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ATLAS OF HIGH RESOLUTION INFRARED SPECTRA OF CARBON DIOXIDE:  
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## Summary

Long-path, low-pressure laboratory absorption spectra of carbon dioxide are presented in an atlas format for the spectral regions 1830 to 2100  $\text{cm}^{-1}$ , 2395 to 2680  $\text{cm}^{-1}$ , and 3140 to 3235  $\text{cm}^{-1}$ . The data were recorded at 0.01  $\text{cm}^{-1}$  resolution and room temperature with the Fourier transform spectrometer in the McMath solar telescope complex of the National Solar Observatory at Kitt Peak. A list of positions and assignments is given for the 3336 lines observed. A total of 52 bands of  $^{12}\text{C}^{16}\text{O}_2$ ,  $^{13}\text{C}^{16}\text{O}_2$ ,  $^{12}\text{C}^{16}\text{O}^{18}\text{O}$ ,  $^{12}\text{C}^{16}\text{O}^{17}\text{O}$ , and  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$  have been identified.

## I. Introduction

This work presents an update to the coverage of our previous atlas of long-path, low-pressure laboratory absorption spectra of carbon dioxide [Benner et al., 1983]. The preparation of the CO<sub>2</sub> atlas has been undertaken as part of a project to obtain assignments, high precision positions, and absolute intensities for CO<sub>2</sub> lines in spectral regions of current interest for atmospheric remote sensing studies. In addition to the atlas, intensities of individual lines in the P, Q, and R branches of the 11102-00001 band of <sup>12</sup>C<sup>16</sup>O<sub>2</sub> have been determined [Rinsland et al., 1983]. Intensity measurements for a number of additional bands will be reported in the near future.

In the present edition, preliminary results are presented in an atlas format for the 1830-2100 cm<sup>-1</sup>, 2395-2680 cm<sup>-1</sup>, and 3140-3235 cm<sup>-1</sup> intervals of carbon dioxide laboratory spectra. The spectral data were recorded at high signal-to-noise with the 0.01-cm<sup>-1</sup> resolution Fourier transform spectrometer located in the McMath solar telescope complex of the National Solar Observatory at Kitt Peak. Spectra and measured positions for 3336 features are presented. Of these, 94 percent have been identified as CO<sub>2</sub> transitions or as residual lines of H<sub>2</sub>O and CO. Assignments and calculated positions are given for the CO<sub>2</sub> lines.

The spectrum of CO<sub>2</sub> in the 1830-2100 cm<sup>-1</sup> and 3140-3235 cm<sup>-1</sup> intervals is characterized by weak, perpendicular ( $\Delta l = \pm 1$ ) bands. These bands have intense Q branches and are affected by a strong J-dependent Coriolis perturbation. For  $\Pi + \Sigma$  bands, this perturbation introduces a  $(1 + \xi \underline{m})^2$  multiplying factor into the expression for the rotational dependence of the intensity for individual P and R branch lines, where  $\underline{m}$  is the rotational index number with a value of J+1 in the R branch and -J for the P branch

[Plyler et al., 1962]. In the lower wavenumber interval,  $\xi$  is negative, the P-branch line intensities are increased, and the R-branch line intensities are reduced relative to rigid-rotor values. In the higher wavenumber interval,  $\xi$  is positive and the effect on the intensities in these branches is reversed. The line intensities in the Q branch of  $\Pi + \Sigma$  bands are not affected by this Coriolis perturbation. General expressions for the Coriolis intensity perturbation factors for all perpendicular CO<sub>2</sub> bands have been given by Toth [1974]. In the lower wavenumber region, our measurements indicate these line intensities are also affected by Fermi interactions and centrifugal distortion effects [Rinsland et al., 1983]. Only bands of <sup>12</sup>C<sup>16</sup>O<sub>2</sub> have been identified in the higher wavenumber region.

The spectrum of CO<sub>2</sub> in the 2395-2680 cm<sup>-1</sup> interval is characterized by weak, parallel ( $\Delta l = 0$ ) bands. For these bands, the Q branch is either weak or absent. Molecular constants and intensities for several bands near 2600 cm<sup>-1</sup> have been reported recently [Hoke and Shaw, 1982a, b].

The authors wish to thank James W. Brault, Rob Hubbard, and Greg Ladd of the National Solar Observatory (NSO) for their assistance in obtaining the data. Mike Brown of NSO provided us with the N<sub>2</sub>O line positions used to calibrate the spectra. Richard Poppen of Tymshare developed the line position finding algorithm used in the analysis. We also thank Mary Ann Smith of NASA Langley Research Center and L. R. Brown of Jet Propulsion Laboratory (JPL) for helpful discussions during the planning of the experiment and Robert A. Toth for valuable suggestion on data analysis. Research at the College of William and Mary and at Systems and Applied Sciences Corporation is supported by grants from NASA. The National Solar Observatory is operated by the Association of Universities for Research in Astronomy, Inc., under contract with NSF.

## II. Description of the Atlas

The spectral data displayed in the atlas were obtained with pressures between 1.0 and 10.0 Torr of CO<sub>2</sub> in a 6-m base path White cell with a total path of 384 m. The gas sample was 99.995 percent minimum purity natural carbon dioxide purchased from the Matheson Corporation. During the 1-hour observing period for each spectrum, the pressure and temperature were monitored continuously using a Datametrics model 1174 gauge with a 0-10 Torr head and a thermistor probe. No changes in pressure and temperature were noted during the runs. The measured pressure and temperature values are estimated to be accurate to  $\approx$  0.2 percent and 0.2 K, respectively. For each scan a total of eight two-sided interferograms have been coadded to increase the signal-to-noise. The unapodized spectral data have been convolved with an instrument function corresponding to an apodization of  $[1-(x/x_{\max})^2]^2$ , where  $x$  is the path difference and  $x_{\max}$  is the maximum path difference (49.055 cm). The experimental conditions for the spectra analyzed in this study are summarized in Table I.

Figure 1 is a compressed plot of the 1830-2010 cm<sup>-1</sup> spectral region as recorded with a pressure of 9.857 Torr of CO<sub>2</sub> and an absorption path of 384 meters. This interval was reported in the first edition of the atlas [Benner et al., 1983]. Some additional assignments have been added in this update. The upper envelope of the spectrum is relatively flat for wavenumbers above 1870 cm<sup>-1</sup>; but at lower wavenumbers, there is a rapid decrease in signal with decreasing wavenumber. This effect results primarily from the decreased sensitivity of the InSb detector in this spectral region. The signal-to-RMS noise ratio ranges from  $\approx$  2000 at 1850

9.857 Torr 384 meters

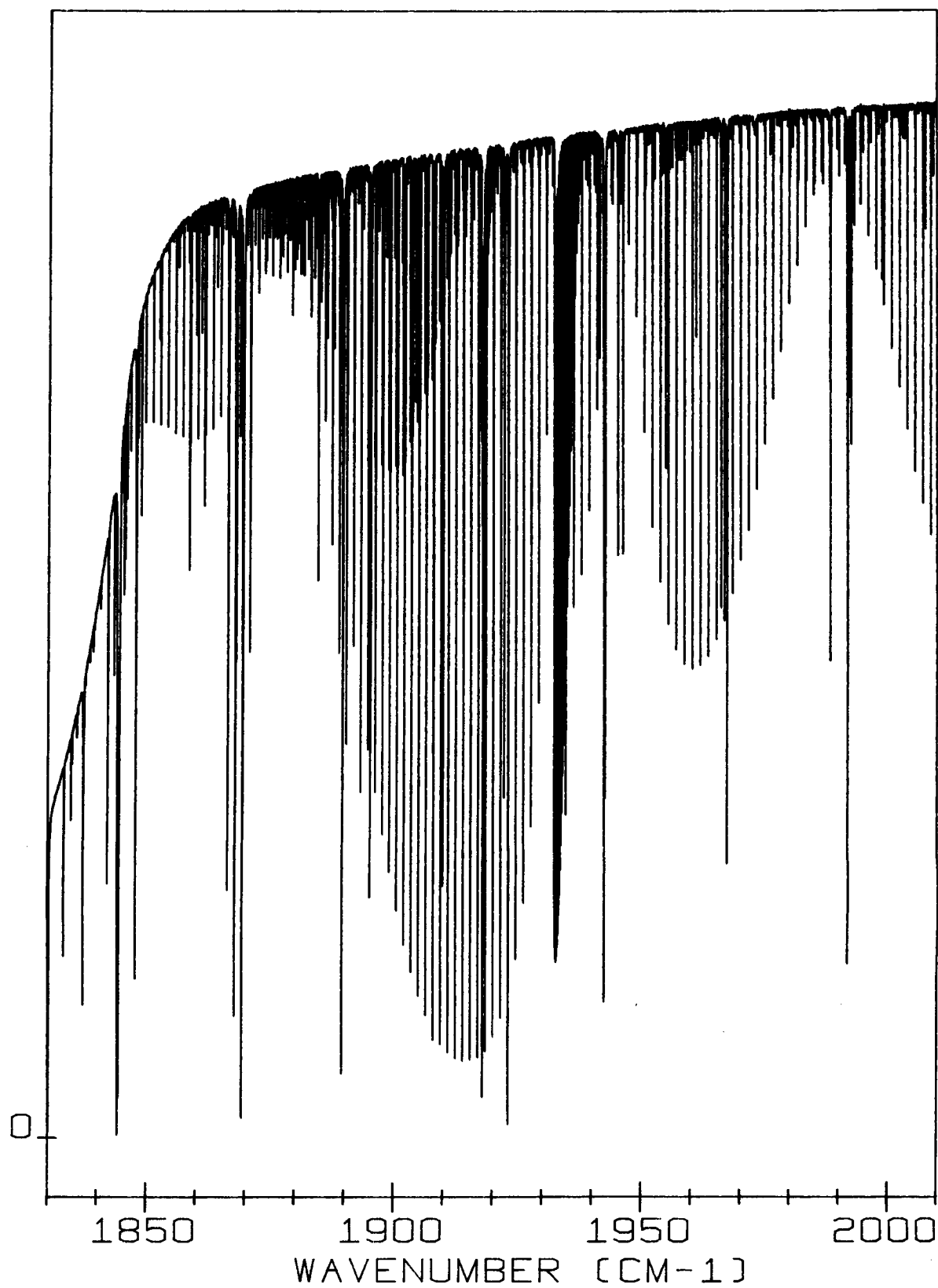


Fig. 1 - Compressed plot of the 1830-2010  $\text{cm}^{-1}$  region.

$\text{cm}^{-1}$  to  $\approx 4000$  for data above  $1900 \text{ cm}^{-1}$ . The filter used to isolate the observed spectral region caused two weak channel spectra with amplitudes of  $\approx 0.1$  percent transmittance and periods of  $0.29 \text{ cm}^{-1}$  and  $0.59 \text{ cm}^{-1}$  in all scans.

Figures 2 and 3 are compressed plots of the  $2010\text{-}2100 \text{ cm}^{-1}$  and  $2395\text{-}2680 \text{ cm}^{-1}$  atlas regions from the same spectrum. The signal-to-RMS noise ratio is about 4000 and 2000 for these intervals, respectively.

Figure 4 is a compressed plot of the  $3140\text{-}3235 \text{ cm}^{-1}$  region as recorded with a pressure of 9.985 Torr of  $\text{CO}_2$  in an absorption path of 384 meters. Because it occurs near the low wavenumber limit of a broadband spectrum covering up to  $4100 \text{ cm}^{-1}$ , the signal-to-RMS noise is only  $\approx 500$  at  $3140 \text{ cm}^{-1}$  and  $\approx 1000$  at  $3235 \text{ cm}^{-1}$ . The signal-to-noise ratios of the other scans used in the analysis of this interval are similar.

Although the 12-meter path within the interferometer was evacuated, the external path between the exit port of the White cell and the FTS (about 10 meters) had to be purged with dry nitrogen to reduce atmospheric absorption. This external path gave rise to broad absorption lines of  $\text{H}_2\text{O}$  and  $\text{CO}$  in the spectra. As can be seen in the atlas, the broad  $\text{H}_2\text{O}$  absorption profile is superimposed on a narrow component, which indicates that additional absorption by  $\text{H}_2\text{O}$  molecules occurred at low pressure within the FTS and the White cell. For some of the weaker  $\text{H}_2\text{O}$  lines, only the narrow component can be detected in the spectra. Lines of  $\text{H}_2^{16}\text{O}$ ,  $\text{H}_2^{17}\text{O}$ , and  $\text{H}_2^{18}\text{O}$  were identified using the lists of Flaud et al. [1981] and Guelachvili [1983]. Lines of  $\text{HDO}$  occur in the  $2395\text{-}2680 \text{ cm}^{-1}$  atlas region and were identified from the work of Toth et al. [1982]. Broad lines of the 1-0 band of  $^{12}\text{C}^{16}\text{O}$  are seen in the  $2040\text{-}2100 \text{ cm}^{-1}$  atlas region and were identified on

9.857 Torr 384 meters

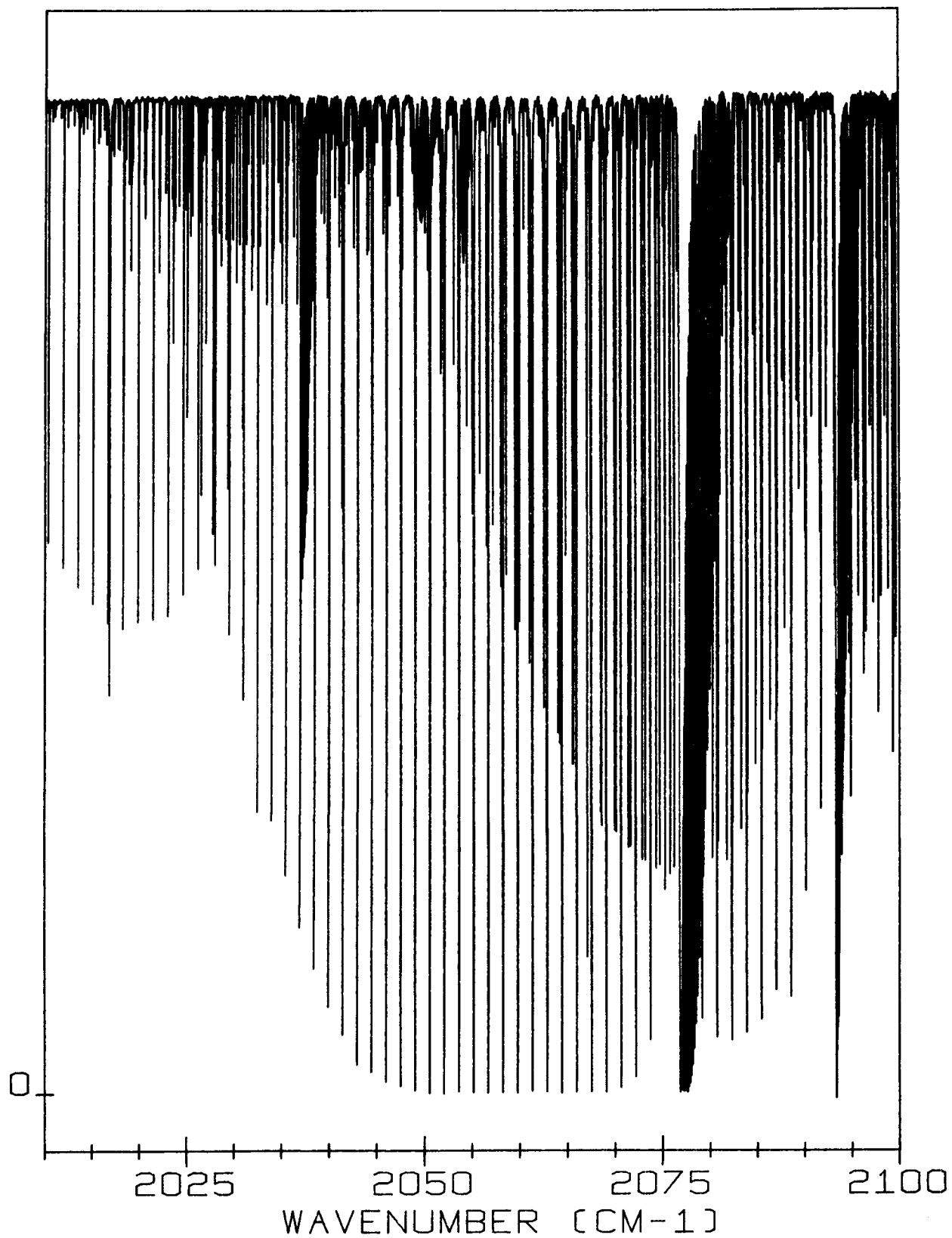


Fig. 2 - Compressed plot of the 2010-2100  $\text{cm}^{-1}$  region.



the basis of precise laboratory positions [Guelachvili, 1979; Guelachvili et al., 1983]. A few additional broad lines from one or more unidentified contaminants have been marked.

The observed spectra are presented in a format similar to that used by Goldman et al. [1982] and Blatherwick et al. [1982] to display atmospheric spectra. In this atlas, each frame shows a  $1\text{-cm}^{-1}$ ,  $2\text{-cm}^{-1}$ , or  $5\text{-cm}^{-1}$  interval of one or two spectra, and the opposite page contains the observed and calculated line positions and the molecular identifications. Each frame also contains a  $0.2\text{-cm}^{-1}$  overlap with adjacent frames at the high and low wavenumber ends. Because of the change in the amplitude of the signal with wavenumber, the amplitudes have been normalized to a different value for each frame. The zero signal levels are marked at the lower left. The location of the observed spectral lines are indicated below the features by vertical tick marks, which are repeated and numbered consecutively at the top of each frame.

Each observed line position is the weighted average of measurements obtained from one to six spectra including the spectra shown in atlas format in this report. The individual position measurements were made interactively with the HALOE HP-1000 dedicated mini-computer system. For each measurement, the appropriate section of spectrum is displayed on a graphics terminal and the user specifies an intensity level below which the spectral data are used to determine the line center. The spectrum in this interval is interpolated with a sinc function to a point spacing of  $\approx 0.001\text{ cm}^{-1}$ , and the position of the intensity minimum of the spectral line is then found from parabolic interpolation of the minimum intensity interpolated point and single adjacent points on the high and low wavenumber sides.

9.857 Torr 384 meters

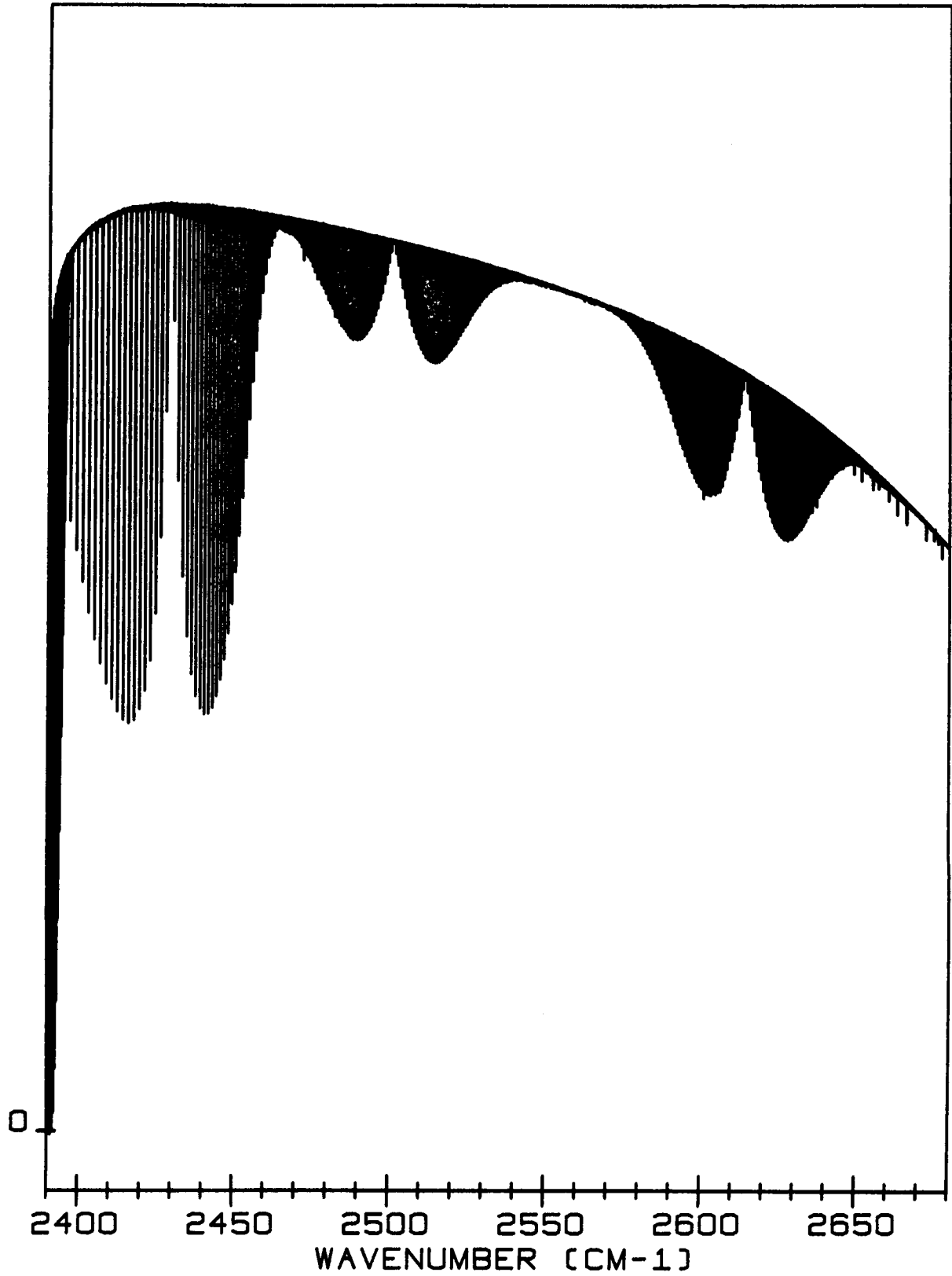


Fig. 3 - Compressed plot of the 2395-2680  $\text{cm}^{-1}$  region.

Additional measurements of the line center are determined by taking the midpoint between the interpolated sides of the spectral line at the user specified intensity level and additionally at 14 evenly spaced intensity levels between this level and the minimum intensity. The total of 16 positional determinations are then averaged and the standard deviation is calculated. A line is least-squares fit to the intensities and positions of the 16 points, and the reciprocal of the slope of this line is used as a measure of the symmetry and intensity of the spectral line. The reciprocal of the product of the square root of this quantity and the standard deviation of the line center determinations has been used as a weight in the position determination. The observed line positions listed in the atlas are the weighted average of the determinations from all spectra. The sum of the individual weights has been assigned to this position and used in the least-squares fitting for the molecular constants (section III).

The absolute calibration of the wavenumber scale is based on N<sub>2</sub>O line positions for the R3 to R27 lines of the 00<sup>0</sup>2-00<sup>0</sup>0 band. These positions were derived from spectra recorded with the Kitt Peak interferometer and calibrated with the frequency of the 3.39- $\mu$ m P(7) transition of CH<sub>4</sub> [Evenson et al., 1973]. Secondary CO<sub>2</sub> standards were established near 2050 cm<sup>-1</sup> and 3500 cm<sup>-1</sup> from a broadband spectrum of CO<sub>2</sub> and N<sub>2</sub>O. These secondary standards have been used to calibrate each of the CO<sub>2</sub> spectra used in this study. We compared the consistency of CO<sub>2</sub> positions near 4  $\mu$ m with the recent high precision measurements of Pine and Guelachvili [1980] and Guelachvili [1980]. The wavenumbers reported in this atlas may be transferred to a scale consistent with the measurements in these papers by multiplying by 1.0000002. This difference ( $\approx 0.0004$  cm<sup>-1</sup> at 1900 cm<sup>-1</sup>) is

9.985 Torr 384 meters

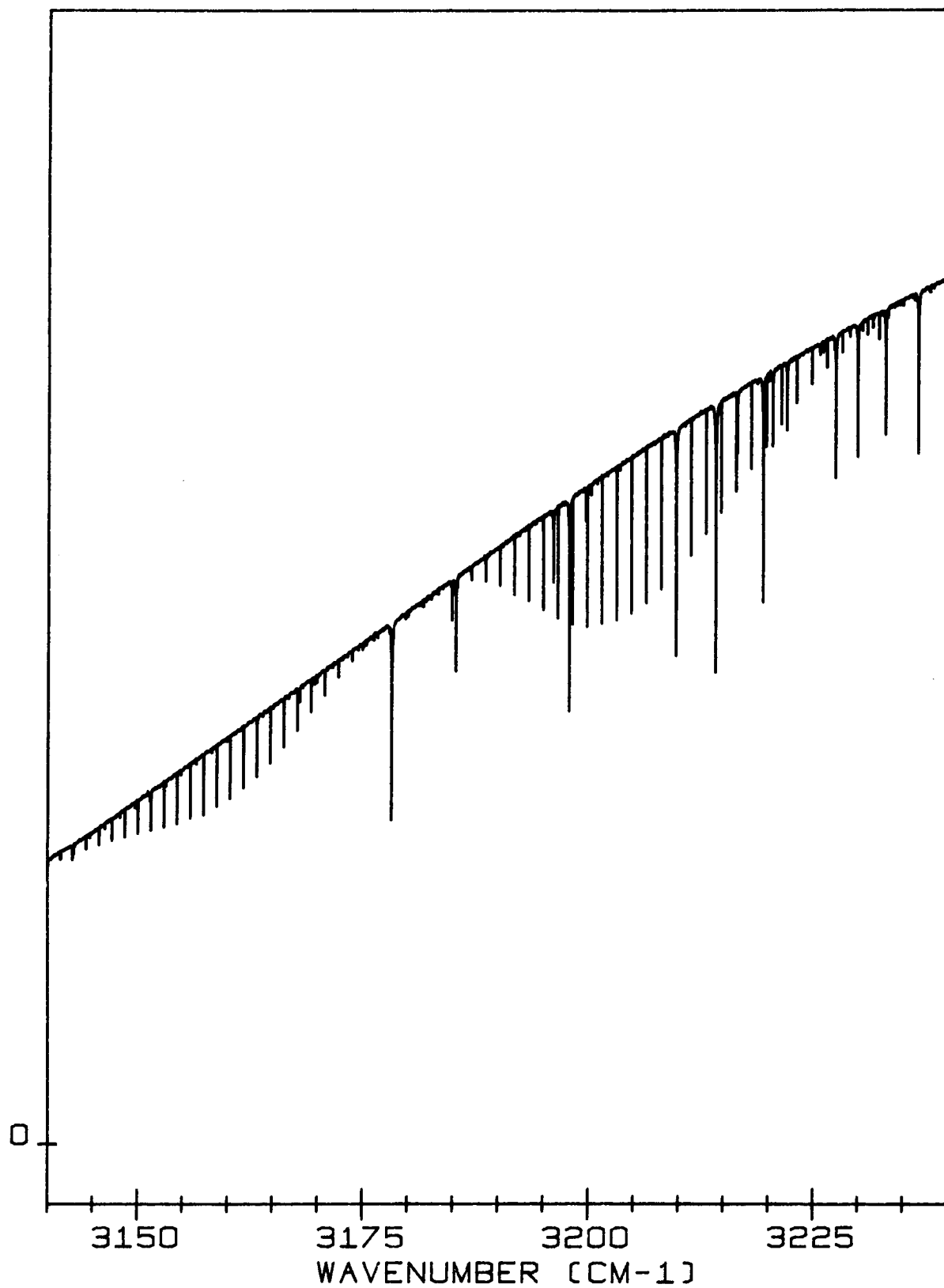


Fig. 4 - Compressed plot of the 3140-3235  $\text{cm}^{-1}$  region.

under study. For isolated lines, the self-consistency of the measured positions from the Kitt Peak spectra is typically  $\pm 0.00002 \text{ cm}^{-1}$  for the strongest lines and  $\pm 0.001 \text{ cm}^{-1}$  for most weak lines. Based on the few available measurements [Freed and Javan, 1970; Arcas et al., 1980], we estimate that pressure-induced lineshifts in these spectra are generally less than  $\pm 0.00002 \text{ cm}^{-1}$ .

The  $\text{CO}_2$  identifications are presented in the same format as appear on the Air Force Geophysics Laboratory line parameters compilation [Rothman and Young, 1981; Rothman et al., 1983]. The energy levels are described by  $(v_1v_2\&v_3r)$ , where the ranking index,  $r$ , is unity for the highest energy vibrational level of a Fermi resonating group. The ranking index can assume values of 1, 2, . . . ,  $(v_1+1)$ . The other quantum numbers have their standard meaning:  $v_1$ ,  $v_2$ , and  $v_3$  are the quantum numbers for the three  $\text{CO}_2$  vibrational modes, and  $\&$  is the vibrational angular momentum about the internuclear axis. The vibrational quantum numbers are given for the upper and lower levels and are followed by the rotational assignment and a three-digit isotope code ( $626 = {}^{12}\text{C}^{16}\text{O}_2$ ;  $636 = {}^{13}\text{C}^{16}\text{O}_2$ ;  $628 = {}^{12}\text{C}^{16}\text{O}^{18}\text{O}$ ; etc.) In those cases in which there are multiple identifications, the assignments are given in order of their relative contribution to the observed feature in the highest  $\text{CO}_2$  abundance spectrum displayed in the atlas. Features identified as residual lines of water vapor and carbon monoxide are indicated as " $\text{H}_2\text{O}$ " and "carbon monoxide," respectively. Broad unassigned lines are labeled "contaminant." Identifications that are uncertain are marked with question marks, while features that seem to be too strong or too broad to be due to only the assigned transition are denoted with a question mark on an additional line in the identification column. An effort has been made to avoid marking features which are sidelobes of the interferometric line shape

rather than real lines. Lines which are believed to be real but are blended with a sidelobe of an adjacent, stronger line are marked with "sidelobe" in addition to the identification to denote this blending and the reduced accuracy of the measured line center for the transition.

An effort has been made to mark all observable features with line center depths greater than about 0.2 percent of the background intensity. Because of the high signal-to-noise of the data, many additional weaker lines are detectable in the spectra but have not been included in our analysis. The least intense CO<sub>2</sub> lines marked in the atlas have an intensity at room temperature of  $\approx 0.5 \times 10^{-26}$  cm/molecule.

### III. Assignments and Calculation of Line Positions

The carbon dioxide assignments were made on the basis of comparisons between the observed line positions and intensities and values calculated with the parameters from the 1980 and 1982 Air Force Geophysics Laboratory compilations [Rothman, 1981; Rothman and Young, 1981; Rothman et al., 1983], supplemented with the molecular constants calculated by Chedin [1979]. For most bands, these molecular constants produce predicted line positions for low-J lines within  $0.1 \text{ cm}^{-1}$  of the measured positions, and it was possible to readily assign the proper sequence of lines by comparisons between the observed and calculated positions. The assignments were checked by examining the relative intensities of the lines within the band and by comparison of the measured combination differences with values calculated from well-determined molecular constants [cf., Bailly et al. 1981]. Spectra recorded with a CO<sub>2</sub> sample enriched in <sup>13</sup>C and <sup>18</sup>O were also examined to check the identifications of isotopic lines. Figure 5 shows the 2052-2054  $\text{cm}^{-1}$  region of spectra recorded with the enriched and natural samples.

Upper: 1.002 Torr 384 meters  $^{13}\text{C}$  and  $^{18}\text{O}$  enriched carbon dioxide  
Lower: 9.857 Torr 384 meters natural carbon dioxide

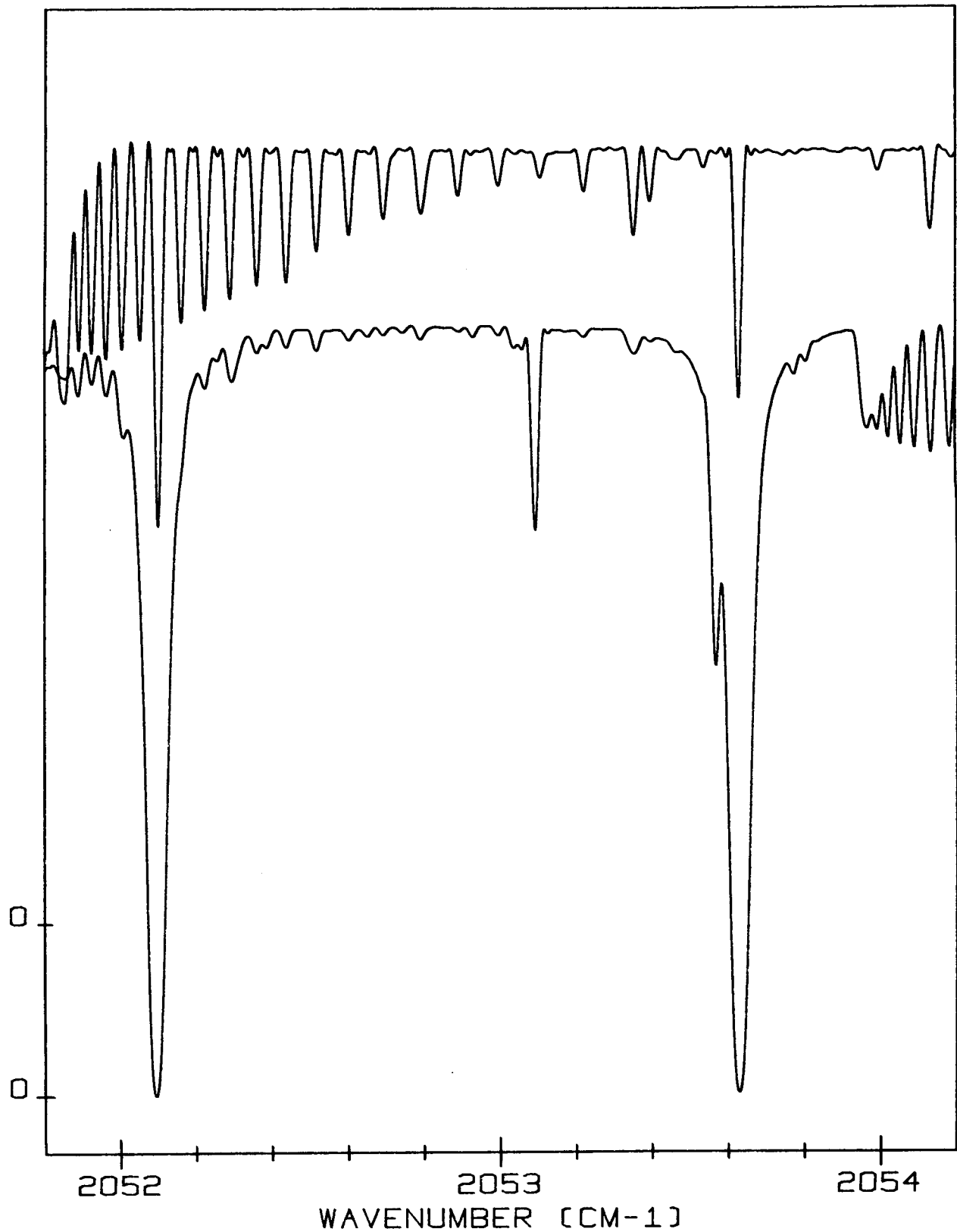


Fig. 5 - Comparison between spectra obtained with the enriched and natural samples.

Positions for each subband least-squares fit to a polynomial in  $\underline{m}$ , where  $\underline{m} = J''+1$  for the R branch and  $\underline{m} = -J''$  for the P branch, or to a polynomial in  $J(J+1)$  for Q branch lines. All unblended lines were used in the weighted least-squares fit. The positions of lines outside the range in  $J$  of the identifications were also calculated with the polynomial coefficients. These calculated positions were used to assign additional lines which resulted in an improvement in the determination of the polynomial coefficients. This process was repeated until no additional lines of the sequence could be detected in the spectra. The calculated positions presented in the atlas were obtained from these polynomial coefficients.

Tables II to V summarize the identification obtained for the 1830-2100  $\text{cm}^{-1}$  interval. The subbands of  $^{12}\text{C}^{16}\text{O}_2$  are listed in Table II with approximate band centers and the range in  $J$  and number of unblended rotational lines observed. The same information is given in Table III for  $^{13}\text{C}^{16}\text{O}_2$ , in Table IV for  $^{12}\text{C}^{16}\text{O}^{18}\text{O}$ , and in Table V for both  $^{12}\text{C}^{16}\text{O}^{17}\text{O}$  and  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$ . Tables VI and VII contain comparable lists of values for the bands identified in the 2395-2680  $\text{cm}^{-1}$  and the 3140-3235  $\text{cm}^{-1}$  regions, respectively. Several of the bands have rotational transitions outside of the spectral interval reported in the atlas. For these cases, the rotational transitions which mark the limits of the coverage are enclosed in parentheses. "NC" denotes that the entire branch occurs beyond the region in the atlas. The positions of these lines will be reported in subsequent installments of the atlas. For bands near the limit of detection, the rotational coverage is incomplete. "ND" denotes that all lines of the branch are very weak and were not observed in the highest abundance Kitt Peak spectrum; a dash indicates the transition is forbidden. "B" indicates that all lines are blended in the measured spectra.



Table VIII is a listing of nine bands identified in the laboratory spectra which need to be added to the Air Force Geophysics Laboratory line parameters compilation. All have been identified in the 1830-2100  $\text{cm}^{-1}$  atlas region. The most prominent of these are the (21102)+(10002) band of  $^{12}\text{C}^{16}\text{O}_2$  and the (12201)+(01101) band of  $^{13}\text{C}^{16}\text{O}_2$ . Of particular interest is the identification of the "forbidden" (03301)+(00001) band of  $^{12}\text{C}^{16}\text{O}_2$ , which is detectable because of a  $\Delta l=2$  Fermi interaction between the (03301) upper level and the nearby (11101) and (11102) levels. The intensities of the individual lines within this band are different than for corresponding lines of normal bands and will be reported and analyzed in a separate publication.

The fitting procedure used in this preliminary analysis of the spectra does not result in the most accurate determination of the molecular constants possible from the data. For this reason, the values are not presented in this report but may be obtained from the authors. Molecular constants derived from a fitting procedure that includes simultaneously all unblended transitions involving several connected vibrational levels will be presented in subsequent installments of the  $\text{CO}_2$  atlas when additional regions of the Kitt Peak data have been analyzed. Work is in progress on the 2100-2150  $\text{cm}^{-1}$  and the 3235-3400  $\text{cm}^{-1}$  regions.

The results of this analysis will be communicated to L. S. Rothman of the Air Force Geophysics Laboratory for inclusion in the next update to the AFGL compilation and to N. Husson of the Laboratoire de Météorologie Dynamique for inclusion into the next update of the Geisa catalogue.

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Table 1

## Experimental Conditions

Spectral Interval	Pressure (Torr)	Temperature (°C)	Path Length (m)
1830-2680 $\text{cm}^{-1}$	1.000	24.3	24
	1.001	24.0	48
	0.992	25.2	144
	1.000	25.4	384
	3.000	25.2	384
	9.857	25.3	384
	3140-3235 $\text{cm}^{-1}$	1.000	24.3
1.001		24.4	48
0.992		25.2	144
1.000		25.4	384
3.000		25.4	384
9.985		24.7	384

Table II

 $^{12}\text{C}^{16}\text{O}_2$  Subbands Identified in the 1830-2100  $\text{cm}^{-1}$  Region

Transition		Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower		P branch	R branch	Q branch	
21103c	02201c	1846.33	ND	R16 - R38	-	10
21103d	02201d	1846.33	ND	R21 - R41	-	6
20003	01101c	1880.99	P 3 - P65	R11 - R67	-	44
20003	01101d	1880.99	-	-	Q26 - Q52	11
21103c	10002	1896.05	P 6 - P56	R20 - R54	-	30
21103d	10002	1896.05	-	-	Q12 - Q34	6
13302c	02201c	1905.49	P18 - P46	R26 - R34	-	17
13302d	02201d	1905.49	P13 - P45	R25 - R45	-	23
13302d	02201c	1905.49	-	-	Q12 - Q46	12
13302c	02201d	1905.49	-	-	Q11 - Q45	15
12202c	01101c	1917.64	P 3 - P69	R 7 - R65	-	47
12202d	01101d	1917.64	P 4 - P68	R 2 - R66	-	45
12202d	01101c	1917.64	-	-	Q21 - Q55	13
12202c	01101d	1917.64	-	-	Q14 - Q50	7
11102c	00001	1932.47	P 2 - P82	R 8 - R80	-	51
11102d	00001	1932.47	-	-	Q 6 - Q74	28
21102c	10001	1951.17	P 4 - P50	R 6 - R10	-	24
21102d	10001	1951.17	-	-	Q 6 - Q48	20
03301c	00001	2003.25	P24 - P58	R48	-	11
03301d	00001	2003.25	-	-	Q30 - Q32	2
20002	01101c	2003.76	P 3 - P55	R 3 - R43	-	37
20002	01101d	2003.76	-	-	Q 2 - Q40	20
21102c	02201c	2004.22	P12 - P30	ND	-	8
21102d	02201d	2004.22	P11 - P31	ND	-	9
21102c	10002	2053.95	P 6 - P66	R 0 - R56	-	35
21102d	10002	2053.95	-	-	Q10 - Q54	12
22202c	11102c	2075.44	P 9 - P43	R 5	-	8
22202d	11102d	2075.44	P 8 - P52	B	-	9
22202d	11102c	2075.44	-	-	Q13 - Q39	9
22202c	11102d	2075.44	-	-	B	0
11101c	00001	2076.86	P 4 - P88	R 2 -(R16)	-	32
11101d	00001	2076.86	-	-	Q 6 - Q82	30
12201c	01101c	2093.34	P 3 - P71	B	-	21
12201d	01101d	2093.34	P 6 - P76	R 2 -(R6)	-	25
12201d	01101c	2093.34	-	-	Q23 - Q69	15
12201c	01101d	2093.34	-	-	Q32 - Q60	7
13301c	02201c	2107.08	(P10)- P66	NC	-	16
13301d	02201d	2107.08	(P11)- P57	NC	-	16

Table II (continued)

 $^{12}\text{C}^{16}\text{O}_2$  Subbands Identified in the 1830-2100  $\text{cm}^{-1}$  Region

Transition		Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower		P branch	R branch	Q branch	
21101c	10001	2112.50	(P18)- P72	NC	-	21
14401c	03301c	2119.09	(P29)- P47	NC	-	7
14401d	03301d	2119.09	(P26)- P48	NC	-	8
22201c	11101c	2120.50	(P33)- P51	NC	-	6
22201d	11101d	2120.50	(P36)- P48	NC	-	5
20001	01101c	2129.75	(P39)- P81	NC	-	17

The symbols NC, ND, and B have the following meaning:

- NC - branch not within spectral region,
- ND - no lines in this branch have been detected,
- B - lines are observed but all are blended.

- NOTES:
1. The 03301-00001 "forbidden" band arises from  $\Delta l=2$  Fermi-type interaction between the 03301 upper level and the nearby 11101 and 11102 levels.
  2. Transitions are enclosed in parentheses if additional lines are observable outside the atlas region.

Table III

 $^{13}\text{C}^{16}\text{O}_2$  Subbands Identified in the 1830-2100  $\text{cm}^{-1}$  Region

Transition		Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower		P branch	R branch	Q branch	
12202c	01101c	1883.20	P17 - P31	ND	-	7
12202d	01101d	1883.20	P24 - P38	ND	-	6
11102c	00001	1896.54	P 4 - P60	R 4 - R56	-	31
11102d	00001	1896.54	-	-	Q 8 - Q42	11
20002	01101c	1996.58	P 7 - P47	ND	-	17
20002	01101d	1996.58	-	-	Q 6 - Q34	12
21102c	10002	2023.87	P 8 - P34	ND	-	11
21102d	10002	2023.87	-	-	Q24 - Q44	6
11101c	00001	2037.09	P 2 - P74	R 2 - R72	-	45
11101d	00001	2037.09	-	-	Q10 - Q58	18
12201c	01101c	2051.79	P 5 - P61	R 9 - R49	-	27
12201d	01101d	2051.79	P 4 - P60	R 4 - R52	-	26
12201d	01101c	2051.79	-	-	Q15 - Q43	6
12201c	01101d	2051.79	-	-	B	0
21101c	10001	2063.71	P 4 - P42	ND	-	8
21101d	10001	2063.71	-	-	Q 8 - Q12	2
13301c	02201c	2064.13	P12 - P38	R 4	-	5
13301d	02201d	2064.13	P 9 - P35	B	-	7
20001	01101c	2102.12	P 3 - P55	NC	-	12
20001	01101d	2102.12	-	-	(Q38)- Q48	4

The symbols NC, ND, and B have the following meaning:

- NC - branch not within spectral region,
- ND - no lines in this branch have been detected,
- B - lines are observed but all are blended.

NOTE: Transitions are enclosed in parentheses if additional lines are observable outside the atlas region.

Table IV  
 $^{12}\text{C}^{16}\text{O}^{18}\text{O}$  Subbands Identified in the 1830-2100  $\text{cm}^{-1}$  Region

Transition		Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower		P branch	R branch	Q branch	
11102c	00001	1901.74	P 4 - P59	R26 - R45	-	47
11102d	00001	1901.74	-	-	Q11 - Q47	28
11101c	00001	2049.34	P 2 - P63	R 4 - R62	-	64
11101d	00001	2049.34	-	-	Q10 - Q49	23
12201c	01101c	2065.86	P11 - P50	ND	-	18
12201d	01101d	2065.86	P 9 - P48	ND	-	20
12201d	01101c	2065.86	-	-	Q24 - Q30	6
12201c	01101d	2065.86	-	-	B	0
20001	01101c	2094.82	P 3 - P44	NC	-	18

The symbols NC, ND, and B have the following meaning:

- NC - branch not within spectral region,
- ND - no lines in this branch have been detected,
- B - lines are observed but all are blended.



Table V  
 $^{12}\text{C}^{16}\text{O}^{17}\text{O}$  and  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$  Subbands Identified in the  
 1830-2100  $\text{cm}^{-1}$  Region

Transition		Isotope Code	Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower			P branch	R branch	Q branch	
11102c	00001	627	1916.70	P15 - P42	ND	-	18
11102d	00001	627	1916.70	-	-	Q10 - Q24	9
11101c	00001	638	2005.45	P15 - P34	ND	-	11
11101c	00001	627	2062.10	P 4 - P65	R 1 - R16	-	45
11101d	00001	627	2062.10	-	-	Q 9 - Q36	19
20001	01101c	627	2110.70	P24 - P32	NC	-	7

The symbols NC, and ND, have the following meaning:

NC - branch not within spectral region,  
 ND - no lines in this branch have been detected.

NOTES: 627 =  $^{12}\text{C}^{16}\text{O}^{17}\text{O}$ ,

638 =  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$ .

Table VI

Subbands of Carbon Dioxide Identified in the 2395 - 2680  $\text{cm}^{-1}$  Region

Transition		Isotope Code	Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower			P branch	R branch	Q branch	
00011	00001	626	2349.14	NC	(R96)-R110	-	8
10011	10002	628	2415.71	P 4 - P22	R 4 - R36	-	40
20011	20002	626	2428.52	P 8 - P18	R 8 - R22	-	11
10011	10002	626	2429.37	P 2 - P36	R 0 - R64	-	48
20012	20003	626	2429.46	P14 - P26	R12 - R38	-	16
11111c	11102c	626	2458.16	P 4 - P48	R 2 - R40	-	38
11111d	11102d	626	2458.16	P 3 - P45	R 1 - R43	-	38
11111d	11102c	626	2458.16	-	-	Q 6	1
11111c	11102d	626	2458.16	-	-	Q 7 - Q21	5
21103c	01101c	628	2464.98	P 9 - P44	R 6 - R44	-	61
21103d	01101d	628	2464.98	P 9 - P40	R 5 - R42	-	56
21103d	01101c	628	2464.98	-	-	B	0
21103c	01101d	628	2464.98	-	-	B	0
20003	00001	628	2500.76	P 1 - P60	R 0 - R62	-	112
20003	00001	627	2524.25	P 3 - P40	R 2 - R38	-	70
20002	00001	638	2588.18	P 7 - P27	R 9 - R36	-	28
20002	00001	628	2614.25	P 1 - P64	R 0 - R63	-	114
21102c	01101c	628	2618.64	P 9 - P47	R 5 - R44	-	68
21102d	01101d	628	2618.64	P 9 - P45	R 5 - R45	-	62
20002	00001	627	2641.24	P 2 - P43	R 1 - R45	-	73

The symbols NC and B have the following meanings:

- NC - branch not within spectral region,  
 B - lines are observable, but all are blended.

NOTES: 1. Transitions are enclosed in parentheses if additional lines are observable outside the atlas region.

2. Isotope codes: 626 =  $^{12}\text{C}^{16}\text{O}_2$ ,  
 628 =  $^{12}\text{C}^{16}\text{O}^{18}\text{O}$ ,  
 627 =  $^{12}\text{C}^{16}\text{O}^{17}\text{O}$ ,  
 638 =  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$ .

Table VII

Subbands of Carbon Dioxide Identified in the 3140 - 3235  $\text{cm}^{-1}$  Region

Transition		Isotope Code	Band Center ( $\text{cm}^{-1}$ )	Range of Measurements of Unblended Lines			# of Unblended Lines
Upper	Lower			P branch	R branch	Q branch	
30004	01101c	626	3125.32	NC	(R19)- R47	-	15
22203c	01101c	626	3154.60	NC	R15 - R45	-	14
22203d	01101d	626	3154.60	NC	R14 - R46	-	16
21103c	00001	626	3181.45	P 8 -(P56)	R 2 - (R64)	-	56
21103d	00001	626	3181.45	-	-	Q10 - Q30	9

- NOTES: 1. Transitions are enclosed in parentheses if additional lines are observable outside the atlas region.
2. Isotope code 626 =  $^{12}\text{C}^{16}\text{O}_2$ .
3. "NC" signifies branch does not occur within spectral region.

Table VIII

Carbon Dioxide Bands Identified in this Study Which are not in the 1982  
Air Force Geophysics Laboratory Line Parameters Compilation\*

Transition	Isotope Code	Band Center ( $\text{cm}^{-1}$ )
11102 + 00001	627	1916.70
03301 + 00001	626	2003.25
11101 + 00001	638	2005.45
21102 + 10002	636	2023.87
12201 + 01101	636	2051.79
21102 + 10002	626	2053.95
21101 + 10001	636	2063.71
13301 + 02201	636	2064.13
20001 + 01101	627	2110.70

\*Rothman et al. [1983].

NOTE: Isotope codes: 626 =  $^{12}\text{C}^{16}\text{O}_2$ ,

636 =  $^{13}\text{C}^{16}\text{O}_2$ ,

627 =  $^{12}\text{C}^{16}\text{O}^{17}\text{O}$ ,

638 =  $^{13}\text{C}^{16}\text{O}^{18}\text{O}$ .

TABLE A 1

-1

Line Positions and Identifications (1830-1832 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1830.13203		H2O
2	1831.49135		?
3	1831.54874	1831.54847	20003-01101 626 P65
4	1831.99211		H2O

FRAME A1

9.857 Torr 384 meters

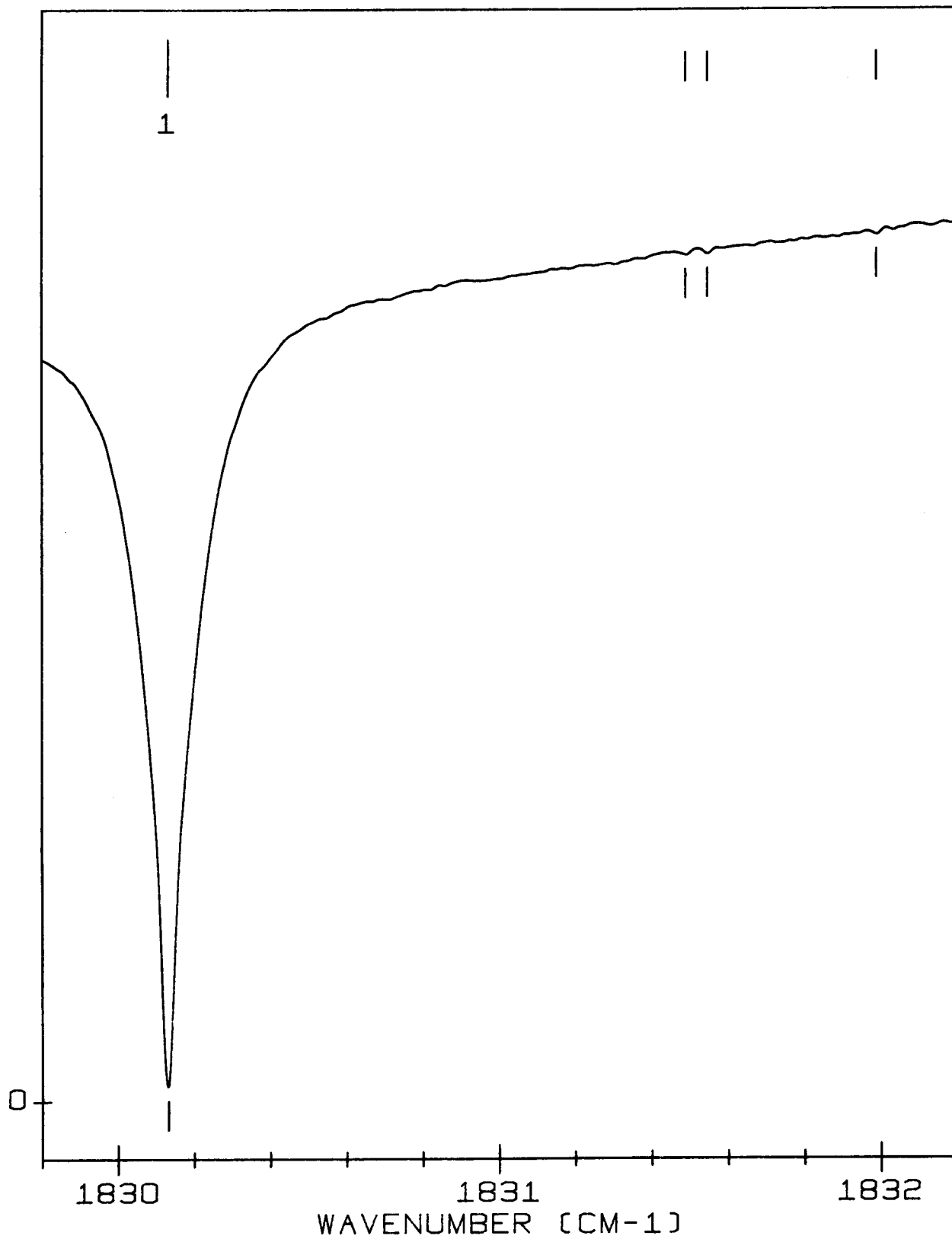


TABLE A 2

-1

Line Positions and Identifications (1832-1834 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1832.26709		H2O
2	1833.06484	1833.06629	20003-01101 626 P63
3	1833.27940		H2O

FRAME A2

9.857 Torr 384 meters

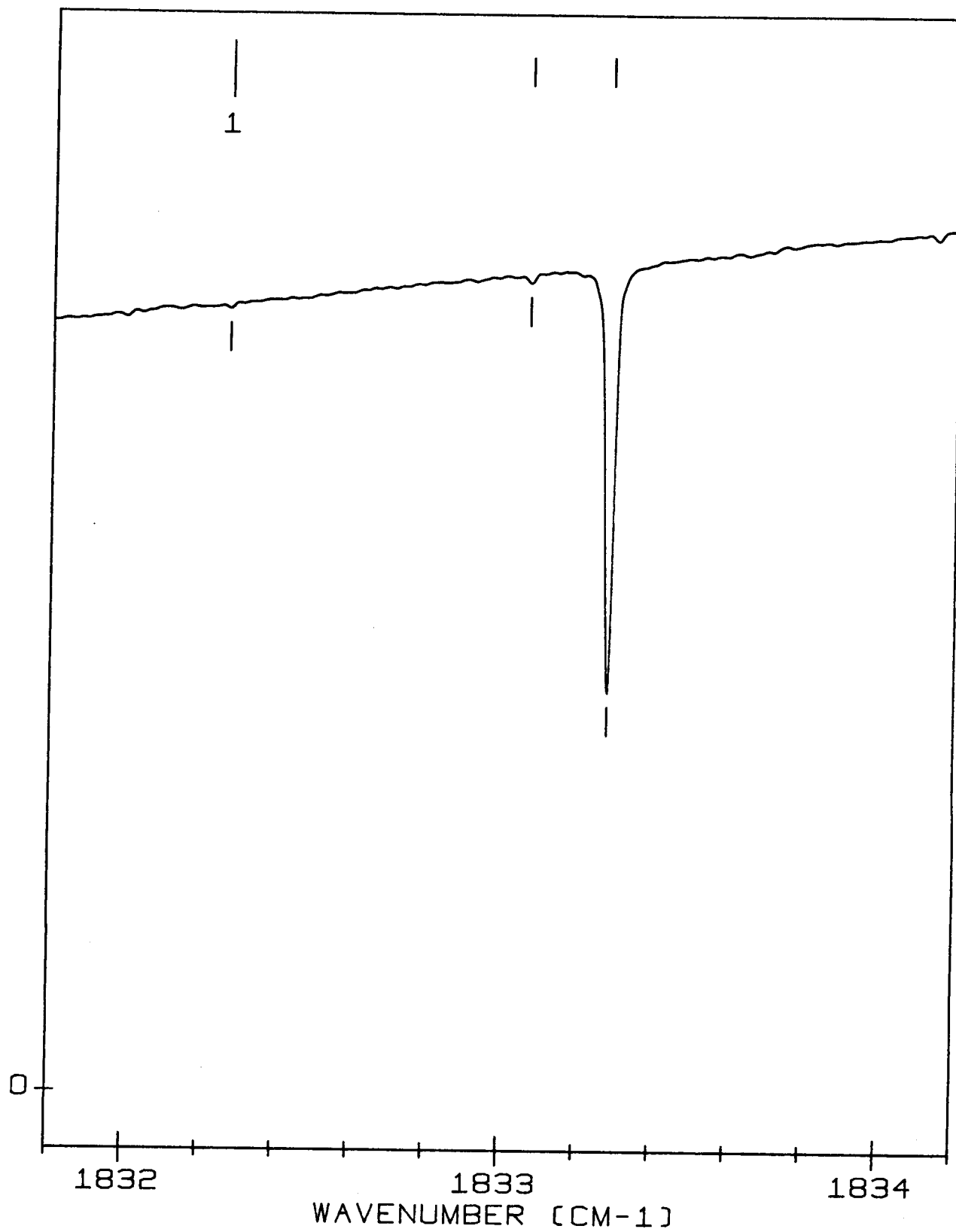




TABLE A 3

-1

Line Positions and Identifications (1834-1836 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1834.14747		H2O
2	1834.58092	1834.58100	20003-01101 626 P61
3	1834.70101		H2O
4	1834.77935		H2O
5	1834.93462		H2O
6	1835.89328		H2O

FRAME A3

9.857 Torr 384 meters

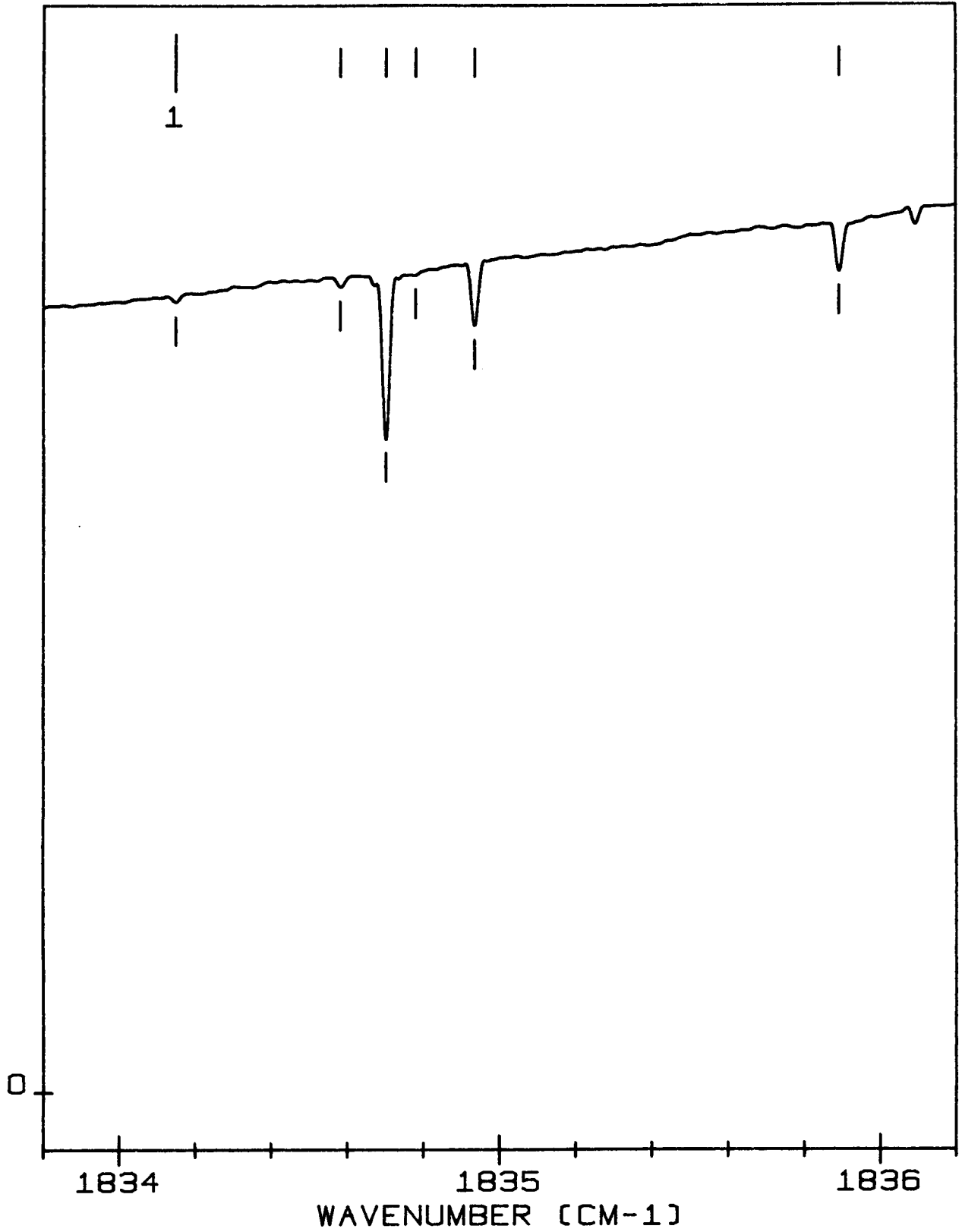


TABLE A 4

-1

Line Positions and Identifications (1836-1838 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1836.09325	1836.09301	20003-01101 626	P59
2	1837.18078		H2O	
3	1837.35998		H2O	
4	1837.60191	1837.60270	20003-01101 626	P57
5	1837.79000		?	

FRAME A4

9.857 Torr 384 meters

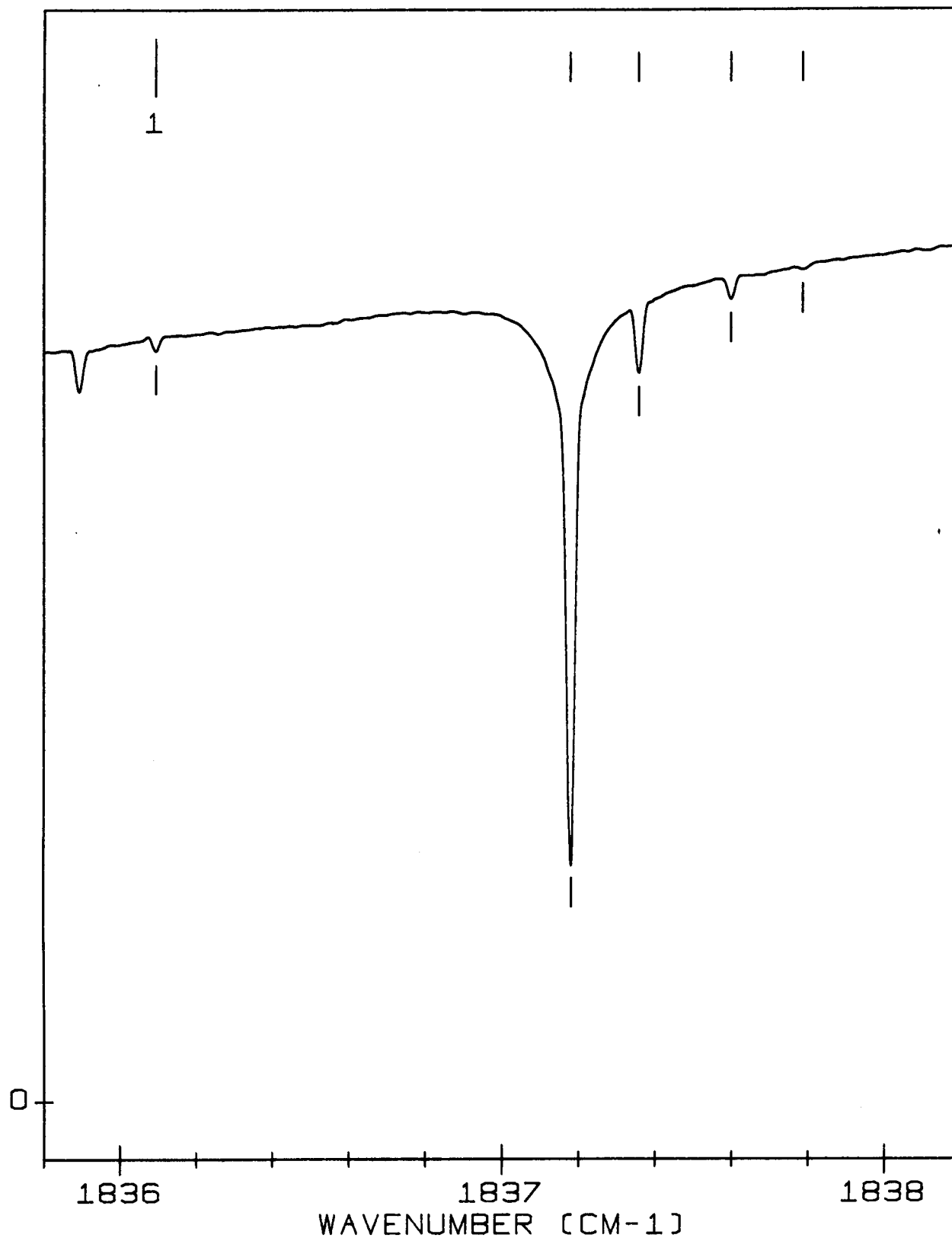


TABLE A 5

-1

Line Positions and Identifications (1838-1840 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1838.46802		H2O
2	1839.11062	1839.11046	20003-01101 626 P55
3	1839.16000		H2O
4	1839.32415		H2O
5	1839.39050		H2O

FRAME A5

9.857 Torr 384 meters

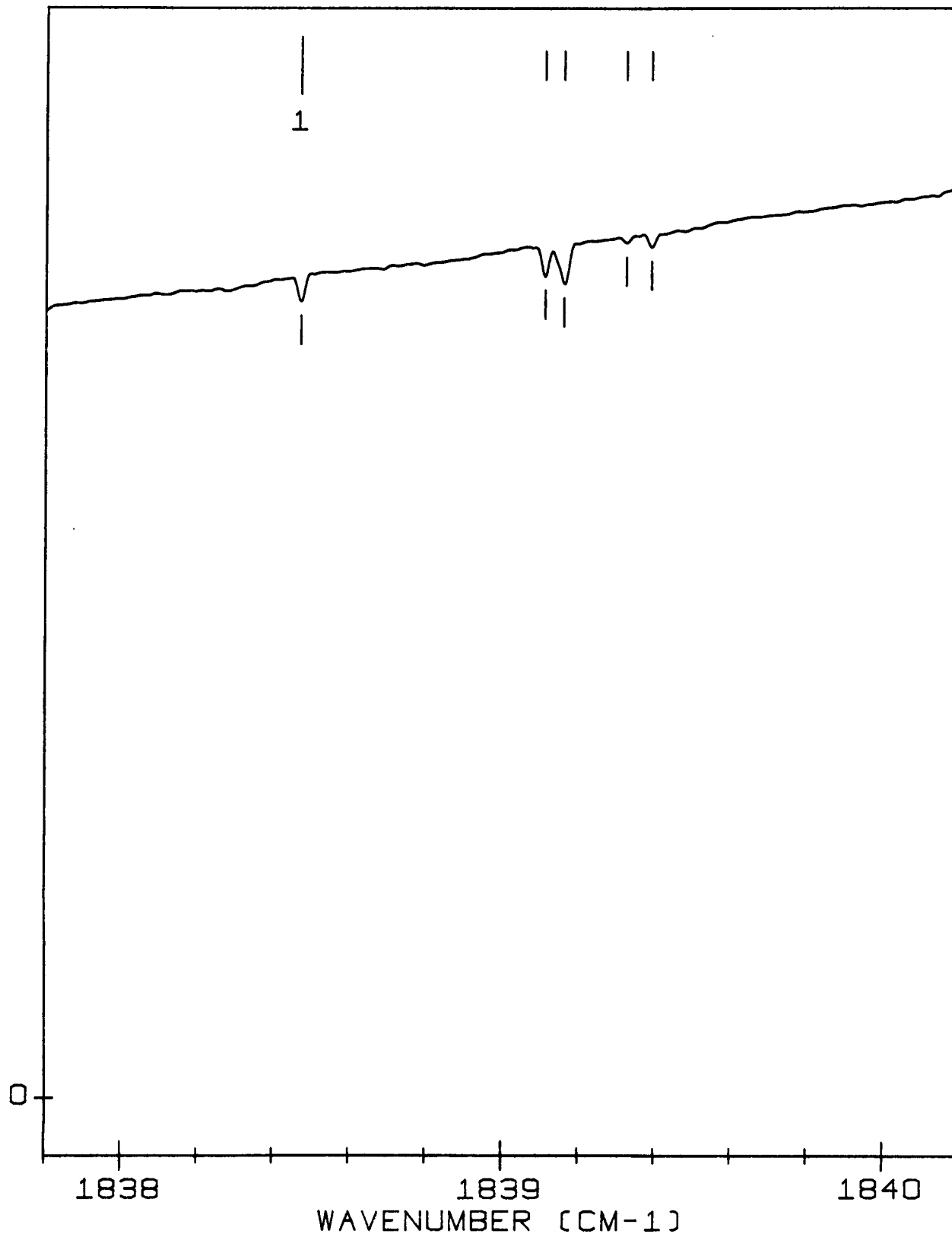


TABLE A 6

-1

Line Positions and Identifications (1840-1842 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1840.29655		H2O
2	1840.61644	1840.61668	20003-01101 626 P53

FRAME A6

9.857 Torr 384 meters

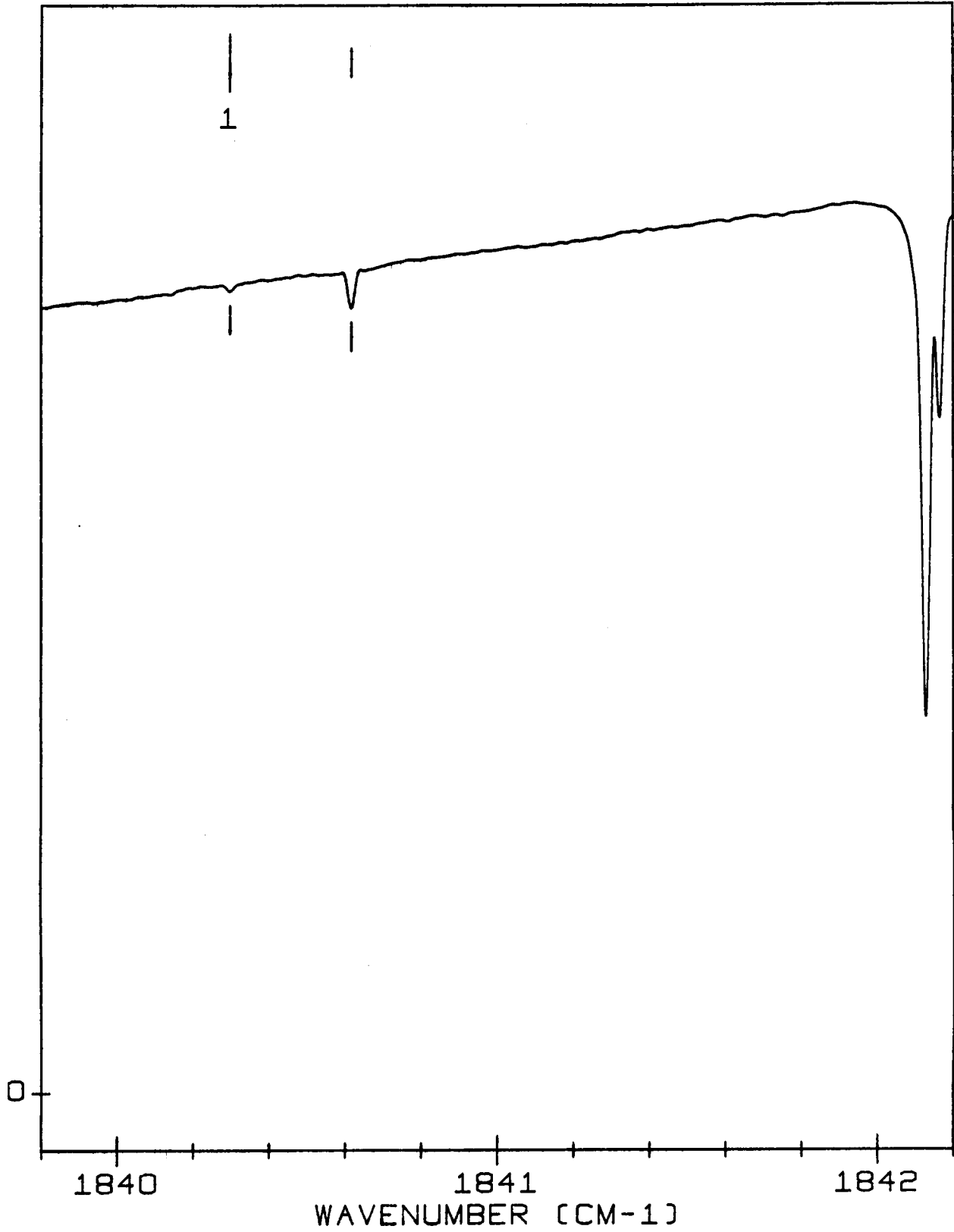




TABLE A 7

-1

Line Positions and Identifications (1842-1844 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1842.12974		H2O
		1842.12172	20003-01101 626 P51
2	1842.16565		H2O
3	1842.85049		H2O
4	1843.39431		H2O
5	1843.62599	1843.62594	20003-01101 626 P49
6	1843.71591		H2O

FRAME A7

9.857 Torr 384 meters

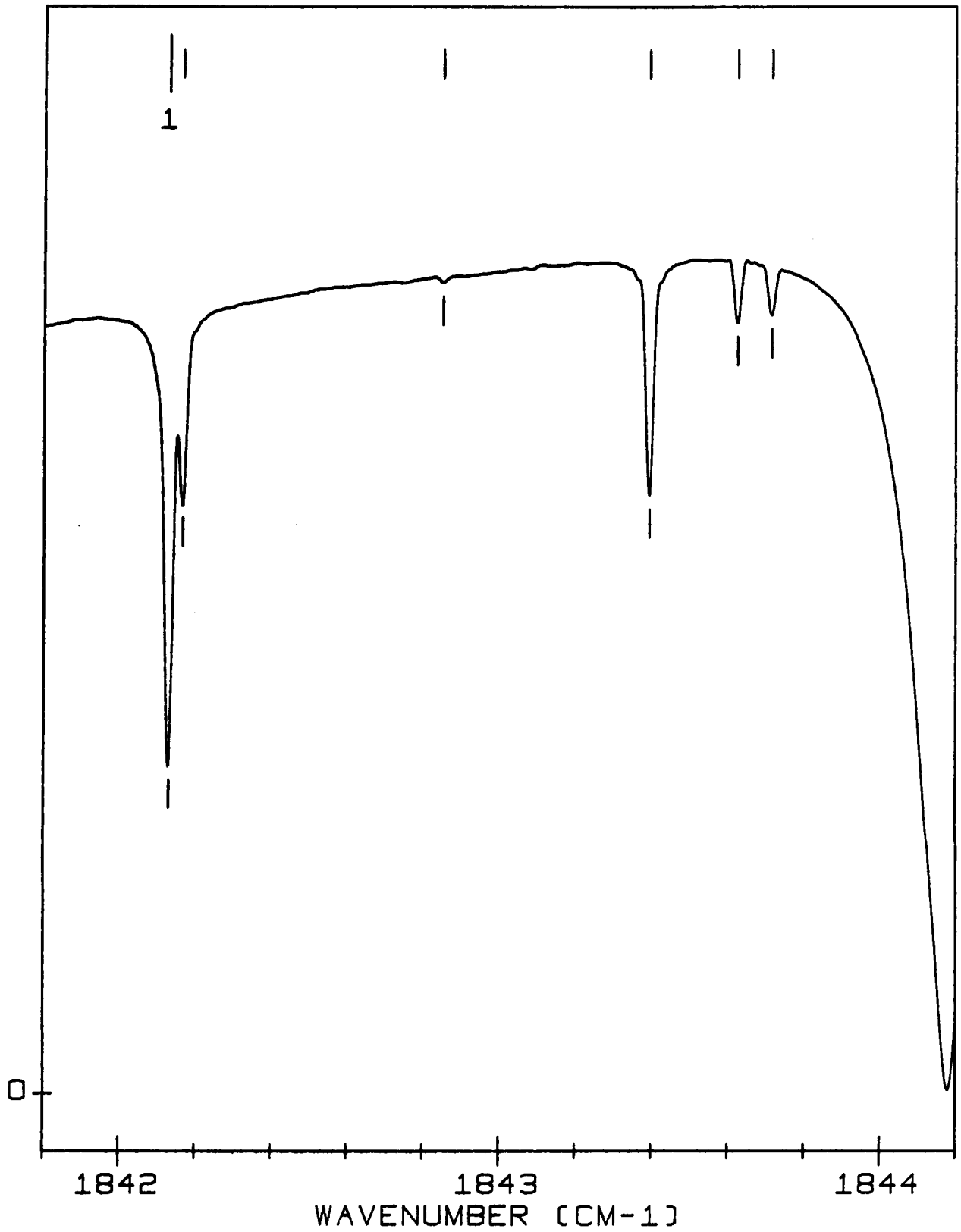


TABLE A 8

-1

Line Positions and Identifications (1844-1846 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1844.17986		H2O
2	1844.39852		H2O
3	1845.12966	1845.12970	20003-01101 626 P47
4	1845.23044		H2O
5	1845.33012		H2O
6	1845.36348		H2O
7	1845.59770		H2O
8	1845.78354		H2O
9	1845.95569		H2O
10	1845.98652		H2O

FRAME A8

9.857 Torr 384 meters

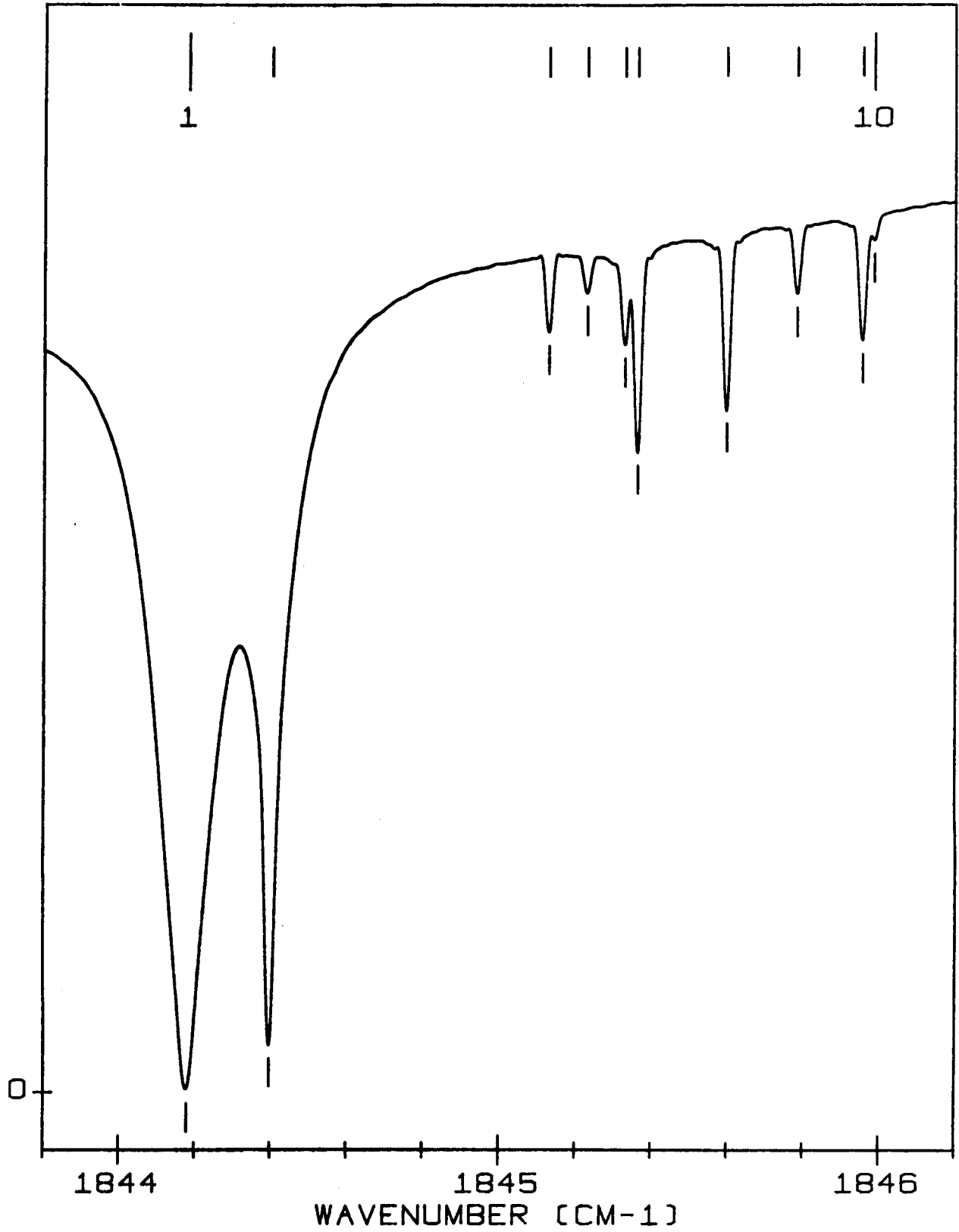


TABLE A 9

-1

Line Positions and Identifications (1846-1848 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1846.63336	1846.63333	20003-01101 626 P45
2	1847.37887		H2O
3	1847.54740		H2O
4	1847.78279		H2O

9.857 Torr 384 meters

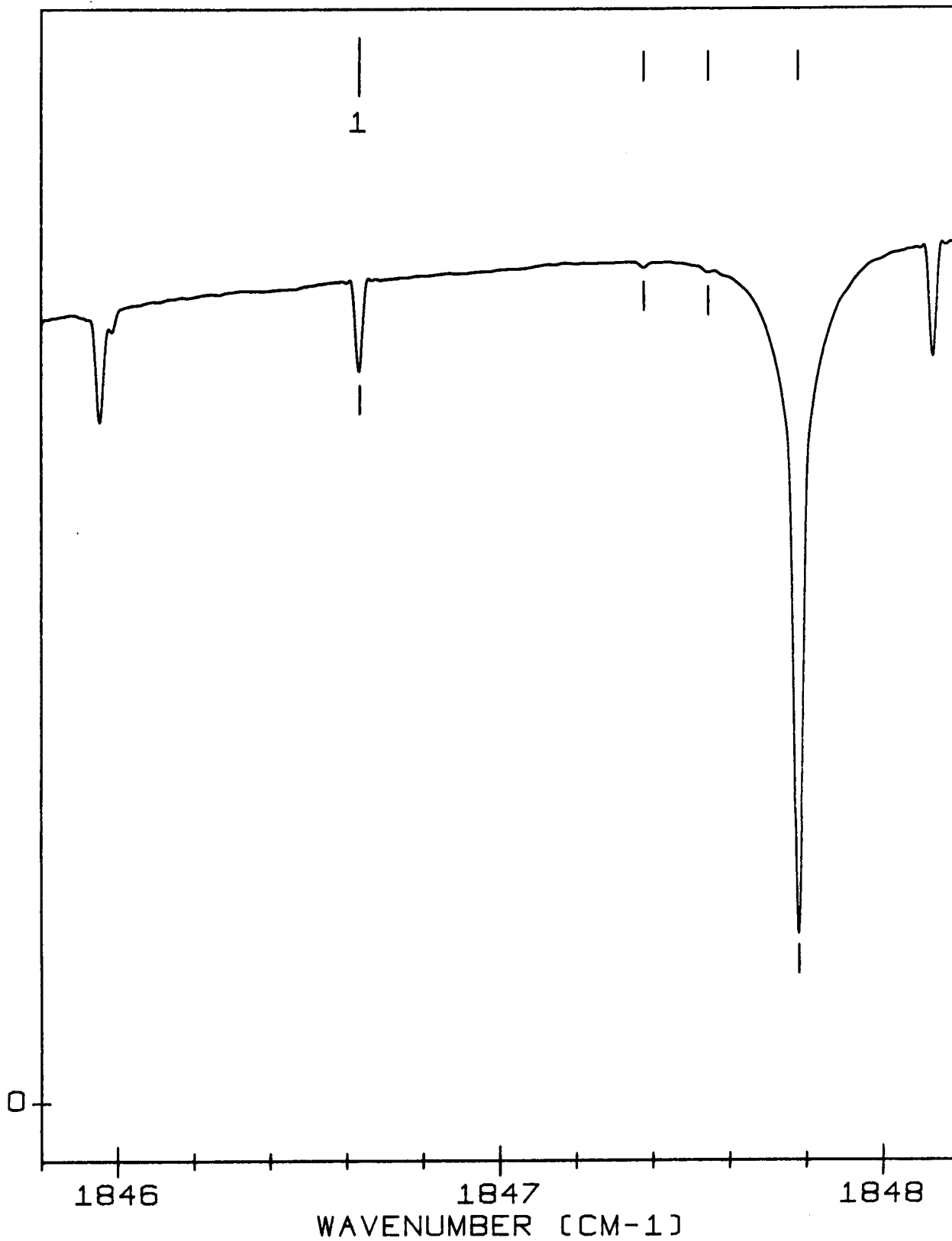


TABLE A 10

-1

Line Positions and Identifications (1848-1850 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1848.13702	1848.13717	20003-01101 626	P43
2	1848.81286		H2O	
3	1849.33812		H2O	
4	1849.64149	1849.64153	20003-01101 626	P41
			H2O	

FRAME A10

9.857 Torr 384 meters

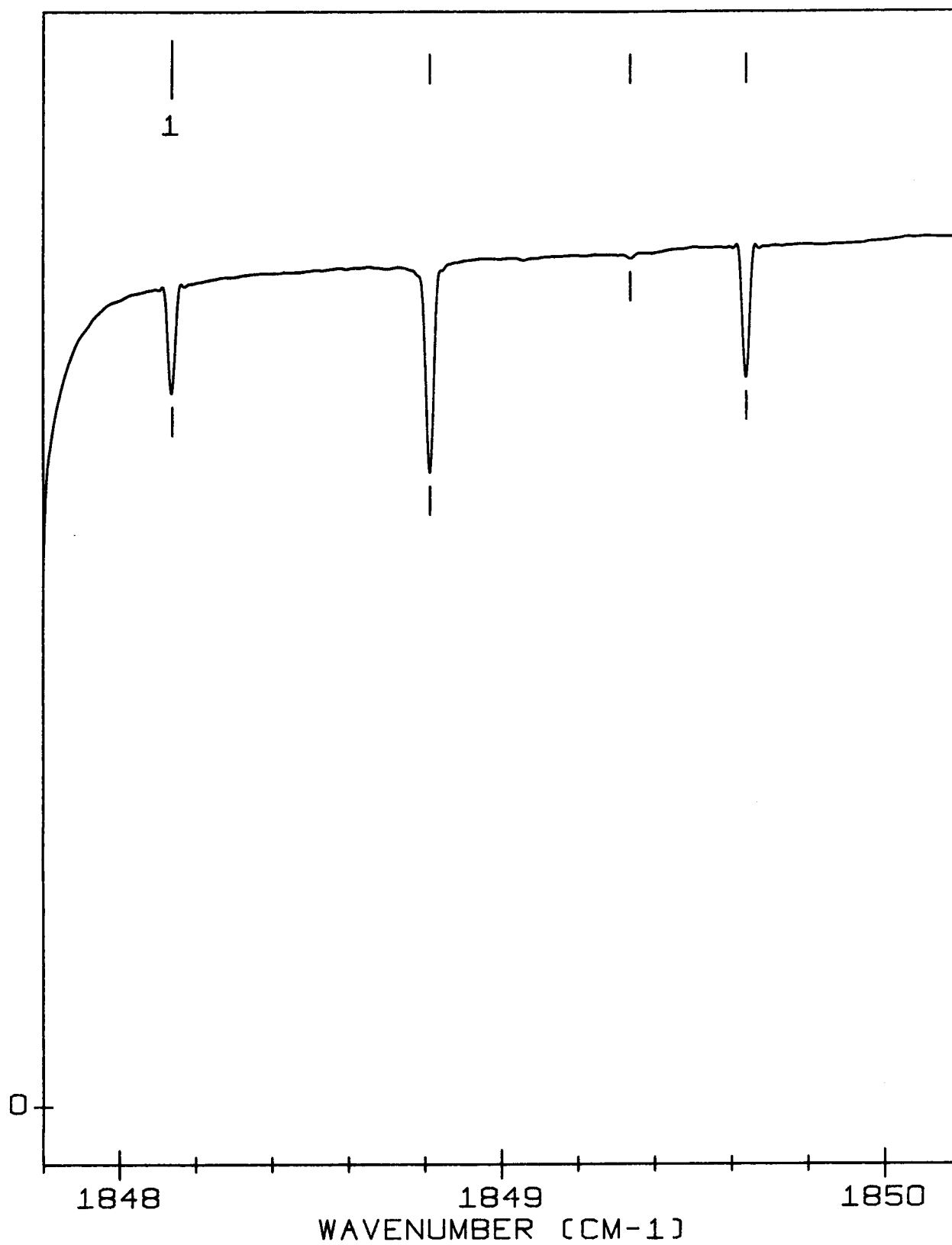




TABLE A 11

Line Positions and Identifications (1850-1852 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1851.14673	1851.14672	20003-01101 626 P39

FRAME A11

9.857 Torr 384 meters

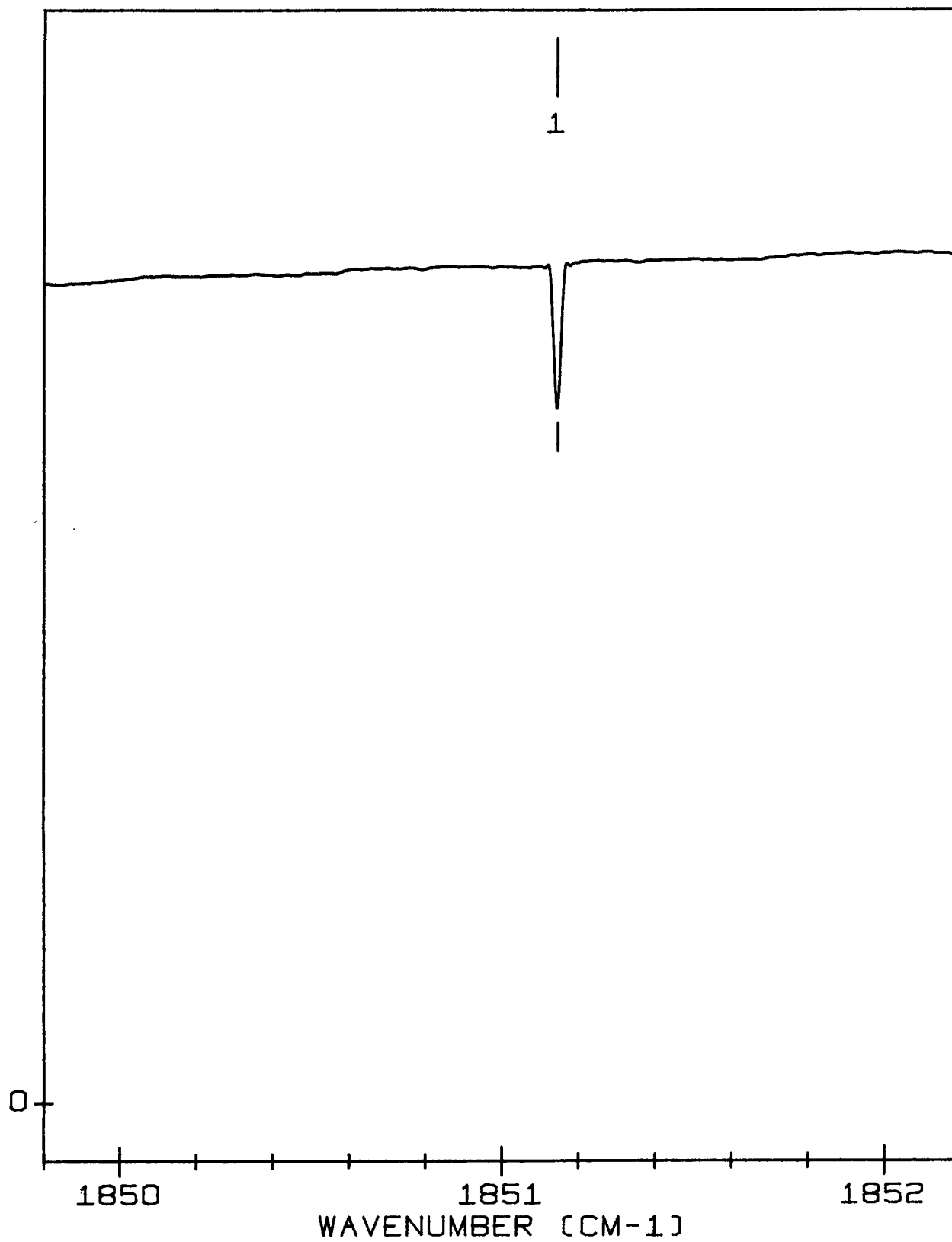


TABLE A 12

-1

Line Positions and Identifications (1852-1854 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1852.19536	1852.19387	11102-00001 636	P60
2	1852.40492		H2O	
3	1852.65304	1852.65303	20003-01101 626	P37
4	1853.59925	1853.59944	11102-00001 636	P58
5	1853.87471		H2O	

FRAME A12

9.857 Torr 384 meters

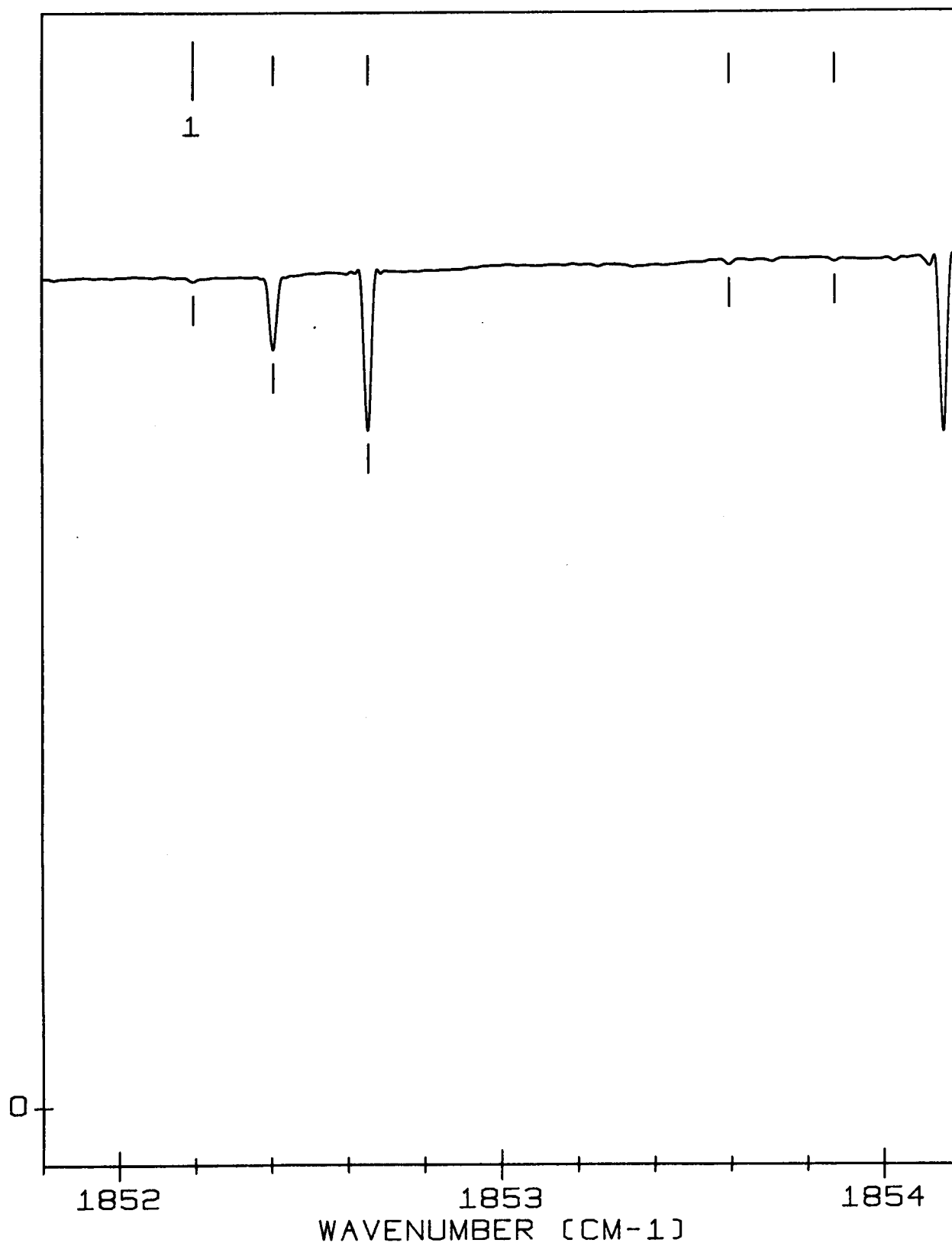


TABLE A 13

-1

Line Positions and Identifications (1854-1856 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1854.03252	1854.03222	21103-10002 626	P56
2	1854.12135		H2O SIDELOBE	
3	1854.16067	1854.16074	20003-01101 626	P35
4	1854.69229	1854.69473	12202-01101 636	P38
5	1855.01033	1855.00902	11102-00001 636	P56
		1855.01200	12202-01101 636	P39
6	1855.47375	1855.47371	21103-10002 626	P54
7	1855.67015	1855.67011	20003-01101 626	P33

FRAME A13

9.857 Torr 384 meters

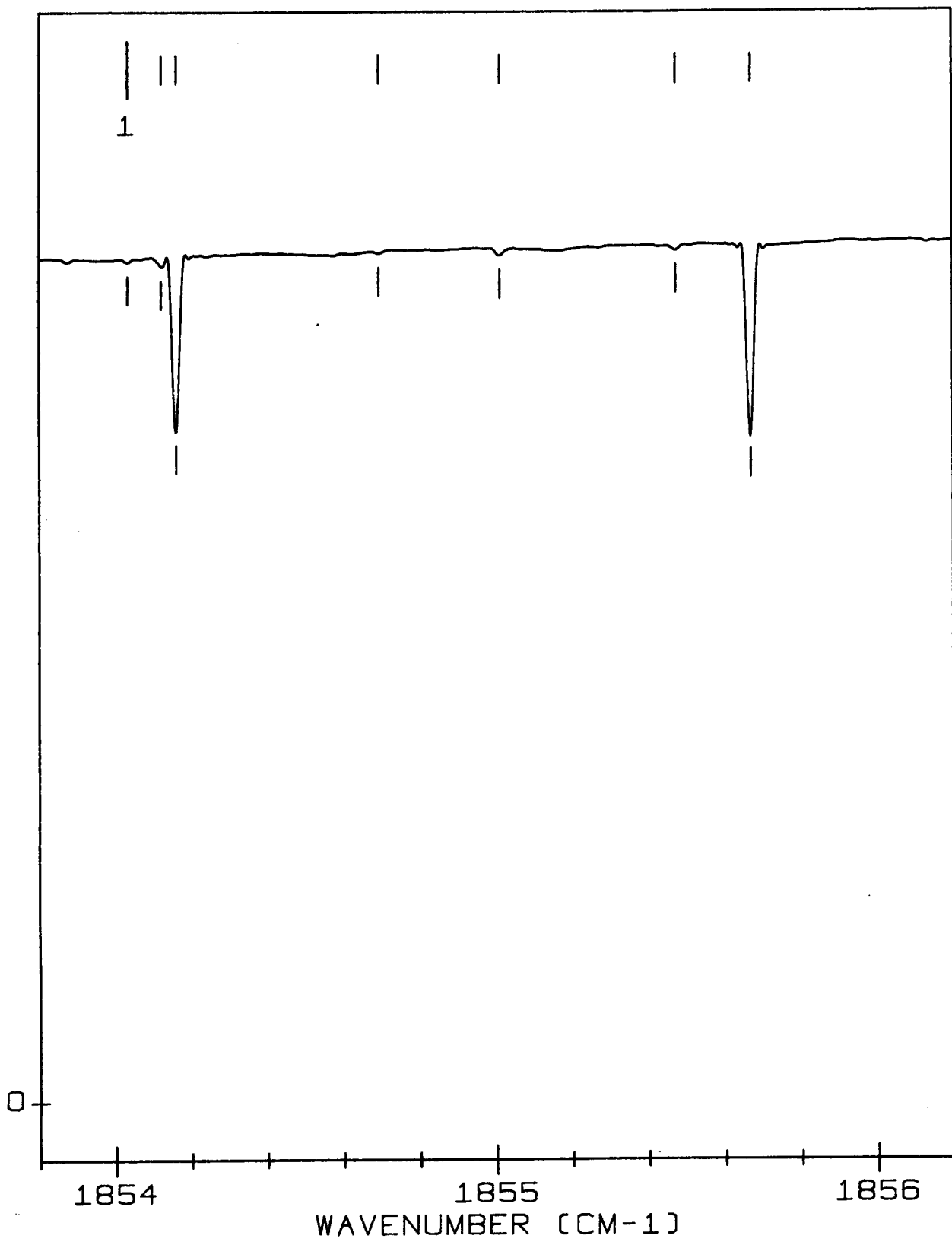


TABLE A 14

-1

Line Positions and Identifications (1856-1858 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1856.25952		H2O		
2	1856.42225	1856.42276	11102-00001	636	P54
3	1856.91797	1856.91939	21103-10002	626	P52
			H2O		
4	1857.18144	1857.18141	20003-01101	626	P31
5	1857.57643	1857.57132	12202-01101	636	P34
6	1857.62341		H2O		
7	1857.84088	1857.84080	11102-00001	636	P52

FRAME A14

9.857 Torr 384 meters

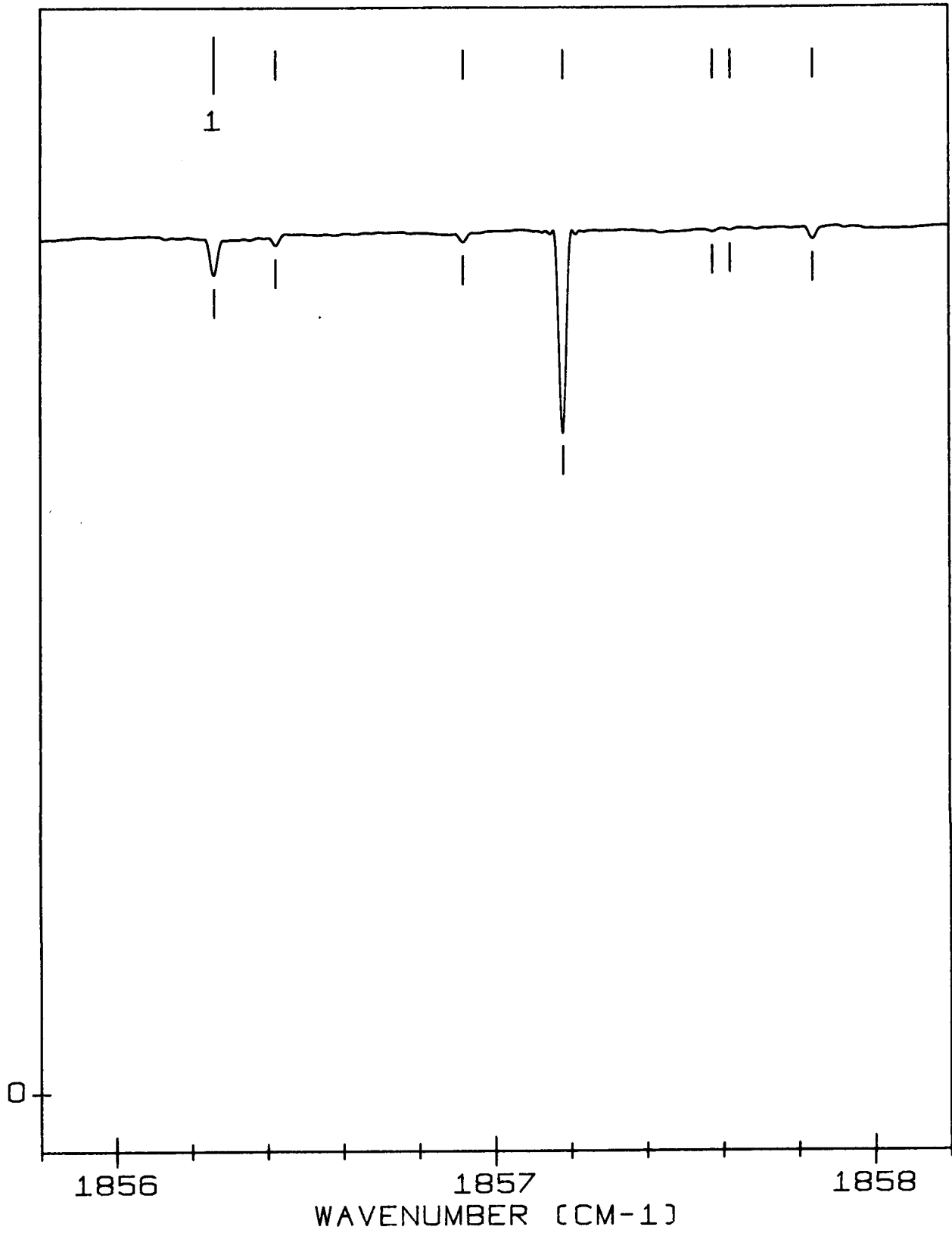




TABLE A 15

-1

Line Positions and Identifications (1858-1860 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1858.27222		H2O		
2	1858.36831	1858.36931	21103-10002	626	P50
3	1858.48146		H2O		
4	1858.51905		H2O		
5	1858.69477	1858.69487	20003-01101	626	P29
6	1859.03874	1859.02176	12202-01101	636	P32
		1859.04219	12202-01101	636	P33
7	1859.26273	1859.26327	11102-00001	636	P50
8	1859.38469	1859.38423	11102-00001	628	P59
9	1859.44889	1859.44789	21103-02201	626	R16
10	1859.70319		H2O		
11	1859.82364	1859.82350	21103-10002	626	P48
			SIDELOBE		
12	1859.86517		H2O		

FRAME A15

9.857 Torr 384 meters

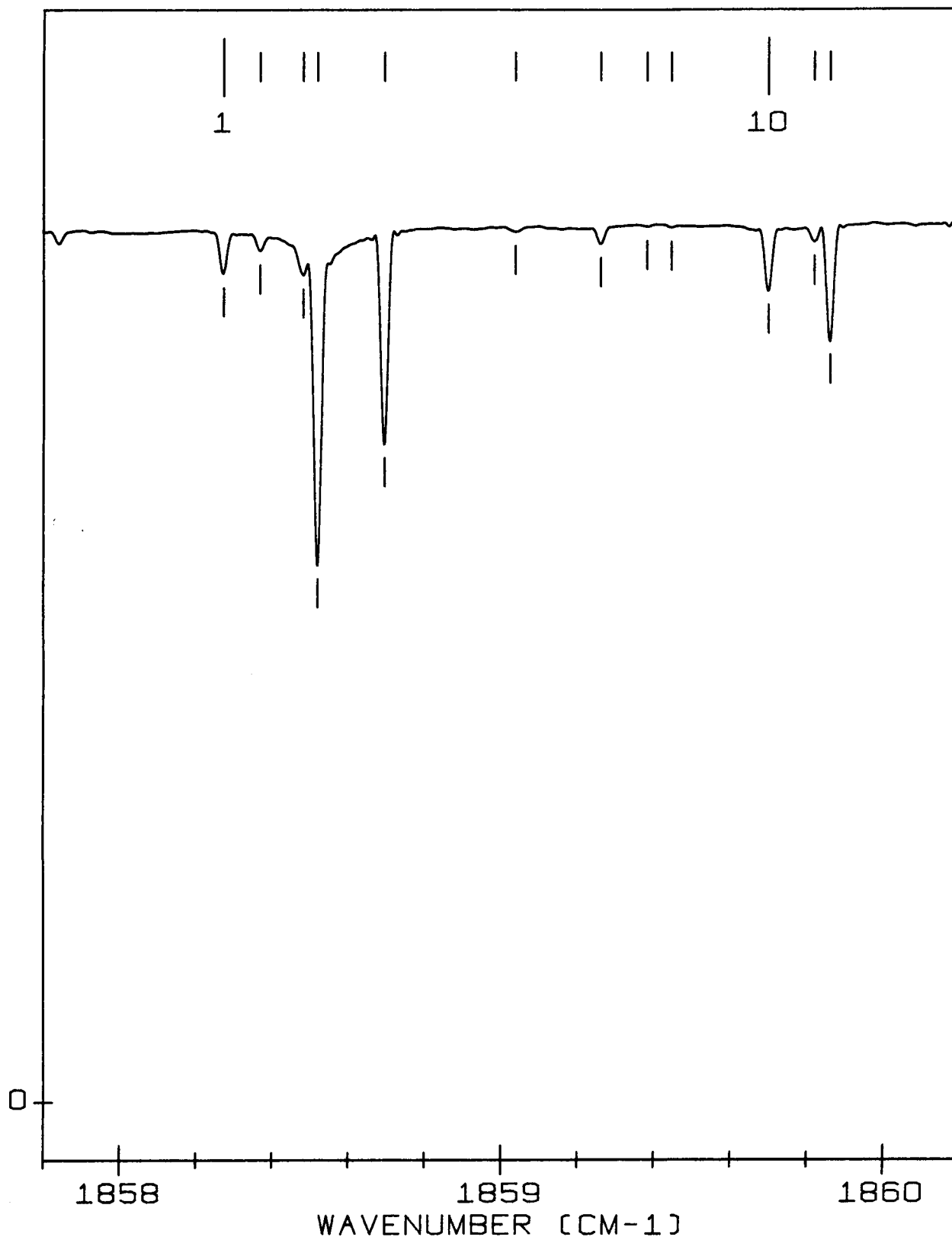


TABLE A 16

-1

Line Positions and Identifications (1860-1862 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1860.21068	1860.21070	20003-01101 626	P27
2	1860.41050	1860.41019	12202-01101 636	P31
3	1860.48574	1860.48030	12202-01101 636	P30
4	1860.69099	1860.69031	11102-00001 636	P48
5	1860.79113	1860.79002	11102-00001 628	P57
6	1860.91590		H2O	
7	1861.28214	1861.28199	21103-10002 626	P46
8	1861.53132		H2O	
9	1861.72915	1861.72912	20003-01101 626	P25
10	1861.79152	1861.79048	12202-01101 636	P29
11	1861.90487		H2O	
12	1861.94275	1861.94693	12202-01101 636	P28

FRAME A16

9.857 Torr 384 meters

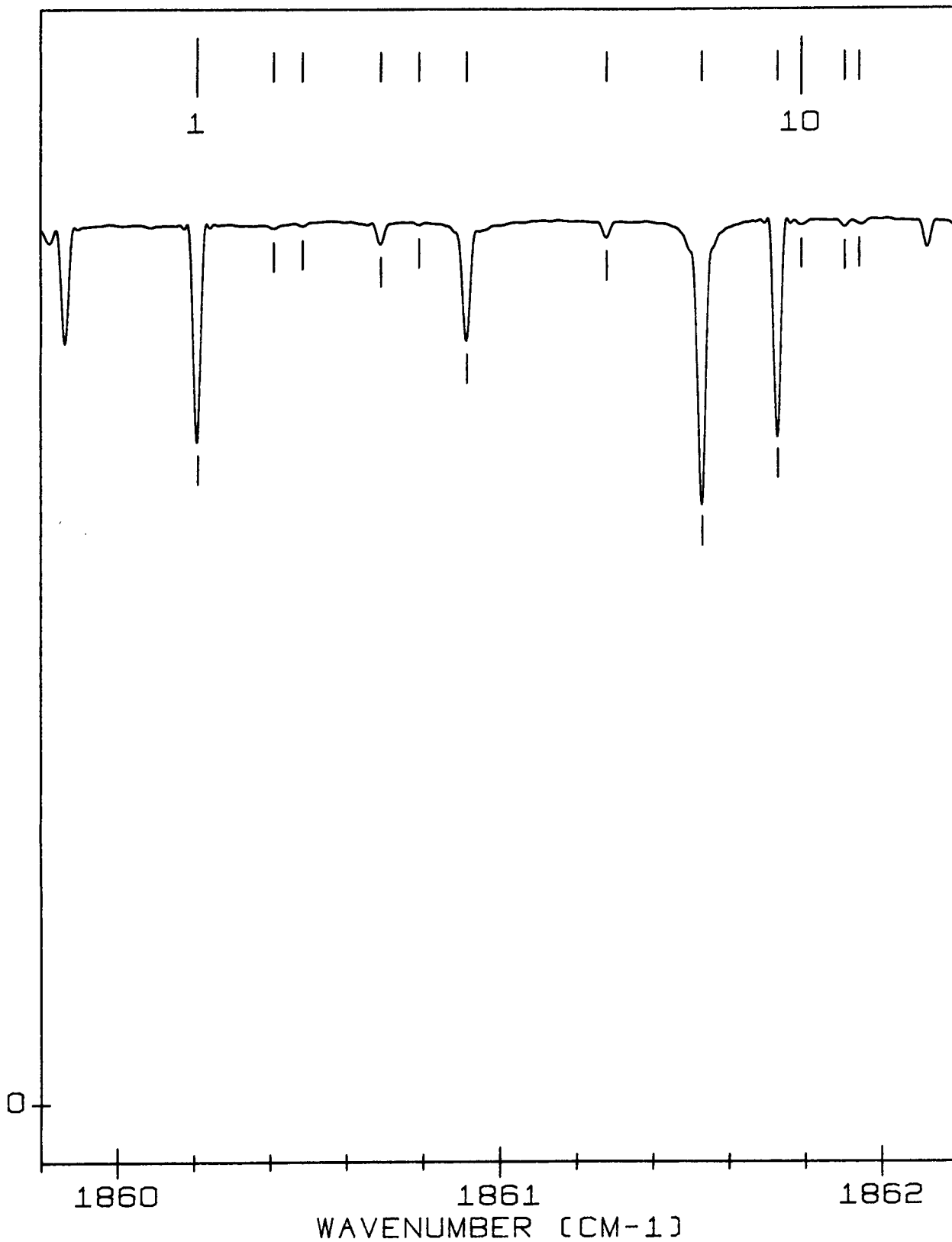


TABLE A 17

-1

Line Positions and Identifications (1862-1864 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1862.12157	1862.12203	11102-00001	636	P46
2	1862.19547		H2O		
3	1862.46855	1862.47313	21103-02201	626	R20
4	1862.74454	1862.74483	21103-10002	626	P44
5	1862.78303		H2O		
6	1862.90005	1862.90124	11102-00001	628	P54
7	1862.95618		H2O		
8	1863.18310	1863.18306	12202-01101	636	P27
9	1863.25034	1863.25033	20003-01101	626	P23
10	1863.42536	1863.42166	12202-01101	636	P26
11	1863.55836	1863.55856	11102-00001	636	P44
12	1863.60511	1863.60572	11102-00001	628	P53
13	1863.89104	1863.89455	21103-02201	626	R21
14	1863.97722	1863.97850	21103-02201	626	R22

FRAME A17

9.857 Torr 384 meters

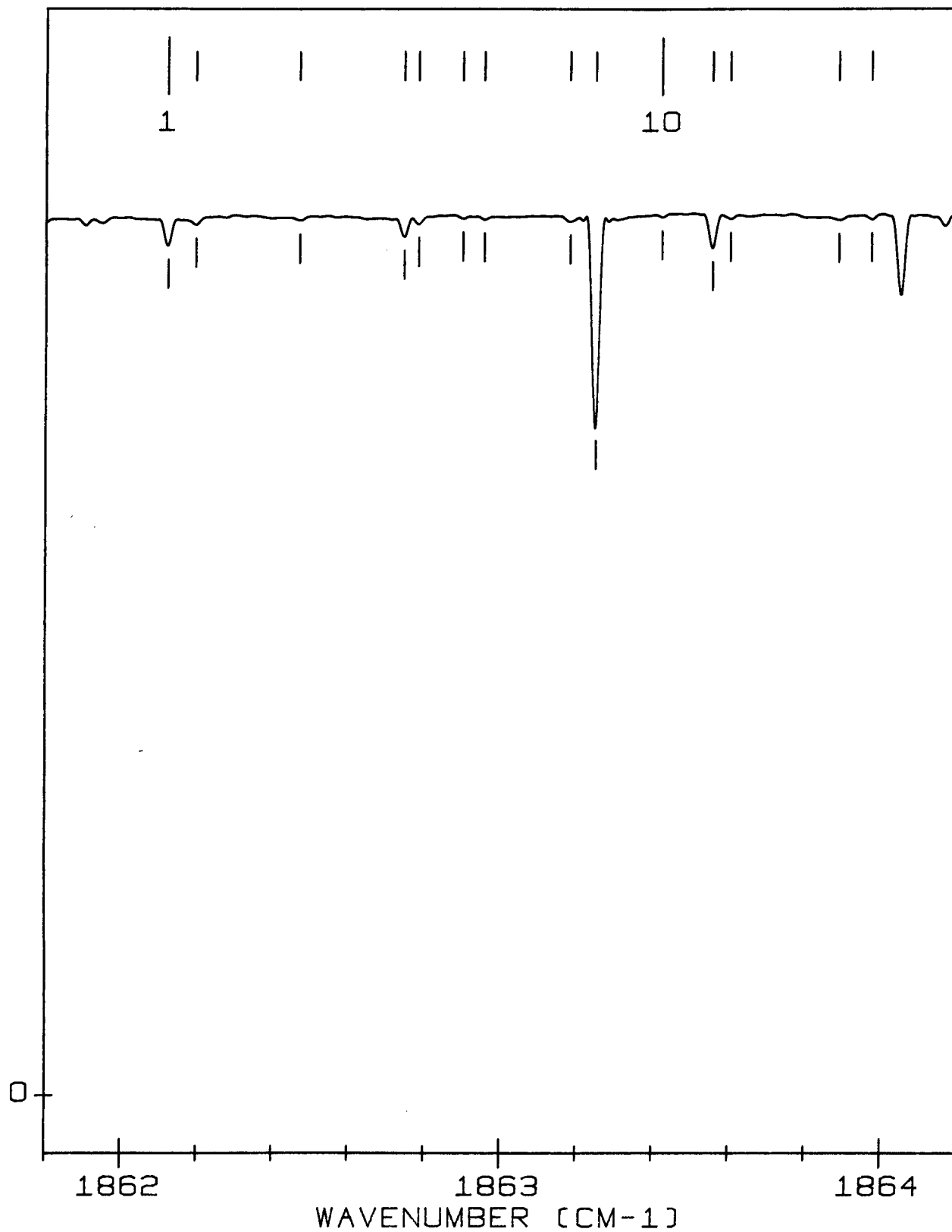


TABLE A 18

-1

Line Positions and Identifications (1864-1866 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1864.05509		H2O		
2	1864.17131		H2O		
3	1864.21190	1864.21203	21103-10002	626	P42
4	1864.32852		H2O		
		1864.31058	11102-00001	628	P52
5	1864.58674	1864.58795	12202-01101	636	P25
6	1864.77447	1864.77448	20003-01101	626	P21
7	1864.90428	1864.90448	12202-01101	636	P24
8	1865.00055	1865.00001	11102-00001	636	P42
		1865.01585	11102-00001	628	P51
9	1865.48037	1865.47788	21103-02201	626	R24
10	1865.52253	1865.52170	21103-02201	626	R23
11	1865.68348	1865.68364	21103-10002	626	P40
12	1865.72088	1865.72154	11102-00001	628	P50

FRAME A18

9.857 Torr 384 meters

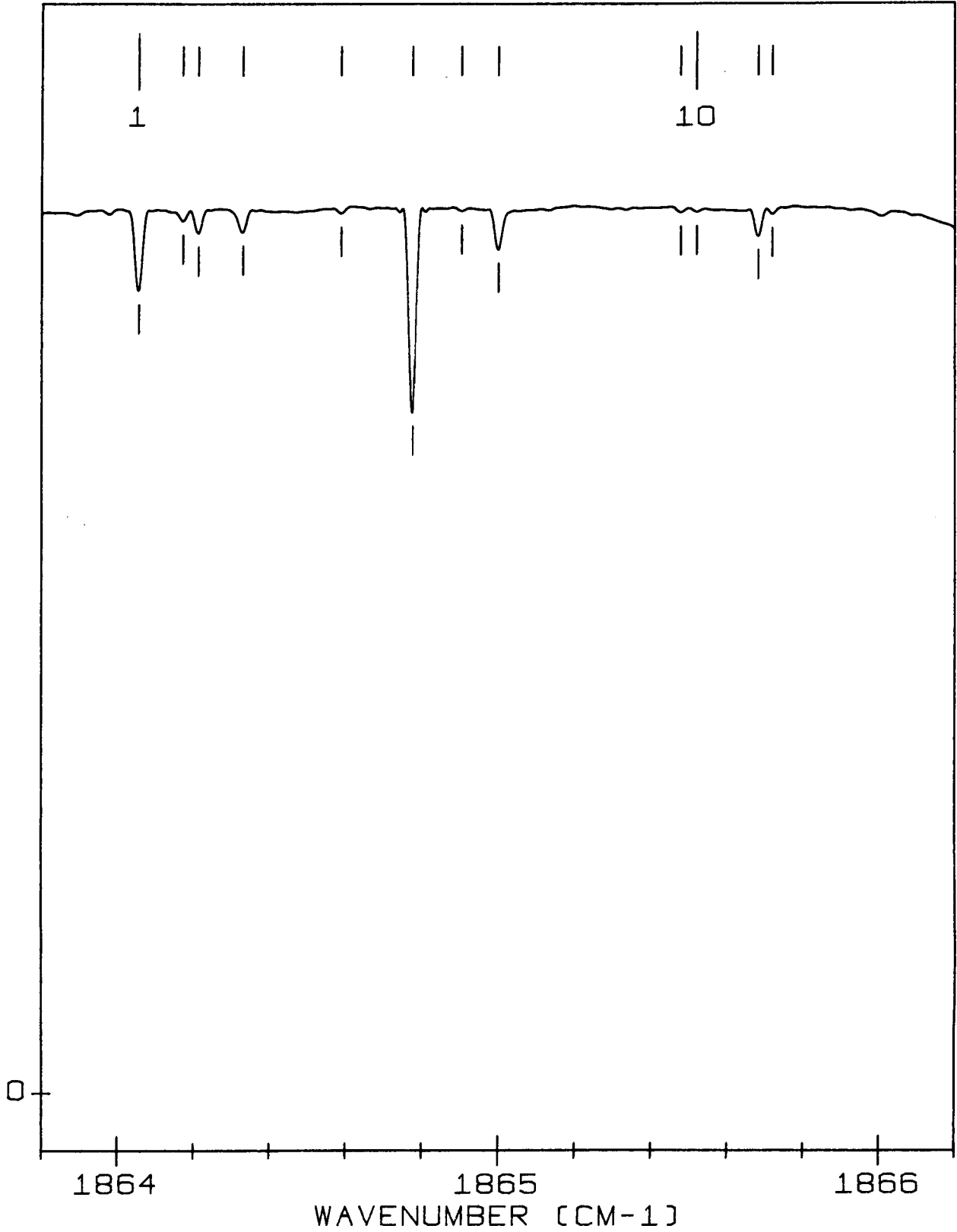




TABLE A 19

-1

Line Positions and Identifications (1866-1868 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1866.00719	1866.00513	12202-01101 636 P23
2	1866.09076		H2O?
3	1866.30272	1866.30176	20003-01101 626 P19 H2O
4	1866.38094		H2O
5	1866.44279	1866.44647	11102-00001 636 P40
		1866.42766	11102-00001 628 P49
6	1866.83806		?
7	1866.97055	1866.97068	21103-02201 626 R26
8	1867.15911	1867.15966	21103-10002 626 P38
		1867.13422	11102-00001 628 P48
		1867.15192	21103-02201 626 R25
9	1867.38752	1867.39218	12202-01101 626 P68
10	1867.43298	1867.43460	12202-01101 636 P21
11	1867.85235		H2O
		1867.83229	20003-01101 626 P17
		1867.89806	11102-00001 636 P38
		1867.84123	11102-00001 628 P47
12	1867.92278		H2O

FRAME A19

9.857 Torr 384 meters

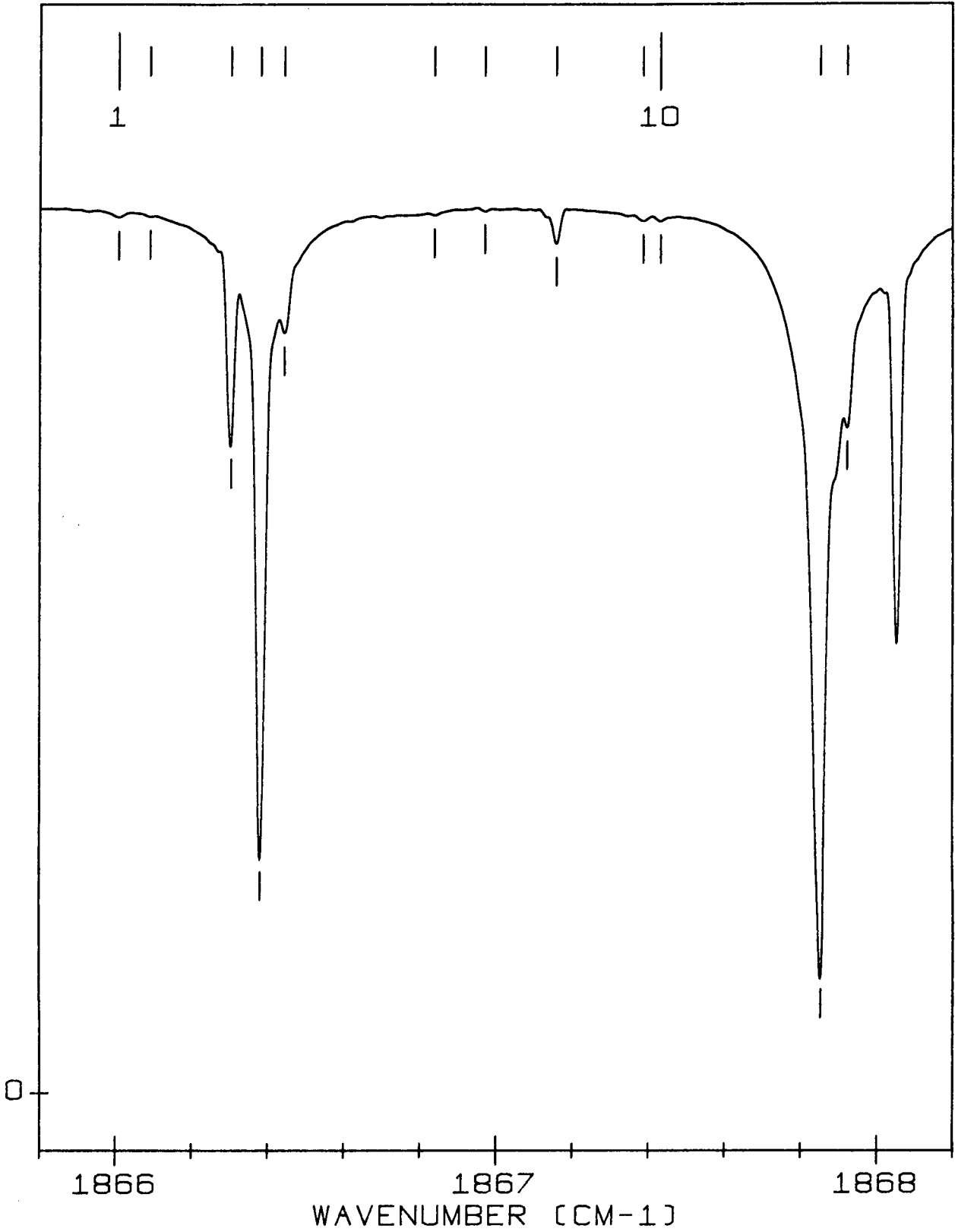


TABLE A 20

-1

Line Positions and Identifications (1868-1870 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1868.05380		H2O		
2	1868.45680	1868.45655	21103-02201	626	R28
3	1868.54877	1868.54871	11102-00001	628	P46
4	1868.64131	1868.64012	21103-10002	626	P36
5	1868.72675		H2O		
6	1868.78915	1868.79856	12202-01101	626	P66
		1868.78520	21103-02201	626	R27
7	1869.34526		H2O		
		1869.36621	20003-01101	626	P15
		1869.25667	11102-00001	628	P45
		1869.35486	11102-00001	636	P36
		1869.43827	13302-02201	626	P49
8	1869.85638	1869.85805	12202-01101	626	P69
9	1869.93456	1869.93535	21103-02201	626	R30
10	1869.96478	1869.96512	11102-00001	628	P44

FRAME A20

9.857 Torr 384 meters

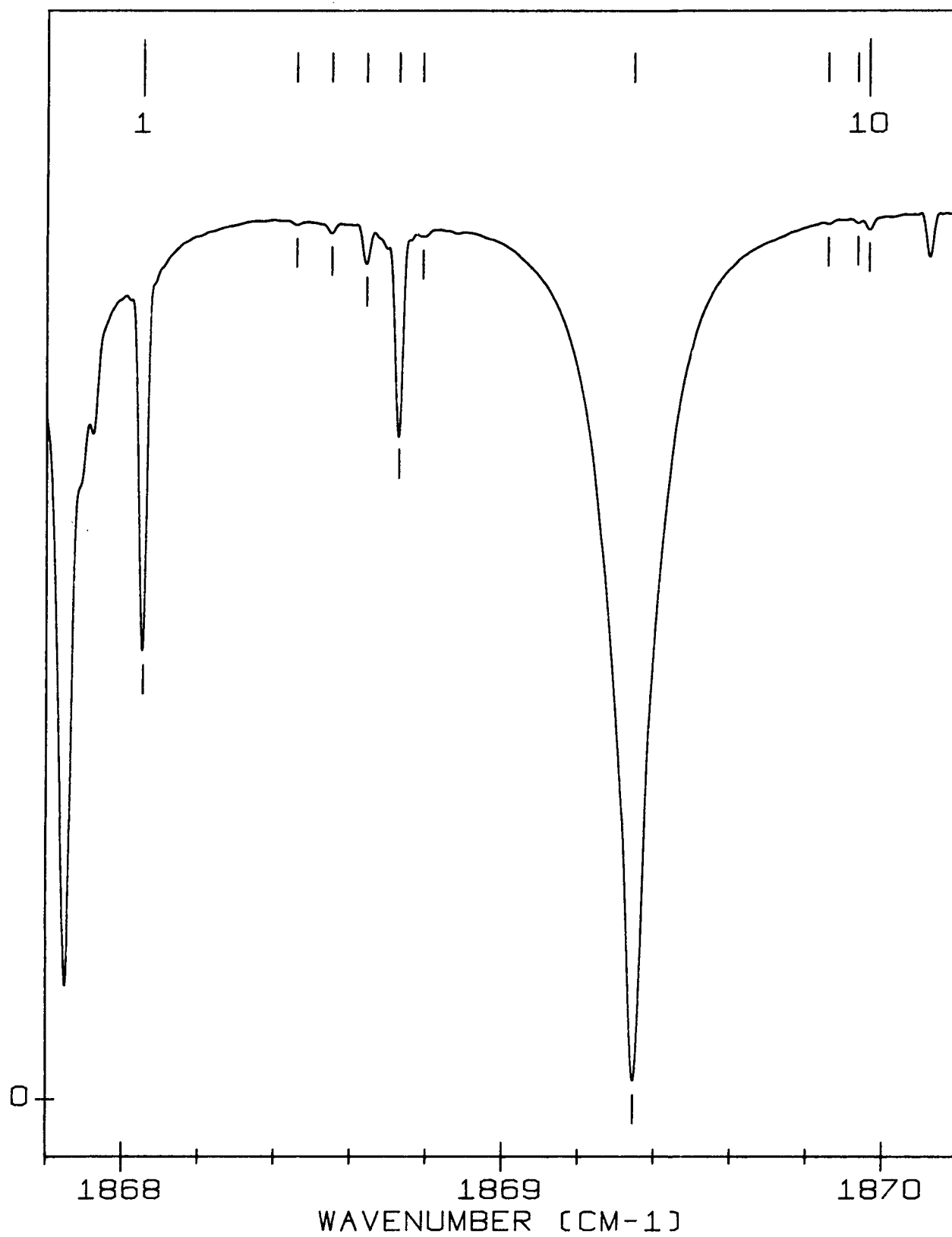


TABLE A 21

-1

Line Positions and Identifications (1870-1872 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1870.12531	1870.12503	21103-10002 626 P34
		1870.12710	13302-02201 626 P48
2	1870.20855	1870.20790	12202-01101 626 P64
3	1870.32986	1870.33045	12202-01101 636 P17
4	1870.41959	1870.42154	21103-02201 626 R29
5	1870.67529	1870.67407	11102-00001 628 P43
6	1870.80527		H2O
		1870.81695	11102-00001 636 P34
		1870.81902	13302-02201 626 P47
7	1870.90304	1870.90362	20003-01101 626 P13
8	1871.07671	1871.07648	12202-01101 626 P67
9	1871.38357	1871.38353	11102-00001 628 P42
10	1871.51153	1871.51170	13302-02201 626 P46
11	1871.57937	1871.58068	11102-00001 626 P82
12	1871.61574	1871.61443	21103-10002 626 P32
		1871.62037	12202-01101 626 P62

FRAME A21

9.857 Torr 384 meters

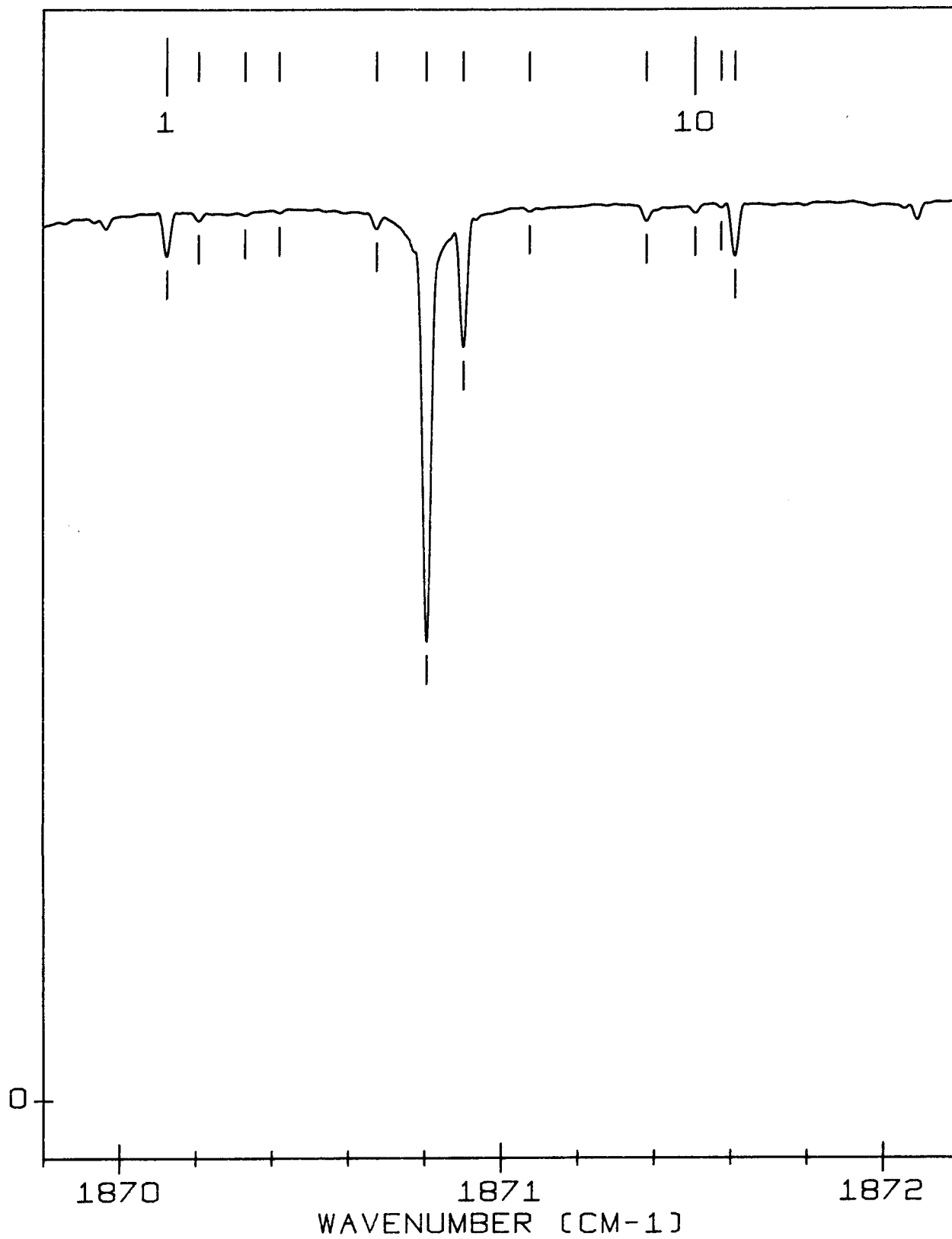


TABLE A 22

-1

Line Positions and Identifications (1872-1874 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1872.05953	1872.06094	21103-02201	626	R31
2	1872.09349	1872.09352	11102-00001	628	P41
3	1872.20707	1872.20713	13302-02201	626	P45
4	1872.28450	1872.28443	11102-00001	636	P32
		1872.30360	12202-01101	626	P65
5	1872.44459	1872.44462	20003-01101	626	P11
6	1872.80463	1872.80403	11102-00001	628	P40
7	1872.87286	1872.87224	21103-02201	626	R34
8	1872.90450	1872.90367	13302-02201	626	P44
9	1873.03515	1873.03615	12202-01101	626	P60
		1873.01435	11102-00001	626	P80
10	1873.10887	1873.10831	21103-10002	626	P30
11	1873.51508	1873.51509	11102-00001	628	P39
12	1873.54085	1873.53964	12202-01101	626	P63
13	1873.60313	1873.60266	13302-02201	626	P43
14	1873.70519	1873.70341	21103-02201	626	R33
			SIDELOBE		
15	1873.75738	1873.75736	11102-00001	636	P30
16	1873.98932	1873.98928	20003-01101	626	P9

