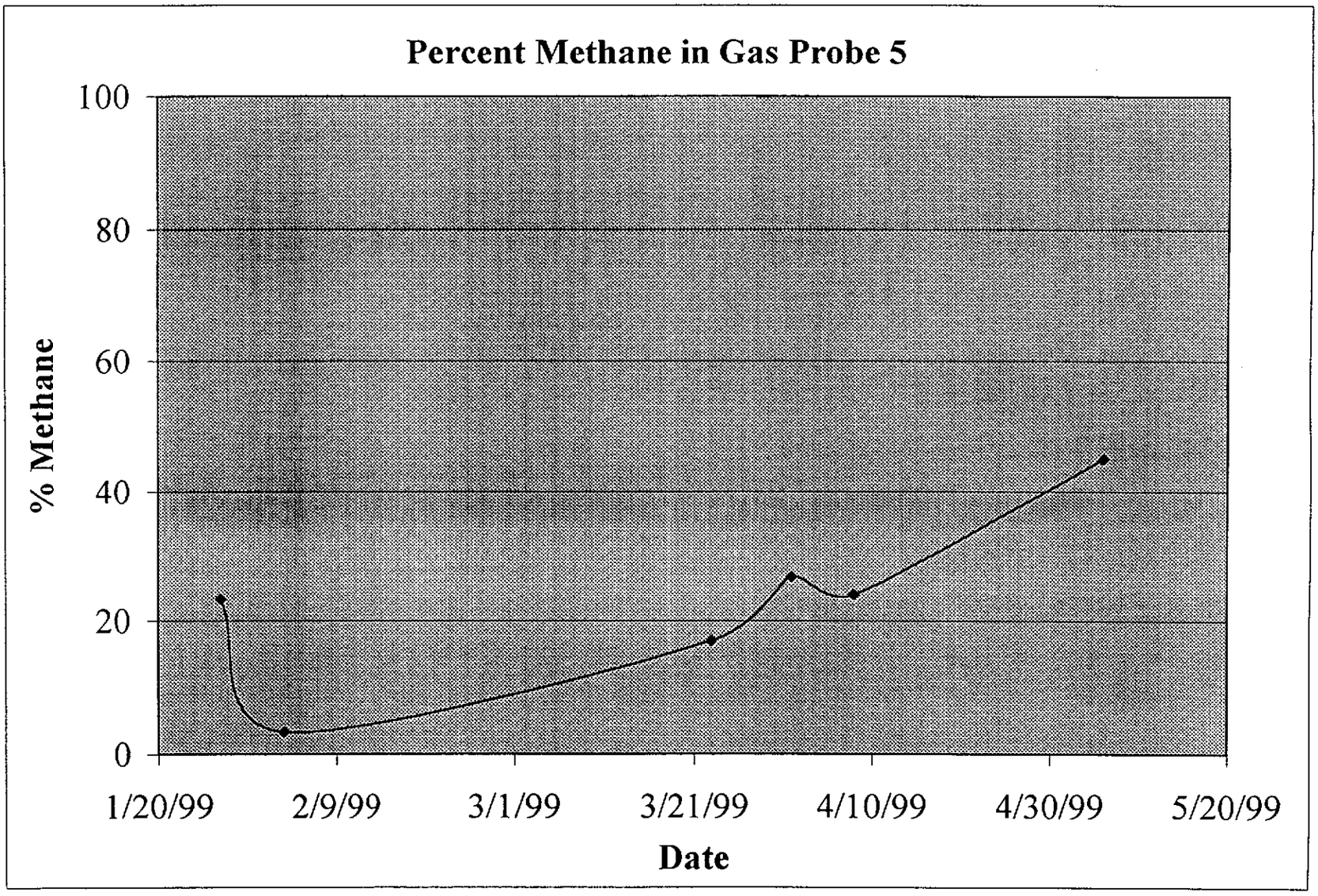

Percent Methane in MW-5
100
80
60
40
20
0
% Methane
1/20/99
2/19/99
3/21/99
4/20/99
5/20/99
Date

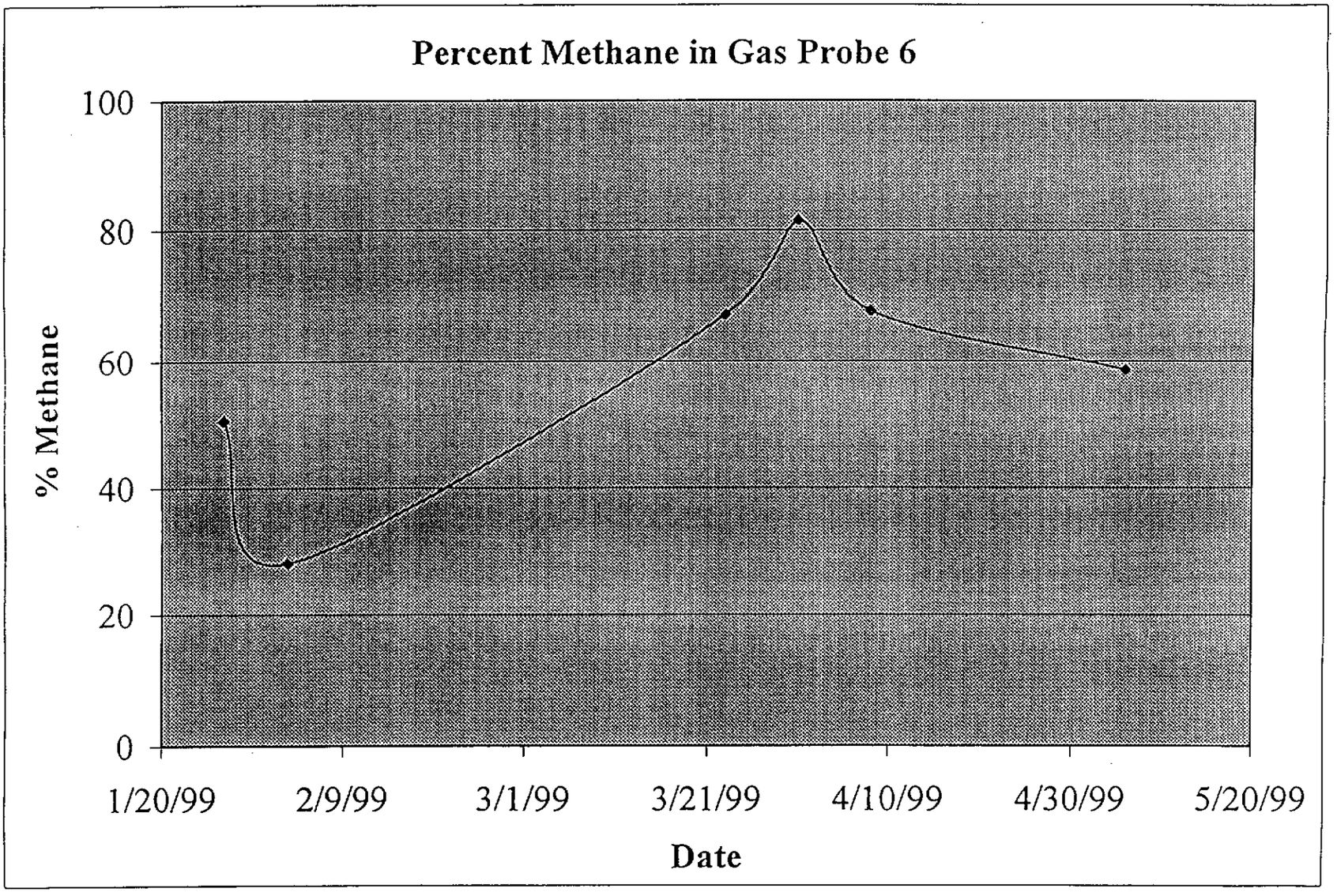

Percent Methane in Gas Probe 1
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

