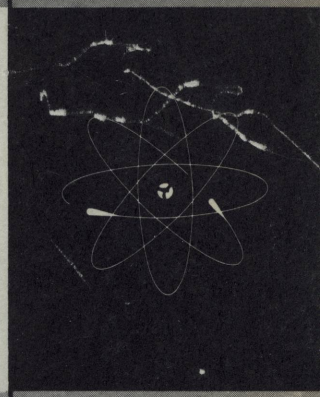
health and safety laboratory



FALLOUT PROGRAM
QUARTERLY SUMMARY REPORT

July 1, 1964

UNITED STATES ATOMIC ENERGY COMMISSION
NEW YORK OPERATIONS OFFICE

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HEALTH AND SAFETY LABORATORY

FALLOUT PROGRAM
QUARTERLY SUMMARY REPORT

(March 1, 1964 through June 1, 1964)

Prepared by

Edward P. Hardy, Jr.
Joseph Rivera
William R. Collins, Jr.

Environmental Studies Division

Preceding reports in this series:

HASL-42, -51, -65, -77, -84, -88, -95, -105, -111, -113, -115, -117, -122, -127, -131, -132, -135, -138, -140, -142, and -144.

July 1, 1964

UNITED STATES ATOMIC ENERGY COMMISSION

New York Operations Office

FALLOUT PROGRAM

QUARTERLY SUMMARY REPORT

July 1, 1964

ABSTRACT

This report presents current data from the HASL Fallout Program, the New Zealand Department of Scientific and Industrial Research, the National Radiation Laboratory in New Zealand, Argonne National Laboratory, and Hazleton-Nuclear Science Corporation. Radionuclide levels in fallout, milk, tap water, and upper air samples are given in tabular form. Also included are interpretive reports and notes dealing with air radioactivity measurements along the slope of Mauna Loa Volcano, global deposition of strontium-90 during 1963, cesium-137 in foods as measured by gamma spectroscopy and a radiochemical method, and strontium-90 in human bones during 1963. A bibliography of recent literature pertinent to fallout studies is given at the end of the report.

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Introduction

Every three months, the Health and Safety Laboratory issues a report summarizing current information obtained at HASL pertaining to fallout. This report, the latest in the series, contains information that became available during the period from March 1, 1964 to June 1, 1964. The next report is scheduled for publication on October 1, 1964. Preceding reports in the series, starting with HASL-42, "Environmental Contamination from Weapons Tests", and continuing through HASL-51, -65, -69, -77, -84, -88, -95, -105, -111, -113, -115, -117, -122, -127, -131, -132, -135, -138, -140, -142, -144, and 146 (this report); may be purchased from the Office of Technical Service, U.S. Department of Commerce, Washington 25, D.C.

To give a more complete picture of the current fallout situation and to provide a medium for rapid publication of fallout data, these quarterly reports often contain information from other laboratories and programs, some of which are not part of the general AEC program. To assist in developing, as rapidly as possible, provisional interpretations of the data, special interpretive reports and notes prepared by scientists working in the field of fallout are also included from time to time. Many of these scientists are associated in some way with the general AEC program. Information developed outside of HASL is identified as such and is gratefully acknowledged by the Laboratory. In this report, data from the New Zealand Department of Scientific and Industrial Research, the National Radiation Laboratory in New Zealand, Division of Biological and Medical Research at Argonne National Laboratory, and Hazleton-Nuclear Science Corporation, are included.

A portion of the radiochemical analyses are carried out by commercial laboratories under contract to the HASL Environmental Studies and Radiochemistry Divisions. The results of these analyses are reported as part of HASL's regular fallout program. The contractor analytical laboratories are Nuclear Science and Engineering Corporation, Pittsburgh, Pennsylvania; Isotopes, Incorporated, Westwood, New Jersey; Radiochemistry, Incorporated, Louisville, Kentucky; Tracerlab, Incorporated, Richmond, California; Controls for Radiation, Incorporated, Cambridge, Massachusetts; Hazleton-Nuclear Science Corporation, Palo Alto, California and Food, Chemical & Research Laboratories, Incorporated, Seattle, Washington.

This report is divided into four main parts:

1. HASL Fallout Program Data,
2. Data from Sources Other Than HASL,
3. Interpretive Reports and Notes, and
4. Recent Publications Related to Fallout.

FALLOUT PROGRAM

Quarterly Summary Report

July 1, 1964

Part I - HASL Fallout Program Data

1. Fallout Deposition Collections

1.1 Monthly Precipitation

1.11 Sr-89 and Sr-90 at 152 World-Wide Sites

At present, there are 49 monthly monitoring sites in the United States and 107 in foreign countries. A map showing the sites is presented as Figure 1, page 4. These collections are made using either stainless steel pots with exposed areas of 0.82 square feet, or plastic funnels with exposed areas of 0.77 square feet to which are attached ion-exchange columns.

In late 1958 and 1959, the monthly samples were analyzed for strontium-90 and strontium-89. The strontium-89 measurements were discontinued in 1960 at most sites and resumed starting with the September 1961 collections. Starting with the 1960 May and June collections, the monthly samples were combined on a two-month basis since strontium-90 levels had dropped considerably. Analyses of individual monthly collections were resumed in September 1961.

The data are presented in tables 1a and 1b, pages 5 through 166. Where strontium-89 to strontium-90 ratios are reported, the strontium-89 results have been extrapolated to midpoint of the sampling month. An asterisk (*) indicates that strontium-89 was assayed but not detected, while a dash (--) means that no strontium-89 analysis was made. Monthly strontium-90 levels for New York City since 1954 are shown in graph form in Figure 2, page 39. The 1962 and 1963 data for New York City have been corrected and an explanation follows in section 1.12 below. In July 1963, rainwater collections were initiated aboard a weather ship stationed in the North Atlantic. Available data for this site are given on page 61.

1.12 Corrections to New York City Precipitation and Sr-90 Data

In order to measure the anticipated low levels of strontium-90 activity in New York City monthly fallout in 1960, the 0.82 square foot stainless steel pot collector was replaced by a 12.5 square foot stainless steel funnel in February of that year. Up to the end of 1961, these strontium-90 deposition measurements agreed reasonably well with similar data obtained at Westwood, New Jersey which is seventeen miles due north of the HASL station. At Westwood, both pot and column collectors have been operated by Isotopes, Inc. since the spring of 1959. When the monthly data for the New York and Westwood sites were normalized for rainfall differences, the specific activity figures, i.e. pc Sr-90/liter, were comparable.

Throughout 1962 and 1963, the agreement between the two sites was poor and indicated that the New York data were low by about 38 percent when considered on an annual basis. Beginning in February 1964, the 0.82 square foot pot collections were resumed at the HASL site and comparative data available through April 1964 have led to the conclusion that the 12.5 square foot funnel is a less efficient fallout

collector than the pot. The reasons for this are not clear but the first course of action taken was to report the HASL pot rather than the funnel measurements beginning in February 1964.

The strontium-90 deposition data for 1962 and 1963 obtained using the 12.5 square foot collector and reported in previous Quarterly reports, have been tentatively corrected in the following manner: the Westwood, N.J. pot and column data were converted from mc/mi^2 to pc/liter using the Westwood precipitation data. The two specific activity figures for each month were averaged. The New York City precipitation values were then multiplied by the Westwood average specific activities to obtain mc/mi^2. The 1962 and 1963 data reported in this Quarterly for New York City are the corrected values as described above. It is expected that pot and column precipitation collections which were carried out during 1962 and 1963 and saved for future studies, will be analyzed for strontium-90. These data will be reported when available. In the meantime, the corrected monthly values for 1962 and 1963 should be used cautiously and with the understanding that they are subject to change pending analyses of other precipitation samples collected during the same period.

Precipitation data for New York City are normally obtained directly through the U.S. Weather Bureau Office, now located at Rockefeller Plaza. The official precipitation records are based on measurements made at the Central Park station. From April 1959 through July 1961, the New York City precipitation figures reported in the U.S. Department of Commerce publication, "Monthly Climatic Data for the World", were used instead. It was assumed that these data represented the official New York City figures. A recent inquiry revealed the fact that data from this source were for La Guardia Airport and were not the official precipitation figures for New York City. The previously reported precipitation data for April 1959 through July 1961 have been replaced in this Quarterly by the Central Park data which, except for this period of time, had always been reported.

The monthly strontium-90 and precipitation data reported on page 38 and the strontium-90 data plotted in Figure 2, p. 39, include all the corrected figures.

1.13 Fission Product Radionuclides at 4 United States Sites Through June 1963

Duplicate monthly collections at Westwood, New Jersey; Pittsburgh, Pennsylvania; Richmond, California, and Houston, Texas have been analyzed for other fission product radionuclides in addition to strontium-89 and strontium-90. Depending upon the activity levels and laboratory facilities, these have included zirconium-95, ruthenium-103, ruthenium-106, cesium-137, barium-140, cerium-141, cerium-144, and plutonium-239. Duplicate monthly collections at Louisville, Kentucky were analyzed for cerium-144 and plutonium-239 but these analyses were discontinued in June of 1961. The data for Westwood, Pittsburgh, Richmond, and Houston are presented on pages 34, 44, 16, and 54, respectively. Collections and analyses at Pittsburgh, Richmond, and Houston were discontinued in June 1963. From July 1963 through June 1964, single monthly collections at Westwood, New Jersey; Appleton, Wisconsin; Chattanooga, Tennessee; Palo Alto, California; Midwest City, Oklahoma; and Seattle, Washington, will be analyzed for manganese-54, iron-55, strontium-89, strontium-90, zirconium-95, antimony-124, cesium-137, and cerium-144. These data are reported on page 172.

HASL MONTHLY FALLOUT SAMPLING NETWORK

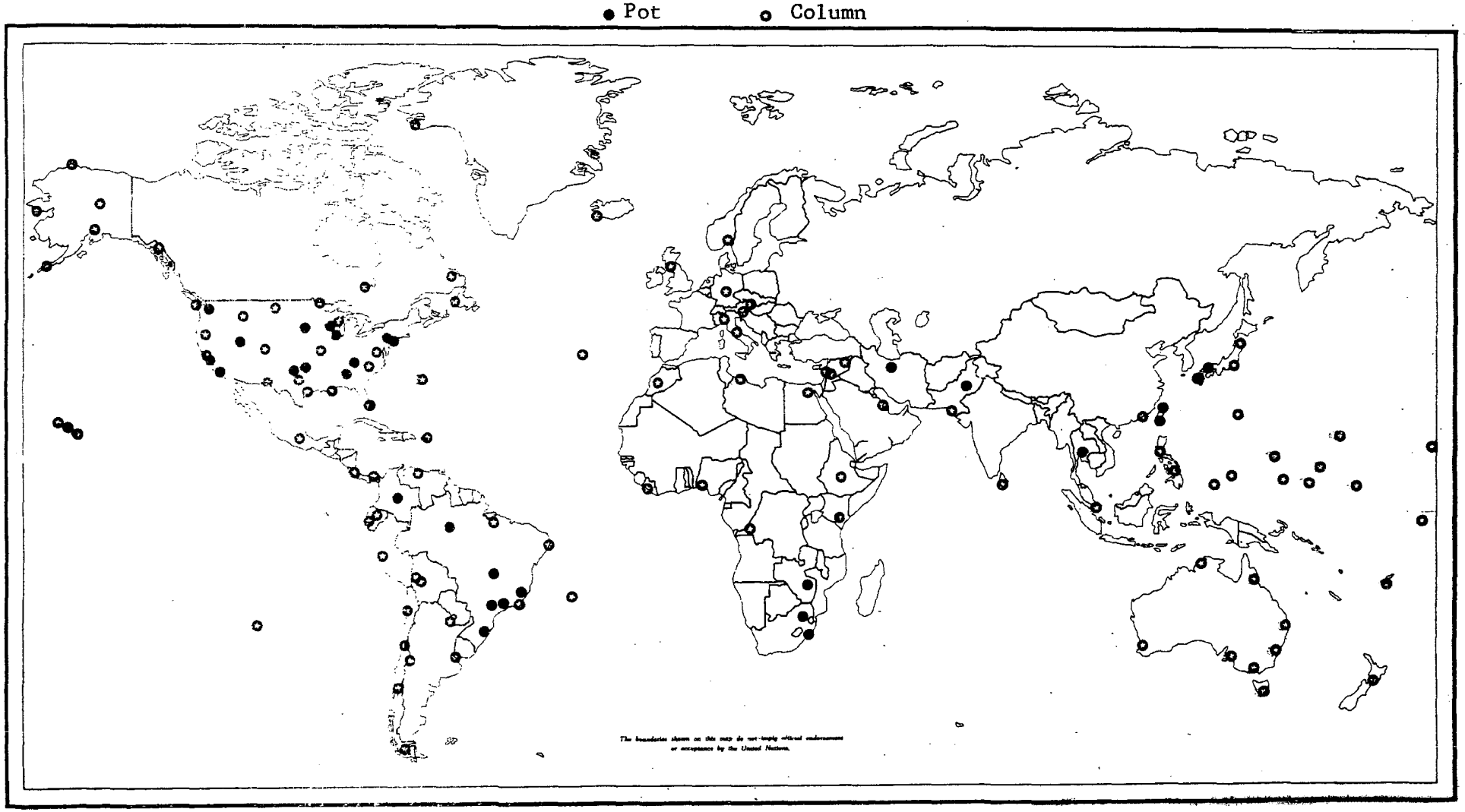


FIGURE 1

Monthly Fallout Deposition Collections: United States Sites

Site: ALABAMA, BIRMINGHAM (Pot) 33°30'N, 86°55'W, ~alt. 600 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec.
1957	Precip. (in.)				5.41	2.96	7.70	2.62	4.19	9.59	1.81	5.67	4.01
	Sr-90 (mc/mi^2)				0.83	0.39	0.95	0.80	1.10	0.42	0.34	0.22	0.40
	Sr-89/Sr-90				--	9.4	31	--	8.4	67	75	20	18
1958	Precip. (in.)	3.42	5.14	3.03	3.51	2.33	3.10	6.79	1.98	5.74	2.31	3.38	1.29
	Sr-90 (mc/mi^2)	0.66	0.24	0.38	1.67	1.17	0.65	2.11	1.06	0.49	0.26	0.60	1.09
	Sr-89/Sr-90	17	12	16	14	15	38	42	44	39	26	48	50
1959	Precip. ~~(in.)~~	4.16	3.52	5.13	2.81	8.27	2.09	3.61	3.64	5.95	6.21	3.84	2.46
	Sr-90 (mc/mi^2)	1.27	1.50	6.17	lost	3.05	1.57	1.68	lost	0.44	0.20	0.28	0.28
	Sr-89/Sr-90	38	48	5.5	"	11.6	4.5	2.7	"	3.9	*	0.66	*
1960	Precip. (in.)	5.05	3.36	6.31	2.28	2.28	2.74	2.06	4.09	2.73	3.45	3.24	3.21
	Sr-90 (mc/mi^2)	0.31	0.29	0.82	0.51	1.41		0.48		0.28		0.14	
	Sr-89/Sr-90	*	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.49	17.67	9.22	4.33	2.45	4.85	10.17	3.56	2.42	2.05	4.29	13.98
	Sr-90 (mc/mi^2)	0.60		1.34		1.61		0.62		0.21	0.10	0.97	1.92
	Sr-89/Sr-90	--		--		--		--		28	62	72	59
1962	Precip. (in.)	8.64	4.39	5.21	2.99	1.26	3.59	3.89	3.49	3.69	2.03	6.41	2.55
	Sr-90 (mc/mi^2)	4.52	2.88	3.72	8.29	1.72	1.80	1.35	1.46	0.79	lost	2.94	1.19
	Sr-89/Sr-90	46	25	22	14	11	9	21	15	15	--	53	50
1963	Precip. (in.)	7.32	3.25	6.31	6.70	3.72	8.44						
	Sr-90 (mc/mi^2)	3.82	1.49	4.93	13.45	6.99	7.87	12.81	2.29	1.32	0.33	0.13	2.00
	Sr-89/Sr-90	26	39	18	13	6.9	2.5	*	*	*	1.0	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	2.36	6.18										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, ANCHORAGE (Column) 61°10'N, 149°59'W, ~alt. 90 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		0.95	0.85	1.32	0.73	0.02	4.43	3.75	1.68	0.86	0.69	1.39
	Sr-90 (mc/mi^2)		not	lost	1.20	0.96	0.24	1.84	0.60	0.27	0.10	0.06	0.14
	Sr-89/Sr-90		recd.	"	13	6.8	6.3	2.9	1.3	0.8	1.4	1.9	*
1960	Precip. (in.)	0.72	0.45	0.22	0.33	0.42	0.24	2.76	3.70	4.79	0.39	0.39	1.04
	Sr-90 (mc/mi^2)	0.21	0.21	0.17	0.26	0.00		0.00		0.32	not	0.14	
	Sr-89/Sr-90	--	--	--	--	--		--		--	recd.	--	
1961	Precip. (in.)	1.57	0.46	0.35	1.37	0.47	1.48	2.20	1.93	5.50	2.81	0.77	1.06
	Sr-90 (mc/mi^2)	0.44			0.15	0.15		0.39		0.28	0.34	0.19	0.82
	Sr-89/Sr-90	--			--	--		--		63	53	83	59
1962	Precip. (in.)	0.88	0.74	0.58	0.25	1.57	3.40	0.72	1.92	1.45	1.56	0.49	1.18
	Sr-90 (mc/mi^2)	0.27	0.65	0.57	0.91	0.85	2.28	1.10	1.99		0.52	0.32	0.55
	Sr-89/Sr-90	70	32	19	19	9	6	4	16		28	29	44
1963	Precip. (in.)	2.17	1.35	1.48	1.78	0.44	1.82		2.85	0.98	1.01	0.12	1.65
	Sr-90 (mc/mi^2)	0.83	2.25	1.09	2.02	1.68	3.58	not	10.37	1.63	0.82	0.32	0.50
	Sr-89/Sr-90	33	26	14	10	7.2	3.1	recd.	1	*	*	*	*
1964	Precip. (in.)	0.35	1.15										
	Sr-90 (mc/mi^2)	0.42	0.56										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, BARROW (Column) 71°16'N, 156°50'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)				0.31	0.17	0.01	1.42	1.16	1.12	1.28	0.06	0.15
	Sr-90 (mc/mi^2)				0.03	0.38	0.18	0.82	0.18	0.02	0.02	0.03	0
	Sr-89/Sr-90				12	8	5.7	3.6	2.4	*	*	*	*
1960	Precip. (in.)	0.14	1.30	0.07	0.44	0.20	0.23	0.20	1.18	0.53	0.37	0.02	0.39
	Sr-90 (mc/mi^2)	0.50	0.19	0.18	0.14	0.17		lost		0.15		0.08	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.27	0.07	0.22	0.15	0.01	0.08	1.80	1.31	0.31	0.44	0.19	0.11
	Sr-90 (mc/mi^2)	0.65		0.16		0.08		0.27		0.12	0.03	0.01	≤0.01
	Sr-89/Sr-90	--		--		--		--		33	32	*	*
1962	Precip. (in.)	0.88	0.66	0.24	0.26	5.60				0.98	0.53		0.06
	Sr-90 (mc/mi^2)	≤0.01	≤0.01	≤0.01	0.02	1.99	1.19	not	not	1.52	0.01	not	≤0.01
	Sr-89/Sr-90	*	*	≥8	18	10	5	recd.	recd.	18	16	recd.	*
1963	Precip. (in.)	0.52	0.27										
	Sr-90 (mc/mi^2)	0.16	0.31	not	not	not	not	not	not	0.19	0.92	0.13	0.03
	Sr-89/Sr-90	40	19	recd.	recd.	recd.	recd.	recd.	recd.	0.58	0.07	0.23	0.24
										*	*	*	--

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, COLD BAY (Column) 55°,12'N, 162°43'W,

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		3.50	0.88	2.34	2.56	2.08	3.23	2.25	5.27	4.35	5.93	1.37
	Sr-90 (mc/mi^2)		1.03	not	2.07	1.86	3.55	1.77	0.57	0.39	0.16	0.60	0.45
	Sr-89/Sr-90		29	recd.	9	11	5.0	3.1	1.4	0.46	1.2	0.4	0.6
1960	Precip. (in.)	3.75	2.42	0.65	1.54	1.97	1.57	1.18	4.33	2.75	4.00	8.94	4.72
	Sr-90 (mc/mi^2)	not	0.32	0.21	0.01	0.40		0.33		0.26		0.23	
	Sr-89/Sr-90	recd.	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.95	1.62	1.73	1.68	0.95	0.12	1.08	3.50	1.93	1.91	4.10	2.79
	Sr-90 (mc/mi^2)	0.16		0.40		0.03		lost	lost	0.36	0.44	0.75	not
	Sr-89/Sr-90	--		--		--				78	75	85	recd.
1962	Precip. (in.)	2.53	1.53		0.76	2.37	0.12	3.42	1.98	3.84	4.16	2.57	1.02
	Sr-90 (mc/mi^2)	not	not	not	0.68	3.94	2.58	0.84	1.78	1.30	0.45	0.61	0.28
	Sr-89/Sr-90	recd.	recd.	recd.	14	7	10	15	13	24	33	41	43
1963	Precip. (in.)	4.91	0.43	3.02	1.66	1.32	1.06	4.28	2.69	3.61	3.02	1.46	2.01
	Sr-90 (mc/mi^2)	0.79	0.61	1.87	3.11	2.70	2.74	7.30	5.98	3.78	0.97	0.79	0.64
	Sr-89/Sr-90	30	29	13	4	5.9	1.2	2	*	*	*	*	*
1964	Precip. (in.)	1.33	1.73										
	Sr-90 (mc/mi^2)	1.56	1.19										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, FAIRBANKS (Column) 64°49'N, 147°52'W, ~alt. 468 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)			0.20	0.39	0.24	0.79	1.38	1.57	3.05	0.92	0.41	0.23
	Sr-90 (mc/mi^2)			0.18	0.22	0.29		0.35		0.07		0.00	
	Sr-89/Sr-90			--	--	--		--		--		--	
1961	Precip. (in.)	0.27	0.17	0.47	0.37	0.24	0.89	2.38	2.85	1.91	1.17	0.47	0.59
	Sr-90 (mc/mi^2)	0.00		0.20		0.48		0.16		0.38	0.04	0.07	0.14
	Sr-89/Sr-90	--		--		--		--		32	70	58	51
1962	Precip. (in.)	0.69	1.26	0.76	0.27	0.62	2.22	4.35	5.00	0.43	0.28	0.17	0.56
	Sr-90 (mc/mi^2)	0.22	0.58	0.47	0.21	0.57	2.56	1.96	1.70	0.34	0.17	0.64	0.10
	Sr-89/Sr-90	58	27	19	10	9	7	6	33	51	28	43	50
1963	Precip. (in.)	1.78	0.27	2.10	0.49	0.11	2.01	2.45	2.51	0.19	1.63	0.18	0.38
	Sr-90 (mc/mi^2)	0.39	0.90	1.56	1.04	0.78	6.29	6.57	4.20	0.48	0.45	0.05	0.19
	Sr-89/Sr-90	36	25	18	11	5.6	*	2	*	*	2.1	*	*
1964	Precip. (in.)	0.21(1)	0.46(2)										
	Sr-90 (mc/mi^2)	0.15	0.28										
	Sr-89/Sr-90	*	0.3										

(1) 4.8" snow.
(2) 9.9" snow.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, JUNEAU (Column) 58°22'N, 134°35'W, ~alt. 16.5 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)					3.79	1.36	7.39	5.75	5.84	6.04	6.82	5.88
	Sr-90 (mc/mi^2)					5.63	1.43	1.78	0.94	0.47	0.24	0.54	0.34
	Sr-89/Sr-90					7.5	5.0	3.2	1.8	0.90	0.86	0.4	0.8
1960	Precip. (in.)	3.86	2.05	5.26	1.57	1.57	3.54	4.33	4.77	8.66	8.95	5.12	0.39
	Sr-90 (mc/mi^2)	0.44	0.25	0.40	0.28	0.88		1.20		not	0.56	0.16	not
	Sr-89/Sr-90	--	--	--	--	--		--		recd.	--	--	recd.
1961	Precip. (in.)	3.76	4.07	2.67	3.92	4.75	3.22	6.04	12.31	7.01	10.20	6.10	4.04
	Sr-90 (mc/mi^2)		0.46	1.21		0.98		1.00		not	1.46	0.89	0.73
	Sr-89/Sr-90		--	--		--		--		recd.	94	82	62
1962	Precip. (in.)	6.99	0.76	5.00	1.99	2.85	4.75	4.75	5.21	9.75	7.39	4.03	8.16
	Sr-90 (mc/mi^2)	1.03	0.16	1.33	0.13	1.35	3.60	2.54	0.92	3.68	2.43	1.86	1.84
	Sr-89/Sr-90	46	*	30	15	9	10	8	8	23	32	47	42
1963	Precip. (in.)	6.55		3.75	3.85	2.02	4.53	5.22	1.20		7.78	3.91	4.56
	Sr-90 (mc/mi^2)	2.26	not	6.57	1.81	2.92	7.25	13.13	3.62	not	0.97	1.06	2.36
	Sr-89/Sr-90	49	recd.	19	10	8.3	4.3	2	*	recd.	3.7	*	*
1964	Precip. (in.)	3.14	8.48										
	Sr-90 (mc/mi2)	2.20	4.06										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ALASKA, NOME (Column) 64°30'N, 165°30'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		0.93	0.17	0.17	1.09	0.39	1.79	1.79	2.76	1.27	0.39	1.03
	Sr-90 (mc/mi^2)		0.21	0.12	0.08	0.18		0.04		not	0.15	0.00	
	Sr-89/Sr-90		--	--	--	--		--		recd.	--	--	
1961	Precip. (in.)	0.92	trace	0.18	2.15	0.38	2.80	3.45	1.94				
	Sr-90 (mc/mi^2)	not received		0.00		0.72		0.31		not	not	not	not
	Sr-89/Sr-90	--	--	--		--		--		recd.	recd.	recd.	recd.
1962	Precip. (in.)	0.97		0.83	0.16	0.59	0.43			1.70			
	Sr-90 (mc/mi^2)	1.10	not	2.42		0.36	0.68	not	not	3.18	not	not	not
	Sr-89/Sr-90	24	recd.	15		11	8	recd.	recd.	12	recd.	recd.	recd.
1963	Precip. (in.)	2.04											0.96
	Sr-90 (mc/mi^2)	1.74	not	not	not	not	not	not	not	not	not	not	0.53
	Sr-89/Sr-90	36	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, W. LOS ANGELES (Pot) . 34°04'N, 118°27'W, ~alt. 410 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)												0.49
	Sr-90 (mc/mi^2)												0.15
	Sr-89/Sr-90												44
1957	Precip. (in.)	3.88	1.94	0.95	1.33	0.27	0.06	0.03	0	0	1.51	0.51	2.10
	Sr-90 (mc/mi^2)	0.99	0.76	0.09	0.84	0.24	0.12	0.92	0.05	0.04	0.26	0.27	0.20
	Sr-89/Sr-90	15	--	--	--	15	13	0.9	4.0	6.9	17	18	20
1958	Precip. (in.)	1.49	6.26	5.25	2.04	0.01	trace	trace	0.02	0.03	0.32	trace	0.01
	Sr-90 (mc/mi^2)	0.44	0.90	1.30	1.50	0.05	0.10	0.16	0.08	0.08	0.15	0.11	0.07
	Sr-89/Sr-90	14	11	24	9	48	4	2	36	29	39	35	21
1959	Precip. (in.)	1.11	3.72	0	0.39	trace	trace	trace	trace	0.04	0.01	0.06	1.11
	Sr-90 (mc/mi^2)	1.82	3.31	0.10	0.63	0.22	0.09	0.09	0.05	0.03	0.12	0.03	0.39
	Sr-89/Sr-90	41	28	15	12	8.5	3.4	*	7.0	*	0.67	*	*
1960	Precip. (in.)	2.83	2.90	0.21	2.00	trace	trace	trace	0.00	trace	trace	2.67	0.06
	Sr-90 (mc/mi^2)	0.25	0.18	lost	0.13	0.12		0.08		0.10		0.15	
	Sr-89/Sr-90	--	2.8	--	--	--		--		--		--	
1961	Precip. (in.)	1.28	trace	0.46	0.29	trace	trace	0.01	0.30	0.04	trace	2.02	1.44
	Sr-90 (mc/mi^2)	0.17		0.20		0.05		0.60		0.15	0.09	1.66	0.91
	Sr-89/Sr-90	--		--		--		--		5.8	43	74	51
1962	Precip. (in.)	2.68											0.2
	Sr-90 (mc/mi^2)	1.81	8.51	1.38	0.18	0.19	0.14	0.11	0.16	0.05	0.26	0.11	0.20
	Sr-89/Sr-90	40	34	20	10	5	4	6	11	18	40	24	35
1963	Precip. (in.)									0.85	0.65	3.35	0.3
	Sr-90 (mc/mi^2)	0.50	2.59	8.38	4.09	0.60	1.52	0.12	0.28	1.17	0.69	1.09	0.07
	Sr-89/Sr-90	27	35	9.2	9	8.4	3.4	*	*	*	0.5	*	*
1964	Precip. (in.)	1.58	0.01										
	Sr-90 (mc/mi^2)	0.53	0.10										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, PALO ALTO (POT)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)												2.38
	Sr-90 (mc/mi^2)												0.75
													0.73
	Sr-89/Sr-90												45
													44
1963	Precip. (in.)	3.34	1.89	4.47	4.02	5.84	0.01						
	Sr-90 (mc/mi^2)	2.24	3.50	3.58	4.72	2.11	0.27						
		2.29	3.22	3.58	4.86	2.19	0.29						
	Sr-89/Sr-90	33	22	14.2	9.92	5.9	4.6						
		34	22	14.7	9.62	6.0	4.3						

monthly collections from July 1963 are reported on page 171 and include, in addition to Sr^{90} and Sr^{89}, other fission product and tracer radionuclides.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, PALO ALTO (COLUMN)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)												2.38
	Sr-90 (mc/mi^2)												0.58
													0.58
	Sr-89/Sr-90												47
													46
1963	Precip. (in.)	3.34	1.89	4.47	4.02	5.84	0.01	0	trace	0.18	0.99	2.74	trace
	Sr-90 (mc/mi^2)	1.88	1.30	3.04	4.52	1.98	0.51	0.10	0.21	0.32	0.53	1.23	0.19
		1.86	1.28	3.09	3.38	1.59	0.32						
	Sr-89/Sr-90	34	23	15.5	9.9	6.0	4.0	2.8	2.9	1.8	1.2	1.0	0.5
		36	24	15.2	10.2	6.3	4.21						
1964	Precip. (in.)	3.41	0.04	1.41									
	Sr-90 (mc/mi^2)	1.99	0.26	1.03									
	Sr-89/Sr-90	0.6	0.3	0.1									

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, RICHMOND (Column) 37°56'N, 108°38'W, ~Alt. 65 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1961	Precip. (in.)							0	0.08	0.30	0.09	5.80	0.38
	Sr-90 (mc/mi^2)							0.012	0.038	≤0.02	0.064	lost	0.239
								≤0.014	0.044	0.036	0.064	0.86	0.258
	Sr-89/Sr-90							---		≥16	8.7	--	48
								---		7.2	9.6	93	49
1962	Precip. (in.)	1.19	6.26	3.17	0.31	0	0	dry	0.10	0.10	6.50	0.90	3.30
	Sr-90 (mc/mi^2)	0.69	3.13	2.43	0.72	0.049	0.157	0.101	0.129	0.148	1.00	0.938	1.05
		0.74	3.29	2.04	0.66	0.052	0.116	0.115	0.139	0.190	0.98	0.310	0.958
	Sr-89/Sr-90	40	29	14	11	8.4	5.2	3.3	7.8	8.5	16	15	36
		36	29	17	12	7.3	4.6	2.5	7.4	7.6	16	44	37
1963	Precip. (in.)	4.45	2.12	3.97	4.30	0.45	dry						
	Sr-90 (mc/mi^2)	2.62	2.25	4.01	6.21	1.67	0.306						
		2.58	1.85	3.89	6.45	2.18	0.315						
	Sr-89/Sr-90	34	20	19	10	3.1	3.4						
		37	23	20	9.9	2.4	4.1						

Beginning in July 1963, collections and analyses at this site were terminated.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, RICHMOND (Pot)[1] 37°56'N, 108°38'W, ~Alt. 65 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (inches)			6.64[2]	wet	dry	wet	dry	dry	0.05	0.21	trace	1.77
	Sr-90 (mc/mi^2)			4.47	0.59	0.52	0.33	0.072	0.031	0.086	0.072	0.012	0.39
				3.00	0.56	0.65	0.19	0.097	0.035	0.058	0.080	0.011	0.39
	Sr-89 (mc/mi^2)			88.5	9.51	10.5	2.01	1.38	0.84	1.22	2.19	0.20	13.6
				75.0	4.06	10.7	2.30	1.44	0.85	1.41	2.44	0.18	14.6
	Sr-89/Sr-90			18	16	20	6.1	19	27	14	30	17	34
				25	7.2	16	12	15	24	24	30	16	37
	Ba-140 (mc/mi^2)			388	21.5	12.8	0.92	5.09	1.30			0.49	
				308	17.7	13.2	0.94	4.81	1.35			0.47	
	W-185 (mc/mi^2)						0.28	2.48	2.60	4.04	2.04	1.10	2.90
							0.25	2.48	2.21	4.04	2.04	0.99	3.20
	Total β (mc/mi^2)			628	501	48.9	21.8	15.4	7.2	9.4	20.2	5.8	65.8
				630	257	39.2	23.0	17.6	7.8	9.6	22.3	6.3	73.6
1959	Precip. (inches)	4.42	6.12	0.81	0.44	trace	none	none	none	2.91	none	none	1.62
	Sr-90 (mc/mi^2)	1.99	2.26	0.81	0.46	0.22	0.019	≤ 0.008	0.014	0.064	0.017	0.004	0.116
		1.76	3.06	0.73	0.51	0.22	0.019	≤ 0.008	0.015	0.092	0.019	0.005	0.124
	Sr-89 (mc/mi^2)	59.7	69.7	10.7	4.8	1.40	0.119	0.24	0.036	0.099	0.017	0.011	0.086
		53.0	75.5	11.5	5.1	1.49	0.124	0.31	0.041	0.107	0.015	0.011	0.044
	Sr-89/Sr-90	30	31	13	10	6.4	6.3	≤ 30	2.6	1.5	1.0	2.8	0.7
		30	25	16	10	6.8	6.5	≤ 39	2.7	1.2	0.8	2.2	0.4
	W-185 (mc/mi^2)	15.5	9.3	3.40	1.58	1.27	0.47	0.20	0.061	0.072	0.058	0.049	0.066
		17.6	8.7	3.50	1.49	lost	0.55	0.25	0.053	0.074	0.047	0.055	0.063
	Total β (mc/mi^2)	417	425	100	54	22.7	4.8	1.55	1.19	5.37	1.09	0.68	3.54
		497	400	79	65	24.1	6.3	1.63	1.31	4.92	1.11	0.73	3.17
1960	Precip. (inches)	5.50	4.63	2.45	1.05	0.33	none	trace	0	0	0.28	5.06	0.77
	Sr-90 (mc/mi^2)	0.360	0.378	0.400	0.081	0.067	0.011	0.025	0.022	0.011	0.020	0.111	0.098
		0.356	0.340	0.456	0.086	0.069	0.009	0.020	0.020	0.013	0.020	0.125	0.088
	Sr-89 (mc/mi^2)	0.32	0.31	2.29	0.047	0.022	≤ 0.003						
		0.36	0.36	2.59	0.052	0.016	0.010						
	Sr-89/Sr-90	0.9	0.8	5.7	0.6	0.3	≤0.3						
		1.0	1.0	5.7	0.6	0.2	1.1						
	W-185 (mc/mi^2)	0.18	0.086	0.069	0.019	0.020	≤ 0.012						
		0.23	0.092	0.069	0.025	0.016	≤ 0.014						
	Ce-144 (mc/mi^2)	3.42	2.99	3.38	0.61	0.48	0.12	0.154	0.218	0.072	0.40	0.53	0.28
		8.90	2.91	3.62	0.62	0.48	0.12	0.146	0.110	0.122	0.34	0.52	0.32
	Pu-239 (mc/mi^2)	≤0.0012	≤0.006	0.007	0.0014	0.0020	0.0038	0.0025	0.0049	0.0006	0.0011	0.0067	0.0020
		0.007	0.006	0.009	0.0018	0.0022	0.0039	0.0020	<0.0033	<0.0016	0.0011	0.0067	0.0019
	Total β (mc/mi^2)	11.6	10.7	16.8	2.37	1.41	0.82						
		22.4	12.7	17.9	2.27	1.49	0.89						

CALIFORNIA, RICHMOND - continued from the previous page.

1961	Precip. (inches)	2.98	1.18	2.79	0.99	0.39	trace	0	0.08	0.30	0.09	4.98	1.20
	Sr-90 (mc/mi^2)	0.131 0.111	0.059 0.058	0.181 0.202	0.153 0.133	0.285 0.255	0.016 0.016	0.029 0.025	lost 0.041	lost 0.029	0.062, 0.071	1.33 1.29	0.66 0.64
	Sr-89 (mc/mi^2)									0.19 0.55	6.01 5.93	98.2 97.0	28.8 28.4
	Sr-89/Sr-90									-- 19.0	97 84	74 75	44 44
	Zr-95 (mc/mi^2)									34.6 36.3	7.6 5.9	75.7 lost	lost lost
	Rh-102 (mc/mi^2)							≤0.042 lost	≤0.025 ≤0.025	≤0.065 lost	≤0.02 lost	≤0.05 ≤0.05	≤0.12 ≤0.03
	Ru-103 (mc/mi^2)								lost ≤0.26	2.33 3.79	18.2 17.1	69.0 55.6	26.3 28.7
	Ru-106 (mc/mi^2)								lost ≤0.005	0.072 0.099	1.05 0.85	10.0 8.6	6.65 5.81
	Cs-136 (mc/mi^2)									not detected	not detected	not detected	not detected
	Cs-137 (mc/mi^2)							0.054 0.059	0.061 0.061	0.058 0.059	0.113 0.091	1.88 1.77	0.75 0.72
	Ba-140 (mc/mi^2)									19.6 ≤3	≤200 ≤205	≤306 ≤245	≤20 ≤23
	Ce-144 (mc/mi^2)	0.66 0.40	0.23 0.26	0.79 0.78	0.47 0.46	1.15 1.35	0.21 0.21	lost 0.44	lost 0.11	3.02 3.11	3.4 3.2	51 57	26.4 29.9
	Pm-147 (mc/mi^2)							≤0.38 ≤0.2	≤0.2 ≤0.2	-- --	-- --	-- --	-- --
	Pu-238 (mc/mi^2)							≤0.0004 ≤0.0005	≤0.0014 0.0008	0.0013 0.0010	0.0012 0.0012	0.0016 0.0024	0.0013 0.0016
	Pu-239 (mc/mi^2)	0.0049 0.0032	0.0012 0.0024	0.0025 0.0027	0.0043 0.0042	0.0111 0.0110	≤0.0007 ≤0.0003	0.0062 0.0053	0.0113 0.0074	0.0084 0.0086	0.0031 0.0036	0.022 0.021	0.0112 0.0113
	Ce-141 (mc/mi^2)								-- 3.84	33.7 35.9	67 57	99 127	33.7 35.9
1962	Precip. (inches)	1.19	8.88	0.85	0.31	dry	dry	dry	0.10	0.10	6.53	0.90	3.30
	Sr-90 (mc/mi^2)	0.83 0.81	4.37 4.13	0.66 0.71	0.72 0.81	0.044 0.035	0.114 0.107	0.074 0.078	0.063 0.062	0.087 0.101	1.12 1.01	0.337 0.312	1.00 1.02
	Sr-89 (mc/mi^2)	31.1 31.3	116 107	14.5 14.4	8.2 8.5	0.29 0.30	0.52 0.50	0.28 0.26	0.24 0.21	1.31 1.20	17.2 18.5	16.4 15.0	37.4 37.3
	Sr-89/Sr-90	38 39	26 26	22 20	11 10	6.6 8.6	4.6 4.7	3.8 3.3	3.8 3.4	15 12	15 18	49 48	37 36
	Zr-95 (mc/mi^2)	lost lost	52.5 lost	25.7 30.2	lost lost	0.050 0.025	lost 2.40	1.57 1.15	0.62 1.47	lost 3.17	lost 33.7	39.8 40.9	75.3 70.5
	Rh-102 (mc/mi^2)	1.2 1.2	lost ≤0.6	lost lost	lost lost	lost lost	0.21 0.14						
	Ru-103 (mc/mi^2)	31 17	≤170 ≤230	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	2.7 1.9	26.9 32.1	23.8 28.2	58.5 34.3
	Rh-106 (mc/mi^2)	11 13	40 50	2.48 15.1	10.1 13.4	0.92 0.39	1.81 1.50	0.95 1.18	0.41 0.38	1.18 0.88	9.9 8.9	3.67 3.88	14.9 8.93
	Cs-136 (mc/mi^2)	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.						
	Cs-137 (mc/mi^2)	1.18 1.21	2.9 8.6	1.19 1.39	1.14 1.45	0.112 0.107	0.218 0.233	0.191 0.196	0.143 0.135	0.211 0.209	1.59 1.61	0.569 0.553	1.87 1.77
	Ba-140 (mc/mi^2)	7.81 6.85	N.D. N.D.										
	Ce-141 (mc/mi^2)	N.D. N.D.	≤95 lost	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	≤0.3 ≤0.3	≤21.7 ≤21.1	47.3 44.9	63.7 78.1
	Ce-144 (mc/mi^2)	25 24	36.4 lost	25.7 26.3	17.7 20.4	2.24 1.23	2.05 2.46	2.19 1.24	8.65 9.66	2.82 3.06	27.6 23.5	14.1 14.1	41.3 37.9
	Pu-238 (mc/mi^2)	0.0007 0.0006	0.0031 0.0060					≤0.001 ≤0.001	N.D. N.D.	0.002 0.001	N.D. N.D.	0.0029 0.0040	0.0026 0.0046
	Pu-239 (mc/mi^2)	0.016 0.014	0.023 0.087					0.0021 ≤0.0048	0.0025 0.0018	0.0038 0.0028	0.019 0.015	0.010 0.009	0.019 0.020

(cont'd.)

CALIFORNIA, RICHMOND - continued from the previous page.