FRAME A22

9.857 Torr 384 meters

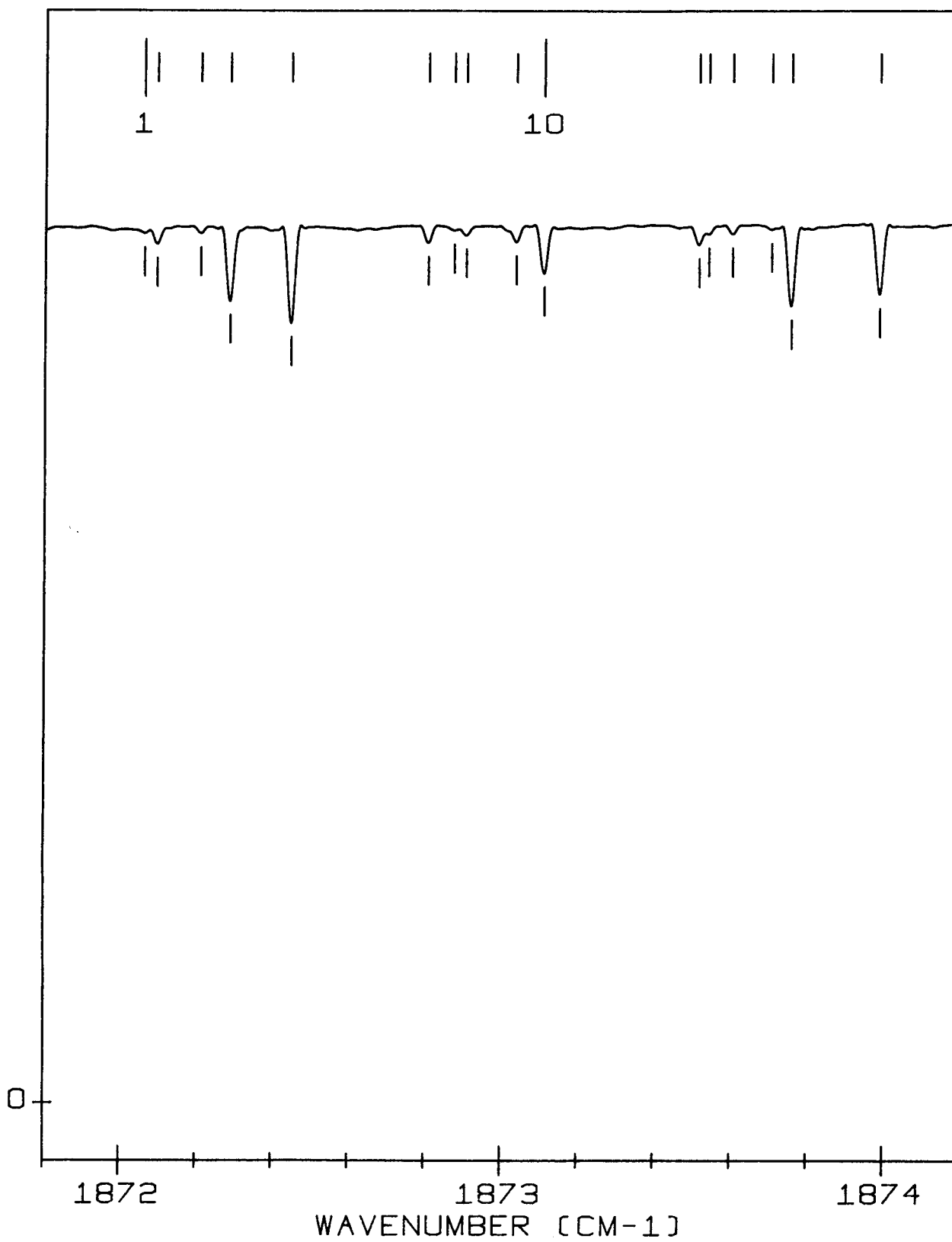




TABLE A 23

-1

Line Positions and Identifications (1874-1876 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1874.22640	1874.22669	11102-00001 628 P38
2	1874.30444	1874.30309	13302-02201 626 P42
3	1874.33103	1874.33115	21103-02201 626 R36
4	1874.45264	1874.45540	12202-01101 626 P58
		1874.44885	11102-00001 626 P78
5	1874.60669	1874.60669	21103-10002 626 P28
6	1874.78349	1874.78479	12202-01101 626 P61
7	1874.93870	1874.93886	11102-00001 628 P37
8	1875.00541	1875.00568	13302-02201 626 P41
9	1875.23596	1875.23581	11102-00001 636 P28
10	1875.35002	1875.34894	21103-02201 626 R35
11	1875.53759	1875.53767	20003-01101 626 P7
12	1875.65072	1875.65160	11102-00001 628 P36
13	1875.71028	1875.71002	13302-02201 626 P40
14	1875.78422	1875.78464	21103-02201 626 R38
15	1875.87976	1875.88434	11102-00001 626 P76
		1875.87828	12202-01101 626 P56

FRAME A23

9.857 Torr 384 meters

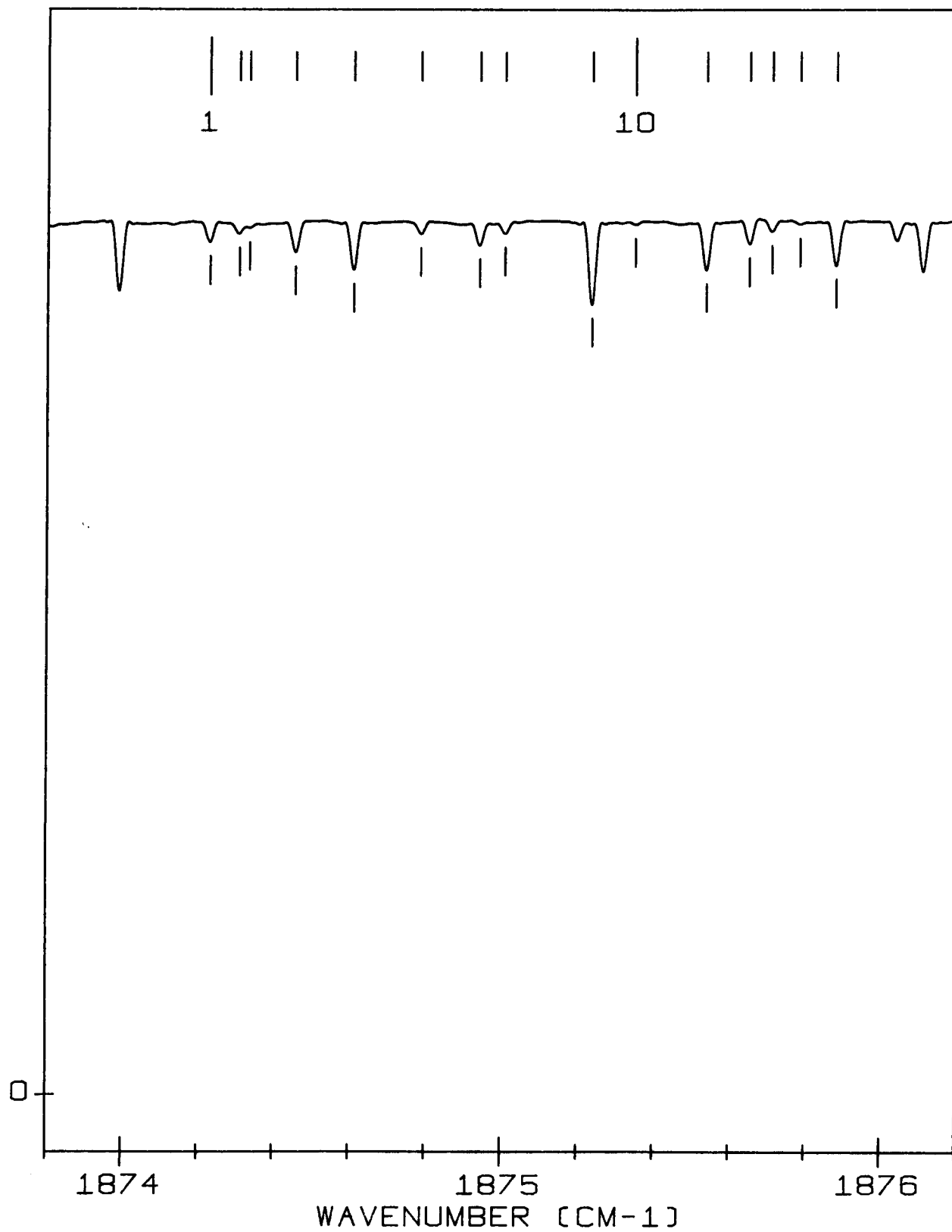


TABLE A 24

-1

Line Positions and Identifications (1876-1878 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1876.04028	1876.03924	12202-01101 626 P59
2	1876.10944	1876.10957	21103-10002 626 P26
3	1876.36504	1876.36491	11102-00001 628 P35
4	1876.41696	1876.41627	13302-02201 626 P39
5	1876.63169		H2O
6	1876.71961	1876.71985	11102-00001 636 P26
7	1877.08434	1877.07881	11102-00001 628 P34
		1877.08982	20003-01101 626 P5
8	1877.12433	1877.12453	13302-02201 626 P38
9	1877.30703	1877.32100	11102-00001 626 P74
		1877.30316	12202-01101 626 P57
		1877.30495	12202-01101 626 P54
10	1877.61702	1877.61696	21103-10002 626 P24
11	1877.79123	1877.79330	11102-00001 628 P33
			H2O
12	1877.83436	1877.83449	13302-02201 626 P37

FRAME A24

9.857 Torr 384 meters

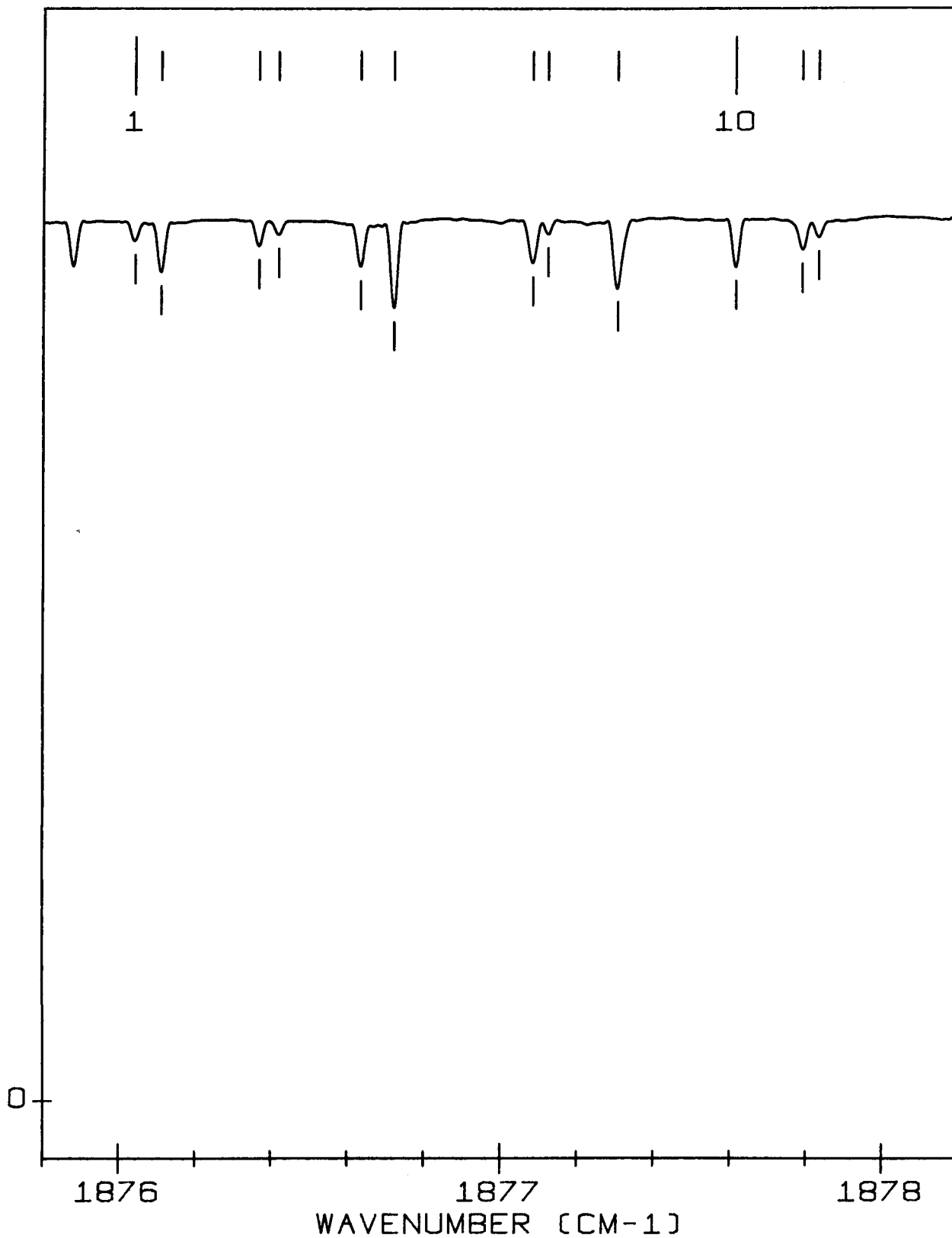


TABLE A 25

-1

Line Positions and Identifications (1878-1880 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1878.20963	1878.20953	11102-00001	636	P24
2	1878.50805	1878.50839	11102-00001	628	P32
3	1878.54532	1878.54666	13302-02201	626	P36
4	1878.57650	1878.57669	12202-01101	626	P55
5	1878.64825	1878.64575	20003-01101	626	P3
6	1878.73572	1878.73555	12202-01101	626	P52
7	1878.75835	1878.75899	11102-00001	626	P72
8	1879.01783		H2O		
9	1879.12870	1879.12887	21103-10002	626	P22
10	1879.22430	1879.22409	11102-00001	628	P31
11	1879.26330	1879.26038	13302-02201	626	P35
12	1879.29709		H2O		
13	1879.59831		H2O		
14	1879.70468	1879.70490	11102-00001	636	P22
15	1879.78456		H2O		
16	1879.85978	1879.85997	12202-01101	626	P53
17	1879.94020	1879.94041	11102-00001	628	P30
18	1879.97648	1879.97649	13302-02201	626	P34

FRAME A25

9.857 Torr 384 meters

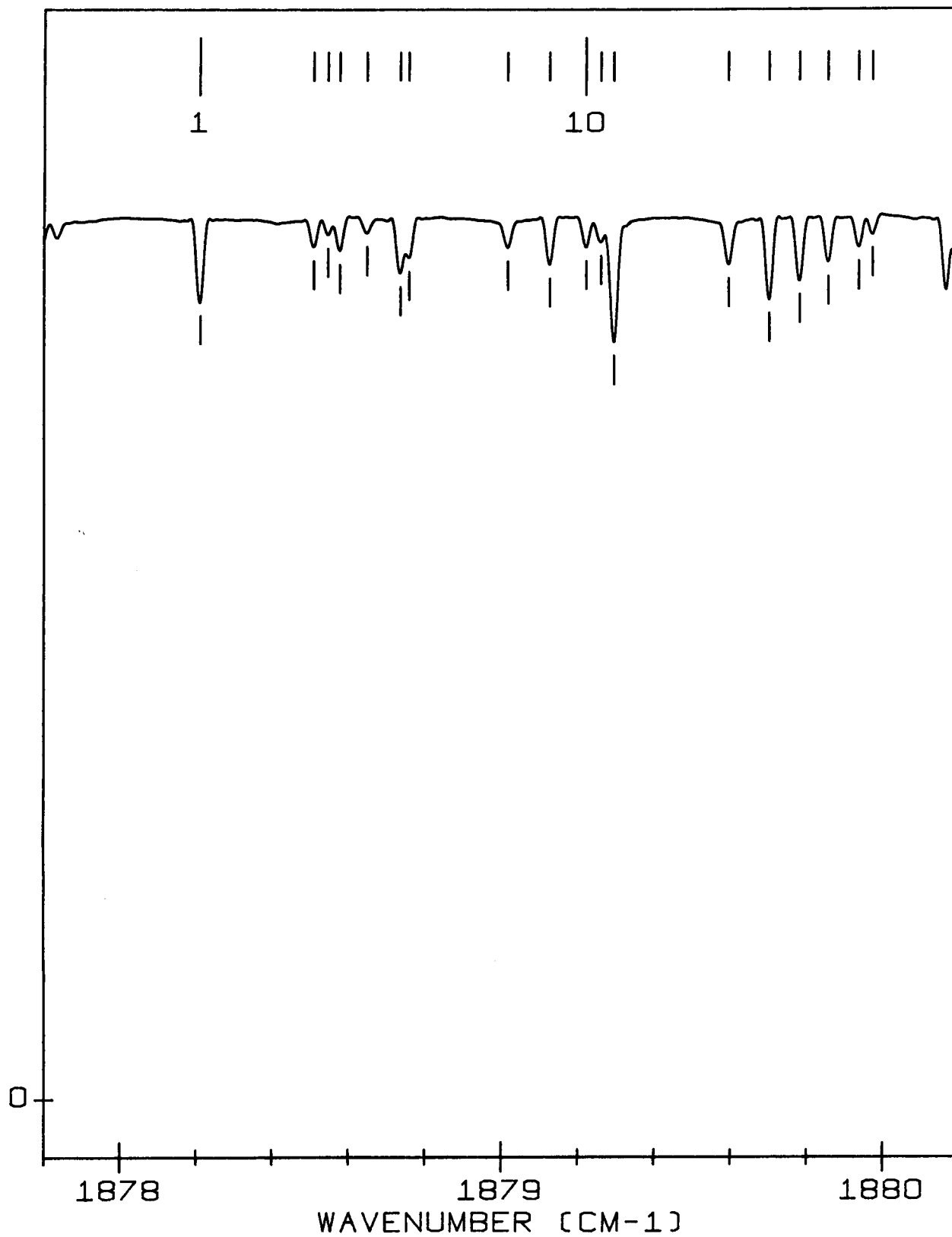


TABLE A 26

-1

Line Positions and Identifications (1880-1882 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1880.16982	1880.17023	12202-01101 626 P50
2	1880.19894	1880.19846	11102-00001 626 P70
		1880.20547	20003-01101 626 P1
3	1880.24744	1880.25063	20003-01101 626 Q52
4	1880.30330	1880.30392	21103-02201 626 R41
5	1880.32937	1880.32854	20003-01101 626 Q50
6	1880.40085	1880.39995	20003-01101 626 Q48
7	1880.46733	1880.46527	20003-01101 626 Q46
8	1880.52499	1880.52491	20003-01101 626 Q44
9	1880.57915	1880.57923	20003-01101 626 Q42
10	1880.64970	1880.64529	21103-10002 626 P20
		1880.65734	11102-00001 628 P29
		1880.62861	20003-01101 626 Q40
11	1880.69570	1880.69401	13302-02201 626 P33
		1880.71390	20003-01101 626 Q36
		1880.67339	20003-01101 626 Q38
12	1880.75049	1880.75045	20003-01101 626 Q34
13	1880.78321	1880.78333	20003-01101 626 Q32
14	1880.81281	1880.81283	20003-01101 626 Q30
15	1880.83919	1880.83920	20003-01101 626 Q28
16	1880.86748	1880.86270	20003-01101 626 Q26
17	1880.97250	1880.88356	20003-01101 626 Q24
		1880.90197	20003-01101 626 Q22
		1880.91815	20003-01101 626 Q20
		1880.93227	20003-01101 626 Q18
		1880.94449	20003-01101 626 Q16
		1880.95496	20003-01101 626 Q14
		1880.96381	20003-01101 626 Q12
		1880.97114	20003-01101 626 Q10
		1880.97706	20003-01101 626 Q8
		1880.98165	20003-01101 626 Q6
		1880.98497	20003-01101 626 Q4
		1880.98705	20003-01101 626 Q2
18	1881.15318	1881.15313	12202-01101 626 P51
19	1881.20601	1881.20600	11102-00001 636 P20
20	1881.37470	1881.37490	11102-00001 628 P28
21	1881.41339	1881.41405	13302-02201 626 P32
22	1881.60883	1881.60911	12202-01101 626 P48
23	1881.63967	1881.63958	11102-00001 626 P68

FRAME A26

9.857 Torr 384 meters

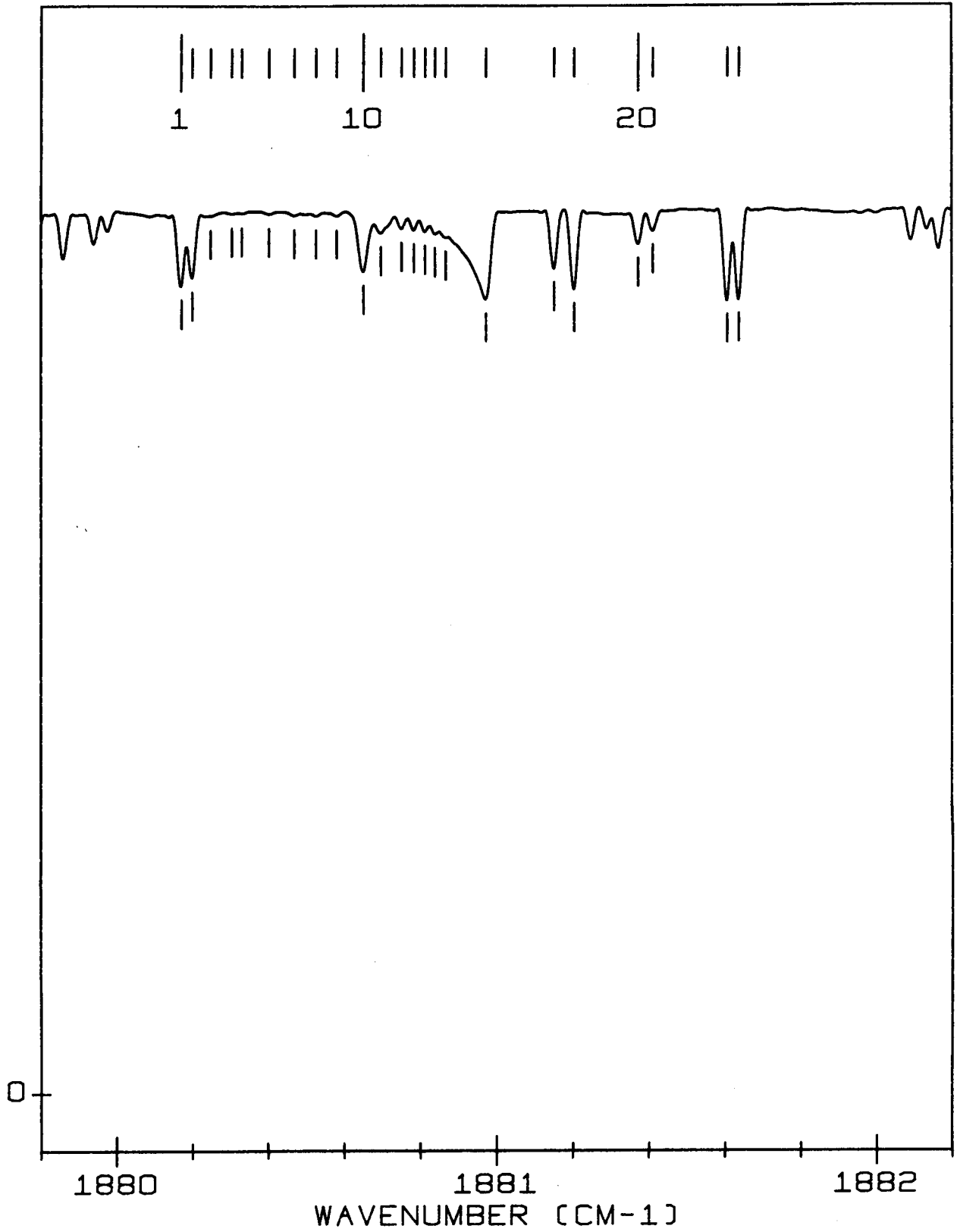




TABLE A 27

-1

Line Positions and Identifications (1882-1884 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1882.09320	1882.09310	11102-00001 628	P27
2	1882.13495	1882.13541	13302-02201 626	P31
3	1882.16613	1882.16621	21103-10002 626	P18
4	1882.45633	1882.45628	12202-01101 626	P49
5	1882.71307	1882.71287	11102-00001 636	P18
6	1882.81174	1882.81194	11102-00001 628	P26
7	1882.85950	1882.85939	13302-02201 626	P30
8	1883.05204	1883.05233	12202-01101 626	P46
9	1883.08246	1883.08251	11102-00001 626	P66
10	1883.53147	1883.53142	11102-00001 628	P25
11	1883.58496	1883.58464	13302-02201 626	P29
12	1883.69141	1883.69164	21103-10002 626	P16
13	1883.76951	1883.76951	12202-01101 626	P47

FRAME A27

9.857 Torr 384 meters

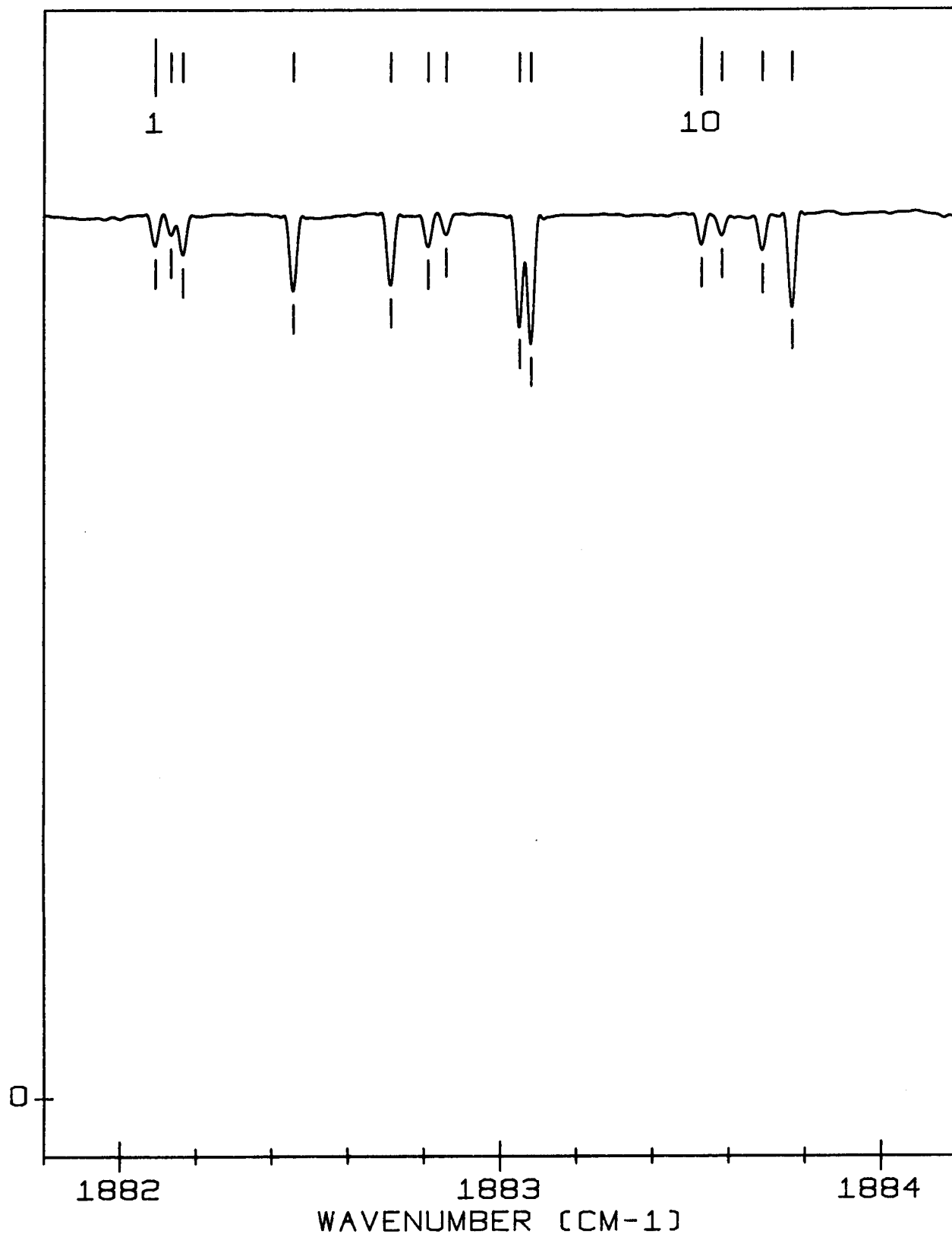


TABLE A 28

-1

Line Positions and Identifications (1884-1886 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1884.22569	1884.22554	11102-00001 636 P16
2	1884.25308	1884.25154	11102-00001 628 P24
3	1884.31301	1884.31255	13302-02201 626 P28
4	1884.39300		H2O
5	1884.50012	1884.50000	12202-01101 626 P44
6	1884.52786	1884.52740	11102-00001 626 P64
7	1884.56506		H2O
8	1884.97205	1884.97233	11102-00001 628 P23
9	1885.02181		H2O
10	1885.04112	1885.04172	13302-02201 626 P27
11	1885.09291	1885.09292	12202-01101 626 P45
12	1885.22197	1885.22156	21103-10002 626 P14
13	1885.30126		H2O
14	1885.61294	1885.61209	11102-00001 627 P42
15	1885.69372	1885.69377	11102-00001 628 P22
		1885.69399	20003-01101 626 R5
16	1885.74334	1885.74405	11102-00001 636 P14
17	1885.77045		H2O
		1885.77357	13302-02201 626 P26
18	1885.97374	1885.97439	11102-00001 626 P62
		1885.95225	12202-01101 626 P42

FRAME A28

9.857 Torr 384 meters

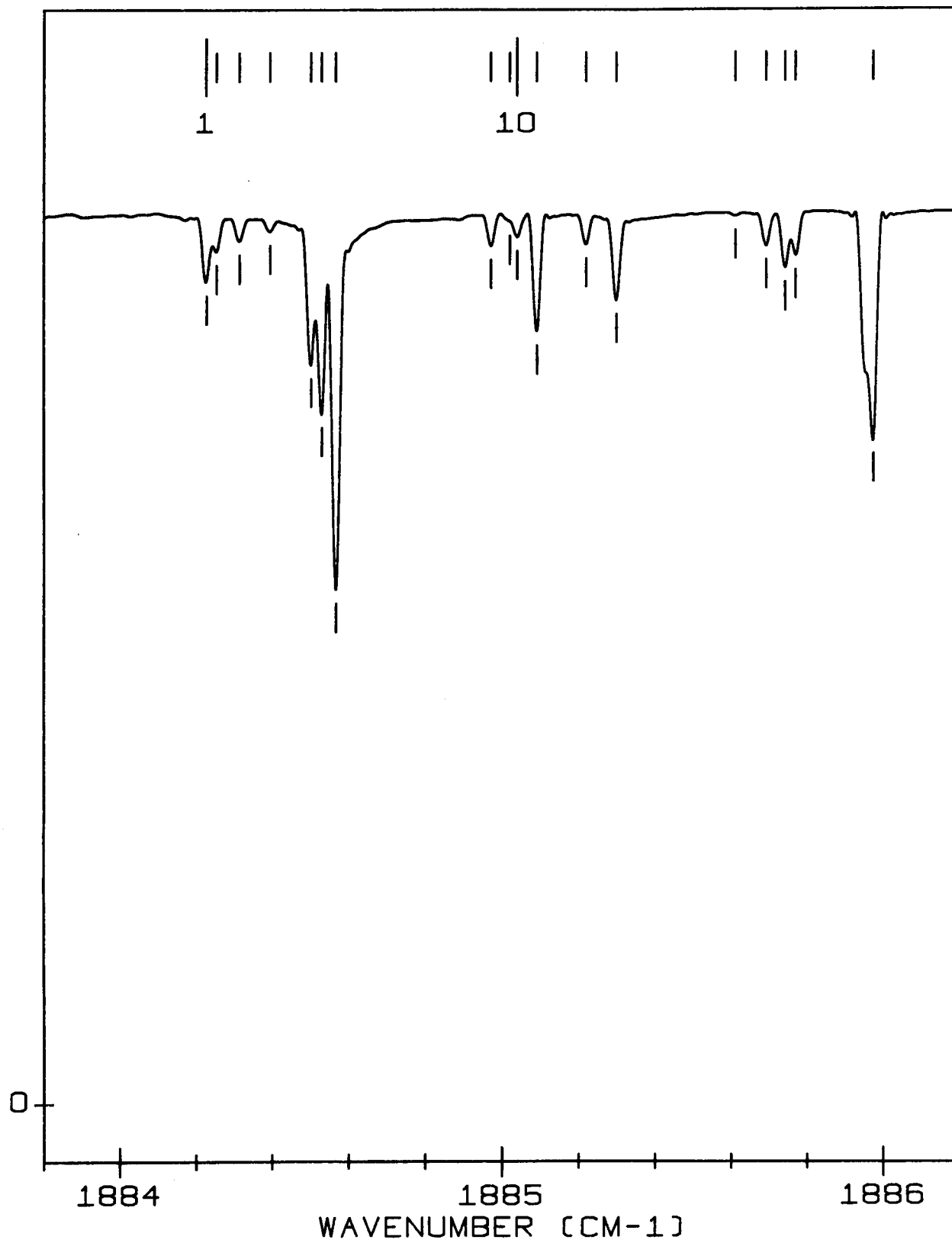


TABLE A 29

-1

Line Positions and Identifications (1886-1888 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1886.33476	1886.33552	11102-00001 627 P41
2	1886.42506	1886.42658	12202-01101 626 P43
		1886.41587	11102-00001 628 P21
3	1886.50723	1886.50670	13302-02201 626 P25
4	1886.75584	1886.75597	21103-10002 626 P12
5	1887.06180	1887.05989	11102-00001 627 P40
6	1887.13884	1887.13864	11102-00001 628 P20
7	1887.24072	1887.24249	13302-02201 626 P24
		1887.26807	11102-00001 636 P12
8	1887.26807	1887.26839	11102-00001 636 P12
		1887.27035	20003-01101 626 R7
9	1887.42080	1887.42362	11102-00001 626 P60
		1887.40918	12202-01101 626 P40
10	1887.77056	1887.77056	12202-01101 626 P41
		1887.78514	11102-00001 627 P39
11	1887.86171	1887.86208	11102-00001 628 P19
12	1887.98011	1887.97960	13302-02201 626 P23

FRAME A29

9.857 Torr 384 meters

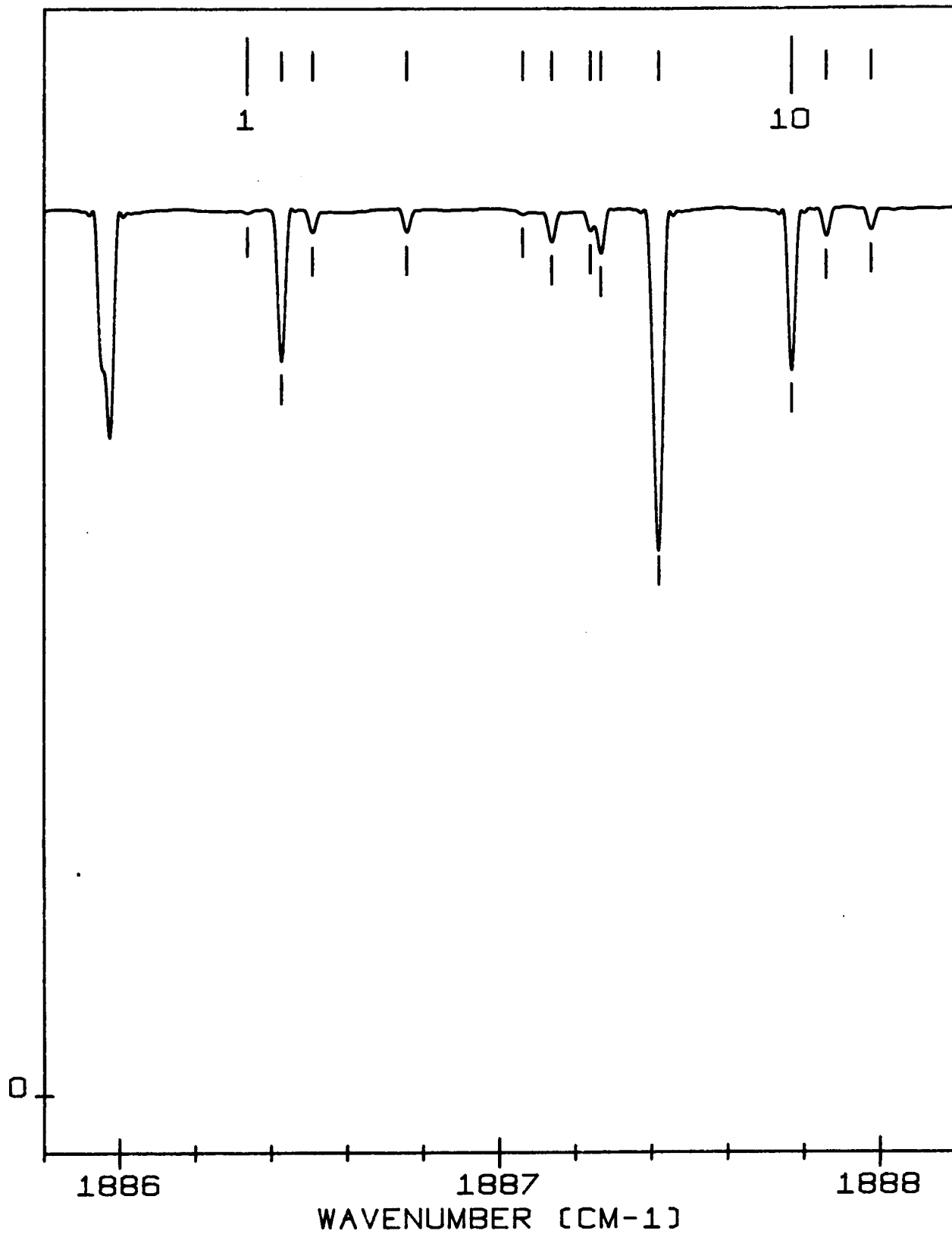


TABLE A 30

-1

Line Positions and Identifications (1888-1890 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1888.29455	1888.29484	21103-10002 626 P10
2	1888.47490		?
3	1888.51306	1888.51124	11102-00001 627 P38
4	1888.58633	1888.58619	11102-00001 628 P18
5	1888.71913	1888.71932	13302-02201 626 P22
6	1888.79935	1888.79860	11102-00001 636 P10
			H2O
7	1888.87388	1888.87525	11102-00001 626 P58
		1888.87090	12202-01101 626 P38
		1888.85021	20003-01101 626 R9
8	1889.12500	1889.12491	12202-01101 626 P39
9	1889.24263	1889.23817	11102-00001 627 P37
10	1889.31233	1889.31097	11102-00001 628 P17
11	1889.56912		H2O
		1889.46046	13302-02201 626 P21
12	1889.83406	1889.83816	21103-10002 626 P8
13	1889.96573	1889.96588	11102-00001 627 P36

## FRAME A30

9.857 Torr 384 meters

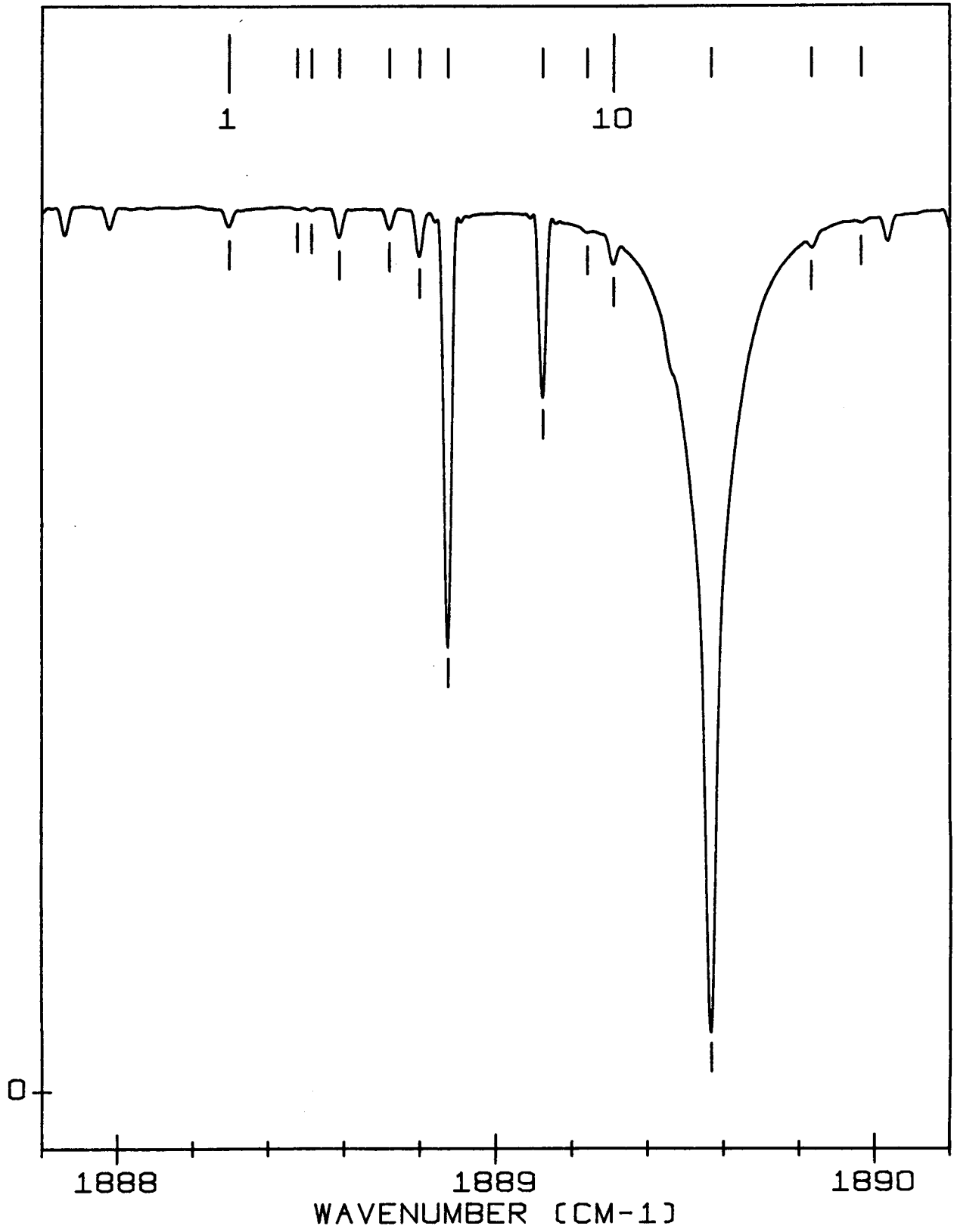




TABLE A 31

-1

Line Positions and Identifications (1890-1892 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1890.03603	1890.03644	11102-00001 628	P16
2	1890.20445	1890.20409	13302-02201 626	P20
			H2O	
3	1890.33192	1890.32940	11102-00001 626	P56
		1890.33749	12202-01101 626	P36
		1890.33467	11102-00001 636	P8
4	1890.43265	1890.43346	20003-01101 626	R11
5	1890.48965	1890.48970	12202-01101 626	P37
6	1890.69433	1890.69436	11102-00001 627	P35
7	1890.76266	1890.76258	11102-00001 628	P15
8	1890.94917	1890.94928	13302-02201 626	P19
9	1891.38537	1891.38592	21103-10002 626	P6
10	1891.42280	1891.42359	11102-00001 627	P34
11	1891.48990	1891.48941	11102-00001 628	P14
12	1891.55174		H2O	
13	1891.69712	1891.69683	13302-02201 626	P18
14	1891.78674	1891.78621	11102-00001 626	P54
		1891.80906	12202-01101 626	P34
15	1891.86521	1891.86495	12202-01101 626	P35
		1891.87661	11102-00001 636	P6

FRAME A31

9.857 Torr 384 meters

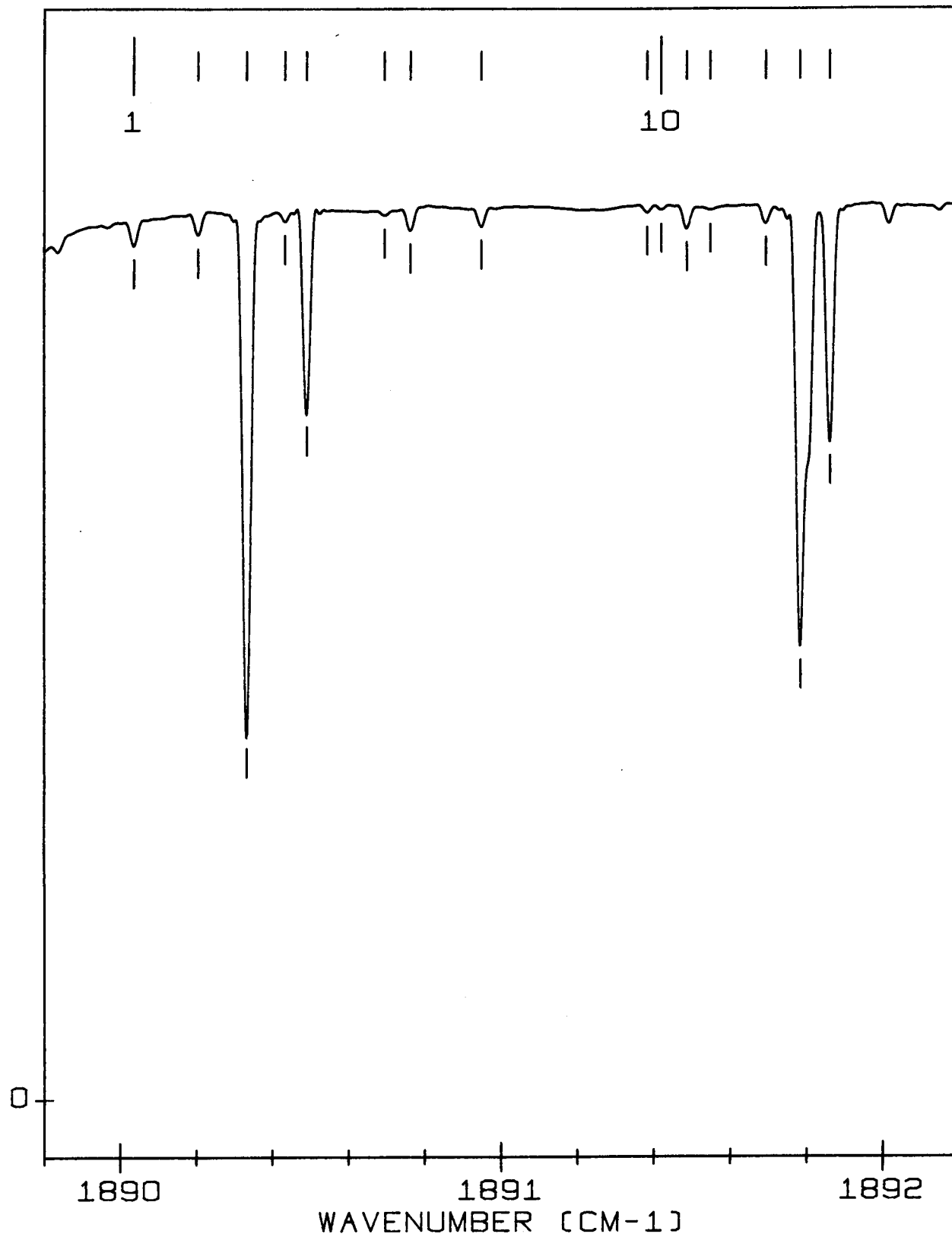


TABLE A 32

-1

Line Positions and Identifications (1892-1894 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1892.02031	1892.01998	20003-01101	626	R13
2	1892.15230	1892.15355	11102-00001	627	P33
3	1892.21710	1892.21691	11102-00001	628	P13
4	1892.44622	1892.44609	13302-02201	626	P17
5	1892.59748		H2O		
6	1892.88527	1892.88423	11102-00001	627	P32
7	1892.94428	1892.94511	11102-00001	628	P12
		1892.93809	21103-10002	626	P4
8	1893.19417	1893.19754	13302-02201	626	P16
			SIDELOBE		
9	1893.24695	1893.24581	11102-00001	626	P52
		1893.25072	12202-01101	626	P33
10	1893.28558	1893.28568	12202-01101	626	P32
11	1893.42404	1893.42441	11102-00001	636	P4
12	1893.61031	1893.60961	20003-01101	626	R15
		1893.61562	11102-00001	627	P31
13	1893.67530	1893.67398	11102-00001	628	P11
14	1893.71640		H2O		
15	1893.95077	1893.95090	13302-02201	626	P15

FRAME A32

9.857 Torr 384 meters

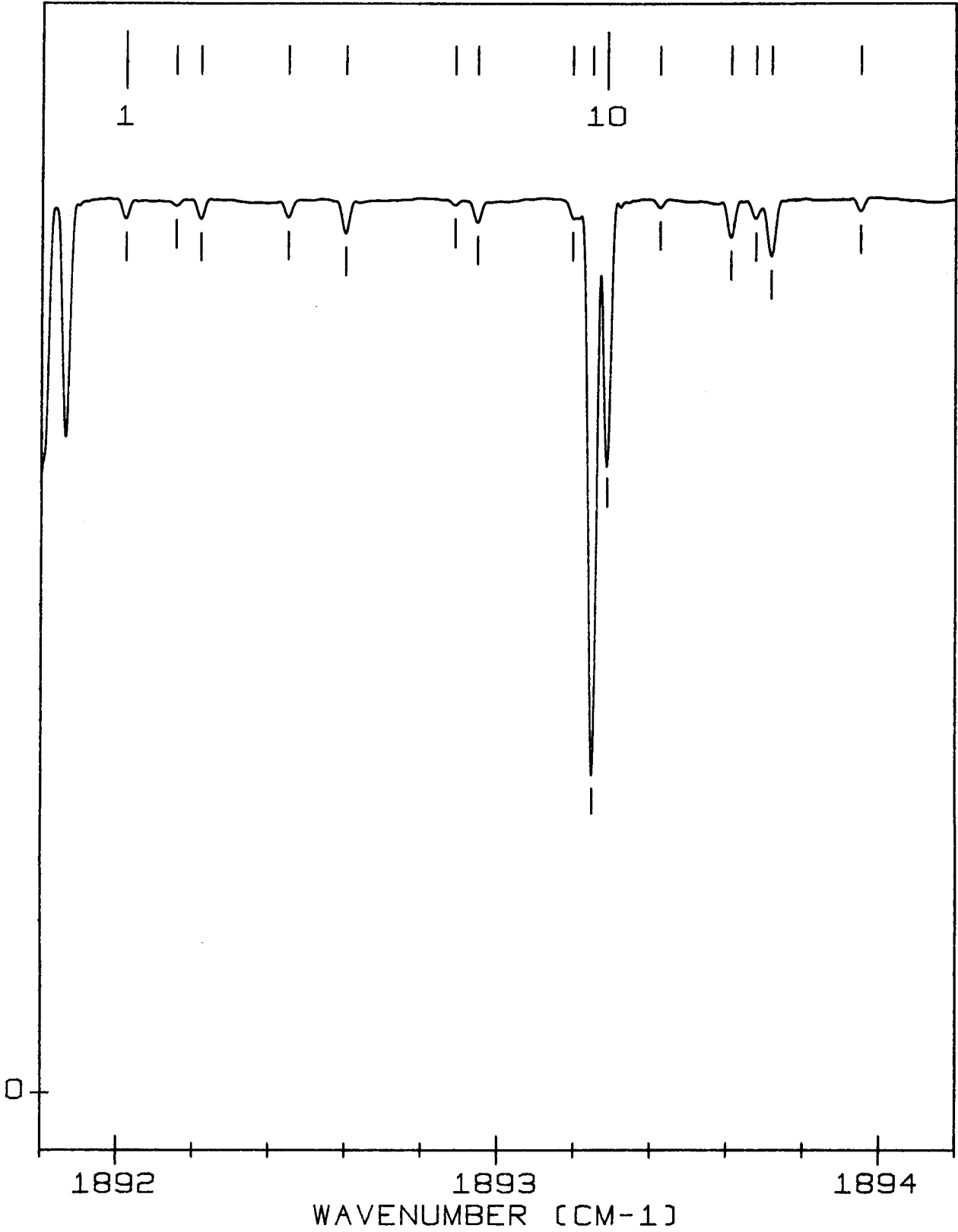


TABLE A 33

-1

Line Positions and Identifications (1894-1896 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1894.35129	1894.34773	11102-00001 627	P30
			H2O	
2	1894.40318	1894.40355	11102-00001 628	P10
3	1894.64771	1894.64702	12202-01101 626	P31
			H2O	
4	1894.68056		H2O	
5	1894.70807	1894.70831	11102-00001 626	P50
		1894.70624	13302-02201 626	P14
6	1894.76748	1894.76743	12202-01101 626	P30
7	1894.90734		H2O	
8	1895.19715		H2O	
		1895.20220	20003-01101 626	R17
		1895.13380	11102-00001 628	P9
		1895.08055	11102-00001 627	P29
9	1895.37420		H2O	
10	1895.46250	1895.46371	13302-02201 626	P13
11	1895.51364		H2O	
12	1895.73883		H2O	
13	1895.81301	1895.81410	11102-00001 627	P28
14	1895.86481	1895.86473	11102-00001 628	P8

## FRAME A33

9.857 Torr 384 meters

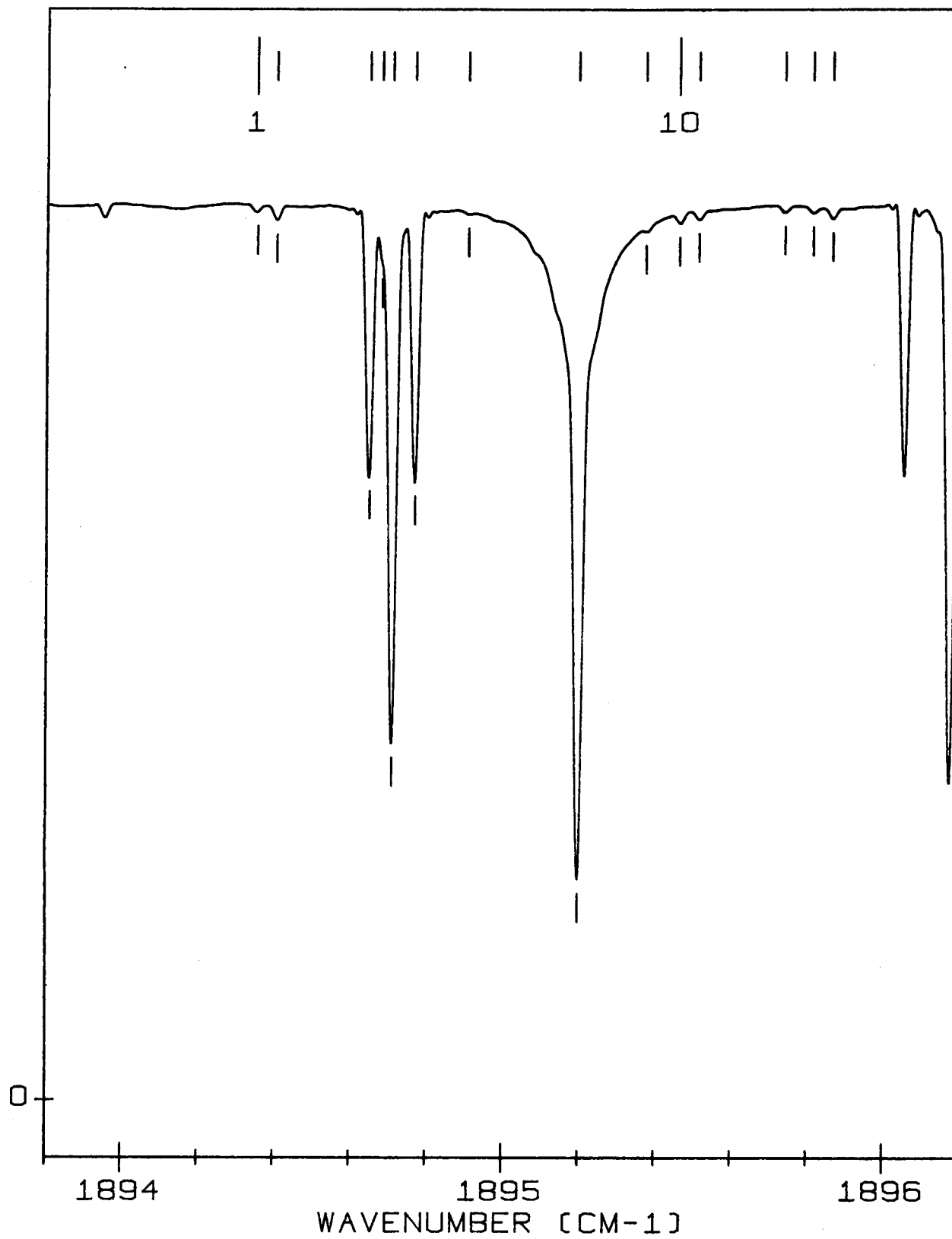


TABLE A 34

-1

Line Positions and Identifications (1896-1898 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1896.05392	1896.05388	12202-01101 626 P29
2	1896.17394	1896.17383	11102-00001 626 P48
		1896.19061	21103-10002 626 Q8
3	1896.25461	1896.25438	12202-01101 626 P28
		1896.22294	13302-02201 626 P12
		1896.26153	21103-10002 626 Q10
4	1896.34725	1896.34700	21103-10002 626 Q12
5	1896.44657	1896.44694	21103-10002 626 Q14
6	1896.56134	1896.56136	21103-10002 626 Q16
		1896.57316	11102-00001 636 Q4
		1896.54816	11102-00001 636 Q2
		1896.54838	11102-00001 627 P27
7	1896.60943	1896.61243	11102-00001 636 Q6
		1896.59635	11102-00001 628 P7
8	1896.66629	1896.66593	11102-00001 636 Q8
9	1896.69272	1896.69036	21103-10002 626 Q18
10	1896.73362	1896.73362	11102-00001 636 Q10
11	1896.80000	1896.79757	20003-01101 626 R19
		1896.81547	11102-00001 636 Q12
12	1896.91139	1896.91140	11102-00001 636 Q14
13	1896.99184	1896.98453	13302-02201 626 P11
		1896.99295	21103-10002 626 Q22
14	1897.02151	1897.02135	11102-00001 636 Q16
15	1897.14475	1897.14527	11102-00001 636 Q18
16	1897.16702	1897.16705	21103-10002 626 Q24
17	1897.28331	1897.28308	11102-00001 636 Q20
		1897.28340	11102-00001 627 P26
18	1897.32640	1897.32866	11102-00001 628 P6
19	1897.37039		H2O
		1897.35653	21103-10002 626 Q26
20	1897.43489	1897.43469	11102-00001 636 Q22
21	1897.47134	1897.47131	12202-01101 626 P27
22	1897.52040		H2O
23	1897.56136	1897.56117	21103-10002 626 Q28
24	1897.60489	1897.60004	11102-00001 636 Q24
			SIDELOBE
25	1897.64251	1897.64250	11102-00001 626 P46
26	1897.74678	1897.74660	12202-01101 626 P26
		1897.74763	13302-02201 626 P10
27	1897.77918	1897.77902	11102-00001 636 Q26
		1897.78017	21103-10002 626 Q30
			SIDELOBE
28	1897.85211		H2O
29	1897.97172	1897.97155	11102-00001 636 Q28

FRAME A34

9.857 Torr 384 meters

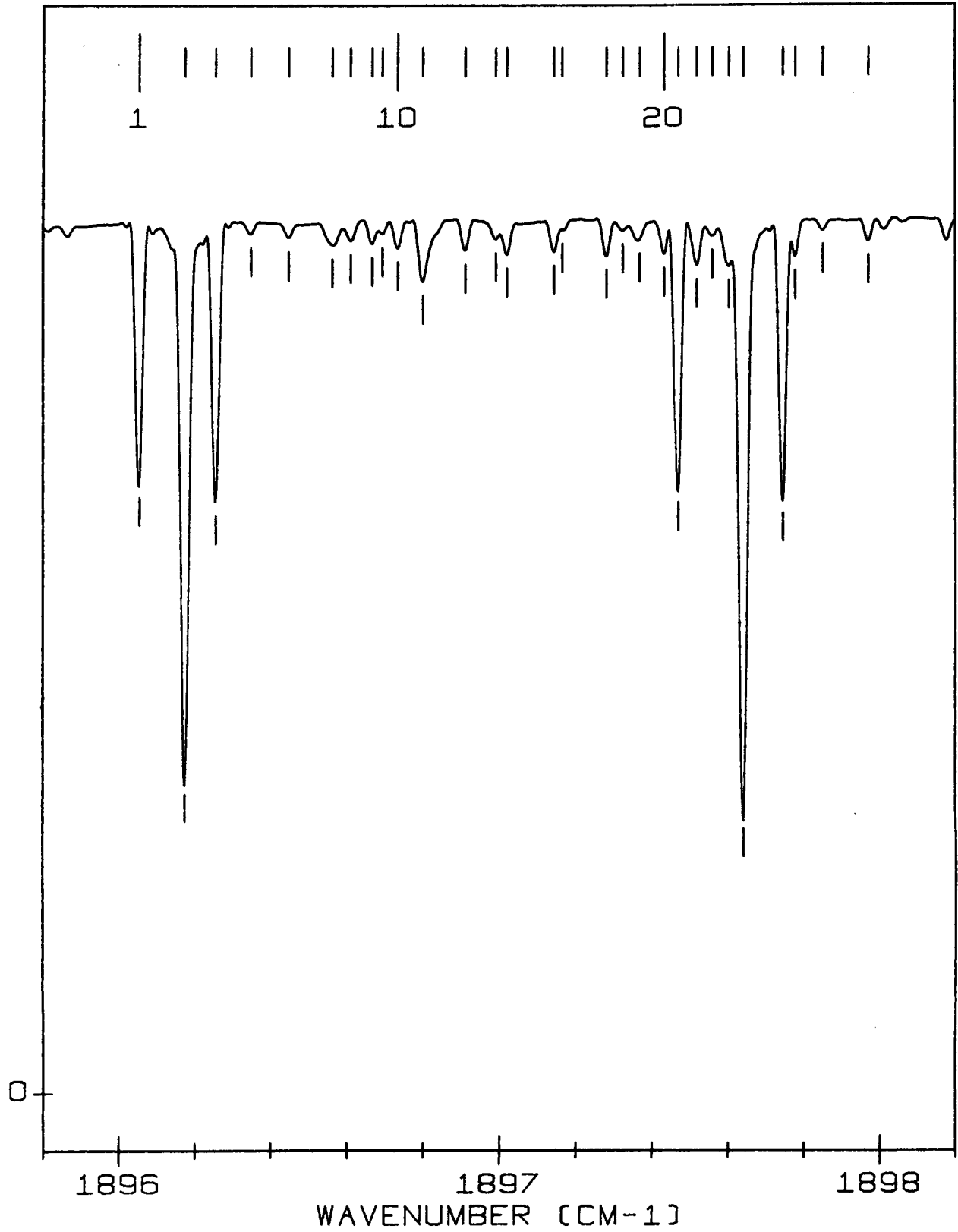




TABLE A 35

-1

Line Positions and Identifications (1898-1900 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1898.01311	1898.01175	21103-10002 626 Q32
		1898.01920	11102-00001 627 P25
2	1898.06223	1898.06165	11102-00001 628 P5
3	1898.17757	1898.17751	11102-00001 636 Q30
4	1898.25274	1898.25274	21103-10002 626 Q34
5	1898.39593	1898.39552	20003-01101 626 R21
		1898.39676	11102-00001 636 Q32
6	1898.51208	1898.51336	13302-02201 626 P9
		1898.49794	21103-10002 626 Q36
7	1898.62891	1898.62915	11102-00001 636 Q34
8	1898.66354		H2O
9	1898.75669	1898.75578	11102-00001 627 P24
10	1898.79070	1898.79532	11102-00001 628 P4
11	1898.86962	1898.87447	11102-00001 636 Q36
			SIDELOBE
12	1898.89914	1898.89933	12202-01101 626 P25
		1898.88764	11102-00001 636 R2
13	1899.11444	1899.11441	11102-00001 626 P44
		1899.13246	11102-00001 636 Q38
14	1899.24424	1899.24414	12202-01101 626 P24
15	1899.40287	1899.40281	11102-00001 636 Q40
16	1899.49240	1899.49319	11102-00001 627 P23
17	1899.68444	1899.68509	11102-00001 636 Q42
18	1899.99560	1899.99585	20003-01101 626 R23

FRAME A35

9.857 Torr 384 meters

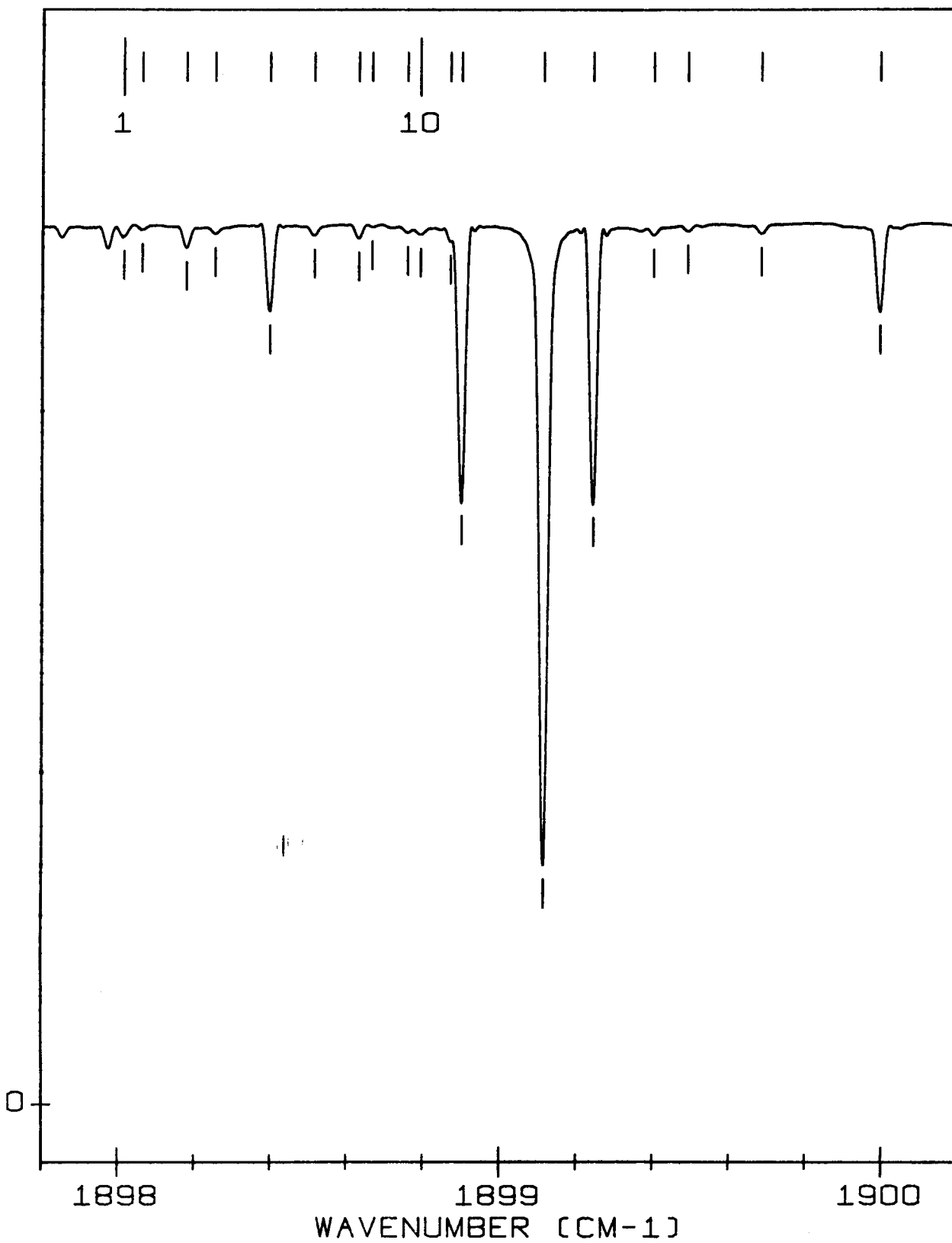


TABLE A 36

-1

Line Positions and Identifications (1900-1902 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1900.04848	1900.05019	13302-02201 626 SIDELOBE	P7
2	1900.23201	1900.23145	11102-00001 627	P22
3	1900.33785	1900.33796	12202-01101 626	P23
4	1900.46353	1900.46158	11102-00001 636	R4
5	1900.58969	1900.58968	11102-00001 626	P42
6	1900.74713	1900.74706	12202-01101 626	P22
7	1900.97024	1900.97060	11102-00001 627	P21
8	1901.59826	1901.59831	20003-01101 626	R25
9	1901.71213	1901.71068	11102-00001 627	P20
10	1901.75942		H2O	
11	1901.78696	1901.78718	12202-01101 626	P21
12	1901.88471	1901.88612	11102-00001 628	Q11
13	1901.91267	1901.91294	11102-00001 628	Q12
14	1901.94223	1901.94198	11102-00001 628	Q13
15	1901.97355	1901.97326	11102-00001 628	Q14

FRAME A36

9.857 Torr 384 meters

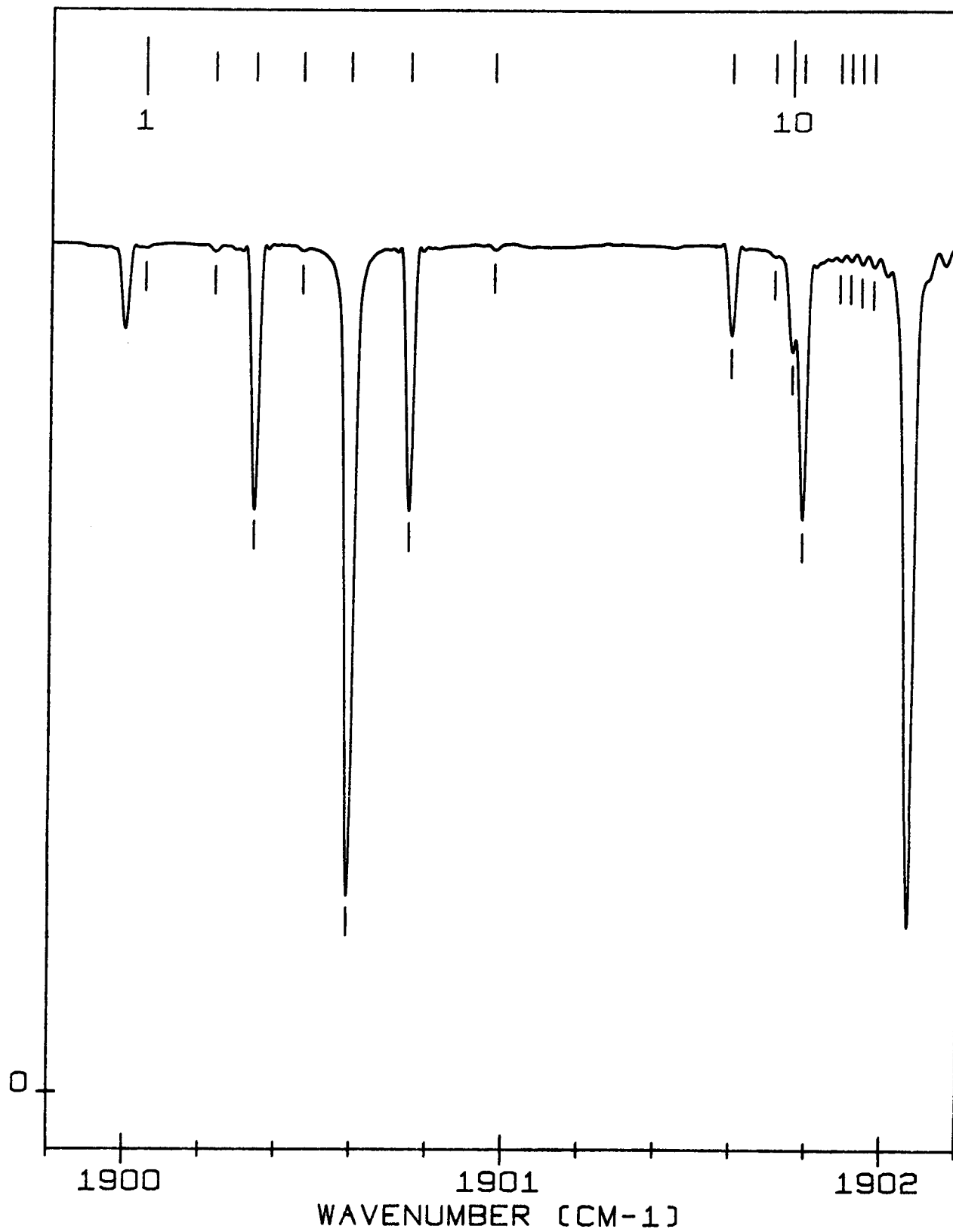


TABLE A 37

-1

Line Positions and Identifications (1902-1904 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1902.00926	1902.00676	11102-00001 628	Q15
2	1902.06843	1902.06839	11102-00001 626	P40
		1902.08041	11102-00001 628	Q17
		1902.04247	11102-00001 628	Q16
		1902.04124	11102-00001 636	R6
3	1902.12274	1902.12055	11102-00001 628	Q18
			SIDELOBE	
4	1902.16255	1902.16289	11102-00001 628	Q19
5	1902.20887	1902.20743	11102-00001 628	Q20
6	1902.25556	1902.25541	12202-01101 626	P20
		1902.25416	11102-00001 628	Q21
7	1902.30430	1902.30307	11102-00001 628	Q22
8	1902.35408	1902.35414	11102-00001 628	Q23
9	1902.40724	1902.40736	11102-00001 628	Q24
10	1902.46148	1902.46273	11102-00001 628	Q25
		1902.45175	11102-00001 627	P19
11	1902.52089	1902.52023	11102-00001 628	Q26
12	1902.57931	1902.57983	11102-00001 628	Q27
13	1902.60683		H2O	
14	1902.64142	1902.64154	11102-00001 628	Q28
15	1902.70505	1902.70532	11102-00001 628	Q29
16	1902.77129	1902.77117	11102-00001 628	Q30
17	1902.83883	1902.83905	11102-00001 628	Q31
18	1902.90890	1902.90897	11102-00001 628	Q32
19	1902.98022	1902.98089	11102-00001 628	Q33
20	1903.05513	1903.05480	11102-00001 628	Q34
21	1903.13149	1903.13068	11102-00001 628	Q35
22	1903.20290	1903.20268	20003-01101 626	R27
		1903.20852	11102-00001 628	Q36
		1903.19384	11102-00001 627	P18
23	1903.24695	1903.24700	12202-01101 626	P19
24	1903.37098	1903.37001	11102-00001 628	Q38
25	1903.45616	1903.45364	11102-00001 628	Q39
26	1903.55061	1903.55065	11102-00001 626	P38
27	1903.62184	1903.62662	11102-00001 628	Q41
28	1903.71537	1903.71598	11102-00001 628	Q42
29	1903.76921	1903.76921	12202-01101 626	P18
30	1903.80349	1903.80725	11102-00001 628	Q43
			SIDELOBE	
31	1903.90066	1903.90046	11102-00001 628	Q44
32	1903.94135	1903.93701	11102-00001 627	P17
33	1903.99721	1903.99562	11102-00001 628	Q45

FRAME A37

9.857 Torr 384 meters

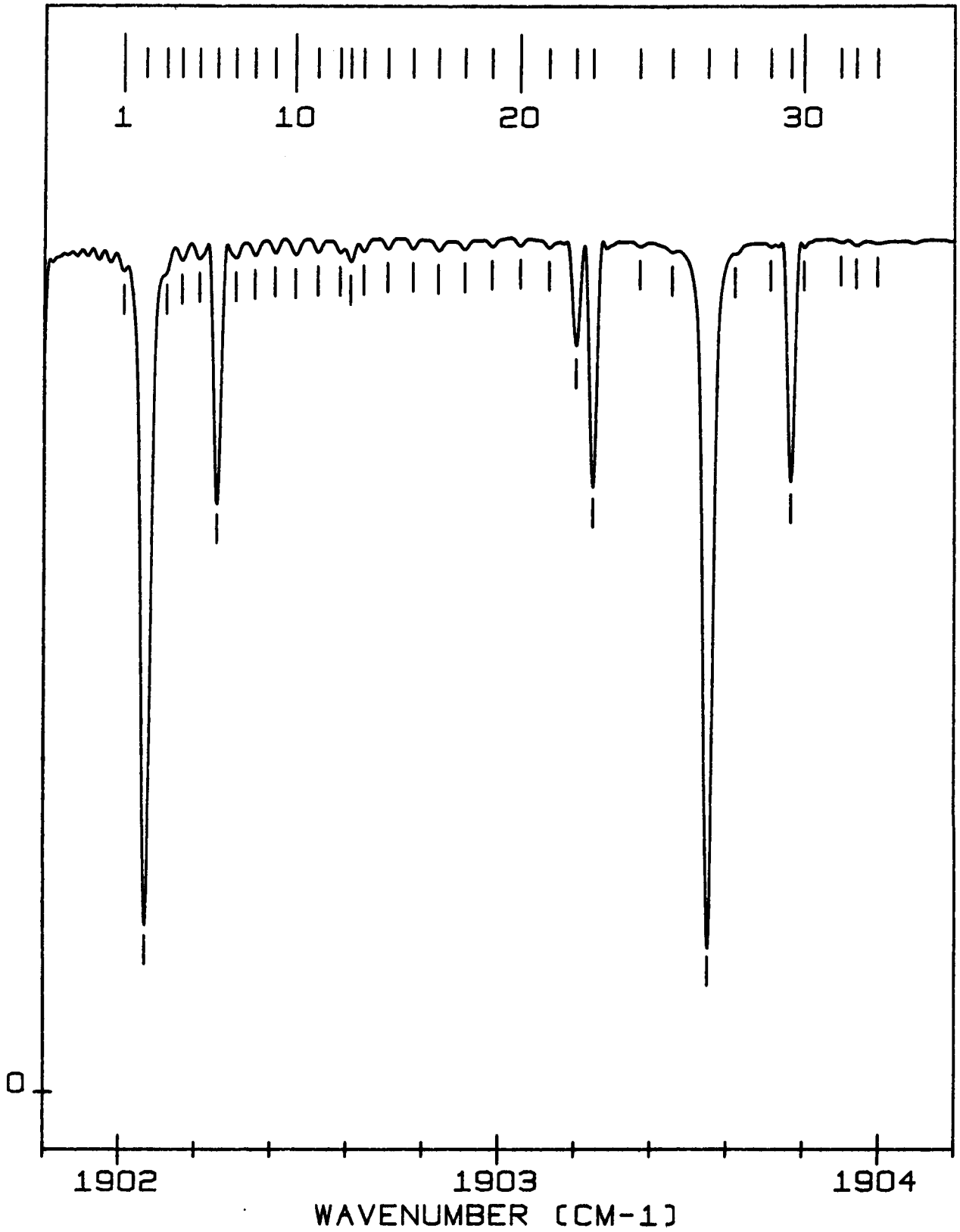


TABLE A 38

-1

Line Positions and Identifications (1904-1906 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1904.09258	1904.09277	11102-00001 628	Q46
2	1904.19289	1904.19195	11102-00001 628	Q47
3	1904.35503		H2O	
4	1904.68323	1904.68133	11102-00001 627	P16
			SIDELOBE	
5	1904.71739	1904.71742	12202-01101 626	P17
6	1904.80867	1904.80869	20003-01101 626	R29
7	1905.03651	1905.03654	11102-00001 626	P36
8	1905.28842	1905.28850	12202-01101 626	P16
9	1905.42596	1905.42685	11102-00001 627	P15
10	1905.61958	1905.62252	13302-02201 626	Q11
11	1905.64460	1905.64663	13302-02201 626	Q12
12	1905.67106	1905.67151	13302-02201 626	Q13
13	1905.69933	1905.69929	13302-02201 626	Q14
14	1905.72862	1905.72837	13302-02201 626	Q15
15	1905.75981	1905.75992	13302-02201 626	Q16
16	1905.79326	1905.79307	13302-02201 626	Q17
17	1905.82874	1905.82853	13302-02201 626	Q18
18	1905.86532	1905.86559	13302-02201 626	Q19
19	1905.90440	1905.90511	13302-02201 626	Q20
20	1905.94491	1905.94591	13302-02201 626	Q21
21	1905.98993	1905.98959	13302-02201 626	Q22

FRAME A38

9.857 Torr 384 meters

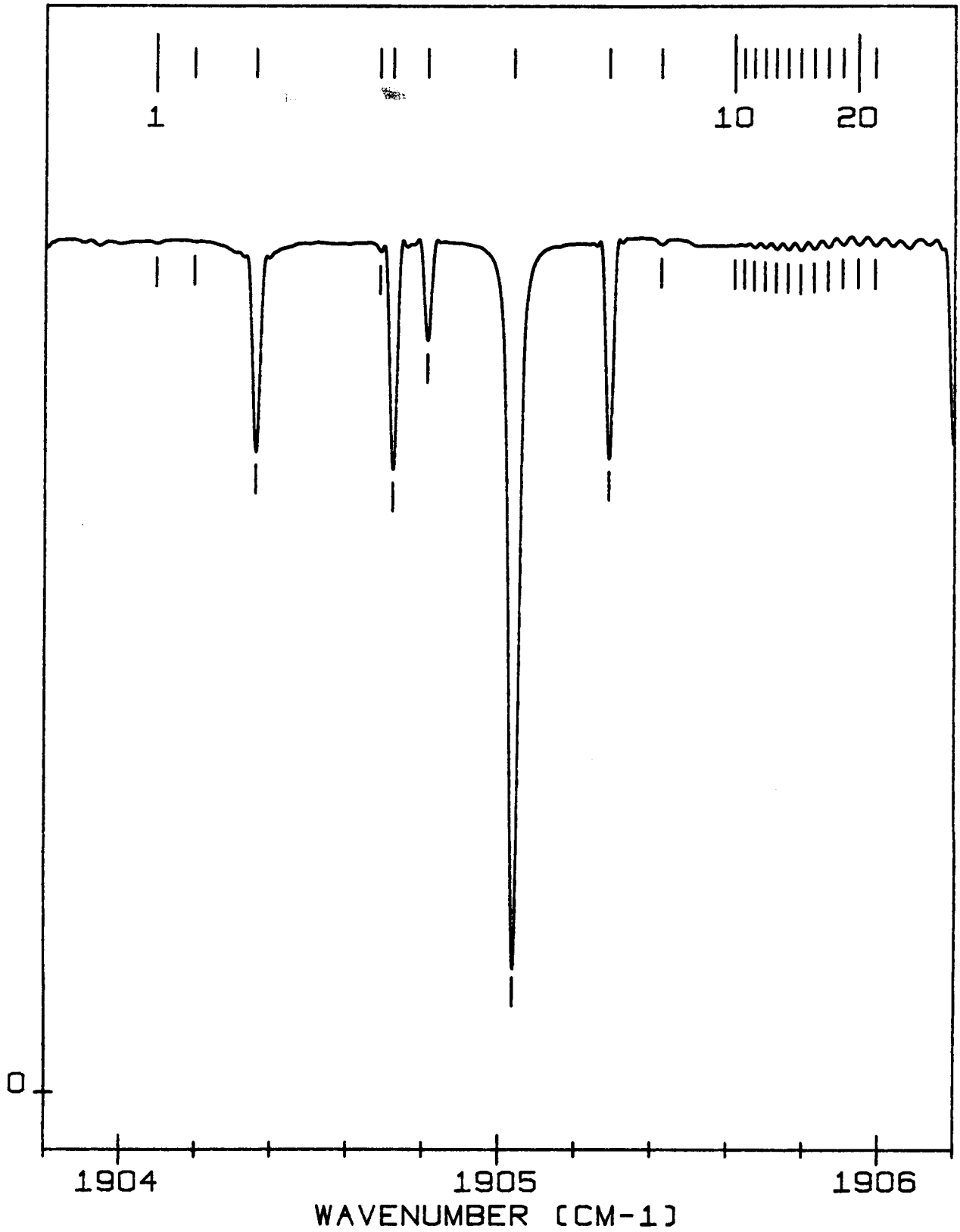




TABLE A 39

-1

Line Positions and Identifications (1906-1908 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1906.03500	1906.03397	13302-02201 626 Q23
2	1906.07445	1906.08187	13302-02201 626 Q24
			H2O?
3	1906.13084	1906.12970	13302-02201 626 Q25
4	1906.19836	1906.19843	12202-01101 626 P15
		1906.18182	13302-02201 626 Q26
		1906.23302	13302-02201 626 Q27
		1906.17364	11102-00001 627 P14
5	1906.28967	1906.28926	13302-02201 626 Q28
6	1906.34449	1906.34383	13302-02201 626 Q29
7	1906.41577	1906.41606	20003-01101 626 R31
		1906.40402	13302-02201 626 Q30
		1906.46204	13302-02201 626 Q31
8	1906.52616	1906.52614	11102-00001 626 P34
		1906.52591	13302-02201 626 Q32
		1906.58755	13302-02201 626 Q33
9	1906.64961	1906.65477	13302-02201 626 Q34
10	1906.72018	1906.72026	13302-02201 626 Q35
11	1906.81320	1906.81332	12202-01101 626 P14
12	1906.86356	1906.86013	13302-02201 626 Q37
13	1906.91356	1906.92178	11102-00001 627 P13
		1906.93329	13302-02201 626 Q38
14	1907.00579	1907.00715	13302-02201 626 Q39
15	1907.08312	1907.08330	13302-02201 626 Q40
16	1907.16652	1907.16140	13302-02201 626 Q41
17	1907.24097	1907.24112	13302-02201 626 Q42
18	1907.32144	1907.32306	13302-02201 626 Q43
19	1907.40930	1907.40774	13302-02201 626 Q44
20	1907.49391	1907.49247	13302-02201 626 Q45
21	1907.53474		?
22	1907.58137	1907.58468	13302-02201 626 Q46
23	1907.68729	1907.69001	12202-01101 626 P13
			H2O
24	1907.71252		H2O
25	1907.95881		H2O

FRAME A39

9.857 Torr 384 meters

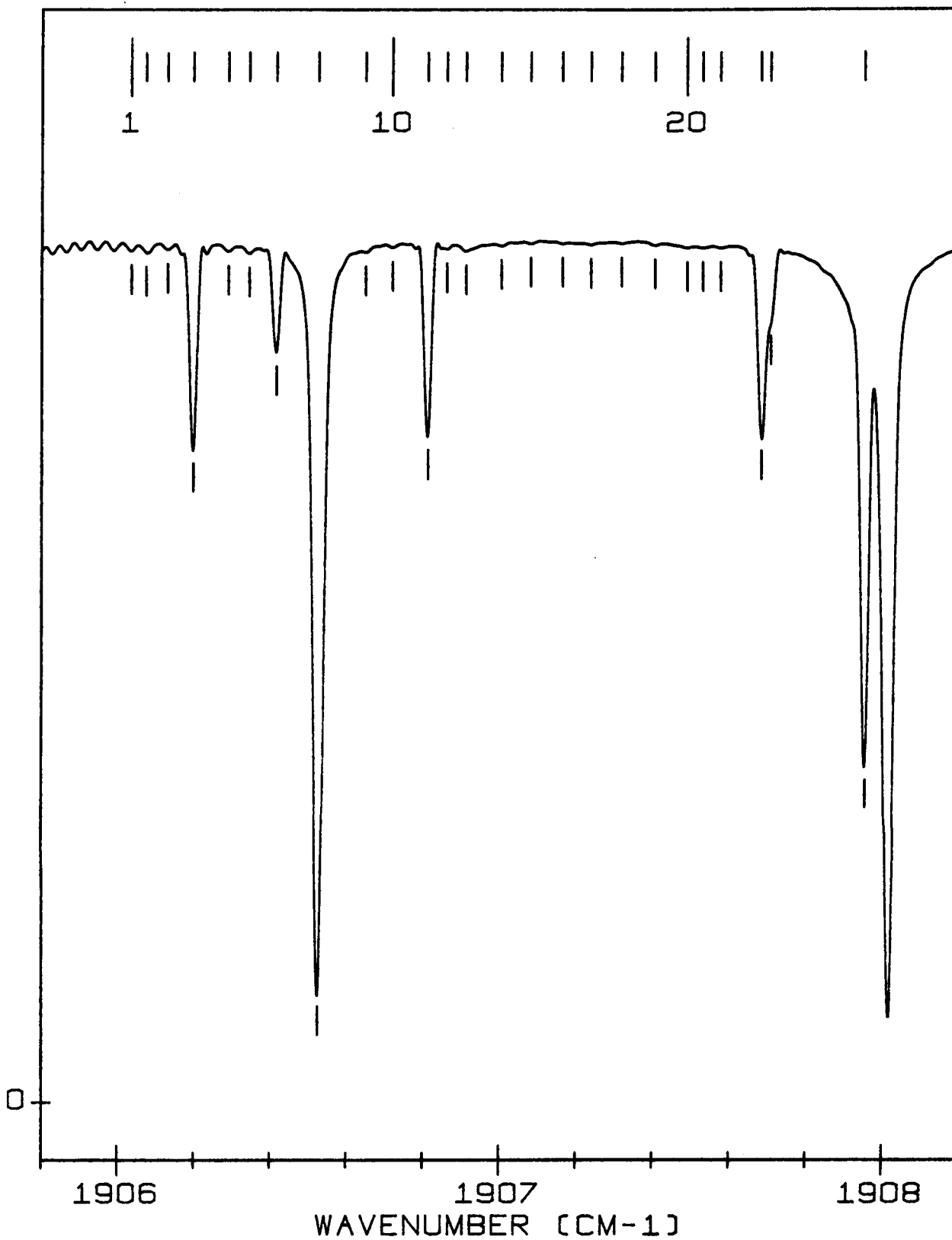


TABLE A 40

-1

Line Positions and Identifications (1908-1910 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1908.01944	1908.01953	11102-00001 626	P32
		1908.02451	20003-01101 626	R33
2	1908.12141		H2O?	
3	1908.34361	1908.34367	12202-01101 626	P12
4	1908.64445	1908.64508	13302-02201 626	R3
5	1909.19238	1909.19217	12202-01101 626	P11
6	1909.51680	1909.51678	11102-00001 626	P30
7	1909.63373	1909.63373	20003-01101 626	R35
8	1909.88064	1909.87957	12202-01101 626	P10
9	1909.96393		H2O	

FRAME A40

9.857 Torr 384 meters

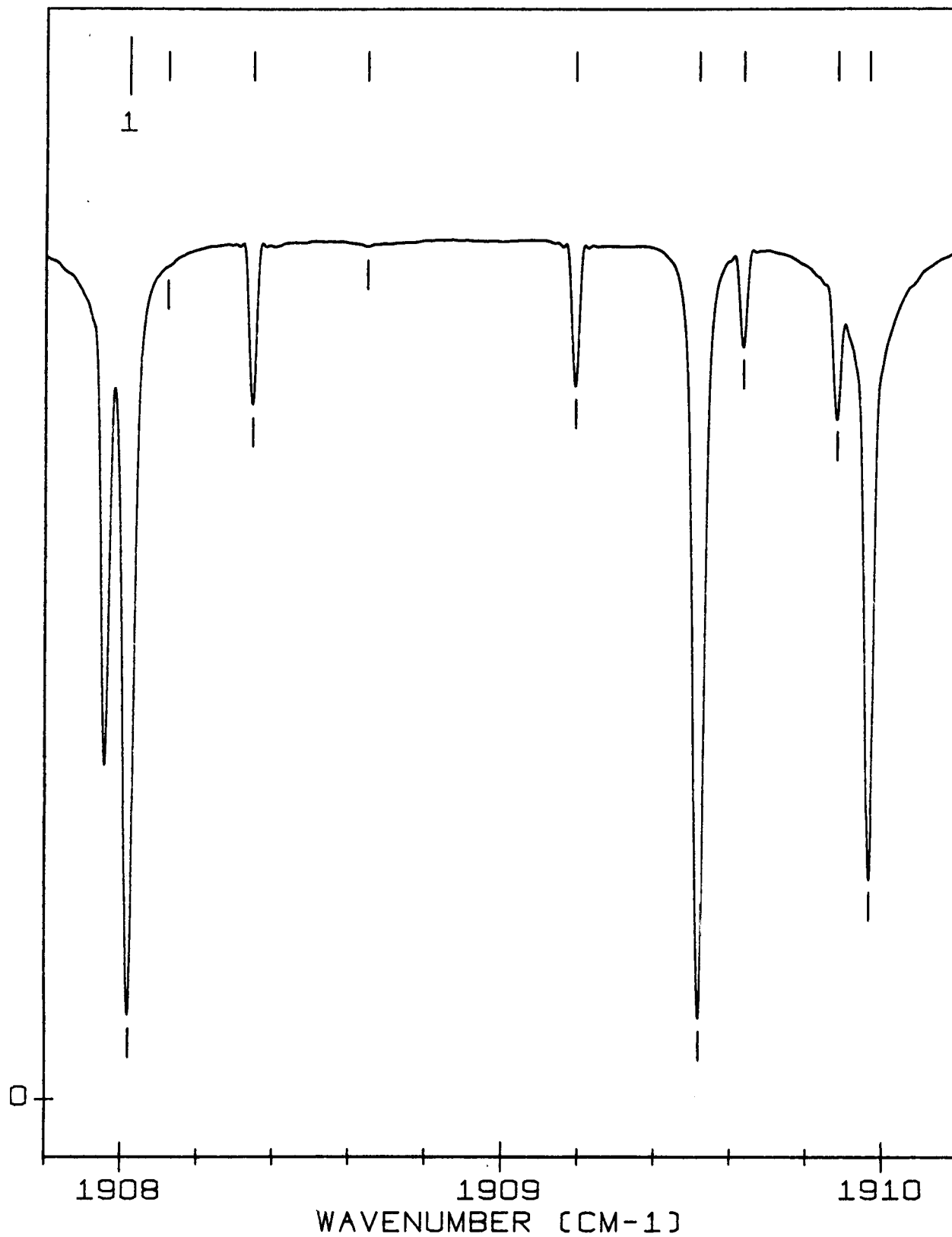


TABLE A 41

-1

Line Positions and Identifications (1910-1912 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1910.22755	1910.23346	13302-02201 626	R5
2	1910.70491	1910.70488	12202-01101 626	P9
3	1911.01798	1911.01796	11102-00001 626	P28
4	1911.24341	1911.24340	20003-01101 626	R37
5	1911.42076	1911.42104	12202-01101 626	P8
6	1911.63670	1911.63634	11102-00001 636	R18
7	1911.69478	1911.69572	21102-10001 626	P50
8	1911.86855		H2O	

FRAME A41

9.857 Torr 384 meters

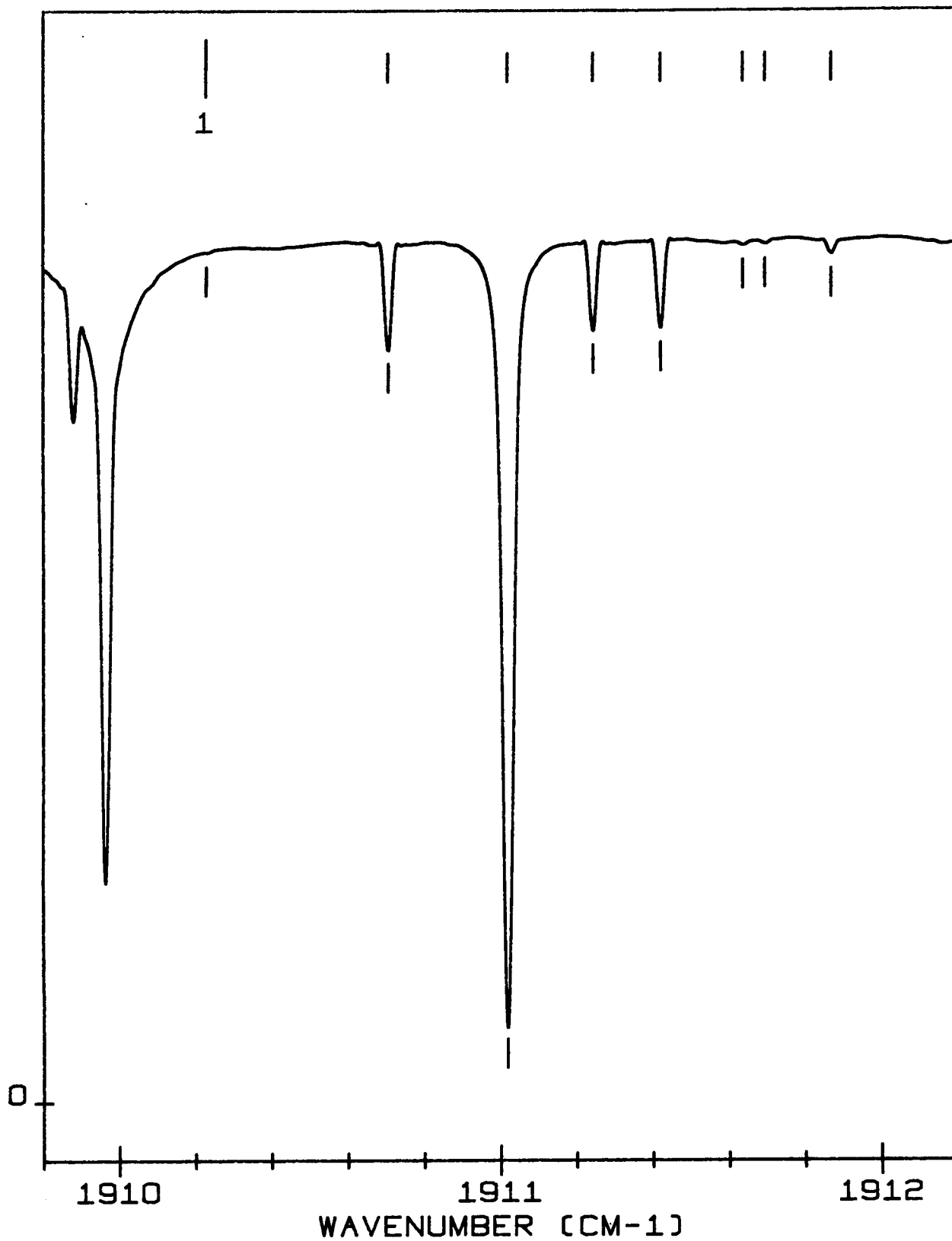


TABLE A 42

-1

Line Positions and Identifications (1912-1914 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1912.22803	1912.22812	12202-01101 626 P7
2	1912.52321	1912.52313	11102-00001 626 P26
			H2O
3	1912.69856	1912.69896	21103-10002 626 R20
4	1912.85312	1912.85319	20003-01101 626 R39
5	1912.96794	1912.96807	12202-01101 626 P6
6	1913.25590	1913.25443	11102-00001 636 R20
7	1913.30238	1913.30091	21102-10001 626 P48
8	1913.76188	1913.76189	12202-01101 626 P5
9	1913.93132		H2O

FRAME A42

9.857 Torr 384 meters

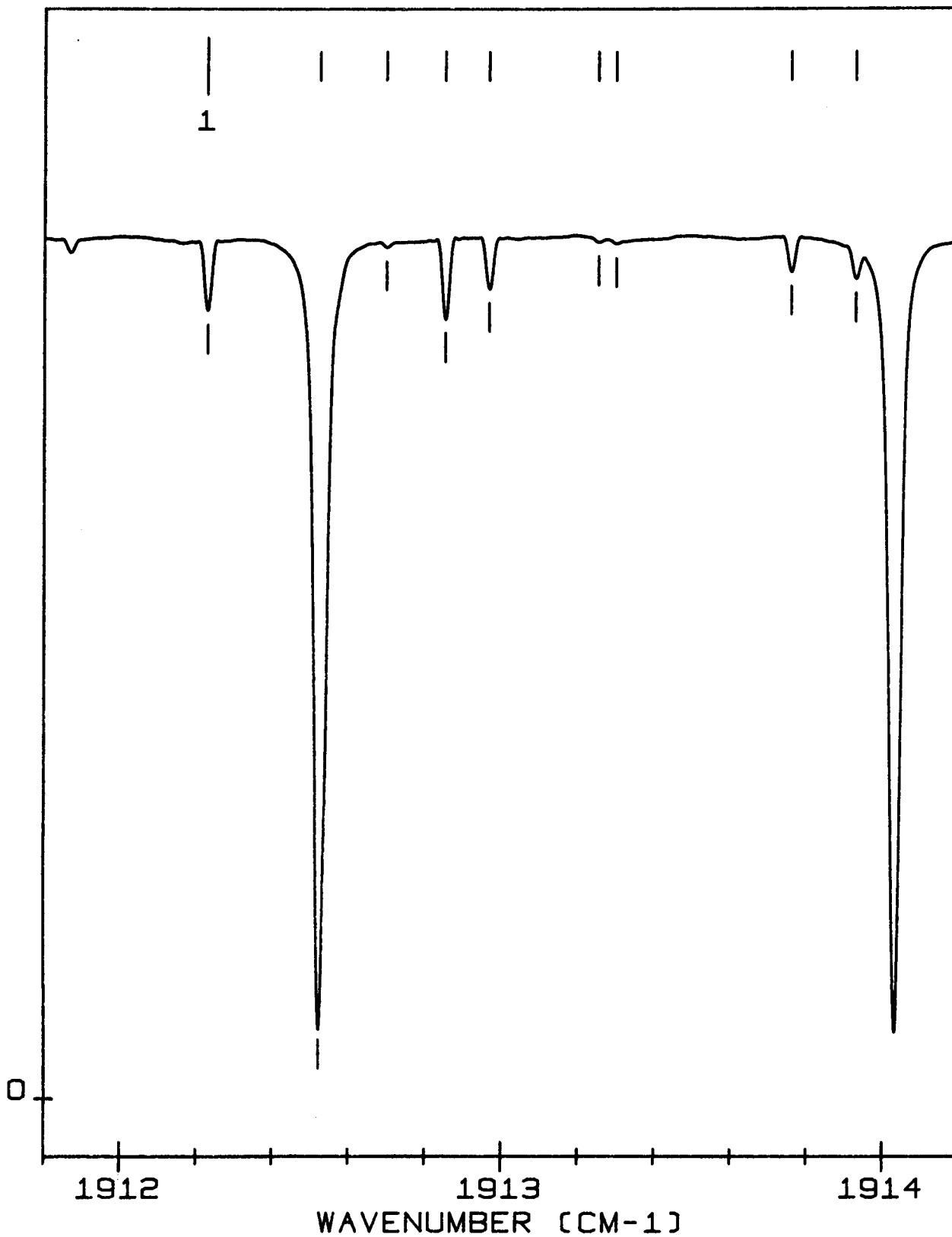




TABLE A 43

-1

Line Positions and Identifications (1914-1916 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1914.03232	1914.03235	11102-00001 626 P24
2	1914.30545	1914.30712	21103-10002 626 R22
3	1914.46287	1914.46277	20003-01101 626 R41
4	1914.52091	1914.52065	12202-01101 626 P4
5	1914.58029		H2O
6	1914.87795	1914.87769	11102-00001 636 R22
7	1914.90219	1914.90285	21102-10001 626 P46
8	1915.19472		H2O
9	1915.27035		H2O
10	1915.30624	1915.30614	12202-01101 626 P3
11	1915.54567	1915.54565	11102-00001 626 P22
12	1915.91920	1915.91907	21103-10002 626 R24

FRAME A43

9.857 Torr 384 meters

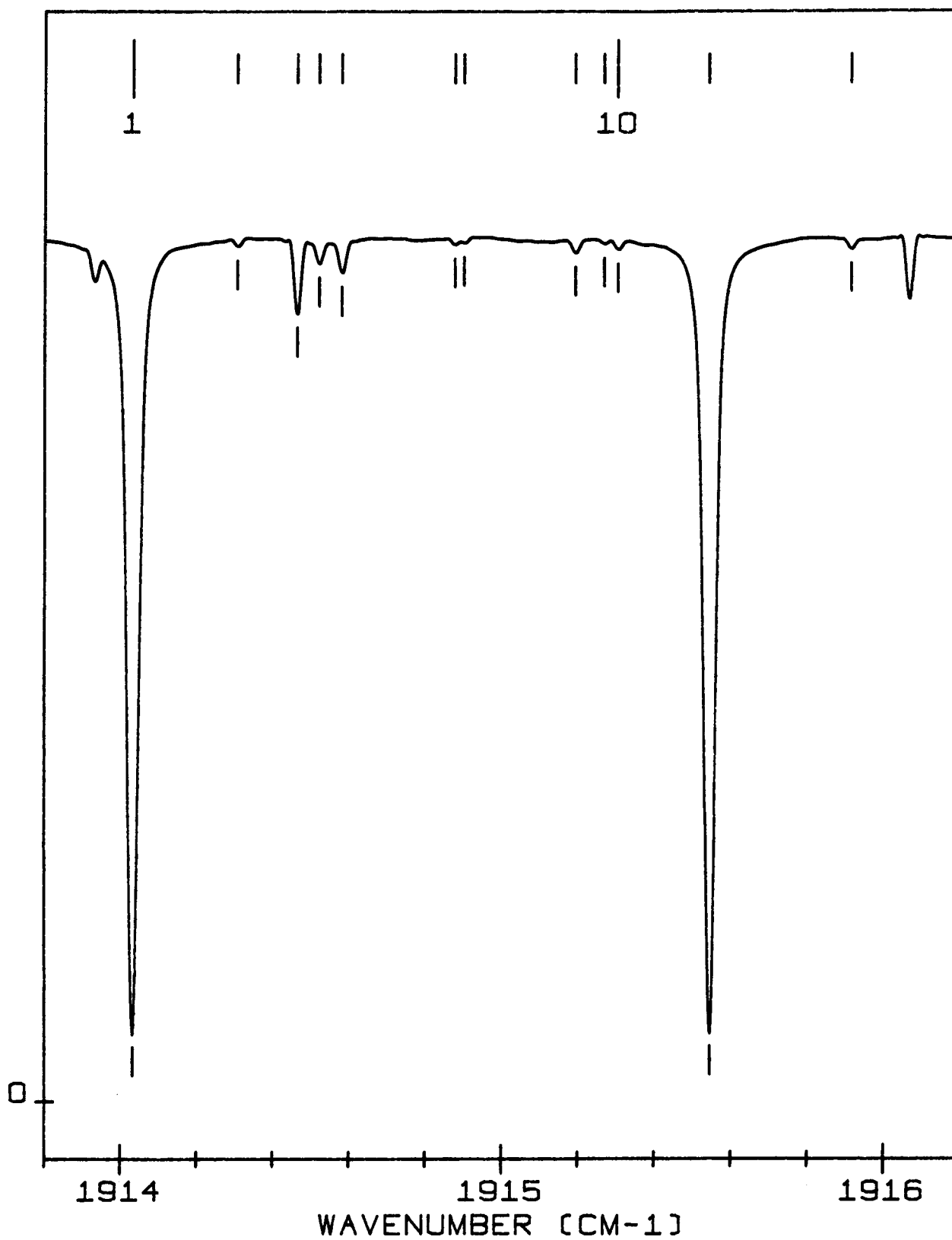


TABLE A 44

-1

Line Positions and Identifications (1916-1918 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1916.07167	1916.07176	20003-01101 626 R43
2	1916.50519	1916.50171	21102-10001 626 P44
		1916.50605	11102-00001 636 R24
3	1916.80420	1916.80670	11102-00001 627 Q9
			H2O?
4	1916.83367	1916.83374	11102-00001 627 Q10
5	1916.86518	1916.86270	11102-00001 627 Q11
6	1916.89165	1916.89359	11102-00001 627 Q12
7	1916.92830	1916.92647	11102-00001 627 Q13
8	1917.06312	1917.06309	11102-00001 626 P20
9	1917.22667	1917.22820	11102-00001 627 Q20
10	1917.28354	1917.28331	11102-00001 627 Q21
11	1917.34139	1917.34077	11102-00001 627 Q22
12	1917.39763	1917.39944	11102-00001 627 Q23
13	1917.45783	1917.45750	11102-00001 627 Q24
14	1917.53265	1917.53474	21103-10002 626 R26
		1917.51228	11102-00001 627 Q25
15	1917.68323	1917.64840	12202-01101 626 Q2
		1917.65491	12202-01101 626 Q3
		1917.65791	12202-01101 626 Q4
		1917.67853	12202-01101 626 Q5
		1917.67285	12202-01101 626 Q6
		1917.69324	12202-01101 626 Q8
		1917.67980	20003-01101 626 R45
16	1917.71684	1917.71260	12202-01101 626 Q7
		1917.71908	12202-01101 626 Q10
17	1917.75423	1917.75711	12202-01101 626 Q9
		1917.75037	12202-01101 626 Q12
18	1917.78714	1917.78712	12202-01101 626 Q14
19	1917.82285	1917.81201	12202-01101 626 Q11
		1917.82934	12202-01101 626 Q16
20	1917.87907	1917.87724	12202-01101 626 Q13
		1917.87704	12202-01101 626 Q18
21	1917.96015	1917.95275	12202-01101 626 Q15
		1917.93020	12202-01101 626 Q20

FRAME A44

9.857 Torr 384 meters

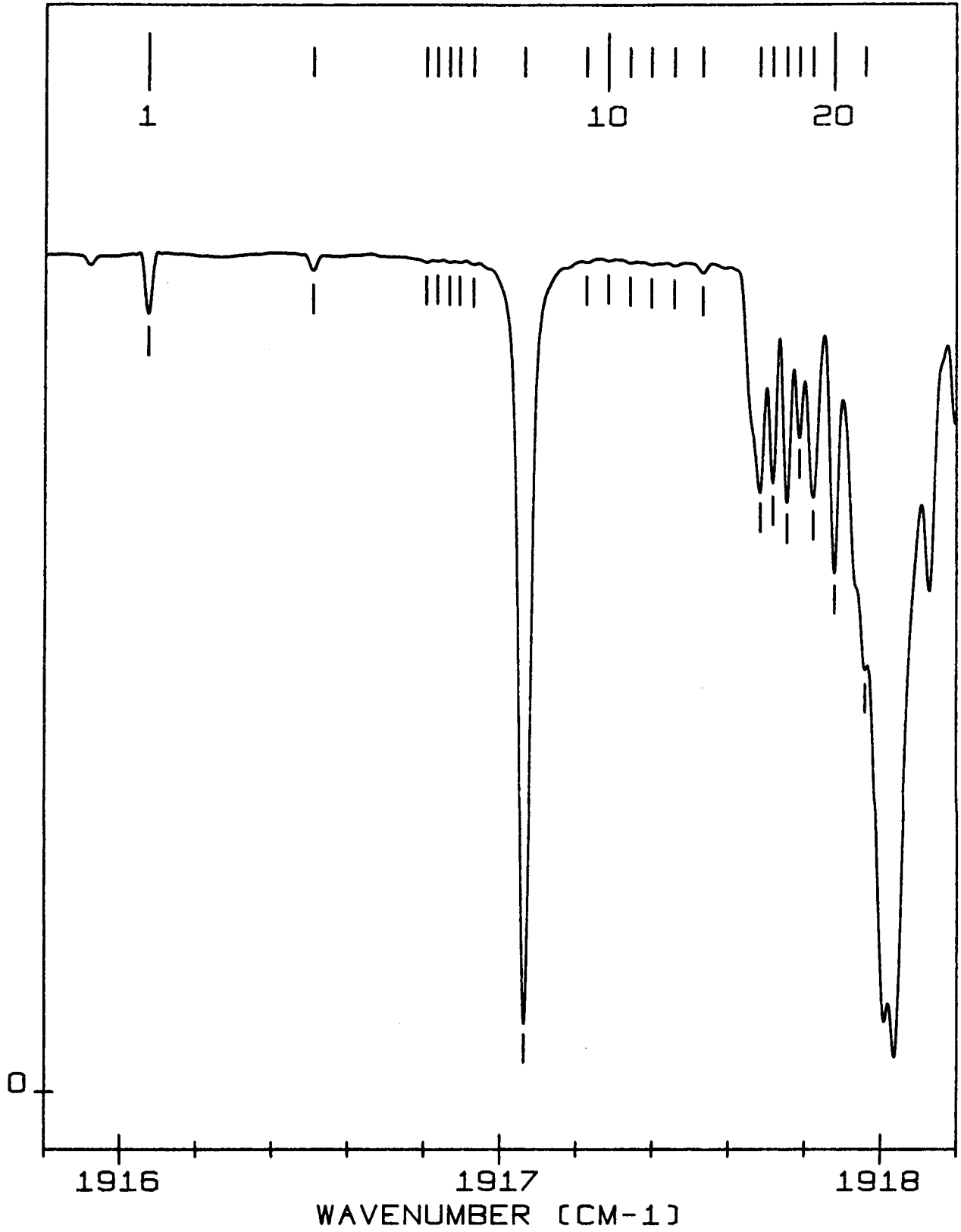


TABLE A 45

-1

Line Positions and Identifications (1918-1920 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1918.00833		H2O
		1917.98882	12202-01101 626 Q22
2	1918.03416		H2O
		1918.03847	12202-01101 626 Q17
		1918.05289	12202-01101 626 Q24
3	1918.12752	1918.13434	12202-01101 626 Q19
		1918.12239	12202-01101 626 Q26
		1918.13939	11102-00001 636 R26
		1918.09770	21102-10001 626 P42
4	1918.19695	1918.19728	12202-01101 626 Q28
5	1918.24012	1918.24028	12202-01101 626 Q21
6	1918.27751	1918.27754	12202-01101 626 Q30
			H2O?
7	1918.35909	1918.35620	12202-01101 626 Q23
		1918.36312	12202-01101 626 Q32
8	1918.45424	1918.45395	12202-01101 626 Q34
9	1918.48231	1918.48204	12202-01101 626 Q25
10	1918.58469	1918.58470	11102-00001 626 P18
		1918.61770	12202-01101 626 Q27
		1918.54999	12202-01101 626 Q36
11	1918.65131	1918.65117	12202-01101 626 Q38
12	1918.76183	1918.76311	12202-01101 626 Q29
		1918.75740	12202-01101 626 Q40
13	1918.86842	1918.86863	12202-01101 626 Q42
14	1918.91815	1918.91817	12202-01101 626 Q31
15	1918.98527	1918.98478	12202-01101 626 Q44
16	1919.08330	1919.08280	12202-01101 626 Q33
		1919.10579	12202-01101 626 Q46
17	1919.15520	1919.15406	21103-10002 626 R28
18	1919.21376	1919.21255	12202-01101 626 R1
		1919.23163	12202-01101 626 Q48
19	1919.25671	1919.25691	12202-01101 626 Q35
20	1919.28709	1919.28651	20003-01101 626 R47
21	1919.36213	1919.36227	12202-01101 626 Q50
22	1919.44048	1919.44040	12202-01101 626 Q37
23	1919.51224	1919.49772	12202-01101 626 Q52
			H2O
24	1919.63389	1919.63317	12202-01101 626 Q39
		1919.63804	12202-01101 626 Q54
25	1919.68863	1919.69097	21102-10001 626 P40
			H2O
26	1919.77751	1919.77762	11102-00001 636 R28
		1919.78336	12202-01101 626 Q56
27	1919.83505	1919.83510	12202-01101 626 Q41
28	1919.99867	1919.99820	12202-01101 626 R2

FRAME A45

9.857 Torr 384 meters

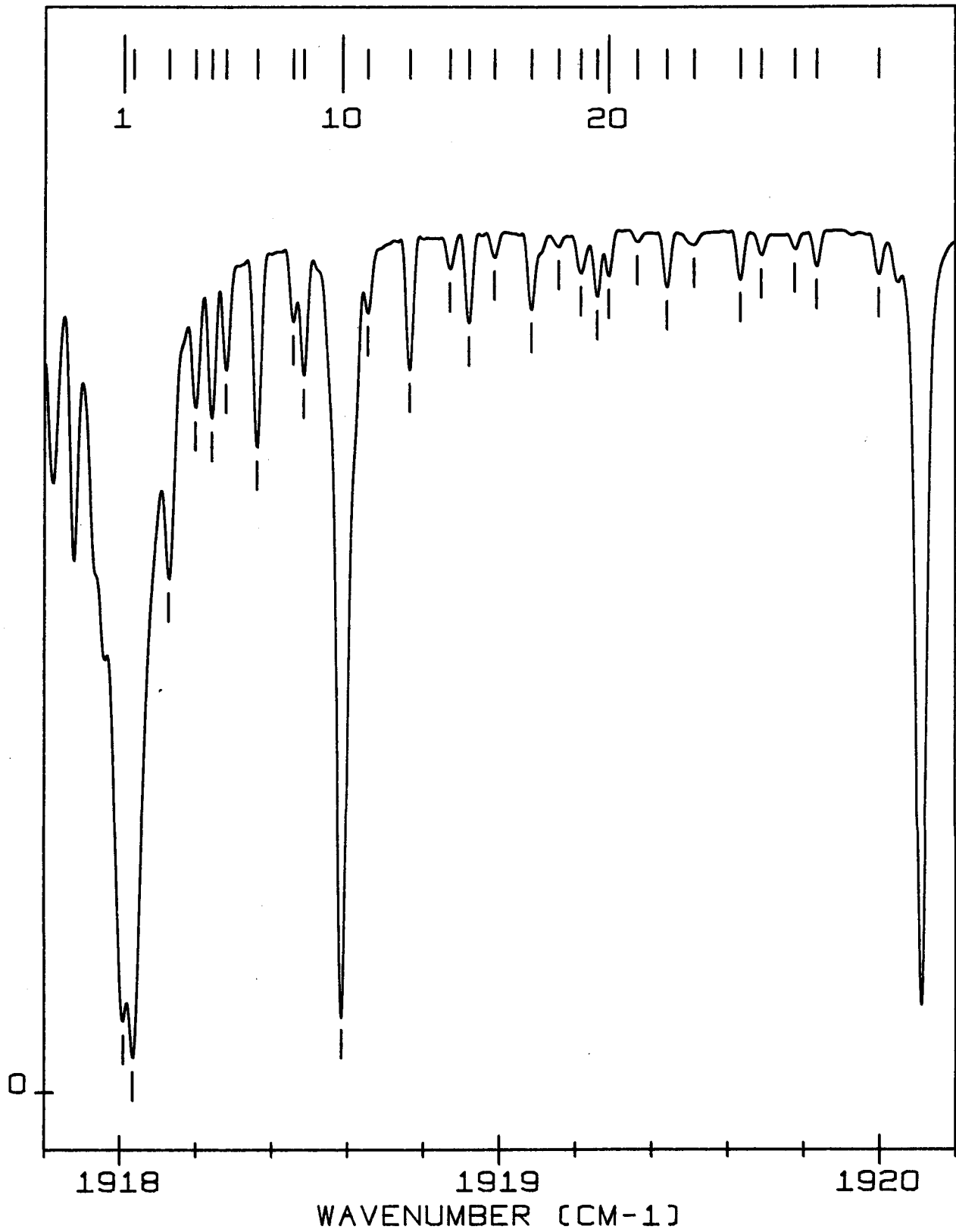


TABLE A 46

-1

Line Positions and Identifications (1920-1922 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1920.04796	1920.04606	12202-01101	626	Q43
2	1920.11050	1920.11051	11102-00001	626	P16
3	1920.26550	1920.26590	12202-01101	626	Q45
4	1920.49433	1920.49445	12202-01101	626	Q47
5	1920.73118	1920.73148	12202-01101	626	Q49
6	1920.79131	1920.79334	12202-01101	626	R3
		1920.77697	21103-10002	626	R30
7	1920.89166	1920.89149	20003-01101	626	R49
			H2O?		
8	1920.91279		H2O		
9	1920.97727	1920.97672	12202-01101	626	Q51
10	1921.22981	1921.22987	12202-01101	626	Q53
11	1921.28158	1921.28169	21102-10001	626	P38
12	1921.42177	1921.42061	11102-00001	636	R30
13	1921.49049	1921.49052	12202-01101	626	Q55
14	1921.57582	1921.57554	12202-01101	626	R4
15	1921.64054	1921.64055	11102-00001	626	P14
16	1921.85604	1921.85562	11102-00001	628	R26

FRAME A46

9.857 Torr 384 meters

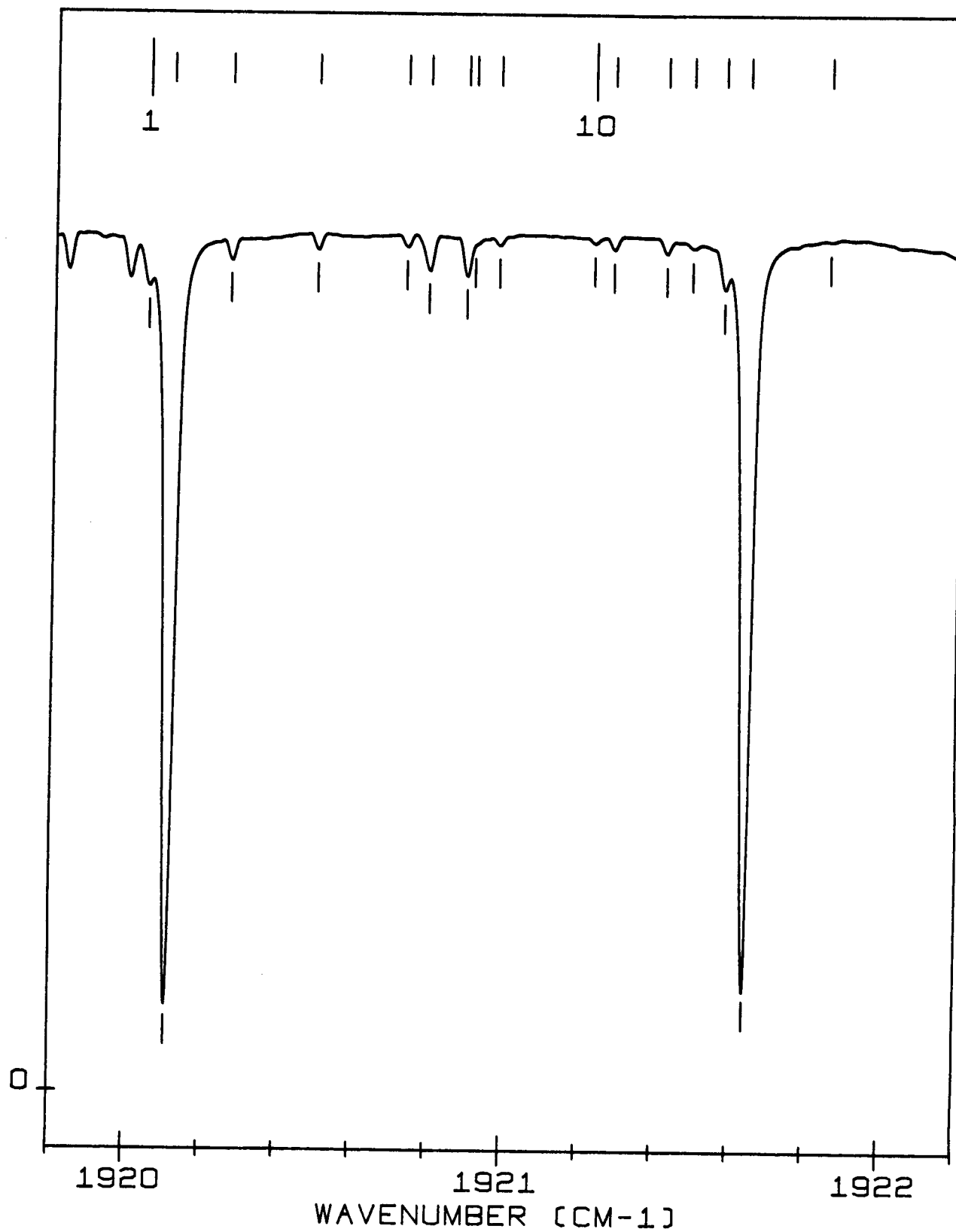




TABLE A 47

-1

Line Positions and Identifications (1922-1924 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1922.34041		H2O		
2	1922.37871	1922.38452	12202-01101	626	R5
		1922.40339	21103-10002	626	R32
3	1922.49287	1922.49435	20003-01101	626	R51
4	1922.60999	1922.60853	11102-00001	628	R27
5	1922.87126	1922.87003	21102-10001	626	P36
6	1923.16698		H2O		
		1923.17484	11102-00001	626	P12
		1923.15829	12202-01101	626	R6
		1923.06826	11102-00001	636	R32
7	1923.98602	1923.98604	12202-01101	626	R7

FRAME A47

9.857 Torr 384 meters

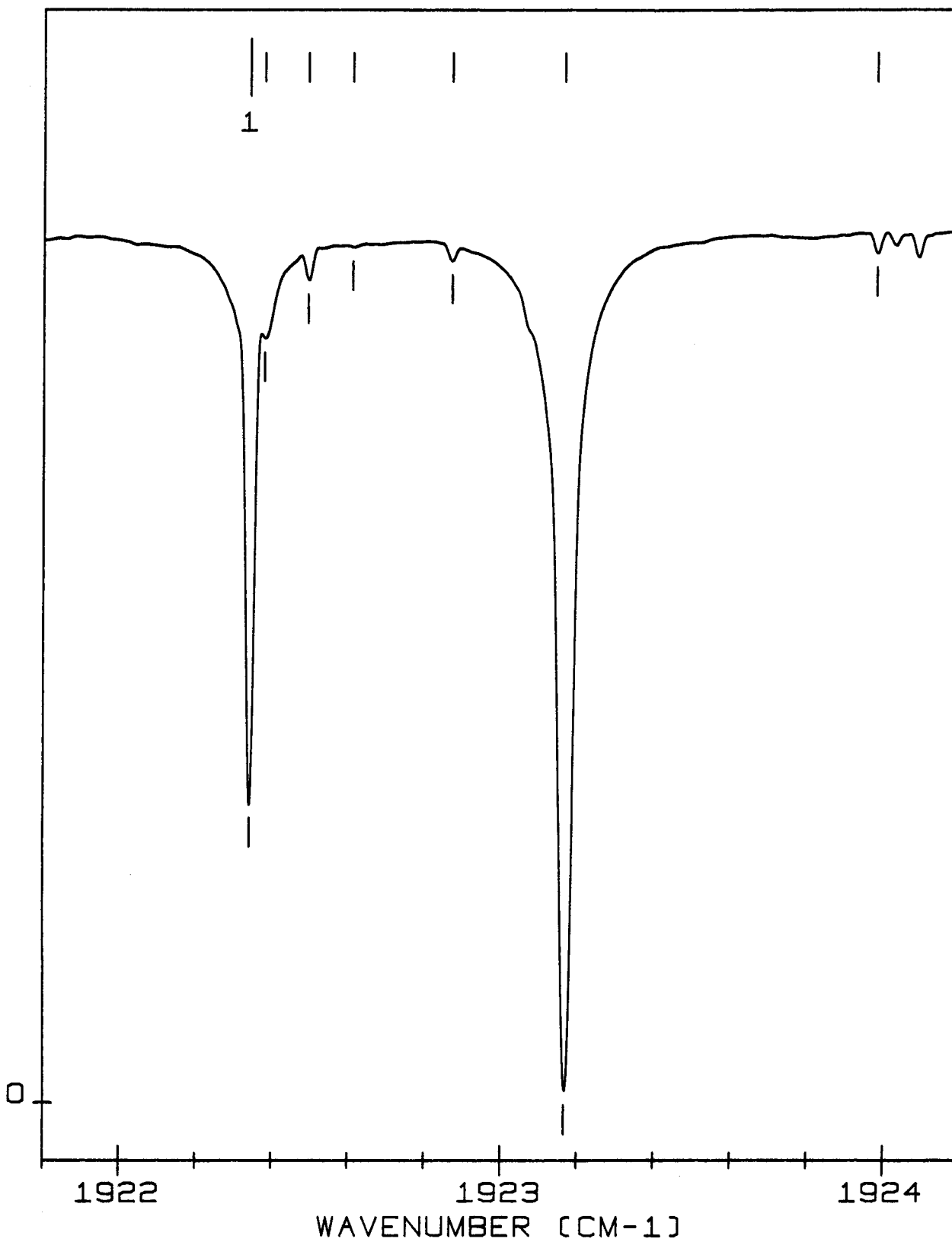


TABLE A 48

-1

Line Positions and Identifications (1924-1926 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1924.03322	1924.03325	21103-10002 626 R34
2	1924.09437	1924.09467	20003-01101 626 R53
3	1924.45512	1924.45611	21102-10001 626 P34
4	1924.71344	1924.71339	11102-00001 626 P10
		1924.74640	12202-01101 626 R8
		1924.72043	11102-00001 636 R34
5	1924.87152	1924.86997	11102-00001 628 R30
		1924.87443	13302-02201 626 R23
6	1925.06752		H2O
7	1925.59766	1925.59787	12202-01101 626 R9
8	1925.62559	1925.62465	11102-00001 628 R31
9	1925.66420	1925.66646	21103-10002 626 R36
10	1925.69260	1925.69203	20003-01101 626 R55

FRAME A48

9.857 Torr 384 meters

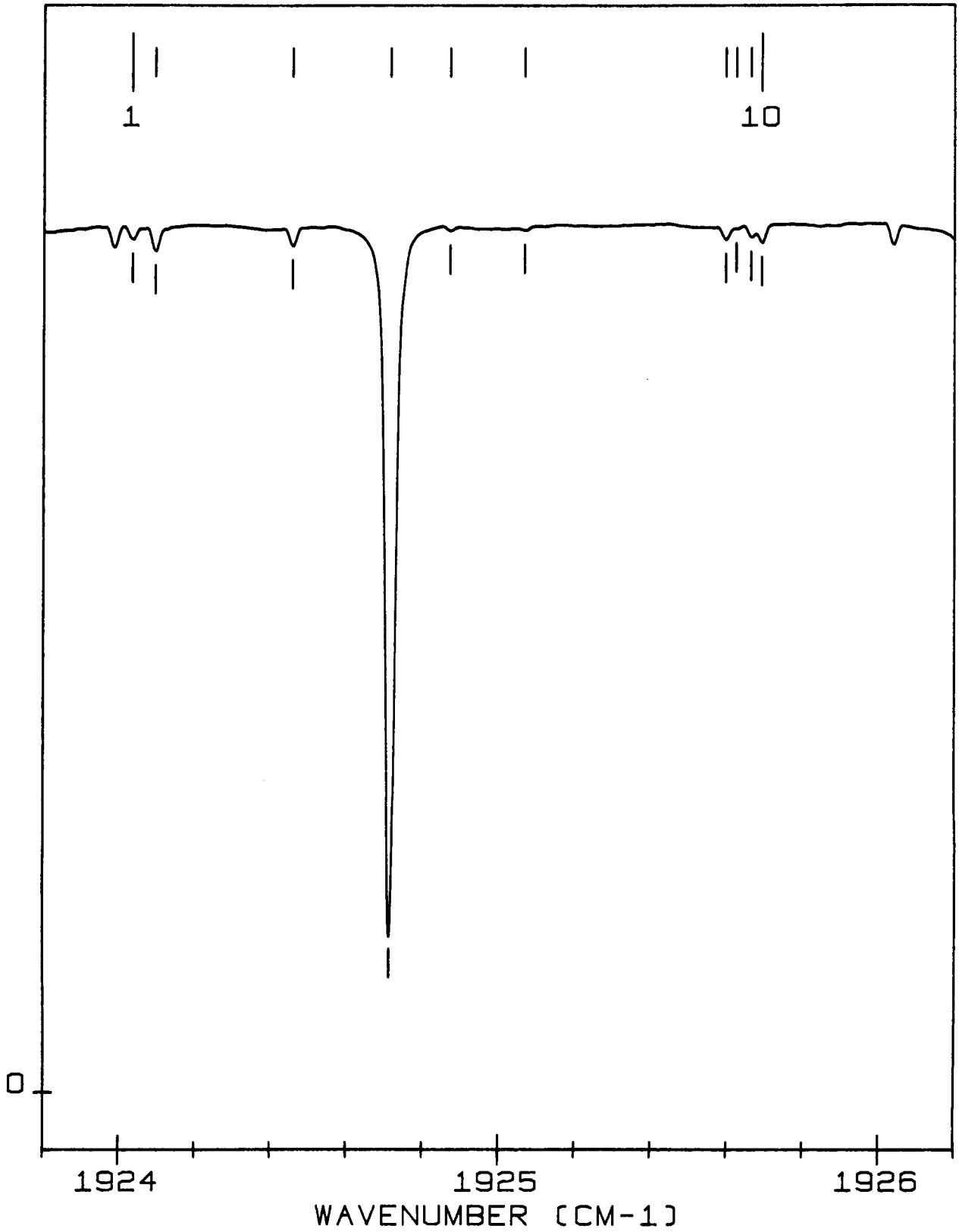


TABLE A 49

-1

Line Positions and Identifications (1926-1928 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1926.04034	1926.04008	21102-10001 626 P32
2	1926.25618	1926.25620	11102-00001 626 P8
3	1926.33832	1926.33983	12202-01101 626 R10
4	1926.37724	1926.37698	11102-00001 636 R36
		1926.37974	11102-00001 628 R32
5	1926.53636	1926.53847	13302-02201 626 R25
6	1926.72561		H2O
7	1927.13470	1927.13522	11102-00001 628 R33
8	1927.22129	1927.21998	12202-01101 626 R11
9	1927.29388	1927.28599	20003-01101 626 R57
		1927.30296	21103-10002 626 R38
10	1927.37365	1927.37203	13302-02201 626 R26
11	1927.62118	1927.62207	21102-10001 626 P30
12	1927.80330	1927.80327	11102-00001 626 P6
13	1927.93680	1927.93850	12202-01101 626 R12

FRAME A49

9.857 Torr 384 meters

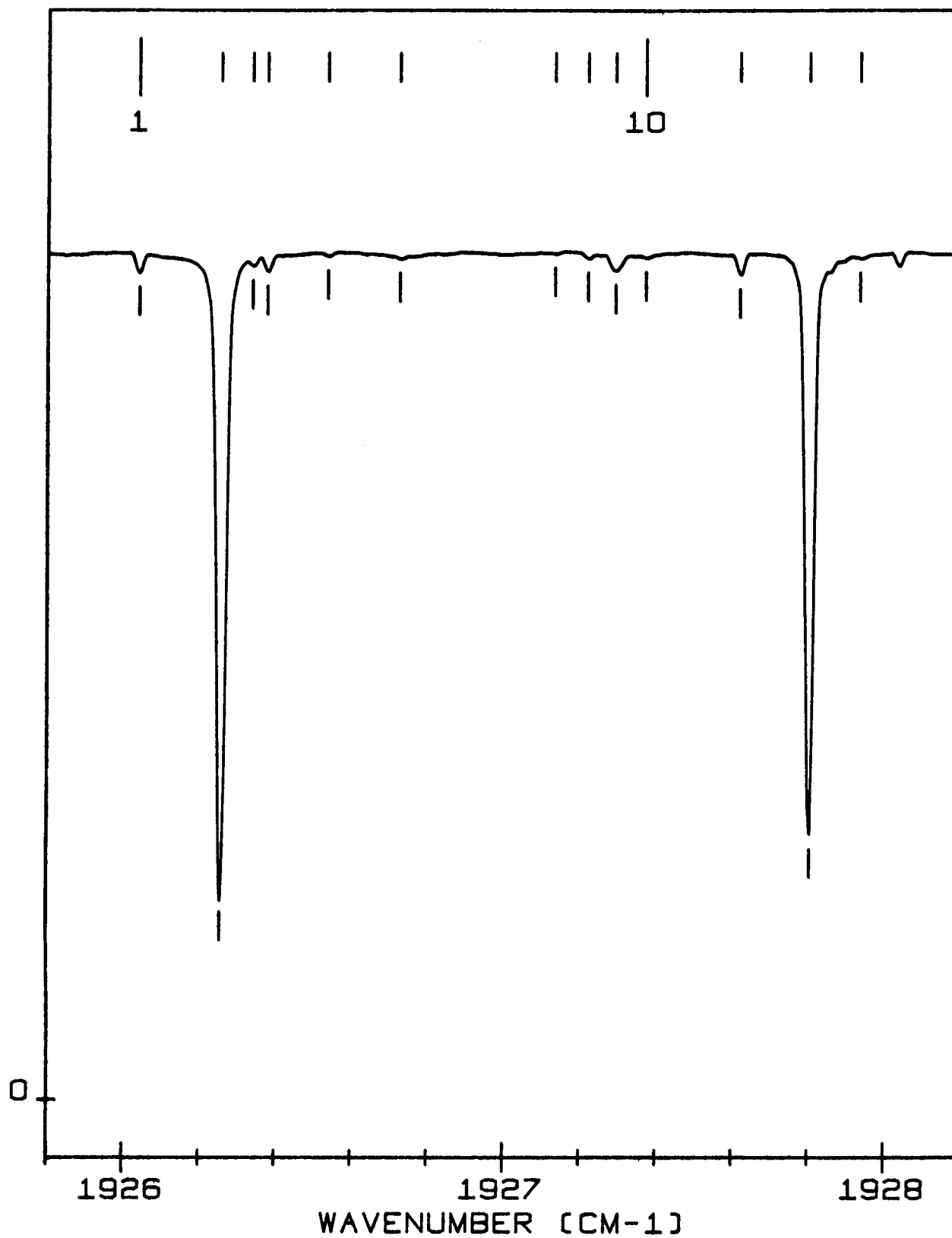


TABLE A 50

-1

Line Positions and Identifications (1928-1930 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1928.03806	1928.03780	11102-00001 636	R38
2	1928.20866	1928.20969	13302-02201 626	R27
3	1928.64881	1928.64733	11102-00001 628	R35
4	1928.87529	1928.87613	20003-01101 626	R59
5	1928.94282	1928.94265	21103-10002 626	R40
6	1929.04631	1929.04709	13302-02201 626	R28
7	1929.20183	1929.20219	21102-10001 626	P28
8	1929.35462	1929.35461	11102-00001 626	P4
9	1929.70243	1929.70272	11102-00001 636	R40
10	1929.88859	1929.88800	13302-02201 626	R29

