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MAUNA LOA CARBON DIOXIDE PROJECT*

REPORT NO. 3

JUNE 15, 1965

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A Summary of Reference Gas Analyses with Infrared Analyzer APC No. 58 at Mauna Loa Observatory from January 1961 through January 1964 together with Analyses of Atmospheric Carbon Dioxide from March 1958 through January 1964.

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I. Introduction.

This report presents the results of a program to measure the concentration of atmospheric carbon dioxide at Mauna Loa Observatory, Hawaii, from March 1958 through January 1964. Daily average values of the concentration of CO_2 in surface air are computed from data derived from the original strip chart records of a continuous recording infrared gas analyzer installed at the station. All relevant data and computations are contained in this report for the years 1961 through 1964. For earlier years only air data and certain essential calibrating data are listed. The experimental method is described and the results interpreted in an article by Pales and Keeling [1965].

The measurements were obtained by the personnel of the U.S. Weather Bureau under the direction of Mr. Jack C. Pales.

Calibrating data for 1958, 1959, and 1960, except for barometric pressures listed in Table 2, below, appear in Mauna Loa Carbon Dioxide Project Report 1, dated June 1, 1961 (referred to below as MLO-1). A provisional version of calibrating data for 1961 and 1962 appears in Mauna Loa Carbon Dioxide Project Report 2 (MLO-2), dated March 15, 1963.*

All data in the present report for 1958 through 1962 are final values. For 1963 and 1964 values are provisional because some of the calibrating gases are still in use at Mauna Loa and have

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*See footnote on next page.

not received final calibrations at Scripps. The procedure for computation follows that used at the Scripps Insititution of Oceanography, La Jolla, California as described in Research Reports I through VIII*.

"Index Values" proportional to concentration have been computed from observed differences in recorder chart ordinates (called "scale differences") obtained with Infrared Analyzer Serial No. 58. The conversion from index values to CO_2 concentrations in parts per million by volume is discussed below in Section XIII. The data are assembled in tables which follow this text.

Barometric pressure corrections have been applied to certain of the calibrations (Tables 2 and 4) and short term air values (Table 16), but are not applied to the daily average air values (Table 10) because the corrections would have no significant effect on these daily averages, or on longer term averages (Tables 11, 12, 13, and 14).

In Tables 1 through 9, of MLO-1 and this report combined, are presented all of the original measurements of scale differences used to calibrate the infrared analyzer at Mauna Loa Observatory together with essential related observations, and computed quantities based on the original measurements. In Table 10 the original air

*Copies of these reports may be obtained from Dr. Charles D. Keeling, Scripps Institution of Oceanography, La Jolla, California.

data, reported as scale differences, and computed daily average index values in air are presented. In Tables 11 through 14 are shown monthly averages derived from the data of Table 10. In Tables 15 through 17 are shown results which allow the above-mentioned air data, obtained with the continuous gas analyzer, to be compared with data obtained independently by sampling with glass flasks.

II. Reference Gas Comparisons - Tables 1 and 2.

These tables list, in chronological order, the observed scale differences which served to calibrate the gas analyzer, together with their conversion into index values proportional to CO_2 concentration. The calibrations consisted of repeated comparisons of pairs of specially prepared gas mixtures of CO_2 in nitrogen. These mixtures (called "reference gases" by Pales and Keeling [1965]) were stored in large stainless steel cylinders, called "tanks".

Under normal operating conditions ten comparisons were obtained by alternately passing one gas of the pair, and then the other, through the infrared analyzer for four minutes at the same flow rate employed in the air measurements (normally 0.5 liters per minute). As soon as one series of ten comparisons had been run, if the calibration involved multiple runs, one or both tanks were replaced and another pair of tanks likewise compared. This process

was repeated without delay until all comparisons scheduled for a particular calendar date had been completed. The scale difference between two successive traces, in recorder chart ordinates, was read with a straight-edge scale at the point in time in which the trace registered an abrupt change from one tank gas to the other. The succession of individual scale differences for each tank pair was entered by the operator of the observatory on a prescribed data sheet as described below, together with essential related observations. The average scale difference for each tank pair was computed and entered on the same sheet.

Two types of data sheets were employed. For days in which a single pair of tanks was compared, the data were entered on the Carbon Dioxide Daily Data Sheets used in connection with air measurements (see Pales and Keeling [1965], Figure 5). For days in which multiple runs were made, the data were entered on special Reference Gas Data Sheets, an example of which is shown in Figure 1. Fig. 1

The calibrations just described served both to establish the recorder sensitivity of the gas analyzer and also to determine the index values of reference gases (called "working tanks") used in connection with air measurements. The latter index values are relative to the index values of primary and secondary reference gases (also called "principal reference gases" or "standard tanks")

which were used at the field station only for purposes of calibration and whose index values were, in all but a few unavoidable cases, well determined at Scripps both prior to and after use there.

In both Tables 1 and 2, tanks related to each calibration run are identified by tank numbers (permanently stamped into the metal) and listed in columns 1 and 2. Column 1 lists the number of the standard tank; column 2 lists the number of the tank with which it is compared. The average observed scale difference for each tank pair is listed in column 3. A positive number indicates that the compared tank for that comparison has a higher scale reading, and consequently a higher CO_2 concentration, than the standard; a negative number indicates the reverse. The number of comparisons (not always 10) which entered into each average scale difference is listed in column 4.

The recorder sensitivity, determined by comparisons of the primary and secondary standards, is expressed by a "recorder scale factor", values of which are listed in column 5. The computed index differences, each with the same sign as the corresponding scale difference, and the index value of the compared tank, in terms of a prescribed, or "assigned" value of the standard tank, are listed in columns 6 and 7, respectively.

For Table 1, weighted average recorder scale factors, column 5, are copied from column 7 of Table 3. Index differences, column 6

were computed by the formula given in Section III-D.

For Table 2, period average recorder scale factors, column 5, are copied from column 3 of the last page of Table 4. Index differences, column 6, were computed by the formula given in Section IV. This formula takes into account, for the time of measurement of scale difference, the departure of barometric pressure from a standard value of 20.000 inches of mercury, which is very nearly the long term average pressure for the observatory. The formula assumes that scale differences are directly proportional to barometric pressure, which is a valid approximation for the narrow pressure range encountered at the station.

The computed index values, column 7 of both tables, are the algebraic sums of the index values of the standard tanks listed in column 1 and the index differences of column 6. The index values of the standard tanks so used are those values listed in column 12 of Table 8, and were derived solely from measurements made at Scripps unless otherwise noted in footnotes of that table.

Table 1 lists the data obtained on days in which the recorder scale factor was measured. The data are for the period January 1961 through January 1964. For data obtained prior to January 1961, see MLO-1. The scale differences entered in column 3 are copied from the original entries on the Reference Gas Data Sheets listed by number on the right side of column 8. The date of analysis is listed in column 9. Under "Table Number"

on the left side of column 8 is listed for each entry the number of the table in which the results of that set of comparisons are principally employed.

Table 2 lists data obtained on days in which the only calibration consisted of comparing the current working tank with a standard tank. The data are for the period December 1958 through January 1964. For data obtained prior to December 1958, see MLO-1. The scale differences entered in column 3 are copied from original entries in the "remarks" column of the Carbon Dioxide Daily Data Sheets listed by date in column 9. Barometric pressures used in computing the index values are listed in column 8. The results of Table 2 are principally employed in Table 6.

For 1958 through 1960 accounting for barometric variations turns out to influence the final index value of the working tanks to only a few hundredths of a ppm. Therefore, the results which appear in Tables 6 and 7 of MLO-1 without barometric corrections have not been revised and do not appear in this report.

III. Recorder Scale Factor - Table 3.

A. Definition.

Adopting the procedure used in previous reports, the recorder scale factor, RSF, is defined as the scale difference which would be obtained for two reference gases having an index difference of 18.00 ppm (part per million of carbon dioxide in nitrogen). For example, on January 9, 1961, tank no. 7344 and tank no. 4277 with an index

difference of 31.63 ppm (see Table 9) had an average observed scale difference of 33.30 ordinates on the recorder chart paper (see line 3 of first page of Table 1). The RSF based on these values is computed as follows:

$$33.30 \times \frac{18.00}{31.63} = 18.95$$

The selection of a factor 18.00, although arbitrary, was originally convenient because it was the index difference between the two principal calibrating reference gases at Scripps. For the sake of consistency this usage is continued here.

B. Standard Computation for Three Mutually Compared Tanks ("Tank Triangle").

Columns 1 through 4, except values with asterisks explained below, and the last entry in column 4 for each calibration day, list selected data copied directly from the corresponding columns of Table 1. These data are employed, as shown below, to obtain daily RSF's.

The following has been adopted as the standard presentation of these data from Table 1 when two reference gases, A and B, with final assigned index values are each compared to a gas,X,without such assignment:

Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons
A	X	[X]-[A]	a
B	X	[X]-[B]	b
A	B	[Y]*	(a or b)*

where [Y] = ([X]-[A]) - ([X]-[B]) = ([B]-[A]), and brackets indicate index values. The asterisk on [Y] indicates a derived value; the

number of comparisons assigned to Y is a or b, whichever is smaller.

As an aid in reading the tables, the observed comparisons and derived values of any group of tanks, A, B, X, are set off in Table 3 by boxes.

When two reference gases with final assigned index values are compared directly, data entered in columns 1 through 4 from Table 1 are listed outside and directly below the box containing the "tank triangle" data for the same calibration day.

C. Determination of Index Differences.

Column 5 lists index differences obtained from index values of the separate tanks according to the tabulation of Table 9. From January 1961 into April 1963 the index values and differences change from month to month for the same pair of tanks. These "sliding values" are explained in Section X.

D. Weighted Average Recorder Scale Factors.

Column 6 presents RSF's computed according to the definition given in Section III-A, above. The final entry in column 4 lists, for each calibration day, the total number of comparisons which have been combined to yield the weighted average RSF listed in column 7. These averages are the basis for further computations and, accordingly, are transcribed in column 5 of Table 1 and column 1 of Table 4.

The index differences in column 6 of Table 1 are computed by the formula:

$$\text{Computed Index Difference} = \frac{\text{Observed scale difference} \times 18.00}{\text{Weighted average RSF}}$$

The method for computing index differences of Table 2 is explained in Section IV.

IV. Summary of Recorder Scale Factors - Table 4.

Values of RSF's from column 7 of Table 3 are assembled in chronological order in column 1 of this table. For 1958 through 1960 values are copied from Table 3 of MLO-1; for 1961 through 1964 values are copied from Table 3 of this report. The barometric pressures observed during each test period, as reported on the original Carbon Dioxide Daily Data Sheets, are listed in column 2.

Column 3 lists the RSF's adjusted to a standard barometric pressure of 20.000 inches of mercury according to the formula:

$$\text{Adjusted Recorder Scale Factor} = \frac{\text{Weighted average RSF} \times 20.000 \text{ inches of Hg}}{\text{Observed barometric pressure during test (inches of Hg)}}$$

The date of analysis, column 4, is copied from column 8 of Table 3.

On the final page of Table 4, weighted average RSF's are presented with the data divided into ten periods. During the first five periods from November 1958 through December 1962, the values in columns 1 and 3 show no trend; the periods are arbitrarily confined to calendar years.

Subsequent to 1962 the data are divided into five additional

periods. The first of these, January 1 - January 22, 1963, is an extension of conditions in 1962 and involves no change in the instrument or in the calibrating reference gases. The second period begins with a change in secondary tank, from tank no. 193 to tank no. 2403 on January 23, 1963 and installation of new pressure regulators. This period ends February 13, 1963 when the gas analyzer was shut off to be repaired. After repair, the RSF had appreciably changed. The third period, February 25 to August 29, 1963, ends with a change of principal reference gas from tank no. 2399 to tank no. 10077. The fourth period, August 30 to December 31, 1963, ends arbitrarily with the calendar year. The fifth period presents data for 1964 up to a major break in analyzer performance in early February.

Index differences in column 6 of Table 2 are computed from these period average RSF's as follows:

$$\text{Computed Index Difference} = \frac{\text{Observed scale difference} \times 18.00 \times 20.000 \text{ inches of Hg}}{\text{Period average adjusted RSF} \times \text{Observed barometric pressure during test (inches of Hg)}}$$

V. Index Values of Primary Reference Tanks - Table 5.

Index values are assembled for primary tanks nos. A-17 and 11083 for the years 1961 through 1964. Earlier results for tank no. A-17 are assembled in MLO-1. The entries in columns 2, 3, 4, 5, and 10 have been copied from columns 1, 2, 4, 7, and 9 of Table 1.

Entries in columns 1, 8, and 9 are taken from the original Reference Gas Data Sheets. Separate weighted averages based on comparisons with the primary and span reference gases are quoted in column 7 for each tank pair and calendar year together with combined weighted averages.

As during the period of MLO-1, tank no. A-17 is treated in this report as a special comparison tank. Weighted average index values are now available for the entire 5-year period of its use. Period average index values, separated according to compared tank and calendar year, are as follows:

Col: 1	2	3	4	5
			Average Index	
Date	A-17 Compared with	No. of Comps.	Prelim.	Final
Feb. '59	SIO Tanks	10		310.09
Mar. '59-Oct. '59	4277 and 4297	227		310.25
Oct. '59-Mar. '60	4277 and 6051	239		310.33
Mar. '60-Dec. '60	4277 and 7344	422		310.37
Jan. '61-May '61	4277 and 2344	200		310.41
May '61-Dec. '61	4277 and 193	290	310.26	310.54
Jan. '62-Dec. '62	4277 and 193	440	310.19	310.74
Jan. '63	4277 and 193	40	310.19	310.83
Jan. '63-Apr. '63	4277 and 2403	99		310.94
Mar. '64	SIO Tanks	65		310.91

Column 4 above lists preliminary index values based on the average value of tank no. 193 as determined at Scripps during May 1960 and May 1961. The values are copied from MLO-2.

Column 5 above lists final index values as computed in this

report. These values take into account that when tank no. 193 was returned to Scripps in February 1963, after its use at Mauna Loa Observatory, its index value had increased by 0.57 ppm since May 1961. It is postulated that this increase is real and that the month-to-month change in value was linear (see Section X). For consistency, the value of high span tank no. 4277, during the period of use of tank no. 193, is also treated as varying linearly from February 1959 to April 1964, i.e. from the time of SIO calibration prior to use to SIO recalibration after use. The observed increase during this 5-year period was 0.37 ppm. These "sliding values" of index value are presented in Table 9, and are the basis for the RSF's of Tables 1 through 4 and the values listed under "final" values.

The preliminary and final index values of tank no. A-17, listed above, are plotted in Figure 2. When index values versus tank no. 193 are compared with values versus other secondary tanks that were in use at Mauna Loa before or after tank no. 193 was in use, and when the index values based on comparisons at Mauna Loa are also compared with those based on comparisons at Scripps before and after use, the "final" values are seen, clearly, to be more reasonable than the preliminary values, in spite of the necessity to assume that <u>both</u> tanks nos. A-17 and 193 increased with time. Further evidence for an increase in value of tank no. 193 is given in Section VIII.

Fig. 2

For tank no. 11083 which succeeded tank no. A-17 as primary

standard at Mauna Loa, the period average index values are as follows:

Col: 1	2	3	4	5
			Average Index	
Date	11083 Compared with	No. of Comps.	Prelim.	Final
Mar. '63	SIO Tanks	104		314.26
Apr. '63-Aug. '63	2399 and 2403	182		314.27
Aug. '63-Dec. '63	10077 and 2403	211		314.36
Jan. '64	10077 and 2403	42		314.18

The values are entirely satisfactory; they indicate, so far at least, no significant departure from constancy.

VI. Index Values of Working Tanks - Table 6.

This table assembles index values based on measurements at Mauna Loa Observatory for "working" tanks (i.e. those tanks compared with air) in use during 1961 through 1964. The entries in columns 2,3,4, 5, and 10 are copied from columns 1, 2, 4, 7, and 9 of either Table 1 or 2. Those index values in column 5 which were copied from Table 2 are labeled with an asterisk and identified with a footnote as "special tank checks". These values are adjusted for variations in the barometric pressure as discussed in Section II. Weighted average index values are listed in column 7. Tank numbers have been recopied as a reading aid in column 8. Tank pressure readings listed in column 9 are taken from the original Reference Gas Data Sheets.

VII. Combined Index Values of Scripps and Mauna Loa Working Tanks - Table 7.

In this table are summarized all relevant index values for the working reference gases used at Mauna Loa Observatory during 1961 through 1964.

Entries in columns 1, 2, 3, 6, 7, 8, and 12 list the tank number, the number of comparisons, weighted average index values, final tank gas pressure readings obtained at Scripps, and the date when the tank was first used versus air. These data are taken from Table 12D of Scripps Research Reports (see footnote, page 3): for 1960 and 1961 from Reports III and IV; for 1962 from Reports IV and V; for 1963 from Reports V, VI, and VII, and for 1964 from Reports VII and VIII.

Entries in columns 4 and 5 are numbers of comparisons and weighted average index values based on measurements at Mauna Loa Observatory. They are copied from columns 6 and 7 of Table 6 of this report.

Entries in columns 9 and 10 list the total number of comparisons and weighted average index values based on all measurements at Scripps and at Mauna Loa Observatory. The latter values are used in Tables 10 and 16 for computing index values for air.

VIII. Comparison of Scripps and Mauna Loa Index Values of Working Reference Gases - Table 7a.

An examination of all available index values of primary tank no. A-17 and secondary tank no. 193 suggest that the index value of each one increased at approximately the same rate during their periods of use at Mauna Loa (see Section V). The evidence is not decisive, however, since for the period of use of tank no. 193 the latter was compared with tank no. A-17. If the index value of tank no. 193 is assumed to be constant, that of tank no. A-17 would appear nearly constant as well. However, when we view the complete time record of tank no. A-17 (see Figure 2) it appears more reasonable to postulate a steady increase in the index value of both tanks rather than a constant index value for both during the period of use of tank no. 193.

Regarding tank no. 193, additional evidence is available in support of the postulate that the index value of this tank increased during its period of use at Mauna Loa. This evidence results from tank no. 193 having been a secondary tank. As such it was compared not only with tank no. A-17 but also with all contemporary working tanks. The index values of these latter tanks, as determined at Mauna Loa, depend on the assigned index value of tank no. 193. By comparing the Mauna Loa index values of the working tanks with index values obtained at Scripps, tank no. 193 can be further checked.

This is done in Figures 3 and 4. Figure 3 is based on preliminary computations from MLO-2 in which tank no. 193 was assigned a constant index value derived from taking a weighted average of all laboratory calibrations made at Scripps prior to its use as a Mauna Loa standard. This plot shows a systematic discrepancy for working tanks during the period of use of tank no. 193, especially near the end of this period. Figure 4 is based on the final computations of this report in which a linearly increasing index value for tank no. 193 is employed (see Table 9). In this plot the working tank differences for the period of use of tank no. 193 no longer show a systematic discrepancy.

Fig. 3
Fig. 4

The values plotted in Figures 3 and 4 are reproduced in Table 7a. This table is composed as follows:

Columns 1, 2, and 3 list the tank number, the total number of comparisons, and the weighted average index values obtained at Scripps. These values were obtained by combining the data for calibrations made at Scripps prior to and after use of the working reference gases at Mauna Loa (columns 2 and 6 and columns 3 and 7 of Table 7). Column 4 lists the number of comparisons at Mauna Loa Observatory copied from column 4 of Table 7. Column 5 lists preliminary index values at Mauna Loa taken from MLO-2 based on a fixed index value for tank no. 193. Column 7 lists final index values taken from column 5 of Table 7 of this report based on a

linearly increasing index value for tank no. 193, as given in Table 9. Columns 6 and 8 list the differences, respectively, of the preliminary and final index values at Mauna Loa from the index values at Scripps. These differences are plotted versus their date of initial use (column 9) in Figures 3 and 4.

IX. Scripps Index Values of Principal Reference Gases - Table 8.

In this table are summarized all relevant index values of all principal reference gases used at Mauna Loa from 1958 through 1964. In column 1 is indicated the use of each tank listed by number in column 2. The symbols are:

I Primary tank (compared only with I_{HS}, I_{LS}, and II).

I_{HS} High span tank (used for determining the RSF).

I_{LS} Low span tank (used for determining the RSF).

II Secondary tank (compared with all tanks).

Entries in columns 3, 4, 5, 7, 8, and 9 are taken from Table 12D of the Scripps Research Reports (see footnote, page 3) listed by report number in columns 6 and 10. The index values of column 12 for 1958 through 1960 were employed in the computations of Tables 1 through 7 of MLO-1; those for 1961 through 1963 in Tables 1 through 7 of this report. In some cases these values represent combined weighted averages of all values at Scripps as listed in columns 3, 4, 7, and 8. Exceptions to this procedure are identified with one or more asterisks and documented in the footnotes. Detailed

explanations are given below.

For 1958 to 1960 the index values of tanks nos. 4284 and 4287 were determined by a special technique discussed in MLO-1. This was done because too few Scripps values were available to yield, by themselves, a reliable index value.

The index value for tanks nos. 4277 and 7344 used in compiling MLO-1 were based only on the initial calibrations of these tanks made at Scripps. The combined value for 7344 (1961 through 1962, column 12) differs by only 0.01 from the provisional value used in MLO-1. The results in MLO-1 have not been corrected to reflect this small difference. If a linear increase were adopted for tank no. 4277 for 1960, its first year of use, consistent with the sliding scale employed from 1961 through 1963 (see Section X), the index value would have been assumed to increase by 0.13 ppm. This increase is also so small that it does not justify recomputing results in MLO-1.

For the two periods "1961 through 1962" and "1963", a sliding scale of index values has been adopted for tanks nos. 4277 and 193. The justification for these "sliding values" is discussed in detail in Sections V and VIII. Monthly values are reported in Table 9.

No index values are listed for tanks nos. A-17 and 11083 since no computations depend upon these index values.

The index values of tanks nos. 10077 and 2403 reported for the period "1963" are provisional. Final values will be obtainable only after the tanks are returned to Scripps. Further adjustments of the data from January 1963 through February 1964 may be necessary when final index values for these tanks have been computed.

X. Monthly Index Values and Differences of Principal Reference Gases - Table 9.

This table lists, in columns 2 and 3 respectively, monthly index values for the high span and the secondary reference gases in use at Mauna Loa Observatory from January 1961 through February 1964. Monthly index differences (the high span minus the secondary) are listed in column 4. "Sliding values" for tanks nos. 4277 and 193 were determined by interpolation. In each case the index values were assumed to change linearly between the month of the last determination at Scripps prior to use and the month of the first recalibration at Scripps after use. The initial and final index values for these computations are taken from columns 5 and 9, respectively, of Table 9.

Provisional index values and their differences for tanks nos. 2403 and 10077, used from August 1963 through February 1964, are also listed. These tanks are still in use at Mauna Loa Observatory.

XI. Index Values of Air with Continuous Analyzer - Table 10.

Air index values obtained for March 1958 through January 1964

are shown in this table. This constitutes a complete tabulation of Hawaiian daily air values up to the closing date of this report. Values for the remainder of 1964 will appear in a later report. Column 1 lists the calendar date of the comparison with air. Column 2 shows the hours of record used to determine the daily average index value. The criterion for selection of acceptable records is described in detail by Pales and Keeling [1965]. Column 3 shows the daily average scale difference between the air trace and the reference gas trace for the period listed in column 2. Column 4 lists the number of comparisons of air versus reference gas made during the period listed in column 2. Values for columns 3 and 4 were obtained from the original Carbon Dioxide Daily Data Sheets.

Column 5 lists the daily RSF's. For the period March 1958 through December 1960 these are taken from Table 4 of MLO-1. Values for periods subsequent to December 1960 are taken from the tabulations of weighted average RSF's, column 1 on the last page of Table 4 of this report. For the period November 22, 1958 to December 31, 1960 all values are copied from MLO-1 where a RSF of 19.24 is employed in the computation of the daily air index values. This value varies from the three period averages covering the same time interval as listed in Table 4 by a maximum of 0.10 RSF units. Since in no case would a change of an air index value by so much as 0.1 ppm result by substituting the values in Table 4, it was not judged worthwhile to

recompute the 1958, 1959, and 1960 data using the revised RSF's.

The computed index difference in column 6 is computed by the formula:

$$\text{Computed Index Difference} = \frac{\text{Observed scale difference} \times 18.00}{\text{Period Average RSF}}$$

For the significance of the 18.00, see Section III-A.

The daily average air index values in column 9 are the algebraic sums of entries in columns 6 and 8. The values in column 8 are taken from column 10 of Table 7.

XII. Monthly Summary of Air Data - Table 11.

This table presents monthly averages of the index values for air. Column 1 lists the month. Column 2 lists the number of days in the month for which air index values are quoted in Table 10. Column 3 lists monthly averages as they appear in column 9 of Table 10. The daily values have not been weighted in forming monthly averages.

XIII. Summary of Manometric Concentrations - Table 12.

A. Manometric Concentration Scale.

Throughout this report the CO_2 data have been reported in terms of an index scale. It was established provisionally at Scripps in 1959 that the true concentration in parts per million by volume is related to the index scale by the relationship:

Manometric Concentration = (C - 311.51) 1.2186 + 311.51

where C is the index value.

This equation is based on the absolute calibration of a suite of primary and span reference gases using a mercury manometer. Future manometric calibrations may result in some further adjustment of the index scale. The intercept value (311.51) is believed to be correct within 1 ppm; the slope value (1.2186) within .001. This well-determined value of the slope means that no significant error exists in comparing different concentrations in the range of 300 to 320 ppm.

This equation has been used to report atmospheric CO_2 concentrations by Keeling [1960], Bolin and Keeling [1963], Kelley [1964], Pales and Keeling [1965], and Brown and Keeling [1965].

B. Monthly Concentrations.

Table 12 lists the average monthly concentrations of CO_2 at Mauna Loa Observatory for 1958 through 1963. The table is in the same format as Table 11. Column 3 lists CO_2 concentrations determined by the equation of XIII-A using the index values of column 3 of Table 11.

XIV. Concentrations in Air Referred to a Constant Datum - Table 13.

This table lists monthly average concentrations from Table 12 referred to a datum of January 1960 on the assumption that the

concentration of CO_2 in the atmosphere at Mauna Loa from 1958 through 1963 increased at the rate of 0.06 ppm per month. This rate is consistent with the data of Table 12 as shown by plotting a twelve month running mean (moving average) which suppresses the seasonal variation (see Pales and Keeling [1965], Figure 12). Composite monthly averages in ppm appear in column 8. Column 9 lists the departure of these composite averages from the composite annual mean value of 313.60 ppm. Values from column 8 provide the Mauna Loa Observatory concentration values listed in column 3 of Table 6 of Pales and Keeling [1965].

XV. Twelve Month Running Mean Concentrations - Table 14.

This table lists data plotted in Figure 12 of Pales and Keeling [1965]. The entries in columns 2 through 6 were computed by the formula:

$$M_{j+5} = \sum_{i=j}^{i=j+11} M_i$$

where j = 1, 2, 3, ...

(index = 1 refers to November 1958; index = 2 refers to December 1958, etc.)

M_i is the manometric concentration of CO_2 for the i th month, as listed in Table 12.

XVI. Index Values and Manometric Concentrations of Flask Samples - Table 15.

Beginning in March 1960, samples of air were collected in 5-liter glass flasks at Mauna Loa Observatory and near Hilo, Hawaii. The samples, analyzed in the Scripps laboratory, were taken primarily to check the continuous analyzer data against an independent set of data, and to compare concentrations in air at 11,000 feet versus air at sea level.

Information for columns 1 through 4 is taken directly from the original Flask Sample Field Data Sheets logged at the Observatory and at Hilo. Column 4 lists sample location as Mauna Loa Observatory (M) or Hilo (H) and identifies the sample taker by a two-letter code as indicated below:

Designation	Name	Title
DK	C. D. Keeling	Chemist (at SIO)
JP	J. C. Pales	Physicist
HE	H. Ellis	Physicist
MK	F. M. Keyes	Electronic Tech.
CK	C. M. Kutaka	Meteorological Tech.
HA	H. Arashiro	Meteorological Tech.
RJ	R. S. Jackson	Meteorological Tech.
FC	F. S. Chin	Meteorological Tech.
BL	B. LeBlanc	Meteorological Tech.

Entries in columns 5 through 8 are copied from the Flask

Sample Laboratory Data Sheets, listed by number in column 9, which constitute the original laboratory record at Scripps.

XVII. Index Values and Manometric Concentrations of Air for Times of Flask Sampling - Table 16.

This table presents CO_2 concentrations in air as measured by the infrared analyzer at times when air samples were collected in evacuated glass flasks at Mauna Loa Observatory.

Columns 1 and 2 show the date and time when the flask samples were collected as listed in columns 2 and 3 of Table 15. The observed scale difference listed in column 3 and the barometric pressure listed in column 4 are average values which apply to a 30 to 60 minute period near the time when the flask sample was taken. Entries in column 5 are RSF's adjusted for barometric pressure, copied from column 3 of Table 4. Computed index differences listed in column 6 were adjusted for barometric pressure according to the formula of Section IV. The index values of working reference gases listed in column 8 are taken from column 10 of Table 7. Air index values, listed in column 9, are the algebraic sums of entries in columns 6 and 8. The manometric concentrations listed in column 10 are computed by the equation of Section XIII-A.

XVIII. Comparison of Continuous Analyzer and Flask Samples at Mauna Loa Observatory - Table 17.

This table reports the concentrations of individual flask

samples collected at Mauna Loa Observatory together with the average concentration observed by the continuous analyzer near the time of collection. Values are reported using the manometric scale described in Section XIII-A.

Flask concentrations copied from column 7 of Table 15 are listed in column 3. Analyzer concentrations copied from column 10 of Table 16 are listed in column 4. Differences (analyzer concentration minus flask concentration) are listed in column 5.

For 1960, 1961, and 1962, all values listed in Table 16 are reported, after rounding to 0.1 ppm, in Table 2 of Pales and Keeling [1965] except for the entries of December 20, 1960. The individual flask concentrations for this day, while agreeing within 0.7 ppm, are clearly too high by several ppm. No external evidence (such as Pales and Keeling [1965] discuss for December 15, 1961) can be found to support rejection for this pair. In Pales and Keeling [1965], to avoid the need to explain a single arbitrary rejection, the data for this day were tacitly withdrawn. All data for 1963 and 1964 are also omitted from Table 2 of Pales and Keeling [1965]. The flask samples reported for these years were analyzed at Scripps at a time when the gas handling system had become contaminated, and on this account are, in general, 1 to 2 ppm too high. Rejection is clearly justifiable because other flasks analyzed at Scripps during the same period also show such contamination. Only for the sake of completeness are the results included here.

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FIGURES

Figure 1. A Reference Gas Data Sheet showing original values obtained by the infrared analyzer for CO_2, plus supporting data.

Figure 2. Period average index values (in ppm) of primary tank no. A-17 from its initial determination at Scripps prior to use at Mauna Loa until its final determination at Scripps after use. The meaning of "Preliminary" and "Final" values are explained in Section V.

Figure 3. Differences between index values (in ppm) obtained from measurements at Mauna Loa and Scripps of all working reference gases used at Mauna Loa from July 1958 through January 1964. For the period of use of tank no. 193 the differences are based on "preliminary" values at Mauna Loa as explained in Section VII.

Figure 4. Same as Figure 2 except that for the period of use of tank no. 193 differences are based on "final" values at Mauna Loa as explained in Section VII.