1963	Precip. (inches)	4.45	2.12	3.97	4.30	0.45	dry
	Sr-90 (mc/mi^2)	2.50	2.69	5.77	5.53	1.08	0.296
		2.58	2.35	5.57	7.97	1.03	0.203
	Sr-89 (mc/mi^2)	71.7	51.7	97.8	58.1	6.73	0.457
		73.7	59.7	84.1	63.3	6.45	0.581
	Sr-89/Sr-90	29	19	17	10	6.2	1.5
		28	25	15	7.9	6.3	2.9
	Zr-95 (mc/mi^2)	104	73.7	130	139	31.0	4.09
		113	67.7	139	134	23.4	lost
	Rh-102 (mc/mi^2)						
	Ru-103 (mc/mi^2)	153	96	99.4	N.D.	N.D.	lost
		166	88	81.7	N.D.	N.D.	<7.17
	Rh-106 (mc/mi^2)	34.7	27.9	77.3	92.1	53.3	lost
		36.5	26.5	80.1	84.1	54.9	9.50
	Cs-136 (mc/mi^2)						
	Cs-137 (mc/mi^2)	4.09	4.17	9.13	11.8	1.56	0.392
		4.29	4.13	11.9	10.1	1.65	0.469
	Ba-140 (mc/mi^2)						
	Ce-141 (mc/mi^2)	90	40	<32	N.D.	<6.65	N.D.
		87	44	<89	N.D.	N.D.	<6.65
	Ce-144 (mc/mi^2)	89.7	73.3	152	189	34.7	7.25
		86.9	69.3	161	193	29.8	7.21
	Pu-238 (mc/mi^2)	0.0026	0.0043	lost	lost	0.019	0.0004
		0.0029	0.0065	lost	lost	<0.004	<0.003
	Pu-239 (mc/mi^2)	0.047	0.035	lost	lost	0.031	0.0057
		0.045	0.037	lost	lost	0.014	0.013

Beginning in July 1963, collections and analyses at this site were terminated.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: CALIFORNIA, SAN FRANCISCO (Column) 37°37'N, 122°23'W, ~alt. 97 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		4.66	0.30	0.37	0.04	trace	trace	trace	2.30	trace	trace	1.97
	Sr-90 (mc/mi^2)		0.50	not	0.39	0.36	lost	0.05	0.09	0.10	0.01	0.18	lost
	Sr-89/Sr-90		26	recd.	14	8.1	--	1.0	*	*	*	*	--
1960	Precip. (in.)	4.49	3.48	1.17	0.73	0.54	trace	trace	trace	trace	0.28	4.33	5.21
	Sr-90 (mc/mi^2)	0.48	0.23	0.24	0.22	0.13		0.00		0.05		0.07	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.64	1.18	3.39	1.25	0.60	0.10	trace	0.04	0.41	0.03	4.37	1.82
	Sr-90 (mc/mi^2)	lost	0.33	0.50		0.32		0.02		0.02	0.06	0.87	0.29
	Sr-89/Sr-90	--	--	--		--		--		7.8	60	74	60
1962	Precip. (in.)	1.70	8.48	2.98	0.34	trace	trace	trace	0.03	0.09	7.30	0.36	2.97
	Sr-90 (mc/mi^2)	0.74	3.42	1.12	0.54	0.14	0.08	5.26	0.04	0.61	0.52	0.18	0.54
	Sr-89/Sr-90	41	27	19	11	7	10	6	6	20	31	35	61
1963	Precip. (in.)	4.47	2.03	3.94	3.70	0.50	trace	trace	trace	0.07	1.34	3.29	0.58
	Sr-90 (mc/mi^2)	1.87	1.66	3.10	3.88	0.88	3.06	0.04	0.07	0.18	0.74	1.05	0.94
	Sr-89/Sr-90	25	31	21	11.9	9.3	1.0	4	*	*	*	*	*
1964	Precip. (in.)	4.35	0.27										
	Sr-90 (mc/mi^2)	1.86	0.36										
	Sr-89/Sr-90	1	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: COLORADO, DENVER (Columm) 39°46'N, 104°53'W, alt. 5283 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.24	1.31	2.85	1.35	3.33	0.44	0.83	0.25	1.82	2.46	0.40	0.26
	Sr-90 (mc/mi^2)		0.63	lost	lost	8.03	1.13	0.70	0.30	0.10	0.22	lost	0.04
	Sr-89/Sr-90		5.2	---	---	7.3	4.4	2.8	1.5	1.1	*	--	*
1960	Precip. (in.)	1.04	1.66	0.89	2.56	2.27	0.63	1.31	0.79	0.39	2.46	0.39	1.57
	Sr-90 (mc/mi^2)	0.18	0.21	0.17	lost	0.99		0.00		0.20		0.04	
	Sr-89/Sr-90	--	--	---	--	--		--		--		--	
1961	Precip. (in.)	0.07	0.66	2.51	1.06	4.12	1.11	1.60	1.21	4.67	0.77	0.98	0.30
	Sr-90 (mc/mi^2)	0.63		0.57		1.15		0.36		0.27	0.14	0.29	0.01
	Sr-89/Sr-90	--		--		---		--		38	63	58	56
1962	Precip. (in.)	1.33	1.06	0.52	1.10	0.84	1.52	0.54	0.58	0.07	0.05	0.68	0.17
	Sr-90(mc/mi^2)	0.16	lost	0.37	2.54	2.02	3.54	0.87	0.80	0.28	0.39	0.25	0.10
	Sr-89/Sr-90	38	--	18	14	9	10	7	12	10	39	31	34
1963									(8/1-9/17)	(9/17-10/1)			
	Precip. (in.)	0.71	0.21	1.42	0.03	0.68	3.59	0.55	2.98	0.79	0.31	0.45	0.51
	Sr-90 (mc/mi^2)	0.21	lost	0.58	0.40	4.24	10.5	2.90	4.30	0.50	2.12	1.73	0.27
	Sr-89/Sr-90	40	--	21	9	6.5	1.2	2	*	0.7	0.8	*	*
1964	Precip. (in.)	0.26	1.04										
	Sr-90 (mc/mi^2)	0.23	0.48										
	Sr-89/Sr-90	*	0.4										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: FLORIDA, CORAL GABLES (Pot) 25°44'N, 80°17'W, ~alt. 10 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)				5.04	10.11	5.82	8.54	13.62	6.27	3.98	2.54	2.84
	Sr-90 (mc/mi^2)				0.53	0.50	0.56	1.51	0.75	0.52	0.41	0.29	0.63
	Sr-89/Sr-90				--	19	36	--	58	40	48	16	15
1958	Precip. (in.)	2.63	1.76	5.08	1.70	16.47	9.31	4.30	9.82	3.76	3.27	4.25	5.91
	Sr-90 (mc/mi^2)	0.29	0.22	0.60	0.49	1.70	1.39	0.77	6.20	0.60	0.74	0.63	1.86
	Sr-89/Sr-90	17	12	9	21	28	16	54	9	44	36	46	29
1959	Precip. (in.)	2.45	2.35	4.51	1.97	11.86	15.19	9.80	10.12	9.18	7.90	12.56	1.13
	Sr-90 (mc/mi^2)	1.16	0.90	6.0	1.54	3.52	lost	1.72	0.50	0.46	0.17	0.20	0.02
	Sr-89/Sr-90	36	24	17	11	7.3	--	2.6	2.8	0.97	*	*	*
1960	Precip. (in.)	0.70	1.71	0.87	10.89	3.54	6.30	5.12	4.33	24.41	10.63	2.36	0.39
	Sr-90 (mc/mi^2)	0.07	0.11	0.07	1.33	lost		0.13	0.44	0.26		0.17	
	Sr-89/Sr-90	--	--	--	--	--		--	--	--		--	
1961	Precip. (in.)	5.00	0.63	1.94	0.55	6.81	10.48	1.91	4.68	3.40	3.92	2.15	0.13
	Sr-90 (mc/mi^2)	0.19		0.13	0.24	lost		0.18		0.08	0.29	0.36	0.26
	Sr-89/Sr-90	--		--	--	--		--		45	84	89	65
1962	Precip. (in.)	1.46	0.12	2.80	1.18	0.91	10.36						
	Sr-90 (mc/mi^2)	0.61	0.62	1.60	3.50	0.96	2.08	1.29	0.95	1.22	1.32	0.40	0.38
	Sr-89/Sr-90	41	35	15	11	17	13	17	8	13	41	47	33
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.16	1.40	3.86	9.41	6.09	6.17	1.67	1.52	3.81	4.80	0.90	1.12
	Sr-89/Sr-90	41	32	13	13	2.3	0.6	5.7	*	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.94	1.01										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: FLORIDA, MIAMI (Column) - 80th Meridian Station - 25°49'N, 80°17'W. Elev. 13 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)		3.45	0.97	0.57	6.89		1.85	5.02	11.20	4.43	1.43	4.26
	Sr-90 (mc/mi^2)		1.94	2.72	1.73	6.85	8.87	2.33	1.96	1.58	3.21	0.82	0.81
	Sr-89/Sr-90		28	19	11	6.5	1.4	2	*	1.4	1.4	*	*
1964	Precip. (in.)	0.55	2.21										
	Sr-90 (mc/mi^2)	0.49	1.23										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: HAWAII, HILO (Column) 19°43'N, 155°04'W, ~alt. 36 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		13.13	7.59	7.92	7.01	2.93	5.78	7.40	1.32	5.88	30.05	14.37
	Sr-90 (mc/mi^2)		6.02	lost	1.74	2.56	0.49	1.02	0.91	0.02	0.03	0.25	0.31
	Sr-89/Sr-90		8	"	11	9	5.5	3.5	1.7	*	*	*	*
1960	Precip. (in.)	25.95	15.97	7.13	15.04	11.70	6.73	9.68	12.88	12.00	10.63	14.93	4.13
	Sr-90 (mc/mi^2)	0.56	0.82	0.55	1.44	1.57	not	0.96		0.15		0.81	
	Sr-89/Sr-90	--	--	--	--	--	recd.	--		--		--	
1961	Precip. (in.)	2.34	20.50	5.75	5.52	8.12	5.78	5.47	7.78	6.76	22.95	12.84	16.04
	Sr-90 (mc/mi^2)	3.07		0.93		1.51		0.49		0.08	0.72	not	1.43
	Sr-89/Sr-90	--		--		--		--		55	91	recd.	58
1962	Precip. (in.)	2.51	5.31	10.88	2.93	13.58	3.39	8.01	4.15	9.49	2.40	6.63	2.31
	Sr-90 (mc/mi^2)	0.80	3.70	5.70	0.82	8.75	2.18	2.74	1.25	2.61	not	2.77	0.84
	Sr-89/Sr-90	42	31	22	13	9	10	12	8	26	recd.	49	47
1963	Precip. (in.)	1.14	1.70	15.85	30.75	12.60	10.91	12.40	7.66	10.18	11.36	1.91	0.77
	Sr-90 (mc/mi^2)	1.06	2.23	11.80	0.86	15.99	12.5	7.40	7.14	3.88	4.67	2.75	0.63
	Sr-89/Sr-90	35	23	15	11	7.5	1.7	2	1	1.7	*	*	*
1964	Precip. (in.)	14.65	18.22										
	Sr-90 (mc/mi^2)	8.00	8.18										
	Sr-89/Sr-90	*	0.1										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: HAWAII, OAHU (UNIV. OF HAWAII) (Pot) 21°19'N, 157°50'W, ~alt. 78 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)						0.83	1.62	3.09	0.62	0.28	4.87	4.02
	Sr-90 (mc/mi^2)						0.58	0.42	0.31	0.16	0.13	0.64	0.57
	Sr-89/Sr-90						--	--	--	--	--	--	--
1958	Precip. (in.)	3.30	2.62	17.75	1.39	2.37	1.76	3.42	7.69	1.48	4.57	0.77	3.30
	Sr-90 (mc/mi^2)	0.71	0.36	1.33	0.84	1.15	1.21	0.07	0.70	0.73	1.56	0.49	1.12
	Sr-89/Sr-90	15	11	21	15	9	2	57	54	26	2	46	51
1959	Precip. (in.)	4.15	5.48	1.28	3.13	3.37	0.30	1.24	5.12		0.91	1.57	2.44
	Sr-90 (mc/mi^2)	2.21	3.91	4.86	2.11	1.61	1.07	lost	0.82		0.16	0.21	0.38
	Sr-89/Sr-90	33	31	18	12	8	4.0	--	0.9		*	*	*
1960	Precip. (in.)	2.19	2.41	2.40	2.18	3.86	1.44	1.18	2.23	1.48	2.24	2.37	5.20
	Sr-90 (mc/mi^2)	0.19	0.33	0.14	0.55	0.55	0.06	0.43		0.38		0.78	
	Sr-89/Sr-90	--	0.8	--	--	*	--	--		--		--	
1961	Precip. (in.)	5.57	4.52	1.19	1.48	1.59	2.60	2.30	3.42	3.15	7.65	2.55	1.32
	Sr-90 (mc/mi^2)	0.84		0.59		0.83		not	0.38	0.34	0.72	0.63	0.91
	Sr-89/Sr-90	--		--		--		recd.	--	*	20	81	54
1962	Precip. (in.)	2.75	2.63	2.09	1.06	0.31	0.12	3.23	1.96	1.87	1.67	0.30	1.79
	Sr-90 (mc/mi^2)	0.93	2.77	3.56	0.56	2.54	1.45	0.59	lost	0.91	0.46	0.23	1.30
	Sr-89/Sr-90	46	23	20	14	8	7	6	lost	7	19	14	4
1963	Precip. (in.)	9.87	0.55	11.84	12.66	2.48	1.62	3.23	0.58	0.27	1.67	1.05	1.91
	Sr-90 (mc/mi^2)	4.18	4.76	8.22	7.69	3.07	9.70	3.39	2.28	2.34	1.15	0.43	2.03
	Sr-89/Sr-90	31	29	11	12	7.5	*	1	*	*	*	*	*
1964	Precip. (in.)	4.41	1.49										
	Sr-90 (mc/mi^2)	1.06	1.80										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: HAWAII, MAUNA LOA (Column) 19°32'21"N, 155°34'42"W, ~alt. 11,150 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		3.51	0.11	0.88	trace	0	5.76	5.76	2.82	2.18	2.82	0.28
	Sr-90 (mc/mi^2)		1.26	lost	0.02	0.05	0.01	0.09	lost	lost	0.02	0	0.10
	Sr-89/Sr-90		26	--	120	6.7	*	*	--	--	*	*	*
1960	Precip. (in.)	0.30	2.11	2.15	1.03	1.12	2.31	0.04	0.71	0.33	1.20	0.69	1.63
	Sr-90 (mc/mi^2)	0.15	0.18	0.19	0.14	0.50		0.00		0.01		0.00	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.17	1.26	0.63	0.77	1.02	0.07	trace	1.00	0.67	3.32	2.91	2.87
	Sr-90 (mc/mi^2)	0.15		0.28		lost		0.02		0.01	0.06	0.04	0.09
	Sr-89/Sr-90	--		--		--		--		*	66	88	86
1962	Precip. (in.)	1.24	0.13	2.14	1.78	2.15	0.49	0.03	0.64	1.36	0.05	0.04	0.02
	Sr-90 (mc/mi^2)	0.42	0.05	1.05	1.07	1.48	0.19	0.01	0.04	0.14	0.01	5.98	0.06
	Sr-89/Sr-90	40	62	18	13	19	13	1	*	14	*	36	17
1963	Precip. (in.)	3.5	0.59	4.36	6.47	4.14	0.87	1.98	1.81	1.68	0.18	0.17	trace
	Sr-90 (mc/mi^2)	0.82	0.39	2.17	0.81	3.67	1.96	1.00	0.47	0.43	0.08	0.05	0.60
	Sr-89/Sr-90	15	31	15	12	8.5	3.2	2	*	1.2	*	*	2
1964	Precip. (in.)	0.32	0.28										
	Sr-90 (mc/mi^2)	0.30	0.26										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: HAWAII, LIHUE (Column) 21°59'N, 159°21'W, ~alt. 115 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	0.97	4.14	9.72	1.16	2.70	1.46	1.19	1.82	7.36	2.48	6.98	2.75
	Sr-90 (mc/mi^2)					0.89		0.21		0.22		0.20	
	Sr-89/Sr-90					--		--		--		--	
1961	Precip. (in.)	1.25	2.19	3.42	4.99	1.02	0.07	2.70	1.82	1.65	4.71	3.09	6.19
	Sr-90 (mc/mi^2)	0.36		0.41		0.41		0.00		0.17	0.33	1.02	0.66
	Sr-89/Sr-90	--		--		--		--		123	111	103	65
		(1/12 - 3/21)			(3/21-4/23)	(4/23-5/24)	(5/24-6/25)	(6/25-7/28)					
1962	Precip. (in.)	14.24	23.40	13.08	2.37	10.88	6.87	1.65	7.05	1.31	5.38		1.14
	Sr-90 (mc/mi^2)		7.46		2.23	4.43	1.07	0.78	lost	1.60	1.60		1.35
	Sr-89/Sr-90		51		18	8	17	15	lost	17	42		44
			(2/9 - 3/2)										
1963	Precip. (in.)	12.31	1.68	6.31	8.84	1.57	1.95	1.71	1.34	2.12	1.02	0.58	3.40
	Sr-90 (mc/mi^2)	2.31	1.76	5.54	6.32	3.11	4.69	1.45	0.74	0.56	0.59	0.27	0.91
	Sr-89/Sr-90	65	29	10	10	11.1	2.2	2	*	0.5	0.5	*	1
1964	Precip. (in.)	7.01	1.73										
	Sr-90 (mc/mi^2)	4.19	0.40										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: ILLINOIS, ARGONNE (Pot) 41°42'N, 87°59'W, ~alt. 746 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)												1.26
	Sr-90 (mc/mi^2)												0.14
	Sr-89/Sr-90												18
1957	Precip. (in.)	2.06	1.77	1.98	6.09	3.21	5.94	8.98	5.36	1.08	3.15	2.72	1.95
	Sr-90 (mc/mi^2)	0.30	0.27	0.47	1.15	0.27	0.48	1.57	0.75	0.12	0.22	0.20	not
	Sr-89/Sr-90	15	--	--	--	8.3	17	--	--	62	28	14	recd.
1958	Precip. (in.)	1.45		0.33	1.64	3.21	6.43	4.74	2.51	1.86	2.12	1.58	0.57
	Sr-90 (mc/mi^2)	0.30		lost	0.57	0.79	4.87	0.09	3.67	0.33	0.76	1.04	0.42
	Sr-89/Sr-90	10		--	24	20	13	13	6	41	37	54	59
1959	Precip. (in.)	2.12	2.39	3.91	4.00	3.87	5.94	4.77	1.63	2.17	2.86	3.01	2.00
	Sr-90 (mc/mi^2)	1.00	lost	lost	4.41	4.19	0.58	0.33	lost	0.90	not	not	not
	Sr-89/Sr-90	37	--	--	10	7.6	4.5	*	--	--	recd.	recd.	recd.
1960	Precip. (in.)	3.54	3.16	1.18	3.15	2.76	3.94	3.54	1.18	1.57	1.57	1.18	1.18
	Sr-90 (mc/mi^2)	not	0.21	1.09	0.64	not	≤0.00	0.52		0.24		0.09	
	Sr-89/Sr-90	recd.	--	--	--	recd.	--	--		--		--	
1961	Precip. (in.)	0.28	0.91	2.95	3.27	1.53	3.74	2.99	6.07	14.17	3.49	1.66	1.89
	Sr-90 (mc/mi^2)	0.14		1.25		1.58		0.22	0.28	0.15	0.44	0.90	0.70
	Sr-89/Sr-90	--		--		--		--	*	63	83	83	64
1962	Precip. (in.)	2.52	1.81	1.81	1.58	2.91	2.56	4.15	2.06	1.72	1.34	0.86	0.33
	Sr-90 (mc/mi^2)	1.55	1.47	0.06	1.62	6.96	1.67	1.87	0.24	0.82	1.04	0.31	0.24
	Sr-89/Sr-90	35	31	25	11	10	8	17	20	33	28	56	49
1963	Precip. (in.)	0.98	0.75	1.84	3.14	2.32	2.40	7.05	1.21	2.11	0.99	1.24	0.55
	Sr-90 (mc/mi^2)	0.63	0.29	6.35	3.61	4.57	9.93	8.58	1.08	0.96	1.33	0.66	0.46
	Sr-89/Sr-90	24	35	18	14	8.5	1.6	2	*	*	*	2.4	*
1964	Precip. (in.)	0.36	0.60										
	Sr-90 (mc/mi^2)	0.74	0.33										
	Sr-89/Sr-90	*	*										

Site: KENTUCKY, LOUISVILLE (Pot) 38°13'N, 85°48'W, ~Alt. 450 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)									2.83	1.65	2.77	1.19
	Sr-89 (mc/mi^2)									3.95	10.56	11.48	23.82
										3.68	10.82	--	24.10
	Sr-90 (mc/mi^2)									0.24	0.52	0.61	0.58
										0.26	0.41	0.71	0.60
	Sr-89/Sr-90									16	20	19	41
										14	26	--	40
1959	Precip. (in.)	5.51	2.76	2.13	1.68	4.42	1.11	2.61	5.20	0.48	3.26	4.15	3.77
	Sr-89 (mc/mi^2)	95.65	47.86	70.55	46.55	36.6	6.54	2.81	0.32	0.11	0.43	0.39	1.47
		97.83	52.79	72.21	40.32	35.1	5.50	2.44	0.10	0.21	0.35	0.21	0.62
	Sr-90 (mc/mi^2)	2.10	1.63	3.19	3.14	2.97	0.94	0.76	0.29	0.06	0.35	0.20	0.46
		2.28	1.54	3.13	3.56	2.98	0.92	0.58	0.29	0.10	0.35	0.26	0.42
	Sr-89/Sr-90	46	29	22	15	12	7	3.7	1.1	1.8	1.2	2.0	3.2
		43	34	23	11	12	6	4.2	0.3	2.1	1.0	0.8	1.5
1960	Precip. (in.)	2.55	4.31	2.42	1.17	3.52	10.11	1.99	1.79	3.00	1.58	3.35	2.04
	Sr-89 (mc/mi^2)	1.00	1.45	1.73	0.22	0.16	0.12	0.08					
		lost	1.86	1.35	0.20	0.25	0.25	0.12					
	Sr-90 (mc/mi^2)	0.41	1.32	0.34	0.56	1.07	1.32	0.18	0.16	0.11	0.18	0.12	0.07
		1.41	1.12	0.41	0.60	1.31	1.27	0.20	0.13	0.08	0.17	0.14	0.07
	Sr-89/Sr-90	2.4	1.1	5.1	0.4	0.1	0.1	0.4					
		--	1.7	3.0	0.3	0.2	0.2	0.6					
	Pu-239 (mc/mi^2)	no analysis made	0.02	0.01	0.04	0.016	0.011	0.003	0.001	0.001	0.004	0.002	0.002
			0.01	0.01	0.04	0.025	0.012	0.001	0.002	0.001	0.002	0.006	0.002
	Ce-144 (mc/mi^2)		0.16	0.49	1.97	0.24	0.56	2.895	2.77	0.602	0.524	0.862	0.34
			0.30	0.85	2.36	0.24	0.60	2.784	0.785	0.714	0.571	0.585	0.32
1961	Precip. (in.)	2.41	5.24	7.63	4.83	9.00	3.59	5.80	0.92	1.48	2.00	4.23	3.76
	Sr-89 (mc/mi^2)									2.66	17.60	63.70	53.00
										3.28	18.95	61.23	58.19
	Sr-90 (mc/mi^2)	0.130	0.302	0.51	1.14	1.32	0.48	0.34	0.18	0.131	0.243	0.734	0.856
		0.156	0.380	0.53	0.97	1.13	0.39	0.52	0.16	0.076	0.276	0.788	0.909
	Sr-89/Sr-90									20	72	87	62
										43	67	78	64
	Pu-239 (mc/mi^2)	0.009	0.007	0.007	0.027	0.033	0.009						
		0.017	0.008	0.016	0.045	0.025	0.004						
	Ce-144	0.661	1.07	1.68	3.70	3.92	1.41						
		0.377	1.04	1.85	3.61	4.00	1.42						
1962	Precip. (in.)	4.03	6.58	3.58	1.44	2.90	5.94	0.65	2.08	3.68	4.70	1.60	2.72
	Sr-90 (mc/mi^2)	2.04	2.18	2.88	1.44	3.83	4.14	1.09	0.93	0.37	1.85	2.31	1.08
		2.07	2.39	3.14	1.22	4.03	3.88	0.98	0.78	0.71	1.59	3.23	1.29
	Sr-89 (mc/mi^2)	95.26	50.51	72.24	21.87	63.78	39.45	14.00	12.65	9.76	31.61	62.11	30.81
		93.38	80.35	76.05	16.97	63.65	37.54	14.14	12.59	27.57	27.74	61.42	33.91
	Sr-89/Sr-90	47	23	25	15	17	10	13	14	26	17	27	28
		45	31	24	14	16	10	14	16	39	17	19	26
1963	Precip. (in.)	1.18	1.27	9.04	1.87	4.56	4.18						
	Sr-90 (mc/mi^2)	1.86	2.41	7.74	3.11	14.78	9.05						
		1.34	1.97	6.25	4.82	15.28	11.80						
	Sr-89 (mc/mi^2)	43.48	46.45	101.47	52.94	110.31	45.80						
		43.54	41.65	79.15	59.36	100.98	67.11						
	Sr-89/Sr-90	23	19	13	17	7	5						
		28	21	12	12	7	6						

Collections at this site were terminated in June 1963.

Site: KENTUCKY, LOUISVILLE (Column) 38°13'N, 85°48'W, ~Alt. 450 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)									2.83	1.65	2.77	1.19
	Sr-89 (mc/mi^2)									4.5 4.6	16.0 10.6	5.0 9.0	21.4 21.3
	Sr-90 (mc/mi^2)									0.23 0.22	0.56 0.30	0.80 1.20	0.58 0.50
	Sr-89/Sr-90									20 21	29 35	6 8	37 43
1959	Precip. (in.)	5.51	2.76	2.13	1.68	4.42	1.11	2.61	5.20	0.48	3.26	4.15	3.77
	Sr-89 (mc/mi^2)	63.41 31.61	23.64 27.54	57.79 60.30	4.48 0.00	23.3 27.8	1.06 5.37	0.75 0.07	0.00 0.25	0.11 0.14	0.81 0.16	0.24 0.10	0.31 0.45
	Sr-90 (mc/mi^2)	1.63 0.82	1.55 1.26	2.71 2.84	0.14 0.29	2.07 2.90	0.22 0.84	0.50 0.43	0.17 0.25	0.08 0.09	0.22 0.27	0.18 0.30	0.52 0.42
	Sr-89/Sr-90	39 39	15 22	21 21	32 --	11 10	5 6	1.5 0.2	0 1	1.4 1.6	3.7 0.6	1.3 0.33	0.60 1.07
1960	Precip. (in.)	2.55	4.31	2.42	1.17	3.52	10.11	1.99	1.79	3.00	1.58	3.35	2.04
	Sr-89 (mc/mi^2)	2.18 0.78	1.93 0.76	1.28 0.30	0.37 0.35	0.19 0.28	0 0	0.15 0.17					
	Sr-90 (mc/mi^2)	0.28 1.05	0.78 0.99	0.59 0.41	0.56 0.44	1.66 1.23	1.42 1.11	0.07	0.12	0.00	0.12	0.06	0.08
	Sr-89/Sr-90	7.8 0.7	2.5 0.8	2.2 0.7	0.7 0.8	0.1 0.2	~0 ~0	0.5 0.5					
	Pu-239 (mc/mi^2)	no analysis made	0.01 0.001	0.01 0.001	0.04 0.004	0.016 0.017	0.009 0.011	0.001 0.001	0.001 0.001	0.003 0.002	0.009 0.005	0.002 0.008	0.003 0.010
	Ce-144 (mc/mi^2)		0.25 0.23	0.62 0.36	0.89 0.59	0.24 0.18	0.59 0.58	0.938 0.268	0.700 0.160	0.460 0.964	0.626 0.455	1.204 0.782	0.45 1.15
1961	Precip. (in.)	2.41	5.24	7.63	4.83	9.00	3.59						
	Sr-89 (mc/mi2)												
	Sr-90 (mc/mi^2)	0.14 --	0.28 --	1.45 --		0.97 1.32	0.45 0.44						
	Sr-89/Sr-90												
	Pu-239 (mc/mi^2)	0.004 0.011	0.004 0.002	0.031 0.064		0.017 0.029	0.007 0.009						
	Ce-144 (mc/mi^2)	0.641 0.567	1.02 0.93	4.82 4.52		3.13 3.37	1.48 1.43						

These monthly collections have been discontinued.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: LOUISIANA, NEW ORLEANS (Column) 30°00'N, 90°03'W, ~alt. 3 feet

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)					3.15	1.57	4.33	6.51	4.00	4.33	0.60	4.17
	Sr-90 (mc/mi^2)					0.27		0.00		0.00		0.38	
	Sr-89/Sr-90					--		--		--		--	
1961	Precip. (in.)	6.94	9.00	8.53	2.88	7.27	8.01	10.38	7.26	8.90	0.51	8.66	5.99
	Sr-90 (mc/mi^2)	0.34		1.21		1.42		0.57		0.10	0.06	0.41	0.42
	Sr-89/Sr-90	--		--		--		--		36	60	81	66
1962	Precip. (in.)	4.19	1.17	1.60	2.66	1.31	8.87	4.70		2.52	3.29	1.96	4.47
	Sr-90 (mc/mi^2)	1.66	0.61	1.49	2.87	1.22	2.36	1.14	0.56	0.56	0.32	0.17	1.13
	Sr-89/Sr-90	41	29	18	14	17	15	24	17	6	26	40	41
1963	Precip. (in.)	5.21	5.90	1.00	1.84	3.17	4.16	6.40	2.12	7.35	0.15	7.85	5.25
	Sr-90 (mc/mi^2)	1.56	1.60	0.66	2.28	2.72	3.06	4.97	2.62	0.74	0.27	1.84	1.51
	Sr-89/Sr-90	30	26	18	14.6	15.7	3.7	3	*	*	*	*	*
1964	Precip. (in.)	9.60	5.35										
	Sr-90 (mc/mi^2)	5.07	3.10										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: MINNESOTA, INTERNATIONAL FALLS (Column) 48°34'N, 93°26', Alt. 1180.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		0.38	0.42	0.39	4.48	1.66	3.61	5.12	2.67	2.09	1.20	0.93
	Sr-90 (mc/mi^2)		0.11	lost	1.08	5.01	lost	2.92	0.97	0.18	0.19	0.05	0.07
	Sr-89/Sr-90		60	--	11	7.4	--	3.1	1.4	0.66	1.2	*	4.3
1960	Precip. (in.)	0.57	0.33	0.40	2.03	2.02	2.36	3.06	2.49	1.87	1.94	1.41	1.67
	Sr-90 (mc/mi^2)	0.10	0.01	1.00	0.75	lost	lost	0.15		0.32		0.00	
	Sr-89/Sr-90	--	*	--	--	--	--	--		--		--	
1961	Precip. (in.)	0.46	0.85	0.68	2.39	1.76	0.70	4.90	2.79	7.36	0.89	0.97	0.93
	Sr-90 (mc/mi^2)	0.36		1.01		1.15		0.88		0.62	0.24	0.31	0.22
	Sr-89/Sr-90	--		--		--		--		132	66	70	61
1962	Precip. (in.)	0.94	1.27	0.76	1.80	6.15	3.45	6.61	2.62	3.57	0.23	0.49	
	Sr-90 (mc/mi^2)	0.18	0.40	0.73	0.12	8.95	5.33	1.94	1.28	1.28	0.17	0.46	not
	Sr-89/Sr-90	42	31	22	15	11	10	7	7	32	37	46	recd.
1963	Precip. (in.)	0.22	1.03	0.59	2.91	4.71	2.08	4.99	3.13	2.52	0.34	1.12	1.19
	Sr-90 (mc/mi^2)	0.52	0.38	0.68	13.21	13.06	4.87	13.18	7.24	2.31	0.64	0.97	0.52
	Sr-89/Sr-90	26	21	16	9	7.4	0.3	2	*	*	*	*	*
1964	Precip. (in.)	0.74	0.63										
	Sr-90 (mc/mi^2)	0.17	0.45										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: MISSOURI, COLUMBIA (Column) 38°58'N, 92°20'W, Alt. 778 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		2.14	3.39	2.42	4.35	0.12	3.97	1.10	5.41	4.19	0.56	1.91
	Sr-90 (mc/mi^2)		3.65	3.95	2.92	3.90	0.38	0.56	0.11	0.24	0.26	0.17	0.29
	Sr-89/Sr-90		2.4	27	11	7.6	4.2	2.5	*	1.5	0.68	*	0.9
1960	Precip. (in.)	1.55	1.85	2.19	5.12	4.19	3.35	2.65	0.27	2.65	4.33	0.84	1.69
	Sr-90 (mc/mi^2)	0.16	0.37	0.30	lost	1.28		0.00		0.27		0.00	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.69	2.04	4.68	4.70	6.33	5.26	5.66	1.97	8.20	2.86	3.36	1.63
	Sr-90 (mc/mi^2)	0.00		1.38		1.81		0.65		0.29	0.40	0.58	0.48
	Sr-89/Sr-90	--		--		--		--		15--	100	81	72
1962	Precip. (in.)	1.66	2.00	3.40	1.33	2.59	1.41	3.58	4.14	6.73	2.48	0.74	0.77
	Sr-90 (mc/mi^2)	0.68	2.28	2.85	2.77	5.82	1.79	2.41	0.83	0.10	0.13	0.72	0.78
	Sr-89/Sr-90	43	40	20	14	16	11	14	21	9	29	38	36
1963	Precip. (in.)	0.40	0.18	3.43	2.15	4.53	1.26	5.70	4.32	2.07	0.78	1.76	0.60
	Sr-90 (mc/mi^2)	0.39	0.46	1.97	5.10	2.95	4.99	6.62	5.18	1.53	1.32	0.85	0.36
	Sr-89/Sr-90	22	24	25	10.9	8.1	0.5	1	*	0.6	1.2	*	*
1964	Precip. (in.)	0.75	1.64										
	Sr-90 (mc/mi^2)	1.23	1.06										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: MONTANA, HELENA (Column) 46°36'N, 112°00'W, ~alt. 3893 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)			0.02	0.72	1.56	1.90	0.11	0.36	0.46	0.95	1.45	0.14
	Sr-90 (mc/mi^2)			0.58	2.02	1.54	2.32	0.40	0.09	0.17	lost	0.03	0.17
	Sr-89/Sr-90			25	*	8.7	5.3	2.8	2.5	*	--	*	1.2
1960	Precip. (in.)	0.24	0.25	0.21	1.56	0.94	0.23	1.02	2.10	0.13	0.26	0.19	0.34
	Sr-90 (mc/mi^2)	0.06	0.11	0.11	0.52	0.11		0.52		0.11		0.00	
	Sr-89/Sr-90	*	0.8	--	--	--		--		--		--	
1961	Precip. (in.)	0.09	0.06	1.03	0.87	1.39	0.78	1.05	0.65	1.16	0.16	0.37	0.55
	Sr-90 (mc/mi^2)	0.13		0.47		0.30		0.39		0.10	0.11	0.27	0.11
	Sr-89/Sr-90	--		--		--		--		50	47	22	68
1962	Precip. (in.)	0.67	0.66	0.54	0.90	3.82	2.09	1.61	1.80	0.31	0.95	0.57	0.14
	Sr-90 (mc/mi^2)	0.10	0.35	0.42	0.15	4.29	3.45	3.46	2.70	0.52	0.56	0.29	0.20
	Sr-89/Sr-90	54	30	19	18	8	10	25	10	13	20	40	19
1963	Precip. (in.)	0.44	0.25	0.23	1.01	1.33	2.47	0.92	0.60	1.30	1.39	0.29	1.29
	Sr-90 (mc/mi^2)	0.32	0.37	0.37	3.18	3.94	11.3	0.47	3.14	1.73	1.86	0.32	0.42
	Sr-89/Sr-90	24	22	10	7	11.6	2.2	--	*	0.3	*	*	*
1964	Precip. (in.)	0.31	0.26										
	Sr-90 (mc/mi^2)	0.39	0.45										
	Sr-89/Sr-90	*	*										

Site: NEW JERSEY, WESTWOOD (Pot) 41°00'N, 74°02'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)								1.310	1.067	0.948	0.597	0.965
	Sr-90 (mc/mi^2)								0.900	1.288	0.663	0.506	1.315
	Sr-89/Sr-90								--	--	--	--	--
1958	Precip. (in.)	6.42		4.92	6.38	3.98	1.90	2.78	4.31	2.66	4.72	3.46	1.08
	Sr-90 (mc/mi^2)	1.15	0.46	0.99	1.61	2.66	1.06	1.10	1.21	0.67	1.67	1.38	0.76
		1.91	1.00	1.02	1.85	2.95	1.03	1.11	1.01	0.73	1.61	1.38	0.82
	Sr-89 (mc/mi^2)				45.6	30.1	10.5	42.4	26.3	19.42	73.77	53.50	25.74
					32.1	34.2	15.3	45.8	24.2	18.40	83.38	53.11	24.65
	Sr-89/Sr-90				28	11	10	38	21	29	44	39	34
					17	12	15	41	24	25	52	38	30
1959	Precip. (in.)	2.66	2.19	3.76	3.23	1.08	5.46	6.21	5.80	2.42	6.36	4.25	4.63
	Sr-90 (mc/mi^2)	1.387	1.376	4.49	6.20	2.72	3.56	1.80	0.998	0.088	0.415	0.282	0.329
		1.385	1.508	4.89	6.51	2.54	4.00	1.72	1.01	0.074	0.422	0.267	0.331
	Sr-89 (mc/mi^2)	37.87	36.75	61.6	65.1	18.1	14.8	1.60	0.800	≤0.067	0.388	0.302	0.583
		43.22	35.40	61.2	61.2	13.4	15.8	2.65	0.04	≤0.076	0.396	0.300	0.608
	Sr-89/Sr-90	27	27	14	11	7	4	0.9	0.80	~0	0.94	1.07	1.77
		31	23	13	9	5	4	1.5	~0	~0	0.94	1.12	1.84
1960	Precip. (in.)	3.13	4.89	2.14	3.99	2.70	1.50	8.33	6.73	6.95	2.59	2.96	2.06
	Sr-90 (mc/mi^2)	0.253	0.860	0.427	1.06	0.789	0.476	0.586	0.334	0.283	0.121	0.118	0.082
		0.254	0.476	0.311	0.513	0.809	0.489	0.578	0.328	0.277	0.128	0.143	0.086
	Sr-89 (mc/mi^2)	≤0.030	1.24	0.254	≤0.010	≤0.036	≤0.034	--	--	--	--	--	--
		≤0.048	1.11	0.273	≤0.003	≤0.036	≤0.034	--	--	--	--	--	--
	Sr-89/Sr-90	*	1.44	0.6	*	*	*	--	--	--	--	--	--
		*	2.33	0.1	*	*	*	--	--	--	--	--	--
	Pu-239 (mc/mi^2)	lost	≤0.0021	0.0033	0.0110	0.0097	0.0036	0.0051	≤0.00346	≤0.00420	≤0.00149	≤0.00149	--
		"	lost	≤0.0025	0.0084	0.0074	0.0033	0.0028	≤0.00149	lost	≤0.00149	≤0.00198	--
	Ce-144 (mc/mi^2)	2.00	1.43	1.12	4.07	3.58	2.00	lost	1.26	1.03	0.545	0.326	0.341
		2.16	1.22	1.11	1.75	3.51	1.92	"	1.31	1.27	0.498	0.408	0.394
	Rh-102 (mc/mi^2)							0.00052	0.00042	0.00032	0.00233	0.00331	0.00087
1961	Precip. (in.)	1.46 & 15"snow	1.73 & 18"snow	4.86	6.17	2.79	1.95	6.83	5.47	3.68	2.06	2.95	3.46
	Sr-90 (mc/mi^2)	0.193	0.235	0.943	1.75	0.762	0.469	0.404	0.203	0.115	0.292	1.12	1.21
		0.189	0.265	0.673	1.40	0.583	0.468	0.377	0.206	0.210	0.305	1.22	1.67
	Sr-89 (mc/mi^2)									4.47	20.4	92.1	49.0
										4.42	22.3	104	95.4
	Sr-89/Sr-90									39	70	82	40
										21	73	85	57
	Pu-239 (mc/mi^2)	0.0103	0.0086	0.0222	0.0324	0.0215	0.0256	0.0135	--	≤0.0021	0.00469	0.0115	0.0176
		lost	0.0057	0.0181	0.0370	0.0242	0.0136	0.0517	0.0183	≤0.0011	0.00580	lost	0.0210
	Ce-144 (mc/mi^2)	0.571	0.714	2.96	2.87	2.43	1.60	2.77	1.73	1.23	7.46	41.4	49.3
		0.697	0.709	2.58	3.38	1.87	1.92	1.67	1.45	5.28	9.21	40.4	58.4
	Rh-102 (mc/mi^2)	0.00208	0.00047	0.0139	0.0136	0.0245	0.0132	0.00475	0.00259	0.00206	0.00097	0.00135	0.00143
	Ba-140 (mc/mi^2)									66	64	196	68.8
										≤220	87	164	62.7
	Zr-95 (mc/mi^2)									23.3	44.4	168	133
										82.7	66.4	151	138
	Ru-106 (mc/mi^2)							2.36	0.906	0.696	2.44	6.87	12.9
								3.25	0.750	1.08	2.32	9.15	14.8
	Cs-137 (mc/mi^2)							0.621	0.615	0.376	0.605	1.85	2.34
								0.611	0.410	0.471	0.712	2.07	2.73
	Ce-141 (mc/mi^2)									lost	32.1	144	42.2
										51.0	30.8	167	67.0
	Pm-147 (mc/mi^2)							4.69	2.55				
								2.95	2.13				

NEW JERSEY, Westwood (POT) - continued from the previous page.

1962	Precip. (in.)	2.95	4.44	4.57	3.37	1.26	6.29	1.29	7.47	3.45	4.70	4.61	2.85
	Sr-90 (mc/mi^2)	1.59 1.37	3.05 3.05	2.06 2.15	5.04 6.00	2.62 2.65	4.80 4.77	2.49 2.73	3.37 3.53	1.22 1.25	3.19 3.01	2.28 2.70	2.77 3.14
	Sr-89 (mc/mi^2)	68.7 66.9	91.5 93.6	39.3 38.9	66.0 59.8	24.4 27.4	21.9 29.6	16.7 17.0	15.9 19.5	18.2 18.5	82.7 75.5	81.1 84.9	82.8 86.3
	Sr-89/Sr-90	43 49	30 31	19 18	13 10	9.3 10	4.6 6.2	6.7 6.2	4.7 5.5	15 15	26 25	36 31	30 27
	Pu-239 (mc/mi^2)	0.0100 0.0136	0.0173 lost	lost 0.0141	0.0533 lost	0.0343 0.0330	0.0643 0.0924	0.0620 0.0400	0.0280 0.0340	≤0.007 ≤0.007	lost 0.030	0.030 0.041	0.0675 0.0623
	Ce-144 (mc/mi^2)	56.2 43.2	87.2 76.0	50.5 46.0	114 104	52.2 46.9	123 123	50.4 48.7	63.3 68.7	20.3 25.5	74.8 70.0	41.7 45.2	81.4 66.6
	Ba-140 (mc/mi^2)	10.7 9.51	6.39 6.00										
	Zr-95 (mc/mi^2)	118 97.1	137 126	47.0 50.5	92.2 74.9	45.0 35.9	56.8 58.3	32.3 41.9	60.6 72.1	25.9 32.8	120 116	94.0 97.9	222 189
	Ru-106 (mc/mi^2)	15.6 11.6	39.6 38.9	6.18 9.10	55.4 43.8	17.9 17.1	51.2 54.5						
	Cs-137 (mc/mi^2)	2.89 2.55	4.98 4.46	3.02 3.16	8.87 7.49	3.86 3.70	8.21 8.61	3.13 3.08	4.68 5.07	1.76 1.77	5.20 4.31	2.80 3.07	lost lost
	Ce-141 (mc/mi^2)	34.3 43.5	60.2 62.4	17.6 15.8	3.52 3.38	3.20 3.80	≤10.6 ≤11.4	≤7.36 ≤7.97	≤13.9 ≤10.6	28.9 21.6	97.2 95.8	103 84.9	78.0 57.4
	Rh-102 (mc/mi^2)	0.00226	0.00467	lost	0.00332	0.00109	0.00412	0.00245	0.00248	0.000831	0.00418		
1963	Precip. (in.)	2.09	1.20	4.02	0.95	2.51	3.55						
	Sr-90 (mc/mi^2)	2.92 2.29	2.83 2.56	6.23 6.35	7.60 7.95	9.46 10.2	6.48 6.13						
	Sr-89 (mc/mi^2)	78.5 72.0	53.2 48.0	71.6 73.5	5.78 60.4	53.2 50.5	22.2 23.4						
	Sr-89/Sr-90	26 31	19 19	11 12	7.6 7.6	5.6 5.0	3.4 3.8						
	Pu-239 (mc/mi^2)	0.0145 0.0319	0.0265 0.0167	0.0727 0.0344	0.0505 lost	lost 0.0532	≤0.0100 ≤0.0119						
	Ce-144 (mc/mi^2)	62.3 58.0	72.6 72.0	153 143	222 165	192 216	122 110						
	Ba-140 (mc/mi^2)												
	Zr-95 (mc/mi^2)	130 121	69.3 75.5	123 126	97.2 103	125 133	62.4 56.3						
	Ru-106 (mc/mi^2)												
	Cs-137 (mc/mi^2)	4.11 3.58	3.74 3.14	9.10 9.22	10.7 11.1	15.0 14.4	9.42 8.95						
	Ce-141 (mc/mi^2)	≤15.5 ≤13.2	≤10.5 ≤10.8	45.5 42.2	≤15 ≤19	≤37.6 ≤55.2	≤10.3 ≤12.5						
	Rh-102 (mc/mi^2)												

Monthly collections from July 1963 are reported on page 171.

Site: NEW JERSEY, WESTWOOD (Column) 41°00'N, 74°02'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)				3.23	1.08	5.46	6.21	5.80	2.42	6.36	4.25	4.63
	Sr-90 (mc/mi^2)				4.62 --	1.48 --	4.35 --	1.13 --	0.63 --	0.123 --	0.35 --	0.23 --	0.27 0.23
	Sr-89 (mc/mi^2)				40.4 --	8.3 --	14.8 --	2.14 --	0.78 --	≤0.052 --	0.26 --	0.40 --	0.40 0.47
	Sr-89/Sr-90				8.8 --	5.6 --	3.4 --	1.9 --	1.2 --	~0 --	0.9 --	1.7 --	1.5 1.4
1960	Precip. (in.)	3.13	4.89	2.14	3.99	2.70	1.50	8.33	6.73	6.95	2.59	2.96	2.06
	Sr-90 (mc/mi^2)	0.333 0.334	0.270 0.711	0.374 0.389	0.688 0.692	0.755 0.768	0.545 0.634	0.41	0.18	0.22	0.18	0.10	0.00
	Sr-89 (mc/mi^2)	0.131 0.082	0.473 0.900	0.08 ≤0.06	≤0.408 ≤0.038	≤0.034 ≤0.034	≤0.037 ≤0.039						
	Sr-89/Sr-90	0.4 0.2	1.8 1.3	0.2 *	* *	* *	* *						
	Pu-239 (mc/mi^2)	0.0030 0.0053	≤0.0022 ≤0.0019	≤0.0042 0.0054	0.0039 ≤0.0042	0.0058 0.0072	≤0.0031 0.0057	0.0033 0.0033	≤0.0016 ≤0.0016	≤0.0044 ≤0.0044	≤0.0020 ≤0.0024	≤0.0016 ≤0.0016	
	Ce-144 (mc/mi^2)	2.02 3.26	0.790 lost	0.352 1.08	2.41 2.09	3.46 3.12	2.79 3.19	1.98 1.35	1.36 1.23	0.966 lost	lost 0.680	0.312 0.512	0.251 lost
	Rh-102 (mc/mi^2)												
1961	Precip. (in.)	1.46 & 15"snow	1.73 & 18"snow	4.86	6.17	2.79	1.95	6.83	5.47	3.68	2.06	2.95	3.46
	Sr-90 (mc/mi^2)	0.544 0.515	0.456 0.453	1.03 1.05	1.29 0.84	0.544 0.634	0.394 0.478	0.446 0.420	0.477 0.458	0.135 0.186	0.26 0.24	1.11 1.04	1.36 1.24
	Sr-89 (mc/mi^2)									2.48 2.60	18 16	81.1 72.5	74.9 73.0
	~~Sr-89/Sr-90~~									~~18~~ 14	75 62	73 70	~~55~~ 59
	Pu-239 (mc/mi^2)	0.0064 0.0059	0.0228 0.0095										
	Ce-144 (mc/mi^2)	1.30 --	0.597 0.803	1.78 1.86	2.80 1.74	2.37 4.43	1.33 lost						

NEW JERSEY, WESTWOOD (Column) - continued from the previous page.

1962	Precip. (in.)	2.95	4.44	4.57	3.37	1.26	6.29	1.29	7.47	3.45	4.70	4.61	2.85
	Sr-90 (mc/mi^2)	1.43	3.01	1.90	4.62	2.89	5.50	2.22	2.87	1.25	2.98	1.33	3.78
		1.29	2.74	1.84	5.15	3.06	5.33	2.51	2.84	1.44	2.96	1.17	3.97
	Sr-89 (mc/mi^2)	56.1	87.9	34.7	67.3	31.8	26.7	14.8	15.1	16.9	74.2	46.0	lost
		53.2	85.6	33.6	66.0	22.2	25.3	13.8	19.4	18.9	74.2	46.2	76.0
	Sr-89/Sr-90	39	29	18	15	11	4.8	6.7	5.3	14	25	35	
		41	31	18	13	7.2	4.7	5.5	6.8	13	25	40	19
1963	Precip. (in.)	2.09	1.20	4.02	0.95	2.91	3.55	4.76	1.80	4.69	0.92	6.22	1.51
	Sr-90 (mc/mi^2)	2.73	2.37	3.53	7.48	9.90	3.98	12.0	5.26	4.63	1.49	2.50	1.40
		2.42	2.28	4.11	7.38	9.31	5.46						
	Sr-89 (mc/mi^2)	64.5	43.7	40.2	46.6	45.7	16.4	33.0	13.0	5.97	1.50	1.54	< 0.55
		70.5	39.7	60.2	41.1	52.4	22.2						
	Sr-89/Sr-90	24	18	11	6.2	4.6	4.1	2.8	2.5	1.3	1.0	0.6	*
		29	17	15	5.6	5.6	4.1						
1964	Precip. (in.)	3.48	1.89	4.24									
	Sr-90 (mc/mi^2)	1.37	1.38	3.49									
	Sr-89 (mc/mi^2)	0.34	< 1.12										
	Sr-89/Sr-90	0.2											

Site: NEW YORK, NEW YORK CITY 40°40'N, 73°50'W, ~alt. 55 ft.