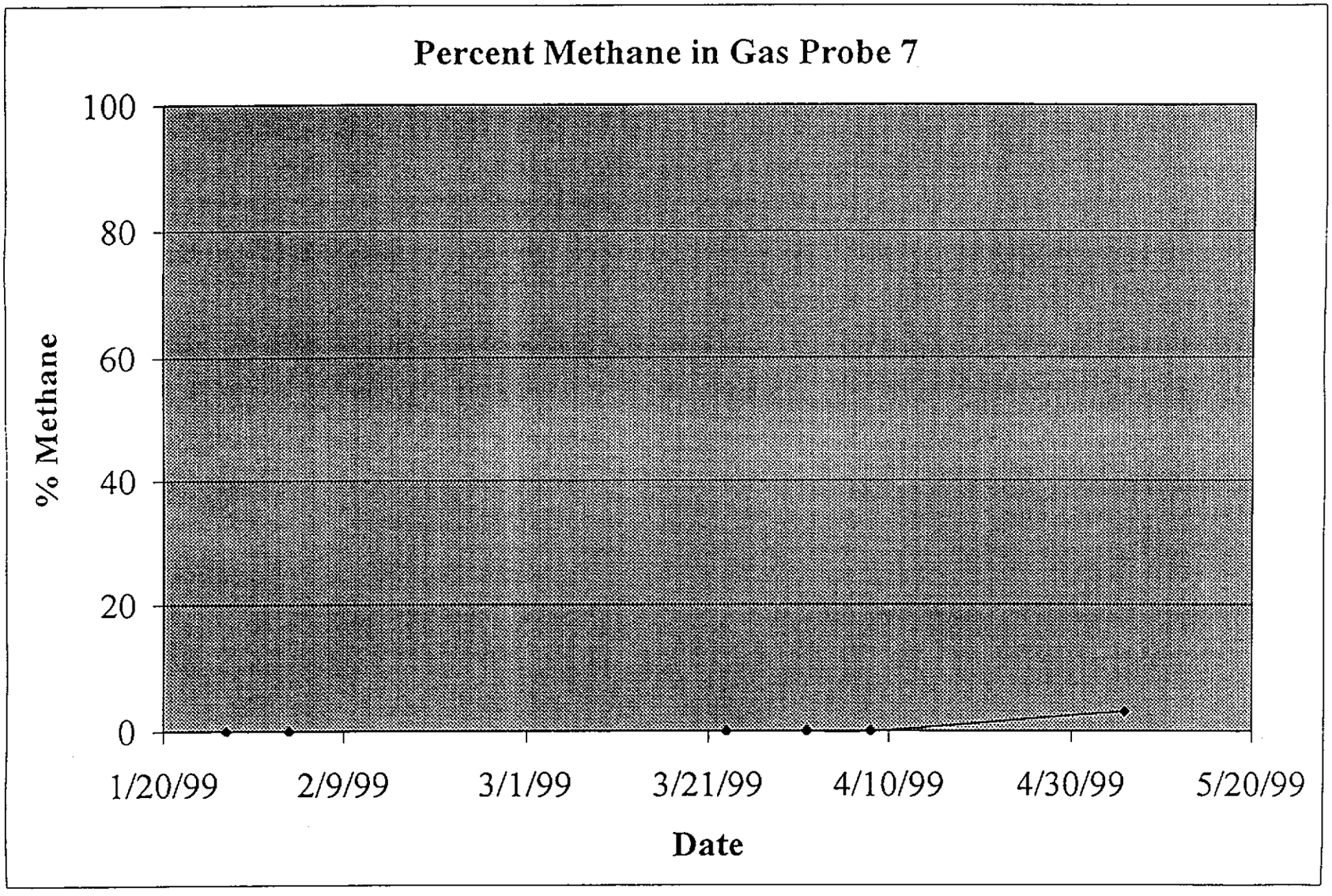

Percent Methane in Gas Probe 2
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

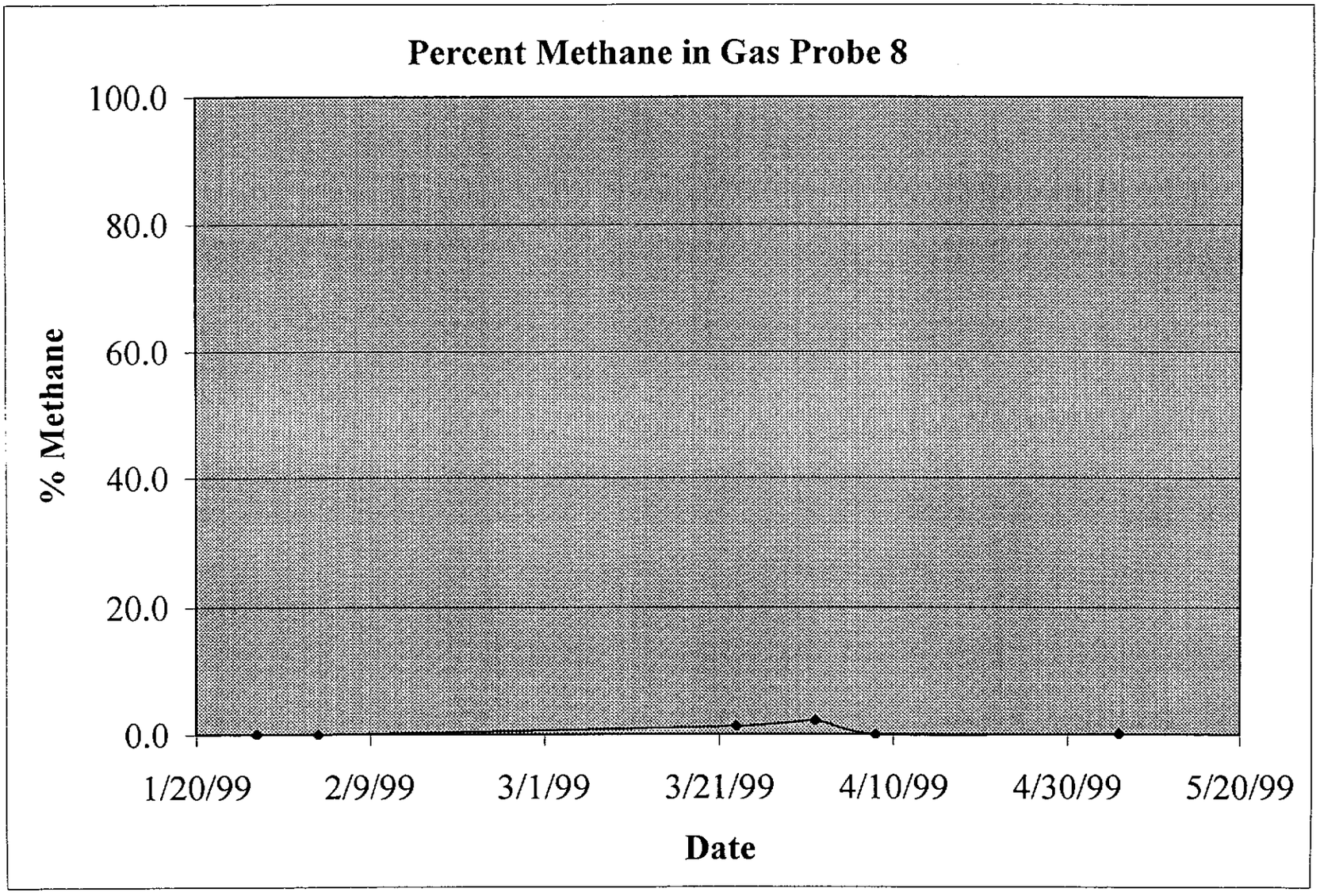

Percent Methane in Gas Probe 3
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