Table 1. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1961
4277	A-17	-37.54	10	18.98	-35.60	310.38	5	72	Jan. 9
7344	A-17	-4.15	10		-3.94	310.41	5	72	
7344	4277	33.30	10		-	-	3	72	
7344	3758	-3.56	10		-3.38	310.97	6	72	
4277	A-17	-37.48	10	18.95	-35.60	310.38	5	73	Jan. 19
7344	A-17	-4.20	10		-3.99	310.36	5	73	
7344	4277	33.31	10		-	-	3	73	
7344	3758	-3.85	10		-3.66	310.69	6	73	
7344	4272	-0.58	10		-0.55	313.80	6	73	
4277	A-17	-37.47	10	18.98	-35.54	310.45	5	74	Feb. 1
7344	A-17	-4.12	10		-3.91	310.44	5	74	
7344	4277	33.37	10		-	-	3	74	
7344	4272	-0.55	10		-0.52	313.83	6	74	
7344	4275	-0.44	10		-0.42	313.93	6	74	
4277	A-17	-37.64	10	19.08	-35.51	310.48	5	75	Feb. 12
7344	A-17	-4.03	10		-3.80	310.55	5	75	
7344	4277	33.49	10		-	-	3	75	
7344	4275	-0.37	10		-0.35	314.00	6	75	
4277	A-17	-37.91	10	19.20	-35.54	310.45	5	76	Feb. 23
7344	A-17	-4.05	10		-3.80	310.55	5	76	
7344	4277	33.63	10		-	-	3	76	
7344	4275	-0.37	10		-0.35	314.00	6	76	

Table 1. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1961
4277	A-17	-37.88	10	19.16	-35.59	310.40	5	77	Mar. 7
7344	A-17	-4.20	10		-3.95	310.40	5	77	
7344	4277	33.70	10		-	-	3	77	
7344	4272	-0.43	10		-0.40	313.95	6	77	
7344	10075	-17.15	10		-16.11	298.24	6	77	
4277	A-17	-37.88	10	19.14	-35.62	310.37	5	78	Mar. 24
7344	A-17	-4.21	10		-3.96	310.39	5	78	
7344	4277	33.64	10		-	-	3	78	
7344	10075	-17.15	10		-16.13	298.22	6	78	
4277	A-17	-37.68	10	19.05	-35.60	310.40	5	79	Apr. 6
7344	A-17	-4.22	10		-3.99	310.36	5	79	
7344	4277	33.54	10		-	-	3	79	
7344	10075	-17.13	10		-16.19	298.16	6	79	
7344	6081	-4.98	10		-4.71	309.64	6	79	
4277	A-17	-37.95	10	19.12	-35.73	310.27	5	80	Apr. 25
7344	A-17	-4.27	10		-4.02	310.33	5	80	
7344	4277	33.56	10		-	-	3	80	
7344	6081	-4.98	10		-4.69	309.66	6	80	
4277	A-17	-37.86	10	19.14	-35.61	310.39	5	81	May 12
7344	A-17	-4.22	10		-3.97	310.38	5	81	
7344	4277	33.66	10		-	-	3	81	
7344	6081	-4.83	10		-4.54	309.81	6	81	
7344	10068	-11.62	10		-10.93	303.42	6	81	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1961
4277	A-17	-38.27	10	19.34	-35.62	310.38	5	82	May 31
193	A-17	-1.64	10		-1.53	310.43	5	82	
193	4277	36.57	10		-	-	3	82	
193	10068	-8.99	10		-8.37	303.59	6	82	
4277	A-17	-37.95	10	19.22	-35.54	310.47	5	83	June 17
193	A-17	-1.57	10		-1.47	310.49	5	83	
193	4277	36.35	10		-	-	3	83	
193	10068	-8.61	10		-8.06	303.90	6	83	
193	10067	7.79	10		7.30	319.26	6	83	
4277	A-17	-38.44	10	19.35	-35.76	310.26	5	84	July 2
193	A-17	-1.79	10		-1.67	310.31	5	84	
193	4277	36.53	10		-	-	3	84	
193	10067	7.82	10		7.27	319.25	6	84	
4277	A-17	-37.43	10	18.91	-35.63	310.39	5	85	July 20
193	A-17	-1.61	10		-1.53	310.45	5	85	
193	4277	35.70	10		-	-	3	85	
193	10067	7.73	10		7.36	319.34	6	85	
193	2427	4.07	10		3.87	315.85	6	85	
4277	A-17	-37.22	5	18.83	-35.58	310.44	5	86	July 21
193	4277	35.60	5		-	-	3	86	
193	A-17	-1.60	5		-1.53	310.45	5	86	
193	2427	4.10	5		3.92	315.90	6	86	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1961
4277	A-17	-38.62	10	19.54	-35.58	310.44	5	87	July 28
193	4277	36.90	10		-	-	3	87	
193	A-17	-1.59	10		-1.46	310.52	5	87	
193	4272	-4.41	10		-4.06	307.92	6	87	
4277	A-17	-37.49	10	18.98	-35.55	310.47	5	88	Aug. 19
193	4277	35.84	10		-	-	3	88	
193	A-17	-1.62	10		-1.54	310.47	5	88	
193	4272	-4.19	10		-3.97	308.04	6	88	
4277	A-17	-37.33	10	18.90	-35.55	310.48	5	89	Sep. 5
193	4277	35.45	10		-	-	3	89	
193	A-17	-1.42	10		-1.35	310.69	5	89	
193	4272	-4.29	10		-4.09	307.95	6	89	
193	7355	-4.91	10		-4.68	307.36	6	89	
4277	A-17	-37.46	10	19.00	-35.49	310.54	5	90	Sep. 28
193	4277	35.87	10		-	-	3	90	
193	A-17	-1.56	10		-1.48	310.56	5	90	
193	7355	-4.94	10		-4.68	307.36	6	90	
4277	A-17	-37.48	10	19.06	-35.40	310.63	5	91	Oct. 15
193	4277	35.94	10		-	-	3	91	
193	A-17	-1.52	10		-1.44	310.63	5	91	
193	7355	-4.77	10		-4.50	307.57	6	91	
193	136	10.46	10		9.88	321.95	6	91	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1961
4277	A-17	-37.91	10	19.28	-35.39	310.65	5	92	Nov. 5
193	A-17	-1.61	10		-1.50	310.59	5	92	
193	4277	36.41	10		-	-	3	92	
193	136	10.58	10		9.88	321.97	6	92	
4277	A-17	-37.58	10	19.10	-35.42	310.62	5	93	Nov. 21
193	A-17	-1.55	10		-1.46	310.63	5	93	
193	4277	36.02	10		-	-	3	93	
193	136	10.79	10		10.17	322.26	6	93	
193	3752	9.52	10		8.97	321.06	6	93	
4277	A-17	-37.36	10	19.02	-35.36	310.68	5	94	Dec. 2
193	A-17	-1.56	10		-1.48	310.64	5	94	
193	4277	35.90	10		-	-	3	94	
193	3752	9.59	10		9.08	321.20	6	94	
4277	A-17	-37.67	10	19.12	-35.46	310.58	5	95	Dec. 12
193	A-17	-1.56	10		-1.47	310.65	5	95	
193	4277	35.98	10		-	-	3	95	
193	3752	9.63	10		9.07	321.19	6	95	
193	3751	15.78	10		14.86	326.98	6	95	
4277	A-17	-37.44	10	19.08	-35.32	310.72	5	96	Dec. 28
193	A-17	-1.46	10		-1.38	310.74	5	96	
193	4277	35.96	10		-	-	3	96	
193	3751	15.79	10		14.90	327.02	6	96	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1962
4277	A-17	-37.62	10	19.12	-35.42	310.63	5	97	Jan. 6
193	A-17	-1.63	10		-1.53	310.62	5	97	
193	4277	36.02	10		-	-	3	97	
193	3751	15.79	10		14.87	327.02	6	97	
193	7364	-10.87	10		-10.23	301.92	6	97	
4277	A-17	-37.66	10	19.18	-35.34	310.71	5	98	Jan. 21
193	A-17	-1.51	10		-1.42	310.73	5	98	
193	4277	36.13	10		-	-	3	98	
193	7364	-10.99	10		-10.31	301.84	6	98	
4277	A-17	-37.80	10	19.16	-35.51	310.54	5	99	Jan. 22
193	A-17	-1.67	10		-1.57	310.58	5	99	
193	4277	36.06	10		-	-	3	99	
193	7364	-10.76	10		-10.11	302.04	6	99	
193	148	6.64	10		6.24	318.39	6	99	
4277	A-17	-37.67	10	19.12	-35.46	310.60	5	100	Feb. 10
193	A-17	-1.65	10		-1.55	310.62	5	100	
193	4277	36.00	10		-	-	3	100	
193	148	6.67	10		6.28	318.45	6	100	
4277	A-17	-37.76	10	19.20	-35.40	310.66	5	101	Feb. 28
193	A-17	-1.65	10		-1.55	310.62	5	101	
193	4277	36.17	10		-	-	3	101	
193	148	6.56	10		6.15	318.32	6	101	
193	10064	-11.10	10		-10.41	301.76	6	101	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1962
4277	A-17	-37.52	10	19.10	-35.36	310.70	5	102	Mar. 14
193	A-17	-1.50	10		-1.41	310.79	5	102	
193	4277	35.85	10		-	-	3	102	
193	10064	-10.99	10		-10.36	301.84	6	102	
4277	A-17	-37.40	10	19.08	-35.28	310.78	5	103	Mar. 31
193	A-17	-1.58	10		-1.49	310.71	5	103	
193	4277	35.96	10		-	-	3	103	
193	10064	-11.01	10		-10.39	301.81	6	103	
193	10072	-7.65	10		-7.22	304.98	6	103	
4277	A-17	-37.69	10	19.14	-35.45	310.62	5	104	Apr. 14
193	A-17	-1.63	10		-1.53	310.70	5	104	
193	4277	35.90	10		-	-	3	104	
193	10072	-7.89	10		-7.42	304.81	6	104	
4277	A-17	-37.82	10	19.21	-35.44	310.63	5	105	Apr. 26
193	A-17	-1.68	10		-1.57	310.66	5	105	
193	4277	36.09	10		-	-	3	105	
193	10072	-7.80	10		-7.31	304.92	6	105	
193	4272	-11.03	10		-10.34	301.89	6	105	
4277	A-17	-37.69	10	19.24	-35.26	310.82	5	106	May 19
193	A-17	-1.59	10		-1.49	310.77	5	106	
193	4277	36.22	10		-	-	3	106	
193	4272	-11.09	10		-10.38	301.88	6	106	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1962
4277	A-17	-37.75	10	19.17	-35.45	310.63	5	107	June 4
193	A-17	-1.76	10		-1.65	310.63	5	107	
193	4272	-11.17	10		-10.49	301.79	6	107	
193	6067	-9.44	10		-8.86	303.42	6	107	
4277	A-17	-37.48	10	19.09	-35.34	310.74	5	108	June 27
193	A-17	-1.59	10		-1.50	310.78	5	108	
193	4277	35.80	10		-	-	3	108	
193	6067	-9.17	10		-8.65	303.63	6	108	
4277	A-17	-37.32	10	19.01	-35.34	310.75	5	109	July 11
193	A-17	-1.73	10		-1.64	310.67	5	109	
193	4277	35.76	10		-	-	3	109	
193	6067	-9.32	10		-8.82	303.49	6	109	
193	6081	-10.19	10		-9.65	302.66	6	109	
4277	A-17	-38.06	10	19.38	-35.35	310.75	5	110	Aug. 2
193	A-17	-1.65	10		-1.53	310.81	5	110	
193	4277	36.28	10		-	-	3	110	
193	6081	-10.22	10		-9.49	302.85	6	110	
4277	A-17	-37.85	10	19.34	-35.23	310.87	5	111	Sep. 13
193	A-17	-1.56	10		-1.45	310.91	5	111	
193	4277	36.24	10		-	-	3	111	
193	6081	-10.31	10		-9.60	302.76	6	111	
193	7344	-11.38	10		-10.59	301.77	6	111	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1962
4277	A-17	-37.46	10	19.08	-35.34	310.77	5	112	Oct. 5
193	A-17	-1.71	10		-1.61	310.78	5	112	
193	4277	35.73	10		-	-	3	112	
193	7344	-11.19	10		-10.56	301.83	6	112	
4277	A-17	-38.28	10	19.50	-35.34	310.77	5	113	Oct. 16
193	A-17	-1.78	10		-1.64	310.75	5	113	
193	4277	36.55	10		-	-	3	113	
193	7344	-11.50	10		-10.62	301.77	6	113	
193	11097	-5.30	10		-4.89	307.50	6	113	
4277	A-17	-37.65	10	19.25	-35.21	310.90	5	114	Nov. 2
193	A-17	-1.68	10		-1.57	310.85	5	114	
193	4277	36.09	10		-	-	3	114	
193	11097	-5.17	9		-4.83	307.59	6	114	
4277	A-17	-37.80	10	19.32	-35.22	310.89	5	115	Nov. 12
193	A-17	-1.64	10		-1.53	310.89	5	115	
193	4277	36.17	10		-	-	3	115	
193	11097	-5.15	10		-4.80	307.62	6	115	
193	11078	-4.35	10		-4.05	308.37	6	115	
4277	A-17	-37.90	10	19.30	-35.35	310.76	5	116	Nov. 26
193	A-17	-1.78	10		-1.66	310.76	5	116	
193	4277	36.15	10		-	-	3	116	
193	11078	-4.37	10		-4.08	308.34	6	116	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1962
4277	A-17	-37.72	10	19.25	-35.27	310.85	5	117	Dec. 12
193	A-17	-1.71	10		-1.60	310.85	5	117	
193	4277	36.00	10		-	-	3	117	
193	11078	-4.36	10		-4.08	308.37	6	117	
193	2425	-1.86	10		-1.74	310.71	6	117	
4277	A-17	-37.41	10	19.09	-35.27	310.85	5	118	Dec. 21
193	A-17	-1.75	10		-1.65	310.80	5	118	
193	4277	35.76	10		-	-	3	118	
193	2425	-1.68	10		-1.58	310.87	6	118	
									1963
4277	A-17	-37.56	10	19.15	-35.30	310.82	5	119	Jan. 3
193	A-17	-1.77	10		-1.66	310.81	5	119	
193	4277	35.82	10	-	-	-	3	119	
193	2425	-1.70	10		-1.60	310.87	6	119	
4277	A-17	-37.54	10	19.16	-35.27	310.85	5	120	Jan. 18
193	A-17	-1.73	10		-1.63	310.84	5	120	
193	4277	35.81	10		-	-	3	120	
193	2425	-1.70	10		-1.60	310.87	6	120	
193	4285	-11.20	10		-10.52	301.95	6	120	
4277	A-17	-37.69	9	19.20	-35.33	310.80	5	121	Feb. 5*
2403	A-17	-0.21	10		-0.20	310.92	5	121	
2403	4277	37.25	11		-	-	3	121	
2403	4285	-9.30	9		-8.72	302.40	6	121	

*New pressure regulators installed

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1963
4277	A-17	-38.36	10	19.61	-35.21	310.93	5	122	Mar. 1
2403	A-17	-0.25	10		-0.23	310.89	5	122	
2403	4277	38.19	10		-	-	3	122	
2403	4285	-9.72	10		-8.92	302.20	6	122	
2403	2423	0.04	10		0.04	311.16	6	122	
4277	A-17	-38.67	10	19.76	-35.23	310.91	5	123	Mar. 19
2403	A-17	-0.25	10		-0.23	310.89	5	123	
2403	4277	38.49	10		-	-	3	123	
2403	2423	0.15	10		0.14	311.26	6	123	
2403	4291	0.95	10		0.87	311.99	6	123	
4277	A-17	-38.41	10	19.70	-35.10	311.04	5	124	Mar. 25
2403	A-17	-0.11	10		-0.10	311.02	5	124	
2403	4277	38.34	10		-	-	3	124	
2403	2423	0.00	10		0.00	311.12	6	124	
2403	4291	0.79	10		0.72	311.84	6	124	
4277	A-17	-38.64	10	19.80	-35.13	311.01	5	125	Apr. 3
2403	A-17	-0.13	10		-0.12	311.00	5	125	
2403	4277	38.52	10		-	-	3	125	
2403	2423	-0.12	10		-0.11	311.01	6	125	
2403	4291	0.97	10		0.88	312.00	6	125	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1963
2399	11083	-23.46	10	19.48	-21.68	314.05	5	126	Apr. 24
2403	11083	3.31	10		3.06	314.18	5	126	
2403	2399	26.49	10		-	-	3	126	
2403	4291	0.89	10		0.82	311.94	6	126	
2399	11083	-23.83	10	20.02	-21.43	314.30	5	127	May 9
2403	11083	3.55	10		3.19	314.31	5	127	
2403	2399	27.35	10		-	-	3	127	
2403	4291	1.24	10		1.11	312.23	6	127	
2403	2421	1.73	10		1.56	312.68	6	127	
2399	11083	-23.52	10	19.82	-21.36	314.37	5	128	June 5
2403	11083	3.49	10		3.17	314.29	5	128	
2403	2399	27.17	10		-	-	3	128	
2403	2421	1.78	10		1.62	312.74	6	128	
2399	11083	-23.57	10	19.79	-21.44	314.29	5	129	June 12
2403	11083	3.48	10		3.17	314.29	5	129	
2403	2399	27.07	10		-	-	3	129	
2403	2421	1.84	10		1.67	312.79	6	129	
2403	2402	1.48	10		1.35	312.47	6	129	
2399	11083	-23.45	10	19.86	-21.25	314.48	5	130	June 28
2403	11083	3.61	10		3.27	314.39	5	130	
2403	2399	27.25	10		-	-	3	130	
2403	2402	1.65	10		1.50	312.62	6	130	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1963
2399	11083	-23.76	10	19.85	-21.55	314.18	5	131	July 11
2403	11083	3.51	10		3.18	314.30	5	131	
2403	2399	27.00	10		-	-	3	131	
2403	2402	1.59	10		1.44	312.56	6	131	
2403	18220	1.49	10		1.35	312.47	6	131	
2399	11083	-23.80	10	19.86	-21.57	314.16	5	132	July 25
2403	11083	3.44	10		3.12	314.24	5	132	
2403	2399	27.06	10		-	-	3	132	
2403	18220	1.66	10		1.50	312.62	6	132	
2399	11083	-23.82	10	19.83	-21.62	314.11	5	133	Aug. 3
2403	11083	3.39	10		3.08	314.20	5	133	
2403	2399	27.02	10		-	-	3	133	
2403	18220	1.60	10		1.45	312.57	6	133	
2403	18216	-1.84	10		-1.67	309.45	6	133	
2399	11083	-23.57	12	19.90	-21.32	314.41	5	134	Aug. 30a
2403	11083	3.62	10		3.27	314.39	5	134	
2403	2399	27.21	11		-	-	3	134	
2399	10077	11.90	10		10.76	346.49	Not used	134	
10077	11083	-35.55	11	19.55	-32.73	314.38	5	135	Aug. 30b
2403	11083	3.62	10		3.33	314.45	5	135	
2403	10077	39.01	11		-	-	3	135	
2403	18216	-1.70	11		-1.57	309.55	6	135	
2403	9184	-4.90	10		-4.51	306.61	6	135	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1963
10077	11083	-36.12	10	19.70	-33.00	314.11	5	136	Sep. 19
2403	11083	3.39	10		3.10	314.22	5	136	
2403	10077	39.29	10		-	-	3	136	
2403	9184	-4.76	10		-4.35	306.77	6	136	
10077	11083	-35.85	11	19.70	-32.76	314.35	5	137	Sep. 28
2403	11083	3.53	11		3.23	314.35	5	137	
2403	10077	39.38	12		-	-	3	137	
2403	9184	-4.62	10		-4.22	306.90	6	137	
2403	11633	-4.88	10		-4.46	306.66	6	137	
10077	11083	-35.61	11	19.82	-32.34	314.77	5	138	Oct. 4
2403	11083	4.04	11		3.67	314.79	5	138	
2403	10077	39.63	12		-	-	3	138	
2403	11633	-4.59	11		-4.17	306.95	6	138	
10077	11083	-35.00	10	19.66	-32.04	315.07	5	139	Oct. 17
2403	11083	4.01	11		3.67	314.79	5	139	
2403	10077	39.56	12		-	-	3	139	
2403	11633	-4.30	10		-3.94	307.18	6	139	
2403	9200	2.19	11		2.00	313.12	6	139	
10077	11083	-36.17	10	19.60	-33.22	313.89	5	140	Oct. 27
2403	11083	3.49	11		3.21	314.33	5	140	
2403	10077	39.00	10		-	-	3	140	
2403	9200	1.66	10		1.52	312.64	6	140	
2403	4271	-1.26	10		-1.16	309.96	6	140	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1963
10077	11083	-35.75	11	19.51	-32.98	314.13	5	141	Nov. 11
2403	11083	3.20	10		2.95	314.07	5	141	
2403	10077	39.07	11		-	-	3	141	
2403	4271	-0.88	10		-0.81	310.31	6	141	
10077	11083	-35.85	10	19.58	-32.96	314.15	5	142	Nov. 28
2403	11083	3.34	11		3.07	314.19	5	142	
2403	10077	39.11	10		-	-	3	142	
2403	4271	-1.09	10		-1.00	310.12	6	142	
2403	4278	-0.53	10		-0.49	310.63	6	142	
10077	11083	-35.62	10	19.55	-32.80	314.31	5	143	Dec. 8
2403	11083	3.45	11		3.18	314.30	5	143	
2403	10077	39.08	12		-		3	143	
2403	4278	-0.37	10		-0.34	310.78	6	143	
10077	11083	-35.60	10	19.50	-32.86	314.25	5	144	Dec. 17
2403	11083	3.46	11		3.19	314.31	5	144	
2403	10077	38.90	10		-		3	144	
2403	9200	1.70	9		1.57	312.69	6	144	
									1964
10077	11083	-35.86	10	19.49	-33.12	313.99	5	145	Jan. 2
2403	11083	3.15	11		2.91	314.03	5	145	
2403	10077	38.93	10		-		3	145	
2403	9200	1.81	10		1.67	312.79	6	145	
2403	3756	2.57	10		2.37	313.49	6	145	

Table 1. Reference Gas Comparisons with Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8		9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Table and Sheet No.		Date of Analysis
Span 485									1964
10077	11083	-35.58	9	19.54	-32.78	314.33	5	146	Jan. 15
2403	11083	3.51	12		3.23	314.35	5	146	
2403	10077	39.04	10		-		3	146	
2403	3756	2.94	11		2.71	313.82	6	146	

Table 2. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Recorder Scale Factor	Computed Index Difference	Computed Index	Barometric Pressure (Inches)	Date of Analysis
Span 485								1958
4297	2425	1.36	10	19.22	1.27	307.05	20.050	Dec. 3
4297	2425	1.27	11		1.18	306.96	20.105	Dec. 15
4297	4295	-8.03	9		-7.49	298.29	20.080	Dec. 26
								1959
4297	4295	-7.97	9	19.09	-7.51	298.27	20.025	Jan. 6
4297	4292	-10.24	8		-9.64	296.14	20.040	Jan. 20
4297	4292	-10.10	9		-9.50	296.28	20.050	Jan. 27
4297	4284	3.60	3		3.39	309.17	20.055	Mar. 1
4297	4284	3.61	8		3.39	309.17	20.110	Mar. 5
4297	4284	3.60	8		3.37	309.15	20.120	Mar. 9
4297	4284	3.59	8		3.38	309.16	20.050	Mar. 11
4297	2420	2.08	8		1.95	307.73	20.080	Mar. 30
4297	2420	2.11	9		1.98	307.76	20.070	Apr. 11
4297	4283	13.73	9		12.90	318.68	20.080	Apr. 23
4297	4283	13.66	9		12.82	318.60	20.100	May 4
4297	2418	6.76	8		6.36	312.14	20.060	May 22
4297	2418	6.85	8		6.43	312.21	20.095	June 7
4297	2423	12.32	9		11.54	317.32	20.130	June 21
4297	2423	12.22	11		11.47	317.25	20.085	July 7
4297	4286	11.99	9		11.27	317.05	20.060	July 22
4297	4285	-2.53	9		-2.38	303.40	20.085	July 30
4297	4285	-2.39	8		-2.26	303.52	19.925	Aug. 5
4297	6074	0.70	9		0.66	306.44	20.055	Aug. 29
4297	6074	1.86	9		1.75	307.53	20.090	Sep. 5
4297	4281	-1.43	9		-1.34	304.44	20.100	Sep. 16
4297	4281	-1.46	9		-1.37	304.41	20.090	Sep. 27

Table 2. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Compari-sons	Recorder Scale Factor	Computed Index Difference	Computed Index	Barometric Pressure (Inches)	Date of Analysis
Span 485								1959
4297	6067	2.13	9	19.09	2.00	307.78	20.085	Oct. 8
4297	6067	2.41	9		2.26	308.04	20.150	Oct. 19
6051	3759	0.50	9		0.47	310.54	20.045	Nov. 2
6051	3759	0.62	9		0.58	310.65	20.100	Nov. 15
6051	4288	1.83	10		1.72	311.79	20.085	Nov. 24
6051	4288	1.72	9		1.62	311.69	20.085	Nov. 30
6051	4274	-9.09	8		-8.55	301.52	20.045	Dec. 16
6051	3753	16.89	9		15.92	325.99	20.005	Dec. 24
								1960
6051	3753	17.06	9	19.25	15.86	325.93	20.110	Jan. 5
6051	2418	-4.22	9		-3.93	306.14	20.055	Jan. 11
6051	2418	-4.09	9		-3.81	306.26	20.065	Jan. 23
6051	7361	10.80	10		10.06	320.13	20.080	Feb. 10
6051	7361	10.94	10		10.20	320.27	20.060	Feb. 26
6051	7361	10.76	6		10.06	320.13	20.000	Mar. 2
6051	7361	10.77	6		10.07	320.14	20.005	Mar. 2
6051	7362	-8.72	9		-8.15	301.92	20.000	Mar. 14
6051	7362	-8.80	11		-8.19	301.88	20.100	Mar. 27
7344	4275	-11.48	9		-10.69	303.66	20.090	Apr. 8
7344	4275	-11.46	10		-10.68	303.67	20.075	Apr. 23
7344	4272	-14.56	10		-13.57	300.78	20.060	May 13
7344	4272	-14.52	10		-13.50	300.85	20.120	May 27
7344	7366	-8.75	11		-8.14	306.21	20.100	June 12
7344	7366	-8.86	12		-8.23	306.12	20.140	June 29
7344	3758	-12.56	11		-11.64	302.71	20.180	July 13
7344	3758	-12.48	11		-11.60	302.75	20.110	July 26
7344	6081	-8.19	11		-7.62	306.73	20.105	Aug. 9
7344	6081	-8.23	11		-7.64	306.71	20.150	Aug. 21

Table 2. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Compari-sons	Recorder Scale Factor	Computed Index Difference	Computed Index	Barometric Pressure (Inches)	Date of Analysis
Span 485								1960
7344	148	-12.19	9	19.25	-11.35	303.00	20.085	Sep. 7
7344	148	-12.22	11		-11.35	303.00	20.125	Sep. 20
7344	7366	3.94	12		3.67	318.02	20.085	Oct. 20
7344	7361	8.57	12		7.98	322.33	20.090	Nov. 4
7344	7361	8.43	11		7.84	322.19	20.120	Nov. 17
7344	7362	-14.33	10		-13.36	300.99	20.060	Dec. 1
7344	7362	-14.15	11		-13.18	301.17	20.075	Dec. 15
								1961
7344	3758	-3.73	11	19.05	-3.54	310.81	19.890	Jan. 1
7344	3758	-3.78	12		-3.56	310.79	20.050	Jan. 14
7344	4272	-0.58	11		-0.55	313.80	20.000	Jan. 26
7344	4275	-0.52	11		-0.49	313.86	20.135	Feb. 8
7344	4275	-0.18	11		-0.17	314.18	20.000	Feb. 17
7344	10075	-17.09	11		-16.05	298.30	20.120	Mar. 16
7344	10075	-17.05	12		-16.03	298.32	20.100	Apr. 1
7344	6081	-4.79	11		-4.50	309.85	20.105	Apr. 18
7344	6081	-4.83	11		-4.52	309.83	20.185	May 3
7344	10068	-11.39	12		-10.70	303.65	20.120	May 23
7344	10068	-11.44	11		-10.73	303.62	20.155	May 30
193	10068	-8.64	11		-8.11	303.85	20.140	May 30
193	10068	-8.57	11		-8.06	303.90	20.095	June 10
193	10067	7.99	11		7.53	319.49	20.060	June 24
193	10067	8.02	12		7.55	319.53	20.075	July 12
193	4272	-4.05	11		-3.80	308.21	20.140	Aug. 11
193	4272	-3.94	11		-3.71	308.50	20.085	Aug. 28
193	7355	-4.63	11		-4.36	307.68	20.050	Sep. 20
193	7355	-4.72	12		-4.42	307.65	20.175	Oct. 7

Table 2. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Compari-sons	Recorder Scale Factor	Computed Index Difference	Computed Index	Barometric Pressure (Inches)	Date of Analysis
Span 485								1961
193	136	10.54	11	19.05	9.93	322.00	20.070	Oct. 26
193	136	10.67	11		10.01	322.10	20.145	Nov. 13
193	3752	9.62	11		9.05	321.14	20.080	Nov. 28
193	3752	9.73	11		9.16	321.28	20.070	Dec. 8
193	3751	15.91	11		15.00	327.12	20.045	Dec. 21
								1962
193	3751	15.87	10	19.13	14.90	327.05	20.050	Jan. 3
193	7364	-10.90	10		-10.23	301.92	20.060	Jan. 12
193	148	6.69	11		6.30	318.47	19.980	Feb. 2
193	148	6.72	12		6.37	318.54	19.850	Feb. 18
193	10064	-11.04	10		-10.38	301.82	20.025	Mar. 6
193	10064	-11.11	10		-10.43	301.77	20.050	Mar. 25
193	10072	-7.70	12		-7.26	304.97	19.970	Apr. 8
193	4272	-10.94	12		-10.22	302.04	20.140	May 11
193	4272	-10.70	11		-10.03	302.23	20.080	May 28
193	6067	-9.18	11		-8.59	303.69	20.120	June 20
193	6067	-9.04	12		-8.50	303.81	20.025	July 5
193	6081	-10.06	10		-9.41	302.90	20.110	July 25
193	6081	-10.10	10		-9.46	302.88	20.100	Aug. 11
193	7344	-11.23	11		-10.52	301.84	20.090	Sep. 28
193	7344	-11.22	11		-10.49	301.90	20.135	Oct. 10
193	11097	-5.20	12		-4.86	307.53	20.125	Oct. 29
193	11097	-5.24	11		-4.90	307.52	20.110	Nov. 8
193	11078	-4.26	9		-3.99	308.46	20.100	Nov. 20
193	11078	-4.24	10		-3.98	308.47	20.070	Dec. 3
193	2425	-1.70	8		-1.60	310.85	19.980	Dec. 18

Table 2. Reference Gas Comparisons with Analyzer No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Compari-sons	Recorder Scale Factor	Computed Index Difference	Computed Index	Barometric Pressure (Inches)	Date of Analysis
Span 485								1963
193	2425	-1.54	13	19.10	-1.46	311.01	19.925	Jan. 11
2403	4285	-9.35	10	19.18	-8.81	302.31	19.910	Jan. 29
2403	2423	0.18	11	19.74	0.16	311.28	20.025	Mar. 12
2403	2423	0.37	10		0.34	311.46	20.095	Mar. 29
2403	2421	1.78	9		1.62	312.74	20.060	May 23
2403	2402	1.60	10		1.46	312.58	20.055	Jun. 22
2403	2402	1.82	10		1.65	312.77	20.160	Jul. 6
2403	18220	1.82	11		1.65	312.77	20.100	Jul. 20
2403	18220	1.95	10		1.77	312.89	20.083	Jul. 30
2403	18216	-1.69	10		-1.53	309.59	20.107	Aug. 24
2403	9184	-4.53	10	19.56	-4.15	306.97	20.105	Sep. 11
2403	9184	-4.67	11		-4.28	306.84	20.078	Sep. 23
2403	11633	-4.82	11		-4.41	306.71	20.120	Sep. 30
2403	11633	-4.01	9		-3.66	307.46	20.145	Oct. 11
2403	9200	2.22	10		2.04	313.16	20.050	Oct. 24
2403	4271	-0.67	10		-0.61	310.51	20.132	Nov. 2
2403	4271	-0.92	9		-0.84	310.28	20.070	Nov. 18
2403	4278	0.39	10		0.36	311.48	20.105	Dec. 4
2403	4278	0.34	10		0.31	311.43	20.120	Dec. 12
2403	9200	1.92	11		1.76	312.88	20.020	Dec. 26
								1964
2403	3756	2.81	11	19.45	2.60	313.72	19.995	Jan. 9
2403	3756	3.00	11		2.76	313.88	20.093	Jan. 21

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1961
4277	A-17	-37.54	10				Jan. 9
7344	A-17	-4.15	10				
7344	4277	33.39*	10*	31.63	19.00		
7344	4277	33.30	10	31.63	18.95		
			20			18.98	
4277	A-17	-37.48	10				Jan. 19
7344	A-17	-4.20	10				
7344	4277	33.28*	10*	31.63	18.94		
7344	4277	33.31	10	31.63	18.96		
			20			18.95	
4277	A-17	-37.47	10				Feb. 1
7344	A-17	-4.12	10				
7344	4277	33.35*	10*	31.64	18.97		
7344	4277	33.37	10	31.64	18.98		
			20			18.98	
4277	A-17	-37.64	10				Feb. 12
7344	A-17	-4.03	10				
7344	4277	33.61*	10*	31.64	19.12		
7344	4277	33.49	10	31.64	19.05		
			20			19.08	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

Col: 1 (Sub) Standard Tank No.	2 Compared Tank No.	3 Observed Scale Difference	4 No. of Comparisons	5 Index Difference	6 Recorder Scale Factor Single	7 Wt'd Set Average	8 Date of Analysis
Span 485							1961
4277	A-17	-37.91	10				Feb. 23
7344	A-17	-4.05	10				
7344	4277	33.86*	10*	31.64	19.26		
7344	4277	33.63	10	31.64	19.13		
			20			19.20	
4277	A-17	-37.88	10				Mar. 7
7344	A-17	-4.20	10				
7344	4277	33.68*	10*	31.64	19.16		
7344	4277	33.70	10	31.64	19.17		
			20			19.16	
4277	A-17	-37.88	10				Mar. 24
7344	A-17	-4.21	10				
7344	4277	33.67*	10*	31.64	19.15		
7344	4277	33.64	10	31.64	19.14		
			20			19.14	
4277	A-17	-37.68	10				Apr. 6
7344	A-17	-4.22	10				
7344	4277	33.46*	10*	31.65	19.03		
7344	4277	33.54	10	31.65	19.07		
			20			19.05	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1961
4277	A-17	-37.95	10				Apr. 25
7344	A-17	-4.27	10				
7344	4277	33.68*	10*	31.65	19.15		
7344	4277	33.56	10	31.65	19.09		
			20			19.12	
4277	A-17	-37.86	10				May 12
7344	A-17	-4.22	10				
7344	4277	33.64*	10*	31.65	19.13		
7344	4277	33.66	10	31.65	19.14		
			20			19.14	
4277	A-17	-38.27	10				May 31
193	A-17	-1.64	10				
193	4277	36.63*	10*	34.05	19.36		
193	4277	36.57	10	34.05	19.33		
			20			19.34	
4277	A-17	-37.95	10				June 17
193	A-17	-1.57	10				
193	4277	-36.38*	10*	34.05	19.23		
193	4277	-36.35	10	34.05	19.22		
			20			19.22	