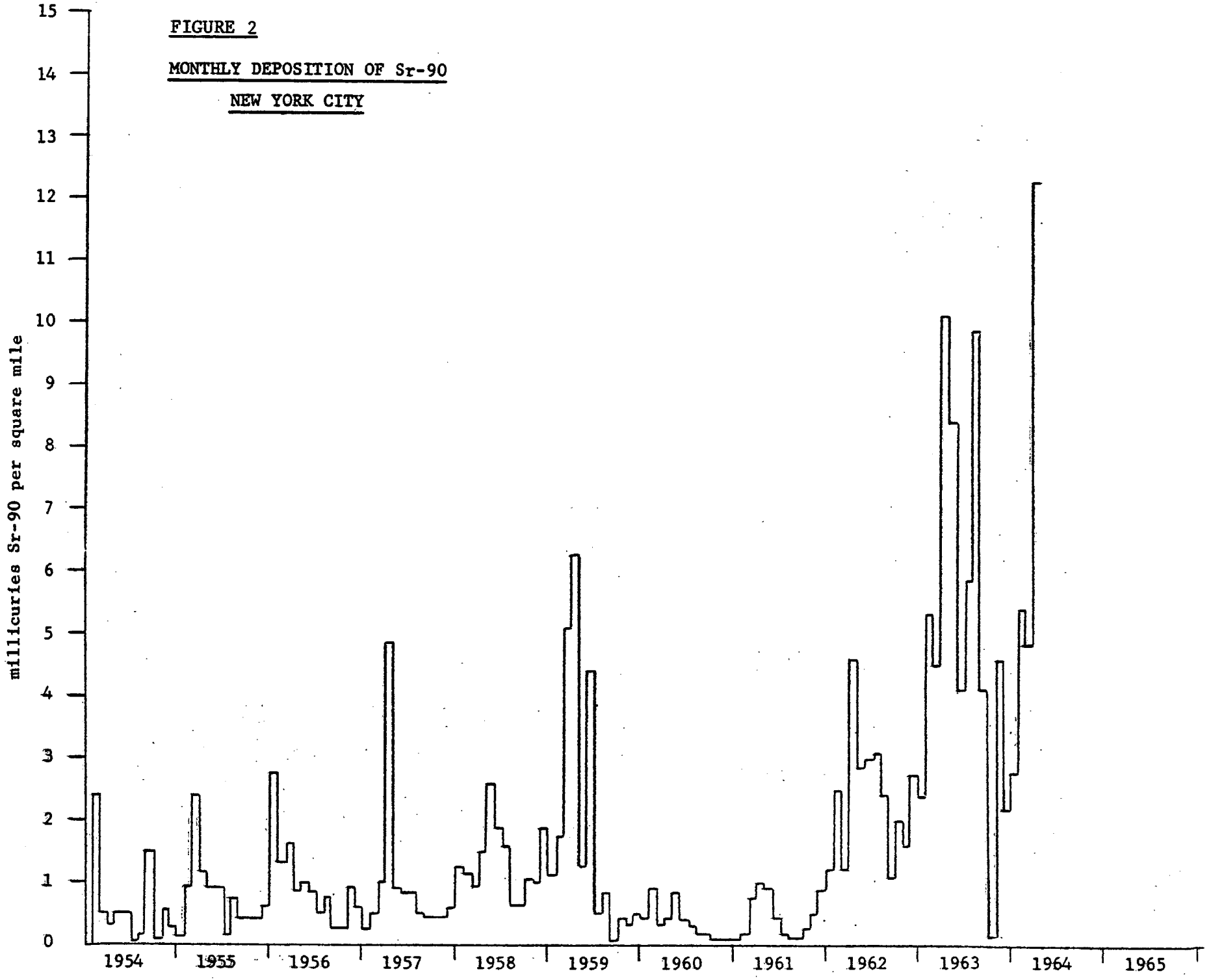
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954	Precip. (in.)		1.81	3.22	2.55	3.28	1.57	0.71	4.38	6.52	1.93	4.93	3.34
	Sr-90 (mc/mi^2)		2.37	0.52	0.34	0.48	0.46	0.14	0.19	1.47	0.20	0.65	0.33
	Sr-89/Sr-90		--	--	--	--	--	--	--	--	--	--	--
1955	Precip. (in.)	0.46	3.01	3.71	1.97	2.02	3.34	0.31	10.75	2.78	6.87	4.18	0.19
	Sr-90 (mc/mi^2)	0.23	0.87	2.43	1.24	0.89	0.87	0.25	0.68	0.43	0.35	0.42	0.55
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--	--	--	--
1956	Precip. (in.)	1.02	4.84	4.89	2.66	2.20	3.11	3.13	2.80	2.08	1.20	5.03	3.29
	Sr-90 (mc/mi^2)	2.71	1.26	1.61	0.77	1.04	0.80	0.46	0.74	0.32	0.31	0.89	0.55
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--	--	--	--
1957	Precip. (in.)	1.57	2.50	2.05	4.51	3.67	1.66	1.66	2.87	3.01	3.27	4.46	5.26
	Sr-90 (mc/mi^2)	0.26	0.53	1.03	4.80	0.94	0.82	0.84	0.50	0.41	0.38	0.42	0.60
	Sr-89/Sr-90	24	21	--	--	12	28	18	59	47	61	21	20
1958	Precip. (in.)	3.79	2.98	3.19	6.14	3.25	2.55	3.68	2.36	4.44	5.46	1.85	1.25
	Sr-90 (mc/mi^2)	1.29	1.23	0.89	1.52	2.63	1.76	1.58	0.60	0.65	1.06	0.98	1.77
	Sr-89/Sr-90	21	16	17	12	11	12	11	20	28	53	29	46
1959	Precip. (in.)	2.34	1.69	3.77	1.91	1.33	4.20	4.28	4.45	1.11	4.83	4.22	4.64
	Sr-90 (mc/mi^2)	1.19	1.73	5.09	6.28	1.30	4.44	0.49	0.68	0.12	0.36	0.31	0.51
	Sr-89/Sr-90	32	23	13	12	5.2	5.04	3.33	1.0	1.05	0.33	0.32	*
1960	Precip. (in.)	2.40	4.43	2.96	3.05	2.97	1.74	8.29	6.26	5.38	2.82	3.05	3.04
	Sr-90 (mc/mi^2)	0.45	0.81	0.32	0.42	0.73	0.43	0.27	0.22	0.15	0.11	0.12	0.11
	Sr-89/Sr-90	0.3	1.5	1.0	0.9	0.2	0.4	--	--	--	--	--	--
1961	Precip. (in.)	1.88	3.96	4.23	5.08	3.60	2.86	4.92	3.13	1.70	2.21	2.71	3.04
	Sr-90 (mc/mi^2)	0.11	0.17	0.68	0.97	0.83	0.43	0.20	0.12	0.06	0.30	0.96	1.44
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	72	87	83	47
1962	Precip. (in.)	2.62	3.74	2.97	3.00	1.26	3.73	1.67	5.71	3.10	3.15	3.94	2.26
	Sr-90 (mc/mi^2)	1.26	2.53	1.29	4.62	2.80	3.03	3.22	2.41	1.16	2.03	1.60	2.71
	Sr-89/Sr-90	50	30	15	11	10	7	5	7	18	30	27	33
1963	Precip. (in.)	1.93	2.55	3.61	1.27	2.16	2.72	2.19	3.21	3.95	0.14	8.24	2.31
	Sr-90 (mc/mi^2)	2.39	5.32	4.54	10.17	8.36	4.22	5.84	9.79	4.20	0.23	4.64	2.16
	Sr-89/Sr-90	30	19	21	--	5.2	5.2	3.4	1.5	1.3	0.9	0.6	0.5
1964	Precip. (in.)	4.62	2.93	2.57	5.09	0.57							
	Sr-90 (mc/mi^2)	2.70	5.44	4.75	12.27								
	Sr-89/Sr-90	0.3	--	--	--								
	Cs-137/Sr-90	1.8	1.4	1.4	1.4								

Note: Refer to page 2 for explanation of strontium-90 and precipitation data corrections.

FIGURE 2

MONTHLY DEPOSITION OF Sr-90

NEW YORK CITY



Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: NORTH DAKOTA, WILLISTON (Column) 48°10'N, 103°38'W, ~alt. 16 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	0.23	0.51	0.17	0.30	0.78	4.93	0.17	1.08	3.74	1.38	1.71	0.54
	Sr-90 (mc/mi^2)		0.22	lost	0.69	1.01	2.30	0.76	0.18	0.31	0.07	0.05	0.13
	Sr-89/Sr-90		23	--	12	7.5	6.8	2.9	0	0.59	*	1.8	1.3
1960	Precip. (in.)	0.61	0.39	0.28	1.11	1.73	5.22	0.89	2.98	0.05	0.02	0.64	0.45
	Sr-90 (mc/mi^2)	lost	0.14	0.26	0.58	0.54		0.32		0.12		0.06	
	Sr-89/Sr-90	--	0.7	--	--	--		--		--		--	
1961	Precip. (in.)	0.09	1.25	0.12	2.39	0.58	0.43	1.80	0.14	2.49	0.07	0.09	0.05
	Sr-90 (mc/mi^2)	0.90		0.59		0.35		0.34		0.24	0.08	0.07	0.12
	Sr-89/Sr-90	--		--		--		--		24	27	51	52
1962	Precip. (in.)	0.47	0.95	0.60	0.38	3.50	3.14	4.10	1.97	0.43	2.08	0.38	0.27
	Sr-90 (mc/mi^2)	0.09	0.23	0.47	0.72	4.90	2.88	3.70	0.44	0.33	0.74	0.70	0.18
	Sr-89/Sr-90	56	28	21	14	8	9	11	10	10	25	35	24
1963	Precip. (in.)	0.35	0.53	0.70	2.33	2.05	3.00	6.20	1.62	0.11	trace	0.27	0.30
	Sr-90 (mc/mi^2)	0.14	0.62	0.42	2.31	2.25	10.2	3.42	1.15	0.66	0.19	0.50	0.65
	Sr-89/Sr-90	23	22	12	10	5.8	2.8	2	*	0.4	*	*	*
1964	Precip. (in.)	0.45	0.12										
	Sr-90 (mc/mi^2)	0.79	0.04										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: OHIO, WOOSTER (Pot)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)								2.41	1.60	0.52	1.55	0,73
	Sr-90 (mc/mi^2)								3.41	1.39	0.54	1.04	0.31
	Sr-89/Sr-90								*	*	0.5	*	*
1964	Precip. (in.)	1.52	1.45										
	Sr-90 (mc/mi^2)	2.88	1.41										
	Sr-89/Sr-90	1.2	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: OKLAHOMA, TULSA (Pot) 36°07'N, 95°58'W, ~alt. 804 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)	1.78	0.86	6.14	4.64	3.44	3.08	3.33	3.58	3.61	0.21	1.39	0.82
	Sr-90 (mc/mi^2)	0.35	0.40	2.29	2.84	2.22	1.47	1.92	1.05	0.90	0.20	0.47	0.57
	Sr-89/Sr-90	15	8	10	12	9	15	88	53	36	23	8	46
1959	Precip. (in.)	2.46		3.02	1.46	6.66	3.30	9.85	2.13	7.42	6.08	1.48	2.53
	Sr-90 (mc/mi^2)	3.94		6.45	3.19	5.95	1.61	1.45	0.26	0.56	0.08	0.06	0.55
	Sr-89/Sr-90	17		13	8.6	8.3	4.2	2.3	1.7	0.38	*	*	*
1960	Precip. (in.)	1.22	2.65	1.06	3.63	8.91	1.65	9.01	1.87	0.89	3.53	0.63	3.01
	Sr-90 (mc/mi^2)	0.17	lost	0.38	0.96	1.99		1.22		0.29	lost	0.15	
	Sr-89/Sr-90	--	--	--	--	--		--		--	--	--	
1961	Precip. (in.)	0.66	2.86	3.30	1.49	9.09		10.88	3.16	7.37	0.86	3.18	(see '62 da
	Sr-90 (mc/mi^2)	0.57		1.42		2.57		0.89		0.27	0.36	0.49	2.18
	Sr-89/Sr-90	--		--		--		--		84	113	99	(12/6-2/12)
		(12/6-2/12)	(2/12-2/28)										
1962	Precip. (in.)	1.33	1.44	3.24	3.40	1.69	5.52	4.83	3.10	10.50	3.92	2.46	
	Sr-90 (mc/mi^2)	3.50	2.02	not	2.28	5.61	2.88	not	not	1.95	1.04	2.34	
	Sr-89/Sr-90	46	25	recd.	19	20	15	recd.	recd.	12	32	76	
1963	Precip. (in.)		1.76	1.45	2.27	2.49	0.53	10.74	3.28				0.98
	Sr-90 (mc/mi^2)	0.27	1.56	2.05	4.68	6.62	1.80	7.07	2.73		1.56		0.45
	Sr-89/Sr-90	22	27	25	12	*	*	*	*		*		*
1964	Precip. (in.)	0.63											
	Sr-90 (mc/mi^2)	0.57											
	Sr-89/Sr-90	1.0											

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: OREGON, MEDFORD (Column) 42°22'N, 122°52'W, Alt. 1312 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.99	2.78	0.88	0.59	1.40	0.27	0	0.28	0.29	0.61	0.16	1.17
	Sr-90 (mc/mi^2)		0.92	not	1.27	2.78	0.54	0.05	0.15	0.15	0.05	0.16	0
	Sr-89/90		25	recd.	9.9	8.6	4.6	5.3	2.1	4.1	0.97	*	*
1960	Precip. (in.)	2.35	4.12	4.40	0.67	1.97	trace	0.09	0.03	0.18	0.38	4.70	1.71
	Sr-90 (mc/mi^2)	0.42	0.42	0.27	0.46	0.69		0.00		0.17		0.20	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.12	2.74	3.05	0.96	1.86	0.34	0.10	0.15	0.93	2.57	3.33	2.60
	Sr-90 (mc/mi^2)	1.06		0.33		0.60		0.21		0.07	0.19	0.26	0.57
	Sr-89/Sr-90	--		--		--		--		21	90	87	55
1962	Precip. (in.)	1.69	1.05	1.00	0.81	0.80	0.15	trace	1.00	0.76	6.27	4.43	4.68
	Sr-90 (mc/mi^2)	0.50	0.47	1.01	0.76	1.44	0.31	0.02	0.35	0.18	0.86	1.16	0.89
	Sr-89/Sr-90	63	42	19	14	10	9	12	16	12	25	53	50
1963	Precip. (in.)	1.75	2.47	0.88	2.25	2.23	0.92	0.15	0.26	0.26	1.40	5.25	1.05
	Sr-90 (mc/mi^2)	2.46	1.58	1.02	4.17	4.92	2.62	1.86	1.40	0.69	0.08	1.08	0.86
	Sr-89/Sr-90	31	31	17	6	7.8	*	*	1	0.9	*	*	*
1964	Precip. (in.)	5.60	0.82										
	Sr-90 (mc/mi^2)	1.58	0.49										
	Sr-89/Sr-90	*	0.5										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

PENNSYLVANIA, PITTSBURGH (Pot) 40°26'N, 80°00'W, ~Alt. 745 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)							4.51	0.49	4.62	1.94	2.17	4.93
	Sr-90 (mc/mi^2)							0.87	0.160	0.126	0.281	0.44	0.66
								0.85	0.152	0.182	0.331	0.13	0.59
	Sr-89/Sr-90									50	26	5.9	12
										28	27	22	14
1958	Precip. (in.)	3.40	1.00	3.36	3.87	3.87	3.00	8.47	5.33	4.34	0.84	3.13	1.18
	Sr-90 (mc/mi^2)	0.66	0.33	0.47	1.38	0.87	2.62	2.15	1.66	0.68	0.55	0.76	0.76
		0.66	0.38	0.48	0.62	0.84	2.47	2.48	1.69	0.68	0.56	0.71	0.77
	Sr-89 (mc/mi^2)	4.4	3.5	5.3	19.6	8.4	34	96	43	18.3	16.7	24.8	19.5
		4.3	4.2	5.1	7.7	9.7	36	90	40	15.9	14.2	24.7	19.0
	Sr-89/Sr-90	7	11	11	14	10	13	45	26	27	30	33	26
		6	11	11	12	12	14	36	24	23	25	35	25
1959	Precip. (in.)	2.80	4.01	2.50	3.65	2.92	3.60	3.32	3.52	1.41	4.59	3.10	2.87
	Sr-90 (mc/mi^2)	1.59	2.01	3.63	5.42	2.96	2.14	0.644	0.367	0.061	0.343	0.347	0.406
		1.29	1.99	3.27	5.36	2.85	1.97	0.704	0.504	0.068	0.355	0.361	0.285
	Sr-89 (mc/mi^2)	34.5	39.8	60.8	52.5	18.2	9.2	2.04	0.82	0.03	0.08	0.17	0.10
		34.0	41.4	61.8	50.1	19.5	9.5	2.14	0.72	0	0.08	0.18	0.14
	Sr-89/Sr-90	22	20	17	10	6	4	3	2.2	0.5	0.2	0.5	0.2
		26	21	19	9	7	5	3	1.4	0	0.2	0.5	0.5
1960	Precip. (in.)	2.89	2.07	1.61	1.59	4.71	3.51	2.89	2.50	3.08	1.93	1.38	2.76
	Sr-90 (mc/mi^2)	0.201	0.420	0.321	0.587	0.784	0.803	0.478	0.250	0.182	0.15	0.10	0.19
		0.300	0.343	0.336	0.431	0.843	0.803	0.459	0.226	0.165	0.14	0.14	0.20
	Sr-89 (mc/mi^2)	0.11	0.44	0.66	0.21	0	0.06						
		0.01	0.55	0.52	0.23	0.22	0.17						
	Sr-89/Sr-90	0.5	1.0	2.0	0.36	*	0.07						
		0.03	1.6	1.6	0.53	0.26	0.21						
	Pu-239 (mc/mi^2)	--	0.003	0.020	0.003	0	0.010	0.022	0.020	0.019	0.005	0.014	0.014
		--	lost	0.012	0.008	0.009	0.003	0.014	0.034	0.012	0.007	0.009	0.025
	Ce-144 (mc/mi^2)	--	2.71	2.20	3.24	3.75	3.48	1.41	1.04	0.66	0.54	0.40	0.58
		--	lost	2.28	2.39	3.63	3.80	1.81	1.02	0.79	0.59	0.46	0.61
	Ru-106							1.63	9.01	0.63	2.89	0.51	0.40
								2.25	3.96	0.97	--	0.80	1.06

PENNSYLVANIA, PITTSBURGH (Pot) - continued from the previous page.

1961	Precip. (in.)	0.90	3.01	3.68	3.44	3.39	4.23	4.08	3.28	1.68	3.09	3.22	2.04
	Sr-90 (mc/mi^2)	0.11 0.14	0.54 0.63	0.74 0.80	1.16 1.08	0.92 0.97	0.83 0.86	0.409 0.442	0.198 0.192	0.073 0.073	0.44 0.37	0.70 0.68	1.01 0.94
	Sr-89 (mc/mi^2)									1.33 1.37	27.4 27.6	53.4 53.9	61.0 62.2
	Sr-89/Sr-90									18 19	62 74	76 79	60 66
	Pu-239 (mc/mi^2)	0.044 0.043	0.039 0.062	0.119 0.028	0 0.009	0 0	0 0	0.015 0.002	0.008 0.008	≤0.006 0.010	≤0.008 0.014	≤0.01 ≤0.01	≤0.01 ≤0.01
	Ce-144 (mc/mi^2)	0.31 0.40	1.53 1.77	2.42 2.36	3.32 3.52	2.19 2.21	2.18 1.97	0.91 0.99	0.59 0.60	0.43 0.55	7.86 8.78	19.0 23.2	27.9 28.0
	Ru-106 (mc/mi^2)	0.31 0.26	1.12 0.87	1.61 1.40	2.32 0.34	2.26 1.92	1.76 1.79	0.94 0.94	0.56 0.65	0.53 0.39	5.75 5.44	9.3 7.5	11.3 14.6
	Rh-102 (mc/mi^2)							0.01 0.01	0.01 0.01	≤0.03 ≤0.01	0.08 0.06	0.02 0.02	≤ 0.01 ≤ 0.09
	Cs-137 (mc/mi^2)							0.68 0.74	0.41 0.39	0.17 0.13	0.69 0.69	1.20 1.16	1.68 1.71
	Gross β							8.0 7.2	14.8 18.1				
	Ba-140 (mc/mi^2)									6.35 6.83	56.7 64.5	55.6 62.8	23.1 24.8
	Zr-95 (mc/mi^2)									1.09 1.62	37.4 67.5	71.6 80.9	97.4 78.5
	Ce-141 (mc/mi^2)									3.9 3.4	54 54	72 114	125 82
	Pm-147 (mc/mi^2)							0 0	0 0				
1962	Precip. (in.)	2.03	3.56	3.02	4.56	2.60	1.61	3.17	2.58	6.86	2.15	1.39	2.34
	Sr-90 (mc/mi^2)	1.36 1.26	2.06 2.07	2.24 2.29	3.69 4.03	3.41 3.61	1.59 1.51	3.75 3.82	3.09 3.34	1.53 1.51	1.43 1.33	1.66 1.53	1.86 1.92
	Sr-89 (mc/mi^2)	63.3 64.4	57.5 59.5	44.0 47.6	59.9 54.2	32.8 34.2	9.54 10.2	23.4 22.2	15.7 16.4	29.9 27.1	33.2 33.8	72.4 64.7	58.9 59.2
	Sr-89/Sr-90	46 51	28 29	20 21	16 13	9.6 9.5	6.0 6.8	6.2 5.8	5.1 4.9	19 18	23 25	44 42	32 31
	Ba-140 (mc/mi^2)	9.32 10.3	3.20 3.88										
	Ce-144 (mc/mi^2)	48.8 48.0	62.1 65.5	73.9 81.0	124 133	96.5 94.4	28.3 26.2	79.4 81.6	60.8 55.2	34.6 35.8	30.8 36.4	72.6 48.2	53.3 56.7
	Pu-239 (mc/mi^2)	≤0.003 ≤0.003	≤0.005 ≤0.007	0.007 0.003	≤0.006 ≤0.010	≤0.004 ≤0.002	≤0.002 ≤0.002	0.38 0.11	0.07 1.26	0.003 0.006	0.008 0.01	0.024 0.027	0.035 0.034
	Ru-106 (mc/mi^2)	20.7 18.4	lost 32.5	32.7 31.2	72.3 66.4	43.5 42.8	11.5 13.1						
	Cs-137 (mc/mi^2)	lost lost	lost lost	4.79 4.95	10.2 9.25	7.09 6.8	2.76 2.79	5.94 6.05	low yield	2.42 2.56	2.14 2.17	2.46 2.46	2.85 2.88
	Rh-102 (mc/mi^2)	≤0.03 ≤0.03	≤0.01 ≤0.01	≤0.05 ≤0.02	0.13 0.16	≤0.4 ≤0.03	0.05 0.08						
	Zr-95 (mc/mi^2)	55.5 59.9	47.2 57.7	63.3 52.6	86.5 80.0	81.0 58.4	10.0 9.72	26.7 60.7	61.6 51.6	71.2 42.4	88.7 92.4	115 66.6	67.7 91.7
	Ce-141 (mc/mi^2)	58 70	79 84	0 93	97 27	64 41	9.0 7.4	<44 <80	71 77	87.9 71.6	112 105	259 169	105 123

PENNSYLVANIA, PITTSBURGH (Pot) - continued from the previous page.

1963	Precip. (in.)	1.97	2.55	6.85	3.04	1.66
	Sr-90 (mc/mi^2)	2.05	2.28	7.35	7.89	5.75
		2.05	2.40	7.33	7.90	5.67
	Sr-89 (mc/mi^2)	56.7	53.9	99.7	71.3	39.4
		59.6	53.3	105	69.5	39.0
	Sr-89/Sr-90	28	24	14	9	7
		29	22	14	9	7
	Ba-140 (mc/mi^2)					
	Ce-144 (mc/mi^2)	57.6	65.6	198	186	126
		59.6	62.4	200	161	126
	Pu-239 (mc/mi^2)	0.033	0.030	0.017	0.057	0.080
		0.055	0.019	0.043	0.050	0.079
	Ru-106 (mc/mi^2)					
	Cs-137 (mc/mi^2)	3.10	4.18	12.3	14.8	10.5
		3.26	3.63	13.7	13.6	9.47
	Rh-102 (mc/mi^2)					
	Zr-95 (mc/mi^2)	66.2	58.2	104	106	48.5
		76.5	58.0	121	86.1	57.3
	Ce-141 (mc/mi^2)	75.0	33.4	0	0	0
		62.0	37.8	0	0	0

Collections and analyses at this site have been terminated.

Site: PENNSYLVANIA, PITTSBURGH (Column) 40°26'N, 80°00'W, ~Alt. 745 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		2.06	1.61	1.59	4.71	3.87	2.89	2.50	3.08	1.93	1.38	2.76
	Sr-90 (mc/mi^2)		0.144	0.179	0.257	lost	0.489	0.006	0.51	0.26	0.35	0.32	0.36
			0.220	0.191	0.422	"	0.459	0.020	0.68	0.27	0.57	0.37	0.35
	Sr-89 (mc/mi^2)	2	0.7	0.6	0.3	0							
		5	0.5	0.6	lost	0.5							
	Sr-89/Sr-90	13.9	3.9	2.3	1	0.0							
		22.7	2.6	1.4	--	1.1							
	Pu-239 (mc/mi^2)			0	0	0.018	0.008	0.028	0.037	0.024	0.001	0.005	0.003
				0.006	0.004	0.006	0	0.030	0.027	0.051	0.004	0.014	0.025
	Ce-144 (mc/mi^2)			1.19	1.94	3.01	2.33	1.32	0.91	0.28	0.28	0.14	0.10
				1.08	2.03	2.13	1.52	1.57	0.98	0.28	0.80	0.10	0.28
1961	Precip. (in.)	0.90	3.01	3.68	3.44	3.86	3.76	4.08	3.28	1.68	3.09	3.22	2.04
	Sr-90 (mc/mi^2)	0.24	0.57	0.50	0.32	0.19	0.15	0.35	0.03	0.018	0.187	0.56	0.78
		0.26	0.53	0.38	0.42	0.60	0.26	0.28	0.07	0.039	0.129	0.63	0.71
	Sr-89 (mc/mi^2)									0.39	9.37	37.4	45.3
										0.74	6.73	57.0	43.8
	Sr-89/Sr-90									22	50	67	58
										19	53	90	62
	Pu-239 (mc/mi^2)	0.014	0.013	0.006	lost	0	0						
		0.012	0.015	0.005	0	0	0						
	Ce-144 (mc/mi^2)	0.19	0.32	0.16	0.69	0.36	0.27						
		0.13	0.21	0.07	lost	0.28	0.50						
1962	Precip. (in.)	2.03	3.56	3.02	4.56	2.60	1.61	3.17	2.58	6.86	2.15	1.39	2.34
	Sr-90 (mc/mi^2)	1.36	2.09	2.20	4.23	4.14	1.76	3.30	2.76	1.35	1.16	1.20	1.44
		1.54	2.06	2.58	4.31	3.86	1.73	3.05	1.08	1.43	1.13	1.35	1.67
	Sr-89 (mc/mi^2)	59.5	61.8	46.9	61.4	43.9	11.0	23.2	14.6	23.7	27.9	57.1	54.0
		69.9	60.6	50.8	58.6	39.4	10.6	20.6	6.5	24.6	22.1	55.8	54.0
	Sr-89/Sr-90	44	30	21	14	11	6.2	7.0	5.3	18	24	48	38
		45	29	20	14	10	6.1	6.8	6.0	17	20	41	32
1963	Precip. (in.)	1.97	2.55	6.85	3.04	1.66							
	Sr-90 (mc/mi^2)	1.89	2.28	6.91	7.20	6.04							
		1.74	2.20	6.65	6.88	5.24							
	Sr-89 (mc/mi^2)	53.9	49.7	88.2	68.6	36.7							
		50.8	45.1	87.5	65.7	31.4							
	Sr-89/Sr-90	28	22	13	10	6							
		29	20	13	10	6							

Collections and analyses at this site have been terminated.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: SOUTH CAROLINA, COLUMBIA (Column) 33°57'N, 81°07'W, ~alt. 217 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)				2.64	5.79	2.67	13.87	4.52	7.12	12.09	0.67	2.42
	Sr-90 (mc/mi^2)				2.52	1.31	0.49	lost	0.31	0.13	0.52	0.21	0.13
	Sr-89/Sr-90				12.2	7.4	4.9	--	1.6	0.91	0.65	*	14
1960	Precip. (in.)	7.15	5.53	6.17	3.91	1.47	2.37	4.79	0.27	3.94	1.71	0.68	2.37
	Sr-90 (mc/mi^2)	0.72	1.01	0.65	0.50	0.83		0.30		0.26		0.31	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.93	8.95	0.29	0.01	2.98	1.95	5.70	14.94	1.46	0.82	1.01	4.74
	Sr-90 (mc/mi^2)	1.54		0.51		0.34		0.54		0.07	0.03	0.10	1.04
	Sr-89/Sr-90	--		--		--		--		13	142	174	60
1962	Precip. (in.)	6.49	5.24	5.30	3.21	4.11	2.99	2.67	4.14	2.85	0.84	4.53	2.27
	Sr-90 (mc/mi^2)	1.86	2.15	4.08	0.23	3.91	2.25	1.86	0.83	1.26	0.05	0.18	0.82
	Sr-89/Sr-90	38	30	19	12	9	8	13	21	73	23	32	47
1963	Precip. (in.)	(1/1 - 2/15) 7.47	3.94	3.28	4.18	2.87	4.84	2.48	1.91	3.98	trace	4.20	5.12
	Sr-90 (mc/mi^2)	lost	1.73	2.72	7.71	3.06	6.47	5.18	1.51	1.24	0.07	1.44	1.76
	Sr-89/Sr-90	--	34	20	13.5	12.5	2.4	0.7	*	0.4	*	*	*
1964	Precip. (in.)	6.27	5.33										
	Sr-90 (mc/mi^2)	0.87	3.81										
	Sr-89/Sr-90	4.0(?)	0.3										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: SOUTH DAKOTA, VERMILLION (Pot) 42°47'10"N, 96°55'37"W, ~alt. 1220 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)				1.35	4.17	2.37	4.29	1.62	3.14	1.67	1.49	0
	Sr-90 (mc/mi^2)				0.51	1.74	1.01	2.80	1.11	0.87	0.93	0.14	0.06
	Sr-89/Sr-90					11	25	68	--	33	51	15	16
1958	Precip. (in.)	0.22	2.13	0.52	3.15	1.85	1.09	4.47	0.19	0.88	0	0.94	0.07
	Sr-90 (mc/mi^2)	0.08	0.38	0.20	2.54	2.28	0.16	2.42	0.50	0.29	0.06	0.74	0.21
	Sr-89/Sr-90	17	13	13	12	16	5	31	49	43	23	47	37
1959	Precip. (in.)	0.27	0.84	1.02	1.33	7.87	2.73	1.32	3.15	2.60	2.60	2.02	1.44
	Sr-90 (mc/mi^2)	0.09	0.90	2.14	3.27	lost	1.52	lost	lost	0.42	0.37	0.24	0.15
	Sr-89/Sr-90	25	24	18	12	--	5.1	--	--	0.37	0.31	*	1.3
1960	Precip. (in.)	0.29	0.10	1.09	3.54	7.38	1.84	1.36	5.77	2.79	0.73	1.04	0.42
	Sr-90 (mc/mi^2)	0.03	0.06	0.70	0.86	3.09		0.90		0.30		0.16	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.17	0.88	0.88	0.87	3.93	3.04	1.17	3.85	2.05	1.43	0.90	0.94
	Sr-90 (mc/mi^2)	0.07		0.56		1.85		0.52		0.74	0.17	0.90	0.25
	Sr-89/Sr-90	--		--		--		--		141	65	62	53
1962	Precip. (in.)	0.14	1.09	3.01	1.90	5.77	5.51	4.45	2.93	2.95	0.66	0.12	0.13
	Sr-90 (mc/mi^2)	0.15	1.24	3.30	5.05	15.5	4.03	2.57	3.33	2.93	0.93	0.08	lost
	Sr-89/Sr-90	38	60	19	10	9	4	26	11	13	27	29	--
1963	Precip. (in.)	0.88	0.25	0.78	1.65	1.96	4.49	2.84	2.68	2.21	0.47	0.10	0.51
	Sr-90 (mc/mi^2)	0.27	0.45	4.56	7.55	7.67	13.09	5.53	4.08	1.26	1.18	0.23	0.03
	Sr-89/Sr-90	30	28	20	12	10.1	4.8	0.4	*	1.0	1.0	*	*
1964	Precip. (in.)	0.16	0.11										
	Sr-90 (mc/mi^2)	0.35	0.40										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: **TEXAS, DALLAS (Column)** 32°51'N, 96°51'W, ~alt. 524 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		2.47	1.26	0.72	3.18	3.16	3.25	1.77	3.51	11.38	1.93	5.85
	Sr-90 (mc/mi^2)		2.13	not	2.84	5.4	0.88	0.29	0.09	0.20	0.01	0.14	0.32
	Sr-89/Sr-90		33	recd.	11	7.4	5.2	2.1	*	1.3	*	*	*
1960	Precip. (in.)	3.21	2.83	0.95	2.98	2.23	3.22	7.34	3.31	2.61	3.74	0.82	8.50
	Sr-90 (mc/mi^2)	0.55	0.06	0.32	0.50	0.49			0.00	0.11		0.12	
	Sr-89/Sr-90	--	--	--	--	--			--	--		--	
1961	Precip. (in.)	3.39	3.21	4.90	1.66	1.31	7.85	1.30	0.19	5.54	3.41	4.04	3.19
	Sr-90 (mc/mi^2)	0.56		0.98		0.72			0.00	0.08	0.07	0.11	0.68
	Sr-89/Sr-90	--		--		--			--	87	101	290 ?	63
1962	Precip. (in.)	1.32	3.02	2.35	8.95	2.00	4.63	8.52	3.38	6.27	7.29	5.72	1.29
	Sr-90 (mc/mi^2)	0.82	1.03	2.54	7.42	0.93	3.57	0.75	0.34	0.07	lost	1.63	1.79
	Sr-89/Sr-90	38	89 lost	18	12	19	8	18	20	14	--	23	38
1963	Precip. (in.)	0.49	0.30	0.66	6.36	1.94	1.48	1.71	0.02	0.94	0.01		1.81
	Sr-90 (mc/mi^2)	0.39	0.77	1.01	5.83	3.55	0.52	1.35	0.25	0.32	0.40	1.43	0.39
	Sr-89/Sr-90	45	31	15	11.7	8.5	3.5	2	1	0.6	*	*	*
1964	Precip. (in.)	3.27	1.25										
	Sr-90 (mc/mi^2)	1.31	2.80										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: TEXAS, EL PASO (Column) 31°48'N, 106°24'W, ~alt. 3948 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		trace	0.07	0.15	0.30	0.46	0.40	2.39	trace	0.58	0.14	0.29
	Sr-90 (mc/mi^2)		0.15	not	0.75	1.00	0.46	0.48	0.32	0.05	0.04	0.03	0.12
	Sr-89/Sr-90		23	recd.	9.4	7.7	4.2	3.2	2.5	*	*	*	3.1
1960	Precip. (in.)	0.72	0.37	0.21	0.02	0.04	0.76	3.61	0.77	0.01	0.77	0.11	1.73
	Sr-90 (mc/mi^2)	0.24	0.20	0.34	0.14	0.47		0.02		0.06		0.21	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.41	trace	0.29	0.01	trace	0.27	2.18	1.40	0.69	0.18	1.63	0.63
	Sr-90 (mc/mi^2)	0.84		0.39		0.10		0.19		not	0.06	0.43	0.61
	Sr-89/Sr-90	--		--		--		--		recd.	57	106	58
1962	Precip. (in.)	0.94	0.58	0.24	0.10	0	trace	1.82	trace	3.54	0.55	0.21	0.30
	Sr-90 (mc/mi^2)	1.00	0.39	0.29	0.70	0.09	lost	0.70	0.13	0.66	0.07	0.44	0.32
	Sr-89/Sr-90	44	25	22	13	12	--	11	22	11	25	50	38
1963	Precip. (in.)	0.13	0.53	trace	trace	0.71	0.05	0.52	1.03	0.64	0.55	0.76	
	Sr-90 (mc/mi^2)	0.33	0.60	0.08	0.25	1.31	0.55	1.54	1.42	0.28	0.34	0.97	0.14
	Sr-89/Sr-90	40	19	6.6	4	6.4	0.5	0.8	*	0.5	1.0	*	*
1964	Precip. (in.)	trace	trace										
	Sr-90 (mc/mi^2)	1.22	0.13										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: TEXAS, HOUSTON (Column) 29°39'N, 95°17'W, ~elt. 72 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		11.33	1.58	7.76	6.20	2.78	9.67	8.45	4.76	5.76	1.90	4.16
	Sr-90 (mc/mi^2)		0.20	not	5.54	6.63	0.44	lost	0.26	0.21	0.09	0.10	0.31
	Sr-89/Sr-90		7.8	recd.	11	6.2	5.0	--	0.68	0.90	*	0.59	*
1960	Precip. (in.)	3.23	3.93	0.38	1.84	0.90	14.66	2.34	7.42	0.61	7.32	3.69	8.97
	Sr-90 (mc/mi^2)	0.35	0.82	0.38	0.60	0.25			0.44	0.23		0.21	
	Sr-89/Sr-90	--	--	--	--	--			--	--		--	
1961	Precip. (in.)	4.44	3.88	1.84	2.42	3.59	11.11	10.07	4.17	7.89	0.05	10.20	3.31
	Sr-90 (mc/mi^2)	1.74		0.66		0.52		0.53		0.06	0.03	0.34	0.33
	Sr-89/Sr-90	--		--		--		--		4.9	40	67	64
1962	Precip. (in.)	1.73	0.71	0.94	4.81	1.15	7.40	0.07	2.77	3.97	3.12	5.68	4.78
	Sr-90 (mc/mi^2)	0.96	0.48	0.86	0.06	0.42	2.12	0.16	0.58	0.38	3.23	1.25	1.04
	Sr-89/Sr-90	40	26	18	16	16	16	24	12	14	36	76	46
1963	Precip. (in.)	3.09	2.60	0.55	0.92	0.62	7.79	2.08	1.85	1.94	0.30	5.72	4.83
	Sr-90 (mc/mi^2)	0.76	1.65	0.80	0.02	0.68	7.12	1.87	0.79	0.52	0.36	1.56	2.49
	Sr-89/Sr-90	8	30	16	*	8.2	0.9	1	*	*	*	*	*
1964	Precip. (in.)	2.89	4.97										
	Sr-90 (mc/mi^2)	0.94	3.63										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: TEXAS, HOUSTON (Tracerlab Site) (Column) 29°45'N, 95°25'W, ~Alt. 40 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1961	Precip. (in.)							8.61	3.23	7.89	0.21	5.70	0.88
	Sr-90 (mc/mi^2)							lost	0.179	lost	0.026	0.259	0.308
								0.092	0.162	0.020	0.033	0.343	0.312
	Sr-89/Sr-90							--	--	--	64	74	68
										12	61	75	83
1962	Precip. (in.)	1.25	0.60	0.60	4.81	1.15	7.40	0.07	2.70	3.97	3.12	5.68	4.73
	Sr-90 (mc/mi^2)	1.15	1.07	1.83	4.81	0.453	3.43	0.44	0.87	0.283	1.25	1.64	2.21
		1.18	0.94	1.81	5.01	0.469	1.94	0.40	--	0.251	--	--	1.11
	Sr-89/Sr-90	40	28	20	14	17	8.7	12	9.2	8.6	23	0.66	42
		39	28	17	13	16	8.2	13		9.4			38
1963	Precip. (in.)	3.09	1.75	0.55	0.92	0.62	N.D.						
	Sr-90 (mc/mi^2)	2.10	0.04	0.629	0.693	2.89	3.23						
		0.43	2.32	--	0.946	1.90	6.69						
	Sr-89/Sr-90	30	27	21	13	3.7	--						
		30	25	--	11	13	0.7						

Beginning in July 1963, collections and analyses at this site were terminated.

Site: TEXAS, HOUSTON (Pot) 29°45'N, 95°25'W, ~Alt. 40 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)					1.55	2.10	1.94	6.44	8.90	5.90	1.65	0.54
	Sr-90 (mc/mi^2)					0.37 0.38	0.67 0.74	0.62 0.48	0.61 0.61	0.61 0.40	0.64 0.64	0.25 0.24	0.46 0.49
	Sr-89 (mc/mi^2)					3.6 3.4	15.6 18.7	41.0 31.5	32 37	14.4 13.8	21.2 21.8	8.1 7.6	19.4 19.2
	Sr-89/Sr-90					10 9	23 23	66 66	53 61	24 35	33 34	32 32	42 39
1959	Precip. (in.)	5.58	6.11	0.84	6.92	7.5	6.52	8.17	6.99	4.24	4.89	1.45	5.69
	Sr-90 (mc/mi^2)	1.14 1.28	1.94 1.75	1.57 1.28	4.12 4.05	6.01 lost	1.00 0.92	0.845 0.896	0.351 0.321	0.537 0.262	0.065 0.055	≤0.045 0.043	0.204 0.212
	Sr-89 (mc/mi^2)	40.0 42.2	43.4 38.0	25.1 22.2	43.5 41.3	34.2 lost	4.83 5.11	2.36 3.63	0.72 0.48	0.440 0.363	0.044 0.059	0.348 0.146	0.267 0.088
	Sr-89/Sr-90	35 33	22 22	16 17	11 10	5.7 --	4.8 5.6	2.8 4.1	2.1 1.5	0.8 1.4	0.68 1.1	-- 3	1.3 0.4
1960	Precip. (in.)	1.95	3.99	--	0.85	0.88	14.38	5.48	7.42	1.86	10.85	4.73	6.72
	Sr-90 (mc/mi^2)	0.158 0.140	0.620 lost	lost lost	0.221 0.278	0.090 0.077	0.601 0.564	0.104 0.103	0.327 0.322	0.079 0.072	0.241 0.229	0.110 0.106	0.181 0.160
	Sr-89 (mc/mi^2)	0.083 0.058	2.13 lost	lost lost	0.540 0.597	0.018 0.022	≤0.049 ≤0.011						
	Sr-89/Sr-90	0.5 0.4	3.44 --	-- --	2.4 2.1	0.2 0.3	0.1 0.02						
	Pu-239 (mc/mi^2)	≤0.000 ≤0.000	lost lost	lost lost	0.0056 0.0051	0.0060 0.0093	0.0115 0.0119	0.0049 0.0098	0.020 0.016	0.0059 lost	0.0051 0.0078	0.0043 0.0029	0.0042 0.0053
	Ce-144 (mc/mi^2)	2.71 2.32	5.48 lost	lost lost	2.59 3.11	1.34 1.15	3.62 2.64	1.50 1.37	2.65 2.68	0.81 0.97	0.336 0.334	0.55 0.65	0.55 0.58
1961	Precip. (in.)	4.44	6.46	1.84	2.42	3.59	8.57	8.61	3.23	7.89	0.21	5.70	0.88
	Sr-90 (mc/mi^2)	0.253 0.247	0.482 0.452	0.227 0.248	0.69 0.65	0.150 0.158	0.431 0.390	0.275 0.256	0.206 0.207	0.094 0.058	0.028 0.029	0.461 0.319	0.38 0.32
	Sr-89 (mc/mi^2)									0.986 0.262	1.59 1.72	27.0 19.3	16.5 16.6
	Sr-89/Sr-90									10 4.5	57 59	58 50	43 52
	Pu-239 (mc/mi^2)	0.0050 0.0040	≤0.009 0.010	≤0.0014 ≤0.0027	0.017 0.019	≤0.0029 lost	0.0065 0.0061	0.0106 0.0089	lost "	0.0129 0.0054	0.004 lost	0.0105 0.0108	0.0065 0.0076
	Ce-144 (mc/mi^2)	0.88 0.70	1.26 1.13	0.90 0.91	1.87 1.87	0.46 1.24	1.66 1.78	0.78 0.67	1.24 0.77	1.50 1.34	1.86 1.77	20.4 20.2	lost lost
	Pu-238 (mc/mi^2)							≤0.0033 ≤0.0029	lost "	0.0012 0.0007	≤0.001 lost	0.0021 0.0019	0.0006 0.0007
	Ce-141 (mc/mi^2)									4.7 5.6	N.D. N.D.	N.D. N.D.	lost lost
	Zr-95 (mc/mi^2)									lost 3.76	7.7 10.4	63 61	lost lost
	Ba-140 (mc/mi^2)									21.6 27.0	≤3700 ≤3760	1010 ≤1010	lost 58

TEXAS, HOUSTON (Pot) - continued from the previous page.

1962	Precip. (in.)	1.25	0.60	0.60	4.81	1.15	7.40	2.77	3.97	3.12	5.68	4.73
	Sr-90 (mc/mi^2)	0.77 0.84	0.89 0.44	1.25 0.79	4.70 4.93	0.43 0.46	3.65 4.61	1.39 1.35	0.56 0.50	1.17 lost	2.04 2.90	1.86 lost
	Sr-89 (mc/mi^2)	46.1 48.1	24.1 11.4	20.7 16.1	60.0 64.8	8.61 8.81	31.2 40.5	14.6 13.3	4.21 4.25	26.0 lost	178 202	56.9 lost
	Sr-89/Sr-90	60 57	27 26	16 20	13 13	20 19	8.5 8.8	10 9.8	7.5 8.5	22 --	87 70	30 --
	Ce-144 (mc/mi^2)	lost lost	25.2 21.5	73.7 80.9	165 198	21.1 20.0	127 147	23.2 20.8	40.9 42.9	40.1 lost	92.9 102	65.3 lost
	Pu-239 (mc/mi^2)	0.022 0.025	0.018 0.017	0.049 0.051	0.109 0.114	0.022 0.016	0.090 0.105	0.025 0.025	0.033 0.029	0.092 lost	lost 0.060	0.044 0.045
	Ce-141 (mc/mi^2)	lost lost	≤2.0 N.D.*	N.D. N.D.	N.D. N.D.	N.D. N.D.	N.D. N.D.	≤ 10 ≤ 2	≤ 13 ≤ 7	68 lost	347 398	128 lost
	Pu-238 (mc/mi^2)	0.0018 0.0018	0.0008 0.0007	0.0016 0.0018	0.005 0.005	0.0011 0.0015	0.0048 0.0074	0.0007 ≤0.0017	0.0015 ≤0.0026	0.010 lost	lost 0.014	0.0046 0.0054
	Ba-140 (mc/mi^2)	21.2 lost	N.D. 2.9	N.D. 2.9				33.3 30.3	4.29 4.21	88.9 lost	653 773	
	Zr-95 (mc/mi^2)	21 lost	17 lost	81 87	132 133	24.5 31.2	192 213	20.3 19.2	58.5 56.9	75.7 lost	107 111	131 138
	Cs-137 (mc/mi^2)										4.49 4.45	3.03 3.53
1963	Precip. (in.)	3.09	1.75	0.55	0.92	0.62	-					
	Sr-90 (mc/mi^2)	2.40 2.51	2.94 2.81	1.02 0.93	1.69 2.63	2.32 2.68	lost 5.61					
	Sr-89 (mc/mi^2)	78 72	61 60	8.45 8.89	11.6 12.1	15.2 17.4	- 1.23					
	Sr-89/Sr-90	33 29	21 22	8.2 9.6	6.9 4.6	6.6 6.5	- 0.2					
	Ce-144 (mc/mi^2)	72.9 71.7	lost 92.1	39 37	65 77	68.5 68.9	20.0 146					
	Pu-239 (mc/mi^2)	0.035 0.039	0.037 0.045	lost lost	lost lost	0.047 0.049	0.049 0.067					
	Ce-141 (mc/mi^2)	76.1 76.5	lost 67.3	≤24 ≤36	≤37 ≤8	N.D. N.D.	N.D. ≤31					
	Pu-238 (mc/mi^2)	0.0077 0.012	0.0079 0.0053	lost lost	lost lost	0.0034 0.0030	0.0017 0.0015					
	Ba-140 (mc/mi^2)											
	Zr-95 (mc/mi^2)	72.5 75.3	79.7 86.5	23 27	50 lost	38.7 41.3	lost 44.5					
	Cs-137 (mc/mi^2)	lost lost	5.41 5.37	2.16 1.84	21.0 20.0	28.1 71.7	3.19 23.6					

Beginning in July 1963, collections and analyses at this site were terminated.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: UTAH, SALT LAKE CITY (Pot) 40°46'N, 110°49'30"W, Alt. 4970 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)												1.67
	Sr-90 (mc/mi^2)												0.31
	Sr-89/Sr-90												--
1957	Precip. (in.)	1.37	0.72	2.18	3.24	3.37	1.47	0.31	1.69	0.33	0.78	1.37	1.61
	Sr-90 (mc/mi^2)	0.8	0.83	2.39	2.30	0.81	1.61	0.94	1.28	0.15	0.59	0.41	0.64
	Sr-89/Sr-90	16	14	9.3	--	1.3	24	--	--	40	49	15	12
1958	Precip. (in.)	0.87	2.20	2.19	2.92	0.30	0.04	0.05	0.23	0.25	trace	1.13	0.54
	Sr-90 (mc/mi^2)	0.70	1.10	1.47	2.10	1.30	0.28	0.06	0.71	lost	0.10	0.25	3.07
	Sr-89/Sr-90	15	13	32	13	12	12	107	44	--	47	16	43
1959	Precip. (in.)	1.60	1.41	0.79	1.61	2.05	1.38	0.19	1.76	1.66	0.22	0.10	1.05
	Sr-90 (mc/mi^2)	2.46	2.56	4.56	5.84	5.95	2.40	0.53	lost	0.69	0.25	0.93	0.26
	Sr-89/Sr-90	--	27	18	10	10	5.8	3.0	--	1.30	0.40	0.11	0
1960	Precip. (in.)	0.96	1.58	2.45	1.11	0.79	0.39	trace	1.18	0.39	1.18	1.57	0.39
	Sr-90 (mc/mi^2)	0.17	0.40	1.08	0.93	0.06		0.16		0.04		0.30	not
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	recd.
1961	Precip. (in.)	0.07	2.05	1.85	0.94	0.24	0.07	0.55	1.18	1.10	1.60	1.15	0.88
	Sr-90 (mc/mi^2)	0.88		1.13		0.07		0.24		0.20	1.13	0.65	2.31
	Sr-89/Sr-90	--		--		--		--		12	82	71	56
1962	Precip. (in.)	0.84	1.42	2.32	2.99	2.12	0.48	2.52		1	0.93	0.56	0.16
	Sr-90 (mc/mi^2)	1.16	4.50	5.53	6.77	10.66	0.33	1.77	0.51	0.50	1.48	0.90	0.22
	Sr-89/Sr-90	40	25	18	13	8	20	25	14	17	3	41	55
1963	Precip. (in.)			2.11	4.06	0.23	1.67	trace	0.54	1.08	1.05	1.56	(11/29/63-1/6/64) 0.84
	Sr-90 (mc/mi^2)	2.15		3.50	20.26	2.06	12.38	0.47	1.88	2.40	2.28	1.45	0.73
	Sr-89/Sr-90	34		18	10	5.6	5.9	0.7	*	*	0.4	*	4(?)
		(1/6-31/64)											
1964	Precip. (in.)	1.01	0.35										
	Sr-90 (mc/mi^2)	2.17	1.06										
	Sr-89/Sr-90	*	0.5										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: U.S. WEATHER BUREAU STATION (Column) - Silver Hill, Md., and Sterling, Va.* 38°59'N, 77°28'W, ~alt. 270 ft.

		collector**	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)			2.08	2.85	4.78	2.69	4.89	5.18	2.22	2.07	3.49	2.50	3.90
	Sr^{90} (mc/mi^2)	#1		1.81	lost	5.77	1.68	1.73	0.60	0.10	0.14	0.27	0.17	0.48
		#2				5.97	2.16	2.34	0.35	0.41	0.05	0.24	0.24	0.31
	Sr-89/Sr-90	#1		2.7		11	7.7	5.4	2.7	1.0	*	0.7	0.4	*
		#2				4.6	9.0	5.9	2.8	1.4	*	0.4	*	*
1960	Precip. (in.)			3.94	1.76	3.45	4.93	1.18	4.65	7.36	3.47	1.45	1.91	1.78
	Sr^{90} (mc/mi^2)	#1	lost	0.07	0.11	lost	0.38		1.03		0.65		0.64	
		#2	lost	0.66	0.22	lost	1.60		0.91		0.36		0.67	
1961	Precip. (in.)		3.20	4.13	4.05	3.22	3.50	3.46	3.19	3.56	3.73	3.25	2.59	2.90
	Sr^{90} (mc/mi^2)	#1	0.39		1.53		1.02		0.28		0.09	0.31	0.50	0.67
		#2	0.23		1.21		1.32		0.69		0.11	0.31	1.07	0.96
	Sr-89/Sr-90	#1	--		--		--		--		22	102	76	59
		#2	--		--		--		--		18	78	38	36
1962	Precip. (in.)		1.91	3.90	5.91	2.42	4.04	4.12	1.37	0.17	2.27	1.35	5.02	2.91
	Sr^{90} (mc/mi^2)	#1	0.86	2.70	1.60	2.67	0.48	2.20	1.24	0.22	1.03	0.66	1.72	0.91
		#2	0.85	0.10	1.61	2.80	4.34	2.74	1.19	0.23	1.09	0.71	1.40	0.93
	Sr-89/Sr-90	#1	43	28	21	14	95	10	6	9	14	26	42	55
		#2	42	25	16	12	9	9	7	11	17	30	51	48
1963	Precip. (in.)		1.42	1.63	4.89	1.06	1.55	6.03	0.99	5.17	3.07	0.12	7.03	2.73
	Sr^{90} (mc/mi^2)	#1	1.15	2.97	3.85	6.03	2.20	0.38	2.95	3.88	0.97	0.16	1.82	1.04
		#2	1.40	1.84	4.86	6.29	2.22	7.84	2.44	3.49	1.28	0.46	2.61	0.05
	Sr-89/Sr-90	#1	31	17	18	11.7	8.9	*	1	1	1.2	*	*	*
		#2	28	23	15	8.6	9.2	8.7	2	1	*	*	*	*
1964	Precip. (in.)		3.35	2.61										
	Sr^{90} (mc/mi^2)	#1	1.79	2.54										
		#2	2.15	2.74										
	Sr-89/Sr-90	#1	*	*										
		#2	*	*										

* collections were made at the Silver Hill site from February 1959 through September 1960. collections were started at Sterling, Va. in October 1960 and will be continued at this site indefinitely.