9.857 Torr 384 meters

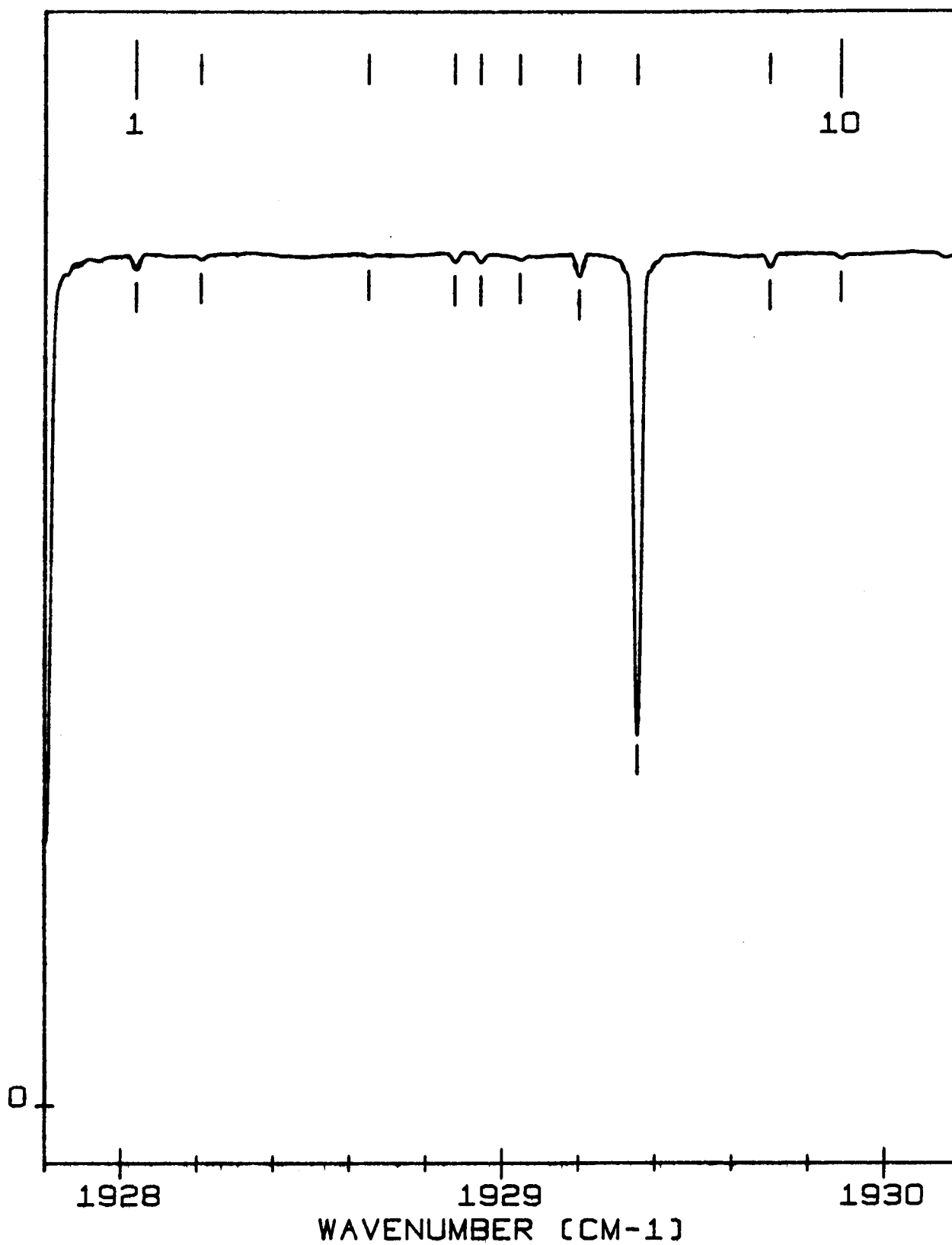
FRAME A50



TABLE A 51

-1

Line Positions and Identifications (1930-1932 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1930.16181	1930.16086	11102-00001 628	R37	
2	1930.46295	1930.46198	20003-01101 626	R61	
3	1930.58582	1930.58545	21103-10002 626	R42	
4	1930.72955	1930.72926	13302-02201 626	R30	
5	1930.78063	1930.78055	21102-10001 626	P26	
6	1930.91025	1930.91020	11102-00001 626	P2	
7	1931.15002	1931.15134	12202-01101 626	R16	
8	1931.37146	1931.37161	11102-00001 636	R42	
9	1931.57389	1931.57330	13302-02201 626	R31	
10	1931.67543	1931.67570	11102-00001 628	R39	

FRAME A51

9.857 Torr 384 meters

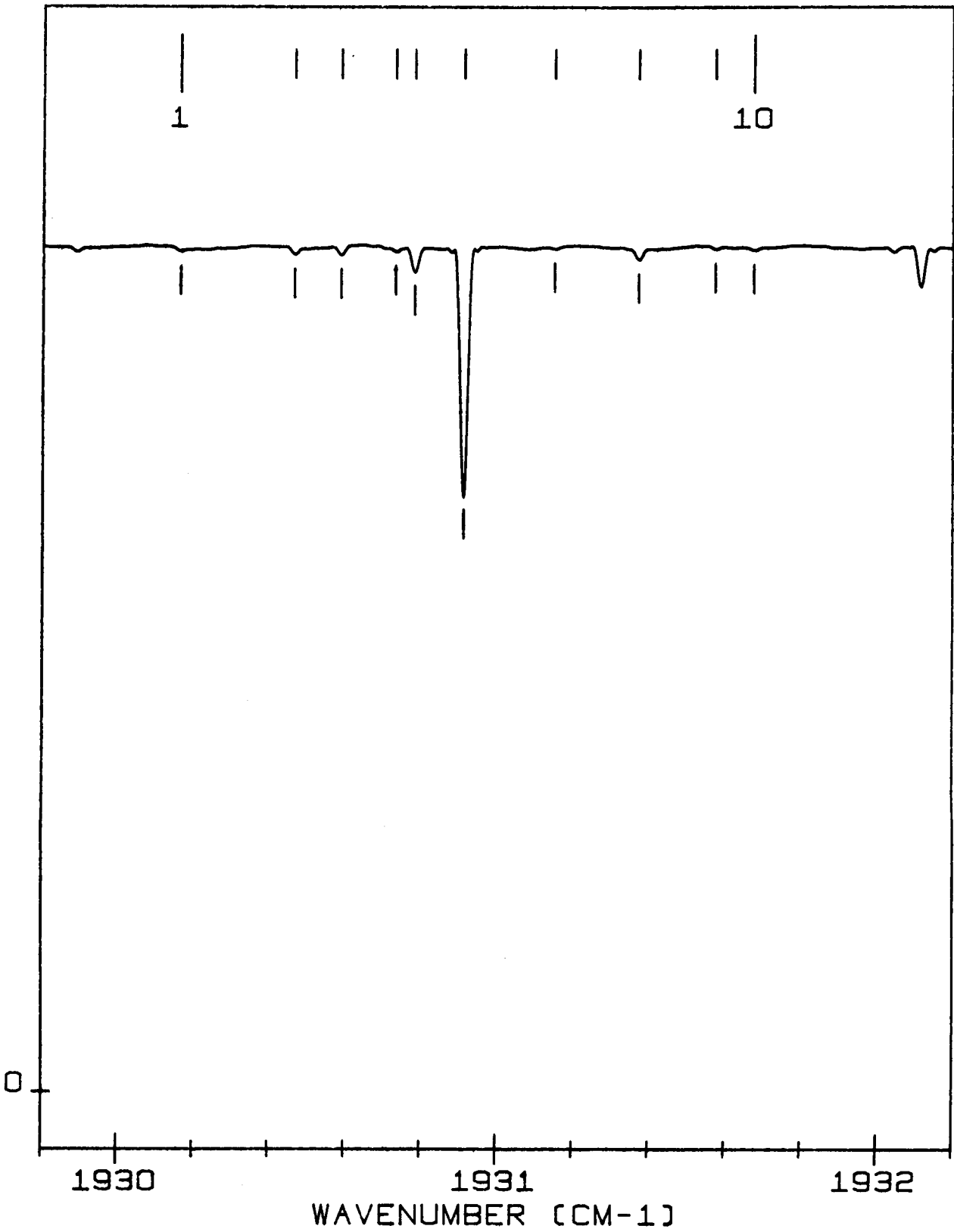


TABLE A 52

-1

Line Positions and Identifications (1932-1934 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1932.04335	1932.04311	20003-01101 626	R63	
2	1932.11649		H2O		
3	1932.14946	1932.14758	12202-01101 626	R17	
			SIDELOBE		
4	1932.23175	1932.23127	21103-10002 626	R44	
5	1932.35711	1932.35724	21102-10001 626	P24	
6	1932.39052		H2O		
7	1932.49738	1932.47886	11102-00001 626	Q2	
		1932.49945	11102-00001 626	Q4	
8	1932.53197	1932.53178	11102-00001 626	Q6	
9	1932.57578	1932.57584	11102-00001 626	Q8	
10	1932.63157	1932.63158	11102-00001 626	Q10	
11	1932.69898	1932.69898	11102-00001 626	Q12	
12	1932.77796	1932.77797	11102-00001 626	Q14	
13	1932.86849	1932.86850	11102-00001 626	Q16	
14	1932.97052	1932.97050	11102-00001 626	Q18	
15	1933.08394	1933.08389	11102-00001 626	Q20	
		1933.04429	11102-00001 636	R44	
16	1933.16529		H2O		
17	1933.20854	1933.20860	11102-00001 626	Q22	
		1933.19171	11102-00001 628	R41	
18	1933.25101	1933.25151	11102-00001 626	R0	
19	1933.34454	1933.34452	11102-00001 626	Q24	
20	1933.49159	1933.49156	11102-00001 626	Q26	
21	1933.64959	1933.64960	11102-00001 626	Q28	
22	1933.81849	1933.81853	11102-00001 626	Q30	
23	1933.87590	1933.88002	21103-10002 626	R46	
24	1933.93377	1933.93237	21102-10001 626	P22	
25	1933.99825	1933.99821	11102-00001 626	Q32	

FRAME A52

9.857 Torr 384 meters

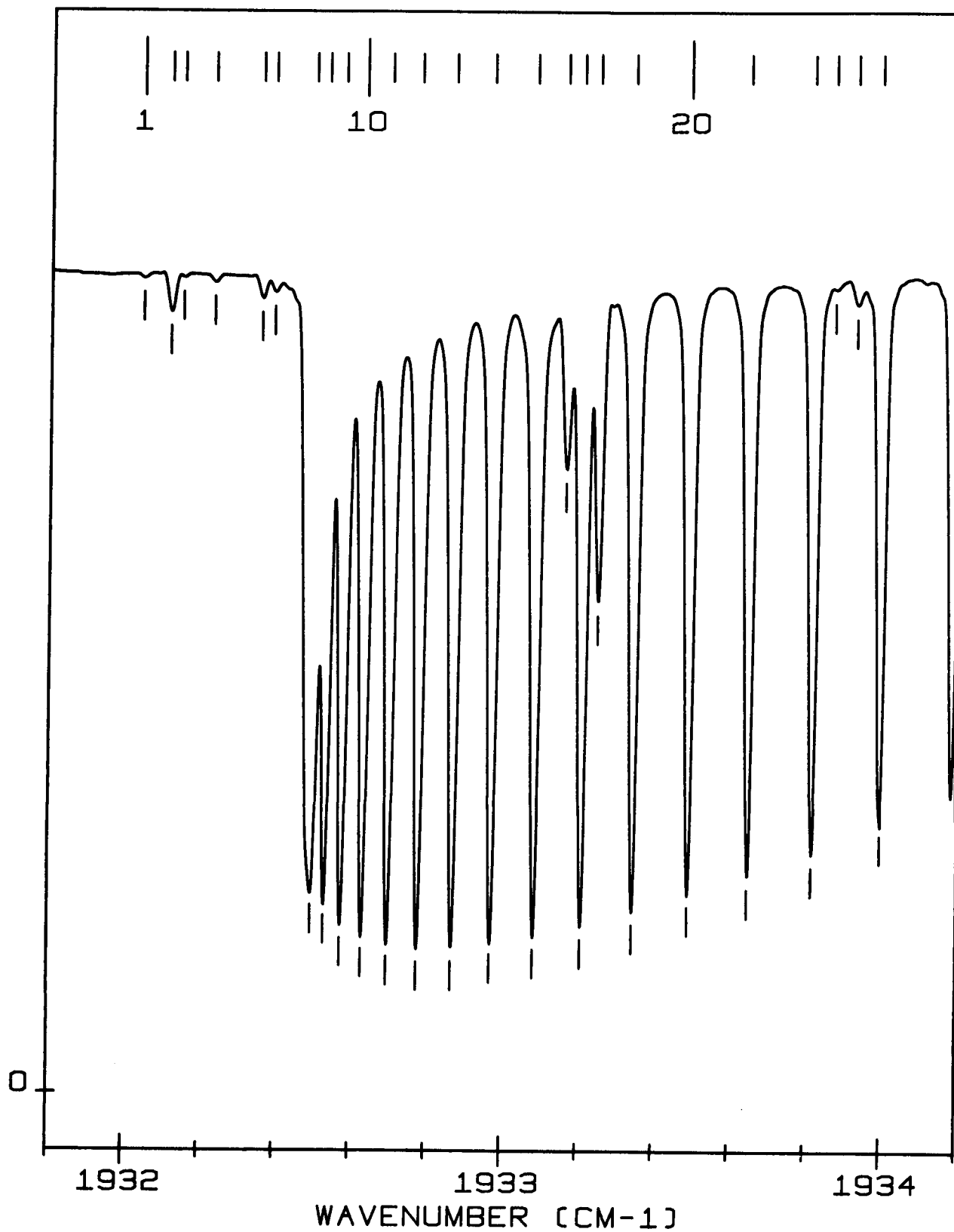


TABLE A 53

-1

Line Positions and Identifications (1934-1936 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1934.11415	1934.11459	13302-02201 626 R34
2	1934.18854	1934.18851	11102-00001 626 Q34
3	1934.38921	1934.38929	11102-00001 626 Q36
4	1934.60042	1934.60039	11102-00001 626 Q38
5	1934.72016	1934.72062	11102-00001 636 R46
6	1934.81997	1934.82166	11102-00001 626 Q40
		1934.81763	11102-00001 626 R2
7	1934.96487	1934.96452	13302-02201 626 R35
8	1935.05292	1935.05292	11102-00001 626 Q42
9	1935.18924	1935.18935	20003-01101 626 R67
10	1935.29403	1935.29399	11102-00001 626 Q44
11	1935.48453	1935.48328	12202-01101 626 R21
12	1935.50739	1935.50599	21102-10001 626 P20
13	1935.54457	1935.54470	11102-00001 626 Q46
14	1935.80491	1935.80484	11102-00001 626 Q48

FRAME A53

9.857 Torr 384 meters

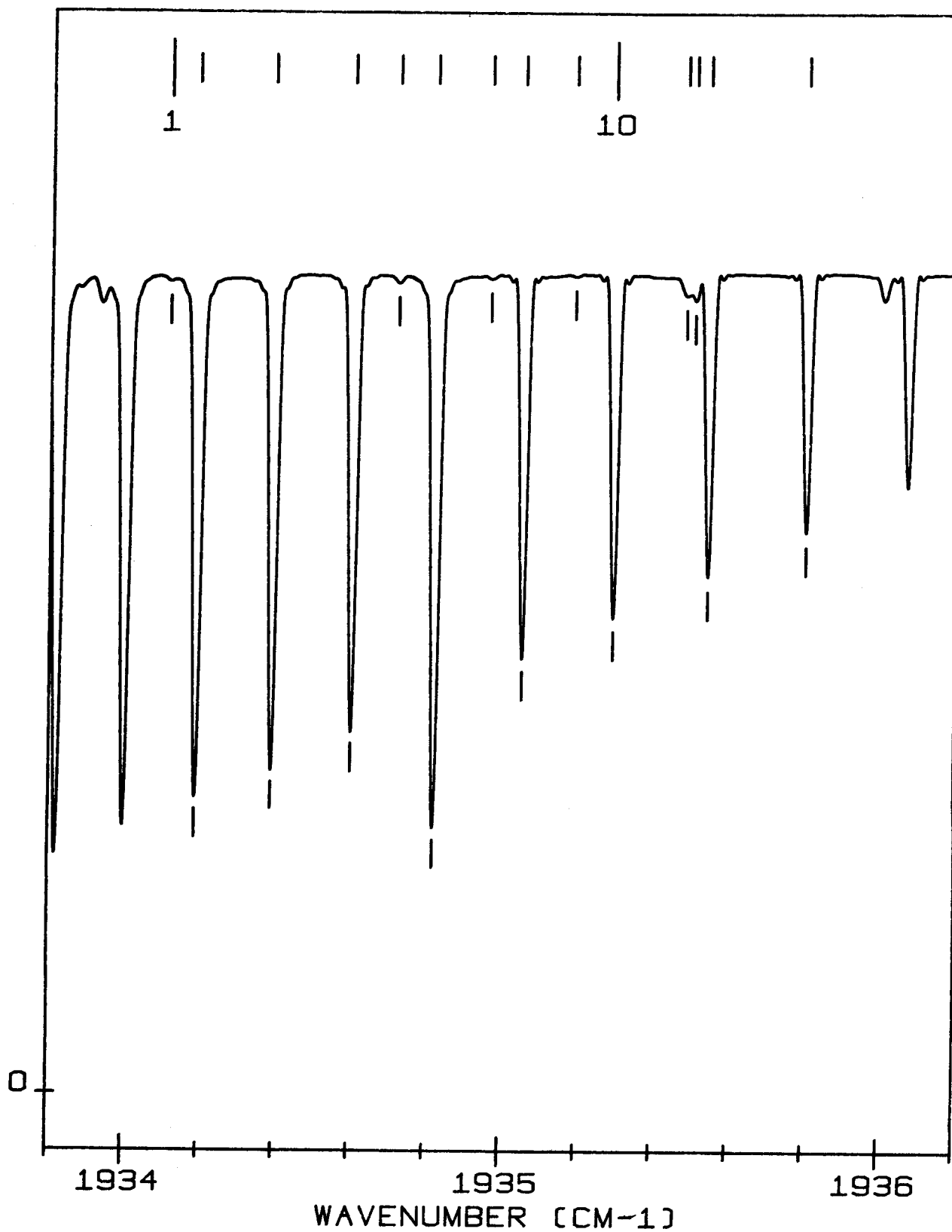


TABLE A 54

-1

Line Positions and Identifications (1936-1938 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1936.00826	1936.00811	12202-01101	626	R22
2	1936.07419	1936.07423	11102-00001	626	Q50
3	1936.22653	1936.22676	11102-00001	628	R45
4	1936.35306	1936.35265	11102-00001	626	Q52
5	1936.38796	1936.38791	11102-00001	626	R4
		1936.40043	11102-00001	636	R48
6	1936.63982	1936.63989	11102-00001	626	Q54
7	1936.93571	1936.93573	11102-00001	626	Q56
8	1937.01201		H2O		
9	1937.07800	1937.07820	21102-10001	626	P18
10	1937.16837	1937.16617	12202-01101	626	R23
			H2O		
11	1937.23959	1937.23995	11102-00001	626	Q58
			H2O		
12	1937.55218	1937.55231	11102-00001	626	Q60
13	1937.63708	1937.63668	12202-01101	626	R24
14	1937.74686		?		
15	1937.87253	1937.87259	11102-00001	626	Q62
16	1937.96197	1937.96231	11102-00001	626	R6
			H2O		

FRAME A54

9.857 Torr 384 meters

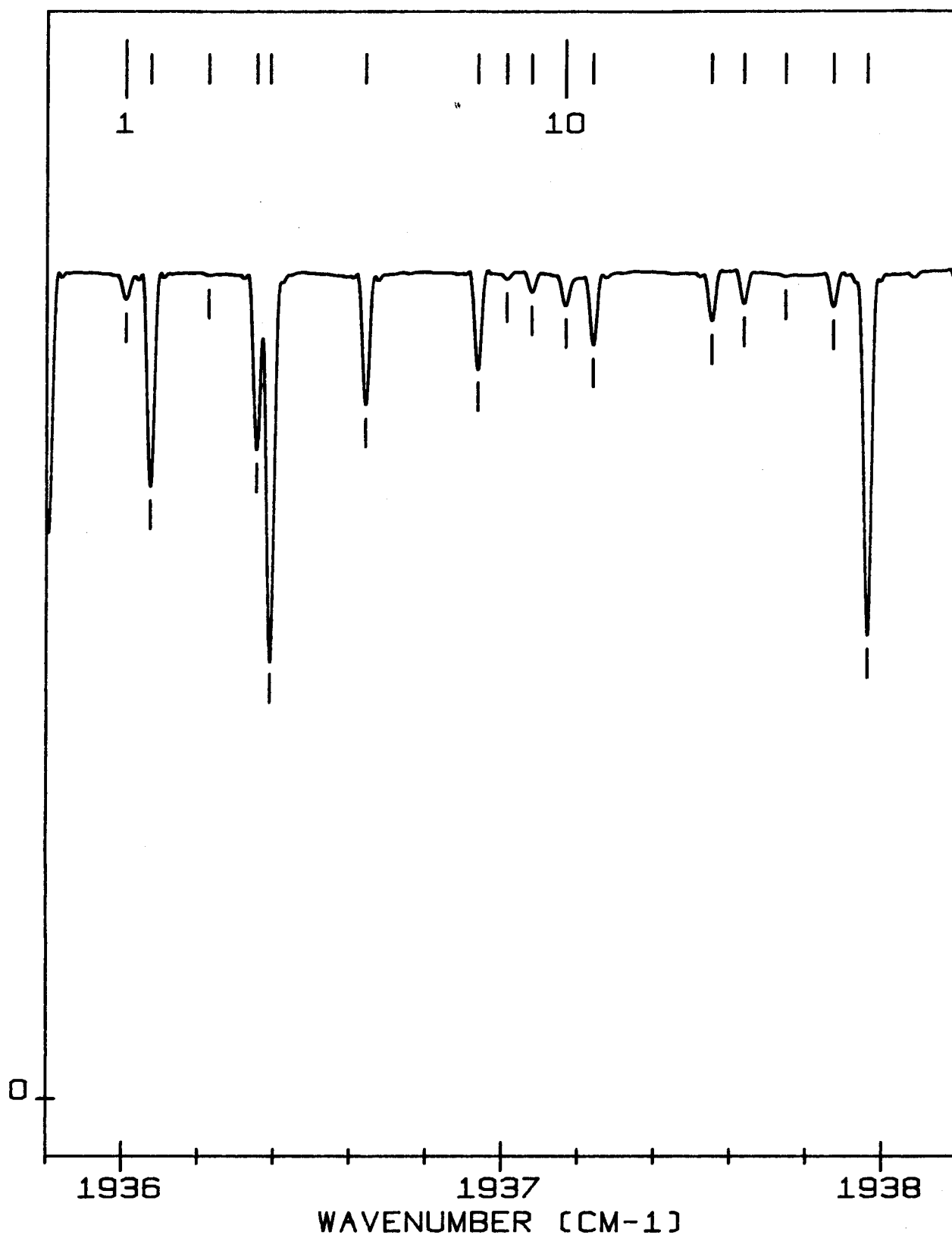




TABLE A 55

-1

Line Positions and Identifications (1938-1940 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1938.08286	1938.08353	11102-00001 636	636	R50
2	1938.20070	1938.20052	11102-00001 626	626	Q64
3	1938.38250	1938.38250	13302-02201 626	626	R39
4	1938.53597	1938.53588	11102-00001 626	626	Q66
5	1938.64879	1938.64904	21102-10001 626	626	P16
6	1938.69521		H2O		
7	1938.85929	1938.85902	12202-01101 626	626	R25
		1938.87841	11102-00001 626	626	Q68
8	1939.12482		H2O		
9	1939.23226	1939.22786	11102-00001 626	626	Q70
			SIDELOBE		
10	1939.26958	1939.26991	12202-01101 626	626	R26
11	1939.54077	1939.54079	11102-00001 626	626	R8
12	1939.77055	1939.76975	11102-00001 636	636	R52
13	1939.94647	1939.94649	11102-00001 626	626	Q74

FRAME A55

9.857 Torr 384 meters

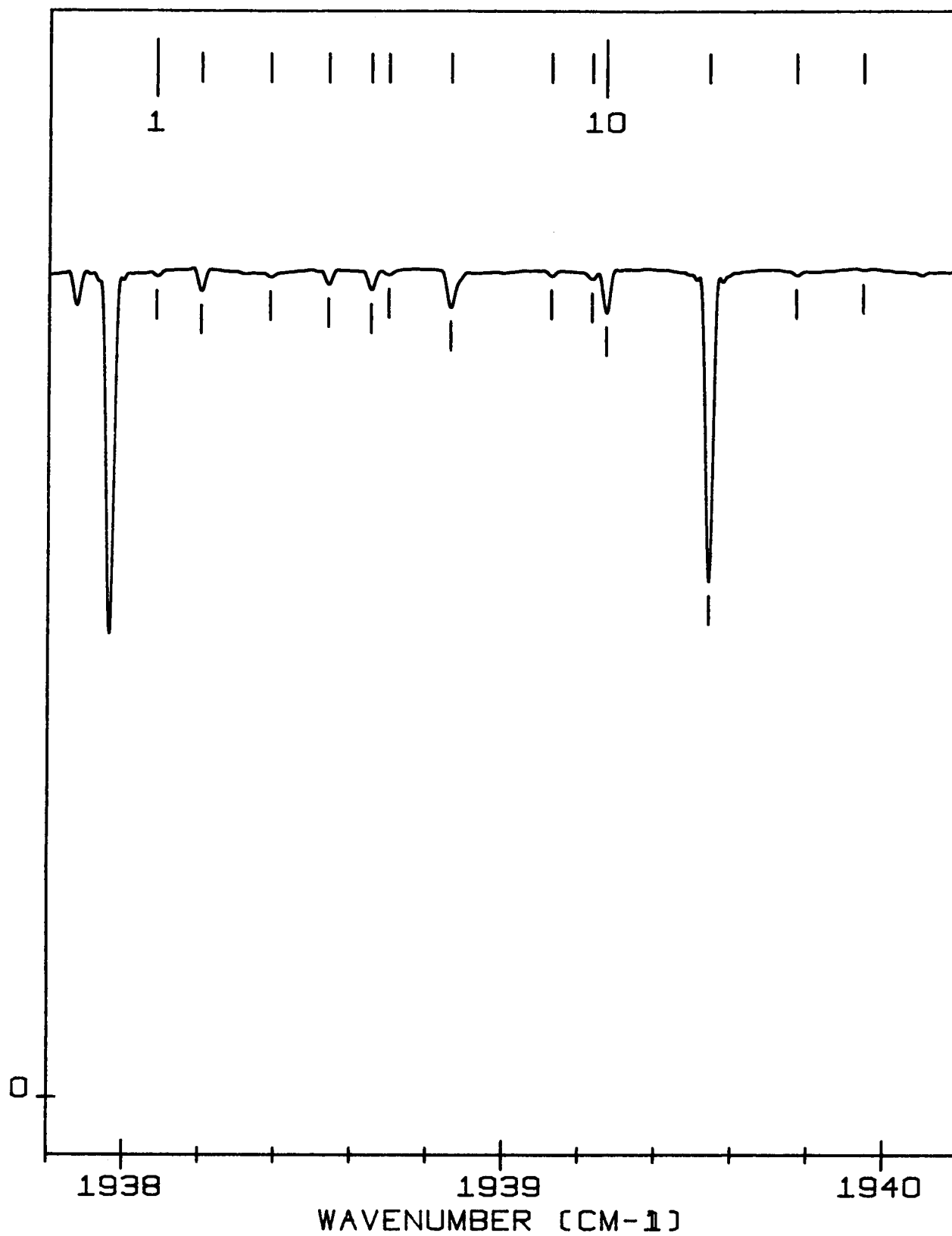


TABLE A 56

-1

Line Positions and Identifications (1940-1942 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1940.09940	1940.10125	13302-02201 626	R41
2	1940.21858	1940.21857	21102-10001 626	P14
3	1940.26723		H2O	
4	1940.50434	1940.50243	21103-10002 626	R54
5	1940.56165	1940.56176	12202-01101 626	R27
6	1940.90798	1940.90769	12202-01101 626	R28
7	1940.96280	1940.96637	13302-02201 626	R42
			SIDELOBE	
8	1941.12327	1941.12328	11102-00001 626	R10
9	1941.45961	1941.45891	11102-00001 636	R54
10	1941.62725		H2O	
11	1941.75704		H2O	
12	1941.78832	1941.78684	21102-10001 626	P12
13	1941.82941		H2O	
		1941.82636	13302-02201 626	R43

FRAME A56

9.857 Torr 384 meters

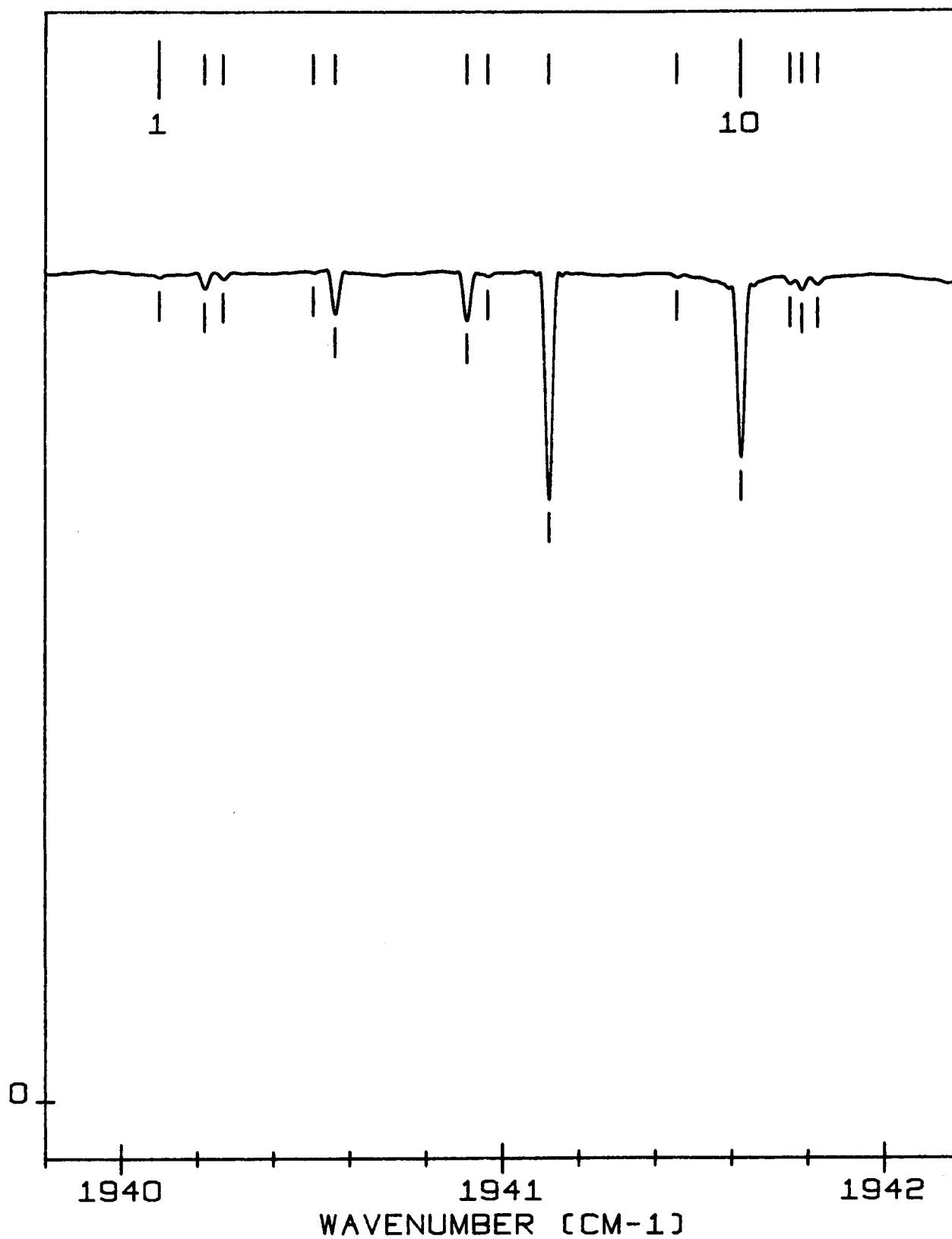


TABLE A 57

-1

Line Positions and Identifications (1942-1944 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1942.27492	1942.27434	12202-01101 626	R29
2	1942.51543		H2O	
		1942.54989	12202-01101 626	R30
3	1942.71117	1942.70974	11102-00001 626	R12
4	1942.76482		H2O	
5	1943.15123	1943.15080	11102-00001 636	R56
6	1943.35354	1943.35386	21102-10001 626	P10
7	1943.55805	1943.55769	13302-02201 626	R45
8	1943.99661	1943.99668	12202-01101 626	R31

FRAME A57

9.857 Torr 384 meters

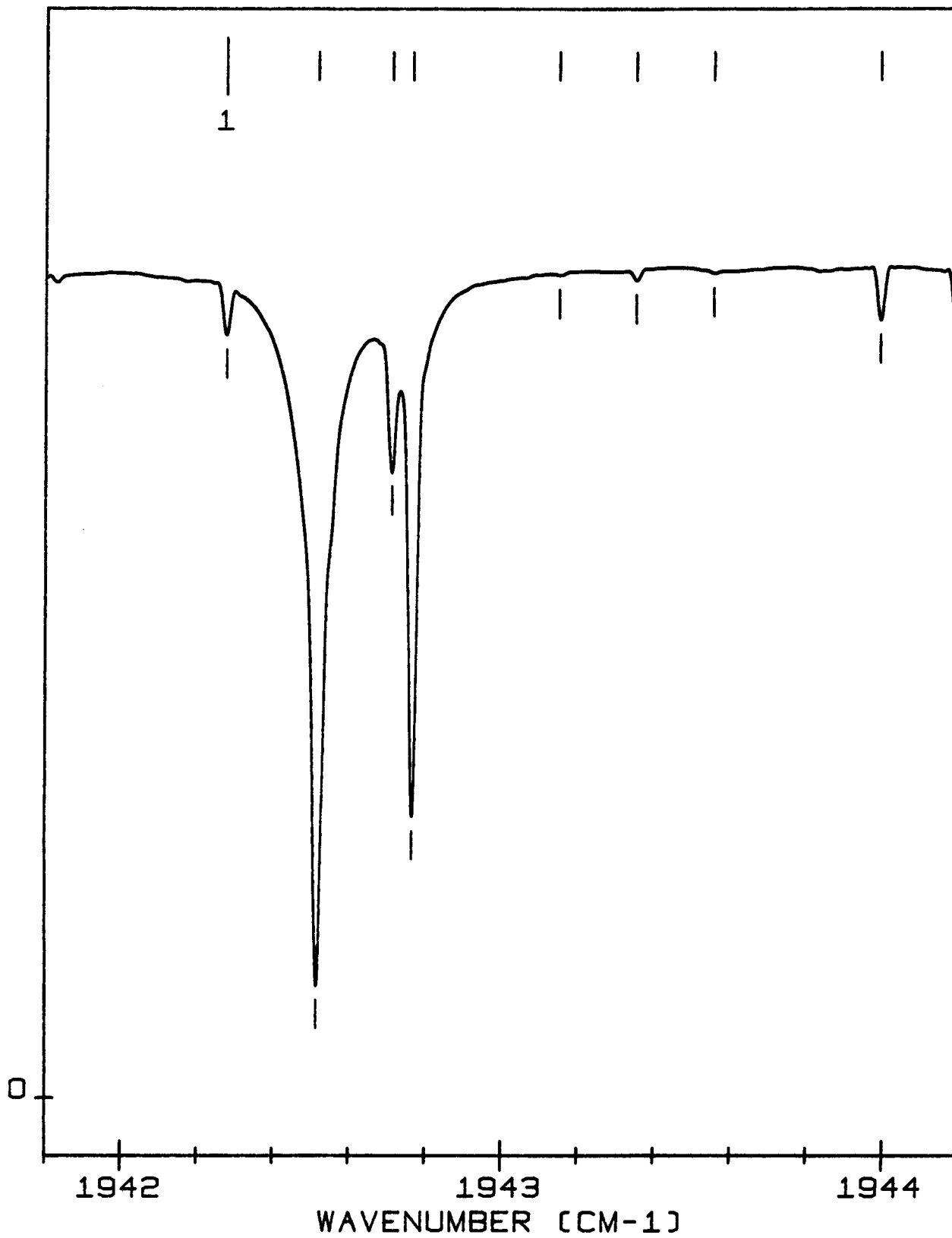


TABLE A 58

-1

Line Positions and Identifications (1944-1946 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1944.19631	1944.19639	12202-01101 626	R32
2	1944.29992	1944.30011	11102-00001 626	R14
3	1944.91982	1944.91968	21102-10001 626	P8
4	1945.34003		H2O	
5	1945.47257		H2O	
6	1945.72861	1945.72871	12202-01101 626	R33
7	1945.84745	1945.84708	12202-01101 626	R34

FRAME A58

9.857 Torr 384 meters

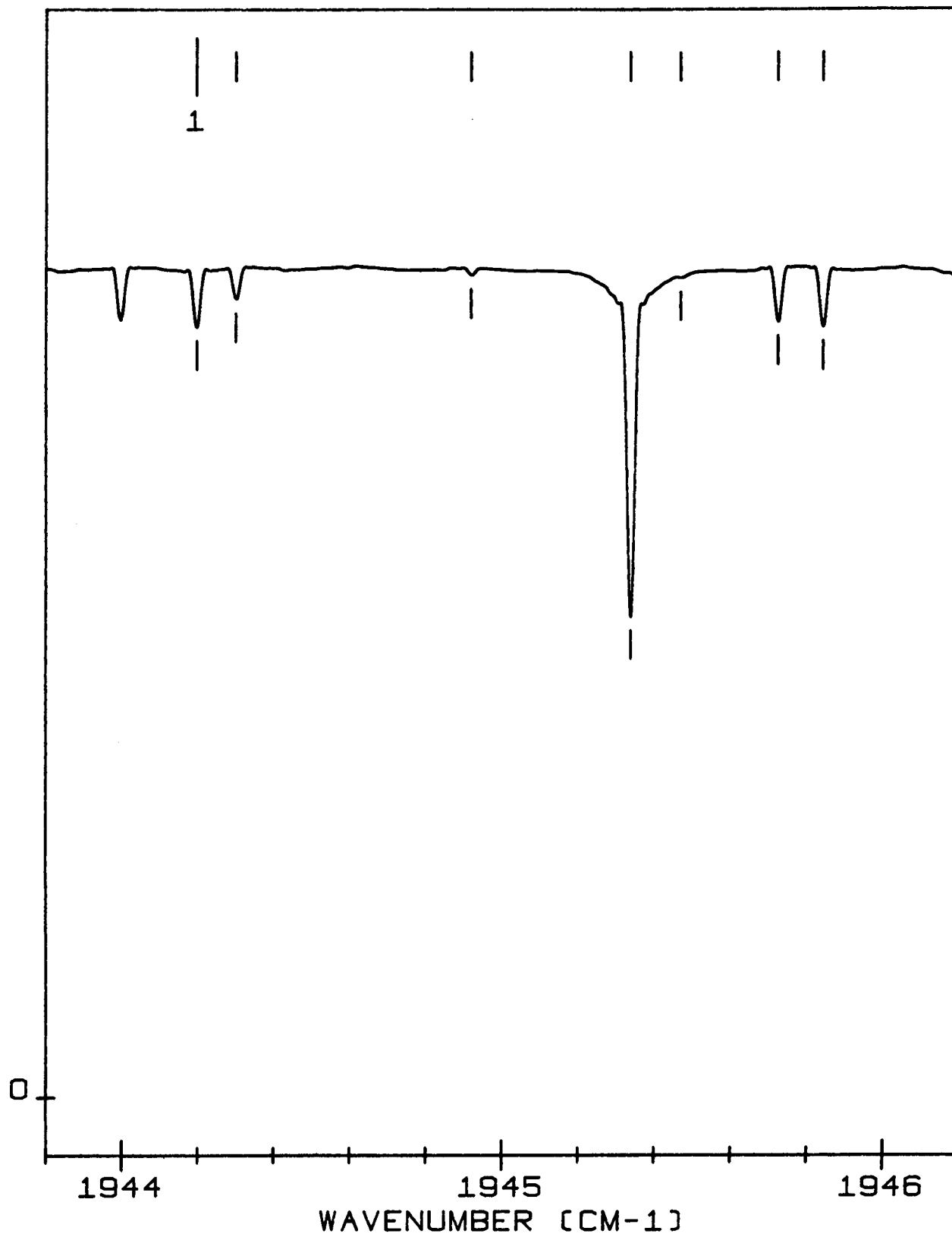




TABLE A 59

-1

Line Positions and Identifications (1946-1948 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1946.20022		H2O		
2	1946.36423		H2O		
3	1946.48313	1946.48430	21102-10001	626	P6
4	1947.47107	1947.47035	12202-01101	626	R35
5	1947.49708	1947.49225	11102-00001	626	R18
		1947.50180	12202-01101	626	R36

FRAME A59

9.857 Torr 384 meters

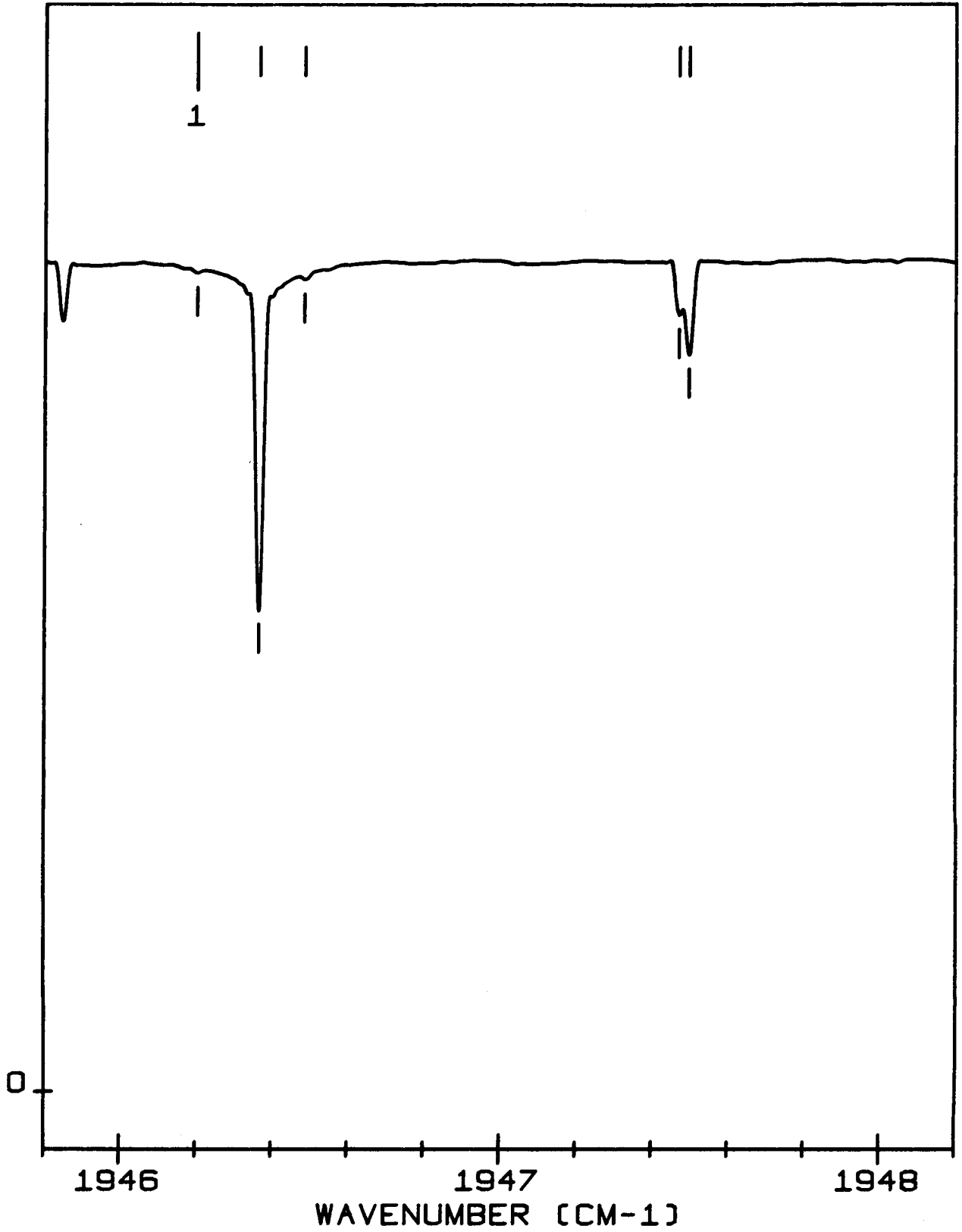


TABLE A 60

-1

Line Positions and Identifications (1948-1950 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1948.04455	1948.04772	21102-10001 626	P4
2	1949.09396	1949.09387	11102-00001 626	R20
3	1949.16018	1949.16041	12202-01101 626	R38
4	1949.22127	1949.22151	12202-01101 626	R37
5	1949.24968		H2O	

FRAME A60

9.857 Torr 384 meters

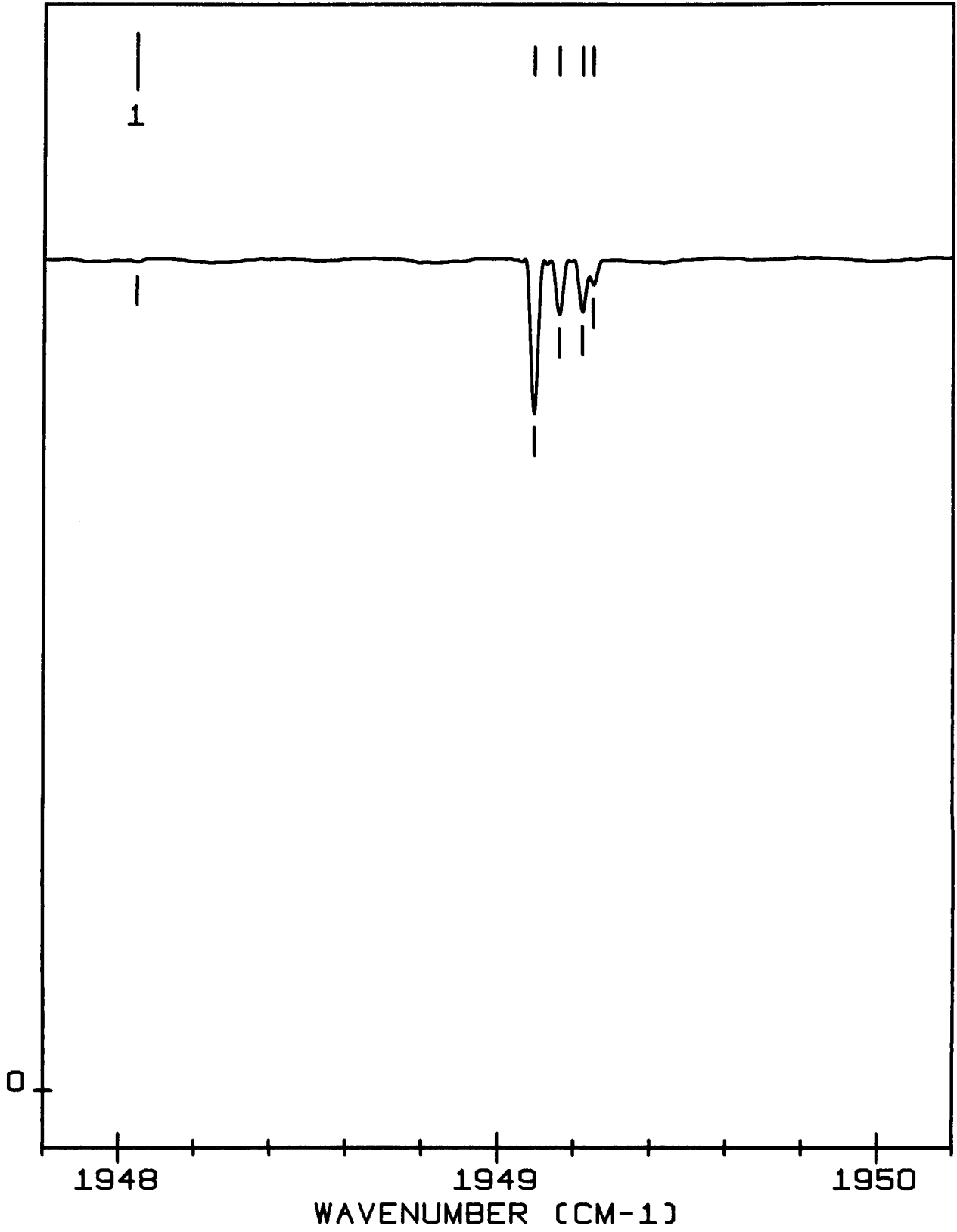


TABLE A 61

-1

Line Positions and Identifications (1950-1952 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1950.69902	1950.69907	11102-00001 626	R22
2	1950.82280	1950.82278	12202-01101 626	R40
3	1950.98206	1950.98210	12202-01101 626	R39
4	1951.12941		H2O	
5	1951.18520	1951.17663	21102-10001 626	Q2
		1951.19050	21102-10001 626	Q4
6	1951.20981	1951.21227	21102-10001 626	Q6
7	1951.24221	1951.24189	21102-10001 626	Q8
8	1951.27939	1951.27932	21102-10001 626	Q10
9	1951.32479	1951.32449	21102-10001 626	Q12
10	1951.37797	1951.37734	21102-10001 626	Q14
11	1951.43737	1951.43779	21102-10001 626	Q16
12	1951.50532	1951.50576	21102-10001 626	Q18
13	1951.58094	1951.58117	21102-10001 626	Q20
14	1951.66501	1951.66395	21102-10001 626	Q22
15	1951.75408	1951.75401	21102-10001 626	Q24
16	1951.85125	1951.85128	21102-10001 626	Q26
17	1951.95605	1951.95567	21102-10001 626	Q28

FRAME A61

9.857 Torr 384 meters

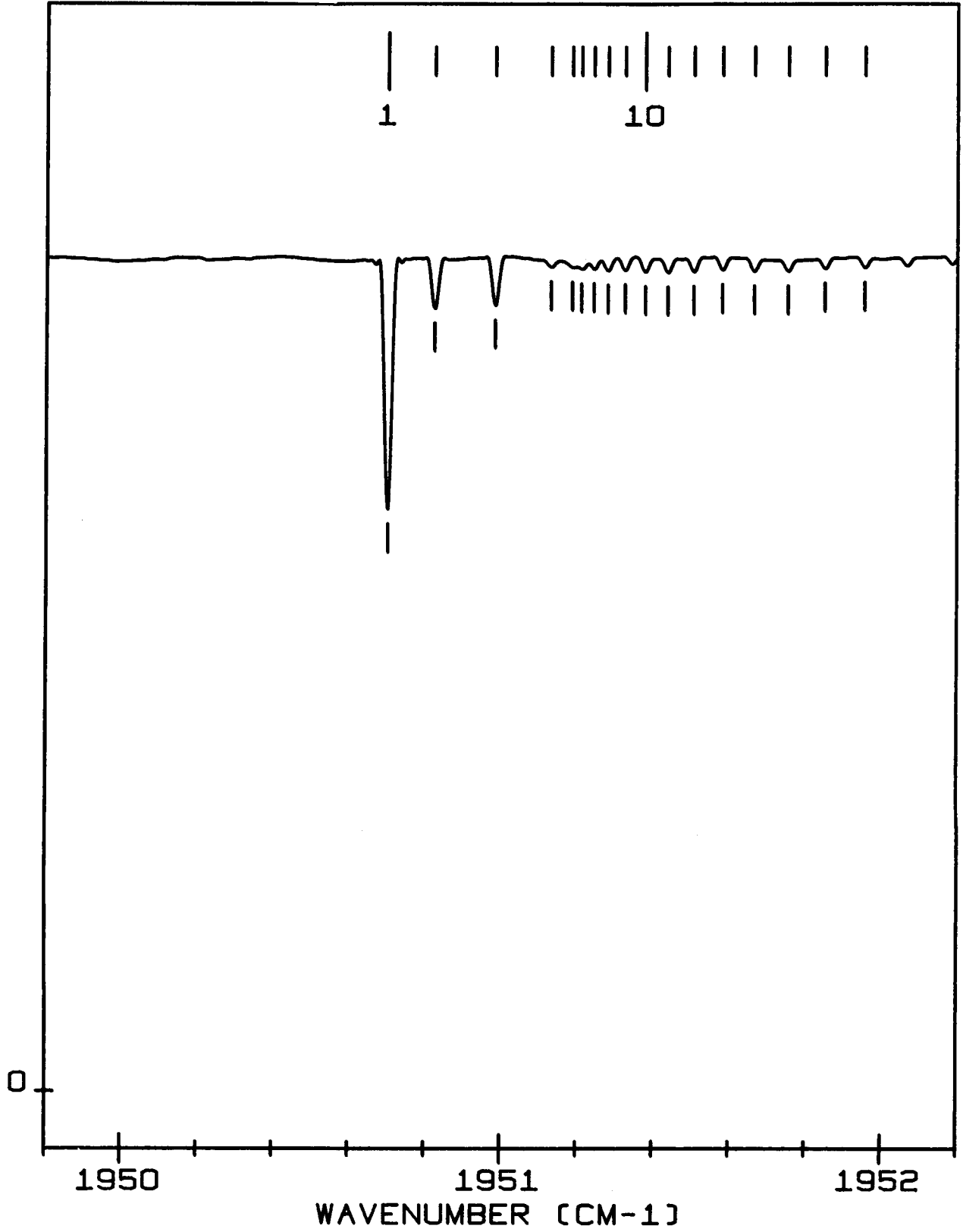


TABLE A 62

-1

Line Positions and Identifications (1952-1954 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1952.06643	1952.06709	21102-10001	626	Q30
2	1952.18563	1952.18545	21102-10001	626	Q32
3	1952.30784	1952.30776	11102-00001	626	R24
		1952.31061	21102-10001	626	Q34
4	1952.44039	1952.44242	21102-10001	626	Q36
5	1952.48862	1952.48874	12202-01101	626	R42
6	1952.58075	1952.58065	21102-10001	626	Q38
7	1952.75212	1952.75202	12202-01101	626	R41
		1952.72503	21102-10001	626	Q40
8	1952.87491	1952.87516	21102-10001	626	Q42
9	1953.02907	1953.03051	21102-10001	626	Q44
10	1953.18898	1953.19039	21102-10001	626	Q46
11	1953.35536	1953.35389	21102-10001	626	Q48
12	1953.51001	1953.51982	21102-10001	626	Q50
			21102-10001	626	R2?
13	1953.73988			?	
14	1953.77528			?	
15	1953.91979	1953.91985	11102-00001	626	R26

FRAME A62

9.857 Torr 384 meters

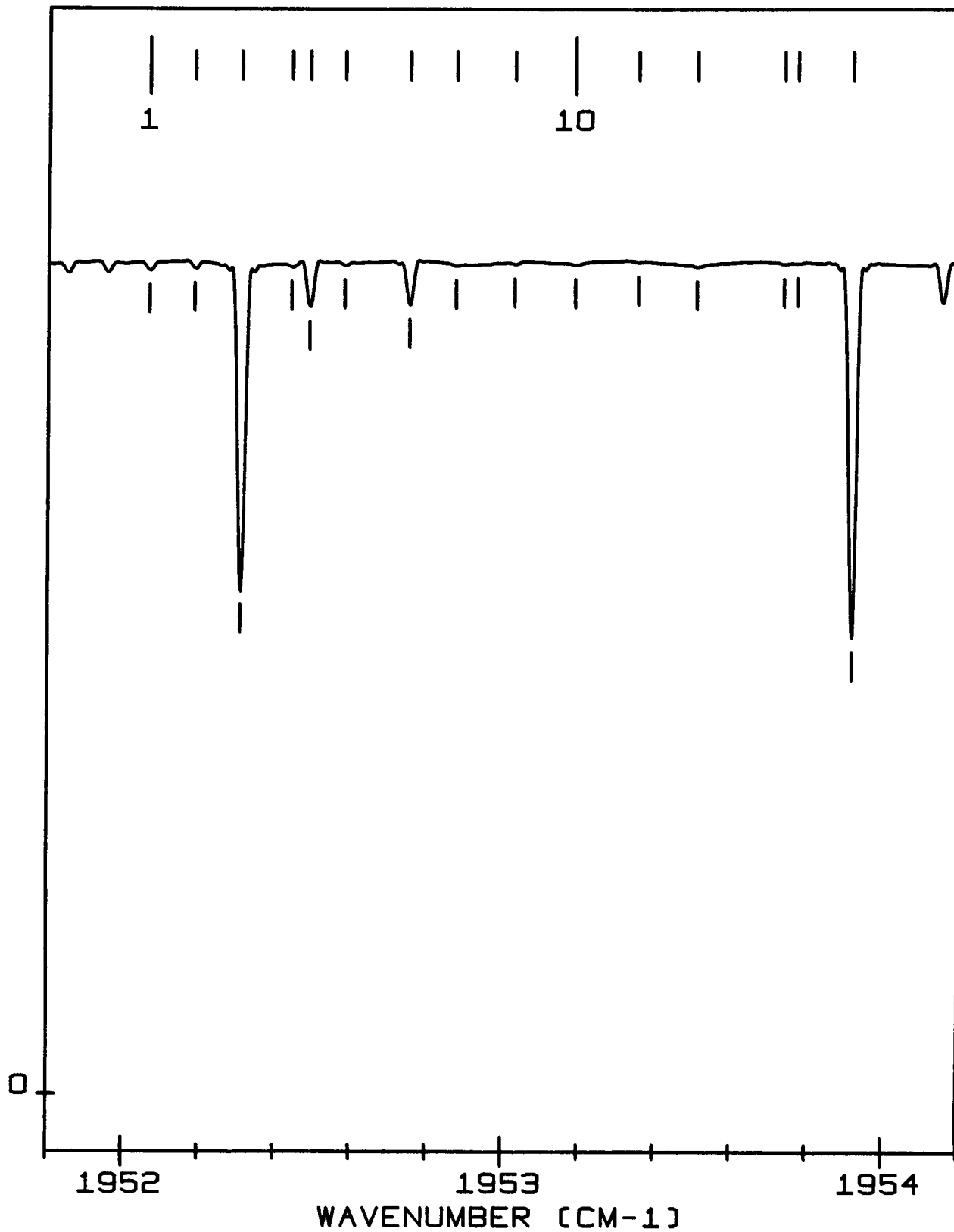




TABLE A 63

Line Positions and Identifications (1954-1956 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1954.15813	1954.15813	12202-01101 626	R44
2	1954.40584		H2O	
3	1954.53139	1954.53116	12202-01101 626	R43
4	1954.99593		H2O	
5	1955.24851		H2O	
6	1955.53522	1955.53521	11102-00001 626	R28
7	1955.73435		H2O	
8	1955.83088	1955.83078	12202-01101 626	R46

FRAME A63

9.857 Torr 384 meters

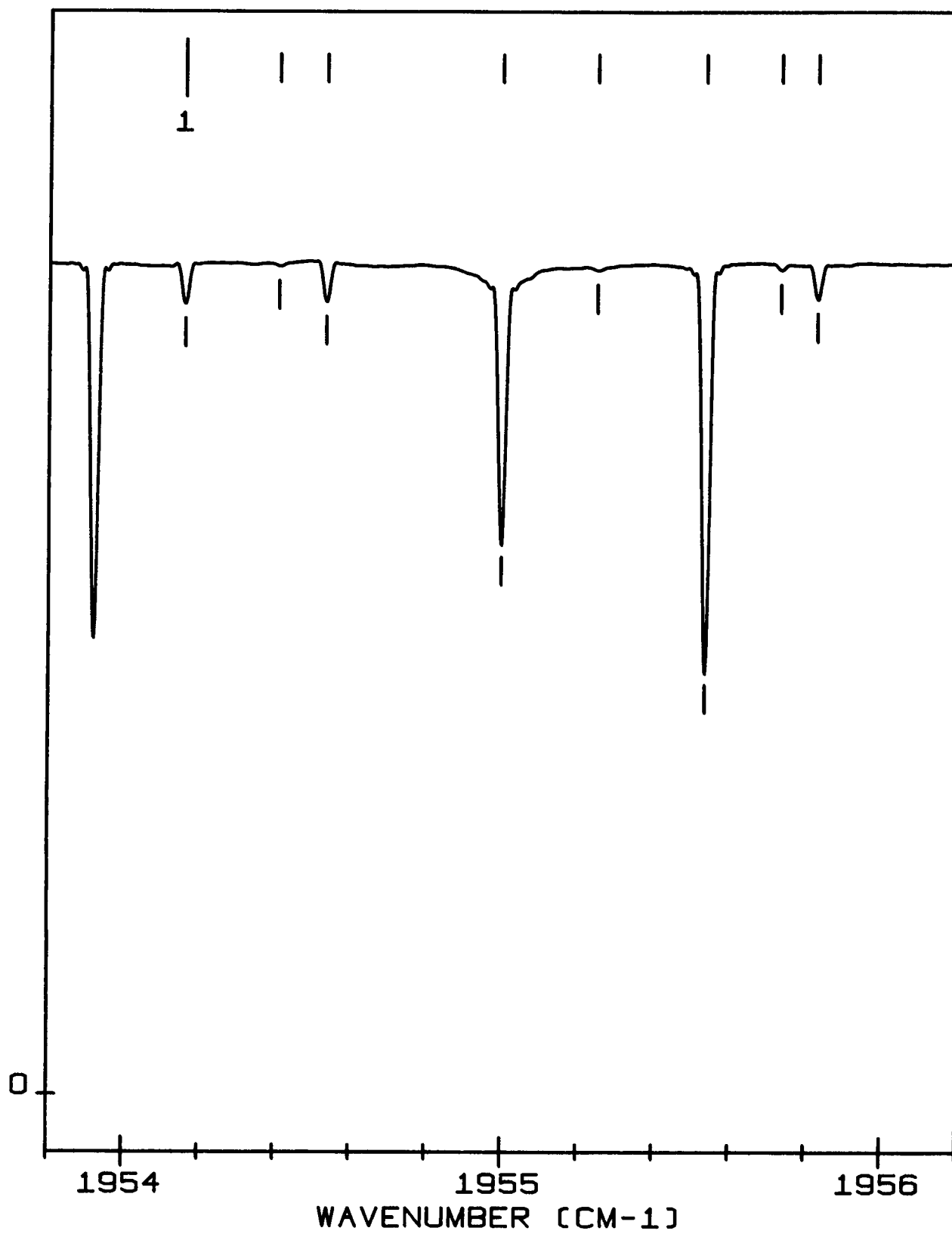


TABLE A 64

-1

Line Positions and Identifications (1956-1958 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1956.23324		H2O
2	1956.31979	1956.31939	12202-01101 626 R45
3	1956.62708	1956.62456	21102-10001 626 R6
4	1957.02891		H2O
5	1957.15376	1957.15376	11102-00001 626 R30
6	1957.50658	1957.50653	12202-01101 626 R48
7	1957.65535		H2O
8	1957.69640	1957.69906	20002-01101 626 P55
9	1957.89736	1957.89749	20002-01101 636 P47

FRAME A64

9.857 Torr 384 meters

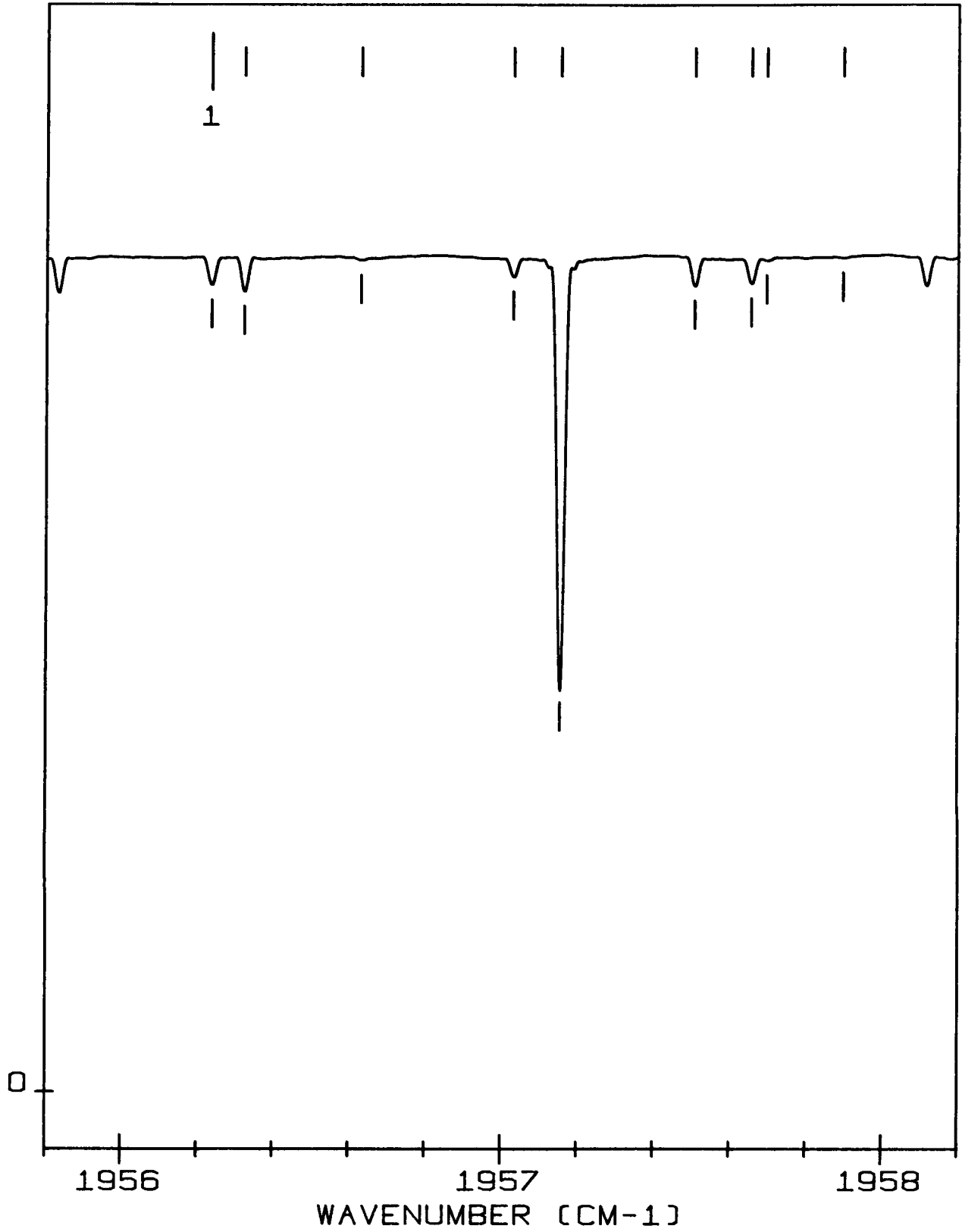


TABLE A 65

-1

Line Positions and Identifications (1958-1960 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1958.11665	1958.11660	12202-01101 626	R47
2	1958.17870	1958.17971	21102-10001 626	R8
3	1958.77533	1958.77535	11102-00001 626	R32
4	1959.18517	1959.18518	12202-01101 626	R50
5	1959.48226	1959.48025	20002-01101 626	P53
6	1959.63104		H2O	
		1959.62828	20002-01101 636	P45
7	1959.73493	1959.73340	21102-10001 626	R10
8	1959.92261	1959.92265	12202-01101 626	R49

FRAME A65

9.857 Torr 384 meters

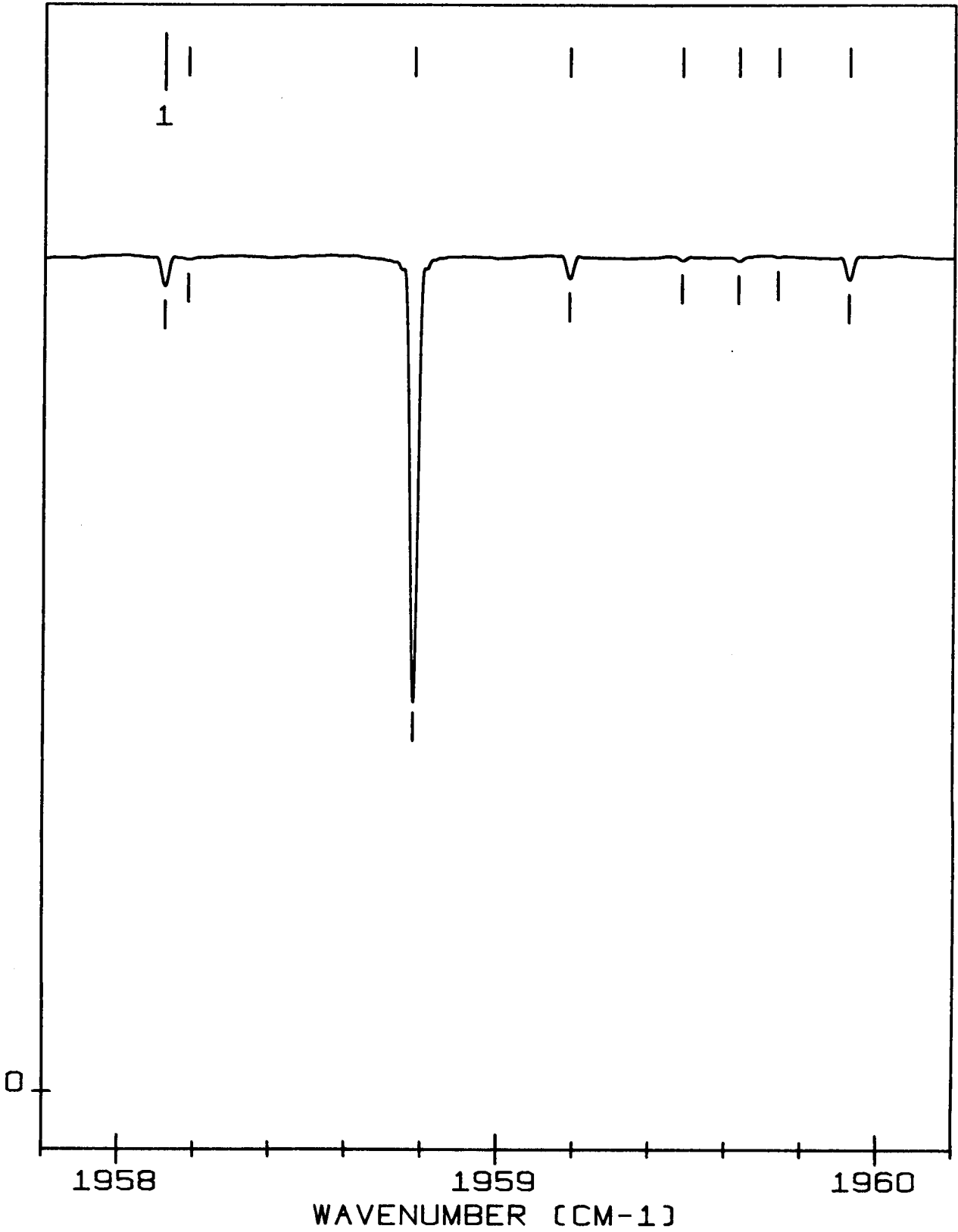


TABLE A 66

-1

Line Positions and Identifications (1960-1962 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1960.39988	1960.39988	11102-00001 626	R34	
2	1960.86646	1960.86656	12202-01101 626	R52	
3	1961.18151		H2O		
4	1961.25264	1961.25381	20002-01101 626	P51	
5	1961.35161	1961.35129	20002-01101 636	P43	
6	1961.73729	1961.73738	12202-01101 626	R51	
7	1961.92989		H2O		

FRAME A66

9.857 Torr 384 meters

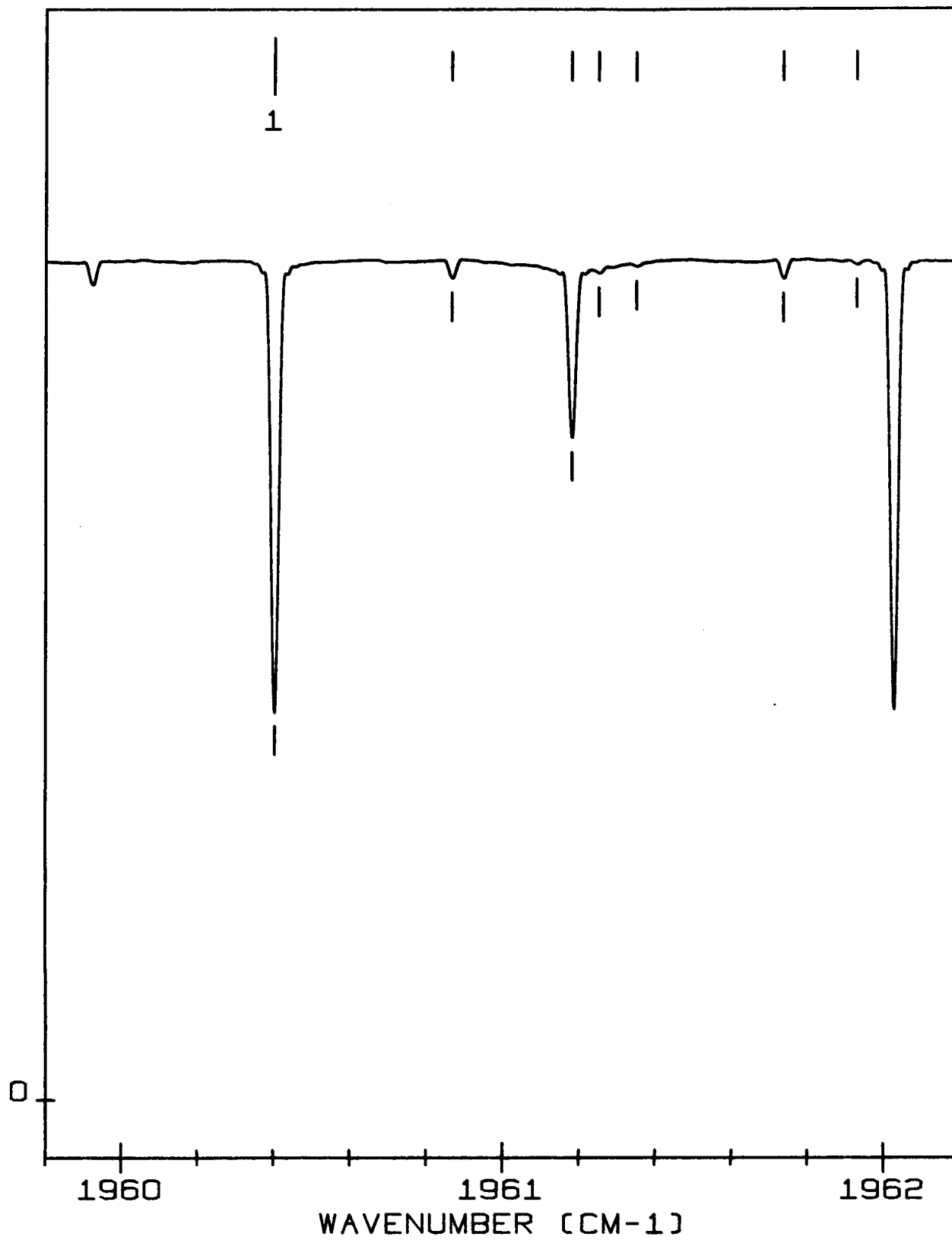




TABLE A 67

-1

Line Positions and Identifications (1962-1964 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1962.02720	1962.02721	11102-00001 626	R36
2	1962.55031	1962.55046	12202-01101 626	R54
3	1963.01997	1963.01968	20002-01101 626	P49
4	1963.06719	1963.06656	20002-01101 636	P41
5	1963.56087	1963.56064	12202-01101 626	R53
6	1963.65724	1963.65722	11102-00001 626	R38

FRAME A67

9.857 Torr 384 meters

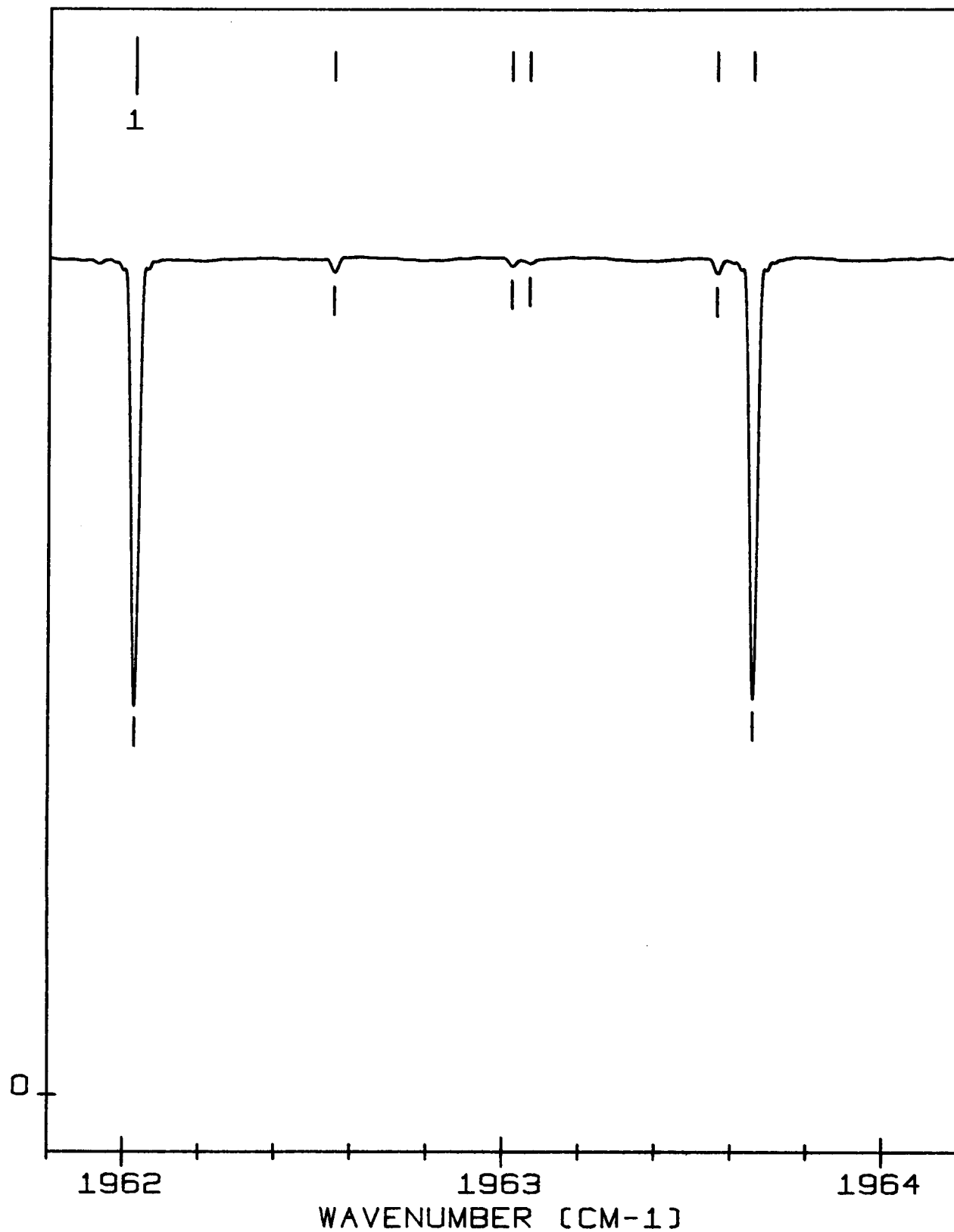


TABLE A 68

-1

Line Positions and Identifications (1964-1966 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1964.23636	1964.23669	12202-01101 626	626	R56
2	1964.77736	1964.77781	20002-01101 626	626	P47
		1964.77412	20002-01101 636	636	P39
3	1965.14260	1965.14231	03301-00001 626	626	P58
4	1965.28971	1965.28975	11102-00001 626	626	R40
5	1965.39187	1965.39225	12202-01101 626	626	R55
6	1965.92531	1965.92505	12202-01101 626	626	R58

9.857 Torr 384 meters

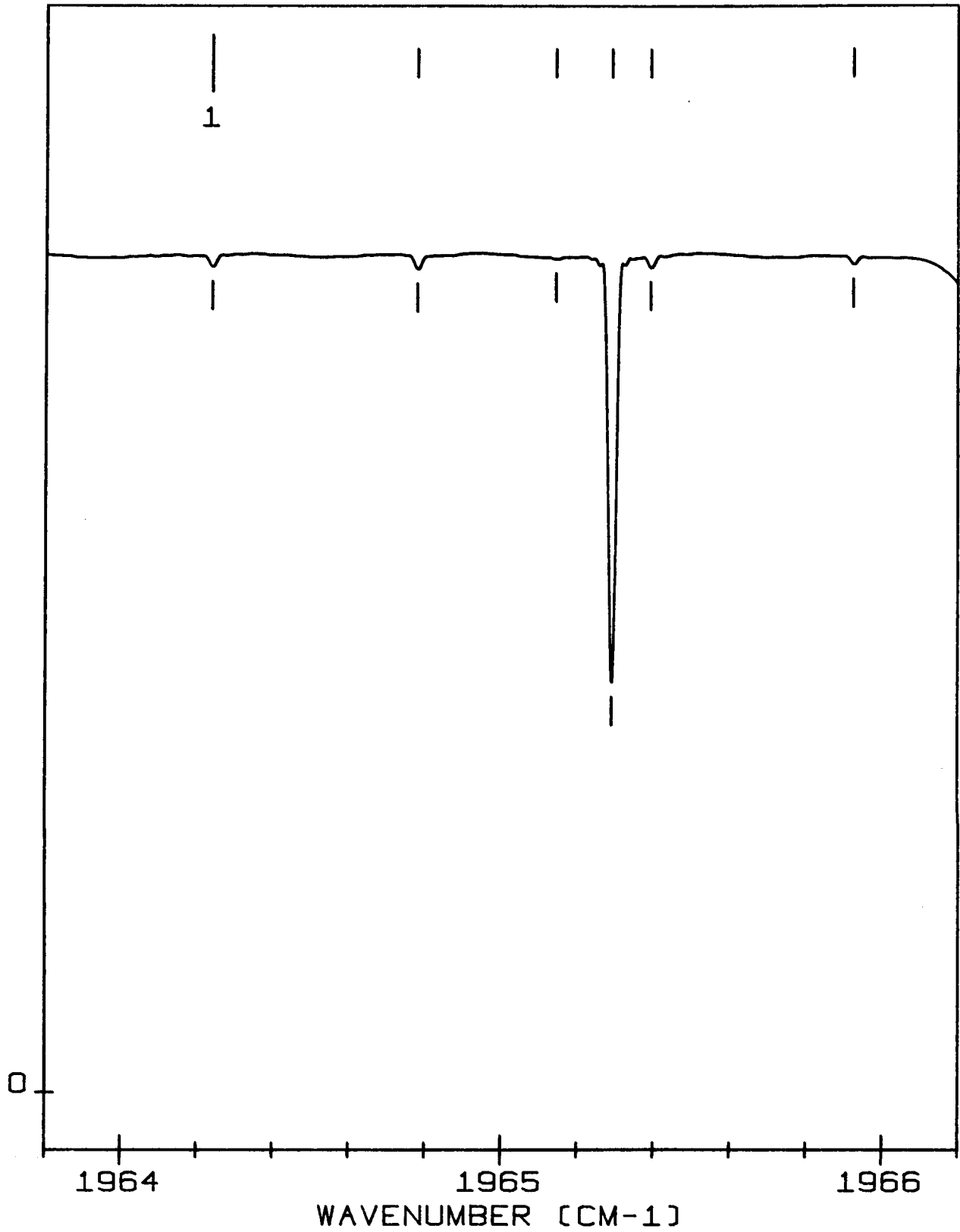


TABLE A 69

-1

Line Positions and Identifications (1966-1968 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1966.26094		H2O		
2	1966.47335	1966.47398	20002-01101	636	P37
3	1966.52795	1966.52815	20002-01101	626	P45
4	1966.92467	1966.92467	11102-00001	626	R42
5	1967.23403	1967.23203	12202-01101	626	R57
6	1967.44187		H2O		
7	1967.61315	1967.61532	12202-01101	626	R60

FRAME A69

9.857 Torr 384 meters

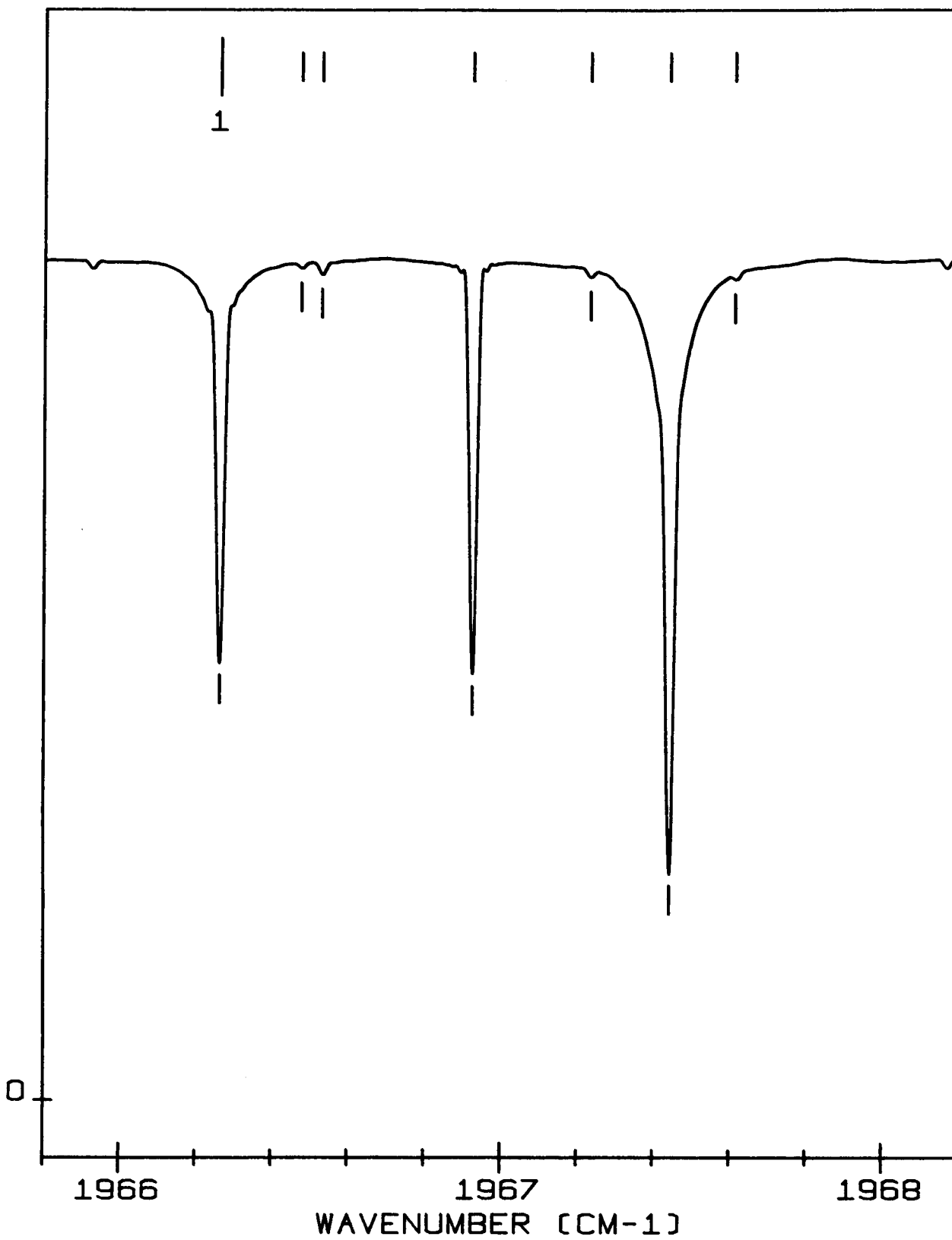


TABLE A 70

-1

Line Positions and Identifications (1968-1970 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1968.16897	1968.16620	20002-01101 636	P35	
			H2O		
2	1968.27031	1968.27066	20002-01101 626	P43	
3	1968.41517	1968.41689	03301-00001 626	P52	
4	1968.56184	1968.56183	11102-00001 626	R44	
5	1969.08123	1969.07979	12202-01101 626	R59	
6	1969.30720	1969.30729	12202-01101 626	R62	
7	1969.54201	1969.54068	03301-00001 626	P50	
8	1969.85129	1969.85079	20002-01101 636	P33	

9.857 Torr 384 meters

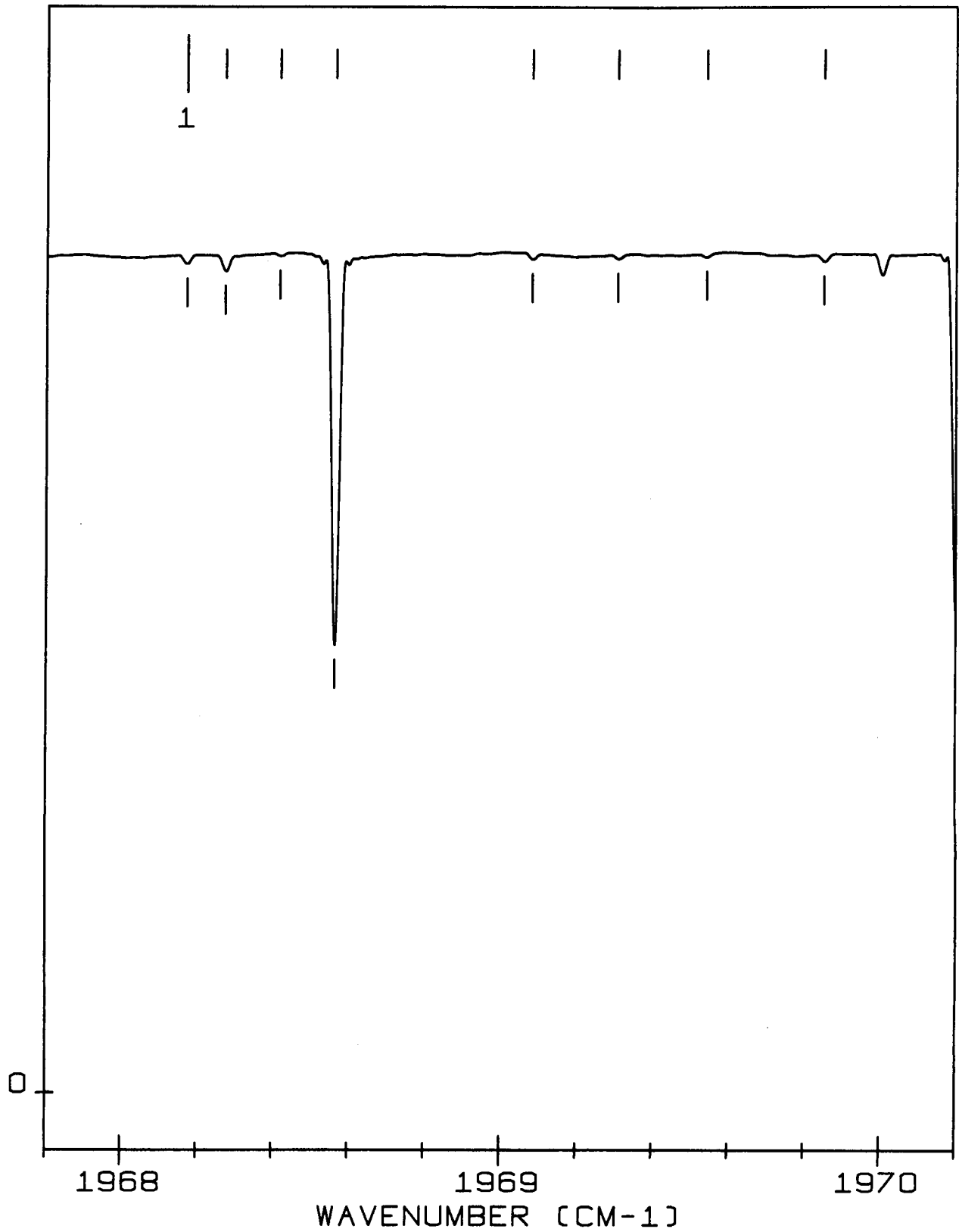




TABLE A 71

-1

Line Positions and Identifications (1970-1972 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1970.00486	1970.00530	20002-01101 626	P41
2	1970.20109	1970.20107	11102-00001 626	R46
3	1970.67926		?	
4	1970.93426	1970.93529	12202-01101 626	R61
5	1970.99938	1971.00072	12202-01101 626	R64
6	1971.52765	1971.52780	20002-01101 636	P31
7	1971.73133	1971.73201	20002-01101 626	P39
8	1971.84225	1971.84223	11102-00001 626	R48

FRAME A71

9.857 Torr 384 meters

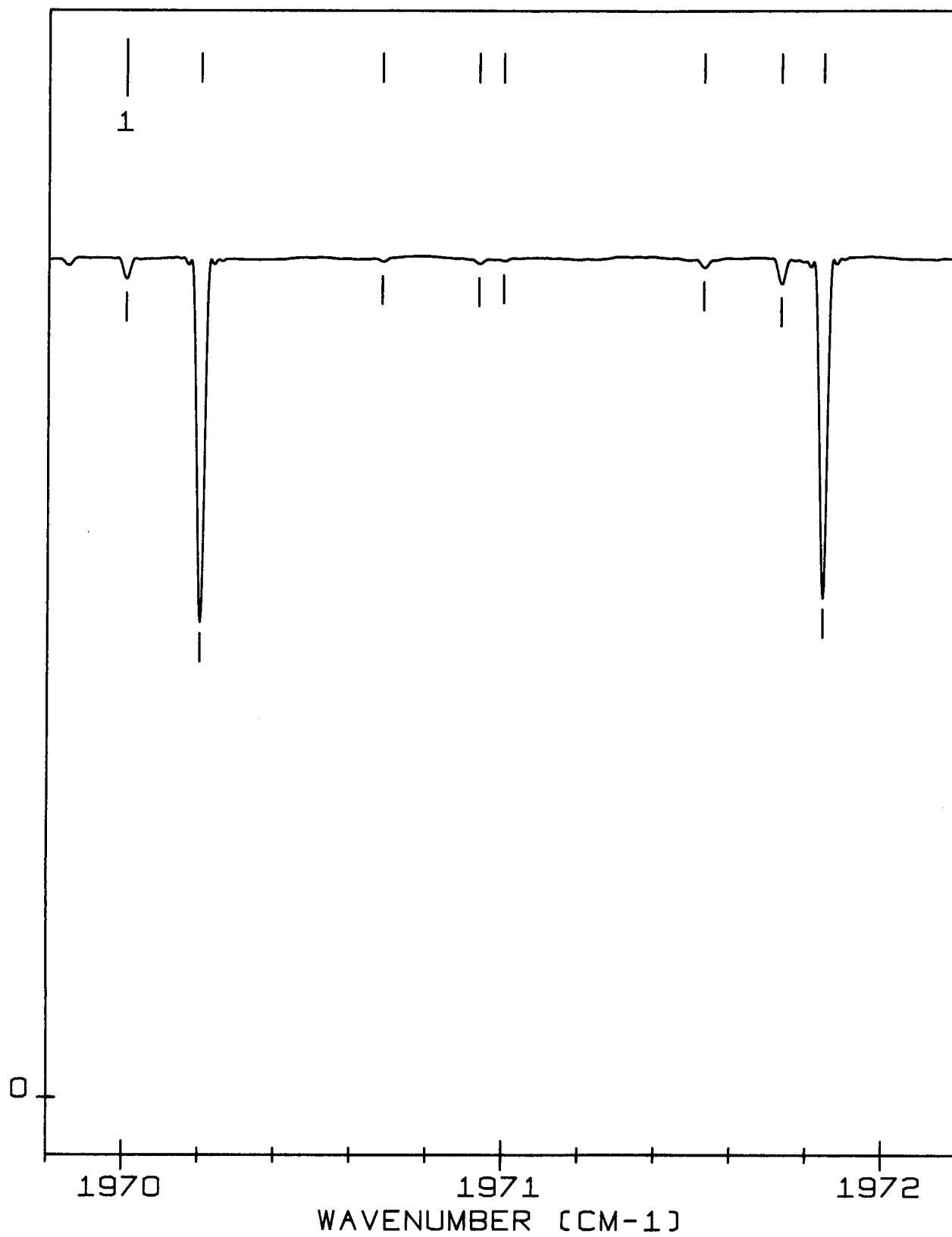


TABLE A 72

-1

Line Positions and Identifications (1972-1974 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1972.69925	1972.69538	12202-01101 626	R66	
2	1972.79906	1972.79832	12202-01101 626	R63	
3	1973.01139	1973.01291	03301-00001 626	P44	
4	1973.19725	1973.19726	20002-01101 636	P29	
5	1973.45047	1973.45076	20002-01101 626	P37	
6	1973.48516	1973.48516	11102-00001 626	R50	

FRAME A72

9.857 Torr 384 meters

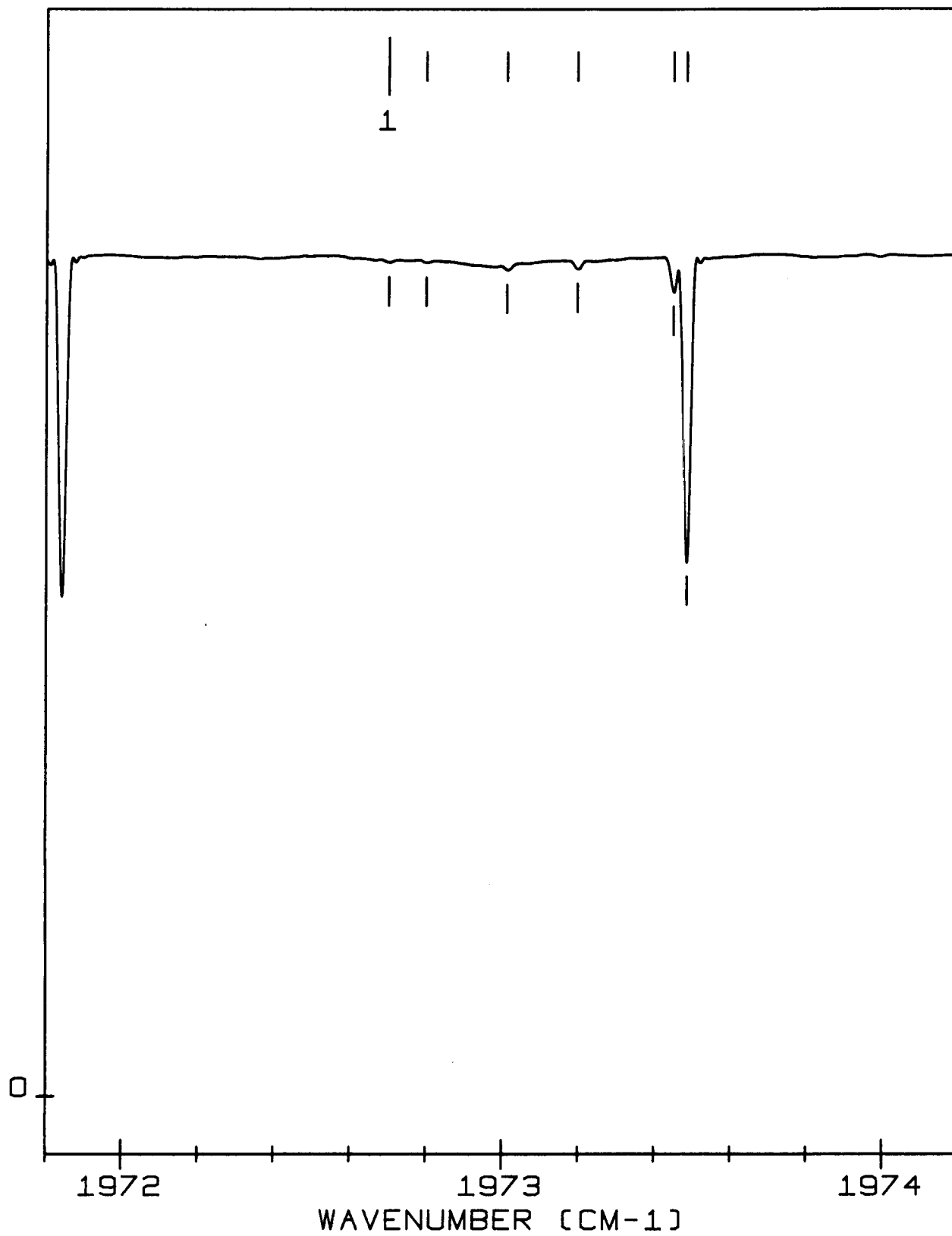


TABLE A 73

-1

Line Positions and Identifications (1974-1976 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1974.20423	1974.20461	03301-00001 626 P42
2	1974.67049	1974.66862	12202-01101 626 R65
3	1974.85907	1974.85922	20002-01101 636 P27
4	1975.12968	1975.12966	11102-00001 626 R52
5	1975.16235	1975.16150	20002-01101 626 P35
6	1975.41418	1975.41369	03301-00001 626 P40

FRAME A73

9.857 Torr 384 meters

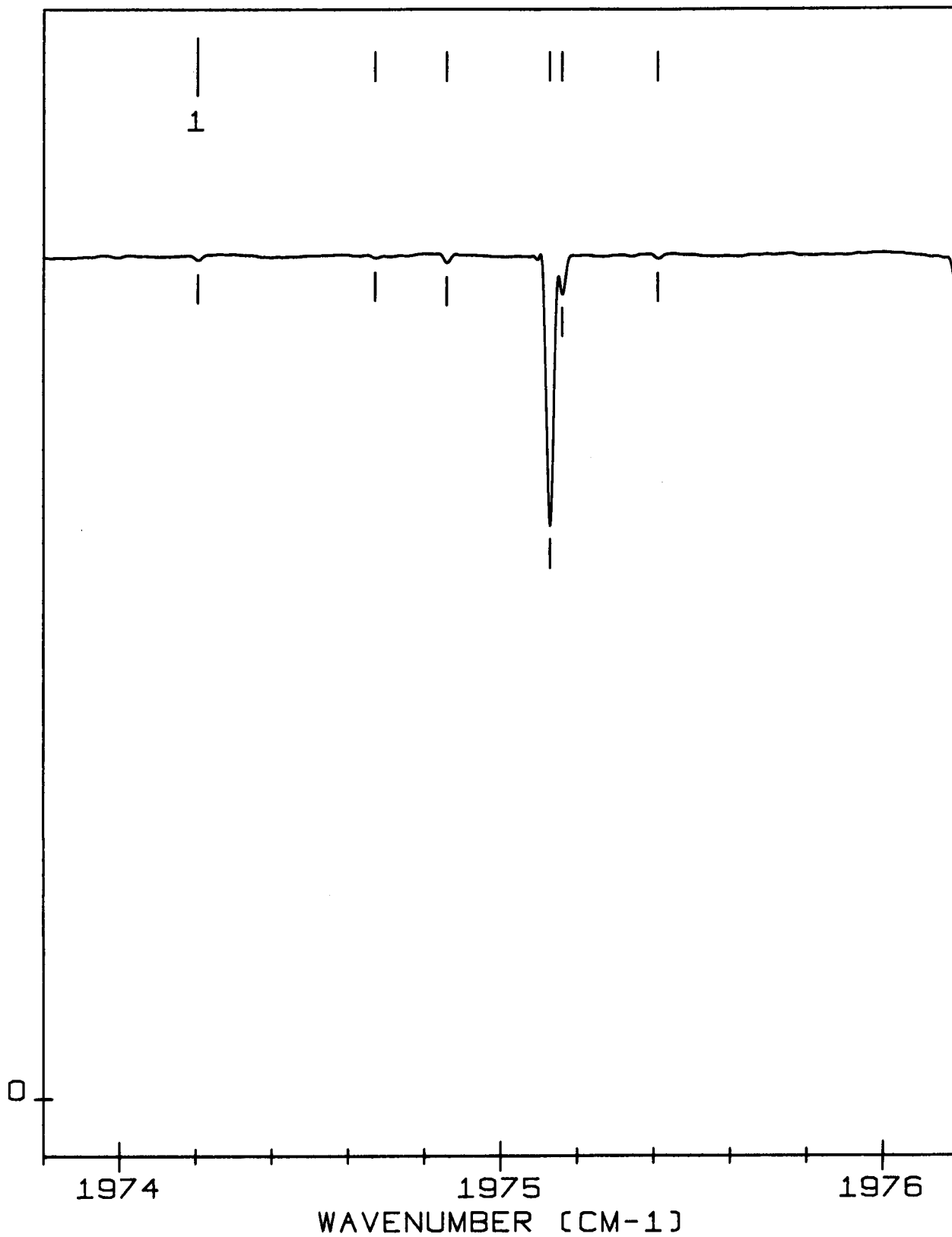


TABLE A 74

-1

Line Positions and Identifications (1976-1978 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1976.19814		H2O
2	1976.51399	1976.51371	20002-01101 636 P25
3	1976.64297	1976.64023	03301-00001 626 P38
4	1976.77559	1976.77559	11102-00001 626 R54
5	1976.86387	1976.86418	20002-01101 626 P33
6	1977.62897		H2O
7	1977.88215	1977.87076	21102-02201 626 P33
		1977.88427	03301-00001 626 P36

FRAME A74

9.857 Torr 384 meters

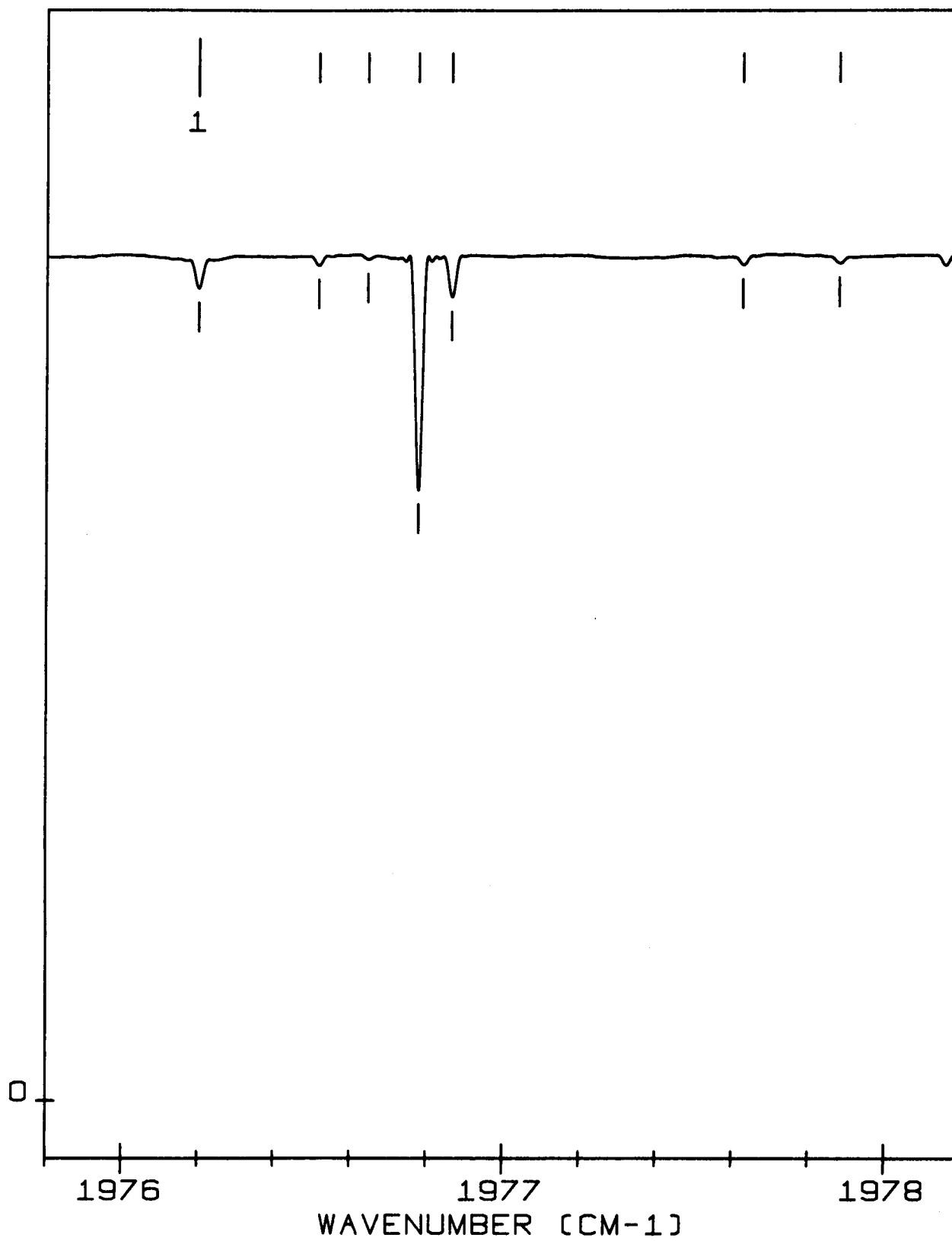




TABLE A 75

-1

Line Positions and Identifications (1978-1980 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1978.16059	1978.16079	20002-01101	636	P23
2	1978.42282	1978.42275	11102-00001	626	R56
3	1978.55824	1978.55878	20002-01101	626	P31
4	1978.72959	1978.72759	11101-00001	636	P74
5	1979.14574	1979.14579	03301-00001	626	P34
6	1979.32026	1979.32036	21102-02201	626	P30
7	1979.49699	1979.49705	21102-02201	626	P31
8	1979.79955	1979.80050	20002-01101	636	P21

FRAME A75

9.857 Torr 384 meters

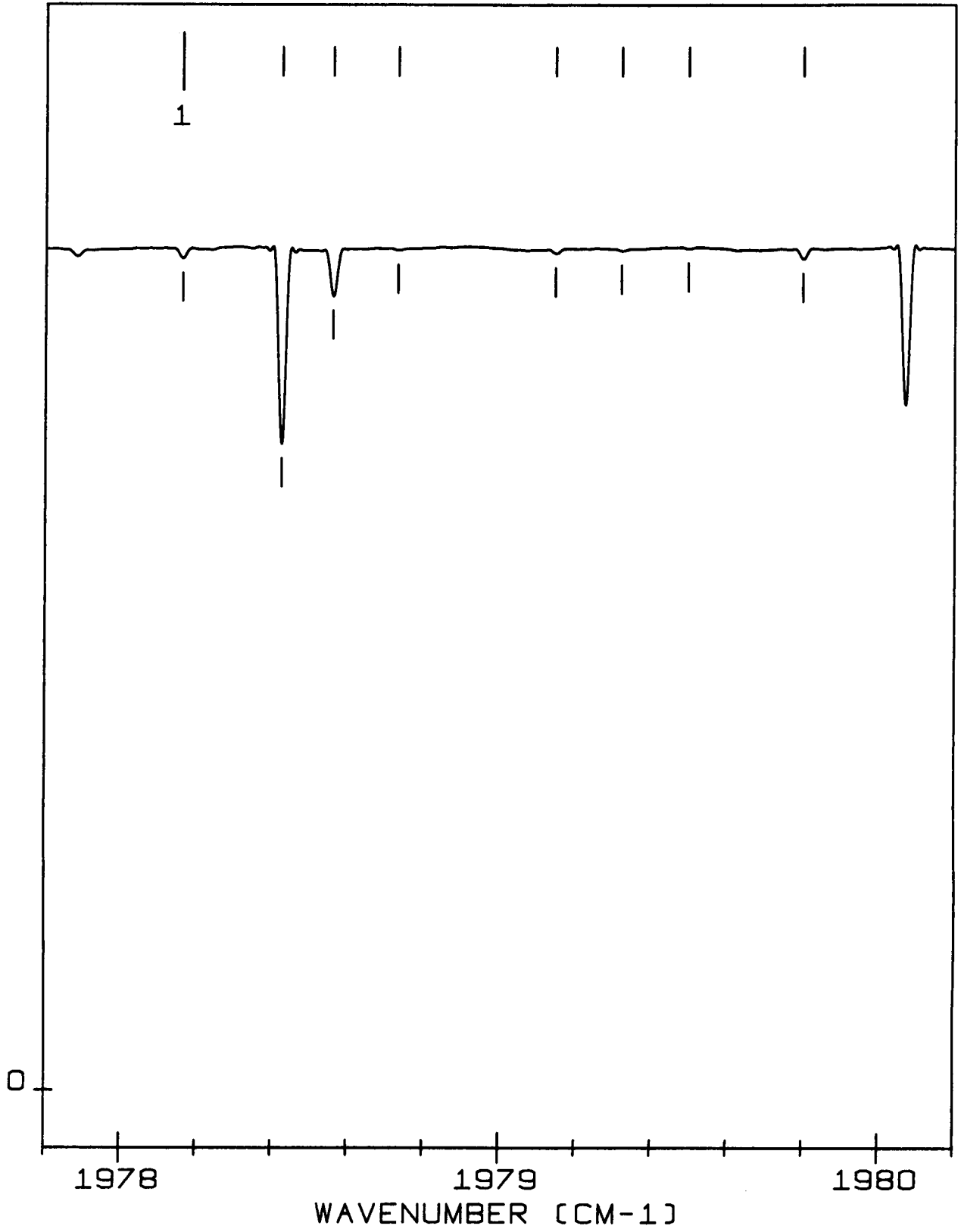


TABLE A 76

-1

Line Positions and Identifications (1980-1982 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1980.07093	1980.07096	11102-00001 626	R58
2	1980.24518	1980.24525	20002-01101 626	P29
3	1980.30525	1980.30604	11101-00001 636	P72
4	1980.42403	1980.42476	03301-00001 626	P32
5	1980.52272	1980.52281	11101-00001 638	P34
6	1980.76200		H2O	
7	1981.07045	1981.07026	21102-02201 626	P28
8	1981.11898	1981.11962	21102-02201 626	P29
9	1981.33011		H2O	
10	1981.43347	1981.43289	20002-01101 636	P19
11	1981.72001	1981.72004	11102-00001 626	R60
12	1981.88689	1981.88560	11101-00001 636	P70
			SIDELOBE	
13	1981.92383	1981.92354	20002-01101 626	P27
14	1981.99001		H2O	

FRAME A76

9.857 Torr 384 meters

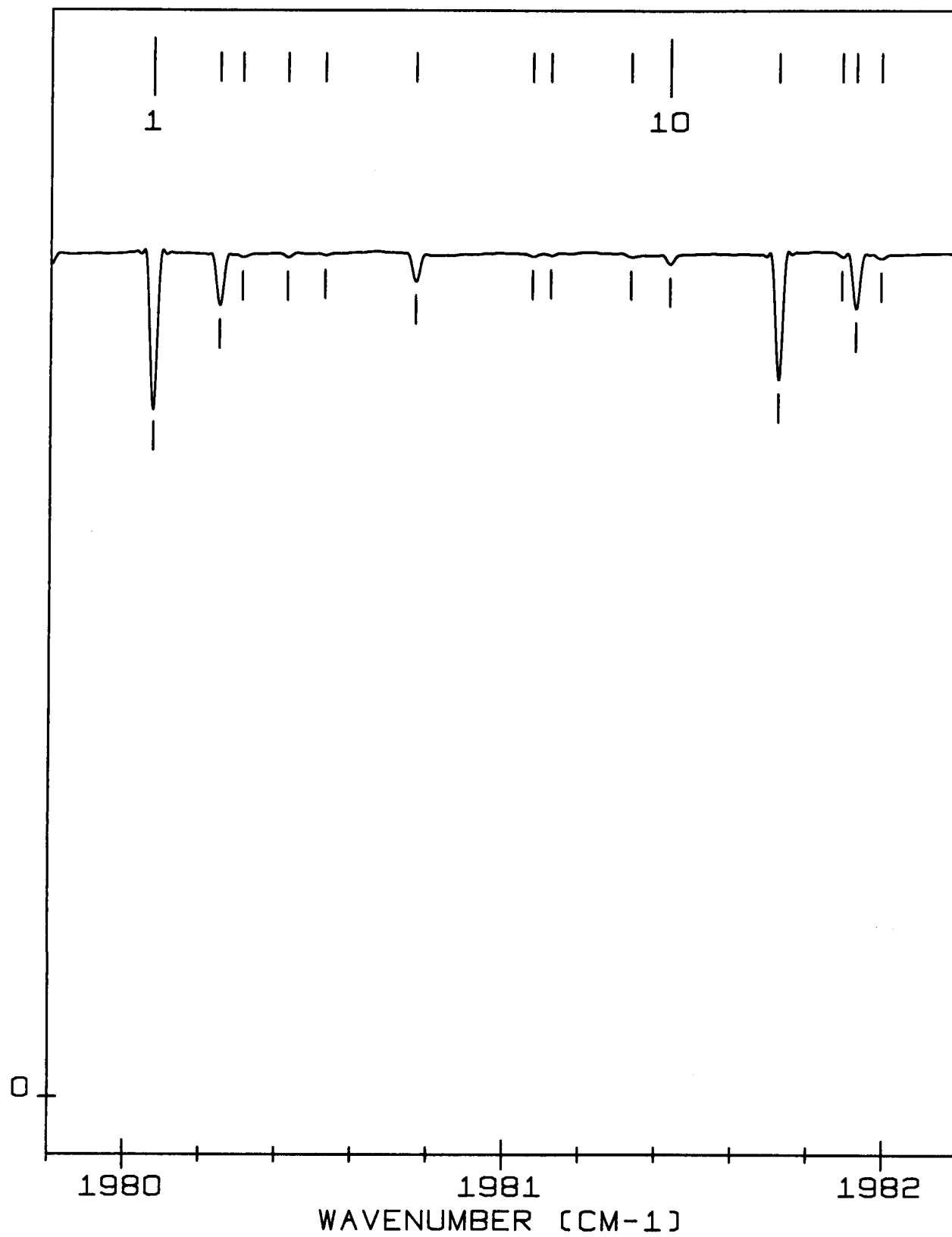


TABLE A 77

-1

Line Positions and Identifications (1982-1984 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1982.70759		H2O		
		1982.71014	11101-00001	638	P31
2	1982.73877	1982.73846	21102-02201	626	P27
3	1982.80613	1982.80837	21102-02201	626	P26
4	1983.05866	1983.05801	20002-01101	636	P17
			H2O		
		1983.03460	03301-00001	626	P28
5	1983.36980	1983.36979	11102-00001	626	R62
6	1983.46665	1983.46614	11101-00001	636	P68
7	1983.59373	1983.59363	20002-01101	626	P25

FRAME A77

9.857 Torr 384 meters

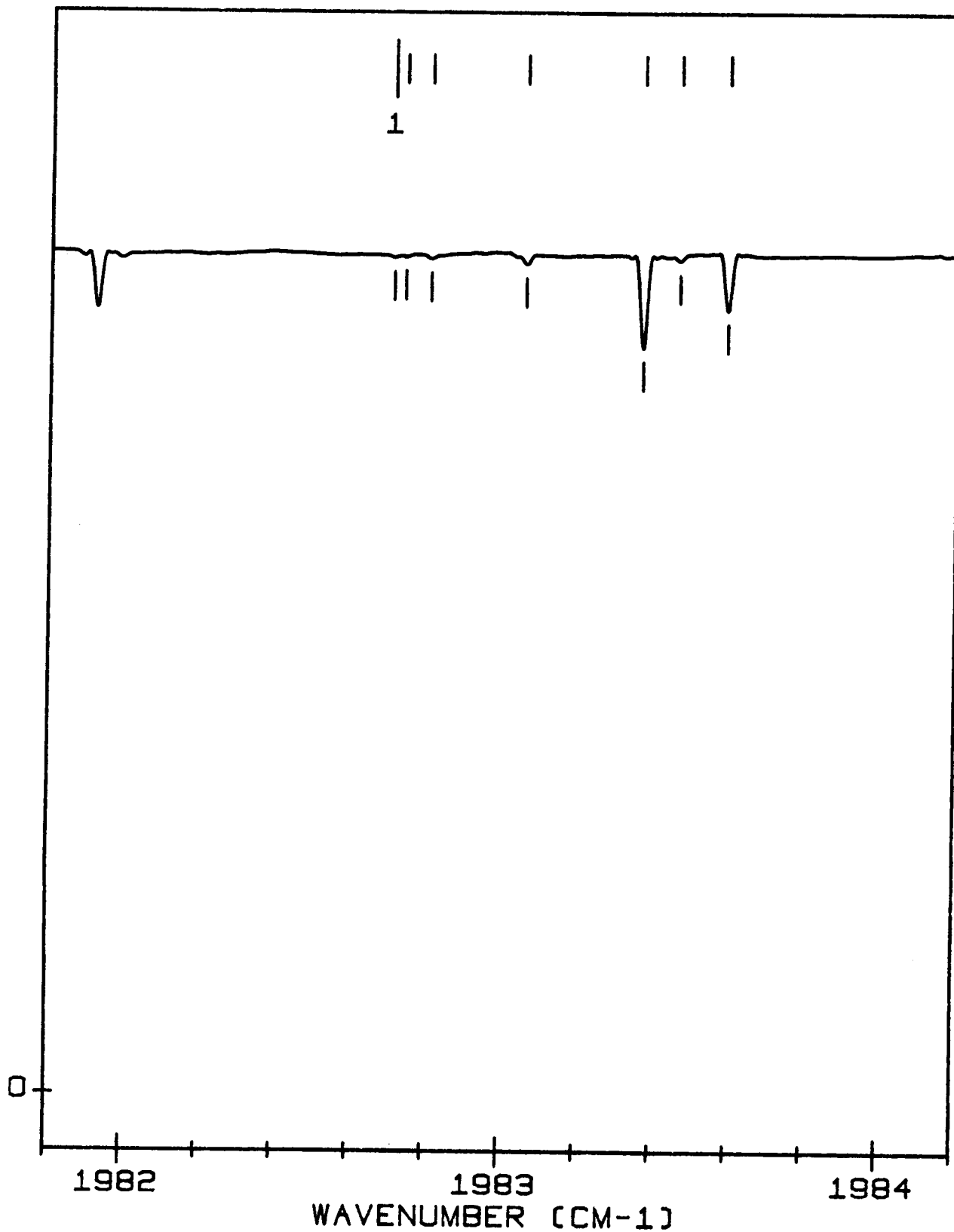


TABLE A 78

-1

Line Positions and Identifications (1984-1986 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1984.17116	1984.16972	11101-00001 638 P29
2	1984.35670	1984.35357	21102-02201 626 P25
		1984.36517	03301-00001 626 P26
3	1984.67489	1984.67591	20002-01101 636 P15
4	1984.77406		?
5	1985.01974	1985.02001	11102-00001 626 R64
6	1985.05014	1985.04752	11101-00001 636 P66
			SIDELOBE
7	1985.25545	1985.25547	20002-01101 626 P23
8	1985.63259	1985.63040	11101-00001 638 P27
9	1985.71276	1985.71256	03301-00001 626 P24
10	1985.96556	1985.96496	21102-02201 626 P23
11	1985.99905		H2O

FRAME A78

9.857 Torr 384 meters

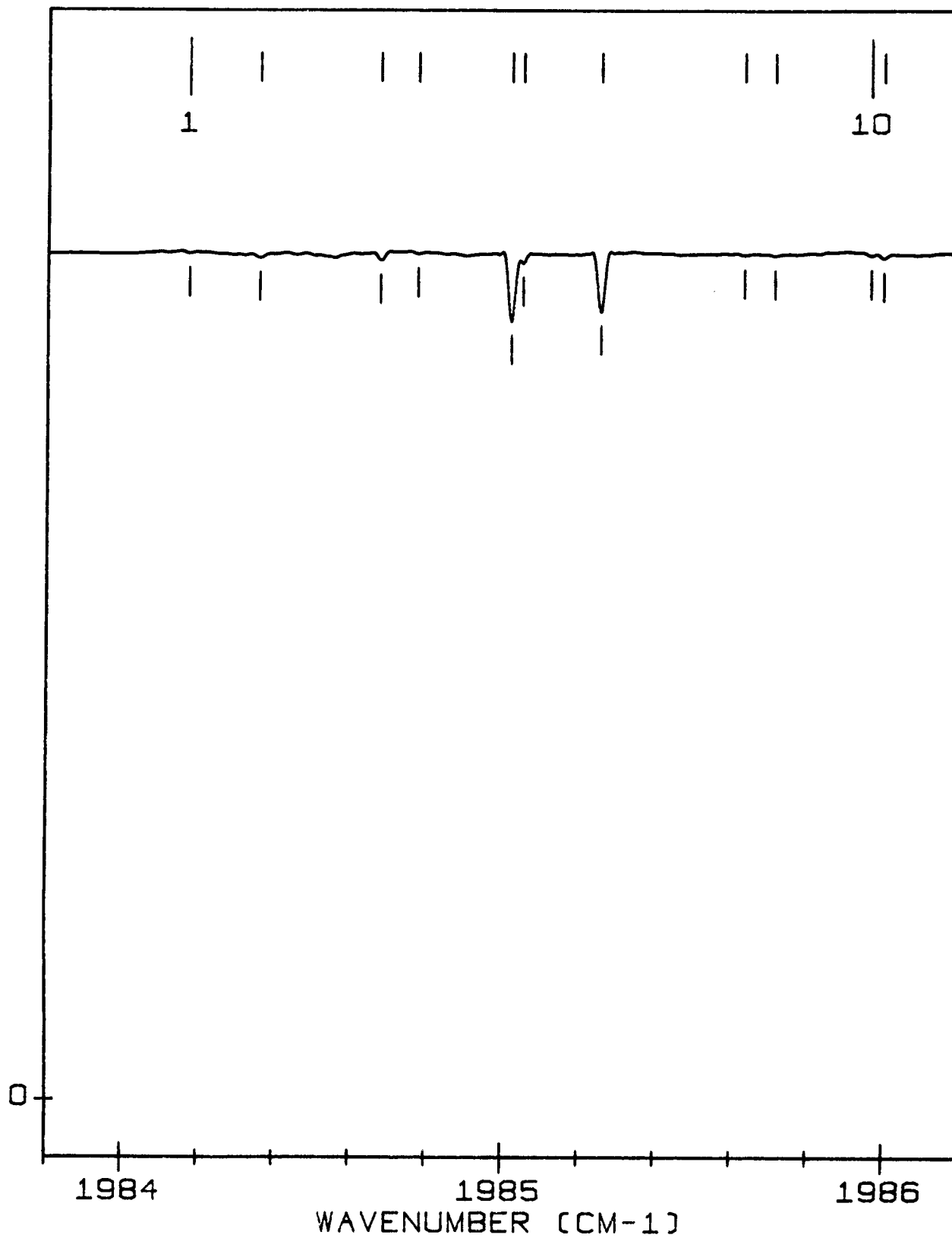




TABLE A 79

-1

Line Positions and Identifications (1986-1988 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	1986.24567	1986.24522	21102-02201	626	P22
2	1986.28769	1986.28666	20002-01101	636	P13
3	1986.35940	1986.36114	11101-00001	638	P26
4	1986.47620		?		
5	1986.62948	1986.62964	11101-00001	636	P64
6	1986.67036	1986.67052	11102-00001	626	R66
7	1986.90907	1986.90902	20002-01101	626	P21
8	1987.08796	1987.09216	11101-00001	638	P25
		1987.07651	03301-00001	626	P22
9	1987.15324		H2O		
10	1987.33992		H2O		
11	1987.57111	1987.57263	21102-02201	626	P21
12	1987.82453	1987.82345	11101-00001	638	P24
13	1987.89031	1987.89031	20002-01101	636	P11
14	1987.94142	1987.94327	21102-02201	626	P20

FRAME A79

9.857 Torr 384 meters

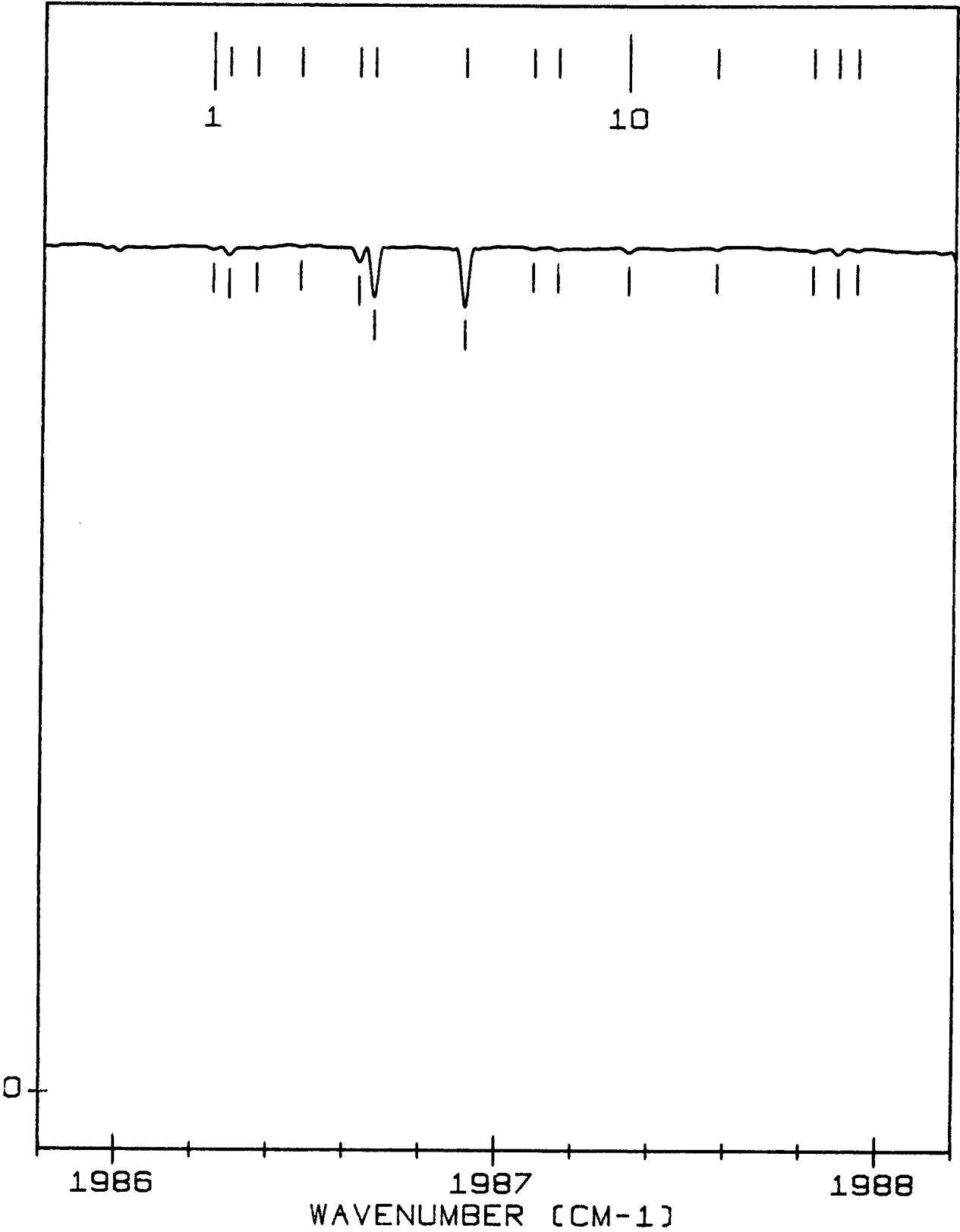


TABLE A 80

-1

Line Positions and Identifications (1988-1990 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1988.21302	1988.21235	11101-00001 636	P62
2	1988.32307	1988.32110	11102-00001 626	R68
3	1988.39551		H2O	
4	1988.55385	1988.55426	20002-01101 626	P19
		1988.55502	11101-00001 638	P23
5	1989.17701	1989.17657	21102-02201 626	P19
6	1989.28460	1989.28686	11101-00001 638	P22
7	1989.48717	1989.48691	20002-01101 636	P9
8	1989.53321		?	
9	1989.62817	1989.62812	21102-02201 626	P18
10	1989.79542	1989.79556	11101-00001 636	P60
11	1989.97177	1989.97155	11102-00001 626	R70

FRAME A80

9.857 Torr 384 meters

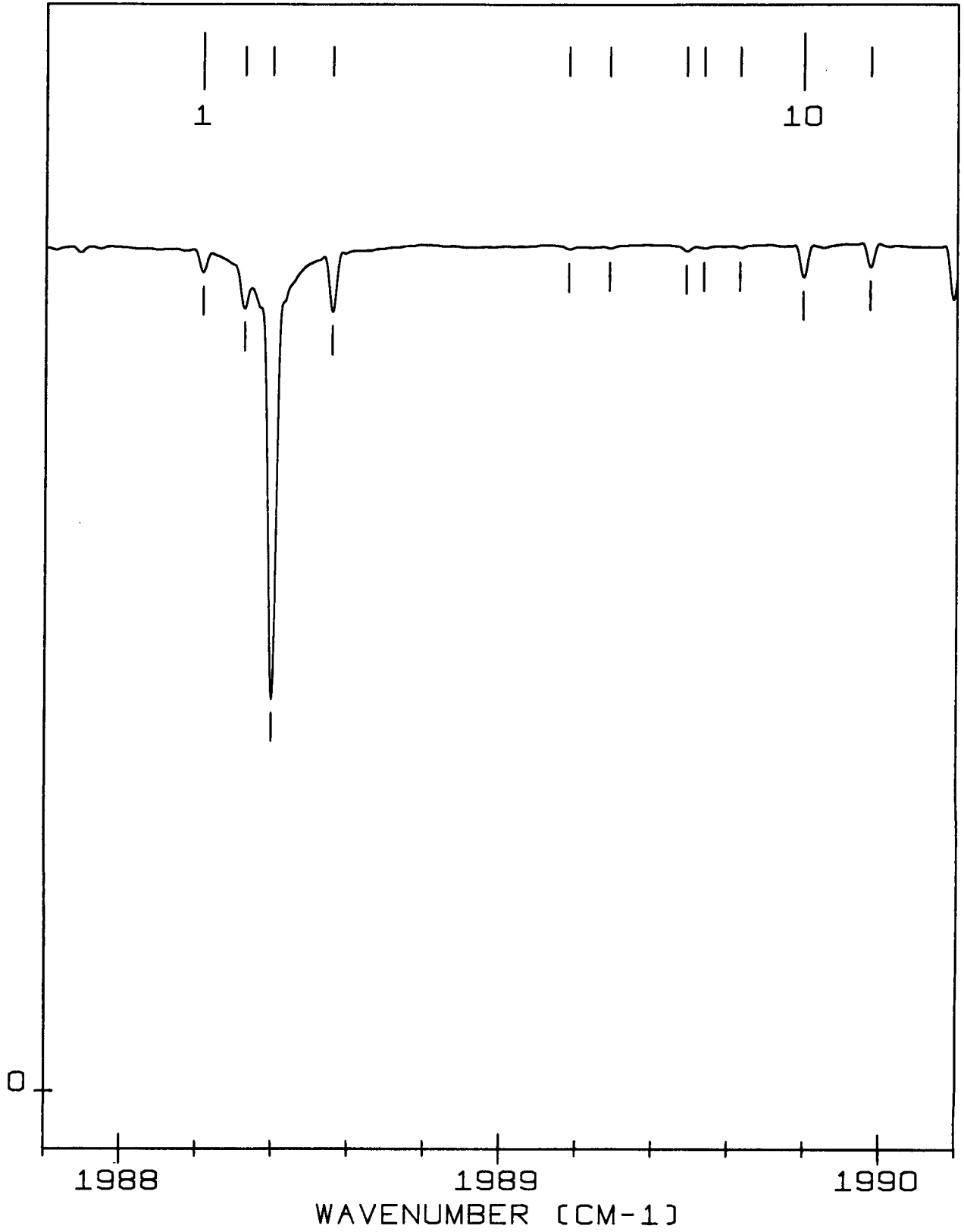


TABLE A 81

-1

Line Positions and Identifications (1990-1992 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1990.01975	1990.01897	11101-00001 638 SIDELOBE	P21
2	1990.19142	1990.19115	20002-01101 626	P17
3	1990.75207	1990.75135	11101-00001 638	P20
4	1990.77469	1990.77678	21102-02201 626	P17
5	1991.07500	1991.07654	20002-01101 636	P7
6	1991.30149	1991.30071	21102-02201 626	P16
7	1991.37911	1991.37914	11101-00001 636	P58
8	1991.48324	1991.48401	11101-00001 638	P19
9	1991.51771		?	
10	1991.62193	1991.62166	11102-00001 626	R72
11	1991.88619		H2O	
		1991.81965	20002-01101 626	P15