*. See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1 (Sub) Standard Tank No.	2 Compared Tank No.	3 Observed Scale Difference	4 No. of Comparisons	5 Index Difference	6 Recorder Scale Factor Single Wt'd Set Average	7	8 Date of Analysis
Span 485							1961
4277	A-17	38.44	10				July 2
193	A-17	1.79	10				
193	4277	36.65*	10*	34.04	19.38		
193	4277	-36.53	10	34.04	19.32		
			20			19.35	
4277	A-17	37.43	10				July 20
193	A-17	-1.61	10				
193	4277	35.82*	10*	34.04	18.94		
193	4277	-35.70	10	34.04	18.88		
			20			18.91	
4277	A-17	-37.22	5				July 21
193	A-17	1.60	5				
193	4277	35.62*	5*	34.04	18.84		
193	4277	-35.60	5	34.04	18.82		
			10			18.83	
4277	A-17	-38.62	10				July 28
193	A-17	1.59	10				
193	4277	-37.03*	10*	34.04	19.58		
193	4277	-36.90	10	34.04	19.51		
			20			19.54	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1961
4277	A-17	-37.49	10				Aug. 19
193	A-17	1.62	10				
193	4277	35.87*	10*	34.01	18.98		
193	4277	-35.84	10	34.01	18.97		
			20			18.98	
4277	A-17	-37.33	10				Sep. 5
193	A-17	1.42	10				
193	4277	35.91*	10*	33.99	19.02		
193	4277	-35.45	10	33.99	18.77		
			20			18.90	
4277	A-17	37.46	10				Sep. 28
193	A-17	1.56	10				
193	4277	35.90*	10*	33.99	19.01		
193	4277	35.87	10	33.99	19.00		
			20			19.00	
4277	A-17	-37.48	10				Oct. 15
193	A-17	-1.52	10				
193	4277	35.96*	10*	33.96	19.06		
193	4277	35.94	10	33.96	19.05		
			20			19.06	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1961
4277	A-17	37.91	10				Nov. 5
193	A-17	1.61	10				
193	4277	36.30*	10*	33.95	19.25		
193	4277	-36.41	10	33.95	19.30		
			20			19.28	
4277	A-17	37.58	10				Nov. 21
193	A-17	1.55	10				
193	4277	36.03*	10*	33.95	19.10		
193	4277	-36.02	10	33.95	19.10		
			20			19.10	
4277	A-17	37.36	10				Dec. 2
193	A-17	1.56	10				
193	4277	35.80*	10*	33.92	19.00		
193	4277	35.90	10	33.92	19.05		
			20			19.02	
4277	A-17	37.67	10				Dec. 12
193	A-17	1.56	10				
193	4277	36.11*	10*	33.92	19.16		
193	4277	35.98	10	33.92	19.09		
			20			19.12	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1961 Dec. 28
4277	A-17	-37.44	10				
193	A-17	-1.46	10				
193	4277	35.98*	10*	33.92	19.09		
193	4277	35.96	10	33.92	19.08		
			20			19.08	
Span 485							1962 Jan. 6
4277	A-17	-37.62	10				
193	A-17	-1.63	10				
193	4277	35.99*	10*	33.90	19.11		
193	4277	36.02	10	33.90	19.13		
			20			19.12	
4277	A-17	-37.66	10				Jan. 21
193	A-17	1.51	10				
193	4277	36.15*	10*	33.90	19.19		
193	4277	36.13	10	33.90	19.18		
			20			19.18	
4277	A-17	-37.80	10				Jan. 22
193	A-17	-1.67	10				
193	4277	36.13*	10*	33.90	19.18		
193	4277	36.06	10	33.90	19.15		
			20			19.16	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1 (Sub) Standard Tank No.	2 Compared Tank No.	3 Observed Scale Difference	4 No. of Comparisons	5 Index Difference	6 Recorder Scale Factor Single	7 Wt'd Set Average	8 Date of Analysis
Span 485							1962
4277	A-17	37.67	10				Feb. 10
193	A-17	1.65	10				
193	4277	36.02*	10*	33.89	19.13		
193	4277	-36.00	10	33.89	19.12		
			20			19.12	
4277	A-17	37.76	10				Feb. 28
193	A-17	1.65	10				
193	4277	36.11*	10*	33.89	19.18		
193	4277	-36.17	10	33.89	19.21		
			20			19.20	
4277	A-17	-37.52	10				Mar. 14
193	A-17	-1.50	10				
193	4277	36.02*	10*	33.86	19.15		
193	4277	35.85	10	33.86	19.06		
			20			19.10	
4277	A-17	-37.40	10				Mar. 31
193	A-17	-1.58	10				
193	4277	35.82*	10*	33.86	19.04		
193	4277	35.96	10	33.86	19.12		
			20			19.08	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1 (Sub) Standard Tank No.	2 Compared Tank No.	3 Observed Scale Difference	4 No. of Comparisons	5 Index Difference	6 Recorder Scale Factor Single	7 Wt'd Set Average	8 Date of Analysis
Span 485							1962
4277	A-17	-37.69	10				Apr. 14
193	A-17	-1.63	10				
193	4277	36.06*	10*	33.84	19.18		
193	4277	35.90	10	33.84	19.10		
			20			19.14	
4277	A-17	-37.82	10				Apr. 26
193	A-17	-1.68	10				
193	4277	36.14*	10*	33.84	19.22		
193	4277	36.09	10	33.84	19.20		
			20			19.21	
4277	A-17	-37.69	10				May 19
193	A-17	-1.59	10				
193	4277	36.10*	10*	33.82	19.21		
193	4277	36.22	10	33.82	19.28		
			20			19.24	
4277	A-17	-37.75	10				June 4
193	A-17	-1.76	10				
193	4277	35.99*	10*	33.80	19.17		
193	4277	Not Run		33.80			
			10			19.17	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1962
4277	A-17	-37.48	10				June 27
193	A-17	-1.59	10				
193	4277	35.89*	10*	33.80	19.11		
193	4277	35.80	10	33.80	19.07		
			20			19.09	
4277	A-17	-37.32	10				July 11
193	A-17	-1.73	10				
193	4277	35.59*	10*	33.78	18.96		
193	4277	35.76	10	33.78	19.06		
			20			19.01	
4277	A-17	-38.06	10				Aug. 2
193	A-17	-1.65	10				
193	4277	36.41*	10*	33.76	19.41		
193	4277	36.28	10	33.76	19.34		
			20			19.38	
4277	A-17	-37.85	10				Sep. 13
193	A-17	-1.56	10				
193	4277	36.29*	10*	33.74	19.36		
193	4277	36.24	10	33.74	19.33		
			20			19.34	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1962
4277	A-17	-37.46	10				Oct. 5
193	A-17	-1.71	10				
193	4277	35.75*	10*	33.72	19.08		
193	4277	35.73	10	33.72	19.07		
			20			19.08	
4277	A-17	-38.28	10				Oct. 16
193	A-17	-1.78	10				
193	4277	36.50*	10*	33.72	19.48		
193	4277	36.55	10	33.72	19.51		
			20			19.50	
4277	A-17	-37.65	10				Nov. 2
193	A-17	-1.68	10				
193	4277	35.97*	10*	33.69	19.22		
193	4277	36.09	10	33.69	19.28		
			20			19.25	
4277	A-17	-37.80	10				Nov. 12
193	A-17	-1.64	10				
193	4277	36.16*	10*	33.69	19.32		
193	4277	36.17	10	33.69	19.33		
			20			19.32	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1962
4277	A-17	-37.90	10				Nov. 26
193	A-17	-1.78	10				
193	4277	36.12*	10*	33.69	19.30		
193	4277	36.15	10	33.69	19.31		
			20			19.30	
4277	A-17	-37.72	10				Dec. 12
193	A-17	-1.71	10				
193	4277	36.01*	10*	33.67	19.25		
193	4277	36.00	10	33.67	19.25		
			20			19.25	
4277	A-17	-37.41	10				Dec. 21
193	A-17	-1.75	10				
193	4277	35.66*	10*	33.67	19.06		
193	4277	35.76	10	33.67	19.12		
			20			19.09	
							1963
4277	A-17	-37.56	10				Jan. 3
193	A-17	-1.77	10				
193	4277	35.79*	10*	33.65	19.14		
193	4277	35.82	10	33.65	19.16		
			20			19.15	
4277	A-17	-37.54	10				Jan. 18
193	A-17	-1.73	10				
193	4277	35.81*	10*	33.65	19.16		
193	4277	35.81	10	33.65	19.16		
			20			19.16	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1963
4277	A-17	-37.69	9				Feb. 5
2403	A-17	-0.21	10				
2403	4277	37.48*	9*	35.01	19.27		
2403	4277	37.25	11	35.01	19.15		
			20			19.20	
4277	A-17	-38.36	10				Mar. 1
2403	A-17	-0.25	10				
2403	4277	38.11*	10*	35.02	19.59		
2403	4277	38.19	10	35.02	19.63		
			20			19.61	
4277	A-17	-38.67	10				Mar. 19
2403	A-17	-0.25	10				
2403	4277	38.42*	10*	35.02	19.75		
2403	4277	38.49	10	35.02	19.78		
			20			19.76	
4277	A-17	-38.41	10				Mar. 25
2403	A-17	-0.11	10				
2403	4277	38.30*	10*	35.02	19.69		
2403	4277	38.34	10	35.02	19.71		
			20			19.70	
4277	A-17	-38.64	10				Apr. 3
2403	A-17	-0.13	10				
2403	4277	38.51*	10*	35.02	19.79		
2403	4277	38.52	10	35.02	19.80		
			20			19.80	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1 (Sub) Standard Tank No.	2 Compared Tank No.	3 Observed Scale Difference	4 No. of Comparisons	5 Index Difference	6 Recorder Scale Factor Single	7 Wt'd Set Average	8 Date of Analysis
Span 485							1963
2399	11083	-23.46	10				Apr. 24
2403	11083	3.31	10				
2403	2399	26.77*	10*	24.61	19.58		
2403	2399	26.49	10	24.61	19.38		
			20			19.48	
2399	11083	-23.83	10				May 9
2403	11083	3.55	10				
2403	2399	27.38*	10*	24.61	20.03		
2403	2399	27.35	10	24.61	20.00		
			20			20.02	
2399	11083	-23.52	10				June 5
2403	11083	3.49	10				
2403	2399	27.01*	10*	24.61	19.76		
2403	2399	27.17	10	24.61	19.87		
			20			19.82	
2399	11083	-23.57	10				June 12
2403	11083	3.48	10				
2403	2399	27.05*	10*	24.61	19.78		
2403	2399	27.07	10	24.61	19.80		
			20			19.79	
2399	11083	-23.45	10				June 28
2403	11083	3.61	10				
2403	2399	27.06*	10*	24.61	19.79		
2403	2399	27.25	10	24.61	19.93		
			20			19.86	

* See Text

Table 3. Recorder Scale Factors of Analyser No.58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1963
2399	11083	-23.76	10				July 11
2403	11083	3.51	10				
2403	2399	27.27*	10*	24.61	19.95		
2403	2399	27.00	10	24.61	19.75		
			20			19.85	
2399	11083	-23.80	10				July 25
2403	11083	3.44	10				
2403	2399	27.24*	10*	24.61	19.92		
2403	2399	27.06	10	24.61	19.79		
			20			19.86	
2399	11083	-23.82	10				Aug. 3
2403	11083	3.39	10				
2403	2399	27.21*	10*	24.61	19.90		
2403	2399	27.02	10	24.61	19.76		
			20			19.83	
2399	11083	-23.57	12				Aug. 30a
2403	11083	3.62	10				
2403	2399	27.19*	10*	24.61	19.89		
2403	2399	27.21	11	24.61	19.90		
			21			19.90	
10077	11083	-35.55	11				Aug. 30b
2403	11083	3.62	10				
2403	10077	39.17*	10*	35.99	19.59		
2403	10077	39.01	11	35.99	19.51		
			21			19.55	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1963
10077	11083	-36.12	10				Sep. 19
2403	11083	3.37	10				
2403	10077	39.49*	10*	35.99	19.75		
2403	10077	39.29	10	35.99	19.65		
			20			19.70	
10077	11083	-35.85	11				Sep. 28
2403	11083	3.53	11				
2403	10077	39.38*	11*	35.99	19.70		
2403	10077	39.38	12	35.99	19.70		
			23			19.70	
10077	11083	-35.61	11				Oct. 4
2403	11083	4.04	11				
2403	10077	39.65*	11*	35.99	19.83		
2403	10077	39.63	12	35.99	19.82		
			23			19.82	
10077	11083	-35.00	10				Oct. 17
2403	11083	4.01	11				
2403	10077	39.01*	10*	35.99	19.51		
2403	10077	39.56	12	35.99	19.79		
			22			19.66	
10077	11083	-36.17	10				Oct. 27
2403	11083	3.17	11				
2403	10077	39.38*	10*	35.99	19.70		
2403	10077	39.00	10	35.99	19.50		
			20			19.60	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single	Wt'd Set Average	Date of Analysis
Span 485							1963
10077	11083	-35.75	11				Nov. 11
2403	11083	3.20	10				
2403	10077	38.95*	10*	35.99	19.48		
2403	10077	39.07	11	35.99	19.54		
			21			19.51	
10077	11083	-35.85	10				Nov. 28
2403	11083	3.34	11				
2403	10077	39.19*	10*	35.99	19.60		
2403	10077	39.11	10	35.99	19.56		
			20			19.58	
10077	11083	-35.62	10				Dec. 8
2403	11083	3.45	11				
2403	10077	39.07*	10*	35.99	19.54		
2403	10077	39.08	12	35.99	19.55		
			22			19.55	
10077	11083	-35.60	10				Dec. 17
2403	11083	3.46	11				
2403	10077	39.06*	10*	35.99	19.54		
2403	10077	38.90	10	35.99	19.46		
			20			19.50	
							1964
10077	11083	-35.86	10				Jan. 2
2403	11083	3.15	11				
2403	10077	39.01*	10*	35.99	19.51		
2403	10077	38.93	10	35.99	19.47		
			20			19.49	

* See Text

Table 3. Recorder Scale Factors of Analyser No. 58

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8
(Sub) Standard Tank No.	Compared Tank No.	Observed Scale Difference	No. of Comparisons	Index Difference	Recorder Scale Factor Single Wt'd	Set Average	Date of Analysis
Span 485							1964
10077	11083	-35.58	9				Jan. 15
2403	11083	3.51	12				
2403	10077	39.09*	9*	35.99	19.55		
2403	10077	39.04	10	35.99	19.53		
			19			19.54	

* See Text

Table 4. Summary of Recorder Scale Factors

MAUNA LOA CARBON DIOXIDE PROJECT

1 Wt'd. Average Recorder Scale Factor	2 Barometric Pressure (Inches)	3 Adjusted Recorder Scale Factor	4 Date of Analysis	1 Wt'd. Average Recorder Scale Factor	2 Barometric Pressure (Inches)	3 Adjusted Recorder Scale Factor	4 Date of Analysis
			1958				1959
19.15	19.900	19.25	Nov. 22	19.15	20.130	19.03	Oct. 26
19.24	20.035	19.21	Nov. 26	19.08	20.035	19.05	Nov. 7
19.28	20.040	19.24	Dec. 10	19.12	20.100	19.02	Nov. 21
19.21	20.120	19.10	Dec. 20-21	19.18	20.140	19.05	Nov. 27
19.20	19.910	19.29	Dec. 31	18.90	20.040	18.86	Dec. 3
				19.15	20.115	19.04	Dec. 10
			1959	19.32	20.050	19.27	Dec. 19
19.25	19.970	19.28	Jan. 14	19.07	19.965	19.10	Dec. 28
19.22	19.985	19.23	Jan. 21				
19.49	20.010	19.48	Feb. 22				1960
19.34	20.135	19.21	Mar. 20	19.25	20.040	19.21	Jan. 8
19.26	20.060	19.20	Apr. 3	19.34	20.085	19.26	Jan. 16
19.28	20.055	19.23	Apr. 16	19.17	20.120	19.06	Jan. 30
19.15	20.170	18.99	Apr. 28	20.02	19.950	20.07	Feb. 17
18.55	20.070	18.49	May 15	19.30	19.975	19.32	Mar. 3
18.96	20.135	18.83	Jun. 3	19.41	20.100	19.31	Mar. 21
18.86	20.080	18.78	Jun. 11	19.52	20.080	19.44	Mar. 29
18.81	20.125	18.69	Jul. 2	19.44	20.030	19.41	Mar. 30
19.21	20.085	19.13	Jul. 8	19.33	20.075	19.26	Apr. 16
19.26	20.170	19.10	Jul. 13	19.30	20.095	19.21	May 3
19.25	20.100	19.15	Jul. 16	19.40	20.080	19.32	May 19
19.30	20.135	19.17	Jul. 27	19.43	20.095	18.91	Jun. 3
19.13	20.070	19.06	Aug. 1	19.23	-	-	Jun. 23
19.43	20.070	19.36	Aug. 8	19.16	20.080	19.08	Jul. 4
19.68	20.100	19.58	Aug. 22	19.22	20.090	19.13	Jul. 19
19.41	20.050	19.36	Sep. 1	19.39	20.120	19.27	Aug. 2
19.20	20.070	19.13	Sep. 10	19.38	20.120	19.26	Aug. 14
18.94	20.070	18.87	Sep. 20	19.18	20.060	19.12	Aug. 27
19.04	20.070	18.97	Oct. 2	19.30	20.105	19.20	Sep. 13
19.28	20.115	19.17	Oct. 12	19.17	20.075	19.10	Sep. 26

Table 4. Summary of Recorder Scale Factors

MAUNA LOA CARBON DIOXIDE PROJECT

1	2	3	4	1	2	3	4
Wt'd. Average Recorder Scale Factor	Barometric Pressure (Inches)	Adjusted Recorder Scale Factor	Date of Analysis	Wt'd. Average Recorder Scale Factor	Barometric Pressure (Inches)	Adjusted Recorder Scale Factor	Date of Analysis
			1960				1961
19.35	20.140	19.22	Oct. 12	19.10	20.095	19.01	Nov. 21
19.31	20.075	19.24	Oct. 26	19.02	20.085	18.94	Dec. 2
19.38	20.085	19.30	Nov. 11	19.12	20.005	19.12	Dec. 12
19.29	20.095	19.20	Nov. 23	19.08	20.030	19.05	Dec. 28
19.42	20.055	19.37	Dec. 8				
19.14	20.070	19.07	Dec. 22				1962
				19.12	20.025	19.10	Jan. 6
			1961	19.18	20.115	19.07	Jan. 21
18.98	20.020	18.96	Jan. 9	19.16	20.085	19.08	Jan. 22
18.95	19.980	18.97	Jan. 19	19.12	20.165	18.96	Feb. 10
18.98	20.115	18.87	Feb. 1	19.20	19.990	19.21	Feb. 28
19.08	20.065	19.02	Feb. 12	19.10	19.980	19.12	Mar. 14
19.20	20.020	19.18	Feb. 23	19.08	20.125	18.96	Mar. 31
19.16	20.065	19.10	Mar. 7	19.14	20.035	19.11	Apr. 14
19.14	20.095	19.05	Mar. 24	19.21	20.150	19.07	Apr. 26
19.05	20.020	19.03	Apr. 6	19.24	20.120	19.13	May 19
19.12	20.065	19.06	Apr. 25	19.17	20.150	19.03	Jun. 4
19.14	20.110	19.04	May 12	19.09	20.050	19.04	Jun. 27
19.34	20.110	19.23	May 31	19.01	20.065	18.95	Jul. 11
19.22	20.120	19.11	Jun. 17	19.38	20.220	19.17	Aug. 2
19.35	20.090	19.26	Jul. 2	19.34	20.080	19.26	Sep. 13
18.91	20.100	18.82	Jul. 20	19.08	20.080	19.00	Oct. 5
18.83	20.105	18.73	Jul. 21	19.50	20.050	19.45	Oct. 16
19.54	20.095	19.45	Jul. 28	19.25	20.030	19.22	Nov. 2
18.98	20.080	18.90	Aug. 19	19.32	20.130	19.20	Nov. 12
18.90	20.015	18.89	Sep. 5	19.30	20.080	19.22	Nov. 26
19.00	20.130	18.88	Sep. 28	19.25	20.050	19.20	Dec. 12
19.06	20.000	19.06	Oct. 15	19.09	19.940	19.15	Dec. 21
19.28	19.970	19.31	Nov. 5				

Table 4. Summary of Recorder Scale Factors

MAUNA LOA CARBON DIOXIDE PROJECT

1	2	3	4	1	2	3	4
Wt'd. Average Recorder Scale Factor	Barometric Pressure (Inches)	Adjusted Recorder Scale Factor	Date of Analysis	Wt'd. Average Recorder Scale Factor	Barometric Pressure (Inches)	Adjusted Recorder Scale Factor	Date of Analysis
			1963				1963
19.15	20.075	19.08	Jan. 3	19.83	20.105	19.73	Aug. 3
19.16	20.045	19.12	Jan. 18	19.90	20.070	19.83	Aug. 30a
19.20	20.030	19.18	Feb. 5	19.55	20.070	19.48	Aug. 30b
19.61	19.950	19.66	Mar. 1	19.70	20.095	19.61	Sep. 19
19.76	20.050	19.71	Mar. 19	19.70	20.100	19.60	Sep. 28
19.70	19.960	19.74	Mar. 25	19.82	20.090	19.73	Oct. 4
19.80	20.095	19.71	Apr. 3	19.66	20.060	19.60	Oct. 17
19.48	20.035	19.45	Apr. 24	19.60	20.115	19.49	Oct. 27
20.02	20.035	19.98	May 9	19.51	20.000	19.51	Nov. 11
19.82	20.090	19.73	Jun. 5	19.58	20.010	19.57	Nov. 28
19.79	20.020	19.77	Jun. 12	19.55	20.065	19.49	Dec. 8
19.86	20.090	19.77	Jun. 28	19.50	20.020	19.48	Dec. 17
19.85	20.080	19.77	Jul. 11				
19.86	20.070	19.79	Jul. 25				1964
				19.49	20.040	19.45	Jan. 2
				19.54	20.095	19.45	Jan. 15

Table 4. Summary of Recorder Scale Factors

MAUNA LOA CARBON DIOXIDE PROJECT

1	2	3	4
Wt'd. Average Recorder Scale Factor	Barometric Pressure (Inches)	Adjusted Recorder Scale Factor	Date of Analysis
Period Averages (Not Weighted)			
19.22	20.000	19.22	Nov. 22-Dec. 31, 1958
19.17	20.080	19.09	1959 complete
19.34	20.076	19.25	1960 "
19.10	20.063	19.04	1961 "
19.20	20.078	19.12	1962 "
19.16	20.060	19.10	Jan. 1-Jan. 22, 1963
19.21	20.030	19.18	Jan. 23-Feb. 13, 1963
19.79	20.050	19.74	Feb. 25-Aug. 29, 1963
19.62	20.065	19.56	Aug. 30-Dec. 31, 1963
19.52	20.070	19.45	Jan. 1-Jan. 21, 1964
Period Average of Report MLO-1. (Not Weighted)			
19.24	20.072	19.17	Nov. 22, 1958-Dec. 21, 1962

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
Analyser	(Sub) Standard Tank No.	Compared Tank No,	Single Set No. of Comparisons	Index	Wt'd Av. No. of Comparisons	Index	Compared Tank No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1961	
	4277	A-17	10	310.38			1410	1500	Jan. 9*	
	7344	A-17	10	310.41			850	1500	Jan. 9	
	4277	A-17	10	310.38			1360	1500	Jan. 19	
	7344	A-17	10	310.36			800	1500	Jan. 19	
	4277	A-17	10	310.45			1400	1500	Feb. 1	
	7344	A-17	10	310.44			780	1500	Feb. 1	
	4277	A-17	10	310.48			1310	1470	Feb. 12	
	7344	A-17	10	310.55			700	1470	Feb. 12	
	4277	A-17	10	310.45			1300	1470	Feb. 23	
	7344	A-17	10	310.55			620	1470	Feb. 23	
	4277	A-17	10	310.40			1320	1490	Mar. 7	
	7344	A-17	10	310.40			580	1490	Mar. 7	
	4277	A-17	10	310.37			1310	1460	Mar. 24	
	7344	A-17	10	310.39			530	1460	Mar. 24	
	4277	A-17	10	310.40			1300	1420	Apr. 6	
	7344	A-17	10	310.36			500	1420	Apr. 6	
	4277	A-17	10	310.27			1280	1430	Apr. 25	
	7344	A-17	10	310.33			490	1430	Apr. 25	
	4277	A-17	10	310.39			1260	1410	May 12	
	7344	A-17	10	310.38			400	1410	May 12	
	Versus	7344:			100	310.42				
	Versus	4277:			100	310.40				
	Wt'd. Av.				200	310.41 A-17				

*Data for 1960 not recopied

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
			Single Set		Wt'd Av.		Compared Tank			
Analyser	(Sub) Standard Tank No.	Compared Tank No,	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1961	
	4277	A-17	10	310.38			1240	1400	May 31	
	193	A-17	10	310.43			1900	1400	May 31	
	4277	A-17	10	310.47			1230	1370	Jun. 17	
	193	A-17	10	310.49			1830	1370	Jun. 17	
	4277	A-17	10	310.26			1270	1400	Jul. 2	
	193	A-17	10	310.31			1800	1400	Jul. 2	
	4277	A-17	10	310.39			1200	1390	Jul. 20	
	193	A-17	10	310.45			1700	1390	Jul. 20	
	4277	A-17	5	310.44			1170	1380	Jul. 21	
	193	A-17	5	310.45			1700	1380	Jul. 21	
	4277	A-17	10	310.44			1170	1390	Jul. 28	
	193	A-17	10	310.52			1670	1390	Jul. 28	
	4277	A-17	10	310.47			1170	1320	Aug. 19	
	193	A-17	10	310.47			1650	1320	Aug. 19	
	4277	A-17	10	310.48			1160	1320	Sep. 5	
	193	A-17	10	310.69			1620	1320	Sep. 5	
	4277	A-17	10	310.54			1150	1320	Sep. 28	
	193	A-17	10	310.56			1590	1320	Sep. 28	
	4277	A-17	10	310.63			1120	1320	Oct. 15	
	193	A-17	10	310.63			1580	1320	Oct. 15	
	4277	A-17	10	310.65			1120	1310	Nov. 5	
	193	A-17	10	310.59			1530	1310	Nov. 5	
	4277	A-17	10	310.62			1100	1280	Nov. 21	
	193	A-17	10	310.63			1490	1280	Nov. 21	
	4277	A-17	10	310.68			1080	1270	Dec. 2	
	193	A-17	10	310.64			1460	1270	Dec. 2	
	4277	A-17	10	310.58			1060	1230	Dec. 12	
	193	A-17	10	310.65			1400	1230	Dec. 12	
	4277	A-17	10	310.72			1050	1220	Dec. 28	
	193	A-17	10	310.74			1370	1220	Dec. 28	

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
			Single Set		Wt'd Av.		Compared Tank			
Analyser	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1962	
	4277	A-17	10	310.63			1030	1200	Jan. 6	
	193	A-17	10	310.62			1320	1200	Jan. 6	
	4277	A-17	10	310.71			1000	1200	Jan. 21	
	193	A-17	10	310.73			1230	1200	Jan. 21	
	4277	A-17	10	310.54			940	1110	Jan. 22	
	193	A-17	10	310.58			1140	1110	Jan. 22	
	4277	A-17	10	310.60			920	1100	Feb. 10	
	193	A-17	10	310.62			1090	1100	Feb. 10	
	4277	A-17	10	310.66			910	1090	Feb. 28	
	193	A-17	10	310.62			1070	1090	Feb. 28	
	4277	A-17	10	310.70			900	1070	Mar. 14	
	193	A-17	10	310.79			1060	1070	Mar. 14	
	4277	A-17	10	310.78			900	1060	Mar. 31	
	193	A-17	10	310.71			1000	1060	Mar. 31	
	4277	A-17	10	310.62			870	1070	Apr. 14	
	193	A-17	10	310.70			990	1070	Apr. 14	
	4277	A-17	10	310.63			890	1050	Apr. 26	
	193	A-17	10	310.66			980	1050	Apr. 26	
	4277	A-17	10	310.82			860	1030	May 19	
	193	A-17	10	310.77			940	1030	May 19	
	4277	A-17	10	310.63			820	1100	June 4	
	193	A-17	10	310.63			890	1100	June 4	
	4277	A-17	10	310.74			850	1000	June 27	
	193	A-17	10	310.78			900	1000	June 27	
	4277	A-17	10	310.75			830	1000	July 11	
	193	A-17	10	310.67			870	1000	July 11	

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
			Single Set		Wt'd Av.		Compared Tank			
Analyser	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1962	
	4277	A-17	10	310.75			800	990	Aug. 2	
	193	A-17	10	310.81			810	990	Aug. 2	
	4277	A-17	10	310.87			780	980	Sep. 13	
	193	A-17	10	310.91			700	980	Sep. 13	
	4277	A-17	10	310.77			770	960	Oct. 5	
	193	A-17	10	310.78			650	960	Oct. 5	
	4277	A-17	10	310.77			760	930	Oct. 16	
	193	A-17	10	310.75			620	930	Oct. 16	
	4277	A-17	10	310.90			720	900	Nov. 2	
	193	A-17	10	310.85			550	900	Nov. 2	
	4277	A-17	10	310.89			690	880	Nov. 12	
	193	A-17	10	310.89			500	880	Nov. 12	
	4277	A-17	10	310.76			690	860	Nov. 26	
	193	A-17	10	310.76			490	860	Nov. 26	
	4277	A-17	10	310.85			580	860	Dec. 12	
	193	A-17	10	310.85			400	860	Dec. 12	
	4277	A-17	10	310.85			660	840	Dec. 21	
	193	A-17	10	310.80			400	840	Dec. 21	
	1961									
	Versus	193:			145	310.55				
	Versus	4277:			145	310.52				
	Wt'd. Av. for 1961:				290	310.54				
	1962									
	Versus	193:			220	310.74				
	Versus	4277:			220	310.74				
	Wt'd. Av. for 1962:				440	310.74				
	Wt'd. Av. for 1961 and 1962:				730	310.66	-17*			

*Set is incomplete

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
Analyser	(Sub) Standard Tank No.	Compared Tank No,	Single Set No. of Comparisons	Index	Wt'd Av. No. of Comparisons	Index	Compared Tank No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1963	
	4277	A-17	10	310.82			620	800	Jan. 3	
	193	A-17	10	310.81			400	800	Jan. 3	
	4277	A-17	10	310.85			630	800	Jan. 18	
	193	A-17	10	310.84			300	800	Jan. 18	
	Versus	193:			20	310.82				
	Versus	4277:			20	310.84				
	Wt'd. Av.-Jan. 1-22, 1963				40	310.83 A-17				
	4277	A-17	9	310.81			590	760	Feb. 5	
	2403	A-17	10	310.92			2130	760	Feb. 5	
	4277	A-17	10	310.93			590	750	Mar. 1	
	2403	A-17	10	310.89			2120	750	Mar. 1	
	4277	A-17	10	310.91			560	750	Mar. 19	
	2403	A-17	10	310.89			2110	750	Mar. 19	
	4277	A-17	10	311.04			540	720	Mar. 25	
	2403	A-17	10	311.02			2060	720	Mar. 25	
	4277	A-17	10	311.01			530	720	Apr. 3	
	2403	A-17	10	311.00			2070	720	Apr. 3	
	Versus	2403:			50	310.94				
	Versus	4277:			49	310.94				
	Wt'd. Av.-Jan. 23-Apr. 3, 1963				99	310.94 A-17				
	2399	11083	10	314.05			900	2100	Apr. 24	
	2403	11083	10	314.18			1880	2100	Apr. 24	
	2399	11083	10	314.30			690	2000	May 9	
	2403	11083	10	314.31			1840	2000	May 9	

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
			Single	Set	Wt'd	Av.	Compared Tank			
Analyser	(Sub) Standard Tank No.	Compared Tank No,	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1963	
	2399	11083	10	314.37			650	1950	Jun. 5	
	2403	11083	10	314.29			1790	1950	Jun. 5	
	2399	11083	10	314.29			640	1940	Jun. 12	
	2403	11083	10	314.29			1740	1940	Jun. 12	
	2399	11083	10	314.48			630	1970	Jun. 28	
	2403	11083	10	314.39			1770	1970	Jun. 28	
	2399	11083	10	314.18			610	1910	Jul. 11	
	2403	11083	10	314.30			1690	1910	Jul. 11	
	2399	11083	10	314.16			600	1880	Jul. 25	
	2403	11083	10	314.24			1630	1880	Jul. 25	
	2399	11083	10	314.11			600	1870	Aug. 3	
	2403	11083	10	314.20			1610	1870	Aug. 3	
	2399	11083	12	314.41			550	1790	Aug. 30a	
	2403	11083	10	314.39			1590	1790	Aug. 30a	
	Versus 2399:				92	314.26				
	Versus 2403:				90	314.29				
	Wt'd. Av.				182	314.27				
	10077	11083	11	314.38			1980	1790	Aug. 30b	
	2403	11083	10	314.45			1590	1790	Aug. 30b	
	10077	11083	10	314.11			1890	1780	Sep. 19	
	2403	11083	10	314.22			1560	1780	Sep. 19	
	10077	11083	11	314.35			1800	1750	Sep. 28	
	2403	11083	11	314.35			1500	1750	Sep. 28	
	10077	11083	11	314.77			1800	1770	Oct. 4	
	2403	11083	11	314.79			1480	1770	Oct. 4	

Table 5. Index Values of Standards and Substandards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11
			Single Set		Wt'd Av.		Compared Tank			
Analyser	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis	Dates of Use
58									1963	
	10077	11083	10	315.07			1790	1770	Oct. 17	
	2403	11083	11	314.79			1440	1770	Oct. 17	
	10077	11083	10	313.89			1800	1700	Oct. 27	
	2403	11083	11	314.33			1420	1700	Oct. 27	
	10077	11083	11	314.13			1790	1680	Nov. 11	
	2403	11083	10	314.07			1390	1680	Nov. 11	
	10077	11083	10	314.15			1770	1620	Nov. 28	
	2403	11083	11	314.19			1360	1670	Nov. 28	
	10077	11083	10	314.31			1720	1620	Dec. 8	
	2403	11083	11	314.30			1340	1620	Dec. 8	
	10077	11083	10	314.25			1690	1640	Dec. 17	
	2403	11083	11	314.31			1270	1640	Dec. 17	
	Versus	10077:			104	314.34				
	Versus	2403:			107	314.38				
	Wt'd. Av.				211	314.36				
									1964	
	10077	11083	10	313.99			1720	1610	Jan. 2	
	2403	11083	11	314.03			1270	1610	Jan. 2	
	10077	11083	9	314.33			1610	1620	Jan. 15	
	2403	11083	12	314.35			1170	1610	Jan. 15	
	Versus	10077			19	314.15				
	Versus	2403			23	314.20				
	Wt'd. Av.				42	314.18				