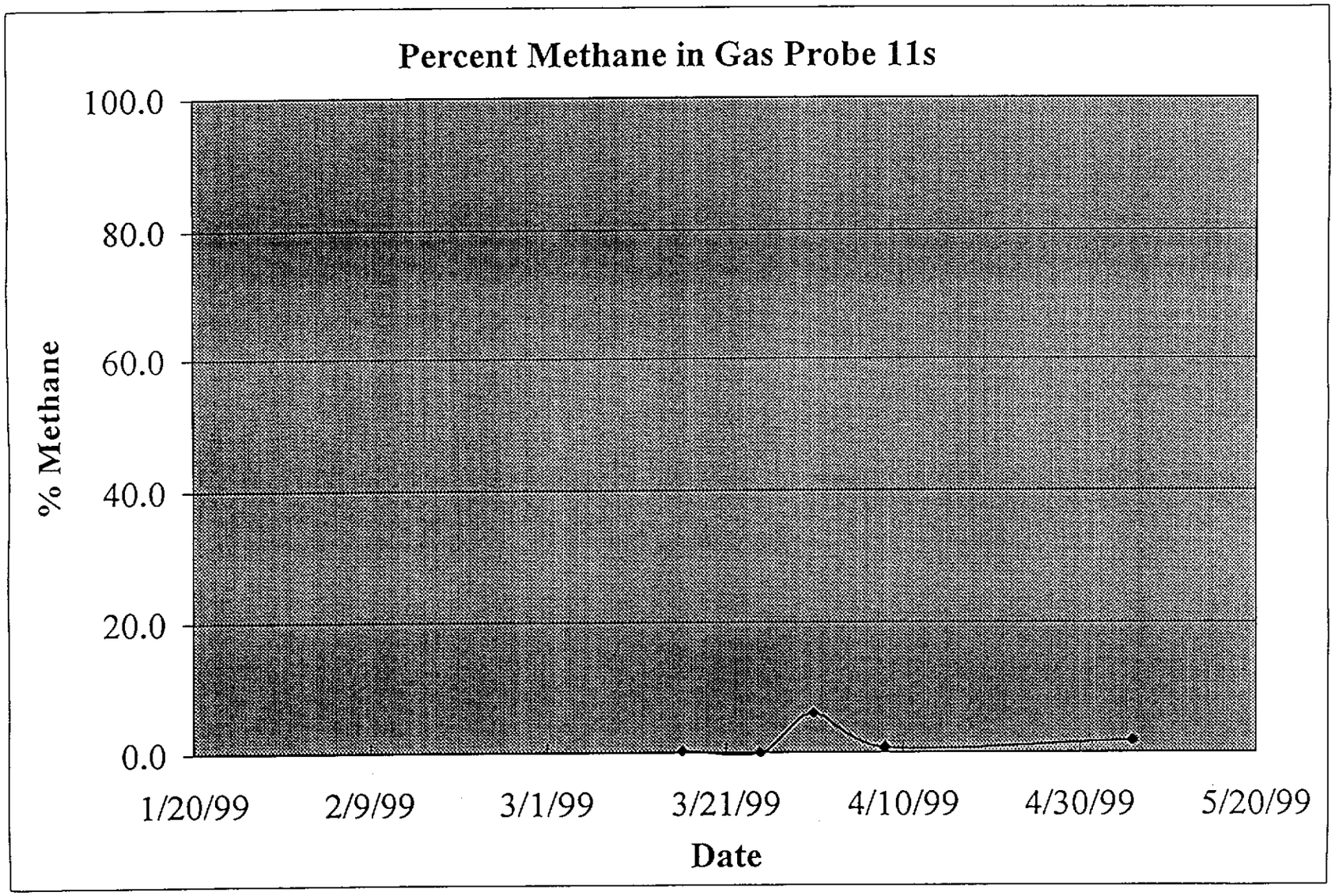

Methane Gas Concentrations in Gas Probe 4
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

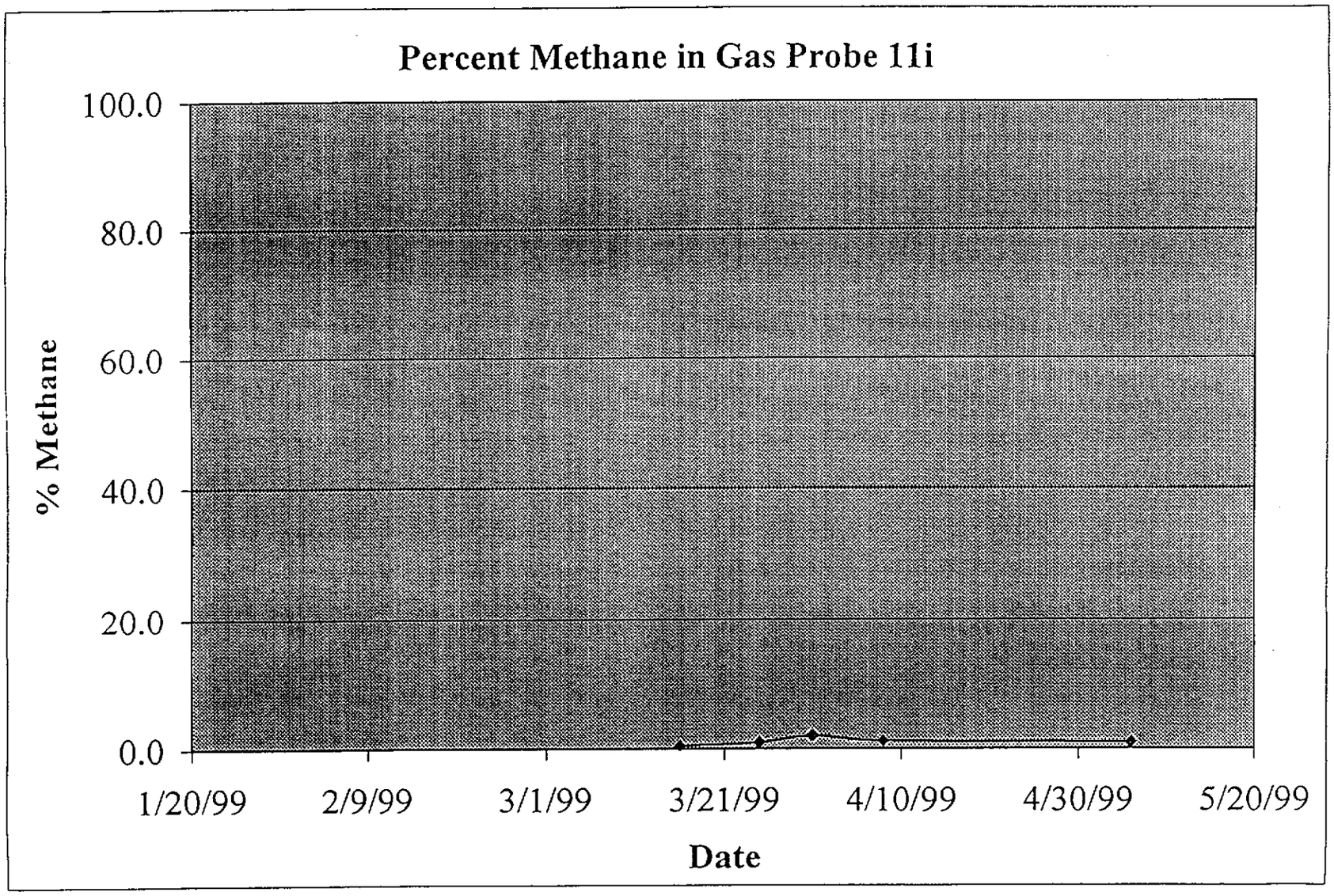

Percent Methane in Gas Probe 5
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