** collectors #1 and #2 are located in the open, approximately 6 feet apart.

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: WASHINGTON, SEATTLE (Pot) 47°35'N, 122°20'W, ~Alt. 10 ft. (Univ. of Washington, Laboratory of Radiation Biology)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)				1.34	0.92	0.72	trace	0.32	1.47	3.12	6.53	5.51
	Sr-90 (mc/mi^2)				0.51	2.12	0.57	0.04	0.16	0.50	0.64	lost	1.62
	Sr-89/Sr-90				15	6	26	4	8	49	48	--	125
1959	Precip. (in.)	7.98	3.64	4.12	3.59	1.60	1.82	0.93	0.60	4.60	2.67	8.14	1.15
	Sr-90 (mc/mi^2)	lost	1.98	3.47	3.64	5.08	1.31	1.29	lost	0.44	0.29	0.41	0.06
	Sr-89/Sr-90	--	28	17	6.1	8.5	4.3	2.9	--	*	*	*	*
1960	Precip. (in.)	5.48	4.01	4.08	2.88	2.68	0.39	trace	1.57	0.97	3.96	2.69	0.64
	Sr-90 (mc/mi^2)	0.50	lost	0.35	0.47	0.91		0.24		0.41		0.64	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	7.71	9.11	4.45	2.35	3.07	0.43	0.75	0.82	0.46	2.83	4.39	5.58
	Sr-90 (mc/mi^2)	0.82		1.02		lost		0.13		0.06	0.60	1.20	2.53
	Sr-89/Sr-90	--		--		--		--		115	78	70	45
1962	Precip. (in.)	2.43						1.11	1.96	2.02	3.41		3.83
	Sr-90 (mc/mi^2)	1.53	1.56	4.20	2.37	2.64	0.89	0.56	1.21	1.86	0.75	2.22	1.91
	Sr-89/Sr-90	39	48	17	11	6	8	5	9	25	45	44	60
1963	Precip. (in.)	1.91	3.97	2.98	2.75	0.94	1.95	0.85	0.76	0.69	4.16	7.63	4.93
	Sr-90 (mc/mi^2)	1.92	3.02	3.94	5.33	1.35	5.47	3.83	1.72	2.09	3.67	4.25	3.10
	Sr-89/Sr-90	46	41	18	13	6.1	*	2	*	*	*	*	*
1964	Precip. (in.)	8.16	1.55										
	Sr-90 (mc/mi^2)	3.10	2.11										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: WASHINGTON, TATOOSH ISLAND (Column) 48°22'N, 124°36'W.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	12.08	7.61	10.50	8.16	2.36	2.78	1.40	1.61	5.21	6.20	10.28	9.38
	Sr-90 (mc/mi^2)												0.09
	Sr-89/Sr-90												*
1960	Precip. (in.)	9.70	6.99	9.35	8.27	6.10	1.78	0.3	4.92	2.84	9.95	10.48	7.81
	Sr-90 (mc/mi^2)	0.09	0.71	1.16	0.34	0.22		0.18		0.31		0.47	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	14.99	21.16	8.70	5.36	3.45	1.76	0.81	2.39	2.50	9.44	9.27	11.89
	Sr-90 (mc/mi^2)	1.80		lost	1.68	1.08		0.15		0.46	1.23	1.21	2.40
	Sr-89/Sr-90	--		--	--	--		--		32	106	90	62
1962	Precip. (in.)	7.11	3.67	6.26	10.20	2.12	1.77	0.89	4.78	3.66	6.48	16.30	12.92
	Sr-90 (mc/mi^2)	2.12	1.74	3.50	4.42	1.96	0.87	1.07	1.45	lost	lost	6.39	0.06
	Sr-89/Sr-90	44	33	19	14	9	9	--	9	--		50	15
1963	Precip. (in.)	2.86	8.97	6.40	5.76	3.33	1.90	4.67		1.23	13.62	14.79	15.13
	Sr-90 (mc/mi^2)	0.89	5.41	8,23	7.12	3.26	2.93	8.26	not	4.43	7.46	5.74	0.32
	Sr-89/Sr-90	48	20	24	12	7.3	1	2	recd.	0.4	1.2	*	0.9
1964	Precip. (in.)		6.80										
	Sr-90 (mc/mi^2)	6.98	3.42										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: United States Sites (cont'd.)

Site: WISCONSIN, GREEN BAY (Column) 44°29'N, 88°08'W, ~alt. 689 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)		1.98	1.87	2.84	3.86	1.26	4.21	2.71	5.17	3.27	1.61	2.85
	Sr-90 (mc/mi^2)		0.63	lost	5.34	2.10	1.42	0.94	0.65	0.21	0.26	0.12	0.25
	Sr-89/Sr-90		13	"	15	*	4.7	2.4	1.4	1.3	0.6	*	0.6
1960	Precip. (in.)	1.04	0.48	1.21	3.13	7.75	3.07	1.87	3.52	3.09	2.32	0.69	0.10
	Sr-90 (mc/mi^2)	0.22	0.01	0.94	lost	0.39		0.07		0.68		0.17	
	Sr-89/Sr-90	--	*	--	--	--		--		--		--	
1961	Precip. (in.)	0.31	0.93	2.12	1.67	1.42	4.31	4.91	2.48	5.02	3.34	2.60	1.27
	Sr-90 (mc/mi^2)	0.20		0.92		2.09		not	0.58	0.17	0.37	0.41	0.23
	Sr-89/Sr-90	--		--		--		recd.	--	50	96	76	64
1962	Precip. (in.)	1.27	2.02	1.14	2.55	2.86	4.35	2.70	2.86	3.87	1.94	0.84	1.03
	Sr-90 (mc/mi^2)	0.26	1.70	1.87	2.62	0.55	4.73	2.10	2.58	0.09	1.29	0.59	0.24
	Sr-89/Sr-90	39	28	18	13	112	8	10	15	21	23	39	30
1963	Precip. (in.)	1.02	0.59	2.58	0.98	1.54	2.67	2.77	2.07	3.00	0.73	1.63	0.73
	Sr-90 (mc/mi^2)	0.54	0.15	3.29	3.41	4.34	6.83	5.75	3.13	2.79	1.29	1.08	0.45
	Sr-89/Sr-90	28	33	19	10.2	7.9	*	1	1	*	1.5	*	*
1964	Precip. (in.)	1.14	0.26										
	Sr-90 (mc/mi^2)	1.36	0.18										
	Sr-89/Sr-90	*	1.6										

Monthly Fallout Deposition Collections: United State Sites (cont'd.)

Site: U.S. COAST GUARD "ECHO" STATION

		(7/15-8/5)	(8/5-25)	(8/25-9/15)	(9/16-10/7)	(10/7-28)	(10/28-11/17)	(11/18-12/8)	(12/8-30)
1963	Precip. (in.)	+	0.30	+	1.38	3.71	3.93	0.74	2.07
	Sr-90 (mc/mi^2)	0.59	0.66	1.62	1.10	1.03	1.43	0.19	1.05
	Sr-89/Sr-90	*	*	1	*	*	*	*	*

		(12/31-1/19)	(1/20-31)	(2/1-9)	(2/10-3/1)
1964	Precip. (in.)	0.97	0.79		2.32
	Sr-90 (mc/mi^2)	3.44	0.71	0.79	1.44
	Sr-89/Sr-90	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites

Site: ARGENTINA, BUENOS AIRES (Column) 34° 37'S, 58°26'W, Alt. 66 ft. (Comision Nacional de Energia Atomica)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									0.05	0.43	0.24	0.22
	Sr-90 (mc/mi^2)									2.9	*	*	*
	Sr-89/Sr-90												
1960	Precip. (in.)	2.16	1.10	7.80	1.30	0.08	1.26	5.90	1.38	4.02	7.09	0.47	1.57
	Sr-90 (mc/mi^2)	0.02	0.10	0.31	0.10	0.12	0.15	0.00		0.19		0.23	
	Sr-89/Sr-90	48	*	--	--	*	*	--		---		--	
1961	Precip. (in.)	7.80	3.82	2.80	3.23	5.24	1.48	1.89	1.53	1.26	4.80	4.63	4.73
	Sr-90 (mc/mi^2)	0.70		0.08		0.02		0.45		0.11	0.58	0.56	0.31
	Sr-89/Sr-90	--		--		--		*		*	*	*	1
1962	Precip. (in.)	3.35	2.77						2.00	4.13	0.78	4.96	
	Sr-90 (mc/mi^2)	0.35	0.13	0.01	0.01	0.07	0.20	0.07	0.16	0.27	0.12	0.84	0.14
	Sr-89/Sr-90	0.7	5	6	10	111	28	45	32	36	16	10	11
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.39	0.03	0.34	0.13	0.13	0.19	0.14	0.16	0.45	0.31		
	Sr-89/Sr-90	11	--	*	*	1	1	*	*	3	*		

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ARGENTINA, FORMOSA (Column) 26°11'S, 58°10'W, Alt. 190 ft. (Comision Nacional de Energia Atomica)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1961	Precip. (in.)						3.46	4.06		5.82	6.09	5.85	3.00
	Sr-90 (mc/mi^2)						0.05	0.46	not	not	0.17	0.14	0.20
	Sr-89/Sr-90						--	*	recd.	recd.	*	*	*
1962	Precip. (in.)								1.23	2.34	5.57	3.41	
	Sr-90 (mc/mi^2)	0.20	0.16	0.12	0.11	0.16	0.09	0.10	0.20	0.24	3.33	0.28	0.26
	Sr-89/Sr-90	*	4	4	17	49	*	*	30	27	16	8	8
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.29	not	0.10	0.15	0.11	0.13	not	0.08	0.22	0.04		
	Sr-89/Sr-90	34	recd.	*	*	*	*	recd.	*	*	2		

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ARGENTINA, MALARQUE (Column) 35°29'S, 69°35'W, Alt. 4723 ft. (Comision Nacional de Energia Atomica)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)											0.21	0.16
	Sr-89/Sr-90											*	*
1960	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.24	0.21	0.05	0.03	0.16		0.00		0.14		0.01	
	Sr-89/Sr-90	0.02	*	--	--	--		--		--		--	
1961	Precip. (in.)	0.09	0.72	0.14	0.85	0.48		0.20		1.13	0.53	0.11	0.31
	Sr-90 (mc/mi^2)	0.60		0.15		0.33		0.54		0.36	0.04	0.07	0.12
	Sr-89/Sr-90	--		--		--		*		*	*	*	*
1962	Precip. (in.)	0.85	0.84						0.24	0.04	0.68		
	Sr-90 (mc/mi^2)	0.20	0.52	0.10	≤0.01	0.05	0.17	lost	0.06	0.06	0.17	lost	0.42
	Sr-89/Sr-90	*	*	2	#	22	17	--	32	*	14	--	*
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	0.86	0.12	0.02	0.03	0.06	0.15	0.31	0.26			
	Sr-89/Sr-90	recd.	*	2	--	*	*	*	4	*			

3.4 mc Sr^{89}/mi^2.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRALIA, ADELAIDE (Pot) 34°56'S, 138°35'E, Alt.140 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						0.23	3.18	2.35	3.00	2.45	0.33	0.25
	Sr-90 (mc/mi^2)						0.04	0.16	0.33	0.50	0.71	0.21	0.10
	Sr-89/Sr-90						16	14	45	18	18	14	14
1959	Precip. (in.)	0.29	0.83	0.93	0.34	0.15	0.36	1.48	1.85	1.27	0.89	0.93	2.00
	Sr-90 (mc/mi^2)	0.08	0.21	0.06	0.05	0.05	0.04	0.11	0.20	0.22	0.29	0.18	0.13
	Sr-89/Sr-90	--	5.7	8.3	--	*	*	5.4	6.0	*	--	1.1	2.3
1960	Precip. (in.)	0.38	1.88	0.84	2.19	4.77	1.60	1.42	1.58	3.64	0.86	3.80	0.11
	Sr-90 (mc/mi^2)	0.08	0.03	0.11	0.14	0.15		0.24		0.58		0.57	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.19	0.32	0.28	4.80	1.28	2.56	2.05	1.51	0.94	0.44	0.32	0.22
	Sr-90 (mc/mi^2)	0.17		0.18		0.33		0.38		0.12	0.41	0.32	0.12
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	0.56	0.88	0.92	0.08	3.65	2.13	1.33	2.31	0.58	2.58	0.53	1.69
	Sr-90 (mc/mi^2)	0.16	0.33	0.15	0.06	0.23	0.26	0.24	0.14	0.10	0.36	0.32	0.29
	Sr-89/Sr-90	*	*	*	5	5	36	24	18	21	15	8	7
1963	Precip. (in.)	3.15	0.09	0.03	1.84	5.08	4.05	3.99	2.55	1.31	1.85	0.24	0.11
	Sr-90 (mc/mi^2)	0.68	0.19	0.01	0.28	0.60	1.36	0.36	0.05	0.19	0.30	0.18	0.14
	Sr-89/Sr-90	18	4.8	3	9.1	*	0.4	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **AUSTRALIA, BRISBANE** (Pot) 27°28'S, 153°02'E, Alt.137 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						9.31	0.14	1.65	1.95	1.38	1.14	11.07
	Sr-90 (mc/mi^2)						0.05	0.01	0.16	0.29	0.95	0.25	0.24
	Sr-89/Sr-90						44	*	46	30	62	19	--
1959	Precip. (in.)	7.26	5.36	5.84	0.99	1.16	0.46	2.59	0.18	4.07	4.69	7.98	5.26
	Sr-90 (mc/mi^2)	0.49	0.01	0.28	0.07	0.14	0.18	0.11	0.06	0.30	0.38	0.28	0.36
	Sr-89/Sr-90	10.4	--	3.5	2.9	4.4	--	0.9	*	*	1.1	*	*
1960	Precip. (in.)	3.21	4.55	3.25	0.74	1.65	1.12	1.49	0.46	1.20	1.20	4.68	4.56
	Sr-90 (mc/mi^2)	0.16	0.22	0.16	0.07	0.24		0.07		0.28		0.81	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	6.36	6.96	1.62	1.07	1.31	1.22	2.91	1.03	2.22	5.16	7.92	4.57
	Sr-90 (mc/mi^2)	0.49		0.33		0.19		0.20		0.20	0.54	0.33	0.34
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	6.44	3.79	4.33	1.74	1.27	0.70	4.69	3.52	1.73	1.28	3.37	8.53
	Sr-90 (mc/mi^2)	0.42	0.26	0.34	0.05	0.08	0.10	0.35	0.18	0.30	0.28	0.57	0.92
	Sr-89/Sr-90	*	*	*	12	38	41	22	18	9	12	11	8
1963	Precip. (in.)	5.80	1.46	14.22	2.31	7.07	0.36	0.02	2.74	0.67	3.41	5.19	6.72
	Sr-90 (mc/mi^2)	0.62	0.16	0.99	0.20	0.30	0.06	0.02	0.31	0.14	0.58	0.36	0.81
	Sr-89/Sr-90	5.4	8.0	*	*	*	*	1	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **AUSTRALIA, DARWIN** (Pot) 12°28'S, 130°51'E, Alt. 97 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)							0.13	0.01	0.00	1.49	5.98	7.16
	Sr-90 (mc/mi^2)							0.43	0.04	0.62	0.26	0.27	0.63
	Sr-89/Sr-90							13	22	43	24	78	12
1959	Precip. (in.)	17.41	4.07	5.54	13.04	0.48	0	0	0	1.38	0.73	5.45	12.93
	Sr-90 (mc/mi^2)	0.48	0.33	0.47	0.04	0.05	0.02	0.01	0.00	0.06	0.06	0.32	0.13
	Sr-89/Sr-90	8.8	5.8	2.8	*	*	*	7.0	*	*	*	*	*
1960	Precip. (in.)	22.36	16.30	17.56	3.20	0.52	0	0	0	0.08	0.76	3.02	4.11
	Sr-90 (mc/mi^2)	0.06	0.20	0.24	0.07	0.07		0.03		0.17		0.27	
	Sr-89/Sr-90	10	--	--	--	--		--		--		--	
1961	Precip. (in.)	10.36	14.50	3.71	3.83	0.01	0	0	0	0.02	2.41	2.11	2.16
	Sr-90 (mc/mi^2)	0.10		0.21		0.09		0.06		0.01	0.38	0.24	0.12
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	22.47	18.30	6.90	1.04	0	0.01	0.01	0	0	2.30	5.60	6.51
	Sr-90 (mc/mi^2)	0.06	0.16	0.19	0.05	0.08	0.03	0.04	0.04	0.01	0.10	0.14	0.28
	Sr-89/Sr-90	*	*	*	10	*	*	18	7	*	22	14	8
1963	Precip. (in.)	12.22	13.00	8.95	4.93	0	0	0	0		1.81	2.31	9.01
	Sr-90 (mc/mi^2)	0.35	0.18	0.14	0.20	0.13	0.05	0.04	0.13	0.09	0.21	0.30	0.22
	Sr-89/Sr-90	*	5.3	3	3.1	*	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRALIA, HOBART (Pot) 42°53'S, 147°20'E, Alt. 177 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						1.34	2.16	5.44	0.87	4.82	1.28	5.14
	Sr-90 (mc/mi^2)						0.08	0.06	0.20	0.08	0.34	0.29	0.48
	Sr-89/Sr-90						2.1	--	32	25	14	15	--
1959	Precip. (in.)	1.36	1.67	0.44	2.06	0.71	1.38	2.15	0.63	3.08	1.00	0.83	3.94
	Sr-90 (mc/mi^2)	0.31	0.29	0.10	0.08	0.10	0.09	0.07	0.19	0.16	0.25	0.12	0.17
	Sr-89/Sr-90	9.3	7.2	4.0	*	5.0	4.4	4.3	1.0	*	1.7	*	*
1960	Precip. (in.)	2.46	0.49	0.59	9.75	3.81	1.99	2.13	1.03	3.29	2.57	I.16	0.39
	Sr-90 (mc/mi^2)	0.21	0.07	0.06	0.32	0.11	0.06	0.12		0.22		0.22	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	1.14	1.20	0.78	1.97	1.23	4.72		2.84	1.31	1.16	0.53	1.63
	Sr-90 (mc/mi^2)	0.30		0.15	not	0.16		0.61		0.21	0.35	0.06	0.22
	Sr-89/Sr-90	--		--	recd.	--		--		*	*	*	*
1962	Precip. (in.)	1.36	0.54	1.39	1.65	2.59	2.43	2.57	3.63	3.84	2.95	0.91	1.73
	Sr-90 (mc/mi^2)	0.21	0.12	0.12	0.07	0.08	0.16	0.16	0.11	0.19	0.19	0.18	0.21
	Sr-89/Sr-90	*	*	*	*	*	20	5	20	19	--	10	7
1963	Precip. (in.)	0.88	1.04	1.15	0.40	1.20	1.11	3.66	1.49	1.62	1.22	1.26	0.51
	Sr-90 (mc/mi^2)	0.19	0.21	0.12	0.07	0.27	0.09	0.23	0.08	0.16	0.25	0.41	0.22
	Sr-89/Sr-90	5.8	4.0	7	3.6	3.8	*	*	--	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRALIA, MELBOURNE (Pot) 37°49'S, 144°58'E, Alt. 155 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						0.72	1.98	3.19	3.03	4.04	2.77	1.25
	Sr-90 (mc/mi^2)						0.08	0.05	0.18	0.24	0.45	0.28	0.24
	Sr-89/Sr-90						2.5	22	12	28	20	--	11
1959	Precip. (in.)	0.54	1.28	4.10	0.62	1.47	2.42	2.57	1.85	4.10	3.26	0.92	2.74
	Sr-90 (mc/mi^2)	0.18	0.32	0.24	0.10	0.11	0.20	0.12	0.15	0.27	lost	0.24	0.24
	Sr-89/Sr-90	*	4.4	4.6	*	3.6	*	*	--	*	--	*	*
1960	Precip. (in.)	1.80	2.41	0.38	7.67	3.75	0.78	2.04	2.79	3.64	1.53	5.43	2.52
	Sr-90 (mc/mi^2)	0.19	0.12	0.16	0.25	0.10		0.29		0.55		0.88	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.32	1.48	2.36	2.98	3.07	2.02	2.11	2.20	1.01	1.41	1.03	1.86
	Sr-90 (mc/mi^2)	0.28		0.45		0.38		0.30		0.12	0.29	0.38	0.28
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	2.37	1.21	0.38	1.06	4.58	1.65	1.70	2.10	1.22	4.37	1.05	1.39
	Sr-90 (mc/mi^2)	0.45	0.39	0.13	0.16	0.15	0.02	0.21	0.15	0.25	0.28	0.26	0.43
	Sr-89/Sr-90	*	*	*	5	3	*	16	9	9	19	8	7
1963	Precip. (in.)	6.92	1.92	1.92	0.43	3.06	1.68	3.29	1.73	3.61	3.46	0.98	0.77
	Sr-90 (mc/mi^2)	0.49	0.46	0.24	0.12	0.33	0.14	0.41	3.12	0.34	0.58	0.56	0.24
	Sr-89/Sr-90	--	--	8	2.9	*	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **AUSTRALIA, PERTH** (Pot) 31°57'S, 115°51'E, Alt.210 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						2.76	16.73	2.66	1.33	2.56	0.46	0.49
	Sr-90 (mc/mi^2)						0.09	0.16	0.18	0.33	0.11	0.11	0.15
	Sr-89/Sr-90						8.9	15	40	31	20	17	14
1959	Precip. (in.)	0.23	0.34	0.20	1.23	2.96	6.36	3.06	4.54	1.20	2.10	1.41	0.52
	Sr-90 (mc/mi^2)	0.06	0.08	0.12	0.10	0.25	0.28	0.19	0.23	0.21	0.18	0.06	0.02
	Sr-89/Sr-90	13.	7.0	5.0	4.0	3.2	*	4.7	*	*	*	*	*
1960	Precip. (in.)	1.06	0.22	2.27	0.72	5.33	4.44	7.38	2.54	2.55	1.06	0.30	0.34
	Sr-90 (mc/mi^2)	0.05	0.07	0.08	0.05	0.23		0.45		0.25		0.13	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.44	0.32	1.64	3.86	3.41	6.40	6.45	6.03	1.80	0.96	0.16	0.90
	Sr-90 (mc/mi^2)	0.21		0.31		0.23		0.56		0.18	0.16	0.06	0.22
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	0.07	0.33	1.64	0.34	5.96	5.68	6.07	3.39	2.83	0,93	1,51	0,53
	Sr-90 (mc/mi^2)	0.08	0.09	0.03	0.05	lost	0.35	0.31	0.17	0.18	0.08	0.14	0.17
	Sr-89/Sr-90	*	*	*	*	—	29	19	19	14	5	4	8
1963	Precip. (in.)	0.63	0.75	1.25	2.59	7.14	8.55	6.10	7.63	2.91	1.38	0.27	0.04
	Sr-90 (mc/mi^2)	0.01	0.07	0.16	0.46	0.31	0.21	0.25	0.31	0.35	0.45	0.31	0.21
	Sr-89/Sr-90	--	6.2	7	5.7	*	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **AUSTRALIA, SYDNEY** (Pot) 33°52'S, 151°12'E, Alt.138 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						8.71	1.13	3.71	1.19	2.19	0.67	5.84
	Sr-90 (mc/mi^2)						0.34	0.26	0.44	0.25	0.24	0.21	0.57
	Sr-89/Sr-90						0.9	23	43	*	25	15	8.2
1959	Precip. (in.)	6.44	7.96	5.63	1.61	2.28	4.32	7.72	3.36	3.40	11.13	3.89	1.93
	Sr-90 (mc/mi^2)	0.64	0.45	0.21	0.05	0.21	0.36	0.26	0.13	0.30	0.68	0.33	0.21
	Sr-89/Sr-90	9.4	5.6	--	--	2.4	*	2.3	*	*	*	*	*
1960	Precip. (in.)	2.27	3.68	2.08	1.16	4.28	3.56	5.58	1.77	2.68	11.03	2.81	9.65
	Sr-90 (mc/mi^2)	0.14	0.21	0.12	0.17	0.23		0.14		0.65		0.90	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.46	3.37	1.19	3.52	1.23	2.22	1.55	9.43	2.06	2.92	21.44	5.98
	Sr-90 (mc/mi^2)	0.54		0.30		0.41		0.44		0.15	0.48	1.18	0.47
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	5.22	5.97	2.50	3.95	10.63	0.16	2.74	4.32	3.46	0.86	0.41	6.78
	Sr-90 (mc/mi^2)	0.60	0.23	0.29	0.14	0.15	0.01	0.15	0.10	0.14	0.23	0.34	0.32
	Sr-89/Sr-90	*	*	*	*	6	*	28	19	7	14	11	50
1963	Precip. (in.)	5.55	1.89	15.28	9.39	8.30	10.41	2.64	10.60	0.97	2.45	1.27	10.98
	Sr-90 (mc/mi^2)	0.60	0.16	1.34	0.61	0.25	0.58	0.28	0.73	0.35	0.34	0.30	0.26
	Sr-89/Sr-90	5.0	5.1	8.5	2.4	*	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRALIA, TOWNSVILLE (Pot) 19°18'S, 146°48'E, Alt. 13 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						0.97	0	0.07	0.23	0.11	1.00	3.49
	Sr-90 (mc/mi^2)						0.25	0.10	0.07	0.02	0.06	0.07	0.23
	Sr-89/Sr-90						16	4.0	13	--	18	86	12
1959	Precip. (in.)	14.83	2.76	6.11	4.53	2.25	0.20	0.07	0	0	0.01	2.06	16.07
	Sr-90 (mc/mi^2)	0.46	0.03	0.36	0.06	0.06	0.03	0.01	0.00	0.01	0.00	0.12	0.16
	Sr-89/Sr-90	8.3	--	5.0	*	*	*	--	*	*	*	*	*
1960	Precip. (in.)	5.48	22.03	14.39	0.34	1.78	0.29	0.05	0.04	0.14	0.45	5.32	3.53
	Sr-90 (mc/mi^2)	0.25	0.18	0.05	0.03	0.05		0.02		0.10		0.34	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.34	8.69	1.19	0.35	0.30	0	0.10	0.34	0	0.16	5.11	2.54
	Sr-90 (mc/mi^2)	0.11		0.16		≤0.02		≤0.03		0.08	≤0.03	0.21	0.18
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	7.75	15.57	3.59	1.25	0.17	0.63	0.53	0.27	0.45	0.03	1.06	3.97
	Sr-90 (mc/mi^2)	0.22	0.25	0.11	0.01	0.07	0.08	0.04	0.01	0.11	0.03	0.07	0.31
	Sr-89/Sr-90	*	*	*	*	10	35	*	*	14	*	--	10
1963	Precip. (in.)	16.16	5.65	14.21	2.36	0.20	0.10	0	1.26	nil	0.06	0.47	1.55
	Sr-90 (mc/mi^2)	0.48	0.14	0.20	0.05	0.07	0.01	0.04	0.12	0.04	0.08	0.22	0.23
	Sr-89/Sr-90	5.0	3.0	6	3.6	*	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRIA, KLAGENFURT (Column)** 46°39'N, 14°20'E, Alt. 1470 ft. (Zentralanstalt fur Meteorologie und Geodynamik)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)								3.51	3.90	1.17	0.78	0.78
	Sr-90 (mc/mi^2)								1.17	0.47	0.08	0.08	0.09
	Sr-89/Sr-90								--	--	--	--	27
1958	Precip. (in.)	2.73	2.34	1.56	3.94	1.56	8.19	5.07	6.63	2.73	3.12	3.90	3.51
	Sr-90 (mc/mi^2)	0.13	0.17	1.15	1.26	0.49	not	3.51	2.28	0.80	0.66	0.46	1.03
	Sr-89/Sr-90	25	10	29	18	18	recd.	6	27	26	22	52	45
1959	Precip. (in.)	0.39	0	2.40	5.91	2.36	6.31	2.98	4.94	0.98	2.22	3.10	3.78
	Sr-90 (mc/mi^2)	0.32	lost	0.75	3.78	1.16	3.60	1.18	1.10	0.14	0.19	0.04	0.19
	Sr-89/Sr-90	28	--	18	9.8	7.9	5.1	2.7	2.1	0.98	1.8	*	7.8
1960	Precip. (in.)	0.86	1.76	3.05	1.80	1.28	4.18	6.18	4.06	5.22	4.30	3.94	4.44
	Sr-90 (mc/mi^2)	0.39	0.16	0.29	0.30	0.62	0.52	0.61		0.28		0.39	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	2.04	0.43	1.20	1.05	2.96	2.60	5.06	1.11	1.70	4.10	4.48	3.00
	Sr-90 (mc/mi^2)	0.20		0.44		1.30		0.74		0.09	0.38	0.68	0.50
	Sr-89/Sr-90	--		--		--		--		3.9	56	93	62
1962	Precip. (in.)	2.03	0.75	2.14	2.09	8.45	4.48	5.27	0.92	4.19	4.13	4.32	1.35
	Sr-90 (mc/mi^2)	0.48	0.32	0.75	1.47	5.70	4.76	5.82	0.94	1.70	0.46	0.98	0.48
	Sr-89/Sr-90	41	26	19	3	9	11	6	13	18	41	36	33
1963	Precip. (in.)	1.78	2.02	2.58	1.76	6.00	2.63	2.46	5.92	3.63	0.94	5.54	2.13
	Sr-90 (mc/mi^2)	0.59	0.66	1.78	5.67	14.18	3.90	9.80	10.64	2.95	4.38	1.57	1.73
	Sr-89/Sr-90	43	25	17	14	5.4	*	1	*	*	*	*	*
1964	Precip. (in.)	0.01	0.39										
	Sr-90 (mc/mi^2)	0.31	0.36										
	Sr-89/Sr-90	*	*										

** Operated as a Pot station from 8/57 - 5/59.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AUSTRIA, VIENNA (Column) *** 48°15'N, 16°22'E, Alt. 664 ft. (Zentralanstalt fur Meteorologie und Geodynamik)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)						0.78	5.07	2.73	2.34	0	1.95	1.56
	Sr-90 (mc/mi^2)						0.45	1.58	0.79	0.59	0.03	0.22	0.11
	Sr-89/Sr-90						--	--	--	--	--	--	27
1958	Precip. (in.)	1.17	2.34	2.73	0.78	0.78	5.85	1.95	3.90	0.78	2.73	1.17	2.73
	Sr-90 (mc/mi^2)	0.16	0.27	0.35	0.71	0.69	3.13	1.07	1.84	0.02(	0.76	0.48	1.23
	Sr-89/Sr-90	25	14	15	18	17	1	12	20	**	34	42	46
1959	Precip. (in.)	1.0	0.79	1.39	3.55	1.97	5.91	5.94	4.48	0.02	--	2.33	
	Sr-90 (mc/mi^2)	0.43	lost	1.15	3.87	2.59	4.15	2.32	0.94	0.51	lost	0.08	lost
	Sr-89/Sr-90	33	--	15.5	11.7	8.0	5.0	2.9	1.4	*	--	*	--
1960	Precip. (in.)	1.85	0.33	1.60	0.97	2.13	3.11	3.43	2.79	1.97	2.51	0.71	1.07
	Sr-90 (mc/mi^2)	0.02	0.12	0.37	0.22	lost	not	0.18		0.23		lost	
	Sr-89/Sr-90	--	--	--	--	--	recd.	--		--		--	
1961	Precip. (in.)	0.35	2.68	1.40	2.55	3.31	1.89	3.26	1.11	0.88	2.31		2.05
	Sr-90 (mc/mi^2)	0.42		0.00		0.50		0.18		0.07	0.47	not	0.18
	Sr-89/Sr-90	--		--		--		--		37	62	recd.	3
1962	Precip. (in.)		1.57	2.11	2.53	2.04	0.98	2.04	1.00	0.99	1.94	3.94	1.68
	Sr-90 (mc/mi^2)	not	lost	1.15	1.78	4.45	1.19	2.62	1.18	0.62	0.90	1.21	0.71
	Sr-89/Sr-90	recd.	--	18	12	8	1½	8	5	19	32	42	46
1963	Precip. (in.)	1.56	0.87	1.87	1.12	2.75	2.08	0.42	3.35	1.91	0.96	1.19	0.23
	Sr-90 (mc/mi^2)	8.44	0.27	2.09	3.32	6.80	6.73	2.22	4.97	1.57	0.63	0.90	0.79
	Sr-89/Sr-90	34	24	16	14	6.3	*	0.4	1	0.7	1.2	*	*
1964	Precip. (in.)	0.29	1.15										
	Sr-90 (mc/mi^2)	0.30	1.49										
	Sr-89/Sr-90	0.7	*										

** Strontium-90 value suspect.
*** Operated as a Pot station from 6/57 - 4/59.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: AZORES, LAJES FIELD (Column) 38°44'N, 27°04'W, ~alt. 366 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										4.85	4.36	2.54
	Sr-90 (mc/mi^2)										0.10	0.06	0.14
	Sr-89/Sr-90										*	*	*
1960	Precip. (in.)	8.42	10.75	3.23			1.48	0.42	3.03	1.79	2.30	7.15	1.78
	Sr-90 (mc/mi^2)	0.62	0.27	0.51	lost	0.42		0.00		0.21		0.17	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	4.78	5.86	6.16	3.62	1.41	1.79	0.06	2.25	2.54	4.00	5.14	13.60
	Sr-90 (mc/mi^2)	0.56		0.92		0.46		0.16		0.09	0.32	1.19	2.20
	Sr-89/Sr-90	--		--		--		--		32	70	78	64
1962	Precip. (in.)	2.66	0.92	10.45	2.99	4.74	1.53	1.90	1.79	2.76	5.74	1.58	5.34
	Sr-90 (mc/mi^2)	0.78	0.84	3.24	3.03	1.60	0.06	0.87	0.54	0.24	1.26	1.33	1.61
	Sr-89/Sr-90	41	27	19	13	9	11	7	9	10	33	44	60
1963	Precip. (in.)	7.26	3.39	5.24	5.59	0.41	3.87	2.08	0.20	1.79	9.11	4.02	5.26
	Sr-90 (mc/mi^2)	4.51	1.84	5.08	0.05	3.28	3.52	2.38	1.11	2.14	1.92	2.59	0.06
	Sr-89/Sr-90	33	24	22	13	8.0	2.3	2	*	0.6	4.6	*	1.9
1964	Precip. (in.)	11.25	14.23										
	Sr-90 (mc/mi^2)	4.58	6.37										
	Sr-89/Sr-90	*	0.3										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **BERMUDA, KINDLEY AFB** (Column) 32°22'N, 64°31'W, Alt. 25 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	5.37	5.59	4.51	5.31	2.06	5.08	1.62	6.45	5.81	6.46	5.52	6.31
	Sr-90 (mc/mi^2)									0.16	0.12	0.34	0.41
	Sr-89/Sr-90									1.3	1.0	0.5	*
1960	Precip. (in.)	3.99		4.06	1.19	7.22	4.17	4.46	3.87	9.98	8.04	2.00	11.73
	Sr-90 (mc/mi^2)	0.14	0.31	0.57	0.25	0.59		0.00		0.24		0.38	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	4.30	2.71	1.71	6.64	8.73	6.00	3.34	4.20	2.65	5.31	6.79	3.32
	Sr-90 (mc/mi^2)	0.40		0.74		0.09		0.00		0.10	0.12	0.03	0.67
	Sr-89/Sr-90	--		--		--		--		47	60	43	60
1962	Precip. (in.)	4.09	2.33	9.03	5.13	3.32	14.28	4.12	5.60	10.45	2.40	10.54	4.64
	Sr-90 (mc/mi^2)	1.03	1.08	7.01	2.77	2.18	1.12	0.28	0.90	1.24	1.26	2.09	2.77
	Sr-89/Sr-90	44	34	12	13	8	13	22	9	15	35	60	49
1963	Precip. (in.)	5.35	8.57	3.38	2.12	5.09	2.95	4.72	10.54	4.13	11.36	6.24	4.54
	Sr-90 (mc/mi^2)	0.47	0.34	2.02	0.86	0.23	0.69	2.52	2.74	1.26	2.02	1.12	3.63
	Sr-89/Sr-90	30	20	23	11	7.2	*	5	*	1.4	0.8	*	*
1964	Precip. (in.)	6.57	5.58										
	Sr-90 (mc/mi^2)	2.93	3.72										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BOLIVIA, CHACALTAYA (Column) 17°10'S,68°15'W, Alt. 17,122 ft. 80th Meridian Station (Universidad Mayor de San Andres)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
									(8/16-30)				
1963	Precip. (in.)					1.55		7.09	0.57	2.23	1.00	2.02	3.54
	Sr-90 (mc/mi^2)					0.08		0.64	0.14	0.22	0.12	0.15	0.19
	Sr-89/Sr-90					0.4		1	*	*	*	*	3.8 (?)
1964	Precip. (in.)	3.77	2.62										
	Sr-90 (mc/mi^2)	0.12	0.08										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BOLIVIA, LA PAZ (Column) 16°18'S, 66°15'W, Alt. 11,218 ft. (Universidad Mayor de San Andres) Ovejuyo Site

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		(2/8-3/18) 0.39		1.31	0.32	0	0	0.39	0.29	1.12	4.33	2.36
	Sr-90 (mc/mi^2)		0.23		0.17	0.12	0.00	0.00	0.00	0.00		0.15	
	Sr-89/Sr-90		--		--	--	--	--	--	--		--	
1961	Precip. (in.)	3.54		1.57	1.18	0.79	0	0	0.39	1.18	0.39		
	Sr-90 (mc/mi^2)	0.00		0.11		0.11		0.00		≤0.01	0.08	0.08	0.04
	Sr-89/Sr-90	--		--		--		--		*	6	6.0	*
1962	Precip. (in.)	3.54	2.76	3.94	0.79					0.79	1.18	1.18	
	Sr-90 (mc/mi^2)	0.87	0.04	0.03	0.06	0.16	not	not	not	0.56	0.13	0.09	0.19
	Sr-89/Sr-90	*	7	14	*	45	recd.	recd.	recd.	--	21	20	19
1963	Precip. (in.)										2.69		
	Sr-90 (mc/mi^2)	0.22	0.02	0.07	0.03	0.05	0.07	0.02	0.17	0.30	0.12	0.13	0.13
	Sr-89/Sr-90	9.0	*	9.0	*	*	*	*	1	*	*	1.0	*
1964	Precip. (in.)	11.58											
	Sr-90 (mc/mi^2)	0.09	0.07										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, BELÉM (Column) 1°27'S, 48°29'W, ~Alt. 25 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)											(11/3-12/11)	(12/11-1/11)
	Sr-90 (mc/mi^2)											6.89	11.37
	Sr-89/Sr-90											0.04	0.07
												*	*
1960	Precip. (in.)	(1/13-2/13)	(2/15-3/15)	(3/15-4/15)	(4/15-5/15)	(5/15 - 7/15)		(7/15 - 9/15)		(9/15 - 11/15)		(11/15 - 1/15/61)	
	Sr-90 (mc/mi^2)	7.64	10.39	14.17	9.72	5.90	8.12	2.76	0.79	2.36	3.88	4.12	17.22
	Sr-89/Sr-90	0.04	0.39	0.26	0.03	0.00		0.00		0.09		0.01	
		--	--	--	--	--		--		--		--	
1961	Precip. (in.)	(1/15 - 3/15)		(3/15 - 5/15)		(5/15 - 7/15)		(7/15 - 9/15)		(9/15-10/15)	(10/15-11/15)	(11/15 - 12/15)	(12/15-1/15/62
	Sr-90 (mc/mi^2)	14.17	15.2	34.55	1.40	8.09	4.99	5.83	7.68	4.70	3.15	7.10	7.91
	Sr-89/Sr-90	lost		0.34		0.02		≤0.00		0.07	0.03	0.14	0.23
		--		--		--		--		1.5	11	63	46
1962	Precip. (in.)	(1/15-2/15)	(2/15-3/15)	(3/15-4/15)	(4/15-5/15)	(5/15 - 7/15)		(7/15-9/15)		(9/15-10/15)			
	Sr-90 (mc/mi^2)	12.5	15.0	15.3	17.3	11.4	4.5	4.9	2.5	3.1	5.1	5.5	5.0
	Sr-89/Sr-90	0.80	not	0.23	5.64	0.23		0.14		0.10		0.13	0.27
		39	recd.	13	3	92		24		15		33	45
1963	Precip. (in.)	(1/16 - 2/28)											
	Sr-90 (mc/mi^2)	18.72		22.57	20.80	8.30	10.1	2.7	4.10	1.70	7.2	4.51	15.63
	Sr-89/Sr-90	0.23		0.45	0.07	0.13	0.32	0.14	0.22	0.21	0.23	0.03	0.24
		22		13	11	7.1	1.6	*	*	*	*	*	*
1964	Precip. (in.)	19.15	20.45										
	Sr-90 (mc/mi^2)	0.47	2.43										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, BRASILIA (Pot) 15°52'S, 47°56'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)									1.18	3.55	4.73	1.58
	Sr-89/Sr-90									0.00	0.08	0.01	0.02
										*	*	*	*
1960	Precip. (in.)	0.01	0.03	0.02	lost	lost	lost	not	0.04	nil	0.87	2.09	2.52
	Sr-90 (mc/mi^2)	--	--	--	--	--	--	recd.	not recd.		0.08		0.06
	Sr-89/Sr-90										--		--
1961	Precip. (in.)	12.92	6.78	2.44	1.54	3.94	nil	nil	0.04	nil	1.89	5.28	13.75
	Sr-90 (mc/mi^2)	0.02		0.03**		≤0.02			0.04			0.07	0.10
	Sr-89/Sr-90	--		--		--			*			*	*
1962	Precip. (in.)	9.46	6.62	11.78	3.70	0.08	nil	nil	0.04	3.35	8.35	11.82	8.98
	Sr-90 (mc/mi^2)	0.03	0.06	0.05		0.07			0.05	0.09	0.10	0.04	0.04
	Sr-89/Sr-90	*	*	*		20			34	10	9	15	11
1963	Precip. (in.)	4.22	9.85	0.55	5.20	0.04	nil	nil					
	Sr-90 (mc/mi^2)	0.08	0.10	0.10	0.67	0.04	0.04	0.03	0.02				
	Sr-89/Sr-90	11	17	--	22	*	*	--	*				

** Former value reported was incorrect.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, ITAICI, SÃO PAULO (Pot) 23°06'S, 47°11'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)								0.26	not	0.50	0.36	0.25
	Sr-90 (mc/mi^2)									recd.			
	Sr-89/Sr-90								62		33	71	13
1959	Precip. (in.)	0.11	lost	0.13	0.04	lost	≤0.00	not	not	not	not	not	not
	Sr-90 (mc/mi^2)	*	--	*	*	--	*	recd.	recd.	recd.	recd.	recd.	recd.
	Sr-89/Sr-90												
1960	Precip. (in.)	not	not	not	not	lost	lost	0.01		0.20		0.35	
	Sr-90 (mc/mi^2)	recd.	recd.	recd.	recd.	--	--	--		--		--	
	Sr-89/Sr-90												
1961	Precip. (in.)	0.17		0.24		0.04		0.04	not	0.07	0.14	0.19	0.28
	Sr-90 (mc/mi^2)	--		--		--		--	recd.	*	*	*	*
	Sr-89/Sr-90												
1962	Precip. (in.)	0.08	0.07	0.10	0.03	0.06	0.02	0.14	0.16	0.21	0.23	0.07	0.16
	Sr-90 (mc/mi^2)	*	*	*	*	88	*	47	22	29	15	21	17
	Sr-89/Sr-90												
1963	Precip. (in.)	0.15	0.03	0.09	0.12	0.06	0.05	0.04	0.09	0.09	0.44	0.35	
	Sr-90 (mc/mi^2)	5.7	*	6	*	7.2	2.1	*	*	*	*	*	
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, MANAUS (Pot) 3°02'S, 60°01'W, ~alt. 95 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	85.14	8.70	10.16	7.40	4.79	4.28	1.29	2.26	1.60	0.40	8.40	5.94
	Sr-90 (mc/mi^2)	0.81	0.68	0.61	0.06	0.13	0.03	0.08	0.04	0	0.08	not recd.	not recd.
	Sr-89/Sr-90	1.7	41										
1960	Precip. (in.)	nil	7.52	9.02	16.15	4.67	6.87	2.68	2.33	3.17	8.90	9.45	11.80
	Sr-90 (mc/mi^2)	not recd.	not recd.	not recd.	0.51 --	lost --		0.02 --	not recd.	not recd.	not recd.	0.09 --	
	Sr-89/Sr-90												
1961	Precip. (in.)	11.52	13.09	9.44	13.90	12.90	4.02	1.31	0.27	2.04	4.85	5.78	13.79
	Sr-90 (mc/mi^2)	0.16 --		0.22 --	0.16 --		not recd.	≤ 0.04 --	lost --	0.11 *		1.31 49	0.33 50
	Sr-89/Sr-90												
							(6/14 - 7/14	- 8/62)	(8/17 - 10/17)		(10/17 - 11/17)		(11/17 - 12/17)
1962	Precip. (in.)	16.02	15.78	11.88	11.78	10.26	4.21	2.22	0.50		4.94	4.20	5.24
	Sr-90 (mc/mi^2)	not recd.	not recd.	not recd.	not recd.	not recd.	0.08	0.21	0.05		0.08		0.19
	Sr-89/Sr-90						49	38	20		30		20
		(12/14/62-1/14/63)	(1/16-3/16)	(3/20-4/20)	(4/20-5/20)	(5/21-6/20)	(6/21-7/19)	(7/20	- 9/20)	(9/20	11/20)		
1963	Precip. (in.)	10.44	7.18	9.42	12.35	9.59	4.81						
	Sr-90 (mc/mi^2)	0.64	0.70	0.38	0.56	0.35	0.19		0.15		lost		
	Sr-89/Sr-90	40	22	6	*	*	*		--		lost		