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	Single Set No. of Comparisons	Index	Wt'd Av. No. of Comparisons	Index	Compared Tank No.	Pressure (P.S.I.)	Date of Analysis
58									1960
	7344	3758	10	310.57				2140	Dec. 22
									1961
	7344	3758	11	310.81*				-	Jan. 1
	7344	3758	10	310.97				1140	Jan. 9
	7344	3758	12	310.79*				-	Jan. 14
	7344	3758	10	310.69	53	310.77	3758	400	Jan. 19
	7344	4272	10	313.80				2120	Jan. 19
	7344	4272	11	313.80*				-	Jan. 26
	7344	4272	10	313.83				1080	Feb. 1
	7344	4272	10	313.95	41	313.84	4272	-	Mar. 7
	7344	4275	10	313.93				2100	Feb. 1
	7344	4275	11	313.86*				-	Feb. 8
	7344	4275	10	314.00				1170	Feb. 12
	7344	4275	11	314.18*				-	Feb. 17
	7344	4275	10	314.00	52	314.00	4275	360	Feb. 23
	7344	10075	10	298.24				2300	Mar. 7
	7344	10075	11	298.30*				-	Mar. 16
	7344	10075	10	298.22				1160	Mar. 24
	7344	10075	12	298.32*				-	Apr. 1
	7344	10075	10	298.16	53	298.25	10075	400	Apr. 6
	7344	6081	10	309.64				2170	Apr. 6
	7344	6081	11	309.85*				-	Apr. 18
	7344	6081	10	309.66				1190	Apr. 25
	7344	6081	11	309.83*				-	May 3
	7344	6081	10	309.81	52	309.76	6081	410	May 12

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
	(Sub)		Single Set		Wt'd Av.		Compared Tank		
Analyzer	Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1961
	7344	10068	10	303.42				2180	May 12
	7344	10068	12	303.65*				-	May 23
	7344	10068	11	303.62*				-	May 30
	193	10068	11	303.85*				-	May 30
	193	10068	10	303.59				1200	May 31
	193	10068	11	303.90*				-	June 10
	193	10068	10	303.90	75	303.71	10068	400	June 17
	193	10067	10	319.26				2200	June 17
	193	10067	11	319.49*				-	June 24
	193	10067	10	319.25				1220	July 2
	193	10067	12	319.53*				-	July 12
	193	10067	10	319.34	53	319.38	10067	410	July 20
	193	2427	10	315.85				2230	July 20
	193	2427	5	315.90	15	315.87	2427	550	July 21
	193	4272	10	307.92				2270	July 28
	193	4272	11	308.21*				-	Aug. 11
	193	4272	10	308.04				1220	Aug. 19
	193	4272	11	308.30*				-	Aug. 28
	193	4272	10	307.95	52	308.09	4272	450	Sep. 5
	193	7355	10	307.36				2260	Sep. 5
	193	7355	11	307.68*				-	Sep. 20
	193	7355	10	307.36				1220	Sep. 28
	193	7355	12	307.65*				-	Oct. 7
	193	7355	10	307.57	53	307.53	7355	400	Oct. 15

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1961
	193	136	10	321.95				2160	Oct. 15
	193	136	11	322.00*				-	Oct. 26
	193	136	10	321.97				1190	Nov. 5
	193	136	11	322.10*				-	Nov. 13
	193	136	10	322.26*	52	322.06	136	-	Nov. 21
	193	3752	10	321.06				2150	Nov. 21
	193	3752	11	321.14*				-	Nov. 28
	193	3752	10	321.20				1200	Dec. 2
	193	3752	11	321.28*				-	Dec. 8
	193	3752	10	321.19	52	321.18	3752	500	Dec. 12
	193	3751	10	326.98				2090	Dec. 12
	193	3751	11	327.12*				-	Dec. 21
	193	3751	10	327.02				1210	Dec. 28
									1962
	193	3751	10	327.05*				-	Jan. 3
	193	3751	10	327.02	51	327.04	3751	380	Jan. 6
	193	7364	10	301.92				2200	Jan. 6
	193	7364	10	301.92*				-	Jan. 12
	193	7364	10	301.84				1180	Jan. 21
	193	7364	10	302.04	40	301.93	7364	320	Jan. 22

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1962
	193	148	10	318.39				2060	Jan. 22
	193	148	11	318.47 *				-	Feb. 2
	193	148	10	318.45				485	Feb. 10
	193	148	12	318.54 *				-	Feb. 18
	193	148	10	318.32	53	318.44	148	470	Feb. 28
	193	10064	10	301.76				1900	Feb. 28
	193	10064	10	301.82 *				-	Mar. 6
	193	10064	10	301.84				1220	Mar. 14
	193	10064	10	301.77 *				-	Mar. 25
	193	10064	10	301.81	50	301.80	10064	484	Mar. 31
	193	10072	10	304.98				2130	Mar. 31
	193	10072	12	304.97 *				-	Apr. 8
	193	10072	10	304.81				1220	Apr. 14
	193	10072	10	304.92	42	304.92	10072	350	Apr. 26
	193	4272	10	301.89				2300	Apr. 26
	193	4272	12	302.04 *				-	May 11
	193	4272	10	301.88				-	May 19
	193	4272	11	302.23				-	May 28
	193	4272	10	301.79	53	301.97	4272	-	June 4
	193	6067	10	303.42				2250	June 4
	193	6067	11	303.69 *				-	June 20
	193	6067	10	303.63				-	June 27
	193	6067	12	303.81 *				-	July 5
	193	6067	10	303.49	53	303.62	6067	520	July 11

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1962
	193	6081	10	302.66				2300	July 11
	193	6081	10	302.85				1200	Aug. 2
	193	6081	10	302.90*				-	July 25
	193	6081	10	302.88*				-	Aug. 11
	193	6081	10	302.76	50	302.81	6081	431	Sep. 13
	193	7344	10	301.77				2270	Sep. 13
	193	7344	11	301.84*				-	Sep. 28
	193	7344	10	301.83				1200	Oct. 5
	193	7344	11	301.90*				-	Oct. 10
	193	7344	10	301.77	52	301.82	7344	400	Oct. 16
	193	11097	10	307.50				2200	Oct. 16
	193	11097	12	307.53*				-	Oct. 29
	193	11097	9	307.59				1200	Nov. 2
	193	11097	11	307.52*				-	Nov. 8
	193	11097	10	307.62	52	307.55	11097	400	Nov. 12
	193	11078	10	308.37				2200	Nov. 12
	193	11078	9	308.46*				-	Nov. 20
	193	11078	10	308.34				1200	Nov. 26
	193	11078	10	308.47*				-	Dec. 3
	193	11078	10	308.37	49	308.40	11078	250	Dec. 12
	193	2425	10	310.71				2200	Dec. 12
	193	2425	8	310.85*				-	Dec. 18
	193	2425	10	310.87	Incomplete			1300	Dec. 21

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Compari-sons	Index	No. of Compari-sons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1963
	193	2425	10	310.87				1210	Jan. 3
	193	2425	13	311.01*				-	Jan. 11
	193	2425	10	310.87	61	310.87	2425	340	Jan. 18
	193	4285	10	301.95				2270	Jan. 18
	2403	4285	10	302.31*				-	Jan. 29
	2403	4285	9	302.40				1240	Feb. 5
	2403	4285	10	302.20	39	302.21	4285	500	Mar. 1
	2403	2423	10	311.16				2180	Mar. 1
	2403	2423	11	311.28*				-	Mar. 12
	2403	2423	10	311.26				1290	Mar. 19
	2403	2423	10	311.12				990	Mar. 25
	2403	2423	10	311.46*				-	Mar. 29
	2403	2423	10	311.01	61	311.22	2423	500	Apr. 3
	2403	4291	10	311.99				2190	Mar. 19
	2403	4291	10	311.84				2170	Mar. 25
	2403	4291	10	312.00				2200	Apr. 3
	2403	4291	10	311.94				1250	Apr. 24
	2403	4291	10	312.23	50	312.00	4291	450	May 9
	2403	2421	10	312.68				2310	May 9
	2403	2421	9	312.74*				-	May 23
	2403	2421	10	312.74				860	Jun. 5
	2403	2421	10	312.79	39	312.74	2421	450	Jun. 12

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Compari-sons	Index	No. of Compari-sons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1963
	2403	2402	10	312.47				2180	Jun. 12
	2403	2402	10	312.58*				-	Jun. 22
	2403	2402	10	312.62				1270	Jun. 28
	2403	2402	10	312.56				520	Jul. 11
	2403	2402	10	312.77*	50	312.60	2402	-	Jul. 6
	2403	18220	10	312.47				2250	Jul. 11
	2403	18220	11	312.77*				-	Jul. 20
	2403	18220	10	312.62				-	Jul. 25
	2403	18220	10	312.89*				-	Jul. 30
	2403	18220	10	312.57	51	312.67	18220	490	Aug. 3
	2403	18216	10	309.45				2240	Aug. 3
	2403	18216	10	309.59*				-	Aug. 24
	2403	18216	11	309.55	31	309.53	18216	370	Aug. 30b
	2403	9184	10	306.61				2230	Aug. 30
	2403	9184	10	306.97*				-	Sep. 11
	2403	9184	10	306.77				1130	Sep. 19
	2403	9184	11	306.84*				-	Sep. 23
	2403	9184	10	306.90	51	306.82	9184	410	Sep. 28
	2403	11633	10	306.66				1700	Sep. 28
	2403	11633	11	306.71*				-	Sep. 30
	2403	11633	11	306.95				1220	Oct. 4
	2403	11633	9	307.46*				-	Oct. 11
	2403	11633	10	307.18	51	306.98	11633	410	Oct. 17

*Special Tank Checks

Table 6. Index Values of Working Reference Gases and Retired (Sub) Standards

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10
			Single Set		Wt'd Av.		Compared Tank		
Analyzer	(Sub) Standard Tank No.	Compared Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No.	Pressure (P.S.I.)	Date of Analysis
58									1963
	2403	9200	11	313.12				2000	Oct. 17
	2403	9200	10	313.16*				-	Oct. 24
	2403	9200	10	312.64				1340	Oct. 27
	2403	9200	9	312.69				1330	Dec. 17
	2403	9200	11	312.88*				-	Dec. 26
	2403	9200	10	312.79	61	312.89	9200	380	Jan. 2**
	2403	4271	10	309.96				2090	Oct. 27
	2403	4271	10	310.51*				-	Nov. 2
	2403	4271	10	310.31				1160	Nov. 11
	2403	4271	9	310.28*				-	Nov. 18
	2403	4271	10	310.12	49	310.24	4271	490	Nov. 28
	2403	4278	10	310.63				2210	Nov. 28
	2403	4278	10	311.48*				-	Dec. 4
	2403	4278	10	310.78				1050	Dec. 8
	2403	4278	10	311.43*	20	310.70	4278***	-	Dec. 12
									1964
	2403	3756	10	313.49				1920	Jan. 2
	2403	3756	11	313.70*				-	Jan. 9
	2403	3756	11	313.82				1190	Jan. 15
	2403	3756	11	313.87*	43	313.73	3756	-	Jan. 21

*Special Tank Checks
** 1964
*** Special Tank Checks omitted from average

Table 7. Combined Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11	12
Tank No.	At Scripps Prior to Use		At Mauna Loa		At Scripps After Use			Wt'd. Average		Tank No.	Date Use Began
	No. of Comparisons	Index	No. of Comparisons	Index	No. of Comparisons	Index	Pressure (P.S.I.)	No. of Comparisons	Index		
II° Tank 7344 in use:											1960
3758	12	310.77	53	310.77	24	310.64	425	89	310.73	3758	Dec. 22
											1961
4272	19	313.87	41	313.84	10	314.10	400	70	313.89	4272	Jan. 19
4275	20	313.96	52	314.00	10	314.18	400	82	314.01	4275	Feb. 1
10075	20	298.46	53	298.25	12	298.38	440	85	298.32	10075	Mar. 7
6081	10	309.81	52	309.76	11	309.93	375	73	309.79	6081	Apr. 6
10068	10	303.68	75	303.71	10	303.68	385	95	303.70	10068	May 12
II° Tank 193 in use:											
10067	10	319.37	53	319.38	10	319.14	375	73	319.35	10067	Jun. 17
2427	51	315.84	15	315.87	9	315.81	310	75	315.84	2427	Jul. 20
4272	9	307.94	52	308.09	10	308.13	430	71	308.08	4272	Jul. 28
7355	10	307.56	53	307.53	10	307.48	400	73	307.53	7355	Sep. 5
136	20	321.76	52	322.06	10	322.31	390	82	322.02	136	Oct. 15
3752	10	320.87	52	321.18	10	321.05	500	72	321.12	3752	Nov. 21
3751	10	326.75	51	327.04	11	327.21	380	72	327.03	3751	Dec. 12

Table 7. Combined Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11	12
	At Scripps Prior to Use		At Mauna Loa		At Scripps After Use			Wt'd. Average			
Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No. of Comparisons	Index	Pressure (P.S.I.)	No. of Comparisons	Index	Tank No.	Date Use Began
II° Tank 193 in use:											1962
7364	10	302.20	40	301.93	10	302.61	300	60	302.09	7364	Jan. 6
148	10	318.22	53	318.44	11	318.35	475	74	318.40	148	Jan. 22
10064	20	301.53	50	301.80	10	301.59	460	80	301.71	10064	Feb. 28
10072	20	304.68	42	304.92	11	304.93	400	73	304.86	10072	Mar. 31
4275**	10	304.77	-	-	10	304.66	2140	-	-	4275	-
4272	10	302.19	53	301.97	32	302.08	480	95	302.03	4272	Apr. 26
6067	10	303.79	53	303.62	22	303.61	520	85	303.64	6067	Jun. 4
6081	11	302.92	50	302.81	11	302.78	440	72	302.82	6081	Jul. 11
7344	12	301.86	52	301.82	12	302.29*	50	64	301.83	7344	Sep. 13
11097	10	307.40	52	307.55	10	307.42	500	72	307.51	11097	Oct. 16
11078	10	308.34	49	308.40	10	308.37	280	69	308.39	11078	Nov. 12

* Omitted from average

** Tank accidently not used at Mauna Loa

Table 7. Combined Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9	10	11	12
	At Scripps Prior to Use		At Mauna Loa		At Scripps After Use			Wt'd. Average			
Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	No. of Comparisons	Index	Pressure (P.S.I.)	No. of Comparisons	Index	Tank No.	Date Use Began
II° Tank 193 in use:											1962
2425	10	310.72	61	310.87	11	310.82	400	82	310.84	2425	Dec. 12
II° Tank 2403 in use:											1963
4285*	20	302.06	39	302.21	10	302.05	300	69	302.14	4285	Jan. 18
2423	11	311.05	61	311.22	12	311.18	540	84	311.19	2423	Mar. 1
4291	20	312.00	50	312.00	9	312.16	690	79	312.02	4291	Apr. 4
2421	10	312.47	39	312.74	11	312.59	470	60	312.67	2421	May 14
2402	11	312.35	50	312.60	10	312.46	510	71	312.54	2402	Jun. 13
18220	10	312.59	51	312.67	10	312.71	500	71	312.66	18220	Jul. 11
18216	11	309.34	31	309.53	10	309.37	370	52	309.46	18216	Aug. 5
9184	11	306.70	51	306.82	11	306.89	450	73	306.81	9184	Sep. 4
11633	65	306.77	51	306.98	12	306.47	400	128	306.83	11633	Sep. 28
9200	11	312.89	61	312.89	11	312.61	400	83	312.85	9200	Oct. 18
4271	10	310.05	49	310.24	11	310.01	500	70	310.18	4271	Oct. 28
4278	9	310.55	20	310.70	10	310.65	420	39	310.65	4278	Nov. 29
											1964
3756	24	313.64	43	313.73	10	313.97	400	77	313.73	3756	Jan. 3

*First run versus 193

Table 7a. Comparison of Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
	At Scripps Prior and After Use Combined		At Mauna Loa					
				Preliminary		Final		
Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	Index Difference MLO-SIO	Index	Index Difference MLO-SIO	Date use Began
								1958
2423	13	306.88	41			307.01	+0.13	Jul. 3
2426	12	306.52	52			306.67	+0.15	Aug. 8
2425	12	306.92	49			306.96	+0.04	Nov. 26
4295	22	298.19	47			298.24	+0.05	Dec. 20
								1959
4292	23	296.28	43			296.24	-0.04	Jan. 14
4284	46	308.93	27			309.15	+0.22	Mar. 1
2420	35	307.58	46			307.66	+0.08	Mar. 20
4283	24	318.62	51			318.61	-0.01	Apr. 16
2418	20	312.24	45			312.21	-0.03	May 15
2423	31	317.40	48			317.29	-0.11	Jun. 11
4286	19	317.17	45			316.91	-0.26	Jul. 8
4285	28	303.26	41			303.35	+0.09	Jul. 27
6074	20	306.34	45			306.48	+0.14	Aug. 22
6081	20	304.27	46			304.22	-0.05	Sep. 10
6067	20	307.71	45			307.85	+0.14	Oct. 2
3759	20	310.28	40			310.46	+0.18	Oct. 26
4288	22	311.54	40			311.66	+0.12	Nov. 21
4274	20	301.60	36			301.61	+0.01	Dec. 3
3753	20	325.66	45			325.74	+0.08	Dec. 19
								1960
2418	22	306.39	47			306.28	-0.11	Jan. 8
7361	37	320.11	59			320.12	+0.01	Jan. 30
7362	20	301.82	52			301.62	-0.20	Mar. 3
4275	20	303.55	48			303.51	-0.04	Mar. 30

Table 7a. Comparison of Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col. I	2	3	4	5	6	7	8	9
	At Scripps Prior and After Use Combined		At Mauna Loa					
				Preliminary		Final		
Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	Index Difference MLO-SIO	Index	Index Difference MLO-SIO	Date use Began
								1960
4272	24	300.90	48			300.73	-0.17	May 3
7366	23	306.16	53			305.96	-0.20	Jun. 3
3758	20	302.73	52			302.64	-0.09	Jul. 4
6081	22	306.68	52			306.70	+0.02	Aug. 2
148	18	302.90	50			302.93	+0.03	Aug. 27
7366	22	317.79	42			317.69	-0.10	Sep. 26
7361	20	322.45	53			322.25	-0.20	Oct. 26
7362	10	301.26	51			301.07	-0.19	Nov. 23
3758	36	310.68	53			310.77	+0.09	Dec. 22
								1961
4272	29	313.95	41			313.84	-0.11	Jan. 19
4275	30	314.03	52			314.00	-0.03	Feb. 1
10075	32	298.43	53	298.30	-0.13	298.25	-0.18	Mar. 7
6081	21	309.87	52	309.78	-0.09	309.76	-0.11	Apr. 6
10068	20	303.68	75	303.60	-0.08	303.71	+0.03	May 12
10067	20	319.26	53	319.18	-0.08	319.38	+0.12	Jun. 17
2427	60	315.84	15	315.66	-0.18	315.87	+0.03	Jul. 20
4272	19	308.04	52	307.83	-0.21	308.09	+0.05	Jul. 28
7355	20	307.52	53	307.23	-0.29	307.53	+0.01	Sep. 5
136	30	321.94	52	321.76	-0.18	322.06	+0.12	Oct. 15
3752	20	320.96	52	320.85	-0.11	321.18	+0.22	Nov. 21
3751	21	326.99	51	326.73	-0.26	327.04	+0.05	Dec. 12
								1962
7364	20	302.41	40	301.48	-0.93	301.93	-0.48	Jan. 6
148	21	318.29	53	318.08	-0.21	318.44	+0.15	Jan. 22

Table 7a. Comparison of Scripps and Mauna Loa Index Values of Working Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
	At Scripps Prior and After Use Combined		At Mauna Loa					
				Preliminary		Final		
Tank No.	No. of Comparisons	Index	No. of Comparisons	Index	Index Difference MLO-SIO	Index	Index Difference MLO-SIO	Date use Began
								1962
10064	30	301.55	50	301.29	-0.26	301.80	+0.25	Feb. 28
10072	31	304.77	42	304.41	-0.36	304.92	+0.15	Mar. 31
4272	42	302.11	53	301.39	-0.72	301.97	-0.14	Apr. 26
6067	32	306.67	53	303.01	-0.66	303.62	-0.05	Jun. 4
6081	22	302.85	50	302.15	-0.70	302.81	-0.04	Jul. 11
7344	12	301.86	52	301.10	-0.76	301.82	-0.04	Sep. 13
11097	20	307.41	52	306.85	-0.56	307.55	+0.14	Oct. 16
11078	20	308.36	49	307.68	-0.68	308.40	+0.04	Nov. 12
2425	21	310.77	61	310.23	-0.54	310.87	+0.10	Dec. 12
								1963
4285	30	302.06	39			302.21	+0.15	Jan. 18
2423	23	311.12	61			311.22	+0.10	Mar. 1
4291	29	312.05	50			312.00	-0.05	Apr. 4
2421	21	312.53	39			312.74	+0.21	May 14
2402	21	312.40	50			312.60	+0.20	Jun. 13
18220	20	312.65	51			312.67	+0.02	Jul. 11
18216	21	309.35	31			309.53	+0.18	Aug. 5
9184	22	306.80	51			306.82	+0.02	Sep. 4
11633	77	306.72	51			306.98	+0.26	Sep. 28
9200	22	312.75	61			312.89	+0.14	Oct. 18
4271	21	310.03	49			310.24	+0.21	Oct. 28
4278	19	310.60	20			310.70	+0.10	Nov. 29
								1964
3756	34	313.74	43			313.73	-0.01	Jan. 3

Table 8. Scripps Index Values of Principal Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col.1	2	3	4	5	6	7	8	9	10	11	12
		At Scripps Prior to Use				At Scripps After Use				Wt'd.Av.	
Tank Rank	Tank No.	No. of Comparisons	Index	Date of Last Run	Report No.	No. of Comparisons	Index	Date of First Rerun	Report No.	No. of Comparisons	Index
1958 thru 1960											
(I)	4284	12	308.80	Jan.'58	I	34	308.97	Nov.'59	III	-	309.09*
(I_{LS})	4287	14	293.80	Jan.'58	I	12	293.62	Nov.'59	III	-	293.84*
(I)	A-17	21	310.09	Feb.'59	II	65	310.91	Mar.'64	VII	-	-
I_{HS}	4277	63	345.84	Feb.'59	II	65	346.21	Mar.'64	VII	63	345.84**
II_1	4297	-	-		-	49	305.78	May '60	III	49	305.78
II_2	6051	10	310.04	Sep.'59	III	52	310.12	May '60	III	62	310.07
II_3	7344	375	314.34	Mar.'60	III	58	314.45	Aug.'61	IV	375	314.34**
1961 thru 1962											
(I)	A-17	21	310.09	Feb.'59	II	65	310.91	Mar.'64	VII	-	-
I_{HS}	4277	63	345.84	Feb.'59	II	65	346.21	Mar.'64	VII	Sliding	Value***
II_3	7344	375	314.34	Mar.'60	III	58	314.45	Aug.'61	IV	433	314.35
II_4	193	62	311.93	May '61	IV	51	312.50	Feb.'63	VI	Sliding	Value***
1963											
(I)	A-17	21	310.09	Feb.'59	II	65	310.91	Mar.'64	VII	-	-
I_{HS}	4277	63	345.84	Feb.'59	II	65	346.21	Mar.'64	VII	Sliding	Value***
II_4	193	62	311.93	May '61	IV	51	312.50	Feb.'63	VI	Sliding	Value***
I	11083	104	314.26	Mar.'63	VI	Still at MLO			-	-	-
I_{HS}	2399	93	335.54	Nov.'62	V	51	336.07	Mar.'64	VII	144	335.73
II_5	2403	102	311.12	Oct.'62	V	Still at MLO			-	102	311.12**
I_{HS}	10077	159	347.11	Jun.'63	VI	Still at MLO			-	159	347.11**

* Adjusted by comparison with tanks at Mauna Loa (See MLO-1, p. 6)

** Scripps values after use not available at time report was prepared

*** See Table 9

Table 9. Monthly Index Values and Differences of Principal Reference Gases

MAUNA LOA CARBON DIOXIDE PROJECT

Col.	1	2	3	4
	Month	Index I_{HS}	Index II	Index Difference
	1961	(4277)*	(7344)	
	Jan.	345.98	314.35	31.63
	Feb.	345.99	314.35	31.64
	Mar.	345.99	314.35	31.64
	Apr.	346.00	314.35	31.65
	May	346.00	314.35	31.65
		(4277)*	(193)*	
	Jun.	346.01	311.96	34.05
	Jul.	346.02	311.98	34.04
	Aug.	346.02	312.01	34.01
	Sep.	346.03	312.04	33.99
	Oct.	346.03	312.07	33.96
	Nov.	346.04	312.09	33.95
	Dec.	346.04	312.12	33.92
	1962			
	Jan.	346.05	312.15	33.90
	Feb.	346.06	312.17	33.89
	Mar.	346.06	312.20	33.86
	Apr.	346.07	312.23	33.84
	May	346.08	312.26	33.82

1	2	3	4
Month	Index I_{HS}	Index II	Index Difference
1962	(4277)*	(193)*	
Jun.	346.08	312.28	33.80
Jul.	346.09	312.31	33.78
Aug.	346.10	312.34	33.76
Sep.	346.10	312.36	33.74
Oct.	346.11	312.39	33.72
Nov.	346.11	312.42	33.69
Dec.	346.12	312.45	33.67
1963			
Jan.	346.12	312.47	33.65
	(4277)*	(2403)	
Feb.	346.13	311.12	35.01
Mar.	346.14	311.12	35.02
Apr.	346.14	311.12	35.02
	(2399)	(2403)	
Apr. to Aug.	335.73	311.12	24.61
	(10077)	(2403)	
Aug. to Feb. '64	347.11	311.12	35.99

*Index Value Slides

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1958									
Mar. 14	0-0830	1630-1930	4.29	56	17.50	4.41	4285	308.36	312.77
21	0-2400		4.42	92	17.50	4.55			312.91
22	0930-2130		4.48	47	17.50	4.61			312.97
24	0-2400		4.82	75	17.50	4.96			313.32
25	0-0300	0830-2400	4.65	65	17.50	4.78			313.14
26	0-0900		4.71	33	17.50	4.84			313.20
28-29	2030-0230		4.71	23	17.50	4.84			313.20
29-30	2230-0730	1730-2400	4.65	64	17.50	4.78			313.14
31	0-1300	1530-1700	5.14	56	17.50	5.29			313.65
							Average	9 days	313.14
Apr. 2-3	1830-0800	1530-2400	5.96	82	17.50	6.13	4285	308.36	314.49
4	0-2400		5.41	88	17.50	5.56			313.92
5	0-0300	1530-2400	5.76	48	17.50	5.92			314.28
6	0-0630	0800-2400	5.54	82	17.50	5.70			314.06
7	0-2400		5.37	80	17.50	5.52			313.88
10-11	2000-0730		5.20	42	17.50	5.35			313.71
13	0530-2400		6.25	68	18.61	6.05			314.41
15	0-2400		7.27	92	18.52	7.06			315.42
16	0-0800		7.09	32	18.47	6.91			315.27
17-18	1730-1100		6.05	68	18.38	5.92			314.28
20	0-0900	1330-2400	4.32	62	18.29	4.25	4286	309.24	313.49
21	0-1300	1730-2400	4.75	76	18.24	4.69			313.93
22	0-1130		4.90	40	18.20	4.85			314.09
23	0-0900	1500-2400	4.47	66	18.15	4.43			313.67
29-30	1700-0730		4.18	58	18.03	4.17			313.41
							Average	15 days	314.15

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1958									
May 2	0-1300		4.57	50	18.00	4.57	4286	309.24	313.81
3-4	1900-0830		4.31	52	17.97	4.32			313.56
5	0-0930		5.16	38	17.96	5.17			314.41
6	0-2100		5.36	74	17.95	5.37			314.61
20-21	1930-1300		5.53	68	17.74	5.61			314.85
20-22	2030-1100		5.48	58	17.74	5.56			314.80
22-23	1830-0200	1300-2400	5.43	72	17.74	5.51			314.75
24	0-1100		5.84	27	17.74	5.93			315.17
24-25	2000-0100	0700-1130	5.20	38	17.74	5.28			314.52
							Average	9 days	314.42
Jul. 4	0-2400		3.54	74	17.88	3.56	4286	309.24	312.80
8	0-0830		3.80	27	17.78	3.85			313.09
11-12	2030-0330		3.29	28	17.70	3.35			312.59
14	1530-2400		6.09	36	17.65	6.21	2423	306.98	313.19
15	0-2400		6.30	92	17.63	6.43			313.41
16	1530-2400		4.98	32	17.60	5.09			312.07
17	0-2100*		5.42	76	17.58	5.55			312.53
19	1330-2400		5.54	44	17.54	5.69			312.67
20	0-1300		6.05	46	17.51	6.22			313.20
23-24	2130-0430		5.81	30	17.42	6.00			312.98
25	0-0600		5.46	24	17.40	5.65			312.63
26	0-0700	1000-2400	5.33	83	17.38	5.52			312.50
27	0-2400		5.47	93	17.35	5.67			312.65
28	0-0800		5.46	32	17.33	5.67			312.65
28-29	2330-0500	0630-0800	5.48	32	17.31	5.70			312.68
30	0-1200	1700-2400	5.87	62	17.29	6.11			313.09
31	0-0900	1630-2030	5.45	50	17.26	5.68			312.66
							Average	17 days	312.80

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1958									
Aug. 4	0-0930	1830-2400	5.23	60	17.17	5.48	2423	306.98	312.46
6	0-1500	1700-2400	5.51	86	17.13	5.79			312.77
7	0-2400*		4.78	88	17.10	5.03			312.01
8	0-0900		4.96	36	17.08	5.23			312.21
12	0-1200		5.37	43	17.08	5.66	2426	306.64	312.30
12-13	2130-0730		5.20	42	17.08	5.48			312.12
14-15	2000-0930		5.52	54	17.08	5.82			312.46
29-30	2300-0930		5.07	44	17.08	5.34			311.98
30-31	1930-1100		4.34	64	17.08	4.57			311.21
							Average	9 days	312.17
Sep. 1	0-2400		4.75	86	17.08	5.01	2426	306.64	311.65
2	0130-0730		4.27	26	17.08	4.50			311.14
2-3	2230-0230		4.09	18	17.08	4.31			310.95
							Average	3 days	311.25
Nov. 8	0-2400		4.18	90	18.29	4.11	2426	306.64	310.75
9-10	1600-0700		4.14	58	18.35	4.06			310.70
11	1130-2400		3.67	48	18.49	3.57			310.21
12	0-2400		4.38	91	18.56	4.25			310.89
13-14	1830-0830		4.03	58	18.03	4.02			310.66
14-15	1530-1100		4.24	80	18.70	4.08			310.72
15-16	1730-1200		4.32	75	18.76	4.14			310.78
16-17	1530-1100		4.42	80	18.83	4.23			310.87
17-18	2030-0830		4.47	50	18.90	4.26			310.90
19-20	1300-0730		4.12	72	19.04	3.89			310.53
20	1300-2400		4.45	43	19.10	4.19			310.83
21	0-2400		4.97	91	19.17	4.67			311.31

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1958									
Nov. 22	0-1330	1830-2400	4.85	75	19.24**	4.54	2426	306.64	311.18
23	0-1000	1730-2400	5.07	65		4.74			311.38
26-27	2100-0930		4.52	51		4.23	2425	306.95	311.18
28	0-1200	1700-2400	4.93	75		4.61			311.56
29	0-0800		4.53	32		4.24			311.19
29-30	2230-1000		4.51	48		4.22			311.17
							Average 18 days		310.93
Dec. 1	0-2400		4.92	94		4.60	2425	306.95	311.55
2	0-2400		4.83	96		4.52			311.47
4	0-2400		5.07	91		4.74			311.69
5	0-2400		5.17	92		4.84			311.79
6	0-2400*		5.19	91		4.86			311.81
7	0-2400*		5.28	82		4.94			311.89
8	0-2400*		5.28	91		4.94			311.89
9	0-0830	1830-2400	5.02	57		4.70			311.65
10	0-0900	1730-2400	4.54	64		4.25			311.20
11	0-1000	1530-2400	4.93	76		4.61			311.56
12	0-1000	1930-2400	5.11	60		4.78			311.73
13	0-0900	1830-2400	5.11	60		4.78			311.73
14	0-2400		5.20	94		4.86			311.81
15	0-1000		5.22	36		4.88			311.83
16	0330-1400	1930-2400	5.03	63		4.71			311.66
17	0-1200	1400-2400	5.17	89		4.84			311.79
21	0130-2400		14.65	92		13.71	4295	298.22	311.93

*variable traces excluded
**Average RSF for period Nov. 22, 1958 to Dec. 21, 1960.