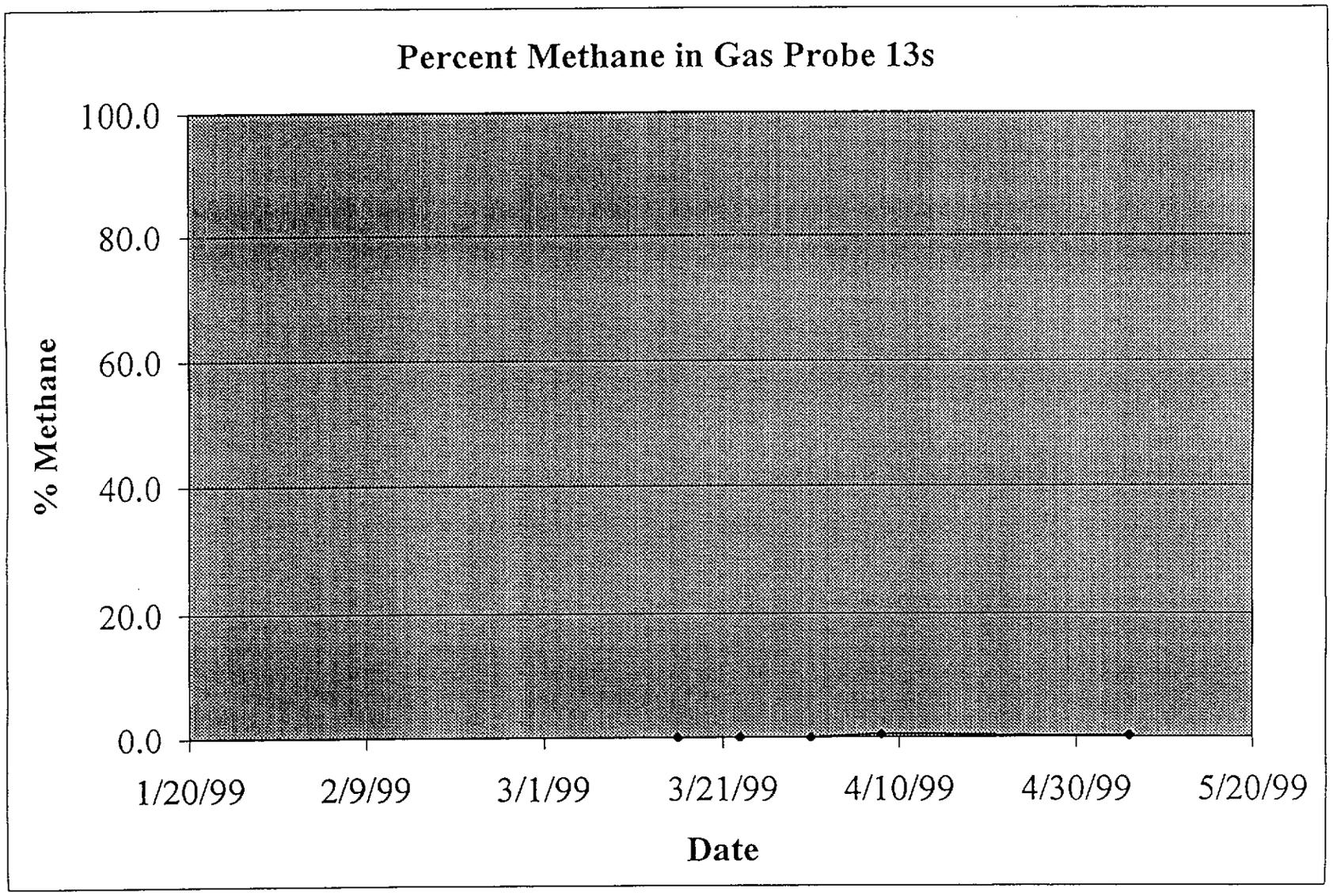

Percent Methane in Gas Probe 6
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

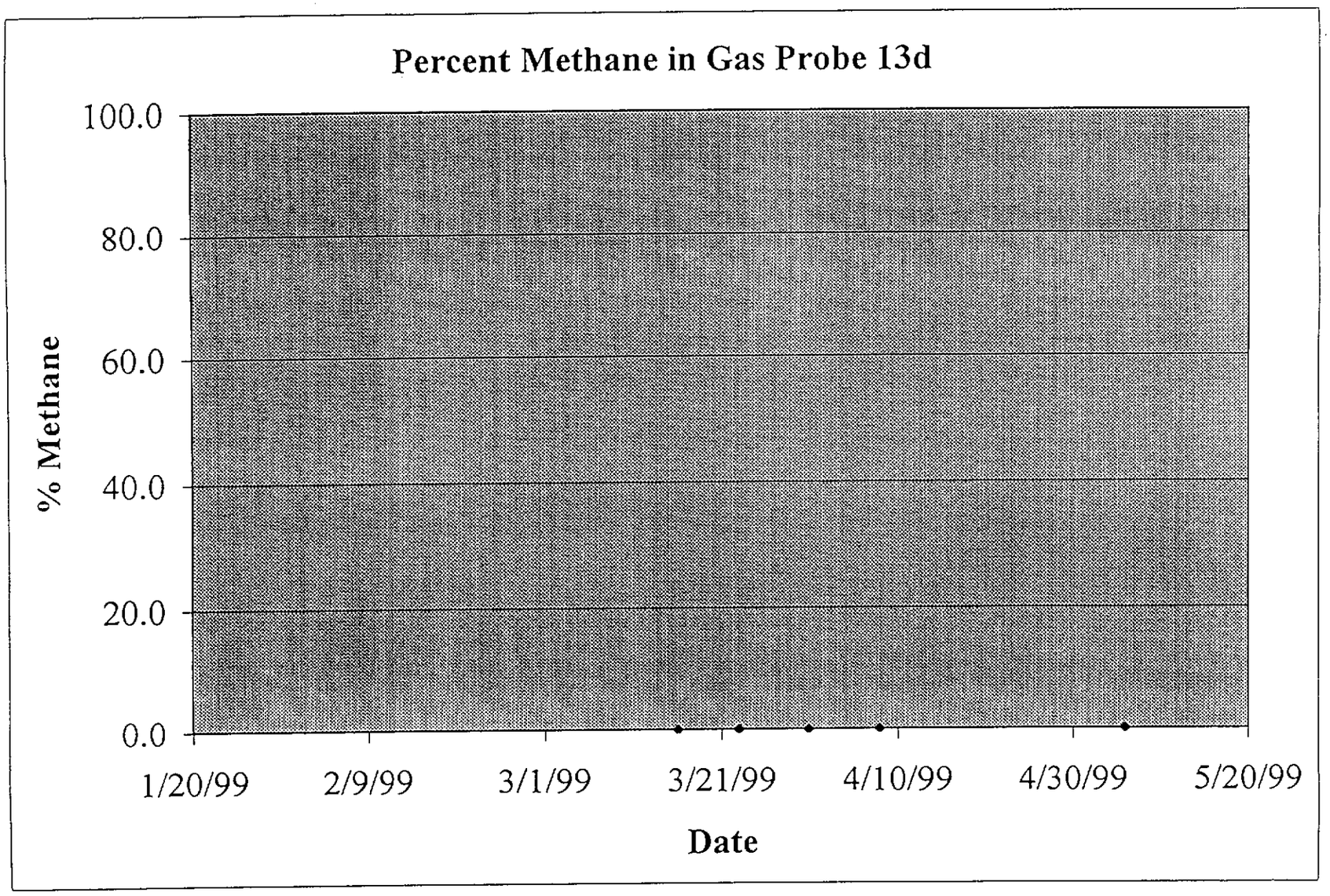

Percent Methane in Gas Probe 7
100
80
60
40
20
0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