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **BRAZIL, NOVA FRIBURGO** (Pot) 22°17'S, 42°32'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)	4.32	4.98	4.86	4.81	2.73	0.83	2.36	0.11	7.17	4.36	15.05	7.92
	Sr-90 (mc/mi^2)								0.14	0.48	0.83	not	0.37
	Sr-89/Sr-90								21	65	16	recd.	18
1959	Precip. (in.)	8.54	3.91	2.97	0.39	0.76	nil	0.52	4.52	0.12	2.53	14.53	
	Sr-90 (mc/mi^2)	0.20	0.21	0.17	0.01	not	0.04	0.03	0.15	0	0.11	0.29	not
	Sr-89/Sr-90	13	9.8	3.8	*	recd.	1.7	*	2.1	*	*	*	recd.
1960	Precip. (in.)	11.49	15.71	26.05	7.65	0.47	5.91	0.35	1.05	0.36		14.19	11.87
	Sr-90 (mc/mi^2)	0.03		0.13	0.00	0.04		0.26		0.24		0.37	not
	Sr-89/Sr-90	--		--	--	--		--		--		--	recd.
1961	Precip. (in.)	15.46	9.61	8.59	3.12	2.57	1.60	0.32	0.04	0.27	1.37	7.41	5.10
	Sr-90 (mc/mi^2)	0.28		0.16		0.09**		0.13		≤0.04	≤0.05	0.43	0.28
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	10.7	8.9	2.77	3.96	1.9	0.1	1.1	0.51	2.03	7.0	9.47	8.26
	Sr-90 (mc/mi^2)	0.26	0.18	0.11	0.10	0.20	0.04	0.16	0.12	0.20	0.23	0.03	0.03
	Sr-89/Sr-90	*	3	12	*	79	57	41	17	23	18	14	*
1963	Precip. (in.)		4.38	4.47	1.08	0.52	0.11		0.24		2.41	5.98	
	Sr-90 (mc/mi^2)	not	0.25	3.81	0.06	0.04	0.06	0.04	0.13	0.05	0.27	0.16	
	Sr-89/Sr-90	recd.	8	--	3	*	*	*	*	*	*	*	

** Former value reported was incorrect.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, RECIFE (Pot) 8°02'S, 34°58'W, ~alt. 10 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.02	5.36	1.69	8.20	11.94	20.49	10.20	3.27	3.55	0.28	1.26	0.32
	Sr-90 (mc/mi^2)									0.13	0.04	0.07	0.03
	Sr-89/Sr-90									--	--	--	--
1960	Precip. (in.)	2.56	0.51	19.31	9.22	10.84	11.50	9.22	6.38	2.32	1.58	0.39	2.24
	Sr-90 (mc/mi^2)	0.06	0.04	0.55	0.12	0.56	not	0.22	not	not	not	not	not
	Sr-89/Sr-90	--	--	--	--	--	recd.	--	recd.	recd.	recd.	recd.	recd.
1961	Precip. (in.)	11.94	2.48	13.95	14.46	10.87	8.63	8.16	1.10	3.98	1.81	0.08	0.47
	Sr-90 (mc/mi^2)	not	not	not	not	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1962	Precip. (in.)	0.35	3.41	5.16	5.59	5.28	18.24	6.78	2.96	4.14	0.83	0.20	2.40
	Sr-90 (mc/mi^2)	not	not	not	not	not	0.49#	0.33	0.27	0.21	0.11	0.05	0.18
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	40	31	38	18	23	46	22
1963	Precip. (in.)	0.75	6.82	13.67	9.50	4.73	4.88						3.14
	Sr-90 (mc/mi^2)	0.16#	0.13#	0.31#	0.08#	0.13#	0.18#	not	not	not	not	not	0.18
	Sr-89/Sr-90	11	8	10	*	*	1	recd.	recd.	recd.	recd.	recd.	*

Column sample.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **BRAZIL, RIO DE JANEIRO** (Column) 22°54'S, 43°13'W, ~Alt. 30 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)				2.94	8.96	5.95	2.71	4.95	3.35	1.05	5.06	6.76
	Sr-90 (mc/mi^2)				0.01	0.18		0.03		0.04		lost	
	Sr-89/Sr-90				--	--		--		--		--	
1961	Precip. (in.)	6.88	3.70	5.01	6.80	5.73	8.01	3.15	0.39	1.32	0.22	4.61	6.81
	Sr-90 (mc/mi^2)	0.24		0.52		0.17		0.30		0.16	0.06	0.16	0.36
	Sr-89/Sr-90	--		--		--		--		3.3	21	*	*
1962	Precip. (in.)	18.50	12.78	0.72	1.52	5.68	3.42	3.70	2.40	6.26	9.73	7.25	4.92
	Sr-90 (mc/mi^2)	0.48	0.28	0.05	0.11	0.50	0.24	0.50	0.22	0.58	1.10	0.88	0.74
	Sr-89/Sr-90	1.04	4.0	7	*	42	30	21	18	13	11	10	5.8
1963	Precip. (in.)	0.60	6.21	3.78	2.57	3.25	1.61	1.69	1.57	0.43	5.28	3.89	2.63
	Sr-90 (mc/mi^2)	0.24	0.40	0.12	0.14	0.33	0.33	0.12	0.23	0.08	0.72	0.35	0.16
	Sr-89/Sr-90	10	6	6	3	--	*	*	*	*	*	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, SÃO JOSÉ DOS CAMPOS (Pot) 23°14'S, 45°51'W, ~alt. 2109 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)	9.34	6.76	4.46	3.65	5.12	2.14	0.76	0.47	3.64	4.07	4.31	8.30
	Sr-90 (mc/mi^2)							0.12	not	not	0.62	0.48	0.32
	Sr-89/Sr-90							78	recd.	recd.	42	20	15
1959	Precip. (in.)	7.74	3.98	5.03	2.00	0.52	nil	nil	2.07	1.32	1.53	5.00	7.27
	Sr-90 (mc/mi^2)	0.18	0.21	0.20	0.05	0.06	0.03	0	lost	0.07	0.12	0.21	0.21
	Sr-89/Sr-90	14	5.0	*	5.9	3.2	*	*	--	*	*	*	*
1960	Precip. (in.)	6.27	13.04	5.39	1.17	3.61	2.38	0.09	0.98	1.17	4.62	4.70	14.14
	Sr-90 (mc/mi^2)	not	0.04	0.08	0.04	0.12	not	not	0.03	0.33		lost	
	Sr-89/Sr-90	recd.	--	--	--	--	recd.	recd.	--	--		--	
1961	Precip. (in.)	6.21	7.87	5.37	1.95	0.89	0.96	0.08	0.58	0.18	3.22	4.13	4.46
	Sr-90 (mc/mi^2)	0.28		0.16		0.04		0.07		0.08	0.16	0.20	0.35
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	6.69	7.86	8.28	0.74	0.80	0.33	1.11	1.69	3.99	6.05	1.02	6.01
	Sr-90 (mc/mi^2)	0.12	0.03	0.04	0.05	0.03	0.02	0.20	0.12	lost	0.18	0.14	0.06
	Sr-89/Sr-90	*	*	*	13	56	108	50	39	--	14	19	5.4
1963	Precip. (in.)	3.48	7.90	5.61	0.26	0.28	0.29			0.39			
	Sr-90 (mc/mi^2)	0.16	0.05	0.05	0.63	0.04	0.23	1.94	0.12	0.21			
	Sr-89/Sr-90	7.9	10	*	*	8.7	*	*	*	--			

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: BRAZIL, SÃO LEOP@LDO (Pot) 29°45'S, 51°11'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)								0.25	0.30	0.08	0.05	0.20
	Sr-89/Sr-90								*	*	2.4	*	2.2
1960	Precip. (in.)				0.87								
	Sr-90 (mc/mi^2)	0.12	0.12	0.24	0.15	0.79		0.77		0.40		0.42	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.27		0.22		0.30		not recd.	0.12	<0.03	0.54	0.50	0.29
	Sr-89/Sr-90	--		--		--				*	*	*	*
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.21	0.16	0.14	0.05	0.15	0.20	0.13	0.41	0.45	0.23	0.33	0.18
	Sr-89/Sr-90	*	*	*	*	106	38	50	19	16	11	105	14
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.18	not	not	0.33	0.04	0.11	0.33	1.46	0.79	0.50	0.64	
	Sr-89/Sr-90	6.0	recd.	recd.	*	8.4	*	1.0	*	*	*	*	

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

BRAZIL

Site: TRINDADE ISLAND (column) 20°31'S, 29°20'W

		Jan.	Feb.	Mar.	Apr.	May (5/28-6/1)	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)					0.23	0.02	0.05	0.14	0.26	0.28, 0.03	0.27	0.18	0.25
	Sr-90 (mc/mi^2)					3	*	112	15	11	13 *	6	10	7
	Sr-89/Sr-90													
1963	Precip. (in.)													
	Sr-90 (mc/mi^2)	0.14	0.26	0.29	0.14	0.27		0.42	0.22	1.15	0.14	1.67		0.07
	Sr-89/Sr-90	5	6.3	10	--	*		*	*	*	*	0.30 *		*
1964	Precip. (in.)													
	Sr-90 (mc/mi^2)	0.32												
	Sr-89/Sr-90	*												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CANADA, ONTARIO, MOOSONEE (Column) 51°16'N,89'W, Alt. 33ft. 80th Meridian Station (Meteorological Branch, Dept. of Transport)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)			0.93	1.44	3.42	2.18	2.01	1.68		1.11	3.29	0.68
	Sr-90 (mc/mi^2)			0.75	3.78	8.02	9.19	5.67	4.66	1.82	1.34	0.37	0.17
	Sr-89/Sr-90			19	12	6.5	3.1	3	*	*	0.8	*	*
1964	Precip. (in.)	2.5	1.44										
	Sr-90 (mc/mi^2)	1.12	0.35										
	Sr-89/Sr-90	*	0.3										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

CANADA

Site: NEWFOUNDLAND, ERNEST HARMAN AB (Column) 48°32'N, 58°34'W, ~alt. 86 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	9.30	5.58	6.42	0.62	1.79	1.82	2.83	3.66	3.23	4.05		2.40
	Sr-90 (mc/mi^2)								0.39	0.19	lost	0.33	not
	Sr-89/Sr-90								0.16	--	--	--	recd.
1960	Precip. (in.)	7.15	1.02	2.01	2.33	1.52	2.78	3.02	1.30	3.10	4.76	4.21	4.54
	Sr-90 (mc/mi^2)	0.09	0.40	0.17	0.54	0.79		0.36		0.15		0.00	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	8.54	2.99	4.10	0.46	1.17	3.10	5.17	3.08	2.14	6.44	3.37	4.53
	Sr-90 (mc/mi^2)	0.39		0.98		1.33		lost		lost	0.51	0.54	0.36
	Sr-89/Sr-90	--		--		--		--			80	100	66
1962	Precip. (in.)	9.67	13.36	1.97	4.37	3.59	4.11	3.24	4.37	2.78	3.24	3.76	4.74
	Sr-90 (mc/mi^2)	0.86	0.59	0.45	2.15	2.43	3.86	2.20	3.47	1.05	0.11	1.86	0.69
	Sr-89/Sr-90	44	35	18	6	9	9	6	4	30	15	42	50
1963	Precip. (in.)	3.55	3.02	1.17	1.07	3.12	2.96	3.15	5.54	4.13	1.98	6.35	5.54
	Sr-90 (mc/mi^2)	0.86	0.22	0.73	1.66	10.27	7.25	6.42	5.98	3.49	2.04	0.21	0.24
	Sr-89/Sr-90	28	24	18	6	6.1	*	2	1	0.8	0.5	*	*
1964	Precip. (in.)	3.83	3.98										
	Sr-90 (mc/mi^2)	0.12	0.97										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

CANADA

Site: NEWFOUNDLAND, GOOSE AB (Column) 53°19'N, 60°25'W, ~alt. 176.73 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	2.29	1.46	3.11	1.23	2.47	2.26	2.90	2.41	2.11	2.76	3.55	2.36
	Sr-90 (mc/mi^2)										lost	lost	0.13
	Sr-89/Sr-90										--	--	
1960	Precip. (in.)	4.33	1.40	2.00	4.83	1.71	3.55	5.27	3.26	4.35	2.82	2.19	1.90
	Sr-90 (mc/mi^2)	0.03	0.17	0.29	0.19	0.38		0.00		0.16		0.07	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.88	0.51	1.47	0.79	5.12	3.15	6.37	2.68	3.15	4.98	2.09	1.89
	Sr-90 (mc/mi^2)	0.08		0.07	not	lost	lost	0.75		0.50	0.25	not	not
	Sr-89/Sr-90	--		--	recd.	--	--	--		--	70	recd.	recd.
1962	Precip. (in.)	1.94	1.98	2.91	2.43	2.51	2.67	3.66	2.09	2.60	2.97	4.55	(12/62-1/63)
	Sr-90 (mc/mi^2)	0.13	0.36	0.76	0.05	2.49	2.82	2.79	1.40	not	not	0.54	5.63
	Sr-89/Sr-90	40	27	21	16	9	11	6	12	recd.	recd.	37	0.95
													43
1963	Precip. (in.)	5.63	3.16	2.73	1.22	1.95	6.37	8.12	2.99	4.33	2.45	3.07	3.96
	Sr-90 (mc/mi^2)	0.95	0.31	0.70	1.27	3.91	16.3	9.66	3.42	2.93	0.97	0.75	0.54
	Sr-89/Sr-90	43	22	14	12	13.1	*	2	1	1.4	0.9	*	*
1964	Precip. (in.)	1.54	3.47										
	Sr-90 (mc/mi^2)	0.13	0.36										
	Sr-89/Sr-90	*	0.3										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **CANTON ISLAND** (Column) 2°46'S, 171°43'W, ~alt. 8 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	10.08	8.01	3.00	3.45	1.15	0.43	1.01	0.89	0.68	0.20	0.86	0.13
	Sr-90 (mc/mi^2)		0.41	lost	0.05	0.00	0.02	0.02	0.01	≤0.00	lost	0.01	0.10
	Sr-89/Sr-90		11	--	4.2	*	*	*	*	*	--	*	*
1960	Precip. (in.)	0.42	4.47	0.74	3.74		3.49	2.22	1.36	0.53	0.61	1.12	0.66
	Sr-90 (mc/mi^2)	0.18	0.14	0.16	0.10		0.27	0.00		0.03		0.03	
	Sr-89/Sr-90	--	--	--	--		--	--		--		--	
1961	Precip. (in.)	1.34	0.30	0.69	0.92	2.80	5.41	3.80	1.55	1.77	0.97	0.08	0.37
	Sr-90 (mc/mi^2)	0.18		0.26		0.00		0.00		≤0.03	0.05	≤0.01	≤0.01
	Sr-89/Sr-90	--		--		--		--		*	2	≥21	≥40
1962	Precip. (in.)	0.11	0.16	0.79	5.62	2.44	0.50	2.72	0.46	2.51	0.24	0.15	0.11
	Sr-90 (mc/mi^2)	0.03	0.04	≤0.02	0.04	0.31	0.07	0.22	1.13	0.11	0.03	0.02	0.01
	Sr-89/Sr-90	*	16	≥16	27	46	79	57	8	17	17	*	*
1963	Precip. (in.)	0.22	0.41	0.88	1.71	0.98	1.74	1.88	4.46	3.67	1.93	0.57	9.60
	Sr-90 (mc/mi^2)	0.04	0.04	0.02	0.04	0.02	0.05	0.07	0.15	0.21	0.15	0.03	0.06
	Sr-89/Sr-90	7	*	9.0	*	--	1.0	*	*	*	*	*	*
1964	Precip. (in.)	15.08	1.04										
	Sr-90 (mc/mi^2)	0.54	0.13										
	Sr-89/Sr-90	*	0.9										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CEYLON, COLOMBO (Column) 6°55'N, 79°52'E, ~Alt. 50 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.75	2.68	0.51	18.37	12.05	12.31	7.34	7.08	9.12	9.88	10.58	6.61
	Sr-90 (mc/mi^2)									0.14	not	0.02	0.05
	Sr-89/Sr-90									*	recd.	*	*
1960	Precip. (in.)	1.84	6.82	2.73	7.81	14.05	4.96	18.38	1.65	4.55	13.89	16.75	2.10
	Sr-90 (mc/mi^2)	0.39	0.01	0.16	0.14	0.03		0.00		0.08		0.00	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.19	1.92	10.58	18.42	20.10	8.77	8.84	9.06	16.79	19.07	19.84	10.25
	Sr-90 (mc/mi^2)	0.00		0.21		0.21		not	0.30	0.06	0.08	0.08	0.05
	Sr-89/Sr-90	--		--		--		recd.	--	12	39	67	68
1962	Precip. (in.)	3.11	1.52	3.86	11.00	19.44	5.15	4.31	17.13	7.87	16.41	8.67	3.34
	Sr-90 (mc/mi^2)	0.01	≤0.01	0.63	0.11	0.33	0.62	0.70	0.45	0.21	0.79	0.17	0.08
	Sr-89/Sr-90	*	≥28	18	9	11	17	8	9	9	23	33	32
1963	Precip. (in.)	2.95	8.73	4.75	12.94	21.52	7.23						
	Sr-90 (mc/mi^2)	not	0.67	0.28	1.15	0.66	2.66	1.50	0.20	1.13	0.72	0.31	4.22
	Sr-89/Sr-90	recd.	22	14	11	12.9	--	*	--	*	0.9	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.27	0.36										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CHILE, ANTOFAGASTA (Column) 23°27'S, 70°16'W, Elev. 1700 ft. - 80th Meridian Station - (Oficina Meteorologica de Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July (7/22-30)	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)									0.02			
	Sr-90 (mc/mi^2)			0.01	0.03	0.02	0.06	0.01	not	0.02	0.44	0.04	0.04
	Sr-89/Sr-90			10	*	*	*	--	recd.	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.08	0.04										
	Sr-89/Sr-90	*	1.0										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

CHILE

Site: EASTER ISLAND (Column) 27°10'S, 109°26'W (Oficina Meteorologica de Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)			1.02	4.09	12.83	5.54	2.23	1.02	3.22	1.65	1.57	
	Sr-90 (mc/mi^2)			0.19	0.20	0.39	0.23	0.15	0.16	0.27	0.16	0.17	
	Sr-89/Sr-90			*	22	*	5 ?	*	*	*	*	*	
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CHILE, PUERTO MONTT (Column) 41°27'S, 72°57'W, Elev. 16 ft. - 80th Meridian Station - (Oficina Meteorologica de Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)				10.4	7.37	2.40	10.21	7.11		2.64		3.28
	Sr-90 (mc/mi^2)				0.96	0.77	0.95	0.56	0.60	0.03	0.13	not	0.47
	Sr-89/Sr-90				3	*	*	*	*	*	*	recd.	*
1964	Precip. (in.)	3.22	4.38										
	Sr-90 (mc/mi^2)	0.06	0.36										
	Sr-89/Sr-90	6.1 ?	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CHILE, PUNTA ARENAS (Column) 53°08'S, 70°53'W, Elev. 10 ft. - 80th Meridian Station - (Oficina Meteorologica de Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
			(2/15-2/28)						(8/15-9/15)				
1963	Precip. (in.)			0.18	3.19	1.34	2.33		2.75	0.44		0.50	1.44
	Sr-90 (mc/mi^2)		0.19	0.14	0.24	0.20	0.20	not	0.16	0.12	not	0.10	0.39
	Sr-89/Sr-90		5	3.4	2	*	*	recd.	*	*	recd.	--	*
1964	Precip. (in.)	1.65	0.78										
	Sr-90 (mc/mi^2)	0.14	0.23										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CHILE, SANTIAGO (Pot) 33°29'S, 70°40'W, Alt. 1710 ft. (University of Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)						4.33	0.79	3.54	0.39	0	0.39	0
	Sr-90 (mc/mi^2)						not	0.13	0.58	0.09	0.27	0.18	0.05
	Sr-89/Sr-90						recd.	53	62	34	33	20	45
1959	Precip. (in.)	0	0	0.79	2.36	2.36	3.15	1.97	1.58	0.39	0.39	0	0
	Sr-90 (mc/mi^2)	0.02	0.03	0.10	0.21	0.15	0.29	0.19	0.23	0.06	0.06	0.02	0.02
	Sr-89/Sr-90	20	*	*	2.7	*	*	*	1.6	*	*	*	*
1960	Precip. (in.)	0	0	2.36	0	0.79	0.35	1.97	0.79	0.39	0	0	0
	Sr-90 (mc/mi^2)	0.01	0.01	0.02	0.03	0.09		0.12		0.10		0.02	
	Sr-89/Sr-90	*	--	--	--	--		--		--		--	
1961	Precip. (in.)	0	0	0.39	0	0.79	3.15	0.79	2.76	1.18	1.18	0	0.28
	Sr-90 (mc/mi^2)	0.03		0.08		0.45		0.27		≤0.04	0.23	≤0.03	0.03
	Sr-89/Sr-90	--		---		--		--		*	*	≤12	*
1962	Precip. (in.)	0	0	0	0.02	0	5.90	0.56	1.26	0.24	0.44		0
	Sr-90 (mc/mi^2)	0.05	≤0.01	0.03	0.01	<0.06	0.22	0.10	0.34	0.05	0.01		0.14
	Sr-89/Sr-90	*	*	*	*	*	29	46	28	8	*		31
1963	Precip. (in.)	0.01	0		0.02	0.17							
	Sr-90 (mc/mi^2)	0.013	0.04	0.05	0.13	0.16	0.19	2.77	0.17	0.20	0.10	0.10	0.10
	Sr-89/Sr-90	7	*	11	10	3.7	1.7	2	*	1.6	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.03	2.84										
	Sr-89/Sr-90	4.1 ?	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CHILE, SANTIAGO (Column) 33°27'S, 70°42'W, Elev. 1706 ft. - 80th Meridian Station - (Oficina Meteorologica de Chile)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)			0.17	0.01	1.07	1.34	3.77			1.13	0.23	
	Sr-90 (mc/mi^2)			0.08	0.03	0.14	0.26	0.43	1.21		0.08	0.09	0.30
	Sr-89/Sr-90			4	6	3.2	*	*	*		*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.12	0.09										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: COLOMBIA, BOGOTA (Pot) 4°38' N, 74°05'W, ~Alt. 8630 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)	0.96	0.44	1.22	4.24	4.39	1.39	1.11	1.02	1.58	4.76	1.75	0.43
	Sr-90 (mc/mi^2)								0.02	0.02	≤0.01	not	≤0.00
	Sr-89/Sr-90								--	--	--	recd.	--
1958	Precip. (in.)	0.35	0.96	1.64	2.71	0.98	0.53	0.22	2.23	0.74	2.77	4.03	1.84
	Sr-90 (mc/mi^2)	0.04	0.04	0.12	0.02	0.12	0.02	0.10	0.20	0.06	0.09	0.10	0.12
	Sr-89/Sr-90	12	15	4	33	13	133	43	92	72	42	44	45
1959	Precip. (in.)	0.26	0.41	2.37	2.94	2.25	4.72	2.69	1.61	0.94	3.64	1.78	0.73
	Sr-90 (mc/mi^2)	lost	0.06	0.07	0.25	0.02	lost	not	0.04	0.02	not	0.33	lost
	Sr-89/Sr-90	--	25	19	12	10	--	recd.	*	*	recd.	*	--
1960	Precip. (in.)	0.79	2.00	1.12	2.24	2.55	0.80	2.95	1.58	2.59	4.48	1.20	3.18
	Sr-90 (mc/mi^2)	not	not	0.29	0.04	0.04		0.01		not	not	not	not
	Sr-89/Sr-90	recd.	recd.	--	--	--		--		recd.	recd.	recd.	recd.
1961	Precip. (in.)	0.91	0.25	2.22	3.97	1.31	2.58	1.72	0.98	0.69	5.76	4.72	1.21
	Sr-90 (mc/mi^2)	lost	not	not	not	not	not	not	not	0.10	≤0.02	0.26	not
	Sr-89/Sr-90		recd.	recd.	recd.	recd.	recd.	recd.	recd.	--	*	65	recd.
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	not	not	0.10	<0.02	0.10	not	not	0.16	0.06	0.66	0.29
	Sr-89/Sr-90	recd.	recd.	recd.	19	*	57	recd.	recd.	26	23	22	9
1963	Precip. (in.)			20.7	2.88	4.48	2.82	0.97	1.47	0.88	3.49	3.40	0.54
	Sr-90 (mc/mi^2)	0.21	0.42	0.14	0.35	0.12	0.06	0.11	0.08	0.05	0.07	0.13	0.06
	Sr-89/Sr-90	41	24	17	13	--	*	*	*	*	*	*	1.0
1964	Precip. (in.)	0.25											
	Sr-90 (mc/mi^2)	0.08											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CONGO, LEOPOLDVILLE - SITE# 1 (Column) 4°18'S, 15°18'E, ~Alt. 1045 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									2.36	6.70	3.15	
	Sr-90 (mc/mi^2)									0.13	0.05	0.06	0.04
	Sr-89/Sr-90									0.8	*	*	*
1960	Precip. (in.)	3.94	4.73	5.91	11.03	0.24	8.62	0.02	trace	2.55	4.43	6.90	3.77
	Sr-90 (mc/mi^2)	0.01	0.22	0.13	0.00	0.21		lost		0.35		0.26	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	4.56	6.92	3.82	13.97	7.08	0.00	0.09	0.004	2.66			
	Sr-90 (mc/mi^2)	0.00		lost		0.34		≤0.00		0.05	≤0.01	0.08	0.37
	Sr-89/Sr-90	--		--		--		--		2.4	*	80	50
							(6/14 to 7/31)						
1962	Precip. (in.)	5.23	6.33										
	Sr-90 (mc/mi^2)	0.53	0.59	0.25	0.18	0.32	0.07		0.01	0.20	0.15	0.06	not
	Sr-89/Sr-90	46	27	19	10	74	42		*	16	18	17	recd.
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.18	0.51	1.34	0.33	not	0.17	0.10	0.02	0.07	0.17	0.36	0.68
	Sr-89/Sr-90	27	29	17	8	recd.	*	*	--	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.11	0.41										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: CONGO, LEOPOLDVILLE - SITE# 2 (Column) 4°20'S, 15°18'E, ~alt. 1,000 ft. (Service Meteorologique)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)					0.24	8.62	0.02	trace	2.55	4.43	6.90	3.77
	Sr-90 (mc/mi^2)					0.16		0.40		0.55		0.57	
	Sr-89/Sr-90					--		--		--		--	
1961	Precip. (in.)	5.12	6.92	3.82	13.97	7.08	0	0.09	0.004	2.66			
	Sr-90 (mc/mi^2)			0.16		0.00		0.09		0.07	<0.01	0.11	0.27
	Sr-89/Sr-90			--		--		--		*	*	64	36
1962	Precip. (in.)	5.23	6.33	9.70	2.33	6.62				1.94	3.79	12.30	9.25
	Sr-90 (mc/mi^2)	0.51	0.48	0.32	0.19	0.42	not	0.19	0.03	0.12	0.14	0.13	0.48
	Sr-89/Sr-90	45	30	18	12	135	recd.	3	*	23	18	14	29
1963	Precip. (in.)	4.39	11.44	8.91	8.12	4.68	0.04	0.48		0.55	2.63	11.89	11.25
	Sr-90 (mc/mi^2)	0.49	1.15	1.44	0.14	0.10	0.17	0.03	0.07	0.11	0.16	0.37	1.51
	Sr-89/Sr-90	27	22	18	18	3.5	*	*	*	*	*	*	*
1964	Precip. (in.)	6.11	3.85										
	Sr-90 (mc/mi^2)	0.48	0.39										
	Sr-89/Sr-90	0.5	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **COSTA RICA, TURRIALBA** (Column) 9°53'30"N, 83°39'30" W, Alt. 1988 ft. (Instituto Interamericana de Ciencas Agricolas)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									6.46	6.05		8.72
	Sr-90 (mc/mi^2)								0.16	0.02	lost	lost	0.18
	Sr-89/Sr-90								1.2	*	--	--	--
1960	Precip. (in.)	6.92	3.70	4.49	1.95	5.88	10.04	8.55	8.98	4.50	10.46	8.31	11.37
	Sr-90 (mc/mi^2)	0.29	0.09	0.32	0.36	0.14		0.00		0.06		0.00	
	Sr-89/Sr-90	--	7.0	--	--	--		--		--		--	
1961	Precip. (in.)	3.35	0.20	1.67	2.24		14.23	11.57		10.32	10.12	15.17	9.75
	Sr-90 (mc/mi^2)	0.02		0.04		0.04		0.00	not	<0.04	0.08	0.49	0.30
	Sr-89/Sr-90	--		--		--		--	recd.	*	13	93	64
1962	Precip. (in.)	4.70	1.2	1.5	4.94	7.56	8.54	12.68	12.81	9.73	11.57	21.00	12.91
	Sr-90 (mc/mi^2)	0.83	0.80		1.21	1.14	0.37	0.13	0.61	0.25		0.26	0.45
	Sr-89/Sr-90	48	38		12	54	71	14	34	18		25	45
1963	Precip. (in.)	4.35	3.71	4.6	1.96	6.26	10.98	7.87	6.90	10.98	10.76		12.60
	Sr-90 (mc/mi^2)	0.01	0.61	1.43	2.41	1.25	0.06	0.90	0.45	0.36	0.74	0.34	0.67
	Sr-89/Sr-90	*	26	17	3	4.3	--	1	*	*	*	*	*
1964	Precip. (in.)	2.81	0.12										
	Sr-90 (mc/mi^2)	0.44	0.44										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ECUADOR, GUAYAQUIL (Column) 2°10'S, 79°52'W, Elev. 23 ft. - 80th Meridian Station - (Meteorologia de la Direcion General de Aviacion Civil)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)				1.86	0.32	trace	trace					
	Sr-90 (mc/mi^2)				0.10	0.03	0.07	0.05	0.02	0.02	0.12	0.05	0.56
	Sr-89/Sr-90				6	*	*	*	3	*	*	*	*
1964	Precip. (in.)	8.53	6.44										
	Sr-90 (mc/mi^2)	0.21	0.21										
	Sr-89/Sr-90	*	0.9										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ECUADOR, QUITO (Column) 0°14'S, 78°30'W, ~Alt. 9300 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)							0.01	lost	lost	0.01	0.03	0.04
	Sr-89/Sr-90							*	--	--	*	*	*
1960	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.14	0.13	0.12	0.12	0.11	not	0.20	0.06	not	not	not	not
	Sr-89/Sr-90	--	--	--	--	--	recd.	--	--	recd.	recd.	recd.	recd.
1961	Precip. (in.)					0.08	2.36	0.79	0.24	(9/5-10/10)	(10/12-11/30)		
	Sr-90 (mc/mi^2)	not	not	not	0.08		0.18	0.00			8.42		4.83
	Sr-89/Sr-90	recd.	recd.	recd.	--		--	--			0.02		0.03
											23		84
1962	Precip. (in.)	9.40		6.85	7.16	4.20	2.04	0.02	0.09	1.48	3.42	5.88	2.60
	Sr-90 (mc/mi^2)	0.10		0.05	0.09	0.25	0.06	0.01	0.02	0.10	0.16	0.06	0.05
	Sr-89/Sr-90	31		25	38	11	58	*	14	21	17	34	46
1963	Precip. (in.)	5.87	4.73	8.66	6.73			1.88			3.98		
	Sr-90 (mc/mi^2)	0.12	0.15	0.15	0.09	0.04	not	0.08	0.03	0.04	0.09	not	0.08
	Sr-89/Sr-90	37	11	15	11	12.6	recd.	4	10	*	*	recd.	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	0.12										
	Sr-89/Sr-90	recd.	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ENIWETOK ATOLL (Column) 11°21'N, 162°21'E, ~alt. 13 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)											(11/7-12/11)	(12/11-1/11)
	Sr-90 (mc/mi^2)				0.56	6.16	4.16	7.17	6.43	12.24	11.32	5.10	7.79
	Sr-89/Sr-90				0.28	0.88	0.44	0.18	0.32	0.24	0.28	0.54	0.31
					18	12	33	12	18	--	57	41	47
		(1/11-2/10)	(2/12-3/14)	(3/14 - 5/2)									
1963	Precip. (in.)	0.49	0.19	2.41		13.51	9.10	8.47	8.89	7.68	11.81	4.19	6.45
	Sr-90 (mc/mi^2)	0.24	0.31	2.22		0.75	2.12	1.34	0.65	0.49	0.46	0.38	0.86
	Sr-89/Sr-90	24	19	13		6.9	1.6	1	*	1.6	*	*	*
1964	Precip. (in.)	2.02	1.09										
	Sr-90 (mc/mi^2)	0.83	0.66										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ETHIOPIA, ADDIS ABABA (Column) 9°03'N, 38°42'E, ~Alt. 9850 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.01	0.23	0.17	lost	lost	lost	0.00		0.03		0.05	0.10
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	--
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.21		0.23		0.67		0.50			0.20		1.12
	Sr-89/Sr-90	--		--		--		--			*		54
1962	Precip. (in.)												0.62
	Sr-90 (mc/mi^2)	≤0.02	not	not	0.33	1.73	not	2.56	1.73	0.49	0.02	0.28	0.65
	Sr-89/Sr-90	*	recd.	recd.	19	13	recd.	10	12	16	*	32	28
1963	Precip. (in.)	0.04	2.13	1.50	6.38	3.82	4.85	8.76	12.63	4.57		17.9	0.71
	Sr-90 (mc/mi^2)	0.89	not	2.38	2.12	4.47	7.17	9.29	8.13	0.14	not	0.81	0.15
	Sr-89/Sr-90	36	recd.	15	8	8.6	3.0	*	0.8	*	recd.	*	*
1964	Precip. (in.)	0.27											
	Sr-90 (mc/mi^2)	0.10	0.25										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: FIJI ISLANDS, SUVA (Column) 18°09'S, 178°25'E, ~ alt. 37 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	13.33	8.30	17.43	17.48	9.37	11.32	1.32	19.19	1.53	9.03	13.03	
	Sr-90 (mc/mi^2)								0.30	0.01	lost	0.02	
	Sr-89/Sr-90								0.38	*	--	*	
1960	Precip. (in.)	15.46	9.49	10.60	4.87	6.45	10.79	11.42	4.37	4.72	5.32	17.94	9.34
	Sr-90 (mc/mi^2)	0.23	0.20	0.17		0.36		0.36		0.18		0.42	
	Sr-89/Sr-90	--	*	--		--		--		--		--	
1961	Precip. (in.)	12.82	10.54	4.20	13.6	7.09	6.97	6.18	5.09	14.03	4.20	24.99	19.25
	Sr-90 (mc/mi^2)	0.11		0.39		0.04		0.30		0.20	0.68	0.82	0.03
	Sr-89/Sr-90	--		--		--		--		3.0	95	0.5	32
1962	Precip. (in.)	20.91	21.64	28.29	5.94	6.67	12.84	4.96	3.22	4.98	4.72	10.67	9.39
	Sr-90 (mc/mi^2)	0.19	0.30	0.08	0.04	0.08	0.72	0.44	not	0.30	0.41	0.65	0.56
	Sr-89/Sr-90	2.2	3	4	4	24	83	55	recd.	12	*	8	9
1963	Precip. (in.)	15.51	6.64	11.87	22.43	13.67	4.46	2.26	19.91	10.89	4.06	9.18	20.31
	Sr-90 (mc/mi^2)	0.39	0.36	0.18	0.11	lost	0.25	0.27	0.92	0.66	0.32	1.24	0.47
	Sr-89/Sr-90	8	7	4.0	13	--	0.4	*	*	*	*	*	*
1964	Precip. (in.)		17.99										
	Sr-90 (mc/mi^2)	0.54	0.28										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: GERMANY, RHEIN MAIN AFB (Column) 50°02'N, 08°34'E, ~alt. 368 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										1.34	1.34	2.09
	Sr-90 (mc/mi^2)										0.10	0.15	0.21
	Sr-89/Sr-90										0.72	0.77	*
1960	Precip. (in.)	1.97	1.64	0.91	1.06	2.76	0.75	3.74	4.94	1.34	5.12	0.30	2.71
	Sr-90 (mc/mi^2)	0.31	0.40	lost	0.27	0.24		0.23		0.12		0.13	
	Sr-89/Sr-90	--	11	--	--	--		--		--		--	
1961	Precip. (in.)	2.44	1.27	0.06	2.40	2.48	7.14	4.84	2.14	1.54	2.64	3.35	1.89
	Sr-90 (mc/mi^2)	0.21		0.70	0.33	1.09		0.74		0.07	0.23	0.39	0.25
	Sr-89/Sr-90	--		--	--	--		--		15	55	81	60
1962	Precip. (in.)	1.93	2.29	2.52	2.01	2.48	0.36	1.14	2.21	1.38	0.59	1.62	2.84
	Sr-90 (mc/mi^2)	0.56	0.64	1.58	2.02	not	3.21	0.06	1.13	lost	lost	0.69	0.86
	Sr-89/Sr-90	53	30	18	13	recd.	9	7	7	--	--	40	45
1963	Precip. (in.)	0.71	0.91	3.15	1.18	1.62	1.77						
	Sr-90 (mc/mi^2)	0.06	0.71	3.52	2.22	2.67	2.20	2.59	9.03	1.54	7.16	1.53	0.13
	Sr-89/Sr-90	22	22	20	12.1	5.9	0.2	2	*	1.6	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.06	0.78										
	Sr-89/Sr-90	1.2	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: GREENLAND, THULE (Column) 76°35'N, 68°38'W, ~alt. 950 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										1.08	0.22	0.25
	Sr-90 (mc/mi^2)										0.04	0.04	0.02
	Sr-89/Sr-90										*	*	*
1960	Precip. (in.)	0.23	0.24	0.57	0.07	0.23	0.15	0.67	0.12	0.68	0.37	0.92	0.15
	Sr-90 (mc/mi^2)	0.18	0.05	0.15	0.22	0.24		0.25		0.05		0.14	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.16	trace	0.08	0.16	0.39	0.60		0.79	0.33	0.22	0.16	0.23
	Sr-90 (mc/mi^2)	0.02		0.00		0.19		0.14		0.03	0.06	1.06	0.04
	Sr-89/Sr-90	--		--		--		--		22	40	89	47
1962	Precip. (in.)	0.20	trace	0.41	0.66	0.52	trace		1.03	0.54	0.48	0.33	0.21
	Sr-90 (mc/mi^2)	<0.01	<0.01	≤0.01	0.11	0.14	<0.01	0.31	0.64	0.07	0.23	0.09	0.06
	Sr-89/Sr-90	≥68	*	≥33	9	6	*	11	7	21	18	26	49
1963	Precip. (in.)	1.07	0.75	0.11	0.15	0.32	0.10						
	Sr-90 (mc/mi^2)	0.09	0.15	0.01	0.05	0.18	0.51	2.15	5.23	0.40	2.27	0.09	0.10
	Sr-89/Sr-90	22	27	10	7.7	7.1	1.4	--	*	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.26	0.14										
	Sr-89/Sr-90	*	0.5										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: GUAM (Column) 13°35'N, 144°55'E, ~alt. 605 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									15.00	10.76	6.78	6.30
	Sr-90 (mc/mi^2)									0.06	0.04	0.10	0.11
	Sr-89/Sr-90									*	*	*	2.4
1960	Precip. (in.)	3.23	0.66	1.59	0.38	5.98	5.92	8.61	16.51	8.94	11.77	11.30	6.22
	Sr-90 (mc/mi^2)	0.25	0.14	0.20	0.27	0.20		0.14		0.27		0.06	0.27
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	--
1961	Precip. (in.)	4.79	3.74	5.03	3.20	4.31	4.09	6.46	14.97	14.51	17.88	5.96	0.23
	Sr-90 (mc/mi^2)	0.12		0.02		0.17		0.12		0.05	0.14	0.35	0.35
	Sr-89/Sr-90	--		--		--		--		71	50	90	17
1962	Precip. (in.)	1.70	8.80	1.42	8.44	5.39	8.14	12.82	11.55	13.92	20.64	11.27	13.28
	Sr-90 (mc/mi^2)	1.48	0.87	0.61	1.97	1.24	1.50	0.79	lost	0.26	0.54		0.64
	Sr-89/Sr-90	47	30	23	12	12	16	17	"	22	25		35
1963	Precip. (in.)	10.92	11.06	3.36	24.00	13.97	8.93	13.25	10.77	12.00	20.24	6.68	17.00
	Sr-90 (mc/mi^2)	1.69	2.38	1.03	5.25	11.68	0.96	0.97	0.60	0.63	0.72	0.66	0.78
	Sr-89/Sr-90	32	37	16	10	6.8	--	--	*	0.6	*	*	*
1964	Precip. (in.)	2.47	3.89										
	Sr-90 (mc/mi^2)	0.86	1.89										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: HONG KONG (Column) 22°18'N, 144°12'E, ~Alt. 25 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	0.39	trace	9.84	1.57	9.84	27.56	6.30	21.26	12.24	10.23	5.43	0.05
	Sr-90 (mc/mi^2)	0.12	lost	0.17	lost	0.24	not recd.	not recd.	not recd.	not recd.	not recd.	not recd.	not recd.
	Sr-89/Sr-90	--	--	--	--	--							
1961	Precip. (in.)	~1.00		5.0	6.78	5.00	8.3	19.38	8.00	21.08	1.22	3.59	
	Sr-90 (mc/mi^2)	0.15		0.48		0.19		not recd.	0.14	<0.15	not recd.	not recd.	not recd.
	Sr-89/Sr-90	--		--		--			--	*			
1962	Precip. (in.)		3.27	0.64									
	Sr-90 (mc/mi^2)	not	not	1.40	0.69	0.99	1.04	0.40	0.09	not	0.98	0.24	
	Sr-89/Sr-90	recd.	recd.	18	13	--	21	10	12	recd.	--	31	
1963	Precip. (in.)	(2/10-3/15)		(3/15-4/10)	(4/10-5/10)	(5/10-6/15)	(6/27	-	8/27)				
	Sr-90 (mc/mi^2)	0.28	0.29	1.64	0.37	2.10		0.54		2.31	1.38	not	0.05
	Sr-89/Sr-90	40	15	18	7	2.2		*		*	*	recd.	2.5
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	2.69											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ICELAND, KEFLAVIK (Column) 63°58'N, 22°36'W, ~ alt. 184 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	2.46	10.94	9.54	2.85	2.44	3.07	2.31	5.54	8.95	7.61	2.15	3.94
	Sr-90 (mc/mi^2)												0.11
	Sr-89/Sr-90												*
1960	Precip. (in.)	3.45	1.58	4.72	2.78	2.36	5.51	5.09	0.69	5.20	2.32	0.23	4.08
	Sr-90 (mc/mi^2)	0.28	0.24	0.35	0.35	lost	lost	0.00		0.14		0.24	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	4.13	5.44	7.07	3.29	2.53	1.74	2.22	4.06	6.31	5.10	4.88	2.28
	Sr-90 (mc/mi^2)	0.28		0.62		0.73		0.36		0.34	0.53	0.60	0.70
	Sr-89/Sr-90	--		--		--		--		67	38	76	61
1962	Precip. (in.)	4.67	7.52	0.40	0.61	1.33	4.62	2.37	1.67	4.74	6.00	5.69	6.27
	Sr-90 (mc/mi^2)	1.55	0.53	0.69	2.35	1.42	1.74	0.58	lost	1.01	1.52	1.40	1.86
	Sr-89/Sr-90	43	32	114	12	9	9	9	"	26	29	53	48
1963	Precip. (in.)	3.45	3.54	4.33	6.00	4.06	1.41	2.02	1.09	5.72	7.21	3.65	lost
	Sr-90 (mc/mi^2)	1.89	2.07	2.98	4.43	2.41	4.58	2.54	1.19	2.90	3.08	0.74	at
	Sr-89/Sr-90	26	20	12	12	7.6	*	4	*	0.4	*	*	site
		(1/11-31)											
1964	Precip. (in.)	5.42	4.25										
	Sr-90 (mc/mi^2)	0.98	2.69										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: IRAN, TEHRAN (Pot) 35°44'N, 51°23'E, Alt. 4464 ft. /Tehran University Nuclear Center/