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1958									
Dec. 22	0-2400		14.60	96	19.24	13.66	4295	298.22	311.88
23	0-2400		14.63	96		13.69			311.91
29	1000-2400		14.89	58		13.93			312.15
30	0-2400		15.01	94		14.04			312.26
31	0-1800	2200-2400	15.13	78		14.15			312.37
							Average	22 days	311.80
1959									
Jan. 1	0-2400		15.00	96		14.03	4295	298.22	312.25
5	0-1330	1500-1630	14.77	62		13.82			312.04
7	1500-2400		14.88	38		13.92			312.14
8	0-2400		15.13	96		14.15			312.37
9	0-2400		15.36	94		14.37			312.59
10	0-2400		15.33	96		14.34			312.56
11	0-0900		15.34	36		14.35			312.57
12	1300-2400		15.21	46		14.23			312.45
13	0730-2400		15.08	67		14.11			312.33
14	0-0830		14.99	33		14.02			
14	1430-2400		17.75	38		16.61	4292	296.26	312.58
15	0-2400		17.88	96		16.73			312.99
16	0-1100	1630-2400	17.63	75		16.49			312.75
17	0-2400		17.34	83		16.22			312.48
18	0-1400		17.34	55		16.22			312.48
19	0-2400		17.02	96		15.92			312.18
20	0-0830	1830-2400*	17.61	55		16.48			312.74
21	0-0730	1800-2400	17.53	55		16.40			312.66
22	0-0600	1930-2400	17.68	44		16.54			312.80
23	0-0830		17.37	34		16.25			312.51

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Jan. 24	0230-0900	1700-2400	17.70	58	19.24	16.56	4292	296.26	312.82
25	0-1130	1500-2400	17.73	84		16.59			312.85
28-29	1900-1100		17.26	65		16.15			312.41
							Average	22 days	312.53
Feb.17-18	2030-0730	1430-2400	18.31	84		17.13	4298	296.26	313.39
19	0-0900	1930-2400	18.06	56		16.90			313.16
20	0-0900	1530-2400	17.87	72		16.72			312.98
21	0-0800		17.67	31		16.53			312.79
22	0-0830		18.29	33		17.11			313.37
22-23	2200-1000		18.73	50		17.52			313.78
24	0-0730		18.47	29		17.28			
24	0800-0830	1800-2400	4.92	26		4.60	4284	309.01	313.57
27	0-1200	1400-2400*	4.61	88		4.31			313.32
28	0-2400		4.70	96		4.40			313.41
							Average	9 days	313.31
Mar. 1	0-2100		4.99	82		4.67	4284	309.01	313.68
4	0-0900	1530-2400	4.92	72		4.60			313.61
5	0-2400		5.02	92		4.70			313.71
6	0-2400		4.80	96		4.49			313.50
7	0-2400*		4.74	90		4.43			313.44
8	0-2400		4.92	96		4.60			313.61
9	0-2400		5.29	90		4.95			313.96
10	0-2400		4.85	95		4.54			313.55
21	0-2400		6.50	95		6.08	2420	307.62	313.70

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Mar. 22	0-1300	1630-2400	6.59	84	19.24	6.17	2420	307.62	313.79
23-24	2030-0230	0430-1000							
		1930-2400	6.09	70		5.70			313.32
25	0-2400		6.12	96		5.73			313.35
26	0-1200	1530-2400	6.21	84		5.81			313.43
27	0-1100	1530-2400	6.07	80		5.68			313.30
28-29	0-0800	1830-0500	6.68	71		6.25			313.87
							Average 15 days		313.59
Mar. 31-									
Apr. 1		2130-1100	5.98	56		5.59	2420	307.62	313.21
1-2	1130-0530		7.34	74		6.87			314.49
2-3	2030-0800		7.54	45		7.05			314.67
3-4	2300-1300		7.54	58		7.05			314.67
5	0-1000	1430-2400	7.08	80		6.62			314.24
6	0-2400		6.65	96		6.22			313.84
7	0-1300	1530-2400	7.06	90		6.60			314.22
8	0-1000	1130-2400	6.44	92		6.02			313.64
9	0-2400		6.52	94		6.10			313.72
10	0-2400		6.89	96		6.45			314.07
11	0-2400		6.46	92		6.04			313.66
12	0-0300	1230-2400	6.60	54		6.17			313.79
13	0-2400		6.55	96		6.13			313.75
14	0-1030	1630-2400	6.97	78		6.52			314.14
16	0-1200		6.82	48		6.38			314.00
16-17	2230-0700	1130-1300	-5.35	42		-5.01	4283	318.61	313.60
18	1230-2400		-4.98	43		-4.66			313.95

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Apr. 19	0-0800		-4.48	32	19.24	-4.19	4283	318.61	314.42
19-20	2300-0900	1830-2400	-4.02	65		-3.76			314.85
21	0-0900	1630-2400	-4.20	61		-3.93			314.68
22	0-0800	1530-2400	-4.27	59		-3.99			314.62
25	0-0900	2000-2400	-3.92	58		-3.67			314.94
26	0-0800	1830-2400	-3.90	56		-3.65			314.96
27	0-0900	1830-2400	-4.03	60		-3.77			314.84
28	0-0400	1800-2400	-4.19	42		-3.92			314.69
29	0-0830	2130-2400	-4.02	46		-3.76			314.85
							Average	26 days	314.25
May 4	0-1500	1700-2400	-4.43	80		-4.14	4283	318.61	314.47
5	0-0400	1830-2400	-3.91	40		-3.66			314.95
6	0-1000		-3.69	39		-3.45			315.16
13	0-1100	1630-2400	-3.96	76		-3.70			314.91
14	0-1200	1630-2400	-3.80	79		-3.56			315.05
15	0-0730		-3.81	30		-3.56			
15	1300-1800		2.14	19		2.00	2418	312.22	314.12
16	1330-2400		1.92	43		1.80			314.02
17	0-2400		2.12	95		1.98			314.20
18	0-0730	1230-2400	2.11	78		1.97			314.19
19	0-1000	1500-2400	2.49	66		2.33			314.55
20	0-2400*		2.99	91		2.80			315.02
21	0-2400*		3.02	93		2.83			315.05
22	0-1200	1330-2000	2.96	64		2.77			314.99
24	0-0800	1630-2400	2.57	61		2.40			314.62
25	0-0730	1630-2400	2.56	60		2.40			314.62
							Average	15 days	314.66

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Jun. 3	1500-2400*		2.86	36	19.24	2.68	2418	312.22	314.90
4	0-0230	0600-2400	3.13	83		2.93			315.15
5	0-1130	1700-2400	3.04	82		2.84			315.06
6	0-1100	1400-2400	2.85	86		2.67			314.89
7	0-1000	1600-2400	2.76	83		2.58			314.80
8	0-0830	1500-2400	2.80	72		2.62			314.84
9	0-1430	2130-2400	2.97	70		2.78			315.00
10	0-0200	1300-2400	1.96	54		1.83			314.05
11-12	1500-0100		-2.93	43		-2.74	2423	317.33	314.59
13-14	1830-1000		-2.72	63		-2.54			314.79
19	0-1100	1430-2400	-3.20	82		-2.99			314.34
20	0-2400		-3.19	93		-2.98			314.35
21	0730-1600	1930-2400	-3.05	56		-2.85			314.48
22	0-1100	1830-2400	-3.16	68		-2.96			314.37
23	0-0900	1330-2400	-3.14	80		-2.94			314.39
24	0-1100	1330-2400	-3.30	86		-3.09			314.24
25	0-1300		-3.19	52		-2.98			314.35
							Average 17 days		314.62
Jul.1-2	1630-0130		-3.62	38		-3.39	2423	317.33	313.94
3	0-0400	1630-2400	-3.15	48		-2.95			314.38
4	0-1300		-3.14	52		-2.94			314.39
5	0-0700	1400-2400	-5.09	70		-4.76			312.57
6	0-0900	1530-2400	-4.99	69		-4.67			312.66
7	0-0200	0830-2400	-4.30	66		-4.02			313.31

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Jul. 8	0-0100	0500-0900*	-3.36	21	19.24	-3.14	2423	317.33	
8	1330-2400*		-4.29	43		-4.01	4286	316.99	313.38
9	0-2400*		-3.99	78		-3.73			313.26
10	0-0830	2030-2400	-3.90	50		-3.65			313.34
11	0-1130		-3.36	46		-3.14			313.85
12	0-2400*		-3.47	92		-3.25			313.74
13	0-0830	1630-2400	-3.51	65		-3.28			313.71
14	0-1230	1530-2400	-3.57	84		-3.34			313.65
15	0-2400		-3.69	96		-3.45			313.54
16	0-1000	1930-2400	-3.56	60		-3.33			313.66
17	0-2400		-3.74	96		-3.50			313.49
18	0-0700	1900-2400	-4.55	50		-4.26			312.73
21	0-2400*		-4.20	92		-3.93			313.06
25	0-0930	1930-2400	-3.94	57		-3.69			313.30
26	0-1100	1730-2400	-3.99	72		-3.73			313.26
27	0-0800		-4.31	32		-4.03			
27	2100-2400		9.98	14		9.34	4285	303.31	312.87
28	0-1000	2130-2400	10.22	48		9.56			312.87
29	0-1100	1330-2300	10.47	82		9.80			313.11
30	0600-2400		10.27	67		9.61			312.92
31	0-2400*		10.04	95		9.39			312.70
							Average 25 days		313.35
Aug. 1-2	1800-1200	1600-2400	10.20	107		9.54	4285	303.31	312.85
3	0-1100	1600-2400	9.71	78		9.08			312.39
4	0-1530		9.40	61		8.79			312.10

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Aug. 5	0-0200	0500-0800			19.24		4285	303.31	
		1000-1530	8.57	46		8.02			311.33
7-8	2300-0930		9.80	38		9.17			312.48
24	0-1400	2000-2400*	6.09	73		5.70	6074	306.44	312.14
27-28	2130-1100		5.49	55		5.14			311.58
29	0-0900		5.24	32		4.90			311.34
30	0130-1200		5.29	44		4.95			311.39
							Average	9 days	311.96
Sep. 2	0-0900		6.27	34		5.87	6074	306.44	312.31
3	0-1400		5.94	55		5.56			312.00
6	0130-0900		5.12	31		4.79			311.23
7	0930-1300	1630-2400	5.39	48		5.04			311.48
8	0-1300	1930-2400	5.30	74		4.96			311.40
9	0-2400		5.18	96		4.85			311.29
10	0-1200		5.16	48		4.83			311.27
15	0-0900	1730-2400	7.48	64		7.00	6081	304.24	311.24
16	0-1300	1430-2400	7.54	87		7.05			311.29
17	0-2400		7.59	96		7.10			311.34
18	0630-2400		7.54	72		7.05			311.29
19-20	1830-0400		6.62	40		6.19			310.43
23	0-2400		7.25	96		6.78			311.02
24	0-1100		7.20	44		6.74			310.98
28-29	2100-0800	1330-2400	7.10	89		6.64			310.88
30	0-1000		7.26	40		6.79			311.03
							Average	16 days	311.28

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Oct. 1	0-0800	1330-2400	6.18	75	19.24	5.78	6081	304.24	310.02
2	0-0900		6.01	35		5.62			309.86
3	0-1330*		3.28	53		3.07	6067	307.81	310.88
5	1300-2100		2.59	34		2.42			310.23
6-7	2130-1200		3.67	59		3.43			311.24
10-11	2100-0800		2.72	44		2.54			310.35
14	0-1200	1500-2400	3.61	86		3.38			311.19
15	0-1030	1930-2400	3.44	62		3.22			311.03
16	0-1300	2000-2400	3.42	70		3.20			311.01
17	0-0930	1800-2400	3.19	64		2.98			310.79
18	0-1000	1830-2400	3.19	64		2.98			310.79
19	0-1030	1700-2400	3.02	72		2.83			310.64
20	0-0900	1930-2400	3.00	56		2.81			310.62
21	0-1100	1830-2400	2.85	67		2.67			310.48
22	0-2400		3.59	91		3.36			311.17
23	0-2400		3.38	96		3.16			310.97
24	0-0900		2.82	36		2.64			310.45
25	0-2400		3.35	96		3.13			310.94
26	0-0730		3.33	29		3.12			
26	1200-2400		0.76	49		0.71	3759	310.40	311.04
27	0-1000	1830-2400	0.84	64		0.79			311.19
28	0-1130	2200-2400	0.91	53		0.85			311.25
30	0-2400*		0.95	88		0.89			311.29
31	0-2400		1.53	96		1.43			311.83
							Average 23 days		310.84

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Nov. 1	0-0900	2130-2400	1.46	48	19.24	1.37	3759	310.40	311.77
2	0-0730	1930-2400	1.42	50		1.33			311.73
3	0-0300	1630-2400	1.57	43		1.47			311.87
5	0-2400		1.32	96		1.23			311.63
7	0-0930		1.49	37		1.39			311.79
12-13	2130-1300	1500-2400*	1.78	97		1.67			312.07
14	0-0800	1400-2400	1.44	74		1.35			311.75
16	0230-2400		2.04	85		1.91			312.31
17	0-2400		2.08	96		1.95			312.35
18	0-2400		1.80	96		1.68			312.08
19	0-1230	1530-2400	2.28	85		2.13			312.53
20	0-2400*		2.22	94		2.08			312.48
21	0-0830		1.98	22**		1.85			
21	1130-1630		0.81	21**		0.76	4288	311.62	312.31
22	0130-1100		0.38	36**		0.36			311.98
24-25	1830-1300	1530-2400	0.85	112		0.80			312.42
26	0330-2400		0.73	84		0.68			312.30
28	0-2400		0.66	96		0.62			312.24
29	0-1000		0.55	40**		0.51			312.13
							Average 18 days		312.10
Dec. 1	0430-2400*		0.45	61**		0.42	4288	311.62	312.04
3	0-0900		0.48	36		0.45			312.07
6	0-2400		11.19	96		10.47	4274	301.60	312.07

*variable traces excluded
**checked by C.D.K. 5/8/61, charts reread

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1959									
Dec. 7	0-2400		11.29	96	19.24	10.56	4274	301.60	312.16
8	0-1400		11.28	56		10.55			312.15
11	0630-2400		11.52	72		10.78			312.38
12	0-2400		11.54	96		10.80			312.40
13	0-2400		11.78	96		11.02			312.62
14	0-2400		11.92	96		11.15			312.75
15	0230-1100	1530-2400	11.85	71		11.09			312.69
17	0-2400		11.81	96		11.05			312.65
18	0-0930	1530-2400*	11.88	73		11.11			312.71
19	0-0630		12.40	25		11.60			
19	1230-2400		-14.00	47		-13.10	3753	325.72	312.47
20	0-2400*		-13.98	91		-13.08			312.64
21	0-2400		-13.81	96		-12.92			312.80
22	0-2400		-13.19	96		-12.34			313.38
23	0-2400*		-13.93	94		-13.03			312.69
24	0-1100	2130-2400	-13.17	55		-12.32			313.40
25	0-2400		-13.90	96		-13.00			312.72
26	0-1100	1330-2400	-13.79	88		-12.90			312.82
27	0-2400*		-13.67	91		-12.79			312.93
29	0530-2400*		-13.92	73		-13.02			312.70
30	0-0800		-14.03	31		-13.13			312.59
							Average 23 days		312.60

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Jan. 3	1400-2400		-13.80	42	19.24	-12.91	3753	325.72	312.81
4	0-0800	1500-2400	-13.72	70		-12.84			312.88
5	0-0900	1830-2400	-14.03	60		-13.13			312.59
6	0-0830	1500-2400	-13.80	71		-12.91			312.81
7	0-1130	1800-2400	-13.64	72		-12.76			312.96
8-9	2230-2400*		7.64	101		7.15	2418	306.32	313.47
12	0-2130		7.53	86		7.04			313.36
13	0330-2400*		7.40	80		6.92			313.24
14	0-0830		7.49	34		7.01			313.33
16	0-1300	1730-2400	7.52	78		7.04			313.36
17	0-2400*		7.80	95		7.30			313.62
18	0-2400		7.79	96		7.29			313.61
19	0-1300	1430-2400	7.59	91		7.10			313.42
21	1100-2400		7.27	54		6.80			313.12
22	0-1000		7.58	40		7.09			313.41
24	0-1130	1900-2400*	7.38	67		6.90			313.22
25	0-2400		7.43	95		6.95			313.27
26	0-0900	1030-1900*	7.54	69		7.05			313.37
27	0-2400		7.52	90		7.04			313.36
28	0-1130	1530-2400*	7.57	81		7.08			313.40
29	0-0730	1000-2400	7.60	88		7.11			313.43
30	0-0830		8.12	33		7.60			
30	1830-2400		-6.96	24		-6.51	7361	320.12	313.79
31	0-0900		-6.98	35		-6.53			313.59
							Average 23 days		313.28

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Feb.2-3	2130-1100*		-7.35	55	19.24	-6.88	7361	320.12	313.24
8	0-2400*		-7.08	88		-6.62			313.50
11	0-0800	0930-2400	-6.50	89		-6.08			314.04
12	0-0800	0930-2400	-6.37	88		-5.96			314.16
13	0-0700	1700-2400*	-7.15	57		-6.69			313.43
14	0-1000	1830-2300	-7.31	55		-6.84			313.28
15-16	2030-1530	1700-2400*	-6.83	106		-6.39			313.73
17	0-1000	1430-2400	-6.86	76		-6.42			313.70
20-21	1600-0600		-6.46	58		-6.04			314.08
23	0-1200	2030-2400	-6.30	63		-5.89			314.23
24	0-1000	1830-2400	-6.63	63		-6.20			313.92
25	0-1600	1830-2400	-7.24	86		-6.77			313.35
26	0-0900	1800-2400	-7.25	59		-6.78			313.34
27	0-0500	0700-1200							
	1900-2400*		-6.85	63		-6.41			313.71
29	0600-1300		-6.48	30		-6.06			314.06
							Average 15 days		313.72
Mar.2-3	2130-0800		-6.80	43		-6.36	7361	320.12	
3	1800-2400		12.75	26		11.93	7362	301.67	313.70
4	0-1000	1630-2400	12.81	71		11.98			313.65
5	0-2400		12.97	95		12.13			313.80
6	0-0800	1630-2000	12.89	47		12.06			313.73
7	0130-0500	1500-2300	12.94	50		12.11			313.78
8-9	1630-0830	1830-2400	12.88	89		12.05			313.72
10-11	2000-2400		13.50	114		12.63			314.30

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Mar. 12	0-2400		13.89	95	19.24	12.99	7362	301.67	314.66
13	0-2400		14.04	96		13.14			314.81
14	0-2400		13.61	90		12.73			314.40
15	0-0830	2130-2400	13.73	46		12.85			314.52
16	0-0800	1530-2400	13.41	67		12.55			314.22
20	0-2400*		14.28	94		13.36			315.03
21	0-0700	1800-2400	13.95	53		13.05			314.72
22	0-0800	1500-2400	13.71	70		12.83			314.50
23	0-0530	1400-2230	12.96	58		12.12			313.79
24	0-2200*		13.72	86		12.84			314.51
25	0400-1000	1430-2400	13.52	59		12.65			314.32
27	1230-2400		13.37	47		12.51			314.18
28	0-2300		14.31	76		13.39			315.06
29	1500-2400		13.42	30		12.56			314.23
31	1300-2400		12.42	46		11.62	4275	303.52	315.14
							Average 22 days		314.31
Apr. 1	0-0200	1000-2400	12.57	65		11.76	4275	303.52	315.28
2	0-2400*		12.32	95		11.53			315.05
3	0-2400		12.39	96		11.59			315.11
4	0-0800	1300-2000	11.89	62		11.12			314.64
7	0-0900		13.06	36		12.22			315.74
8	0-1000		12.78	40		11.96			315.48
12	0-0800	1130-2400	12.93	81		12.10			315.62
13	0-2400		12.93	96		12.10			315.62

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Apr. 14	0-2400		12.51	96	19.24	11.70	4275	303.52	315.22
15	0-2400*		12.65	94		11.83			315.35
16	0100-0400	1130-2400*	12.50	63		11.69			315.21
17	0-2400		12.54	96		11.73			315.25
18	0-2400*		13.05	95		12.21			315.73
19	0-2400		12.35	96		11.55			315.07
20	0-2400		12.84	94		12.01			315.53
21	0-2400		12.41	96		11.61			315.13
22	0-1000	1330-2400*	12.61	82		11.80			315.32
23	0-2400		12.48	91		11.68			315.20
24	0-2400		12.64	94		11.83			315.35
25	0-1230	1600-2400	12.46	84		11.66			315.18
26	0-1230	1430-2400	13.12	90		12.27			315.79
27	0-1100		13.29	43		12.43			315.95
							Average 22 days		315.36
May 5	0-0230	0530-2400	16.64	86		15.57	4272	300.78	316.35
6	0-2400		16.32	96		15.27			316.05
7	0-2400		16.59	96		15.52			316.30
8	0-0800	1300-2400	16.29	78		15.24			316.02
9	0-2400*		15.84	94		14.82			315.60
10	0-2400		15.88	96		14.86			315.64
11	0-2400		16.32	92		15.27			316.05
14	0800-2400*		16.23	62		15.18			315.96
15	0-2400*		16.05	95		15.02			315.80

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
May 16	0-2000		15.56	80	19.24	14.56	4272	300.78	315.34
17	0730-2400		16.21	68		15.17			315.95
18	0-2400		16.49	95		15.43			316.21
19	0-2400		16.68	80		15.60			316.38
20	0-2400		16.54	96		15.47			316.25
21	0-2400		16.40	96		15.34			316.12
22	0-2200		16.03	88		15.00			315.78
24-25	2200-2400*		16.07	103		15.03			315.81
26	0-2400		16.41	96		15.35			316.13
27	0-0500	0730-2230*	16.44	76		15.38			316.16
28	1430-2400		15.65	40		14.64			315.42
29	0-2400*		16.41	93		15.35			316.13
30	0-0900	1730-2400	16.83	64		15.75			316.53
31	0-2400*		16.57	95		15.50			316.28
							Average	23 days	316.01
Jun. 1	0-2100*		16.41	83		15.35	4272	300.78	316.13
3	1230-2400		10.02	47		9.37	7366	306.02	315.39
4	1100-1500	2000-2400	10.00	36		9.36			315.38
10	0-1130	2030-2400	11.08	62		10.37			316.39
11	0-1200	2100-2400	10.88	62		10.18			316.20
12	0-2400		10.91	91		10.21			316.23
13	0-2400*		10.61	93		9.93			315.95
14	0-2400*		10.68	94		9.99			316.01
15	0-1400	1900-2300	10.41	73		9.74			315.76
16	0830-1230	1630-2400	10.27	49		9.61			315.63
17	0-1000		10.08	39		9.43			315.45

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Jun. 25	0-1200		10.06	48	19.24	9.41	7366	306.02	315.43
28-29	2130-1400	1530-2400	9.86	100		9.22			315.24
							Average 13 days		315.78
Jul. 1	0-1330	1930-2400	9.12	74		8.53	7366	306.02	314.55
2	0-0930	1330-2400	8.60	79		8.05			314.07
3	0-2400		8.86	96		8.29			314.31
5	0430-0800	0900-2000	13.02	64		12.18	3758	302.67	314.85
7	0-0900	1730-2400	13.06	61		12.22			314.89
8	0-2400		13.29	96		12.43			315.10
11-12	1930-1000		13.12	52		12.27			314.94
15-16	2200-1000	2030-2400	13.02	66		12.18			314.85
17	0-1000	2000-2400	13.10	58		12.26			314.93
18	0-0700	2130-2400	12.84	40		12.01			314.68
19	0-0800	1530-2400	12.85	71		12.02			314.69
20	0-2400		12.60	96		11.79			314.46
21	0-2400		12.58	85		11.77			314.44
22	0-2400		12.70	93		11.88			314.55
23	0-2400		12.37	96		11.57			314.24
25-26	2030-2400		12.33	107		11.54			314.21
27	0-0900*		12.44	35		11.64			314.31
30	0-2400		11.66	96		10.91			313.58
31	0-1030	1500-2400	11.95	80		11.18			313.85
							Average 19 days		314.50
Aug. 1	0-1130	2000-2400	11.84	64		11.08	3758	302.67	313.75
2	0-0930		12.38	38		11.58			314.25

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Aug. 2-3	1830-0230		7.60	34	19.24	7.13	6081	306.69	313.82
6-7	2000-0300	0800-1130	7.22	46		6.75			313.44
8	0530-2400		6.93	76		6.48			313.17
10	0-1200		7.08	48		6.62			313.31
11	0230-1100		7.53	36		7.04			313.73
12	0-1200*		7.35	47		6.88			313.57
13	0-1500	2100-2400	7.29	74		6.82			313.51
14	0-0930	1930-2400	6.80	58		6.36			313.05
15	0-2400		6.84	96		6.40			313.09
17	0-2400		6.57	95		6.15			312.84
18	0-2400		5.43	96		5.08			311.77
19	0-1200		4.81	48		4.50			311.19
22-23	2000-2400		6.05	114		5.66			312.35
24	0-0930		6.13	38		5.73			312.42
26	0-2400*		5.21	95		4.87			311.56
27	0-0800		5.78	32		5.41			
27	2200-2400		10.00	9		9.36	148	302.92	312.14
28	0-1030		9.57	42		8.95			311.87
30	0130-2400		8.73	92		8.17			311.09
31	0-2400		9.75	94		9.12			312.04
							Average 21 days		312.76
Sep. 1	0-2400		8.29	96		7.76	148	302.92	310.68
2-3	1930-1200	1700-2400	9.69	97		9.07			311.99
4	0-2400		9.73	96		9.10			312.02
5	0-1200	2000-2400	9.42	66		8.81			311.73
6-7	1830-1330	1930-2400	9.59	97		8.97			311.89

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Sep. 8	0-1200	1900-2400*	9.71	67	19.24	9.08	148	302.92	312.00
9-10	2230-1000	1930-2400	9.79	68		9.16			312.08
11	0530-2400*		8.95	78		8.37			311.29
12	0-2400		8.99	95		8.41			311.33
13	0-2400		8.73	73		8.17			311.09
15	0-1230		9.98	50		9.34			312.26
16	0-2400		8.36	84		7.82			310.74
17	0-2400*		9.28	93		8.68			311.60
18	0-1230		9.55	50		8.93			311.85
19	0830-2400		8.65	64		8.09			311.01
20	0-2400		8.58	91		8.03			310.95
21	0-2400*		8.52	95		7.97			310.89
22	0-2400*		7.89	94		7.38			310.30
23	0-2400*		8.38	94		7.84			310.76
24	0-2400*		8.14	94		7.62			310.54
26	0-0900		8.22	35		7.69			
26	1900-2400		-7.36	20		-6.89	7366	317.73	310.69
							Average 21 days		311.32
Oct. 2	0-2400		-7.13	95		-6.67	7366	317.73	311.06
3	0-2200		-7.12	87		-6.66			311.07
5	0-1000	1930-2400	-6.96	60		-6.51			311.22
7	0-2400*		-7.51	95		-7.03			310.70
8	0-2400		-7.77	96		-7.27			310.46
9	0-0500	1000-2400	-7.50	78		-7.02			310.71
12-13	2000-1200		-6.84	66		-6.40			311.33

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Oct. 14	0330-1200		-6.77	36	19.24	-6.33	7366	317.73	311.40
14-15	2230-1200		-7.24	56		-6.77			310.96
15-16	2100-1900		-6.77	90		-6.33			311.40
19	0530-0800	1330-2400	-6.61	55		-6.18			311.55
21	0730-2400		-6.06	68		-5.67			312.06
22	0-1400		-6.10	56		-5.71			312.02
23	0-1000		-7.02	40		-6.57			311.16
24	1500-2400		-7.67	37		-7.18			310.55
25	0-2400		-6.97	96		-6.52			311.21
26	0-1130		-7.89	39		-7.38			
26	1830-2130		-11.39	14		-10.66	7361	322.30	310.69
28	0-2400		-11.76	96		-11.00			311.30
29	0-1200		-11.45	48		-10.71			311.59
							Average 19 days		311.18
Nov. 2	0-2400		-11.67	96		-10.92	7361	322.30	311.38
3	0-2400*		-11.36	95		-10.63			311.67
4	0-1400	2000-2400	-11.35	68		-10.62			311.68
5	0830-2400		-11.49	64		-10.75			311.55
6	0-2400		-11.61	96		-10.86			311.44
7	0-2400*		-11.59	93		-10.84			311.46
8	0-2400		-11.31	94		-10.58			311.72
9	0-2130		-11.24	85		-10.52			311.78
11	0-2400		-11.45	57		-10.71			311.59
12	0-2400		-10.80	92		-10.10			312.20
13	0730-2400		-10.63	68		-9.94			312.36
14	0-2400		-11.04	96		-10.33			311.97

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Nov. 15	0-2400		-11.12	96	19.24	-10.40	7361	322.30	311.90
16	0-2400		-11.12	86		-10.40			311.90
17	0-2400		-11.06	86		-10.35			311.95
18	0-2400		-11.10	90		-10.38			311.92
19	0-1000		-10.91	40		-10.21			312.09
20	1300-2400		-11.00	46		-10.29			312.01
21	0-2400		-10.96	96		-10.25			312.05
22	0-2400		-10.75	96		-10.06			312.24
23	0-0830		-10.53	34		-9.85			
23	1530-2400		12.13	35		11.35	7362	301.10	312.45
24	0-2400		11.93	96		11.16			312.26
25	0-2400		11.72	96		10.96			312.06
26	0-1100	1330-2400	11.71	88		10.96			312.06
27	0-2400		11.79	95		11.03			312.13
28	0230-2400		11.94	88		11.17			312.27
29	0830-2400		12.37	64		11.57			312.67
30	0-2400		12.19	96		11.40			312.50
							Average	28 days	311.97
Dec. 1	0400-2300		12.36	60		11.56	7362	301.10	312.66
4	0-1300	1730-2400	12.26	80		11.47			312.57
5	0-2400		12.19	96		11.40			312.50
6	0-1230	1800-2400	12.55	76		11.74			312.84
7	1300-2400		12.80	46		11.98			313.08
8	0-2400		12.54	59		11.73			312.83
9	0-2400		12.33	96		11.54			312.64
10	0-2400*		12.50	92		11.69			312.79

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1960									
Dec. 11	0-1230		12.46	50	19.24	11.66	7362	301.10	312.76
12	0530-2400		12.44	74		11.64			312.74
13	0-1900		12.41	76		11.61			312.71
14	1030-2400		12.52	56		11.71			312.81
15	0-2400		12.74	91		11.92			313.02
16	0-2400		12.86	96		12.03			313.13
17	0-1000		12.58	40		11.77			312.87
18	0530-2400		12.51	76		11.70			312.80
19	0-2400		12.55	96		11.74			312.84
20	1930-2400		12.44	20		11.64			312.74
22-23	2200-1530		2.58	71		2.41	3758	310.75	313.16
25	0830-2400		2.35	60		2.20			312.95
26	0930-2400		2.45	60		2.29			313.04
27	0-2000	2300-2400	2.69	84		2.52			313.27
28	0-0900	1830-2400	2.70	60		2.53			313.28
29	0-2400		2.55	96		2.39			313.14
30	0-2000		2.45	80		2.29			313.04
31	0330-2400*		2.59	83		2.42			313.17
							Average 26 days		312.90
1961									
Jan. 1	0-2400		3.01	89	19.11	2.84	3758	310.73	313.57
2	0-2400*		3.02	95		2.84			313.57
3	0-2400		2.89	96		2.72			313.45
4	0-1200		3.01	48		2.84			313.51
5	2030-2400		2.87	16		2.70			313.43

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Jan. 6	0-2400		2.90	96	19.11	2.73	3758	310.73	313.46
7	0830-2100		2.52	52		2.37			313.10
8	0330-2200		2.53	76		2.38			313.11
9	0230-0830	1430-2400	2.90	64		2.73			313.46
10	0-0700		2.86	28		2.69			313.42
11	0-2400		2.97	86		2.80			313.53
12	0-2400		3.02	92		2.84			313.57
13	0-2400		3.01	96		2.84			313.57
14	0-2400		2.63	91		2.48			313.21
15	1130-2400		3.07	52		2.89			313.62
16	0-2400		3.28	96		3.09			313.82
17	0-2400		3.29	96		3.10			313.83
18	0-2400		3.23	96		3.04			313.77
19	0-1000		3.22	39		3.03			
19	1600-2400		-0.61	33		-0.57	4272	313.89	313.56
20	0-2400		-0.47	96		-0.44			313.45
21	0-2400*		-0.45	87		-0.42			313.47
22	0-1200	1900-2400	-0.26	69		-0.24			313.65
23	0-2400		-0.30	96		-0.28			313.61
24	0-2400		-0.51	96		-0.48			313.41
25	0-2400		-0.47	96		-0.44			313.45
26	0-2400		-0.52	89		-0.49			313.40
27	0-2400		+0.01	96		+0.01			313.90
28	0-1300	1730-2400	-0.20	80		-0.19			313.70
29	0-2400		-0.54	96		-0.51			313.38
30	0-2400		-0.57	96		-0.54			313.35

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Jan. 31	0-2400		-0.38	88	19.11	-0.36	4272	313.89	313.53
							Average 31 days		313.52
Feb. 1	0-1330*		-0.41	48		-0.39	4272	313.89	
1	2000-2400		-0.02	18		-0.02	4275	314.01	313.63
2	0-1100		-0.26	44		-0.24			313.77
4	0230-1200*	1830-2400	-0.43	67		-0.40			313.61
5	1830-2400		-0.59	24		-0.56			313.45
6	0-2400		-0.55	92		-0.52			313.49
7	0-1300		-0.17	50		-0.16			313.85
8	1230-2400		-0.23	47		-0.22			313.79
9	0-2400		-0.01	96		-0.01			314.00
10	0-1200	1500-2400	+0.01	76		+0.01			314.02
11	0-2400		+0.64	93		+0.60			314.61
12	0-0800	1330-1900	+0.26	55		+0.24			314.25
14	0730-1000	1630-2400	+0.49	44		+0.46			314.47
15	0-2000*		+0.20	77		+0.19			314.20
16	0830-2400*		+0.12	61		+0.11			314.12
17	0-2400*		+0.20	89		+0.19			314.20
18	0-2400*		+0.45	95		+0.42			314.43
19	0-2400		+0.47	96		+0.44			314.45
20	0-2400		+0.38	95		+0.36			314.37
21	0-2400*		+0.49	95		+0.46			314.47
22	0-2400		+0.38	96		+0.36			314.37
23	0-0800		+0.21	24		+0.20			
23	2030-2400		+0.80	14		+0.75	4272	313.89	314.37

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Feb. 24	0-2400		+0.73	96	19.11	+0.69	4272	313.89	314.58
25	0-1100	1630-2400	+0.59	76		+0.56			314.45
26	0-1000		+0.54	40		+0.51			314.40
27	1430-2400		+0.08	38		+0.08			313.97
28	0530-2400		+0.44	76		+0.41			314.30
							Average 26 days		314.14
Mar. 1	0-2400		0.42	96		0.40	4272	313.89	314.29
2	0-2400		0.48	96		0.45			314.34
3	0-0830	1900-2400	0.54	56		0.51			314.40
4	0-1730		0.59	68		0.56			314.45
7	0-1000		0.23	39		0.22			
7	1530-2200		17.10	27		16.11	10075	298.32	314.24
10	0730-2000		17.14	51		16.14			314.46
12	0-2400*		16.98	95		15.99			314.31
13	0-2400		17.80	96		16.77			315.09
14	0-0600	0930-2000	17.87	68		16.83			315.15
15	0-2200*		18.22	87		17.16			315.48
16	0530-2400		18.04	74		16.99			315.31
17	0430-2100*		17.98	67		16.94			315.26
19	0930-2400		17.50	60		16.48			314.80
20	0-0700	1230-2400*	17.14	75		16.14			314.46
21	0-2400		17.84	96		16.80			315.12
22	0-2400		17.76	96		16.73			315.05
23	0-2400		17.92	96		16.88			315.20
24	1230-2400		16.99	45		16.00			314.32