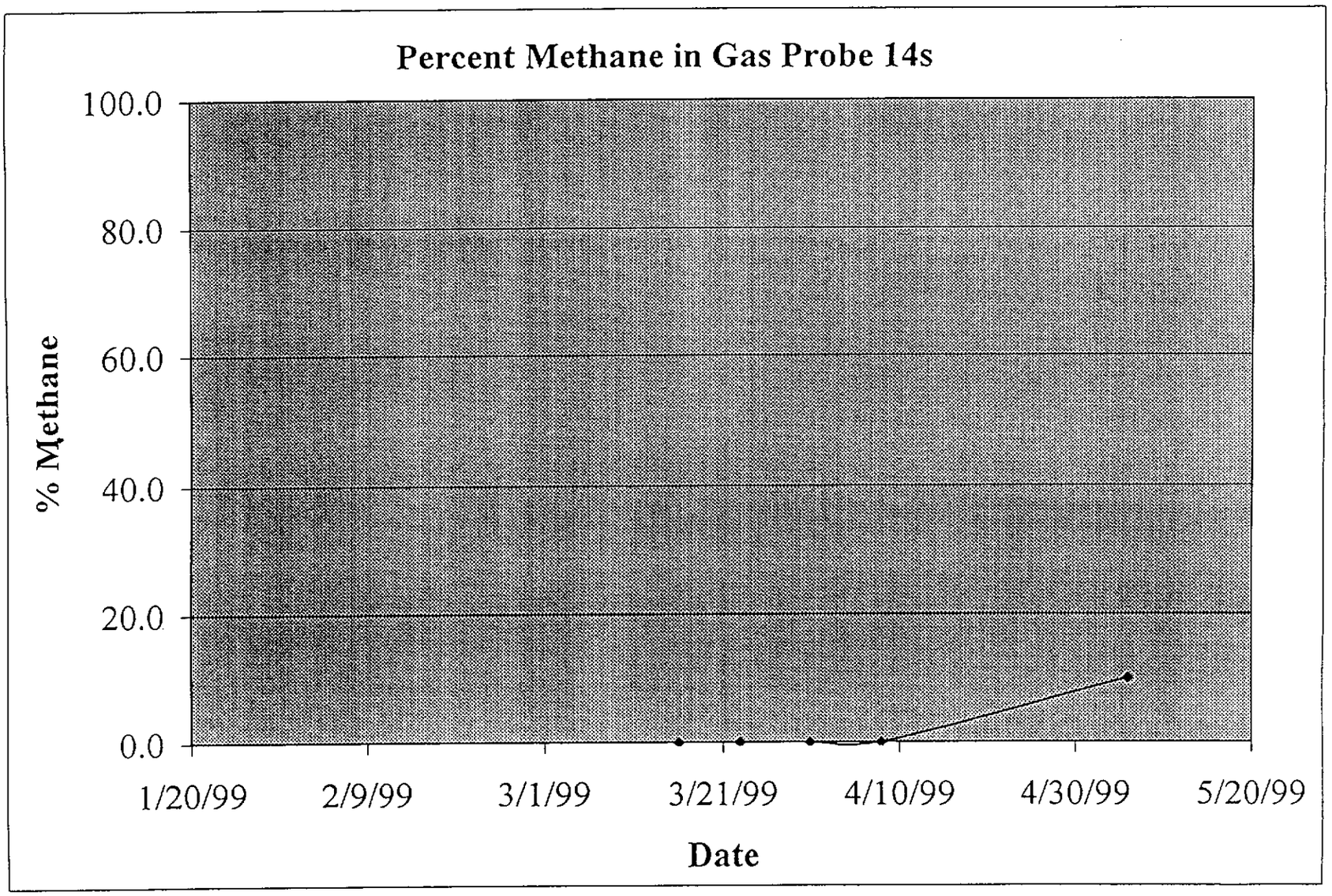

Percent Methane in Gas Probe 8
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

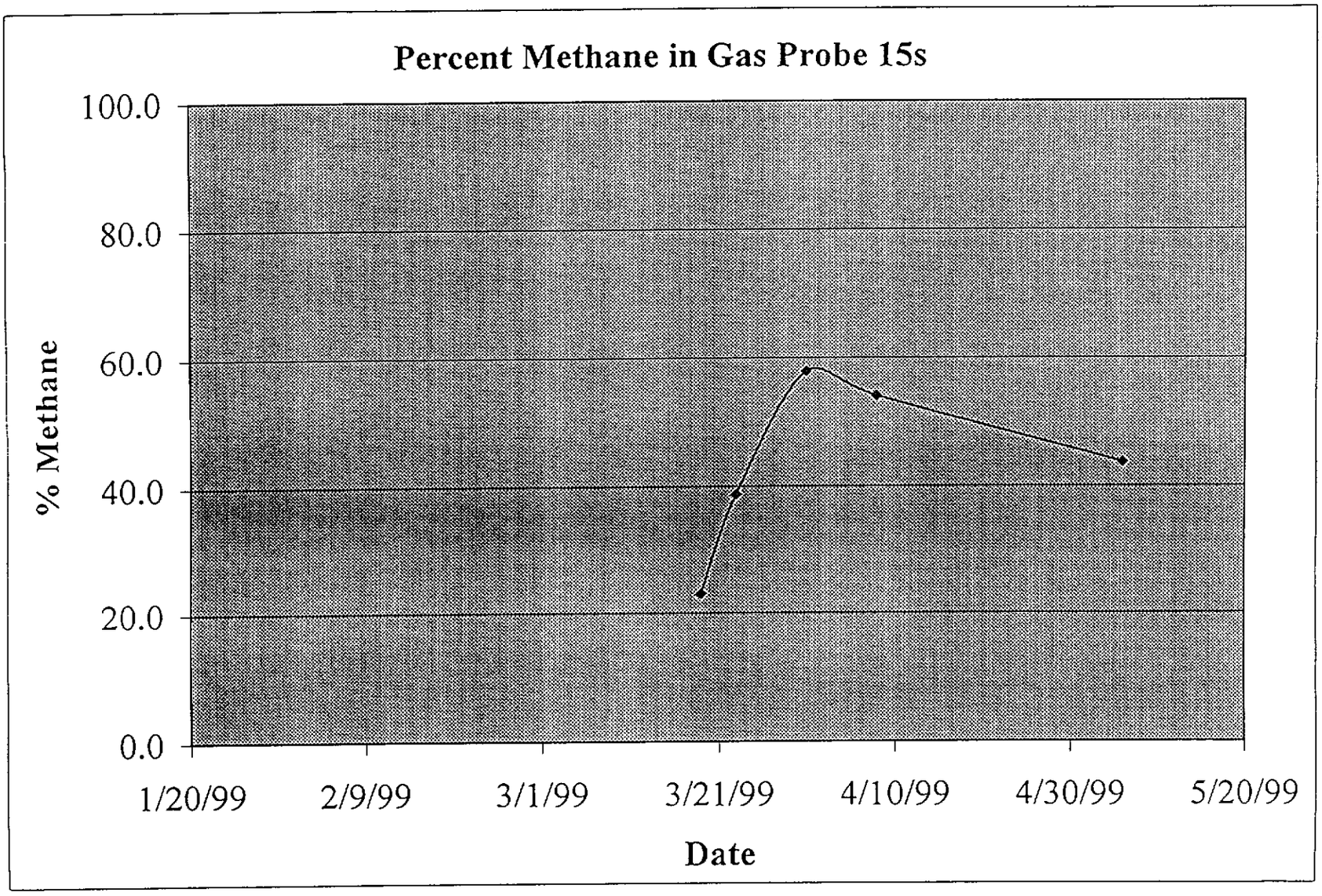

Percent Methane in Gas Probe 11s
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