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip, (in.)						0.15	trace		0.09	0.61	0.21	0.51
	Sr-90 (mc/mi^2)						0.66	0.08	0.19	0.20	1.10	0.41	0.76
	Sr-89/Sr-90						8	13	13	16	11	29	47
1963	Precip. (in.)	0.43	4.8	0.36	1.56	1.59	0.03		0.6		0.13	0.81	2.46
	Sr-90 (mc/mi^2)	1.64	1.77	3.26	8.23	7.44	1.06	0.26	0.24	0.12	0.67	0.78	2.32
	Sr-89/Sr-90	47	24	15.0	5.2	9.5	*	*	*	*	*	*	*
1964	Precip. (in.)	0.13	1.31										
	Sr-90 (mc/mi^2)	0.37	0.76										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ITALY, FLORENCE (Column) 43°47'N, 11°15'E, ~Alt. 165 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										0.99		4.91
	Sr-90 (mc/mi^2)										0.12	0.33	0.43
	Sr-89/Sr-90										1.5	*	0.8
1960	Precip. (in.)	6.61	2.64	4.87	1.93	0.07	1.76	4.31	0.34	4.41	8.85	4.57	6.81
	Sr-90 (mc/mi^2)	0.27	0.64	0.63	0.36	0.84		1.13		0.48		0.57	
	Sr-89/Sr-90	—	0.3	--	--	--		--		--		--	
1961	Precip. (in.)	4.51	1.09	0	4.16	1.40	3.33	0.30	0.40		4.20	4.34	3.31
	Sr-90 (mc/mi^2)	0.39		0.97		0.58		0.19		0.26	0.68	0.64	1.92
	Sr-89/Sr-90	--		--		--		--		1.8	95	101	70
1962	Precip. (in.)	5.55	3.07	3.40	1.99	2.09	2.03	0.03		1.21	3.33	6.30	2.30
	Sr-90 (mc/mi^2)	1.35	1.35	3.02	4.34	3.03	3.37	0.12	0.70	0.50	1.09	2.54	1.81
	Sr-89/Sr-90	48	29	22	12	7	8	8	28	28	52	43	44
1963	Precip. (in.)	1.80	0.48	2.80	3.14	3.30	2.23	2.94	2.90	2.68	1.04	3.21	2.98
	Sr-90 (mc/mi^2)	3.11	1.84	0.72	7.89	13.46	9.27	6.08	8.10	0.18	1.44	2.88	0.84
	Sr-89/Sr-90	36	25	12	12	7.1	1.1	3	*	*	*	*	*
1964	Precip. (in.)		3.28										
	Sr-90 (mc/mi^2)	0.38	2.18										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: ITALY, MILAN (Column) 45°28'N, 9°12'E, ~Alt. 400 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)									3.58	0.92	6.81	9.30
	Sr-89/Sr-90									0.02	0.02	0.10	0.02
										*	*	*	*
1960	Precip. (in.)	3.43	3.55	3.94	1.69	0.96	6.80	0.79	4.33	7.02	9.78	5.00	2.50
	Sr-90 (mc/mi^2)	0.20	0.39	0.17	0.34	1.16		0.31		0.79		0.66	
	Sr-89/Sr-90	--	--	--	--	---		--		---		--	
1961	Precip. (in.)	1.22	1.45	0	5.34	2.3	3.95	3.60	0.67	0.5	2.98	6.96	2.24
	Sr-90 (mc/mi^2)	0.13		0.84		1.11		0.50		<0.01	0.26	1.36	0.41
	Sr-89/Sr-90	--		--		--		--		>20	84	82	68
1962	Precip. (in.)	0.75	2.26	2.71	3.99	3.59	2.87	0.72	1.76	2.91	3.43	5.98	16.9
	Sr-90 (mc/mi^2)	1.24	1.76	0.34	2.92	2.28	2.33	0.87	lost	0.89	1.07	1.89	0.34
	Sr-89/Sr-90	46	25	18	11	9	6	18	"	22	34	18	38
1963	Precip. (in.)	4.03	2.88	3.40	3.40	3.54	2.47	2.06	5.50	4.76	1.54	8.77	(12/1/63-1/7/64)
	Sr-90 (mc/mi2)	1.36	0.76	2.82	3.94	3.42	0.60	6.57	9.66	1.87	0.93	4.12	0.69
	Sr-89/Sr-90	28	34	12	13	6.7	2.0	2	*	0.9	*	*	*
		(1/7-2/1/64)											
1964	Precip. (in.)	0.55	3.35										
	Sr-90 (mc/mi^2)	4.01	1.70										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: IWO JIMA (Column) 24°47'N, 141°19'E, ~alt. 370 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	2.83	0.93	1.14	5.69	5.33	1.60	2.10	5.28	5.48	6.75	2.88	3.47
	Sr-90 (mc/mi^2)								0.11	0.13	0.07	0.06	not
	Sr-89/Sr-90								2.1	*	*	*	recd.
1960	Precip. (in.)	7.01	7.09	1.50	11.70	1.31	2.63	5.16	11.77	0.00	11.81	0.00	2.99
	Sr-90 (mc/mi^2)	0.48	0.24	0.34	0.36	0.35		0.26		0.06		0.11	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.71	3.65	6.88	2.85	2.87	3.12	13.53	6.47	8.06	7.66	5.60	2.72
	Sr-90 (mc/mi^2)	0.43		0.93		0.43		0.07		0.15	0.10	0.30	1.97
	Sr-89/Sr-90	--		--		--		---		14	90	72	69
1962	Precip. (in.)	7.38	0.33	2.03	2.70	7.65	8.76	1.80	11.20	2.17	13.27	3.32	5.67
	Sr-90 (mc/mi^2)	1.66	0.66	0.84	1.09	0.45	1.41	0.38	0.77	0.29	0.80	0.33	2.26
	Sr-89/Sr-90	47	29	22	14	8	7	9	12	16	30	49	50
1963	Precip. (in.)	1.44	0.31	0.58	1.21	4.41	2.03	4.06	5.37	6.93	7.73	6.06	9.17
	Sr-90 (mc/mi2)	1.44	0.73	0.06	0.64	1.51	2.75	1.49	1.40	0.83	0.62	1.18	1.25
	Sr-89/Sr-90	45	35	20	12	12.2	*	0.2	*	1.0	*	*	*
1964	Precip. (in.)	1.24	0.72										
	Sr-90 (mc/mi^2)	1.26	0.58										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: JAPAN, HIROSHIMA (Pot) 34°23'N, 132°27'E, ~Alt. 75 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)								11.93	9.83	3.51	1.64	0.23
	Sr-90 (mc/mi^2)								0.50	lost	0.27	0.11	0.06
	Sr-89/Sr-90								--	--	--	--	--
1957	Precip. (in.)	2.15	2.26	1.29	11.00	6.44	10.22	21.10	4.48	10.92	2.07	2.46	1.91
	Sr-90 (mc/mi^2)	0.29	0.53	0.23	1.12	0.57	0.49	0.82	0.05	0.28	lost	0.14	0.36
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--	--	--	--
1958	Precip. (in.)	2.65	2.93	4.88	10.49	3.74	3.98	6.90	9.87	3.59	4.88	2.38	1.95
	Sr-90 (mc/mi^2)	0.24	0.25	0.92	3.37	1.06	0.64	0.43	2.66	0.42	0.79	0.71	0.57
	Sr-89/Sr-90	13	12	11	10	14	11	3.2	17	52	48	8	62
1959	Precip. (in.)	2.64	5.24	2.37	8.12	6.03	2.60	13.08	4.77	4.93	4.33	2.24	3.70
	Sr-90 (mc/mi^2)	1.81	2.45	5.55	6.52	0.40	1.09	1.37	lost	0.04	0.27	0.13	0.16
	Sr-89/Sr-90	31	28	10	7	--	5.6	3.2	--	*	0.5	*	*
1960	Precip. (in.)	1.58	0.39	2.10	5.12	8.59	9.49	7.12	4.09	10.83	2.80	2.95	0.79
	Sr-90 (mc/mi^2)	0.24	0.09	0.84	0.56	1.31		0.48		0.27		0.08	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.16	1.57	3.31	6.69	5.35	5.00	6.81	4.61	3.11	7.12	4.61	1.85
	Sr-90 (mc/mi^2)	0.24		1.06		0.77		0.11		not	0.28	0.58	not
	Sr-89/Sr-90	--		--		--		--		recd.	6.7	74	recd.
1962	Precip. (in.)	1.58	1.18	0.94	5.98	7.32	9.61	18.58	4.53	4.80	8.70	3.70	2.24
	Sr-90 (mc/mi^2)	1.11	1.66	3.50	3.44	3.56	1.72	0.13	0.28	1.16	0.97	0.93	1.69
	Sr-89/Sr-90	38	23	17	14	8	7	10	22	16	25	37	36
1963	Precip. (in.)	1.38	1.10	2.44	5.87	15.74	10.00	6.34	11.81				
	Sr-90 (mc/mi^2)	1.15	1.31	3.56	8.76	9.18	12.09	0.06	2.34	not	3.10	0.73	0.58
	Sr-89/Sr-90	32	30	16	11	11.0	*	1	*	recd.	0.2	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.18	1.97										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: JAPAN, MISAWA (Column) 40°42'N, 141°22'E, ~alt. 119 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	3.78	1.92	4.43	1.92	2.83	5.34	4.48	4.13	7.14	3.44	2.92	2.11
	Sr-90 (mc/mi^2)									0.41	0.24	0.16	0.26
	Sr-89/Sr-90									0.46	1.0	*	*
1960	Precip. (in.)	9.25	3.91	2.66	3.95	4.11	1.84	2.11	4.73	3.29	6.56	3.80	4.58
	Sr-90 (mc/mi^2)	0.14	0.52	lost	0.29	0.00		0.00		0.21		0.03	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.38	3.34	0.79	2.75	0.91	3.72	4.55	3.22	5.78	4.89	1.91	3.06
	Sr-90 (mc/mi^2)	0.40		0.88		0.54		0.20		<0.01	0.51	0.49	1.08
	Sr-89/Sr-90	--		--		--		--		>138	52	94	62
1962	Precip. (in.)	3.34	2.93	4.42		2.23	2.30	1.45	5.01	7.74	4.04	2.36	1.20
	Sr-90 (mc/mi^2)	0.86	≤0.03	3.59		3.10	1.86	0.05	0.87	2.84	3.16	1.01	0.74
	Sr-89/Sr-90	19	*	12		12	10	12	33	17	43	51	39
1963	Precip. (in.)	6.10	2.11	2.76	2.07	3.21	3.87	7.09	6.19	1.97	3.66	1.75	1.99
	Sr-90 (mc/mi^2)	1.00	2.62	2.10	4.25	1.53	4.42	7.24	4.45	2.05	2.17	0.90	0.78
	Sr-89/Sr-90	55	26	30	10	8.6	1.1	2	3	0.6	*	*	*
1964	Precip. (in.)	3.60	5.55										
	Sr-90 (mc/mi^2)	1.42	1.97										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: JAPAN, NAGASAKI (Pot) 32°45'N, 129°52'E, ~Alt. 200 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)								17.43	16.07	3.59	1.44	1.37
	Sr-90 (mc/mi^2)								0.34	0.17	0.20	0.08	0.22
	Sr-89/Sr-90								--	--	--	--	--
1957	Precip. (in.)	3.94	3.28	1.40	11.27	6.44	10.18	28.67	11.35	14.74	2.11	2.42	5.38
	Sr-90 (mc/mi^2)	1.01	0.17	0.38	1.98	0.72	0.27	1.07	0.46	0.26	0.21	0.19	0.17
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--	--	--	--
1958	Precip. (in.)	2.50	2.77	5.38	14.94	7.29	5.93	1.33	14.27	2.77	6.67	2.11	3.86
	Sr-90 (mc/mi^2)	0.60	0.55	1.13	2.52	1.75	0.88	2.10	0.50	0.26	0.55	0.61	2.16
	Sr-89/Sr-90	16	11	14	15	4	35	86	60	52	44	48	37
1959	Precip. (in.)	3.35	5.83	3.55	8.59	7.84	4.18	11.11	3.15	8.67	0.56	3.90	4.77
	Sr-90 (mc/mi^2)	3.00	2.14	3.74	7.60	3.02	0.74	1.73	0.19	0.13	0.06	0.09	0.36
	Sr-89/Sr-90	31	26	15	9.3	7.3	3.9	2.3	*	*	*	*	*
1960	Precip. (in.)	2.36	0.79	4.33	5.63	9.84	12.16	1.50	3.15	16.14	3.66	3.23	1.69
	Sr-90 (mc/mi^2)	0.13	0.20	0.85	0.58	0.11		not	not	0.14		0.27	
	Sr-89/Sr-90	--	--	--	--	--		recd.	recd.	--		--	
1961	Precip. (in.)	3.46	1.85	4.17	4.21	8.78	4.28	5.35	7.16	4.16	6.14	4.92	2.56
	Sr-90 (mc/mi^2)	0.43		0.05		0.71		0.14		0.02	0.13	1.07	2.03
	Sr-89/Sr-90	--		--		--		--		*	44	86	60
1962	Precip. (in.)	5.51	2.24	2.44	7.95	7.56	12.36	19.22	12.87	7.48	4.72	4.92	3.11
	Sr-90 (mc/mi^2)	3.13	3.32	4.23	2.14	1.53	0.65	0.44	0.26	0.49	0.27	0.89	2.54
	Sr-89/Sr-90	40	29	23	14	7	9	14	15	15	16	36	54
1963	Precip. (in.)	4.33	1.22	4.29	7.95	13.58	8.82	15.91	17.21				
	Sr-90 (mc/mi^2)	3.44	2.02	6.29	0.91	0.68	1.24	0.50	0.21	0.53	0.87	1.16	2.62
	Sr-89/Sr-90	29	35	15	16	8.9	*	*	*	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.98	1.84										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: JAPAN, TACHIKAWA (Column) 35°42'N, 139°24'E, ~alt. 320 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)											2.77	3.75
	Sr-90 (mc/mi^2)										0.33	lost	0.14
	Sr-89/Sr-90										*	--	*
1960	Precip. (in.)	1.80	0.11	2.10	6.42	5.23	3.35	1.43	16.02	6.46	5.07	2.74	2.79
	Sr-90 (mc/mi^2)	0.22	0.13	0.38	0.96	1.21		0.00		0.22		0.56	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.68	1.34	3.46	5.91	1.91	13.23	1.25	3.89	2.87	11.66	1.90	1.45
	Sr-90 (mc/mi^2)	0.89		0.93		0.83		0.21		<0.01	0.09	0.19	0.46
	Sr-89/Sr-90	--		--		--		--		>29	80	78	66
1962	Precip. (in.)	0.85	0.77	2.04	3.87	5.60	7.57	10.73	8.77	0.69	4.09	5.46	2.49
	Sr-90 (mc/mi^2)	0.36	0.49	≤0.03	1.76	1.99	4.23	2.26	0.38	0.16	1.18	1.49	0.50
	Sr-89/Sr-90	44	27	≥101	12	10	7	7	13	15	37	46	51
1963	Precip. (in.)	0.05	0.33	2.41	2.59	3.73	8.29	3.15	11.01	2.82	9.85	2.79	1.02
	Sr-90 (mc/mi^2)	0.26	0.36	3.08	3.59	6.16	7.37	3.45	1.91	2.80	2.00	1.45	0.40
	Sr-89/Sr-90	17	28	12	9	4.7	2.4	2	*	*	1.0	*	*
1964	Precip. (in.)		2.53										
	Sr-90 (mc/mi^2)	0.07	0.62										
	Sr-89/Sr-90	*	0.5										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: JOHNSTON ISLAND (Column) 16°45'N, 169°32'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		0.39	5.28	0.87	1.03	0.79	0.83	1.65	3.82	6.97	3.12	3.12
	Sr-90 (mc/mi^2)		0.32	0.14	0.17	0.48		0.01		0.09		0.09	
	Sr-89/Sr-90		--	--	--	--		--		--		--	
1961	Precip. (in.)	0.64	1.10	0.78	3.17	0.39	0.83	1.70	3.78	1.13	12.72	3.03	1.74
	Sr-90 (mc/mi^2)	0.12		not	0.22	0.02		0.07		0.06	0.07	0.71	0.29
	Sr-89/Sr-90	--		recd.	--	--		--		19	111	86	58
1962	Precip. (in.)	1.95	3.91		3.83	1.81	1.15	0.51	14.8	2.08	0.86	1.76	0.62
	Sr-90 (mc/mi^2)	0.47	1.20	2.79	0.08	0.13	0.71	1.32	0.04	0.36	0.06	0.06	0.03
	Sr-89/Sr-90	38	28	19	17	12	8	3	8	11	16	31	50
1963	Precip. (in.)	0.29	0.41	2.32	7.62	12.04	2.10	1.20	3.30	2.08	1.10	1.68	0.98
	Sr-90 (mc/mi^2)	0.06	0.08	0.24	0.37	0.58	0.33	0.32	0.04	0.06	0.13	0.03	0.08
	Sr-89/Sr-90	26	25	13	11	7.6	4.0	3	*	*	*	*	*
1964	Precip. (in.)	1.03	1.16										
	Sr-90 (mc/mi^2)	0.19	0.49										
	Sr-89/Sr-90	*	0.9										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: KENYA, KIKUYU (Pot) 1°13'S, 36°38'E, Alt. 6800 ft. (East African Agriculture & Forestry Research Organization)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)	5.11	2.00	0.69	10.28	11.39	5.69	0.77	0.09	1.26	2.33	4.88	3.28
	Sr-90 (mc/mi^2)	0.14	0.26	0.03	0.03	0.14	0.19	0.15	0.02	0.04	0.09	0.06	0.16
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--	--	--	--
1958	Precip. (in.)	0.90	5.46	3.41	4.79	11.82	2.89	2.41	0.28	0.08	2.33	2.39	2.54
	Sr-90 (mc/mi^2)	0.03	0.14	0.22	0.13	0.90	0.22	0.26	0.13	0.07	0.25	0.15	0.12
	Sr-89/Sr-90	24	12	5	6	5	30	48	24	50	26	37	62
1959	Precip. (in.)	0.65	1.71	2.46	4.05	6.23	0.06	0.52	1.25	0.82	0.80	9.83	2.20
	Sr-90 (mc/mi^2)	0.24	0.22	0.27	0.35	0.22	0.03	0.01	0.04	0.09	0.03	0.11	0.04
	Sr-89/Sr-90	32	28	19	12	6.6	7.0	*	*	1.7	*	*	*
1960	Precip. (in.)	1.81	0.27	5.88	5.37	3.24	1.29	0.17	0.60	0.80	2.30	2.63	0.89
	Sr-90 (mc/mi^2)	0.10	0.01	0.13	0.07	0.22	not	0.04		0.17		0.09	
	Sr-89/Sr-90	--	--	--	--	--	recd.	--		--		--	
1961	Precip. (in.)	0.26	0.28	2.74	6.62	3.85	0.62	1.05	1.00	1.29	6.46	21.93	13.57
	Sr-90 (mc/mi^2)	0.03		0.10		0.84		0.11		0.39	0.02	0.16	0.46
	Sr-89/Sr-90	--		--		--		--		28	*	*	65
1962	Precip. (in.)	6.35	0.68	1.29	5.67	14.80	1.30	0.05	1.29	0.32	2.76	4.44	3.53
	Sr-90 (mc/mi^2)	0.55	0.14	0.13	1.67	0.77	5.19	0.04	0.11	0.02	0.18	0.15	0.29
	Sr-89/Sr-90	40	33	20	9	4	7	34	31	7	16	26	54
1963	Precip. (in.)	3.47	2.12	1.83	15.39	9.15	1.42	0.18	2.00	0.09	0.55	7.65	9.62
	Sr-90 (mc/mi^2)	0.38	0.45	0.33	0.10	1.29	0.24	0.11	0.15	0.07	0.05	0.20	0.45
	Sr-89/Sr-90	37	34	24	3	7.1	*	2	*	*	*	*	*
1964	Precip. (in.)	1.44	3.42										
	Sr-90 (mc/mi^2)	0.06	1.05										
	Sr-89/Sr-90	1	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: KENYA, NAIROBI (Column) 1°17'S, 36°49'E, ~alt. 5453 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	0.43	3.54	7.45	4.03	3.34	0.08	0.05	1.23	2.44	1.20	9.11	1.37
	Sr-90 (mc/mi^2)									0.16	0.08	0.14	lost
	Sr-89/Sr-90									*	*	*	--
1960	Precip. (in.)	1.72	0.47	11.50	6.15	5.18	1.47	0.25	0.21	0.95	2.78	2.90	2.09
	Sr-90 (mc/mi^2)	0.12	0.17	0.25	0.20	0.05		0.00		0.08		0.01	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.33	0.62	2.98	6.18	4.53	0.98	0.27	1.06	1.40	6.46	29.51	14.94
	Sr-90 (mc/mi^2)	0.00		0.37		0.23		0.07		<0.02	0.04	0.20	0.64
	Sr-89/Sr-90	--		--		--		--		>37	6.7	49	69
1962	Precip. (in.)	7.84	1.75	0.92	5.75	10.07		0.07	1.67	0.62	3.28	4.11	3.75
	Sr-90 (mc/mi^2)	1.26	0.29	0.20	0.24	0.80	0.67	0.19	0.12	0.30	0.40	0.27	0.30
	Sr-89/Sr-90	38	28	17	17	2	25	20	18	11	8	28	47
1963	Precip. (in.)	7.60	2.30	4.49	4.86	9.99	1.41	(7/6-8/21) 0.25	2.02	0.07	0.54	7.96	12.17
	Sr-90 (mc/mi^2)	1.52	0.66	0.63	0.20	0.06	5.92	0.09	0.06	0.08	0.05	0.10	0.46
	Sr-89/Sr-90	39	21	15	8	13.3	6.4	*	2	*	*	*	*
1964	Precip. (in.)	(1/10-2/4) 1.86	3.36										
	Sr-90 (mc/mi^2)	0.18	0.29										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: KOROR ISLAND (Column) 7°21'N, 134°31'E, ~alt. 102 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	15.16	10.20	3.74	11.66	11.46	14.17	13.43	11.37	20.79	15.03	11.00	14.00
	Sr-90 (mc/mi^2)	0.15	lost	0.06	0.16	0.26		0.00		0.15		0.03	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	16	9.5	6.21	6.71	20.14	23.93	13.69	17.37	11.61	18.55	7.81	13.8
	Sr-90 (mc/mi^2)	0.21		0.17		0.07		0.33		0.22	0.20	0.11	0.43
	Sr-89/Sr-90	--		--		--		--		*	15	96	63
1962	Precip. (in.)	16.70	8.65	7.46	6.10	18.34	8.37	35	22.57	17.68	9.61	4.93	14.10
	Sr-90 (mc/mi^2)	0.99	0.44	0.68	0.99	≤0.01	0.38	0.54	0.38	0.24	0.13	0.16	0.34
	Sr-89/Sr-90	58	33	18	14	*	12	19	13	15	29	40	46
1963	Precip. (in.)	18.63	8.79	8.41	3.39	12.01	14.00	11.17	14.31	13.40	10.23	6.73	13.38
	Sr-90 (mc/mi^2)	0.68	0.60	1.11	1.27	0.69	2.90	0.30	0.35	0.44	0.68	0.26	0.68
	Sr-89/Sr-90	41	26	18	9	7.8	*	0.8	2	*	0.6	*	*
1964	Precip. (in.)	7.07	16.45										
	Sr-90 (mc/mi^2)	1.49	1.08										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: LEBANON, BEIRUT (Column) 33°54'N, 35°28'E, ~Alt. 125 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										5.52	4.55	2.36
	Sr-90 (mc/mi^2)										0.28	lost	0.63
	Sr-89/Sr-90										*	--	*
1960	Precip. (in.)	5.62		4.72	1.17	0.02	0.00			0.71	0.47	0.39	1.18
	Sr-90 (mc/mi^2)	0.09	0.30	not	not	not	not	0.00		0.09		0.57	
	Sr-89/Sr-90	--	--	recd.	recd.	recd.	recd.	--		--		--	
1961	Precip. (in.)	6.43	10.56	3.66	0.11	6.16	0.00	0	0	13.20	5.83	3.02	5.51
	Sr-90 (mc/mi^2)	1.39		0.55		0.20		0.09		0.19	0.12	0.76	4.87
	Sr-89/Sr-90	--		--		--		--		--	62	51	53
1962	Precip. (in.)	7.00	7.56	0.53	2.28	0.29	0			12.24	5.43	0.18	11.25
	Sr-90 (mc/mi^2)	5.02	8.49	1.36	2.66	1.09	0.02	0.05	0.09	0.02	0.16	0.34	3.70
	Sr-89/Sr-90	43	31	30	17	8	*	8	7	17	19	14	43
1963	Precip. (in.)	10.1	6.20	2.80	3.70	3.02	trace			0.87	3.72	5.38	5.39
	Sr-90 (mc/mi^2)	10.48	2.49	1.81	1.74	4.53	0.80	0.11	0.13	1.15	2.82	2.54	5.88
	Sr-89/Sr-90	50	37	16.6	11.4	6.8	*	1	*	*	1.7	*	*

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: LIBERIA, MONROVIA (Column) 6°20'N, 10°46'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)							3-5		5.01	1.01		
	Sr-90 (mc/mi^2)							0.32	lost	0.16	0.04	0.10	0.01
	Sr-89/Sr-90							*	--	*	--	*	--
1960	Precip. (in.)	1.18	1.01	5.01	1.45	11.07	57.18	19.30	23.41	25.75			
	Sr-90 (mc/mi^2)	0.01	lost	lost	0.17	0.14	0.21	0.07		0.14		0.14	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)		0.90	4.90	3.73								
	Sr-90 (mc/mi^2)	0.03	0.36	0.78		not recd.	not recd.	not recd.	not recd.	not recd.	not recd.	not recd.	not recd.
	Sr-89/Sr-90	--	--	--									
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	Stations not in operation in 1962.											
	Sr-89/Sr-90												
			(2/8 - 4/10/63)		(4/20 - 5/21)		(5/21-6/21)	(6/21-7/25)		(7/21-8/21)			
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	not recd.	1.66		0.13		3.05	2.90	1.46	not recd.	2.40	0.22	not recd.
	Sr-89/Sr-90		16		12.2		2.9	2	*		*	*	
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.06											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: LIBYA (Columns) 32°53'N, 13°12'E, ~alt. 30 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sharah Shahat													
1963	Precip. (in.)	4.49	2.73		0.65	0.9		0.13					
	Sr-90 (mc/mi^2)	0.19	1.18	not	0.73	2.05	1.12	0.15	not	not	not	not	
	Sr-89/Sr-90	25	32	recd.	*	*	*	1	recd.	recd.	recd.	recd.	
Ben Gashir		(1/15-2/15)	(2/15-3/15)	(3/15-4/15)	(4/15-5/14)	(5/15-6/16)		(7/14-8/15)					
1963	Precip. (in.)	0.31	1.29	0.64	0.20					1.61	3.90	1.43	0.23
	Sr-90 (mc/mi^2)	0.26	0.12	0.30	0.89	0.71	not	1.43	not	1.94	2.22	0.51	2.20
	Sr-89/Sr-90	24	20	11	10	2.7	recd.	*	recd.	1.6	1.2	*	*
Cyrene													
1963	Precip. (in.)			2.15				trace		trace	4.54	2.36	
	Sr-90 (mc/mi^2)	not	not	0.04	not	not	1.12	0.50	0.05	0.05	0.76	0.54	not
	Sr-89/Sr-90	recd.	recd.	10	recd.	recd.	*	0.4	*	*	*	*	recd.
Sharah Shahat													
1964	Precip. (in.)	3.99	3.19										
	Sr-90 (mc/mi^2)	1.36	1.12										
	Sr-89/Sr-90	0.2	*										
Ben Gashir													
1964	Precip. (in.)	0.23	1.10										
	Sr-90 (mc/mi^2)	2.64	0.54										
	Sr-89/Sr-90	*	*										
Cyrene													
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: LIBYA, WHEELUS AB (Column) 32°54'N, 13°17'E, ~alt. 46 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.07	1.76	0.12	trace	0.03	0.02	0.00	trace	trace	0.77	1.57	2.81
	Sr-90 (mc/mi^2)										0.15	0.13	not
	Sr-89/Sr-90										0.66	0.51	recd.
1960	Precip. (in.)	0.69	0.26	0.09	2.25	0.02	0.01	trace	trace	1.82	0.02	1.07	8.22
	Sr-90 (mc/mi^2)	0.16	0.09	lost	lost	0.44		0.00		0.24		0.26	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	2.04	0.46	1.11	1.50	0.33	trace	0	0.04	0.02	0.93	0.01	0.72
	Sr-90 (mc/mi^2)	0.53		0.70		0.00		0.22		<0.01	0.12	0.08	1.26
	Sr-89/Sr-90	--		--		--		--		*	53	54	63
1962	Precip. (in.)	3.04	3.24	0.79	0.22	0.09	trace	trace	0	trace	1.65	1.36	2.43
	Sr-90 (mc/mi^2)	2.80	2.10	0.12	0.28	0.38	0.34	0.10	0.05	0.11	0.73	2.42	2.75
	Sr-89/Sr-90	44	27	16	12	13	18	31	15	8	29	48	51
1963	Precip. (in.)	1.99	0.31	0.62	0.54	0.03	0.03	0.06		1.61	4.89	0.37	0.34
	Sr-90 (mc/mi^2)	0.50	0.86	1.92	1.19	0.65	0.23	0.59	0.02	1.56	8.88	0.67	0.24
	Sr-89/Sr-90	27	27	13	12	7.8	1.4	2	*	*	0.3	*	*
1964	Precip. (in.)	5.12	1.38										
	Sr-90 (mc/mi^2)	3.10	0.62										
	Sr-89/Sr-90	*	0.2										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: MAJURO ISLAND (Column) 7°05'N, 171°23'E, ~alt. 10 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	9.17	3.60	11.17	23.41	14.27	13.22	14.10	14.59	16.93	9.71	16.32	6.54
	Sr-90 (mc/mi^2)		0.17	0.20	0.43	0.36		0.25		0.09		0.23	
	Sr-89/Sr-90		--	--	--	--		--		--		--	
1961	Precip. (in.)	21.97	6.50	4.24	8.50	8.34	13.90	5.34	11.31	11.14	11.50	12.04	16.92
	Sr-90 (mc/mi^2)	0.24		0.30		0.00		0.00		< 0.03	0.06	0.09	0.52
	Sr-89/Sr-90	--		--		--		--		>20	12	72	70
1962	Precip. (in.)	17.55	5.15	11.48	5.95	12.01	7.54	11.02	8.91	21.03	16.36	22.69	11.71
	Sr-90 (mc/mi^2)	0.55	0.36	2.18	0.85	0.37	0.65	0.37	0.30	0.12	0.22	0.30	0.31
	Sr-89/Sr-90	40	34	20	13	36	54	30	22	19	30	138	55
1963	Precip. (in.)	17.46	9.57	12.43	6.19	11.31	11.96	11.69	10.77	6.83	13.13	11.60	8.57
	Sr-90 (mc/mi^2)	0.35	0.99	1.38	1.29	0.22	0.77	0.48	0.39	0.16	0.23	0.30	3.70 -?
	Sr-89/Sr-90	29	24	18	3	9.2	3.0	5	*	*	*	*	*
1964	Precip. (in.)	1.40	6.99										
	Sr-90 (mc/mi^2)	0.63	1.02										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: MALAYSIA, SINGAPORE (Column) 1°20'N, 103°50'E, ~Alt. 25 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										6.37	8.74	20.35
	Sr-90 (mc/mi^2)									0.05	0.00	0.02	0.00
	Sr-89/Sr-90									*	--	*	*
1960	Precip. (in.)	5.24	8.35	4.73	4.33	5.52	7.09	4.31	1.97	5.80	2.48	4.13	7.04
	Sr-90 (mc/mi^2)	<0.00	lost	0.10	0.02	0.95	lost	0.96		0.09		0.10	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	6.05	5.25	12	5.44	5.39	4.71	4.72	2.60	5.71	2.07	8.65	11.23
	Sr-90 (mc/mi^2)	0.00		0.24		0.03	1,29	0.11		0.09	0.06	0.09	0.11
	Sr-89/Sr-90	--		--		--	--	--		3.1	16	55	53
1962	Precip. (in.)	15.37	3.94	9.45	5.12	4.33	3.54	4.28	6.89	7.09	6.10	8.04	15.70
	Sr-90 (mc/mi^2)	0.13	0.19	0.14	0.27	0.05	0.22	0.13	0.50	0.23	0.04	0.13	0.22
	Sr-89/Sr-90	43	22	18	14	12	56	32	12	10	28	25	41
1963	Precip. (in.)	8.91	5.96	1.79	1.88	6.25	6.7	6.55	3.03	6.86	2.89	5.98	18.44
	Sr-90 (mc/mi^2)	0.26	0.31	0.31	0.46	0.22	0.20	0.25	0.16	0.07	0.17	0.11	0.16
	Sr-89/Sr-90	46	28	18	8	4.0	3	*	*	*	*	*	*
1964	Precip. (in.)	6.06	17.1										
	Sr-90 (mc/mi^2)	0.26	0.05										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: MEXICO, MEXICO CITY (Column) 19°26'N, 99°03' W, ~alt. 7340 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)								6.50	~5	5.91	0.08	0.04
	Sr-90 (mc/mi^2)								0.22	0.04	0.08	lost	0.15
	Sr-89/Sr-90								2.1	*	1.5	--	*
1960	Precip. (in.)	0.20	0	0.50	0.08	1.75	2.76	7.09	5.91	4.96	1.78	0.83	0.69
	Sr-90 (mc/mi^2)	0.13	0.12	0.02	0.25	0.25		lost	lost	0.06		0.03	
	Sr-89/Sr-90	--	--	--	--	--		--	--	--		--	
1961	Precip. (in.)	0.29	trace	3.0	6.2	0.56	8.76	4.59	5.87	5.03	<1.06	0.14	0.13
	Sr-90 (mc/mi^2)	0.15		0.41		0.49		0.23		0.04	≤0.01	0.02	0.04
	Sr-89/Sr-90	--		--		--		--		*	>108	8.6	56
1962	Precip. (in.)			0.16	3.92	1.46	5.54		5.08	4.94	3.56	5.2	0.12
	Sr-90 (mc/mi^2)	≤0.01	0.03	≤0.01	2.72	0.60	0.81	not	0.87	0.16	0.20	0.09	0.09
	Sr-89/Sr-90	≥38	17	≥73	13	19	13	recd.	17	15	13	31	19
1963	Precip. (in.)			0.59	0.07	1.67	4.05	9.75	7.64	6.32	3.38	0.07	
	Sr-90 (mc/mi^2)	0.03	0.04	0.07	2.36	0.41	4.03	2.60	2.67	0.76	0.60	0.11	4.64 - ?
	Sr-89/Sr-90	*	6	13	12	7.3	2.1	1	*	1.2	*	*	*
1964	Precip. (in.)	1.22											
	Sr-90 (mc/mi^2)	0.17											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: MOROCCO, RABAT (COLUMN) 34°02'N, 6°51'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)										0.10	2	7
	Sr-90 (mc/mi^2)							0.04	0.31	0.17	0.33	1.08	6.88
	Sr-89/Sr-90							1.0	*	*	*	*	*
1964	Precip. (in.)	0.20	2.00										
	Sr-90 (mc/mi^2)	2.79	2.79										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: MOROCCO, SIDI SLIMANE AFB(Column) 32°51'N, 8°32'W

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)										0.22	2.44	2.80
	Sr-90 (mc/mi^2)									0.10	0.05	0.31	0.28
	Sr-89/Sr-90									*	*	0.82	1.2
1960	Precip. (in.)			4.08		0.67	1.02	trace	trace				3.39
	Sr-90 (mc/mi^2)	0.31	0.37	1.24	lost	0.25		0.00		0.00		0.22	
	Sr-89/Sr-90	--	--	--	---	---		--		--		--	
1961	Precip. (in.)	2.23	0.06			0.42	0.37	trace	trace	0.12			1.19
	Sr-90 (mc/mi^2)	0.25		not	0.35	0.18		0.08		0.20	0.10	1.16	0.73
	Sr-89/Sr-90	--		recd.	--	--		--		5.1	56	77	68
1962	Precip. (in.)	0.42			0.43	0.22	0.37	trace	trace	0.14	1.36	8.27	3.09
	Sr-90 (mc/mi^2)	1.19	1.26	4.76	0.61	1.44	0.98	0.20	0.12	0.32	0.43	4.20	2.22
	Sr-89/Sr-90	44	27	23	13	10	8	5	9	10	33	43	49
1963	Precip. (in.)	5.16	7.55	0.35	1.81	1.19							
	Sr-90 (mc/mi^2)	3.18	1.65	0.34	5.98	0.68	0.03	collections at this site were terminated in June 1963.					
	Sr-89/Sr-90	31	29	23	10	8.8	---						

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: NEW ZEALAND, WELLINGTON (Column) 41°17'S, 174°46'E, ~alt. 112 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									1.15	4.33	1.97	1.97
	Sr-90 (mc/mi^2)									0.18	0.16	0.09	0.11
	Sr-89/Sr-90									0.67	*	*	*
1960	Precip. (in.)	1.58	4.33	3.55	1.63	3.54	7.16	7.60	4.93	6.16	3.67	1.57	1.54
	Sr-90 (mc/mi^2)	0.25	0.36	0.30	0.28	not	0.18	0.52		0.56		0.57	
	Sr-89/Sr-90	--	--	--	--	recd.	--	--		--		--	
1961	Precip. (in.)	3.9	2.67	5.12	2.01	7.50	7.50	2.33	3.05	6.66	0.77	2.10	1.24
	Sr-90 (mc/mi^2)	0.27		0.42		0.59		0.02		0.05	0.08	0.10	0.15
	Sr-89/Sr-90	--		--		--		--		*	5	*	1.0
1962	Precip. (in.)	9.86	2.04	4.14	8.35	5.03	6.35	5.37	6.06	2.28	6.91	2.86	3.31
	Sr-90 (mc/mi^2)	1.58	0.08	0.29	0.15	0.20	0.26	0.20	0.22	0.14	0.58	0.27	0.20
	Sr-89/Sr-90	1.4	*	*	*	20	11	19	12	10	8	20	15
1963	Precip. (in.)	2.43	3.46	2.65	2.35	3.51	5.45	3.19	9.43	2.91	0.30	3.35	
	Sr-90 (mc/mi^2)	0.27	0.25	0.33	0.33	0.21	0.35	0.24	0.58	0.02	0.17	0.30	1.12
	Sr-89/Sr-90	8	4	2.8	2	2.0	--	*	*	*	*	*	*
1964	Precip. (in.)	2.96	0.98										
	Sr-90 (mc/mi^2)	0.50	0.22										
	Sr-89/Sr-90	*	0.8										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: NIGERIA, LAGOS (Column) 6°26'N, 3°24'E, ~Alt. 2 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)								3.15	4.33	0.79	5.52	1.18
	Sr-90 (mc/mi^2)								lost	0.09	0.09	≤0.00	0.00
	Sr-89/Sr-90								--	*	1.2	*	*
1960	Precip. (in.)	0.79	2.36	1.58	8.66	9.06	13.38	3.94	4.33	9.06	6.30	2.76	3.94
	Sr-90 (mc/mi^2)	0.12	0.15	0.22	lost	0.16		0.23		0.05		0.13	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	1.18	0.12	5.90	11.42		19.29	12.60	0.12	3.94	10.24	3.94	0.39
	Sr-90 (mc/mi^2)	0.11		0.64		0.46		0.16		≤0.03	0.08	0.03	0.14
	Sr-89/Sr-90	--		--		--		--		≥23	67	60	58
1962	Precip. (in.)	0.12	3.00	0			1.50				(10/5-11/15)	(11/15-12/15)	(12/15-1/2
	Sr-90 (mc/mi^2)	0.14	8.04		0.47	0.66	1.78	0.68	0.25	0.22	0.32	0.17	0.14
	Sr-89/Sr-90	46	3		12	22	30	30	16	13	27	25	20
		(1/28-2/20)	(2/20-3/9)	(3/9-4/12)	(4/12-5/17)	(5/17-6/19)	(6/14-7/9)	(7/9	- 8/31)				
1963	Precip. (in.)	0.07	0.71	1.83	4.63	11.86	11.96	11.96	19.41	14.58			
	Sr-90 (mc/mi^2)	0.19	0.30	1.02	1.04	4.06	0.04	2.02		0.03	0.11	0.33	0.09
	Sr-89/Sr-90	18	26	14	27.9	9.1	--	0.4		*	*	*	1.0
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.17											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: NORWAY, OSLO (Column) 59°56'N, 10°45'E, ~Alt. 40 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)							2.60	1.73		5.16	5.24	5.67
	Sr-90 (mc/mi^2)							1.76	0.49	lost	0.34	0.39	0.40
	Sr-89/Sr-90							3.1	2	--	*	0.3	*
1960	Precip. (in.)	2.60	1.18	1.17	0.87	0.70	4.21	7.12	5.31	1.74	3.07	5.24	2.55
	Sr-90 (mc/mi^2)	0.31	0.17	2.40	0.15	0.80		0.60	not	0.13		0.18	
	Sr-89/Sr-90	--	--	--	--	--		--	recd.	--		--	
1961	Precip. (in.)	2.01	1.73	1.34	7.01	1.57	2.59	2.50	2.64	4.57	6.42	3.56	1.42
	Sr-90 (mc/mi^2)	0.43		0.44		0.18		0.35		0.24	0.55	0.42	0.34
	Sr-89/Sr-90	--		--		--		--		47	87	67	49
1962	Precip. (in.)	2.76	1.93	0.90	1.70	3.46	1.69	3.70	5.83	2.91	1.62	2.52	2.24
	Sr-90 (mc/mi^2)	0.99	0.42	0.24	1.12	2.80	1.26	2.09	1.91	1.24	0.49	1.11	0.84
	Sr-89/Sr-90	38	42	26	9	6	9	8	9	21	36	41	32
1963	Precip. (in.)	0.16	0.20	0.83	2.99	4.59	1.89	2.13	5.59	3.99	2.84	3.92	1.34
	Sr-90 (mc/mi^2)	0.11	0.18	0.79	4.84	9.40	5.30	0.87	0.07	1.92	1.51	2.62	0.18
	Sr-89/Sr-90	22	50	24.6	10	6.3	1.2	1	*	1.5	*	*	*
1964	Precip. (in.)	14.5	20.1										
	Sr-90 (mc/mi^2)	1.66	0.56										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PAKISTAN, KARACHI (Pot) 24°51'N, 67°02'E, ~Alt. 50 ft. (Pakistan Atomic Energy Centre)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)		0.39	0	0	0	0	3.15				0	0.04
	Sr-90 (mc/mi^2)		0.02	0.07	0.13	0.39	0.07	0.29	0.15	0.56	0.06	0.04	0.65
	Sr-89/Sr-90		45	40	4	3	13	53	31	61	16	9	49
1959	Precip. (in.)	0	0	0	0	0	0	6.30	0.08	9.85	0	1.58	0
	Sr-90 (mc/mi^2)	0.29	lost	0.15	0.47	not	not	0.47	0.06	0.11	lost	0.12	lost
	Sr-89/Sr-90	37	--	18	5.3	recd.	recd.	2.4	--	4.5	--	*	--
1960	Precip. (in.)	0.16	0	1.18	0	0	trace	1.18	0.20	0	0	0	0
	Sr-90 (mc/mi^2)	0.38	0.02	0.13	0.02	lost		0.02		0.08		0.08	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.04	0	0	0.24	0	0.20	3.55	1.97	3.94	(10/15 - 12/14)		
	Sr-90 (mc/mi^2)	0.11		0.10	0.05	≤0.03	not	not	not	not	0.96	0.02	0.26
	Sr-89/Sr-90	--		--	--	--	recd.	recd.	recd.	recd.		0.45+	
												75	
1962	Precip. (in.)	1.26	1.59	1.72	trace	0.59	trace	6.46	4.60	5.64	0.00	0.54	0.29
	Sr-90 (mc/mi^2)	2.22+	2.15+	5.33+	2.48+	1.67+	1.69+	not	lost	1.05+	0.31+	0.10+	0.23+
	Sr-89/Sr-90	47	27	10	13	13	8	recd.	"	19	62	47	39
1963	Precip. (in.)	0.00	0.30	0.50	0.89								
	Sr-90 (mc/mi^2)	0.40+	1.52+	8.15+	0.13+	not	not	not					
	Sr-89/Sr-90	41	30	18	5	recd.	recd.	recd.					

+ Samples for these months were designated as coming from Lahore (31°39'N, 74°22'E, Alt. 700 ft.)

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PAKISTAN, KARACHI (Column) (Pakistan Atomic Energy Commission)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)	trace		trace	1								
	Sr-90 (mc/mi^2)	0.11	not	0.16	0.39	0.18	not	not	2.46+	not	not	not	not
	Sr-89/Sr-90	18	recd.	11	11	*	recd.	recd.	1	recd.	recd.	recd.	recd.
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

+ Samples for these months were designated as coming from Lahore ($31^{o}39'N$, $74^{0}22'E$, ~alt. 700 ft.)

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PANAMA CANAL ZONE (Column) 8°55'N, 79°36'W, Alt. 33 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									4.35	18.90	9.25	8.17
	Sr-90 (mc/mi^2)									0.09	0.05	0.08	0.18
	Sr-89/Sr-90									*	*	0.9	1.2
1960	Precip. (in.)	3.33	1.14	0.79	8.27	8.91	7.01	6.43	6.85	7.27	7.51	15.19	10.20
	Sr-90 (mc/mi^2)	0.13	0.22	0.18	0.49	0.18		0.03		0.13		0.06	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.19	0.86	0	1.79	4.19	10.31	9.93	5.91	7.13	10.93	11.92	4.16
	Sr-90 (mc/mi^2)	0.09		not	0.16	0.27		0.03		0.01	0.01	0.25	0.29
	Sr-89/Sr-90	--		recd.	--	--		--		14	46	102	56
1962	Precip. (in.)	1.03	0	0.03	3.51	7.89	8.87	7.91	8.09	7.05	15.23	9.18	6.8
	Sr-90 (mc/mi^2)	0.41	≤0.02	0.11	not	not	1.89	not	1.54	0.30	0.28	0.47	0.58
	Sr-89/Sr-90	41	≥25	22	recd.	recd.	34	recd.	29	22	18	46	39
1963	Precip. (in.)	2.31	2.47	trace	4.84	16.27	7.77	7.91	1.09	5.52	8.52	10.56	1.10
	Sr-90 (mc/mi^2)	0.35	0.35	0.08	2.22	4.11	1.49	0.97	0.84	0.29	0.29	1.48	0.26
	Sr-89/Sr-90	50	20	15	9	10.0	*	1	1	*	2.3	*	*
1964	Precip. (in.)	0.33	1.34										
	Sr-90 (mc/mi^2)	0.21	0.43										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PERU, LIMA (Column) 12°06'S, 77°03'W, ~Alt. 501 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)							0.39		0.16	0.79	0.06	0.08
	Sr-90 (mc/mi^2)							0.11		lost	0.03	lost	0.14
	Sr-89/Sr-90							--		--	*	--	*
1960	Precip. (in.)	trace	trace	trace	trace	0.1	0.20	0.20	0.39	2.36	0.24	0.08	trace
	Sr-90 (mc/mi^2)	0.03	not	not	0.08	0.25		lost	lost	0.12	not	0.07	
	Sr-89/Sr-90	--	recd.	recd.	--	--		--	--	--	recd.	--	
1961	Precip. (in.)	trace	0	0	0	trace	trace	0.39	0.39	0.39	0.12	trace	trace
	Sr-90 (mc/mi^2)	0.06		0.19		0.13		0.00		<0.02	0.06	0.06	<0.01
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	trace	0	0	trace	trace	trace	0.2	0.02	0.1			0.1
	Sr-90 (mc/mi^2)	<0.02	≤0.02	≤0.01	≤0.02	0.03	0.07	0.09	0.25	0.37	0.10	0.08	0.04
	Sr-89/Sr-90	*	*	≥1.7	*	40	45	9	10	27	9	14	2
1963	Precip. (in.)	lost					0.01	trace	1.0		(10/10-11/12)	(11/12-12/11)	(12/12-1/12/64)
	Sr-90 (mc/mi^2)	in	0.02	0.01	0.02	0.01	0.06	0.02	0.15	0.11	0.17	0.16	0.10
	Sr-89/Sr-90	analysis	*	--	3	*	4.6	--	*	*	*	*	*
		(1/12-2/12)											
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.11											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PHILIPPINE ISLANDS, CEBU CITY (Column) 10°20'N, 123°54'E, Alt. 111 ft. (Philippine Atomic Energy Commission)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1961	Precip. (in.)				2.76	5.03	6.47	9.98	2.96		10.28	4.46	4.03
	Sr-90 (mc/mi^2)				0.36	0.00		≤0.00		not	0.02	≤0.01	0.15
	Sr-89/Sr-90				--	--		--		recd.	38	>166	58
1962	Precip. (in.)	2.08	7.12	3.26	1.26	3.27	6.96	8.30	13.03	5.50	4.41	5.46	2.64
	Sr-90 (mc/mi^2)	≤0.02	1.51	0.07	0.15	0.28	0.29	0.47	lost	0.01	0.09	0.13	0.17
	Sr-89/Sr-90	≥64	30	25	15	4	15	37	"	*	22	46	40
1963	Precip. (in.)	2.72	1.02	3.09	3.49	3.20	5.07	9.97	8.66	9.39	8.29	3.99	
	Sr-90 (mc/mi^2)	0.10	0.26	0.29	0.63	0.95	0.74	0.78	0.30	0.06	0.49	0.29	not
	Sr-89/Sr-90	22	15	15	15	1.5	*	1	*	*	14	*	recd.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PHILIPPINE ISLANDS, CLARK AB (Column) 15°11'N, 120°33'E, ~alt. 33 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	0.91	0.14	1.35	0.10	3.06	2.80	16.17	16.83	8.74	2.00	9.46	3.15
	Sr-90 (mc/mi^2)											0.11	0.11
	Sr-89/Sr-90											*	2.4
1960	Precip. (in.)	0.79	1.18	0.14	4.69	4.42	14.78	6.56	31.50	11.28	0.44	3.54	0.39
	Sr-90 (mc/mi^2)	lost	0.24	0.08	0.18	0.02		0.09		0.12		0.00	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.01	0.13	0.39	1.44	5.22	26.48	16.46	13.20	10.20	6.32	1.04	0.01
	Sr-90 (mc/mi^2)	0.13		0.08		0.25		0.22		≤0.15	0.10	≤0.02	0.02
	Sr-89/Sr-90	--		--		--		--		*	61	≥93	23
1962	Precip. (in.)	2.87	0.21	0.07	3.87	2.48	6.91	24.46	12.80	19.06	1.57	3.34	Trace
	Sr-90 (mc/mi^2)	≤0.01	0.09	0.10	not	0.31	0.42	0.55	not	0.28	0.26	0.13	
	Sr-89/Sr-90	≥47	13	11	recd.	21	8	6	recd.	10	32	11	
1963	Precip. (in.)	0.05	0.04	1.67	1.80	5.11	22.22		11.29	20.15	1.44	0.13	6.90
	Sr-90 (mc/mi^2)	lost	not	0.24	0.16	not	not	not	1.63	0.32	0.30	0.06	0.10
	Sr-89/Sr-90	--	recd.	18	8	recd.	recd.	recd.	*	*	1.0	*	*
1964	Precip. (in.)	0.04	0.08										
	Sr-90 (mc/mi^2)	0.59	0.11										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PHILIPPINE ISLANDS, QUEZON CITY (Column) 14°40'N, 121°05'E, Alt. 231 ft. (Philippine Atomic Energy Commission)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1961	Precip. (in.)			2.50	1.53	4.92	22.86	16.47	23.37		10.83	4.31	0.46
	Sr-90 (mc/mi^2)			0.73		0.20		0.00	0.01	0.00	0.07	0.04	0.02
	Sr-89/Sr-90			--		--		--	--	--	79	43	27
1962	Precip. (in.)	1.25	0.02	0.27	3.28		7.36	37.84	13.04	14.04	1.98	3.63	0.41
	Sr-90 (mc/mi^2)	≤0.02	≤0.01	≤0.01	0.25	not	0.61	0.99	0.28	0.20	0.13	0.08	0.05
	Sr-89/Sr-90	≥77	≥45	≥34	16	recd.	--	16	*	14	13	35	19
1963	Precip. (in.)	0.12	trace	0.26	9.02	3.38	22.70	13.07		19.32	6.03	1.91	3.75
	Sr-90 (mc/mi^2)	0.04	0.05	0.12	0.04	0.81	4.61	0.74	0.80	0.42	0.38	0.10	0.06
	Sr-89/Sr-90	29	15	11	*	11.2	0.7	1	*	*	1.2	*	*
1964	Precip. (in.)	1.27	0.08										
	Sr-90 (mc/mi^2)	0.06	0.04										
	Sr-89/Sr-90	*	0.8										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PONAPE ISLAND (Column) 6°58'N, 158°13'E, ~alt. 126 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		12.45	15.81	25.72	20.08	18.36	12.01	16.02	13.11	16.18	18.9	20.8
	Sr-90 (mc/mi^2)		0.32	0.28	0.29	0.14	0.36	0.14		0.27		0.20	
	Sr-89/Sr-90		3.3	--	--	--	--	--		--		--	
1961	Precip. (in.)	17	18	17	12	22	18	15.51	17.52	20.71	14.07	18.29	16.47
	Sr-90 (mc/mi^2)		0.48		0.39		0.38		0.03	0.01	lost	0.37	0.23
	Sr-89/Sr-90		--		--		--		--	*	**	105	58
1962	Precip. (in.)	26.67	16.04	11.04	11.94	22.41	12.27	13.60	18.54	22.91	18.57	5.90	17.44
	Sr-90 (mc/mi^2)	0.32	1.01	1.44	1.31	1.26	0.51	0.42	0.22	0.21	0.19	0.88	0.51
	Sr-89/Sr-90	56	29	23	13	20	50	35	29	15	22	30	55
1963	Precip. (in.)	20.99	16.37	17.06	12.53	19.12	9.52	13.73	18.23	13.12	20.68	4.55	9.08
	Sr-90 (mc/mi^2)	0.49	0.53	0.97	0.80	0.62	0.57	1.00	0.63	0.40	0.24	0.41	0.55
	Sr-89/Sr-90	34	16	21	14	8.9	--	2	*	*	*	*	*
1964	Precip. (in.)	3.59	19.76										
	Sr-90 (mc/mi^2)	0.71	1.05										
	Sr-89/Sr-90	*	*										