FRAME A81

9.857 Torr 384 meters

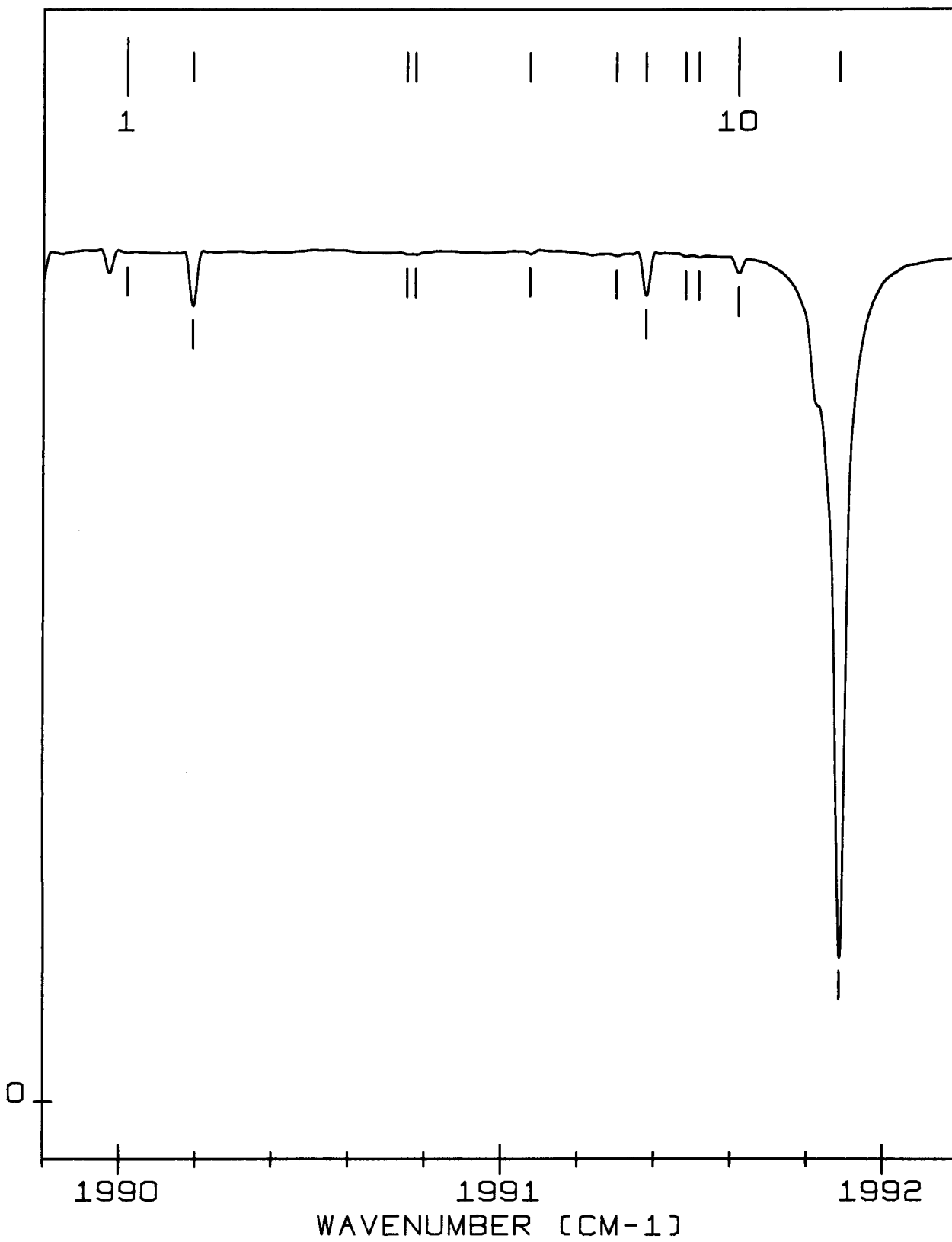


TABLE A 82

-1

Line Positions and Identifications (1992-1994 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1992.21659	1992.21694	11101-00001 638	P18
2	1992.38794		H2O	
		1992.37327	21102-02201 626	P15
3	1992.65044		H2O	
		1992.65925	20002-01101 636	P5
4	1992.96269	1992.96300	11101-00001 636	P56
		1992.96249	21102-02201 626	P14
		1992.95014	11101-00001 638	P17
5	1993.25798		H2O	
		1993.27122	11102-00001 626	R74
6	1993.43976	1993.43974	20002-01101 626	P13
7	1993.68288	1993.68361	11101-00001 638	P16
8	1993.96592	1993.96603	21102-02201 626	P13

FRAME A82

9.857 Torr 384 meters

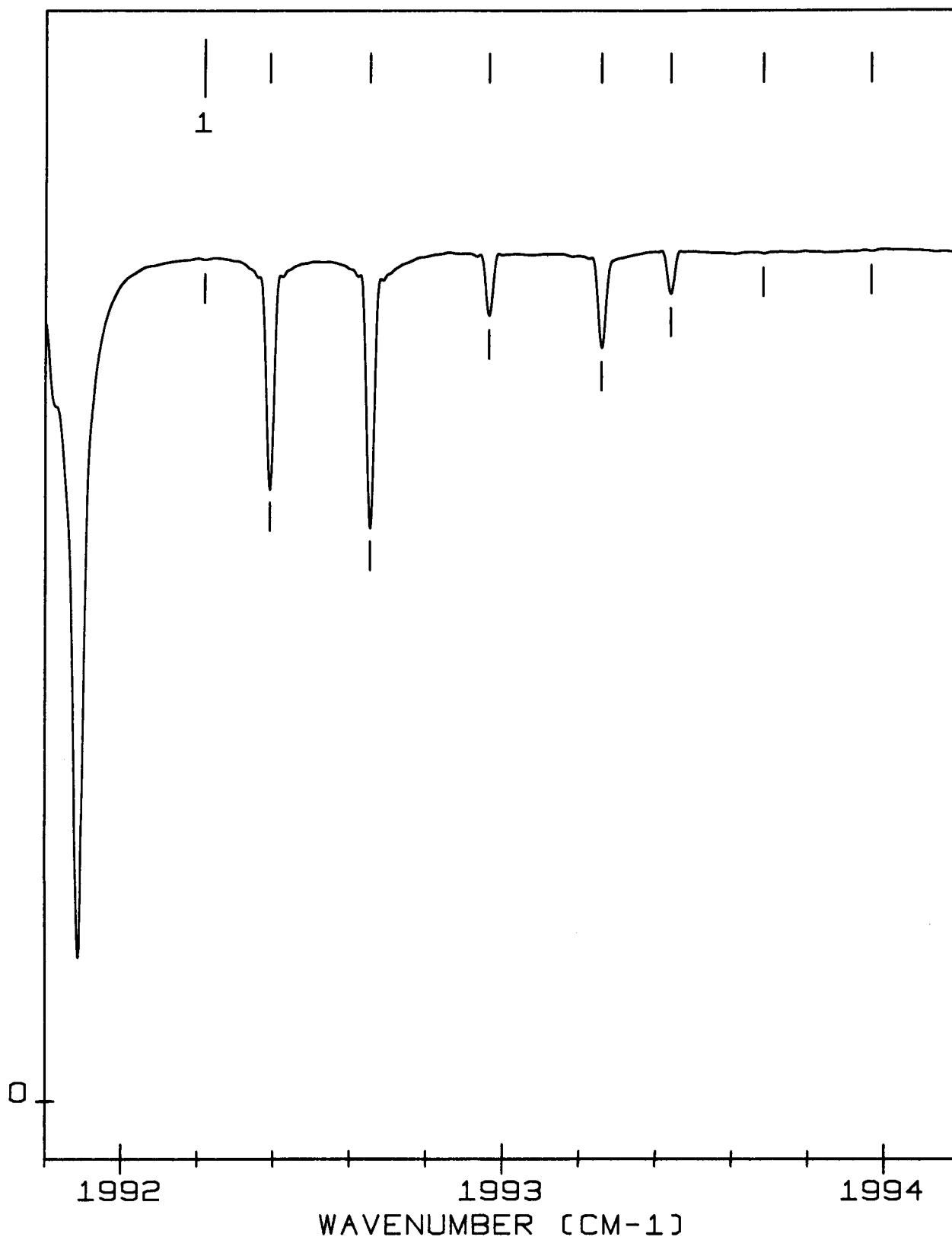




TABLE A 83

-1

Line Positions and Identifications (1994-1996 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	1994.41741	1994.41736	11101-00001 638	P15
2	1994.54696	1994.54703	11101-00001 636	P54
3	1994.61531	1994.61541	21102-02201 626	P12
4	1994.73627	1994.73945	20002-01101 636	Q34
5	1994.82929		?	
6	1994.91835	1994.92000	11102-00001 626	R76
7	1994.94584	1994.94769	20002-01101 636	Q32
8	1995.05109	1995.05137	20002-01101 626	P11
9	1995.14429	1995.14338	20002-01101 636	Q30
10	1995.32596	1995.32655	20002-01101 636	Q28
11	1995.49868	1995.49722	20002-01101 636	Q26
12	1995.55573	1995.55507	21102-02201 626	P11
13	1995.65449	1995.65540	20002-01101 636	Q24
14	1995.80341	1995.80111	20002-01101 636	Q22
15	1995.93450	1995.93437	20002-01101 636	Q20

FRAME A83

9.857 Torr 384 meters

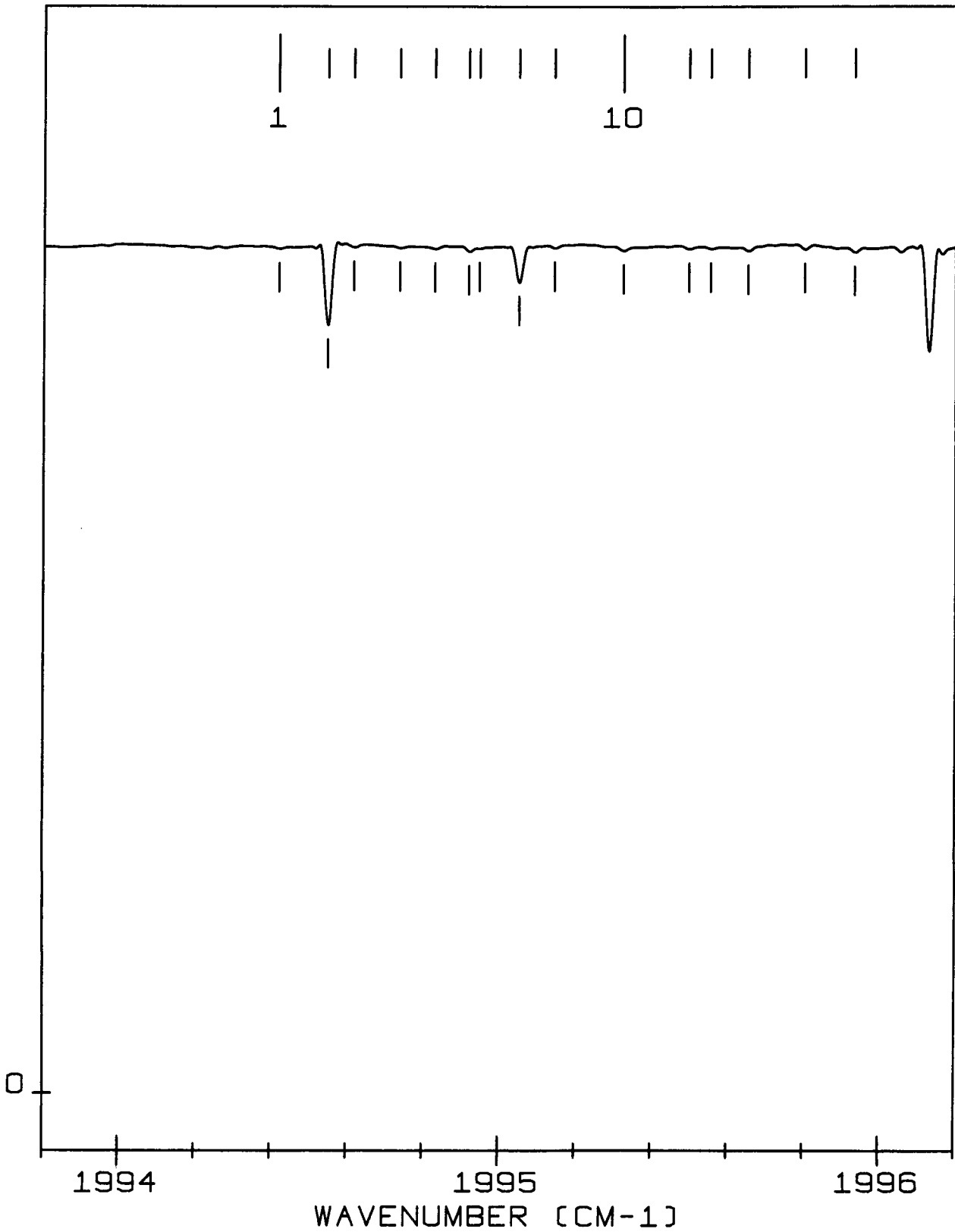


TABLE A 84

-1

Line Positions and Identifications (1996-1998 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1996.05564	1996.05519	20002-01101 636 Q18
2	1996.13130	1996.13112	11101-00001 636 P52
3	1996.16521	1996.16359	20002-01101 636 Q16
			SIDELOBE
4	1996.25550	1996.25957	20002-01101 636 Q14
		1996.26196	21102-02201 626 P10
5	1996.29702	1996.29731	21102-10002 636 P34
6	1996.34154	1996.34314	20002-01101 636 Q12
7	1996.41355	1996.41431	20002-01101 636 Q10
8	1996.47331	1996.47310	20002-01101 636 Q8
9	1996.52021	1996.51951	20002-01101 636 Q6
10	1996.56713	1996.56779	11102-00001 626 R78
		1996.55353	20002-01101 636 Q4
11	1996.65421	1996.65453	20002-01101 626 P9
12	1997.71518	1997.71519	11101-00001 636 P50
13	1997.97336	1997.97174	21102-10002 636 P32

FRAME A84

9.857 Torr 384 meters

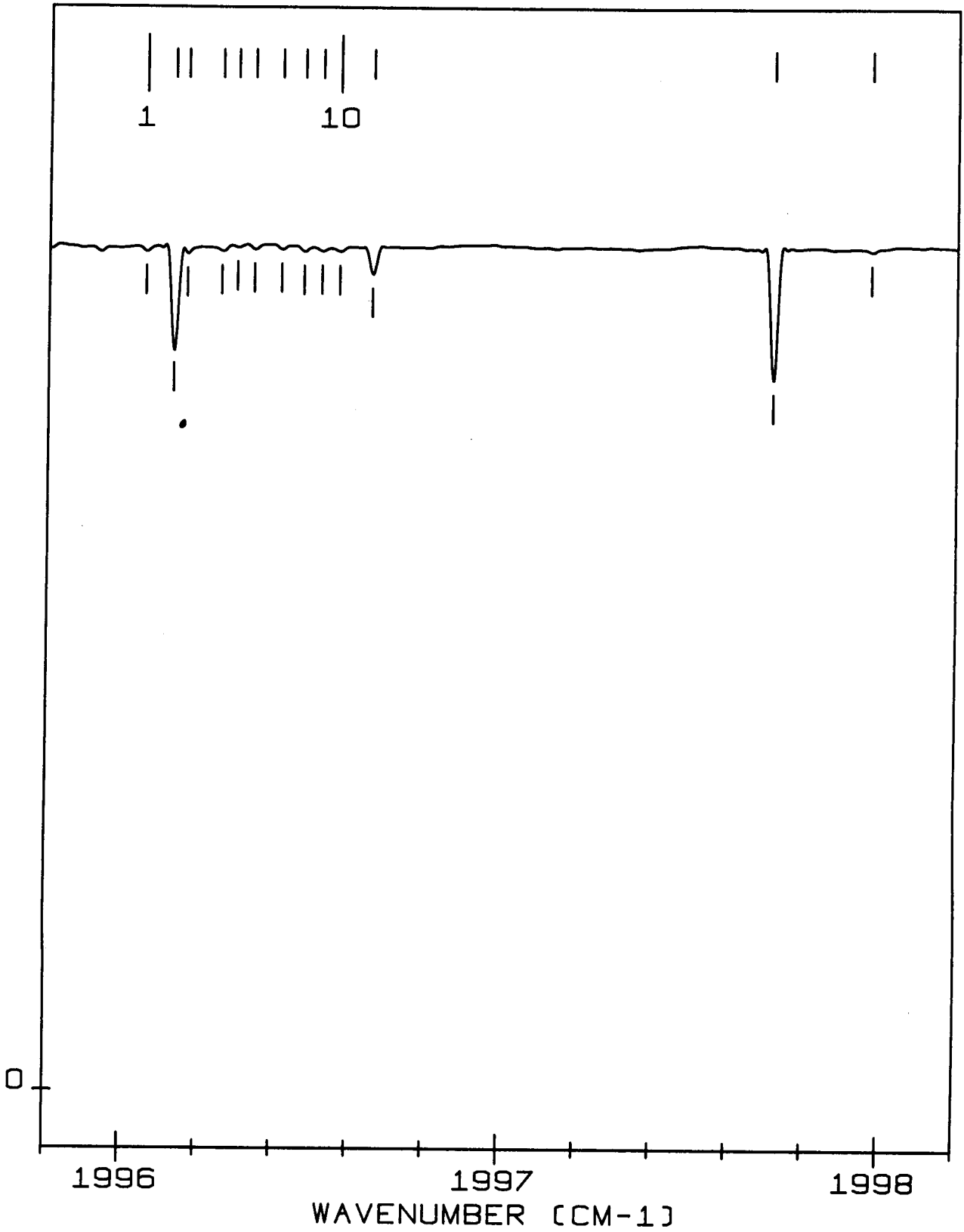


TABLE A 85

-1

Line Positions and Identifications (1998-2000 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	1998.21472	1998.21437	11102-00001 626 R80
2	1998.24916	1998.24917	20002-01101 626 P7
3	1998.72034		?
		1998.72197	21102-02201 626 P7
4	1998.92398		H2O
5	1999.29918	1999.29914	11101-00001 636 P48
6	1999.64263	1999.64131	21102-10002 636 P30
7	1999.83515	1999.83528	20002-01101 626 P5
8	1999.94516		H2O

FRAME A85

9.857 Torr 384 meters

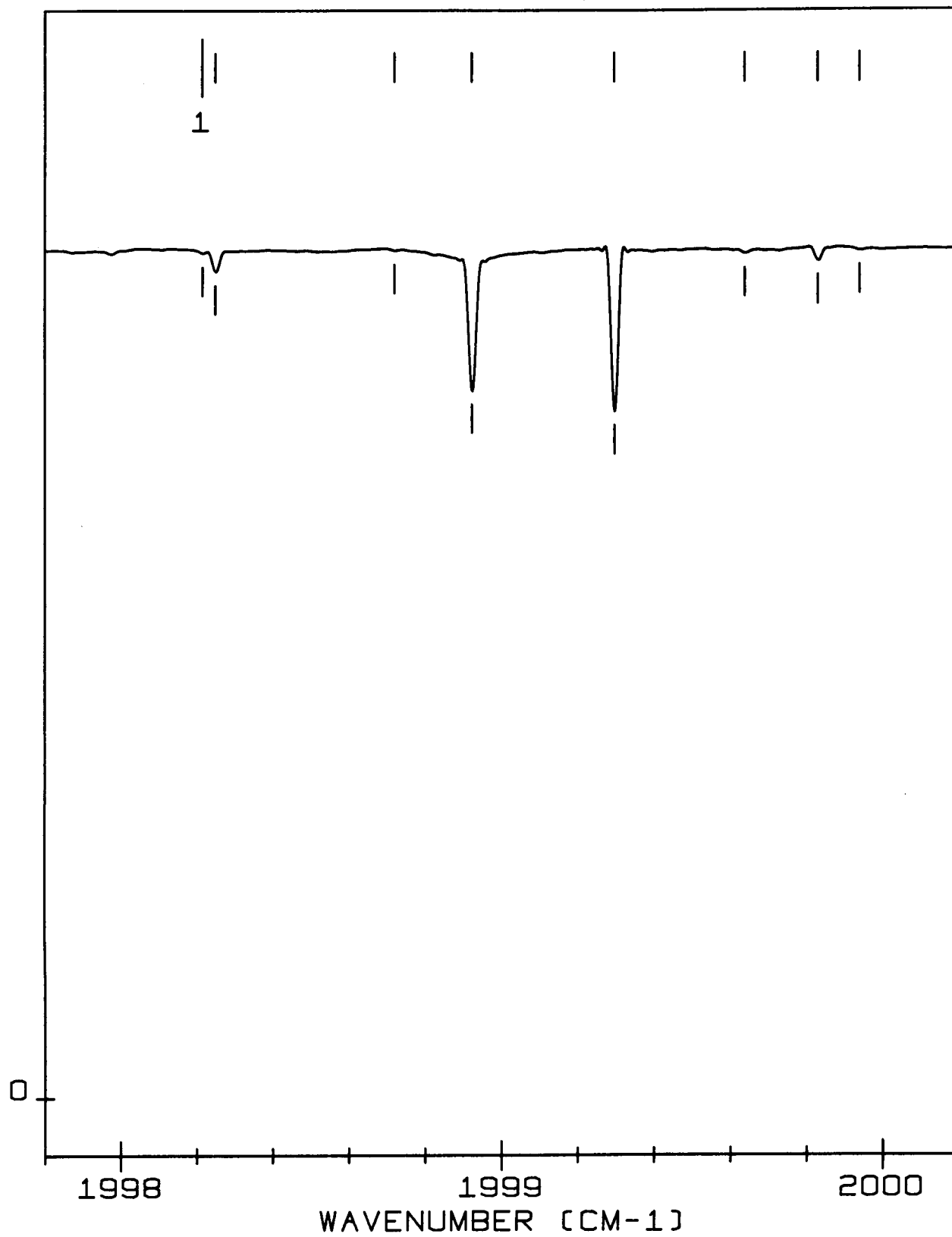


TABLE A 86

-1

Line Positions and Identifications (2000-2002 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2000.88292	2000.88288	11101-00001 636	P46
2	2000.99255	2000.99213	20002-01101 626	Q40
3	2001.01819	2001.01862	21102-10002 626	P66
4	2001.25847	2001.25843	20002-01101 626	Q38
5	2001.30544	2001.30529	21102-10002 636	P28
6	2001.41289	2001.41281	20002-01101 626	P3
7	2001.50960	2001.51142	20002-01101 626	Q36
8	2001.75146	2001.75108	20002-01101 626	Q34
9	2001.97747	2001.97738	20002-01101 626	Q32

FRAME A86

9.857 Torr 384 meters

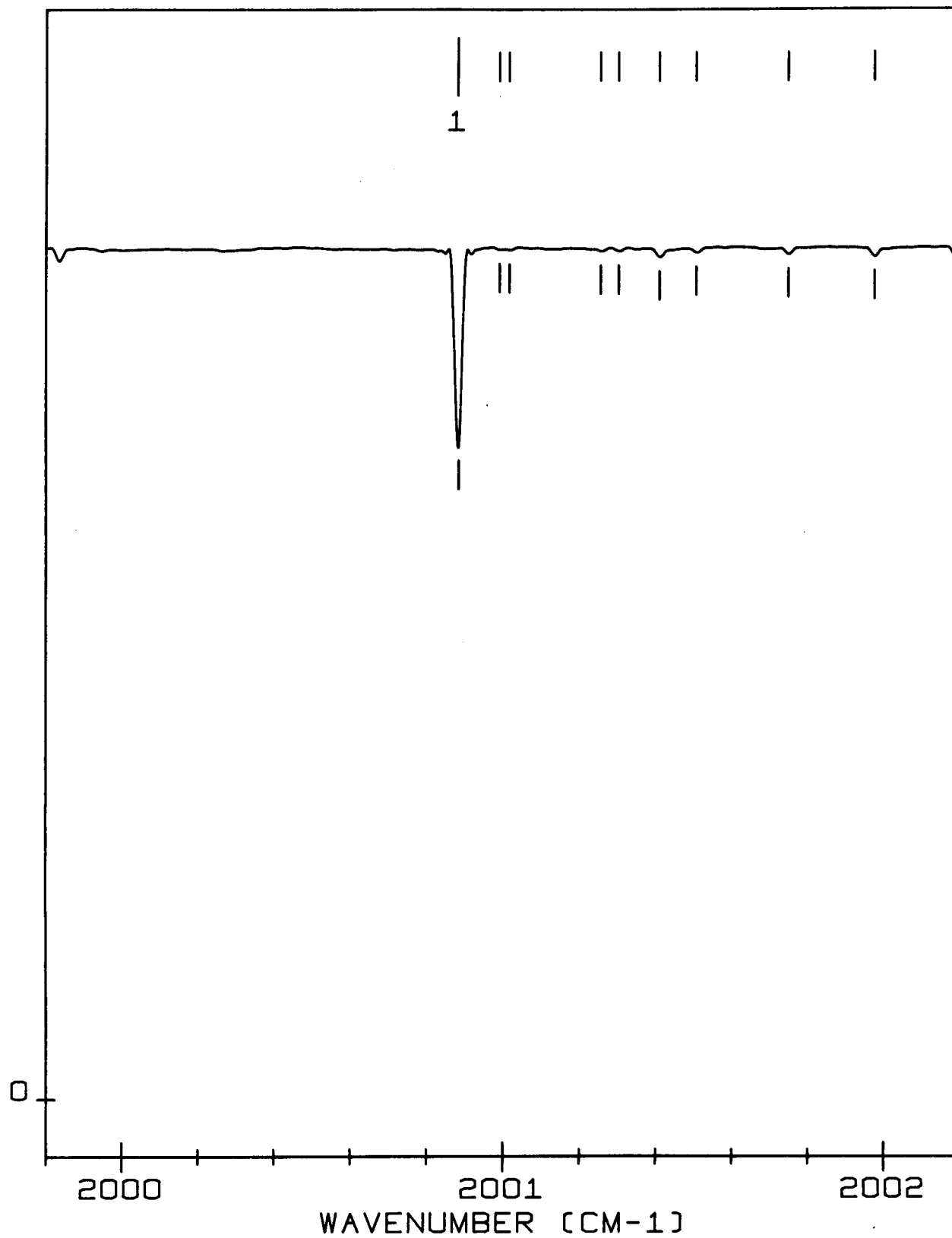




TABLE A 87

-1

Line Positions and Identifications (2002-2004 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2002.19063	2002.19028	20002-01101 626	Q30
2	2002.38958	2002.38976	20002-01101 626	Q28
3	2002.46630	2002.46634	11101-00001 636	P44
4	2002.57607	2002.57577	20002-01101 626	Q26
5	2002.63931	2002.63894	21102-10002 626	P64
6	2002.74817	2002.74829	20002-01101 626	Q24
7	2002.90696	2002.90730	20002-01101 626	Q22
8	2002.97001	2002.96305	21102-10002 636	P26
		2002.98176	20002-01101 626	P1
9	2003.05266	2003.05278	20002-01101 626	Q20
10	2003.18515	2003.18471	20002-01101 626	Q18
11	2003.30301	2003.30309	20002-01101 626	Q16
12	2003.40804	2003.40792	20002-01101 626	Q14
13	2003.49922	2003.49921	20002-01101 626	Q12
14	2003.57658	2003.57695	20002-01101 626	Q10
15	2003.64057	2003.64116	20002-01101 626	Q8
16	2003.69273	2003.69184	20002-01101 626	Q6
17	2003.72933	2003.72899	20002-01101 626	Q4
18	2003.75241	2003.75264	20002-01101 626	Q2
19	2003.82972		?	

FRAME A87

9.857 Torr 384 meters

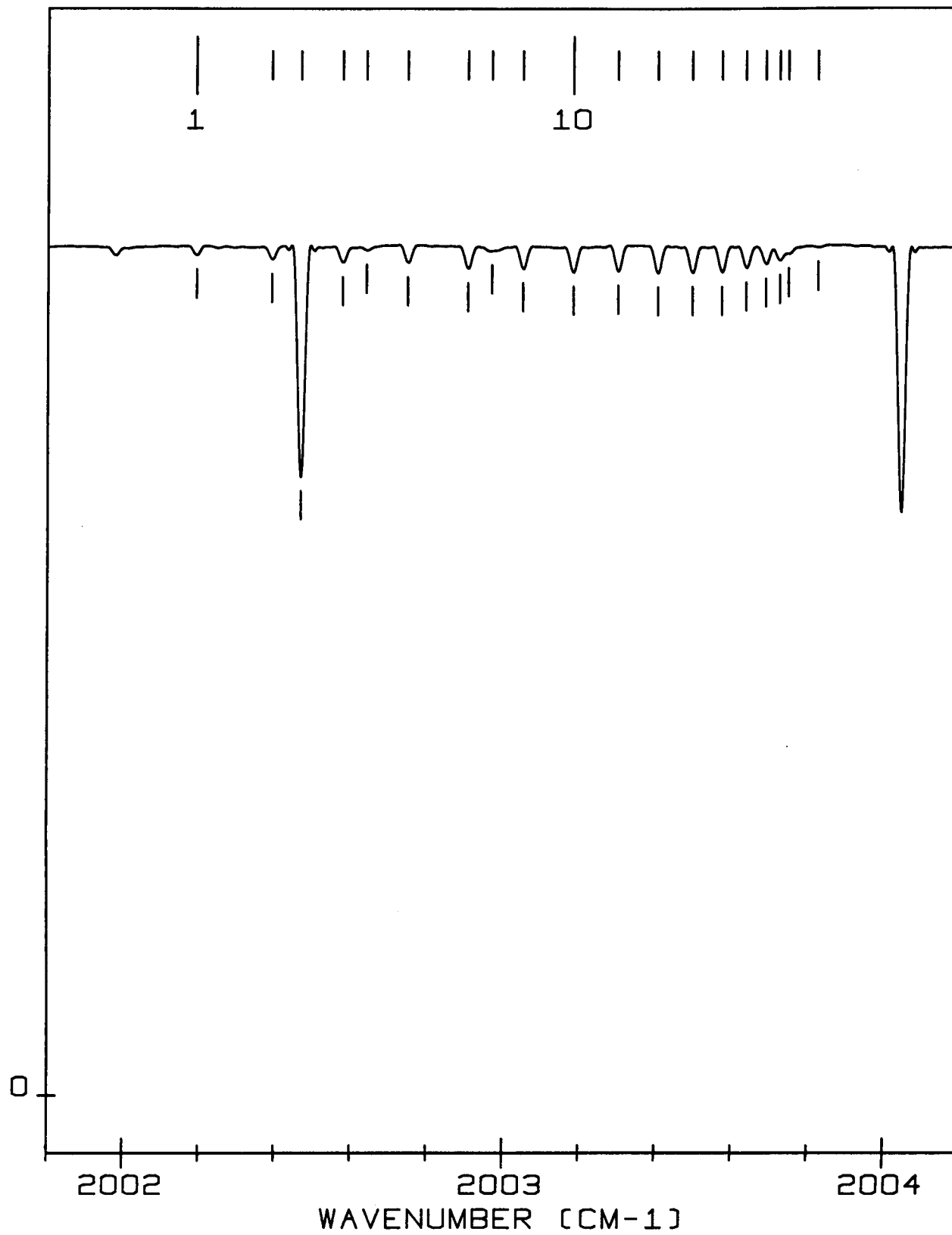


TABLE A 88

-1

Line Positions and Identifications (2004-2006 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2004.04943	2004.04941	11101-00001 636 P42
2	2004.26107	2004.26035	21102-10002 626 P62
3	2004.61174	2004.61412	21102-10002 636 P24
4	2004.82118	2004.81951	12201-01101 636 P60
5	2004.90589	2004.90773	11101-00001 628 P63
6	2005.24769	2005.24769	03301-00001 626 Q30
7	2005.51681	2005.51681	03301-00001 626 Q32
8	2005.57536	2005.57660	11101-00001 628 P62
9	2005.63249	2005.63204	11101-00001 636 P40
			H2O
10	2005.88054	2005.88259	21102-10002 626 P60

FRAME A88

9.857 Torr 384 meters

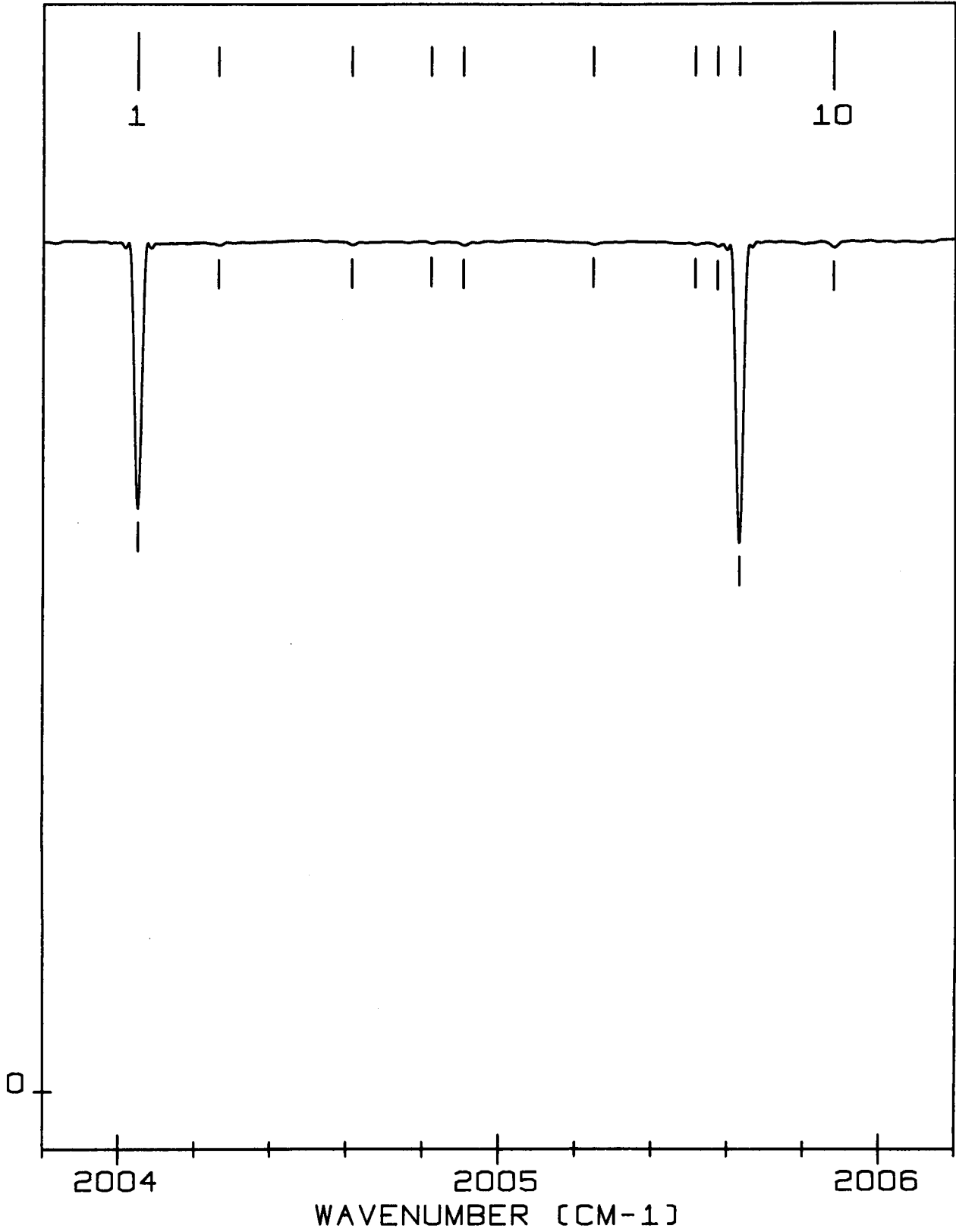


TABLE A 89

-1

Line Positions and Identifications (2006-2008 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2006.24924	2006.24687	11101-00001 628 P61
		2006.25810	21102-10002 636 P22
2	2006.35689	2006.35533	12201-01101 636 P61
3	2006.37489	2006.37646	12201-01101 636 P58
4	2006.86723	2006.86635	20002-01101 626 R3
5	2006.91875	2006.91853	11101-00001 628 P60
6	2007.21410	2007.21414	11101-00001 636 P38
7	2007.50425	2007.50541	21102-10002 626 P58
8	2007.59050	2007.59157	11101-00001 628 P59
9	2007.69993		H2O
10	2007.76774	2007.77086	12201-01101 636 P59
11	2007.89027	2007.89478	21102-10002 636 P20
12	2007.93309	2007.93481	12201-01101 636 P56

FRAME A89

9.857 Torr 384 meters

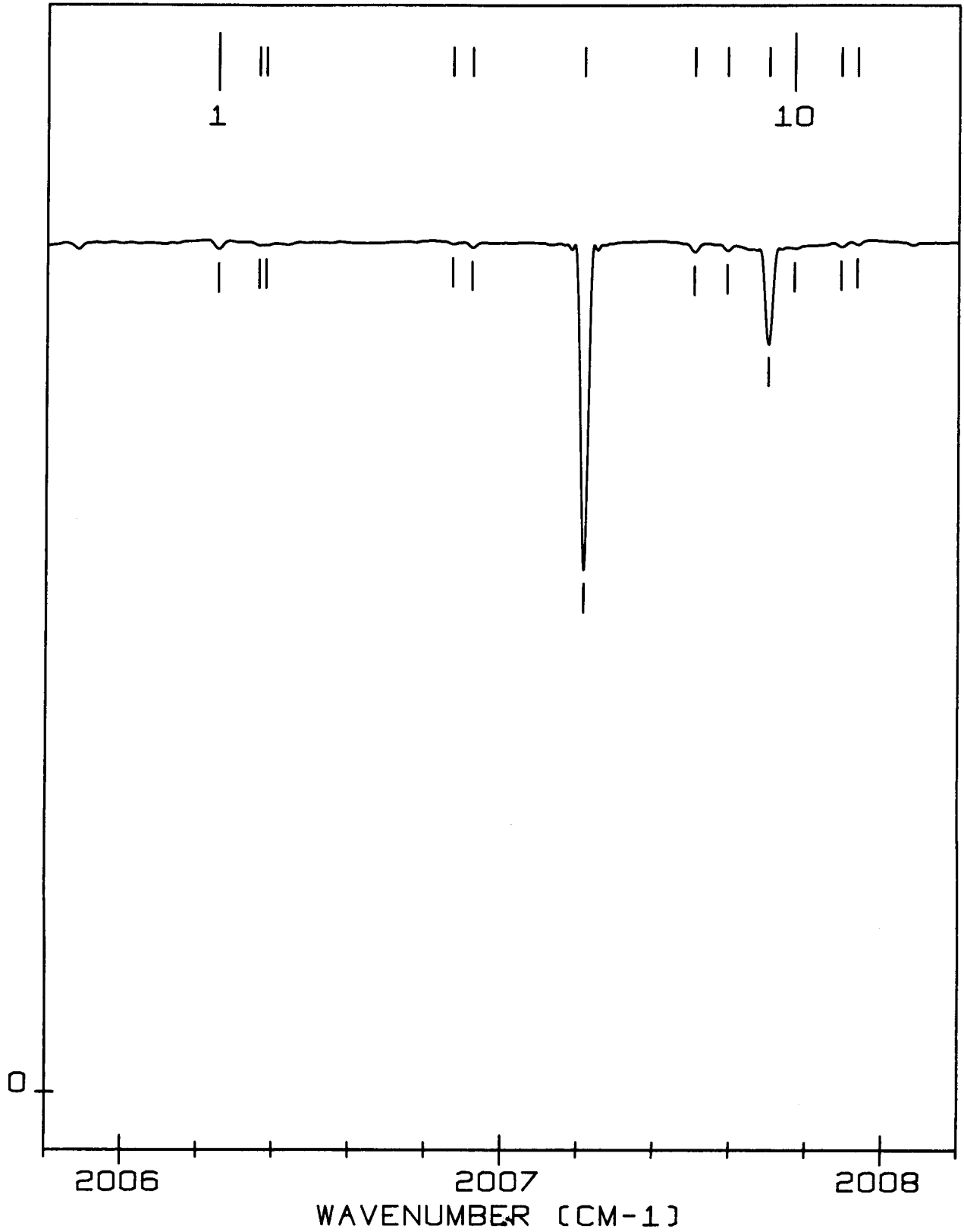


TABLE A 90

-1

Line Positions and Identifications (2008-2010 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2008.07886		H2O?		
2	2008.26465	2008.26597	11101-00001	628	P58
3	2008.35784		?		
4	2008.40385	2008.40502	20002-01101	626	R5
5	2008.79565	2008.79564	11101-00001	636	P36
6	2008.94110	2008.94172	11101-00001	628	P57
7	2009.12863	2009.12856	21102-10002	626	P56
8	2009.19081	2009.19122	12201-01101	636	P57
9	2009.33347		H2O		
10	2009.49558	2009.49444	12201-01101	636	P54
11	2009.52326	2009.52402	21102-10002	636	P18
12	2009.61823	2009.61880	11101-00001	628	P56
13	2009.93391	2009.93498	20002-01101	626	R7

FRAME A90

9.857 Torr 384 meters

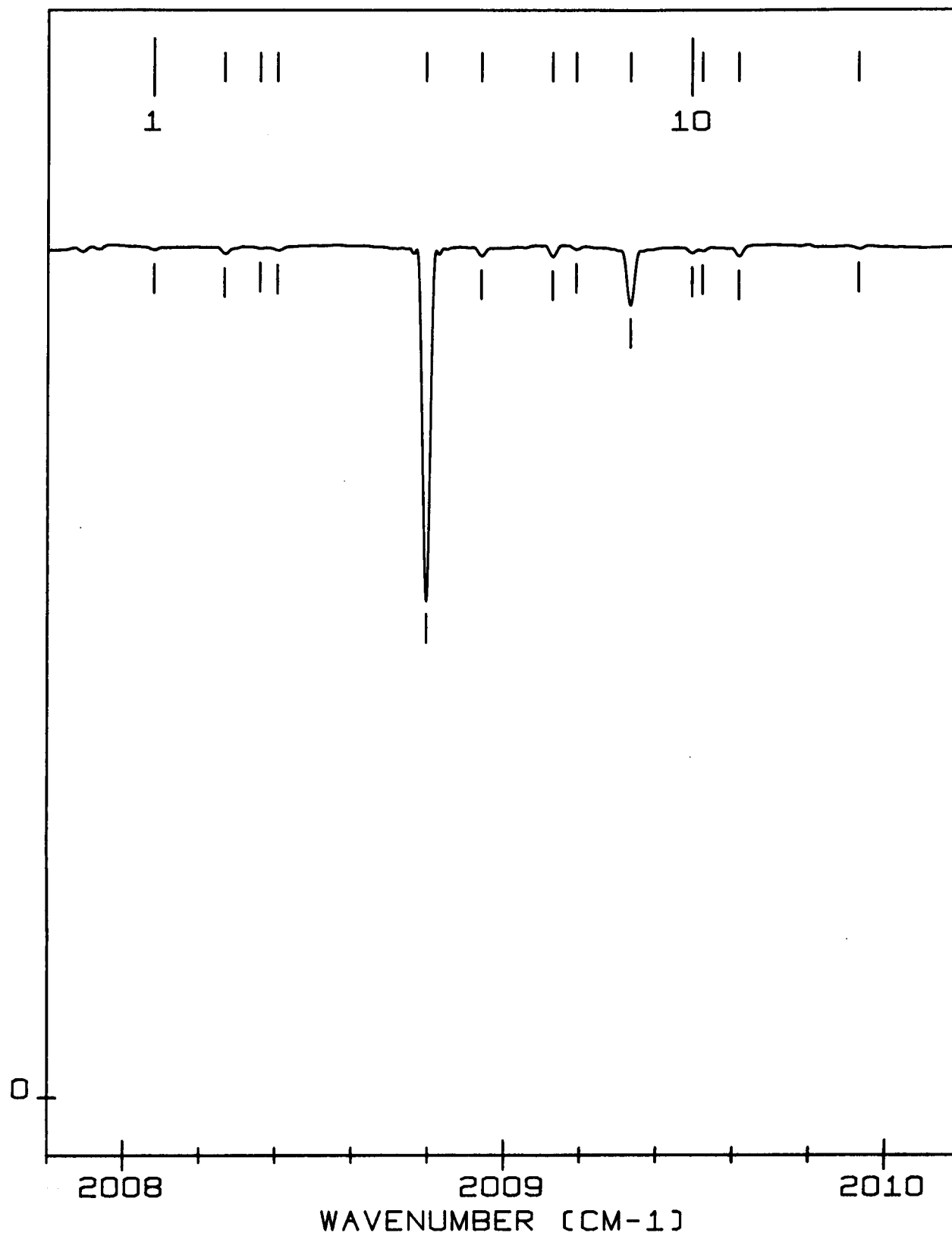




TABLE A 91

-1

Line Positions and Identifications (2010-2012 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2010.29693	2010.29721	11101-00001	628	P55
2	2010.37646	2010.37647	11101-00001	636	P34
3	2010.47735	2010.47628	11101-00001	626	P88
4	2010.55221		?		
5	2010.61515	2010.61649	12201-01101	636	P55
6	2010.70405		?		
7	2010.75194	2010.75180	21102-10002	626	P54
8	2010.91226		H2O		
9	2010.97669	2010.97692	11101-00001	628	P54
10	2011.05471	2011.05527	12201-01101	636	P52
11	2011.14723	2011.14583	21102-10002	636	P16
12	2011.45454	2011.45622	20002-01101	626	R9
13	2011.65793	2011.65792	11101-00001	628	P53
14	2011.90292	2011.90344	11101-00001	626	P86
15	2011.95652	2011.95656	11101-00001	636	P32

FRAME A91

9.857 Torr 384 meters

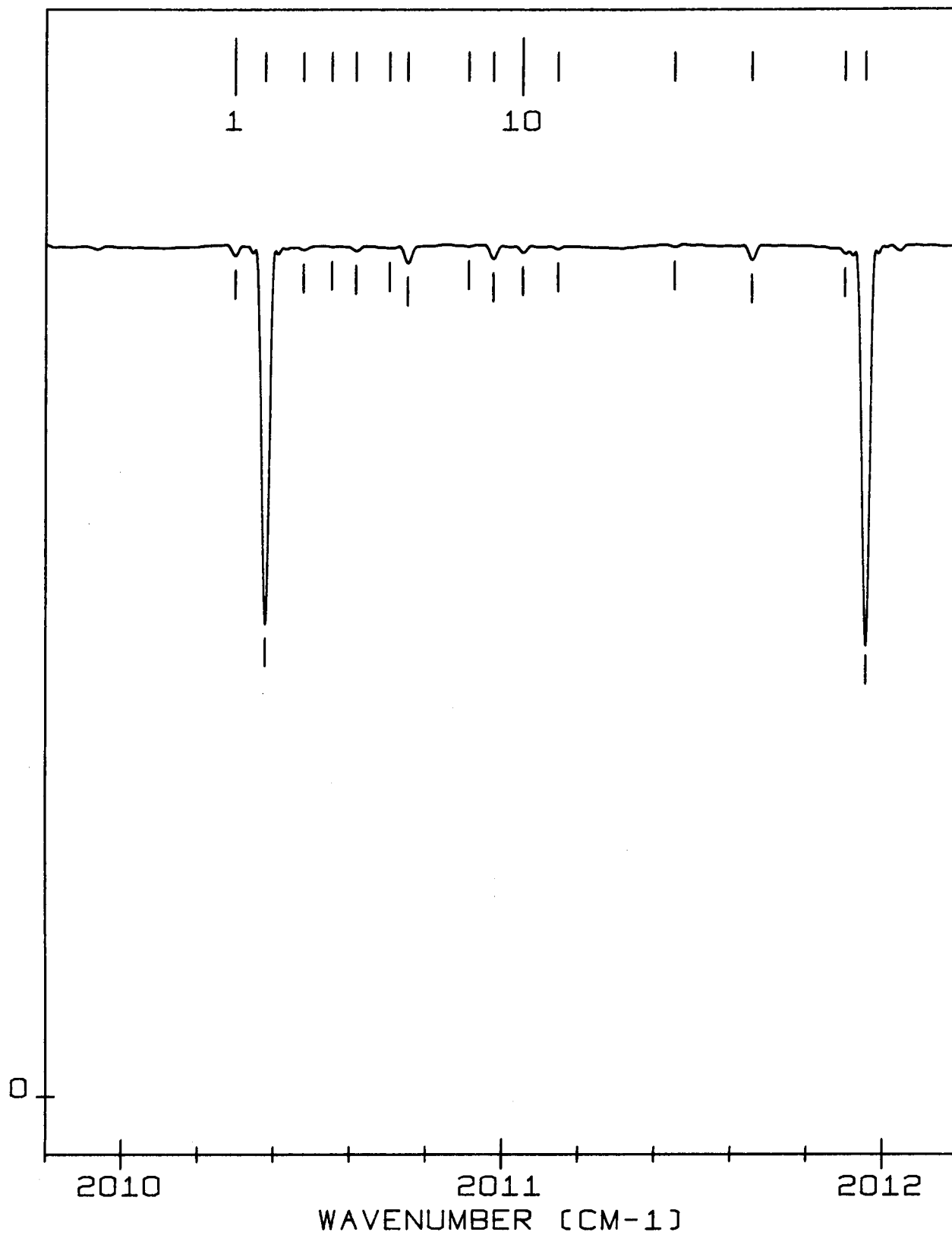


TABLE A 92

-1

Line Positions and Identifications (2012-2014 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2012.04550	2012.04675	12201-01101 636	P53
2	2012.34053	2012.34021	11101-00001 628	P52
3	2012.37515	2012.37491	21102-10002 626	P52
4	2012.61719	2012.61719	12201-01101 636	P50
5	2012.76014	2012.76035	21102-10002 636	P14
6	2012.79236		?	
7	2012.96886	2012.96871	20002-01101 626	R11
8	2013.02380	2013.02377	11101-00001 628	P51
9	2013.17524		?	
10	2013.33662	2013.33638	11101-00001 626	P84
11	2013.48136	2013.48206	12201-01101 636	P51
12	2013.53584	2013.53585	11101-00001 636	P30
13	2013.70792	2013.70858	11101-00001 628	P50
14	2013.99790	2013.99766	21102-10002 626	P50

FRAME A92

9.857 Torr 384 meters

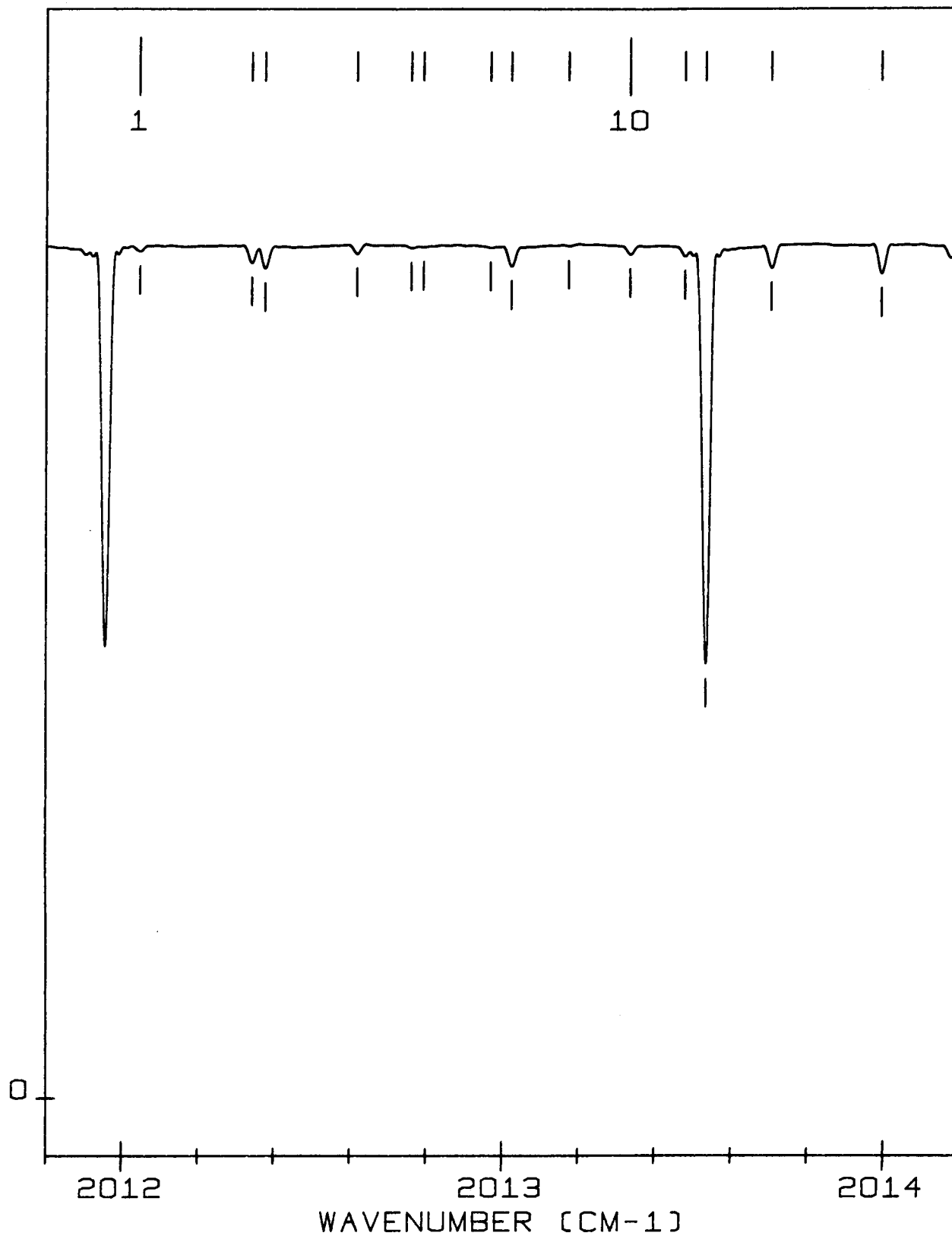


TABLE A 93

-1

Line Positions and Identifications (2014-2016 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2014.17989	2014.18010	12201-01101 636	P48
2	2014.36404	2014.36781	21102-10002 636	P12
3	2014.39455	2014.39464	11101-00001 628	P49
4	2014.47208	2014.47243	20002-01101 626	R13
5	2014.51418	2014.50850	11101-00001 627	P65
6	2014.69100		?	
7	2014.77466	2014.77490	11101-00001 626	P82
8	2014.92142	2014.92245	12201-01101 636	P49
9	2015.08144	2015.08194	11101-00001 628	P48
			SIDELOBE	
10	2015.11426	2015.11428	11101-00001 636	P28
11	2015.20748	2015.20947	11101-00001 627	P64
			SIDELOBE	
12	2015.62029	2015.61983	21102-10002 626	P48
13	2015.65416		?	
14	2015.74374	2015.74391	12201-01101 636	P46
15	2015.76999	2015.77045	11101-00001 628	P47
16	2015.85604		?	
17	2015.91250	2015.91167	11101-00001 627	P63
18	2015.97116	2015.96737	20002-01101 626	R15
		2015.96862	21102-10002 636	P10

FRAME A93

9.857 Torr 384 meters

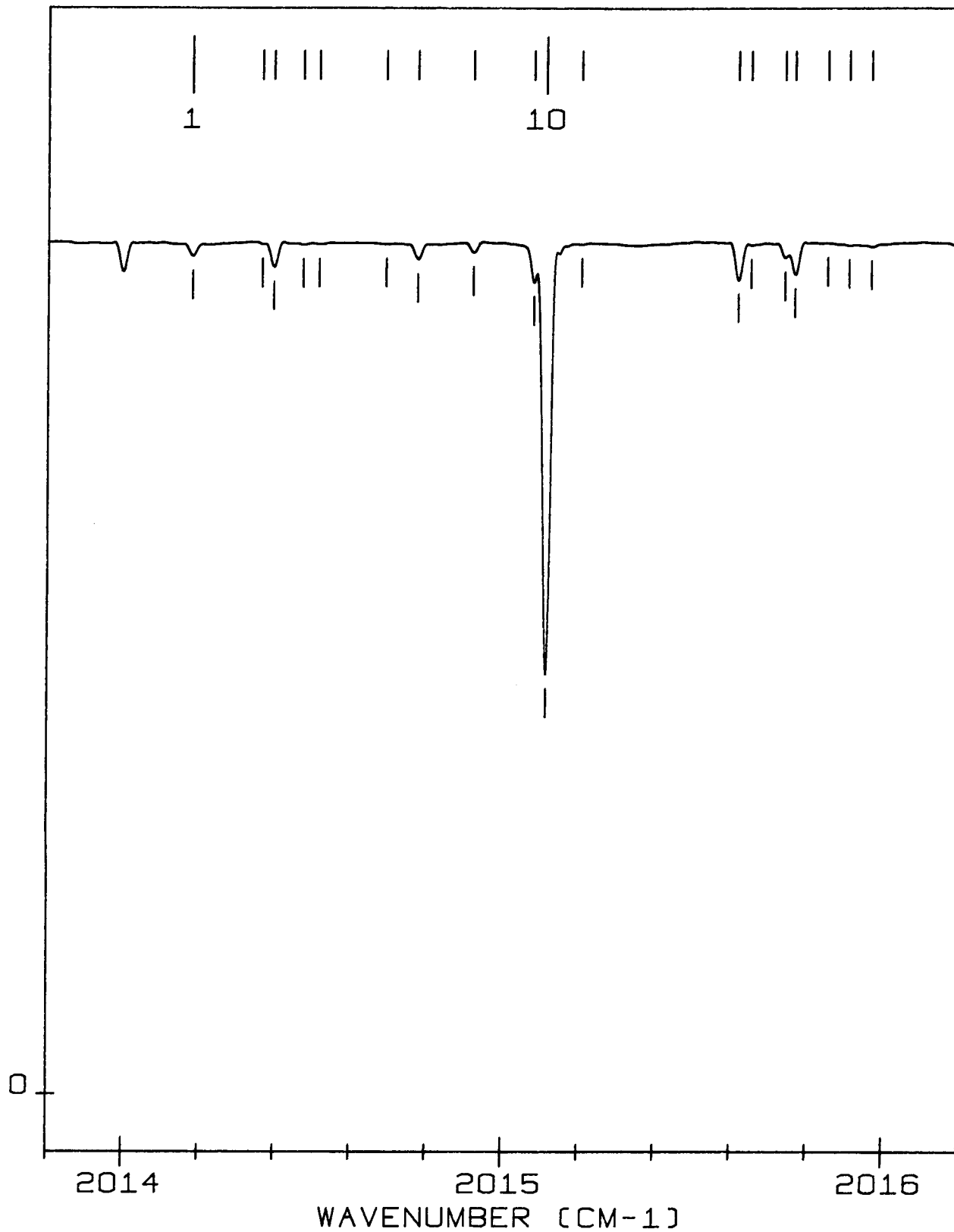


TABLE A 94

-1

Line Positions and Identifications (2016-2018 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2016.21865	2016.21882	11101-00001 626	P80
2	2016.36953	2016.36797	12201-01101 636	P47
3	2016.46006	2016.46017	11101-00001 628	P46
4	2016.69195	2016.69179	11101-00001 636	P26
5	2016.79839		H2O	
6	2016.83426		H2O	
7	2017.15096	2017.15109	11101-00001 628	P45
8	2017.24105	2017.24121	21102-10002 626	P46
9	2017.30929	2017.30854	12201-01101 636	P44
10	2017.56640	2017.56325	21102-10002 636	P8
11	2017.66799	2017.66795	11101-00001 626	P78
12	2017.71185		?	
			SIDELOBE	
13	2017.81752	2017.81863	12201-01101 636	P45
14	2017.84274	2017.84320	11101-00001 628	P44
15	2017.92952		?	

FRAME A94

9.857 Torr 384 meters

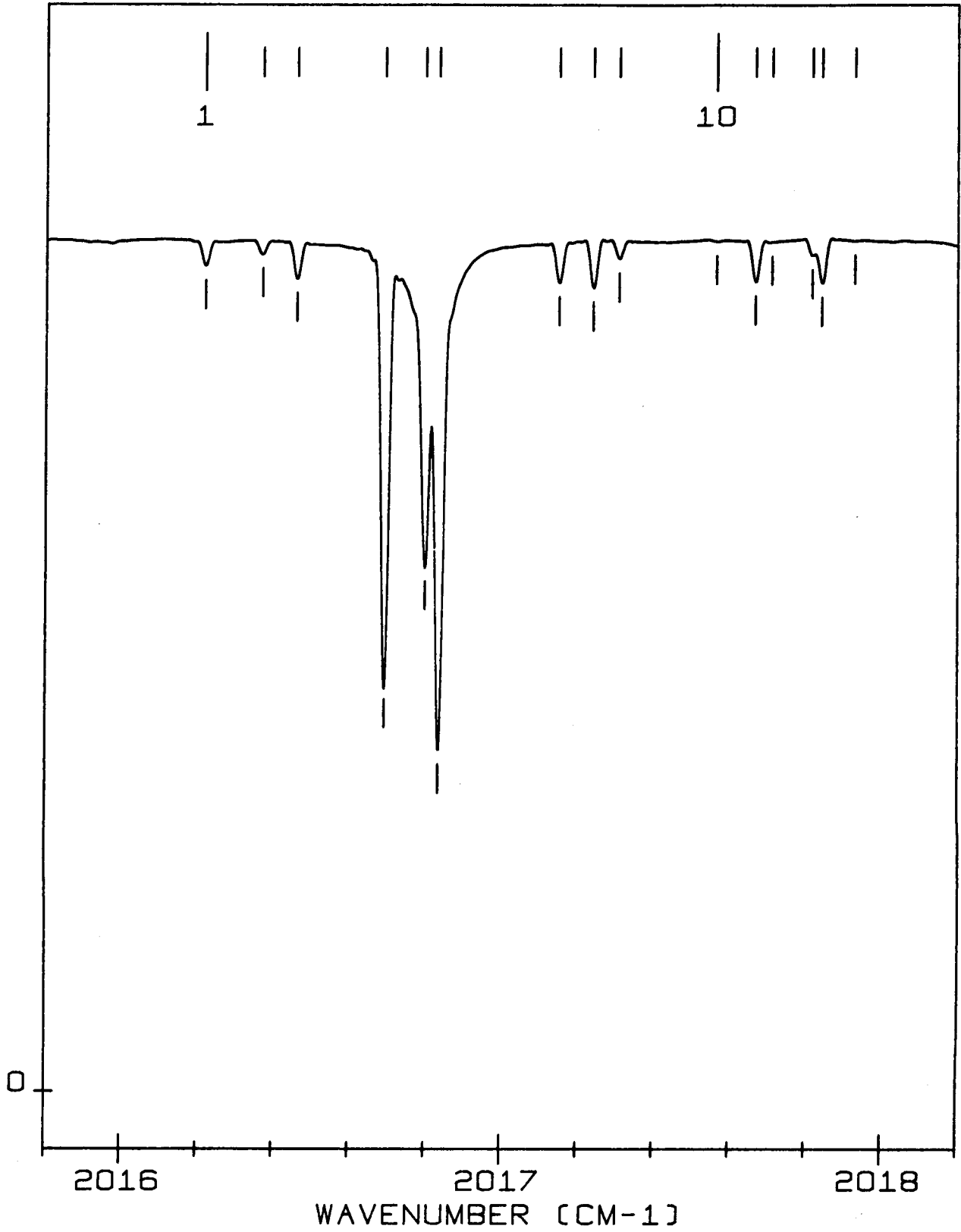




TABLE A 95

-1

Line Positions and Identifications (2018-2020 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2018.02637	2018.02555	11101-00001 627	P60
2	2018.08813		?	
3	2018.26847	2018.26832	11101-00001 636	P24
4	2018.33722		H2O	
5	2018.53637	2018.53649	11101-00001 628	P43
6	2018.58945		?	
7	2018.73691	2018.73254	11101-00001 627	P59
8	2018.82860		?	
9	2018.86453	2018.86161	21102-10002 626	P44
		2018.87388	12201-01101 636	P42
10	2019.07020		H2O	
11	2019.12192	2019.12212	11101-00001 626	P76
12	2019.23088	2019.23094	11101-00001 628	P42
13	2019.27381	2019.27445	12201-01101 636	P43
14	2019.44128	2019.44069	11101-00001 627	P58
15	2019.67315		?	
16	2019.84379	2019.84382	11101-00001 636	P22
17	2019.92647	2019.92655	11101-00001 628	P41
18	2019.97809		?	

9.857 Torr 384 meters

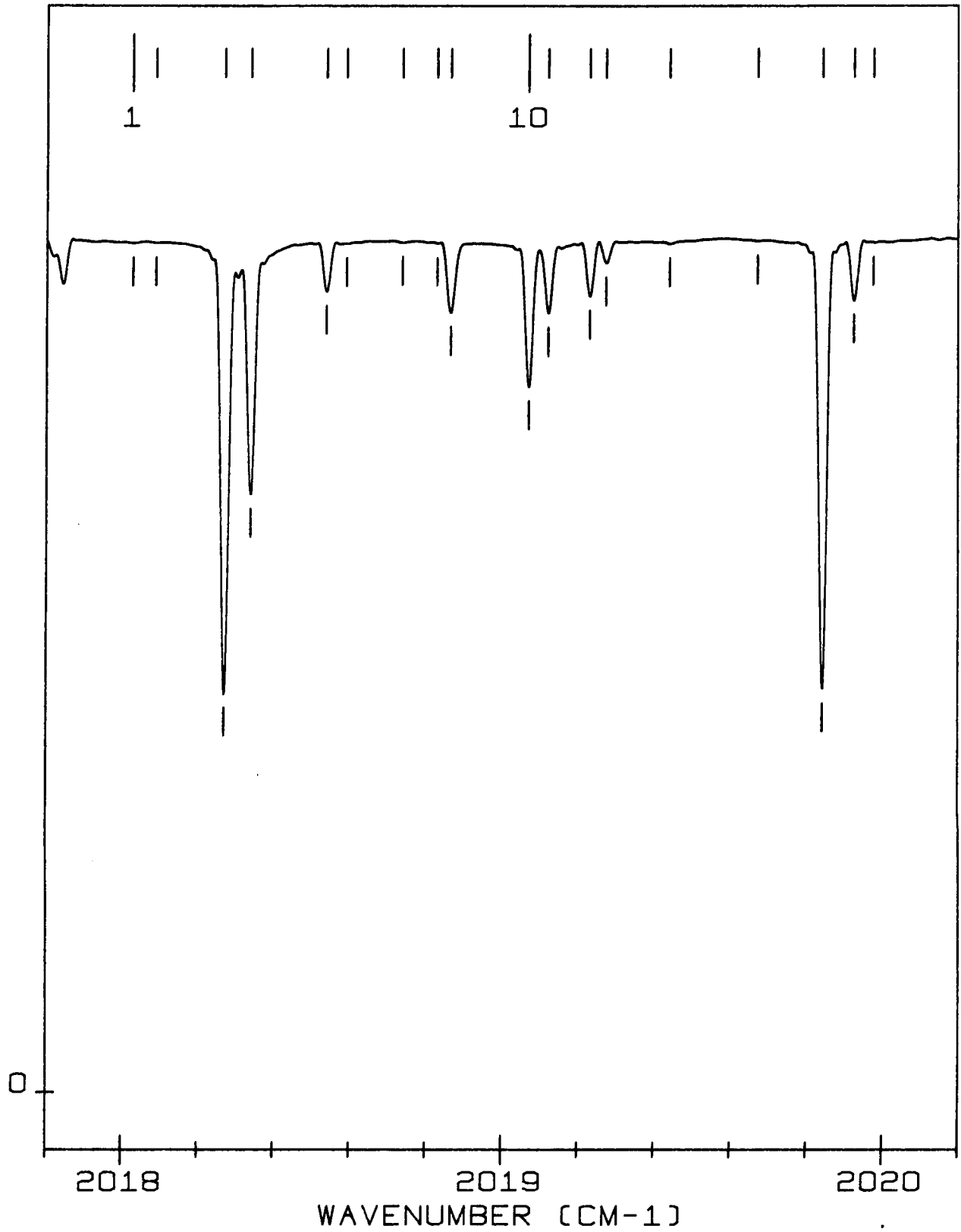


TABLE A 96

-1

Line Positions and Identifications (2020-2022 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2020.02018		?		
2	2020.14992	2020.14999	11101-00001	627	P57
3	2020.40244	2020.39931	20002-01101	626	R21
			SIDELOBE		
4	2020.43996	2020.43986	12201-01101	636	P40
5	2020.48090	2020.48082	21102-10002	626	P42
6	2020.53296		H2O		
7	2020.58122	2020.58115	11101-00001	626	P74
8	2020.62307	2020.62330	11101-00001	628	P40
9	2020.73525	2020.73544	12201-01101	636	P41
10	2020.86011	2020.86042	11101-00001	627	P56
11	2021.32122	2021.32119	11101-00001	628	P39
12	2021.41823	2021.41825	11101-00001	636	P20
13	2021.52235		?		
14	2021.57142	2021.57196	11101-00001	627	P55
15	2021.85805	2021.85893	20002-01101	626	R23

9.857 Torr 384 meters

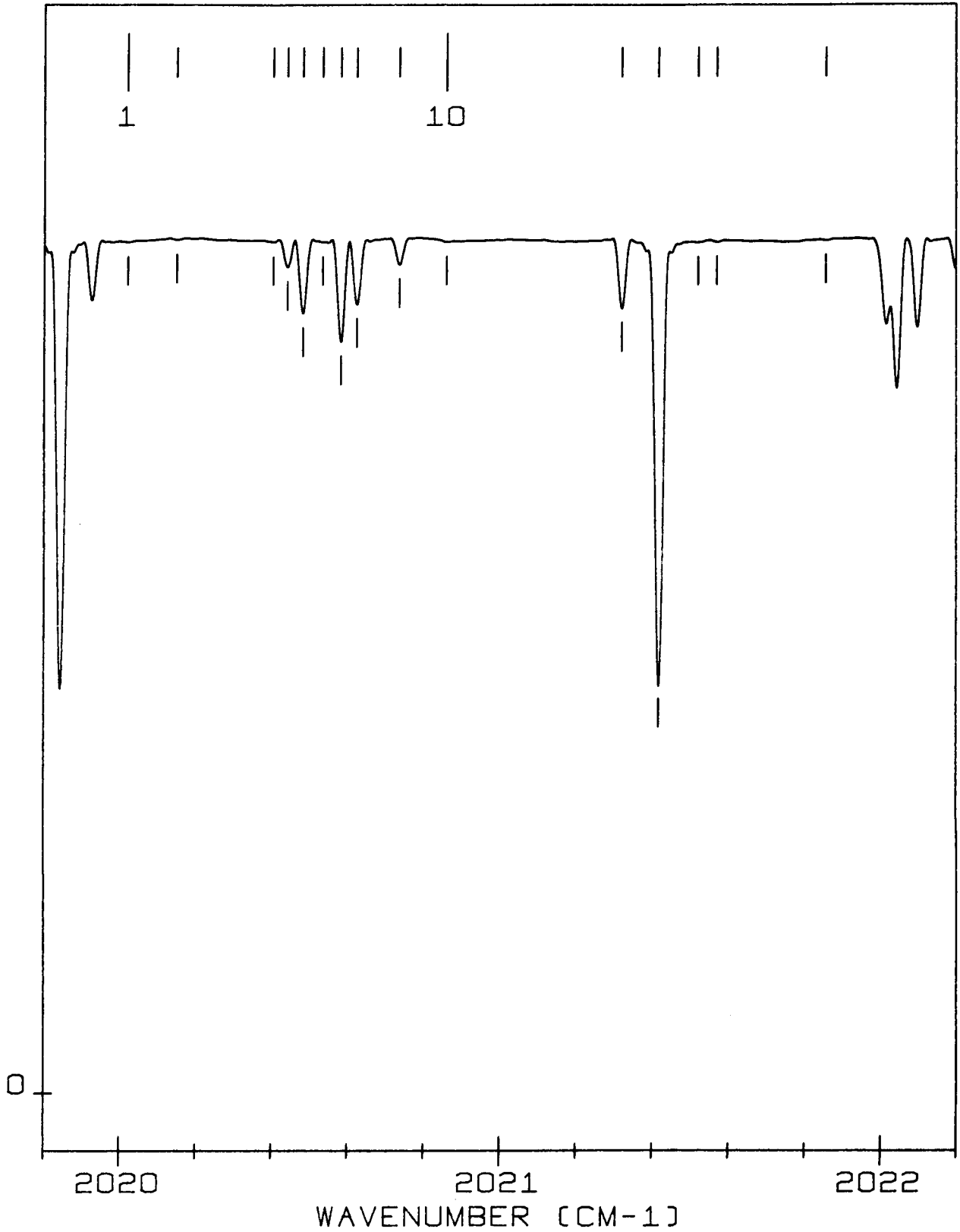


TABLE A 97

-1

Line Positions and Identifications (2022-2024 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2022.01687	2022.02020	11101-00001 628 P38
		2022.00639	12201-01101 636 P38
2	2022.04469	2022.04488	11101-00001 626 P72
3	2022.09869	2022.09867	21102-10002 626 P40
4	2022.20152	2022.20158	12201-01101 636 P39
5	2022.28153	2022.28460	11101-00001 627 P54
6	2022.72042	2022.72033	11101-00001 628 P37
7	2022.99161	2022.99154	11101-00001 636 P18
		2022.99833	11101-00001 627 P53
8	2023.02963		H2O
9	2023.31008	2023.30969	20002-01101 626 R25
			?
10	2023.42160	2023.42157	11101-00001 628 P36
11	2023.51315	2023.51315	11101-00001 626 P70
12	2023.57313	2023.57339	12201-01101 636 P36
13	2023.67338	2023.67287	12201-01101 636 P37
14	2023.71507	2023.71497	21102-10002 626 P38
		2023.71314	11101-00001 627 P52
15	2023.80337		?
16	2023.88865	2023.91118	21102-10002 636 Q14
		2023.89744	21102-10002 636 Q12
		2023.88579	21102-10002 636 Q10
		2023.87620	21102-10002 636 Q8
		2023.86864	21102-10002 636 Q6
		2023.86312	21102-10002 636 Q4
		2023.85961	21102-10002 636 Q2

9.857 Torr 384 meters

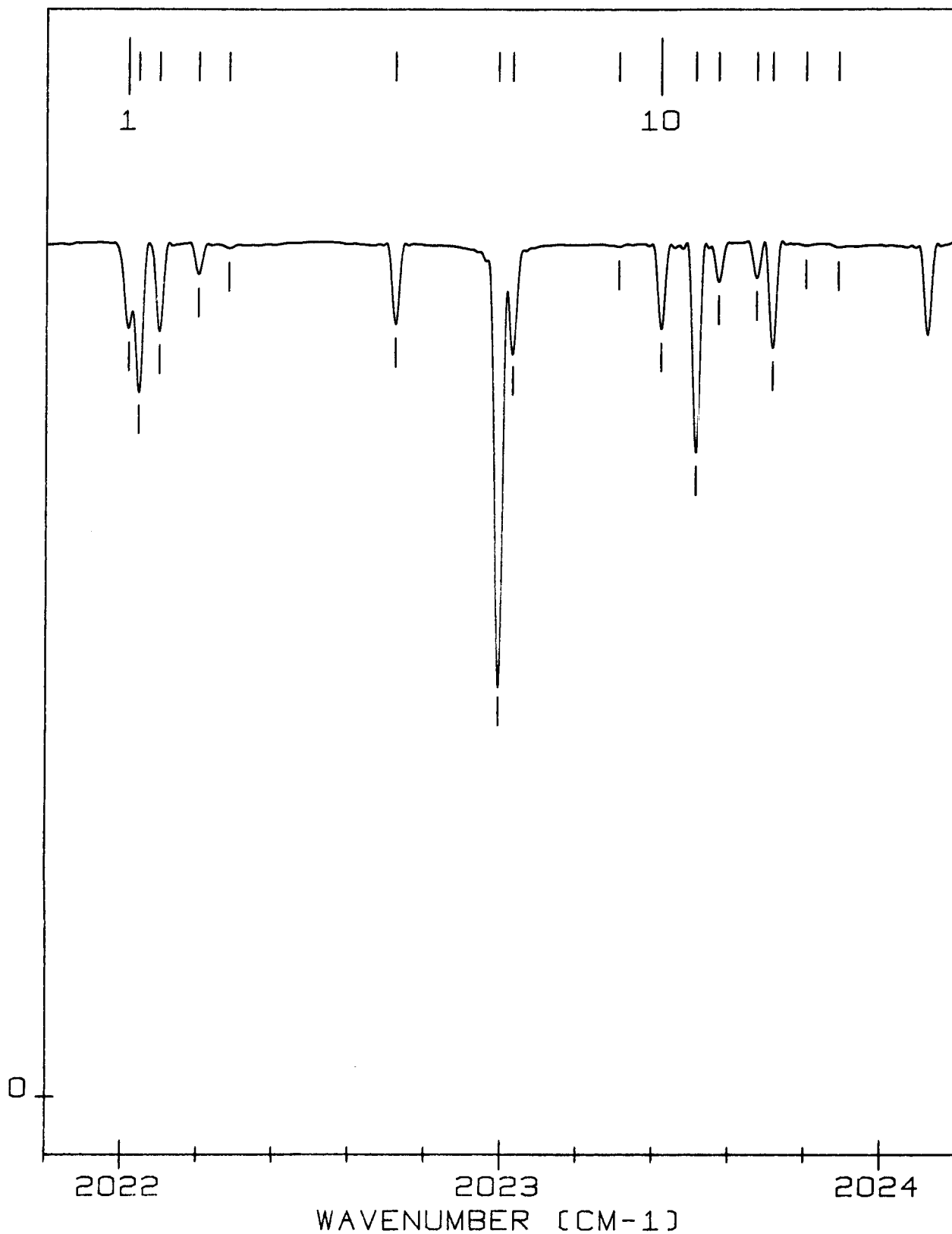


TABLE A 98

-1

Line Positions and Identifications (2024-2026 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2024.01268	2024.01228	21102-10002 636	Q24
2	2024.06677	2024.06862	21102-10002 636	Q28
3	2024.12389	2024.12390	11101-00001 628	P35
4	2024.25328	2024.25303	21102-10002 636	Q38
5	2024.29838	2024.29793	21102-10002 636	Q40
6	2024.34719	2024.34568	21102-10002 636	Q42
7	2024.38328		21102-10002 636	Q44?
8	2024.42938	2024.42900	11101-00001 627	P51
9	2024.56365	2024.56365	11101-00001 636	P16
10	2024.75065	2024.75157	20002-01101 626	R27
11	2024.82740	2024.82732	11101-00001 628	P34
12	2024.98582	2024.98581	11101-00001 626	P68
13	2025.14511	2025.14929	12201-01101 636	P35
		2025.14080	12201-01101 636	P34
		2025.14592	11101-00001 627	P50
14	2025.32958	2025.32956	21102-10002 626	P36
15	2025.45081		?	
16	2025.53185	2025.53182	11101-00001 628	P33
17	2025.86349	2025.86386	11101-00001 627	P49

9.857 Torr 384 meters

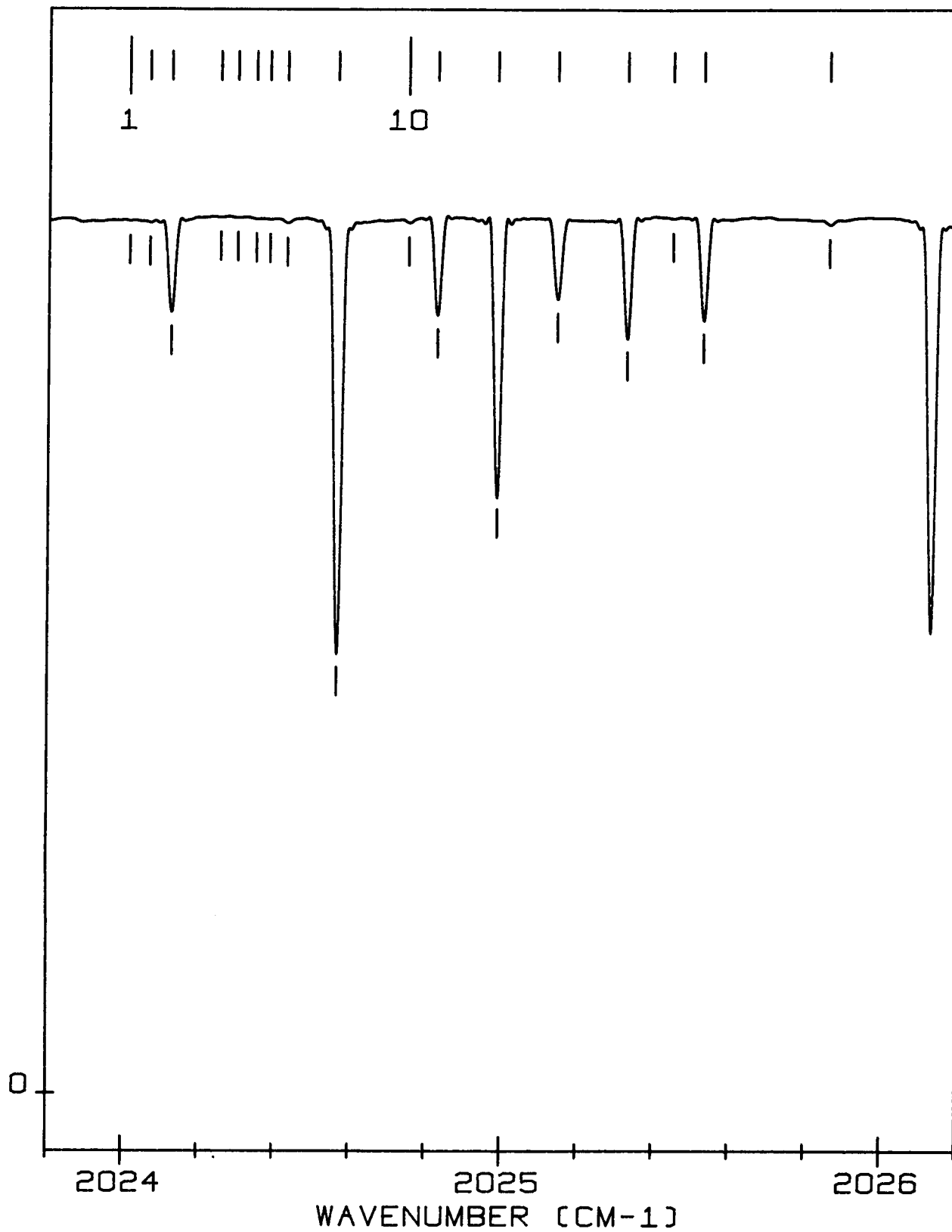




TABLE A 99

-1

Line Positions and Identifications (2026-2028 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2026.13454	2026.13455	11101-00001 636	P14
2	2026.18721	2026.18456	20002-01101 626	R29
3	2026.23741	2026.23739	11101-00001 628	P32
4	2026.46269	2026.46271	11101-00001 626	P66
5	2026.60209		H2O	
		2026.58283	11101-00001 627	P48
6	2026.63204	2026.63082	12201-01101 636	P33
7	2026.70854	2026.70852	12201-01101 636	P32
8	2026.85679		H2O?	
9	2026.94309	2026.94226	21102-10002 626	P34
		2026.94402	11101-00001 628	P31
10	2027.02389		H2O	
11	2027.21208		?	
12	2027.30312	2027.30281	11101-00001 627	P47
13	2027.60574	2027.60865	20002-01101 626	R31
			SIDELOBE	
14	2027.65142	2027.65170	11101-00001 628	P30
15	2027.70419	2027.70419	11101-00001 636	P12
16	2027.94365	2027.94369	11101-00001 626	P64

FRAME A99

9.857 Torr 384 meters

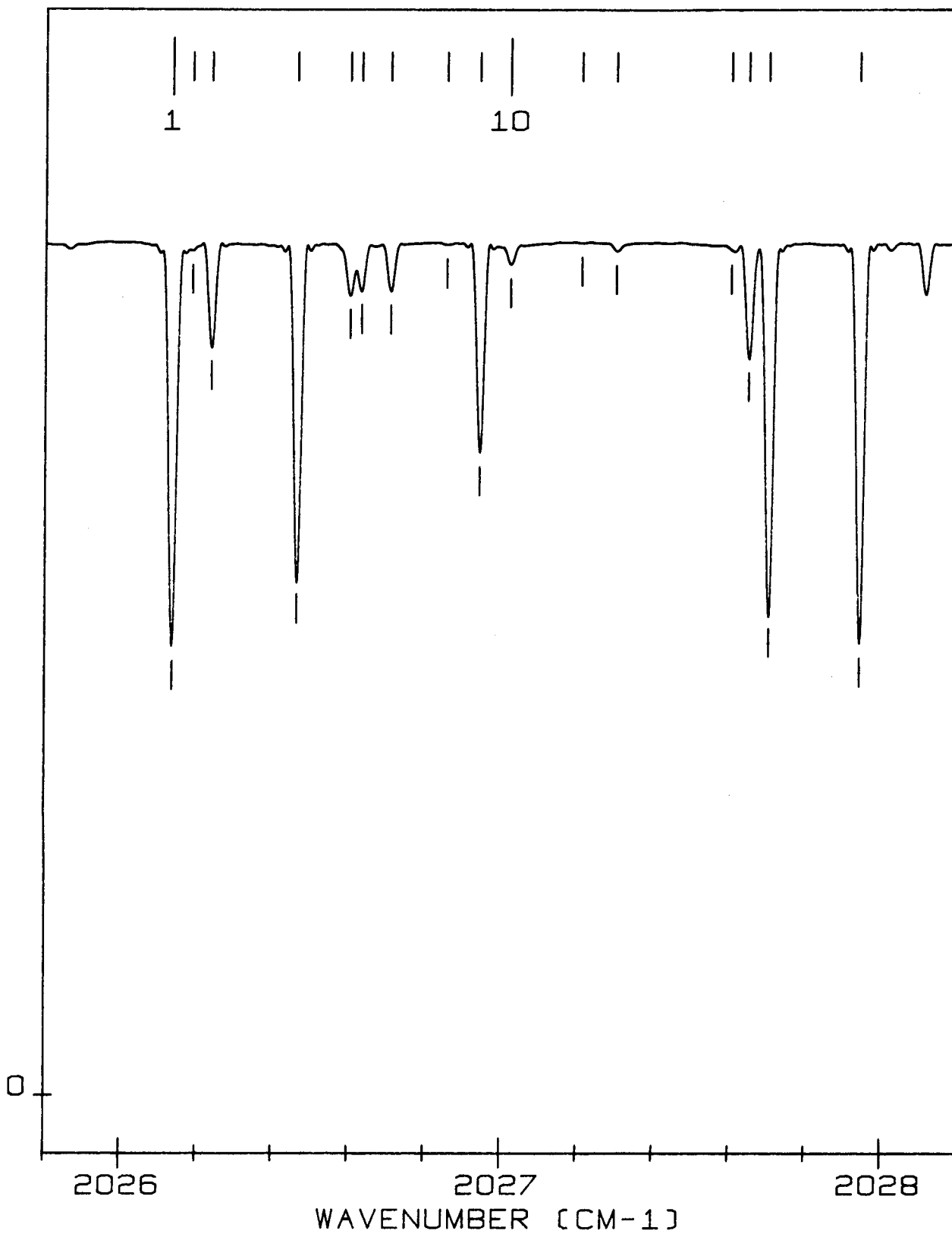


TABLE A100

-1

Line Positions and Identifications (2028-2030 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2028.02456	2028.02379	11101-00001 627 P46
2	2028.11738	2028.11743	12201-01101 636 P31
3	2028.27657	2028.27649	12201-01101 636 P30
4	2028.36047	2028.36043	11101-00001 628 P29
5	2028.55291	2028.55292	21102-10002 626 P32
6	2028.64496		?
7	2028.71117		?
8	2028.74547	2028.74574	11101-00001 627 P45
9	2029.02717	2029.02382	20002-01101 626 R33
			SIDELOBE
10	2029.07021	2029.07020	11101-00001 628 P28
11	2029.27255	2029.27253	11101-00001 636 P10
12	2029.42865	2029.42863	11101-00001 626 P62
13	2029.46432	2029.46867	11101-00001 627 P44
			SIDELOBE
14	2029.60900	2029.60910	12201-01101 636 P29
15	2029.78106	2029.78100	11101-00001 628 P27
16	2029.84445	2029.84465	12201-01101 636 P28
17	2029.99768		H2O

FRAME A100

9.857 Torr 384 meters

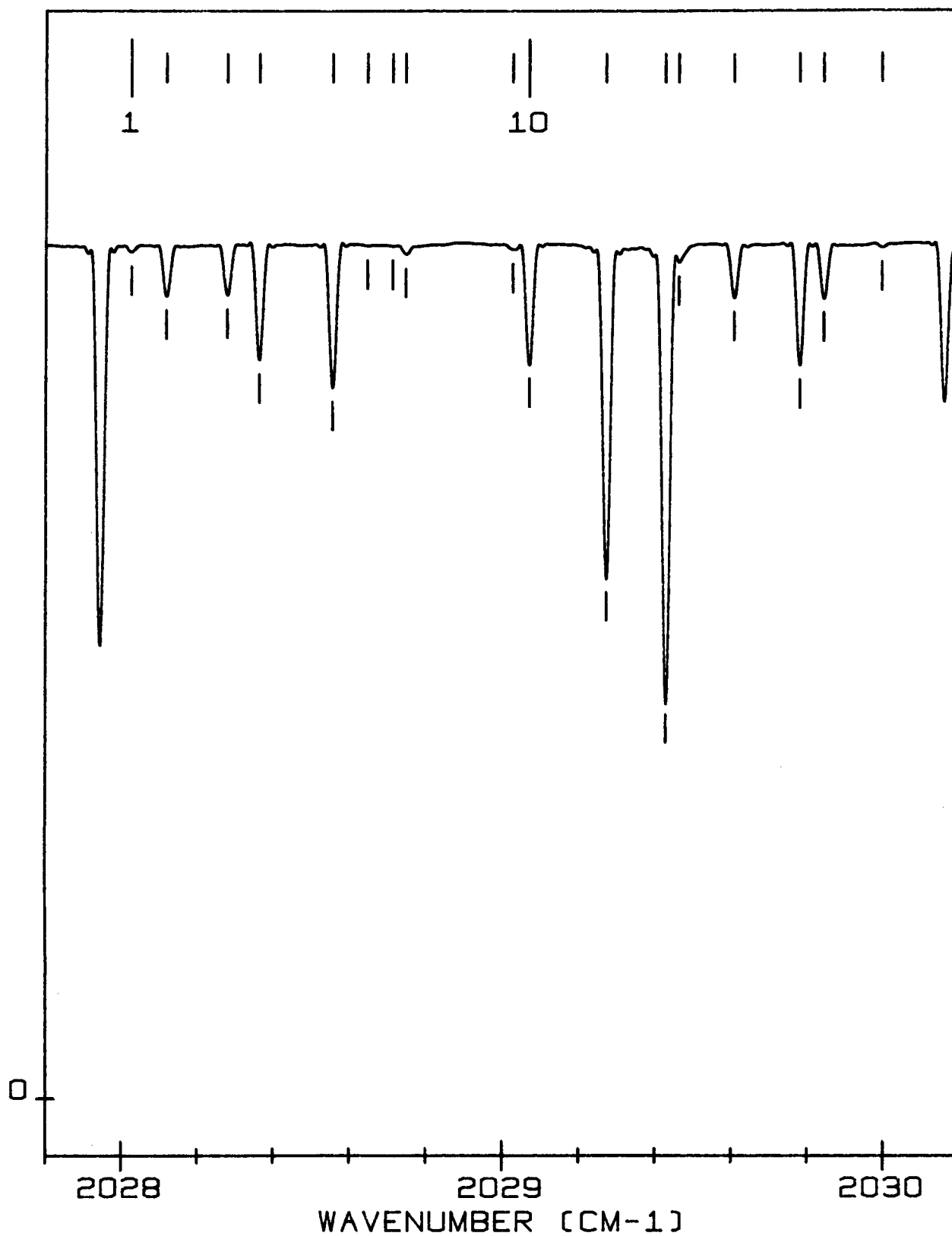


TABLE A101

-1

Line Positions and Identifications (2030-2032 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2030.16147	2030.16139	21102-10002 626 P30
2	2030.19446	2030.19257	11101-00001 627 P43
			SIDELOBE
3	2030.23242		H2O
4	2030.43360	2030.43006	20002-01101 626 R35
5	2030.49281	2030.49282	11101-00001 628 P26
6	2030.83952	2030.83952	11101-00001 636 P8
7	2030.91739	2030.91738	11101-00001 626 P60
		2030.91741	11101-00001 627 P42
8	2031.03220	2031.03214	21101-10001 636 P42
9	2031.10584	2031.10580	12201-01101 636 P27
10	2031.20550	2031.20565	11101-00001 628 P25
11	2031.41289	2031.41292	12201-01101 636 P26
12	2031.61072	2031.61085	12201-01101 628 P50C
13	2031.64364	2031.64319	11101-00001 627 P41
14	2031.68693	2031.68828	12201-01101 628 P48D
15	2031.76750	2031.76753	21102-10002 626 P28
16	2031.82710	2031.82737	20002-01101 626 R37
17	2031.91954	2031.91950	11101-00001 628 P24

FRAME A101

9.857 Torr 384 meters

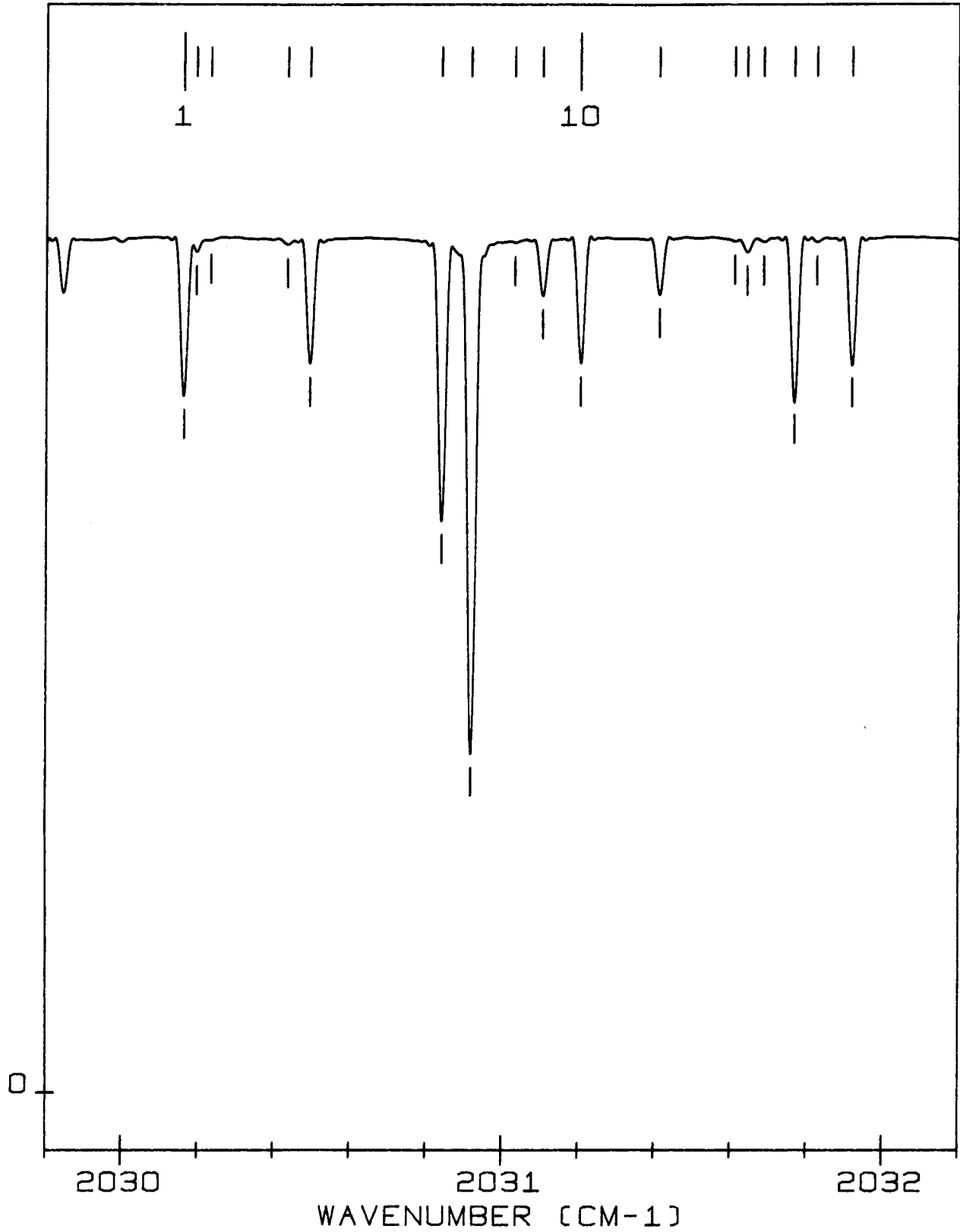


TABLE A102

-1

Line Positions and Identifications (2032-2034 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2032.24796	2032.24690	12201-01101 628	P49C
2	2032.37559	2032.36989	11101-00001 627	P40
		2032.37086	12201-01101 628	P47D
			SIDELOBE	
3	2032.40919	2032.40983	11101-00001 626	P58
		2032.40515	11101-00001 636	P6
4	2032.60654	2032.60748	12201-01101 636	P25
5	2032.63413	2032.63434	11101-00001 628	P23
6	2032.88011	2032.88461	12201-01101 628	P48C
7	2032.98130	2032.98125	12201-01101 636	P24
8	2033.05480	2033.05493	12201-01101 628	P46D
9	2033.09763	2033.09751	11101-00001 627	P39
10	2033.21334	2033.21574	20002-01101 626	R39
		2033.20770	13301-02201 636	P40
11	2033.36929	2033.35018	11101-00001 628	P22
		2033.37120	21102-10002 626	P26
12	2033.44639		?	
13	2033.49096		?	
14	2033.52184	2033.52402	12201-01101 628	P47C
15	2033.74028	2033.74046	12201-01101 628	P45D
16	2033.79276		?	
17	2033.82720	2033.82604	11101-00001 627	P38
18	2033.90583	2033.90583	11101-00001 626	P56
19	2033.96919	2033.96937	11101-00001 636	P4

FRAME A102

9.857 Torr 384 meters

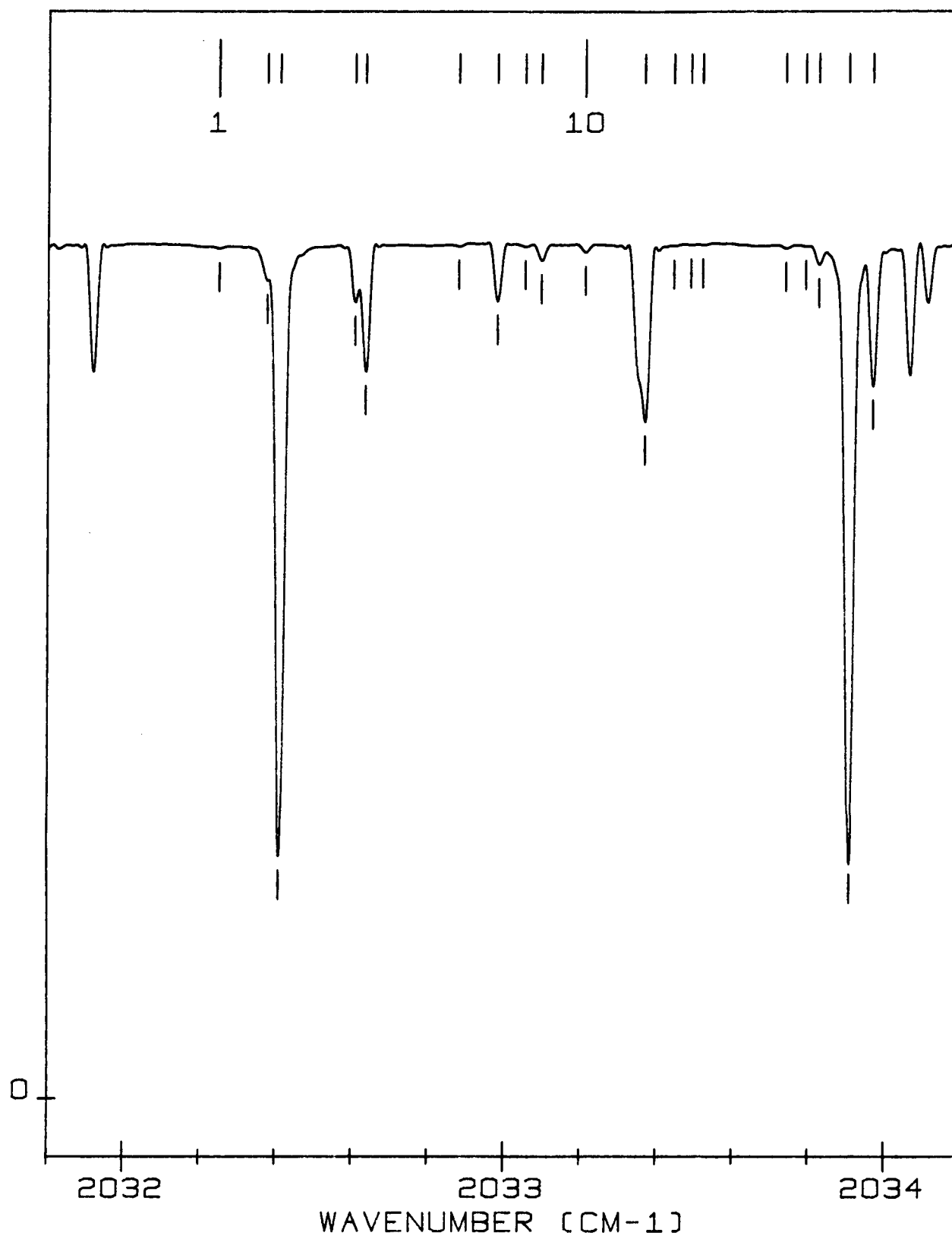




TABLE A103

-1

Line Positions and Identifications (2034-2036 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2034.06230	2034.06700	11101-00001 628	P21
			H2O	
2	2034.11396	2034.11412	12201-01101 636	P23
		2034.13465	21101-10001 636	P38
3	2034.16594	2034.16518	12201-01101 628	P46C
4	2034.23086		22202-11102 626	P52?
5	2034.36697		?	
6	2034.42904	2034.42743	12201-01101 628	P44D
7	2034.50756		?	
8	2034.55070	2034.55546	11101-00001 627	P37
		2034.54956	12201-01101 636	P22
9	2034.59349	2034.59517	20002-01101 626	R41
10	2034.63056		?	
11	2034.73278	2034.73460	13301-02201 636	P38
12	2034.78493	2034.78481	11101-00001 628	P20
		2034.80812	12201-01101 628	P45C
13	2034.97223	2034.97229	21102-10002 626	P24
14	2035.11677	2035.11583	12201-01101 628	P43D
15	2035.14213		?	
16	2035.28571	2035.28577	11101-00001 627	P36
17	2035.40529	2035.40528	11101-00001 626	P54
		2035.45288	12201-01101 628	P44C
18	2035.50349	2035.50359	11101-00001 628	P19
19	2035.53302	2035.53216	11101-00001 636	P2
20	2035.62561	2035.62569	12201-01101 636	P21
21	2035.68719	2035.68804	21101-10001 636	P36
22	2035.76161		?	
23	2035.80565	2035.80562	12201-01101 628	P42D
24	2035.96690	2035.96564	20002-01101 626	R43

9.857 Torr 384 meters

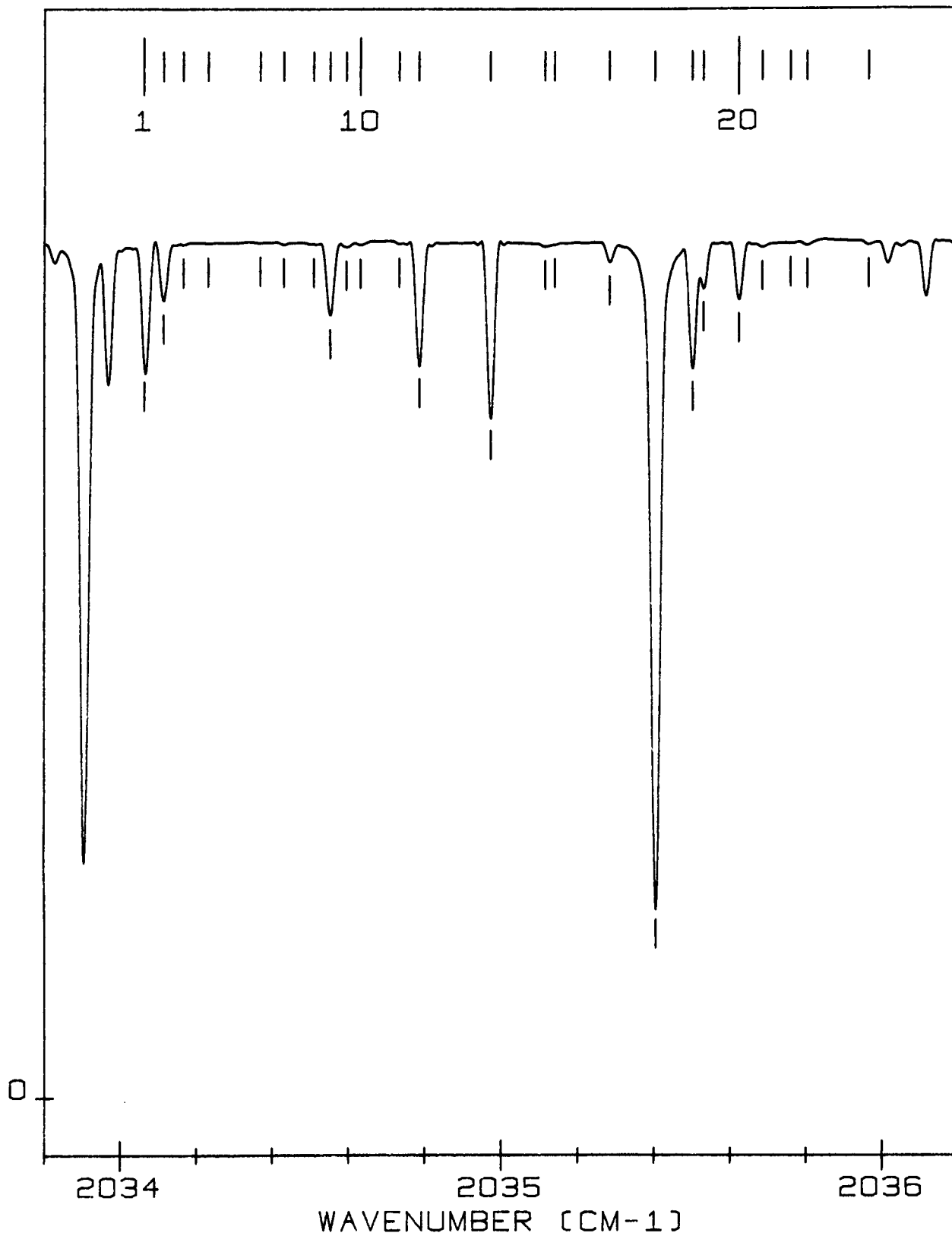


TABLE A104

-1

Line Positions and Identifications (2036-2037 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2036.01702	2036.01695	11101-00001 627	P35
2	2036.04970	2036.05210	12201-01101 626	P76
3	2036.11769	2036.11782	12201-01101 636	P20
		2036.09950	12201-01101 628	P43C
4	2036.22335	2036.22334	11101-00001 628	P18
5	2036.26216	2036.26354	13301-02201 636	P36
			SIDELOBE	
6	2036.49672	2036.49680	12201-01101 628	P41D
7	2036.57063	2036.57066	21102-10002 626	P22
8	2036.74880	2036.74899	11101-00001 627	P34
		2036.74799	12201-01101 628	P42C
9	2036.90806	2036.90805	11101-00001 626	P52
10	2036.94293	2036.94405	11101-00001 628	P17

9.857 Torr 384 meters

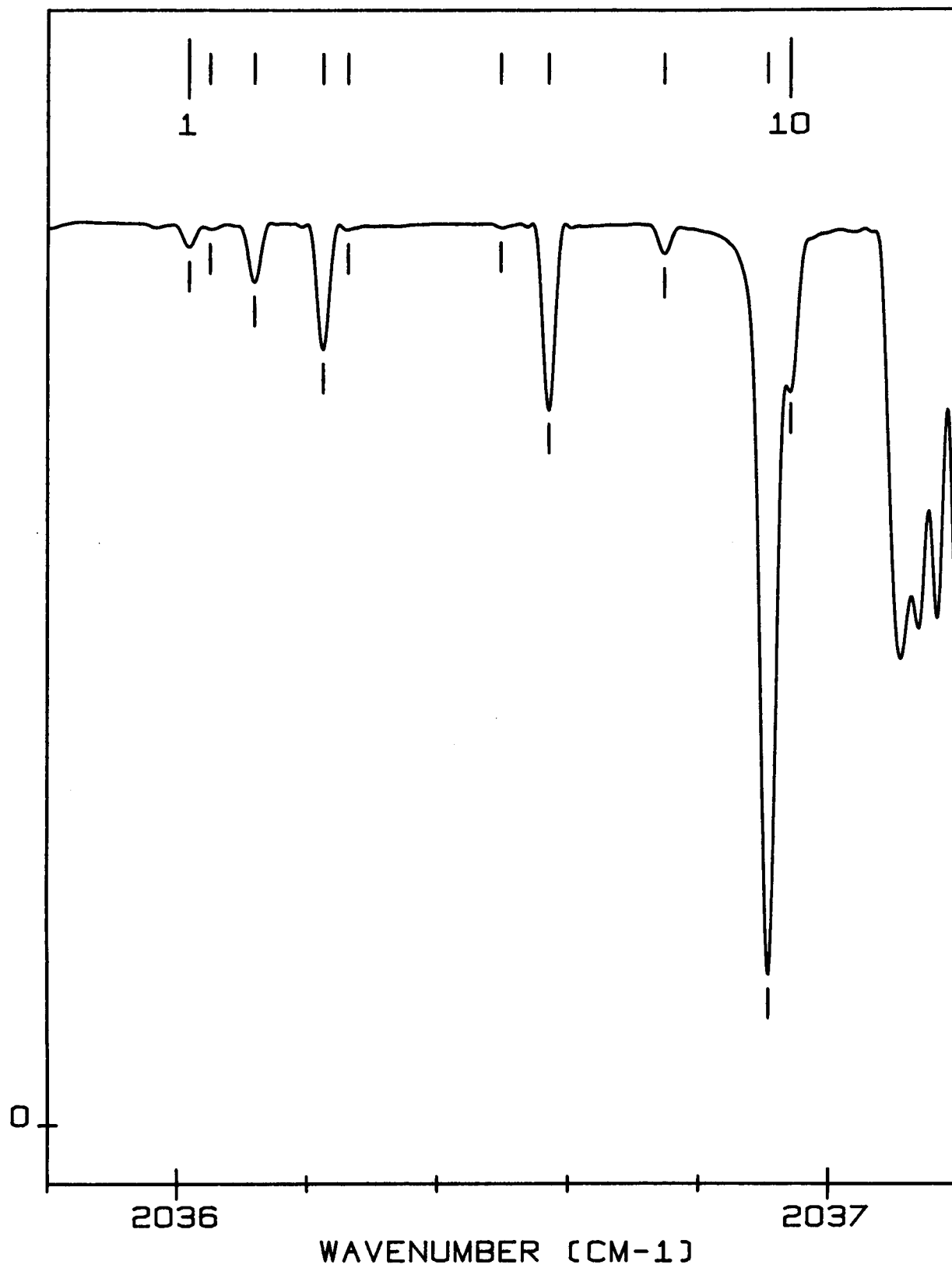


TABLE A105

-1

Line Positions and Identifications (2037-2038 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2037.03901	2037.03968	13301-02201 636 P35
2	2037.11265	2037.12177	11101-00001 636 Q6
		2037.10677	11101-00001 636 Q4
		2037.09723	11101-00001 636 Q2
3	2037.13959	2037.14224	11101-00001 636 Q8
		2037.14214	12201-01101 636 P19
			12201-01101 626 P79?
4	2037.16820	2037.16819	11101-00001 636 Q10
5	2037.19991	2037.19963	11101-00001 636 Q12
		2037.18934	12201-01101 628 P40D
6	2037.23676	2037.23659	11101-00001 636 Q14
		2037.24240	21101-10001 636 P34
7	2037.27907	2037.27909	11101-00001 636 Q16
8	2037.32717	2037.32716	11101-00001 636 Q18
9	2037.38096	2037.38083	11101-00001 636 Q20
		2037.39840	12201-01101 628 P41C
10	2037.44017	2037.44014	11101-00001 636 Q22
11	2037.47375	2037.48189	11101-00001 627 P33
			12201-01101 626 P74?
12	2037.50532	2037.50513	11101-00001 636 Q24
			H2O
13	2037.57579	2037.57584	11101-00001 636 Q26
14	2037.65384	2037.65232	11101-00001 636 Q28
		2037.66572	11101-00001 628 P16
		2037.68595	12201-01101 636 P18
15	2037.73463	2037.73464	11101-00001 636 Q30
16	2037.82286	2037.82285	11101-00001 636 Q32
17	2037.87406	2037.87359	11101-00001 636 R0
		2037.88323	12201-01101 628 P39D
18	2037.91702	2037.91702	11101-00001 636 Q34

9.857 Torr 384 meters

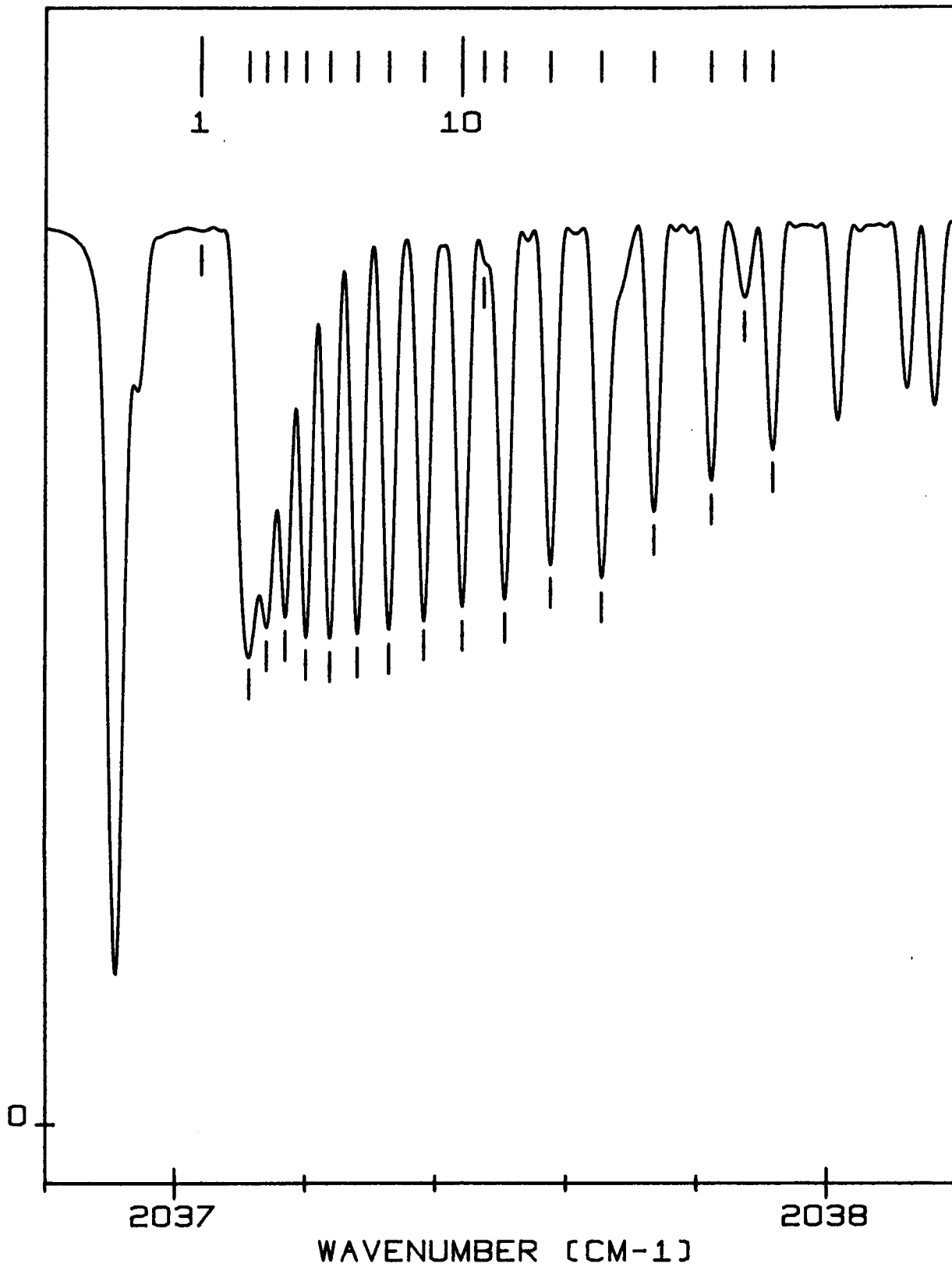


TABLE A106

-1

Line Positions and Identifications (2038-2039 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2038.01722	2038.01721	11101-00001	636	Q36
2	2038.05075	2038.05075	12201-01101	628	P40C
			SIDELOBE		
3	2038.12498	2038.12351	11101-00001	636	Q38
4	2038.16598	2038.16620	21102-10002	626	P20
5	2038.23566	2038.23599	11101-00001	636	Q40
		2038.21564	11101-00001	627	P32
6	2038.35529	2038.35475	11101-00001	636	Q42
7	2038.41401	2038.41403	11101-00001	626	P50
		2038.40757	12201-01101	626	P77
		2038.38835	11101-00001	628	P15
8	2038.47949	2038.47986	11101-00001	636	Q44
9	2038.57600	2038.57844	12201-01101	628	P38D
		2038.56987	13301-02201	636	P33
10	2038.61141	2038.61142	11101-00001	636	Q46
11	2038.66351	2038.66344	12201-01101	636	P17
12	2038.70106	2038.70507	12201-01101	628	P39C
13	2038.74956	2038.74954	11101-00001	636	Q48
14	2038.79921	2038.79744	21101-10001	636	P32
15	2038.86250		22202-11102	626	P49?
			SIDELOBE		
16	2038.89376	2038.89430	11101-00001	636	Q50
17	2038.92217	2038.92098	12201-01101	626	P72
18	2038.95036	2038.95023	11101-00001	627	P31

## FRAME A106

9.857 Torr 384 meters

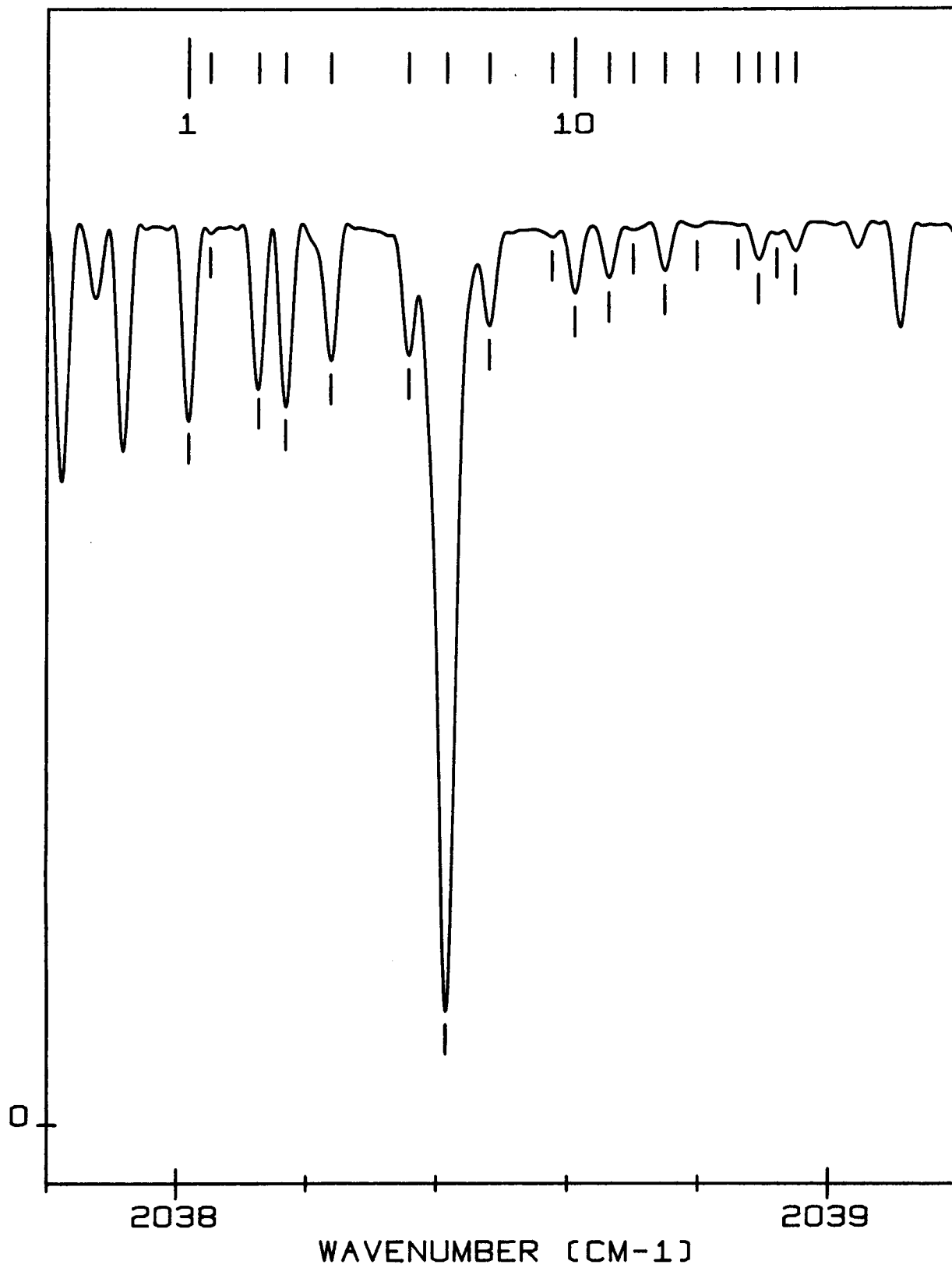




TABLE A107

-1

Line Positions and Identifications (2039-2040 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2039.00990	2039.00861	22202-11102 626 P46
2	2039.04584	2039.04580	11101-00001 636 Q52
3	2039.11191	2039.11192	11101-00001 628 P14
4	2039.20442	2039.20414	11101-00001 636 Q54
5	2039.25348	2039.25392	12201-01101 636 P16
			?
6	2039.32713	2039.32750	13301-02201 636 P32
7	2039.36715	2039.36942	11101-00001 636 Q56
		2039.36138	12201-01101 628 P38C
8	2039.43268	2039.43267	11101-00001 636 R2
9	2039.54154	2039.54174	11101-00001 636 Q58
10	2039.63413		?
11	2039.68583	2039.68564	11101-00001 627 P30
12	2039.72114	2039.71715	12201-01101 626 P75
		2039.72117	11101-00001 636 Q60
13	2039.75886	2039.75882	21102-10002 626 P18
14	2039.83671	2039.83643	11101-00001 628 P13
15	2039.92310	2039.92312	11101-00001 626 P48

9.857 Torr 384 meters

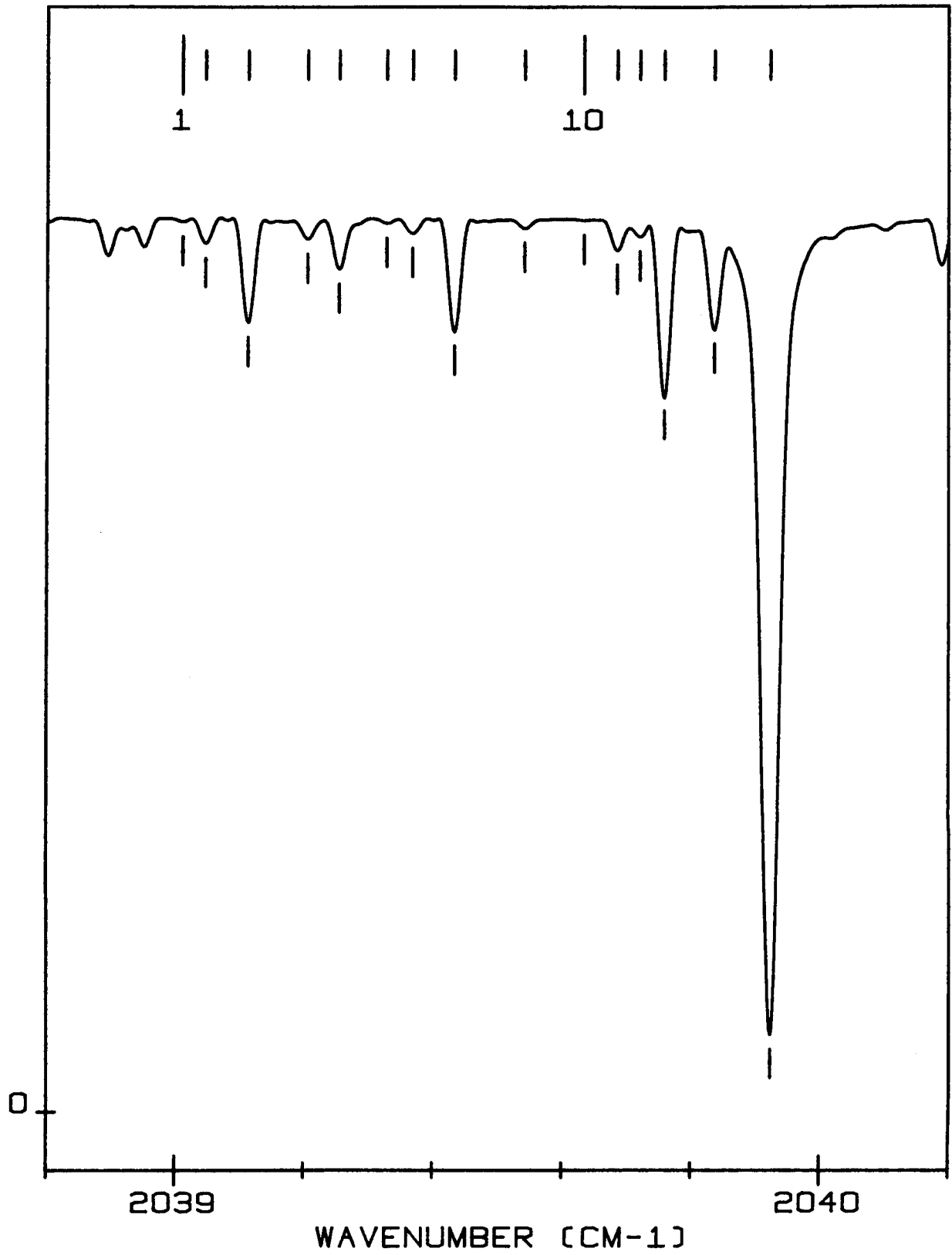


TABLE A108

-1

Line Positions and Identifications (2040-2042 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2040.01949	2040.01971	12201-01101	628	P37C
2	2040.10132	2040.10128	13301-02201	636	P31
3	2040.18949	2040.18956	12201-01101	636	P15
4	2040.29862	2040.27657	22202-11102	626	P47
			?		
5	2040.36149	2040.36350	12201-01101	626	P70
		2040.35290	21101-10001	636	P30
6	2040.42136	2040.42187	11101-00001	627	P29
7	2040.56187	2040.56188	11101-00001	628	P12
8	2040.60084	2040.60226	22202-11102	626	P44
			SIDELOBE		
9	2040.67563	2040.68007	12201-01101	628	P36C
		2040.67191	12201-01101	628	P35D
10	2040.82163	2040.82166	12201-01101	636	P14
11	2040.86297	2040.86252	13301-02201	636	P30
			SIDELOBE		
12	2040.99020	2040.99023	11101-00001	636	R4
13	2041.02861	2041.03103	12201-01101	626	P73
			SIDELOBE		
14	2041.15943	2041.15891	11101-00001	627	P28
15	2041.28798		H2O		
		2041.28826	11101-00001	628	P11
16	2041.34778	2041.34840	21102-10002	626	P16
		2041.34249	12201-01101	628	P35C
		2041.37228	12201-01101	628	P34D
17	2041.43525	2041.43521	11101-00001	626	P46
18	2041.49543		H2O		
19	2041.63438	2041.63463	13301-02201	636	P29
20	2041.66770		?		
21	2041.67938		?		
			SIDELOBE		
22	2041.71968	2041.72046	12201-01101	636	P13
		2041.70685	22202-11102	626	P45
23	2041.81171	2041.81123	12201-01101	626	P68
24	2041.89756	2041.89676	11101-00001	627	P27
		2041.90858	21101-10001	636	P28

FRAME A108

9.857 Torr 384 meters

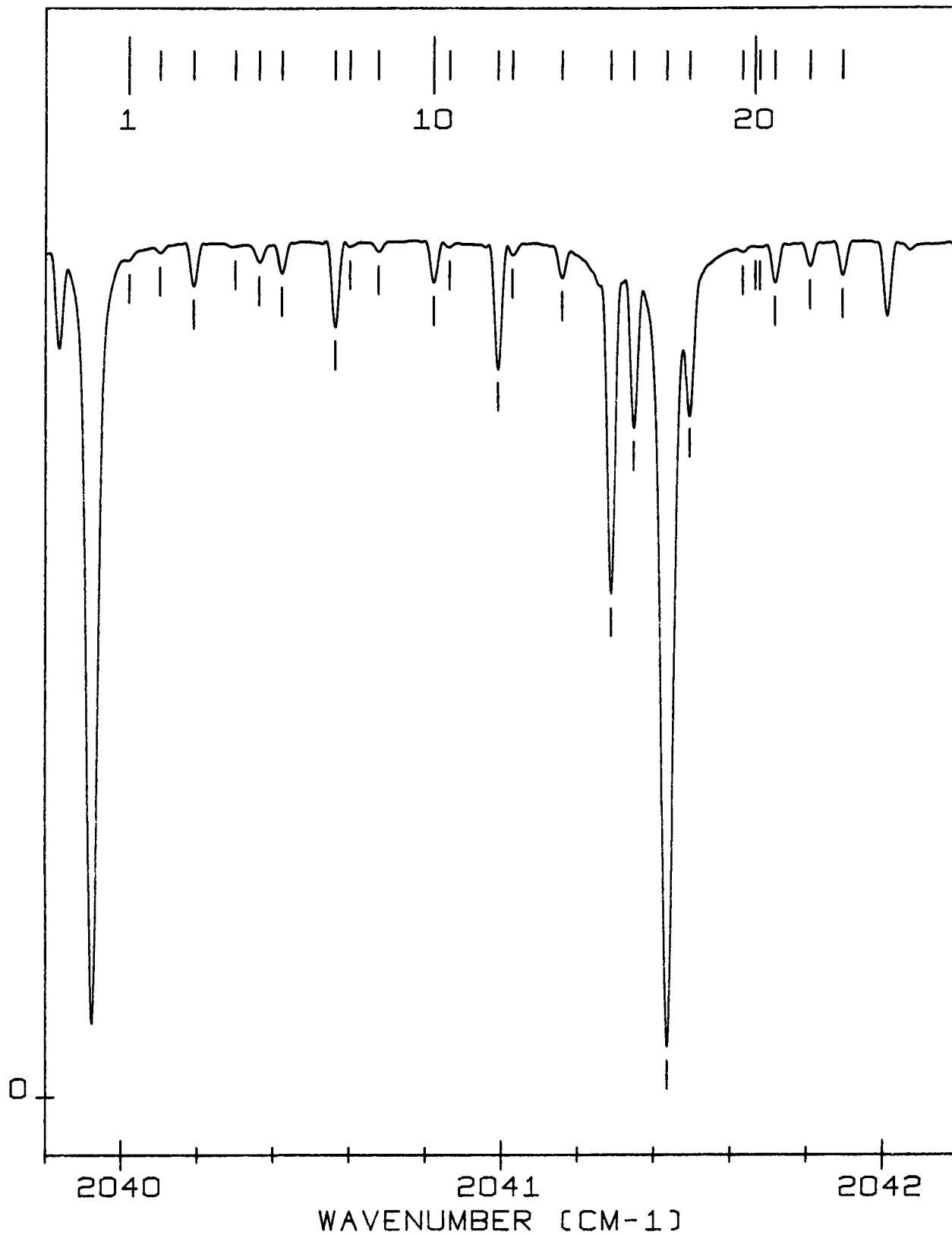


TABLE A109

-1

Line Positions and Identifications (2042-2044 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2042.01525	2042.01557	11101-00001 628 P10
		2042.00697	12201-01101 628 P34C
2	2042.07278	2042.07390	12201-01101 628 P33D
3	2042.19536	2042.19604	22202-11102 626 P42
4	2042.31619		?
5	2042.35031	2042.34951	12201-01101 626 P71
6	2042.38958	2042.38914	12201-01101 636 P12
		2042.39958	13301-02201 636 P28
7	2042.43902		?
8	2042.54625	2042.54624	11101-00001 636 R6
9	2042.63530	2042.63540	11101-00001 627 P26
10	2042.67545	2042.67354	12201-01101 628 P33C
11	2042.74397	2042.74380	11101-00001 628 P9
12	2042.77674	2042.77676	12201-01101 628 P32D
13	2042.95010	2042.95019	11101-00001 626 P44
		2042.93487	21102-10002 626 P14
14	2043.05921		CONTAMINANT
15	2043.14551	2043.14302	22202-11102 626 P43
16	2043.17002	2043.17046	13301-02201 636 P27
17	2043.26052	2043.26402	12201-01101 626 P66
		2043.25612	12201-01101 636 P11
18	2043.34217	2043.34221	12201-01101 628 P32C
19	2043.37465	2043.37482	11101-00001 627 P25
20	2043.47321	2043.47295	11101-00001 628 P8
		2043.48084	12201-01101 628 P31D
		2043.46433	21101-10001 636 P26
21	2043.58202		?
22	2043.64077		?
			SIDELOBE
23	2043.67260	2043.67285	12201-01101 626 P69
24	2043.79036	2043.78975	22202-11102 626 P40
25	2043.94926		H2O
		2043.95631	12201-01101 636 P10
		2043.93867	13301-02201 636 P26

FRAME A109

9.857 Torr 384 meters

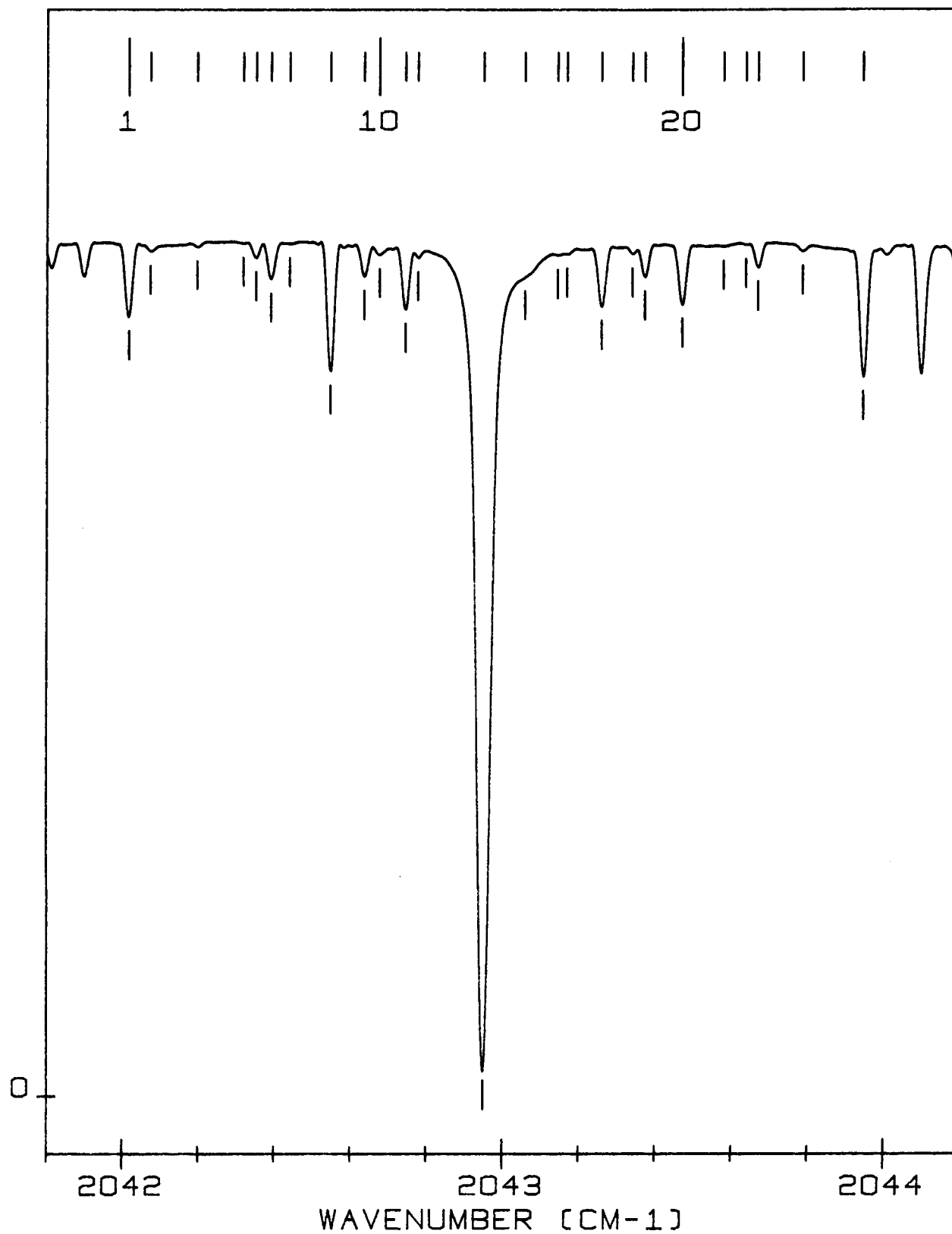


TABLE A110

-1

Line Positions and Identifications (2044-2046 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2044.01026	2044.01299	12201-01101 628	P31C
2	2044.10211	2044.10068	11101-00001 636	R8
		2044.11503	11101-00001 627	P24
3	2044.20174	2044.20301	11101-00001 628	P7
		2044.18613	12201-01101 628	P30D
4	2044.29733		?	
5	2044.46797	2044.46798	11101-00001 626	P42
6	2044.51719	2044.51814	21102-10002 626	P12
7	2044.58488	2044.58508	22202-11102 626	P41
8	2044.68668	2044.68589	12201-01101 628	P30C
9	2044.72125	2044.72175	12201-01101 626	P64
		2044.70915	13301-02201 636	P25
10	2044.79629	2044.79649	12201-01101 636	P9
11	2044.85580	2044.85601	11101-00001 627	P23
12	2044.89264	2044.89262	12201-01101 628	P29D
13	2044.93401	2044.93399	11101-00001 628	P6
14	2045.00195	2045.00129	12201-01101 626	P67
		2045.02005	21101-10001 636	P24
15	2045.24660		?	
16	2045.30179		?	
17	2045.35935	2045.36092	12201-01101 628	P29C
18	2045.38047	2045.38318	22202-11102 626	P38
19	2045.48060	2045.47978	13301-02201 636	P24
20	2045.52346	2045.52313	12201-01101 636	P8
21	2045.59816	2045.59775	11101-00001 627	P22
		2045.60029	12201-01101 628	P28D
22	2045.65524	2045.66587	11101-00001 628	P5
		2045.65355	11101-00001 636	R10
23	2045.98847	2045.98848	11101-00001 626	P40
		2046.03807	12201-01101 628	P28C
		2046.03303	22202-11102 626	P39

FRAME A110

9.857 Torr 384 meters

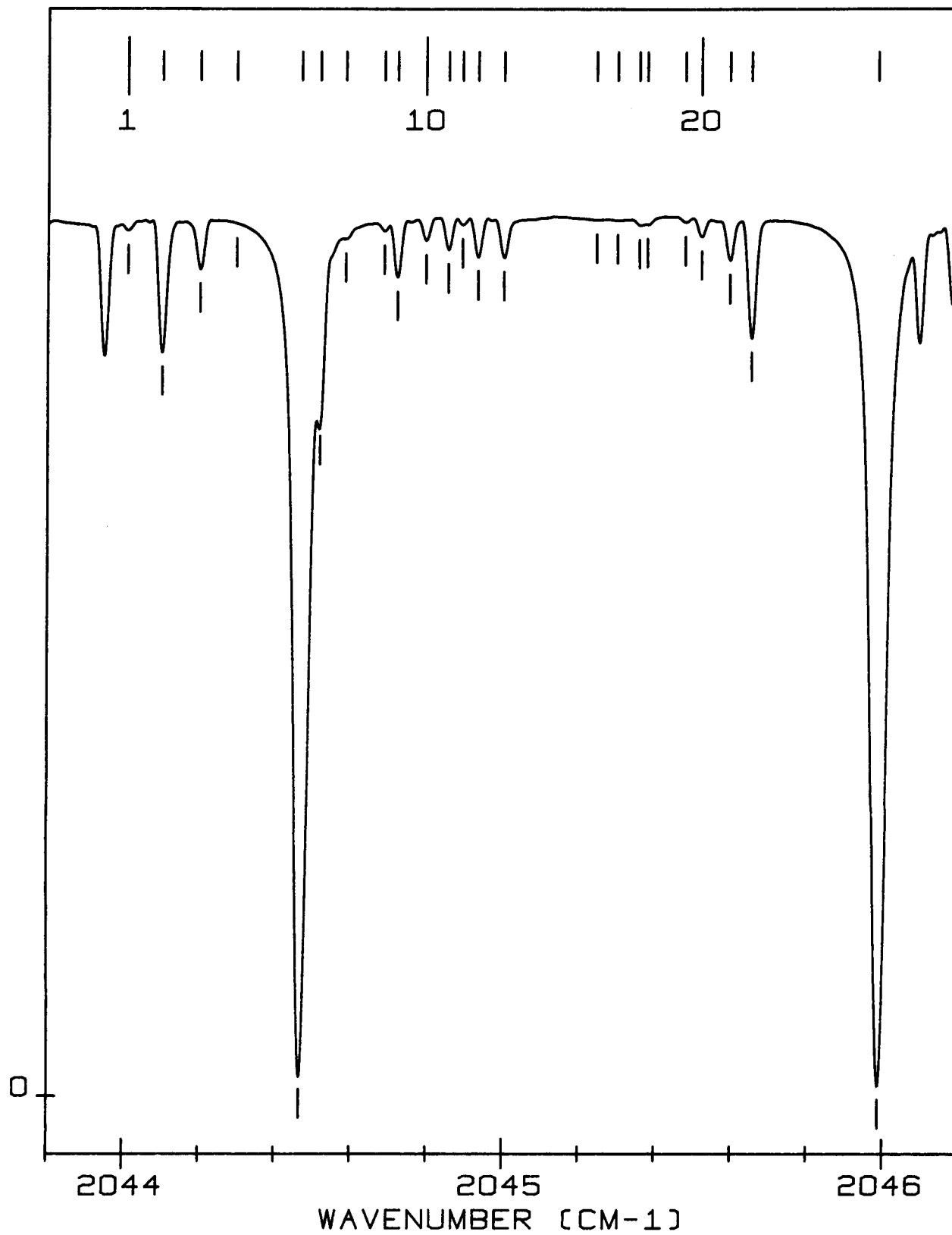




TABLE A111

-1

Line Positions and Identifications (2046-2048 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2046.09855	2046.09814	21102-10002 626	P10
2	2046.18431	2046.18429	12201-01101 626	P62
3	2046.25190	2046.25089	13301-02201 636	P23
4	2046.30578	2046.30913	12201-01101 628	P27D
			SIDELOBE	
5	2046.33748	2046.34025	11101-00001 627	P21
		2046.33506	12201-01101 626	P65
		2046.34156	12201-01101 636	P7
6	2046.39908	2046.39866	11101-00001 628	P4
7	2046.51557		H2O	
8	2046.57078	2046.57565	21101-10001 636	P22
9	2046.67357	2046.67355	03301-00001 626	R48
10	2046.71815	2046.71737	12201-01101 628	P27C
11	2046.83511		?	
12	2046.88476		?	
13	2046.97675	2046.97614	22202-11102 626	P36
14	2047.02138	2047.01914	12201-01101 628	P26D
		2047.02293	13301-02201 636	P22
15	2047.08476	2047.08350	11101-00001 627	P20
		2047.08956	12201-01101 636	P6
16	2047.13222	2047.13235	11101-00001 628	P3
17	2047.20484	2047.20482	11101-00001 636	R12
18	2047.39681	2047.39880	12201-01101 628	P26C
19	2047.51159	2047.51161	11101-00001 626	P38
		2047.48686	22202-11102 626	P37
20	2047.65241	2047.65151	12201-01101 626	P60
21	2047.67412	2047.67479	21102-10002 626	P8
		2047.67438	12201-01101 626	P63
22	2047.73044	2047.73029	12201-01101 628	P25D
23	2047.79568	2047.79571	13301-02201 636	P21
24	2047.82794	2047.82750	11101-00001 627	P19
25	2047.86665	2047.86693	11101-00001 628	P2
26	2047.89176	2047.89129	12201-01101 636	P5
27	2047.98852		?	