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Mar. 25	0-2100		17.13	84	19.11	16.14	10075	298.32	314.46
26	1030-2100		17.63	44		16.60			314.92
27	0-2200		17.97	88		16.93			315.25
28	0830-2400*		18.13	62		17.08			315.40
29	0-2400		17.68	96		16.65			314.97
30	0-2400		17.89	96		16.85			315.17
31	0-0330	0830-2400	18.13	78		17.08			315.40
							Average 25 days		314.85
Apr. 1	0-2400		18.06	91	19.11	17.01	10075	298.32	315.33
2	0-2400		18.29	96		17.22			315.54
3	0-2400		18.58	96		17.50			315.82
4	0-2400*		18.77	95		17.68			316.00
5	0-2400		18.58	96		17.50			315.82
6	0-0730		18.28	30		17.22			
6	1400-2400		6.28	42		5.92	6081	309.79	315.64
7	0-2100		6.18	84		5.82			315.61
8	0600-2400*		6.13	75		5.77			315.56
9	0-0400	0730-2400*	6.22	83		5.86			315.65
10	0730-2400		5.85	65		5.51			315.30
12	0-2400		5.48	96		5.16			314.95
13	0-1200		4.89	48		4.61			314.40
14	0730-2300		5.84	64		5.50			315.29
15	0630-2100		5.39	60		5.08			314.87

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Apr. 16	0630-2400		5.61	76	19.11	5.28	6081	309.79	315.07
17	0-2400		5.62	96		5.29			315.08
18	0-2400		5.60	89		5.27			315.06
19	0-2400		5.64	95		5.31			315.10
20	0-2400		6.21	96		5.85			315.64
21	0-2400		6.60	96		6.22			316.01
22	0-2400		6.70	96		6.31			316.10
23	1200-2400		6.35	50		5.98			315.77
25	0-0800	1400-2400	6.29	74		5.92			315.71
26	0-2400		6.55	96		6.17			315.96
27	0-0730	2030-2400	6.38	46		6.01			315.80
29	0-1100	2200-2400	6.53	54		6.15			315.94
30	0-2400		5.79	96		5.45			315.24
							Average 27 days		315.49
May 1	0-1130	1530-2400	6.05	82		5.70	6081	309.79	315.49
2	0-2400*		6.12	95		5.76			315.55
3	0-2400		6.99	91		6.58			316.37
4	0-2400		7.57	96		7.13			316.92
5	0-2400*		6.76	94		6.37			316.16
6	0-0900	1400-2400	7.16	77		6.74			316.53
7	0-2400		7.17	96		6.75			316.54
8	0-2400		7.01	96		6.60			316.39
9	0-1700		6.96	67		6.56			316.35

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
May 12	0-0830		7.19	33	19.11	6.77	6081	309.79	
12	1700-2400		12.92	30		12.17	10068	303.70	316.23
13	0-1100	1330-2400	13.66	88		12.87			316.57
16	0-2400		13.34	96		12.57			316.27
17	0-2400		13.66	95		12.87			316.57
18	0-2400		13.74	95		12.94			316.64
19	0-2400		13.76	96		12.96			316.66
20	0-2400		13.46	96		12.68			316.38
21	0530-2000		13.32	56		12.55			316.25
23	0330-2100		13.49	66		12.71			316.41
24	0130-2400*		13.37	89		12.59			316.29
25	0-2400*		13.09	94		12.33			316.03
26	0-2400*		13.68	94		12.89			316.59
27	0-1200		13.76	48		12.96			316.66
28	0-1200	1630-2400	13.62	78		12.83			316.53
29	1230-2400		13.08	48		12.32			316.02
30	0-1000	1400-2400	12.94	80		12.19			315.89
31	1430-2400		13.18	39		12.41			316.11
							Average 26 days		316.32
Jun. 2	0530-2400		13.09	76		12.33	10068	303.70	316.03
3	0-2400		13.27	96		12.50			316.20
4	0-2400		13.12	96		12.36			316.06

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Jun. 5	0-2400		12.95	96	19.11	12.20	10068	303.70	315.90
6	0-2400		13.03	96		12.27			315.97
7	0-2400*		13.44	94		12.66			316.36
8	0-2400		13.26	96		12.49			316.19
11	0-2400		12.95	96		12.20			315.90
12	0-2400*		12.77	95		12.03			315.73
13	0-0930	1700-2400	12.84	67		12.09			315.79
14	0-2400*		12.76	95		12.02			315.72
15	0-2400		12.79	94		12.05			315.75
16	0-2400*		11.85	93		11.16			314.86
17	0-0900		12.61	35		11.88			
17	1430-2400		-3.85	37		-3.63	10067	319.35	315.65
18	0-2400		-3.99	94		-3.76			315.59
19	0-2400		-3.88	96		-3.65			315.70
20	0-2400*		-4.03	93		-3.80			315.55
21	0-2400		-3.98	96		-3.75			315.60
22	0-0400	0730-2400	-3.80	84		-3.58			315.77
23	0-0530	1230-2400	-3.94	70		-3.71			315.64
24	0-0900	1130-2400	-3.95	85		-3.72			315.63
25	0-0800	1130-2400	-4.28	84		-4.03			315.32
27	0-2400*		-4.13	93		-3.89			315.46
28	1130-2400		-4.37	52		-4.12			315.23
29	0-2400*		-4.74	95		-4.46			314.89
30	0-1100	1630-2400	-3.99	76		-3.76			315.59
							Average 26 days		315.70

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Jul. 1	0-2400		-3.89	96	19.11	-3.66	10067	319.35	315.69
2	0-1500	2130-2400	-4.05	70		-3.81			315.54
5	0-2400*		-4.15	91		-3.91			315.44
6	0-2400*		-4.27	95		-4.02			315.33
7	0-2400		-4.21	85		-3.97			315.38
8	0-1300		-4.22	52		-3.97			315.38
10	0-0700	1930-2400	-4.65	48		-4.38			314.97
11	0-1130		-4.62	44		-4.35			315.00
14	0-2400*		-4.87	95		-4.59			314.76
15	0-2400*		-4.83	93		-4.55			314.80
16	0-0500	1930-2400	-4.77	40		-4.49			314.86
17	0-1000	1530-2400*	-4.86	75		-4.58			314.77
18	0-0900		-4.89	34		-4.61			314.74
24	0-2100		-2.32	84		-2.19	2427	315.84	313.65
30	0630-1300		6.84	37		6.44	4272	308.08	314.52
31	0-0900	1830-2400	6.65	59		6.26			314.34
							Average 16 days		314.95
Aug. 1	0-1230	1930-2400	6.73	70		6.34	4272	308.08	314.42
2	0-1200	1800-2400	6.88	74		6.48			314.56
3	0-2400*		6.98	95		6.57			314.65
4	0-2400		6.79	96		6.40			314.48
5	0-2400		6.49	93		6.11			314.19
6	0-1400	1830-2400	6.46	80		6.08			314.16

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Aug. 7	0-1300	1800-2400	6.60	78	19.11	6.22	4272	308.08	314.30
8	0-1100		6.49	40		6.11			314.19
10	0-800		6.62	32		6.24			314.32
12	0-2400		5.73	96		5.40			313.48
16	0-2400		6.26	96		5.90			313.98
17	0-1200		5.90	48		5.56			313.64
18	0-1200		5.91	48		5.57			313.65
19	0-0800	1200-2400	4.45	78		4.19			312.27
22	0-1000		5.87	40		5.53			313.61
24	0-1000	2030-2400	5.91	54		5.57			313.65
25	0-0800		5.77	32		5.43			
25	0830-2400		3.80	64		3.58			312.28
26	0-2400		3.63	96		3.42			311.50
27	0-2400		3.68	96		3.47			311.55
28	0-2400		4.01	90		3.78			311.86
29	0630-2400		4.58	72		4.31			312.39
							Average 22 days		313.39
Sep. 1	0-2400*		5.39	94		5.08	4272	308.08	313.16
2	0-2400		4.26	96		4.58			312.66
3	0-2400		4.32	96		4.07			312.15
4	0-2400		3.48	95		3.28			311.36
5	0-1100*		3.90	41		3.67			
5	1830-2400*		4.46	21		4.20	7355	307.53	311.75

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Sep. 6	0-2400		4.56	96	19.11	4.30	7355	307.53	311.83
7	0-2400		5.12	94		4.82			312.35
8	0-1230		4.72	50		4.45			311.98
10	0830-2400		4.80	64		4.52			312.05
11	0-2400		5.01	96		4.72			312.25
15	0-1200		5.36	47		5.05			312.58
16	1530-2400		4.13	36		3.89			311.42
17	0-1200	1900-2400	4.11	70		3.87			311.40
18	0-2400		3.97	96		3.74			311.27
19	0-2200		4.21	88		3.97			311.50
20	0-2300		4.34	87		4.09			311.62
23	1100-2400		4.79	54		4.51			312.04
24	0-2100	2230-2400	4.88	92		4.60			312.13
25	0-2300		5.21	92		4.91			312.44
30	0730-2400		5.50	68		5.18			312.71
							Average 20 days		312.03
Oct. 1	0-0600	2230-2400	5.45	32		5.13	7355	307.53	312.66
2	0-0800		5.48	32		5.16			312.69
3	0-2400*		4.74	94		4.46			311.99
4	0-2400*		4.43	95		4.17			311.70
7	0-2400		4.79	90		4.51			312.04
8	0-2400		4.95	93		4.66			312.19
9	0-2400		4.81	96		4.53			312.06

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Oct. 10	0-2400		4.68	95	19.11	4.41	7355	307.53	311.94
11	0-0600	0800-2230							
		2300-2400	4.86	80		4.58			312.11
12	0-2400		4.83	96		4.55			312.08
13	0-2400		5.05	96		4.76			312.29
14	0-0930	1730-2400	4.79	66		4.51			312.04
15	0100-0830		4.90	33		4.62			
15	1500-2400		-10.20	37		-9.61	136	322.02	312.29
16	0-2400		- 9.60	96		-9.04			312.98
17	0-2100		- 9.81	84		-9.24			312.78
18	1030-2400		- 9.97	56		-9.39			312.63
19	0-0630	1000-2000	-10.10	68		-9.51			312.51
20	1700-2400		-10.40	30		-9.80			312.22
21	0-0930	2030-2400	- 9.79	54		-9.22			312.80
22	0-2400		-10.42	94		-9.81			312.21
23	0-2400*		-10.34	93		-9.74			312.28
24	0-2400*		-10.55	95		-9.94			312.08
25	0-2400		-10.48	94		-9.87			312.15
26	0-2400		-10.52	90		-9.91			312.11
27	0-0500	2000-2400	-10.18	38		-9.59			312.43
28	0-2400		-10.07	96		-9.48			312.54
30	0-2400*		- 9.66	94		-9.10			312.92
31	0-2400*		- 9.46	95		-8.91			313.11
							Average 28 days		312.35
Nov. 1	0-2400*		-9.59	91		-9.03	136	322.02	312.99
2	0-2400		-9.58	93		-9.02			313.00

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Nov. 3	0-2400*		-10.01	95	19.11	-9.43	136	322.02	312.59
4	0-2400*		-10.18	95		-9.59			312.43
5	0-0800	1300-2100	-10.07	64		-9.48			312.54
7	1430-2400		-10.62	40		-10.00			312.02
8	0-2400		-10.24	94		-9.65			312.37
9	0-1300	1830-2400	-10.20	76		-9.61			312.41
10	0-0500	1230-2100	-10.34	56		-9.74			312.28
11	0-2400		-10.01	96		-9.43			312.59
14	1130-2400		-9.96	52		-9.38			312.64
15	0-2400		-9.67	96		-9.11			312.91
16	0-2400*		-9.62	89		-9.06			312.96
17	0-2400		-9.81	96		-9.24			312.78
18	0-2400		-9.68	96		-9.12			312.90
19	0-2400		-9.79	96		-9.22			312.80
20	0-2400		-9.98	96		-9.40			312.62
21	0-1000		-9.87	39		-9.30			
21	1630-2400		-8.18	32		-7.70	3752	321.12	313.04
22	0-2400*		-8.19	94		-7.71			313.41
23	0-2400		-8.23	96		-7.75			313.37
24	0-2400		-8.36	96		-7.87			313.25
25	0-2400*		-8.48	87		-7.99			313.13
26	0-2000*		-8.44	76		-7.95			313.17
28	0700-2400		-8.48	60		-7.99			313.13
							Average 24 days		312.81
Dec. 1	0-2400		-8.59	96		-8.09	3752	321.12	313.03
2	0-0830	1330-2400	-8.50	77		-8.01			313.11
3	1730-2400		-8.66	28		-8.16			312.96

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA·CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1961									
Dec. 4	0-2400*		-8.27	94	19.11	-7.79	3752	321.12	313.33
5	0-1000	1230-2400	-7.99	67		-7.53			313.59
6	0-2200		-7.70	87		-7.25			313.87
9	0130-2400		-7.76	90		-7.31			313.81
10	0-2400		-8.22	91		-7.74			313.38
11	0-1000	1730-2400	-8.19	68		-7.71			313.41
12	1600-2400		-14.27	34		-13.44	3751	327.03	313.59
13	0-2400		-14.42	96		-13.58			313.45
14	0-1100		-14.48	44		-13.64			313.39
15	0700-2400		-13.93	72		-13.12			313.91
16	0-2400		-14.38	96		-13.54			313.49
17	0-2400*		-14.29	94		-13.46			313.57
19	0-1130		-14.36	44		-13.53			313.50
24	0-1200	1630-2400	-14.13	80		-13.31			313.72
25	0-0730	1730-2400	-14.12	57		-13.30			313.73
26	0-2400		-14.10	96		-13.28			313.75
27	0-2400		-13.95	96		-13.14			313.89
28	0-1300	1800-2400*	-14.08	76		-13.26			313.77
29	0-2400		-13.70	96		-12.90			314.13
30	0-1300	2130-2400*	-13.61	62		-12.82			314.21
31	0-1400	1830-2400*	-13.94	78		-13.13			313.90
							Average 24 days		313.60
1962									
Jan. 1	0-2400		-14.07	96	19.20	-13.19	3751	327.03	313.84
2	0-2400		-13.93	95		-13.06			313.97
3	0-2000		-13.77	73		-12.91			314.12

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Jan. 6	1430-2400		13.10	40	19.20	12.28	7364	302.09	314.37
7	0-0900	1230-2400	12.94	84		12.13			314.22
8	0-0830	0930-2400*	13.39	91		12.55			314.64
9	1230-2400		13.44	48		12.60			314.69
10	0-2000	2230-2400	13.43	88		12.59			314.68
11	0-2400		13.29	96		12.46			314.55
12	1430-2400*		13.17	36		12.35			314.44
13	0-2400*		13.28	92		12.45			314.54
14	0-1300*		13.14	47		12.32			314.41
15	0130-1300*	2000-2400	13.25	67		12.42			314.51
16	0-1000	1830-2400	13.22	64		12.39			314.48
17	0-1500	2030-2400	13.21	76		12.38			314.47
18	0-0800	2130-2400	13.25	44		12.42			314.51
19	0-1200		13.42	48		12.58			314.67
21	1630-2400		12.97	32		12.16			314.25
23	0-0430	0830-2400*	-4.18	80		-3.92	148	318.40	314.48
24	0-0800		-4.18	32		-3.92			314.48
25	1430-2400*		-4.85	39		-4.55			313.85
26	0-2400*		-4.50	90		-4.22			314.18
27	0-2400*		-4.38	96		-4.11			314.29
28	0-2400*		-4.35	95		-4.08			314.32
29	0300-2000		-4.25	70		-3.98			314.42
30	1630-2400*		-4.74	30		-4.44			313.96
31	0-2400*		-4.52	93		-4.24			314.16
							Average 27 days		314.35
Feb. 1	0-2400		-4.20	96		-3.94	148	318.40	314.46
2	0-2400*		-4.06	88		-3.81			314.59

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
Day of Month	Hours of Record Used	Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962								
Feb. 3	0-2300*	-4.03	86	19.20	-3.78	148	319.40	314.62
4	0130-2400	-4.32	92		-4.05			314.35
5	0-2400*	-4.32	88		-4.05			314.35
6	0-2400*	-4.02	92		-3.77			314.63
7	0-2400	-4.14	96		-3.88			314.52
8	0-2400	-3.91	96		-3.67			314.73
9	0-2400*	-4.12	91		-3.86			314.54
10	0-2400	-3.78	78		-3.54			314.86
17	0-2400	-3.72	96		-3.49			314.91
18	0-2400	-3.61	89		-3.38			315.02
19	0-2400	-3.56	95		-3.34			315.06
20	0-2400	-3.17	93		-2.97			315.43
21	0-1300	-3.12	51		-2.93			315.47
						Average 15 days		314.77
Mar. 1	0-2400*	14.74	95		13.82	10064	301.71	315.53
2	0-2400*	14.74	95		13.82			315.53
3	0-2400	14.64	96		13.72			315.43
4	0-2400*	14.49	86		13.58			315.29
5	0-2400*	14.45	89		13.55			315.26
6	0-0900 1330-2400	14.39	78		13.49			315.20
7	0-2400*	14.59	90		13.68			315.39
9	0-2400*	14.57	90		13.66			315.37
10	0830-2400*	14.49	59		13.58			315.29
11	0-0600 1730-2400	14.73	51		13.81			315.52
12	0-2400*	14.95	93		14.02			315.73
13	0-2400	14.82	76		13.89			315.60

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Mar. 14	0-2400*		15.11	76	19.20	14.17	10064	301.71	315.88
15	0-2400*		15.17	89		14.22			315.93
16	0-2400*		15.18	91		14.23			315.94
17	0-0630	0930-2400	15.24	85		14.29			316.00
18	0-2400		15.08	96		14.14			315.85
19	0-2400*		15.03	88		14.09			315.80
20	0-2400*		15.52	83		14.55			316.26
21	0-2400*		15.04	87		14.10			315.81
22	0-2400		15.02	96		14.08			315.79
24	0-1100		14.91	44		13.98			315.69
26	0-2400*		14.90	94		13.97			315.68
29	0-2400*		15.52	88		14.55			316.26
30	0-2400*		15.53	94		14.56			316.27
							Average 25 days		315.69
Apr. 1	0-2400		11.88	96		11.14	10072	304.86	316.00
2	0-2400		11.97	96		11.22			316.08
3	0-2400		11.94	96		11.19			316.05
4	0-1200		12.45	48		11.67			316.53
9	0-2400		11.64	96		10.91			315.77
10	0-1500		11.92	59		11.18			316.04
12	0-1100	1930-2400	13.03	44		12.22			317.08
13	0-1200	2030-2400	12.67	62		11.88			316.74
14	0-0500	2030-2400	12.45	36		11.67			316.53
15	0-1200*	2230-2400	12.73	51		11.93			316.79
16	0-1200*	1930-2400	12.58	66		11.79			316.65
17	0-1200*		12.72	43		11.92			316.78

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Apr. 20	0-1000	2030-2400	12.70	54	19.20	11.91	10072	304.86	316.77
23	0-1100		12.14	44		11.38			316.24
25	0-1100		12.37	42		11.60			316.46
26	0-0800		12.00	31		11.25			
26	1500-1800		14.68	13		13.76	4272	302.03	316.02
27	0-1200	2030-2400	14.86	63		13.93			315.96
29	0-1400	2130-2400	15.53	66		14.56			316.59
30	0-0800		15.43	32		14.47			316.50
							Average 19 days		316.40
May 3	0-2400		15.67	94		14.69	4272	302.03	316.72
4	0-2400		15.60	96		14.63			316.66
5	0-0800		15.67	20		14.69			316.72
8	0-1000	1930-2400	16.00	57		15.00			317.03
9	0-2400		15.87	89		14.88			316.91
10	0-1200	1730-2400*	15.55	71		14.58			316.61
11	0-2400*		15.50	76		14.53			316.56
12	0-2400*		15.51	88		14.54			316.57
15	0-1900	2030-2400*	16.37	89		15.35			317.38
17	0330-1200		16.01	33		15.01			317.04
18	0-2400*		15.92	91		14.92			316.95
20	0-1200	2130-2400*	15.84	55		14.85			316.88
21	0-1800*		15.75	70		14.77			316.80
22	1100-2400		15.79	56		14.80			316.83
23	0-1100		15.83	44		14.84			316.87
24	0630-1400		16.12	31		15.11			317.14
25	0730-2400		15.75	66		14.77			316.80

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
May 26	0-2400*		15.68	92	19.20	14.70	4272	302.03	316.73
27	0-0430	0730-1200	16.31	38		15.29			317.32
31	0-0600	2030-2400	15.71	40		14.73			316.76
							Average 20 days		316.86
Jun. 1	0-2400*		15.69	90		14.71	4272	302.03	316.74
2	0-2400*		15.53	91		14.56			316.59
3	0-2400*		15.62	93		14.64			316.67
4	0-0700		15.62	29		14.64			
4	1430-2400		14.46	42		13.56	6067	303.64	316.98
5	0-2400		14.22	96		13.33			316.97
6	0-2400		13.84	96		12.98			316.62
7	0-2400*		13.92	93		13.05			316.69
8	0-2400*		14.12	92		13.24			316.88
9	0-1100		14.15	44		13.27			316.91
12	0-2400*		14.03	95		13.15			316.79
13	0-2400		14.12	94		13.24			316.88
14	0-1300		14.15	52		13.27			316.91
15	0-1000		13.83	40		12.97			316.61
17	0330-2400*		13.17	82		12.35			315.99
18	0630-2400		13.50	59		12.66			316.30
19	0-2300		13.40	91		12.56			316.20
21	0530-2400*		13.77	74		12.91			316.55
22	0-2400*		13.81	87		12.95			316.59
23	0-1300	2130-2400*	13.78	50		12.92			316.56
24	0-2400*		12.93	83		12.12			315.76
25	0-2400*		12.88	91		12.08			315.72

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Jun. 26	0730-2400		13.14	68	19.20	12.32	6067	303.64	315.96
27	0-1300	1830-2400	13.43	77		12.59			316.23
28	0-2400		13.98	94		13.11			316.75
29	0-2400*		14.00	95		13.12			316.76
30	0-2400*		13.85	93		12.98			316.62
							Average 26 days		316.55
Jul. 1	0-2400*		12.85	92		12.05	6067	303.64	315.69
2	0-0900		12.84	36		12.04			315.68
3	1930-2400		13.04	20		12.22			315.86
4	0-2400*		13.15	81		12.33			315.97
5	0-2400*		12.99	88		12.18			315.82
6	0-0800		13.40	32		12.56			316.20
8	0-2400*		13.56	87		12.71			316.35
9-10	2130-2400	0-0800	13.33	44		12.50			316.14
14	0-0800	2030-2400	14.16	48		13.28	6081	302.82	316.10
15	0-1100	1930-2400	13.83	64		12.97			315.79
16	0-1100	2030-2400	13.87	59		13.00			315.82
19	0-2400		13.12	94		12.30			315.12
24	0230-1400	1730-2200	13.16	68		12.34			315.16
25	0130-1200		13.42	35		12.58			315.40
26	0730-1000	1930-2400	13.46	31		12.62			315.44
27	0-2400		12.87	96		12.07			314.89
28	0-2400		12.74	88		11.94			314.76
29	0-2400		12.73	89		11.93			314.75
30	0-2400*		12.56	91		11.78			314.60
31	0-1300		12.79	52		11.99			314.81
							Average 20 days		315.52

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Aug. 2	0-0630	1330-2400	12.94	70	19.20	12.13	6081	302.82	314.95
3	0-2400*		12.89	95		12.08			314.90
4	0-1000		12.79	40		11.99			314.81
8	0530-2400		12.54	76		11.76			314.58
9	0-1300	2030-2300	12.60	64		11.81			314.63
11	0-2400*		10.51	91		9.85			312.67
12	0-2400*		11.05	94		10.36			313.18
13	0030-1500	2130-2400	11.35	68		10.64			313.46
14	0030-1100	1930-2400	11.81	63		11.07			313.89
15	0-2400		11.78	96		11.04			313.86
16	0-2400		11.89	94		11.15			313.97
17	0030-0800		11.88	31		11.14			313.96
							Average 12 days		314.07
Sep. 14	0-1300	1930-2400	12.10	72		11.34	7344	301.83	313.17
15	0-1000		12.16	32		11.40			313.23
16	0330-1000	1930-2400	12.35	48		11.58			313.41
17	0-1200	1830-2400	12.16	72		11.40			313.23
18	0-1200	1930-2400	12.29	68		11.52			313.35
19	0-2400		11.89	96		11.15			312.98
20	0030-1200	1930-2400	11.43	67		10.72			312.55
21	0-2400*		11.02	94		10.33			312.16
25	0030-1400	1930-2300	11.33	74		10.62			312.45
26	0-1100	2030-2400	12.21	57		11.45			313.28
27	0-1230	1900-2400	11.33	73		10.62			312.45
28	0-1100	1930-2400*	11.31	56		10.60			312.43
29	0-2400		11.50	96		10.78			312.61
30	0-2400		11.71	96		10.98			312.81
							Average 14 days		312.87

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Oct. 1	0-2400		11.71	92	19.20	10.98	7344	301.83	312.81
2	0-2400		11.23	92		10.53			312.36
6	0030-0800		10.93	50		10.25			312.08
7	1830-2400		10.72	24		10.05			311.88
8	0030-2400*		10.87	84		10.19			312.02
9	0-2400*		10.98	92		10.29			312.12
10	0-2400		10.96	88		10.28			312.11
11	0-1400	2030-2400	10.98	72		10.29			312.12
12	0-1600	2030-2400	11.06	63		10.37			312.20
17	0-1000	2130-2400	5.56	78		5.21	11097	307.51	312.72
21	1830-2400		5.12	24		4.80			312.31
22	0-2400		5.11	94		4.79			312.30
23	0-2400*		5.15	94		4.83			312.34
25	0730-1900		5.64	46		5.29			312.80
27	0-2400		5.41	87		5.07			312.58
28	0-1200	1530-2400	5.31	78		4.98			312.49
29	0-0400	1730-2400	5.23	44		4.90			312.41
30	0-2400*		5.22	91		4.89			312.40
31	0930-2400*		5.26	58		4.93			312.44
							Average 19 days		312.34
Nov. 2	0-2400		5.25	76		4.92	11097	307.51	312.43
4	0-0500	1830-2400	5.47	44		5.13			312.64
5	0-2400		5.69	96		5.33			312.84
6	0-2400		5.84	96		5.48			312.99
7	0-2400		5.96	89		5.59			313.10
8	0-2400		5.93	88		5.56			313.07
9	0-2400*		5.78	92		5.42			312.93

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962									
Nov. 11	0230-1700		5.90	60	19.20	5.53	11097	307.51	313.04
12	0-0800		5.75	33		5.39			312.90
14	0-0800	1430-2400	5.72	83		5.36	11078	308.39	313.75
15	0-0400	1930-2400	5.64	36		5.29			313.68
16	0-2400		5.52	96		5.18			313.57
17	0-2400*		5.19	88		4.87			313.26
18	0-2400*		5.25	91		4.92			313.31
19	0-2400		5.25	96		4.92			313.31
20	0-2400		5.35	92		5.02			313.41
21	0-2400		5.62	96		5.27			313.66
22	0-2000		5.67	80		5.32			313.71
23	0130-2400*		5.68	91		5.33			313.72
24	0-2400		5.41	90		5.07			313.46
25	0-2400*		5.52	95		5.18			313.57
26	0-2400*		5.54	77		5.19			313.58
27	0-2400		5.42	96		5.08			313.47
28	0-2400		5.67	96		5.32			313.71
29	0-2400		5.54	94		5.19			313.58
30	0-2400		5.48	96		5.14			313.53
							Average 26 days		313.32
Dec. 1	0-2400*		5.42	92		5.08	11078	308.39	313.47
2	0-2400*		5.82	84		5.46			313.85
3	0-2400*		5.83	76		5.47			313.86
4	0-2400*		5.76	94		5.40			313.79
6	0330-2400		5.52	84		5.18			313.57
7	0-2400		6.06	96		5.68			314.07
8	0-2400		5.74	91		5.38			313.77
9	0-2400		5.76	96		5.40			313.79
10	0-2200		5.69	89		5.33			313.72
12	1730-2300		3.34	25		3.13	2425	310.84	313.97
14	0-1200	1830-2400	3.49	86		3.27			314.11

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
Day of Month	Hours of Record Used	Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1962								
Dec. 15	0-2400*	3.35	90	19.20	3.14	2425	310.84	313.98
16	0-2400*	3.37	95		3.16			314.00
17	0-2400*	3.55	93		3.33			314.17
18	0-2400	3.51	93		3.29			314.13
19	0-2400*	3.63	92		3.40			314.24
20	0-2400	3.93	96		3.68			314.52
21	0-2000	3.77	79		3.53			314.37
22	0-0900	4.22	37		3.96			314.80
						Average 19 days		314.01
1963								
Jan. 4	0430-1130	4.04	26	19.16	3.80	2425	310.84	314.64
5	0200-1030	3.99	36		3.75			314.59
6	1000-2400*	4.11	52		3.86			314.70
7	0-2400*	4.26	92		4.00			314.84
8	0-2400	4.33	96		4.07			314.91
9	0-2400	4.40	96		4.13			314.97
10	0-2400	4.28	96		4.02			314.86
11	0-2400*	4.24	89		3.98			314.82
12	0-2400*	4.10	95		3.85			314.69
13	0-2400*	4.23	95		3.97			314.81
14	0-2400	4.51	96		4.24			315.08
15	0-2400	4.38	96		4.11			314.95
16	0-2030*	4.19	81		3.94			314.78
17-18	1730-2400 0-0700	4.78	29		4.49			
18	1400-2400	13.97	42		13.12	4285	302.14	315.29

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Jan. 19	0-1200	1730-2400	13.84	80	19.16	13.00	4285	302.14	315.14
20	0-0930	1430-2400	13.29	76		12.49			314.63
21	0-2400*		13.43	92		12.62			314.76
22	0-1400		13.71	56		12.88			315.02
23	0-2400*		13.77	94	19.21	12.90			315.04
24	0-2400*		13.73	93		12.87			315.01
25	0-2400		13.78	96		12.91			315.05
26	0-2400		13.77	96		12.90			315.04
27	0-2400		13.94	96		13.06			315.20
28	0-2400		13.56	96		12.71			314.85
29	0-2400*		13.37	90		12.53			314.67
30	0-2400		13.51	96		12.66			314.80
31	0-2400		13.50	96		12.65			314.79
							Average 27 days		314.89
Feb. 1	0-2400		13.73	96		12.87	4285	302.14	315.01
2	0-2400		13.74	96		12.87			315.01
3	0-2400*		13.72	91		12.86			315.00
4	0-2400*		13.64	94		12.78			314.92
5	0-2400*		13.66	76		12.80			314.94
6	0-2400		13.81	96		12.94			315.08
7	0-2400*		14.18	95		13.29			315.43
8	0-2400		13.86	96		12.99			315.13
9	0-2400		13.57	96		12.72			314.86
10	0-2400*		13.71	92		12.85			314.99
11	0-2400		13.86	96		12.99			315.13
12	0-2400*		13.66	92		12.80			314.94

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Feb. 25	1530-2400		14.50	36	19.79	13.19	4285	302.14	315.33
26	0-1200		14.68	26		13.35			315.49
27	0830-2400*		14.60	60		13.28			315.42
							Average 15 days		315.11
Mar.1-2	1930-2400	0-1200	4.72	48		4.29	2423	311.19	315.48
3	0230-1400	1830-2400	4.72	72		4.29			315.48
4	0-1300	2130-2400	4.67	61		4.25			315.44
6	1830-2400		4.90	24		4.46			315.65
7	0-2400*		4.89	95		4.45			315.64
8	0-2400		4.98	96		4.53			315.72
9	0-2400*		5.13	95		4.67			315.86
10	0-1000	1830-2400	5.08	64		4.62			315.81
11	0330-2400*		5.21	82		4.74			315.93
15	0-2400*		5.11	88		4.65			315.84
16	0-2400*		5.11	95		4.65			315.84
17	0-2400*		5.17	90		4.70			315.89
18	0-1200*		5.34	46		4.86			316.05
19	1530-2400		4.81	35		4.37			315.56
20	0-1400	2030-2400	5.37	72		4.88			316.07
21	0-1300	2230-2400	5.58	60		5.08			316.27
22	0-1300	1930-2400	5.79	72		5.27			316.46
23	0-2400*		5.70	86		5.18			316.37
24	0-2400		5.60	96		5.09			316.28
25	0-0830		5.44	34		4.95			316.14
26	0-2400*		5.59	94		5.08			316.27

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Mar. 27	0-2400*		5.64	95	19.79	5.13	2423	311.19	316.32
28	0-2400		5.58	96		5.08			316.27
29	0-1200		5.47	47		4.98			316.17
30	0930-2400*		5.70	59		5.18			316.37
31	0-0500	1330-2400	5.25	64		4.78			315.97
							Average 26 days		315.97
Apr. 4	0-1000	1530-2400*	4.70	67		4.27	4291	312.02	316.29
5	0-1200*		4.96	41		4.51			316.53
11	0-1200		4.73	48		4.30			316.32
12	0-0830		4.78	33		4.35			316.37
13	0-2400*		4.58	95		4.17			316.19
14	0-0430	1030-2400*	5.15	73		4.68			316.70
15	0-2400		5.70	96		5.18			317.20
16	0-2400		5.41	96		4.92			316.94
17	0-0700	2130-2400	5.46	38		4.96			316.98
18	0-1000		5.75	40		5.23			317.25
20	0-0800		6.07	30		5.52			317.54
21-22	1930-2400	0-0800	6.36	52		5.78			317.80
23	0-2400*		6.00	91		5.46			317.48
24	0-2400*		5.91	65		5.38			317.40
26	1330-2400		5.68	44		5.17			317.19
27	0-0500		5.72	20		5.20			317.22
28	0-2400*		5.94	95		5.40			317.42
29	0-0800		5.95	32		5.41			317.43
30	0-2400*		6.07	92		5.52			317.54
							Average 19 days		317.04

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
May 8-9	2030-2400	0-0500	5.97	36	19.79	5.43	4291	312.02	317.45
14	1830-2400		5.07	21		4.61	2421	312.67	317.28
15	0-1300		5.25	52		4.78			317.45
16	1530-2300		5.15	32		4.68			317.35
17	1030-2400		5.34	54		4.86			317.53
20	0-1000		5.78	40		5.26			317.93
21	0-0700		5.98	28		5.44			318.11
22	0-0800	2030-2400	5.51	48		5.01			317.68
23	0-1000	1930-2400	5.57	60		5.07			317.74
24	0-0900	1830-2400	5.59	60		5.08			317.75
25	0-0700		5.75	28		5.23			317.90
27	0-0800		5.21	32		4.74			317.41
28	0-0800	1530-2400	5.37	68		4.88			317.55
29	0-1000		5.70	40		5.18			317.85
							Average 14 days		317.64
Jun. 3	0-2400		5.29	96		4.81	2421	312.67	317.48
4	0-1400*		5.63	53		5.12			317.79
5	0-1000	2030-2400	5.55	43		5.05			317.72
10	0130-2400*		5.11	86		4.65			317.32
13	0-1000		5.54	40		5.04	2402	312.54	317.58
14	0130-0800	2230-2400	5.38	36		4.89			317.43
15	0-0500	2230-2400	5.39	28		4.90			317.44
16	0-0500		5.54	20		5.04			317.58
17	0-2400*		5.24	77		4.77			317.31
18	0-2400		4.71	96		4.28			316.82