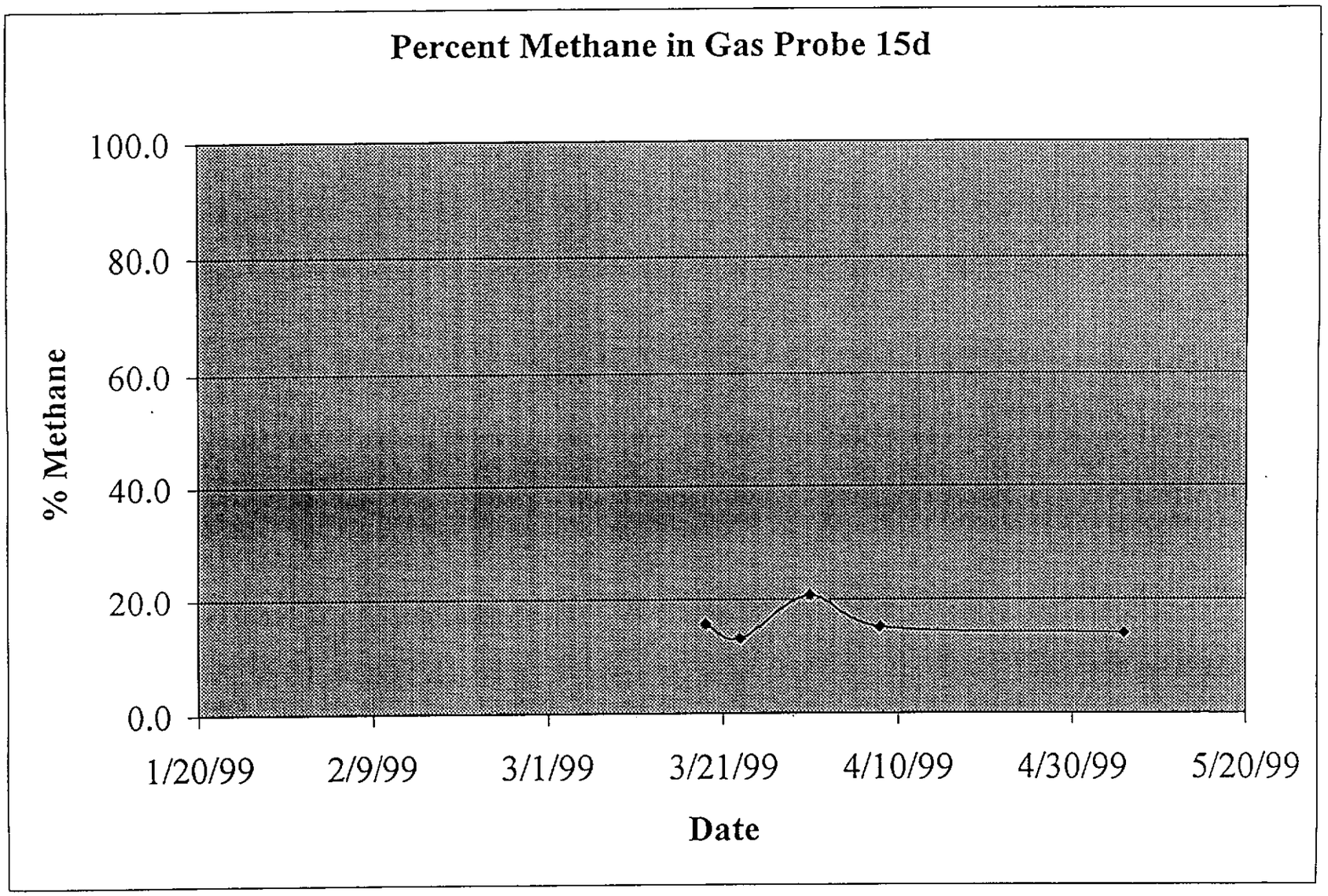

Percent Methane in Gas Probe 11i
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

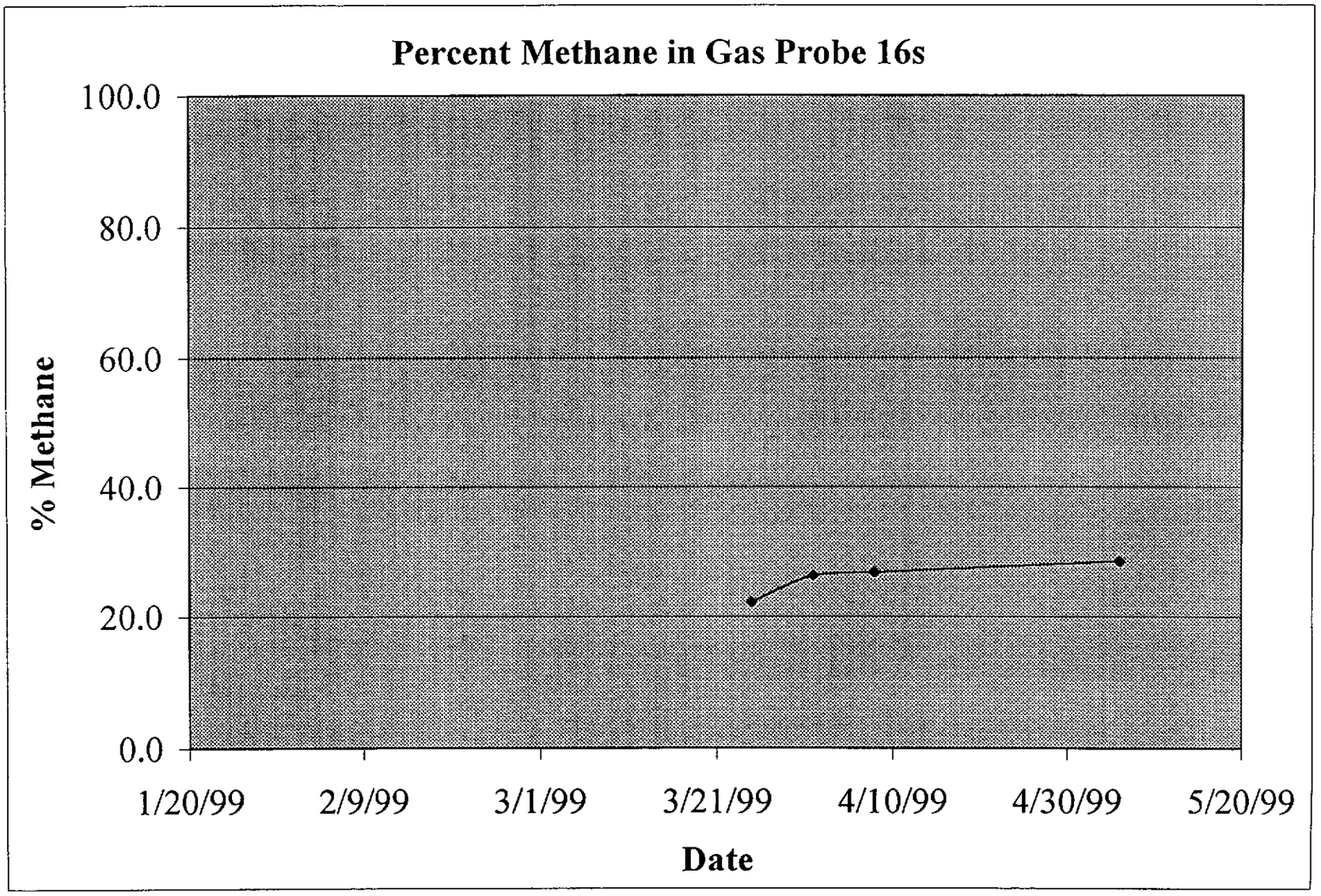

Percent Methane in Gas Probe 13s
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