9.857 Torr 384 meters

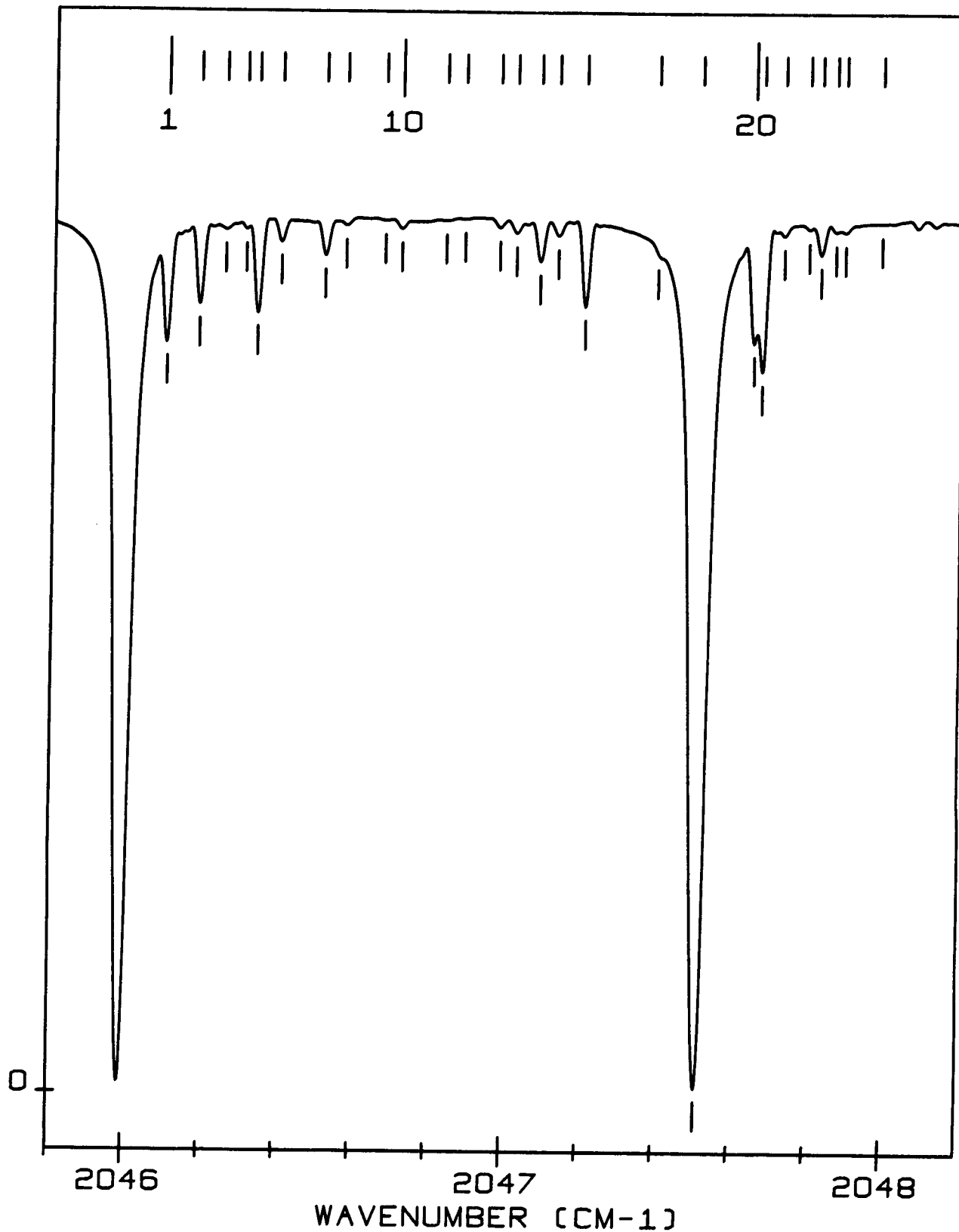


TABLE A112

-1

Line Positions and Identifications (2048-2049 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2048.01601		?		
2	2048.08273	2048.08236	12201-01101	628	P25C
3	2048.13161	2048.13114	21101-10001	636	P20
4	2048.18913		?		
5	2048.22464		?		
6	2048.25653		?		
7	2048.41002		?		
8	2048.44257	2048.44259	12201-01101	628	P24D
9	2048.49882		?		
10	2048.57066	2048.57223	11101-00001	627	P18
		2048.56845	22202-11102	626	P34
		2048.56811	13301-02201	636	P20
11	2048.65423	2048.65557	12201-01101	636	P4
12	2048.75534	2048.75449	11101-00001	636	R14
		2048.76806	12201-01101	628	P24C
13	2048.82990		?		
14	2048.94462	2048.94658	22202-11102	626	P35

9.857 Torr 384 meters

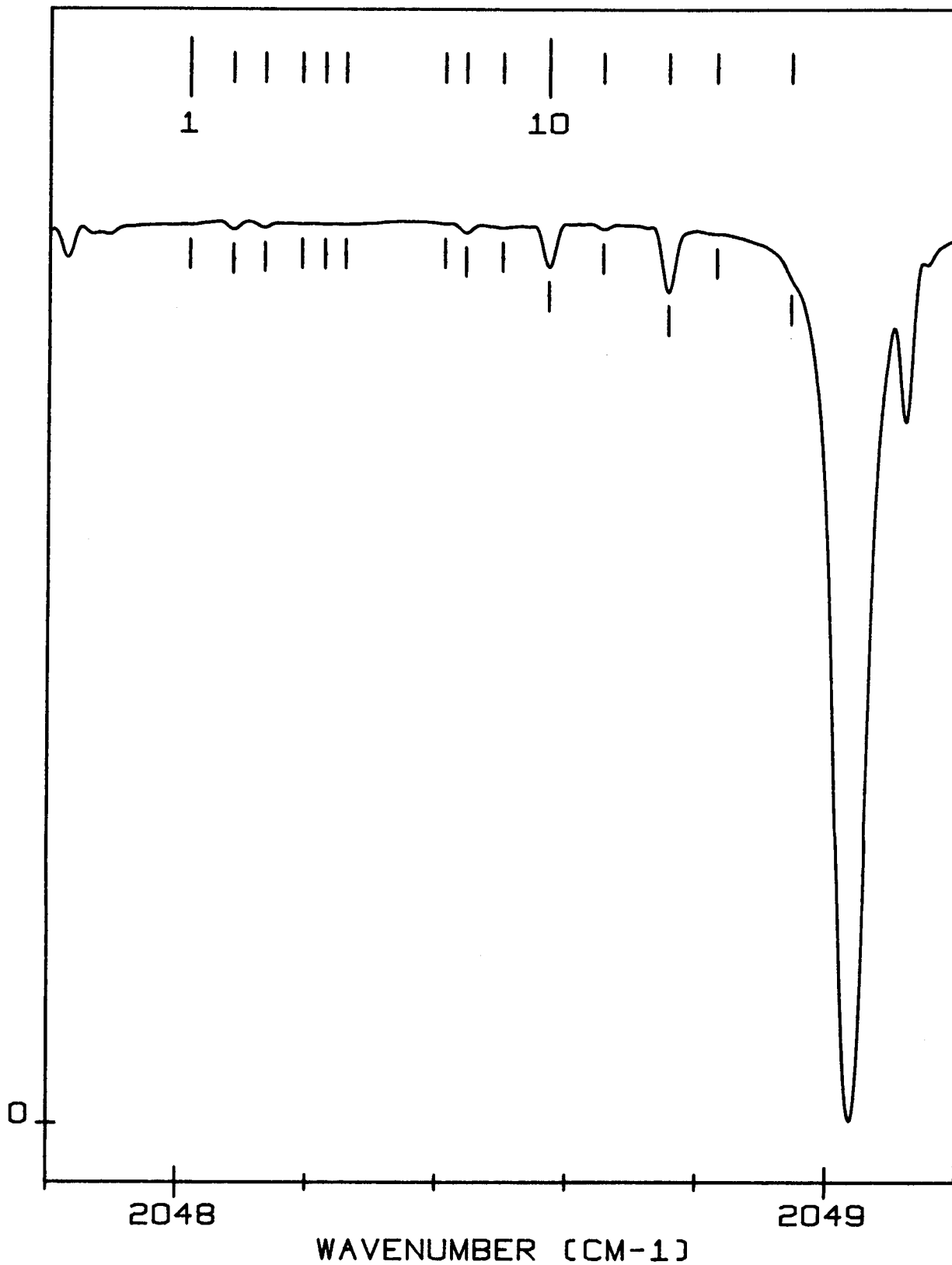


TABLE A113

-1

Line Positions and Identifications (2049-2050 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2049.03723	2049.03727	11101-00001 626 P36
		2049.01945	12201-01101 626 P61
2	2049.12260	2049.12329	12201-01101 626 P58
3	2049.15535	2049.15602	12201-01101 628 P23D
4	2049.24820	2049.24804	21102-10002 626 P6
5	2049.28260		?
			SIDELOBE
6	2049.31807	2049.31770	11101-00001 627 P17
7	2049.35837	2049.37860	11101-00001 628 Q5
		2049.36534	11101-00001 628 Q4
		2049.35474	11101-00001 628 Q3
		2049.34678	11101-00001 628 Q2
		2049.34148	11101-00001 628 Q1
		2049.34346	13301-02201 636 P19
8	2049.40643	2049.41307	11101-00001 628 Q7
		2049.39451	11101-00001 628 Q6
9	2049.43201	2049.43430	11101-00001 628 Q8
		2049.44565	12201-01101 636 P3
10	2049.45621	2049.45818	11101-00001 628 Q9
		2049.45589	12201-01101 628 P23C
11	2049.48449	2049.48473	11101-00001 628 Q10
12	2049.51385	2049.51394	11101-00001 628 Q11
13	2049.54572	2049.54581	11101-00001 628 Q12
14	2049.58049	2049.58036	11101-00001 628 Q13
15	2049.61767	2049.61758	11101-00001 628 Q14
16	2049.65753	2049.65748	11101-00001 628 Q15
17	2049.69967	2049.70006	11101-00001 628 Q16
		2049.68653	21101-10001 636 P18
18	2049.74510	2049.74532	11101-00001 628 Q17
19	2049.79326	2049.79327	11101-00001 628 Q18
20	2049.84387	2049.84392	11101-00001 628 Q19
		2049.87057	12201-01101 628 P22D
21	2049.89726	2049.89727	11101-00001 628 Q20
22	2049.95310	2049.95332	11101-00001 628 Q21

9.857 Torr 384 meters

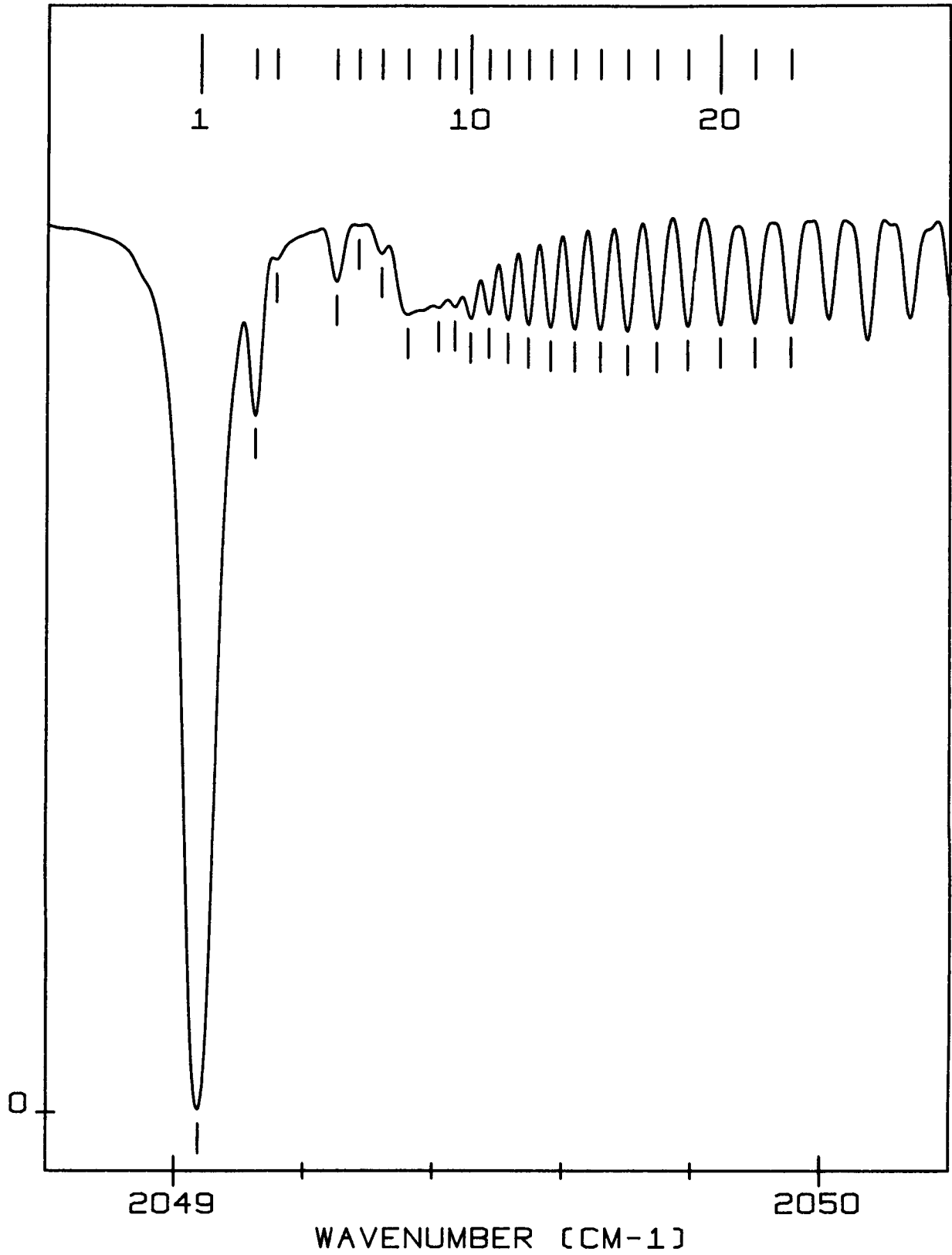


TABLE A114

-1

Line Positions and Identifications (2050-2051 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2050.01204	2050.01208	11101-00001 628 Q22
2	2050.07204	2050.07355	11101-00001 628 Q23
		2050.07605	11101-00001 628 R0
		2050.06389	11101-00001 627 P16
3	2050.13861	2050.13775	11101-00001 628 Q24
		2050.14585	12201-01101 628 P22C
		2050.15997	22202-11102 626 P32
		2050.11531	13301-02201 636 P18
4	2050.20478	2050.20467	11101-00001 628 Q25
5	2050.27438	2050.27432	11101-00001 628 Q26
6	2050.30388	2050.30254	11101-00001 636 R16
7	2050.34661	2050.34672	11101-00001 628 Q27
8	2050.37024	2050.37045	12201-01101 626 P59
9	2050.42167	2050.42186	11101-00001 628 Q28
		2050.41219	22202-11102 626 P33
10	2050.50151	2050.49976	11101-00001 628 Q29
11	2050.56540	2050.56538	11101-00001 626 P34
		2050.58042	11101-00001 628 Q30
		2050.59951	12201-01101 626 P56
		2050.58623	12201-01101 628 P21D
12	2050.66297	2050.66384	11101-00001 628 Q31
13	2050.75010	2050.75005	11101-00001 628 Q32
14	2050.81519	2050.81419	11101-00001 628 R1
		2050.81081	11101-00001 627 P15
		2050.81783	21102-10002 626 P4
15	2050.83840	2050.83904	11101-00001 628 Q33
		2050.83792	12201-01101 628 P21C
			CARBON MONOXIDE
16	2050.89231	2050.89380	13301-02201 636 P17
			SIDELOBE
17	2050.93046	2050.93082	11101-00001 628 Q34

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

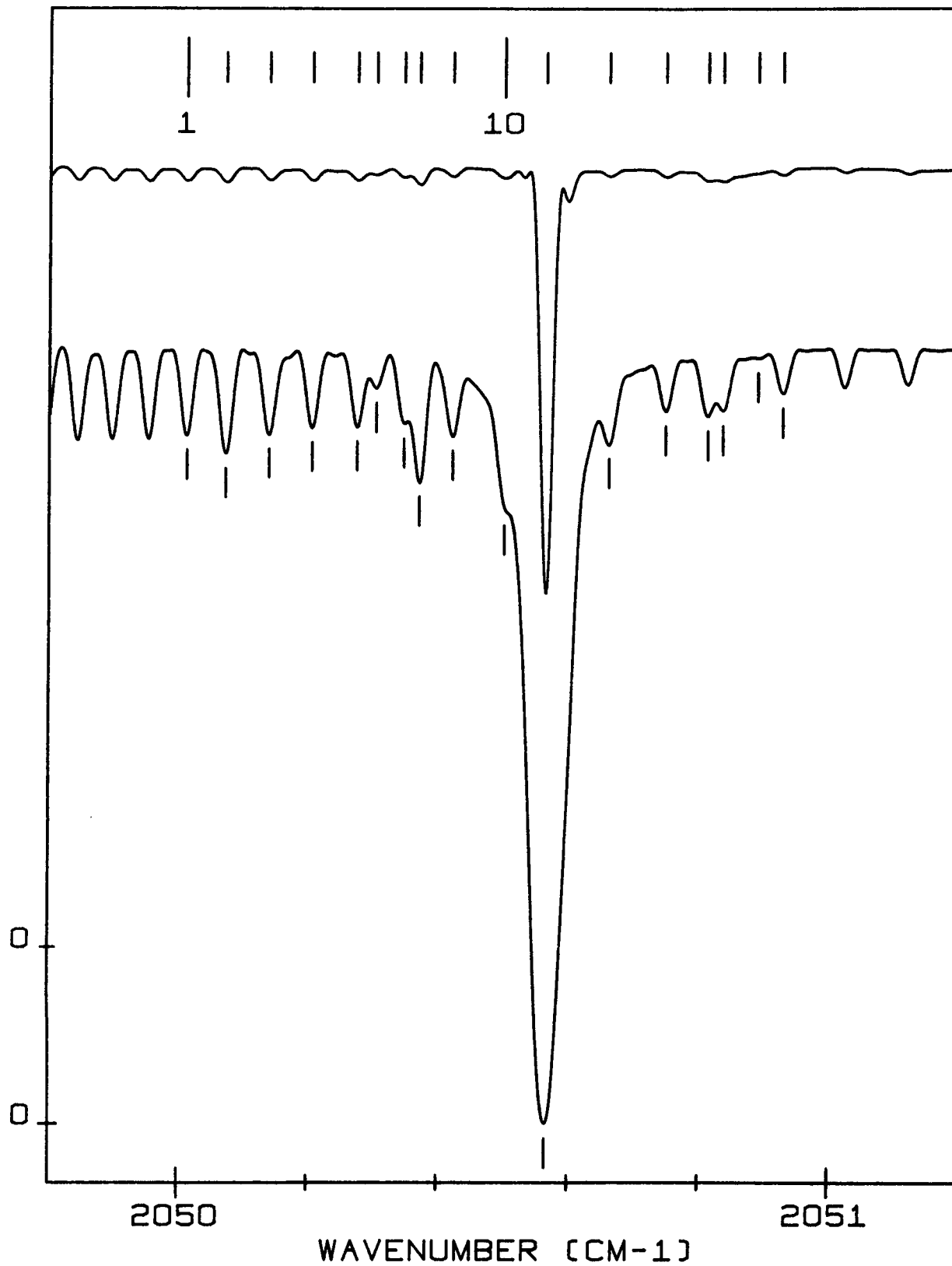




TABLE A115

-1

Line Positions and Identifications (2051-2052 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2051.02542	2051.02540	11101-00001 628 Q35
2	2051.12278	2051.12280	11101-00001 628 Q36
3	2051.22294	2051.22302	11101-00001 628 Q37
		2051.24191	21101-10001 636 P16
4	2051.32656	2051.32606	11101-00001 628 Q38
		2051.30300	12201-01101 628 P20D
5	2051.43191	2051.43195	11101-00001 628 Q39
6	2051.46435		?
			SIDELOBE
7	2051.54987	2051.54069	11101-00001 628 Q40
		2051.55322	11101-00001 628 R2
		2051.55843	11101-00001 627 P14
		2051.53210	12201-01101 628 P20C
8	2051.65441	2051.65228	11101-00001 628 Q41
		2051.66455	13301-02201 636 P16
9	2051.72906	2051.72755	12201-01101 626 P57
		2051.75055	22202-11102 626 P30
10	2051.76959		12201-01101 636 QEVEN*
		2051.76675	11101-00001 628 Q42
11	2051.84960	2051.86281	12201-01101 636 Q11
		2051.83906	12201-01101 636 Q9
		2051.81985	12201-01101 636 Q7
		2051.80518	12201-01101 636 Q5
		2051.79503	12201-01101 636 Q3
		2051.84896	11101-00001 636 R18
12	2051.88775	2051.89114	12201-01101 636 Q13
		2051.88409	11101-00001 628 Q43
		2051.88368	22202-11102 626 P31
13	2051.92405	2051.92406	12201-01101 636 Q15
14	2051.96177	2051.96159	12201-01101 636 Q17

\* Unresolved Q Branch of 12201c-01101d 628

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

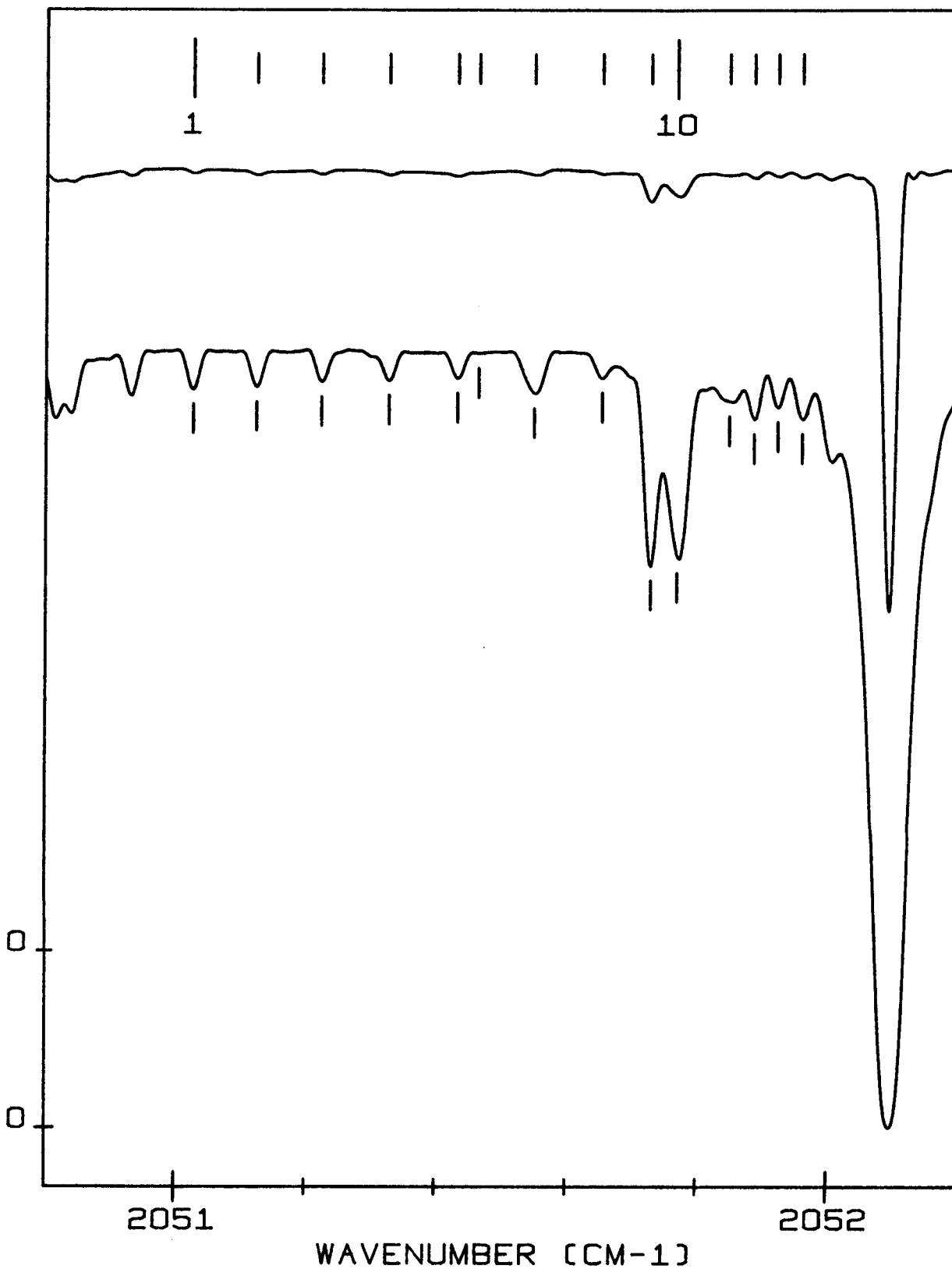


TABLE A116

-1

Line Positions and Identifications (2052-2053 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2052.00651	2052.00378	12201-01101 636 Q19
		2052.00433	11101-00001 628 Q44
		2052.02086	12201-01101 628 P19D
2	2052.09572	2052.09587	11101-00001 626 P32
		2052.08006	12201-01101 626 P54
		2052.05066	12201-01101 636 Q21
		2052.10225	12201-01101 636 Q23
3	2052.16933	2052.15862	12201-01101 636 Q25
		2052.12748	11101-00001 628 Q45
4	2052.22162	2052.21979	12201-01101 636 Q27
		2052.22837	12201-01101 628 P19C
5	2052.25377	2052.25353	11101-00001 628 Q46
6	2052.29300	2052.29313	11101-00001 628 R3
		2052.30677	11101-00001 627 P13
		2052.28582	12201-01101 636 Q29
7	2052.35628	2052.35677	12201-01101 636 Q31
8	2052.38217	2052.38252	11101-00001 628 Q47
		2052.38412	21102-10002 626 P2
9	2052.43499	2052.43269	12201-01101 636 Q33
		2052.44625	13301-02201 636 P15
10	2052.51382	2052.51444	11101-00001 628 Q48
		2052.51364	12201-01101 636 Q35
11	2052.54658	?	
12	2052.59984	2052.59969	12201-01101 636 Q37
13	2052.64931	2052.64931	11101-00001 628 Q49
14	2052.69064	2052.69089	12201-01101 636 Q39
15	2052.73950	2052.73981	12201-01101 628 P18D
16	2052.78976	2052.78715	11101-00001 628 Q50
		2052.78734	12201-01101 636 Q41
		2052.79738	21101-10001 636 P14
17	2052.85530	?	
18	2052.88838	2052.88909	12201-01101 636 Q43
19	2052.92715	2052.92796	11101-00001 628 Q51
		2052.92673	12201-01101 628 P18C
20	2052.99356	H2O	
		2052.99624	12201-01101 636 Q45

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

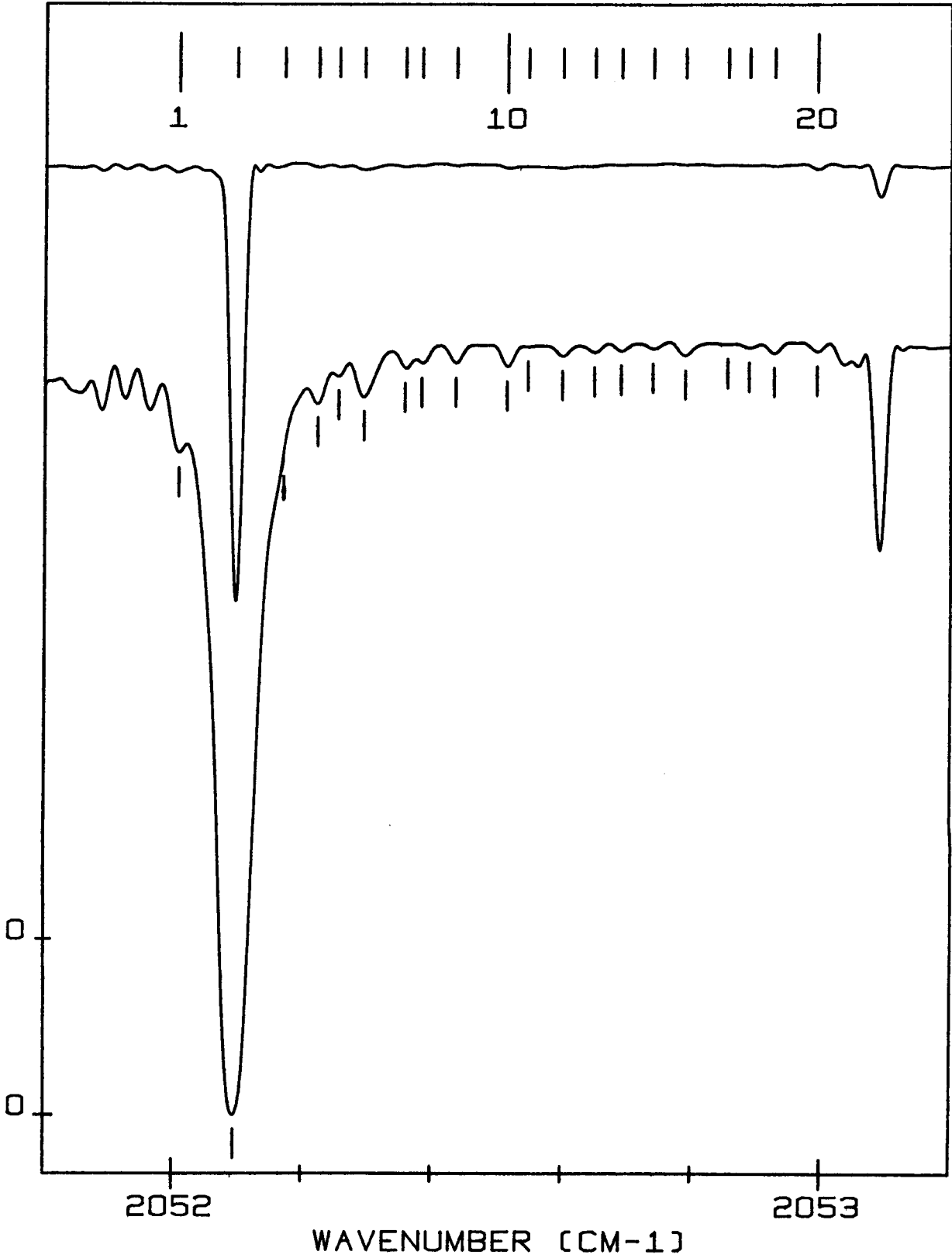


TABLE A117

-1

Line Positions and Identifications (2053-2054 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2053.03559	2053.03392	11101-00001 628	R4
2	2053.05638	2053.05582	11101-00001 627	P12
		2053.07176	11101-00001 628	Q52
			SIDELOBE	
3	2053.09104	2053.09090	12201-01101 626	P55
4	2053.16859		?	
5	2053.21761	2053.21856	11101-00001 628	Q53
		2053.21582	13301-02201 636	P14
6	2053.35173	2053.34008	22202-11102 626	P28
		2053.36107	22202-11102 626	P29
		2053.36838	11101-00001 628	Q54
		2053.35169	12201-01101 636	R1
7	2053.39480	2053.39376	11101-00001 636	R20
8	2053.46141	2053.45985	12201-01101 628	P17D
9	2053.53090		11101-00001 628	Q55?
			20001-01101 636	P59?
10	2053.56516	2053.56480	12201-01101 626	P52
11	2053.62866	2053.62867	11101-00001 626	P30
		2053.62716	12201-01101 628	P17C
12	2053.77483	2053.77559	11101-00001 628	R5
13	2053.80559	2053.80556	11101-00001 627	P11
14	2053.96767	2053.96106	21102-10002 626	Q4
		2053.95136	21102-10002 626	Q2
15	2053.99502	2053.99716	21102-10002 626	Q8
		2053.97632	21102-10002 626	Q6
		2054.00013	13301-02201 636	P13

Upper: 1.000 Torr 384 meters  
 Lower: 9.857 Torr 384 meters

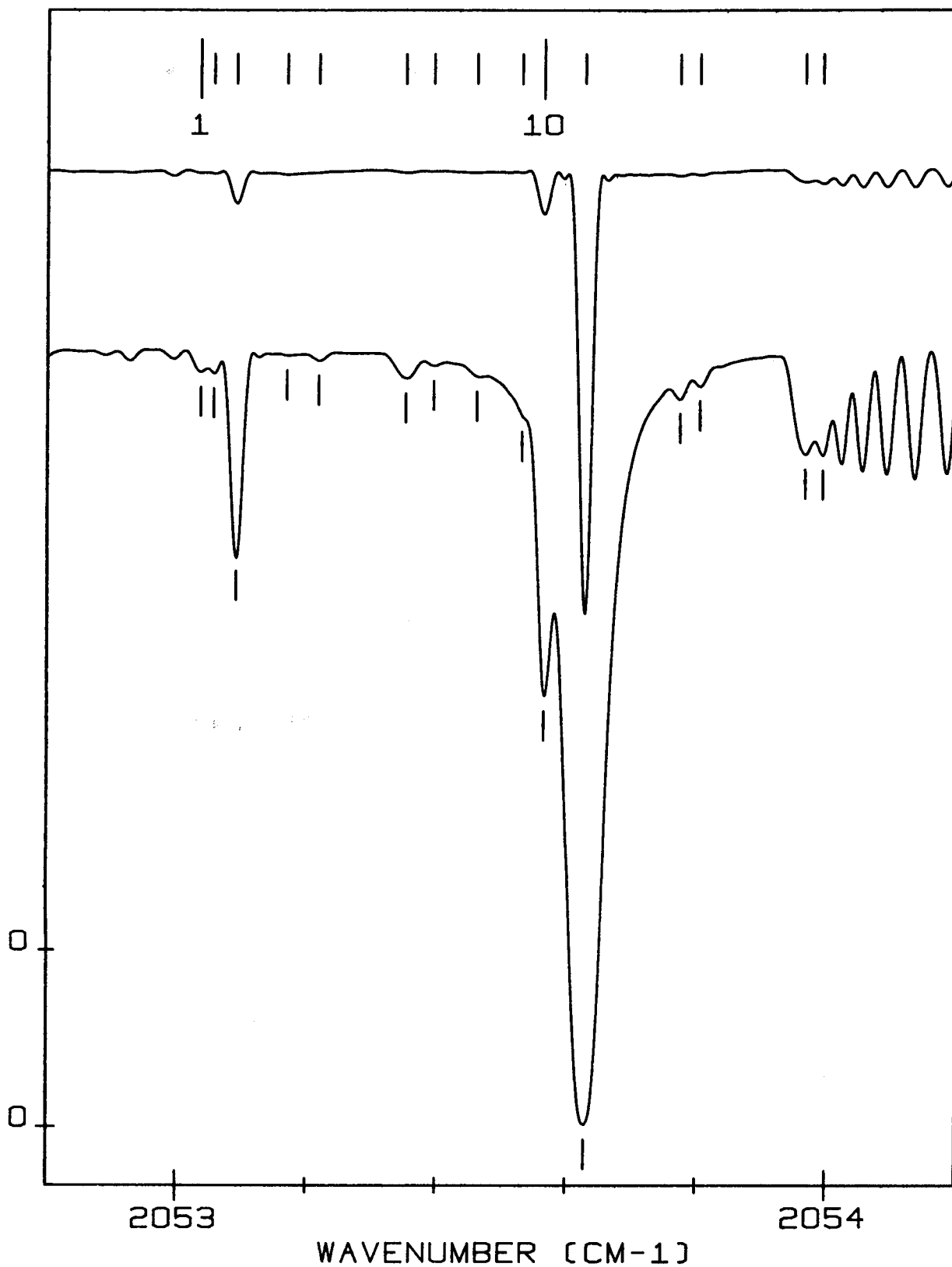


TABLE A118

-1

Line Positions and Identifications (2054-2055 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2054.02366	2054.02361	21102-10002 626 Q10
2	2054.05580	2054.05570	21102-10002 626 Q12
3	2054.09332	2054.09346	21102-10002 626 Q14
4	2054.13645	2054.13695	21102-10002 626 Q16
		2054.13284	12201-01101 636 R2
5	2054.18631	2054.18623	21102-10002 626 Q18
		2054.18097	12201-01101 628 P16D
6	2054.24141	2054.24134	21102-10002 626 Q20
7	2054.30257	2054.30237	21102-10002 626 Q22
8	2054.33429	2054.32963	12201-01101 628 P16C
			SIDELOBE
9	2054.36913	2054.36939	21102-10002 626 Q24
		2054.35311	21101-10001 636 P12
10	2054.40555		?
			SIDELOBE
11	2054.45907	2054.46066	12201-01101 626 P53
		2054.44247	21102-10002 626 Q26
12	2054.52081	2054.52172	21102-10002 626 Q28
		2054.51814	11101-00001 628 R6
13	2054.55648	2054.55600	11101-00001 627 P10
14	2054.60719	2054.60722	21102-10002 626 Q30
15	2054.69846	2054.69908	21102-10002 626 Q32
16	2054.72786	2054.72691	21102-10002 626 R0
17	2054.76716	2054.76912	13301-02201 636 P12
18	2054.79746	2054.79742	21102-10002 626 Q34
19	2054.84441	2054.84434	22202-11102 626 P27
20	2054.90296	2054.90234	21102-10002 626 Q36
		2054.90316	12201-01101 628 P15D
		2054.92210	12201-01101 636 R3
		2054.92846	22202-11102 626 P26
21	2054.97770		?

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

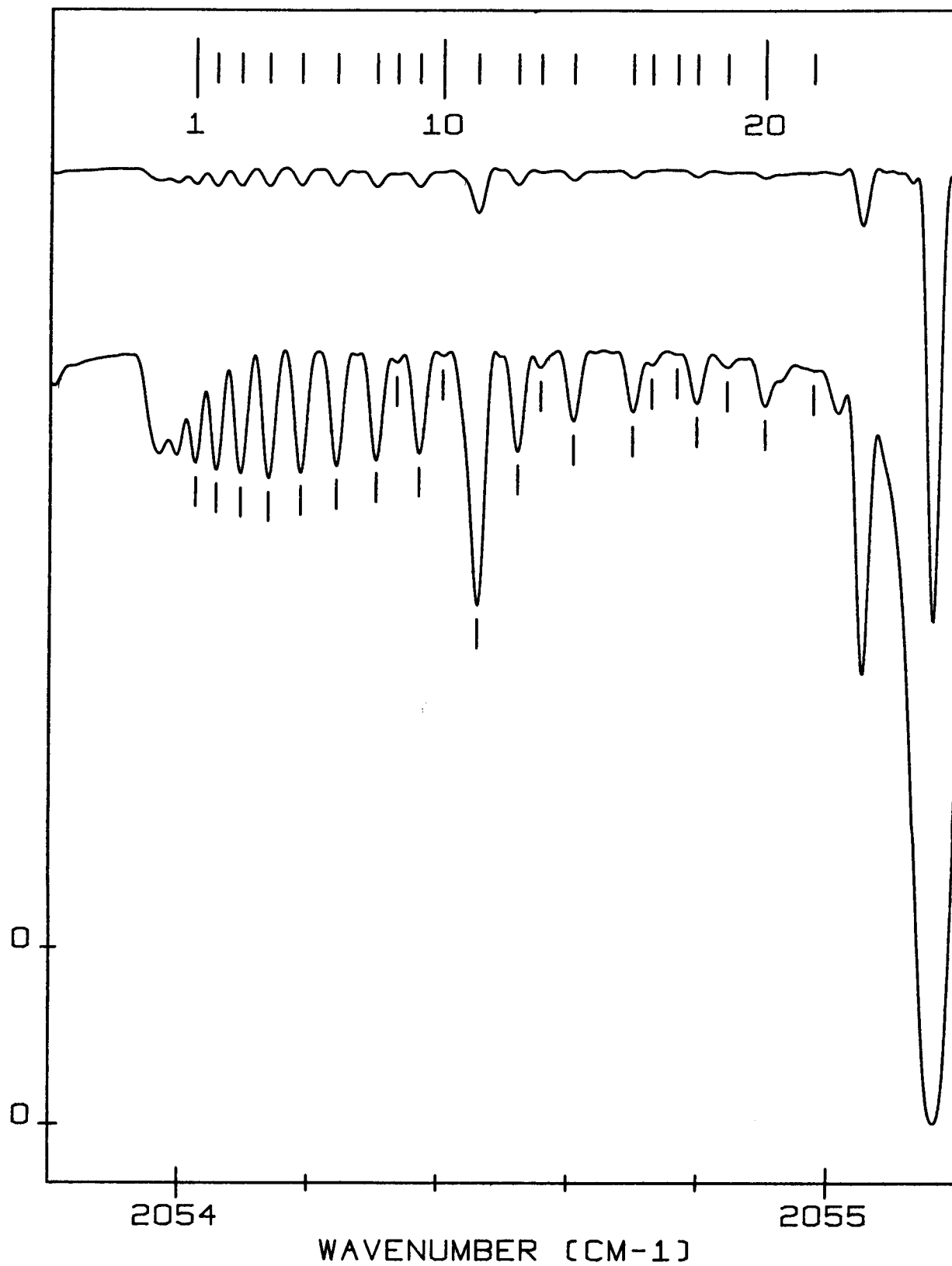




TABLE A119

-1

Line Positions and Identifications (2055-2056 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2055.01629	2055.01398	21102-10002	626	Q38
		2055.03413	12201-01101	628	P15C
			SIDELOBE		
2	2055.05361	2055.05364	12201-01101	626	P50
3	2055.16367	2055.16369	11101-00001	626	P28
		2055.13246	21102-10002	626	Q40
4	2055.25902	2055.25793	21102-10002	626	Q42
		2055.26156	11101-00001	628	R7
			20001-01101	636	P57?
5	2055.30630	2055.30713	11101-00001	627	P9
6	2055.39103	2055.39054	21102-10002	626	Q44
8	2055.53070	2055.53042	21102-10002	626	Q46
9	2055.62648	2055.62641	12201-01101	628	P14D
10	2055.67669	2055.67776	21102-10002	626	Q48
11	2055.69769	2055.69660	12201-01101	636	R4
12	2055.74255	2055.74065	12201-01101	628	P14C
13	2055.83688	2055.83694	12201-01101	626	P51
14	2055.91554	2055.90932	21101-10001	636	P10

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

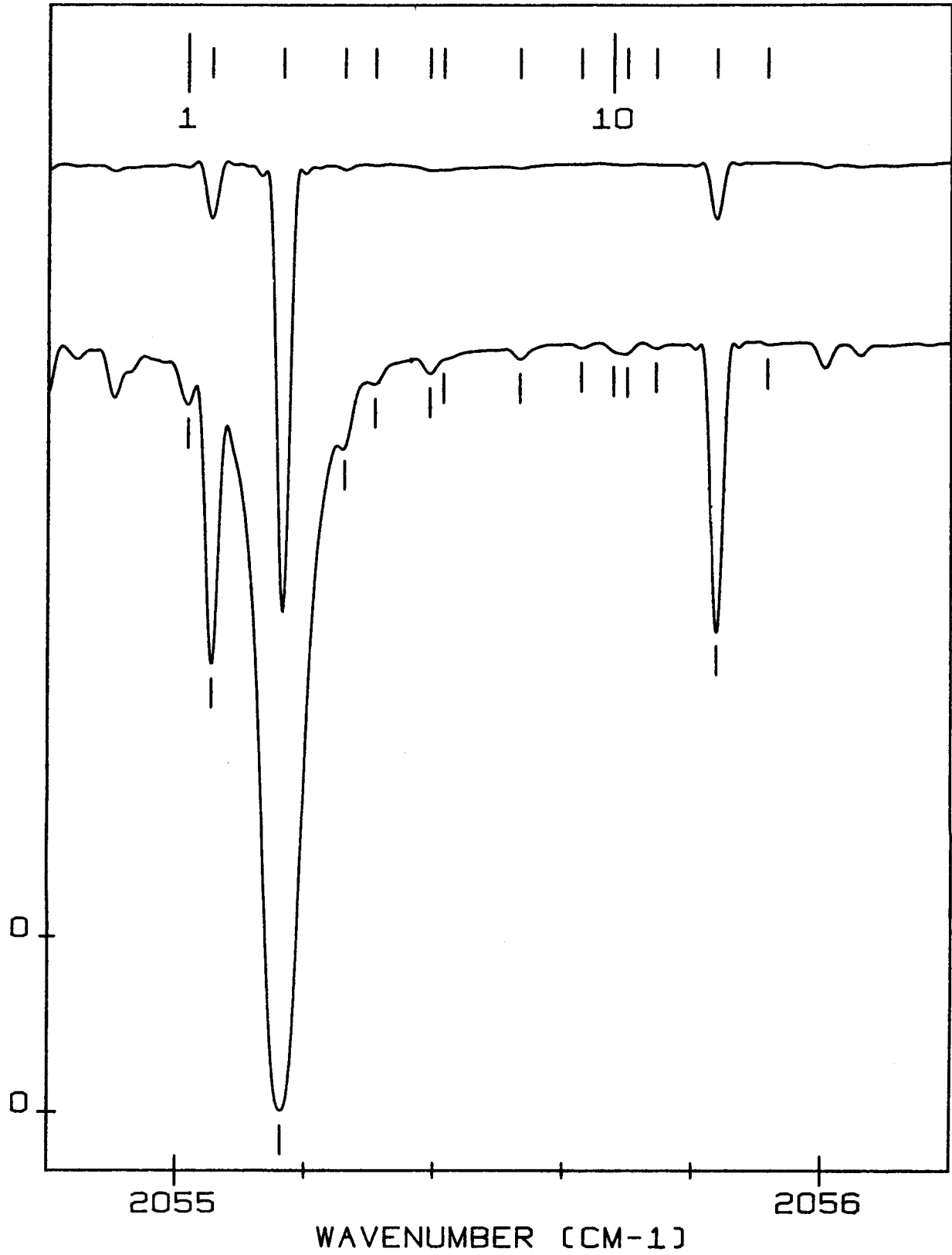


TABLE A120

-1

Line Positions and Identifications (2056-2058 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2056.00511	2056.00585	11101-00001 628	R8
2	2056.05953	2056.05895	11101-00001 627	P8
3	2056.11225		?	
4	2056.16598	2056.16613	21102-10002 626	Q54
5	2056.28484	2056.28429	21102-10002 626	R2
6	2056.33679	2056.33350	22202-11102 626	P25
		2056.35073	12201-01101 628	P13D
7	2056.45321	2056.44915	12201-01101 628	P13C
8	2056.51359	2056.49705	12201-01101 636	R5
		2056.51560	22202-11102 626	P24
			SIDELOBE	
9	2056.54647	2056.54647	12201-01101 626	P48
10	2056.70086	2056.70088	11101-00001 626	P26
		2056.75102	11101-00001 628	R9
11	2056.80737	2056.81145	11101-00001 627	P7
12	2056.93147	2056.93282	20001-01101 636	P55
13	2057.07586	2057.07611	12201-01101 628	P12D
14	2057.10865	2057.10864	13301-02201 636	P9
15	2057.16619	2057.15961	12201-01101 628	P12C
			SIDELOBE	
16	2057.21984	2057.21988	12201-01101 626	P49
17	2057.25593	2057.25978	12201-01101 636	R6
			SIDELOBE	
18	2057.36925		?	
19	2057.42601	2057.42937	21101-10001 626	P72
20	2057.49697	2057.49705	11101-00001 628	R10
		2057.46625	21101-10001 636	P8
21	2057.53109		?	
			SIDELOBE	
22	2057.56347	2057.56463	11101-00001 627	P6
23	2057.60421		?	
24	2057.79995	2057.80254	12201-01101 628	P11D
25	2057.83689	2057.83807	21102-10002 626	R4
		2057.82855	22202-11102 626	P23
26	2057.87188	2057.87201	12201-01101 628	P11C
27	2057.92473	2057.92318	13301-02201 626	P66
28	2057.98768		?	

Upper: 1.000 Torr 384 meters  
 Lower: 9.857 Torr 384 meters

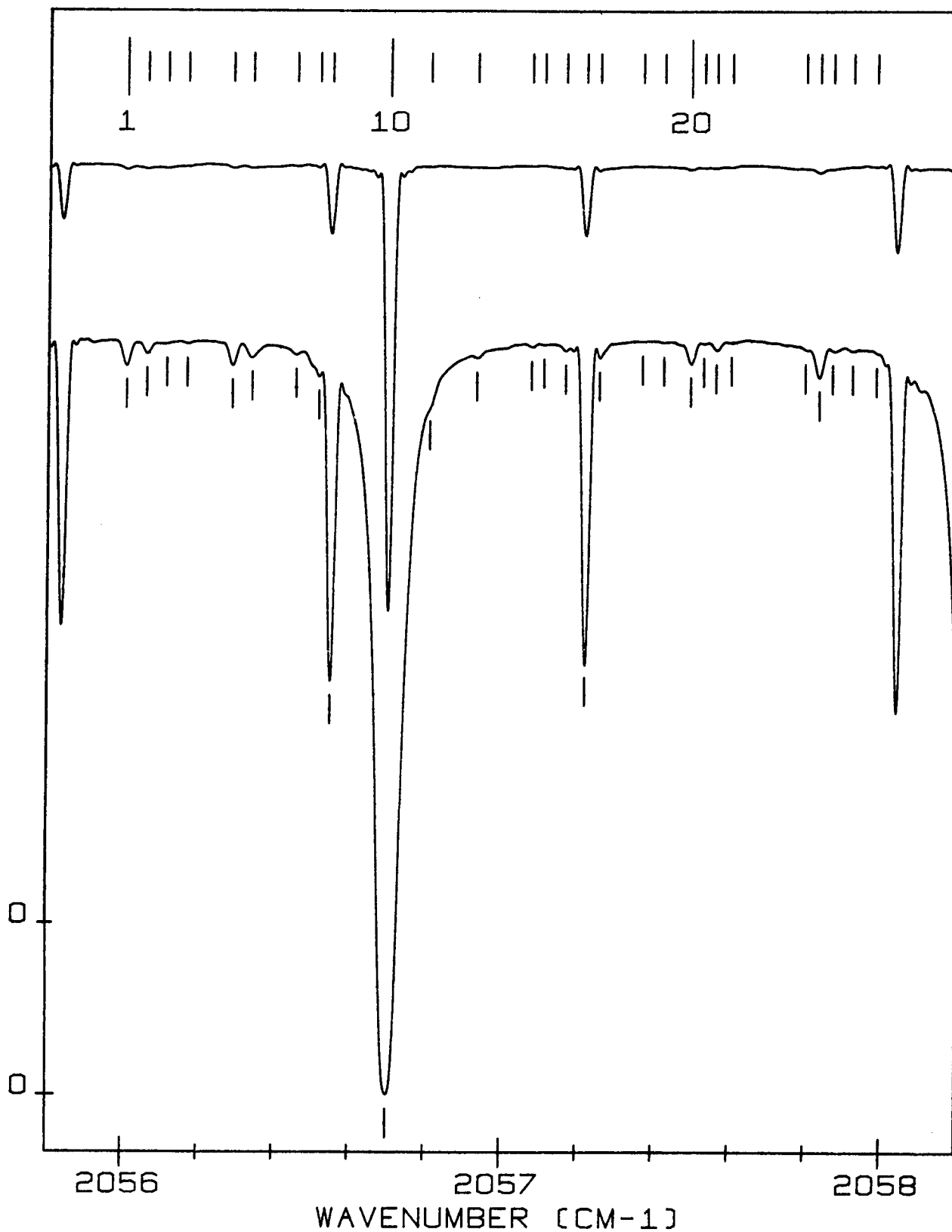


TABLE A121

-1

Line Positions and Identifications (2058-2060 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2058.01201	2058.01836	11101-00001 636 R26 SIDELOBE
2	2058.04313	2058.04318	12201-01101 626 P46
3	2058.07794	2058.07652	12201-01101 636 R7 SIDELOBE
4	2058.10200	2058.10144	22202-11102 626 P22
5	2058.24013	2058.24016	11101-00001 626 P24
		2058.24396	11101-00001 628 R11
		2058.31849	11101-00001 627 P5
6	2058.53184	2058.53003	12201-01101 628 P10D
7	2058.60963	2058.60957	12201-01101 626 P47
		2058.58631	12201-01101 628 P10C
		2058.62986	20001-01101 636 P53
8	2058.82236	2058.82239	12201-01101 636 R8
9	2058.85845		?
10	2058.91881	2058.92584	21101-10001 626 P70
11	2058.95825		?
12	2058.99176	2058.99173	11101-00001 628 R12
13	2059.02337	2059.02422	21101-10001 636 P6
14	2059.07322	2059.07302	11101-00001 627 P4
15	2059.21967		?
16	2059.25966	2059.25856	12201-01101 628 P9D
17	2059.32882	2059.32949	22202-11102 626 P21
		2059.30249	12201-01101 628 P9C
		2059.33068	13301-02201 626 P64
18	2059.38881	2059.38823	21102-10002 626 R6
19	2059.54376	2059.54367	12201-01101 626 P44
		2059.55663	11101-00001 636 R28
20	2059.66089	2059.66049	12201-01101 636 R9
21	2059.68578	2059.68592	22202-11102 626 P20
22	2059.78147	2059.78148	11101-00001 626 P22
		2059.74038	11101-00001 628 R13
		2059.82822	11101-00001 627 P3
23	2059.91051		CARBON MONOXIDE

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

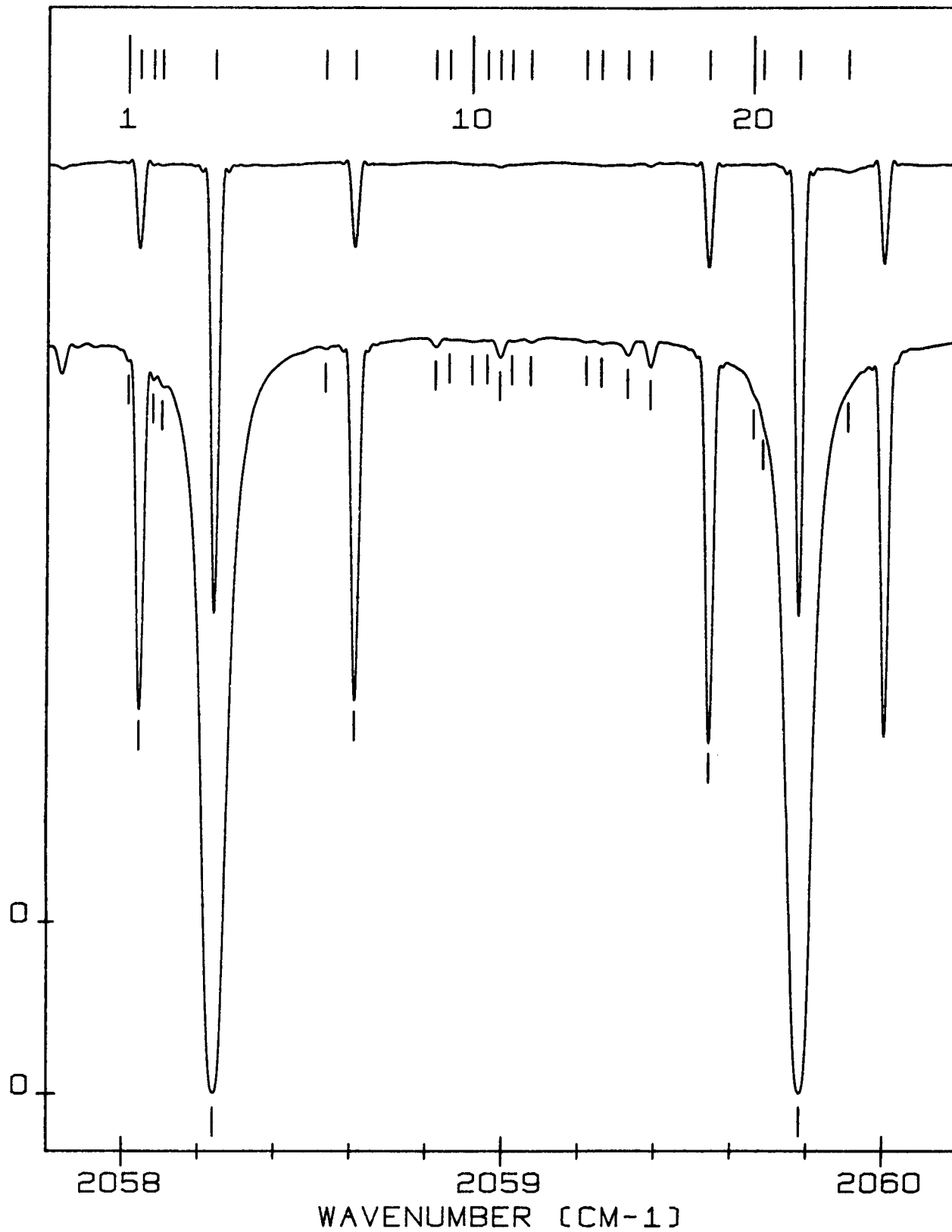


TABLE A122

-1

Line Positions and Identifications (2060-2062 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2060.00606	2060.00612	12201-01101 626 P45
2	2060.25804		?
3	2060.32553	2060.32556	20001-01101 636 P51
4	2060.38560	2060.38440	12201-01101 636 R10
5	2060.42591	2060.42427	21101-10001 626 P68
6	2060.48374		H2O
		2060.48989	11101-00001 628 R14
7	2060.58702	2060.58357	21101-10001 636 P4
8	2060.63301		?
9	2060.68981		?
10	2060.74380	2060.74380	13301-02201 626 P62
11	2060.83591	2060.83631	22202-11102 626 P19
12	2060.93571	2060.93477	21102-10002 626 R8
13	2061.04785	2061.04783	12201-01101 626 P42
14	2061.09064	2061.09329	11101-00001 636 R30
			SIDELOBE
15	2061.24875	2061.24027	11101-00001 628 R15
		2061.24895	12201-01101 636 R11
		2061.26901	22202-11102 626 P18
16	2061.32475	2061.32477	11101-00001 626 P20
17	2061.40952	2061.40962	12201-01101 626 P43
		2061.44729	13301-02201 626 P61
18	2061.74120		?
19	2061.86268		?
20	2061.93794	2061.92467	21101-10001 626 P66
		2061.94580	12201-01101 636 R12
21	2061.99138	2061.99151	11101-00001 628 R16

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

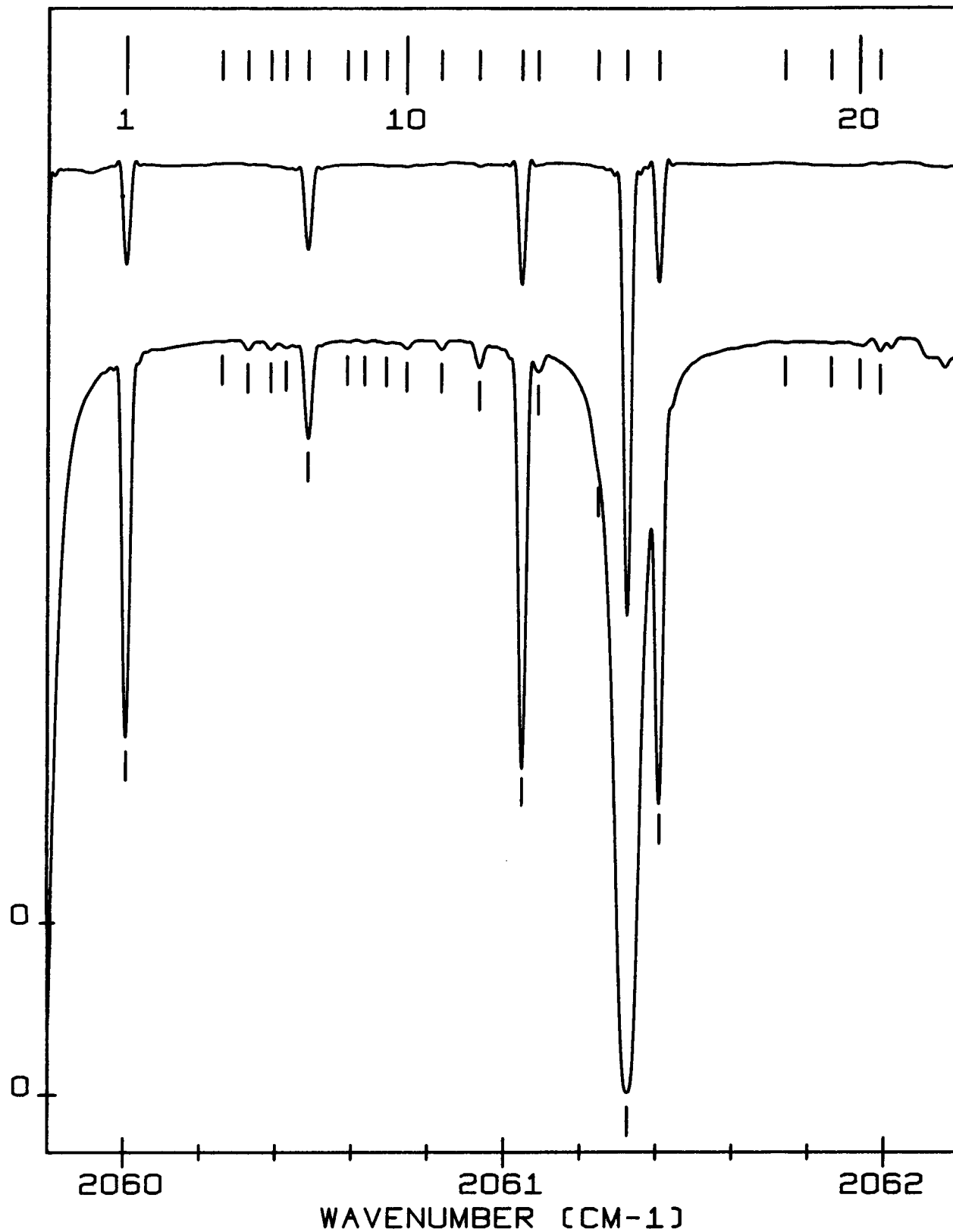




TABLE A123

-1

Line Positions and Identifications (2062-2063 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2062.01991	2062.01950	20001-01101 636	P49
2	2062.16185	2062.16247	13301-02201 626	P60
		2062.18779	11101-00001 627	Q8
		2062.16813	11101-00001 627	Q7
		2062.15094	11101-00001 627	Q6
		2062.13620	11101-00001 627	Q5
		2062.12393	11101-00001 627	Q4
		2062.11411	11101-00001 627	Q3
		2062.10675	11101-00001 627	Q2
		2062.10184	11101-00001 627	Q1
3	2062.20748	2062.20991	11101-00001 627	Q9
4	2062.23276	2062.23451	11101-00001 627	Q10
5	2062.26108	2062.26157	11101-00001 627	Q11
6	2062.29104	2062.29111	11101-00001 627	Q12
7	2062.32278	2062.32313	11101-00001 627	Q13
8	2062.35618	2062.35763	11101-00001 627	Q14
		2062.34902	22202-11102 626	P17
9	2062.39504	2062.39462	11101-00001 627	Q15
10	2062.43373	2062.43411	11101-00001 627	Q16
11	2062.47722	2062.47770	21102-10002 626	R10
		2062.47609	11101-00001 627	Q17
12	2062.52206	2062.52058	11101-00001 627	Q18
13	2062.55570	2062.55558	12201-01101 626	P40
		2062.56758	11101-00001 627	Q19
14	2062.62347	2062.62834	11101-00001 636	R32
		2062.61710	11101-00001 627	Q20
15	2062.67026	2062.66914	11101-00001 627	Q21
16	2062.72748	2062.72371	11101-00001 627	Q22
17	2062.78496	2062.78081	11101-00001 627	Q23
18	2062.82081	2062.82014	12201-01101 626	P41
19	2062.86996	2062.86999	11101-00001 626	P18
		2062.84047	11101-00001 627	Q24
		2062.90267	11101-00001 627	Q25
		2062.87003	13301-02201 626	P59
		2062.85566	11101-00001 627	R0
		2062.85070	22202-11102 626	P16
		2062.84188	12201-01101 636	R13
20	2062.96581	2062.96744	11101-00001 627	Q26

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

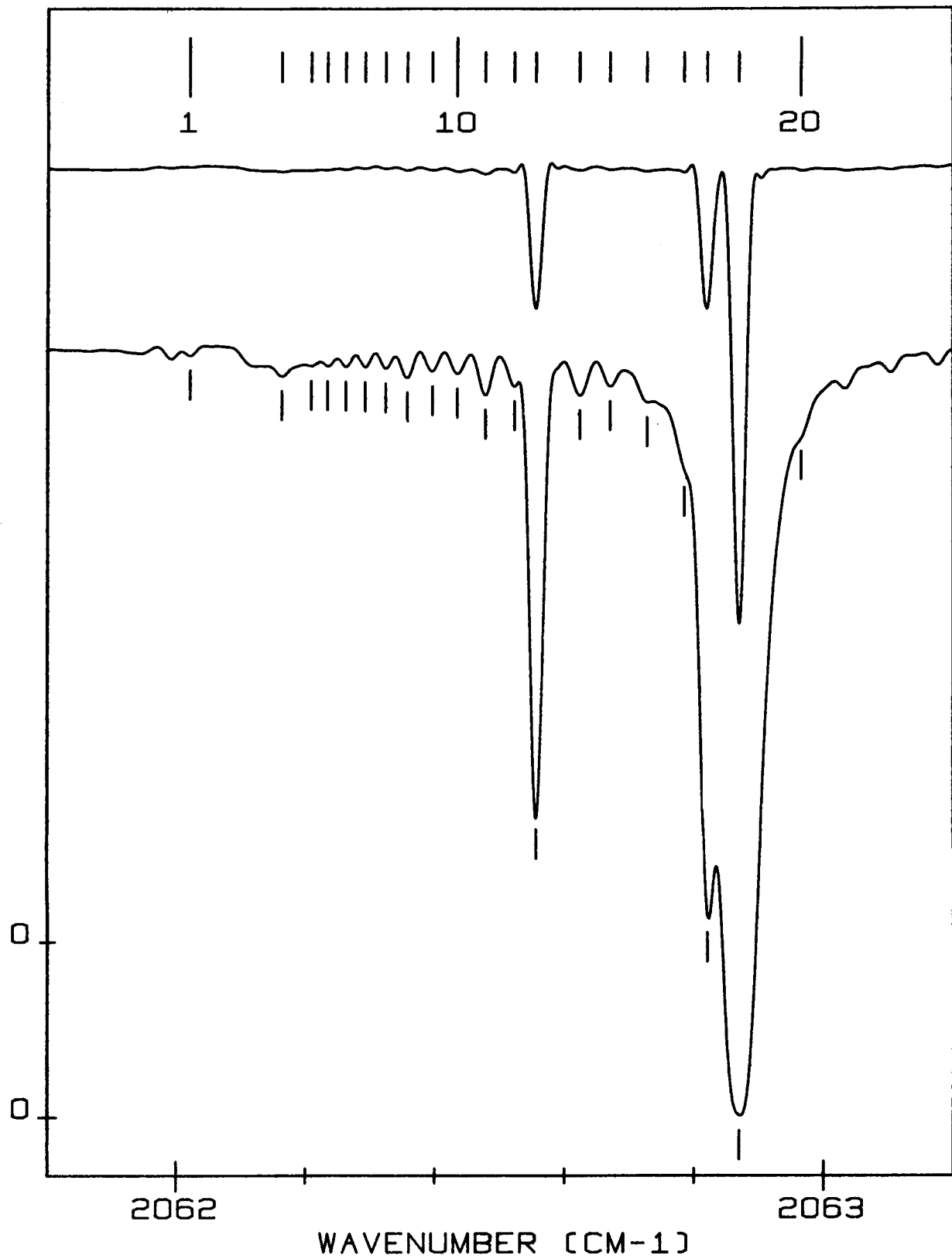


TABLE A124

-1

Line Positions and Identifications (2063-2064 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2063.03380	2063.03478	11101-00001 627	Q27
2	2063.10475	2063.10469	11101-00001 627	Q28
3	2063.13723		?	
4	2063.17687	2063.17720	11101-00001 627	Q29
5	2063.25226	2063.25230	11101-00001 627	Q30
6	2063.29704	2063.29458	20001-01101 628	P44
7	2063.32994	2063.33001	11101-00001 627	Q31
8	2063.36064		?	
9	2063.41190	2063.41034	11101-00001 627	Q32
		2063.42701	21101-10001 626	P64
10	2063.49656	2063.49330	11101-00001 627	Q33
		2063.49661	11101-00001 628	R18
		2063.50659	12201-01101 636	R14
11	2063.58279	2063.57890	11101-00001 627	Q34
		2063.58666	13301-02201 626	P58
12	2063.61474	2063.61417	11101-00001 627	R1
13	2063.66385	2063.66714	11101-00001 627	Q35
14	2063.71129	2063.71127	20001-01101 636	P47
15	2063.75851	2063.75806	11101-00001 627	Q36
16	2063.79808	2063.79808	21101-10001 636	Q8
17	2063.85824	2063.85164	11101-00001 627	Q37
		2063.84393	21101-10001 636	Q10
18	2063.86900	2063.86762	22202-11102 626	P15
19	2063.89943	2063.89943	21101-10001 636	Q12
20	2063.94547	2063.94791	11101-00001 627	Q38
		2063.96458	21101-10001 636	Q14

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

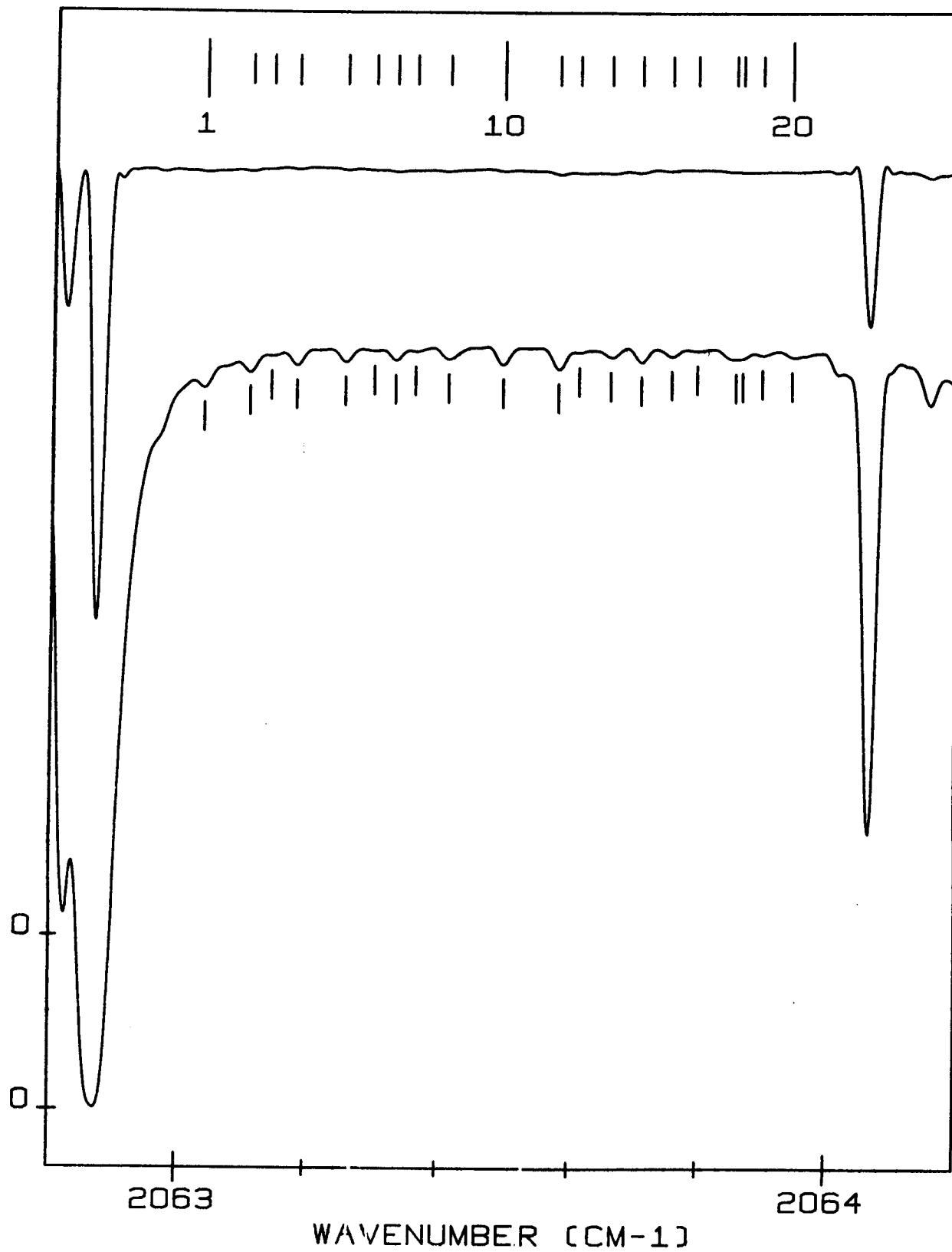


TABLE A125

-1

Line Positions and Identifications (2064-2066 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2064.01633	2064.01702	21102-10002 626	R12
		2063.99615	20001-01101 628	P43
		2064.04689	11101-00001 627	Q39
		2064.03938	21101-10001 636	Q16
2	2064.06682	2064.06681	12201-01101 626	P38
3	2064.16145	2064.16178	11101-00001 636	R34
		2064.14857	11101-00001 627	Q40
4	2064.23774	2064.23775	12201-01101 626	P39
5	2064.29955	2064.29802	13301-02201 626	P57
6	2064.38284		CARBON MONOXIDE	
		2064.37334	11101-00001 627	R2
		2064.36013	11101-00001 627	Q42
		2064.41707	11101-00001 626	P16
7	2064.41703	2064.43099	22202-11102 626	P14
			CARBON MONOXIDE	
8	2064.69643	2064.69675	20001-01101 628	P42
9	2064.73684		?	
10	2064.85270		H2O	
11	2064.92848	2064.93131	21101-10001 626	P62
12	2065.01751		H2O	
		2065.01630	13301-02201 626	P56
		2065.00518	11101-00001 628	R20
		2065.06676	12201-01101 636	R16
13	2065.05570		?	
14	2065.13345	2065.13316	11101-00001 627	R3
15	2065.18078		?	
16	2065.39880	2065.40049	20001-01101 636	P45
		2065.39211	22202-11102 626	P13
		2065.39662	20001-01101 628	P41
17	2065.54798	2065.55274	21102-10002 626	R14
18	2065.58150	2065.58145	12201-01101 626	P36
19	2065.66249	2065.66252	12201-01101 626	P37
20	2065.69575	2065.69365	11101-00001 636	R36
21	2065.73283	2065.73126	13301-02201 626	P55
22	2065.76610	2065.76077	11101-00001 628	R21
23	2065.84632		H2O	
		2065.89364	11101-00001 627	R4
24	2065.96597	2065.96597	11101-00001 626	P14

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

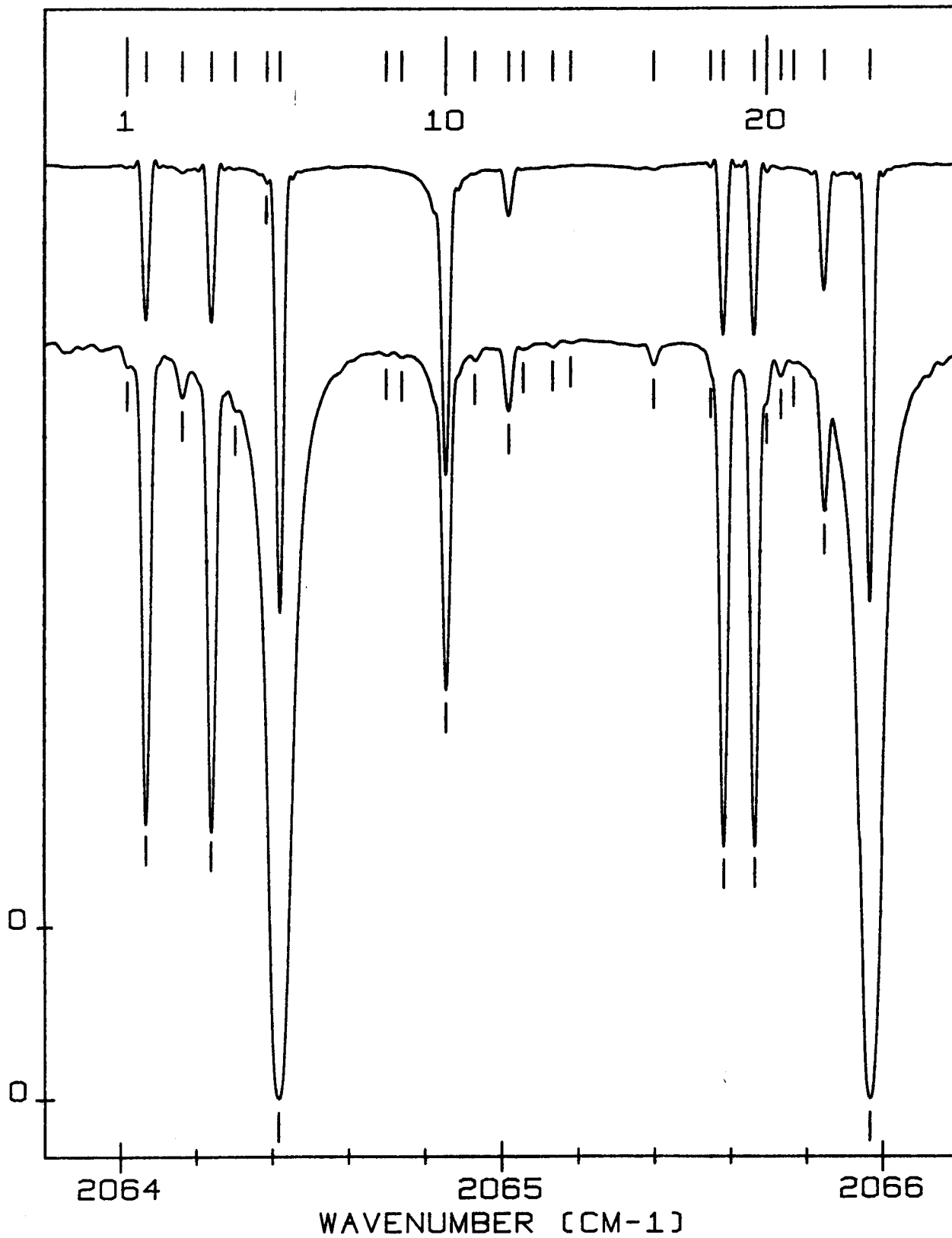


TABLE A126

-1

Line Positions and Identifications (2066-2067 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2066.09128	2066.08004	12201-01101 628 Q14C
			12201-01101 628 Q20D
			12201-01101 628 Q21D
2	2066.12103	2066.09602 2066.11303	20001-01101 628 P40
			12201-01101 628 Q15C
3	2066.15681	2066.14821	12201-01101 628 Q22D
			12201-01101 628 Q16C
4	2066.19743	2066.18560	12201-01101 628 Q23D
			12201-01101 628 Q24D
			12201-01101 628 Q17C
5	2066.22965	2066.22518	12201-01101 628 Q25D
			12201-01101 628 Q18C
			12201-01101 628 Q26D
6	2066.27623	2066.26696	12201-01101 628 Q27D
			12201-01101 628 Q19C
7	2066.31301	2066.31094	12201-01101 628 Q28D
			12201-01101 628 Q20C
			12201-01101 628 Q29D
8	2066.36511	2066.35712	12201-01101 628 Q30D
			12201-01101 628 Q21C
9	2066.40615	2066.40550	12201-01101 628 Q31D
			12201-01101 628 Q22C
10	2066.44982	2066.45135	13301-02201 626 P54
		2066.43755	21101-10001 626 P60
		2066.45608	12201-01101 628 Q23C
11	2066.50868	2066.50886	12201-01101 628 Q24C
12	2066.56613	2066.56383	12201-01101 628 Q25C
13	2066.62107	2066.62101	12201-01101 628 Q26C
14	2066.65338	2066.65476	11101-00001 627 R5
15	2066.67988	2066.68039	12201-01101 628 Q27C
16	2066.73943	2066.74196	12201-01101 628 Q28C
17	2066.80425	2066.79517	20001-01101 628 P39
		2066.80574	12201-01101 628 Q29C
18	2066.87403	2066.87171	12201-01101 628 Q30C
19	2066.92891	2066.93989	12201-01101 628 Q31C
		2066.92248	22202-11102 626 P11

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

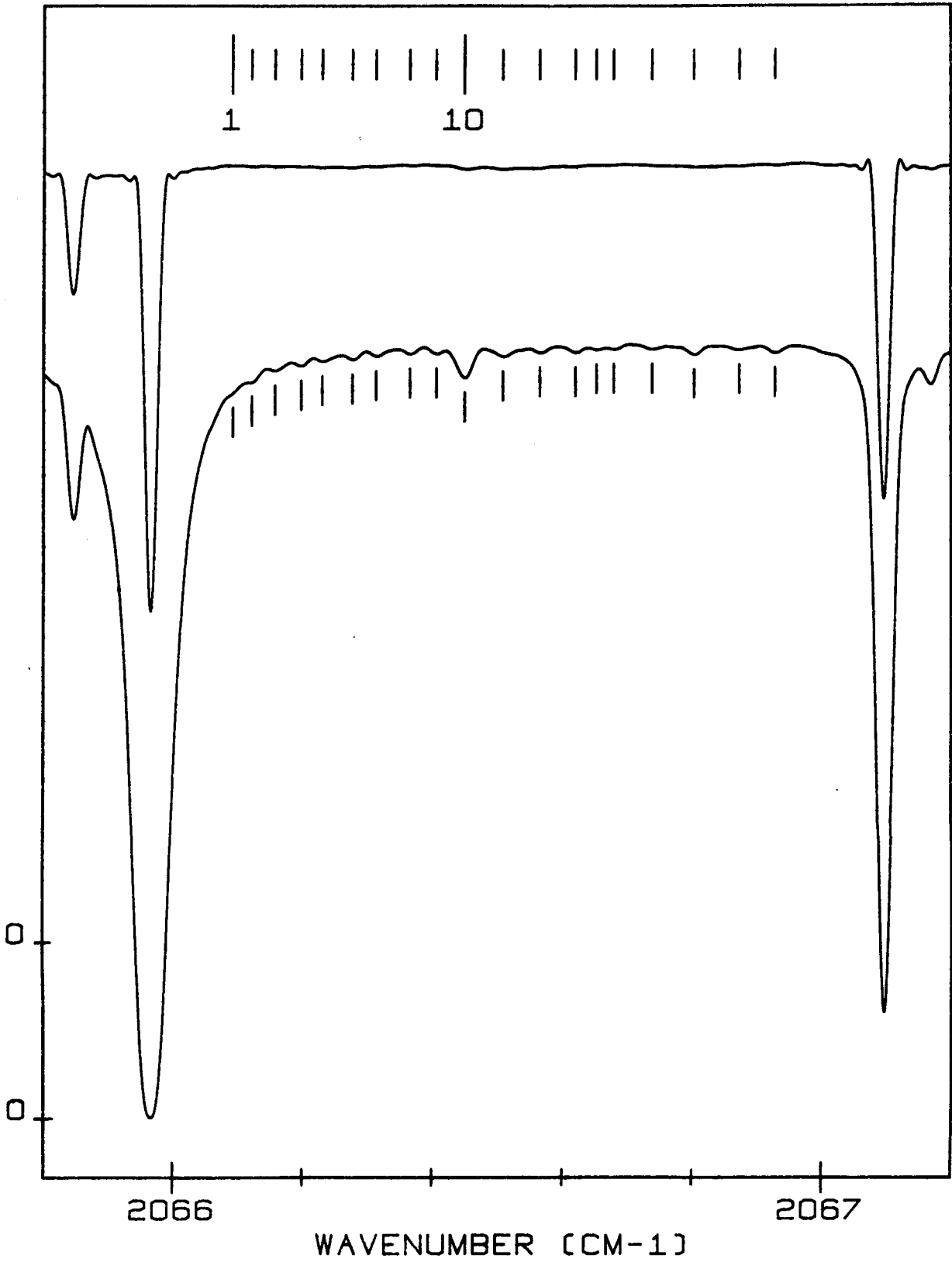




TABLE A127

-1

Line Positions and Identifications (2067-2068 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2067.09686	2067.09940	12201-01101 626	P34
		2067.09450	12201-01101 626	P35
		2067.08490	21102-10002 626	R16
		2067.08678	20001-01101 636	P43
2	2067.16870	2067.16969	13301-02201 626	P53
3	2067.22388	2067.22394	11101-00001 636	R38
4	2067.27775		11101-00001 628	R23?
5	2067.51664	2067.51665	11101-00001 626	P12
6	2067.85578		?	
7	2067.89173	2067.89175	13301-02201 626	P52
8	2067.94577	2067.94572	21101-10001 626	P58

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

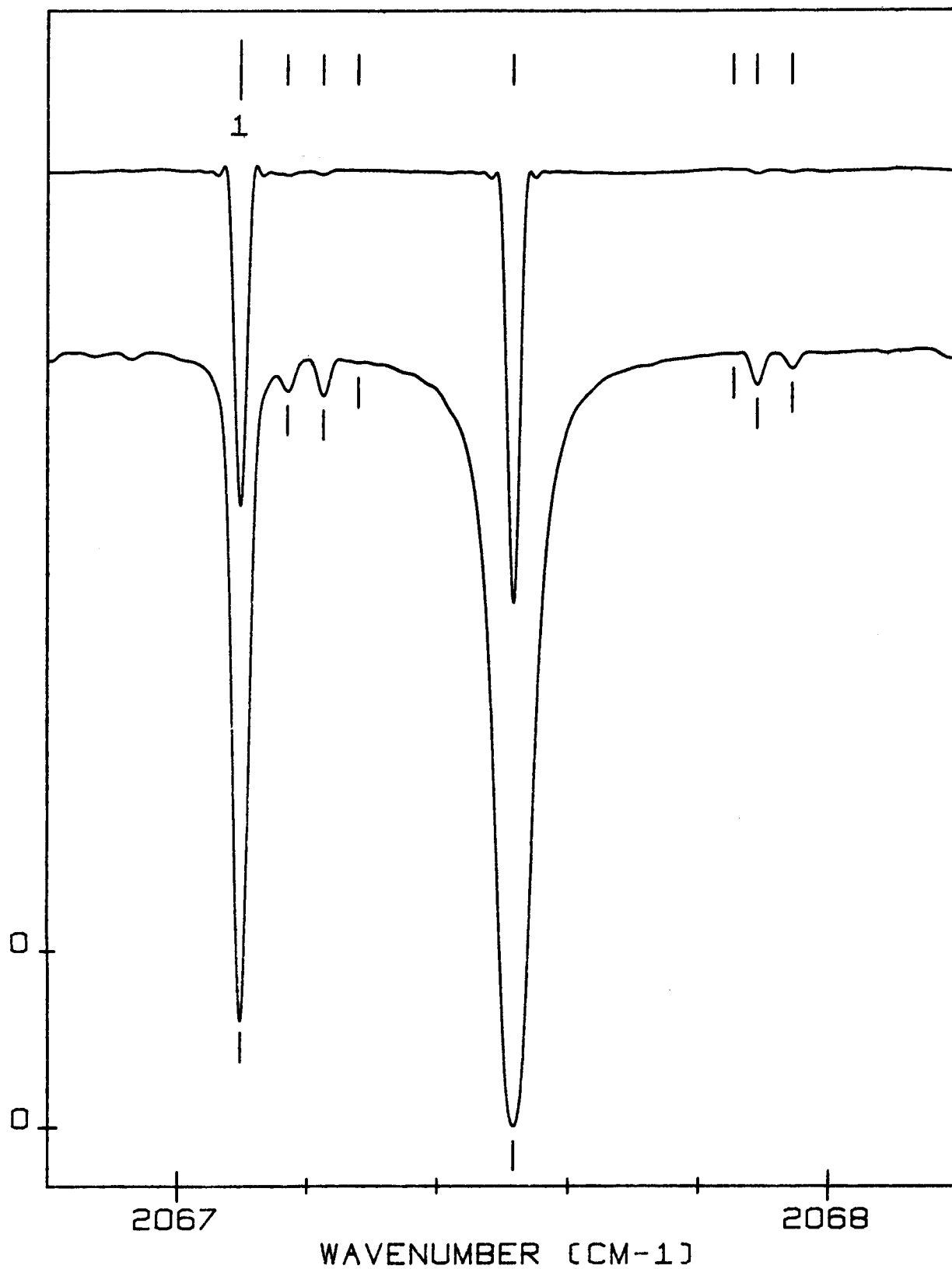


TABLE A128

-1

Line Positions and Identifications (2068-2070 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2068.05819		13301-02201 636	R4?
2	2068.08970		?	
3	2068.11783		?	
4	2068.19092	2068.19362	20001-01101 628	P37
		2068.17897	11101-00001 627	R7
5	2068.24690	2068.24698	20001-01101 626	P81
6	2068.46387	2068.45874	22202-11102 626	P9
7	2068.53374	2068.53374	12201-01101 626	P33
8	2068.62045	2068.62059	12201-01101 626	P32
		2068.61331	13301-02201 626	P51
9	2068.71959		?	
10	2068.75945	2068.75270	11101-00001 636	R40
		2068.76978	20001-01101 636	P41
11	2068.84581		CARBON MONOXIDE	
12	2068.89386	2068.89331	20001-01101 628	P36
13	2068.94028	2068.94205	11101-00001 627	R8
14	2069.06905	2069.06905	11101-00001 626	P10
15	2069.16389	2069.16371	22202-11102 626	P8
16	2069.30174		?	
17	2069.33746	2069.33747	13301-02201 626	P50
18	2069.37118		?	
19	2069.41920		?	
20	2069.45448	2069.45583	21101-10001 626	P56
21	2069.48661		?	
22	2069.59216	2069.59357	20001-01101 628	P35
23	2069.63252	2069.63195	20001-01101 626	P79
		2069.62673	13301-02201 636	R6
24	2069.70650	2069.70578	11101-00001 627	R9
25	2069.79850		?	
26	2069.98027	2069.98027	12201-01101 626	P31

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

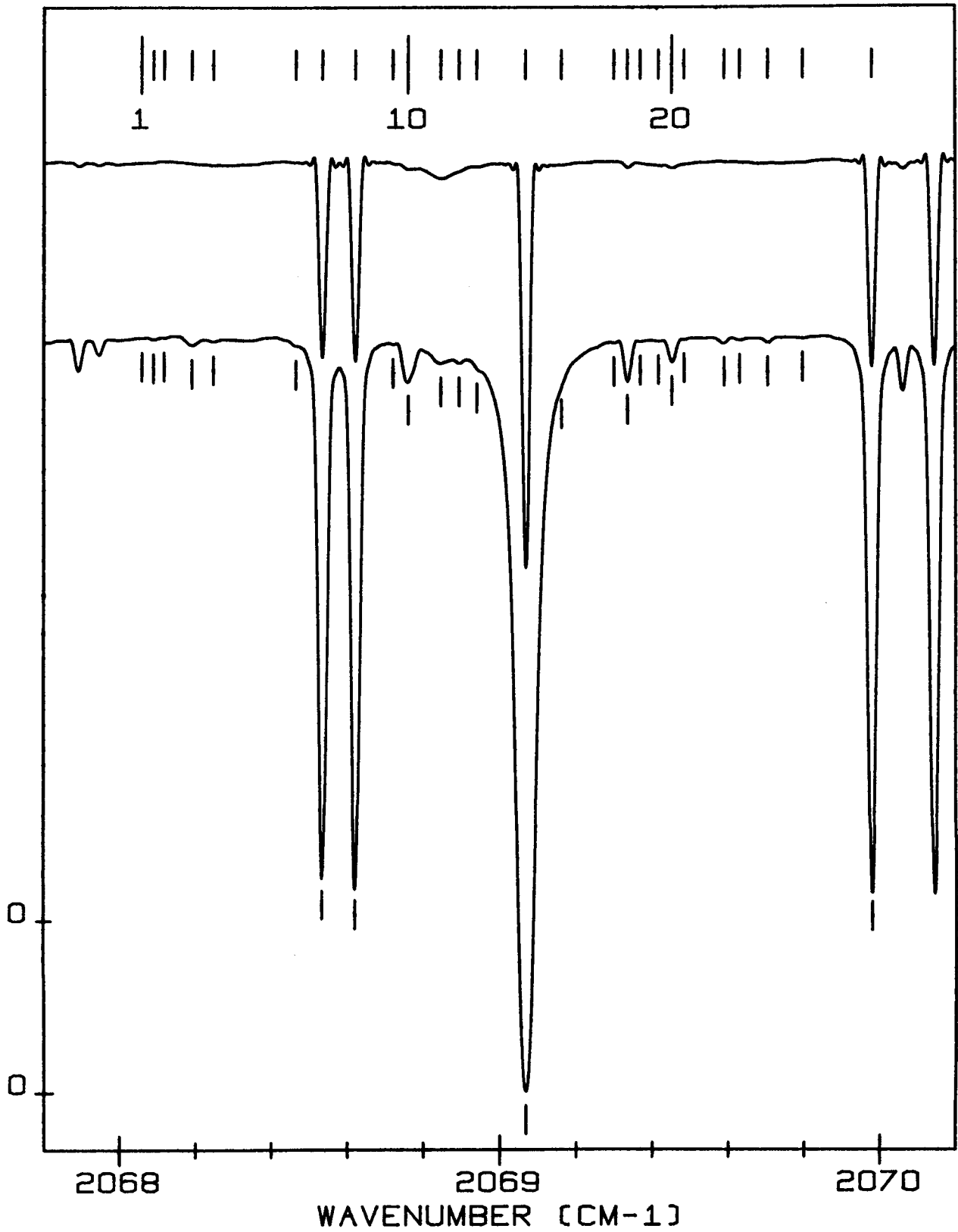


TABLE A129

-1

Line Positions and Identifications (2070-2072 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2070.06206	2070.06207	13301-02201 626	P49
2	2070.14494	2070.14493	12201-01101 626	P30
3	2070.28128	2070.27992	11101-00001 636	R42
		2070.29455	20001-01101 628	P34
4	2070.41833	2070.08617	13301-02201 636	R7
			SIDELOBE	
5	2070.45002	2070.44916	20001-01101 636	P39
		2070.47016	11101-00001 627	R10
6	2070.62315	2070.62314	11101-00001 626	P8
7	2070.78845	2070.78844	13301-02201 626	P48
8	2070.82218		?	
9	2070.85819		?	
10	2070.96759	2070.96786	21101-10001 626	P54
11	2070.99532	2070.99640	20001-01101 628	P33
12	2071.03184	2071.03047	20001-01101 626	P77
13	2071.07313		?	
14	2071.12138		?	
15	2071.17349		?	
16	2071.20732		?	
17	2071.23436	2071.23520	11101-00001 627	R11
18	2071.29590		?	
19	2071.43414	2071.43413	12201-01101 626	P29
20	2071.51554	2071.51596	13301-02201 626	P47
21	2071.55111		?	
22	2071.67237	2071.67234	12201-01101 626	P28
		2071.69924	20001-01101 628	P32
23	2071.80575	2071.80565	11101-00001 636	R44
24	2071.84037		?	
25	2071.89547		?	

FRAME A129

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

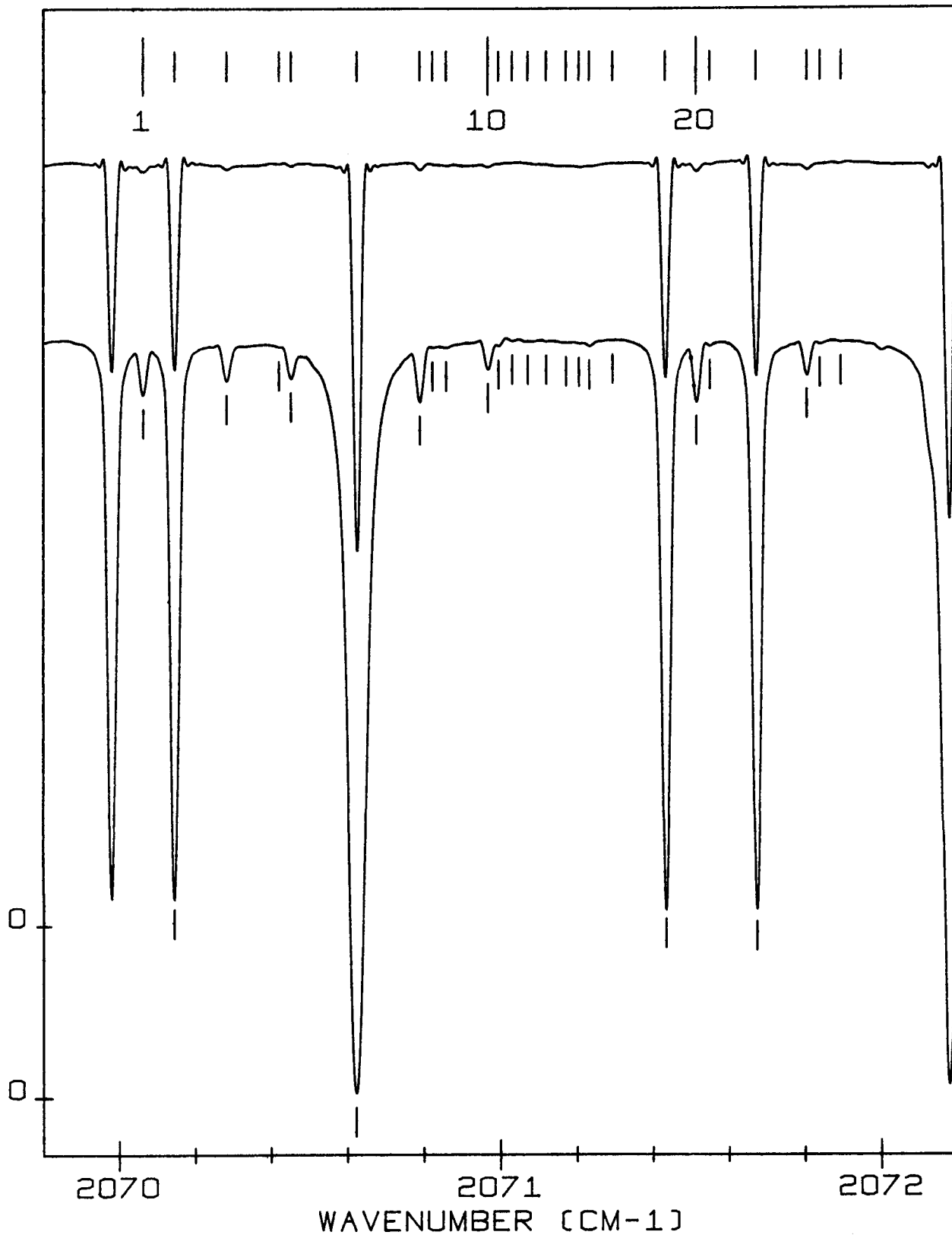


TABLE A130

-1

Line Positions and Identifications (2072-2074 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2072.00201	2072.00088	11101-00001 627	R12
2	2072.12404	2072.12460	20001-01101 636	P37
3	2072.17887	2072.17888	11101-00001 626	P6
4	2072.24372	2072.24463	13301-02201 626	P46
5	2072.40145	2072.40319	20001-01101 628	P31
6	2072.44177	2072.44185	20001-01101 626	P75
7	2072.48200	2072.48181	21101-10001 626	P52
8	2072.54125		H2O	
9	2072.56234		?	
10	2072.61530		?	
11	2072.76878	2072.76721	11101-00001 627	R13
12	2072.89540	2072.89534	12201-01101 626	P27
13	2072.97465	2072.97494	13301-02201 626	P45
14	2073.00905		?	
15	2073.02875		?	
16	2073.10777	2073.10833	20001-01101 628	P30
17	2073.20281	2073.20276	12201-01101 626	P26
18	2073.26259		CARBON MONOXIDE	
19	2073.32868	2073.32991	11101-00001 636	R46
20	2073.36122		?	
21	2073.41498		?	
22	2073.48895		?	
23	2073.53411	2073.53420	11101-00001 627	R14
24	2073.57035		?	
25	2073.70291	2073.70599	13301-02201 626	P44
26	2073.73625	2073.73623	11101-00001 626	P4
27	2073.79408	2073.79577	20001-01101 636	P35
		2073.81473	20001-01101 628	P29
28	2073.86436	2073.86542	20001-01101 626	P73
29	2073.94249		?	
30	2073.99756	2073.99767	21101-10001 626	P50

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

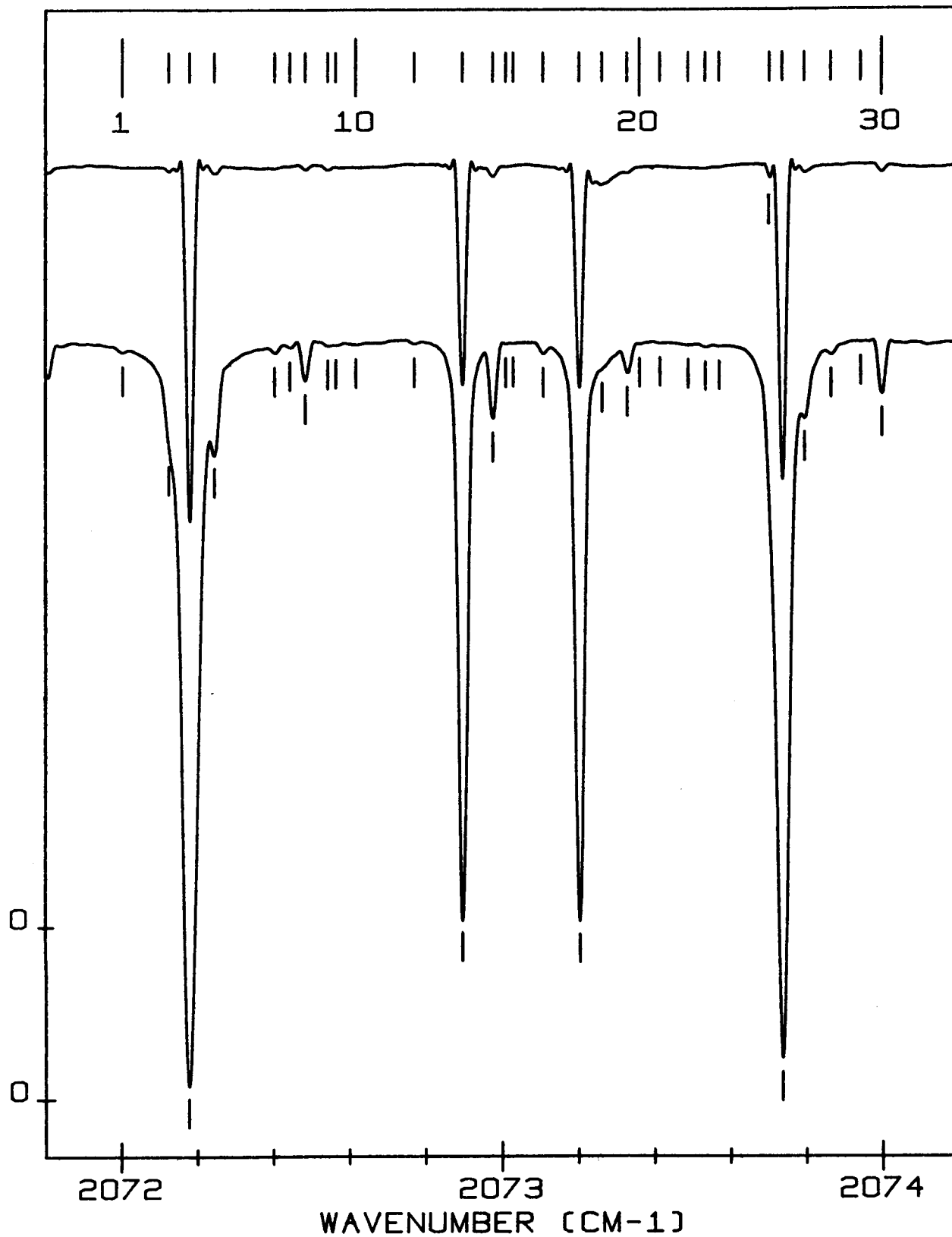




TABLE A131

-1

Line Positions and Identifications (2074-2076 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2074.03220		?
2	2074.05600		?
3	2074.11755		12201-01101 636 R27?
4	2074.23510		H2O
5	2074.36398	2074.36393	12201-01101 626 P25
6	2074.43888	2074.43899	13301-02201 626 P43
7	2074.52528	2074.52246	20001-01101 628 P28
8	2074.73609	2074.73611	12201-01101 626 P24
9	2074.85333	2074.85274	11101-00001 636 R48
10	2075.01848		?
11	2075.06582	2075.07013	11101-00001 627 R16
12	2075.09307		?
13	2075.17286	2075.17247	13301-02201 626 P42
14	2075.23902	2075.23154	20001-01101 628 P27
			SIDELOBE
15	2075.29521	2075.29517	11101-00001 626 P2
		2075.30050	20001-01101 626 P71
16	2075.42549		22202-11102 626 Q6?
17	2075.46267	2075.46240	20001-01101 636 P33
18	2075.51522	2075.51543	21101-10001 626 P48
19	2075.56900	2075.56810	22202-11102 626 Q13
20	2075.60827	2075.60863	22202-11102 626 Q15
21	2075.65438	2075.65479	22202-11102 626 Q17
22	2075.70914	2075.70659	22202-11102 626 Q19
23	2075.76453	2075.76407	22202-11102 626 Q21
		2075.74350	12201-01101 636 R29
24	2075.83990	2075.83991	12201-01101 626 P23
		2075.82723	22202-11102 626 Q23
		2075.83908	11101-00001 627 R17
25	2075.90750	2075.90808	13301-02201 626 P41
		2075.89609	22202-11102 626 Q25
26	2075.94306	2075.94201	20001-01101 628 P26
			SIDELOBE
27	2075.97065	2075.97069	22202-11102 626 Q27
		2075.97072	12201-01101 636 R30

## FRAME A131

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

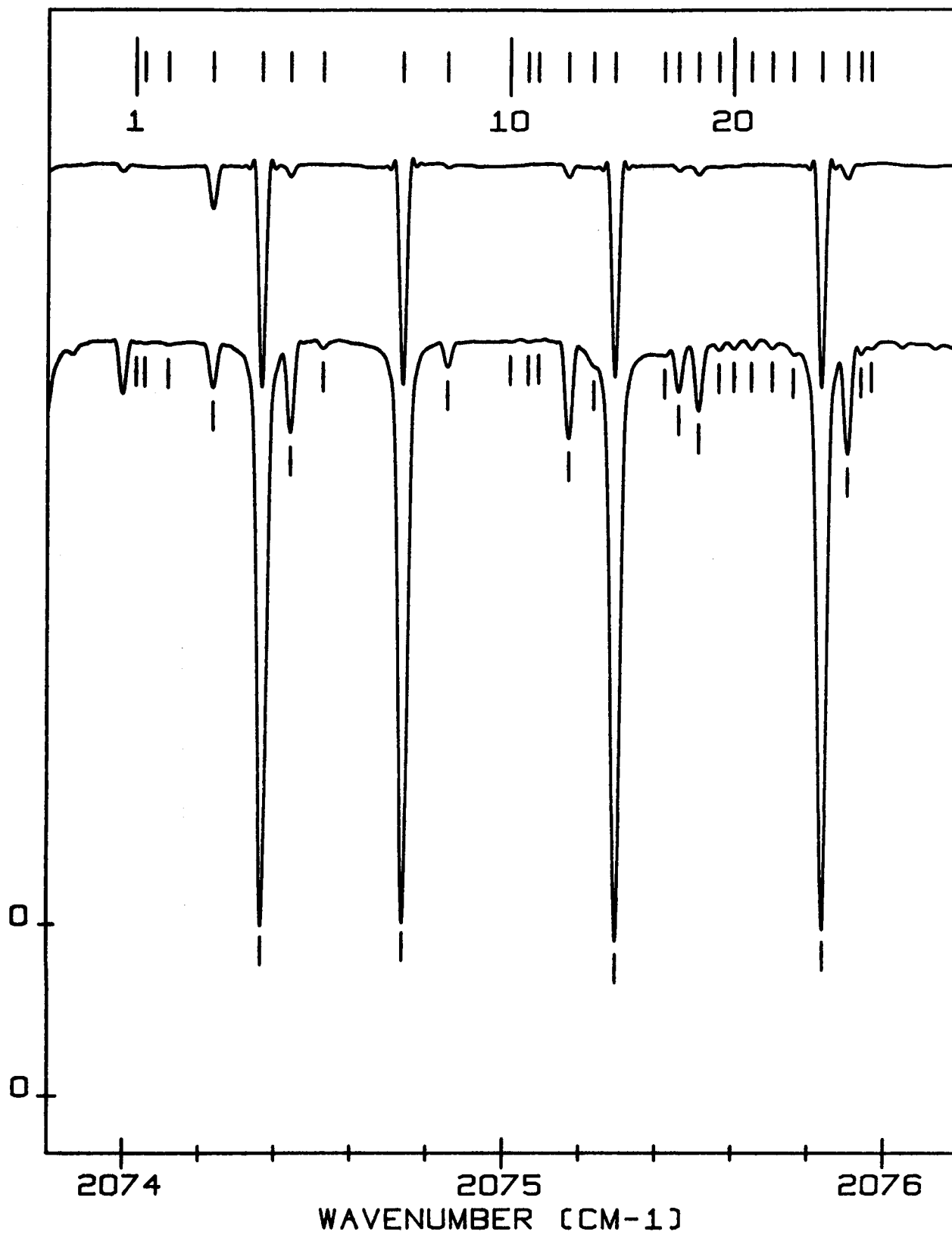


TABLE A132

-1

Line Positions and Identifications (2076-2078 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2076.05180	2076.05105	22202-11102 626 Q29
2	2076.09124		?
3	2076.13870	2076.13719	22202-11102 626 Q31
4	2076.21690	2076.22915	22202-11102 626 Q33 21102-10002 626 R28?
			SIDELOBE
5	2076.27233	2076.27234	12201-01101 626 P22
6	2076.32762	2076.32696	22202-11102 626 Q35
7	2076.37417	2076.37416	11101-00001 636 R50
8	2076.42899	2076.43064	22202-11102 626 Q37
9	2076.54406	2076.54025	22202-11102 626 Q39
10	2076.61098		11101-00001 627 R18?
			SIDELOBE
11	2076.64459	2076.64403	13301-02201 626 P40
		2076.65386	20001-01101 628 P25
		2076.65580	22202-11102 626 Q41
12	2076.74852	2076.74646	20001-01101 626 P69
13	2076.87257	2076.87801	11101-00001 626 Q4
		2076.86239	11101-00001 626 Q2
14	2076.90177	2076.90255	11101-00001 626 Q6
15	2076.93617	2076.93604	11101-00001 626 Q8
16	2076.97836	2076.97850	11101-00001 626 Q10
17	2077.02990	2077.02994	11101-00001 626 Q12
		2077.03508	21101-10001 626 P46
18	2077.09034	2077.09039	11101-00001 626 Q14
19	2077.15985	2077.15988	11101-00001 626 Q16
		2077.12421	20001-01101 636 P31
20	2077.23845	2077.23846	11101-00001 626 Q18
21	2077.32584	2077.32615	11101-00001 626 Q20
		2077.32329	12201-01101 626 P21
22	2077.38417	2077.38217	13301-02201 626 P39
		2077.36708	20001-01101 628 P24
		2077.37553	12201-01101 636 R31
23	2077.42302	2077.42302	11101-00001 626 Q22
24	2077.52911	2077.52911	11101-00001 626 Q24
25	2077.64191	2077.64447	11101-00001 626 Q26
		2077.63648	11101-00001 626 R0
			CARBON MONOXIDE
26	2077.76917	2077.76917	11101-00001 626 Q28
27	2077.81106	2077.81137	12201-01101 626 P20
28	2077.90328	2077.90327	11101-00001 626 Q30
		2077.89422	11101-00001 636 R52

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

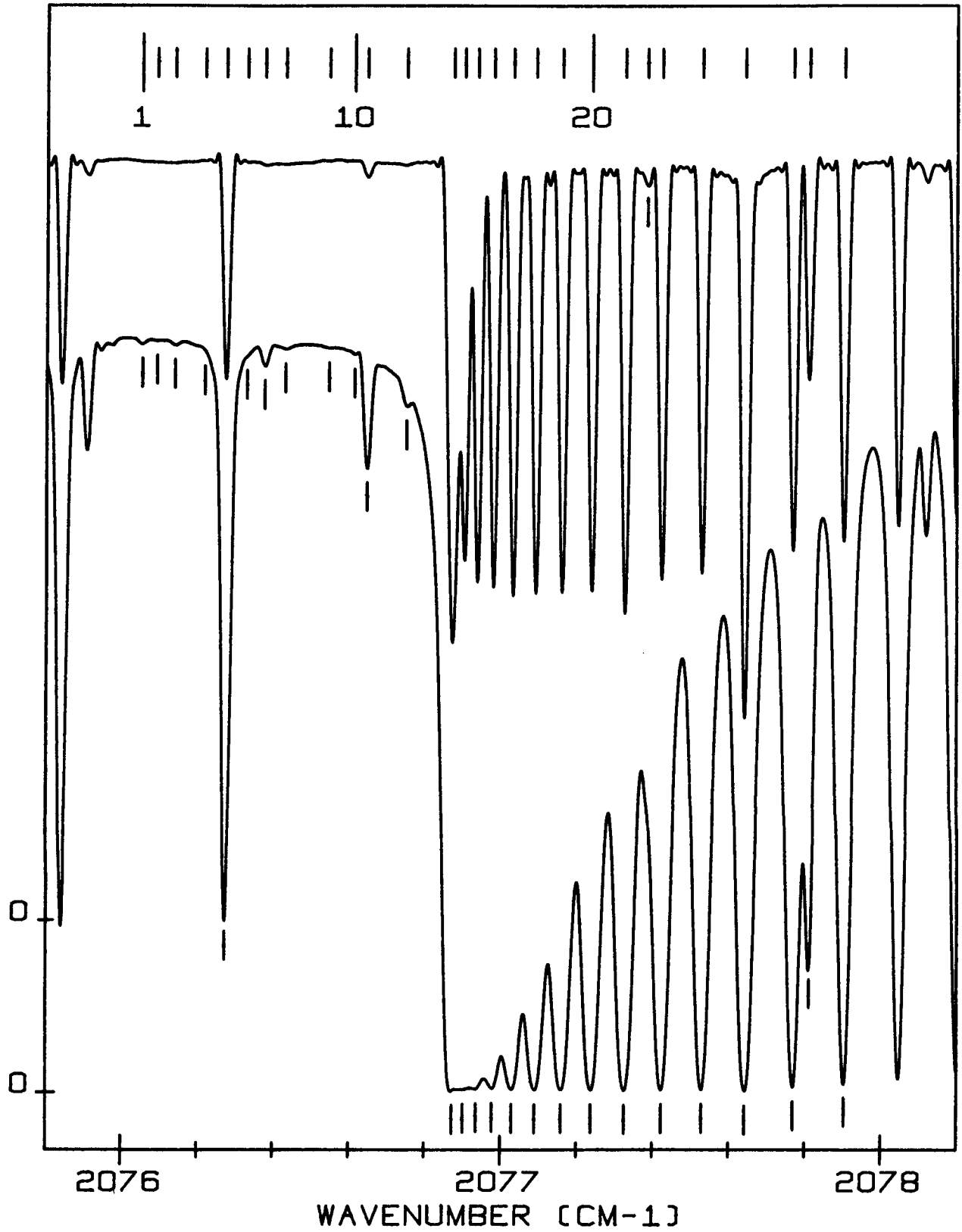


TABLE A133

-1

Line Positions and Identifications (2078-2080 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2078.04686	2078.04684	11101-00001 626 Q32
2	2078.12057	2078.12063	13301-02201 626 P38
		2078.08166	20001-01101 628 P23
3	2078.19999	2078.19996	11101-00001 626 Q34
		2078.20265	20001-01101 626 P67
4	2078.36271	2078.36270	11101-00001 626 Q36
5	2078.53526	2078.53516	11101-00001 626 Q38
		2078.55662	21101-10001 626 P44
6	2078.56716		H2O
7	2078.71740	2078.71742	11101-00001 626 Q40
8	2078.77932	2078.78093	20001-01101 636 P29
			SIDELOBE
9	2078.81412	2078.81408	12201-01101 626 P19
		2078.79755	20001-01101 628 P22
10	2078.86155	2078.86125	13301-02201 626 P37
11	2078.90959	2078.90957	11101-00001 626 Q42
12	2079.01167	2079.01171	12201-01101 636 R33
13	2079.11171	2079.11172	11101-00001 626 Q44
14	2079.19924	2079.19925	11101-00001 626 R2
15	2079.32393	2079.32398	11101-00001 626 Q46
16	2079.35339	2079.35315	12201-01101 626 P18
17	2079.41015	2079.41296	11101-00001 636 R54
18	2079.54644	2079.54644	11101-00001 626 Q48
		2079.51472	20001-01101 628 P21
19	2079.60233	2079.60223	13301-02201 626 P36
20	2079.66853	2079.66846	20001-01101 626 P65
21	2079.77922	2079.77924	11101-00001 626 Q50

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

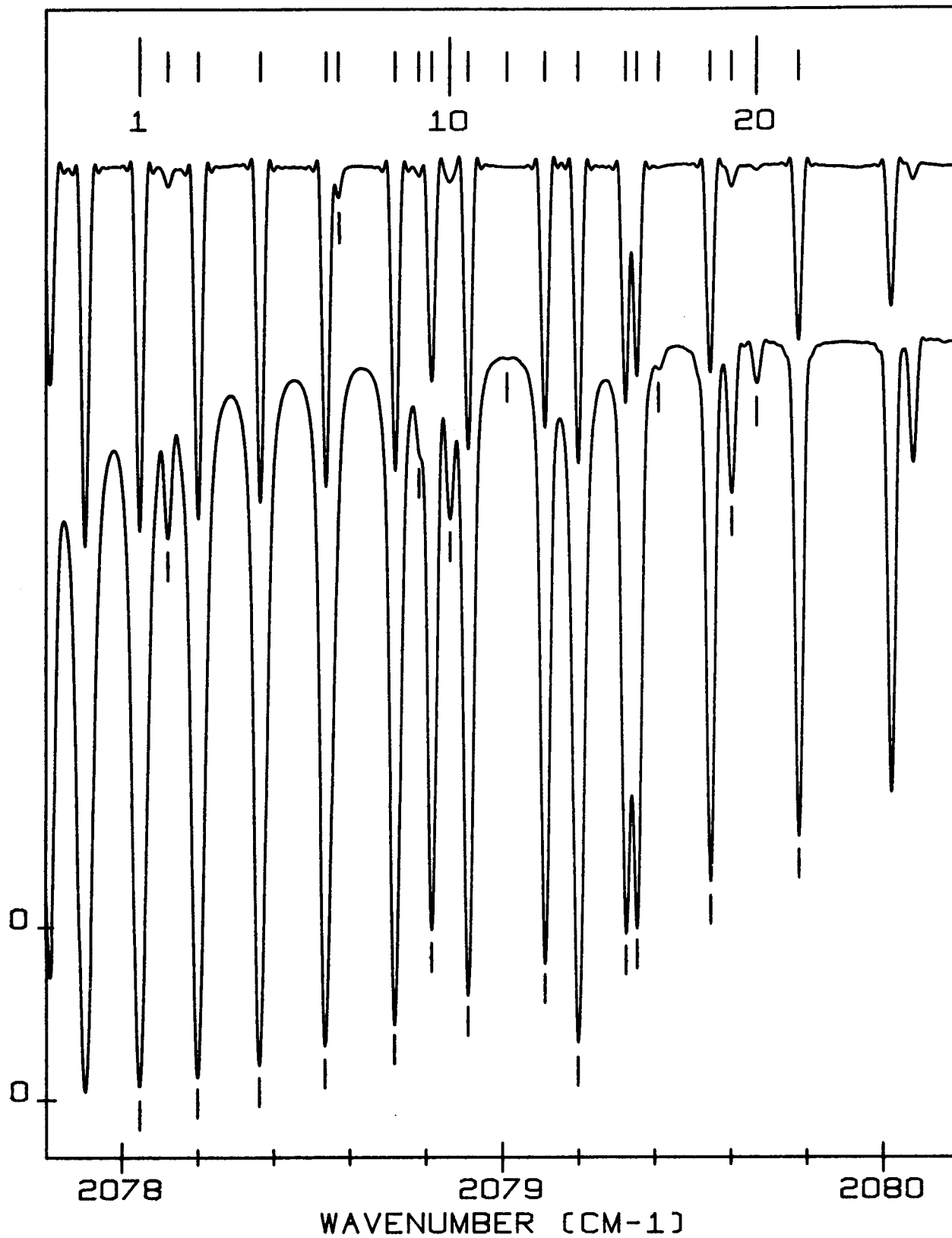


TABLE A134

-1

Line Positions and Identifications (2080-2082 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2080.02247	2080.02248	11101-00001 626 Q52
2	2080.08006	2080.08004	21101-10001 626 P42
3	2080.15981	2080.16839	22202-11102 626 R5
4	2080.24008	2080.23311	20001-01101 628 P20
			SIDELOBE
5	2080.27634	2080.27629	11101-00001 626 Q54
6	2080.31229	2080.31228	12201-01101 626 P17
7	2080.34572	2080.34527	13301-02201 626 P35
8	2080.43220	2080.43234	20001-01101 636 P27
9	2080.54080	2080.54081	11101-00001 626 Q56
10	2080.64367	2080.63515	12201-01101 636 R36
		2080.65197	12201-01101 636 R35
11	2080.76352	2080.76351	11101-00001 626 R4
12	2080.81654	2080.81618	11101-00001 626 Q58
13	2080.89760	2080.89762	12201-01101 626 P16
14	2080.93155	2080.93043	11101-00001 636 R56
		2080.95444	22202-11102 626 R6
15	2080.95389	2080.95267	20001-01101 628 P19
16	2081.05383	2081.05696	11101-00001 628 R41
			SIDELOBE
17	2081.09890	2081.10253	11101-00001 626 Q60
		2081.08879	13301-02201 626 P34
18	2081.14310	2081.14330	20001-01101 626 P63
19	2081.40002	2081.40001	11101-00001 626 Q62
20	2081.60547	2081.60533	21101-10001 626 P40
21	2081.67452	2081.67332	20001-01101 628 P18
22	2081.70876	2081.70878	11101-00001 626 Q64
23	2081.81876	2081.81789	12201-01101 626 P15
		2081.83422	13301-02201 626 P33
		2081.81276	14401-03301 626 P49
		2081.83115	11101-00001 628 R42
24	2081.87409		H2O
25	2081.99962		CARBON MONOXIDE

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

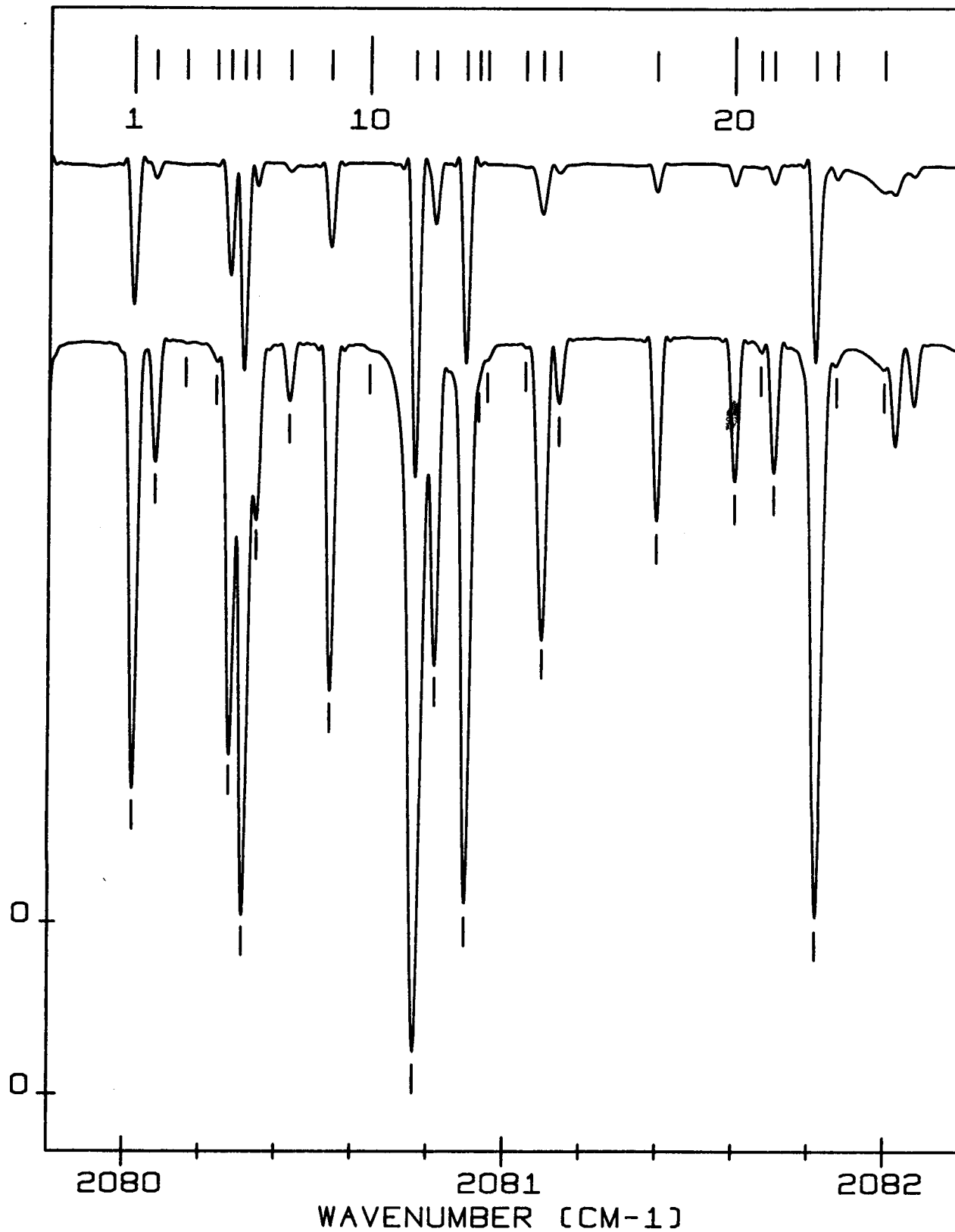




TABLE A135

-1

Line Positions and Identifications (2082-2084 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2082.02804	2082.02899	11101-00001 626	Q66
2	2082.07773	2082.07819	20001-01101 636	P25
		2082.08386	22201-11101 626	P50
3	2082.17815	2082.18894	12201-01101 636	R38
4	2082.22189	2082.22119	21102-10002 626	R36
5	2082.32924	2082.32925	11101-00001 626	R6
6	2082.36186	2082.36082	11101-00001 626	Q68
7	2082.40945	2082.39502	20001-01101 628	P17
			SIDELOBE	
8	2082.44475	2082.44474	12201-01101 626	P14
		2082.44666	11101-00001 636	R58
9	2082.47914	2082.52431	22202-11102 626	R8
			SIDELOBE	
10	2082.54329	2082.54539	14401-03301 626	P48
11	2082.58013	2082.58026	13301-02201 626	P32
12	2082.62657	2082.62657	20001-01101 626	P61
13	2082.70480	2082.70443	11101-00001 626	Q70
14	2083.05976	2083.06001	11101-00001 626	Q72
15	2083.09895		?	
			SIDELOBE	
16	2083.13227	2083.13248	21101-10001 626	P38
		2083.11769	20001-01101 628	P16
17	2083.27593	2083.27633	14401-03301 626	P47
18	2083.33067	2083.33090	12201-01101 626	P13
		2083.32805	13301-02201 626	P31
19	2083.38540	2083.38227	11101-00001 628	R44
20	2083.42770	2083.42774	11101-00001 626	Q74
21	2083.52714		22201-11101 626	P51?
22	2083.59048	2083.58969	22201-11101 626	P48
23	2083.71805	2083.71829	20001-01101 636	P23
		2083.71789	21102-10002 626	R38
24	2083.75123	2083.74226	12201-01101 636	R40
			SIDELOBE	
25	2083.80608	2083.80780	11101-00001 626	Q76
26	2083.84177	2083.84128	20001-01101 628	P15
27	2083.89645	2083.89645	11101-00001 626	R8
28	2083.95919	2083.96173	11101-00001 636	R60
		2083.94446	12201-01101 636	R39
29	2083.99444	2083.99444	12201-01101 626	P12

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

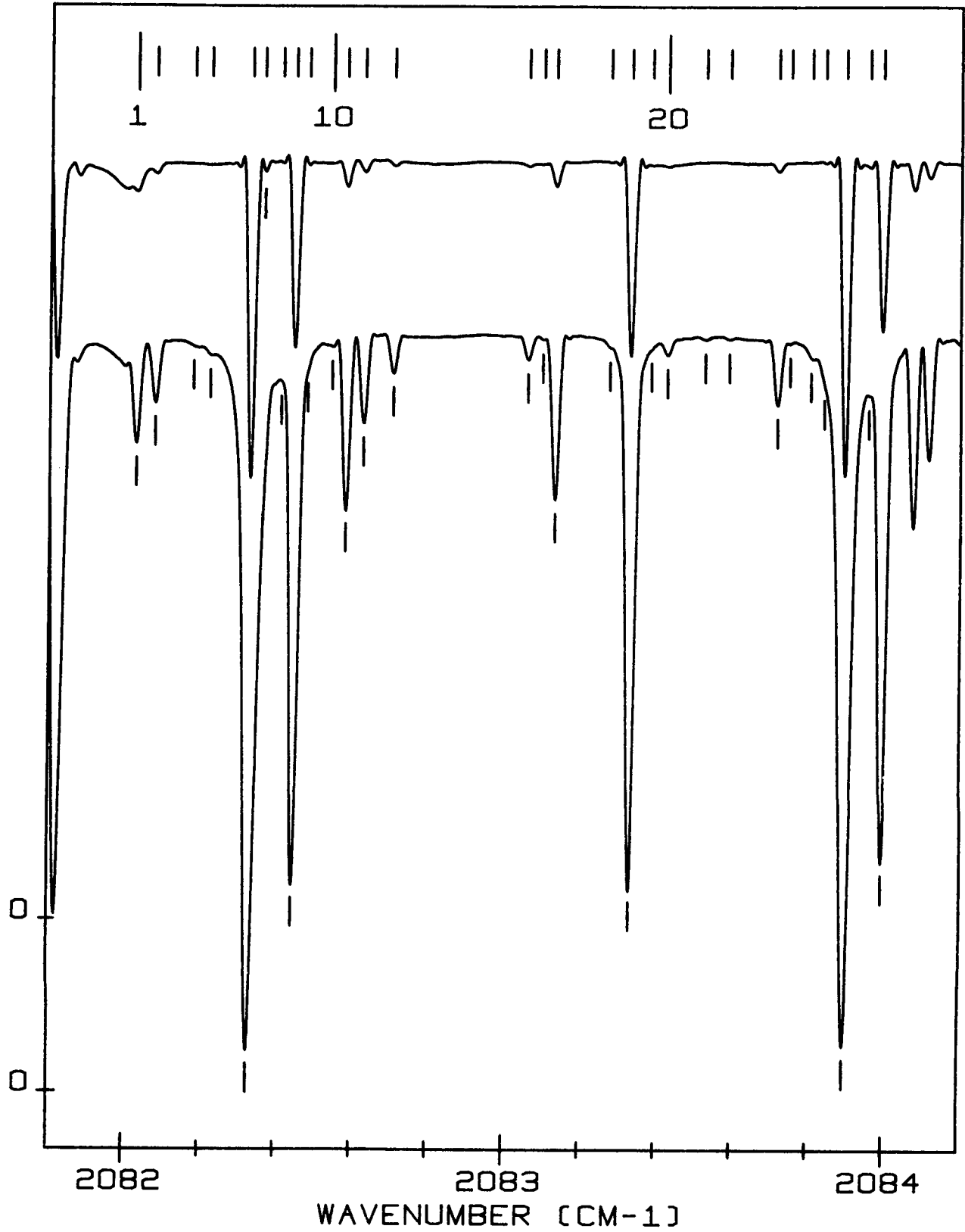


TABLE A136

-1

Line Positions and Identifications (2084-2086 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2084.07647	2084.07660	13301-02201 626 P30
2	2084.11782	2084.11773	20001-01101 626 P59
3	2084.20193	2084.20041	11101-00001 626 Q78
4	2084.56554	2084.56574	20001-01101 628 P14
5	2084.60492	2084.60576	11101-00001 626 Q80
6	2084.66149	2084.66149	21101-10001 626 P36
7	2084.74643	2084.74566	14401-03301 626 P45
8	2084.82385	2084.82675	13301-02201 626 P29
9	2084.85116	2084.85130	12201-01101 626 P11
10	2084.88535	2084.88443	22201-11101 626 P49
11	2084.92951	2084.93708	11101-00001 628 R46
12	2085.02428	2085.02407	11101-00001 626 Q82
13	2085.09908	2085.09832	22201-11101 626 P46
14	2085.17055		?
15	2085.21153	2085.21190	21102-10002 626 R40
16	2085.29243	2085.29104	20001-01101 628 P13
		2085.29514	12201-01101 636 R42
17	2085.35254	2085.35243	20001-01101 636 P21
18	2085.46510	2085.46509	11101-00001 626 R10
		2085.47568	11101-00001 636 R62
		2085.48425	14401-03301 626 P44
19	2085.54652	2085.54670	12201-01101 626 P10
20	2085.57874	2085.57779	13301-02201 626 P28
21	2085.61615	2085.61622	20001-01101 626 P57