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Jun. 19	0-0700		4.65	28	19.79	4.23	2402	312.54	316.77
21	0730-2400*		4.58	63		4.17			316.71
22	0-2400*		4.46	76		4.06			316.60
25	1630-2400		4.15	32		3.77			316.31
26	0-1300	2130-2400	4.71	64		4.28			316.82
27	0-2400*		4.42	94		4.02			316.56
28	0-0900	1700-2400	4.51	65		4.10			316.64
29	0-2400*		4.24	91		3.86			316.40
30	0-0900		4.24	36		3.86			316.40
							Average 19 days		317.04
Jul. 1	0-2400*		3.29	94		2.99	2402	312.54	315.53
2	0-2400*		3.42	95		3.11			315.65
3	0-1200*	1930-2400*	3.92	66		3.57			316.11
4	0-1200*		3.69	46		3.36			315.90
5	0-2400*		3.97	77		3.61			316.15
6	0-2400*		4.18	78		3.80			316.34
7	0-2400*		3.73	93		3.39			315.93
8	0-2400*		3.57	95		3.25			315.79
9	0-2400*		3.41	91		3.10			315.64
10	0-2400*		3.38	93		3.07			315.61
11	0-0800		3.71	34		3.37			
11	1630-2400		3.21	31		2.92	18220	312.66	315.75
12	0-0800	1930-2400	3.31	52		3.01			315.67
13	0-0600	0730-1000	3.33	36		3.02			315.68
16	0-1000	1730-2400	3.30	40		3.00			315.66
17	0-2400*		2.92	91		2.66			315.32
18	0-2400*		2.54	90		2.31			314.97

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Jul. 19	0-1400*		3.04	54	19.79	2.76	18220	312.66	315.42
20	0-1200	2130-2400*	4.10	57		3.73			316.39
21	0-0300	1430-2400*	3.07	51		2.79			315.45
22	0-2400*		3.09	95		2.81			315.47
23	0-2400		2.83	96		2.57			315.23
24	0-2400*		2.87	92		2.61			315.27
25	0-1100	1930-2400*	2.68	62		2.44			315.10
26	0-2400*		2.57	93		2.34			315.00
27	0-1100*		2.30	42		2.09			314.75
29	0530-1200		2.37	28		2.16			314.82
30	0330-1100		3.07	32		2.79			315.45
							Average 27 days		315.57
Aug. 3	0-0700		2.91	30		2.65	18220	312.66	315.31
5-6	1930-2400	0-0600	5.43	42		4.94	18216	309.46	314.40
7	0-0600	2030-2400	5.66	40		5.15			314.61
8	0-0900		5.58	36		5.07			314.53
9	0-2400*		5.63	94		5.12			314.58
10	0-1000	1830-2400	5.59	64		5.08			314.54
11	0-0800		5.07	32		4.61			314.07
12	0-2400*		5.37	79		4.88			314.34
13	0-1200		5.39	48		4.90			314.36
14-15	1930-2400	0-1000	5.21	60		4.74			314.20
16	0-0800		4.59	32		4.17			313.63
21	0-0800		4.12	32		3.75			313.21
22	0-2400		5.15	96		4.68			314.14
23	0-2400		4.68	96		4.26			313.72

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Aug. 24	0-2400		4.33	96	19.79	3.94	18216	309.46	313.40
25	0-1000*		4.66	37		4.24			313.70
26	0-1000		4.56	40		4.15			313.61
27	0-1200*		3.63	44		3.30			312.76
29	0130-1500		4.44	56		4.04			313.50
30	1630-2400		6.12	32	19.62	5.61	9184	306.81	312.42
31	0-0800	2130-2400*	6.73	43		6.17			312.98
							Average 21 days		313.91
Sep. 4	0-2400*		7.31	92	19.62	6.71	9184	306.81	313.52
5	0-1100		7.40	42		6.79			313.60
6-7	2030-2400	0-2400	7.07	112		6.49			313.30
8	0-1200		7.12	39		6.53			313.34
9	0-1200	1930-2400	6.90	66		6.33			313.14
10	0-2400*		6.28	95		5.76			312.57
11	0-1100	1930-2400	6.34	62		5.82			312.63
12	0-0900	2030-2400	6.65	52		6.10			312.91
13	0-1100	2030-2400	6.21	42		5.70			312.51
14	0-1000		5.58	40		5.12			311.93
15	0730-2200		6.32	60		5.80			312.61
16	0-2400*		6.61	91		6.06			312.87
17	0-2400		6.41	95		5.88			312.69
18	0-0800		6.53	32		5.99			312.80
21-22	2030-2400	0-0700 1830-2400	6.33	68		5.81			312.62
23	0-1200	1930-2400	6.22	68		5.71			312.52

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Sep. 24	0-1200		6.21	48	19.62	5.70	9184	306.81	312.51
27	0-0600	0830-1200	6.21	40		5.70			312.51
28	0130-1000*		6.48	37		5.94			
28	1230-2400		6.64	28		6.09	11633	306.83	312.82
30	1130-2400		6.36	49		5.83			312.66
							Average 20 days		312.81
Oct. 1	1930-2400		6.41	20		5.88	11633	306.83	312.71
4-5	1930-2400	0-1200							
		1930-2400	6.76	88		6.20			313.03
6	0-1400		6.65	53		6.10			312.93
9	0-2400*		6.34	93		5.82			312.65
10	0-1200		6.37	48		5.84			312.67
11-12	1930-2400	0-0600							
		1930-2400	6.26	64		5.74			312.57
13	0-2400*		6.20	93		5.69			312.52
14	0-1200	2030-2400	5.88	63		5.39			312.22
15	0-1200		6.16	48		5.65			312.48
16	0-2400*		6.19	94		5.68			312.51
18	0-2400*		-0.29	84		-0.27	9200	312.85	312.58
19	0-2400*		-0.15	86		-0.14			312.71
20	0-2400*		-0.30	89		-0.28			312.57
21	0-1200	1730-2400	+0.34	76		+0.31			313.16
22	0-2400*		+0.16	81		+0.15			313.00
23	0-2400*		-0.11	87		-0.10			312.75
24	0-1400		+0.38	56		+0.35			313.20

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Oct. 26	0-0800	1930-2400	-0.53	52	19.62	-0.49	9200	312.85	312.36
27	0-0600		-0.52	24		-0.48			312.37
28	0230-1100	2030-2400	3.33	52		3.06	4271	310.18	313.24
29	0-1000	2030-2400	3.09	55		2.83			313.01
30	0-0600	1130-2300	2.78	71		2.55			312.73
31	0-2400*		3.24	91		2.97			313.15
							Average 23 days		312.74
Nov. 4	1830-2400			26			4271	310.18	
5	0-2400*		3.31	121		3.04			313.22
6	0-2400*		3.20	92		2.94			313.12
7	0-2400*		3.33	95		3.06			313.24
8	0-1200*	1930-2400	3.25	67		2.98			313.16
9	0-1700	2030-2400	3.01	84		2.76			312.94
10	0-1200		3.37	48		3.09			313.27
12-13	2230-2400	0-1000							
		1930-2400	3.62	67		3.32			313.50
28	0100-0800		3.94	32		3.61			313.79
29	0300-0900		3.38	27		3.10	4278	310.65	313.75
30	0100-0800	1930-2400	3.82	48		3.50			314.15
							Average 10 days		313.41
Dec. 1	0-0900	1930-2400	3.42	56		3.14	4278	310.65	313.79
2	0-2400*		3.53	89		3.24			313.89
4	0430-2200		3.59	66		3.29			313.94

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Compari-sons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1963									
Dec. 6	0-0400	1930-2400*	3.82	34	19.62	3.50	4278	310.65	314.15
7	0-1000	1230-2400	3.71	68		3.40			314.05
8	1430-2000*		3.79	36		3.48			314.13
9	0-1000	2030-2400	4.04	56		3.71			314.36
10	0-1200		4.13	48		3.79			314.44
14	0-0800	2030-2400	3.88	48		3.56			314.21
15	0-2400		4.36	96		4.00			314.65
16	0-2400*		3.99	86		3.66			314.31
17	0-0800		4.03	32		3.70			
17	1430-2400		1.45	39		1.33	9200	312.85	314.26
18	0-2400*		1.66	88		1.52			314.37
19	0230-2400*		1.72	87		1.58			314.43
20	0-1000	1930-2400	1.82	60		1.67			314.52
21	0-1500	1930-2400	2.06	80		1.89			314.52
22	0-2400		1.94	93		1.78			314.63
23	0530-2400		2.69	76		2.47			315.32
24	0-1200	1430-2400	2.37	88		2.17			315.02
25	0-2400		2.13	96		1.95			314.80
26	0-0900	1530-2400	2.05	72		1.88			314.73
27	0-1000	1730-2400	2.17	68		1.99			314.84
28	0-2400		2.43	96		2.23			315.08
29	0-1700*		2.32	67		2.13			314.98
30	0930-2400		2.02	60		1.85			314.70
31	0-2400		2.07	96		1.90			314.75
							Average 26 days		314.50

*variable traces excluded

Table 10. Indices of Air with Continuous Analyzer

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2		3	4	5	6	7	8	9
Day of Month	Hours of Record Used		Observed Scale Difference	No. of Comparisons	RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Daily Index
1964									
Jan. 1	0-2400*		2.13	94	19.52	1.96	9200	312.85	314.81
3	0-2400*		1.69	95		1.56	3756	313.73	315.29
4	1400-2400		1.26	44		1.16			314.89
5	0-1000		1.53	26		1.41			315.14
6	1430-2400*		1.26	30		1.16			314.89
7	0-1000	2130-2400	1.21	52		1.12			314.85
8	0030-1400*		1.45	53		1.34			315.07
9	0-900	1430-2400	1.31	76		1.21			314.94
10	0-2400*		1.62	93		1.49			315.22
11	0-2400*		1.74	86		1.60			315.33
12	0-2400*		2.04	86		1.88			315.61
13	0-2400*		2.13	94		1.96			315.69
15	0-1230	1830-2400	1.98	75		1.83			315.56
16	0-1130	1830-2400	2.15	68		1.98			315.71
17	0-2400*		2.18	95		2.01			315.74
18	0-1000		2.14	39		1.97			315.70
20	0-1000	1630-2400	1.92	72		1.77			315.50
21	0030-0830		1.91	34		1.76			315.49
							Average 18 days		315.30

*variable traces excluded

Table 11. Monthly Average Index of Atmospheric Carbon Dioxide (ppm) at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

1	2	3	4	5	6	7	8	9	10	11	12	13
Month	No. of Days	Index	No. of Days	Index	No. of Days	Index	No. of Days	Index	No. of Days	Index	No. of Days	Index
	1958		1959		1960		1961		1962		1963	
Jan.	-	-	22	312.53	23	313.28	31	313.52	27	314.35	27	314.89
Feb.	-	-	9	313.31	15	313.72	26	314.14	15	314.77	15	315.11
Mar.	9	313.14	15	313.59	22	314.31	25	314.85	25	315.69	26	315.97
Apr.	15	314.15	26	314.25	22	315.36	27	315.49	19	316.40	19	317.04
May.	9	314.42	15	314.66	23	316.01	26	316.32	20	316.86	14	317.64
Jun.	-	-	17	314.62	13	315.78	26	315.70	26	316.55	19	317.04
Jul.	17	312.80	25	313.35	19	314.50	16	314.95	20	315.52	27	315.57
Aug.	9	312.17	9	311.96	21	312.76	22	313.39	12	314.07	21	313.91
Sep.	3	311.25	16	311.28	21	311.32	20	312.03	14	312.87	20	312.81
Oct.	-	-	23	310.84	19	311.18	28	312.35	19	312.34	23	312.74
Nov.	18	310.93	18	312.10	28	311.97	24	312.81	26	313.32	10	313.41
Dec.	22	311.80	23	312.60	26	312.90	24	313.60	19	314.01	26	314.50

Table 12. The Monthly Average Manometric Concentration of Atmospheric Carbon Dioxide (ppm) at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

1	2	3	4	5	6	7	8	9	10	11	12	13
Month	No. of Days	Av. Conc.	No. of Days	Av. Conc.	No. of Days	Av. Conc.	No. of Days	Av. Conc.	No. of Days	Av. Conc.	No. of Days	Av. Conc.
	1958		1959		1960		1961		1962		1963	
Jan.	-	-	22	312.75	23	313.67	31	313.96	27	314.97	27	315.63
Feb.	-	-	9	313.70	15	314.20	26	314.71	15	315.48	15	315.90
Mar.	9	313.50	15	314.04	22	314.92	25	315.58	25	316.60	26	316.94
Apr.	15	314.73	26	314.85	22	316.20	27	316.36	19	317.47	19	318.25
May	9	315.06	15	315.35	23	316.99	26	317.37	20	318.03	14	318.98
Jun.	-	-	17	315.30	13	316.71	26	316.62	26	317.65	19	318.25
Jul.	17	313.08	25	313.75	19	315.15	16	315.70	20	316.40	27	316.46
Aug.	9	312.31	9	312.06	21	313.03	22	313.80	12	314.63	21	314.43
Sep.	3	311.19	16	311.23	21	311.28	20	312.14	14	313.17	20	313.09
Oct.	-	-	23	310.69	19	311.11	28	312.53	19	312.52	23	313.01
Nov.	18	310.80	18	312.23	28	312.07	24	313.09	26	313.72	10	313.83
Dec.	22	311.86	23	312.84	26	313.20	24	314.06	19	314.56	26	315.15
Average of Monthly Values		312.82		313.23		314.04		314.66		315.43		315.83

Table 13. Values of Table 12 Referred to a Constant Datum (January 1960)

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6	7	8	9
Month	Concentration of CO_2 (ppm)							Departure of Average from Annual Mean
	1958	1959	1960	1961	1962	1963	Average 1958-63	
Jan.		313.47	313.67	313.24	313.53	313.47	313.48	- .12
Feb.		314.36	314.14	313.93	313.98	313.68	314.02	.42
Mar.	314.82	314.64	314.80	314.74	315.04	314.66	314.78	1.18
Apr.	315.99	315.39	316.02	315.46	315.85	315.91	315.77	2.17
May	316.26	315.83	316.75	316.41	316.35	316.58	316.36	2.76
Jun.		315.72	316.41	315.60	315.91	315.79	315.89	2.29
Jul.	314.16	314.11	314.79	314.62	314.40	313.94	314.34	.74
Aug.	313.33	312.36	312.61	312.66	312.77	311.85	312.60	-1.00
Sep.	312.15*	311.47	310.80	310.94	311.25	310.45	310.98	-2.62
Oct.		310.87	310.57	311.27	310.54	310.71	310.79	-2.81
Nov.	311.64	312.35	311.47	311.77	311.68	311.07	311.66	-1.94
Dec.	312.64	312.90	312.54	312.68	312.46	312.33	312.59	-1.01
Annual Mean							313.60	

* Omitted from average because value is based on only 3 days of data.

Table 14. Twelve Month Running Mean Concentration of Atmospheric Carbon Dioxide at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

Col: 1	2	3	4	5	6
Month	Concentration of CO_2 (ppm)				
	1959	1960	1961	1962	1963
Jan.		313.91	314.25	315.18	315.75
Feb.		313.99	314.31	315.25	315.73
Mar.		313.99	314.38	315.34	315.73
Apr.	313.03	314.03	314.50	315.34	315.77
May	313.15	314.01	314.59	315.39	315.78
Jun.	313.23	314.04	314.66	315.43	315.83
Jul.	313.31	314.07	314.74	315.49	
Aug.	313.35	314.11	314.81	315.52	
Sep.	313.42	314.17	314.89	315.55	
Oct.	313.54	314.18	314.99	315.62	
Nov.	313.67	314.21	315.04	315.70	
Dec.	313.79	314.20	315.13	315.75	

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1960							
109	Mar. 30		M-DK	315.16		315.96		115
110	Mar. 30		M-DK	315.09		315.87		115
111	Mar. 30		M-JP	315.78	315.34	316.71	316.18	115
115	Mar. 30	1800	H-DK	315.59		316.48		115
116	Mar. 30	1800	H-DK	315.51		316.38		115
117	Mar. 30	1800	H-DK	315.25	315.45	316.07	316.31	116
112	Mar. 31	1600	M-JP	315.44		316.30		115
113	Mar. 31	1600	M-JP	315.05		315.82		115
114	Mar. 31	1600	M-JP	315.62	315.37	316.52	316.21	115
118	Date Unknown		H-JP	315.55		316.43		117
119	Date Unknown		H-JP	315.62		316.52		117
120	Date Unknown		H-JP	315.48	315.55	316.35	316.43	117
193	Apr. 23	1030	M-JP	315.70		316.62		134
194	Apr. 23	1030	M-JP	315.84		316.79		134
195	Apr. 23	1030	M-JP	315.60	315.71	316.49	316.63	134
196	Apr. 24	0800	M-JP	316.09		317.09		134
197	Apr. 24	0800	M-JP	315.90		316.86		134
198	Apr. 24	0800	M-JP	316.14	316.04	317.15	317.03	134
199	Jul. 3	1520	M-CK	314.39		315.02		141
200	Jul. 3	1520	M-CK	319.25	314.39*	320.95	315.02	141
181	Jul. 3	0900	H-JP	315.49		316.36		141
182	Jul. 3	0900	H-JP	315.49	315.49	316.36	316.36	141
183	Jul. 15	1400	H-CK	314.00		314.54		141
184	Jul. 15	1400	H-CK	314.50	314.25	315.15	314.85	141
201	Jul. 17	1700	M-CK	312.91		313.22		141
202	Jul. 17	1700	M-CK	313.60	313.26	314.06	313.64	141

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1960							
203	Aug. 1	1500	M-CK	312.22		312.38		141
204	Aug. 1	1500	M-CK	319.75	312.22*	321.55	312.38	141
185	Aug. 4	1530	H-CK	312.42		312.62		141
186	Aug. 4	1530	H-CK	312.52	312.47	312.74	312.68	141
187	Aug. 18	1000	M-CK	313.12		313.47		158
188	Aug. 18	1000	M-CK	313.20	313.16	313.57	313.52	158
189	Aug. 18	1430	H-HA	310.15		309.85		159
190	Aug. 18	1430	H-HA	310.48	310.32	310.25	310.06	159
191	Oct. 6	1450	M-JP	310.60		310.40		159
192	Oct. 6	1450	M-JP	310.56	310.58	310.35	310.38	159
193	Oct. 6	1520	H-HA	311.37		311.34		209
194	Oct. 6	1520	H-HA	313.31	311.37*	313.70	311.34	178
145	Nov. 4	1345	M-CK	315.01*		315.78		179
146	Nov. 4	1345	M-CK	363.40*				179
195	Nov. 4	1250	H-HA	311.80		311.86		209
196	Nov. 4	1250	H-HA	311.94	311.87	312.03	311.95	209
147	Nov. 25	1510	M-CK	370.47				179
148	Nov. 25	1510	M-CK					
197	Nov. 25	1300	H-HA	312.58		312.81		209
198	Nov. 25	1300	H-HA	312.65	312.62	312.90	312.86	209
149	Dec. 1	1050	M-JP	313.22		313.59		179
150	Dec. 1	1050	M-JP	313.22	313.22	313.59	313.59	179
151	Dec. 1	1050	H-HA	314.21		314.80		177
152	Dec. 1	1050	H-HA	314.48	314.34	315.13	314.96	177
153	Dec. 20	1545	M-HA	314.48		315.13		177
154	Dec. 20	1545	M-HA	315.02	314.75	315.79	315.46	177
155	Dec. 20	1545	H-CK	314.12		314.69		177
156	Dec. 20	1545	H-CK	314.57	314.34	315.24	314.96	177

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1961							
169	Jan. 4	1250	M-BL	313.58		314.03		179
170	Jan. 4	1250	M-BL	313.58	313.58	314.03	314.03	179
171	Jan. 4	1315	H-CK	314.11		314.68		179
172	Jan. 4	1315	H-CK	314.11	314.11	314.68	314.68	179
173	Jan. 17	1400	M-HA	314.47		315.12		179
174	Jan. 17	1400	M-HA	314.47	314.47	315.12	315.12	179
175	Jan. 17	1405	H-CK	319.23		320.92		183
176	Jan. 17	1405	H-CK	319.23	319.23	320.92	320.92	183
177	Feb. 2	1350	M-CK	314.52		315.18		183
178	Feb. 2	1350	M-CK	314.06	314.29	314.62	314.90	183
179	Feb. 2	1345	H-JP	314.98		315.74		183
180	Feb. 2	1345	H-JP	314.89	314.94	315.63	315.69	183
181	Feb. 17	1115	M-CK	315.26		316.08		186
182	Feb. 17	1115	M-CK	314.80	315.03	315.52	315.80	186
199	Feb. 17	1115	H-BL	314.48		315.13		177
200	Feb. 17	1115	H-BL	314.48	314.48	315.13	315.13	177
201	Mar. 1	1525	H-CK	315.20		316.01		177
202	Mar. 1	1525	H-CK	336.40	315.20*	341.84	316.01	177
185	Mar. 15	1520	M-CK	314.25		314.85		186
186	Mar. 15	1520	M-CK		314.25		314.85	
203	Mar. 15	1525	H-RJ	316.27		317.31		177
204	Mar. 15	1525	H-RJ	316.36	316.32	317.42	317.37	177
189	Apr. 4	1110	M-CK	317.29		318.55		186
190	Apr. 4	1110	M-CK	316.18	316.74	317.21	317.88	186
188	Apr. 4	1110	H-RJ	317.85		319.24		186
187	Apr. 4	1110	H-RJ	316.74	317.30	317.88	318.57	186

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1961							
I-1	May 15	1447	M-CK	335.30		340.50		200
I-2	May 15	1447	M-CK	316.00	316.00*	316.98	316.98	200
I-3	May 15	1445	H-HA	316.74		317.88		200
I-4	May 15	1445	H-HA	316.74	316.74	317.88	317.88	200
I-7	Jun. 1	1420	M-HA	315.16		315.96		206
I-8	Jun. 1	1420	M-HA	315.16	315.16	315.96	315.96	206
I-5	Jun. 1	1425	H-BL	317.20		318.44		187
I-6	Jun. 1	1425	H-BL	317.66	317.43	319.00	318.72	187
I-12	Jun. 15	1353	M-HA	315.63		316.53		200
I-13	Jun. 15	1353	M-HA	315.63	315.63	316.53	316.53	200
I-9	Jun. 15	1353	H-BL	316.74		317.88		200
I-10	Jun. 15	1353	H-BL	316.74	316.74	317.88	317.88	200
I-14	Jul. 1	1402	M-RJ	315.63		316.53		200
I-15	Jul. 1	1402	M-RJ	315.82	315.72	316.76	316.64	200
I-17	Jul. 1	1356	H-FC	316.55		317.65		200
I-18	Jul. 1	1356	H-FC	316.00	316.27	316.98	317.31	200
I-16	Jul. 15	1248	M-HA	315.45		316.31		200
I-23	Jul. 15	1248	M-HA	315.45	315.45	316.31	316.31	200
I-19	Jul. 15	1255	H-CK	315.67		316.58		222
I-20	Jul. 15	1255	H-CK	315.17	315.42	315.97	316.27	200
I-24	Aug. 1	1515	M-BL	313.21		313.58		222
I-25	Aug. 1	1515	M-BL	313.31	313.26	313.70	313.64	222
I-31	Aug. 1	1520	H-HA	313.12		313.47		222
I-34	Aug. 1	1520	H-HA	313.77	313.44	314.26	313.86	221
I-26	Aug. 15	1440	M-HE	315.22		316.03		222
I-27	Aug. 15	1440	M-HE	312.85	314.04	313.14	314.59	222

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1961							
I-32	Aug. 15	1442	H-RJ	313.94		314.47		222
I-33	Aug. 15	1442	H-RJ	313.21	313.57	313.58	314.02	222
I-28	Sep. 1	1130	M-HA	313.12		313.47		222
I-41	Sep. 1	1130	M-HA	313.31	313.22	313.70	313.59	222
I-29	Sep. 1	1130	H-CK	311.12		311.03		222
I-30	Sep. 1	1130	H-CK	311.76	311.44	311.81	311.42	222
I-42	Sep. 15	1005	M-HA	312.30		312.47		220
I-43	Sep. 15	1005	M-HA	312.39	312.35	312.58	312.53	220
I-22	Sep. 15	1020	H-CK	311.02		310.91		220
I-35	Sep. 15	1020	H-CK	309.74	310.38	309.35	310.13	220
I-44	Oct. 2	1200	M-CK	312.30		312.47		220
I-45	Oct. 2	1200	M-CK	312.30	312.30	312.47	312.47	220
I-39	Oct. 2	1200	H-JP	312.39		312.58		220
I-40	Oct. 2	1200	H-JP	313.03	312.71	313.36	312.97	220
I-46	Oct. 15	1050	M-HA	311.48		311.47		221
I-68	Oct. 15	1050	M-HA					
I-36	Oct. 15	1055	H-CK	314.96		315.71		221
I-37	Oct. 15	1055	H-CK	313.49	314.22	313.92	314.81	221
I-49	Nov. 3	1051	H-FC	314.63		315.31		249
I-50	Nov. 3	1051	H-FC	314.63	314.63	315.31	315.31	249
I-69	Nov. 3	1050	M-BL	312.85		313.14		224
I-70	Nov. 3	1050	M-BL	312.66	312.75	312.91	313.02	224
I-51	Nov. 15	1425	H-HA	314.53		315.19		249
I-52	Nov. 15	1425	H-HA	314.45	314.49	315.09	315.14	249
I-71	Nov. 15	1425	M-CK	312.85		313.14		224
I-72	Nov. 15	1425	M-CK	312.85	312.85	313.14	313.14	224

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Obseratory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1961							
I-61	Dec. 5	1455	M-CK	314.45		315.09		224
I-62	Dec. 5	1455	M-CK	314.17	314.31	314.75	314.92	224
I-63	Dec. 15	1435	M-CK	317.00		318.20		224
I-64	Dec. 15	1435	M-CK	317.00	317.00	318.20	318.20	224
I-53	Dec. 19	1440	H-CK	313.97		314.51		249
I-54	Dec. 19	1440	H-CK	313.97	313.97	314.51	314.51	249
	1962							
I-65	Jan. 1	1147	M-HE	313.99		314.53		224
I-66	Jan. 1	1147	M-HE	314.17	314.08	314.75	314.64	224
I-45	Jan. 15	1422	M-FC	313.04		313.37		249
I-46	Jan. 15	1422	M-FC	313.32	313.18	313.72	313.55	249
I-55	Feb. 1	1215	H-HA	316.97		318.16		249
I-56	Feb. 1	1215	H-BL	317.06	317.02	318.27	318.22	249
I-147	Feb. 1	1215	M-FC	315.10		315.88		249
I-148	Feb. 1	1215	M-FC	315.66	315.38	316.57	316.23	249
I-149	Feb. 15	1415	M-CK	314.81		315.53		250
I-150	Feb. 15	1415	M-HA	314.81	314.81	315.53	315.53	250
I-57	Feb. 17	1430	H-HE	315.38		316.23		249
I-58	Feb. 17	1430	H-HA	315.47	315.42	316.34	316.27	249
I-59	Mar. 1	1230	H-FC	314.07		314.63		249
I-60	Mar. 1	1230	H-FC	314.53	314.30	315.19	314.91	249
I-151	Mar. 1	1235	M-RJ	315.75		316.68		250
I-152	Mar. 1	1235	M-HE	315.75	315.75	316.68	316.68	250
I-153	Mar. 15	1435	M-CK	316.03		317.02		250
I-154	Mar. 15	1435	M-CK	316.31	316.17	317.36	317.19	250
I-155	Apr. 1	1520	M-FC	317.34		318.61		250

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col.	1	2	3	4	5	6	7	8	9
	Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
		1962							
	I-156	Apr. 1	1520	M-CK	316.12	316.73	317.13	317.87	250
	I-25	Apr. 16	1525	M-HE	316.36		317.42		258
	I-26	Apr. 16	1525	M-HE	316.46	316.41	317.54	317.48	258
	I-157	Apr. 16	1520	H-JP	317.80		319.17		257
	I-158	Apr. 16	1520	H-JP	317.32	317.56	318.59	318.88	257
	I-27	May 1	1450	M-CK	317.13		318.36		258
	I-28	May 1	1450	M-CK	317.13	317.13	318.36	318.36	258
	I-159	May 5	1125	H-CK	318.66		320.23		257
	I-160	May 5	1125	H-CK	318.66	318.66	320.23	320.23	257
	I-29	May 15	1405	M-HE	317.51		318.82		258
	I-30	May 15	1405	M-HE	317.51	317.51	318.82	318.82	258
	I-161	May 15	1410	H-FC	Broken				
	I-162	May 15	1410	H-FC	317.32	317.32	318.59	318.59	257
	I-31	Jun. 1	1835	M-CK	316.84		318.01		257
	I-32	Jun. 1	1835	M-CK	316.74	316.79	317.88	317.94	257
	I-33	Jun. 15	1420	M-CK	315.79		316.73		258
	I-34	Jun. 15	1420	M-CK	315.98	315.88	316.96	316.84	258
	I-70	Jun. 15	1307	H-FC	316.65		317.77		257
	I-71	Jun. 15	1307	H-FC	316.84	316.74	318.01	317.88	257
	I-67	Jul. 1	1442	H-HE	315.02		315.79		257
	I-72	Jul. 1	1442	H-HE	315.21	315.12	316.02	315.91	257
	I-35	Jul. 1	1615	M-CK	315.21		316.02		258
	I-36	Jul. 1	1615	M-CK	315.31	315.26	316.14	316.08	258
	I-63	Jul. 16	1105	M-HA	315.88		316.84		263
	I-64	Jul. 16	1105	M-HA	315.88	315.88	316.84	316.84	263
	I-68	Jul. 18	1460	H-HA	316.94		318.13		257

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1962							
I-69	Jul. 18	1400	H-HA	311.09	311.09*	311.00	311.00	257
I-61	Aug. 1	1130	M-HE	314.48		315.13		264
I-62	Aug. 1	1130	M-HE	314.17	314.32	314.75	314.93	264
I-37	Aug. 2	1315	H-JP	314.54		315.20		273
I-40	Aug. 2	1315	H-JP	312.86	312.86*	313.16	313.16	273
I-38	Aug. 15	1350	H-CK	313.70		314.18		273
I-39	Aug. 15	1350	H-CK	312.96	313.33	313.28	313.73	273
I-65	Aug. 16	1503	M-HA	313.65		314.12		264
I-66	Aug. 16	1503	M-HA	313.86	313.76	314.37	314.25	264
I-169	Sep. 15	1150	M-HA	312.45		312.66		284
I-170	Sep. 15	1150	M-HA	312.45	312.45	312.66	312.66	284
I-41	Sep. 18	1300	H-HA	312.43		312.63		273
I-42	Sep. 18	1300	H-HA	320.13	312.43*	322.02	312.63	273
I-43	Oct. 2	1500	H-JP	Broken				
I-44	Oct. 2	1500	H-JP	Broken				
I-171	Oct. 3	1410	M-CK	311.72		311.77		286
I-172	Oct. 3	1410	M-CK	311.63	311.67	311.66	311.70	286
I-45	Oct. 15	1350	H-HA	320.24		322.15		273
I-46	Oct. 15	1350	H-HA	Broken				
I-47	Nov. 1	1045	H-HE	312.96		313.28		273
I-48	Nov. 1	1045	H-HE	313.70	313.33	314.18	313.73	273
I-173	Nov. 2	1100	M-CK	313.01		313.34		286
I-174	Nov. 2	1100	M-CK	313.01	313.01	313.34	313.34	286
I-175	Nov. 19	0955	M-HE	313.97		314.51		280
I-176	Nov. 19	0955	M-HE	313.87	313.92	314.39	314.45	280
I-177	Dec. 2	2155	M-HE	314.21		314.80		286

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
						Manometric		
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Conc. (ppm)	Av. Conc. (ppm)	Sheet No.
	1962							
I-178	Dec. 2	2155	M-HE	314.21	314.21	314.80	314.80	286
I-163	Dec. 4	1430	H-HA	315.06		315.84		292
I-164	Dec. 4	1430	H-HA	315.06		315.84	315.84	292
I-165	Dec. 14	1225	H-CK	314.92		315.67		292
I-166	Dec. 14	1225	H-CK	314.63	314.77	315.31	315.48	292
I-179	Dec. 16	2200	M-HE	315.02		315.79		280
I-180	Dec. 16	2200	M-HE	315.02	315.02	315.79	315.79	280

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1963							
I-25	Jan. 2	2230	M-HA	318.76		320.35		299
I-26	Jan. 2	2230	M-HA	319.18	318.97	320.86	320.60	299
I-167	Jan. 3	1150	H-CK	315.92		316.88		292
I-168	Jan. 3	1150	H-CK	316.42	316.17	317.49	317.19	292
I-27	Jan. 15	2200	M-CK	315.48		316.35		299
I-28	Jan. 15	2200	M-CK	315.90	315.69	316.86	316.60	299
I-67	Jan. 17	1345	H-JP	316.98		318.18		301
I-68	Jan. 17	1345	H-JP	316.77	316.88	317.92	318.05	301
I-29	Feb. 1	2230	M-HA	316.22		317.25		299
I-30	Feb. 1	2230	M-HA	320.03	316.22*	321.90	317.25	299
I-69	Feb. 4	1035	H-HE	318.79		320.39		301
I-70	Feb. 4	1035	H-HE	318.79	318.79	320.39	320.39	301
I-71	Feb. 15	1440	H-HE	316.77		317.92		301
I-72	Feb. 15	1440	H-HE	316.66	316.71	317.79	317.85	301
I-31	Feb. 15	2240	M-HA	316.64		317.76		300
I-32	Feb. 15	2240	M-HA	316.64	316.64	317.76	317.76	300
I-33	Mar. 1	2200	M-HA	316.64		317.76		300
I-34	Mar. 1	2200	M-HA	316.64	316.64	317.76	317.76	300
I-13	Mar. 3	1315	H-HE	317.92		319.32		305
I-14	Mar. 3	1315	H-HE	317.82	317.87	319.20	319.26	305
I-35	Mar. 17	2245	M-CK	317.17		318.41		300
I-36	Mar. 17	2245	M-CK	316.85	317.01	318.02	318.21	300
I-15	Mar. 15	1400	H-CK	318.03		319.46		305
I-16	Mar. 15	1400	H-CK	316.49	316.49*	317.58	317.58	305
I-17	Apr. 2	1135	H-CK	318.54		320.08		305
I-18	Apr. 2	1135	H-CK	317.72	318.13	319.08	319.58	305