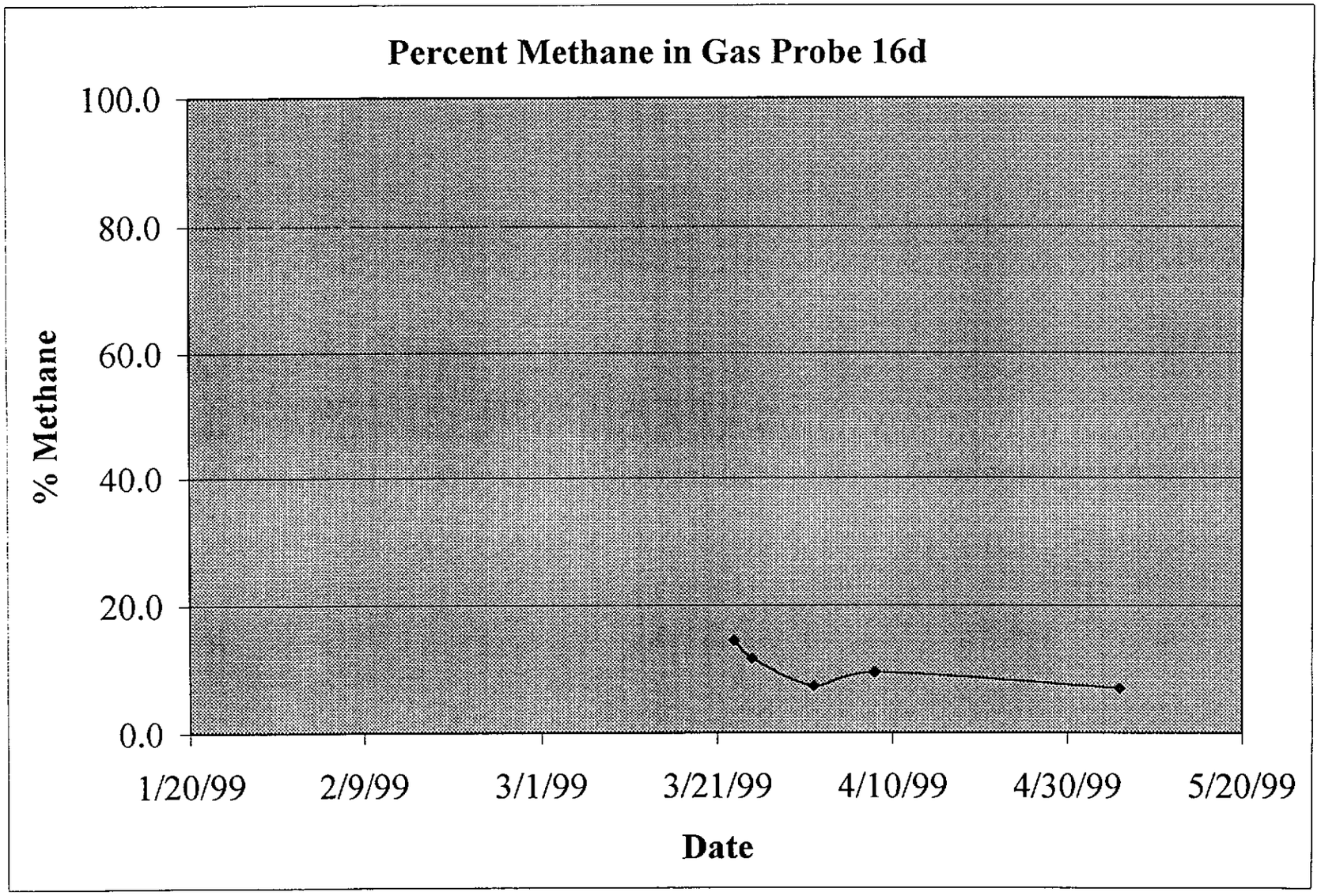

Percent Methane in Gas Probe 13d
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date


Percent Methane in Gas Probe 14s
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date


Percent Methane in Gas Probe 15s
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date


Percent Methane in Gas Probe 15d
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date


Percent Methane in Gas Probe 16s
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date


Percent Methane in Gas Probe 16d
100.0
80.0
60.0
40.0
20.0
0.0
% Methane
1/20/99
2/9/99
3/1/99
3/21/99
4/10/99
4/30/99
5/20/99
Date

Attachment 4

Analytical Laboratory Report

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

ESTAMERICA 5781
ORI PATTTON
22 LYMAN STREET
SHEVILLE, NC 28801

Project: 2040.03
Project Name: THE FLETCHER GROUP
Sampler: STU RYMAN

Lab Number: 99-A40836
Sample ID: GP-13D
Sample Type: Ground water
Site ID:

Date Collected: 3/19/99
Time Collected:
Date Received: 3/23/99
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
Benzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Bromobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Bromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Bromoform	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Bromomethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
2-Butanone	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
n-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
sec-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
t-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Carbon disulfide	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Carbon tetrachloride	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Chlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Chloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
2-Chloroethylvinylether	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Chloroform	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Chloromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
2-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
4-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2-Dibromo-3-chloropropane	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
Dibromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2-Dibromoethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Dibromomethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,3-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,4-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Dichlorodifluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
cis-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
trans-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,3-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
2,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
cis-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40836
Sample ID: GP-13D

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
trans-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Ethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Hexachlorobutadiene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
2-Hexanone	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
Isopropylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
4-Isopropyltoluene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
4-Methyl-2-pentanone	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
Methylene chloride	ND	ug/l	2	2	1	3/25/99	9:54	J.Haley	8260B	7210
Naphthalene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
n-Propylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Styrene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1,1,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1,2,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Tetrachloroethene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Toluene	0.8	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2,3-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2,4-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1,1-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,1,2-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Trichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2,3-Trichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,2,4-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
1,3,5-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Vinyl chloride	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Xylenes	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Bromodichloromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
Trichlorofluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	9:54	J.Haley	8260B	7210
METALS										
Calcium, Total	4.430	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Magnesium, Total	3.960	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Sodium, Total	ND	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
MISCELLANEOUS CHEMISTRY										
Sulfate	ND	mg/l	5.00	5.00	1	3/25/99	15:26	S.Brewer	375.4	6731
Chloride	ND	mg/l	1.00	1.00	1	3/30/99	13:15	J.Temple	9251	8023

ND = Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surrogate, 1,2-Dichloroethane, d4	105.	60. - 138.
VOA Surrogate, Toluene d8	100.	80. - 123.
VOA Surrogate, 4-Bromofluorobenzene	109.	73. - 122.

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40836
Sample ID: GP-13D

Report Approved By: Michael A. Dunn Report Date: 3/30/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

Laboratory Certification Number: 387

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

TESTAMERICA 5781
LORI PATTTON
22 LYMAN STREET
ASHEVILLE, NC 28801

Lab Number: 99-A40837
Sample ID: GP-14D
Sample Type: Ground water
Site ID:

Date Collected: 3/19/99
Time Collected:
Date Received: 3/23/99
Time Received: 9:00

Project: 2040.03
Project Name: THE FLETCHER GROUP
Sampler: STU RYMAN

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
Benzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Bromobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Bromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Bromoform	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Bromomethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
2-Butanone	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
n-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
sec-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
t-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Carbon disulfide	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Carbon tetrachloride	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Chlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Chloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
2-Chloroethylvinylether	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Chloroform	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Chloromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
2-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
4-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2-Dibromo-3-chloropropane	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
Dibromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2-Dibromoethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Dibromomethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,3-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,4-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Dichlorodifluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
cis-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
trans-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,3-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
2,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
cis-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40837
Sample ID: GP-14D

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
trans-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Ethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Hexachlorobutadiene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
2-Hexanone	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
Isopropylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
4-Isopropyltoluene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
4-Methyl-2-pentanone	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
Methylene chloride	ND	ug/l	2	2	1	3/25/99	10:40	J.Haley	8260B	7210
Naphthalene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
n-Propylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Styrene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1,1,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1,2,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Tetrachloroethene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Toluene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2,3-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2,4-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1,1-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,1,2-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Trichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2,3-Trichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,2,4-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
1,3,5-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Vinyl chloride	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Xylenes	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Bromodichloromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
Trichlorofluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	10:40	J.Haley	8260B	7210
METALS										
Calcium, Total	7.980	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Magnesium, Total	6.620	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Sodium, Total	ND	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
MISCELLANEOUS CHEMISTRY										
Sulfate	ND	mg/l	5.00	5.00	1	3/25/99	15:26	S.Brewer	375.4	6731
Chloride	1.69	mg/l	1.00	1.00	1	3/30/99	13:24	J.Temple	9251	8023

ND = Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surrogate, 1,2-Dichloroethane, d4	104.	60. - 138.
VOA Surrogate, Toluene d8	100.	80. - 123.
VOA Surrogate, 4-Bromofluorobenzene	108.	73. - 122.