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

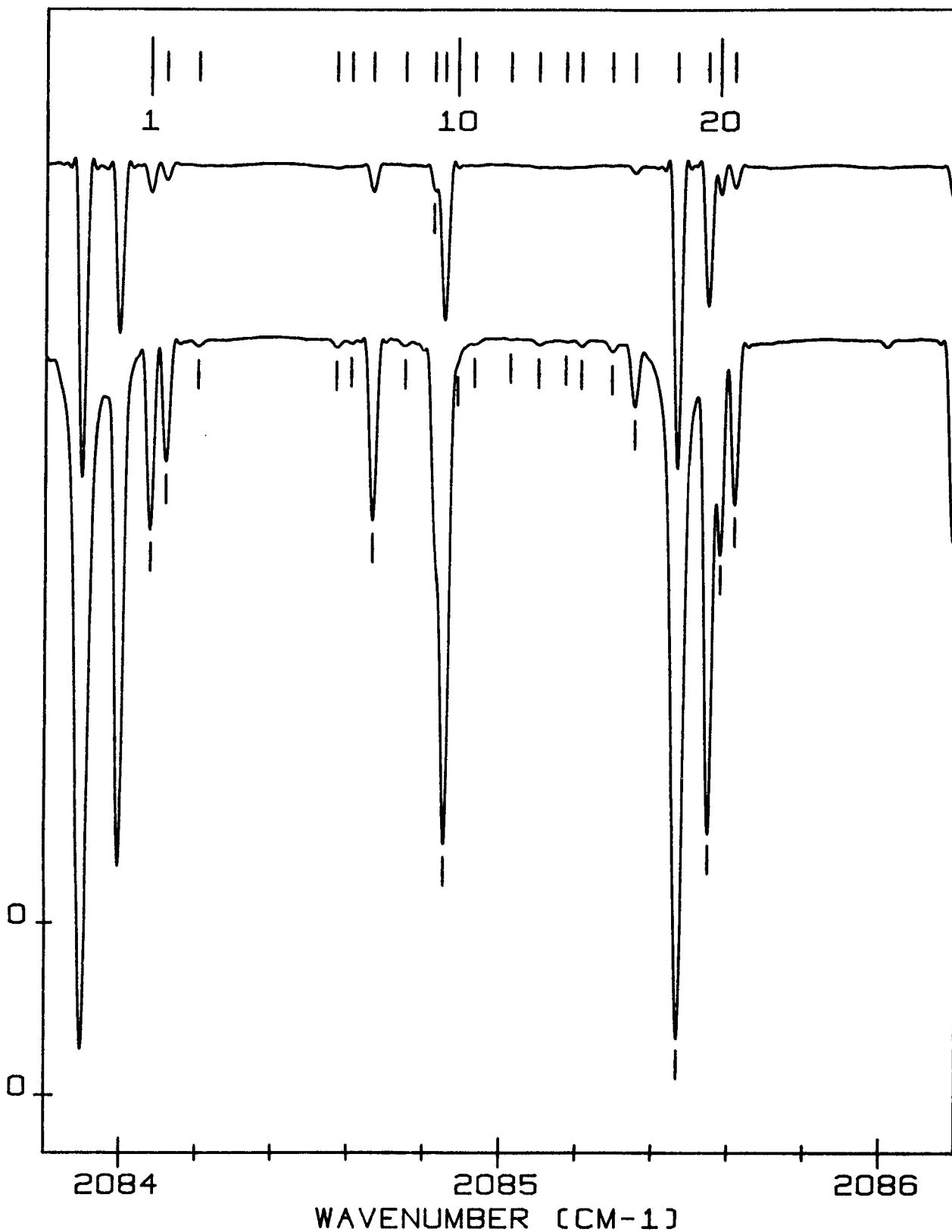


TABLE A137

-1

Line Positions and Identifications (2086-2088 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2086.01720	2086.01714	20001-01101 628	P12
2	2086.19249	2086.19233	21101-10001 626	P34
3	2086.22559	2086.22048	14401-03301 626	P43
			SIDELOBE	
4	2086.25167	2086.24688	22201-11101 626	P47
5	2086.32981	2086.33028	13301-02201 626	P27
			CARBON MONOXIDE	
6	2086.37880	2086.37908	12201-01101 626	P9
7	2086.49419	2086.49559	11101-00001 628	R48
8	2086.60967	2086.60972	22201-11101 626	P44
9	2086.70302	2086.70335	21102-10002 626	R42
10	2086.74480	2086.74405	20001-01101 628	P11
11	2086.84820	2086.84762	12201-01101 636	R44
12	2086.88970	2086.88709	20001-01101 627	P32
13	2086.98078	2086.98044	20001-01101 636	P19
		2086.96162	14401-03301 626	P42
14	2087.03517	2087.03516	11101-00001 626	R12
15	2087.10100	2087.10146	12201-01101 626	P8
		2087.08378	13301-02201 626	P26
		2087.12153	20001-01101 626	P55
16	2087.25293	2087.25226	12201-01101 636	R43
		2087.27624	11101-00001 628	R49
17	2087.40742		H2O	
18	2087.44046		?	
19	2087.47040	2087.47178	20001-01101 628	P10
20	2087.61792	2087.61505	22201-11101 626	P45
		2087.62664	20001-01101 627	P31
21	2087.69274	2087.70056	14401-03301 626	P41
			SIDELOBE	
22	2087.72503	2087.72501	21101-10001 626	P32
23	2087.83863	2087.83860	13301-02201 626	P25
24	2087.91424	2087.91421	12201-01101 626	P7

FRAME A137

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

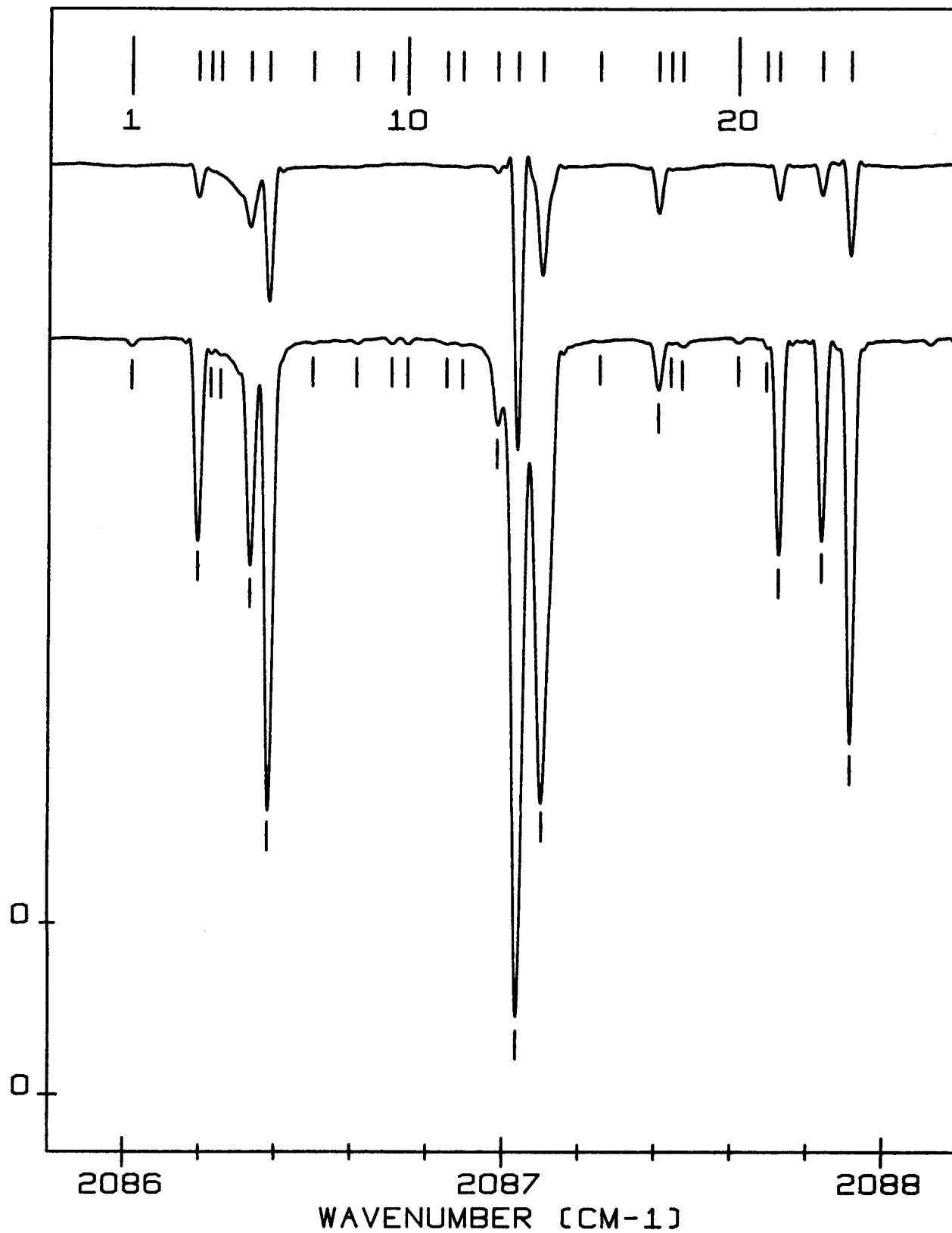


TABLE A138

-1

Line Positions and Identifications (2088-2090 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2088.05628	2088.05784	11101-00001 628	R50
2	2088.12346	2088.12389	22201-11101 626	P42
3	2088.19625	2088.19236	21102-10002 626	R44
		2088.20037	20001-01101 628	P9
4	2088.36644	2088.36655	20001-01101 627	P30
5	2088.39981	2088.39973	12201-01101 636	R46
6	2088.44459	2088.44402	14401-03301 626	P40
7	2088.60609	2088.60666	11101-00001 626	R14
		2088.59454	13301-02201 626	P24
		2088.60216	20001-01101 636	P17
		2088.63315	20001-01101 626	P53
8	2088.65871	2088.65868	12201-01101 626	P6
9	2088.83506	2088.84037	11101-00001 628	R51
10	2088.86835		?	
11	2088.92995	2088.92990	20001-01101 628	P8
		2088.91163	12201-01101 636	R45
12	2088.98860	2088.98936	22201-11101 626	P43
13	2089.10748	2089.10684	20001-01101 627	P29
14	2089.18626	2089.18570	14401-03301 626	P39
15	2089.25942	2089.25951	21101-10001 626	P30
16	2089.35174	2089.35170	13301-02201 626	P23
17	2089.45668	2089.45670	12201-01101 626	P5
18	2089.64197	2089.64081	22201-11101 626	P40
		2089.66048	20001-01101 628	P7
19	2089.67335	2089.67906	21102-10002 626	R46
20	2089.74199		H2O	
21	2089.84395	2089.84749	20001-01101 627	P28
22	2089.93175	2089.93130	14401-03301 626	P38

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

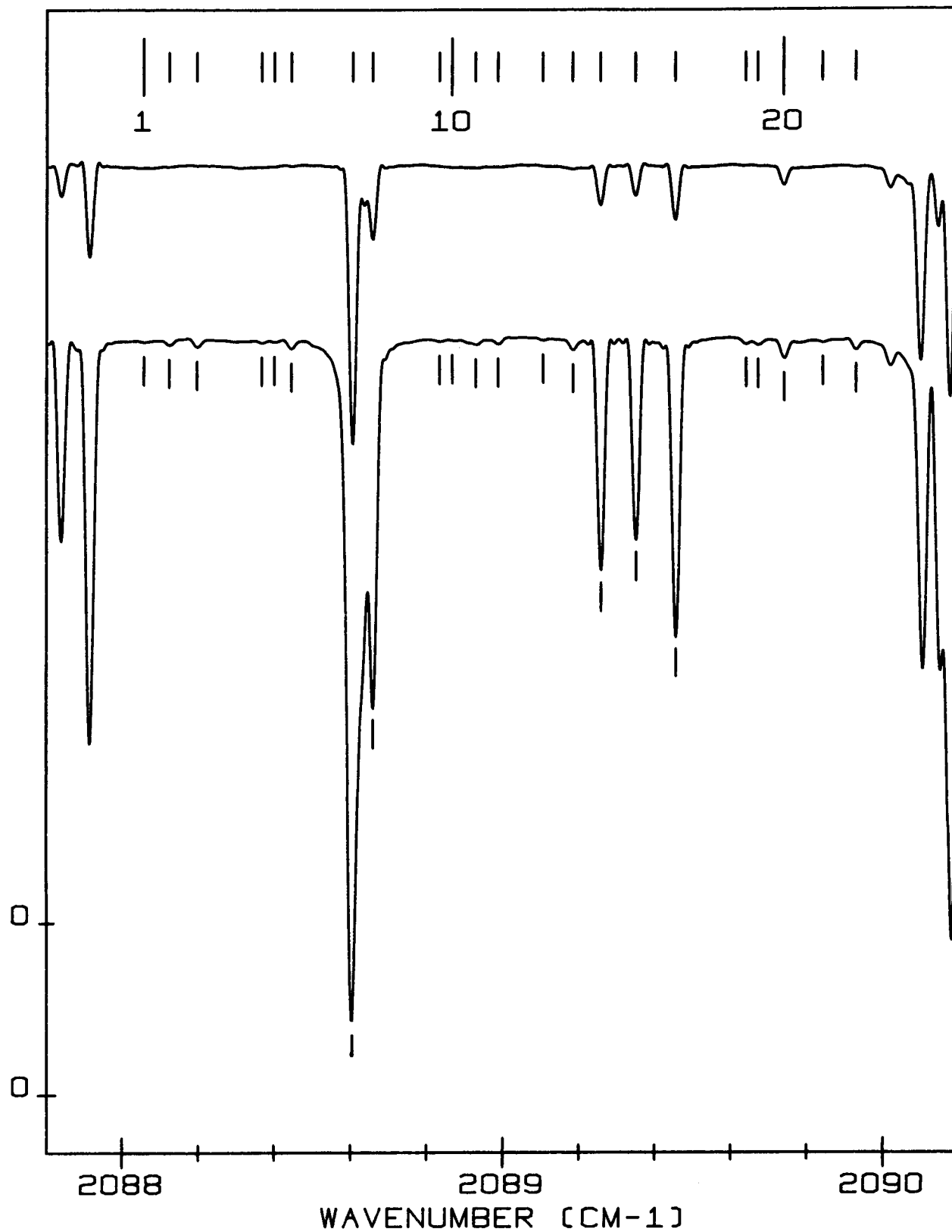




TABLE A139

-1

Line Positions and Identifications (2090-2092 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2090.02313		H2O
2	2090.10382		H2O
		2090.11003	13301-02201 626 P22
3	2090.15085	2090.15060	20001-01101 626 P51
4	2090.17947	2090.17958	11101-00001 626 R16
5	2090.21762	2090.21834	12201-01101 626 P4
		2090.21745	20001-01101 636 P15
6	2090.36990	2090.37020	22201-11101 626 P41
			H2O
		2090.39226	20001-01101 628 P6
7	2090.39790	2090.40829	11101-00001 628 R53
8	2090.60706		CARBON MONOXIDE
		2090.57446	12201-01101 636 R47
		2090.58852	20001-01101 627 P27
9	2090.67417	2090.67570	14401-03301 626 P37
10	2090.79577	2090.79582	21101-10001 626 P28
11	2090.86948	2090.86953	13301-02201 626 P21
12	2091.00637	2091.00650	12201-01101 626 P3
13	2091.12696	2091.12543	20001-01101 628 P5
14	2091.16035	2091.16361	21102-10002 626 R48
		2091.16046	22201-11101 626 P38
15	2091.19386	2091.19369	11101-00001 628 R54
16	2091.33091	2091.32993	20001-01101 627 P26
17	2091.42322	2091.42332	14401-03301 626 P36
18	2091.50873	2091.50302	12201-01101 636 R50
		2091.52159	11101-00001 636 R70
19	2091.63027	2091.63022	13301-02201 626 P20
20	2091.67346	2091.67343	20001-01101 626 P49
21	2091.75395	2091.75393	11101-00001 626 R18
		2091.75793	22201-11101 626 P39
22	2091.82628	2091.82616	20001-01101 636 P13
23	2091.85837	2091.86024	20001-01101 628 P4

FRAME A139

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

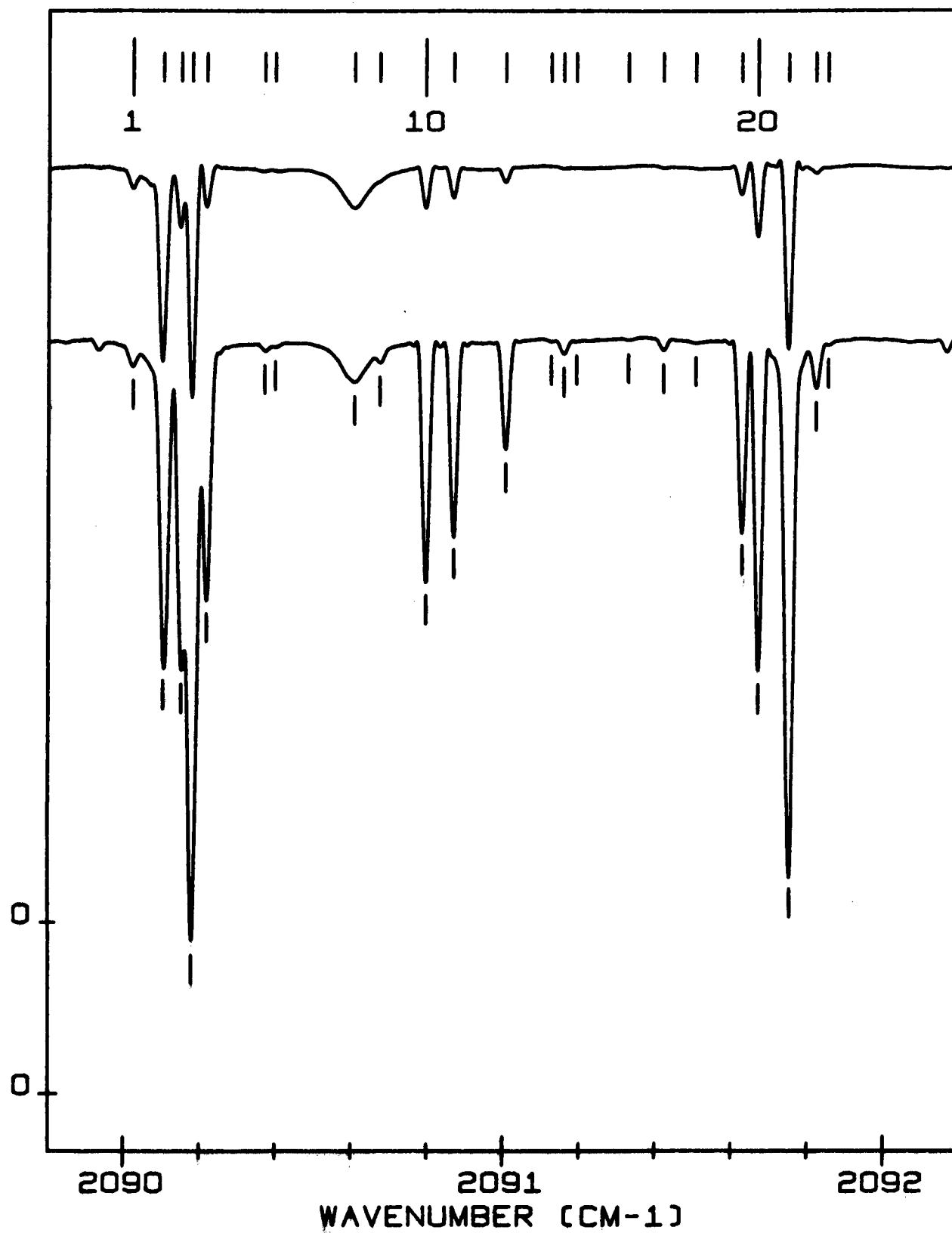


TABLE A140

-1

## Line Positions and Identifications (2092-2093 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2092.07217	2092.07170	20001-01101 627	P25
2	2092.17055	2092.17041	14401-03301 626	P35
3	2092.24061	2092.24059	12201-01101 636	R49
4	2092.27989		?	
			SIDELOBE	
5	2092.33391	2092.33394	21101-10001 626	P26
6	2092.39197	2092.39207	13301-02201 626	P19
7	2092.60005	2092.59698	20001-01101 628	P3
8	2092.64645	2092.64615	21102-10002 626	R50
9	2092.68283	2092.68281	22201-11101 626	P36
10	2092.81328	2092.81385	20001-01101 627	P24
11	2092.88401		?	
12	2092.92010	2092.91995	14401-03301 626	P34

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

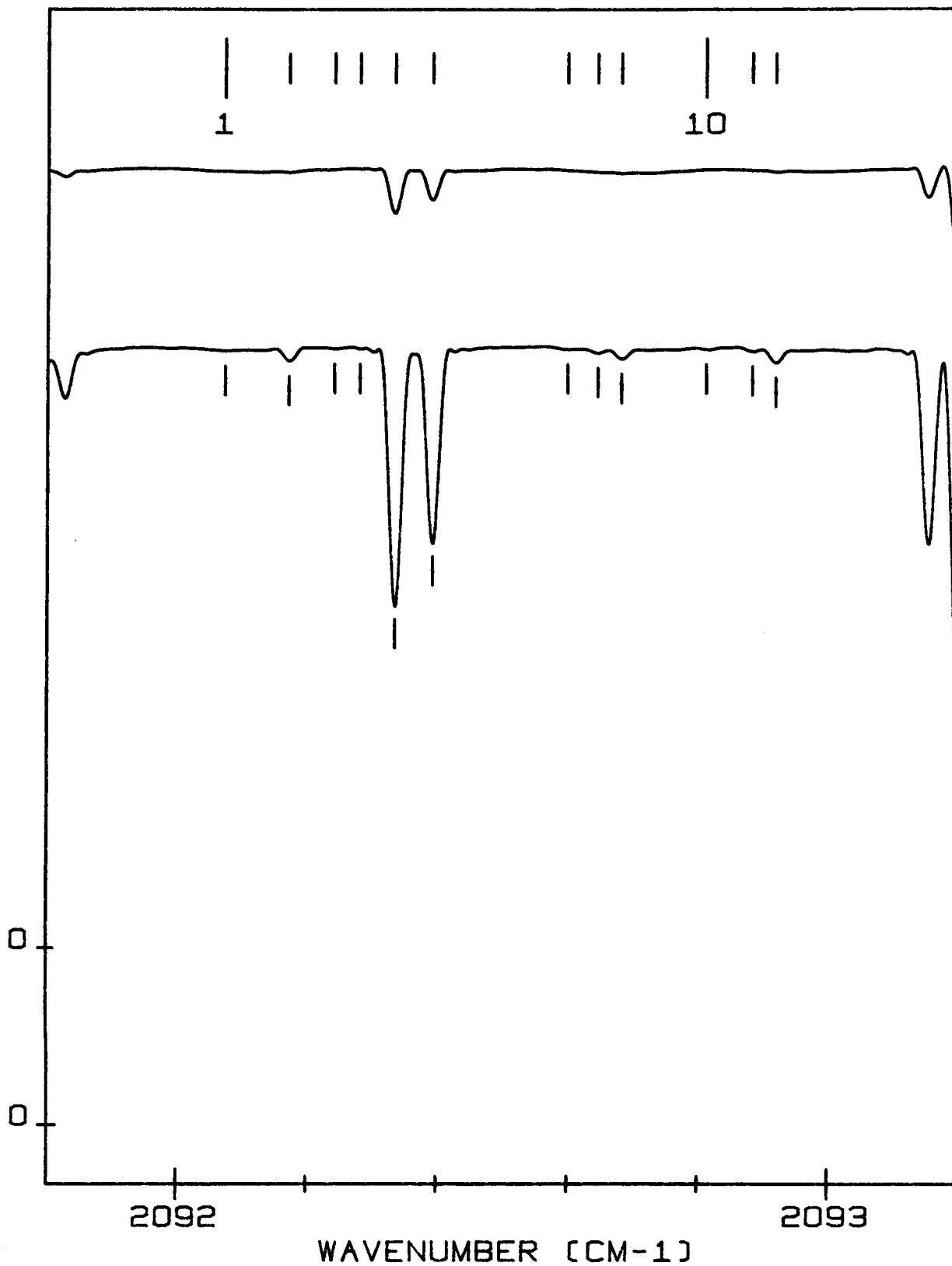


TABLE A141

-1

Line Positions and Identifications (2093-2094 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2093.02873	2093.03095	11101-00001 636 R72
2	2093.05346	2093.05428	12201-01101 636 R52
3	2093.15411	2093.15508	13301-02201 626 P18
		2093.15288	22201-11101 626 P37
4	2093.20121	2093.20118	20001-01101 626 P47
5	2093.36567	2093.37572	12201-01101 626 Q5
		2093.35948	12201-01101 626 Q3
		2093.36852	12201-01101 626 Q10
		2093.35697	12201-01101 626 Q8
		2093.34782	12201-01101 626 Q6
		2093.34110	12201-01101 626 Q4
		2093.32969	11101-00001 626 R20
6	2093.39423	2093.39919	12201-01101 626 Q7
		2093.39879	12201-01101 626 Q14
		2093.38247	12201-01101 626 Q12
7	2093.42626	2093.42991	12201-01101 626 Q9
		2093.41745	12201-01101 626 Q16
		2093.43841	12201-01101 626 Q18
		2093.42821	20001-01101 636 P11
8	2093.46391	2093.46788	12201-01101 626 Q11
		2093.46165	12201-01101 626 Q20
9	2093.51292	2093.51314	12201-01101 626 Q13
		2093.48712	12201-01101 626 Q22
		2093.51478	12201-01101 626 Q24
10	2093.56254	2093.56570	12201-01101 626 Q15
		2093.54457	12201-01101 626 Q26
		2093.57646	12201-01101 626 Q28
		2093.55637	20001-01101 627 P23
11	2093.61944	2093.62561	12201-01101 626 Q17
		2093.61037	12201-01101 626 Q30
12	2093.64621	2093.64626	12201-01101 626 Q32
13	2093.68870	2093.69287	12201-01101 626 Q19
		2093.68405	12201-01101 626 Q34
		2093.66968	14401-03301 626 P33
14	2093.72392	2093.72368	12201-01101 626 Q36
15	2093.76572	2093.76754	12201-01101 626 Q21
		2093.76507	12201-01101 626 Q38
16	2093.80760	2093.80815	12201-01101 626 Q40
17	2093.84919	2093.84965	12201-01101 626 Q23
18	2093.87923	2093.85283	12201-01101 626 Q42
		2093.87384	21101-10001 626 P24
19	2093.90190	2093.89903	12201-01101 626 Q44
20	2093.93854	2093.93924	12201-01101 626 Q25
		2093.91929	13301-02201 626 P17
		2093.94667	12201-01101 626 Q46
21	2093.99554	2093.99564	12201-01101 626 Q48

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

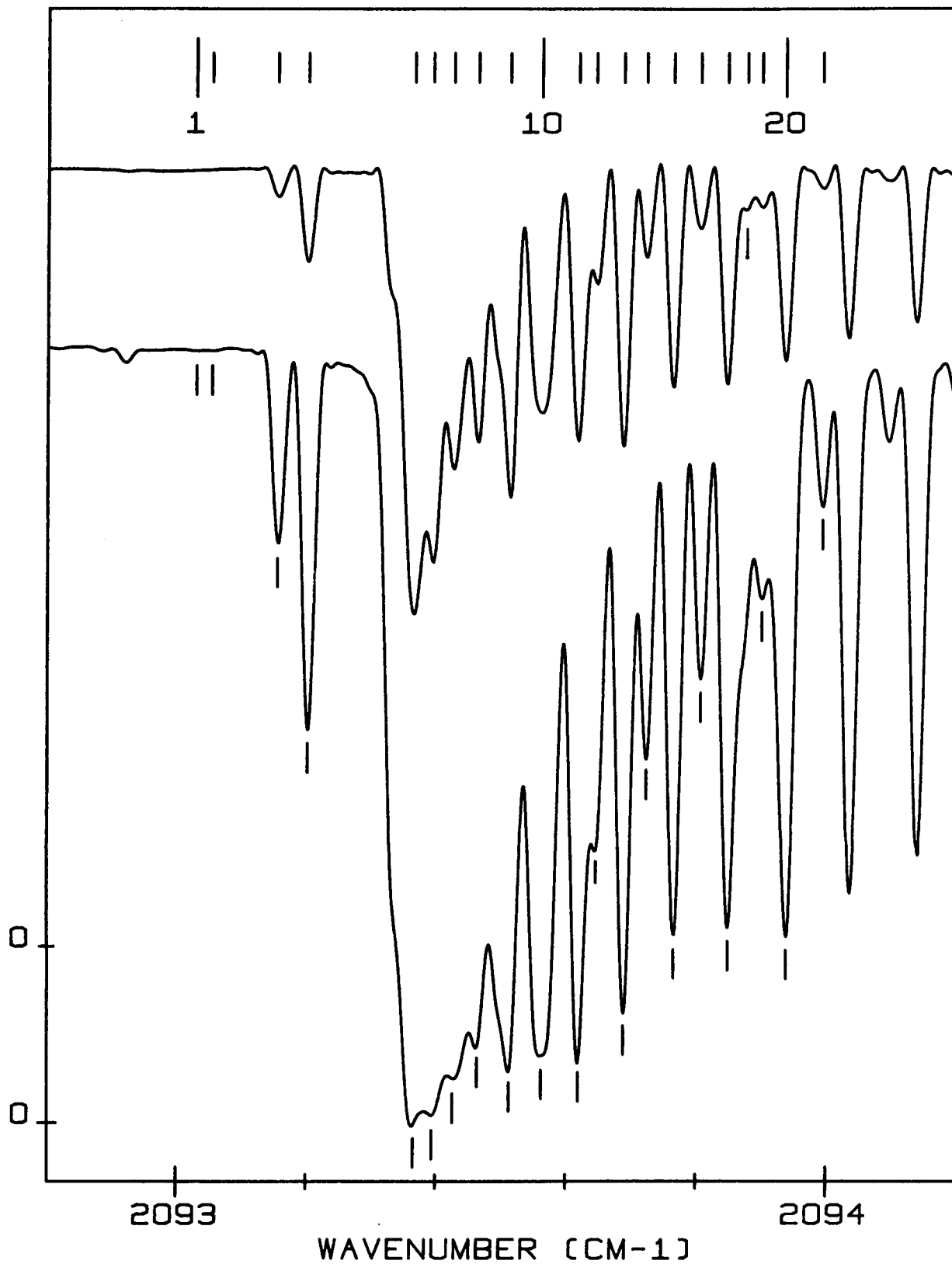


TABLE A142

-1

Line Positions and Identifications (2094-2096 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2094.03648	2094.03635	12201-01101 626	Q27
2	2094.09767	2094.09719	12201-01101 626	Q52
3	2094.14100	2094.14102	12201-01101 626	Q29
		2094.14957	12201-01101 626	Q54
4	2094.20273	2094.20287	12201-01101 626	Q56
		2094.20784	22201-11101 626	P34
5	2094.25308	2094.25331	12201-01101 626	Q31
		2094.25698	12201-01101 626	Q58
6	2094.31135	2094.31177	12201-01101 626	Q60
7	2094.37302	2094.37326	12201-01101 626	Q33
		2094.36714	12201-01101 626	Q62
8	2094.42246	2094.42294	12201-01101 626	Q64
		2094.42109	14401-03301 626	P32
9	2094.46708	2094.47906	12201-01101 626	Q66
			SIDELOBE	
10	2094.50076	2094.50091	12201-01101 626	Q35
11	2094.55628	2094.55537	22201-11101 626	P35
12	2094.60394		?	
			SIDELOBE	
13	2094.63638	2094.63633	12201-01101 626	Q37
14	2094.68453	2094.68457	13301-02201 626	P16
15	2094.73353	2094.73344	20001-01101 626	P45
16	2094.77976	2094.77955	12201-01101 626	Q39
			?	
17	2094.85976		CARBON MONOXIDE	
18	2094.90978	2094.91288	12201-01101 626	R1
		2094.93064	12201-01101 626	Q41
		2094.90688	11101-00001 626	R22
19	2095.02352	2095.02347	20001-01101 636	P9
20	2095.08974	2095.08965	12201-01101 626	Q43
21	2095.17337	2095.17339	14401-03301 626	P31
22	2095.25670	2095.25664	12201-01101 626	Q45
23	2095.41875	2095.41553	21101-10001 626	P22
24	2095.44682	2095.43165	12201-01101 626	Q47
		2095.45115	13301-02201 626	P15
25	2095.61461	2095.61475	12201-01101 626	Q49
26	2095.69590	2095.69584	12201-01101 626	R2
27	2095.73152	2095.73552	22201-11101 626	P32
			SIDELOBE	
28	2095.80593	2095.80601	12201-01101 626	Q51
29	2095.92667	2095.92665	14401-03301 626	P30
		2095.92636	11101-00001 628	R60
30	2095.96705	2095.96566	22201-11101 626	P33

## FRAME A142

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

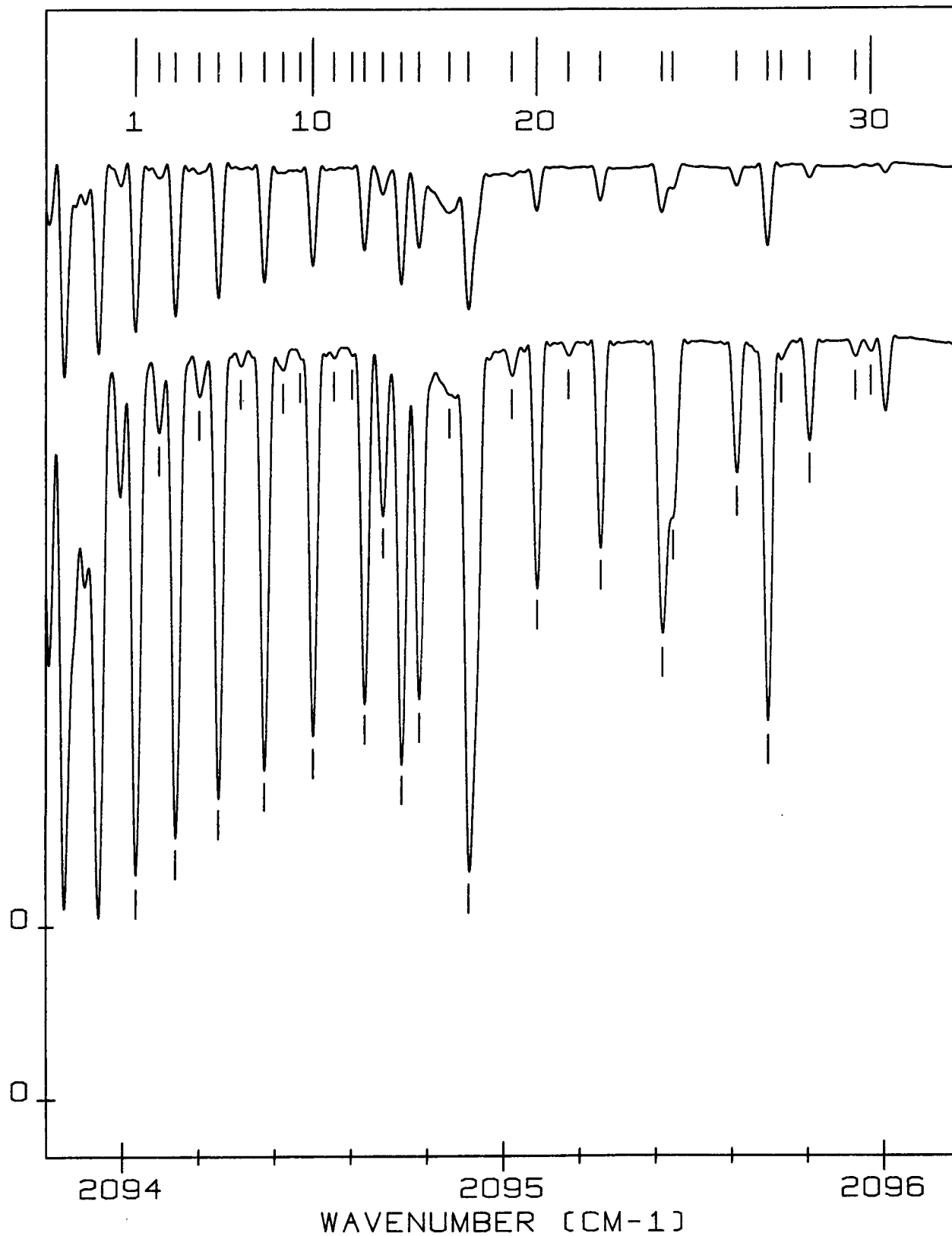




TABLE A143

-1

## Line Positions and Identifications (2096-2098 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2096.00548	2096.00548	12201-01101 626 Q53
2	2096.21721	2096.21866	13301-02201 626 P14
		2096.21323	12201-01101 626 Q55
3	2096.26978	2096.26981	20001-01101 626 P43
4	2096.32836		?
5	2096.36984		?
6	2096.43032	2096.42934	12201-01101 626 Q57
7	2096.48776	2096.48811	12201-01101 626 R3
		2096.48550	11101-00001 626 R24
8	2096.61336	2096.61189	20001-01101 636 P7
9	2096.65462	2096.65388	12201-01101 626 Q59
10	2096.68204	2096.68143	14401-03301 626 P29
11	2096.71686	2096.71857	11101-00001 628 R61
12	2096.88647	2096.88693	12201-01101 626 Q61
13	2096.95905	2096.95899	21101-10001 626 P20
14	2096.98804	2096.98762	13301-02201 626 P13
15	2097.07831	2097.08334	21102-10002 626 R56
16	2097.12847	2097.12859	12201-01101 626 Q63
17	2097.26613	2097.26608	12201-01101 626 R4
		2097.26580	22201-11101 626 P30
18	2097.36757		H2O
		2097.37895	12201-01101 626 Q65
		2097.38401	22201-11101 626 P31
19	2097.43605	2097.43657	14401-03301 626 P28
20	2097.51215	2097.51177	11101-00001 628 R62
21	2097.63888	2097.63813	12201-01101 626 Q67
22	2097.75689	2097.75733	13301-02201 626 P12
23	2097.80990	2097.80992	20001-01101 626 P41
24	2097.90602	2097.90625	12201-01101 626 Q69

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters.

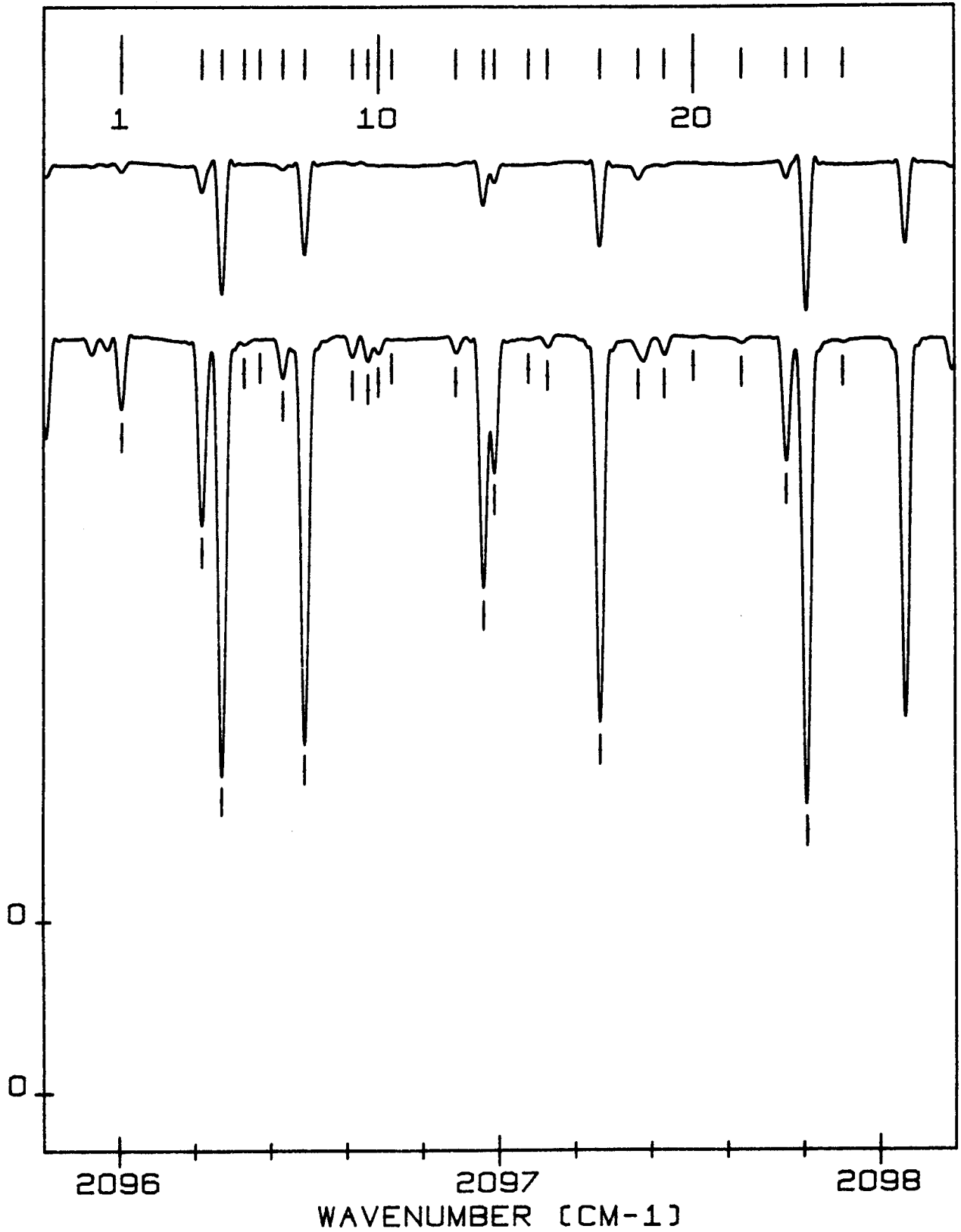


TABLE A144

-1

Line Positions and Identifications (2098-2100 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2098.07046	2098.07053	12201-01101 626 R5
		2098.06557	11101-00001 626 R26
2	2098.19387	2098.19375	14401-03301 626 P27
		2098.19338	20001-01101 636 P5
		2098.18346	12201-01101 626 Q71
3	2098.50437	2098.50420	21101-10001 626 P18
4	2098.52910	2098.52867	13301-02201 626 P11
5	2098.66128		?
6	2098.75496	2098.75069	20001-01101 636 Q48
7	2098.80543	2098.79866	22201-11101 626 P28
		2098.81065	22201-11101 626 P29
			SIDELOBE
8	2098.83865	2098.83860	12201-01101 626 R6
9	2098.95178	2098.95081	14401-03301 626 P26
10	2099.08063		CARBON MONOXIDE
		2099.00745	20001-01101 636 Q46
11	2099.25663	2099.25592	20001-01101 636 Q44
12	2099.30029	2099.30055	13301-02201 626 P10
13	2099.35338	2099.35340	20001-01101 626 P39
14	2099.49503	2099.49577	20001-01101 636 Q42
15	2099.54323		?
16	2099.65814	2099.64709	11101-00001 626 R28
		2099.66012	12201-01101 626 R7
17	2099.71204	2099.71028	14401-03301 626 P25
		2099.72669	20001-01101 636 Q40
18	2099.76771	2099.76791	20001-01101 636 P3
19	2099.94882	2099.94838	20001-01101 636 Q38

FRAME A144

Upper: 1.000 Torr 384 meters  
Lower: 9.857 Torr 384 meters

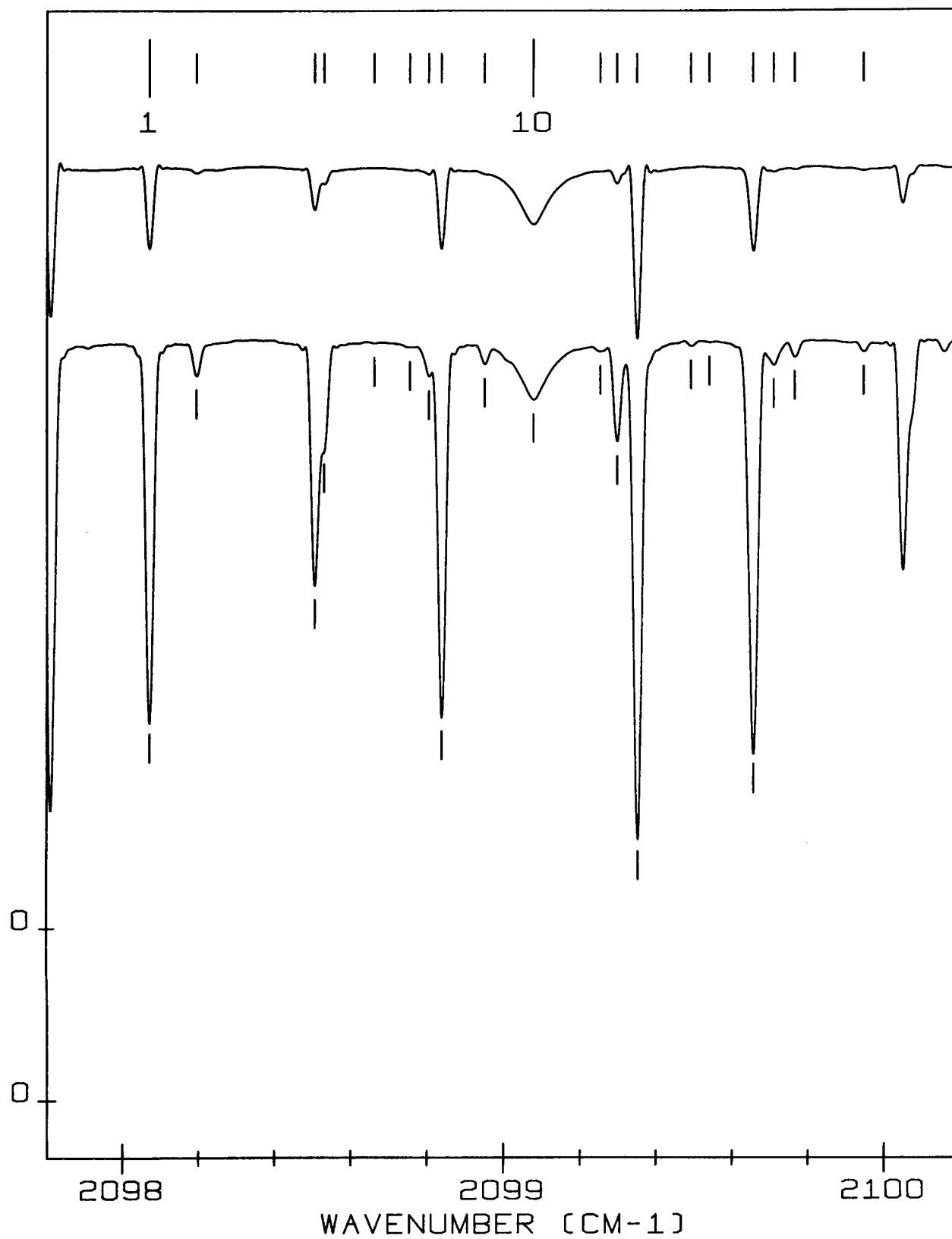


TABLE B 1

-1

Line Positions and Identifications (2395-2400 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2395.13627	2395.13625	00011-00001 626	R96
2	2395.45670	2395.45676	00011-00001 626	R98
3	2395.75153	2395.75150	00011-00001 626	R100
4	2396.02046	2396.02047	00011-00001 626	R102
5	2396.26296	2396.26368	00011-00001 626	R104
6	2396.48135	2396.48112	00011-00001 626	R106
7	2396.67238	2396.67280	00011-00001 626	R108
8	2396.83781	2396.83871	00011-00001 626	R110
9	2397.04790	2397.04788	10011-10002 626	P36
10	2397.56868		?	
11	2398.34264	2398.34578	10011-10002 628	P22
12	2398.87595		?	
13	2399.06300	2399.06298	10011-10002 626	P34
14	2399.18734	2399.18714	10011-10002 628	P21

## FRAME B1

9.857 Torr 384 meters

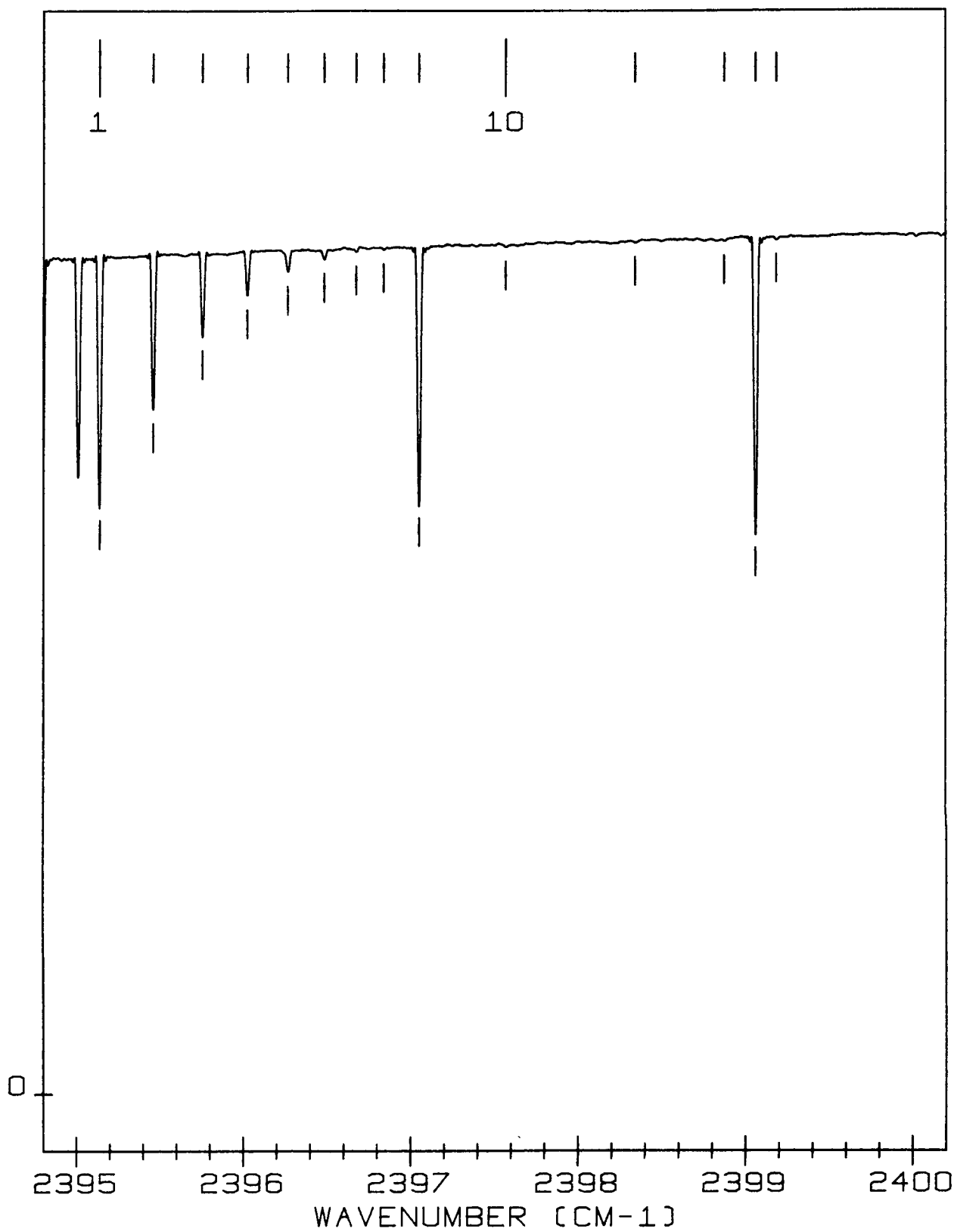


TABLE B 2

-1

Line Positions and Identifications (2400-2405 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2400.02435	2400.02363	10011-10002 628	P20
2	2400.17493		?	
3	2400.85541	2400.85524	10011-10002 628	P19
4	2401.05352	2401.05354	10011-10002 626	P32
5	2401.45160		?	
6	2401.68120	2401.68195	10011-10002 628	P18
7	2402.17933		?	
8	2402.50395	2402.50373	10011-10002 628	P17
9	2402.71834		?	
10	2403.01927	2403.01926	10011-10002 626	P30
11	2403.23085		?	
12	2403.32237	2403.32057	10011-10002 628	P16
13	2403.39508		?	
14	2403.97372		?	
15	2404.13682	2404.13246	10011-10002 628	P15
		2404.14845	20012-20003 626	P28
16	2404.95989	2404.95988	10011-10002 626	P28
		2404.93937	10011-10002 628	P14

FRAME B2

9.857 Torr 384 meters

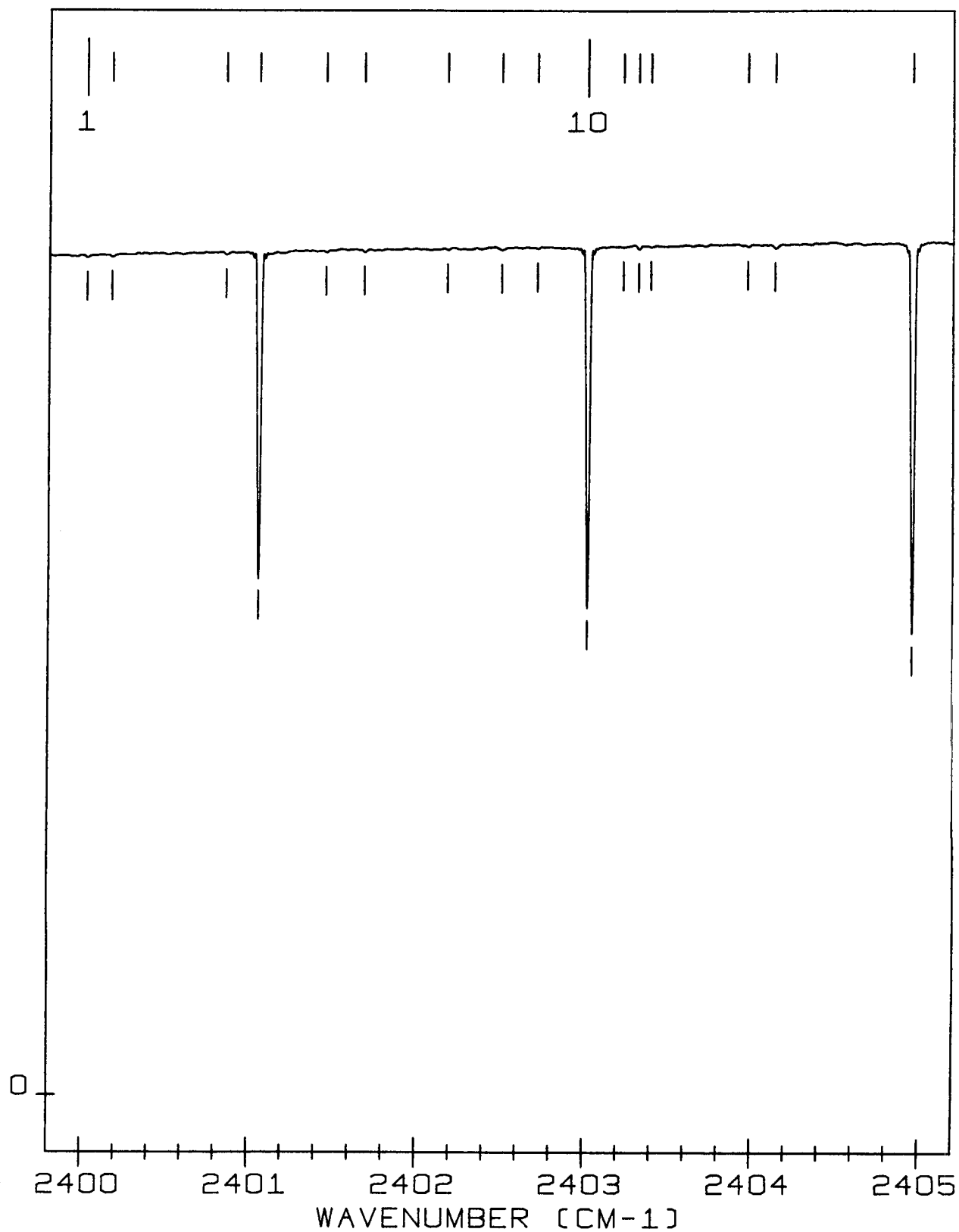




TABLE B 3

-1

Line Positions and Identifications (2405-2410 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
2	2405.21170		?
3	2405.74379	2405.74130	10011-10002 628 P13
4	2406.18958	2406.18788	20012-20003 626 P26
5	2406.53990	2406.53824	10011-10002 628 P12
6	2406.87510	2406.87511	10011-10002 626 P26
7	2407.33004	2407.33016	10011-10002 628 P11
8	2407.40145		?
9	2408.11729	2408.11706	10011-10002 628 P10
10	2408.19318	2408.19271	20012-20003 626 P24
11	2408.76468	2408.76472	10011-10002 626 P24
12	2408.89896	2408.89892	10011-10002 628 P9
13	2409.66791	2409.67575	10011-10002 628 P8

## FRAME B3

9.857 Torr 384 meters

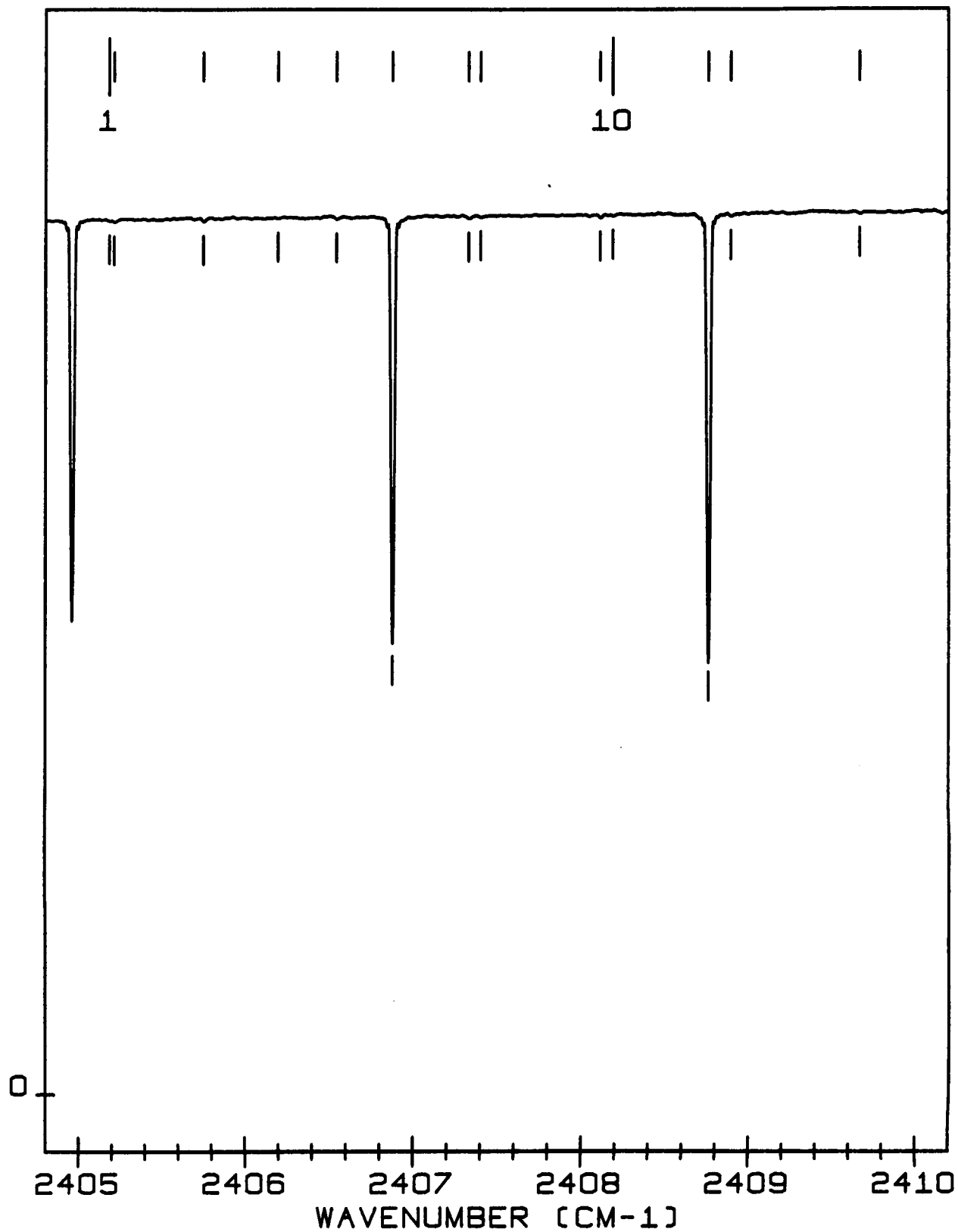


TABLE B 4

-1

Line Positions and Identifications (2410-2415 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2410.16155	2410.16264	20012-20003 626 P22
2	2410.44478	2410.44751	10011-10002 628 P7
3	2410.62845	2410.62847	10011-10002 626 P22
4	2411.21453	2411.21422	10011-10002 628 P6
5	2412.09596	2412.09743	20012-20003 626 P20
6	2412.35074		?
7	2412.46613	2412.46614	10011-10002 626 P20
8	2412.73316	2412.73241	10011-10002 628 P4
9	2413.01526	2413.01478	11111-11102 626 P48
10	2413.86526	2413.86794	20011-20002 626 P18
11	2413.99689	2413.99684	20012-20003 626 P18
12	2414.27753	2414.27755	10011-10002 626 P18

## FRAME B4

9.857 Torr 384 meters

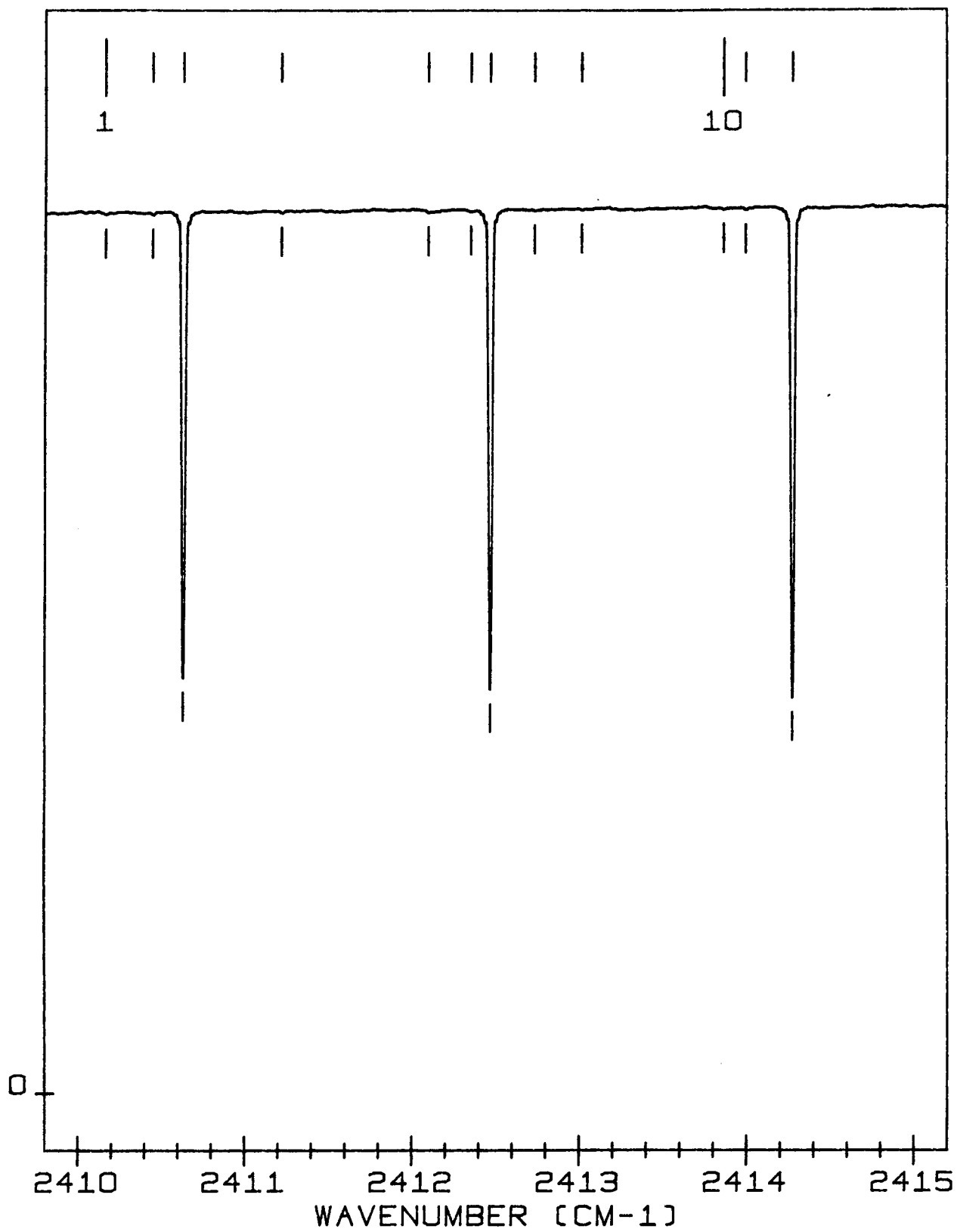


TABLE B 5

-1

Line Positions and Identifications (2415-2420 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2415.55909	2415.56115	20011-20002 626 P16
2	2415.86172	2415.86065	20012-20003 626 P16
3	2416.06250	2416.06251	10011-10002 626 P16
4	2416.44749	2416.45422	11111-11102 626 P45
5	2417.33576	2417.33538	11111-11102 626 P44
6	2417.68920	2417.68866	20012-20003 626 P14
7	2417.82086	2417.82084	10011-10002 626 P14
8	2418.30948		?
9	2418.58105	2418.58141	11111-11102 626 P43
10	2418.89575	2418.89841	20011-20002 626 P12
11	2419.31435	2419.31224	10011-10002 628 R4
12	2419.46410	2419.46032	11111-11102 626 P42
13	2419.55239	2419.55241	10011-10002 626 P12

FRAME B5

9.857 Torr 384 meters

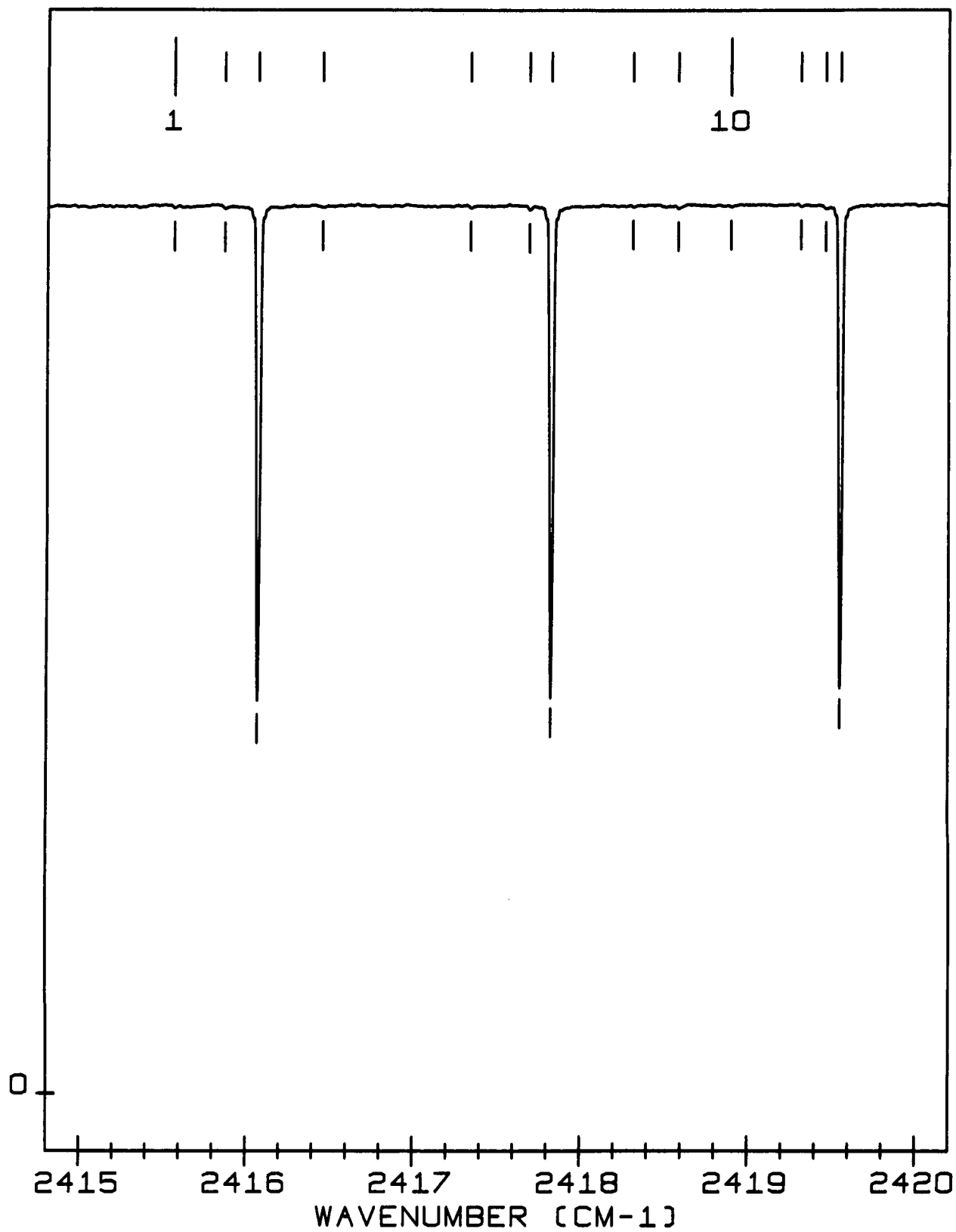


TABLE B 6

-1

Line Positions and Identifications (2420-2425 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2420.54509	2420.54247	20011-20002	626	P10
2	2420.68351	2420.68441	11111-11102	626	P41
3	2420.71793	2420.71832	10011-10002	628	R6
4	2421.25708	2421.25709	10011-10002	626	P10
5	2421.41251	2421.41372	10011-10002	628	R7
6	2421.55904	2421.56126	11111-11102	626	P40
7	2422.16745	2422.17014	20011-20002	626	P8
8	2422.76103	2422.76297	11111-11102	626	P39
9	2422.78996	2422.78924	10011-10002	628	R9
10	2422.93475	2422.93474	10011-10002	626	P8
		2422.95626	20012-20003	626	P8
11	2423.21789		?		
12	2423.46799	2423.46937	10011-10002	628	R10
13	2423.63771	2423.63788	11111-11102	626	P38
14	2424.14147	2424.14443	10011-10002	628	R11
15	2424.58529	2424.58528	10011-10002	626	P6
16	2424.81513	2424.81441	10011-10002	628	R12
		2424.81689	11111-11102	626	P37
17	2424.97252		?		

FRAME B6

9.857 Torr 384 meters

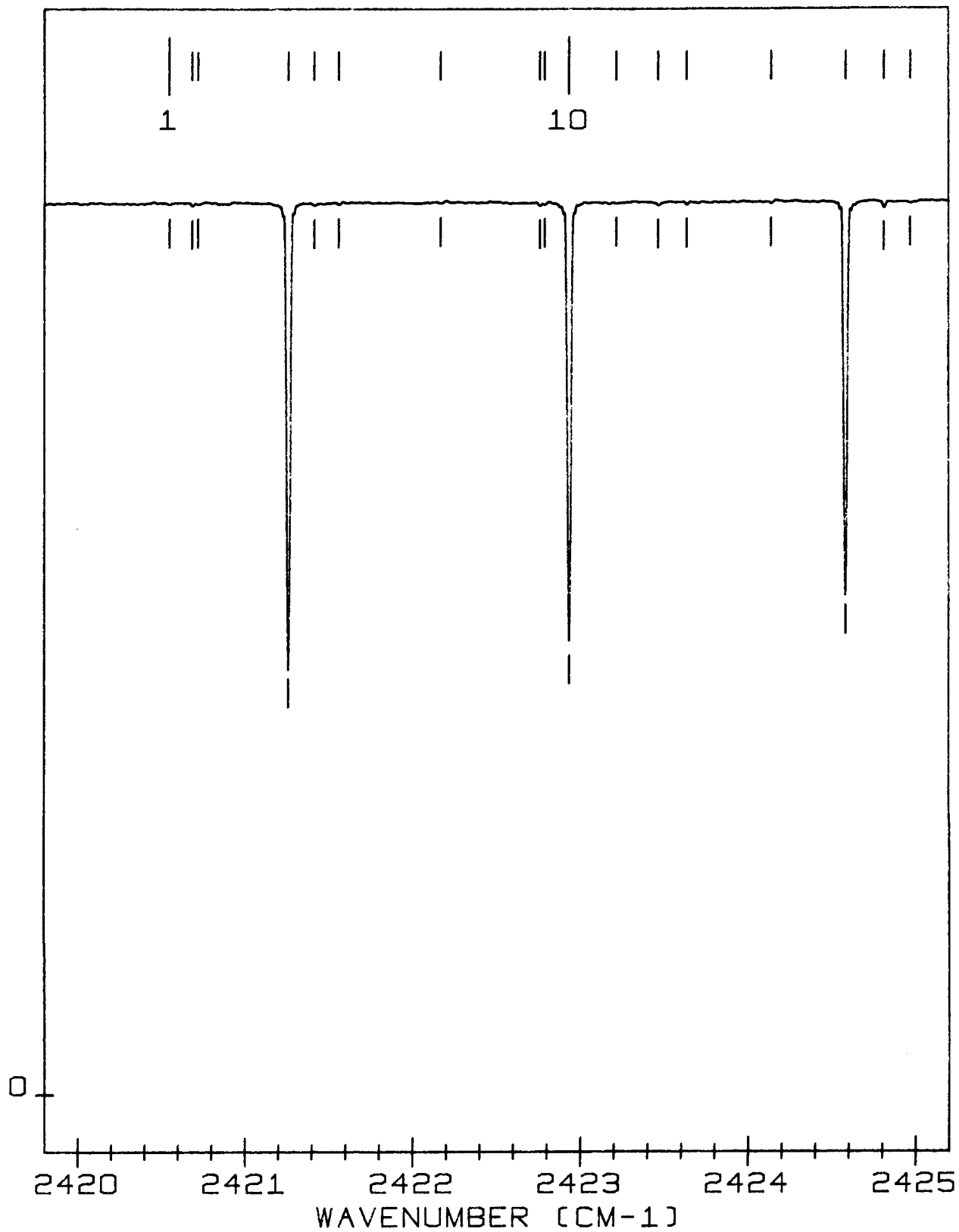




TABLE B 7

-1

Line Positions and Identifications (2425-2430 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2425.48469	2425.47934	10011-10002 628	R13
2	2425.68925	2425.68988	11111-11102 626	P36
3	2426.14053	2426.13922	10011-10002 628	R14
4	2426.20864	2426.20863	10011-10002 626	P4
5	2426.79183	2426.79405	10011-10002 628	R15
6	2426.84517	2426.84594	11111-11102 626	P35
7	2427.44343	2427.44385	10011-10002 628	R16
8	2427.71636	2427.71697	11111-11102 626	P34
9	2427.80471	2427.80470	10011-10002 626	P2
10	2428.08759	2428.08862	10011-10002 628	R17
11	2428.72884	2428.72839	10011-10002 628	R18
12	2428.85128	2428.84992	11111-11102 626	P33
13	2429.36188	2429.36317	10011-10002 628	R19
14	2429.71844	2429.71888	11111-11102 626	P32
15	2429.77810		?	
16	2429.99689	2429.99296	10011-10002 628	R20

FRAME B7

9.857 Torr 384 meters

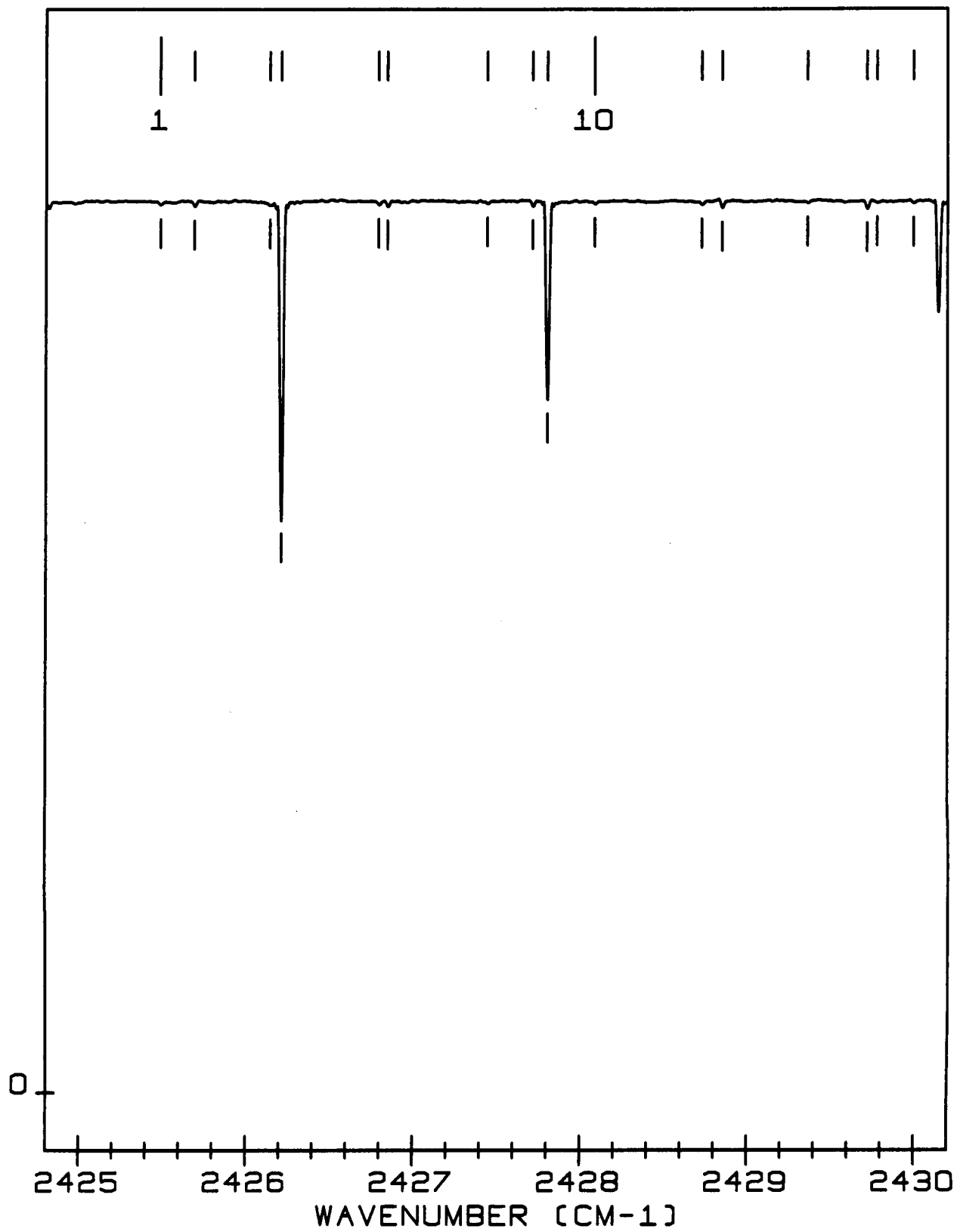


TABLE B 8

-1

Line Positions and Identifications (2430-2435 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2430.14764	2430.14759	10011-10002 626	R0
2	2430.61855	2430.61778	10011-10002 628	R21
3	2430.82872	2430.82864	11111-11102 626	P31
4	2431.06274		?	
5	2431.23801	2431.23764	10011-10002 628	R22
6	2431.67538	2431.67532	10011-10002 626	R2
7	2431.85223	2431.85258	10011-10002 628	R23
8	2432.46263	2432.46259	10011-10002 628	R24
9	2432.55847	2432.55779	21103-01101 628	P44C
10	2432.78199	2432.78192	11111-11102 626	P29
11	2433.06840	2433.06769	10011-10002 628	R25
12	2433.17571	2433.17568	10011-10002 626	R4
13	2433.64696	2433.64617	11111-11102 626	P28
14	2434.03551	2434.03617	21103-01101 628	P42C
15	2434.26050	2434.26328	10011-10002 628	R27
16	2434.64868	2434.64867	10011-10002 626	R6
17	2434.70848	2434.70958	11111-11102 626	P27
18	2434.77255	2434.77489	21103-01101 628	P41C
19	2434.85345	2434.85380	10011-10002 628	R28

FRAME B8

9.857 Torr 384 meters

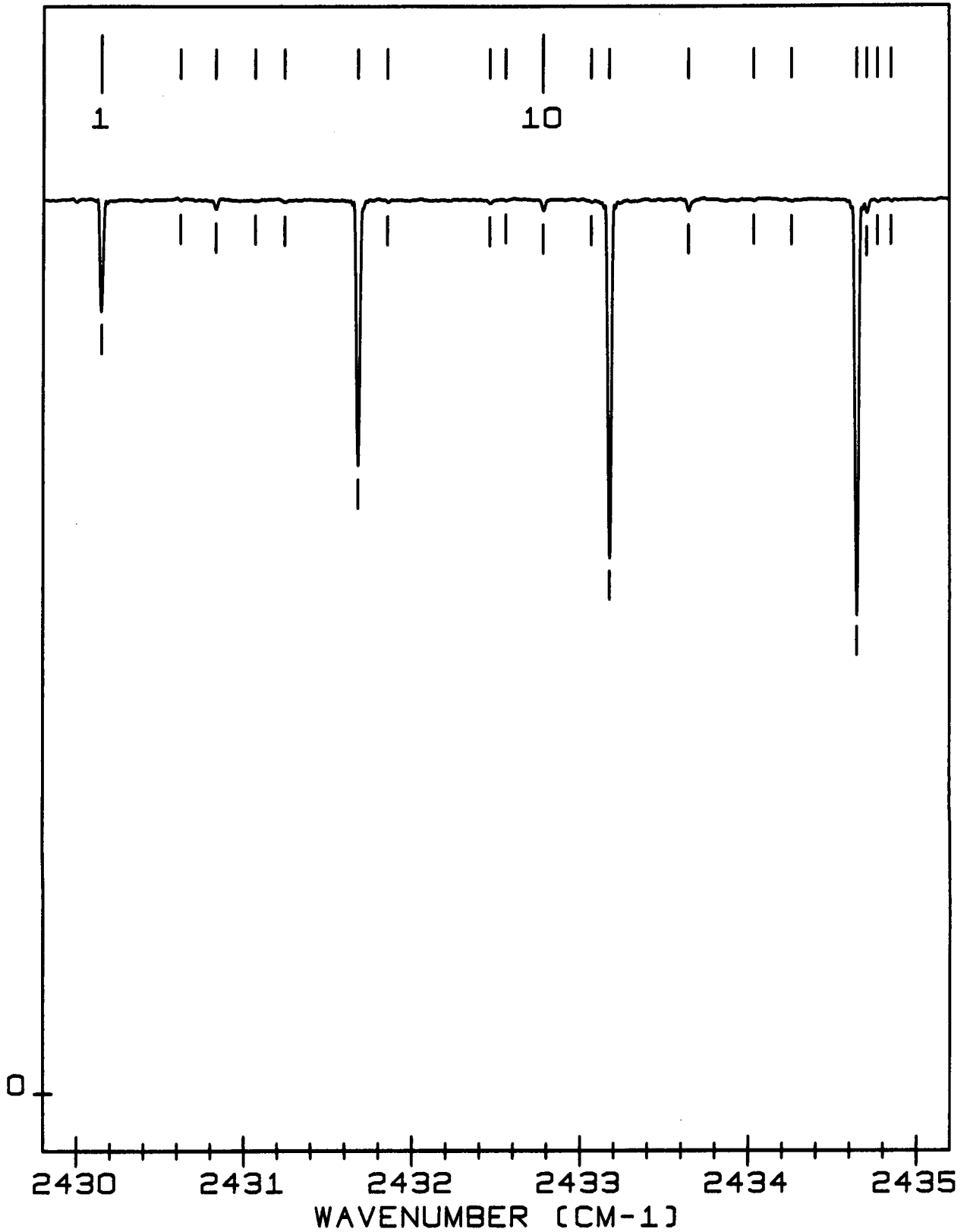


TABLE B 9

-1

Line Positions and Identifications (2435-2440 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2435.33927	2435.34389	20011-20002 626 R8
2	2435.44011	2435.43949	10011-10002 628 R29
3	2435.57150	2435.57107	11111-11102 626 P26
4	2435.85621		?
5	2436.09433	2436.09432	10011-10002 626 R8
6	2436.24861	2436.25150	21103-01101 628 P39C
7	2436.28416	2436.28557	21103-01101 628 P40D
8	2436.47494		?
9	2436.50251		?
10	2436.55984		?
11	2436.61063	2436.61145	11111-11102 626 P25
12	2436.81326	2436.81593	20011-20002 626 R10
13	2436.99014	2436.98943	21103-01101 628 P38C
		2436.98513	21103-01101 628 P39D
14	2437.16880	2437.16785	10011-10002 628 R32
15	2437.47467	2437.46985	11111-11102 626 P24
		2437.46954	20012-20003 626 R10
16	2437.51268	2437.51267	10011-10002 626 R10
17	2437.68906	2437.68535	21103-01101 628 P38D
18	2437.72907	2437.72714	21103-01101 628 P37C
19	2437.76231		?
20	2438.38417	2438.38626	21103-01101 628 P37D
21	2438.48750	2438.48739	11111-11102 626 P23
22	2438.80610	2438.80504	20012-20003 626 R12
23	2438.90378	2438.90378	10011-10002 626 R12
24	2439.08587	2439.08789	21103-01101 628 P36D
25	2439.19792	2439.20194	21103-01101 628 P35C
26	2439.34237	2439.34231	11111-11102 626 P22
27	2439.40878	2439.40623	10011-10002 628 R36
28	2439.70394	2439.71084	20011-20002 626 R14
29	2439.94248	2439.93908	21103-01101 628 P34C

## FRAME B9

9.857 Torr 384 meters

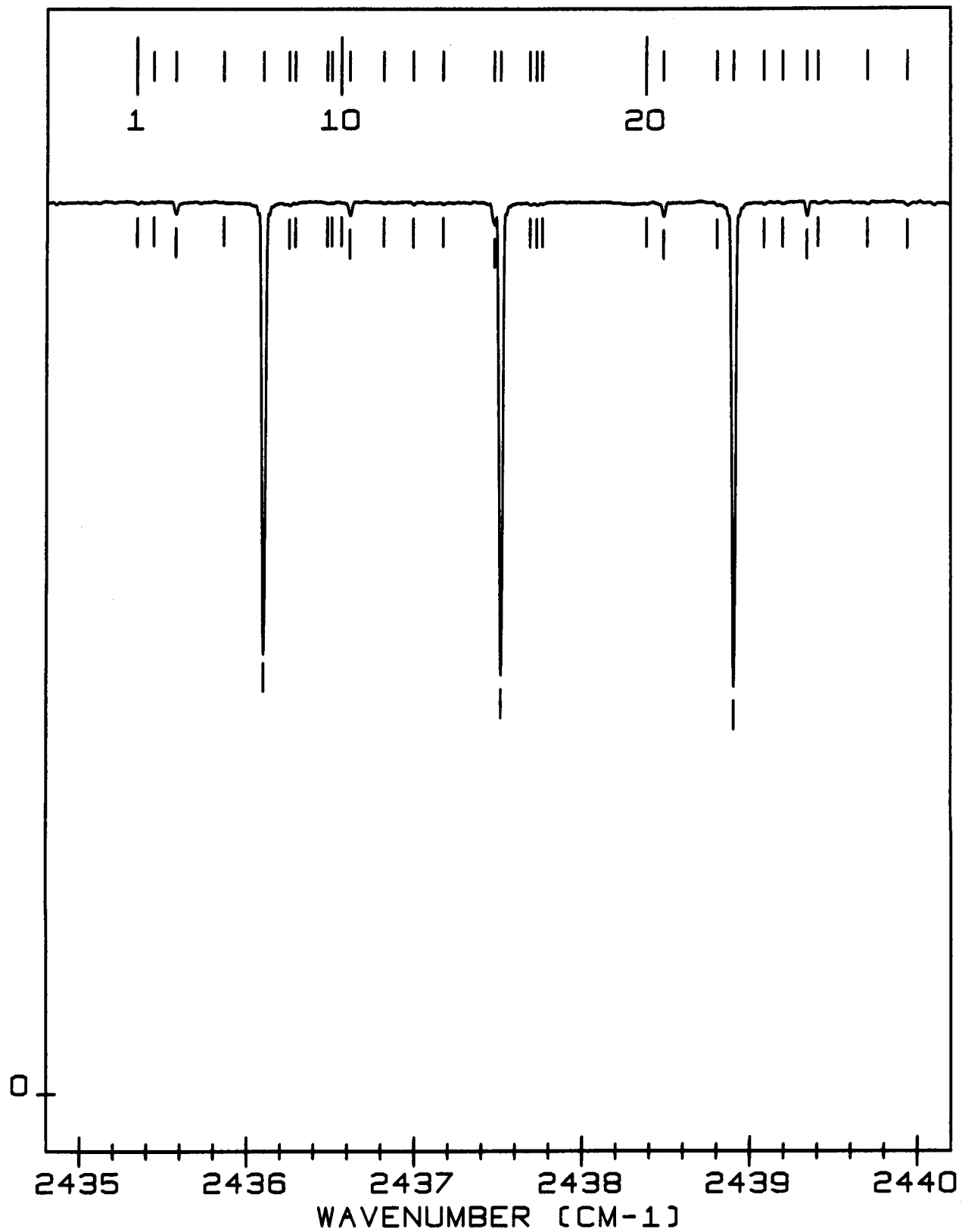


TABLE B 10

-1

Line Positions and Identifications (2440-2445 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2440.10354	2440.10411	20012-20003 626 R14
2	2440.26771	2440.26772	10011-10002 626 R14
3	2440.33661	2440.33724	11111-11102 626 P21
4	2440.49413	2440.49339	21103-01101 628 P34D
5	2440.67371	2440.67605	21103-01101 628 P33C
6	2441.13101	2441.13373	20011-20002 626 R16
7	2441.18841	2441.18826	11111-11102 626 P20
8	2441.36612	2441.36686	20012-20003 626 R16
9	2441.41310	2441.41289	21103-01101 628 P32C
10	2441.60455	2441.60457	10011-10002 626 R16
11	2441.90176	2441.90204	21103-01101 628 P32D
12	2442.15949	2442.16088	11111-11102 626 P19
13	2442.53652	2442.54023	20011-20002 626 R18
14	2442.60368	2442.59342	20012-20003 626 R18
		2442.60761	21103-01101 628 P31D
15	2442.91443	2442.91444	10011-10002 626 R18
16	2443.00739	2443.00753	11111-11102 626 P18
17	2443.31367	2443.31404	21103-01101 628 P30D
18	2443.62265	2443.62269	21103-01101 628 P29C
19	2443.78199	2443.78393	20012-20003 626 R20
20	2443.95820	2443.95818	11111-11102 626 P17
21	2444.02254	2444.02134	21103-01101 628 P29D
22	2444.19744	2444.19746	10011-10002 626 R20
23	2444.35902	2444.35910	21103-01101 628 P28C
24	2444.73089	2444.72955	21103-01101 628 P28D
25	2444.79965	2444.79996	11111-11102 626 P16
26	2444.93710	2444.93857	20012-20003 626 R22

FRAME B10

9.857 Torr 384 meters

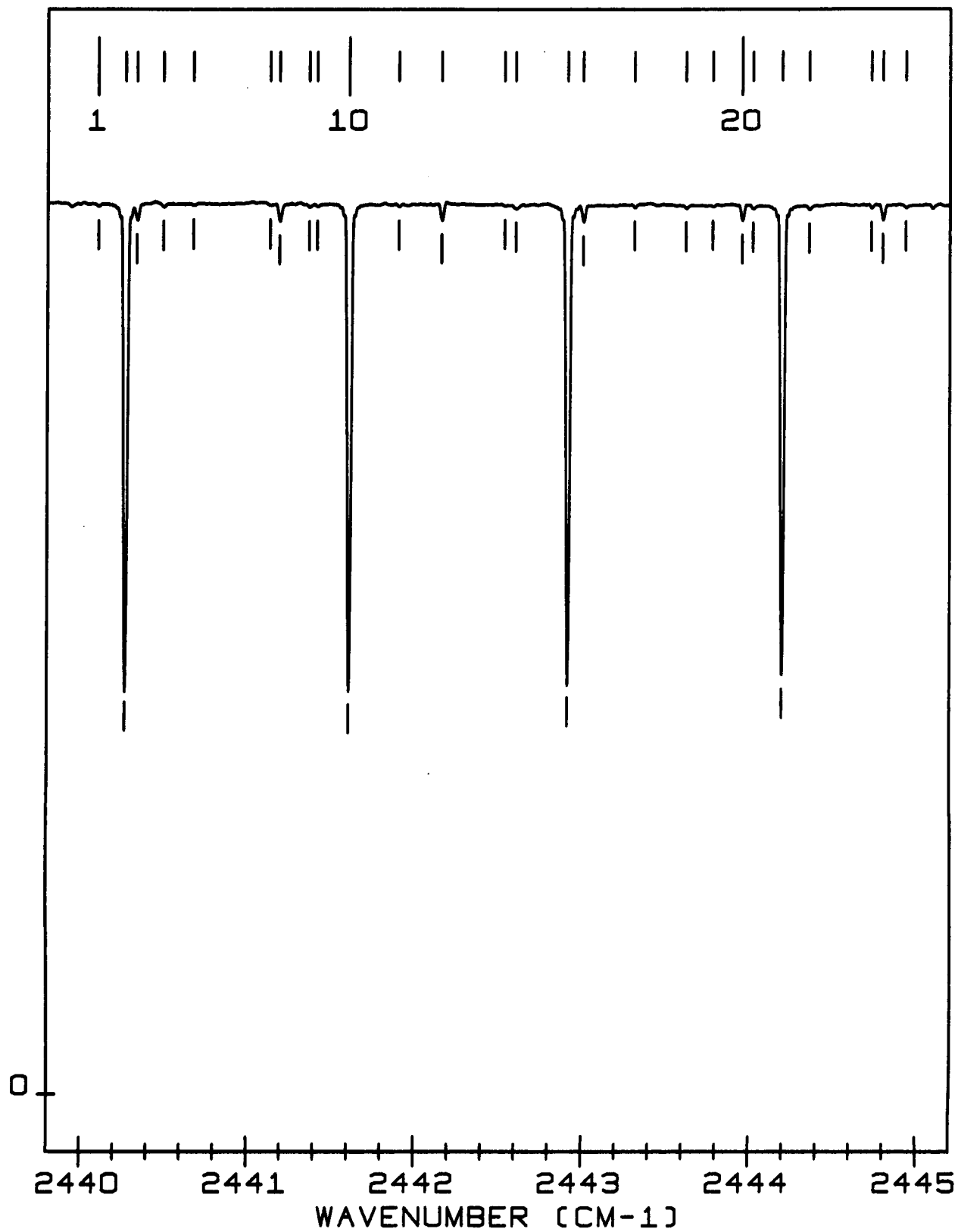




TABLE B 11

-1

Line Positions and Identifications (2445-2450 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2445.09628	2445.09544	21103-01101	628	P27C
2	2445.31130	2445.30408	20011-20002	626	R22
3	2445.45374	2445.45376	10011-10002	626	R22
4	2445.72905	2445.72902	11111-11102	626	P15
5	2445.83171	2445.83172	21103-01101	628	P26C
6	2446.05887	2446.05752	20012-20003	626	R24
7	2446.11480		?		
8	2446.14958	2446.14872	21103-01101	628	P26D
9	2446.22024		?		
10	2446.56554	2446.56540	11111-11102	626	P14
		2446.56796	21103-01101	628	P25C
11	2446.68349	2446.68349	10011-10002	626	R24
12	2446.85911	2446.85973	21103-01101	628	P25D
13	2447.14032	2447.14099	20012-20003	626	R26
14	2447.30426	2447.30415	21103-01101	628	P24C
15	2447.47327	2447.47330	11111-11102	626	P13
16	2447.57138	2447.57171	21103-01101	628	P24D
17	2447.88681	2447.88684	10011-10002	626	R26
18	2448.04003	2448.04032	21103-01101	628	P23C
19	2448.30176	2448.30373	11111-11102	626	P12
20	2448.77699	2448.77648	21103-01101	628	P22C
21	2449.00183	2448.99864	21103-01101	628	P22D
22	2449.06394	2449.06398	10011-10002	626	R28
23	2449.19185	2449.19093	11111-11102	626	P11
24	2449.51376	2449.51262	21103-01101	628	P21C
25	2449.71486	2449.71363	21103-01101	628	P21D

FRAME B11

9.857 Torr 384 meters

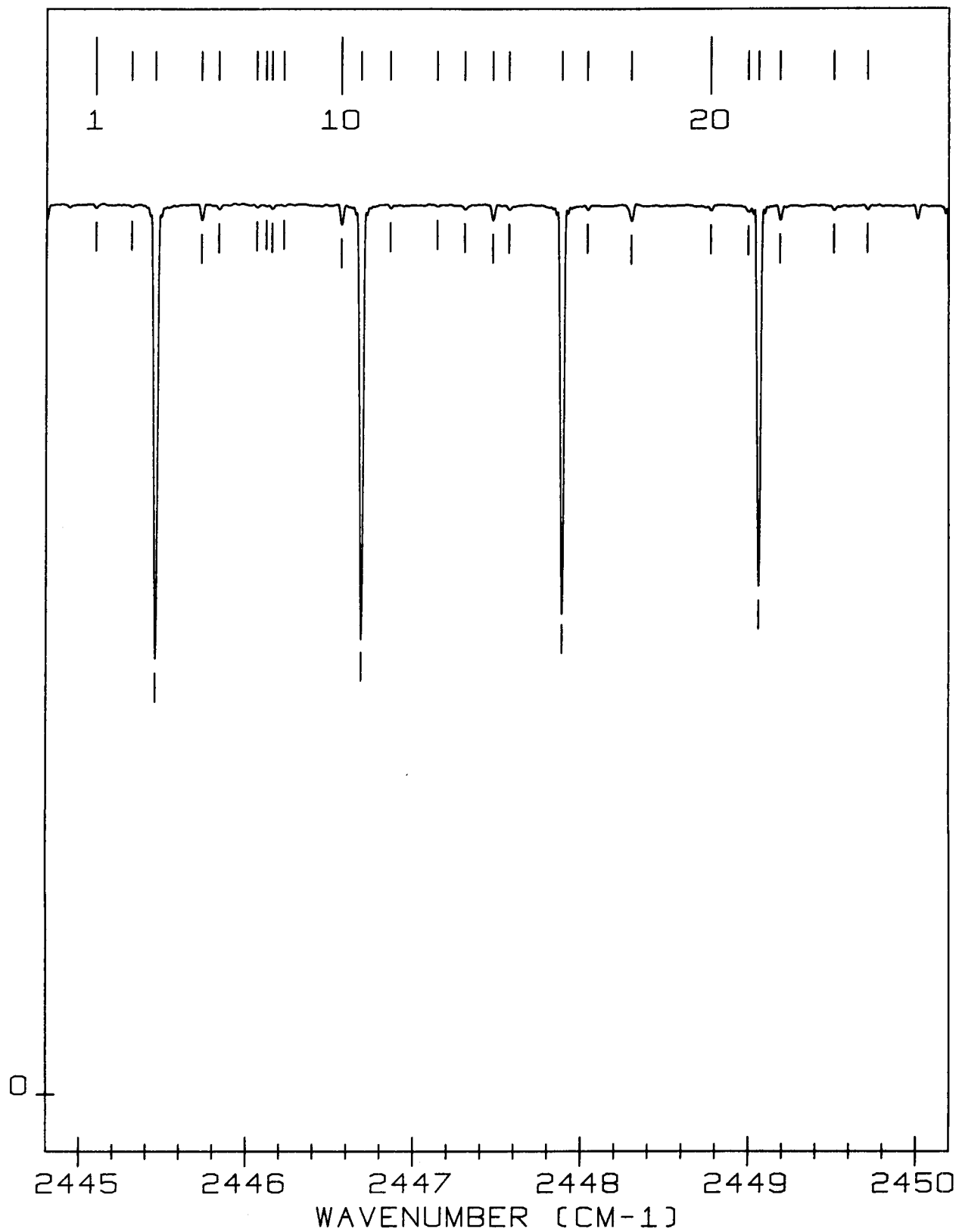


TABLE B 12

-1

Line Positions and Identifications (2450-2455 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2450.01438	2450.01482	11111-11102	626	P10
2	2450.18108	2450.18092	20012-20003	626	R32
3	2450.21508	2450.21511	10011-10002	626	R30
4	2450.24913	2450.24877	21103-01101	628	P20C
5	2450.42960	2450.42965	21103-01101	628	P20D
6	2450.88113	2450.88181	11111-11102	626	P9
7	2450.98510	2450.98493	21103-01101	628	P19C
8	2451.14572	2451.14670	21103-01101	628	P19D
9	2451.34046	2451.34047	10011-10002	626	R32
10	2451.69788	2451.69858	11111-11102	626	P8
11	2451.72048	2451.72111	21103-01101	628	P18C
12	2451.86475	2451.86482	21103-01101	628	P18D
13	2452.44037	2452.44028	10011-10002	626	R34
14	2452.54586	2452.54587	11111-11102	626	P7
15	2452.58334	2452.58400	21103-01101	628	P17D
16	2452.90908	2452.91091	20012-20003	626	R38
17	2453.19322	2453.19355	21103-01101	628	P16C
18	2453.30477	2453.30426	21103-01101	628	P16D
19	2453.35418	2453.35490	11111-11102	626	P6
20	2453.51481	2453.51480	10011-10002	626	R36
21	2453.93019	2453.92983	21103-01101	628	P15C
22	2454.02517	2454.02561	21103-01101	628	P15D
23	2454.18358	2454.18305	11111-11102	626	P5
24	2454.56430	2454.56430	10011-10002	626	R38
25	2454.66519	2454.66615	21103-01101	628	P14C
26	2454.74885	2454.74805	21103-01101	628	P14D
27	2454.98361	2454.98373	11111-11102	626	P4

## FRAME B12

9.857 Torr 384 meters

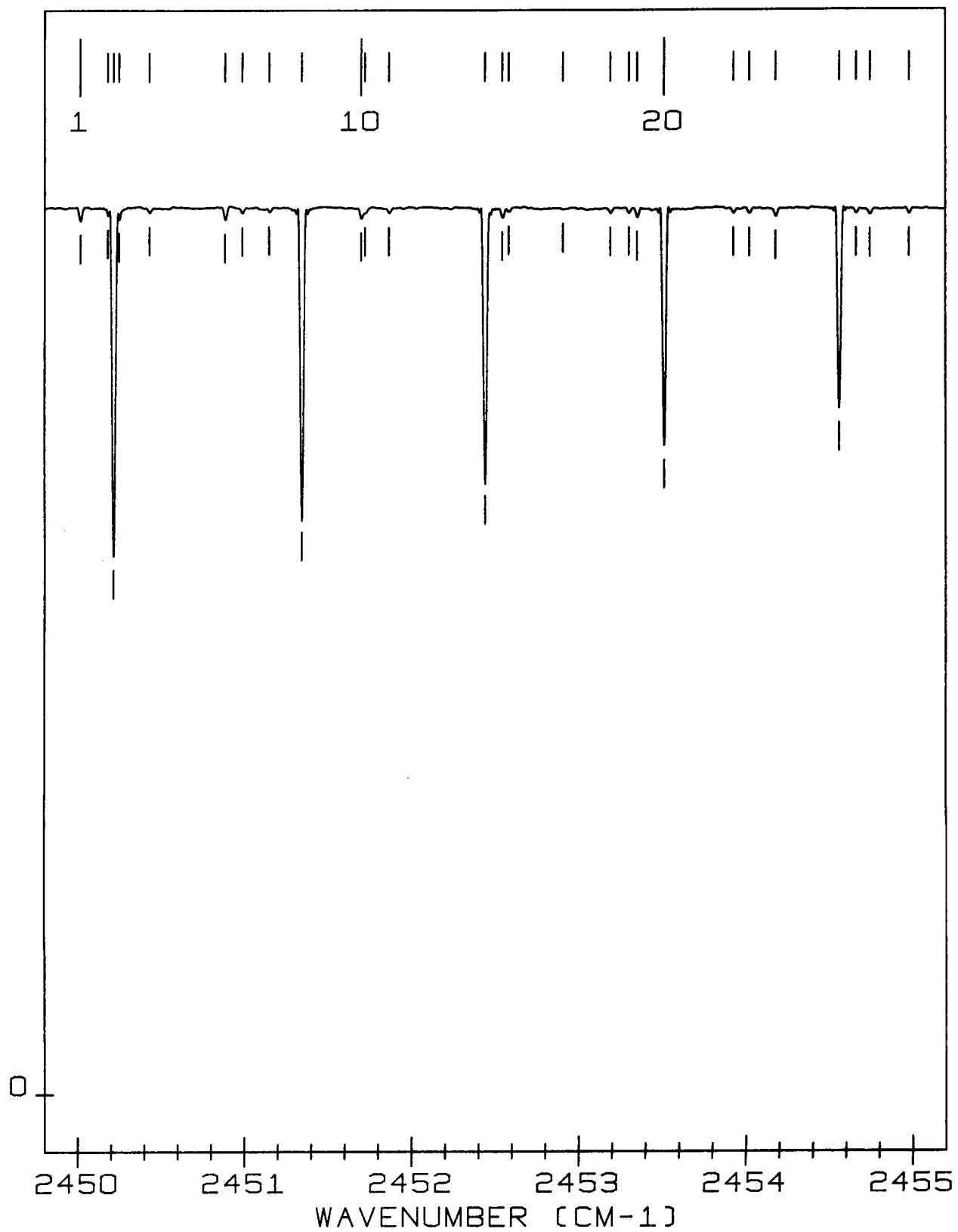


TABLE B 13

-1

Line Positions and Identifications (2455-2460 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2455.40321	2455.40252	21103-01101 628	P13C
2	2455.47197	2455.47160	21103-01101 628	P13D
3	2455.58903	2455.58907	10011-10002 626	R40
4	2455.79297	2455.79329	11111-11102 626	P3
5	2456.13896	2456.13894	21103-01101 628	P12C
6	2456.19576	2456.19626	21103-01101 628	P12D
7	2456.55525		?	
8	2456.58935	2456.58940	10011-10002 626	R42
		2456.58499	11111-11102 626	P2
9	2456.87590	2456.87542	21103-01101 628	P11C
10	2456.92283		?	
11	2457.00752		?	
12	2457.13209		?	
13	2457.17981		?	
14	2457.29415	2457.28616	20003-00001 628	P60
15	2457.39625		?	
16	2457.45530		?	
17	2457.56564	2457.56561	10011-10002 626	R44
18	2457.61039	2457.61196	21103-01101 628	P10C
19	2457.64905	2457.64895	21103-01101 628	P10D
20	2457.82756	2457.82780	11111-11102 626	Q11
21	2457.89062		?	
22	2457.93375	2457.93079	11111-11102 626	Q9
23	2457.97803	2457.97803	11111-11102 626	Q6
24	2458.01532	2458.01534	11111-11102 626	Q7
25	2458.07722		11111-11102 626	Q4
		2458.08072	11111-11102 626	Q5
26	2458.13491		11111-11102 626	Q2
		2458.12634	11111-11102 626	Q3
27	2458.15192	2458.15181	11111-11102 626	Q1
28	2458.34928	2458.34856	21103-01101 628	P9C
29	2458.37696	2458.37699	21103-01101 628	P9D
30	2458.51815	2458.51805	10011-10002 626	R46
31	2458.73588	2458.73876	20003-00001 628	P58
32	2459.09943	2459.08523	21103-01101 628	P8C
		2459.10616	21103-01101 628	P8D
33	2459.44729	2459.44706	10011-10002 626	R48
34	2459.70117	2459.70075	11111-11102 626	R1
35	2459.82827	2459.82197	21103-01101 628	P7C
		2459.83646	21103-01101 628	P7D

FRAME B13

9.857 Torr 384 meters

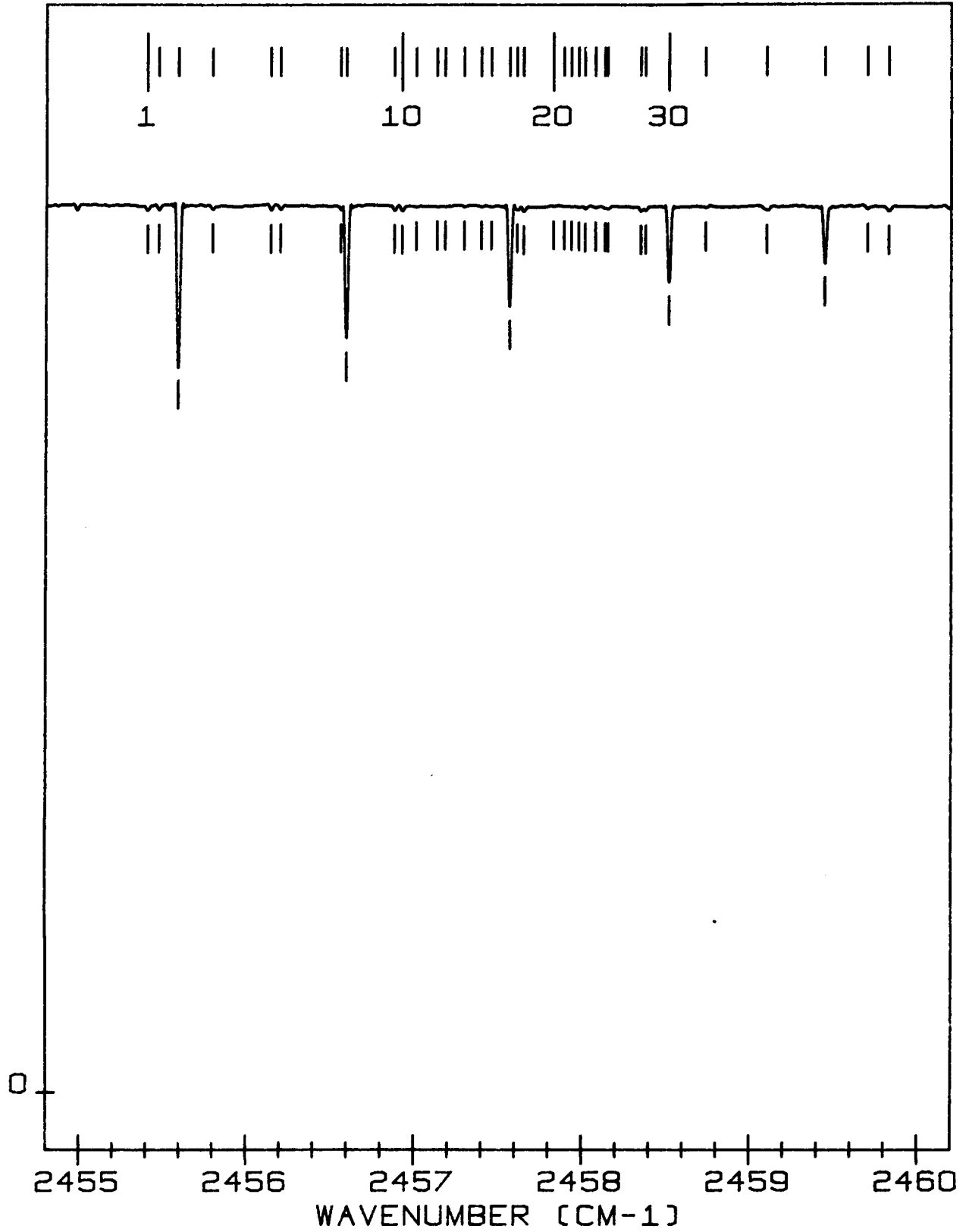


TABLE B 14

-1

Line Positions and Identifications (2460-2465 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2460.19069	2460.18837	20003-00001 628	P56
2	2460.35310	2460.35300	10011-10002 626	R50
3	2460.46663	2460.46728	11111-11102 626	R2
4	2460.56661	2460.55878	21103-01101 628	P6C
		2460.56791	21103-01101 628	P6D
5	2460.91089	2460.91217	20003-00001 628	P55
6	2461.23550	2461.23627	10011-10002 626	R52
7	2461.29741	2461.29565	21103-01101 628	P5C
		2461.30050	21103-01101 628	P5D
8	2461.34952		?	
9	2461.48157		?	
10	2461.63710	2461.63538	20003-00001 628	P54
11	2461.97204	2461.97179	11111-11102 626	R4
12	2462.03561	2462.03259	21103-01101 628	P4C
		2462.03424	21103-01101 628	P4D
13	2462.09704	2462.09727	10011-10002 626	R54
14	2462.35999	2462.35802	20003-00001 628	P53
15	2462.70580	2462.70497	11111-11102 626	R5
16	2462.77072	2462.76960	21103-01101 628	P3C
		2462.76911	21103-01101 628	P3D
17	2462.93648	2462.93641	10011-10002 626	R56
18	2463.08087	2463.08016	20003-00001 628	P52
19	2463.44738	2463.44863	11111-11102 626	R6
20	2463.50556	2463.50668	21103-01101 628	P2C
		2463.50514	21103-01101 628	P2D
21	2463.75439	2463.75412	10011-10002 626	R58
22	2463.80064	2463.80183	20003-00001 628	P51
23	2464.16698	2464.16648	11111-11102 626	R7
24	2464.52260	2464.52309	20003-00001 628	P50
25	2464.55175	2464.55086	10011-10002 626	R60
26	2464.89775	2464.89782	11111-11102 626	R8
27	2464.97668		21103-01101 628	Q1C
			21103-01101 628	Q1D

FRAME B14

9.857 Torr 384 meters

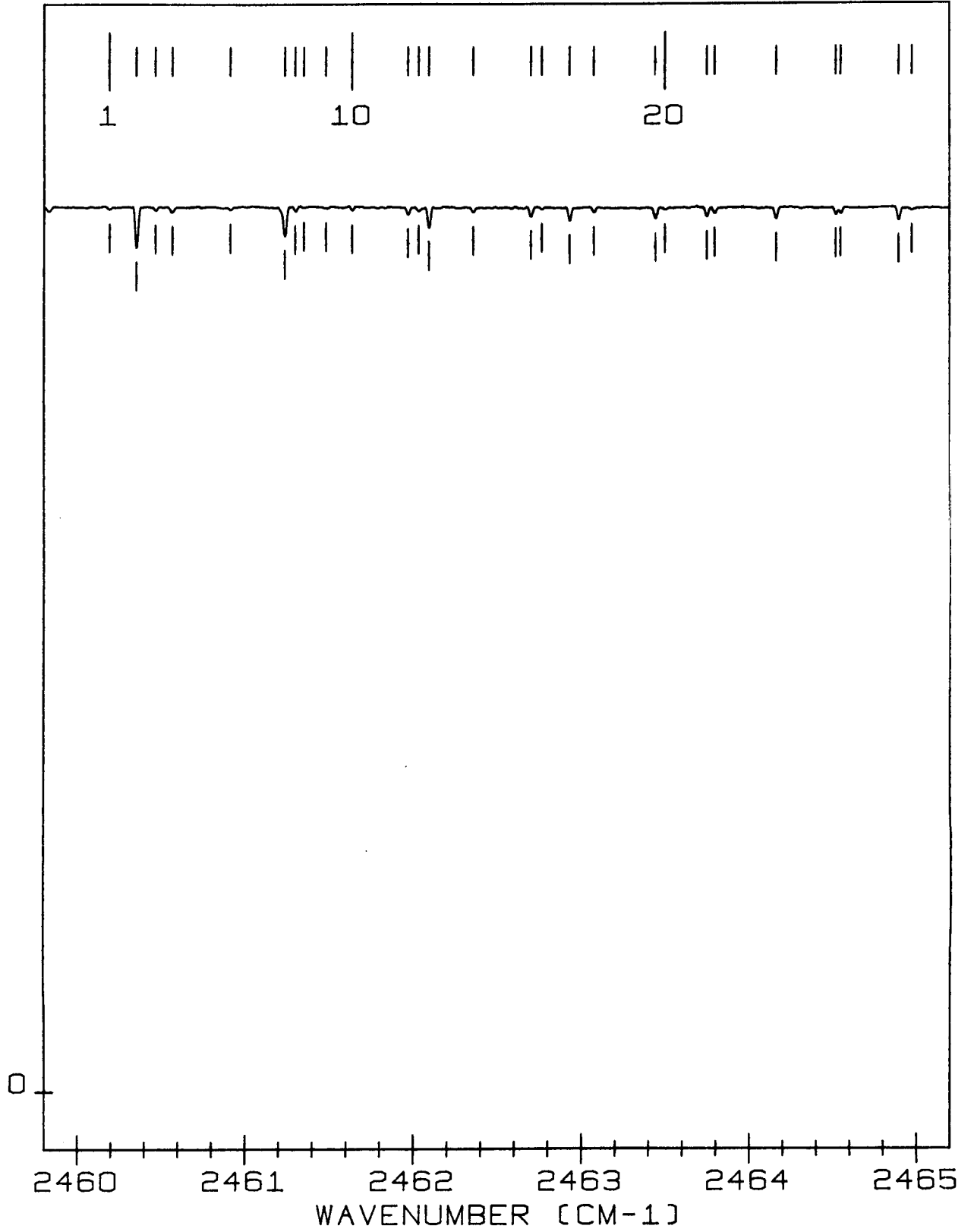




TABLE B 15

-1

Line Positions and Identifications (2465-2470 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2465.24406	2465.24397	20003-00001 628 P49
2	2465.28177		?
3	2465.32763	2465.32709	10011-10002 626 R62
4	2465.60088	2465.60092	11111-11102 626 R9
5	2465.96445	2465.96451	20003-00001 628 P48
6	2466.08295	2466.08330	10011-10002 626 R64
7	2466.31983	2466.31940	11111-11102 626 R10
8	2466.46119	2466.45561	21103-01101 628 R1C
		2466.46062	21103-01101 628 R1D
9	2466.68503	2466.68477	20003-00001 628 P47
10	2467.00908	2467.00831	11111-11102 626 R11
11	2467.20029	2467.19299	21103-01101 628 R2C
		2467.20232	21103-01101 628 R2D
12	2467.40464	2467.40477	20003-00001 628 P46
13	2467.71374	2467.71339	11111-11102 626 R12
14	2467.94121	2467.93041	21103-01101 628 R3C
		2467.94515	21103-01101 628 R3D
15	2468.12523	2468.12456	20003-00001 628 P45
16	2468.38827	2468.38868	11111-11102 626 R13
17	2468.67677	2468.66787	21103-01101 628 R4C
		2468.68910	21103-01101 628 R4D
18	2468.84403	2468.84418	20003-00001 628 P44
19	2469.08019	2469.07987	11111-11102 626 R14
20	2469.40501	2469.40537	21103-01101 628 R5C
21	2469.43408	2469.43415	21103-01101 628 R5D
22	2469.56381	2469.56367	20003-00001 628 P43
23	2469.74211	2469.74207	11111-11102 626 R15

FRAME B15

9.857 Torr 384 meters

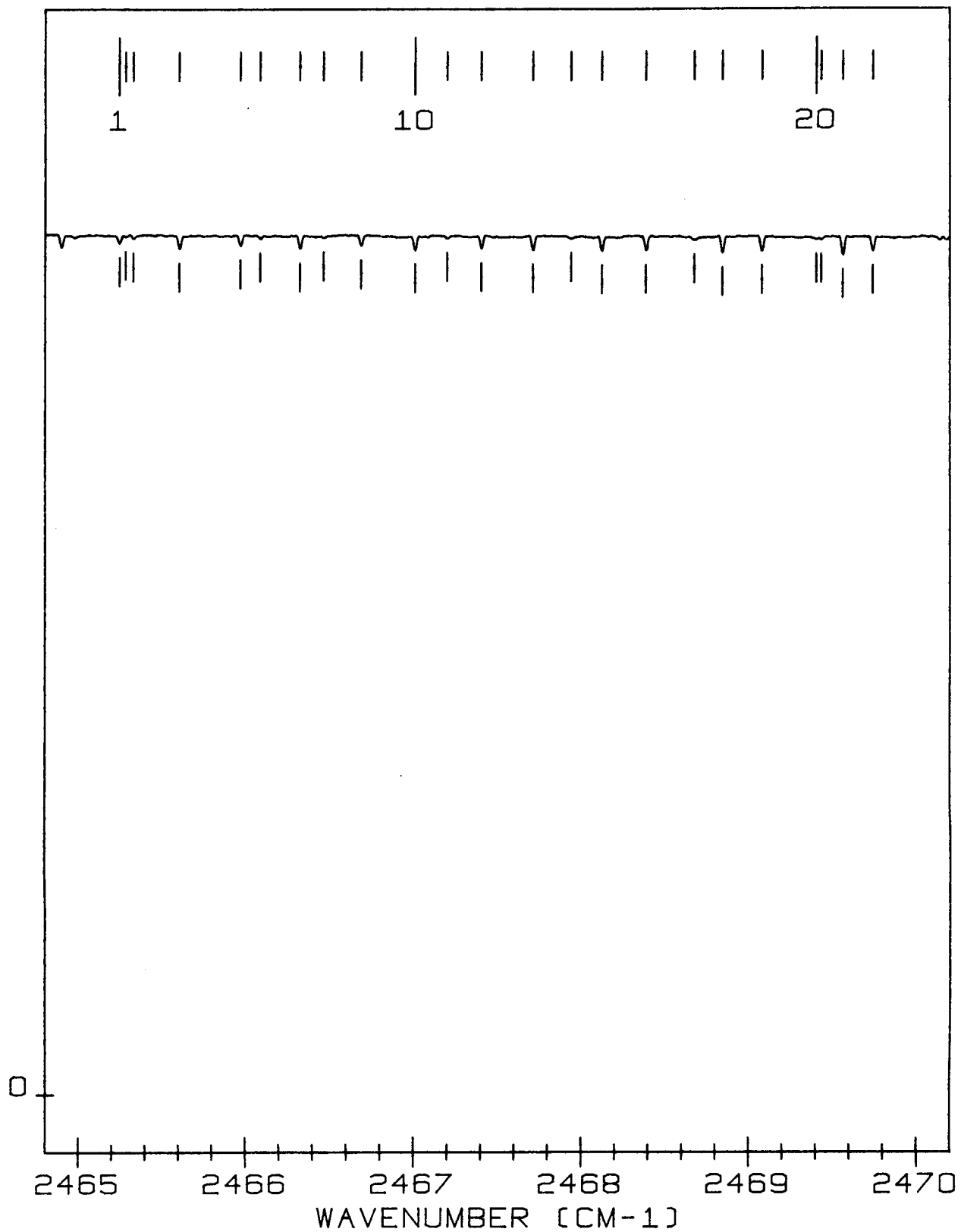


TABLE B 16

-1

Line Positions and Identifications (2470-2475 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2470.14147	2470.14291	21103-01101 628	R6C
2	2470.18202	2470.18032	21103-01101 628	R6D
3	2470.28278	2470.28305	20003-00001 628	P42
4	2470.41904	2470.41889	11111-11102 626	R16
5	2470.87998	2470.88047	21103-01101 628	R7C
6	2470.92778	2470.92757	21103-01101 628	R7D
7	2471.00229	2471.00237	20003-00001 628	P41
8	2471.06849	2471.06853	11111-11102 626	R17
9	2471.61882	2471.61804	21103-01101 628	R8C
10	2471.67501	2471.67591	21103-01101 628	R8D
11	2471.72434	2471.72167	20003-00001 628	P40
		2471.73056	11111-11102 626	R18
12	2472.36591	2472.36810	11111-11102 626	R19
		2472.35562	21103-01101 628	R9C
13	2472.43984	2472.44098	20003-00001 628	P39
		2472.42533	21103-01101 628	R9D
14	2473.01511	2473.01496	11111-11102 626	R20
15	2473.09342	2473.09320	21103-01101 628	R10C
16	2473.15945	2473.16032	20003-00001 628	P38
		2473.17582	21103-01101 628	R10D
17	2473.64037	2473.64087	11111-11102 626	R21
18	2473.83187	2473.83078	21103-01101 628	R11C
19	2473.87965	2473.87974	20003-00001 628	P37
20	2473.92774	2473.92736	21103-01101 628	R11D
21	2474.27237	2474.27221	11111-11102 626	R22
22	2474.56624	2474.56833	21103-01101 628	R12C
23	2474.59915	2474.59926	20003-00001 628	P36
24	2474.68070	2474.67993	21103-01101 628	R12D
25	2474.88698	2474.88689	11111-11102 626	R23

FRAME B16

9.857 Torr 384 meters

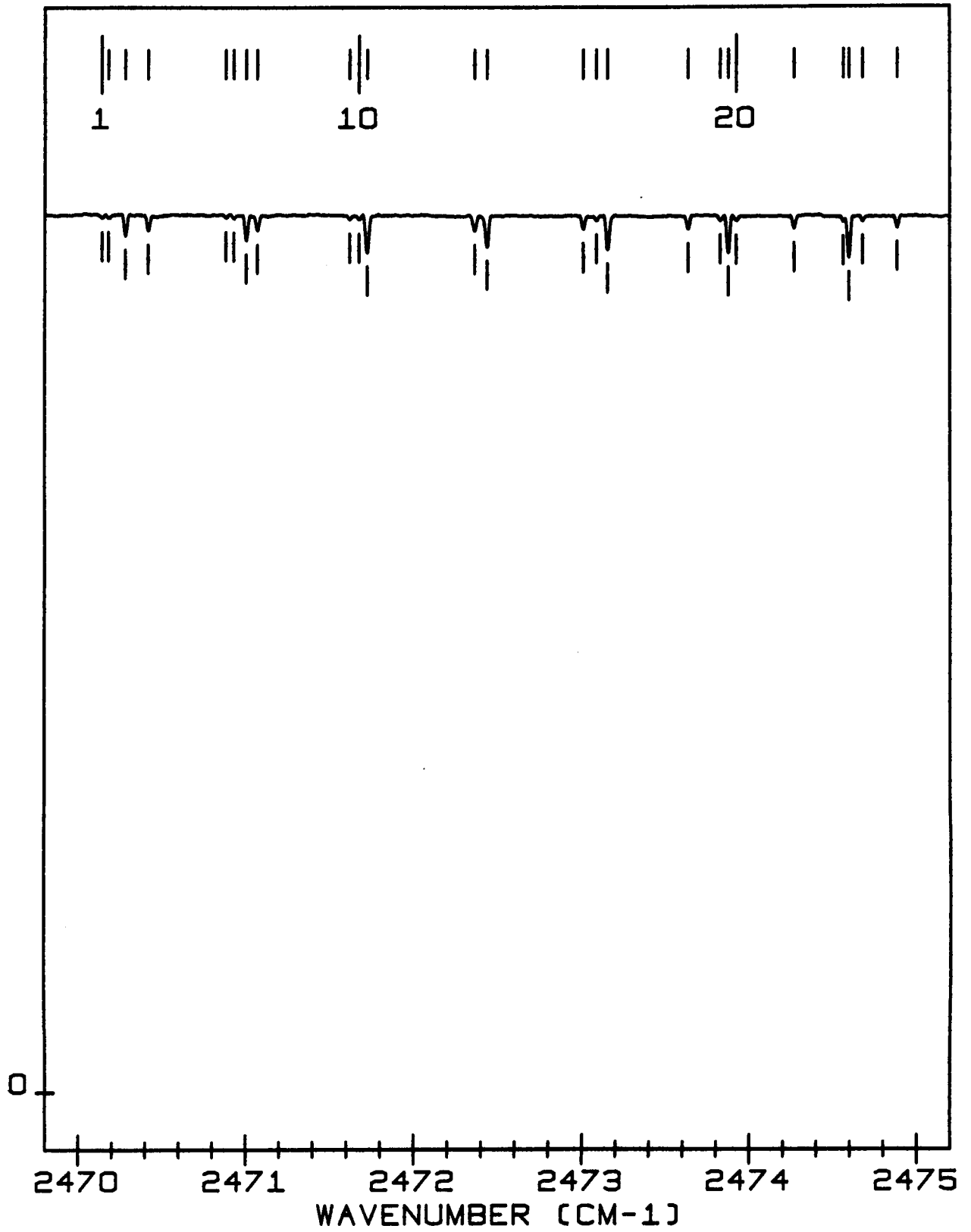


TABLE B 17

-1

Line Positions and Identifications (2475-2480 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2475.31776	2475.31892	20003-00001 628	P35
		2475.30586	21103-01101 628	R13C
2	2475.43431	2475.43354	21103-01101 628	R13D
3	2475.50230	2475.50244	11111-11102 626	R24
4	2476.03911	2476.03874	20003-00001 628	P34
		2476.04335	21103-01101 628	R14C
5	2476.10625	2476.10627	11111-11102 626	R25
6	2476.18618	2476.18817	21103-01101 628	R14D
7	2476.70601	2476.70579	11111-11102 626	R26
8	2476.75913	2476.75875	20003-00001 628	P33
		2476.78078	21103-01101 628	R15C
9	2476.94304	2476.94379	21103-01101 628	R15D
10	2477.29851	2477.29910	11111-11102 626	R27
11	2477.47900	2477.47899	20003-00001 628	P32
12	2477.51658	2477.51816	21103-01101 628	R16C
13	2477.70161	2477.70039	21103-01101 628	R16D
14	2477.88241	2477.88242	11111-11102 626	R28
15	2478.19946	2478.19947	20003-00001 628	P31
16	2478.25511	2478.25546	21103-01101 628	R17C
17	2478.46281	2478.45797	21103-01101 628	R17D
		2478.46547	11111-11102 626	R29
18	2478.92031	2478.92022	20003-00001 628	P30
19	2478.99331	2478.99267	21103-01101 628	R18C
20	2479.03212	2479.03249	11111-11102 626	R30
21	2479.21817	2479.21649	21103-01101 628	R18D
22	2479.60587	2479.60552	11111-11102 626	R31
23	2479.64129	2479.64127	20003-00001 628	P29
24	2479.72933	2479.72978	21103-01101 628	R19C
25	2479.97574	2479.97595	21103-01101 628	R19D

FRAME B17

9.857 Torr 384 meters

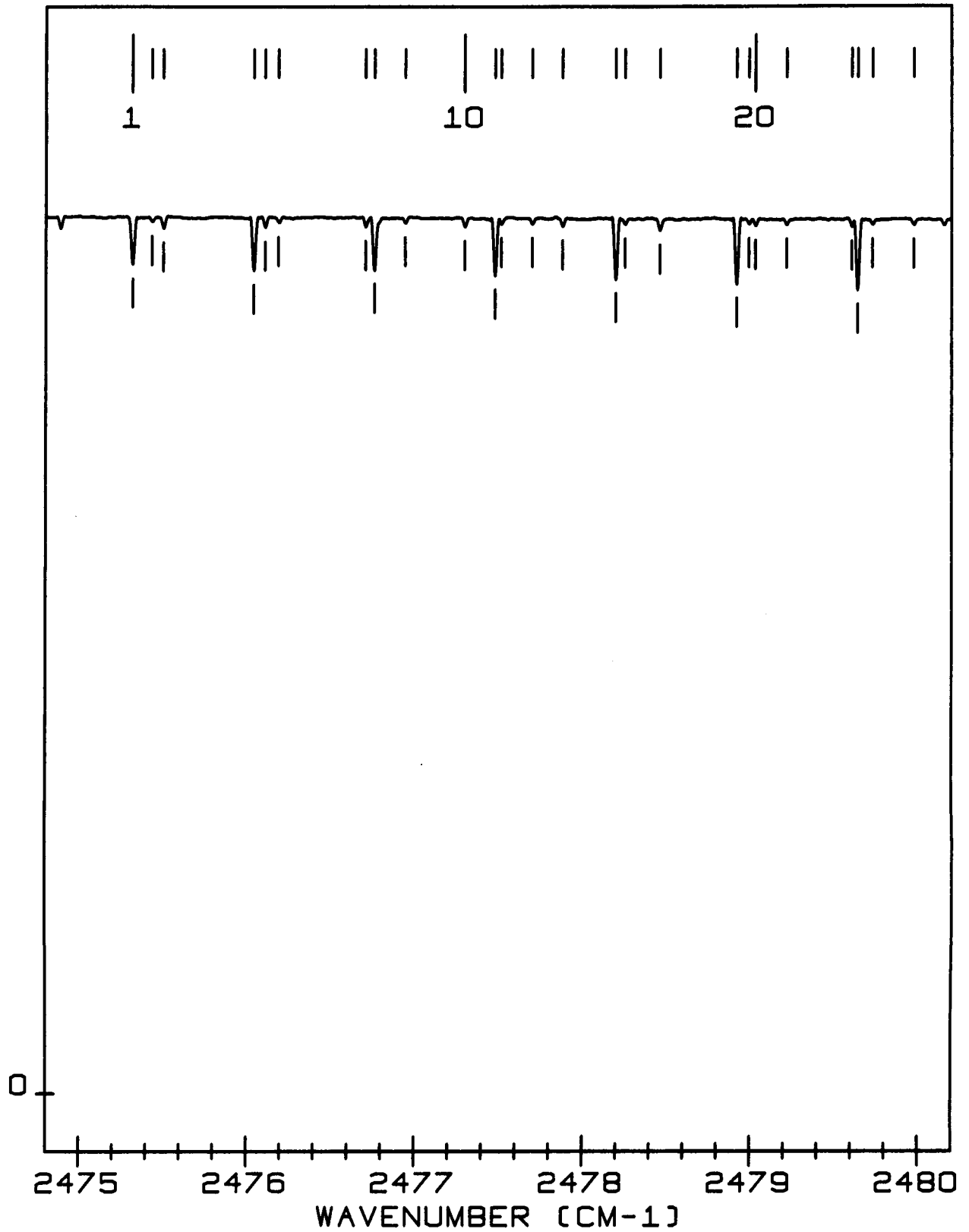


TABLE B 18

-1

Line Positions and Identifications (2480-2485 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2480.15618	2480.15618	11111-11102 626	R32
2	2480.36269	2480.36265	20003-00001 628	P28
3	2480.46581	2480.46677	21103-01101 628	R20C
4	2480.72819	2480.71936	11111-11102 626	R33
		2480.73633	21103-01101 628	R20D
5	2481.08445	2481.08437	20003-00001 628	P27
6	2481.20332	2481.20364	21103-01101 628	R21C
7	2481.25329	2481.25370	11111-11102 626	R34
8	2481.49691	2481.49759	21103-01101 628	R21D
9	2481.80660	2481.80645	20003-00001 628	P26
		2481.80713	11111-11102 626	R35
10	2481.94025	2481.94036	21103-01101 628	R22C
11	2482.25988	2482.25974	21103-01101 628	R22D
12	2482.32677	2482.32526	11111-11102 626	R36
13	2482.52912	2482.52893	20003-00001 628	P25
14	2482.67725	2482.67691	21103-01101 628	R23C
15	2482.72114		?	
16	2482.86860	2482.86898	11111-11102 626	R37
17	2483.02266	2483.02273	21103-01101 628	R23D
18	2483.25187	2483.25181	20003-00001 628	P24
19	2483.37122	2483.37108	11111-11102 626	R38
20	2483.41444	2483.41329	21103-01101 628	R24C
21	2483.78726	2483.78656	21103-01101 628	R24D
22	2483.90474	2483.90505	11111-11102 626	R39
23	2483.97519	2483.97512	20003-00001 628	P23
24	2484.14982	2484.14948	21103-01101 628	R25C
25	2484.38864	2484.39140	11111-11102 626	R40
26	2484.55127	2484.55120	21103-01101 628	R25D
27	2484.69898	2484.69888	20003-00001 628	P22
28	2484.88566	2484.88545	21103-01101 628	R26C
29	2484.91592	2484.91553	11111-11102 626	R41