** 0.50 mc Sr^{89}/mi^2

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: PUERTO RICO, SAN JUAN (Column) 18°26'N, 66°00'W, Elev. 32 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		3.13	2.40	5.76	22.09	18.35	5.08	8.49	12.97	16.18	18.90	20.87
	Sr-90 (mc/mi^2)		0.18	0.31	0.55	not recd.	not recd.	0.60		0.27	not recd.	not recd.	see Jan.'61
	Sr-89/Sr-90		--	--	--			--		--			
1961	Precip. (in.)	3.51	2.95		2.82	1.77	5.28	9.33	5.20	2.62	8.47	9.26	10.00
	Sr-90 (mc/mi^2)	0.27*		0.60		0.28	0.53		lost	0.30	0.47		0.86
	Sr-89/Sr-90	--		--		--	--		--	0.8	63		64
1962	Precip. (in.)	4.24	2.67		3.70	7.53	7.31	12.23		4.85	5.49	3.84	4.11
	Sr-90 (mc/mi^2)	1.53	1.01	not	3.46	2.62	1.57	2.00		0.54	0.31	0.37	0.94
	Sr-89/Sr-90	42	34	recd.	12	20	11	13		9	63	62	46
1963	Precip. (in.)	3.13	1.39	4.68	5.21		18.51			10.98	1.63	3.00	0.68
	Sr-90 (mc/mi^2)	0.88	0.63	4.64	2.40		8.67			1.87	0.33	1.00	0.51
	Sr-89/Sr-90	37	33	13	8.1		*			0.5	0.9	*	*
1964	Precip. (in.)	2.02	1.75										
	Sr-90 (mc/mi^2)	0.67	0.76										
	Sr-89/Sr-90	*	*										

* December 1960 and January 1961 combined.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: SAUDI ARABIA, DHAHRAN (Column) 26°18'N, 50°05'E

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												0.03
	Sr-90 (mc/mi^2)												*
	Sr-89/Sr-90												
1960	Precip. (in.)				0.05	0.00		0.00	0.00	0.00	0.00		0.04
	Sr-90 (mc/mi^2)	0.13	0.04	0.47	0.23	0.26	lost	0.21		0.55		0.08	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	0.50	0.65	0.50	0.78	trace	0	0	0	0	0	1.02	0.19
	Sr-90 (mc/mi^2)	0.31		0.44		0.00		0.00		<0.02	0.03	0.12	0.46
	Sr-89/Sr-90	--		--		--		--		>11	22	11	60
1962	Precip. (in.)	trace	trace	trace									
	Sr-90 (mc/mi^2)	0.11	0.13	0.39	not	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	50	24	19	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	not	not	not	not	not	not	not	not	not	0.58	0.92
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	*	*
1964	Precip. (in.)		2.00										
	Sr-90 (mc/mi^2)	1.68	3.50										
	Sr-89/Sr-90	*	0.7										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: SCOTLAND, PRESTWICK (Column) 55°30'N, 4°37'W, ~alt. 30 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)									1.43	5.61	3.93	4.25
	Sr-90 (mc/mi^2)									0.13	not	0.25	0.25
	Sr-89/Sr-90									4.3	recd.	0.7	*
1960	Precip. (in.)	4.16	2.84	2.84	2.20	1.34	2.58	2.15	3.47	2.82	1.80	4.06	3.60
	Sr-90 (mc/mi^2)	0.03	0.27	0.44	0.60	0.51	0.67	lost	lost	0.51		0.39	
	Sr-89/Sr-90	--	--	--	--	--	--	--	--	--		--	
1961	Precip. (in.)	1.73	2.9	2.02	2.98	0.90	1.57	2.81	0.20	5.68	5.28	2.23	3.11
	Sr-90 (mc/mi^2)	0.52		0.17		0.62		0.47		0.48	0.40	not	1.82
	Sr-89/Sr-90	--		--		--		--		53	84	recd.	62
1962	Precip. (in.)	5.03	2.19	1.07	1.89	1.88	1.72	2.26	5.49	6.50	1.86	1.85	3.85
	Sr-90 (mc/mi^2)	1.76	2.15	1.38	not	2.84	1.81	1.60	2.88	1.60	0.78	1.26	1.55
	Sr-89/Sr-90	46	30	20	recd.	8	10	7	8	17	29	9	45
1963	Precip. (in.)	0.45	0.27	3.42	1.66	3.20	2.06	2.10	3.52	2.74	4.66		
	Sr-90 (mc/mi^2)	0.37	2.59	2.51	18.91	5.17	5.30	4.71	4.16	2.28	2.25	lost	lost
	Sr-89/Sr-90	28	21	23	14	8.7	0.2	1	*	0.8	*	--	--
1964	Precip. (in.)	2.48	0.54										
	Sr-90 (mc/mi^2)	3.94	1.49										
		*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: SOUTHERN RHODESIA, SALISBURY (Pot) 17°48.5'S, 31°03'E, Alt. 4900 ft. (Federal Ministry of Agriculture)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1956	Precip. (in.)											6.85	6.34
	Sr-90 (mc/mi^2)											0.18	0.12
	Sr-89/Sr-90											--	--
1957	Precip. (in.)	7.07	3.76	4.59	0.85	nil	nil	nil	0.22	0.12	0.70	1.32	9.21
	Sr-90 (mc/mi^2)	0.11	0.08	0.05	0.04	not	not	not	not	not	not	0.11	0.10
	Sr-89/Sr-90	--	--	--	--	recd.	recd.	recd.	recd.	recd.	recd.	--	--
1958	Precip. (in.)	5.87	8.98	0.57	1.87	nil	0.02	0.02	nil	0.49	2.35	2.34	8.74
	Sr-90 (mc/mi^2)	0.10	0.04	0.02	0.16	0.55	0.02	0.02	0.05	0.17	0.43	0.35	0.41
	Sr-89/Sr-90	4	5	7	18	--	9	14	*	71	32	12	9
1959	Precip. (in.)	5.29	8.91	2.51	nil	0.58	0.61	0.04	nil	0.19	3.23		6.67
	Sr-90 (mc/mi^2)	0.13	0.20	0.13	0.01	0.02	0.05	0.09	0.02	lost	0.08		0.12
	Sr-89/Sr-90	4.3	13	4.4	*	3.0	5.8	*	*	--	13		--
1960	Precip. (in.)	2.61	4.21	1.43	3.53	1.19	1.04	nil	nil	0.15	0.94	3.11	11.98
	Sr-90 (mc/mi^2)	0.07	0.08	0.07	0.04	0.06		0.26		0.32		0.37	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	6.25	5.44	4.04	4.56	0.34	0.60	nil	0.23	1.06	1.58	8.31	4.18
	Sr-90 (mc/mi^2)	0.46		0.07		0.05		0.22		0.04	0.16	0.21	0.17
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	8.22	4.83	3.60	0.89	0.07	nil	nil	0.01	0.11	0.01	4.54	16.22
	Sr-90 (mc/mi^2)	0.10	0.15	0.08	0.05	0.02	0.01	0.02	0.02	0.14	0.03	0.42	0.46
	Sr-89/Sr-90	7.4	7	*	*	*	12	9	*	6	*	18	22
1963	Precip. (in.)	4.52	11.24	1.45	2.45	nil	nil	nil	nil	nil	3.89	0.83	2.89
	Sr-90 (mc/mi^2)	0.20	0.27	0.07	0.01	0.01	0.01	0.03	0.03	0.26	0.38	0.20	0.31
	Sr-89/Sr-90	8	9	4.5	15	*	--	*	*	*	*	*	*
1964	Precip. (in.)	6.54	7.54										
	Sr-90 (mc/mi^2)	0.18	0.21										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: SYRIA, DAMASCUS (Column) 33°29'N, 36°14'E, Alt. 2405 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		trace	5.19	0.39	trace	0	0	0	0	0	2.36	1.18
	Sr-90 (mc/mi^2)	not	0.15		0.52	not	not	not	not	not	not	0.07	
	Sr-89/Sr-90	recd.	--		--	recd.	recd.	recd.	recd.	recd.	recd.	--	
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.50	0.02	not	0.04	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	--	--	recd.	--	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)		NO SAMPLES RECEIVED DURING THIS YEAR.										
	Sr-89/Sr-90												
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)		NO SAMPLES RECEIVED DURING THIS YEAR.										
	Sr-89/Sr-90												
1964	Precip. (in.)		4.04										
	Sr-90 (mc/mi^2)	not	3.11										
	Sr-89/Sr-90	recd.	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: SYRIA, KAMISHLY (Column) 37°03'N, 41°13'E, Alt. 1483 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)		trace	2.76	2.36			0		0.22	2.45		trace
	Sr-90 (mc/mi^2)		0.71	not	not	not	not	not	not	0.01		not	not
	Sr-89/Sr-90		--	recd.	recd.	recd.	recd.	recd.	recd.	--		recd.	recd.
1961	Precip. (in.)	1.18	0.94	3.15	2.36								
	Sr-90 (mc/mi^2)	not	0.25	not	0.63	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	recd.	--	recd.	--	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)				NO SAMPLES RECEIVED DURING THIS YEAR.								
	Sr-89/Sr-90												
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)				NO SAMPLES RECEIVED DURING THIS YEAR.								
	Sr-89/Sr-90												
1964	Precip. (in.)		5.75										
	Sr-90 (mc/mi^2)	not	3.18										
	Sr-89/Sr-90	recd.	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: TAIWAN, TAINAN (Pot) 23°01'N, 120°14'E

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)	0.86	0.77	3.49	0.15	4.92	3.74	28.21					
	Sr-90 (mc/mi^2)	0.03	0.07	0.19	0.05	0.41	0.22	1.01	0.30	0.37	0.01	0.01	0.28
	Sr-89/Sr-90	25	12	10	12	58	47	65	10	50	158	110	47
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.22	0.77	0.14	1.23	0.22	0.68	0.27	0.17	$\leq$0.00	0.02	0.05	0.04
	Sr-89/Sr-90	35	29	9.6	15	8.3	1.2	3.7	0.9	--	3.6	*	*
1960	Precip. (in.)		0.79	5.52	9.06								
	Sr-90 (mc/mi^2)	0.03	0.04	0.17	0.14	0.29		0.29		0.03		0.03	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.07		0.04		1.51		0.13		$\leq$0.03	0.02	0.06	0.14
	Sr-89/Sr-90	--		--		--		--		*	*	79	69
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.26	0.28	0.56	0.52	0.09	0.06	0.46	0.17	0.30	0.08	0.06	0.05
	Sr-89/Sr-90	38	34	22	11	8	40	35	21	25	12	20	51
1963	Precip. (in.)		3	10.5	0.01	0.01	7.9	21.2	1.08	9.1	0.02	0.02	0.2
	Sr-90 (mc/mi^2)	0.32	0.19	0.76	0.18	0.10	0.64	1.72	0.28	0.46	0.08	0.10	0.15
	Sr-89/Sr-90	10	8.2	46	14	7.6	4.6	0.4	*	*	*	*	*
1964	Precip. (in.)	1.93	0.03										
	Sr-90 (mc/mi^2)	0.61	0.05										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd.)

Site: TAIWAN, TAIPEI (Pot) 25°05'N, 121°32'E

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)		9.57	5.40	2.24	4.13	8.49	20.43	4.68	7.02	3.51	1.95	5.85
	Sr-90 (mc/mi^2)		0.15	0.10	0.57	0.31	1.01	0.07	0.57	0.23	0.80	1.13	2.01
	Sr-89/Sr-90		9	14	11	37	34	327**	51	47	54	44	32
1959	Precip. (in.)	3.15	2.44	3.94	12.61	7.49	13.00	16.55	9.06	8.67	4.73	5.12	14.97
	Sr-90 (mc/mi^2)	1.86	lost	2.84	3.97	1.16	0.14	0.27	0.20	0.08	0.42	0.21	0.11
	Sr-89/Sr-90	38	"	17	12	7.6	3.9	1.9	1.7	*	*	1.2	*
1960	Precip. (in.)	4.33	0.79	5.52	9.06	7.88	9.46	9.46	55.16	7.49	2.76	2.76	2.76
	Sr-90 (mc/mi2)	not	0.32	0.48	0.70	0.40	0.69	0.29	0.31	0.26			
	Sr-89/Sr-90	recd.	--	--	--	--	--	--	--	--			
1961	Precip. (in.)	1.97	6.30	9.85	4.33	7.49	2.76	15.76	3.94	14.18	3.15	1.97	4.73
	Sr-90 (mc/mi^2)	0.49		0.06		0.14		0.12		0.14	0.51	0.31	1.00
	Sr-89/Sr-90	--		--		--		--		121	79	85	59
1962	Precip. (in.)	4.33	3.15	11.42	4.72	7.09							
	Sr-90 (mc/mi^2)	2.28	1.89	5.25	2.46	1.92	0.40	0.35	0.24	0.65	0.10	0.60	0.80
	Sr-89/Sr-90	44	24	17	12	10	9	16	28	22	17	42	47
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.44	2.73	3.29	1.77	6.93	2.32	2.26	1.75	1.36	1.34	1.24	1.98
	Sr-89/Sr-90	8	22	21	12	10	1.3	1	*	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	5.15	2.18										
	Sr-89/Sr-90	*	*										

**Sr-90 value suspect.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: TAIWAN, TAITUNG (Pot) 22°45'N, 121°10'E

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1958	Precip. (in.)				1.17	6.86	4.30	15.73					
	Sr-90 (mc/mi^2)				0.22	0.18	0.57	0.45	0.07	0.02	lost	0.08	0.50
	Sr-89/Sr-90				10	25	56	51	1	40	--	50	41
1959	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.37	0.52	lost	0.92	0.37	0.21	0.08	0.04	lost	0.03	0.05	0.08
	Sr-89/Sr-90	41	22	--	9.4	8.9	*	*	*	--	*	*	4.7
1960	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.04	0.11	0.04	0.25	0.23		0.08		0.05		0.03	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)		0.19		0.49	0.09		0.04		0.02	≤0.03	0.17	0.35
	Sr-89/Sr-90		--		--	--		--		*	*	31	49
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.45	2.31	1.66	3.11	0.84	0.03	0.12	lost	0.15	2.08	0.20	0.32
	Sr-89/Sr-90	35	33	17	14		*	16	"	24	22	33	48
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.41	0.42	1.17	1.17	0.36	16.98	10.11	0.13	6.29	0.58	1.64	1.4
	Sr-89/Sr-90	26	0.66	2.31	2.11	0.42	0.43	0.48	0.06	4.17	0.28	0.25	0.18
			18	17	19	7.7	*	*	*	*	*	1.10	*
1964	Precip. (in.)	1.50	1.68										
	Sr-90 (mc/mi^2)	0.53	0.61										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: THAILAND, BANGKOK (Pot) 13°44'N, 100°30'E, Alt. 75 ft. (Thai Atomic Energy Committee for Peace)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)			1.95	5.85	1.56	9.36	6.63	11.70	17.55	16.38	2.73	0
	Sr-90 (mc/mi^2)			0.05	0.13	0.04	0.02	0.02	0.04	0.07	0.02	0.01	not
	Sr-89/Sr-90			--	--	--	--	--	--	--	--	--	recd.
1958	Precip. (in.)	1.56	1.56	0.12	0.12	1.56	7.03	6.63	12.48	12.48	8.97	0.48	0
	Sr-90 (mc/mi^2)	0.12	lost	0.04	0.04	0.05	0.17	0.40	0.23	0.04	0.12	0.02	0.03
	Sr-89/Sr-90	8	--	5	44	17	79	96	44	46	48	57	21
1959	Precip. (in.)	0	1.51	0.69	2.36	8.57	5.30	9.46	3.94	8.27	9.06	0.83	0
	Sr-90 (mc/mi^2)	<0.02	0.05	0.54	0.04	0.14	0.25	0.48	0.11	0.06	0.03	<0.00	0.16
	Sr-89/Sr-90	--	12	18	2.1	2.9	7.9	3.4	*	*	*	*	*
1960	Precip. (in.)	0	0	1.35	4.24	4.11	3.12	5.02	9.60	2.33	17.5	0.27	0.40
	Sr-90 (mc/mi^2)	0.29	0.00	0.08	0.04	0.18		0.07		0.14		0.02	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0	3.47	2.36	3.54	7.48	8.32	4.69	7.09	8.64	8.99	<1.24	0.06
	Sr-90 (mc/mi^2)	0.11		0.13		0.16		0.17		<0.02	0.20	<0.03	not
	Sr-89/Sr-90	--		--		--		--		*	59	*	recd.
1962	Precip. (in.)	<0	0.79	1.71	1.47	7.06	4.64	4.94		18.25	6.48	0.06	
	Sr-90 (mc/mi^2)	<0.01	0.14	0.60	0.20	0.03	0.02	0.30	0.15	0.26	0.09	0.02	0.03
	Sr-89/Sr-90	*	6	17	16	*	64	13	35	30	*	*	*
1963	Precip. (in.)	0	0.39	1.59	2.18	3.30	4.81	5.22	12.11	13.12	13.18	2.21	0.25
	Sr-90 (mc/mi^2)	0.10	0.17	0.33	1.20	0.85	0.41	0.73	0.45	0.56	0.38	0.10	0.08
	Sr-89/Sr-90	*	5.1	*	2.5	*	*	*	*	*	*	*	*
1964	Precip. (in.)	0.44											
	Sr-90 (mc/mi2)	0.18											
	Sr-89/Sr-90	*											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: THAILAND, BANGKOK (Column) 13°44'N, 100°30'E, ~alt. 75 ft. (Thai Atomic Energy Committee for Peace)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)												
	Sr-90 (mc/mi^2)				0.63	1.86	1.03	0.01	0.25	0.58	0.24	0.11	0.29
	Sr-89/Sr-90				--	*	*	1	*	*	1	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	0.06											
	Sr-89/Sr-90	1.5											

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: TRUK ISLAND (Column) 7°28'N, 151°51'E, ~alt. 5 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	0.96	8.23	9.11	16.12	20.08	7.97	13.48	11.47	14.49	11.36	11.30	34.89
	Sr-90 (mc/mi^2)												0.00
	Sr-89/Sr-90												*
1960	Precip. (in.)	12.61	6.30	7.43	10.86	14.23	11.09	9.45	13.19	6.49	11.14	16	18
	Sr-90 (mc/mi^2)	not	0.24	0.09	0.18	0.22		0.05		0.06		0.02	
	Sr-89/Sr-90	recd.	--	--	--	--		--		--		--	
1961	Precip. (in.)	9.12	7.62	6.13	11.3	22.36	12.71	19.24	17.86	17.12	17.88	7.87	15.24
	Sr-90 (mc/mi^2)	0.28		1.07		0.40		0.09		0.06	0.07	0.33	0.45
	Sr-89/Sr-90	--		--		--		--		*	11	94	74
1962	Precip. (in.)	7.97	7.75	12.77	6.98	18.33	12.27	32.99	16.51	14.64	9.77	26.26	11.04
	Sr-90 (mc/mi^2)	0.21	0.52	0.06	0.63	0.63	0.48	0.52	lost	0.09	0.09	0.10	0.28
	Sr-89/Sr-90	51	26	*	9	17	44	40	"	24	21	17	46
1963	Precip. (in.)	11.27	7.35	5.44	7.41	8.54	7.64	14.01	18.35	16.88	16.61	7.07	9.48
	Sr-90 (mc/mi^2)	0.49	0.36	0.59	0.42	0.28	0.85	0.56	0.58	0.31	0.29	0.24	0.62
	Sr-89/Sr-90	24	23	22	9	5.3	--	1	*	1.2	2.0	*	*
1964	Precip. (in.)	2.00	10.80										
	Sr-90 (mc/mi^2)	0.68	0.99										
	Sr-89/Sr-90	*	0.6										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: UAR, ALEXANDRIA (Column) 31°13'N, 29°55'E, ~alt. 25 ft. (Atomic Energy Establishment of the UAR)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)												0.25
	Sr-90 (mc/mi^2)												*
	Sr-89/Sr-90												
1960	Precip. (in.)	2.76	0.39	1.18	0.00	0.00	0.00	0.00	0.00	trace	trace	2.36	1.97
	Sr-90 (mc/mi^2)	0.03	0.18	0.18	0.26	0.00	not	not	not	not	not	not	not
	Sr-89/Sr-90	--	--	--	--	--	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1961	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	not	not	not	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1962	Precip. (in.)												
	Sr-90 (mc/mi^2)	not	not	not	not	not	not	not	not	not	not	not	not
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.	recd.
1963	Precip. (in.)								trace	trace		0.45	0.78
	Sr-90 (mc/mi^2)	not	not	not	not	not	not	not	0.07	0.02	0.35	0.64	1.99
	Sr-89/Sr-90	recd.	recd.	recd.	recd.	recd.	recd.	recd.	0.5	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: UAR, CAIRO (INSHAS) (Column) 30°23'N, 31°23'E, (Atomic Energy Establishment of the UAR)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1963	Precip. (in.)					0.02		trace	trace			trace	0.11
	Sr-90 (mc/mi^2)					1.97.	0.14	0.13	0.17	0.08	0.09	2.31	0.36
	Sr-89/Sr-90					6	*	*	*	*	*	*	*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90												

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: **UNION OF SOUTH AFRICA, DURBAN** (Pot) 29°52'S, 30°59'E, Alt. 511 ft. (University of Natal)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)						0.39	0.39	0.78	4.64	3.51	3.12	5.85
	Sr-90 (mc/mi^2)						0.08	≤0.01	0.10	0.23	0.24	0.32	0.22
	Sr-89/Sr-90						--	--	--	--	--	--	---
1958	Precip. (in.)	9.75	10.53	4.68	11.70	0.39	0.78	0.78	0.25	3.12	1.17	4.29	3.55
	Sr-90 (mc/mi^2)	0.02	0.18	0.09	0.46	0.91	0.04	0.44	0.02	0.40	0.38	0.60	0.60
	Sr-89/Sr-90	<5	16	2	<2	--	34	4	15	32	16	14	11
1959	Precip. (in.)	5.12	2.76	0.79	1.18	5.91	0	4.33	3.15	1.58	3.15	2.76	2.76
	Sr-90 (mc/mi^2)	0.56	0.14	lost	0.17	0.24	0.05	0.08	0.17	lost	0.24	0.43	0.27
	Sr-89/Sr-90	3	5	--	3.0	2.3	*	4.7	*	--	*	*	2.9
1960	Precip. (in.)	2.76	3.55	2.36	3.15	0.39	0.08	0.39	0.04	1.97	3.54	6.30	6.69
	Sr-90 (mc/mi^2)	0.29	0.20	0.07	lost	0.03		0.68		0.39		not	not
	Sr-89/Sr-90	--	--	--	--	--		--		--		recd.	recd.
1961	Precip. (in.)	4.72	2.76	5.12	10.63	2.76	5.51	1.97	1.58	2.76	3.54	3.14	3.14
	Sr-90 (mc/mi^2)	0.60		0.61		0.25		0.38		0.28	0.55	0.64	0.54
	Sr-89/Sr-90	--		--		--		--		*	*	**	*
1962	Precip. (in.)	3.55	3.54	4.72	1.57	1.97	0.04						
	Sr-90 (mc/mi^2)	0.50	0.54	0.38	0.13	<0.02	0.18	<0.01	0.24	0.26	0.47	0.75	0.45
	Sr-89/Sr-90	*	*	*	*	*	7	*	25	17	12	11	8
1963	Precip. (in.)	lost				0.75	1.22	5.7	0.6	1.77	3.14	1.70	7.2
	Sr-90 (mc/mi^2)	in	0.52	0.68	0.10	0.08	0.13	0.53	0.10	0.06	0.64	0.38	0.37
	Sr-89/Sr-90	analysis	3	24	15	2.2	*	*	*	*	*	**	*
1964	Precip.(in.)	7.8	2.92										
	Sr-90 (mc/mi^2)	0.80	1.05										
	Sr-89/Sr-90	*	*										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: UNION OF SOUTH AFRICA, PRETORIA (Pot) 25°45'S, 28°14'E, Alt. 4490 ft. (National Physical Research Laboratory)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1957	Precip. (in.)							4.29	1.56	4.68	3.12		0.63
	Sr-90 (mc/mi^2)							0.06	0.07	0.45	0.19	0.10	0.12
	Sr-89/Sr-90							--	--	--	--	--	--
1958	Precip. (in.)	4.91	1.13	3.32	3.39	0.92	0.04	0	0	1.56	2.34	4.29	7.49
	Sr-90 (mc/mi^2)	0.10	0.06	0.11	0.17	0.49	0.02	0.05	0.01	0.59	0.86	0.36	0.76
	Sr-89/Sr-90	29	3	3	3	--	38	39	194**	60	33	17	19
1959	Precip. (in.)	7.49	4.02	0.18	1.58	0.79	0	0.39	0	0.39	0.79	3.94	5.91
	Sr-90 (mc/mi^2)	0.48	0.52	0.13	0.16	0.08	0.03	0.05	$\leq$0.00	0.12	0.07	0.17	0.24
	Sr-89/Sr-90	7	3	4.8	0.58	*	*	*	--	*	97	*	*
1960	Precip. (in.)	3.00	2.36	2.76	2.76	2.76	0.08	0.04	0.39	0.78	2.36	6.30	4.33
	Sr-90 (mc/mi^2)	0.06	0.09	0.09	0.09	0.23		0.01		0.25		0.42	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	4.33	1.97	3.15	4.33	1.37	0.39	trace	trace	1.57	3.94	4.33	2.93
	Sr-90 (mc/mi^2)	0.37		0.22		0.14		$\leq$0.05		0.46	0.26	6.48	0.53
	Sr-89/Sr-90	--		--		--		--		*	*	*	*
1962	Precip. (in.)	3.94	4.97	2.60	1.34	0	0	0	0.05	0.01	1.17	6.93	3.94
	Sr-90 (mc/mi^2)	0.23	0.23	0.33	0.10	0.02	0.03	not	0.12	0.06	0.67	0.48	not
	Sr-89/Sr-90	*	*	*	*	*	85	recd.	19	14	25	12	recd.
1963	Precip. (in.)	5.13	0.51	0.43	5.09		2.17				0.99	3.56	3.61
	Sr-90 (mc/mi^2)	0.57	0.09	0.04	0.12	0.08	0.28	0.05	0.12	0.07	0.27	0.32	0.88
	Sr-89/Sr-90	8	6.5	23	4.5	2.4	*	*	*	*	*	*	*
1964	Precip. (in.)	6.95	0.24										
	Sr-90 (mc/mi^2)	0.68	0.18										
	Sr-89/Sr-90	*	0.6										

**Sr-90 value suspect.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site #1

Site: VENEZUELA, CARACAS (Column) 10°24'N, 66°59'W, Alt. 5740 ft. (I.V.I.C.) (Instituto Venzolano de Investigaciones Cientificas)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	0.79	1.46	0.05	3.18	3.14	6.45	6.02	4.87	3.42	1.90	1.63	3.49
	Sr-90 (mc/mi^2)	0.11	0.07	0.02	0.24	0.76		0.27		0.13		0.24	
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	
1961	Precip. (in.)	0.37	0.17	0.13	4.17	0.12	3.33	8.20	4.20	5.04	3.72	3.64	1.48
	Sr-90 (mc/mi^2)	0.17		0.00		0.31		0.08		0.06	0.18		0.11
	Sr-89/Sr-90	--		--		--		--		*	71		63
1962	Precip. (in.)	0.70	1.00	2.10		4.58	(a) 8.42	(b) 6.06	3.82	3.41	4.40	1.99	1.96
	Sr-90 (mc/mi^2)	0.55	0.28	0.46		0.56	1.00	0.92	0.33	0.61	0.18	0.26	0.25
	Sr-89/Sr-90	46	27	8		28	14	--	23	19	26	58	37
1963	Precip. (in.)	0.87	0.65	1.51	1.28	13.86	8.95	3.14	2.45	5.80	5.38	5.89	1.37
	Sr-90 (mc/mi^2)	0.30	0.24	1.10	0.58	1.99	0.20	1.69	0.87	0.57	0.64	0.57	0.23
	Sr-89/Sr-90	22	23	16	9	8.0	--	1	*	*	*	**	*
1964	Precip. (in.)	0.47	0.06										
	Sr-90 (mc/mi^2)	0.15	0.05										
	Sr-89/Sr-90	*	1.6										

(a) Sampling period - 6/1 - 7/11.
(b) Sampling period - 7/11 - 8/1.

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site #2

Site: VENEZUELA, CARACAS (Column) 10°3'N, 66°48'W, ~alt. 3035 ft. (Instituto Venzolano de Investigaciones Cientificas)

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1962	Precip. (in.)										0.17	0.44	
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90										23	30	
1963	Precip. (in.)			1.04		1.30	0.54	1.30	0.31	0.36			0.55
	Sr-90 (mc/mi^2)												
	Sr-89/Sr-90			13		9.4	*	*	*	*			*
1964	Precip. (in.)												
	Sr-90 (mc/mi^2)	1.20	0.05										
	Sr-89/Sr-90	*	1.0										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd)

Site: WAKE ISLAND (Column) 19°17'N, 166°39'E, ~alt. 11.45 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1959	Precip. (in.)	1.02	0.57	0.55	2.22	2.04	2.13	2.36	3.15	3.26	2.43	2.14	3.10
	Sr-90 (mc/mi^2)				1.95	1.04	0.07	0.24	0.18	0.10	0.04	0.27	0.21
	Sr-89/Sr-90				12	8.4	5.7	2.6	1.2	*	*	*	2.9
1960	Precip. (in.)	0.39	0.73	0.52	2.00	0.95	5.47	3.15	3.19	4.87	6.41	4.46	0.65
	Sr-90 (mc/mi^2)	0.15	≤0.00	0.24	0.24	0.22	0.15	0.18		0.25		0.11	
	Sr-89/Sr-90	--	--	--	--	--	--	--		--		--	
1961	Precip. (in.)	0.83	0.56	3.47	1.09	0.50	1.09	4.29	8.03	10.81	5.31	3.32	0.76
	Sr-90 (mc/mi^2)	0.48		0.62		0.23		0.46		0.29	0.14	≤0.05	0.18
	Sr-89/Sr-90	--		--		--		--		3.8	53	≥85	54
1962	Precip. (in.)	0.49	0.63	1.00	0.58	1.00	5.16	8.26	8.48	6.27	11.70	1.03	2.44
	Sr-90 (mc/mi^2)	0.16	0.42	0.10	0.62	0.50	1.76	1.39	1.14	0.22	0.16	0.18	0.58
	Sr-89/Sr-90	51	32	34	12	13	11	13	10	23	22	48	47
1963	Precip. (in.)	0.55	0.32	1.09	2.86	3.66	3.37	1.38	4.37	2.09	5.54	3.12	1.72
	Sr-90 (mc/mi^2)	1.60	0.58	0.40	1.21	4.89	3.23	1.28	0.85	0.53	1.15	0.39	0.29
	Sr-89/Sr-90	28	22	23	16	9.7	*	3	*	0.4	*	*	*
1964	Precip. (in.)	0.92	0.61										
	Sr-90 (mc/mi^2)	1.14	0.61										
	Sr-89/Sr-90	*	1.0										

Monthly Fallout Deposition Collections: Outside United States Sites (cont'd.)

Site: YAP ISLAND (Colonia) 9°31'N, 138°8'E, ~alt. 58 ft.

		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1960	Precip. (in.)	1.72	6.23	4.22	6.30	13.52	9.56	11.46	11.97	10.67	18.07	20.75	8.15
	Sr-90 (mc/mi^2)	0.44	0.13	0.24	0.24	0.42		0.08		0.20		lost	0.02
	Sr-89/Sr-90	--	--	--	--	--		--		--		--	--
1961	Precip. (in.)	11.65	5.67	11.14	4.76	18.07	12.32	12.72	17.24	10.81	21.00	4.93	11.38
	Sr-90 (mc/mi^2)	0.31		0.28	not	lost		0.00		≤0.01	0.13	lost	0.36
	Sr-89/Sr-90	--			recd.	--		--		≥121	31	#	62
1962	Precip. (in.)	8.53	13.36	7.50	15.95	14.43	7.77	19.44	17.52	12.23	9.38	7.41	15.01
	Sr-90 (mc/mi^2)	0.25	0.84	0.84	0.85	0.82	0.40	0.77	lost	0.24	0.15	0.25	0.65
	Sr-89/Sr-90	54	29	22	13	9	18	20	"	15	17	32	39
1963	Precip. (in.)	11.26	12.20	11.13	4.20	7.14	8.77	13.49	28.10	10.25	16.60	7.46	10.06
	Sr-90 (mc/mi^2)	0.36	0.63	0.93	2.49	0.94	1.66	0.46	0.85	0.49	0.86	0.49	0.51
	Sr-89/Sr-90	44	29	17	10	5.9	4.5	2	*	*	1.8	*	1
1964	Precip. (in.)	2.37	6.91										
	Sr-90 (mc/mi^2)	0.76	1.35										
	Sr-89/Sr-90	*	*										

12.4 mc Sr^{89}/mi^2.

1.1 Monthly Precipitation - cont'd.

1.14 "Tracer" Radionuclides at 3 U.S. Sites Through June 1963

A number of activation products were produced in relatively high abundance in some high yield detonations carried out by the USSR and the USA in 1961 and 1962. Specifically, Mn-54, Fe-55, and Sb-124 were produced in large quantities while Tl-204 was generated in smaller amounts. The half-lives and dominant radiations of these "tracer" radionuclides are given on the last pages of this report.

In an attempt to trace the arrival and behavior of debris from the higher yield shots, three laboratories were contracted to analyze for several of these radionuclides in monthly fallout collections. Data for Richmond, California; Pittsburgh, Pennsylvania, and Westwood, New Jersey through June 1963 are given in tables 1c, 1d, and 1e, pages 167, 168, and 169 respectively.

The collections at Westwood, New Jersey were also analyzed for strontium-90 and these data may be compared with the monthly data reported on pages 34 and 35 of this quarterly report. Strontium-90 and other radionuclide data for monthly collections at Pittsburgh, Pennsylvania and Richmond, California, are reported on pages 44 through 46 and 16 through 18, respectively.

Rhodium-102 which is a tracer for the high altitude U.S. Orange shot of the Hardtack series on August 11, 1963, has been measured in fallout debris collected at Westwood, New Jersey. These data are reported on page 35.

Table 1c

"Tracer" Radionuclides in Monthly and Weekly Fallout Collections

Site: Richmond, California

Year	Collection Period	Precip. (inches)	mc/mi^2(1) Mn-54	Sb-124	Fe-55
1962	April 2 to May 5	0.31	0.308	1.01	< 1.28
	August 6 - 9	0.10	0.075		
	October 5 - 15	6.5	0.153	0.538	
	October 15 - 22	0.02	0.097	0.015	
	October 22 - 29	0.01	0.096		
	November 5 - 12	0.08	0.092	0.055	
	November 12 - 17	0.10	0.132	< 0.026	
	November 17 - 27	0.72	0.187	< 0.752	
	December 10 - 14	0.29	0.094		
	December 14 - 18	2.81	1.88		
1963	January 22 to February 1	4.45		3.69	
	February 1 - 11	1.11		2.15	
	February 11 - 14	0.95	0.952		
	February 14 - 19	0.06		0.124	
	March 13 - 15	0.11	0.345	0.178	101
	March 15 - 18	1.12	0.915	0.602	44.8
	March 18 - 25	0.80	2.58	1.38	81.5
	April 1 - 11	4.55	4.52	2.12	< 18.8

(1) Data are corrected for decay to the midpoint of the collection period.

Table 1d

"Tracer" Radionuclides in Monthly Fallout Collections Through June 1963

Site: Westwood, New Jersey

Year	Collection Month	Precip. (inches)	mc/mi^2(1) Sr-90	Mn-54	Fe-55	Sb-124	Tl-204
1962	July	1.29	2.42 ± 0.03	1.68 ± 0.18	≤5.96	0.44 ± 0.13	≤0.006
	August	7.47	2.24 ± 0.03	4.40 ± 0.12	12.9 ± 0.6	24.2 ± 10.6(2)	≤0.052
			2.32 ± 0.03	4.02 ± 0.05	8.12 ± 0.29	0.27 ± 0.06	0.098 ± 0.002
	September	3.45	1.07 ± 0.01	≤0.73	5.38 ± 0.29	0.35 ± 0.07	≤0.046
			0.76 ± 0.01	0.81 ± 0.03	3.54 ± 0.10	lost	0.035 ± 0.006
	October	4.70	2.70 ± 0.03	5.27 ± 0.18	38.3 ± 1.8	≤0.73	lost
			2.53 ± 0.03	3.45 ± 0.06	10.4 ± 0.2	0.16 ± 0.06	lost
	November	4.61	1.38 ± 0.02	2.28 ± 0.14	10.6 ± 0.6	20.1 ± 1.1(2)	≤0.043
			0.96 ± 0.01	2.01 ± 0.05	4.19 ± 0.14	0.09 ± 0.01	lost
	December	2.85	3.48 ± 0.04	2.70 ± 0.13	6.24 ± 0.25	≤1.05	0.129 ± 0.024
			lost	2.02 ± 0.05	4.48 ± 0.04	0.11 ± 0.03	0.337 ± 0.008
1963	January	2.09	2.73 ± 0.03	4.43 ± 0.08	10.2 ± 0.1	≤0.40	0.047 ± 0.013
			3.24 ± 0.10	6.07 ± 0.16	14.5 ± 0.4	≤0.30	0.008 ± 0.001
	February	1.20	2.69 ± 0.03	5.47 ± 0.12	14.2 ± 0.4	0.44 ± 0.05	0.101 ± 0.089
			1.32 ± 0.02	4.34 ± 0.13	12.0 ± 0.3	≤0.27	lost
	March	4.02	4.82 ± 0.08	5.89 ± 0.18	47.6 ± 1.4	0.18 ± 0.08	0.056 ± 0.002
			4.36 ± 0.05	6.40 ± 0.13	46.9 ± 1.1	0.13 ± 0.05	0.148 ± 0.001
	April	0.95	6.00 ± 0.07	5.67 ± 0.24	38.0 ± 1.1	0.15 ± 0.11	0.102 ± 0.002
			9.58 ± 0.13	6.90 ± 0.43	37.8 ± 0.6	≤0.11	0.112 ± 0.004
	May	2.91	7.18 ± 0.08	6.78 ± 0.22	67.9 ± 1.2	≤0.09	0.141 ± 0.004
			7.66 ± 0.09	8.31 ± 0.12	84.3 ± 1.2	≤0.06	0.120 ± 0.002
	June	3.55	6.05 ± 0.07	7.88 ± 0.13	lost	lost	0.095 ± 0.003
			5.92 ± 0.09	6.34 ± 0.10	88.6 ± 2.4	0.05 ± 0.03	0.081 ± 0.003

(1) Data are corrected for decay to the midpoint of the collection period.
(2) Suspect data.

Table 1e

"Tracer" Radionuclides in Monthly Fallout Collections Through May 1963

Site: Pittsburgh, Pennsylvania

Year	Collection Month	Precip. (inches)	mc/mi^2(1) Mn-54	Sb-124
1962	April	4.56	5.93 ± 0.28	1.4 ± 2.8
	May	2.60	7.62 ± 0.31	1.2 ± 1.8
	June	1.61	4.30 ± 0.24	lost
	July	3.17	7.9 ± 0.3	0.32 ± 0.64
			8.4 ± 0.6	0.82 ± 0.50
	August	2.58	0.76 ± 0.36	0 ± 0.3
			1.47 ± 0.34	0 ± 0.1
	September	6.86	2.30 ± 0.36	0.05 ± 0.17
			2.36 ± 0.36	0.11 ± 0.15
	October	2.15	1.92 ± 0.34	0.23 ± 0.12
			1.77 ± 0.36	0.01 ± 0.09
	November	1.39	2.20 ± 0.33	0.08 ± 0.10
			2.78 ± 0.33	0.23 ± 0.09
	December	2.34	3.22 ± 0.34	0.15 ± 0.07
			3.01 ± 0.39	0.05 ± 0.09
1963	January	1.97	3.15 ± 0.21	0.34 ± 0.13
			2.96 ± 0.20	0.26 ± 0.14
	February	2.55	5.08 ± 0.19	0.3 ± 0.3
			5.02 ± 0.15	0.1 ± 0.3
	March	6.85	18.3 ± 0.4	1.05 ± 0.12
			17.3 ± 0.4	0.50 ± 0.11
	April	3.04	21.7 ± 0.4	0.35 ± 0.06
			21.6 ± 0.4	0.25 ± 0.06
	May	1.66	17.4 ± 0.3	0.13 ± 0.03
			17.3 ± 0.3	0.12 ± 0.03

(1) Data are corrected for decay to the midpoint of the collection period.

1.1 Monthly Precipitation - cont'd.

1.15 Fission Product and "Tracer" Radionuclides at 6 U.S. Sites from July 1963

It was considered desireable to obtain data on short and long-lived fission products and unique tracers in precipitation at sites representing the major geographical regions of the United States. Beginning in July 1963, monthly precipitation collections at six sites are being analyzed for the fission product radionuclides: Sr-89, Sr-90, Zr-95, Cs-137, and Ce-144; and the "tracer" radionuclides: Mn-54, Fe-55, and Sb-124. The sites are at Westwood, New Jersey; Appleton, Wisconsin; Chattanooga, Tennessee; Midwest City, Oklahoma; Palo Alto, California; and Seattle, Washington. Available results are reported in the following table 1f, page 171.

Table 1f

FISSION-PRODUCT AND "TRACER" RADIONUCLIDES IN MONTHLY COLLECTIONS AT 6 U. S. SITES FROM JULY 1963

mc Sr^{90}/mi^2

Period	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
July 1963	13.4			4.33	0.40	1.27(1)
August	5.72	3.88	1.50	1.44	0.85	1.79
September	5.34	3.98	0.96	0.97	0.29	2.41
October	1.56	1.73	0.12	0.38	0.37	2.70
November	2.55	2.44	2.02	3.14	0.87	3.85
December	1.43	0.53	1.59	0.22	0.085	2.77
January 1964	2.69	1.54	3.35			3.91
February						1.48
March						3.65
April						
May						
June						

mc Sr^{89}/mi^2

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
32.2			19.9	1.80	3.55(1)
10.4	7.27	2.60	4.32	2.38	3.87
6.69	5.39	0.96	1.55	0.38	0.55
1.56	1.73	<0.14	0.46	0.37	2.57
1.52	1.39	1.17	3.14	0.78	0.55
0.48	0.25	0.99	0.18	0.06	1.06
0.68	0.34	0.90			0.64
					0.23
					<0.11

mc Ce^{144}/mi^2

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
186			60.5	0.93	14.0(1)
124	74.5	29.5	41.1	4.26	30.5
94.3	70.4	18.3	23.2	7.03	32.5
29.2	33.2	4.93	6.80	5.93	36.3
53.9	44.6	38.8	13.0	12.2	42.3
30.0	12.9	39.5	6.74	5.26	44.4
57.8	25.7	51.3			49.4
					19.5
					33.3

mc Cs^{137}/mi^2

Period	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
July 1963	17.3			7.37	0.12	1.35(1)
August	12.2	5.60	2.63	4.44	0.52	2.31
September	8.73	6.44	1.66	1.97	0.65	3.18
October	2.57	3.53	0.32	0.90	0.87	2.09
November	4.86	4.39	4.19	2.52	1.92	4.10
December	1.64	0.45	3.00	0.78	0.57	4.78
January 1964	5.19	2.72	5.23			5.48
February						2.43
March						4.85
April						
May						
June						

mc Zr^{95}/mi^2

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
86.0			17.7	0.28	6.25(1)
lost	lost	11.8	8.58	1.30	12.35
20.9	19.4	7.01	5.11	1.76	9.32
5.29	5.71	<4.09	2.93	1.59	7.76
lost	5.58	3.44	2.75	2.67	5.75
4.51	1.31	4.32	0.103	0.70	4.23
5.04	1.66				2.98
					2.22
					1.71

mc Mn^{54}/mi^2

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
24.0			7.43	<0.06	3.62
16.3	5.04	1.64	4.50	0.86	7.19
11.7	7.45	2.01	2.48	0.93	3.52
2.98	3.80	< 0.72	1.00	1.52	5.86
lost	2.49	1.32	2.51	1.74	5.27
3.44	<1.25	1.76	0.63	0.72	3.02
5.36	2.20	3.58			4.44
					1.89
					3.58

mc Fe^{55}/mi^2

Period	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto
July 1963	72.0			17.6	0.60
August	28.8	37.6	14.3	4.14	2.14
September	21.3	15.9	3.20	2.89	0.76
October	10.8	6.74	≤0.39	1.50	1.50
November	5.30	3.90	4.09	13.0	4.86
December	8.48	1.87	9.58	2.26	1.58
January 1964	15.2	2.97	8.93		
February					
March					
April					
May					
June					

mc Sb^{124}/mi^2

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
0.83			*	*	≤2.55
< 1.26	<0.28	0.21	*	*	≤0.84
< 0.27	<1.71	<0.14	*	*	0.59
< 0.26	<0.67	<0.83	*	*	0.60
<1.48	<1.53	<3.49	*	*	0.97
lost	lost	<0.46	*	*	<1.78
≤0.45					

Precipitation in Inches

Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
4.76			5.94	dry	1.81(1)
1.80	1.98	0.83	2.45	trace	1.57
4.69	3.82	0.94	1.81	0.18	0.94
0.92	0.62	dry	0.20	0.99	4.19
4.48	1.69	6.82	1.99	2.74	7.92
1.51	0.57	4.70	0.67	trace	4.75
3.48	1.04	5.63			7.39
					1.25
					2.97

(1) Collections began on the 15th.

* Undetectable.

Note: Radionuclide data extrapolated to midpoint of collection month.

1.2 Weekly Precipitation

1.21 Sr-89 and Sr-90 at 6 U.S. Sites from July 1963

In July 1963 weekly precipitation collections were initiated at six sites in the United States: Westwood, New Jersey; Appleton, Wisconsin; Chattanooga, Tennessee; Midwest City, Oklahoma, Palo Alto, California; and Seattle, Washington. These collections are being analyzed for strontium-89 and strontium-90 only and the available results are reported in the following table 1g, page 173.