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40837
Sample ID: GP-14D

Report Approved By: Michael A. Dunn Report Date: 3/30/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

Laboratory Certification Number: 387

SPECIALIZED ASSAYS, INC.
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P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

TESTAMERICA 5781
LORI PATTTON
22 LYMAN STREET
ASHEVILLE, NC 28801

Project: 2040.03
Project Name: THE FLETCHER GROUP
Sampler: STU RYMAN

Lab Number: 99-A40838
Sample ID: GP-15D
Sample Type: Ground water
Site ID:

Date Collected: 3/19/99
Time Collected:
Date Received: 3/23/99
Time Received: 9:00

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
VOLATILE ORGANICS										
Acetone	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
Benzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Bromobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Bromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Bromoform	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Bromomethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
2-Butanone	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
n-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
sec-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
t-Butylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Carbon disulfide	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Carbon tetrachloride	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Chlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Chloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
2-Chloroethylvinylether	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Chloroform	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Chloromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
2-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
4-Chlorotoluene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2-Dibromo-3-chloropropane	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
Dibromochloromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2-Dibromoethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Dibromomethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,3-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,4-Dichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Dichlorodifluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2-Dichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
cis-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
trans-1,2-Dichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,3-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
2,2-Dichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
cis-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210

SPECIALIZED ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40838
Sample ID: GP-15D

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
trans-1,3-Dichloropropene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Ethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Hexachlorobutadiene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
2-Hexanone	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
Isopropylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
4-Isopropyltoluene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
4-Methyl-2-pentanone	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
Methylene chloride	ND	ug/l	2	2	1	3/25/99	11:25	J.Haley	8260B	7210
Naphthalene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
n-Propylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Styrene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1,1,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1,2,2-Tetrachloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Tetrachloroethene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Toluene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2,3-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2,4-Trichlorobenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1,1-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,1,2-Trichloroethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Trichloroethene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2,3-Trichloropropane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,2,4-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
1,3,5-Trimethylbenzene	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Vinyl chloride	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Xylenes	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Bromodichloromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
Trichlorofluoromethane	ND	ug/l	0.4	0.4	1	3/25/99	11:25	J.Haley	8260B	7210
METALS										
Calcium, Total	3.820	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Magnesium, Total	4.520	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
Sodium, Total	ND	mg/l	1.000	1.000	1	3/26/99	8:31	C.Holmes	6010B	5914
MISCELLANEOUS CHEMISTRY										
Sulfate	ND	mg/l	5.00	5.00	1	3/25/99	15:26	S.Breuer	375.4	6731
Chloride	1.02	mg/l	1.00	1.00	1	3/30/99	13:24	J.Temple	9251	8023

ND = Not detected at the report limit.

Surrogate	% Recovery	Target Range
VOA Surrogate, 1,2-Dichloroethane, d4	104.	60. - 138.
VOA Surrogate, Toluene d8	101.	80. - 123.
VOA Surrogate, 4-Bromofluorobenzene	110.	73. - 122.

COPY 1

SPECIALIZED
ASSAYS, INC.
2960 Foster Creighton Dr.
P.O. Box 40566
Nashville, TN 37204-0566
Phone 1-615-726-0177

ANALYTICAL REPORT

Laboratory Number: 99-A40838
Sample ID: GP-15D

Report Approved By: _____ Report Date: 3/30/99

Theodore J. Duello, Ph.D., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Services
Eric Smith, Assistant Technical Director

Laboratory Certification Number: 387

COPY 1

TESTAMERICA INC.

Page ___ of ___

Chain of Custody Record

Asheville, NC (828) 254-5169 — 5781
Lumberton, NC (910) 738-6190 — 135977
Norcross, GA (770) 368-0636
Lexington, SC (803) 796-8989
Charlotte, NC (704) 392-1164
Brighton, CO (303) 659-0497
Frankfort KY (502) 223-0251
Macon, GA (912) 757-0811
Morrisville, NC (919) 380-9699
Orlando, FL (407) 851-2560

Client: The Fletcher Group	Project No.: 2040.03
Report Address: 48 Patton Ave Suite 303 Asheville 28801	Invoice Address: SAME
Attn: Stu Ryman	Attn: SAME
Phone No.: 281 3350	Sampled By: Stu Ryman
Fax No.: 281 3351	P.O. No: 2040.03
	State Samples Collected NC

TURNAROUND TIME
☐ 24 Hours ☐ 48 Hours
☐ 5 Days ☒ ~~10~~ Days
Date Needed: ____

REQUESTED PARAMETERS

LAB CODE I.D.
A = Asheville, NC
C = Charlotte, NC
D = Denver, CO
E = Lexington, SC
G = Macon, GA
K = Frankfort, KY
L = Lumberton, NC
M = Morrisville, NC
N = Norcross, GA
O = Orlando, FL
S = Subcontracted

Sample ID	Date	Time	Comp/ Grab	Matrix	Containers	EPA 8260 Low Level	Calcium	Magnesium	Sodium	Chloride	Sulfate							← Preserv.	REMARKS
						HCl	HNO_3	HNO_3	HNO_3	4°	4°								
GP-13d	3/19/99		GRAB	WATER	4	✓	✓	✓	✓	✓	✓								40836
GP-14d	3/19/99		GRAB	WATER	4	✓	✓	✓	✓	✓	✓								40837
GP-15d	3/19/99		GRAB	WATER	4	✓	✓	✓	✓	✓	✓								40838

Lab Use Only — Custody Seal: ☐ Yes ☐ No ☐ N/A — JA

1.9°C DT — Init Lab Temp.
4°C — Rec. Lab Temp

COMMENTS:

Relinquished By:	Date 3/22/99 Time 0830	Received By:	Date 3/22/99 Time 0830	Lab Use Only: Metals pH <2 DT
Relinquished By:	Date 3/22/99 Time 1635	Received By:	Date 3/23/99 Time 900	
Relinquished By:	Date Time	Received By:	Date Time	
Relinquished By:	Date Time	Received By:	Date Time	

SAMPLE RECEIPT PROBLEMS

DATE RECEIVED 3/24 ACCT NO. 5781

COMPANY: T Am / Asheville

Client Services Rep: DR

Login initials: _____

PROBLEM (S):

602 LIST- FULL OR BTEX 135977 METALS?

TPH METHOD? TCLP?

NO COC - PLEASE FAX NO ANALYSIS REQUESTED

OUT OF HOLDING TIME-- TEST-- HERB LIST- LONG OR SHORT?

OTHER: SEE ATTACHED

RESOLUTION Per Dinah Trammel

~~8260B~~ ~~602B~~

8260B with .5 ug/l detection limit

Spoke to: D. Trammel Date: 3/24/99 10:25 Am

Spoke to: _____ Date: _____

Spoke to: _____ Date: _____

Spoke to: _____ Date: _____