FRAME B18

9.857 Torr 384 meters

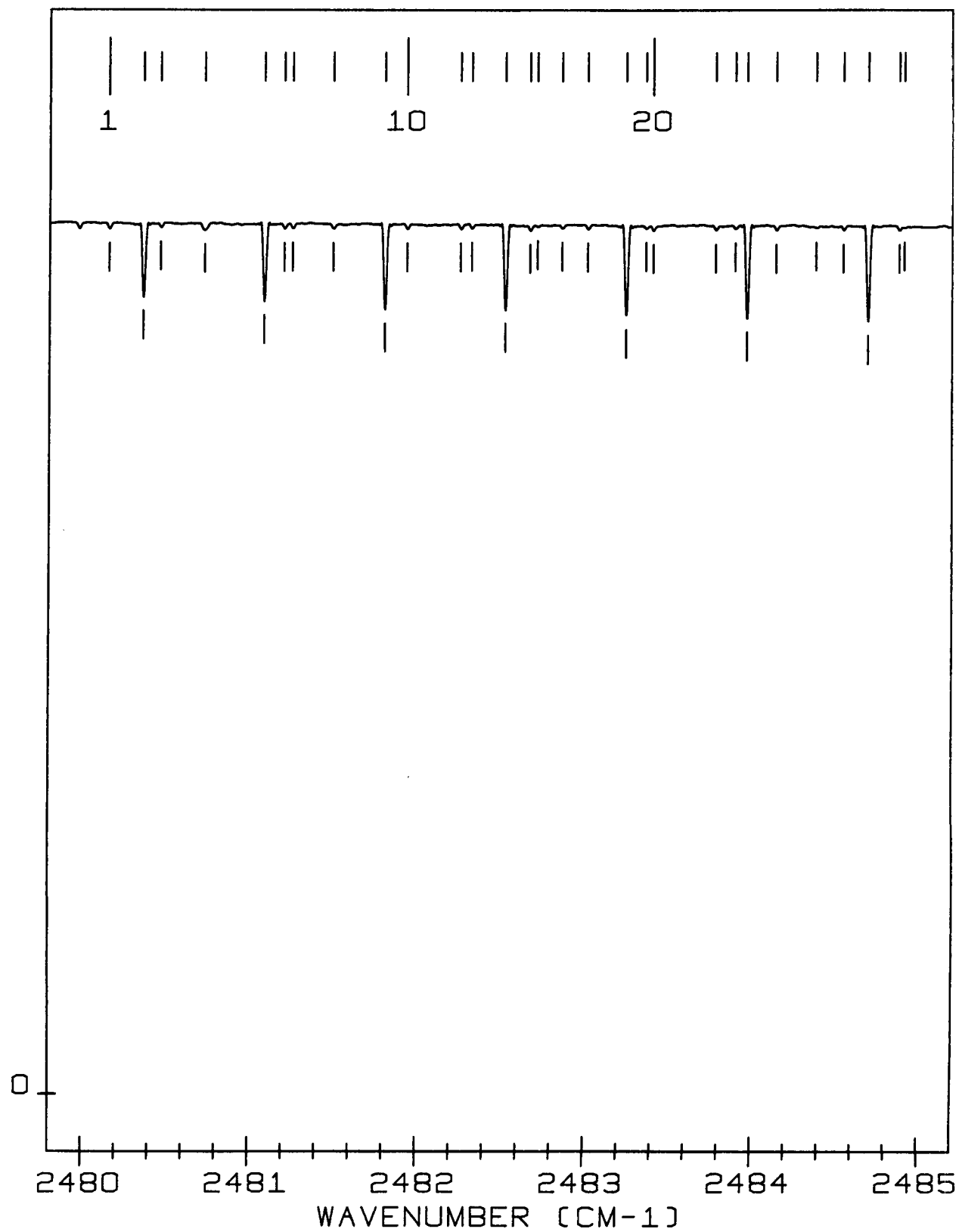




TABLE B 19

-1

Line Positions and Identifications (2485-2490 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2485.31451	2485.31662	21103-01101 628 R26D
2	2485.42320	2485.42310	20003-00001 628 P21
3	2485.62119	2485.62119	21103-01101 628 R27C
4	2485.90304	2485.90057	11111-11102 626 R43
5	2486.08304	2486.08281	21103-01101 628 R27D
6	2486.14789	2486.14780	20003-00001 628 P20
7	2486.35698	2486.35669	21103-01101 628 R28C
8	2486.87313	2486.87300	20003-00001 628 P19
9	2487.09129	2487.09191	21103-01101 628 R29C
10	2487.59889	2487.59871	20003-00001 628 P18
11	2487.82707	2487.82685	21103-01101 628 R30C
12	2488.32503	2488.32494	20003-00001 628 P17
13	2488.38397	2488.38568	21103-01101 628 R30D
14	2488.55954	2488.56148	21103-01101 628 R31C
15	2489.05169	2489.05171	20003-00001 628 P16
16	2489.15418	2489.15465	21103-01101 628 R31D
17	2489.29626	2489.29578	21103-01101 628 R32C
18	2489.77914	2489.77903	20003-00001 628 P15
19	2489.92135	2489.92425	21103-01101 628 R32D

FRAME B19

9.857 Torr 384 meters

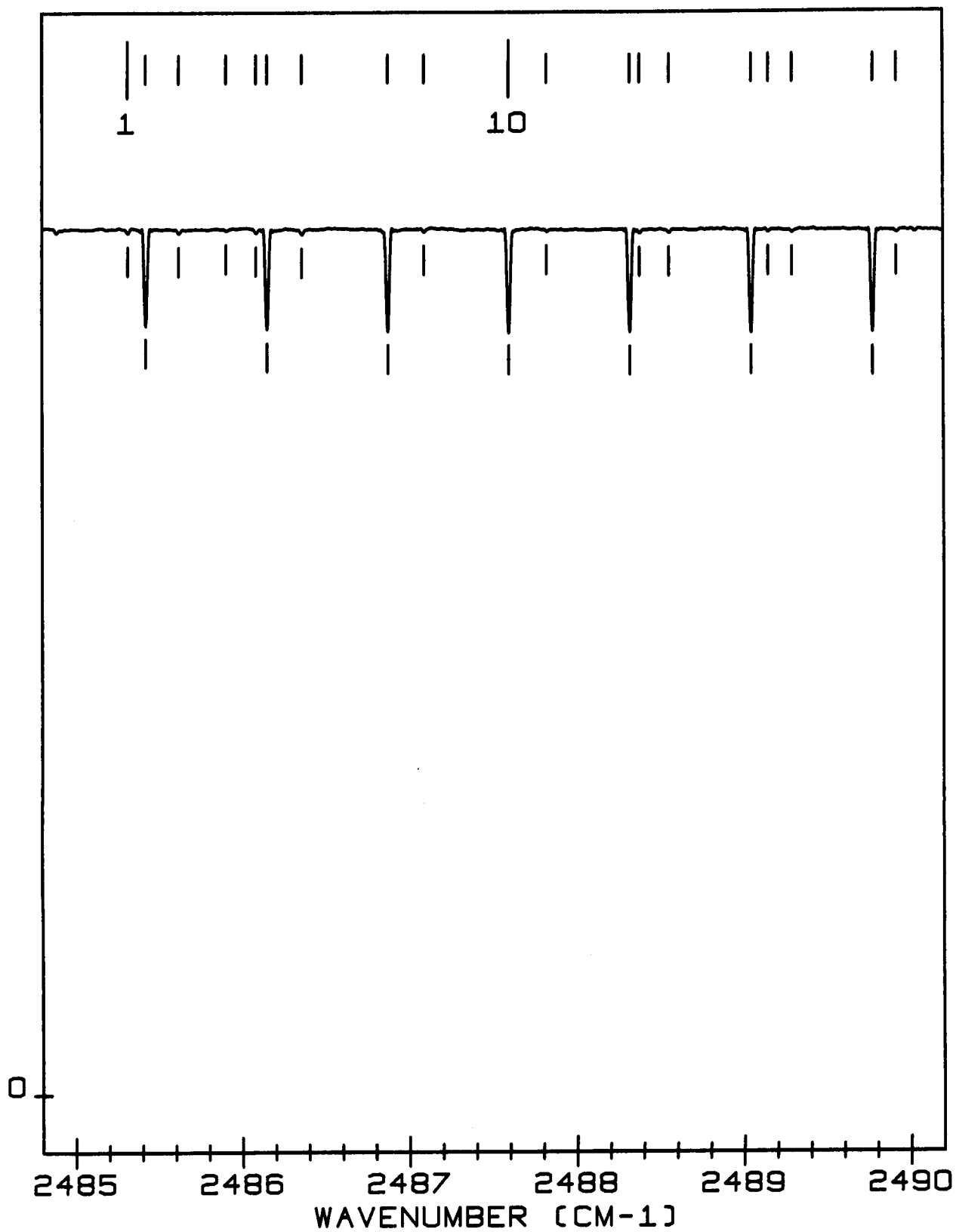


TABLE B 20

-1

Line Positions and Identifications (2490-2495 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2490.02988	2490.02973	21103-01101 628	R33C
2	2490.50691	2490.50691	20003-00001 628	P14
3	2490.69461	2490.69445	21103-01101 628	R33D
4	2490.76232	2490.76331	21103-01101 628	R34C
5	2491.23531	2491.23537	20003-00001 628	P13
6	2491.46235	2491.46522	21103-01101 628	R34D
7	2491.49581	2491.49650	21103-01101 628	R35C
8	2491.96435	2491.96440	20003-00001 628	P12
9	2492.23403	2492.22926	21103-01101 628	R36C
		2492.23653	21103-01101 628	R35D
10	2492.69403	2492.69402	20003-00001 628	P11
11	2492.95947	2492.96159	21103-01101 628	R37C
12	2493.00590	2493.00835	21103-01101 628	R36D
13	2493.42409	2493.42423	20003-00001 628	P10
14	2493.69357	2493.69345	21103-01101 628	R38C
15	2493.77920	2493.78065	21103-01101 628	R37D
16	2494.15498	2494.15505	20003-00001 628	P9
17	2494.42588	2494.42482	21103-01101 628	R39C
18	2494.55470	2494.55339	21103-01101 628	R38D
19	2494.81211	2494.80995	20003-00001 627	P40
20	2494.88637	2494.88647	20003-00001 628	P8

## FRAME B20

9.857 Torr 384 meters

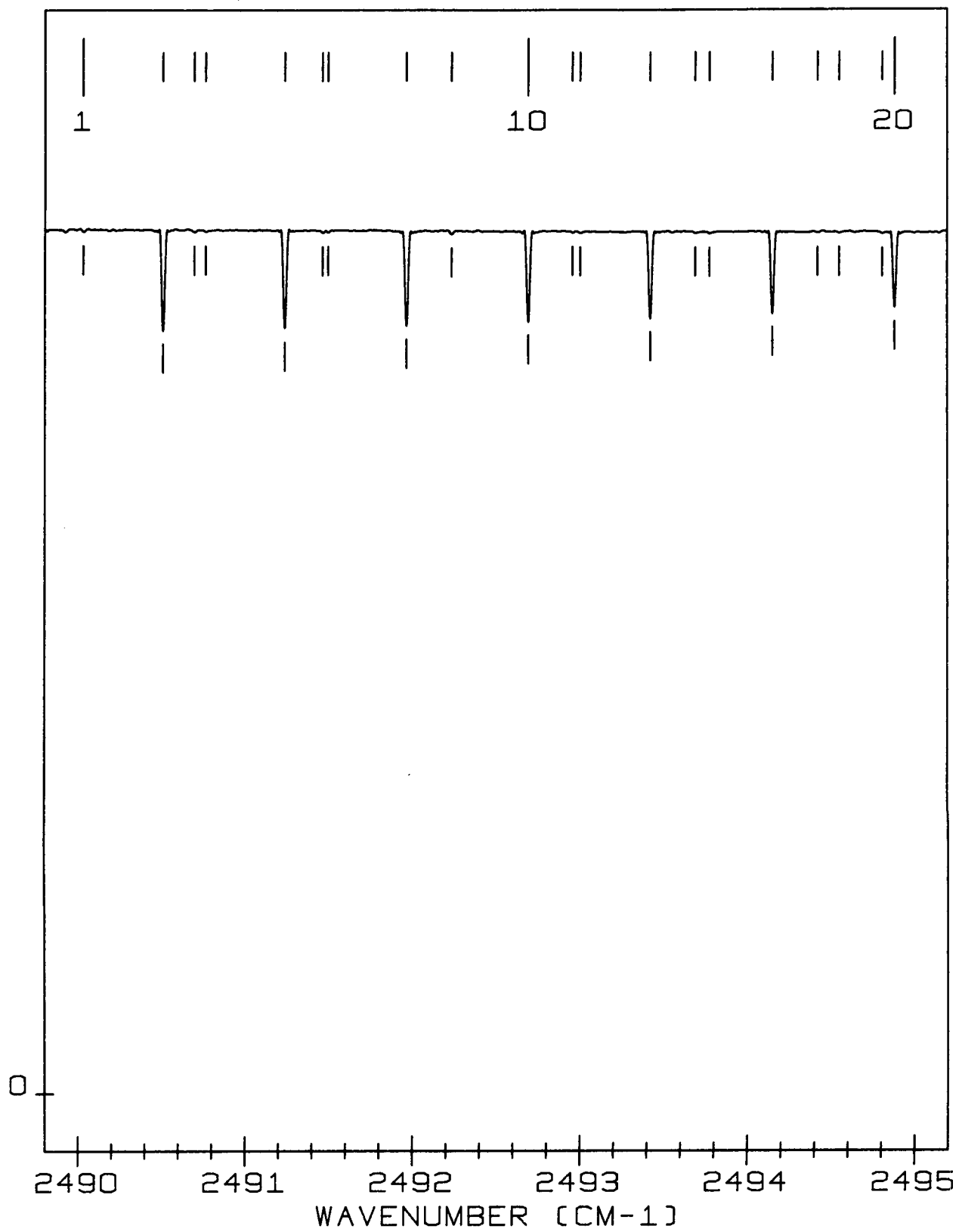


TABLE B 21

-1

Line Positions and Identifications (2495-2500 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2495.15247	2495.15567	21103-01101 628	R40C
2	2495.32397	2495.32653	21103-01101 628	R39D
3	2495.61841	2495.61851	20003-00001 628	P7
4	2496.09832	2496.10005	21103-01101 628	R40D
5	2496.35095	2496.35116	20003-00001 628	P6
6	2496.61667	2496.61572	21103-01101 628	R42C
7	2496.96197	2496.96844	20003-00001 627	P37
8	2497.08438	2497.08442	20003-00001 628	P5
9	2497.34730	2497.34487	21103-01101 628	R43C
10	2497.64889	2497.64808	21103-01101 628	R42D
11	2497.68894	2497.68910	20003-00001 627	P36
12	2497.81827	2497.81831	20003-00001 628	P4
13	2498.07289	2498.07339	21103-01101 628	R44C
14	2498.41361	2498.41040	20003-00001 627	P35
15	2498.55260	2498.55282	20003-00001 628	P3
16	2499.13561	2499.13238	20003-00001 627	P34
17	2499.28781	2499.28795	20003-00001 628	P2
18	2499.85413	2499.85505	20003-00001 627	P33

FRAME B21

9.857 Torr 384 meters

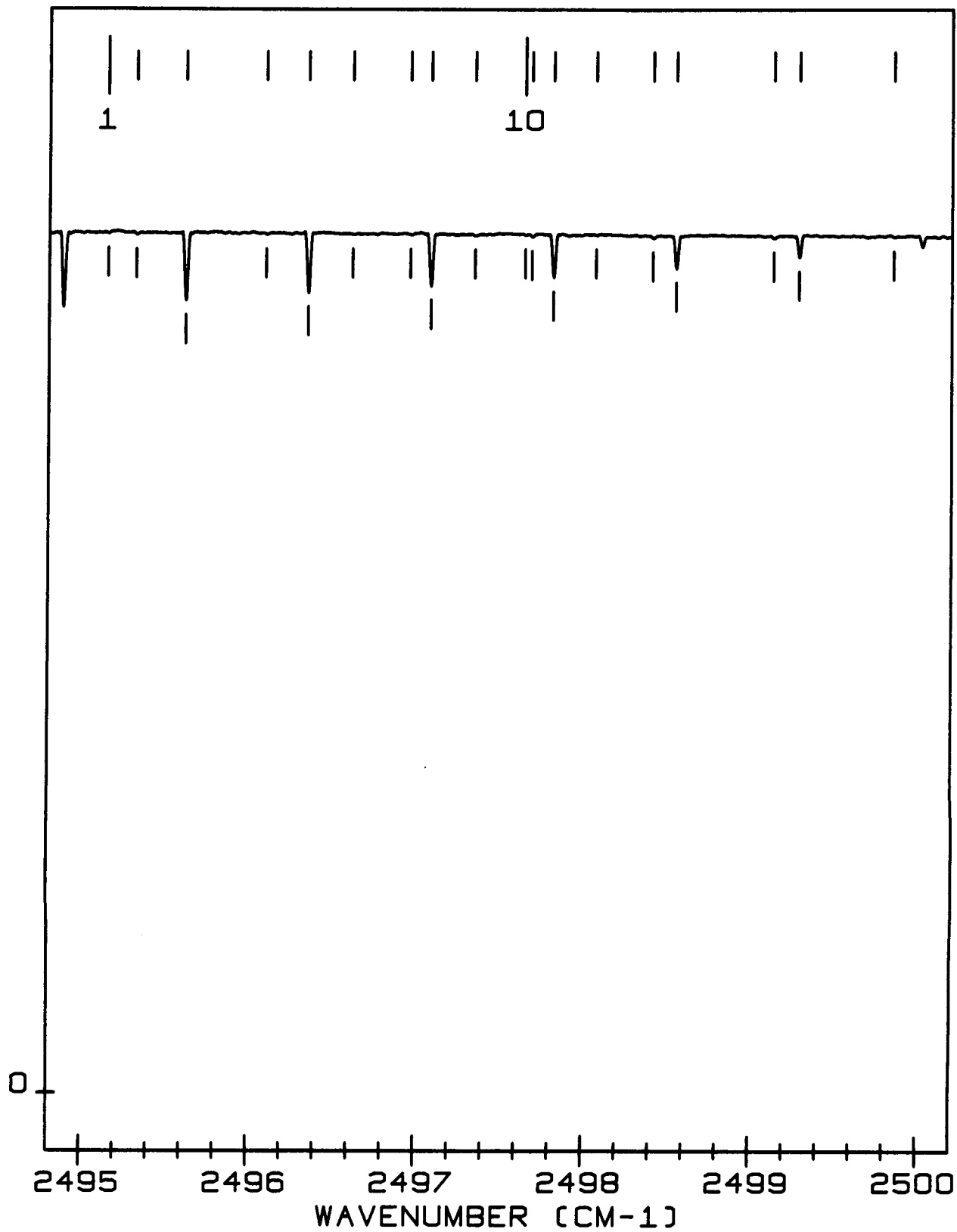


TABLE B 22

-1

Line Positions and Identifications (2500-2505 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2500.02379	2500.02370	20003-00001 628	P1
2	2500.57890	2500.57846	20003-00001 627	P32
3	2501.30315	2501.30264	20003-00001 627	P31
4	2501.49681	2501.49705	20003-00001 628	R0
5	2502.02852	2502.02761	20003-00001 627	P30
6	2502.23451	2502.23465	20003-00001 628	R1
7	2502.75301	2502.75341	20003-00001 627	P29
8	2502.97270	2502.97285	20003-00001 628	R2
9	2503.47789	2503.48005	20003-00001 627	P28
10	2503.71156	2503.71165	20003-00001 628	R3
11	2504.20723	2504.20757	20003-00001 627	P27
12	2504.45094	2504.45104	20003-00001 628	R4
13	2504.93519	2504.93599	20003-00001 627	P26

FRAME B22

9.857 Torr 384 meters

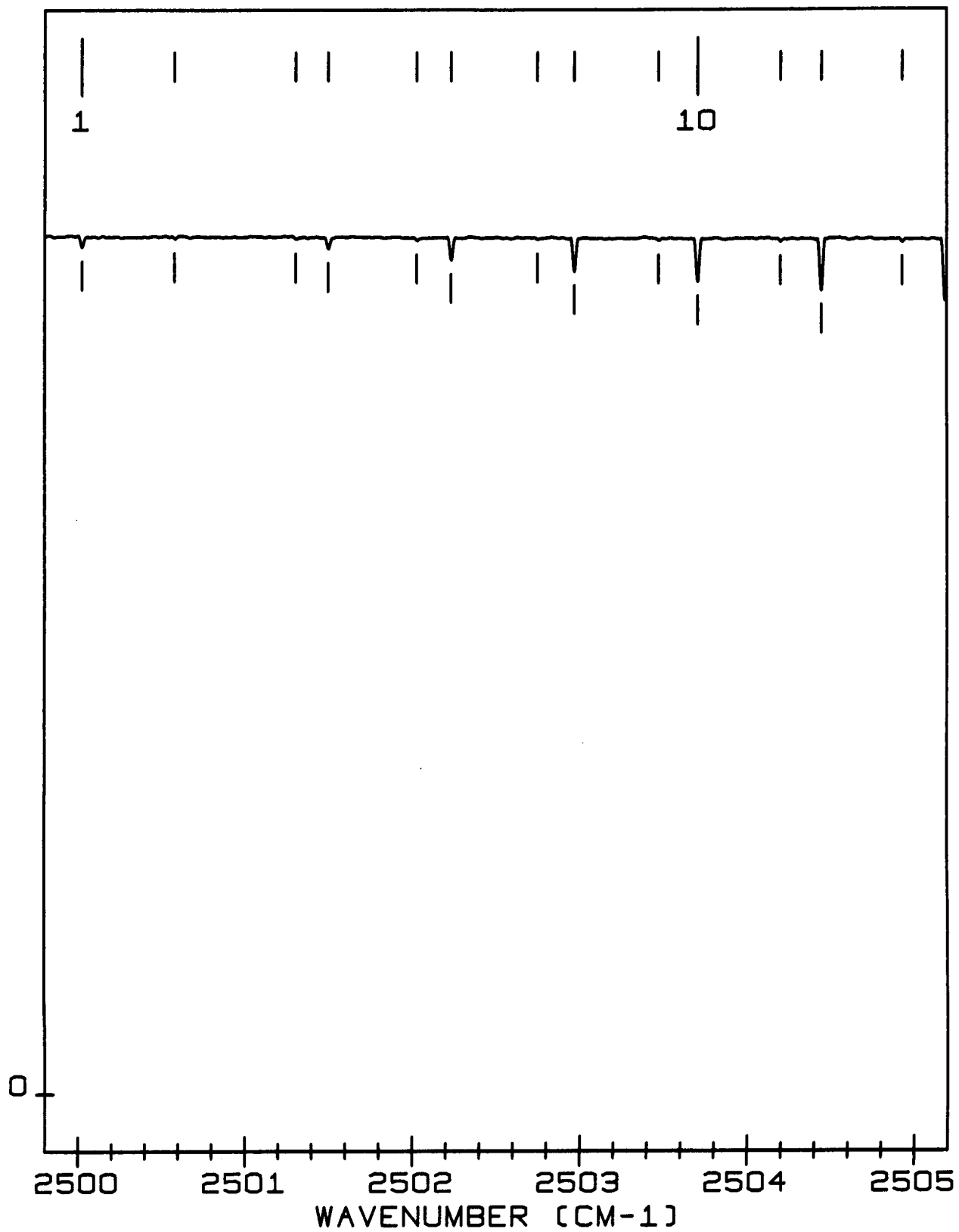




TABLE B 23

-1

Line Positions and Identifications (2505-2510 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2505.19094	2505.19102	20003-00001 628	R5
2	2505.66599	2505.66534	20003-00001 627	P25
3	2505.93154	2505.93158	20003-00001 628	R6
4	2506.39556	2506.39563	20003-00001 627	P24
5	2506.67253	2506.67271	20003-00001 628	R7
6	2507.12715	2507.12689	20003-00001 627	P23
7	2507.41436	2507.41440	20003-00001 628	R8
8	2507.85849	2507.85914	20003-00001 627	P22
9	2508.15661	2508.15664	20003-00001 628	R9
10	2508.59240	2508.59240	20003-00001 627	P21
11	2508.65176		?	
12	2508.89937	2508.89941	20003-00001 628	R10
13	2509.32675	2509.32669	20003-00001 627	P20
14	2509.64271	2509.64271	20003-00001 628	R11

FRAME B23

9.857 Torr 384 meters

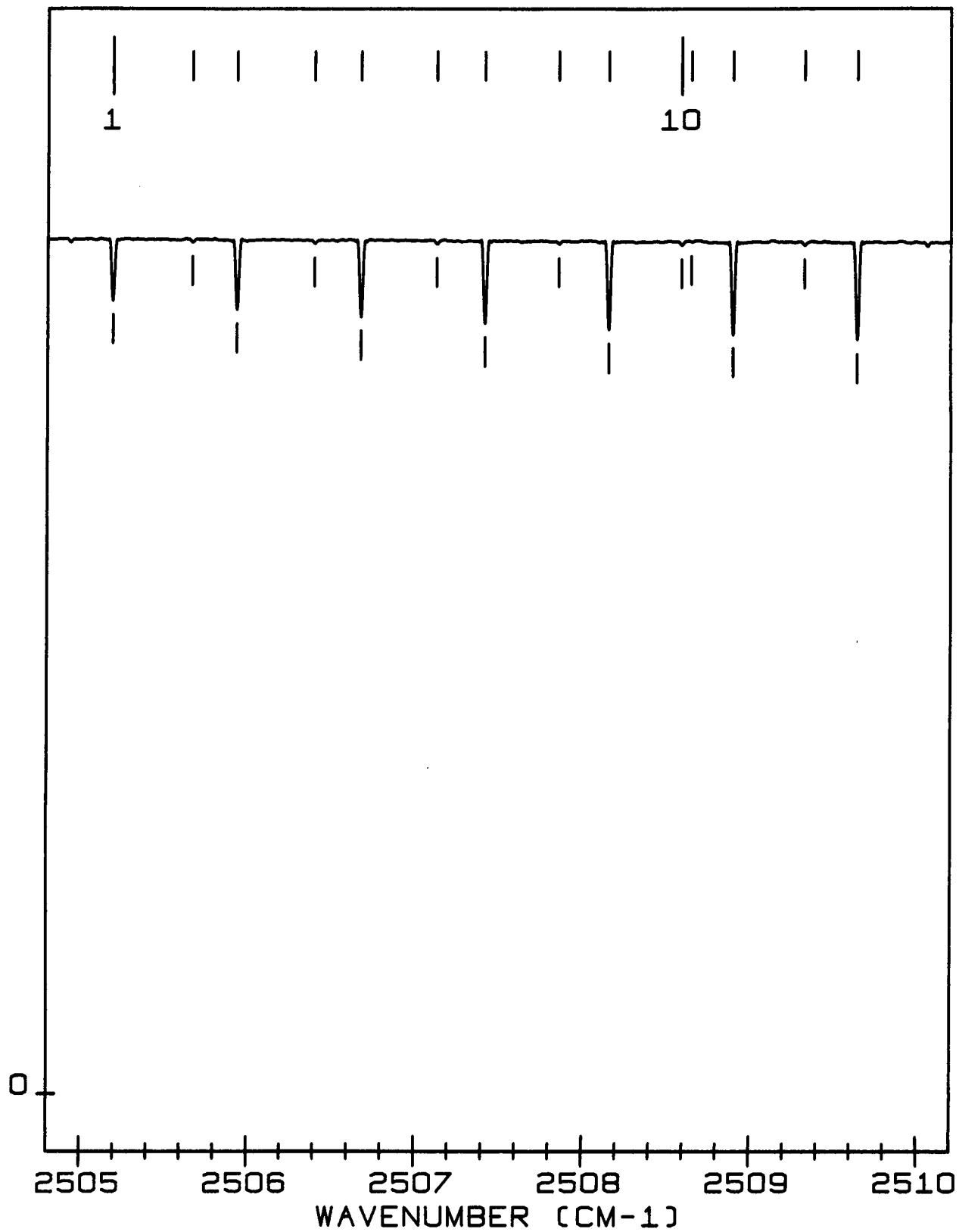


TABLE B 24

-1

Line Positions and Identifications (2510-2515 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2510.06099	2510.06203	20003-00001 627	P19
2	2510.38655	2510.38651	20003-00001 628	R12
3	2510.79733	2510.79842	20003-00001 627	P18
4	2511.13084	2511.13080	20003-00001 628	R13
5	2511.53433	2511.53590	20003-00001 627	P17
6	2511.87559	2511.87558	20003-00001 628	R14
7	2512.27443	2512.27447	20003-00001 627	P16
8	2512.62090	2512.62082	20003-00001 628	R15
9	2513.01295	2513.01414	20003-00001 627	P15
10	2513.36661	2513.36650	20003-00001 628	R16
11	2513.75583	2513.75494	20003-00001 627	P14
12	2514.11274	2514.11260	20003-00001 628	R17
13	2514.49737	2514.49686	20003-00001 627	P13
14	2514.85928	2514.85911	20003-00001 628	R18

FRAME B24

9.857 Torr 384 meters

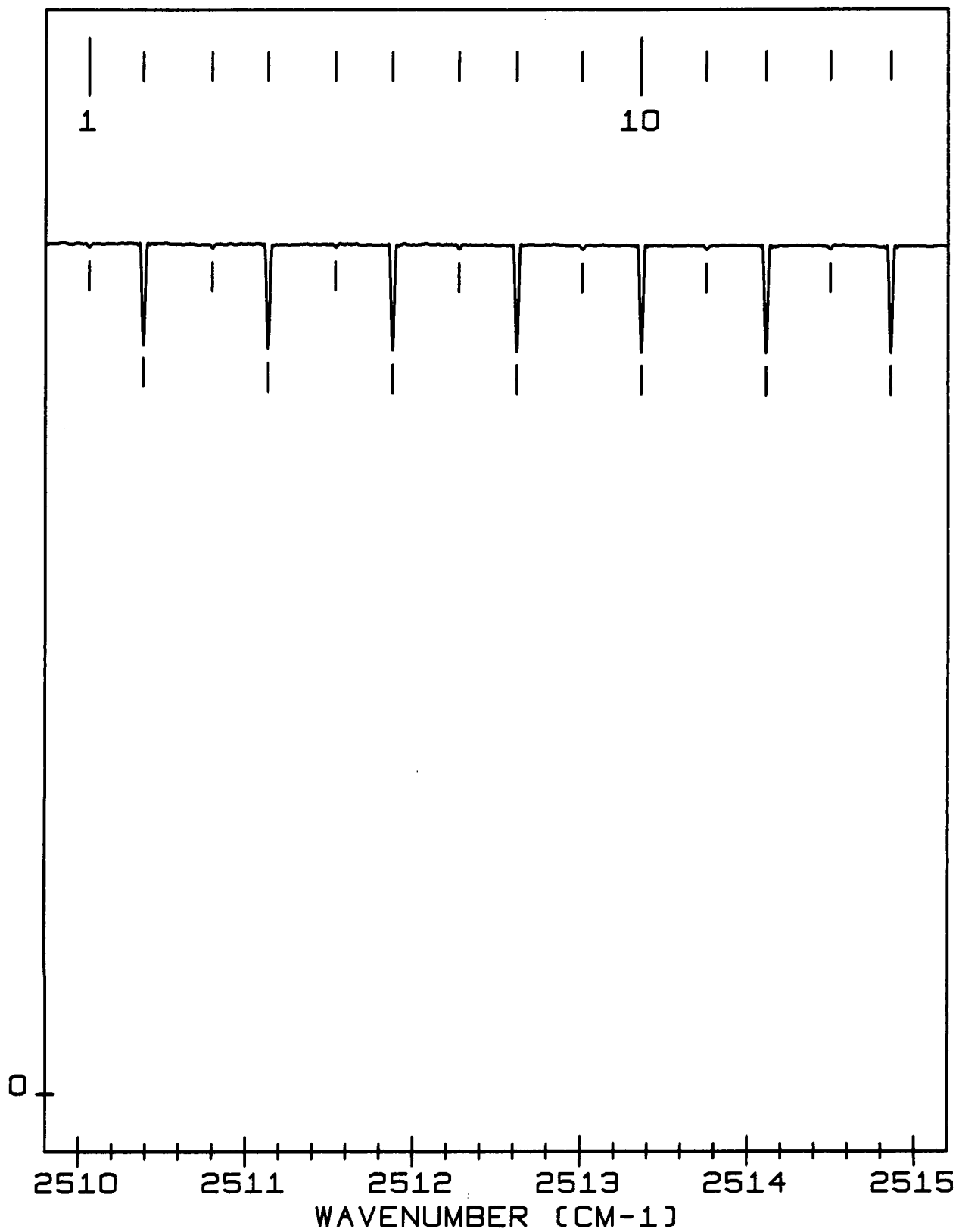


TABLE B 25

-1

Line Positions and Identifications (2515-2520 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2515.24120	2515.23993	20003-00001 627 P12
2	2515.60612	2515.60601	20003-00001 628 R19
3	2515.98402	2515.98414	20003-00001 627 P11
4	2516.35341	2516.35327	20003-00001 628 R20
5	2516.45133		?
6	2516.72933	2516.72952	20003-00001 627 P10
7	2517.10092	2517.10087	20003-00001 628 R21
8	2517.47622	2517.47606	20003-00001 627 P9
9	2517.84891	2517.84879	20003-00001 628 R22
10	2518.22377	2518.22377	20003-00001 627 P8
11	2518.59718	2518.59700	20003-00001 628 R23
12	2518.97435	2518.97266	20003-00001 627 P7
13	2519.34562	2519.34548	20003-00001 628 R24
14	2519.72224	2519.72274	20003-00001 627 P6

FRAME B25

9.857 Torr 384 meters

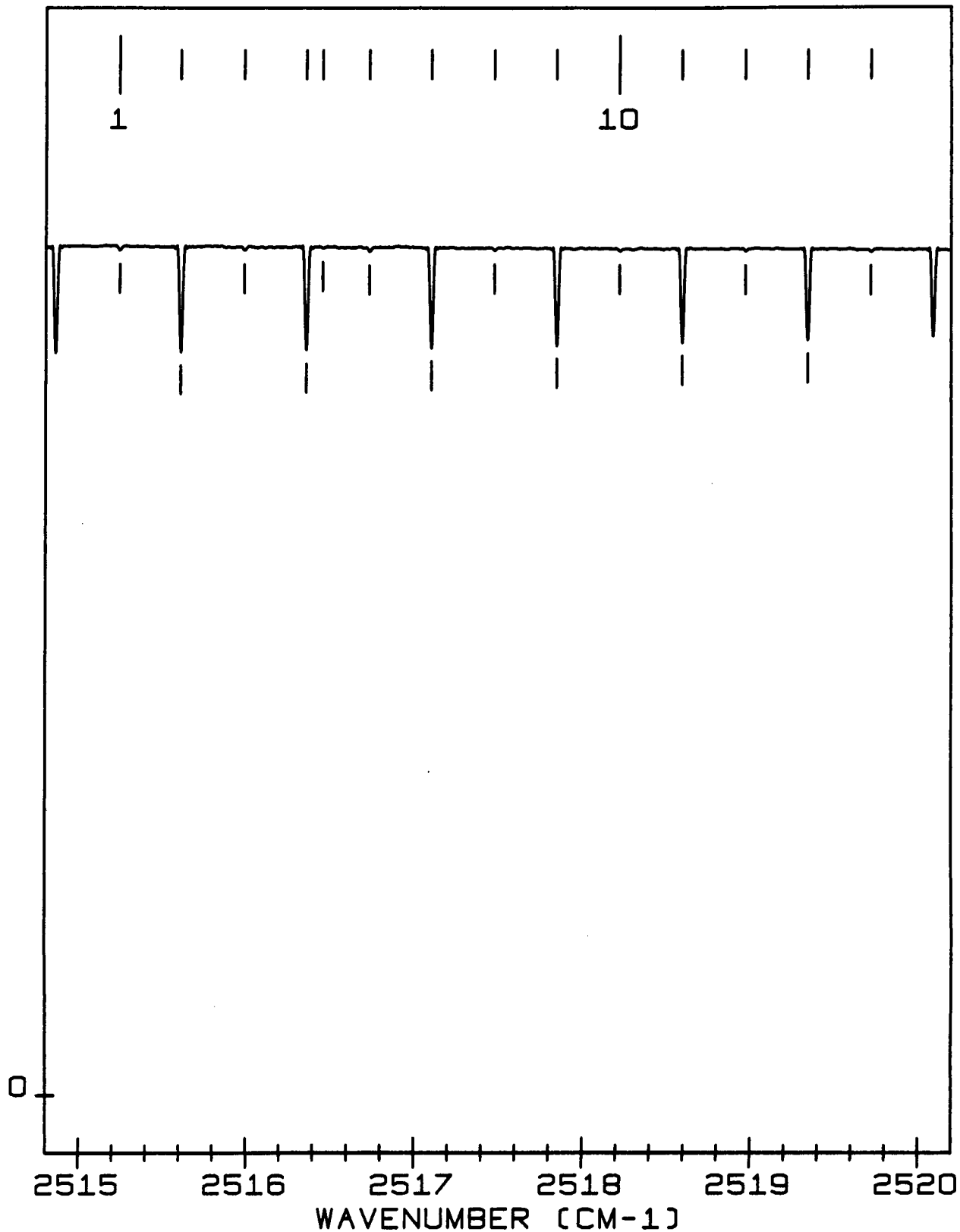


TABLE B 26

-1

Line Positions and Identifications (2520-2525 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2520.09439	2520.09421	20003-00001 628	R25
2	2520.47471	2520.47400	20003-00001 627	P5
3	2520.84319	2520.84315	20003-00001 628	R26
4	2521.22647	2521.22645	20003-00001 627	P4
5	2521.59241	2521.59228	20003-00001 628	R27
6	2521.98280	2521.98008	20003-00001 627	P3
7	2522.34161	2522.34157	20003-00001 628	R28
8	2523.09092	2523.09099	20003-00001 628	R29
9	2523.84050	2523.84051	20003-00001 628	R30
10	2524.59004	2524.59010	20003-00001 628	R31

FRAME B26

9.857 Torr 384 meters

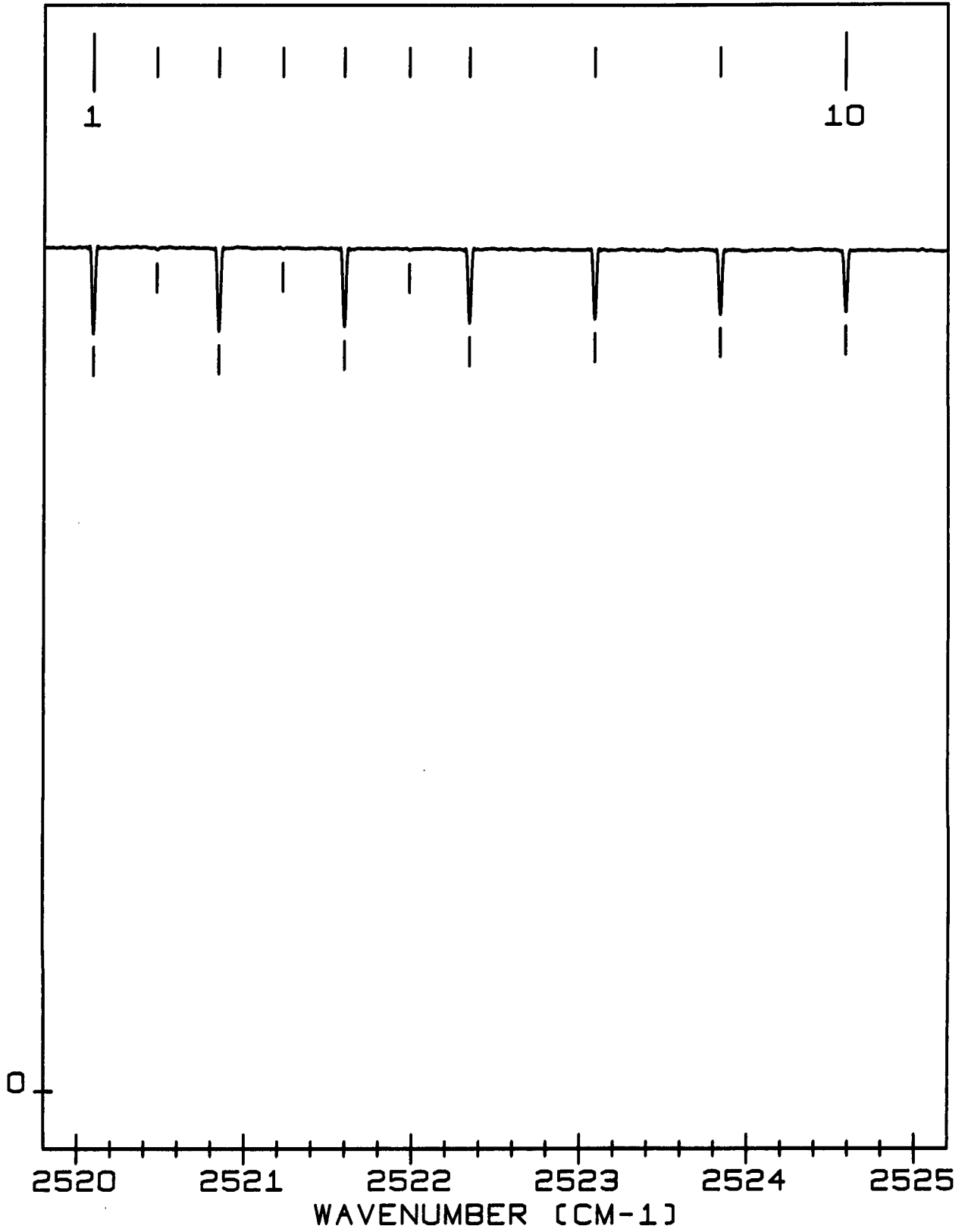




TABLE B 27

-1

Line Positions and Identifications (2525-2530 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2525.33970	2525.33972	20003-00001 628	R32
2	2526.08927	2526.08935	20003-00001 628	R33
3	2526.52928	2526.52681	20003-00001 627	R2
4	2526.83895	2526.83894	20003-00001 628	R34
5	2527.28770	2527.28872	20003-00001 627	R3
6	2527.58828	2527.58847	20003-00001 628	R35
7	2528.04806	2528.05178	20003-00001 627	R4
8	2528.33772	2528.33789	20003-00001 628	R36
9	2528.81755	2528.81601	20003-00001 627	R5
10	2529.08688	2529.08718	20003-00001 628	R37
11	2529.58113	2529.58137	20003-00001 627	R6
12	2529.83605	2529.83628	20003-00001 628	R38

FRAME B27

9.857 Torr 384 meters

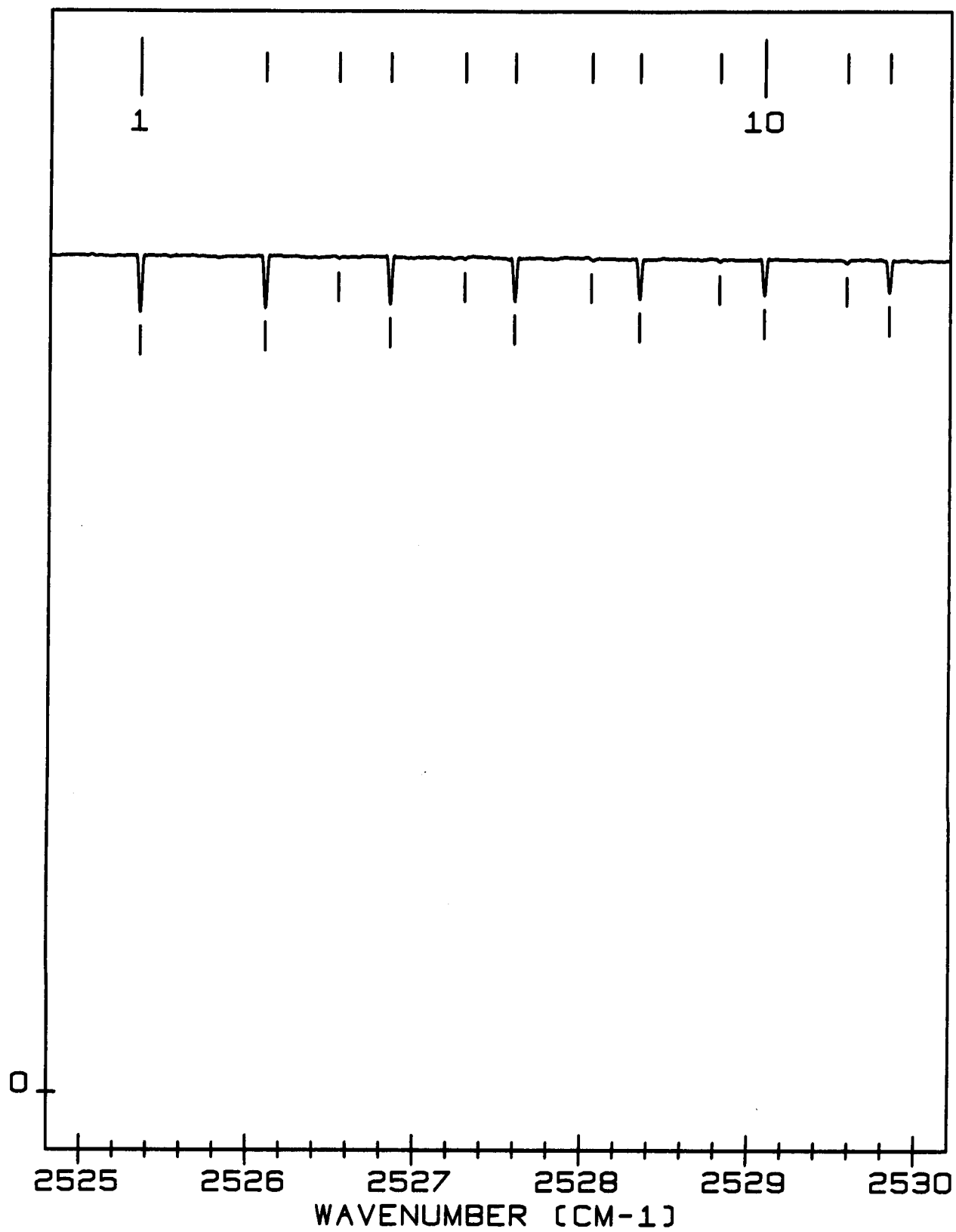


TABLE B 28

-1

Line Positions and Identifications (2530-2535 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2530.34703	2530.34787	20003-00001 627	R7
2	2530.58499	2530.58517	20003-00001 628	R39
3	2531.11561	2531.11550	20003-00001 627	R8
4	2531.33362	2531.33380	20003-00001 628	R40
5	2531.88316	2531.88423	20003-00001 627	R9
6	2532.08173	2532.08213	20003-00001 628	R41
7	2532.65341	2532.65407	20003-00001 627	R10
8	2532.82993	2532.83012	20003-00001 628	R42
9	2533.42363	2533.42498	20003-00001 627	R11
10	2533.57760	2533.57773	20003-00001 628	R43
11	2534.19757	2534.19697	20003-00001 627	R12
12	2534.32472	2534.32491	20003-00001 628	R44
13	2534.35978		H2O	
14	2534.68138		H2O	
15	2534.97092	2534.97000	20003-00001 627	R13

FRAME B28

9.857 Torr 384 meters

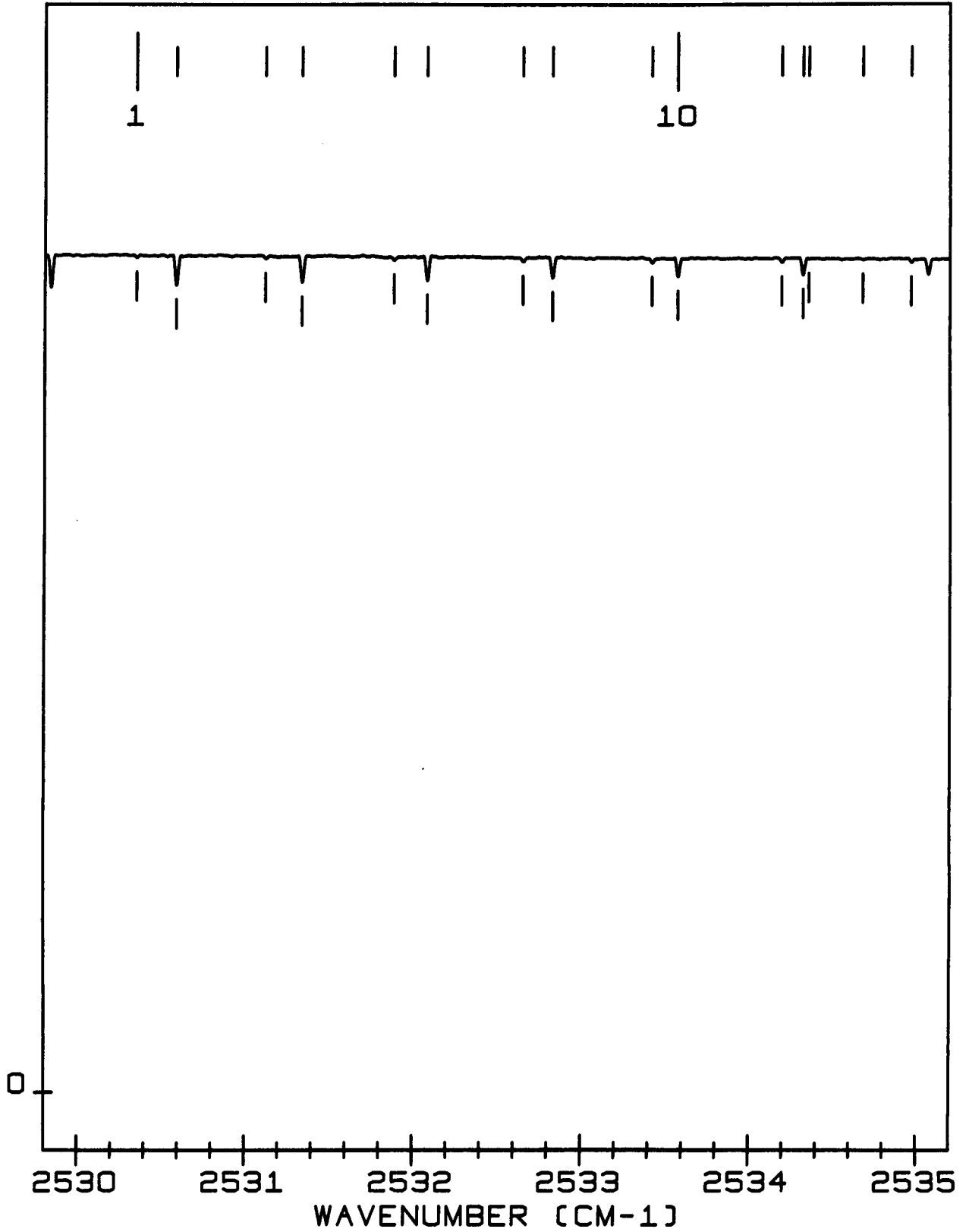


TABLE B 29

-1

Line Positions and Identifications (2535-2540 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2535.07164	2535.07163	20003-00001	628	R45
2	2535.53367		?		
3	2535.74361	2535.74407	20003-00001	627	R14
4	2535.81797	2535.81782	20003-00001	628	R46
5	2536.51748	2536.51916	20003-00001	627	R15
6	2536.56329	2536.56346	20003-00001	628	R47
7	2537.30538	2537.30848	20003-00001	628	R48
		2537.29525	20003-00001	627	R16
8	2538.05598	2538.05285	20003-00001	628	R49
		2538.07231	20003-00001	627	R17
9	2538.79716	2538.79652	20003-00001	628	R50
10	2538.84958	2538.85032	20003-00001	627	R18
11	2539.53962	2539.53942	20003-00001	628	R51
12	2539.63140	2539.62927	20003-00001	627	R19

FRAME B29

9.857 Torr 384 meters

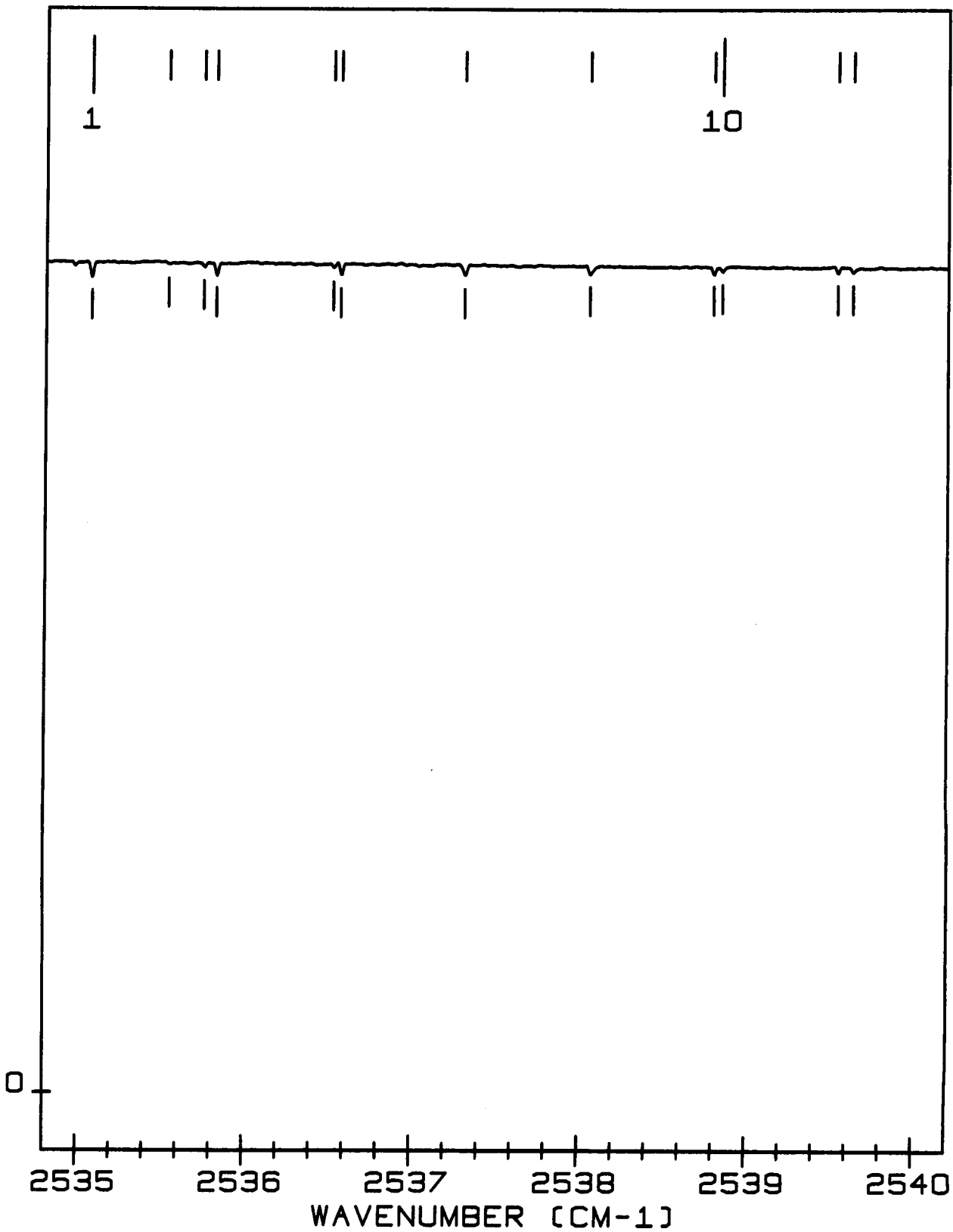


TABLE B 30

-1

Line Positions and Identifications (2540-2545 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2540.28188	2540.28152	20003-00001 628	R52
2	2540.40987	2540.40913	20003-00001 627	R20
3	2541.02401	2541.02276	20003-00001 628	R53
4	2541.18891	2541.18987	20003-00001 627	R21
5	2541.76636	2541.76309	20003-00001 628	R54
6	2541.97168	2541.97147	20003-00001 627	R22
7	2542.50244	2542.50245	20003-00001 628	R55
8	2542.75435	2542.75390	20003-00001 627	R23
9	2543.24290	2543.24079	20003-00001 628	R56
10	2543.53743	2543.53714	20003-00001 627	R24
11	2543.98395	2543.97805	20003-00001 628	R57
12	2544.32124	2544.32115	20003-00001 627	R25
13	2544.66160		H2O	
14	2544.71541	2544.71418	20003-00001 628	R58

FRAME B30

9.857 Torr 384 meters

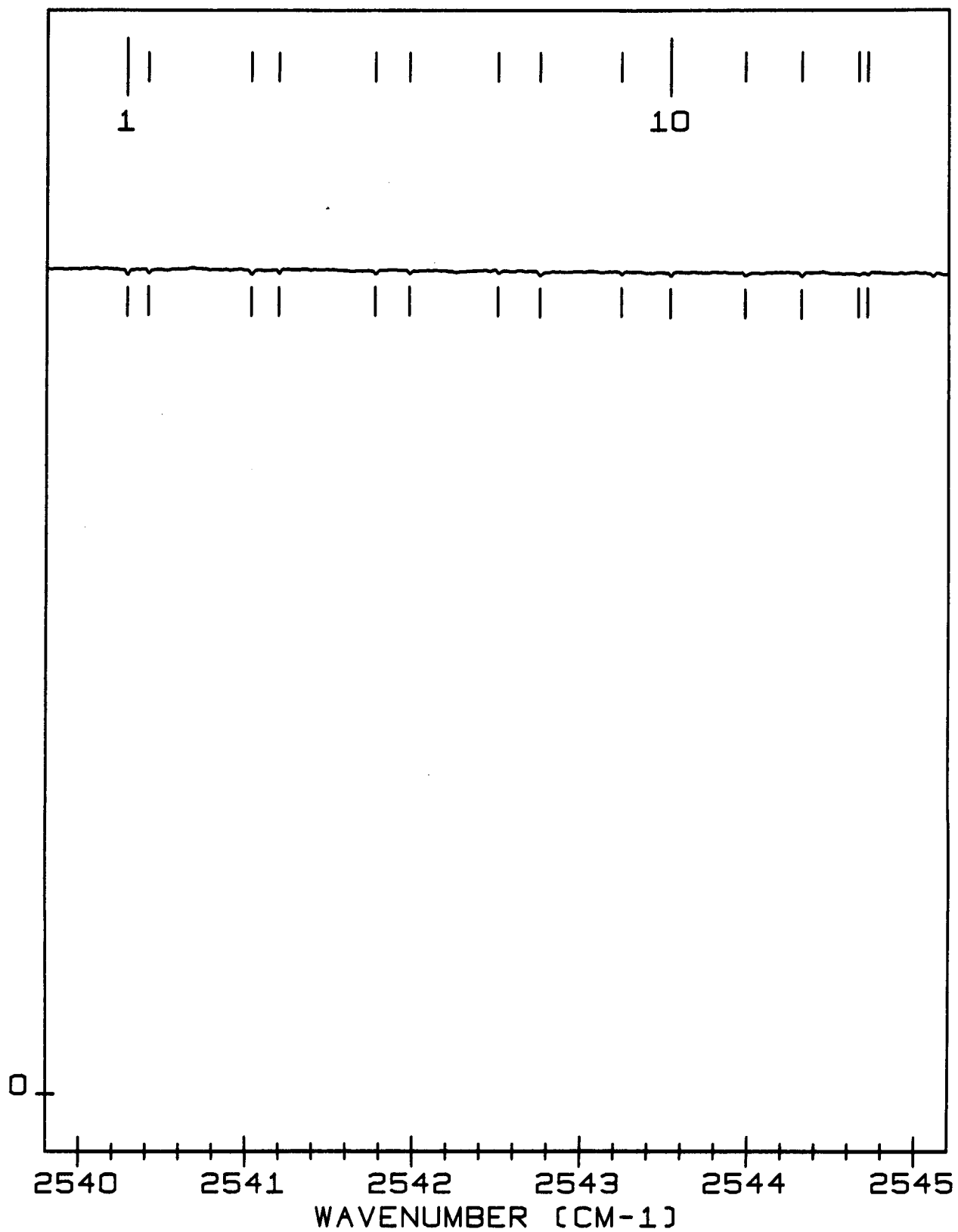




TABLE B 31

-1

Line Positions and Identifications (2545-2550 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2545.10598	2545.10591	20003-00001 627	R26
2	2545.45596	2545.44913	20003-00001 628	R59
3	2545.89122	2545.89139	20003-00001 627	R27
4	2546.18741	2546.18282	20003-00001 628	R60
5	2546.67589	2546.67754	20003-00001 627	R28
6	2546.92122	2546.91521	20003-00001 628	R61
7	2546.99348		H2O	
8	2547.46411	2547.46435	20003-00001 627	R29
9	2547.65232	2547.64622	20003-00001 628	R62
10	2547.82434		H2O	
11	2548.25217	2548.25178	20003-00001 627	R30
12	2548.66241		H2O	
13	2548.71525		H2O	
14	2549.04082	2549.03979	20003-00001 627	R31
15	2549.82725	2549.82834	20003-00001 627	R32
16	2549.90476		H2O	

FRAME B31

9.857 Torr 384 meters

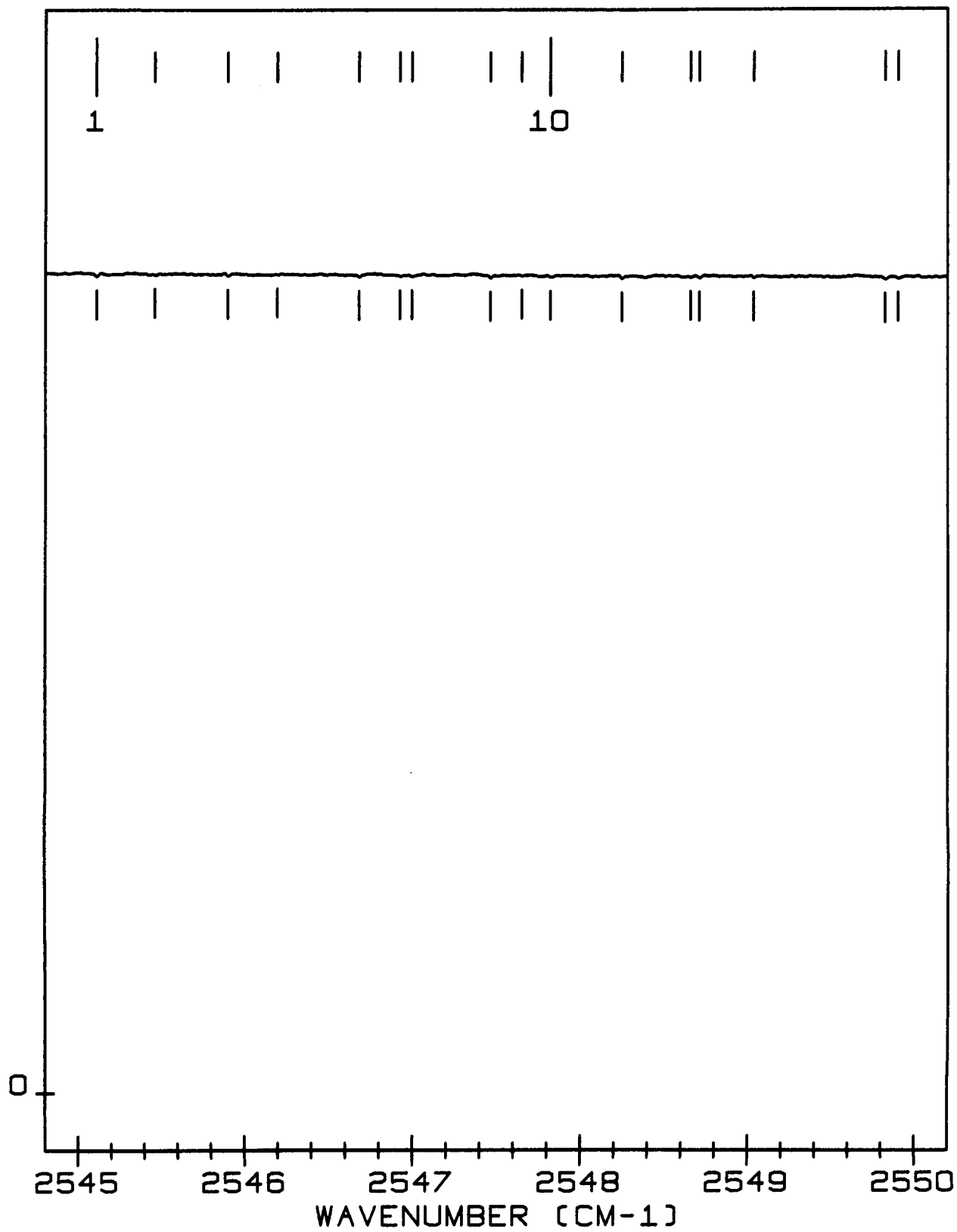


TABLE B 32

-1

Line Positions and Identifications (2550-2555 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2551.40814	2551.40694	20003-00001 627	R34
2	2552.19458	2552.19691	20003-00001 627	R35
3	2552.98512	2552.98727	20003-00001 627	R36
4	2553.78034	2553.77798	20003-00001 627	R37
5	2554.56963	2554.56901	20003-00001 627	R38

9.857 Torr 384 meters

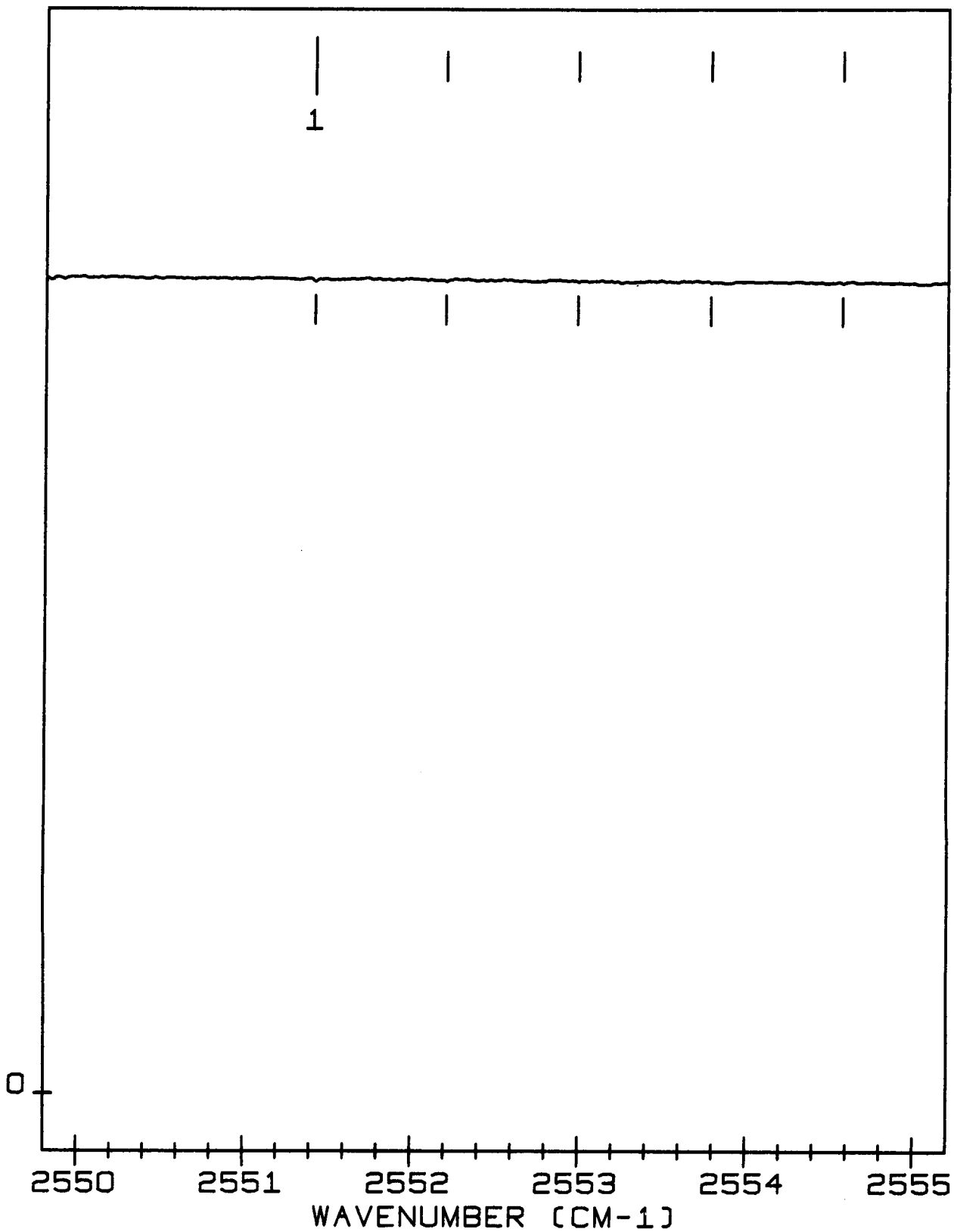


TABLE B 33

Line Positions and Identifications (2555-2560 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2556.31446		H2O

FRAME B33

9.857 Torr 384 meters

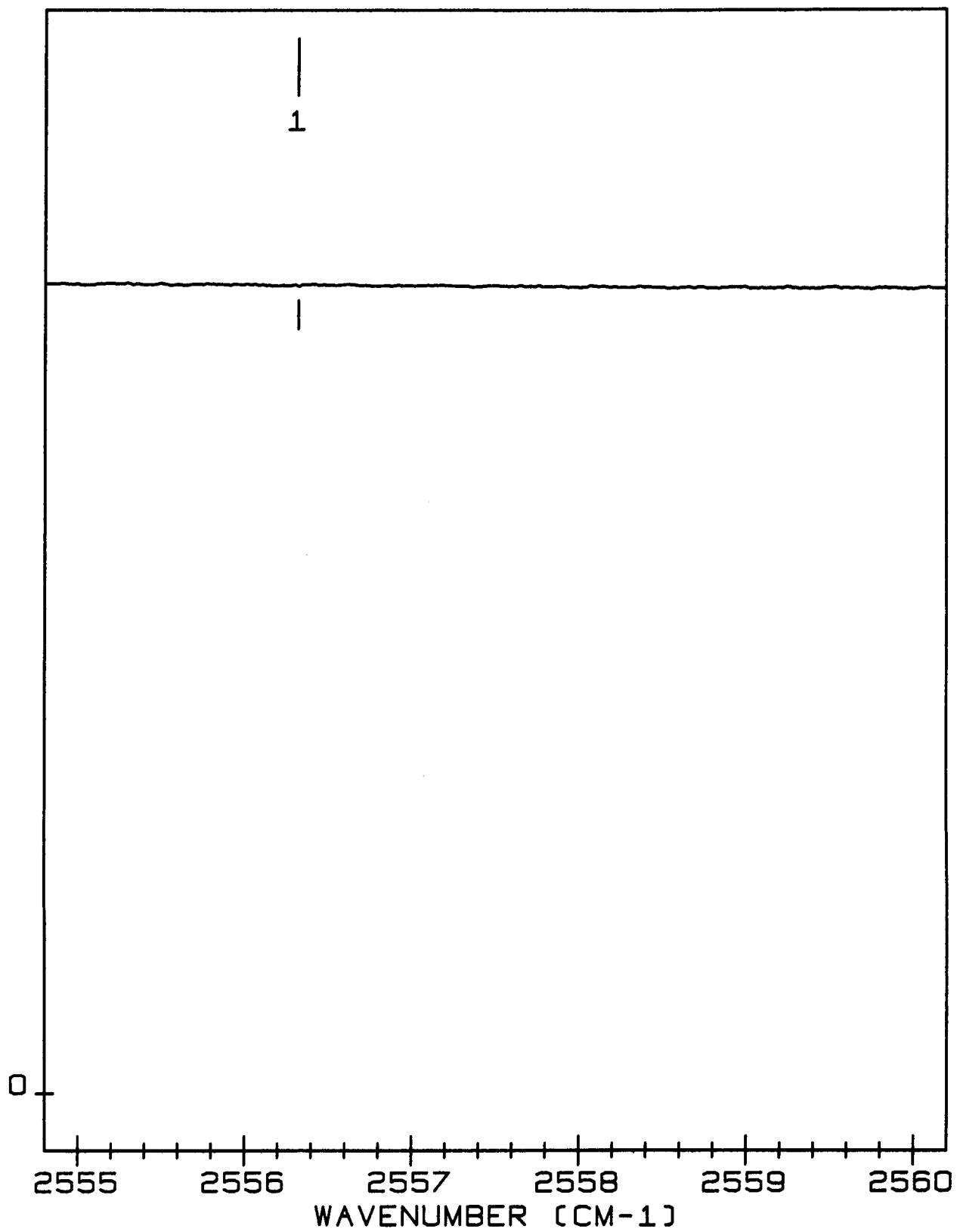


TABLE B 34

-1

Line Positions and Identifications (2560-2565 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2562.29794		H2O
2	2563.73747		H2O
3	2563.84517		H2O
4	2564.28863		H2O

FRAME B34

9.857 Torr 384 meters

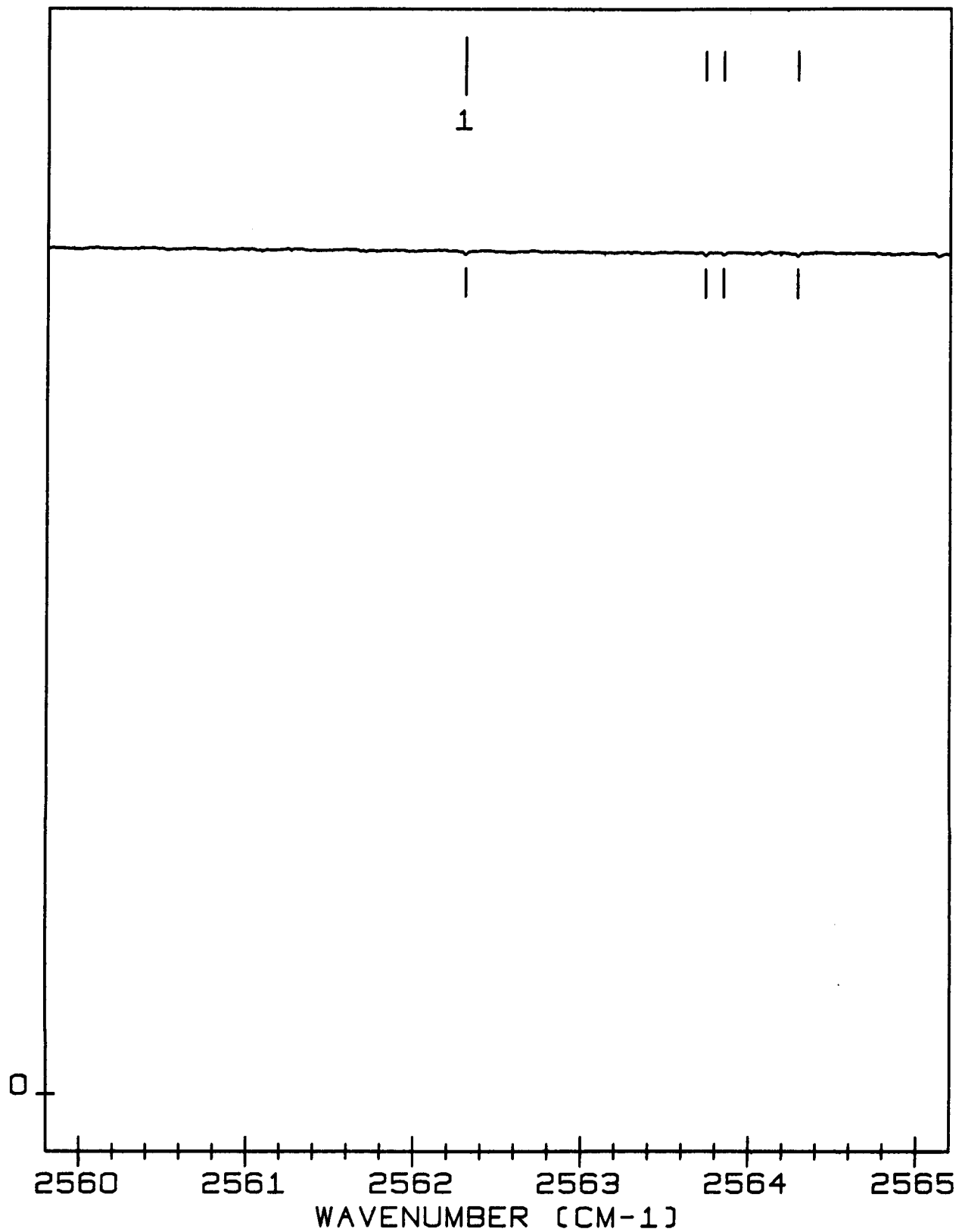




TABLE B 35

-1

Line Positions and Identifications (2565-2570 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2565.12844		H2O
2	2565.44908		H2O
3	2565.63664	2565.63051	20002-00001 628 P64
4	2566.40358	2566.40649	20002-00001 628 P63
5	2567.87603	2567.87291	20002-00001 638 P27
6	2567.95987	2567.95778	20002-00001 628 P61
7	2568.20943		?
8	2568.73917	2568.73304	20002-00001 628 P60
9	2569.51180	2569.50804	20002-00001 628 P59

FRAME B35

9.857 Torr 384 meters

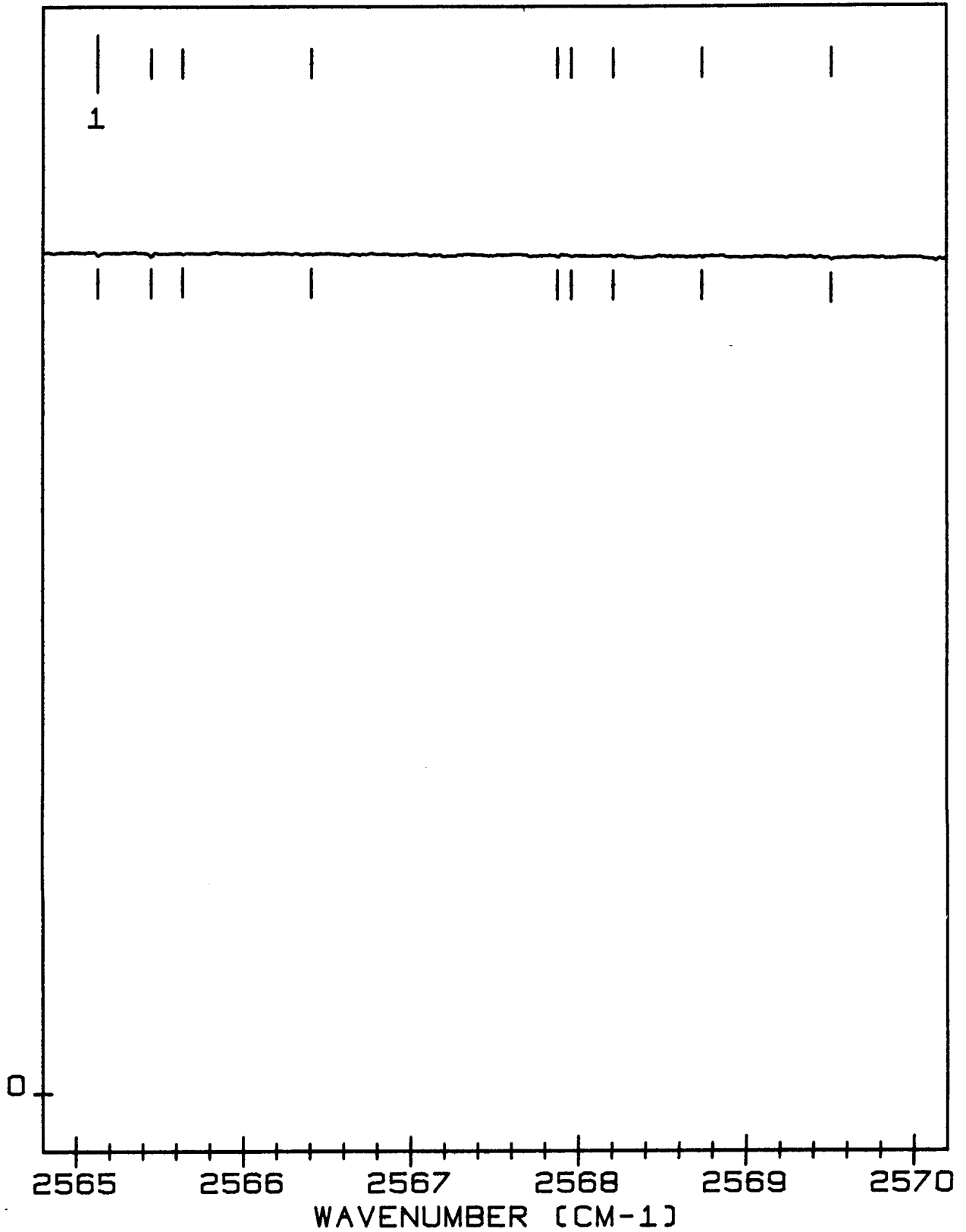


TABLE B 36

-1

Line Positions and Identifications (2570-2575 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2570.13648		H2O		
2	2570.17730	2570.17695	20002-00001	638	P24
3	2570.28380	2570.28274	20002-00001	628	P58
4	2570.89957		H2O		
5	2571.06233	2571.05713	20002-00001	628	P57
6	2571.22834		H2O		
7	2571.43309		H2O		
8	2571.70480	2571.70544	20002-00001	638	P22
9	2571.83296	2571.83120	20002-00001	628	P56
10	2572.46325	2572.46751	20002-00001	638	P21
11	2572.60710	2572.60493	20002-00001	628	P55
12	2573.37905	2573.37829	20002-00001	628	P54
13	2573.51765		H2O		
14	2574.15174	2574.15128	20002-00001	628	P53
15	2574.74396	2574.74537	20002-00001	638	P18
16	2574.92473	2574.92389	20002-00001	628	P52

FRAME B36

9.857 Torr 384 meters

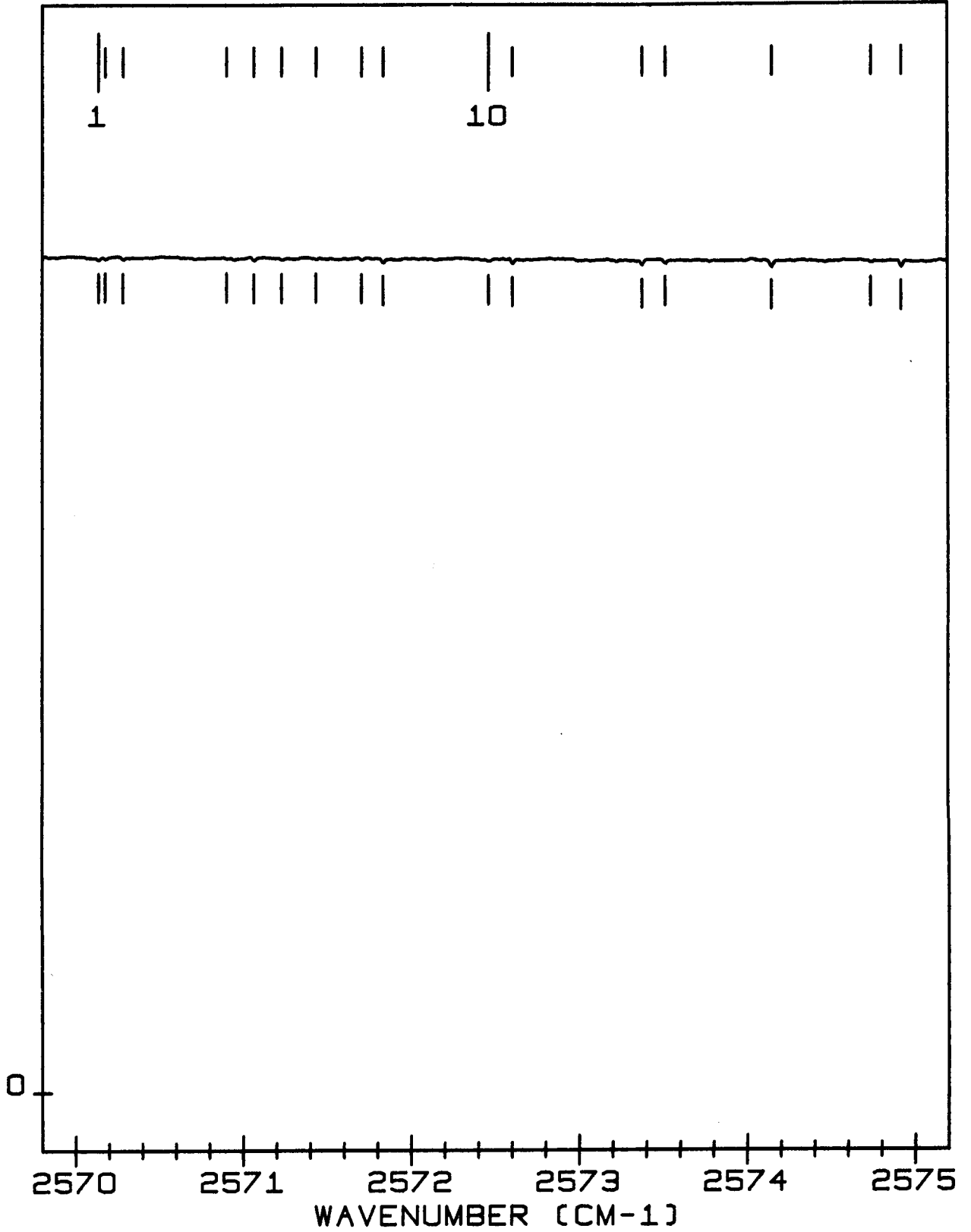


TABLE B 37

-1

Line Positions and Identifications (2575-2580 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2575.69636	2575.69608	20002-00001 628 P51
2	2576.25760	2576.25722	20002-00001 638 P16
3	2576.46835	2576.46785	20002-00001 628 P50
4	2576.65993		H2O
5	2577.23923	2577.23919	20002-00001 628 P49
6	2577.76295	2577.76389	20002-00001 638 P14
7	2578.00991	2578.01007	20002-00001 628 P48
8	2578.51349	2578.51533	20002-00001 638 P13
9	2578.60365		H2O
10	2578.78053	2578.78048	20002-00001 628 P47
11	2578.80944		H2O
12	2579.26475	2579.26553	20002-00001 638 P12
13	2579.54990	2579.55042	20002-00001 628 P46

FRAME B37

9.857 Torr 384 meters

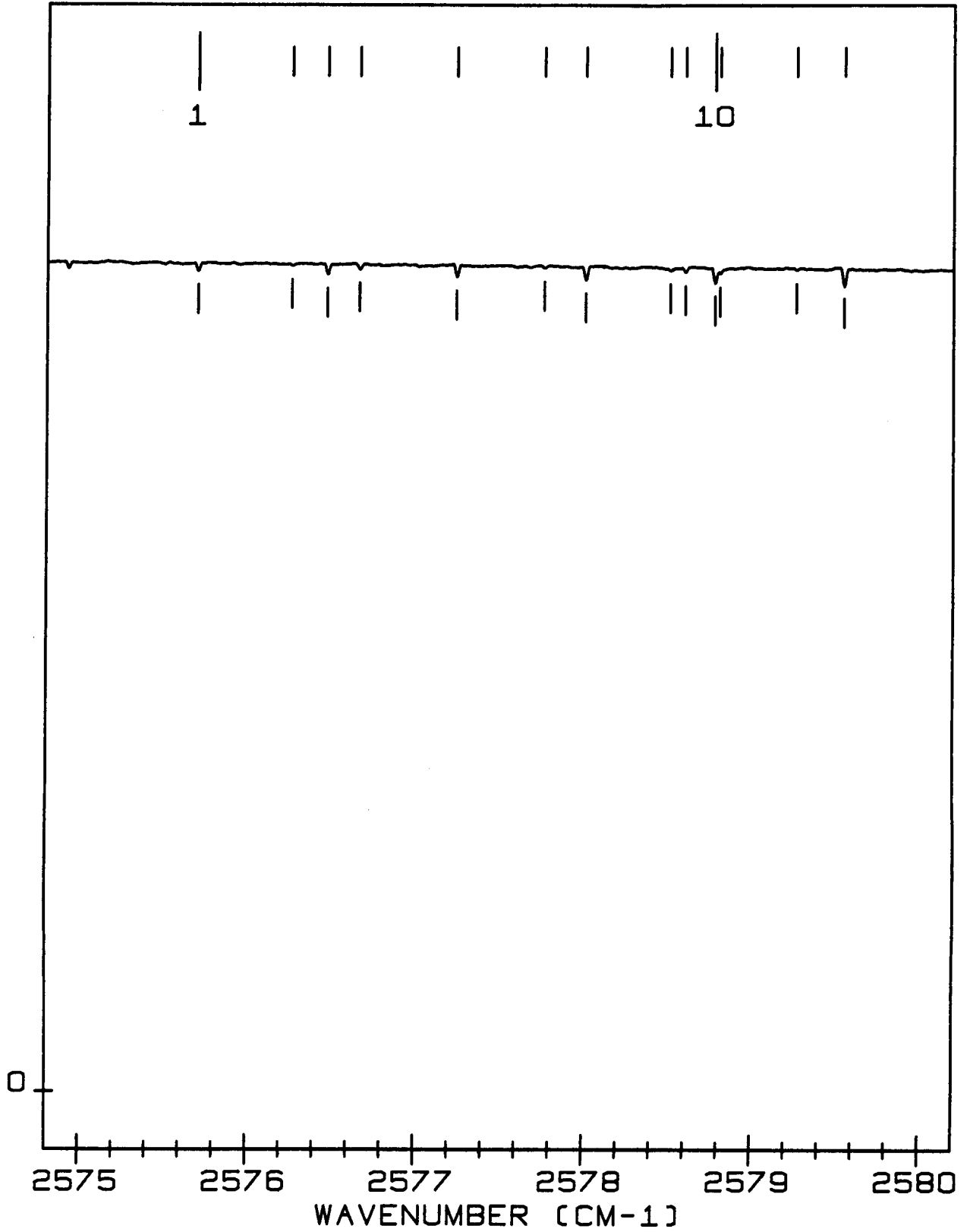


TABLE B 38

-1

Line Positions and Identifications (2580-2585 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2580.31980	2580.31985	20002-00001 628	P45
2	2580.76771	2580.76227	20002-00001 638	P10
3	2581.04450		H2O	
4	2581.08848	2581.08878	20002-00001 628	P44
5	2581.51056	2581.50884	20002-00001 638	P9
6	2581.85711	2581.85718	20002-00001 628	P43
7	2582.30223		H2O	
		2582.29525	21102-01101 628	P48C
8	2582.62481	2582.62505	20002-00001 628	P42
9	2583.00526	2582.99844	20002-00001 638	P7
10	2583.07139	2583.07101	21102-01101 628	P47C
11	2583.39221	2583.39236	20002-00001 628	P41
12	2583.84000	2583.84605	21102-01101 628	P46C
13	2584.15895	2584.15912	20002-00001 628	P40
14	2584.92502	2584.92529	20002-00001 628	P39

FRAME B37

9.857 Torr 384 meters

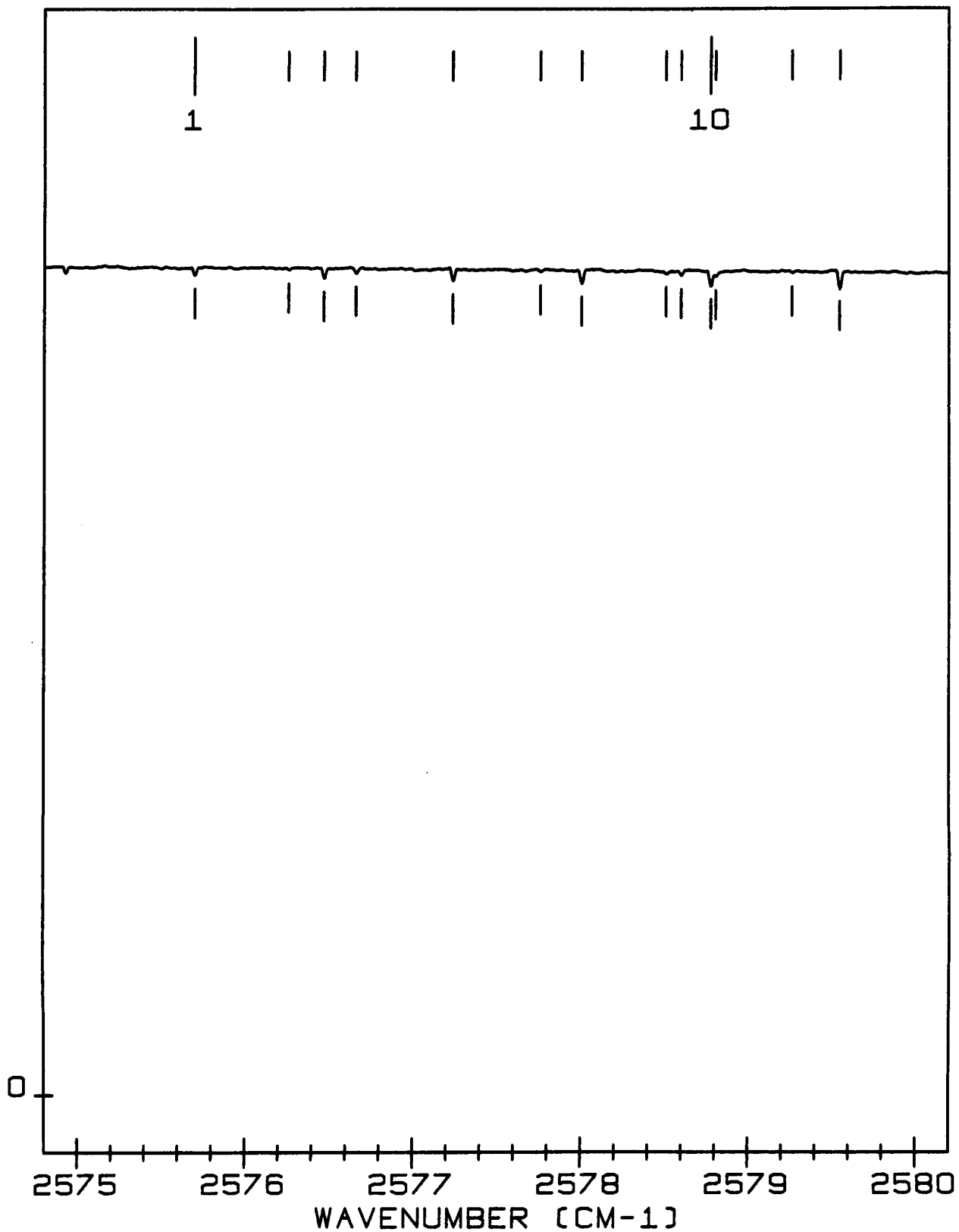




TABLE B 38

-1

Line Positions and Identifications (2580-2585 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2580.31980	2580.31985	20002-00001 628	P45
2	2580.76771	2580.76227	20002-00001 638	P10
3	2581.04450		H2O	
4	2581.08848	2581.08878	20002-00001 628	P44
5	2581.51056	2581.50884	20002-00001 638	P9
6	2581.85711	2581.85718	20002-00001 628	P43
7	2582.30223		H2O	
		2582.29525	21102-01101 628	P48C
8	2582.62481	2582.62505	20002-00001 628	P42
9	2583.00526	2582.99844	20002-00001 638	P7
10	2583.07139	2583.07101	21102-01101 628	P47C
11	2583.39221	2583.39236	20002-00001 628	P41
12	2583.84000	2583.84605	21102-01101 628	P46C
13	2584.15895	2584.15912	20002-00001 628	P40
14	2584.92502	2584.92529	20002-00001 628	P39

FRAME B38

9.857 Torr 384 meters

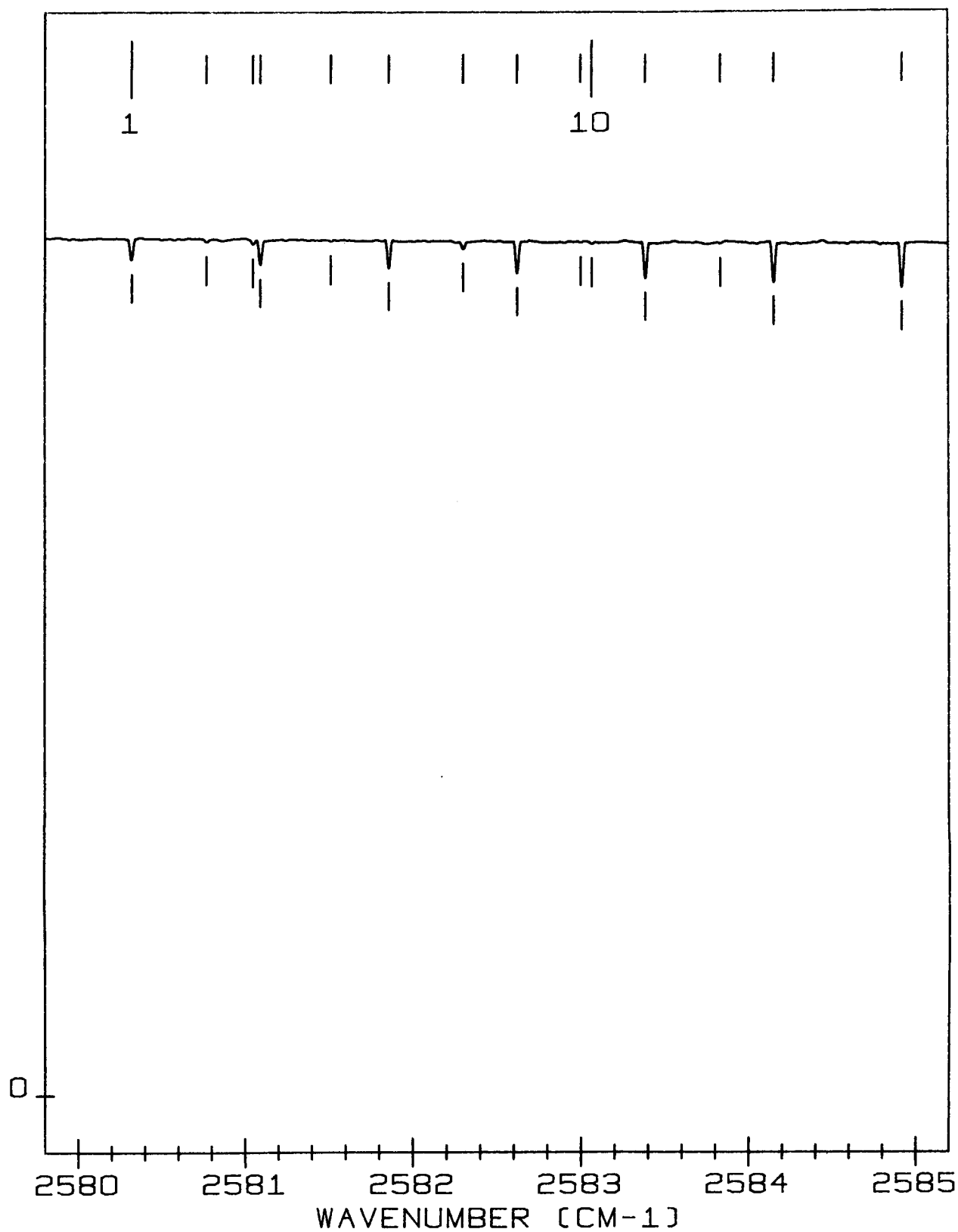


TABLE B 39

-1

Line Positions and Identifications (2585-2590 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2585.43125		H2O		
2	2585.52811	2585.52356	21102-01101	628	P45D
3	2585.69086	2585.69088	20002-00001	628	P38
4	2586.45574	2586.45586	20002-00001	628	P37
5	2586.93708	2586.93901	21102-01101	628	P42C
6	2587.22022	2587.22023	20002-00001	628	P36
7	2587.71498	2587.72126	21102-01101	628	P42D
		2587.71042	21102-01101	628	P41C
8	2587.98393	2587.98398	20002-00001	628	P35
9	2588.45046	2588.45430	21102-01101	628	P41D
10	2588.48364	2588.48109	21102-01101	628	P40C
11	2588.74704	2588.74709	20002-00001	628	P34
12	2589.00246		H2O		
13	2589.25110	2589.25100	21102-01101	628	P39C
14	2589.50960	2589.50955	20002-00001	628	P33
15	2589.57521		H2O		
16	2589.91410	2589.92103	21102-01101	628	P39D

FRAME B39

9.857 Torr 384 meters

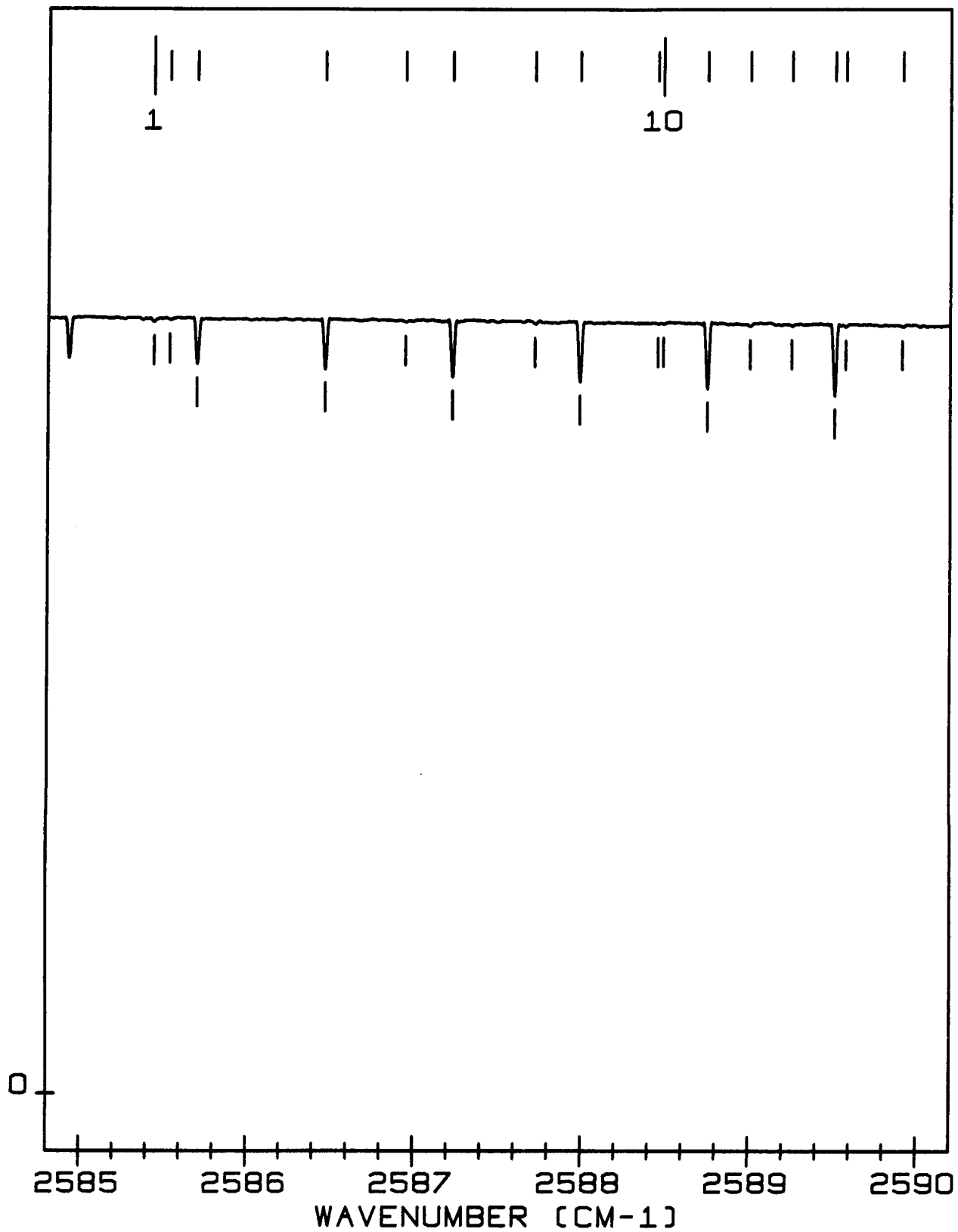


TABLE B 40

-1

Line Positions and Identifications (2590-2595 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2590.27142	2590.27135	20002-00001 628	P32
2	2590.65601	2590.65472	21102-01101 628	P38D
3	2590.78373	2590.78856	21102-01101 628	P37C
4	2590.82359		H2O	
5	2591.03251	2591.03248	20002-00001 628	P31
6	2591.21633		H2O	
7	2591.38669	2591.38862	21102-01101 628	P37D
8	2591.55770	2591.55620	21102-01101 628	P36C
9	2591.79302	2591.79293	20002-00001 628	P30
10	2592.12294	2592.12271	21102-01101 628	P36D
11	2592.32447	2592.32307	21102-01101 628	P35C
12	2592.55273	2592.55269	20002-00001 628	P29
13	2592.85597	2592.85701	21102-01101 628	P35D
14	2593.08798	2593.08916	21102-01101 628	P34C
15	2593.24109		H2O	
16	2593.31174	2593.31175	20002-00001 628	P28
17	2593.58890	2593.59149	21102-01101 628	P34D
18	2593.61675		H2O	
19	2593.85523	2593.85448	21102-01101 628	P33C
20	2594.07021	2594.07010	20002-00001 628	P27
21	2594.32683	2594.32616	21102-01101 628	P33D
22	2594.61767	2594.61901	21102-01101 628	P32C
23	2594.82779	2594.82773	20002-00001 628	P26

FRAME B40

9.857 Torr 384 meters

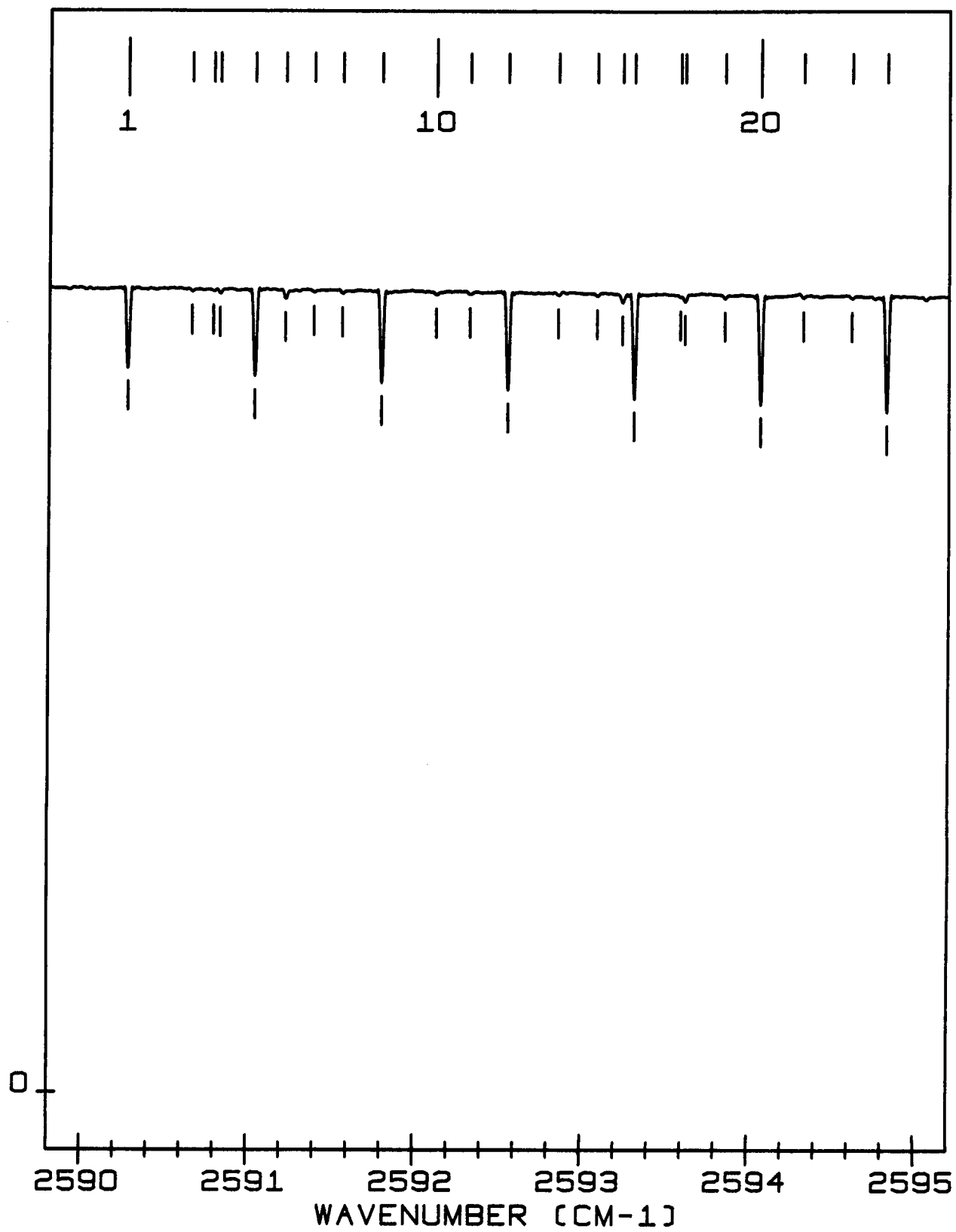


TABLE B 41

-1

Line Positions and Identifications (2595-2600 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2595.06103	2595.06100	21102-01101 628 P32D
2	2595.38256	2595.38275	21102-01101 628 P31C
3	2595.47879	2595.47444	20002-00001 638 R9
4	2595.58473	2595.58463	20002-00001 628 P25
5	2595.79740	2595.79603	21102-01101 628 P31D
6	2596.14501	2596.14570	21102-01101 628 P30C
7	2596.20423	2596.19786	20002-00001 638 R10
8	2596.34088	2596.34080	20002-00001 628 P24
9	2596.53192	2596.53122	21102-01101 628 P30D
10	2596.73445		H2O
11	2596.91052	2596.90785	21102-01101 628 P29C
12	2597.09621	2597.09621	20002-00001 628 P23
13	2597.26705	2597.26658	21102-01101 628 P29D
14	2597.67075	2597.66920	21102-01101 628 P28C
15	2597.85097	2597.85087	20002-00001 628 P22
16	2598.00148	2598.00209	21102-01101 628 P28D
17	2598.36417	2598.36077	20002-00001 638 R13
18	2598.42885	2598.42973	21102-01101 628 P27C
19	2598.60484	2598.60477	20002-00001 628 P21
20	2598.73822	2598.73776	21102-01101 628 P27D
21	2599.08062	2599.07922	20002-00001 638 R14
22	2599.18979	2599.18946	21102-01101 628 P26C
23	2599.35796	2599.35789	20002-00001 628 P20
24	2599.47360	2599.47359	21102-01101 628 P26D
25	2599.79633	2599.79640	20002-00001 638 R15
26	2599.94766	2599.94837	21102-01101 628 P25C

FRAME B41

9.857 Torr 384 meters

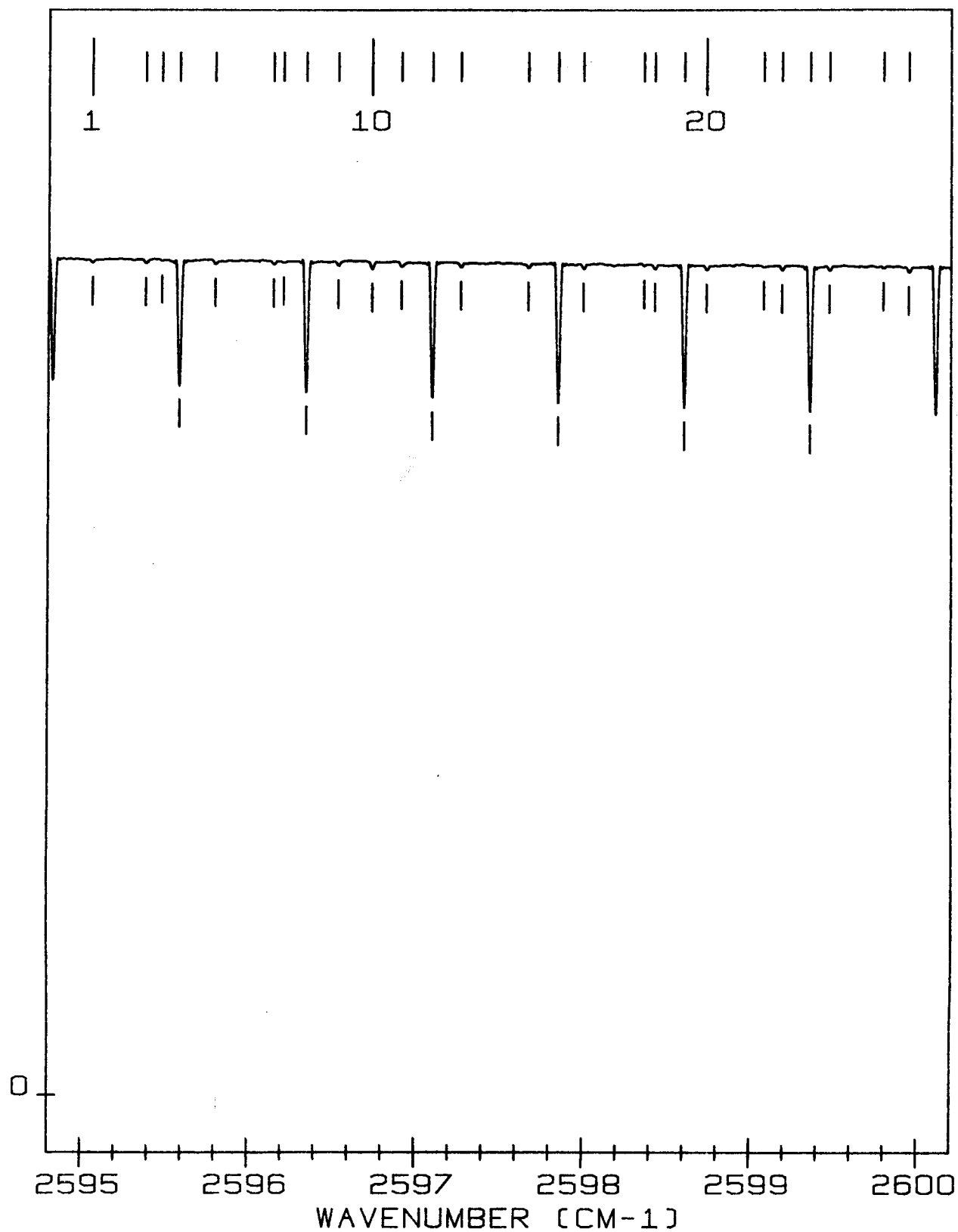




TABLE B 42

-1

Line Positions and Identifications (2600-2605 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2600.11030	2600.11023	20002-00001 628 P19
2	2600.20923	2600.20955	21102-01101 628 P25D
3	2600.51092	2600.51227	20002-00001 638 R16
4	2600.70788	2600.70646	21102-01101 628 P24C
5	2600.86125	2600.86179	20002-00001 628 P18
			H2O
6	2600.94516	2600.94566	21102-01101 628 P24D
7	2601.22528	2601.22681	20002-00001 638 R17
8	2601.46335	2601.46372	21102-01101 628 P23C
9	2601.61258	2601.61255	20002-00001 628 P17
10	2601.68173	2601.68191	21102-01101 628 P23D
11	2601.94050	2601.94001	20002-00001 638 R18
12	2602.22077	2602.22016	21102-01101 628 P22C
13	2602.36250	2602.36250	20002-00001 628 P16
14	2602.41840	2602.41828	21102-01101 628 P22D
15	2602.65037	2602.65183	20002-00001 638 R19
16	2602.97587	2602.97576	21102-01101 628 P21C
17	2603.11165	2603.11165	20002-00001 628 P15
18	2603.15327	2603.15479	21102-01101 628 P21D
19	2603.35903	2603.36225	20002-00001 638 R20
20	2603.73025	2603.73052	21102-01101 628 P20C
21	2603.85991	2603.85999	20002-00001 628 P14
22	2603.89328	2603.89141	21102-01101 628 P20D
23	2604.48443	2604.48444	21102-01101 628 P19C
24	2604.60757	2604.60750	20002-00001 628 P13
		2604.62816	21102-01101 628 P19D
25	2604.66162		?

FRAME B42

9.857 Torr 384 meters

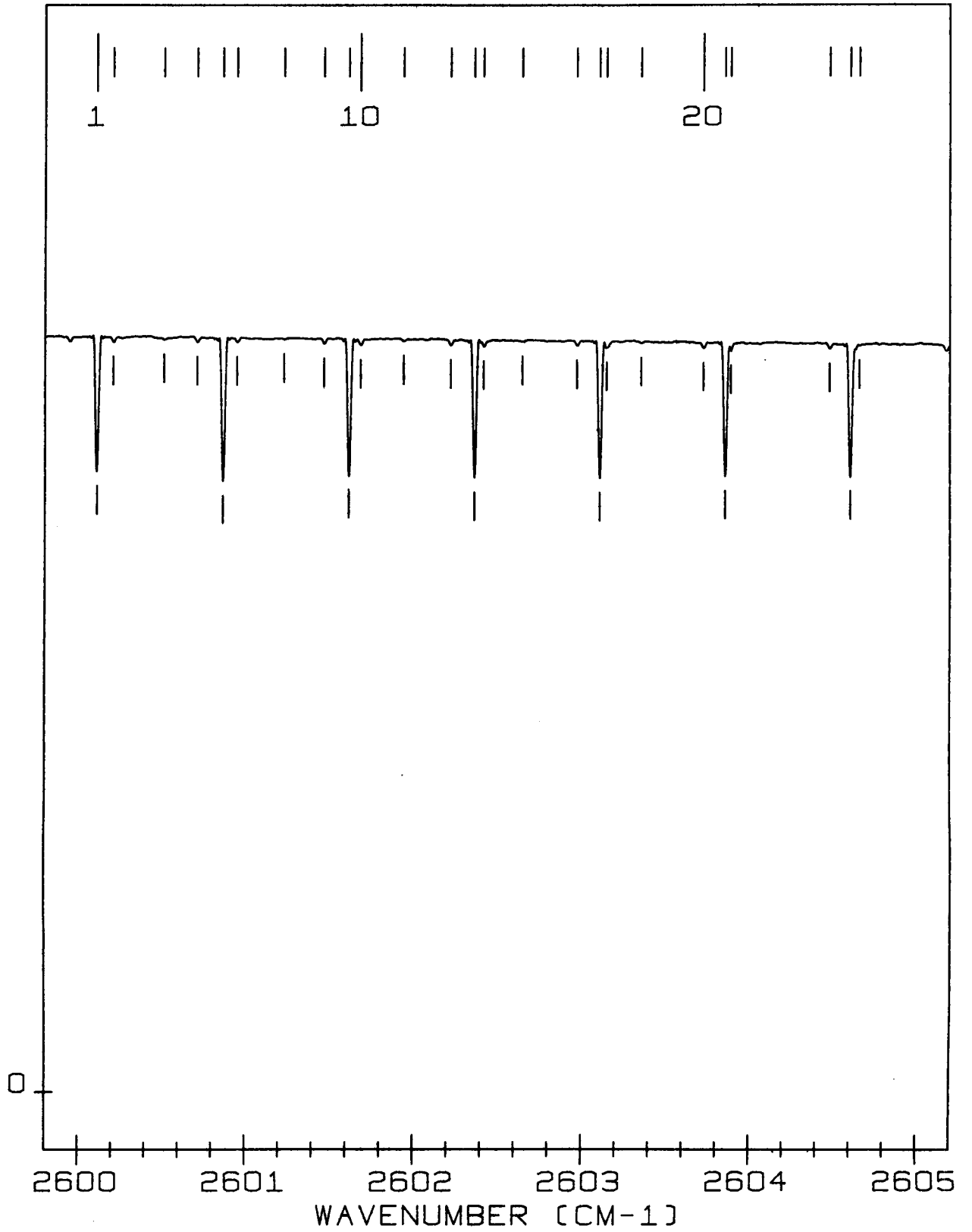


TABLE B 43

-1

Line Positions and Identifications (2605-2610 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2605.18037		H2O		
2	2605.23774	2605.23751	21102-01101	628	P18C
3	2605.35438	2605.35418	20002-00001	628	P12
		2605.36502	21102-01101	628	P18D
4	2605.47942	2605.48486	20002-00001	638	R23
5	2605.98936	2605.98974	21102-01101	628	P17C
6	2606.10000	2606.10003	20002-00001	628	P11
		2606.10199	21102-01101	628	P17D
7	2606.18795	2606.18942	20002-00001	638	R24
8	2606.30721		H2O		
9	2606.74213	2606.74110	21102-01101	628	P16C
10	2606.84474	2606.84505	20002-00001	628	P10
		2606.83906	21102-01101	628	P16D
11	2607.19014		H2O		
12	2607.45210		?		
13	2607.49064	2607.49162	21102-01101	628	P15C
14	2607.58881	2607.58921	20002-00001	628	P9
		2607.59386	20002-00001	638	R26
15	2607.62278		H2O		
16	2607.71182	2607.71692	20002-00001	627	P43
17	2608.16224		H2O		
18	2608.24203	2608.24126	21102-01101	628	P14C
19	2608.29137		H2O		
		2608.31352	21102-01101	628	P14D
		2608.29368	20002-00001	638	R27
20	2608.33214	2608.33253	20002-00001	628	P8
21	2608.51580	2608.51708	20002-00001	627	P42
22	2608.99063	2608.99005	21102-01101	628	P13C
		2608.99185	20002-00001	638	R28
23	2609.07459	2609.07500	20002-00001	628	P7
24	2609.73881	2609.73796	21102-01101	628	P12C
25	2609.78604	2609.78835	21102-01101	628	P12D
26	2609.81643	2609.81660	20002-00001	628	P6

FRAME B43

9.857 Torr 384 meters

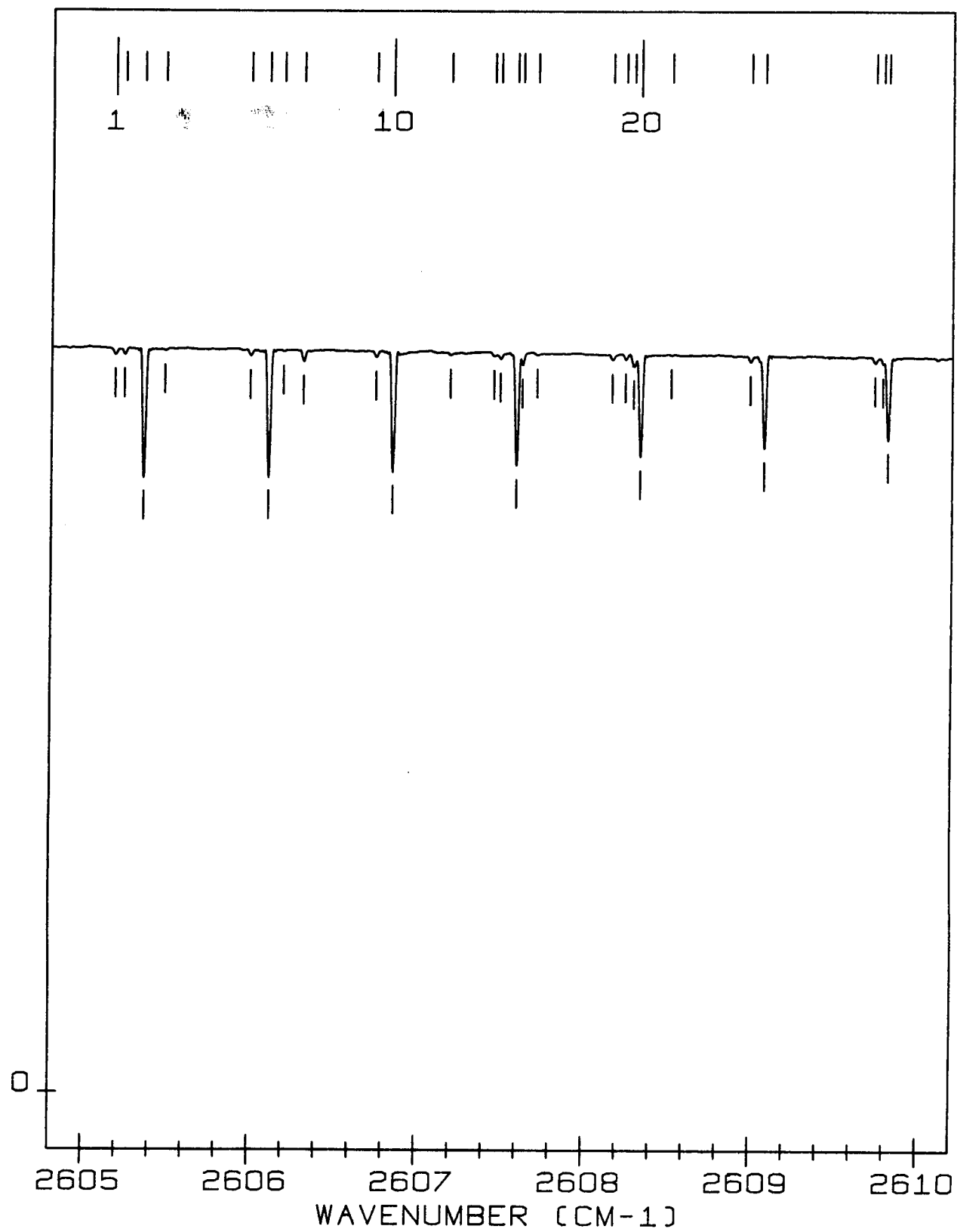


TABLE B 44

-1

Line Positions and Identifications (2610-2615 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2610.11171	2610.11477	20002-00001 627	P40
2	2610.15941		?	
3	2610.31546		?	
4	2610.38956	2610.38311	20002-00001 638	R30
5	2610.48464	2610.48500	21102-01101 628	P11C
6	2610.52468	2610.52590	21102-01101 628	P11D
7	2610.55718	2610.55734	20002-00001 628	P5
8	2610.91179	2610.91228	20002-00001 627	P39
9	2611.08267	2611.07612	20002-00001 638	R31
10	2611.23077	2611.23117	21102-01101 628	P10C
11	2611.26392	2611.26354	21102-01101 628	P10D
12	2611.29702	2611.29721	20002-00001 628	P4
13	2611.71044	2611.70890	20002-00001 627	P38
14	2611.77803	2611.76733	20002-00001 638	R32
15	2611.97815	2611.97645	21102-01101 628	P9C
16	2612.00114	2612.00125	21102-01101 628	P9D
17	2612.03601	2612.03622	20002-00001 628	P3
18	2612.50168	2612.50461	20002-00001 627	P37
19	2612.53894		H2O	
20	2612.73026	2612.72085	21102-01101 628	P8C
		2612.73904	21102-01101 628	P8D
21	2612.77469	2612.77434	20002-00001 628	P2
22	2613.29737	2613.29941	20002-00001 627	P36
23	2613.47129	2613.46436	21102-01101 628	P7C
		2613.47690	21102-01101 628	P7D
24	2613.51145	2613.51159	20002-00001 628	P1
25	2614.09380	2614.09328	20002-00001 627	P35
26	2614.21089	2614.20699	21102-01101 628	P6C
		2614.21483	21102-01101 628	P6D
27	2614.50983	2614.51330	20002-00001 638	R36
28	2614.88485	2614.88622	20002-00001 627	P34
29	2614.95094	2614.94871	21102-01101 628	P5C
		2614.95283	21102-01101 628	P5D
30	2614.98344	2614.98344	20002-00001 628	R0

FRAME B44

9.857 Torr 384 meters

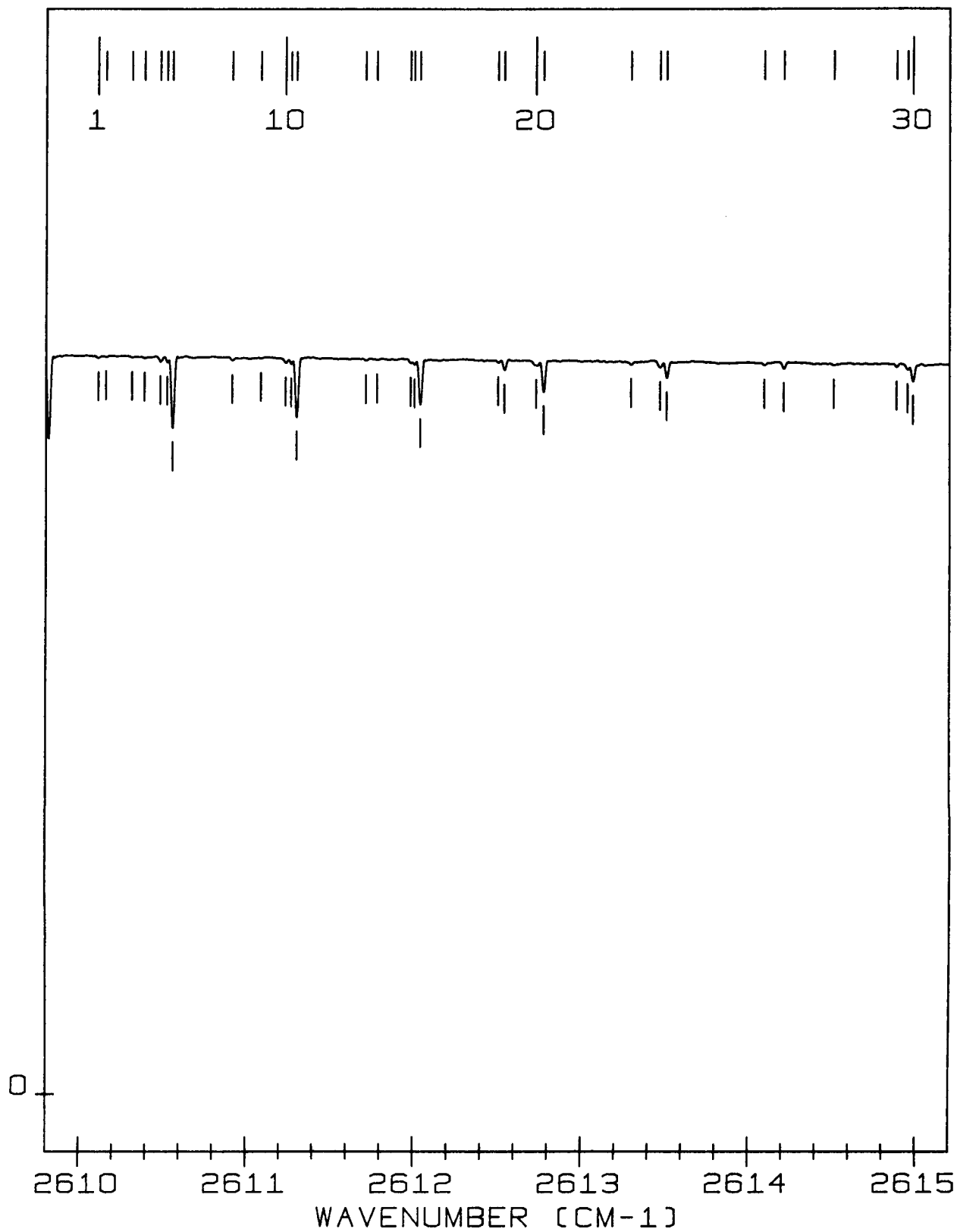


TABLE B 45

-1

Line Positions and Identifications (2615-2620 cm )

LINE NO	OBSERVED	CALCULATED	IDENTIFICATION		
	POSITION	POSITION			
1	2615.68456	2615.68955	21102-01101	628	P4C
		2615.69089	21102-01101	628	P4D
		2615.67821	20002-00001	627	P33
2	2615.71764	2615.71804	20002-00001	628	R1
3	2616.45171	2616.45175	20002-00001	628	R2
4	2617.18417	2617.18457	20002-00001	628	R3
5	2617.25862	2617.25935	20002-00001	627	P31
6	2617.91627	2617.91649	20002-00001	628	R4
7	2618.04858	2618.04848	20002-00001	627	P30
8	2618.64729	2618.64752	20002-00001	628	R5
9	2618.83642	2618.83663	20002-00001	627	P29
10	2619.37752	2619.37765	20002-00001	628	R6
11	2619.62590	2619.62380	20002-00001	627	P28
12	2619.76008				H2O

FRAME B45

9.857 Torr 384 meters

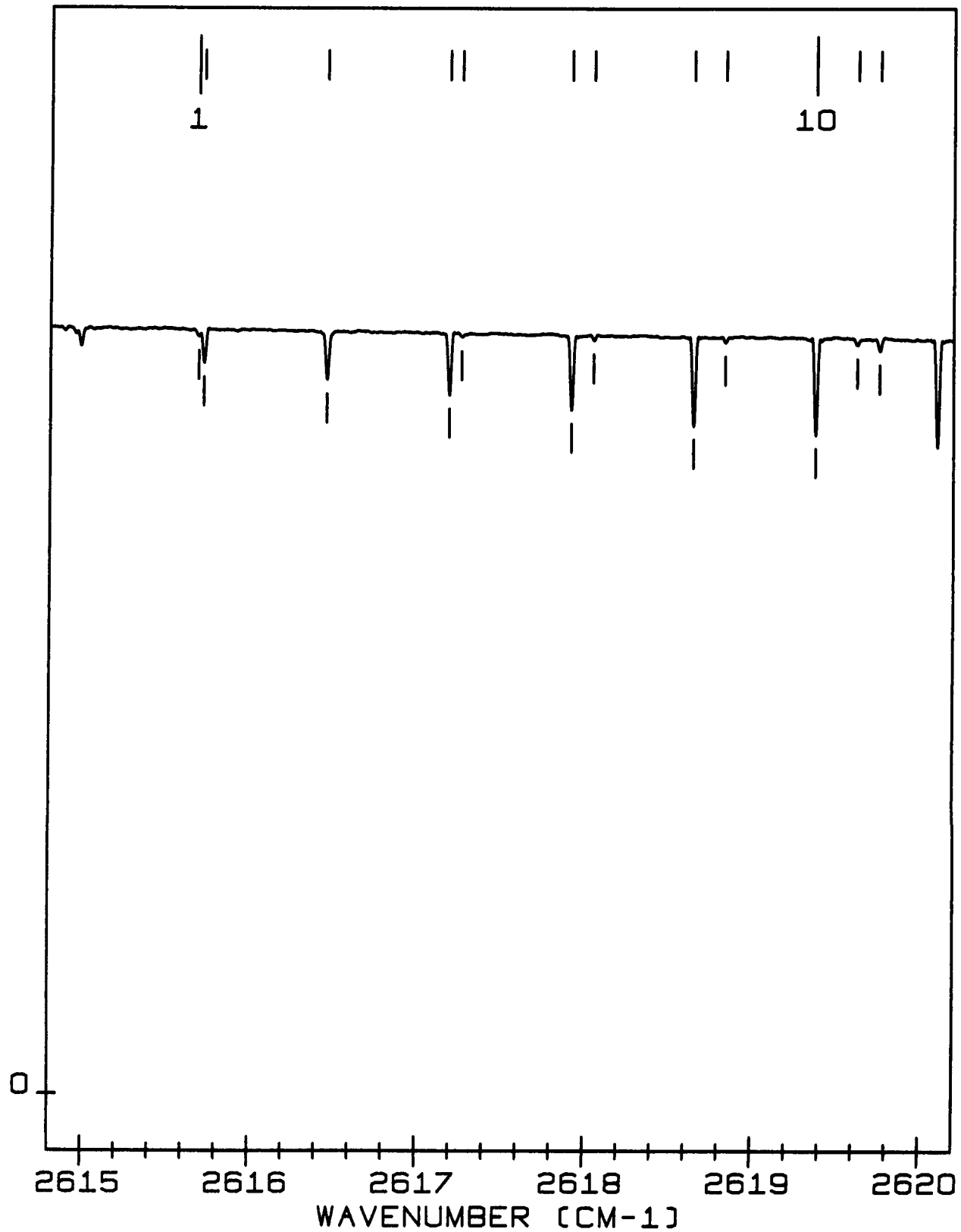




TABLE B 46

-1

Line Positions and Identifications (2620-2625 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2620.10684	2620.10689	20002-00001 628	R7
2	2620.40972	2620.40998	20002-00001 627	P27
3	2620.83482	2620.83523	20002-00001 628	R8
4	2620.86588	2620.84998	21102-01101 628	R2C
		2620.85885	21102-01101 628	R2D
5	2621.19370	2621.19517	20002-00001 627	P26
6	2621.56255	2621.56267	20002-00001 628	R9
7	2621.59499	2621.58353	21102-01101 628	R3C
		2621.59731	21102-01101 628	R3D
8	2621.73107		H2O	
9	2621.98044	2621.97935	20002-00001 627	P25
10	2622.10582		H2O	
11	2622.28925	2622.28921	20002-00001 628	R10
12	2622.32308	2622.31615	21102-01101 628	R4C
		2622.33581	21102-01101 628	R4D
13	2622.76215	2622.76252	20002-00001 627	P24
14	2622.85687		H2O	
15	2623.01477	2623.01485	20002-00001 628	R11
16	2623.04896	2623.04784	21102-01101 628	R5C
17	2623.07210	2623.07435	21102-01101 628	R5D
18	2623.54481	2623.54468	20002-00001 627	P23
19	2623.73958	2623.73959	20002-00001 628	R12
20	2623.77605	2623.77860	21102-01101 628	R6C
21	2623.81433	2623.81292	21102-01101 628	R6D
22	2623.98182		H2O	
23	2624.32612	2624.32581	20002-00001 627	P22
24	2624.46347	2624.46343	20002-00001 628	R13
25	2624.50988	2624.50843	21102-01101 628	R7C
26	2624.54801	2624.55152	21102-01101 628	R7D
27	2624.94593		H2O	