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1963							
I-37	Apr. 3	0045	M-HE	317.41		318.70		303
I-38	Apr. 3	0045	M-HE	317.63	317.52	318.97	318.83	303
I-19	Apr. 20	1410	H-HE	318.91		320.53		305
I-20	Apr. 20	1410	H-HE	318.91	318.91	320.53	320.53	305
I-39	Apr. 20	2100	M-HA	319.50		321.25		303
I-41	Apr. 20	2100	M-HA	319.28	319.39	320.98	321.11	303
I-193	May 1	2200	M-CK	318.98		320.61		333
I-194	May 1	2200	M-CK	318.89	318.94	320.50	320.56	333
I-21	May 3	1400	H-JP	320.57		322.55		305
I-22	May 3	1400	H-JP	320.16	320.36	322.05	322.30	305
I-23	May 15	1345	H-HE	320.68		322.69		305
I-24	May 15	1345	H-HE	320.26	320.47	322.18	322.43	305
I-195	Jun. 2	2200	M-HA	318.43		319.94		333
I-196	Jun. 2	2200	M-HA	318.15	318.29	319.60	319.77	333
I-205	Jun. 5	1420	H-HA	318.51	318.51*	320.04	320.04	337
I-206	Jun. 5	1420	H-HA	Broken				337
I-197	Jun. 15	2245	M-MK	317.78		319.15		333
I-198	Jun. 15	2245	M-MK	317.51	317.64	318.82	318.98	333
I-207	Jun. 15	1440	H-HA	318.51		320.04		337
I-208	Jun. 15	1440	H-HA	319.06	318.78	320.71	320.37	337
I-211	Jul. 3	1210	H-JP	317.96		319.37		337
I-212	Jul. 3	1210	H-JP	317.59	317.78	318.92	319.15	337
I-199	Jul. 5	0715	M-MK	318.15		319.60		333
I-200	Jul. 5	0715	M-MK	317.78	317.96	319.15	319.37	333
I-213	Jul. 15	1027	H-HE	316.95		318.14		337
I-214	Jul. 15	1027	H-HE	316.95	316.95	318.14	318.14	337

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Manometric Conc. (ppm)	Manometric Av. Conc. (ppm)	Sheet No.
	1963							
I-201	Jul. 16	2205	M-HA	317.60		318.93		333
I-202	Jul. 16	2205	M-HA	316.95	317.28	318.14	318.54	333
I-215	Aug. 1	1600	H-HE	313.45		313.87		337
I-216	Aug. 1	1600	H-HE	313.82	313.64	314.32	314.11	337
I-43	Aug. 2	2300	M-HE	317.05		318.26		333
I-204	Aug. 2	2300	M-HE	316.68	316.86	317.81	318.03	333
I-45	Aug. 15	2235	M-CK	314.28		314.89		333
I-46	Aug. 15	2235	M-CK	314.28	314.28	314.89	314.89	333
I-71	Aug. 17	1125	H-JP	315.20		316.01		337
I-72	Aug. 17	1125	H-JP	315.20	315.20	316.01	316.01	337
I-69	Sep. 2	1400	H-CK	314.74		315.45		338
I-70	Sep. 2	1400	H-CK	315.11	314.92	315.88	315.67	338
I-47	Sep 4	2200	M-HE	314.10		314.67		334
I-48	Sep. 4	2200	M-HE	313.91	314.00	314.43	314.54	334
I-37	Sep. 17	0800	M-HE	313.45		313.87		334
I-38	Sep. 17	0800	M-HE	313.36	313.40	313.76	313.81	334
I-67	Sep. 18	1300	H-HE	312.89		313.19		338
I-68	Sep. 18	1300	H-HE	313.35	313.12	313.75	313.47	338
I-39	Oct. 1	2200	M-CK	Broken				
I-40	Oct. 1	2200	M-CK	313.63	313.63*	314.09	314.09	334
I-61	Oct. 1	1315	H-JP	314.00		314.54		338
I-62	Oct. 1	1315	H-JP	313.91	313.96	314.43	314.50	338
I-63	Oct. 15	1400	H-HA	314.64		315.32		338
I-64	Oct. 15	1400	H-HA	318.42	314.64*	319.93	315.32	338
I-41	Oct. 17	2300	M-HE	313.54		313.98		334
I-42	Oct. 17	2300	M-HE	313.54	313.54	313.98	313.98	334

* Single Sample Only

Table 15. Indices and Manometric Concentration of Flask Samples at Mauna Loa Observatory and Hilo.

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9
						Manometric		
Flask No.	Date	Hour LST	Place and Observer	Index (ppm)	Average Index (ppm)	Conc. (ppm)	Av. Conc. (ppm)	Sheet No.
	1963							
I-65	Nov. 4	1435	H-JP	314.64		315.32		338
I-66	Nov. 4	1435	H-JP	315.11	314.88	315.90	315.62	338
I-25	Dec. 17	2150	M-CK	316.65		317.77		346
I-26	Dec. 17	2150	M-CK	316.45	316.55	317.53	317.65	346
	1964							
I-27	Jan. 15	1900	M-CK	316.84		318.01		347
I-28	Jan. 15	1900	M-CK	316.74	316.79	317.88	317.94	347

Table 16. Indices and Manometric Concentrations of Air with Continuous Analyzer for Times of Flask Sampling

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9	10
Day of Month	Time LST	Observed Scale Difference	Barometric Pressure (inches)	Adjusted RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Air Index	Manometric Conc.
1960									
Mar. 31	1600	12.30	20.045	19.25	11.47	4275	303.52	314.99	315.75
Apr. 23	1030	12.50	20.080	19.25	11.64	4275	303.52	315.16	315.96
Apr. 24	0800	12.60	20.090	19.25	11.73	4275	303.52	315.25	316.07
Jul. 3	1520	8.80	20.085	19.25	8.19	7366	306.02	314.21	314.80
Jul. 17	1700	11.60	20.080	19.25	10.80	3758	302.67	313.47	313.90
Aug. 1	1500	9.90	20.105	19.25	9.21	3758	302.67	311.88	311.96
Aug. 18	1000	6.40	20.075	19.25	5.96	6081	306.69	312.65	312.90
Oct. 6	1450	- 8.20	20.080	19.25	- 7.64	7366	317.73	310.09	309.78
Nov. 4	1345	-11.50	20.040	19.25	-10.73	7361	322.30	311.57	311.58
Dec. 1	1050	12.10	20.070	19.25	11.27	7362	301.10	312.37	312.56
Dec. 20	1545	11.30	20.090	19.25	10.52	7362	301.10	311.62	311.64
1961									
Jan. 4	1250	3.60	20.070	19.04	3.39	3758	310.73	314.12	314.69
Jan. 17	1400	3.30	19.935	19.04	3.13	3758	310.73	313.86	314.37
Feb. 2	1350	- 0.70	20.155	19.04	- 0.66	4275	314.01	313.35	313.75
Feb. 17	1115	0.70	20.000	19.04	0.66	4275	314.01	314.67	315.36
Mar. 15	1520	17.60	20.070	19.04	16.58	10075	298.32	314.90	315.64
Apr. 4	1110	19.20	20.065	19.04	18.09	10075	298.32	316.41	317.48
May 15	1447	13.15	20.060	19.04	12.40	10068	303.70	316.10	317.10
Jun. 1	1420	12.60	20.090	19.04	11.86	10068	303.70	315.56	316.45
Jun. 15	1353	12.60	20.085	19.04	11.86	10068	303.70	315.56	316.45
Jul. 1	1402	- 3.90	20.130	19.04	- 3.66	10067	319.35	315.69	316.60
Jul. 15	1248	- 4.40	20.055	19.04	- 4.15	10067	319.35	315.20	316.01
Aug. 1	1515	4.75	20.115	19.04	4.47	4272	308.08	312.55	312.78
Aug. 15	1440	5.00	20.150	19.04	4.69	4272	308.08	312.77	313.05
Sep. 1	1130	5.90	20.140	19.04	5.54	4272	308.08	313.62	314.08
Sep. 15	1005	4.70	20.100	19.04	4.42	7355	307.53	311.95	312.05

Table 16. Indices and Manometric Concentrations of Air with Continuous Analyzer for Times of Flask Sampling

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9	10
Day of Month	Time LST	Observed Scale Difference	Barometric Pressure (inches)	Adjusted RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Air Index	Manometric Conc.
1961									
Oct. 2	1200	5.30	20.105	19.04	4.98	7355	307.53	312.51	312.73
Nov. 3	1050	- 9.85	19.985	19.04	- 9.32	136	322.02	312.70	312.96
Nov. 15	1425	- 9.60	20.040	19.04	- 9.06	136	322.02	312.96	313.28
Dec. 5	1405	- 6.80	19.990	19.04	- 6.43	3752	321.12	314.69	315.39
Dec. 15	1435	-13.85	20.060	19.04	-13.06	3751	327.03	313.97	314.51
1962									
Jan. 1	1147	-14.10	20.170	19.12	-13.16	3751	327.03	313.87	314.39
Jan. 15	1422	12.50	19.905	19.12	11.82	7364	302.09	313.91	314.43
Feb. 1	1215	- 4.20	19.970	19.12	- 3.96	148	318.40	314.44	315.08
Feb. 15	1015	- 3.75	20.000	19.12	- 3.53	148	318.40	314.87	315.60
Mar. 1	1235	14.60	19.960	19.12	13.77	10064	301.71	315.48	316.35
Mar. 15	1435	15.30	19.950	19.12	14.44	10064	301.71	316.15	317.16
Apr. 1	1520	11.85	20.090	19.12	11.11	10072	304.86	315.97	316.94
Apr. 16	1525	11.60	20.000	19.12	10.92	10072	304.86	315.78	316.71
May 1	1050	15.80	20.005	19.12	14.83	4272	302.03	316.86	318.03
May 15	1405	16.35	20.090	19.12	15.32	4272	302.03	317.35	318.63
Jun. 1	1835	15.85	20.060	19.12	14.88	4272	302.03	316.91	318.09
Jun. 15	1420	13.10	20.070	19.12	12.29	6067	303.64	315.93	316.90
Jul. 1	1615	12.00	20.065	19.12	11.26	6067	303.64	314.90	315.64
Jul. 16	1105	13.80	20.100	19.12	12.93	6081	302.82	315.75	316.68
Aug. 1	1130	12.70	20.210	19.12	11.83	6081	302.82	314.65	315.34
Aug. 15	1500	11.50	20.160	19.12	10.74	6081	302.82	313.56	314.01
Sep. 15	1150	11.40	20.090	19.12	10.68	7344	301.83	312.51	312.73
Oct. 3	1410	10.35	20.075	19.12	9.71	7344	301.83	311.54	311.55
Nov. 2	1100	5.30	20.050	19.12	4.98	11097	307.51	312.49	312.70
Nov. 19	0955	5.40	20.120	19.12	5.05	11078	308.39	313.44	313.86
Dec. 2	2155	5.60	20.055	19.12	5.26	11078	308.39	313.65	314.12

Table 16. Indices and Manometric Concentrations of Air with Continuous Analyzer for Times of Flask Sampling

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	6	7	8	9	10
Day of Month	Time LST	Observed Scale Difference	Barometric Pressure (inches)	Adjusted RSF	Computed Index Difference	Reference Tank No.	Reference Tank Index	Air Index	Manometric Conc.
1962									
Dec. 16	2210	3.70	20.080	19.12	3.47	2425	310.84	314.31	314.92
1963									
Jan. 2	2230	6.50	20.055	19.10	6.07	2425	310.84	316.91	318.10
Jan. 15	2200	4.00	19.980	19.10	3.77	2425	310.84	314.61	315.29
Feb. 1	2230	13.80	19.925	19.18	13.00	4285	302.14	315.14	315.93
Mar. 1	2200	4.80	20.015	19.74	4.37	2423	311.19	315.56	316.45
Mar. 17	2245	4.95	20.065	19.74	4.50	2423	311.19	315.69	316.60
Apr. 3	0045	5.30	20.035	19.74	4.83	2423	311.19	316.02	317.01
Apr. 20	2100	5.80	20.080	19.74	5.27	4291	312.02	317.29	318.55
May 1	2200	6.30	20.140	19.74	5.71	4291	312.02	317.73	319.09
Jun. 2	2200	5.40	20.160	19.74	4.89	2421	312.67	317.56	318.88
Jun. 15	2245	5.00	20.110	19.74	4.54	2402	312.54	317.08	318.30
Jul. 5	0715	4.40	20.140	19.74	3.98	2402	312.54	316.52	317.62
Jul. 16	2205	3.60	20.040	19.74	3.28	18220	312.66	315.94	316.91
Aug. 2	2300	2.70	20.115	19.74	2.45	18220	312.66	315.11	315.90
Aug. 15	2235	4.60	20.070	19.74	4.18	18216	309.46	313.64	314.11
Sep. 4	2200	7.20	20.135	19.56	6.58	9184	306.81	313.39	313.80
Sep. 17	0800	6.90	20.080	19.56	6.32	9184	306.81	313.13	313.48
Oct. 1	2200	6.30	20.085	19.56	5.77	11633	306.83	312.60	312.84
Oct. 17	2300	0.20	20.060	19.56	0.18	9200	312.85	313.03	313.36
Dec. 17	2150	1.80	20.045	19.56	1.65	9200	312.85	314.50	315.15
1964									
Jan. 15	1900	2.20	20.110	19.45	2.02	3756	313.73	315.75	316.68

Table 17. Comparison of Continuous Analyzer and Flask Samples at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	1	2	3	4	5
Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)	Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)
1960					1961				
Mar. 31	1600	316.30	315.75	-0.55	Jan. 17	1400	315.12	314.37	-0.75
		315.82		-0.07			315.12		-0.75
		316.52		-0.77	Feb. 2	1350	315.18	313.75	-1.43
Apr. 23	1030	316.62	315.96	-0.66			314.62		-0.87
		316.79		-0.83	Feb. 17	1115	316.08	315.36	-0.72
		316.49		-0.53			315.52		-0.16
Apr. 24	0800	317.09	316.07	-1.02	Mar. 15	1520	314.85	315.64	+0.79
		316.86		-0.79	Apr. 4	1110	318.55	317.48	-1.07
		317.15		-1.08			317.21		+0.27
Jul. 3	1520	315.02	314.80	-0.22	May 15	1447	340.50	317.10	-23.40
		320.95		-6.15			316.98		+0.12
Jul. 17	1700	314.06	313.90	-0.16	Jun. 1	1420	315.96	316.45	+0.49
		313.22		+0.68			315.96		+0.49
Aug. 1	1500	312.38	311.96	-0.42	Jun. 15	1353	316.53	316.45	-0.08
		321.55		-9.59			316.53		-0.08
Aug. 18	1000	313.47	312.90	-0.57	Jul. 1	1402	316.53	316.60	+0.07
		313.57		-0.67			316.76		-0.16
Oct. 6	1450	310.40	309.78	-0.62	Jul. 15	1248	316.31	316.01	-0.30
		310.35		-0.57			316.31		-0.30
Nov. 4	1345	315.78	311.58	-4.20	Aug. 1	1515	313.58	312.78	-0.80
		374.74		-63.17			313.70		-0.92
Dec. 1	1050	313.59	312.56	-1.03	Aug. 15	1440	316.03	313.05	-2.98
		313.59		-1.03			313.14		-0.09
Dec. 20	1545	315.13	311.64	-3.49	Sep. 1	1130	313.47	314.08	+0.61
		315.79		-4.15			313.70		+0.38
1961					Sep. 15	1005	312.47	312.05	-0.42
Jan. 4	1250	314.03	314.69	+0.66			312.58		-0.53
		314.03		+0.66					

Table 17. Comparison of Continuous Analyzer and Flask Samples at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	1	2	3	4	5
Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)	Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)
1961					1962				
Oct. 2	1200	312.47	312.73	+0.26	May 1	1050	318.36	318.03	-0.33
		312.47		+0.26			318.36		-0.33
Nov. 3	1050	313.14	312.96	-0.18	May 15	1405	318.82	318.63	-0.19
		312.91		+0.05			318.82		-0.19
Nov. 15	1425	313.14	313.28	+0.14	Jun. 1	1835	318.01	318.09	+0.08
		313.14		+0.14			317.88		+0.21
Dec. 5	1405	315.09	315.39	+0.30	Jun. 15	1420	316.73	316.90	+0.17
		314.75		+0.64			316.96		-0.06
Dec. 15	1435	318.20	314.51	-3.69	Jul. 1	1615	316.02	315.64	-0.38
		318.20		-3.69			316.14		-0.50
1962					Jul. 16	1105	316.84	316.68	-0.16
Jan. 1	1147	314.53	314.39	-0.14			316.84		-0.16
		314.75		-0.36	Aug. 1	1130	315.13	315.34	+0.21
Jan. 15	1422	313.37	314.43	+1.06			314.75		+0.59
		313.72		+0.71	Aug. 15	1500	314.12	314.01	-0.11
Feb. 1	1215	315.88	315.08	-0.80			314.37		-0.36
		316.57		-1.49	Sep. 15	1150	312.66	312.73	+0.07
Feb. 15	1015	315.53	315.60	+0.07			312.66		+0.07
		315.53		+0.07	Oct. 3	1410	311.77	311.55	-0.22
Mar. 1	1235	316.68	316.35	-0.33			311.66		-0.11
		316.68		-0.33	Nov. 2	1100	313.34	312.70	-0.64
Mar. 15	1435	317.02	317.16	+0.14			313.34		-0.64
		317.36		-0.20	Nov. 19	0955	314.51	313.86	-0.65
Apr. 1	1520	318.61	316.94	-1.67			314.39		-0.53
		317.13		-0.19	Dec. 2	2155	314.80	314.12	-0.68
Apr. 16	1525	317.42	316.71	-0.71			314.80		-0.68
		317.54		-0.83					

Table 17. Comparison of Continuous Analyzer and Flask Samples at Mauna Loa Observatory

MAUNA LOA CARBON DIOXIDE PROJECT

Col. 1	2	3	4	5	1	2	3	4	5
Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)	Date	Time LST	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)
1962					1963				
Dec. 16	2210	315.79	314.92	-0.87	Aug. 2	2300	318.26	315.90	-2.36
		315.79		-0.87			317.81		-1.91
1963					Aug. 15	2235	314.89	314.11	-0.78
Jan. 2	2230	320.35	318.10	-2.25			314.89		-0.78
		320.86		-2.76	Sep. 4	2200	314.67	313.80	-0.87
Jan. 15	2200	316.35	315.29	-1.06			314.43		-0.63
		316.86		-1.57	Sep. 17	0800	313.87	313.48	-0.39
Feb. 1	2230	317.25	315.93	-1.32			313.76		-0.28
		321.90		-5.97	Oct. 1	2200	314.09	312.84	-1.49
Mar. 1	2200	317.76	316.45	-1.31	Oct. 17	2300	313.98	313.36	-0.62
		317.76		-1.31			313.98		-0.62
Mar. 17	2245	318.41	316.60	-1.81	Dec. 17	2150	317.77	315.15	-2.62
		318.02		-1.42			317.53		-2.38
Apr. 3	0045	318.70	317.01	-1.69	1964				
		318.97		-1.96	Jan. 15	1900	318.01	316.68	-1.33
Apr. 20	2100	321.25	318.55	-2.70			317.88		-1.20
		320.98		-2.43					
May 1	2200	320.61	319.09	-1.52					
		320.50		-1.41					
Jun. 2	2200	319.94	318.88	-1.06					
		319.60		-0.72					
Jun. 15	2245	319.15	318.30	-0.85					
		318.82		-0.52					
Jul. 5	0715	319.60	317.62	-1.98					
		319.15		-1.53					
Jul. 16	2205	318.93	316.91	-2.02					
		318.14		-1.23					

Table 18. Comparison of Continuous Analyzer and Flask Samples at Mauna Loa Observatory

Date	Time	CO_2 Concentration (ppm) Flask	Analyzer	Departure (ppm)
1964				
Jun. 30	2000	320.55	315.86	-4.69
		318.04		-2.18
Jul. 13	1900	318.04	316.77	-1.27
		-	-	-
Jul. 31	2300	316.07	314.34	-1.73
		316.37		-2.03
Aug. 18	0600	315.48	314.34	-1.14
		315.87		-1.53
Aug. 31	2100	315.56	315.06	-0.50
		315.46		-0.40
Sep. 15	0000	314.29	312.24	-2.05
		314.58		-2.34
Oct. 2	2300	314.04	310.53	-3.51
		313.94		-3.41
Oct. 14	1000	319.20	312.87	-6.33
		316.16		-3.29
Oct. 31	2130	315.29	314.10	-1.19
		315.14		-1.04
Nov. 14	2200	315.84	313.74	-2.10
		315.24		-1.50
Nov. 30	2330	315.00	314.01	-0.99
		315.00		-0.99
Dec. 17	0700	-	314.50	-
		315.94		-1.44
Dec. 31	0900	315.94	315.26	-0.68
		315.74		-0.48
1965				
Jan. 13	1400	316.27	315.64	-0.63
		315.98		-0.34
Jan. 29	1000	318.96	315.92	-3.04
		316.12		-0.20
Feb. 16	0800	317.54	316.48	-1.06
		322.32		-5.84
Mar. 4	0700	316.81	317.15	-0.34
		317.10		-0.05
Mar. 17	0600	317.34	316.54	-0.80
		317.10		-0.56
Mar. 31	0900	317.54	317.21	-0.33
		317.88		-0.67

STATION MAUNA LOA OBSERVATORY Freezer Temp. -86.7°F
CARBON DIOXIDE REFERENCE TANK TEST Freezing Unit defrosted 312 hours ago

SHEET NO. 73
DATE 19 JAN 1961
OBSERVER JCP & CK

	I_o I_s	Scale Diff.* (I_s-I_o)	I_o II	Scale Diff. (II-I_o)	I_s II	Scale Diff. (II-I_s)	II W_n	Scale Diff. (W-11)	II W_{n+1}	Scale Diff. (W-II)
Tank No.	4277 A-17	-37.4	7344 A-17	-4.3	7344 4277	+33.4	7344 3758	-3.9	7344 4272	-0.7
Tank Press. (PSI)	1360 1500	-37.4	800 1500	-4.3	800 1360	+33.3	790 400	-4.0	790 2120	-0.7
Flow Rate (LPM)	07	-37.5		-4.2		+33.3		-3.8		-0.7
Zero Setting	750	-37.5		-4.3		+33.3		-3.8		-0.9
Span Setting	480	-37.4		-4.2		+33.3		-3.9		-0.6
Time Test Began	0943	-37.4	1025	-4.2	1113	+33.2	1156	-3.8	1239	-0.5
Time Test Ended	1025	-37.6	1113	-4.0	1156	+33.4	1239	-3.8	1335	-0.4
No. of Scale		-37.5		-4.3		+33.3		-3.9		-0.4
Diff.'s Recorded	10	-37.6	10	-4.0	10	+33.4	10	-3.8	10	-0.4
		-37.5		-4.2		+33.2		-3.8		-0.5
Average Scale Diff.*		-37.48		-4.20		+33.31		-3.85		-0.58

*Record Individual Diff.'s to 0.1 deci-inches

Compute Average to 0.01 deci-inches

FIGURE 1.

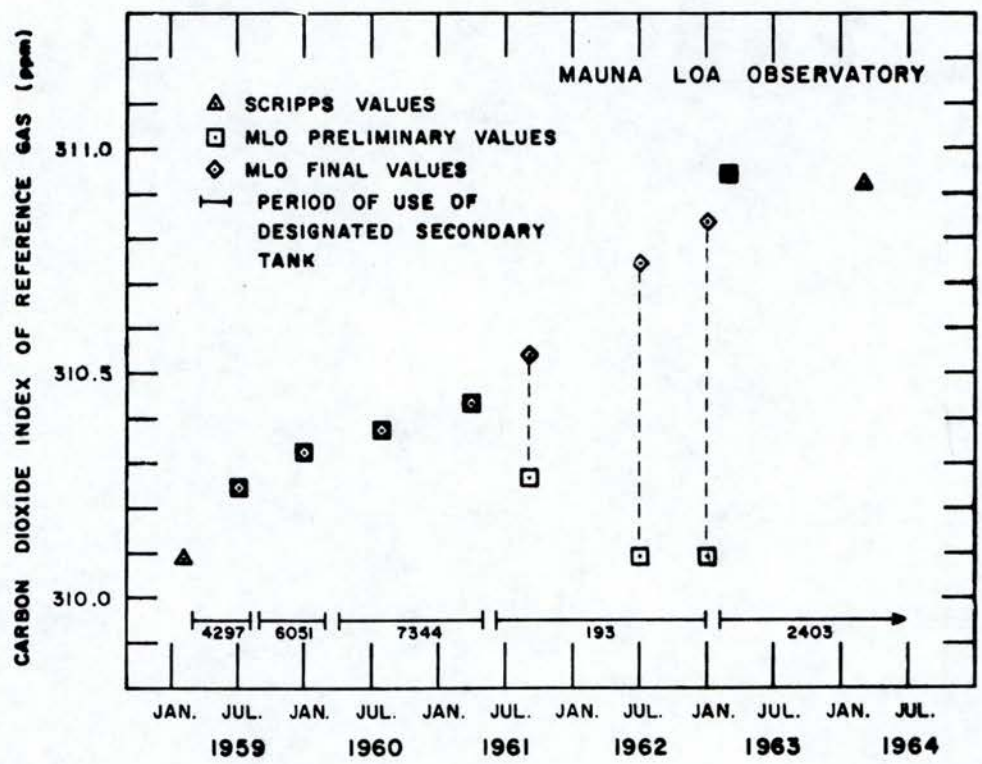

FIGURE 2. PERIOD AVERAGE INDEX VALUES (IN PPM) OF PRIMARY TANK NO. A-17.

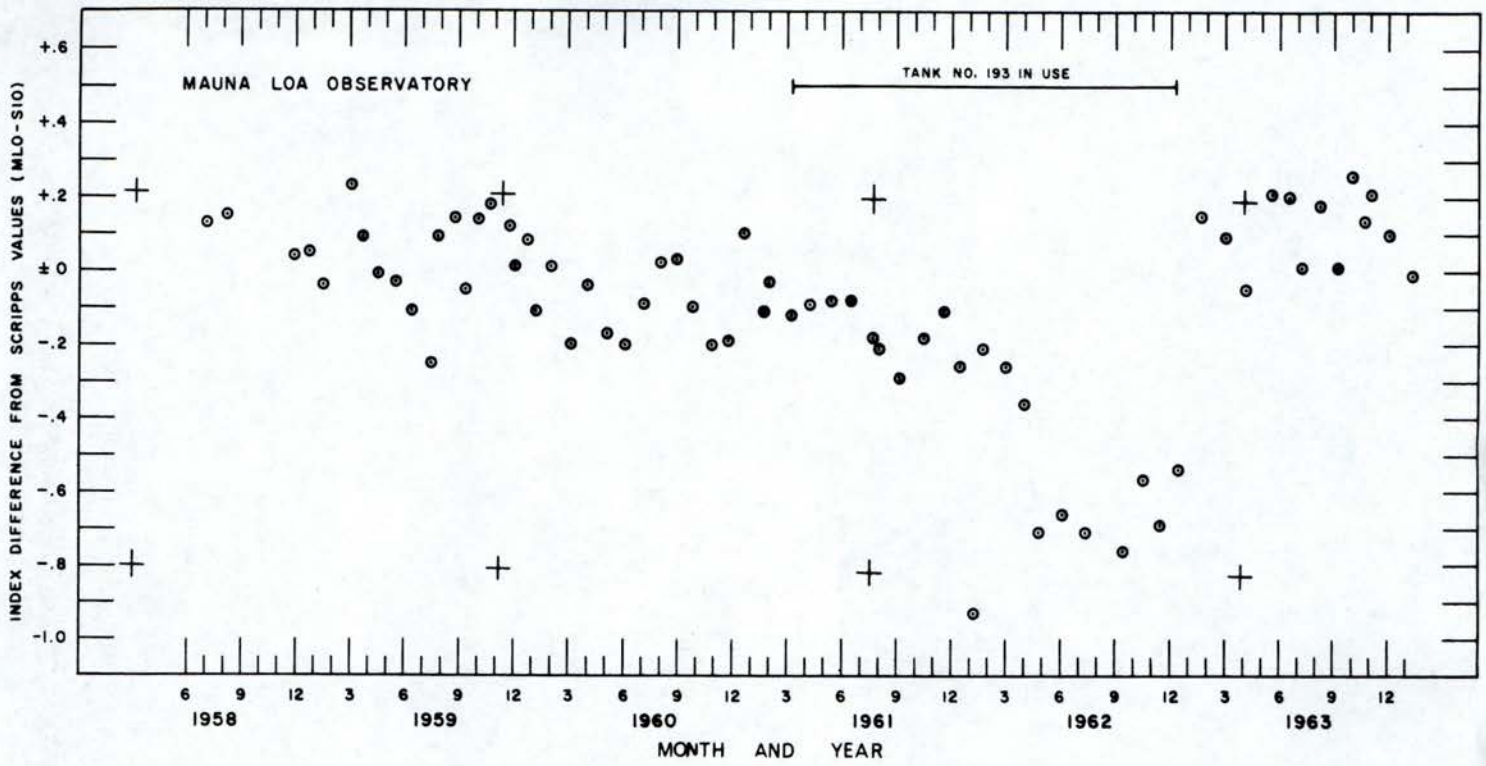

FIGURE 3. COMPARISON OF SCRIPPS AND MAUNA LOA INDEX VALUES OF WORKING REFERENCE GASES (BEFORE ADJUSTMENT).

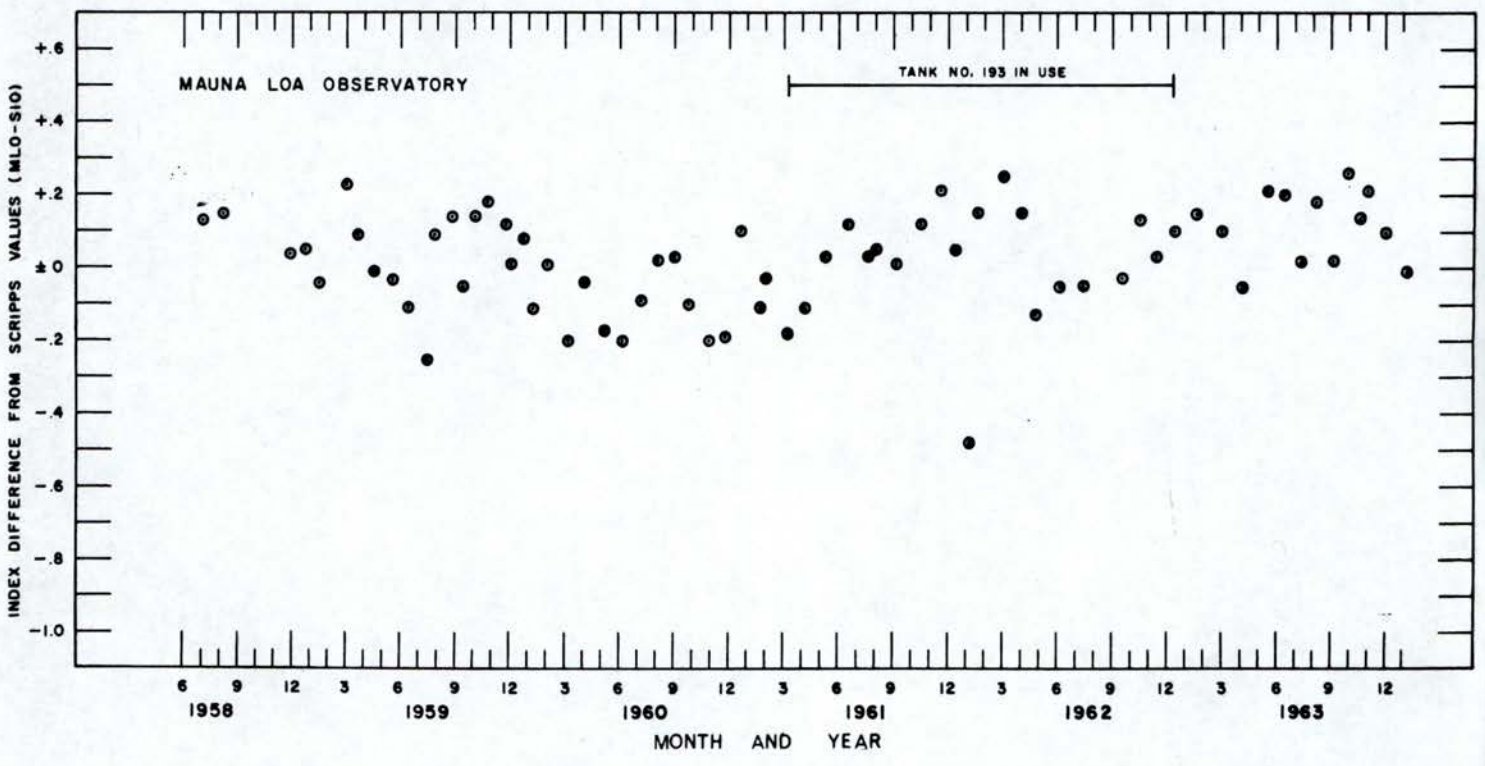

FIGURE 4. COMPARISON OF SCRIPPS AND LAUNA LOA INDEX VALUES OF WORKING REFERENCE GASES (AFTER ADJUSTMENT).