## FRAME B46

9.857 Torr 384 meters

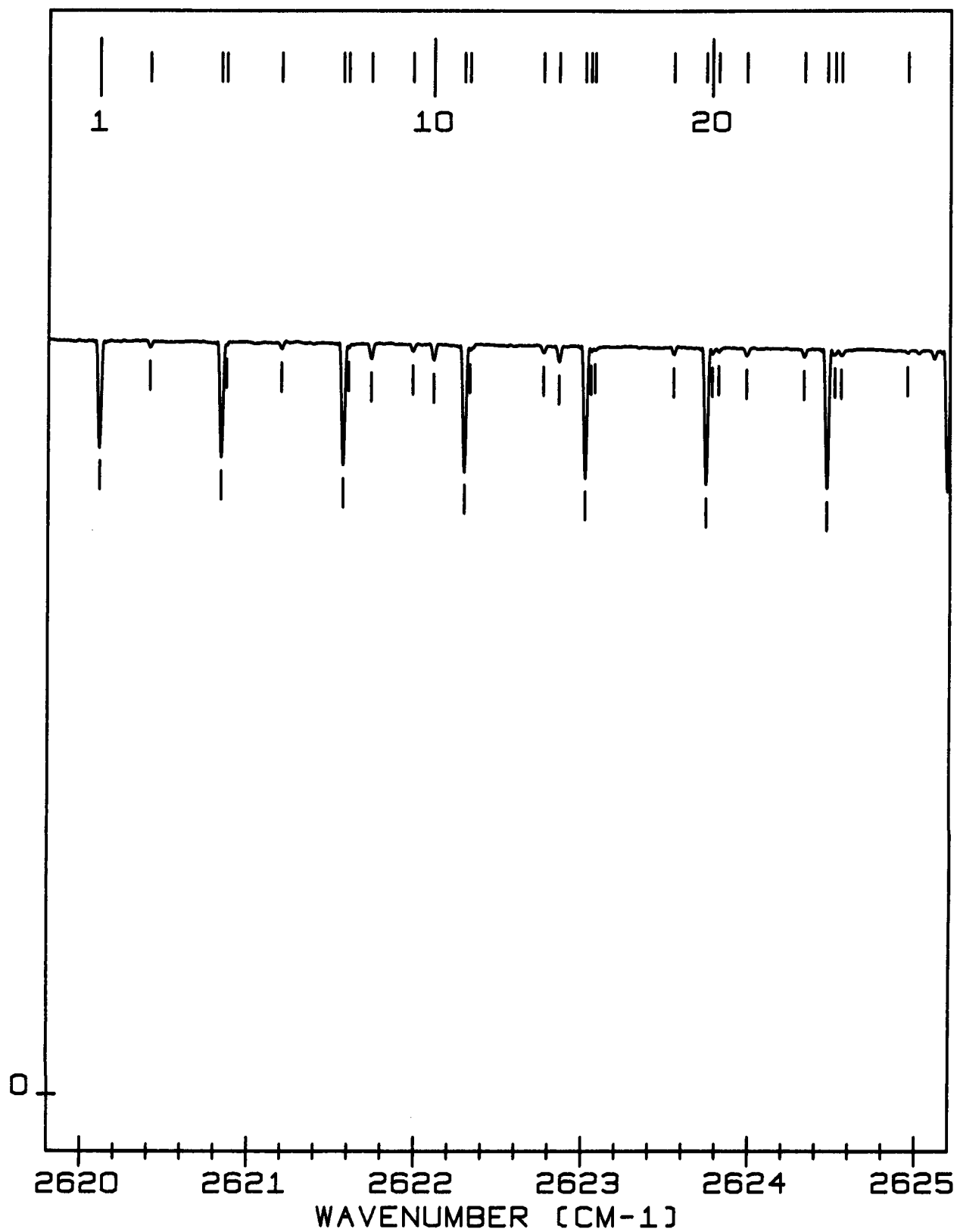


TABLE B 47

-1

Line Positions and Identifications (2625-2630 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2625.01237		H2O		
2	2625.10629	2625.10591	20002-00001	627	P21
3	2625.18640	2625.18638	20002-00001	628	R14
4	2625.23905	2625.23733	21102-01101	628	R8C
5	2625.29005	2625.29015	21102-01101	628	R8D
6	2625.44120		H2O		
7	2625.90838	2625.90843	20002-00001	628	R15
8	2625.96582	2625.96529	21102-01101	628	R9C
9	2626.02830	2626.02880	21102-01101	628	R9D
10	2626.62963	2626.62958	20002-00001	628	R16
11	2626.66343	2626.66301	20002-00001	627	P19
12	2626.69250	2626.69231	21102-01101	628	R10C
13	2626.76780	2626.76748	21102-01101	628	R10D
14	2627.34992	2627.34984	20002-00001	628	R17
15	2627.43857	2627.43998	20002-00001	627	P18
		2627.41839	21102-01101	628	R11C
16	2627.50551	2627.50618	21102-01101	628	R11D
17	2628.06933	2628.06920	20002-00001	628	R18
18	2628.14410	2628.14353	21102-01101	628	R12C
19	2628.21571	2628.21590	20002-00001	627	P17
20	2628.24680	2628.24491	21102-01101	628	R12D
21	2628.45821		H2O		
22	2628.78783	2628.78768	20002-00001	628	R19
23	2628.86658	2628.86772	21102-01101	628	R13C
24	2628.98824	2628.99076	20002-00001	627	P16
		2628.98365	21102-01101	628	R13D
25	2629.50540	2629.50526	20002-00001	628	R20
26	2629.59089	2629.59096	21102-01101	628	R14C
27	2629.72264	2629.72240	21102-01101	628	R14D
28	2629.76541	2629.76456	20002-00001	627	P15

FRAME B47

9.857 Torr 384 meters

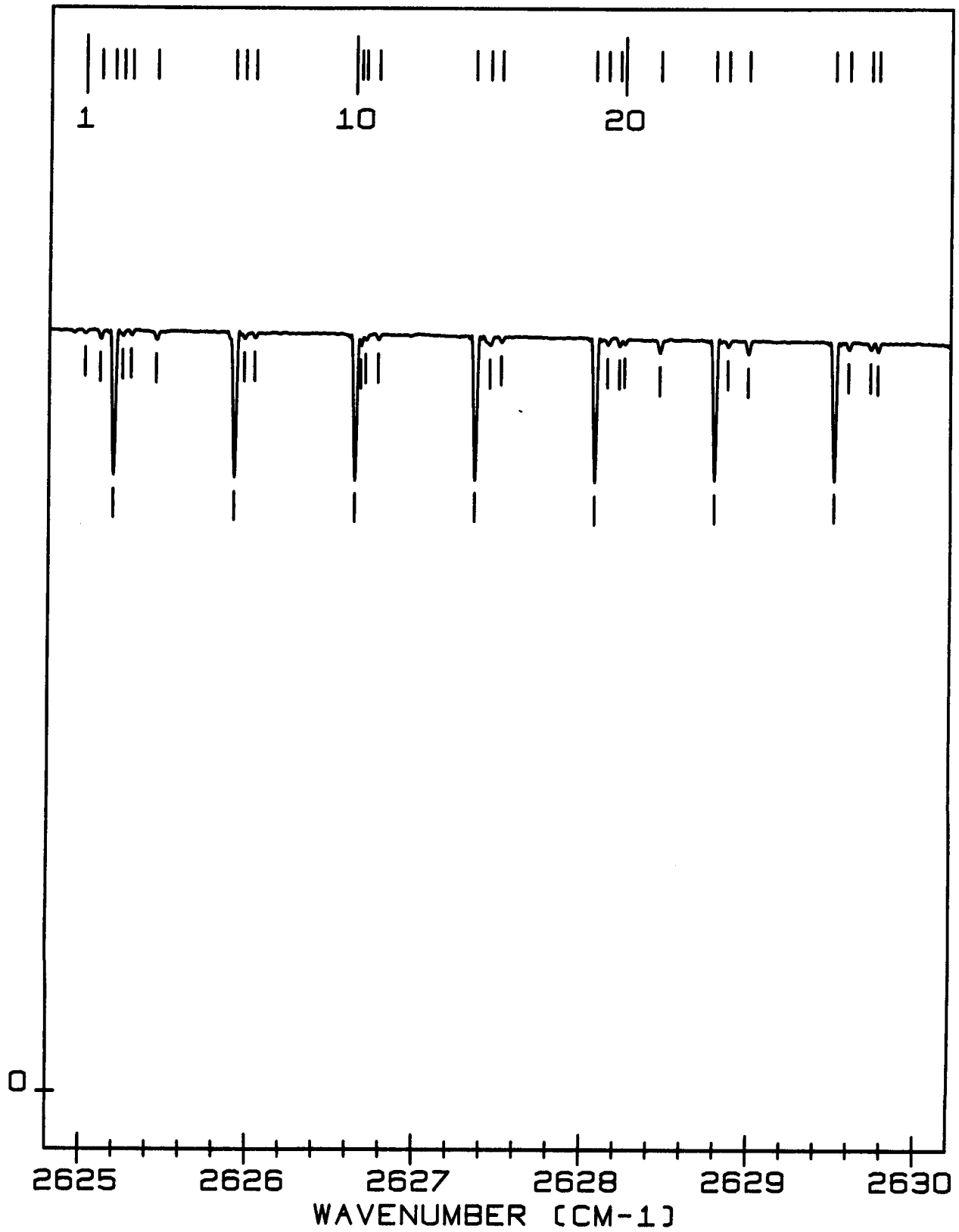


TABLE B 48

-1

Line Positions and Identifications (2630-2635 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2630.22207	2630.22196	20002-00001	628	R21
2	2630.31421	2630.31325	21102-01101	628	R15C
3	2630.46174	2630.46117	21102-01101	628	R15D
4	2630.53715	2630.53728	20002-00001	627	P14
5	2630.93790	2630.93778	20002-00001	628	R22
6	2631.03461	2631.03459	21102-01101	628	R16C
7	2631.20008	2631.19996	21102-01101	628	R16D
8	2631.30923	2631.30893	20002-00001	627	P13
9	2631.65284	2631.65271	20002-00001	628	R23
10	2631.75491	2631.75498	21102-01101	628	R17C
11	2631.93943	2631.93876	21102-01101	628	R17D
12	2632.07953	2632.07949	20002-00001	627	P12
13	2632.36693	2632.36677	20002-00001	628	R24
14	2632.47535	2632.47440	21102-01101	628	R18C
15	2632.67881	2632.67756	21102-01101	628	R18D
16	2632.84843	2632.84897	20002-00001	627	P11
17	2633.08007	2633.07995	20002-00001	628	R25
18	2633.19282	2633.19287	21102-01101	628	R19C
19	2633.41669	2633.41638	21102-01101	628	R19D
20	2633.61737	2633.61736	20002-00001	627	P10
21	2633.79239	2633.79226	20002-00001	628	R26
22	2633.90962	2633.91038	21102-01101	628	R20C
23	2634.15563	2634.15520	21102-01101	628	R20D
24	2634.38439	2634.38465	20002-00001	627	P9
25	2634.50384	2634.50370	20002-00001	628	R27
26	2634.62773	2634.62693	21102-01101	628	R21C
27	2634.89552	2634.89403	21102-01101	628	R21D

FRAME B48

9.857 Torr 384 meters

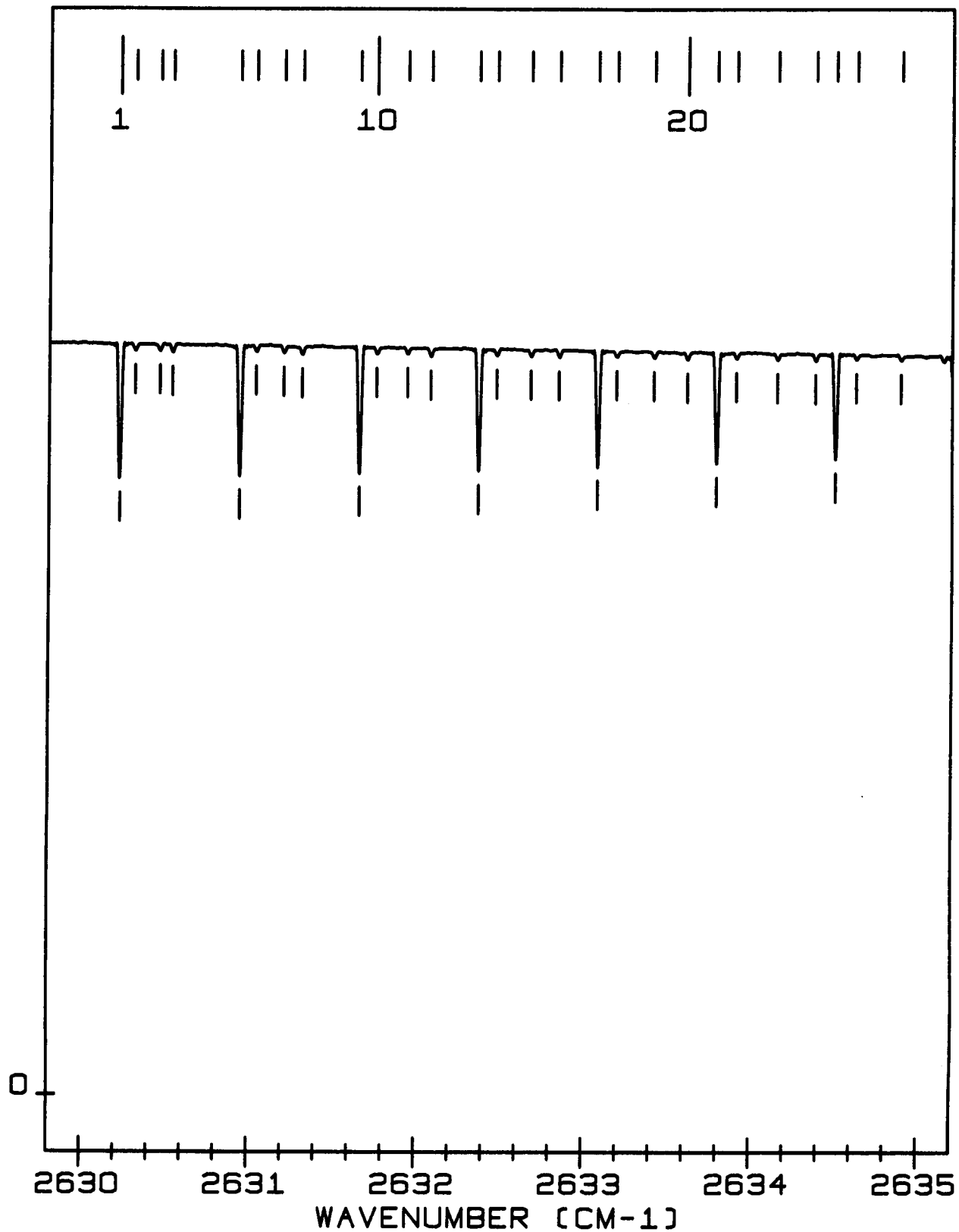


TABLE B 49

-1

Line Positions and Identifications (2635-2640 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2635.15169	2635.15084	20002-00001 627 P8
2	2635.21438	2635.21428	20002-00001 628 R28
3	2635.34306	2635.34252	21102-01101 628 R22C
4	2635.59236		H2O
5	2635.63340	2635.63287	21102-01101 628 R22D
6	2635.92368	2635.92401	20002-00001 628 R29
		2635.91592	20002-00001 627 P7
7	2636.05774	2636.05713	21102-01101 628 R23C
8	2636.37100	2636.37170	21102-01101 628 R23D
9	2636.63295	2636.63287	20002-00001 628 R30
10	2636.68088	2636.67989	20002-00001 627 P6
11	2636.77080	2636.77079	21102-01101 628 R24C
12	2637.11006	2637.11054	21102-01101 628 R24D
13	2637.34256	2637.34089	20002-00001 628 R31
14	2637.44279	2637.44275	20002-00001 627 P5
15	2637.48345	2637.48347	21102-01101 628 R25C
16	2637.85041	2637.84939	21102-01101 628 R25D
17	2638.04805	2638.04807	20002-00001 628 R32
18	2638.19936	2638.19518	21102-01101 628 R26C
		2638.20450	20002-00001 627 P4
19	2638.55368		H2O
20	2638.58812	2638.58823	21102-01101 628 R26D
21	2638.72516		H2O
22	2638.75423	2638.75440	20002-00001 628 R33
23	2638.90700	2638.90593	21102-01101 628 R27C
24	2638.96351	2638.96512	20002-00001 627 P3
25	2639.32827	2639.32707	21102-01101 628 R27D
26	2639.45990	2639.45990	20002-00001 628 R34
27	2639.61633	2639.61569	21102-01101 628 R28C
28	2639.72323	2639.72462	20002-00001 627 P2

FRAME B49

9.857 Torr 384 meters

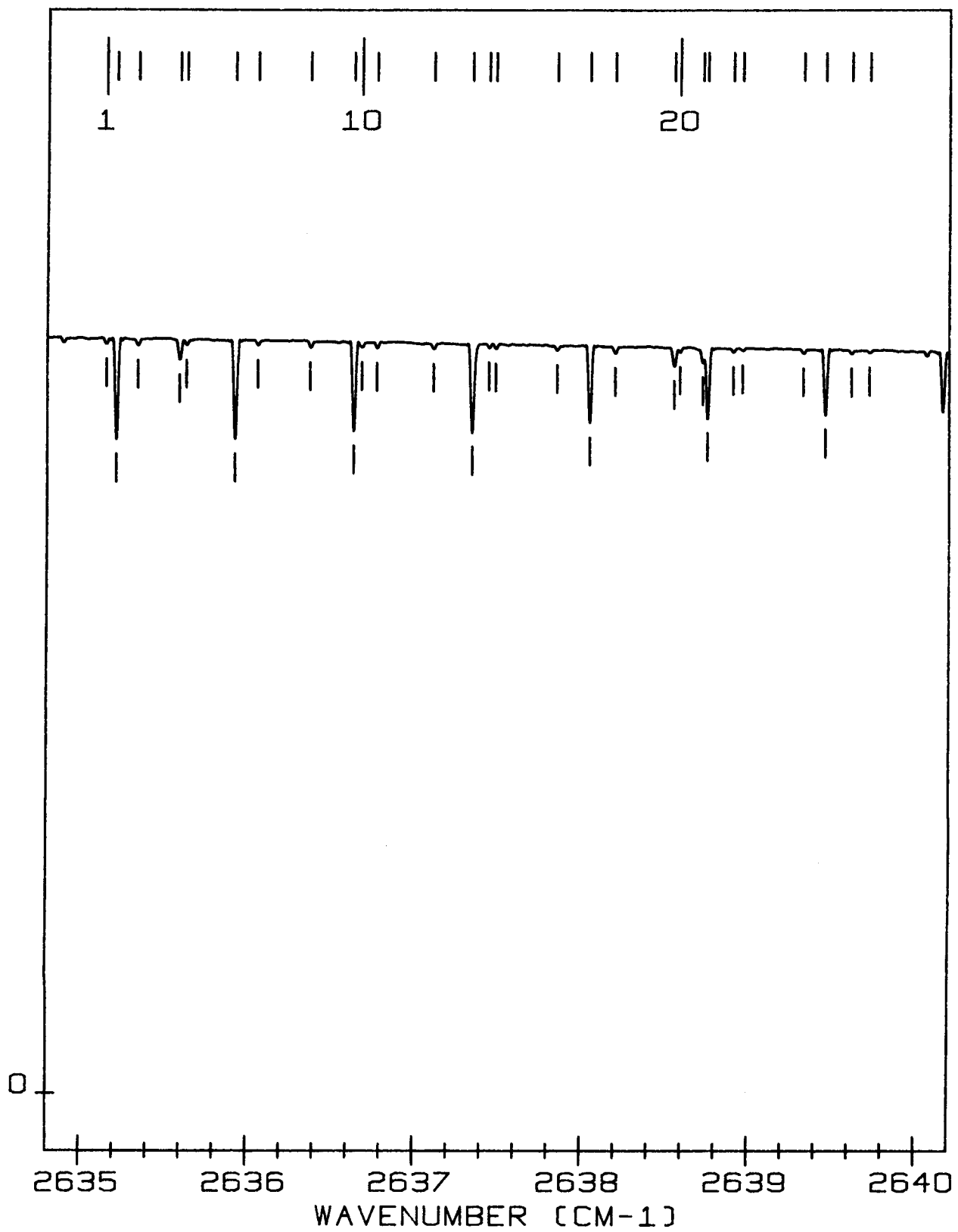




TABLE B 50

-1

Line Positions and Identifications (2640-2645 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2640.06629	2640.06591	21102-01101	628	R28D
2	2640.16448	2640.16458	20002-00001	628	R35
3	2640.32454	2640.32449	21102-01101	628	R29C
4	2640.80396	2640.80475	21102-01101	628	R29D
5	2640.86824	2640.86843	20002-00001	628	R36
6	2641.03221	2641.03231	21102-01101	628	R30C
7	2641.53991	2641.54359	21102-01101	628	R30D
8	2641.57135	2641.57147	20002-00001	628	R37
9	2641.74004	2641.73915	21102-01101	628	R31C
10	2641.99451		H2O		
11	2642.20920		H2O		
12	2642.27397	2642.27370	20002-00001	628	R38
		2642.28243	21102-01101	628	R31D
13	2642.44634	2642.44502	21102-01101	628	R32C
14	2642.56341		H2O		
15	2642.75637	2642.75130	20002-00001	627	R1
16	2642.97502	2642.97513	20002-00001	628	R39
17	2643.02174	2643.02126	21102-01101	628	R32D
18	2643.15318	2643.14991	21102-01101	628	R33C
19	2643.50274	2643.50513	20002-00001	627	R2
20	2643.67541	2643.67577	20002-00001	628	R40
21	2643.76014	2643.76009	21102-01101	628	R33D
22	2643.85182	2643.85381	21102-01101	628	R34C
23	2644.25765	2644.25781	20002-00001	627	R3
24	2644.37502	2644.37561	20002-00001	628	R41
25	2644.46456		H2O		
26	2644.49938	2644.49891	21102-01101	628	R34D
27	2644.55862	2644.55674	21102-01101	628	R35C

FRAME B50

9.857 Torr 384 meters

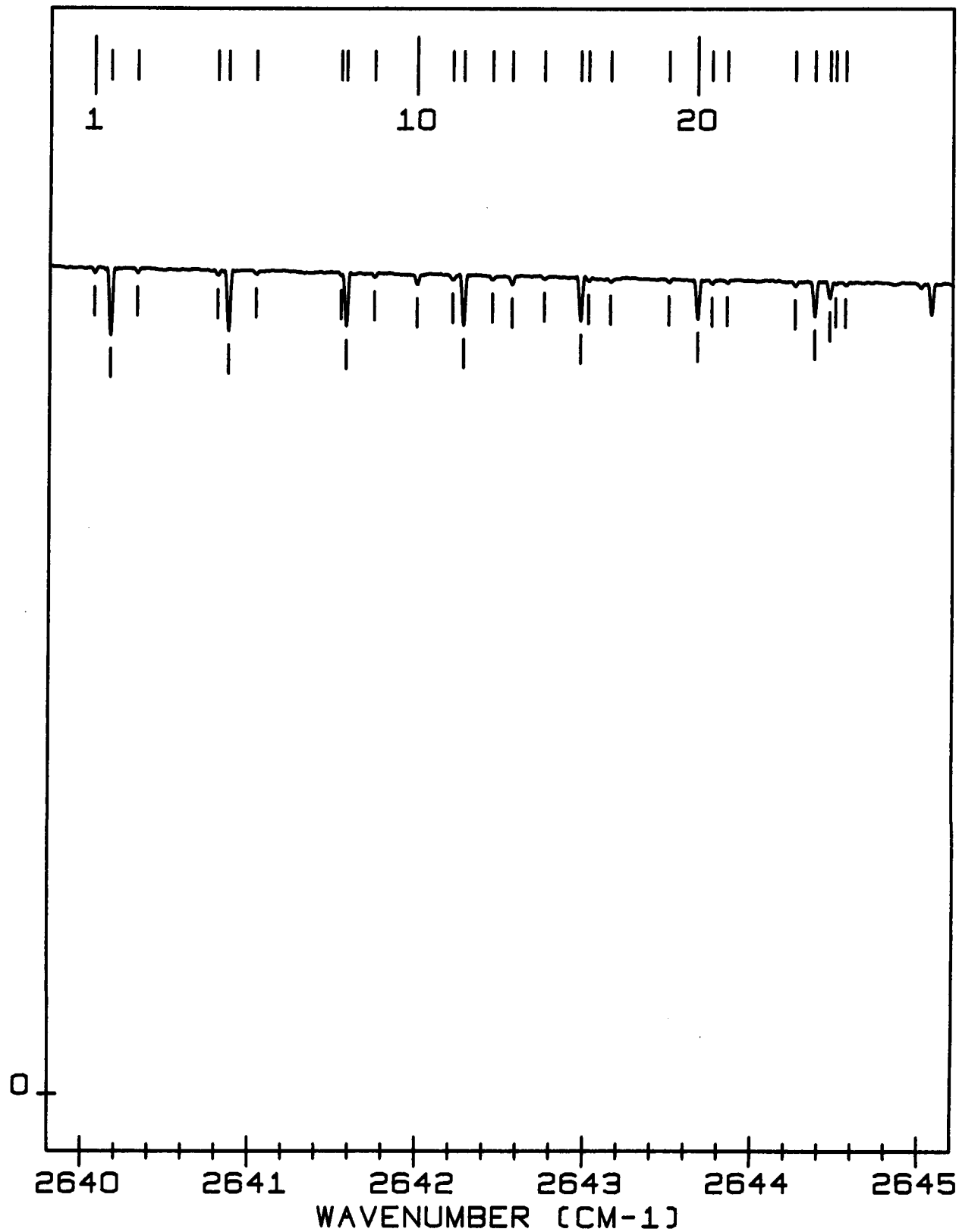


TABLE B 51

-1

Line Positions and Identifications (2645-2650 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2645.00956	2645.00935	20002-00001	627	R4
2	2645.07465	2645.07468	20002-00001	628	R42
3	2645.24647	2645.23773	21102-01101	628	R35D
		2645.25869	21102-01101	628	R36C
4	2645.77104	2645.77298	20002-00001	628	R43
		2645.75974	20002-00001	627	R5
5	2645.97652	2645.97654	21102-01101	628	R36D
		2645.95965	21102-01101	628	R37C
6	2646.47038	2646.47051	20002-00001	628	R44
7	2646.50897	2646.50898	20002-00001	627	R6
8	2646.65831	2646.65963	21102-01101	628	R38C
9	2646.71503	2646.71535	21102-01101	628	R37D
10	2646.78680		?		
11	2647.16709	2647.16729	20002-00001	628	R45
12	2647.25683	2647.25707	20002-00001	627	R7
13	2647.36231	2647.35862	21102-01101	628	R39C
14	2647.45377	2647.45416	21102-01101	628	R38D
15	2647.53568		?		
16	2647.86336	2647.86332	20002-00001	628	R46
17	2648.00406	2648.00400	20002-00001	627	R8
18	2648.05196	2648.05663	21102-01101	628	R40C
19	2648.19119	2648.19296	21102-01101	628	R39D
20	2648.55847	2648.55862	20002-00001	628	R47
21	2648.67090		?		
22	2648.74949	2648.74978	20002-00001	627	R9
		2648.75366	21102-01101	628	R41C
23	2648.93570	2648.93175	21102-01101	628	R40D
24	2649.25295	2649.25318	20002-00001	628	R48
25	2649.34697		H2O		
26	2649.44791	2649.44970	21102-01101	628	R42C
27	2649.49503	2649.49440	20002-00001	627	R10
28	2649.67200	2649.67055	21102-01101	628	R41D
29	2649.94765	2649.94703	20002-00001	628	R49

FRAME B51

9.857 Torr 384 meters

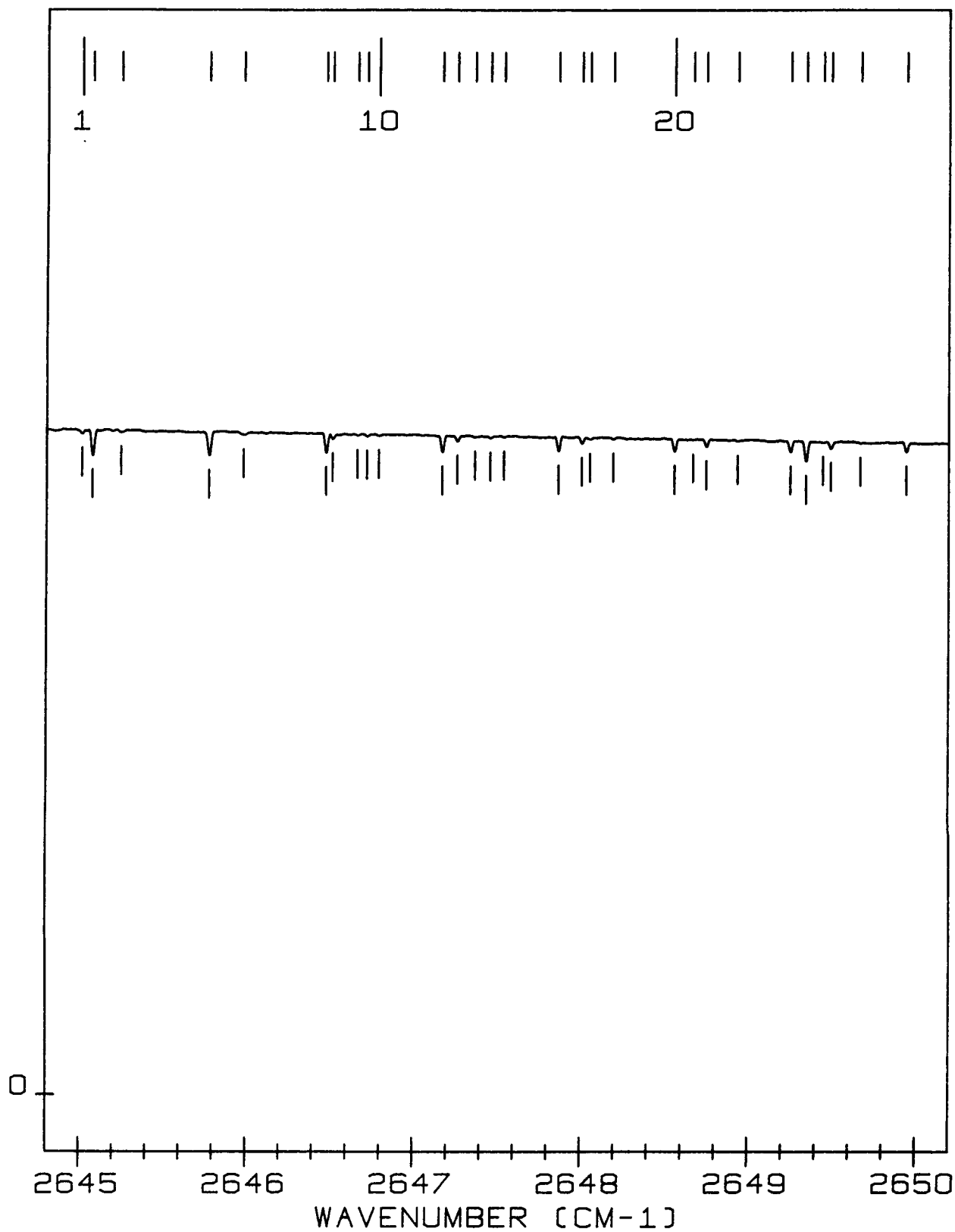


TABLE B 52

-1

Line Positions and Identifications (2650-2655 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2650.14282	2650.14475	21102-01101 628	R43C
2	2650.23782	2650.23786	20002-00001 627	R11
3	2650.40832	2650.40933	21102-01101 628	R42D
4	2650.64066	2650.64017	20002-00001 628	R50
5	2650.83587	2650.83881	21102-01101 628	R44C
6	2650.97994	2650.98017	20002-00001 627	R12
7	2651.33353	2651.33260	20002-00001 628	R51
8	2651.72191	2651.72131	20002-00001 627	R13
9	2651.82228		H2O	
10	2651.88644	2651.88690	21102-01101 628	R44D
11	2652.02475	2652.02435	20002-00001 628	R52
12	2652.46115	2652.46129	20002-00001 627	R14
13	2652.62603	2652.62567	21102-01101 628	R45D
14	2652.71564	2652.71541	20002-00001 628	R53
15	2653.20034	2653.20011	20002-00001 627	R15
16	2653.29057		?	
17	2653.40724	2653.40581	20002-00001 628	R54
18	2653.93789	2653.93776	20002-00001 627	R16
19	2654.09742	2654.09555	20002-00001 628	R55
20	2654.67427	2654.67425	20002-00001 627	R17
21	2654.78552	2654.78464	20002-00001 628	R56

FRAME B52

9.857 Torr 384 meters

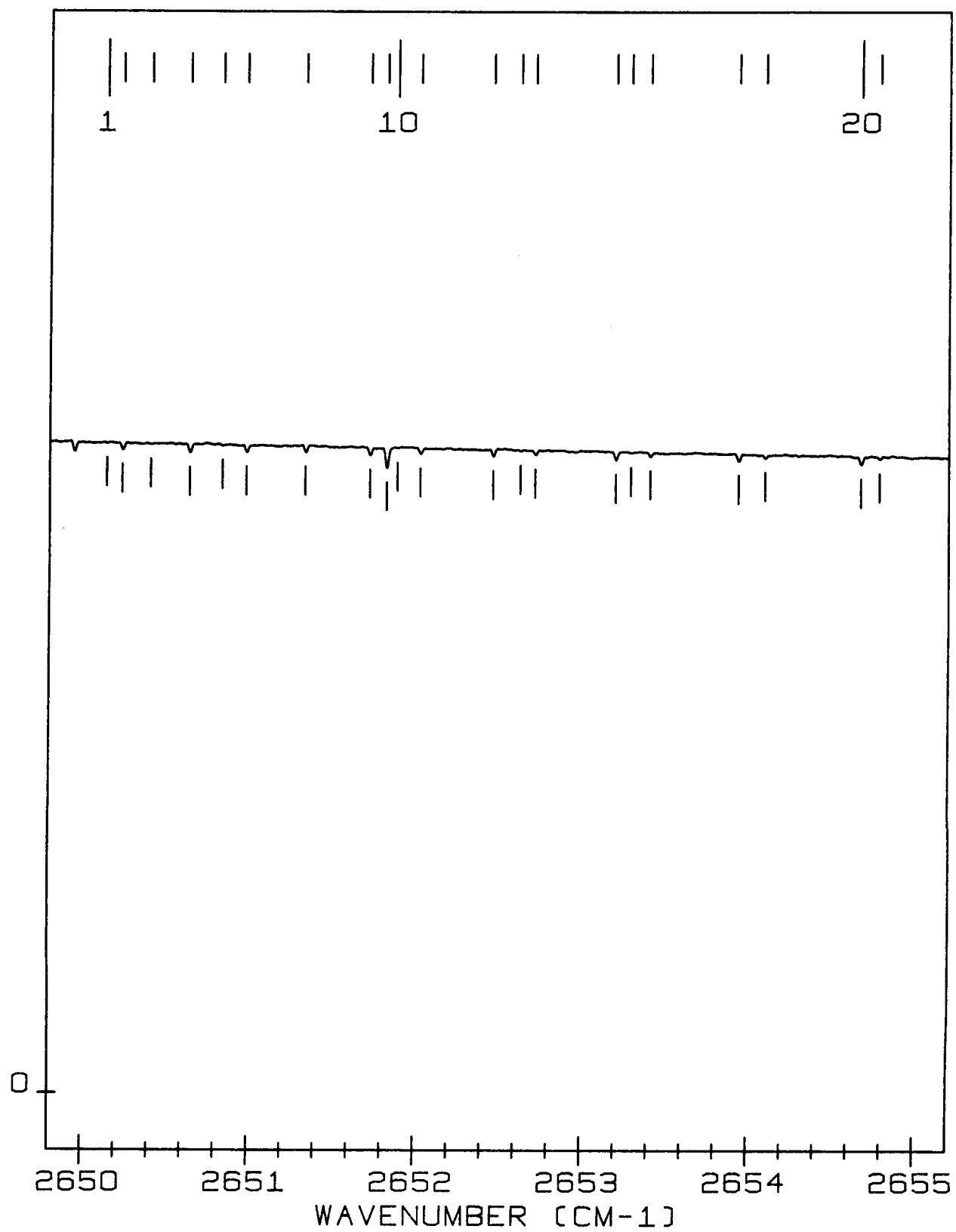


TABLE B 53

-1

Line Positions and Identifications (2655-2660 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	2655.40975	2655.40958	20002-00001 627	R18
2	2655.45573		H2O	
3	2656.14577	2656.14374	20002-00001 627	R19
4	2656.87689	2656.87674	20002-00001 627	R20
5	2657.32954		H2O	
6	2657.53786	2657.53477	20002-00001 628	R60
7	2657.60950	2657.60857	20002-00001 627	R21
8	2658.22163	2658.22080	20002-00001 628	R61
9	2658.33897	2658.33924	20002-00001 627	R22
10	2659.06881	2659.06875	20002-00001 627	R23
11	2659.27373		H2O	
12	2659.43880		?	
13	2659.59887	2659.59115	20002-00001 628	R63
14	2659.79679	2659.79709	20002-00001 627	R24

FRAME B53

9.857 Torr 384 meters

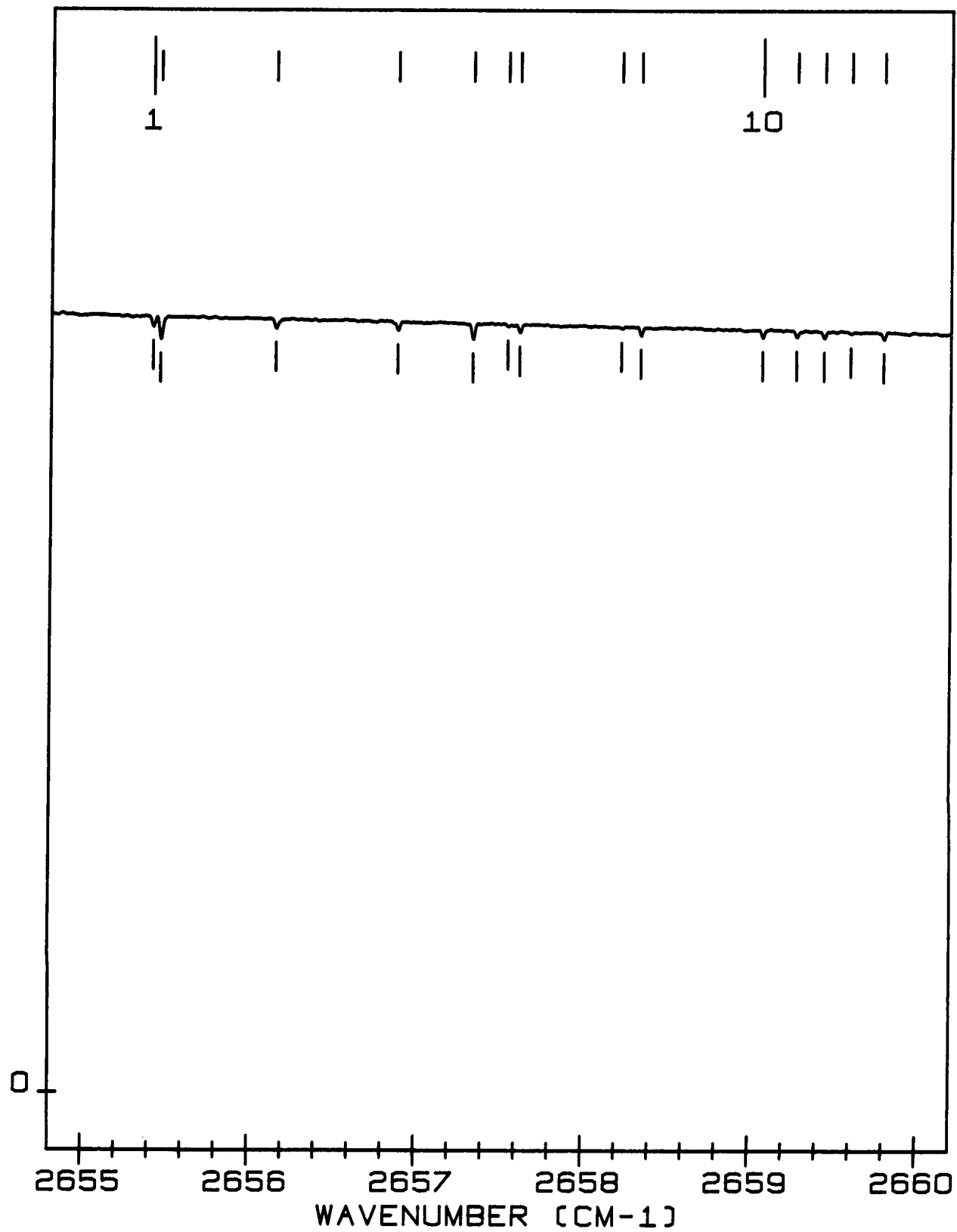




TABLE B 54

-1

Line Positions and Identifications (2660-2665 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2660.51238	2660.52428	20002-00001 627	R25	
			H2O		
2	2661.24963	2661.25030	20002-00001 627	R26	
3	2661.97535	2661.97516	20002-00001 627	R27	
4	2662.03085		H2O		
5	2662.69816	2662.69886	20002-00001 627	R28	
6	2663.28591		H2O		
7	2663.42241	2663.42140	20002-00001 627	R29	
8	2664.14245	2664.14279	20002-00001 627	R30	
9	2664.86245	2664.86303	20002-00001 627	R31	

FRAME B54

9.857 Torr 384 meters

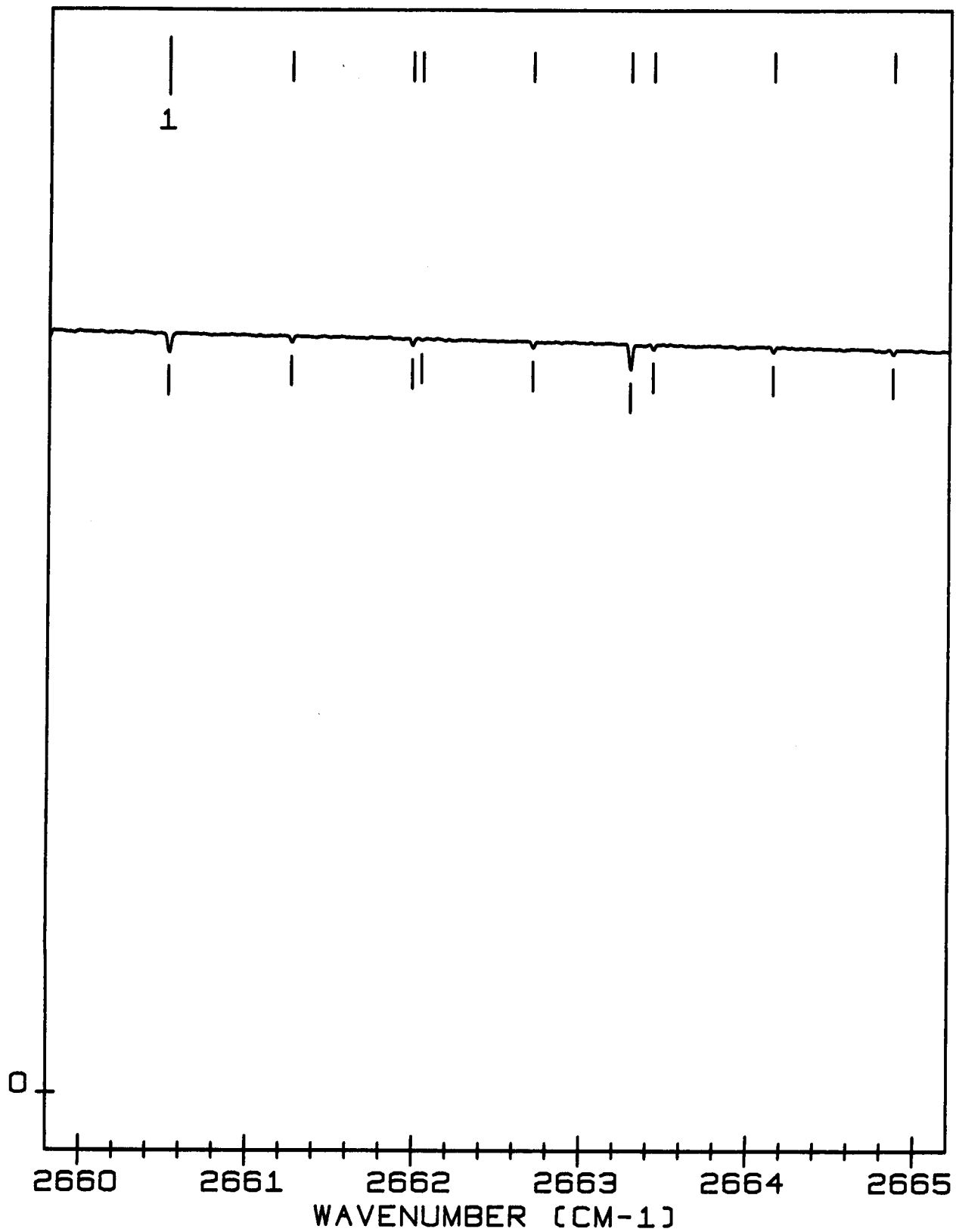


TABLE B 55

-1

Line Positions and Identifications (2665-2670 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2665.58301	2665.58211	20002-00001 627	R32	
2	2666.28755		H2O		
		2666.30004	20002-00001 627	R33	
3	2667.01666	2667.01682	20002-00001 627	R34	
4	2667.73236	2667.73246	20002-00001 627	R35	
5	2668.44877	2668.44695	20002-00001 627	R36	
6	2669.16164	2669.16031	20002-00001 627	R37	
7	2669.87072	2669.87252	20002-00001 627	R38	

FRAME B55

9.857 Torr 384 meters

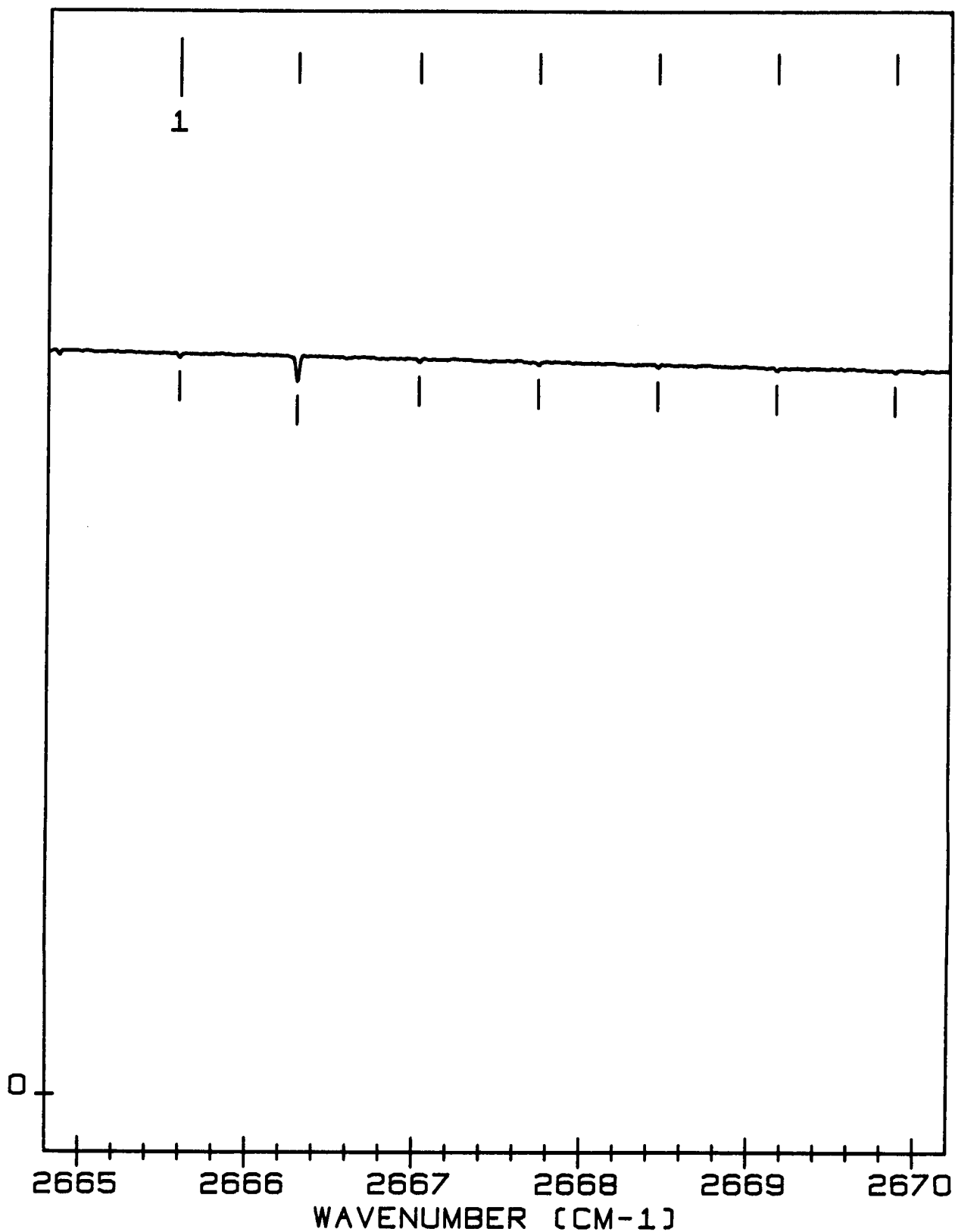


TABLE B 56

-1

Line Positions and Identifications (2670-2675 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	2670.03259		?		
2	2670.58485	2670.58360	20002-00001 627	R39	
3	2671.29145	2671.29355	20002-00001 627	R40	
4	2672.00182	2672.00237	20002-00001 627	R41	
5	2672.59299		H2O		
6	2673.06271		H2O		
7	2674.12216	2674.12209	20002-00001 627	R44	
8	2674.55648		?		
9	2674.82605	2674.82643	20002-00001 627	R45	

FRAME B56

9.857 Torr 384 meters

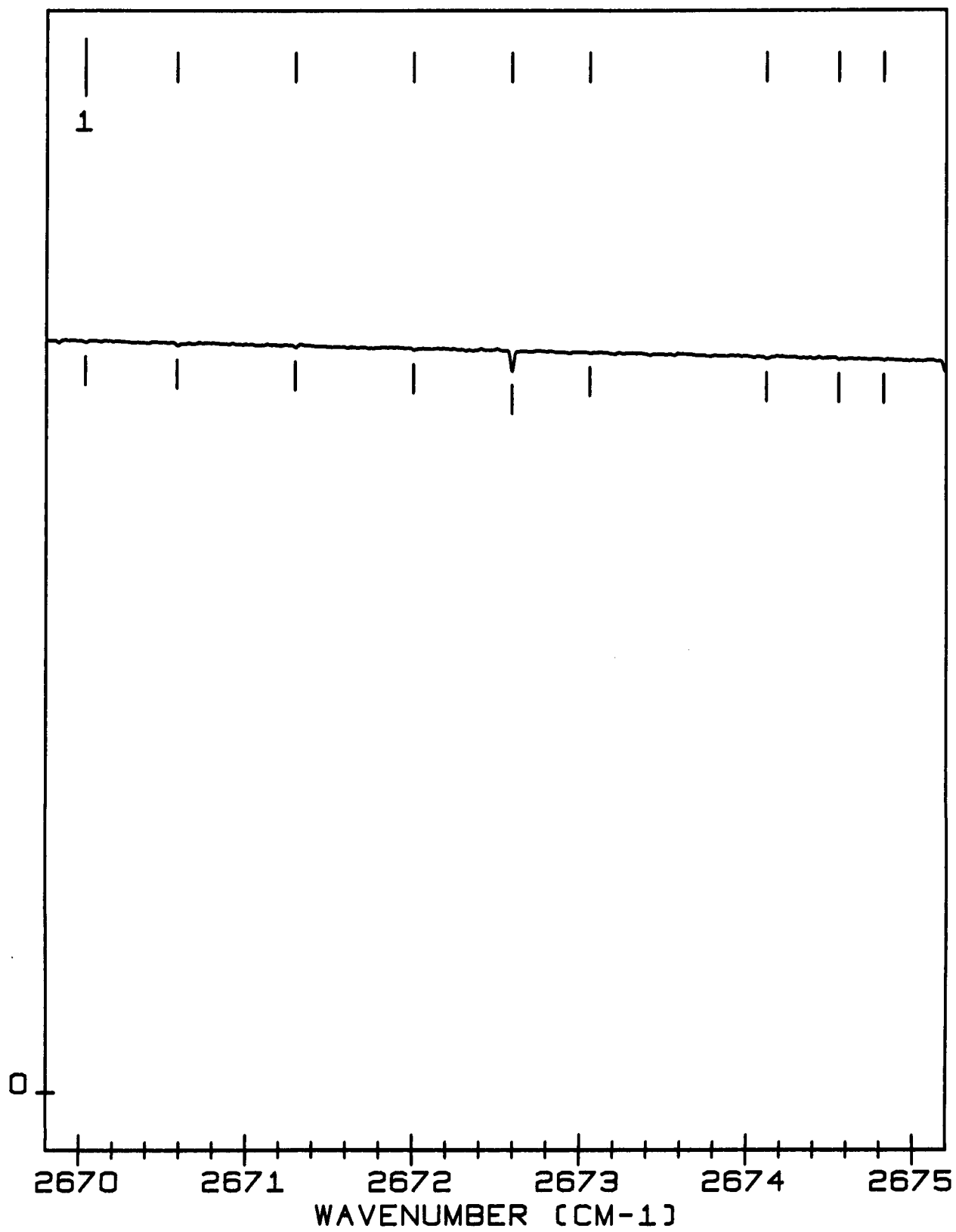


TABLE B 57

-1

Line Positions and Identifications (2675-2680 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	2675.19498		H2O
2	2676.54073		H2O
3	2677.71937		H2O

FRAME B57

9.857 Torr 384 meters

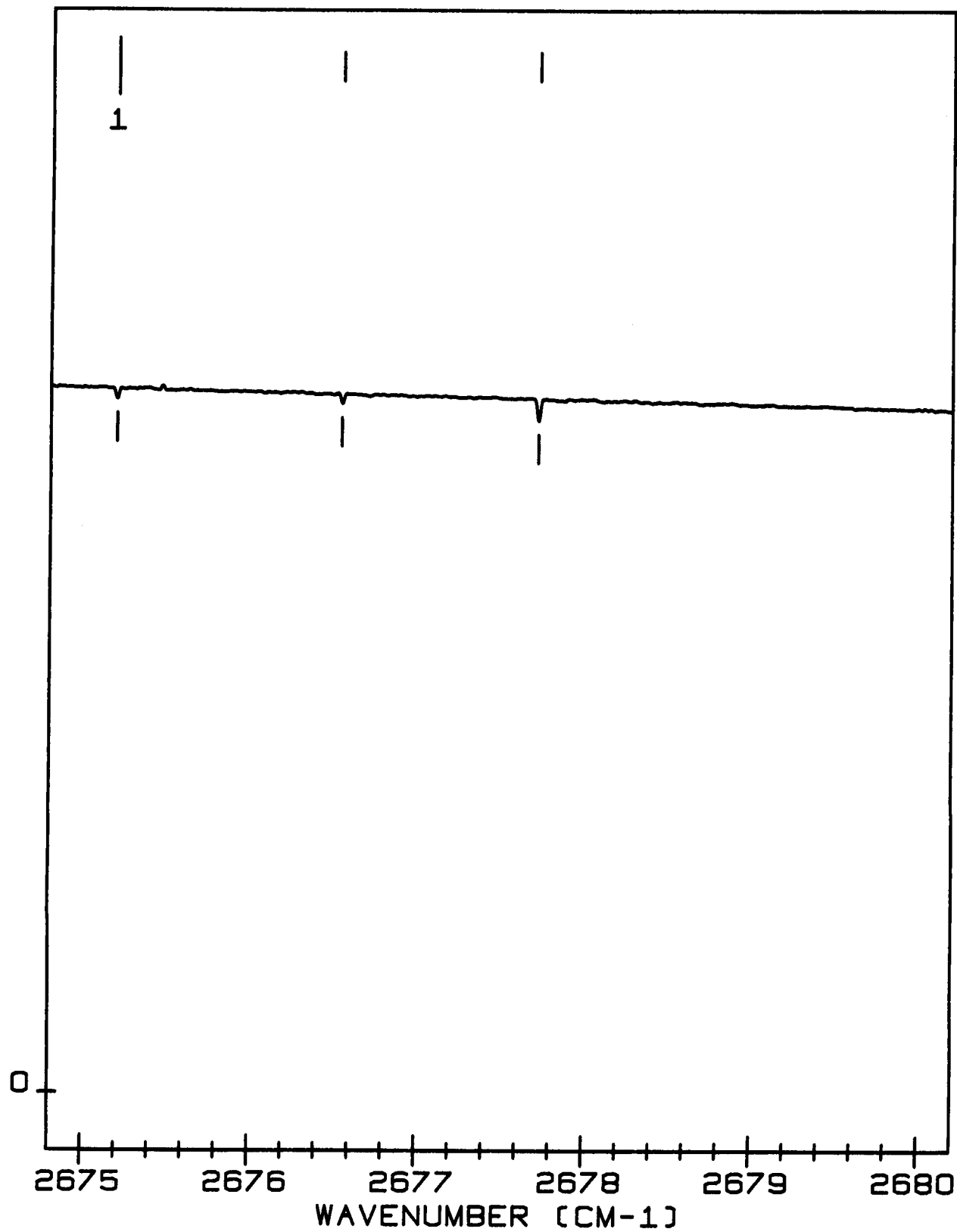




TABLE C 1

-1

Line Positions and Identifications (3140-3145 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3140.04603	3140.04618	21103-00001 626	P56	
2	3141.38305	3141.38382	30004-01101 626	R19	
3	3141.46039	3141.46043	21103-00001 626	P54	
4	3142.77975		H2O		
5	3142.87755	3142.87780	21103-00001 626	P52	
6	3143.03685	3143.03685	30004-01101 626	R21	
7	3144.29853	3144.29855	21103-00001 626	P50	
8	3144.69610	3144.69608	30004-01101 626	R23	

FRAME C1

9.985 Torr 384 meters

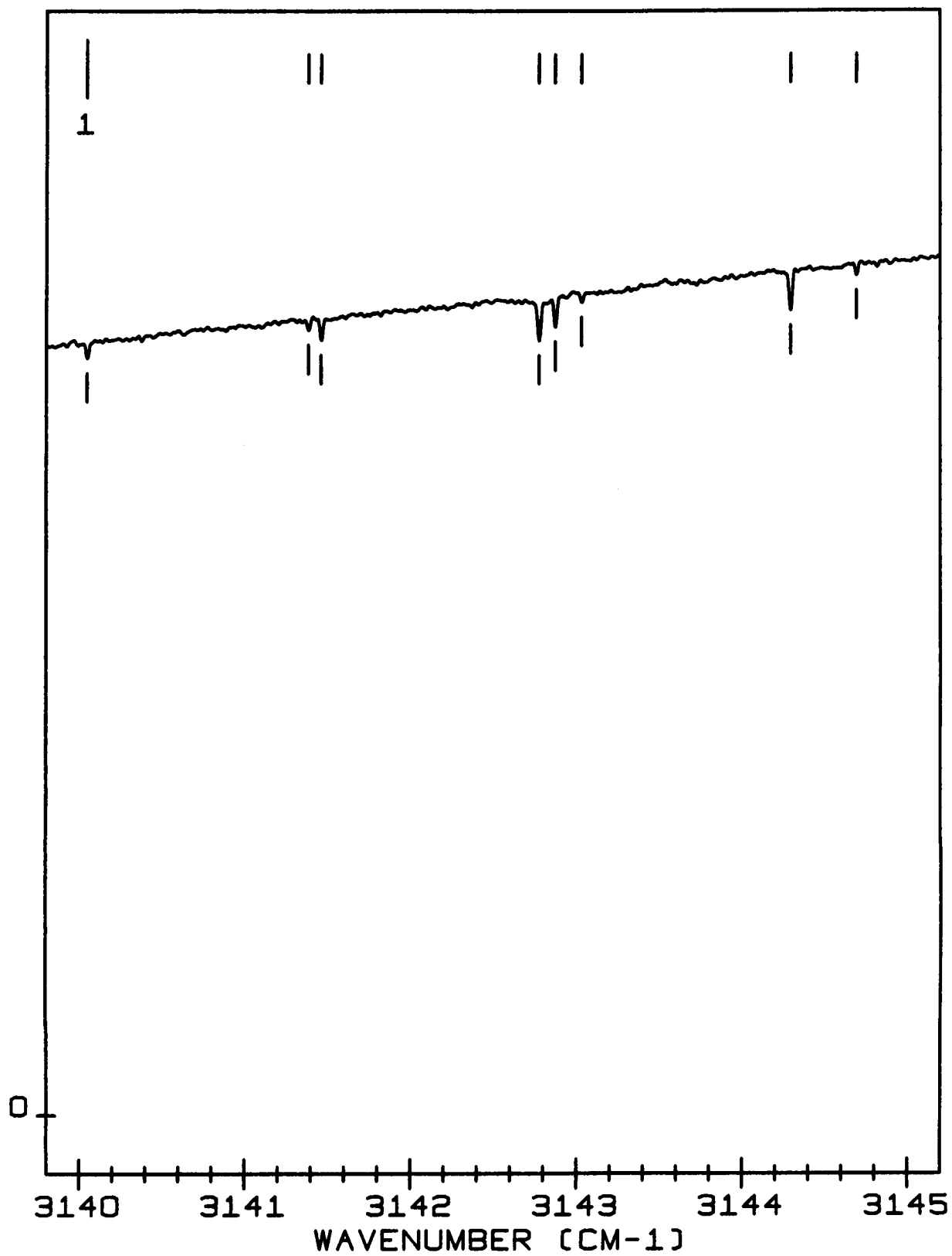


TABLE C 2

-1

Line Positions and Identifications (3145-3150 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	3145.72341	3145.72294	21103-00001 626	P48
2	3146.36135	3146.36145	30004-01101 626	R25
3	3147.15108	3147.15119	21103-00001 626	P46
4	3148.03091	3148.03282	30004-01101 626	R27
5	3148.58386	3148.58354	21103-00001 626	P44
6	3149.71025	3149.70997	30004-01101 626	R29

FRAME C2

9.985 Torr 384 meters

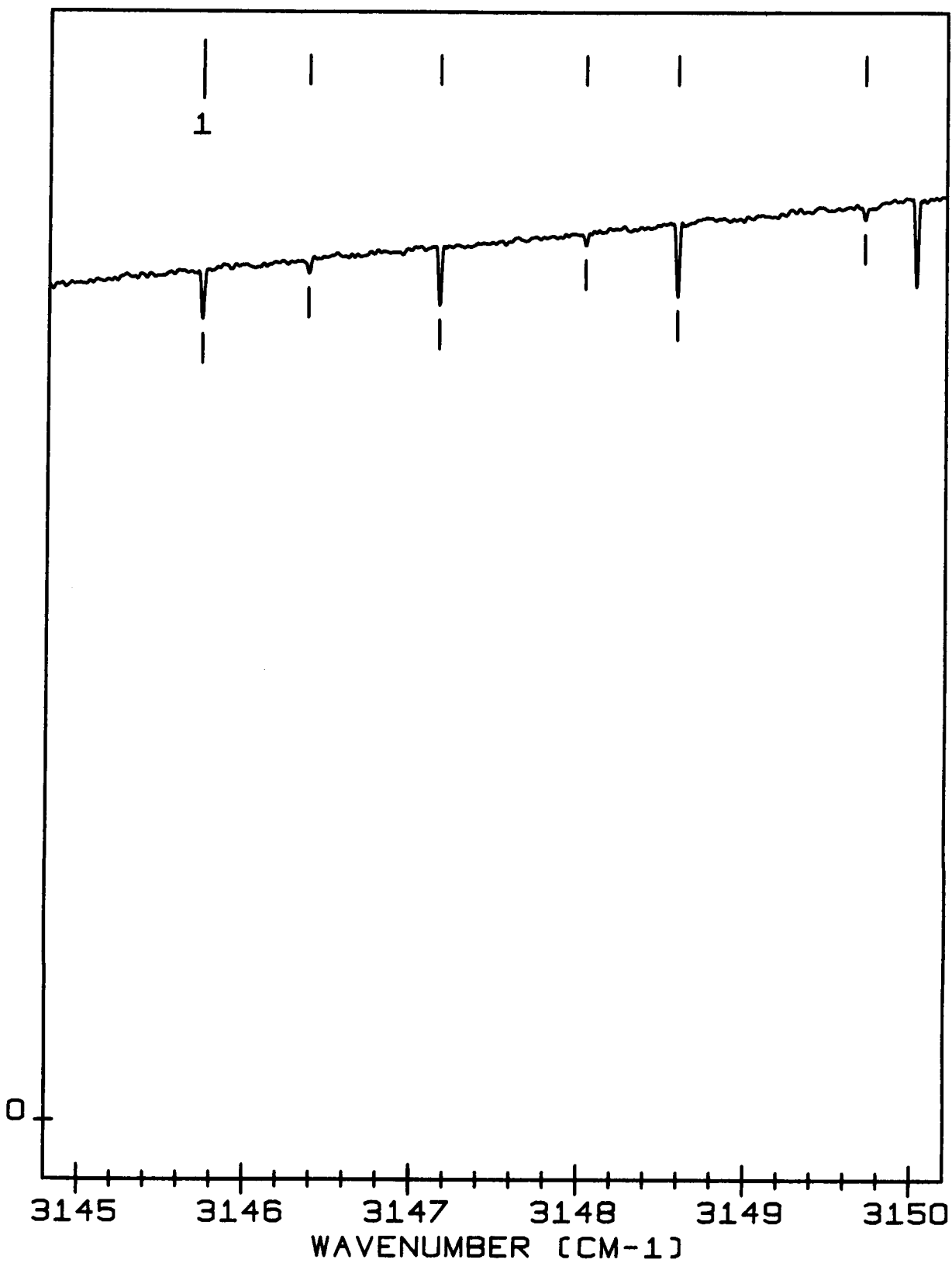


TABLE C 3

-1

Line Positions and Identifications (3150-3155 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3150.02046	3150.02020	21103-00001 626	P42	
2	3151.35548		H2O		
3	3151.39202	3151.39262	30004-01101 626	R31	
4	3151.46098	3151.46139	21103-00001 626	P40	
5	3152.90761	3152.90730	21103-00001 626	P38	
6	3153.08315	3153.08039	30004-01101 626	R33	
7	3154.35838	3154.35812	21103-00001 626	P36	
8	3154.77320	3154.77285	30004-01101 626	R35	

FRAME C3

9.985 Torr 384 meters

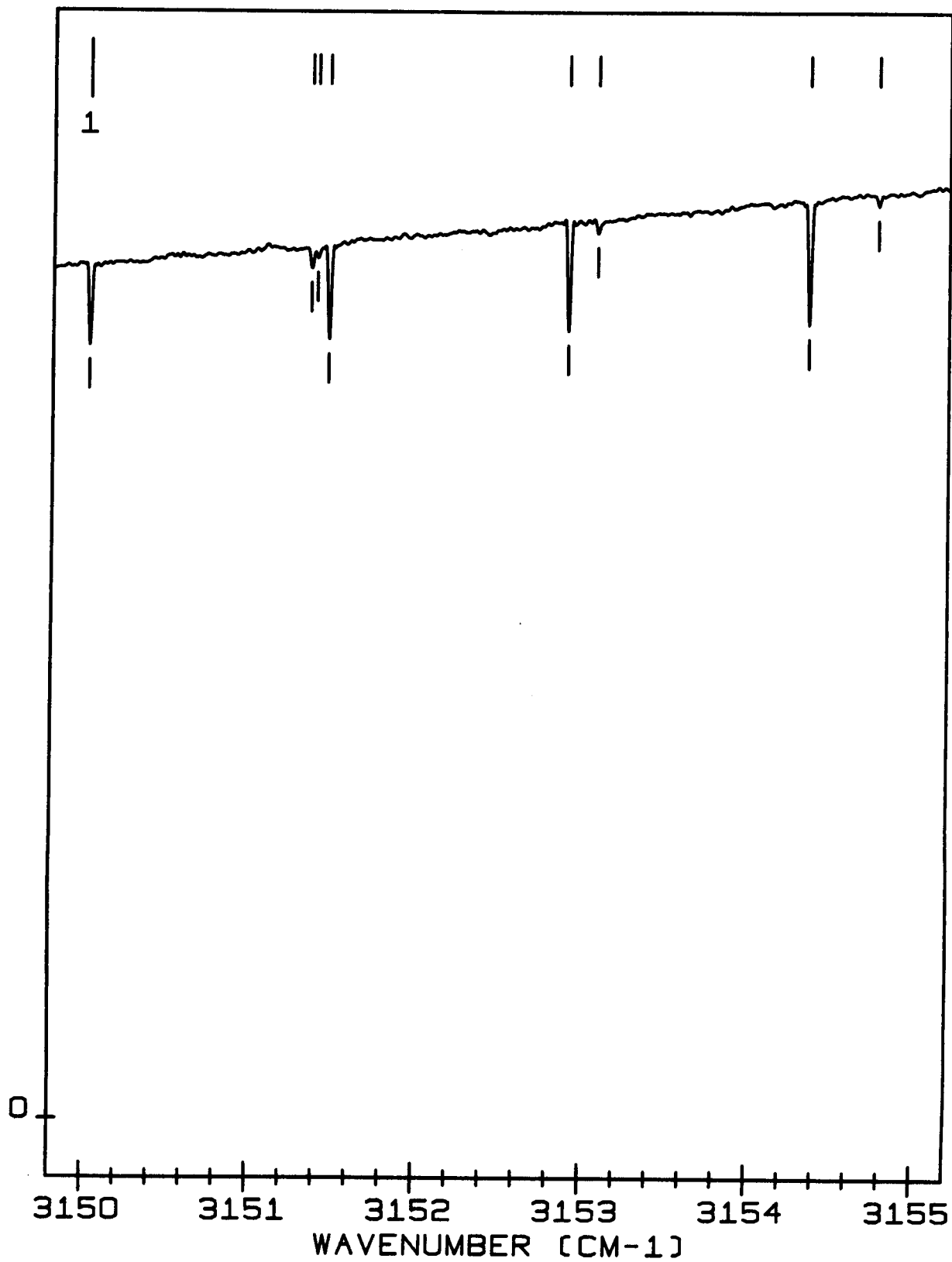


TABLE C 4

-1

Line Positions and Identifications (3155-3160 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3155.81415	3155.81404	21103-00001 626	P34	
2	3156.47065	3156.46947	30004-01101 626	R37	
3	3157.27552	3157.27521	21103-00001 626	P32	
4	3158.17036	3158.16965	30004-01101 626	R39	
5	3158.74169	3158.74180	21103-00001 626	P30	
6	3159.87091	3159.87273	30004-01101 626	R41	

## FRAME C4

9.985 Torr 384 meters

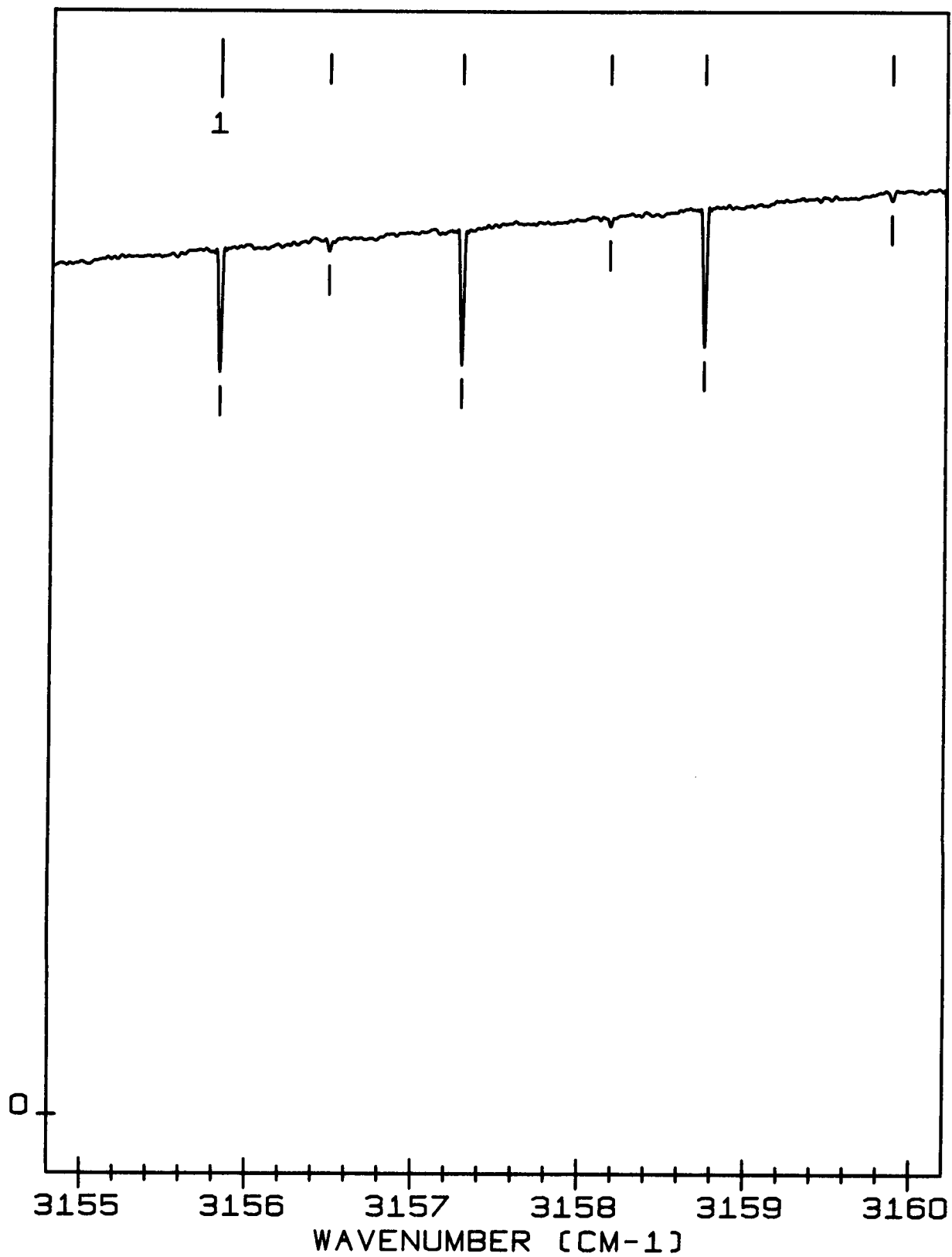




TABLE C 5

-1

Line Positions and Identifications (3160-3165 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	3160.21412	3160.21395	21103-00001 626	P28
2	3161.57761	3161.57796	30004-01101 626	R43
3	3161.69132	3161.69180	21103-00001 626	P26
4	3163.17549	3163.17548	21103-00001 626	P24
5	3163.28371	3163.28452	30004-01101 626	R45
6	3163.82835		H2O	
7	3164.66532	3164.66509	21103-00001 626	P22
8	3164.99279	3164.99150	30004-01101 626	R47

FRAME C5

9.985 Torr 384 meters

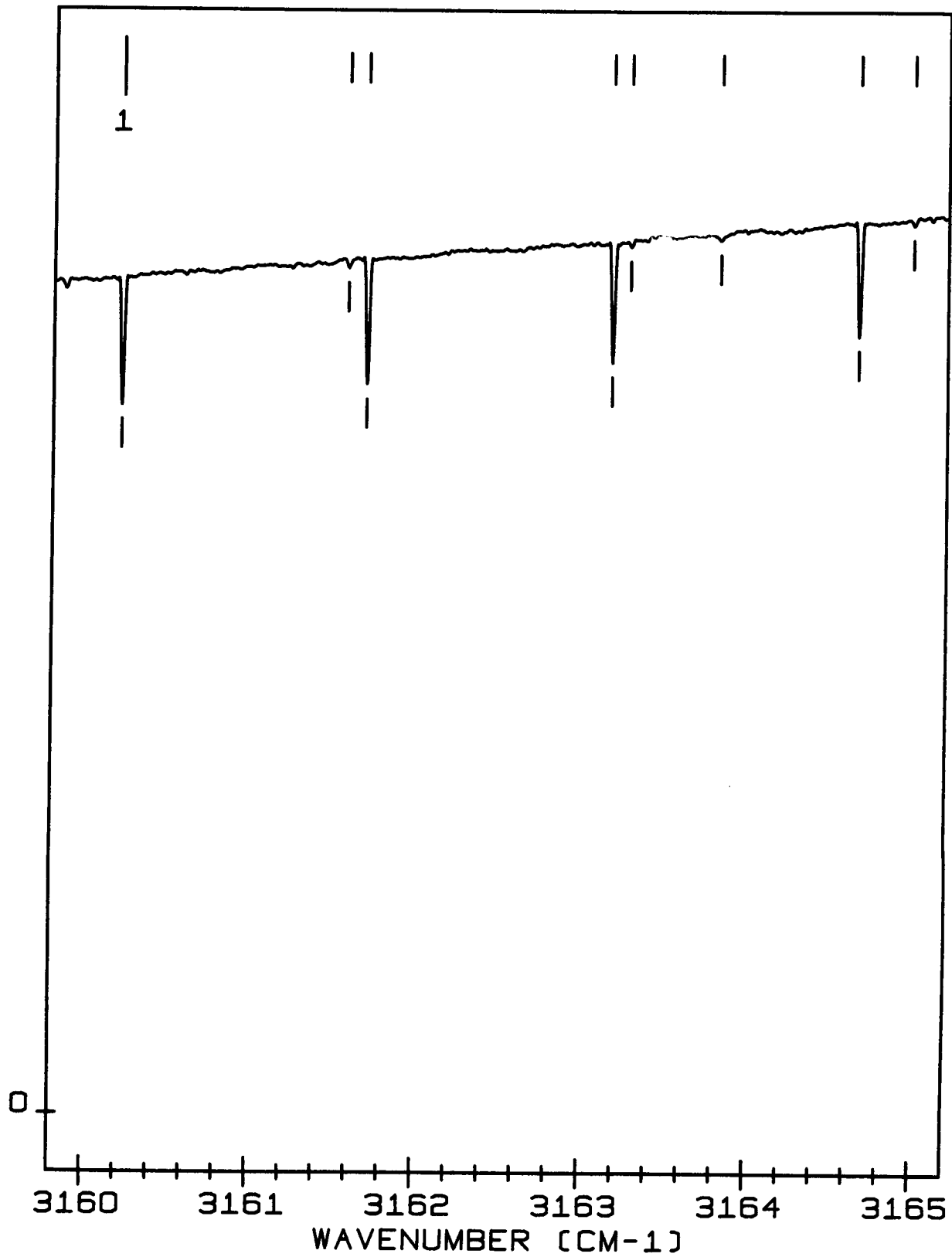


TABLE C 6

-1

Line Positions and Identifications (3165-3170 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3165.10244		H2O		
2	3165.45443		H2O		
3	3166.16066	3166.16075	21103-00001	626	P20
4	3166.45206		H2O		
5	3166.63291	3166.62880	22203-01101	626	R14
6	3166.69965	3166.69792	30004-01101	626	R49
			H2O		
7	3167.59353	3167.59596	22203-01101	626	R15
8	3167.66262	3167.66255	21103-00001	626	P18
9	3167.91197		H2O		
10	3168.26228	3168.26400	22203-01101	626	R16
11	3169.03159		?		
12	3169.17058	3169.17055	21103-00001	626	P16
13	3169.27644	3169.27634	22203-01101	626	R17
			H2O		
14	3169.30951		H2O		
15	3169.54836		H2O		
16	3169.81998		H2O		
17	3169.90569	3169.90725	22203-01101	626	R18

FRAME C6

9.985 Torr 384 meters

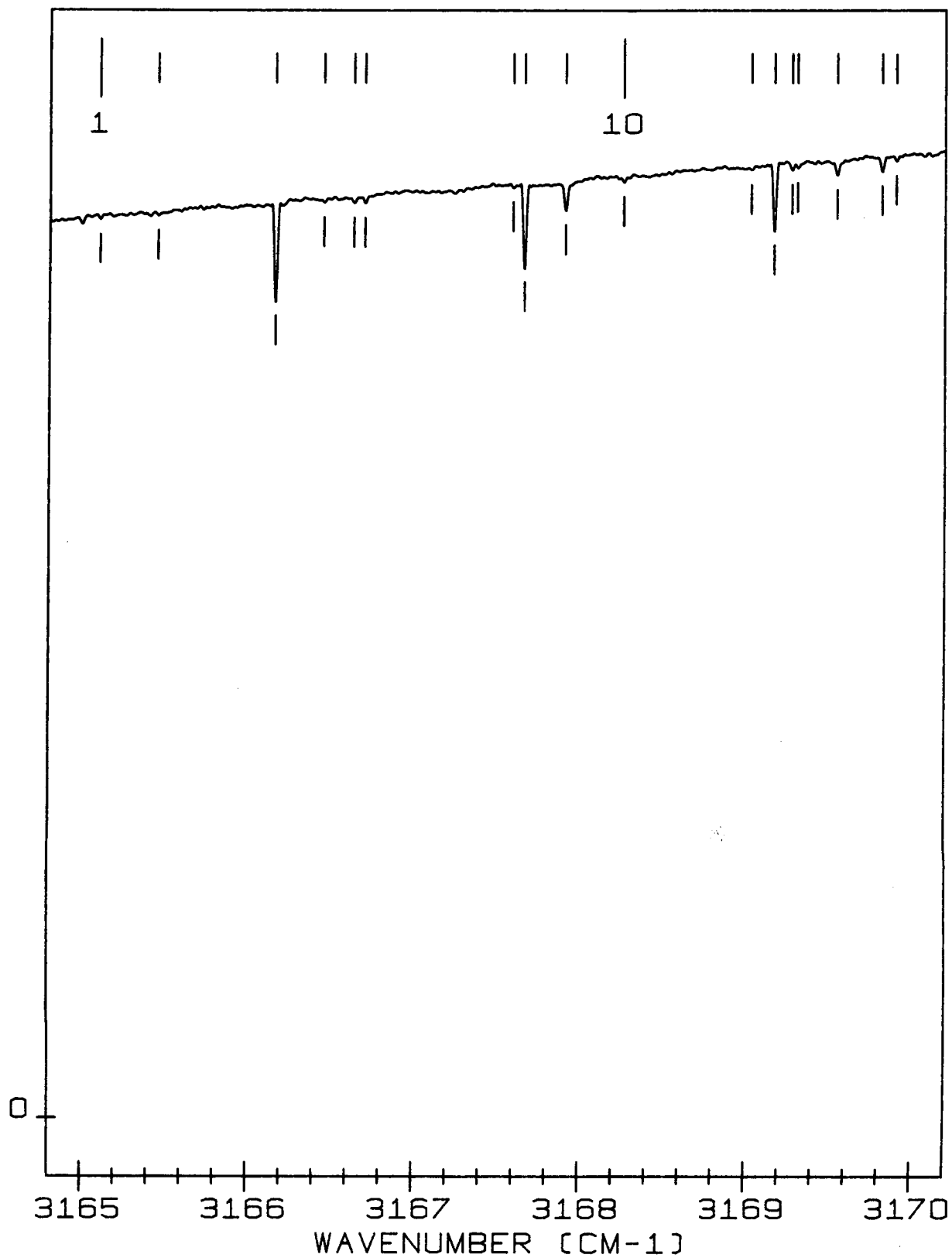


TABLE C 7

-1

Line Positions and Identifications (3170-3175 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	3170.68508	3170.68485	21103-00001 626 P14
2	3170.97223	3170.97088	22203-01101 626 R19
3	3171.55815	3171.55840	22203-01101 626 R20
4	3172.20551	3172.20548	21103-00001 626 P12
5	3172.67874	3172.67932	22203-01101 626 R21
6	3173.15705		H2O
7	3173.21820	3173.21728	22203-01101 626 R22
8	3173.73241	3173.73251	21103-00001 626 P10
9	3174.40279	3174.40141	22203-01101 626 R23
10	3174.88156	3174.88374	22203-01101 626 R24
11	3174.93345		H2O

FRAME C7

9.985 Torr 384 meters

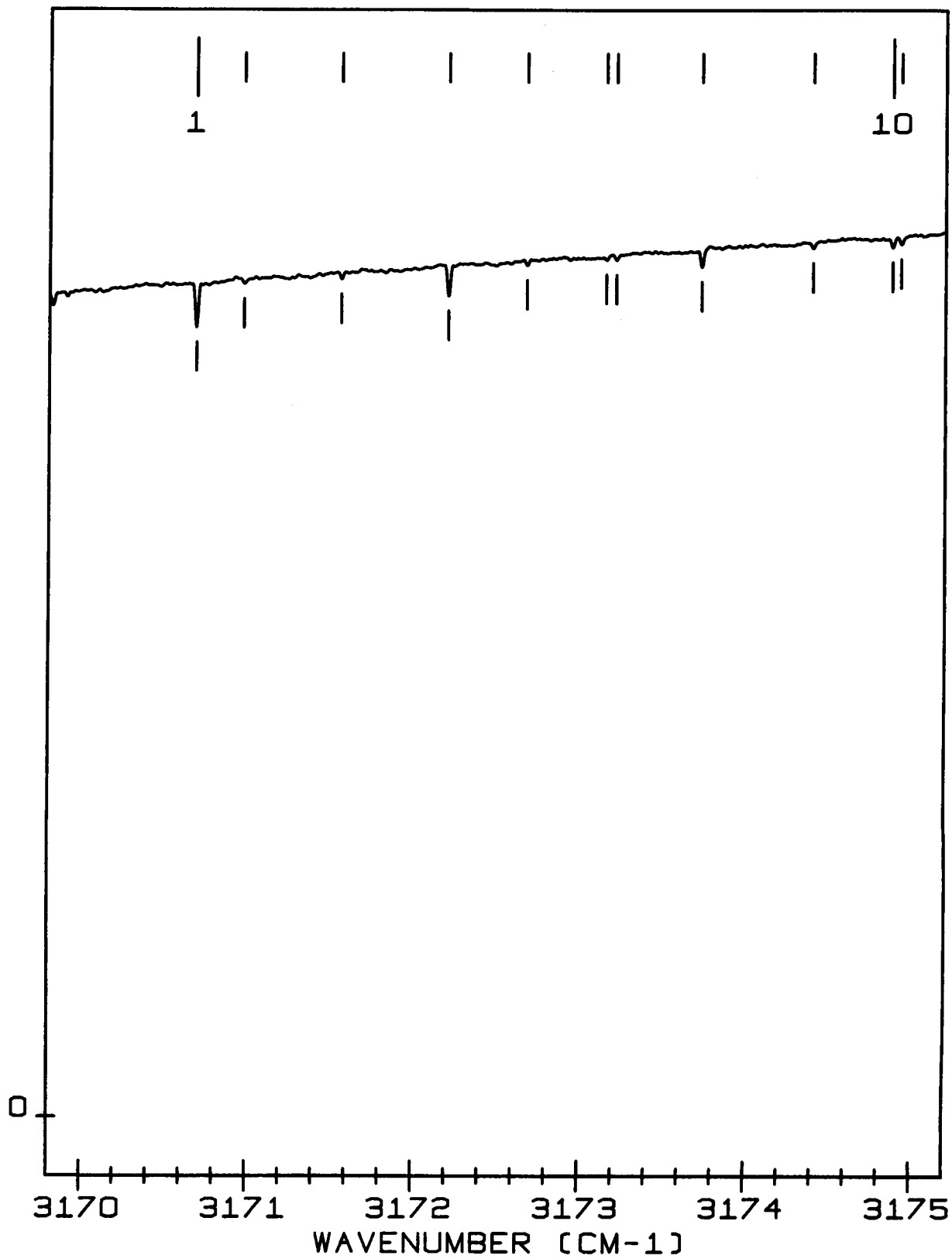


TABLE C 8

-1

Line Positions and Identifications (3175-3180 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	3175.26717	3175.26596	21103-00001 626	P8
2	3176.13593	3176.13697	22203-01101 626	R25
3	3176.55700	3176.55758	22203-01101 626	R26
4	3177.88645	3177.88581	22203-01101 626	R27
5	3178.11979		H2O	
6	3178.23708	3178.23861	22203-01101 626	R28
7	3179.64824	3179.64779	22203-01101 626	R29
8	3179.66931		H2O	
9	3179.92497	3179.92662	22203-01101 626	R30

FRAME C8

9.985 Torr 384 meters

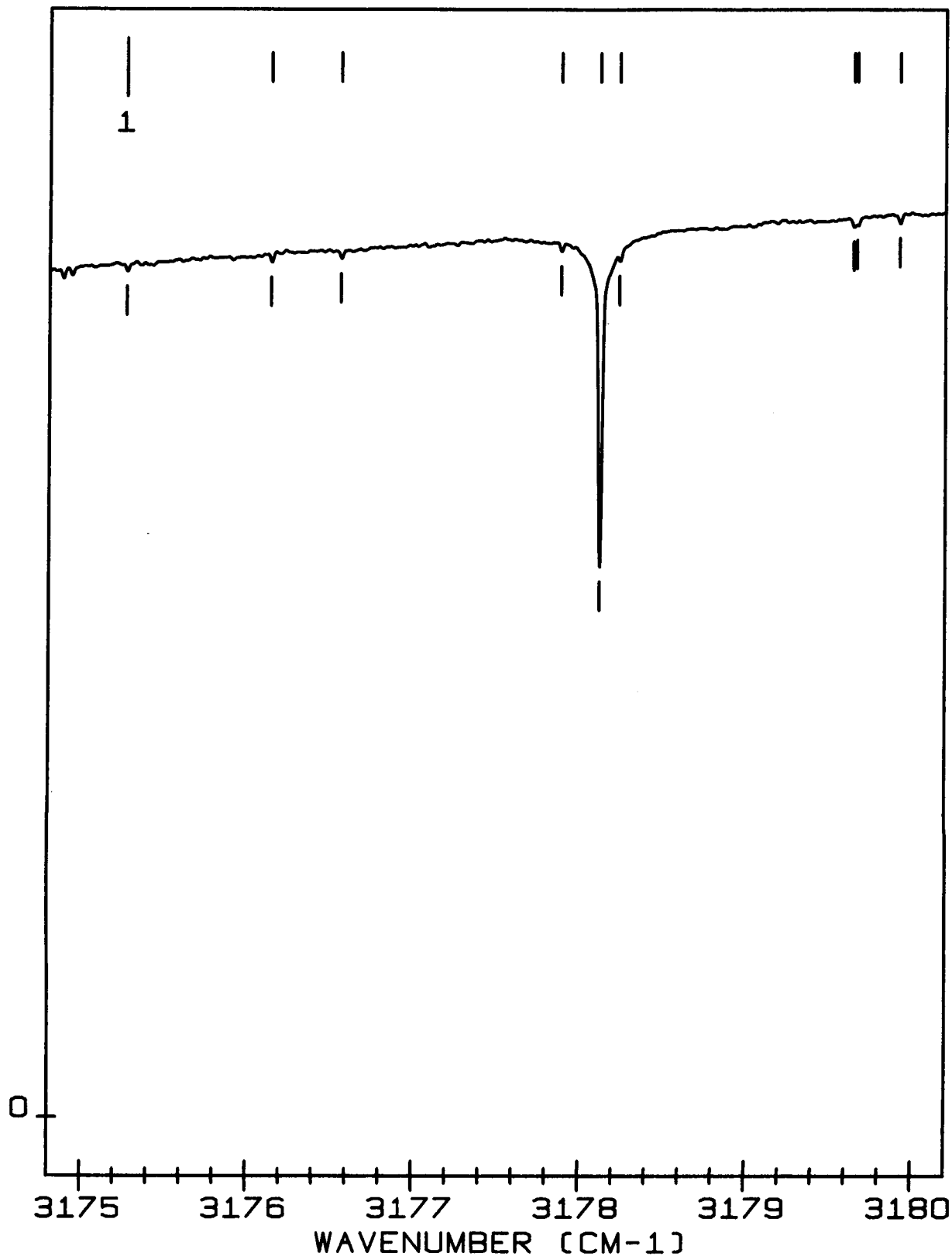




TABLE C 9

-1

Line Positions and Identifications (3180-3185 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	3181.42226	3181.42279	22203-01101 626	R31
2	3181.62060	3181.62137	22203-01101 626	R32
3	3181.69557	3181.69556	21103-00001 626	Q10
4	3181.79448	3181.79354	21103-00001 626	Q12
5	3181.91448	3181.90828	21103-00001 626	Q14
6	3182.04384	3182.03967	21103-00001 626	Q16
7	3182.18849	3182.18755	21103-00001 626	Q18
8	3182.27945		H2O	
9	3182.35165	3182.35175	21103-00001 626	Q20
10	3182.52213		H2O	
		3182.53208	21103-00001 626	Q22
11	3182.72900	3182.72834	21103-00001 626	Q24
12	3182.94277	3182.94030	21103-00001 626	Q26
13	3183.21081	3183.21074	22203-01101 626	R33
14	3183.32189	3183.32262	22203-01101 626	R34
15	3183.40994	3183.41032	21103-00001 626	Q30
16	3183.81835	3183.81526	21103-00001 626	R2
17	3184.73211		H2O	
18	3184.82478		H2O	

FRAME C9

9.985 Torr 384 meters

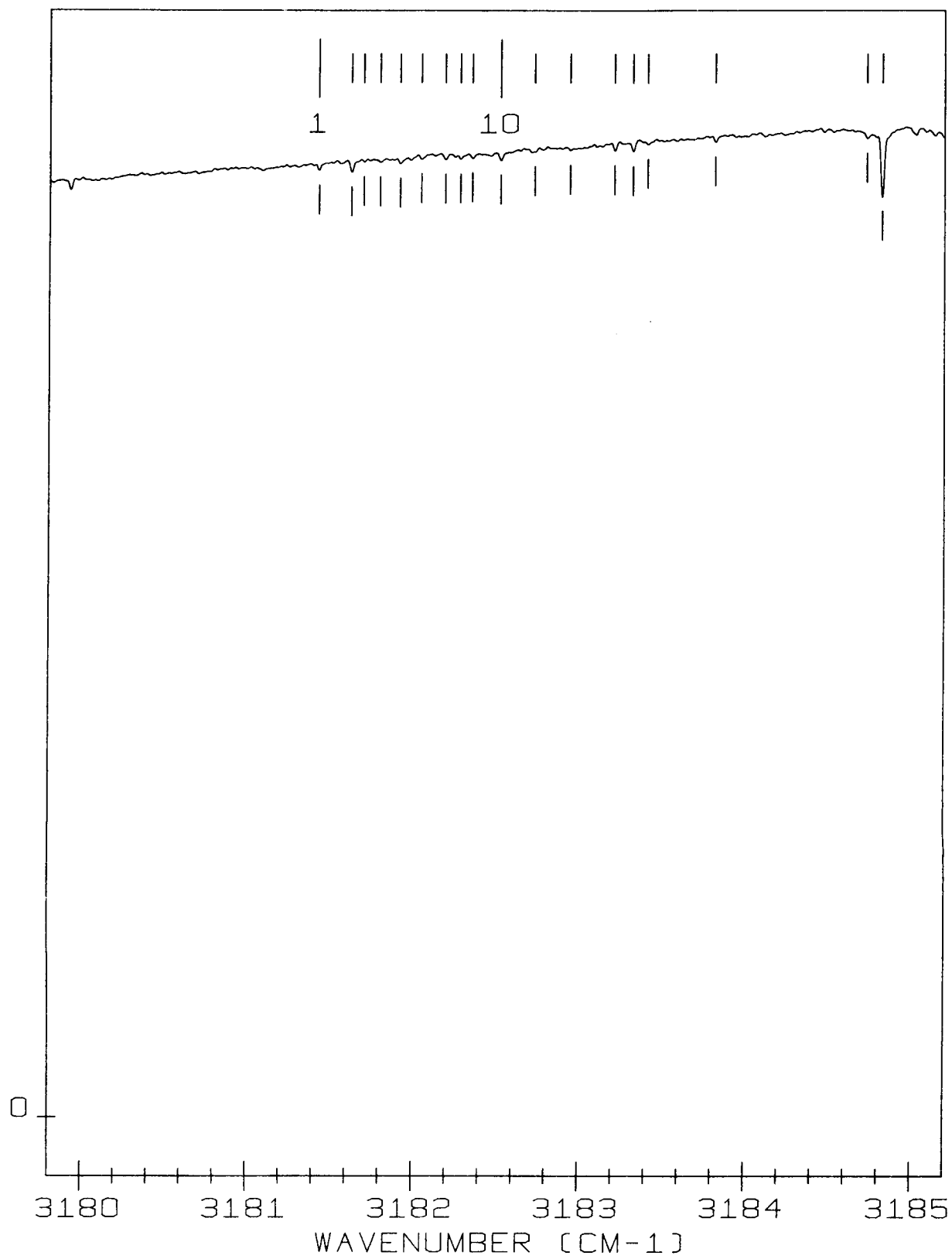


TABLE C 10

-1

Line Positions and Identifications (3185-3190 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION	
1	3185.02586	3185.01159	22203-01101 626	R35
		3185.03014	22203-01101 626	R36
2	3185.09001		H2O	
3	3185.14246		H2O	
4	3185.25581		H2O	
5	3185.39019	3185.39053	21103-00001 626	R4
6	3186.74401	3186.74364	22203-01101 626	R38
7	3186.82542	3186.82529	22203-01101 626	R37
8	3186.97228	3186.97212	21103-00001 626	R6
9	3188.46469	3188.46285	22203-01101 626	R40
10	3188.55987	3188.55997	21103-00001 626	R8
11	3188.65205	3188.65187	22203-01101 626	R39

FRAME C10

9.985 Torr 384 meters

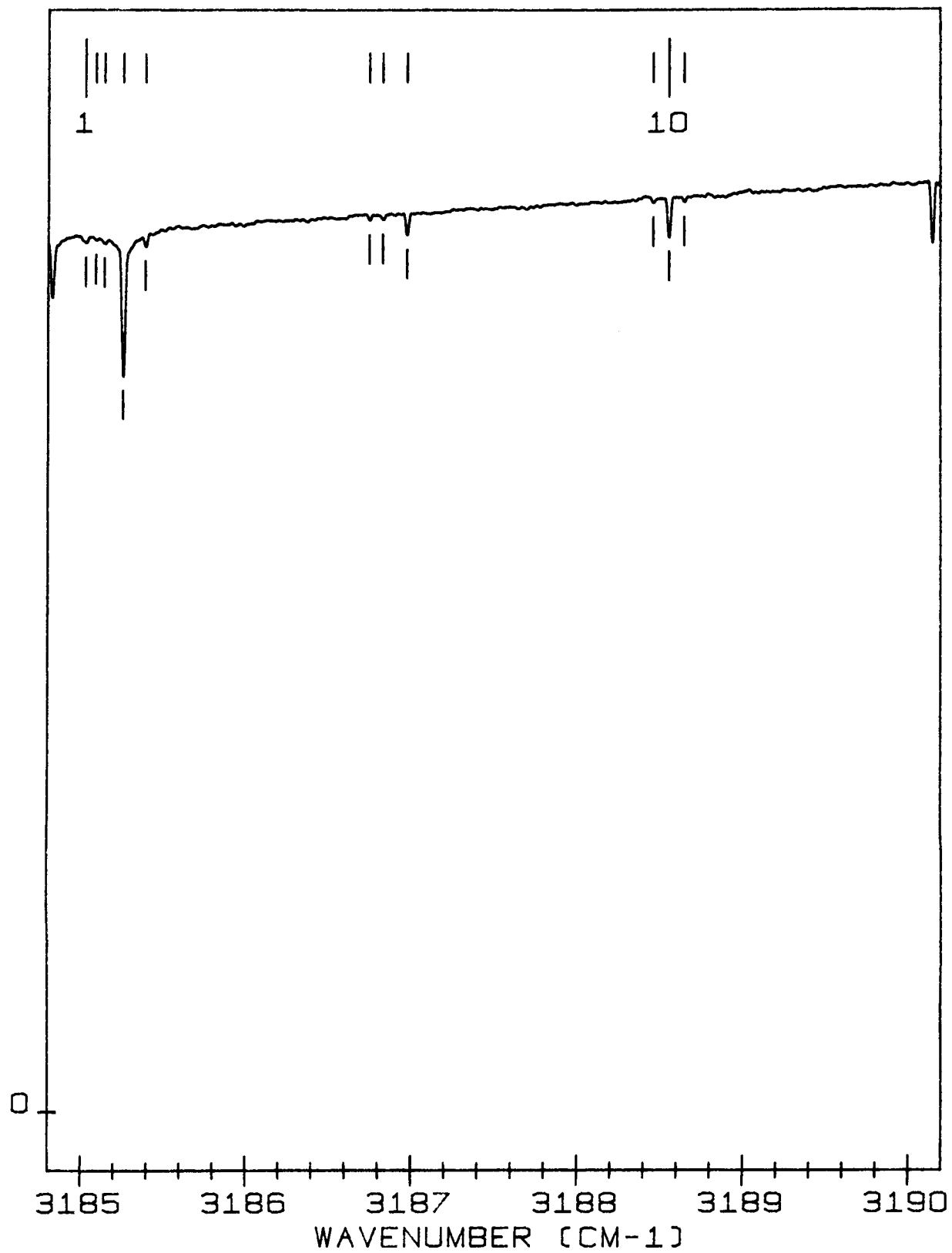


TABLE C 11

-1

Line Positions and Identifications (3190-3195 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3190.15381	3190.15401	21103-00001	626	R10
2	3190.18720	3190.18747	22203-01101	626	R42
3	3190.49109	3190.49136	22203-01101	626	R41
4	3190.94289		H2O		
5	3191.75420	3191.75413	21103-00001	626	R12
6	3191.91789	3191.91719	22203-01101	626	R44
7	3192.34347	3192.34382	22203-01101	626	R43
8	3193.36043	3193.36026	21103-00001	626	R14
9	3193.65276	3193.65170	22203-01101	626	R46
10	3194.21247	3194.20934	22203-01101	626	R45
11	3194.97235	3194.97227	21103-00001	626	R16

FRAME C11

9.985 Torr 384 meters

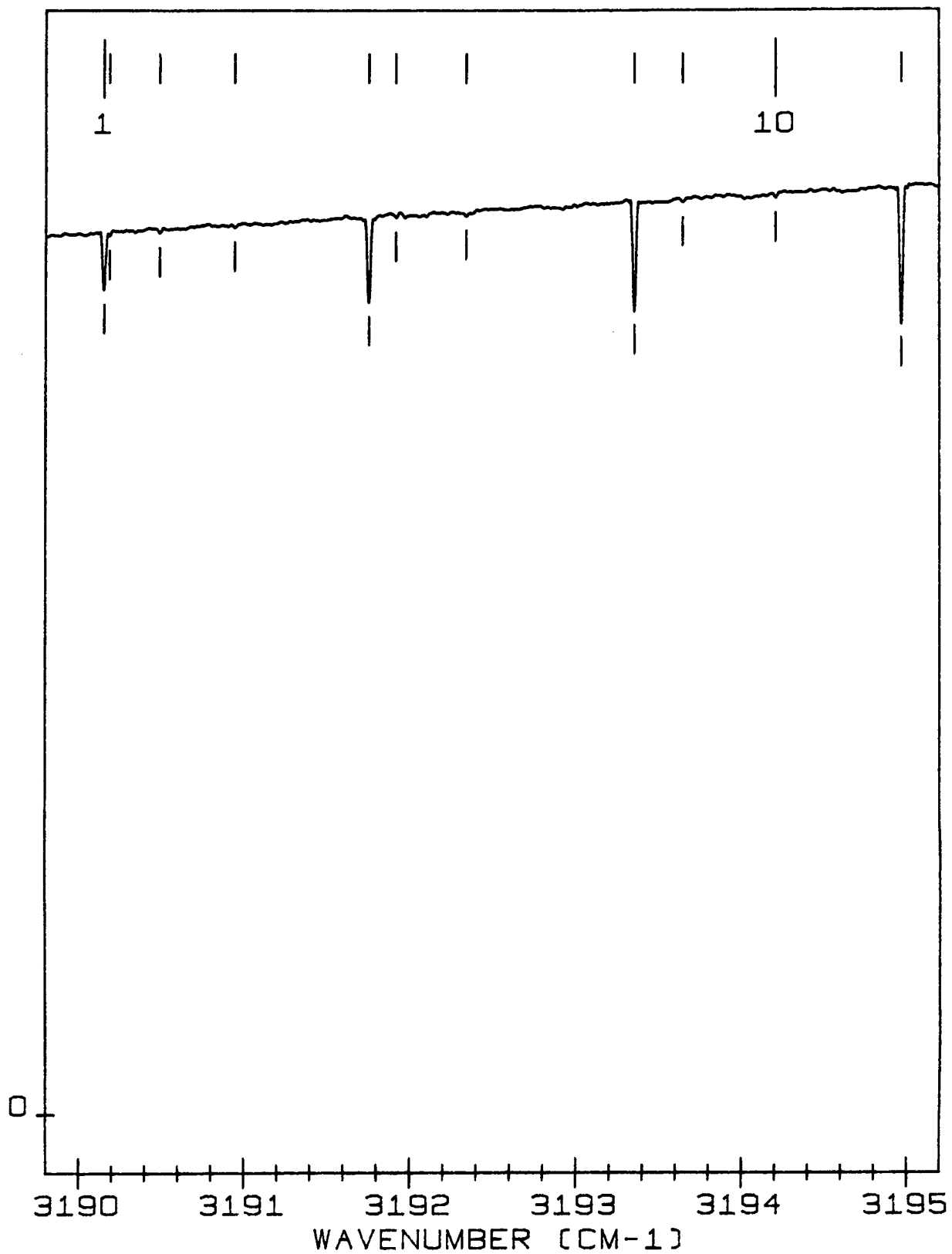


TABLE C 12

-1

Line Positions and Identifications (3195-3200 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3196.09403		H2O		
2	3196.58950	3196.59005	21103-00001 626	R18	
3	3196.64662		H2O		
4	3197.86576		H2O		
5	3198.21335	3198.21347	21103-00001 626	R20	
6	3199.72587		H2O		
7	3199.84239	3199.84238	21103-00001 626	R22	

FRAME C12

9.985 Torr 384 meters

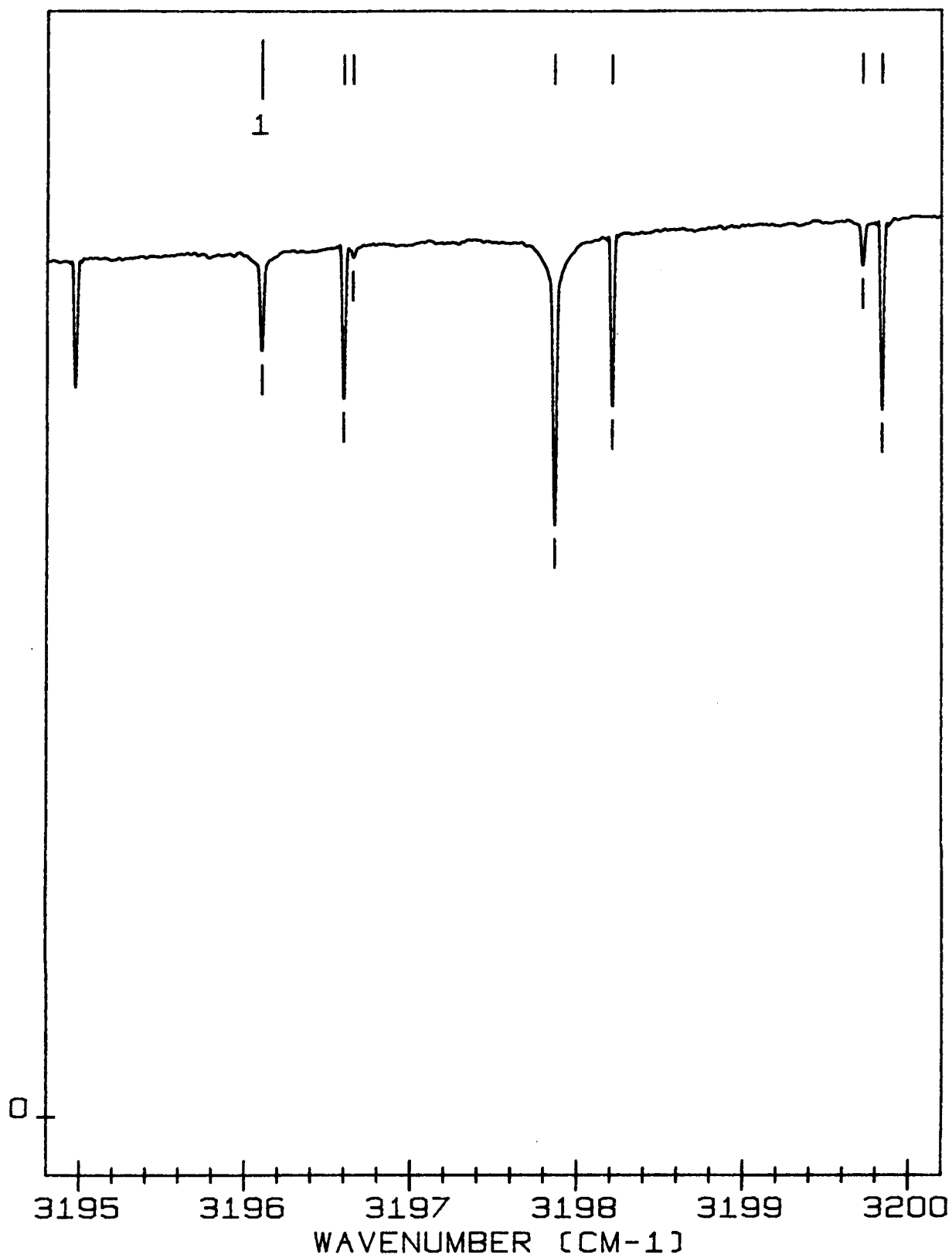




TABLE C 13

-1

Line Positions and Identifications (3200-3205 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3200.27714		H2O		
2	3200.95990		H2O		
3	3201.47686	3201.47663	21103-00001 626	R24	
4	3202.10620		H2O		
5	3203.11600	3203.11605	21103-00001 626	R26	
6	3203.46542		H2O		
7	3204.76065	3204.76047	21103-00001 626	R28	

FRAME C13

9.985 Torr 384 meters

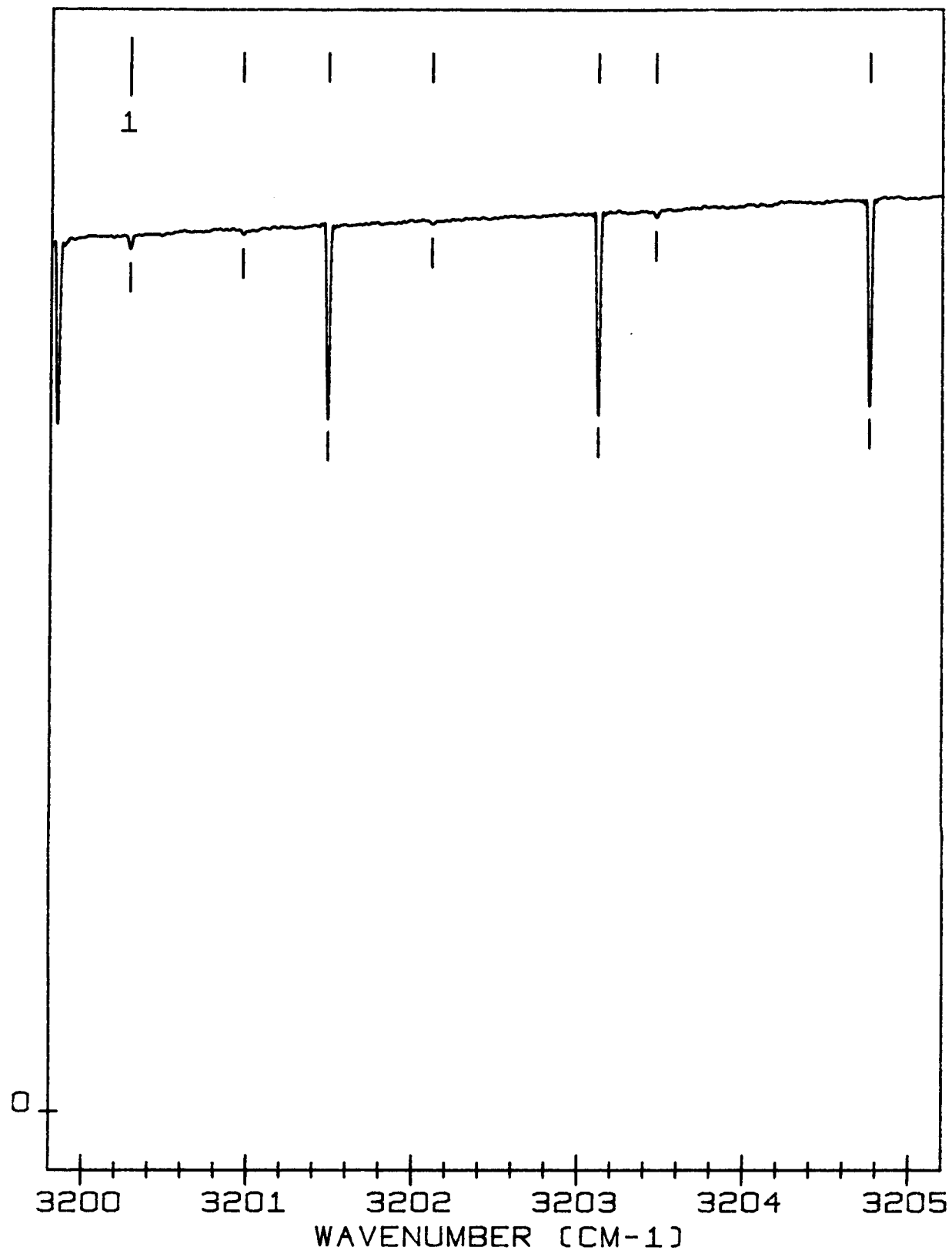


TABLE C 14

-1

Line Positions and Identifications (3205-3210 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3205.41278		H2O		
2	3206.40980	3206.40970	21103-00001 626	R30	
3	3208.06373	3208.06353	21103-00001 626	R32	
4	3209.72350	3209.72177	21103-00001 626	R34	
5	3209.74654		H2O		

FRAME C14

9.985 Torr 384 meters

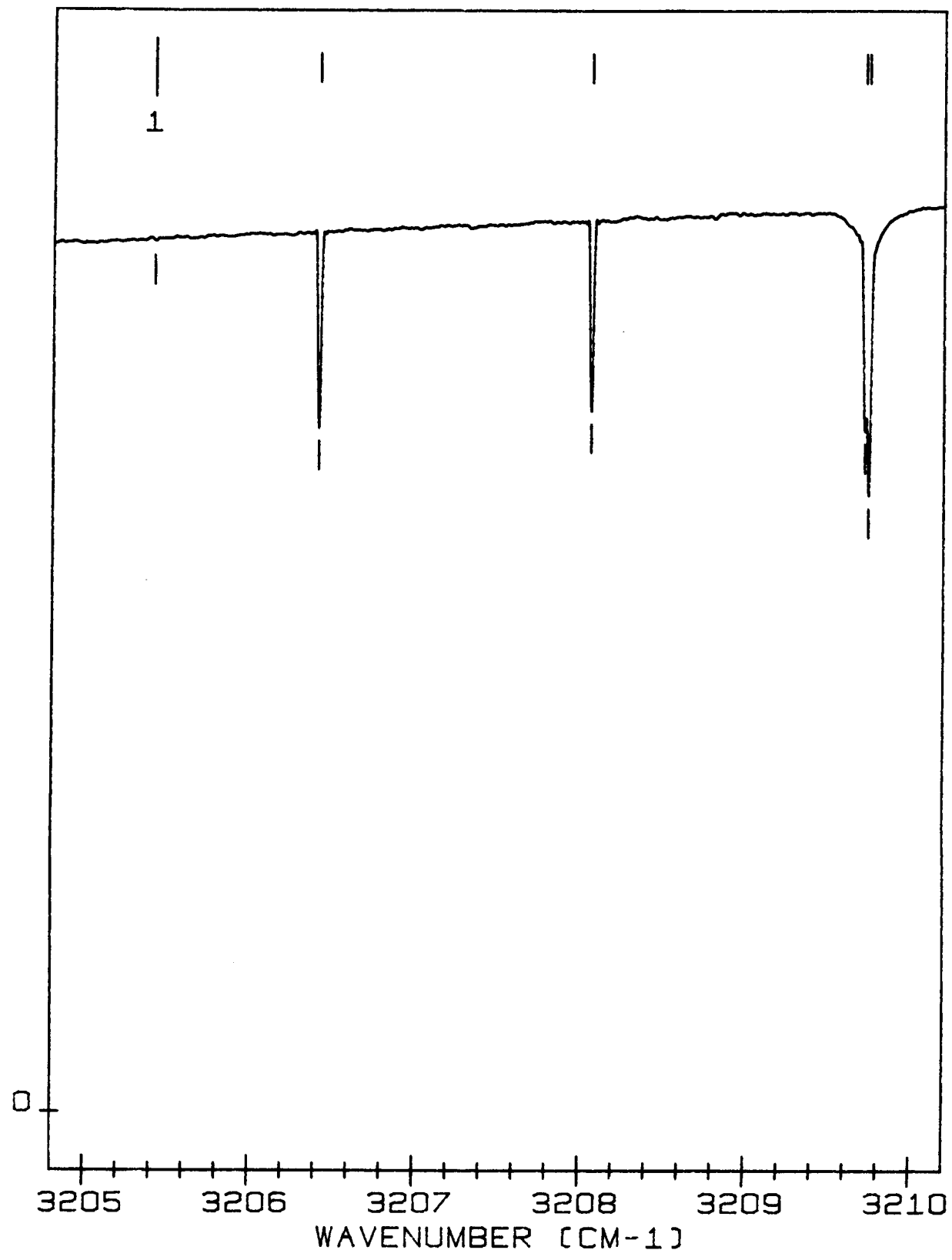


TABLE C 15

-1

Line Positions and Identifications (3210-3215 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	3210.72006		H2O
2	3211.38419	3211.38419	21103-00001 626 R36
3	3213.05064	3213.05056	21103-00001 626 R38
4	3214.12356		H2O
5	3214.29038		?
6	3214.33499		?
7	3214.52524		?
8	3214.67612		H2O
9	3214.72041	3214.72064	21103-00001 626 R40

FRAME C15

9.985 Torr 384 meters

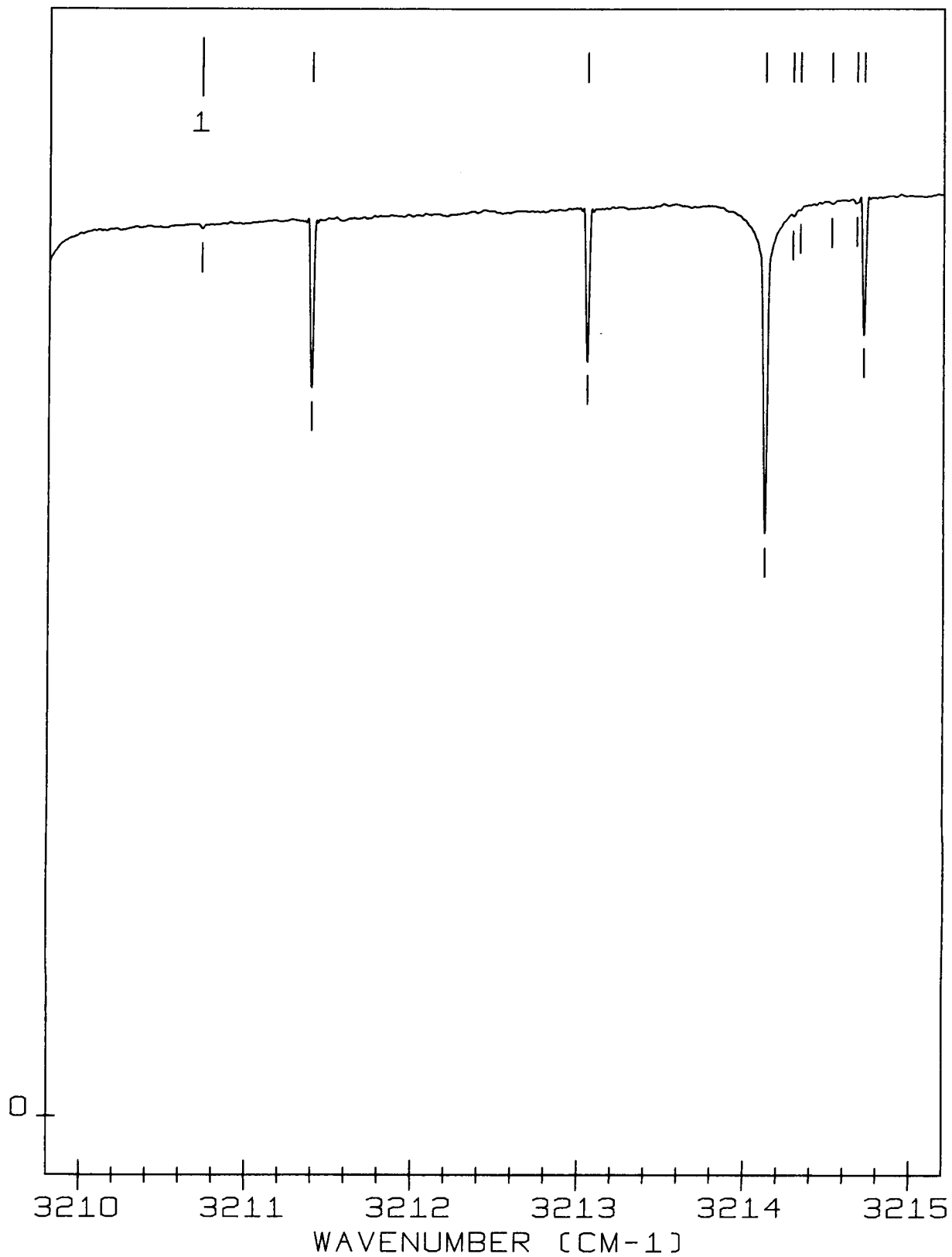


TABLE C 16

-1

Line Positions and Identifications (3215-3220 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	3215.92976		?
2	3215.98733		?
3	3216.39422	3216.39418	21103-00001 626 R42
4	3216.52314		H2O
5	3218.07088	3218.07092	21103-00001 626 R44
6	3218.76102		H2O
7	3219.38424		H2O
8	3219.75060	3219.75060	21103-00001 626 R46

FRAME C16

9.985 Torr 384 meters

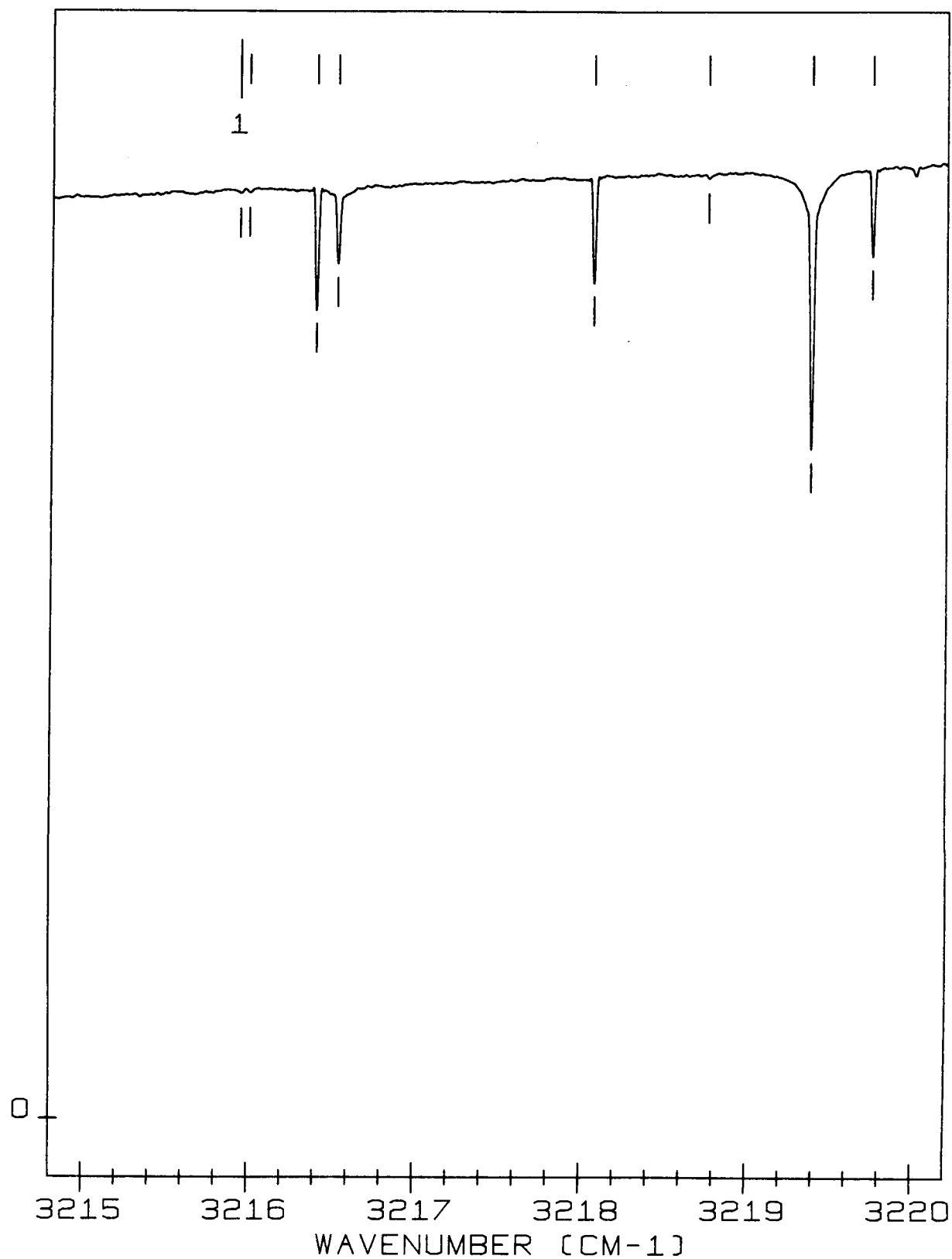




TABLE C 17

-1

Line Positions and Identifications (3220-3225 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION		
1	3220.00821		H2O		
2	3220.44322		H2O		
3	3221.43293	3221.43292	21103-00001 626	R48	
4	3222.03566		H2O		
5	3223.11758	3223.11760	21103-00001 626	R50	
6	3224.80437	3224.80434	21103-00001 626	R52	

FRAME C17

9.985 Torr 384 meters

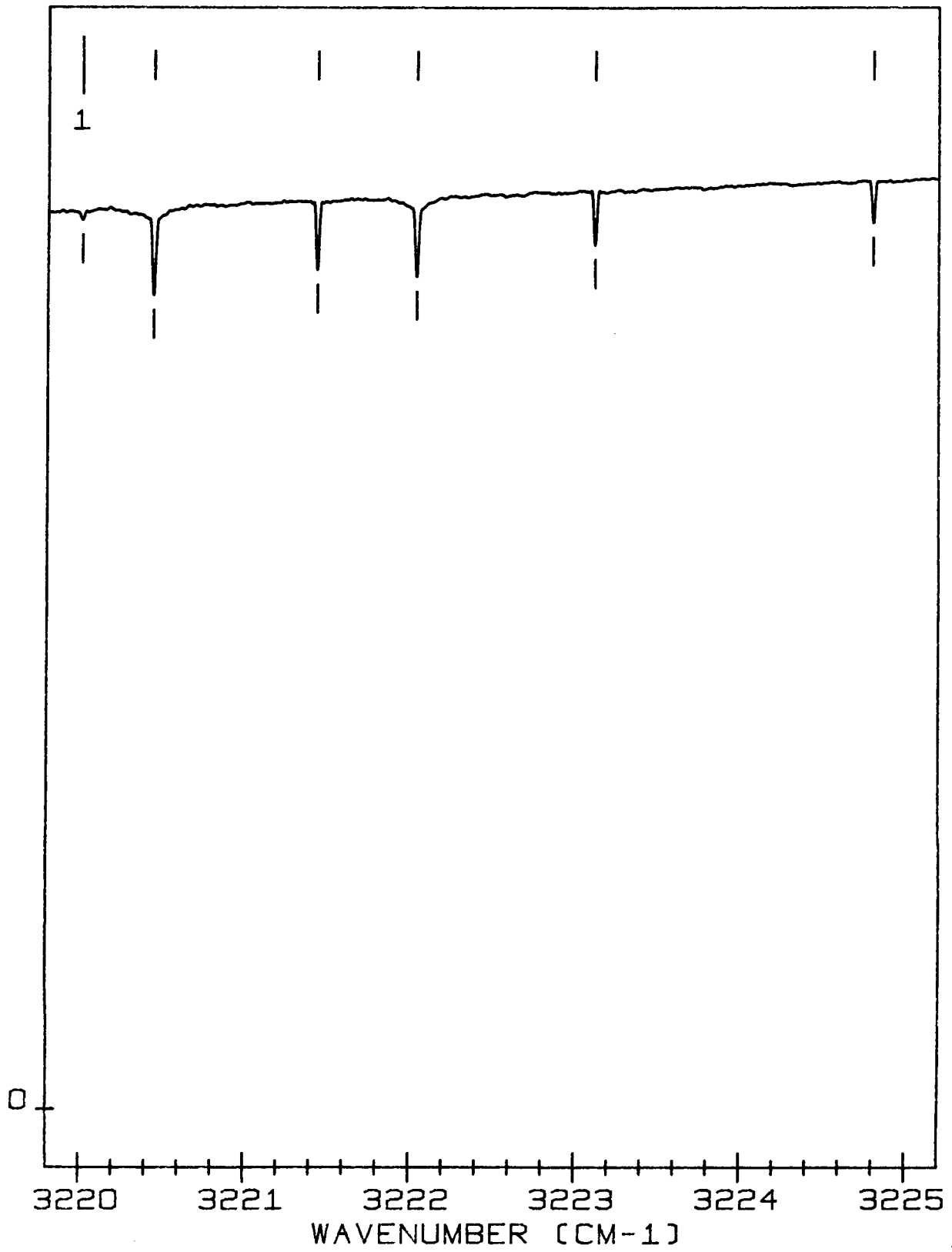


TABLE C 18

-1

Line Positions and Identifications (3225-3230 cm<sup>-1</sup>)

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	3225.70673		H2O
2	3226.06899		H2O
3	3226.49288	3226.49284	21103-00001 626 R54
4	3227.06086		?
5	3227.36014		H2O
6	3227.46555		H2O
7	3228.18249	3228.18277	21103-00001 626 R56
8	3228.88591		?
9	3229.04264		H2O
10	3229.90080	3229.87381	21103-00001 626 R58

FRAME C18

9.985 Torr 384 meters

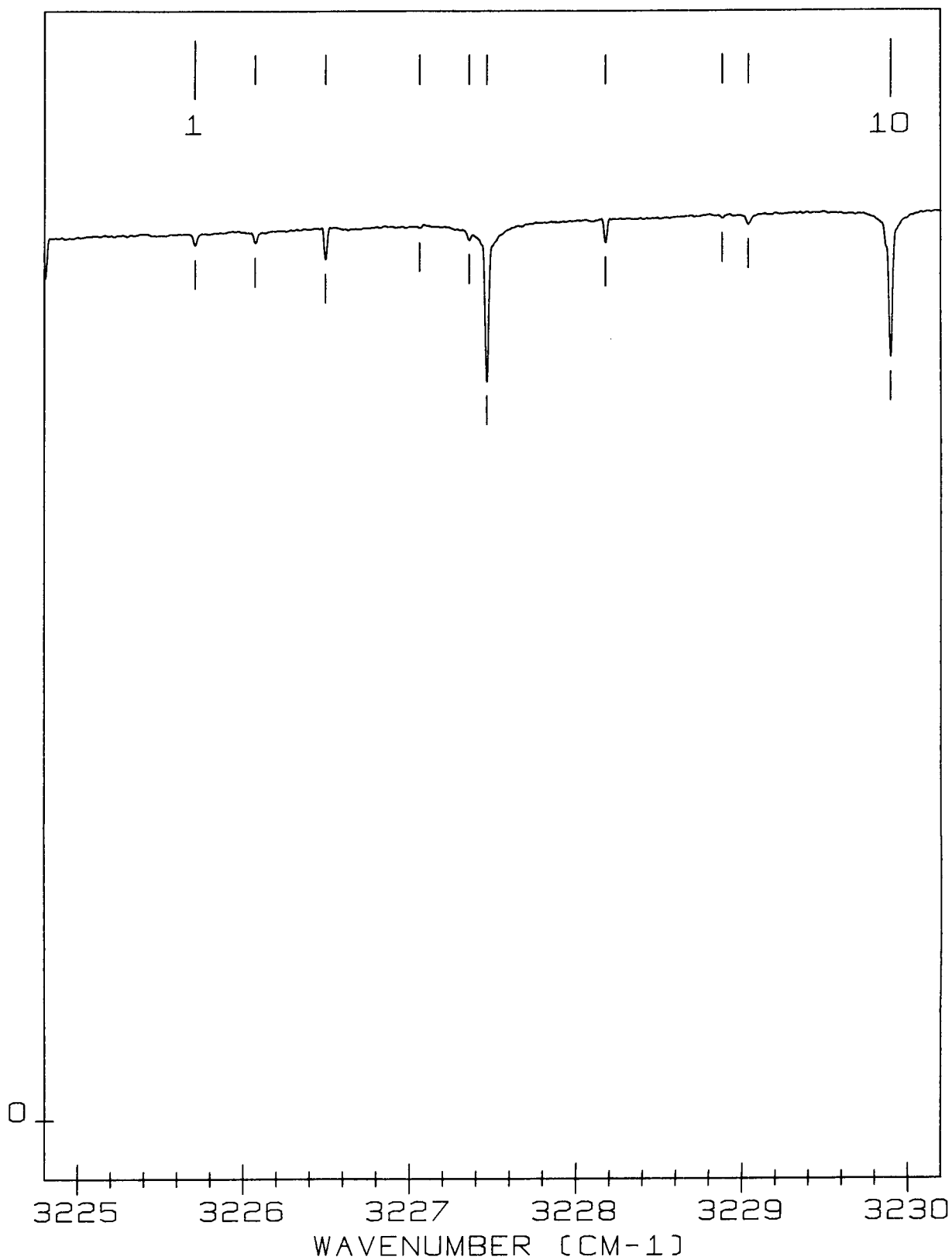


TABLE C 19

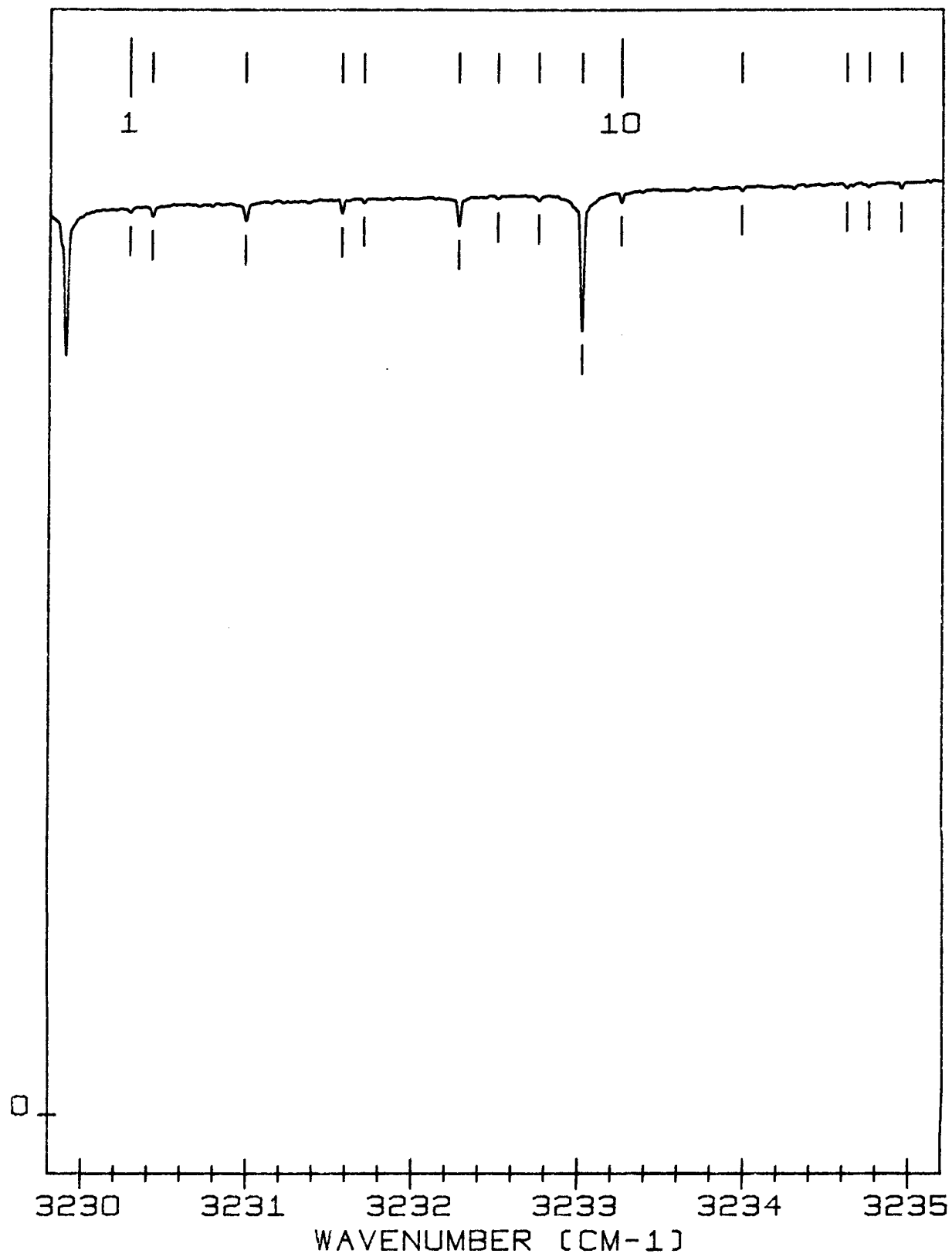
-1

Line Positions and Identifications (3230-3235 cm )

LINE NO	OBSERVED POSITION	CALCULATED POSITION	IDENTIFICATION
1	3230.28501		H2O
2	3230.42124		H2O
3	3230.98310		H2O
4	3231.56571	3231.56563	21103-00001 626 R60
5	3231.69781		H2O
6	3232.27405		H2O
7	3232.50873		?
8	3232.75719		H2O
9	3233.02031		H2O
10	3233.25760	3233.25788	21103-00001 626 R62
11	3233.98568		H2O
12	3234.62162		H2O
13	3234.75526		?
14	3234.95060	3234.95021	21103-00001 626 R64

FRAME C19

9.985 Torr 384 meters



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16. Abstract  An atlas of long-path room-temperature absorption spectra of carbon dioxide is presented for the spectral intervals 1830-2100 cm <sup>-1</sup> , 2395-2680 cm <sup>-1</sup> , and 3140-3235 cm <sup>-1</sup> . The spectral data were recorded at high signal-to-noise with the 0.01-cm <sup>-1</sup> resolution Fourier transform interferometer in the McMath solar telescope complex of the National Solar Observatory at Kitt Peak. The spectra were obtained with pressures between 1 and 10 Torr of CO <sub>2</sub> and with total paths between 24 and 384 meters. A compilation of the measured line positions and the assignments derived from the analysis are presented. Of the 3336 lines in the atlas, 94 percent have been identified as CO <sub>2</sub> lines or as residual lines of H <sub>2</sub> O and CO. Calculated positions are presented for the carbon dioxide lines; a total of 52 bands of <sup>12</sup> C <sup>16</sup> O <sub>2</sub> , <sup>13</sup> C <sup>16</sup> O <sub>2</sub> , <sup>12</sup> C <sup>16</sup> O <sup>18</sup> O, <sup>12</sup> C <sup>16</sup> O <sup>17</sup> O, and <sup>13</sup> C <sup>16</sup> O <sup>18</sup> O have been identified. The weakest carbon dioxide lines marked in the atlas have intensities of ≈ 0.5 x 10 <sup>-26</sup> cm/molecule at room temperature.					
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