Table 11

WEEKLY PRECIPITATION COLLECTIONS For Sr^{90} and Sr^{89} at 6 U. S. Sites from July 1963

Period	Precipitation in Inches						mc Sr^{90}/mi^2						mc Sr^{89}/mi^2(1)						Sr^{89}/Sr^{90}					
	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle	Westwood	Appleton	Chattanooga	Midwest City	Palo Alto	Seattle
7/1-8/63	0.91			0.02	dry		2.77			0.27	0.027		7.07			0.98	0.087		2.6			3.6	3.2	
7/8-15/63	0.34			2.81	dry		2.98			1.64	0.014		7.43			5.89	0.046		2.5			3.6	3.2	
7/15-22/63	1.98			dry	dry	1.79	5.60			0.02	0.012	0.67	6.35			0.05	0.033	1.73	1.1			2.6	2.8	2.6
7/22-31/63	1.53	0.34	3.05(2)	3.11	dry	0.02	2.77	1.86	4.54	2.00	0.016	0.62	5.67	4.09	7.87	6.28	0.032	1.60	2.0	2.2	1.7	3.1	2.0	2.6
8/1-8/63	0.05	0.59	0.03	trace	dry	dry	0.54	0.86	0.10	0.09	0.048	0.08	1.35	1.82	0.12	0.30	0.158	0.15	2.5	2.1	1.3	3.2	3.3	1.8
8/8-15/63	0.98	0.31	0.07	1.89	trace	0.08	2.99	1.29	0.33	1.45	0.153	0.93	5.18	3.01	0.66	4.50	0.428	1.51	1.7	2.3	2.0	3.1	2.8	1.6
8/15-22/63	0.77	0.33	0.61	0.06	dry	0.40	1.84	1.07	1.28	0.06	0.021	0.26	3.62	1.72	1.80	0.19	0.046	0.42	2.0	1.6	1.4	3.4	2.2	1.6
8/22-31/63	dry	0.75	0.12	0.50	dry	1.09	0.23	0.52	0.19	0.49	0.022	0.73	0.34	2.04	0.24	1.13	0.057	0.95	1.5	3.9	1.2	2.3	2.6	1.3
9/1-8/63	0.44	1.21	0.19	0.97	dry	0.45	0.49	2.00	0.15	0.58	0.045	0.60	0.71	2.42	0.16	1.22	0.086	0.73	1.4	1.2	1.1	2.1	1.9	1.2
9/8-15/63	0.58	1.39	0.09	0.21	0.18	0.20	0.64	0.86	0.26	0.19	0.21	0.97	0.87	1.13	0.19	0.40	0.378	0.89	1.4	1.3	1.4	2.1	1.8	0.9
9/15-22/63	0.47	0.51	dry	0.43	trace	0.19	0.72	0.65	0.04	0.19	0.12	0.36	0.92	0.71	<0.04	0.32	0.24	0.31	1.3	1.1	1.1	1.7	2.0	0.8
9/22-30/63	3.20	0.70	0.66	0.20	dry	0.10	3.14	1.02	0.64	0.33	0.010	0.41	3.93	0.98	0.63	0.50	0.023	0.49	1.2	1.0	1.0	1.5	2.3	1.2
10/1-8/63	dry	0.01	dry	trace	dry	0.32	0.14	0.24	0.03	0.029	0.010	0.88	0.12	0.26	<0.04	0.052	0.019	0.87	0.8	1.1	*	1.8	1.9	1.0
10/8-15/63	dry	dry	dry	trace	0.85	0.71	0.07	lost	0.05	0.022	0.339	0.25	0.06	lost	<0.07	0.029	0.440	0.34	0.9	lost	*	1.3	1.3	1.3
10/15-22/63	dry	0.54	dry	0.16	0.14	1.39	0.05	1.40	0.02	0.298	0.125	1.25	0.06	1.32	<0.03	0.149	0.150	0.51	1.3	0.9	*	0.5	1.2	0.4
10/22-30/63	0.92	0.07	dry	0.04	trace	1.77	1.22	0.28	0.03	0.093	0.052	1.73	1.49	0.29	0.03	0.028	0.026	0.54	1.2	1.0	1.1	0.3	0.5	0.3
11/1-8/63	3.98	trace	1.59	0.04	0.90	1.85	1.75	0.06	1.42	0.124	0.426	1.05	1.40	<0.05	1.13	0.074	0.426	0.47	0.8	*	0.6	0.6	1.0	0.4
11/8-15/63	0.16	0.56	trace	dry	0.44	2.85	0.18	1.60	0.02	0.036	0.190	1.17	0.14	1.17	≤0.03	0.036	0.095	0.31	0.8	0.7	*	1.0	0.5	0.3
11/15-22/63	dry	1.13	0.07	1.95	1.40	1.61	0.05	0.87	0.06	0.985	0.184	0.69	0.04	0.50	0.04	0.788	0.110	0.13	0.8	0.6	0.7	0.8	0.6	0.2
11/22-30/63	2.08	trace	5.16	trace	trace	1.61	0.36	0.06	1.17	0.021	0.436	0.60	0.36	<0.03	0.70	0.025	0.349	0.27	1.0	*	0.6	1.2	0.8	0.4
12/1-8/63	0.14	0.34	0.40	dry	dry	0.75	0.34	0.54	0.24	0.018	0.016	0.49	0.24	0.25	0.16	0.005	0.014	0.38	0.7	0.5	0.7	0.3	0.9	0.8
12/8-15/63	1.13	0.06	2.24	0.64	dry	0.62	0.80	0.07	0.36	0.236	0.065	0.43	0.48	0.04	0.26	0.189	0.032	0.13	0.6	0.5	0.7	0.8	0.5	0.3
12/15-22/63	0.15	0.11	dry	0.02	trace	1.11	0.11	0.06	0.02	0.070	0.078	0.92	<0.08	0.03	≤0.05	0.021	0.023	0.29	*	0.5	*	0.3	0.3	0.3
12/22-31/63	0.09	0.06	2.06	0.01	dry	2.27	0.71	0.12	0.44	0.049	0.019	0.93	0.29	0.06	1.11	0.020	0.008	0.26	0.4	0.5	0.4	0.4	0.4	0.3
1/1-8/64	0.11	0.06	0.88	dry	dry	0.44	0.06	<0.04	0.54	0.014	0.018	1.00	0.04	<0.18	0.21	<0.003	0.016	0.18	0.6	*	0.4	≤0.2	0.9	0.2
1/8-15/64	2.02	0.05	1.40	trace	trace	1.27	0.48	0.22	0.64	0.014	0.164	0.94	0.19	0.06	<0.03	0.011	0.066	0.08	0.4	0.3	*	0.8	0.4	0.1
1/15-22/64	0.70	0.01	0.22	dry	3.14	3.44	0.64	0.10	0.37	0.019	1.84	0.99	0.10	<0.02	0.07	0.013	0.74	0.34	0.2	*	0.2	0.7	0.4	0.4
1/22-31/64	0.65	0.92	3.13	0.67		2.24	1.35	0.94	1.52	0.38		1.51	0.46	0.28	0.31	0.13		<0.06	0.3	0.3	0.2	0.3		*
2/1-8/64	0.79	0.02	0.79	1.92	dry	0.11	1.02	0.05	0.64	2.38	0.012	0.186	<0.32	<0.06	0.26	2.14	0.004	0.048	*	*	0.4	0.9	0.3	0.3
2/8-15/64	0.01	0.10	2.11	0.03	drv	0.32	0.069	0.21	2.07	0.22	0.14	0.707	<0.05	0.08	0.20	<0.01	0.042	0.092	*	0.4	0.1	<0.05	0.3	0.1
2/15-22/64	1.06	dry	1.96	0.03	dry	0.62	1.17	0.02	0.63	0.15	0.029	0.259	0.17	<0.03	0.15	0.03	0.006	<0.013	0.1	*	0.2	0.2	0.2	*
2/22-29/64	0.03	0.04	0.64	trace	0.04	0.20	0.027	0.06	1.35	0.04	0.097	0.345	<0.02	<0.03	0.25	0.016	0.008	0.095	*	*	0.2	0.4	0.1	0.3
3/1-8/63	0.23	0.88	2.32	0.11	0.26	1.24	0.060	1.35	0.828	0.30	0.15	0.83	<0.01	0.20	0.10	0.042	<0.15	0.25	*	0.1	0.1	0.14	*	0.3
3/8-15/64	1.08	0.18	4.79	0.68	0.39	0.54	1.89	0.407	2.37	0.32	0.19	1.06	0.33	0.04		0.060	0.057	0.05	0.2	0.1		0.2	0.3	*
3/15-22/64	0.23	dry	1.06	0.49	0.33	0.91	0.143	0.216	2.02	1.90	0.18	1.08				0.095	≤0.005	<0.03				0.05	*	*
3/22-31/64	0.70	0.60	3.20	0.06	0.43	0.28	1.22	0.208	2.46	0.51	0.67	0.80				<0.005	<0.020	<0.02				0.01	*	*
4/1/8-64	2.26	0.69		1.50	0.00	0.54	2.14	0.243		1.46	0.03	0.98				0.175	0.007	0.09				0.12	0.2	0.1
4/8-15/64	1.18	0.08		0.00	0.00	0.38	1.10	0.410		0.06	0.02	1.54				0.004	0.010	<0.06				0.06	0.5	*
4/15-22/64						0.26						0.78						<0.02						*
4/22-30/64						0.15						0.72						<0.01						*
5/1-8/64																								
5/8-15/64																								
5/15-22/64																								
5/22-31/64																								

(1) Sr-89 result as of midpoint of collection period.
(2) Rain guage blew over during severe thunderstorm.
* Sr-89 undetectable.

2. Radiostrontium in Milk and Tap Water

In 1954 the Health and Safety Laboratory began monitoring liquid whole milk in New York City for strontium-90 in order to estimate the dietary contribution from the ingestion of this radionuclide in milk. During the same year, tap water sampling was begun on a routine basis at the laboratory which receives its supply from one of the main reservoirs servicing New York City.

Powdered milk monitoring was initiated at a main processing plant in Perry, New York in 1954 and in 1955, sampling of powdered buttermilk from the Mandan, North Dakota area was begun. The powdered buttermilk is used as cattle feed and it was of interest to have a continuous record of the strontium-90 levels in this animal dietary supplement. Liquid milk from two large dairies serving Honolulu has been monitored since the summer of 1959. On the island of Oahu the dairy cows are on pasture throughout the year and it is of interest to know how well the strontium levels in milk in this area reflect changes in deposition rates.

Although a more complete study of the strontium-90 content of the diets in three major U.S. cities has been in process since March 1960, milk and tap water analyses at the above-mentioned sites have been continued in order to provide a detailed and continuous history of the contamination levels of these staples.

2.1 Milk

The New York City sample is a monthly composite of pasteurized milk purchased daily at retail stores. Five main dairies are represented in the sample. The Mandan and Perry samples are monthly composites of powdered milk collected in weekly five-pound lots. The Honolulu samples are monthly composites of quart samples collected weekly. During appropriate periods strontium-89, as well as strontium-90, has been analyzed in these milk samples. These data have been given in the quarterly reports but the monthly results for 1964 only are presented on pages 175 and 176 of this report. The strontium-90 data since the inception of the sampling programs are graphed in Figures 3, 4, 5, 6, on pages 178 through 182.

2.2 Strontium-90 in New York City Tap Water

Samples of New York City tap water are taken daily at HASL so that by the end of the month, approximately 100 liters have been collected. Strontium-90 and cesium-137 data for monthly samples collected in 1964 are shown on page 178. Tap water sampling and analyses were carried out at Richmond, California from 1959 through the first half of 1963. These data have been reported in previous quarterlies. A graphical presentation of the New York City strontium-90 data is shown in Figure 7, p. 182.

Table 2a

Strontium-90 and Calcium in Milk

Year	Sampling Month	g Ca / liter	pc Sr^{90} per liter	pc Sr^{90} per g Ca
New York City - liquid				
1959	Average			11
1960	Average			8.0
1961	Average			6.7
1962	Average			12
1963	Average			26
1964	January	1.04	22.0	21.1
	February	1.08	25.8	23.9
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

Year	Sampling Month	g Ca/liter dairy #1	g Ca/liter dairy #2	pc Sr^{90}/liter dairy #1	pc Sr^{90}/liter dairy #2	pc Sr^{90}/g Ca dairy #1	pc Sr^{90}/g Ca dairy #2
Honolulu, Hawaii - liquid							
8/59-12/59	Average					5.0	
1960	Average					3.2	
1961	Average					2.4	
1962	Average					3.5	5.0
1963	Average					6.9	9.1
1964	January	1.10	1.08	7.6	9.4	6.9	8.7
	February	1.23	1.07	8.8		7.2	
	March						
	April						
	May						
	June						
	July						
	August						
	September						
	October						
	November						
	December						

Table 2a - cont'd.

Strontium-90 and Calcium in Milk

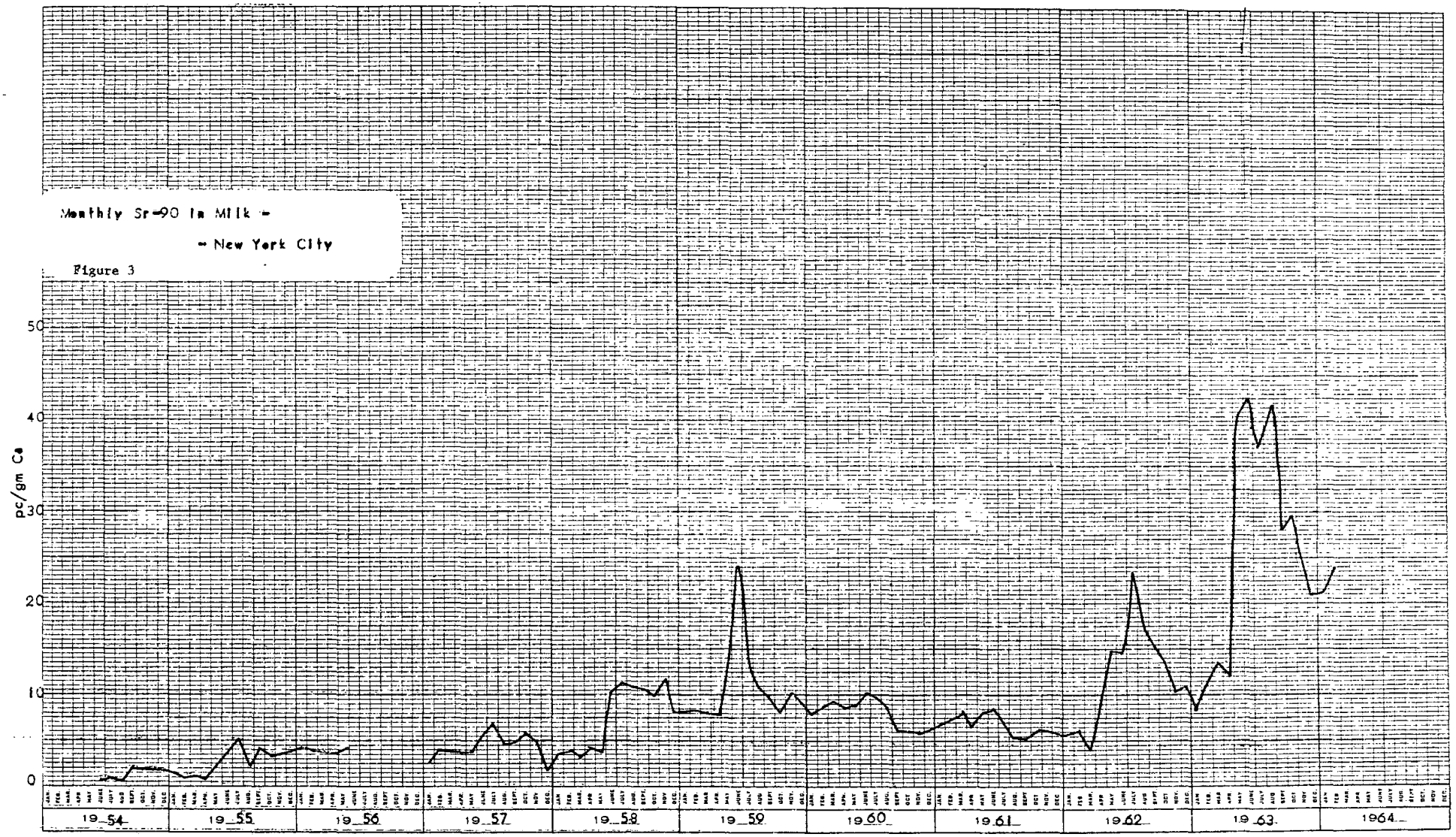
Year	Sampling Month	g Ca / kg powder	pc Sr^{90} per kg powder	pc Sr^{90} per g Ca
Perry, New York - powdered				
1959	Average			8.0
1960	Average			6.5
1961	Average			6.2
1962	Average			11.1
1963	Average			21.6
1964	January	8.63	174	20.1
	February	8.78	191	21.7
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			
Mandan, North Dakota - powdered buttermilk				
1959	Average			26
1960	Average			15
1961	Average			9.4
1962	Average			25
1963	Average			58
1964	January	10.8	738	68.3
	February	10.6	863	81.8
	March			
	April			
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

Table 2b

Radiostrontium in New York City Tap Water

Year	Sampling Month	pc Sr^{90}/liter (1)	Sr^{89}/Sr^{90} (2)	Cs^{137}/Sr^{90}
1959	Average	0.40		
1960	Average	0.47		
1961	Average	0.32		
1962	Average	0.72		
1963	Average	1.45		
1964	January	1.62	$\lesssim$0.1	0.20
	February	1.86		0.20
	March	1.59		0.24
	April	1.98		0.34
	May			
	June			
	July			
	August			
	September			
	October			
	November			
	December			

(1) From 100-200 liters per sample - sampling began August 1954.
(2) Sr-89 extrapolated to midpoint of sampling period. Sr-89 analyses discontinued after January 1964.


Monthly Sr-90 In Milk -
- New York City
Figure 3
pc/gm Ca
0
10
20
30
40
50
19_54
19_55
19_56
19_57
19_58
19_59
1960
19_61
19_62
19_63
1964

Monthly Sr-90 In Milk -

Perry, N.Y.

Figure 4

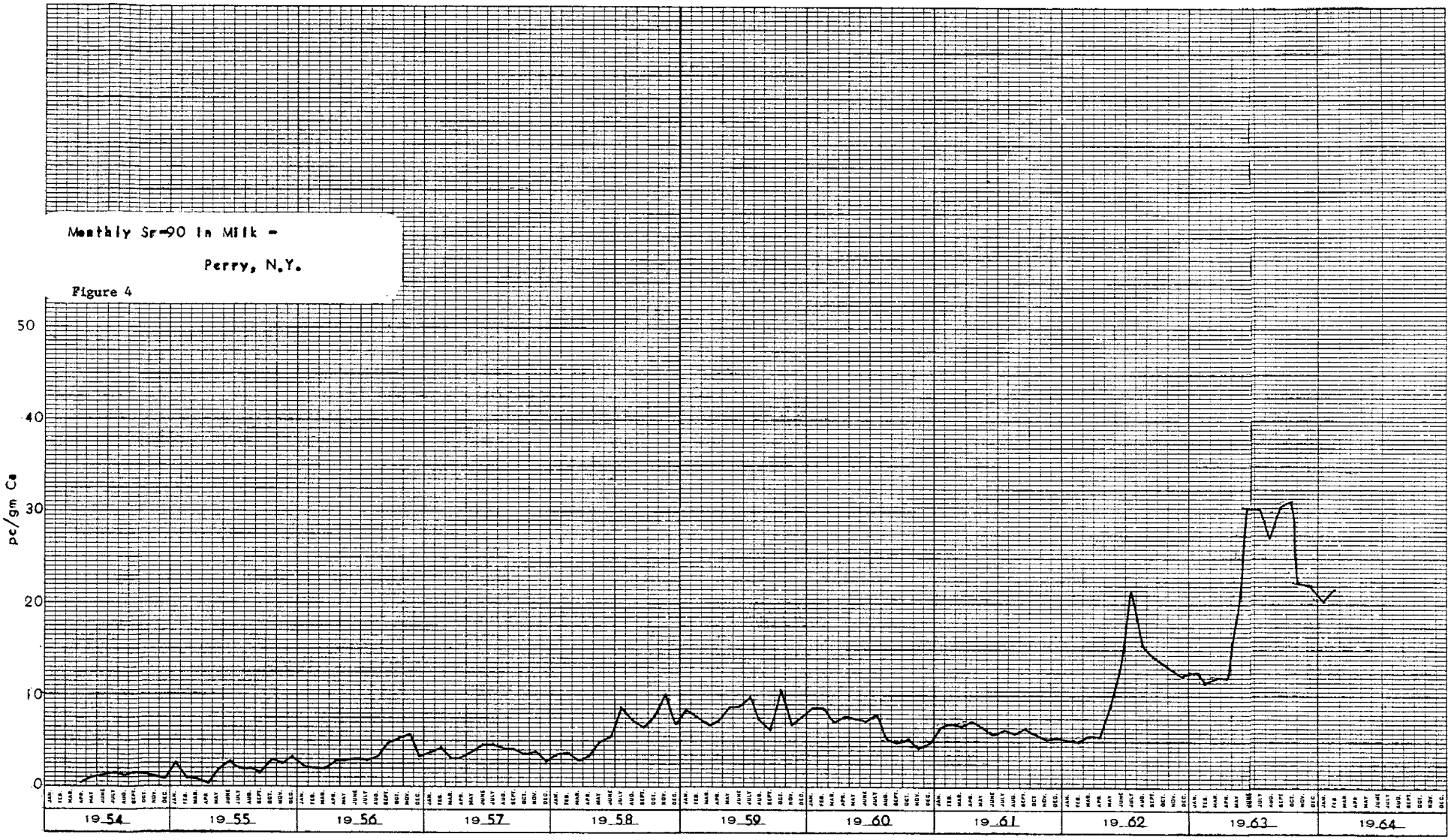
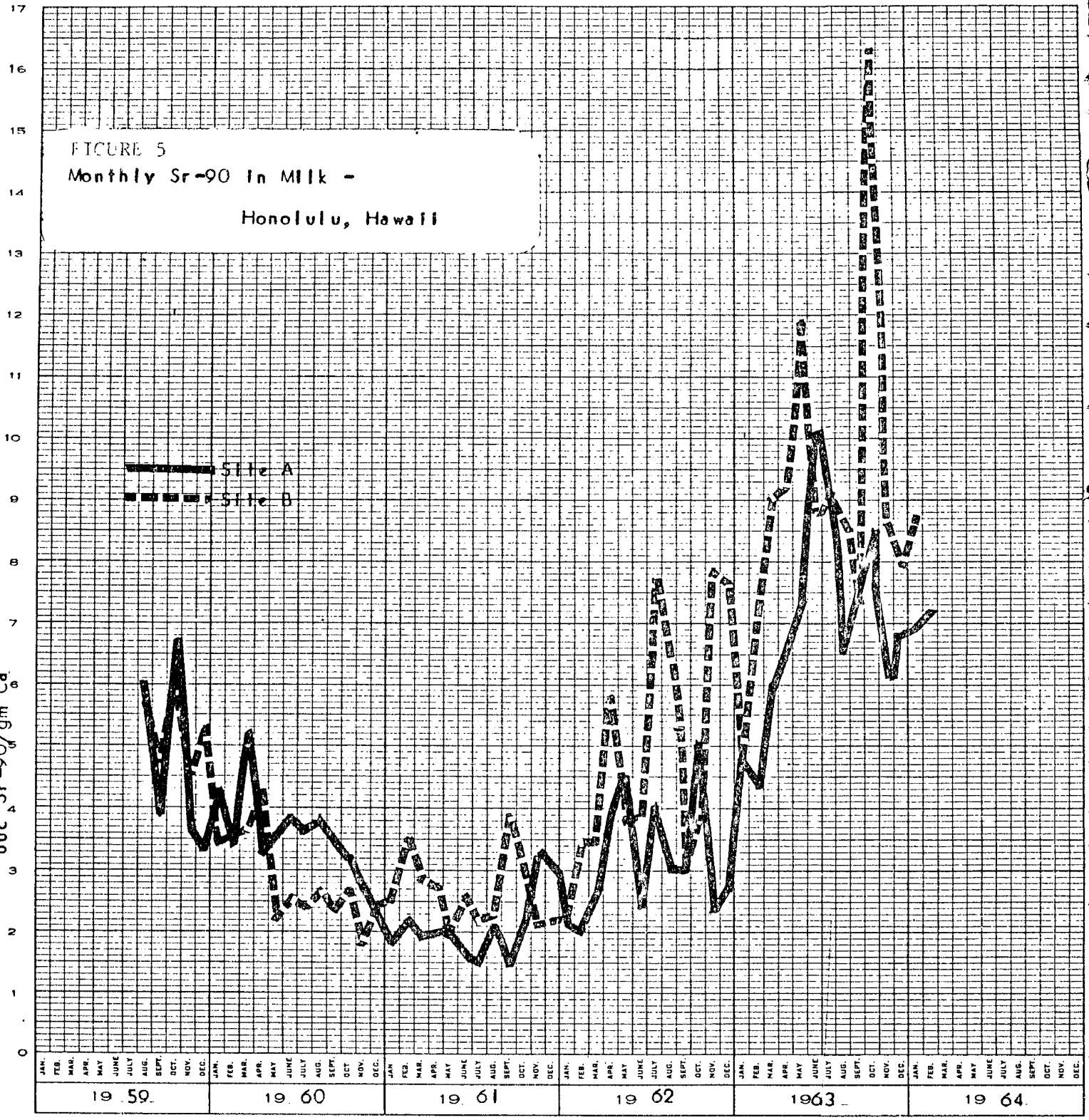


FIGURE 5

Monthly Sr-90 in Milk -

Honolulu, Hawaii



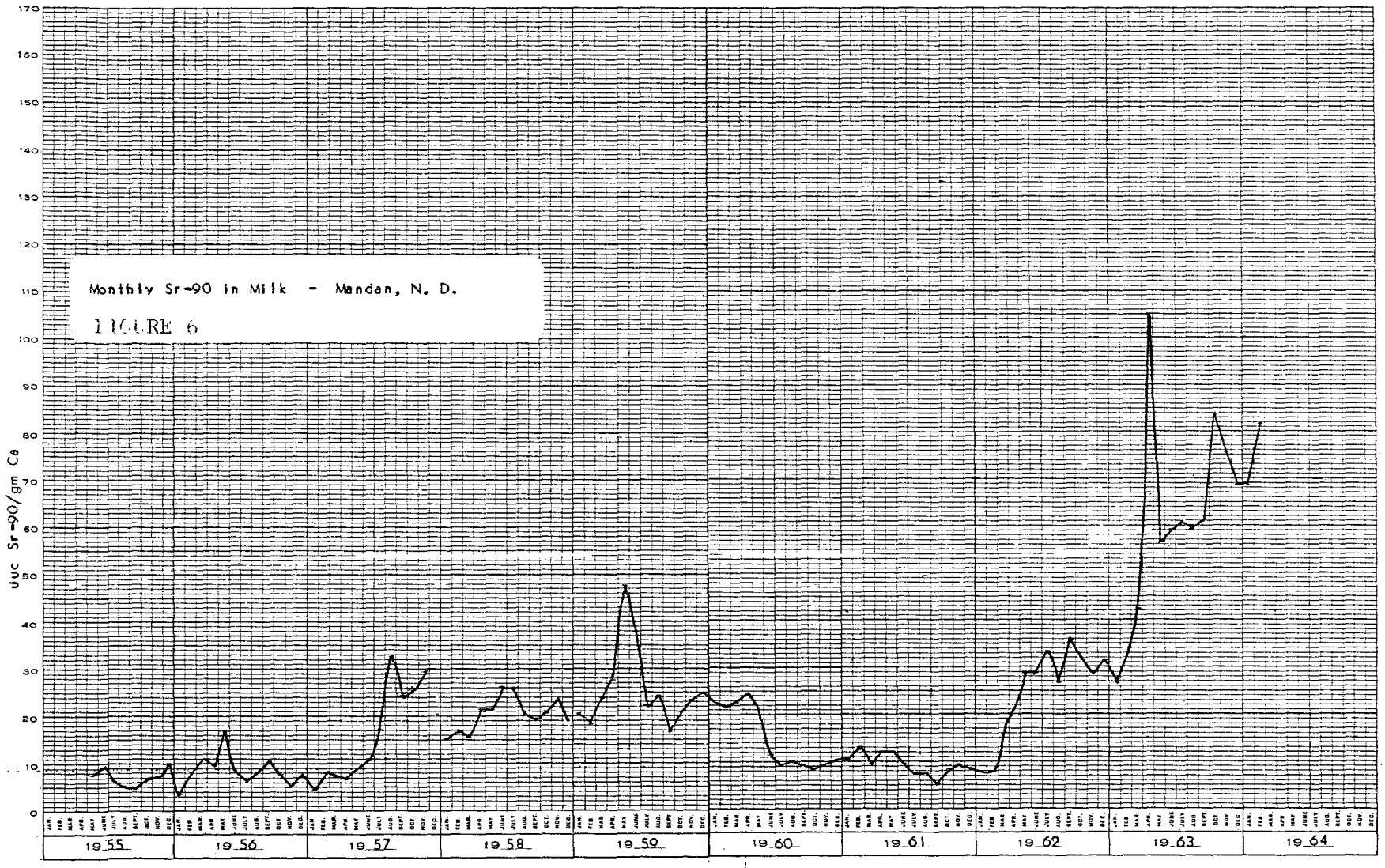
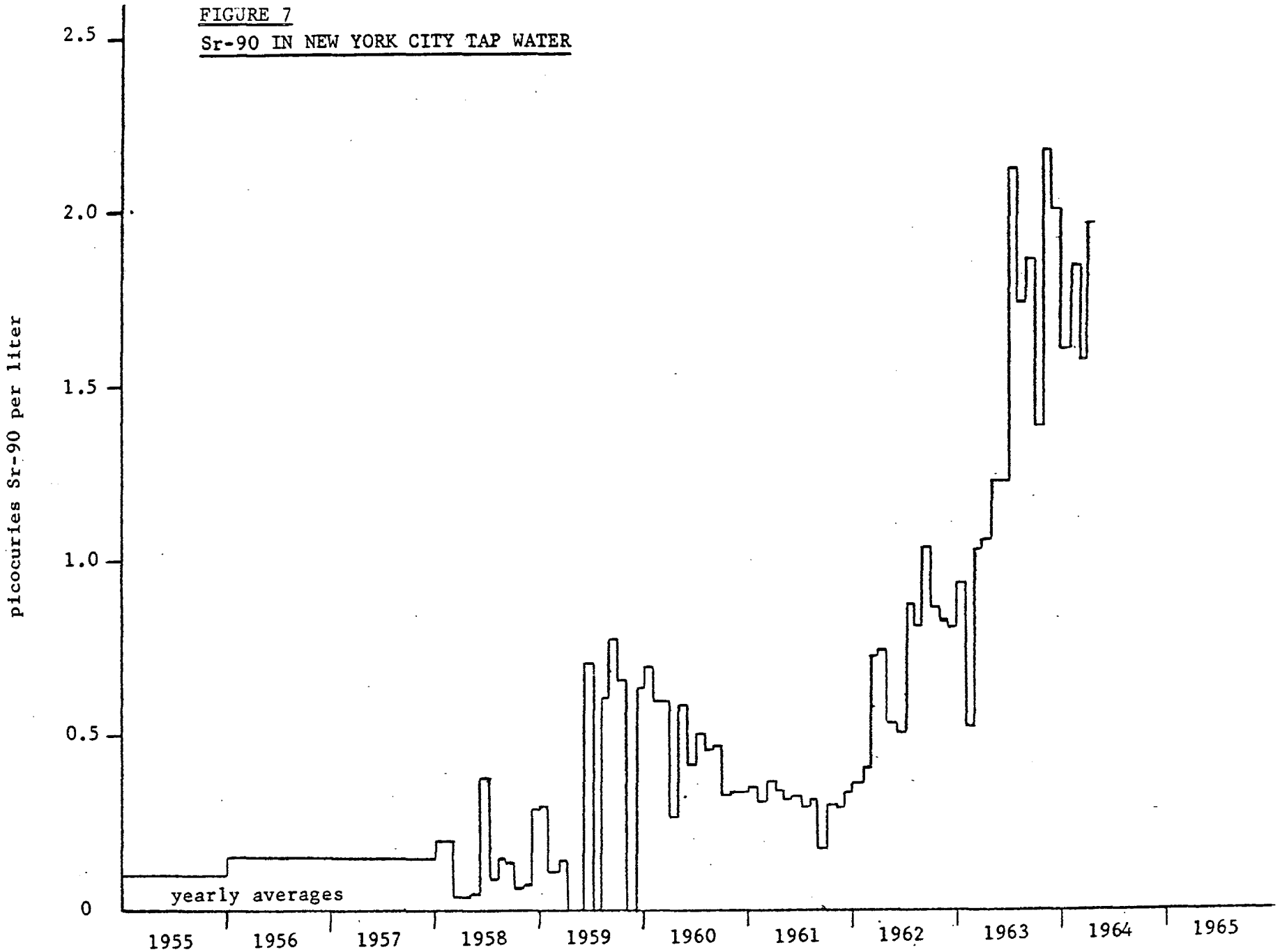

Monthly Sr-90 in Milk - Mandan, N. D.
FIGURE 6
uuc Sr-90/gm Ca
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
19 55
19 56
19 57
19 58
19 59
19 60
19 61
19 62
19 63
19 64

FIGURE 7

Sr-90 IN NEW YORK CITY TAP WATER



3. Tri-City Diet Studies - Fifteenth Sampling

The annual dietary intake of Sr-90 in New York City, Chicago, and San Francisco has been estimated from measurements of the Sr-90 content of foods purchased at these cities every three months since March 1960. Details of the sampling system and a discussion of the results obtained so far in this continuing program are summarized in HASL-147.*

Results of the most recent set of analyses and estimates of the Sr-90/Ca ratio of the diet for the three cities are given in Table 3. The average daily intakes of Sr-90 at the three cities since the tri-city diet surveys began are plotted in Figure 8.

In New York City and Chicago the Sr-90 intakes were about the same as those found three months earlier. There was a slight increase in the Sr-90 intake estimated for San Francisco. The average Sr-90/Ca ratio in the diets at the three cities during 1963 were 30, 19, and 14 pc/g Ca for New York City, Chicago, and San Francisco respectively.

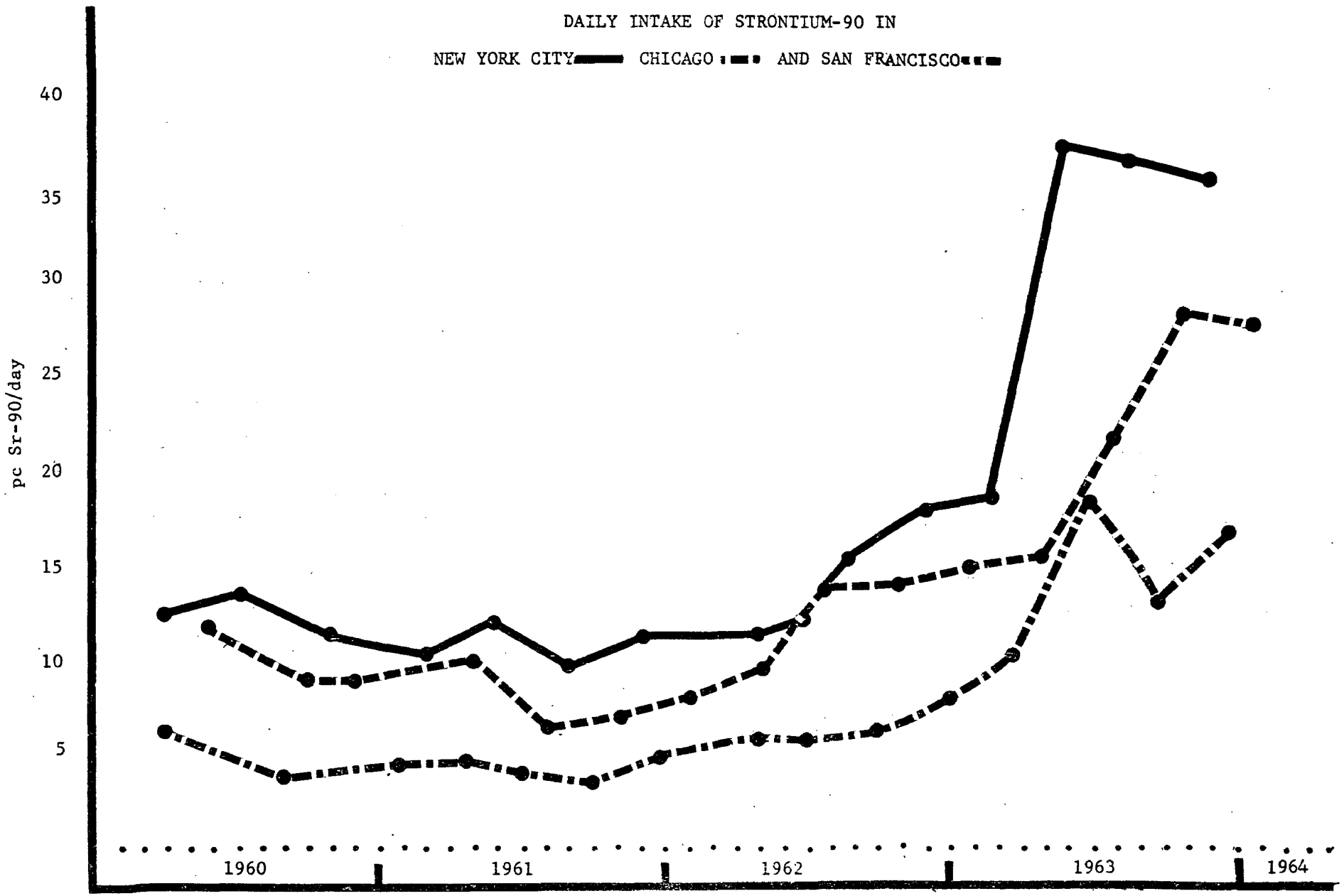
*HASL Contributions to the Study of Fallout in Food Chains, Joseph Rivera and John H. Harley, July 1, 1964 (HASL-147).

Table 3. Tri-City Diet Studies

(Fifteenth Sampling)

Food Category	kg/yr	g Ca/yr	N. Y. C. 11/63		Chicago 1/64		S. F. 12/63	
			μμc/kg	μμc/yr	μμc/kg	μμc/yr	μμc/kg	μμc/yr
Bakery Products	37	37.0	32.8 ± 1.30	1212	28.54 ± 1.70	1056	23.4 ± 1.45	866
Whole Grain Products	11	10.0	83.3 ± 1.36	916	80.7 ± 2.62	888	25.0 ± 1.40	275
Eggs	16	9.1	4.2 ± 0.09	67	8.6 ± 0.29	138	5.0 ± 0.28	80
Fresh Vegetables	43	15.0	29.6 ± 0.62	1274	18.2 ± 0.63	783	5.4 ± 0.41	232
Root Vegetables	17	6.1	7.8 ± 0.39	133	9.0 ± 0.40	153	10.9 ± 0.58	186
Milk	221	234.3	27.7 ± 0.71	6115	18.0 ± 0.62	3978	11.8 ± 0.50	2610
Poultry	17	9.2	2.3 ± 0.07	38	3.7 ± 0.01	62	2.1 ± 0.08	36
Fresh Fish	8	10.8	2.0 ± 0.15	16	1.3 ± 0.14	10	0.8 ± 0.14	7
Flour	43	8.6	34.8 ± 0.71	1497	28.7 ± 0.58	1232	17.7 ± 0.47	762
Macaroni	3	0.7	14.3 ± 0.13	43	21.9 ± 0.43	66	11.6 ± 0.53	35
Rice	3	1.1	7.7 ± 0.24	23	4.4 ± 0.28	13	2.0 ± 0.36	6
Meat	73	10.9	0.8 ± 0.09	55	1.2 ± 0.07	88	2.0 ± 0.08	149
Shellfish	1	0.8	4.4 ± 0.23	4	1.4 ± 0.25	1	12.2 ± 0.36	12
Dried Beans	3	2.9	38.2 ± 1.94	115	37.8 ± 2.22	114	10.6 ± 1.47	32
Fresh Fruit	68	12.6	7.0 ± 0.33	475	4.8 ± 0.22	328	1.9 ± 0.20	133
Potatoes	45	5.8	6.5 ± 0.44	287	7.6 ± 0.68	341	2.6 ± 0.36	115
Canned Fruit	26	1.3	2.3 ± 0.14	59	2.4 ± 0.17	61	1.7 ± 0.13	45
Fruit Juices	19	1.7	6.7 ± 0.35	127	7.6 ± 0.49	145	3.2 ± 0.32	61
Canned Vegetables	20	4.2	14.6 ± 0.58	291	9.1 ± 0.65	181	2.5 ± 0.41	49
Annual Intake		383		12747		9638		5691
Strontium-90 to Calcium ratio in total diet				33.3		25.2		14.9

FIGURE 8


DAILY INTAKE OF STRONTIUM-90 IN
NEW YORK CITY CHICAGO AND SAN FRANCISCO
pc Sr-90/day
40
35
30
25
20
15
10
5
1960
1961
1962
1963
1964

4. High Altitude Balloon Sampling Program

by L. P. Salter (HASL)

The U. S. Atomic Energy Commission's program for measuring stratospheric nuclear debris collected by balloon-borne filtering devices has been in continuous operation since 1956. During 1964 monthly collections have been made from several altitudes at two sites:

Location	Latitude	Flight Organization
San Angelo, Texas	31°N	Detachment 1, 6th Weather Squadron, Goodfellow Air Force Base
Mildura, Australia	34°S	Department of Supply, Commonwealth of Australia

Additional samples are being collected in the late spring and summer from Eilson Air Force Base, Alaska, at 65°N by Detachment 1, 6th Weather Squadron.

Filters are shipped to HASL where gross gamma activity measurements and gamma spectra have been obtained for all samples collected since February 1962. Selected filters are then analyzed for fission products and other pertinent radionuclides at HASL and contractor laboratories.

Results of gamma activity measurements for samples collected in March, April, and May 1964 are presented in Tables 4a, 4b, and 4c herein. Radionuclide assay data through November 1963 and gamma activity data through February 1964 have been given previously in the following reports:

HASL-144, p.184 (April 1964)
HASL-140, p.185 (October 1963)
HASL-127, p.151 (July 1962)
HASL-115, p. 70 (October 1961)

Sample Collection Data

Altitude

All altitude data are obtained from barometric readings and refer to pressure-altitude in the ICAO Standard Atmosphere. The predominant sampling altitude is given in kilofeet (KFT). The entire sample was collected within a range of ±2 kilofeet of the predominant altitude except as indicated otherwise in NOTES on the bottom of the page.

Flight Date and Number

The date of flight and number assigned to the flight by balloon operations organizations are given. Two samples usually are collected from each flight.

Unit

Most 1963 and 1964 collections have been made with the "Direct Flow Sampler" which utilizes one square foot of I.P.C. No. 1478 filter paper. This system when routinely used with a Westinghouse motor and Torrington 704 blower is referred to as "D-7". A discussion of this unit was presented by Rex Wood in HASL-115, p.155 (October 1961).

When two samples are obtained on the same flight from similar units they are designated as -1 and -2.

Volume

The volume of air sampled is reported in thousands of standard cubic feet (KSCF) of air, computed at 1013 mb and 59°F (1 KSCF = 34.6 Kg of air). The method of determining the volume is indicated according to the following code listed under the reported volume:

F: Flowmeter
T: Radiotelemetry of blower speed
E: Estimated

The method currently preferred is that based on flowmeter measurements. In the absence of these data or when such data are suspect, a volume has been calculated on the basis of radiotelemetry of the instantaneous blower speed. Whenever the volume listed is estimated or doubtful, appropriate NOTES are given on the bottom of the page and the data are given in parentheses.

An evaluation of the volume data has been presented by K. Telegadas in HASL-144, p.258 (April 1964).

Gamma Activity Measurements

The measured gamma activity concentration in counts per minute per 10^3 SCF (CPM/KSCF) are reported as of the counting date. The standard deviation due to counting is less than 5% except for those concentration values annotated as follows:

A) Standard deviation due to counting 5-10%

Counting Procedure

The filter samples are received in plastic bags from the collection sites and counted without prior treatment about one to two weeks after collection date.

The bags containing the one square foot filters are folded into a plastic box 80 mm x 65 mm x 31 mm deep which is placed in the center of a heavily shielded 8" diameter x 4" NaI (Tl) crystal. The pulses from three phototubes, matched for

pulse height response, are summed, amplified, and fed to a multichannel analyzer to obtain a gamma scan. The gross gamma activities are obtained by summing the data between 0.1 and 3.0 Mev and correcting for background.

Standardization

Because of the complexity involved in estimating the disintegration rate from the observed gamma counts per minute in a mixture of nuclides such as those present in composited weapons debris, such a conversion has not been attempted. The CPM results reported herein, therefore, are of significance on a relative basis only. The efficiency of the counting system has been compared, however, to a standard Cs-137 source counted under the same geometry. This source yields about 0.35 counts per emitted photon which is equivalent to about 0.30 counts per disintegration of Cs-137.

Precision

The degree of reproducibility for these gross gamma measurements has been evaluated and a value of about 0.013 found for the coefficient of variation (ratio of standard deviation to mean, or per cent standard deviation ÷ 100). This precision value includes the error from all sources of variation, exclusive of counting statistics, such as day to day fluctuations in response due to counting and factors relating to sample handling processes. The precision data are discussed in more detail in HASL-131, p.153 (October 1962).

Table 4a

SAN ANGELO, TEXAS (31°N) MAR 1964

ALT(KFT)	64	64	81	81	93	93	106	106
FLT DAY	11	11	26	26	10	10	17	17
FLT NO	T886	T886	T894	T894	T885	T885	T890	T890
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME (KSCF)	2.23 F	2.20 F	1.80 F	1.84 F	1.40 F	1.28 F	0.90 F	0.89 F
GR GAMMA CPM/KSCF	MAR18 2760	MAR20 2580	APR 8 520	APR 9 506	MAR18 284	MAR19 323	MAR24 167 A	MAR25 194

SAN ANGELO, TEXAS (31°N) APR 1964

ALT(KFT)	67	67	80	80	90	90	108	108
FLT DAY	6	6	13	13	10	10	27	27
FLT NO	T895	T895	T898	T898	T897	T897	T902A	T902A
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME (KSCF)	1.94 F	1.99 F	1.57 F	1.56 F	(1.48)[a] E	1.48 F	0.71 F	0.71 F
GR GAMMA CPM/KSCF	APR14 2770	APR15 2640	APR21 319	APR22 328	APR21 (203)	APR21 217	MAY 5 180 A	MAY 6 176

SAN ANGELO, TEXAS (31°N) MAY 1964

ALT(KFT)	80	80	90	90	106	106
FLT DAY	12	12	14	14	21	21
FLT NO	T904	T904	T906	T906	T911	T911
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME (KSCF)	1.84 F	1.79 F	1.86 F	1.83 F	0.78 F	0.75 F
GR GAMMA CPM/KSCF	MAY19 449	MAY20 452	MAY20 219	MAY21 222	MAY26 159 A	MAY27 163

a Flowmeter and telemetry data lost; volume estimated from D7-2 unit.

Table 4b

MILDURA, AUSTRALIA (34°S) MAR 1964

ALT(KFT)	71	71	81	81	90	90	107	107
FLT DAY	17	17	6	6	2	2	11	11
FLT NO	A182	A182	A180	A180	A179	A179	A181	A181
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME	1.48	1.63	1.51	1.61	1.26	1.36	0.64	0.77
(KSCF)	F	F	F	F	F	F	F	F
GR GAMMA	MAR24	MAR25	MAR10	MAR11	MAR10	MAR11	MAR17	MAR19
CPM/KSCF	368	364	391	394	256	238	231	156
							A	A

MILDURA, AUSTRALIA (34°S) APR 1964

ALT(KFT)	70	70	81	81	89	89	108	108
FLT DAY	16	16	10	10	7	7	15	15
FLT NO	A186	A186	A184	A184	A183	A183	A185	A185
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME	1.69	1.76	1.53	1.70	1.54	0.91	0.65	0.42
(KSCF)	F	F	F	F	F	F	F	F
GR GAMMA	APR21	APR22	APR14	APR15	APR15	APR14	APR21	APR22
CPM/KSCF	361	362	388	401	282	301	142	178
							A	A

MILDURA, AUSTRALIA (34°S) MAY 1964

ALT(KFT)	63	63	80	80	82	82	88	88	88	88	106	106	107	107
FLT DAY	29	29	28	28	18	18	5	5	20	20	27	27	7	7
FLT NO	A196	A196	A195	A195	A191	A191	A187	A187	A193	A193	A194	A194	A188	A188
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME	2.33	2.26	1.70	1.69	1.53	1.40	1.46	1.60	1.32	1.47	0.79	0.79	0.75	0.81
(KSCK)	F	F	F	F	F	F	F	T	F	F	F	F	F	F
GR GAMMA	JUN 3	JUN 4	JUN 3	JUN 4	MAY21	MAY22	MAY12	MAY13	MAY26	MAY27	JUN 2	JUN 3	MAY12	MAY13
CPM/KSCF	327	328	262	244	278	280	185	171	201	201	200	173	169	158
												A	A	

Table 4c

ALASKA (65°N) MAY 1964

ALT(KFT)	80	80	81[a]	81[a]	89[a]	89[a]	90	90
FLT DAY	23	23	5	5	2	2	21	21
FLT NO	A10A	A10A	A6A	A6A	A5A	A5A	A9A	A9A
UNIT	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2	D7-1	D7-2
VOLUME (KSCF)	1.52 F	1.46 F	1.57 F	1.34 F	1.49 F	1.55 F	1.08 F	1.64 F
GR/GAMMA CPM/KSCF	JUN 2 543	JUN 3 570	MAY 8 459	MAY 8 440	MAY 7 490	MAY 8 459	MAY28 219	MAY28 226

a Samples landed in snow; filter papers wet when recovered.

Part II - Data From Sources Other Than HASL

Numerous fallout studies are conducted by other organizations in the United States and abroad. Some of these data are sent to the editors for dissemination in these HASL quarterly reports. Submitted data are reproduced essentially as received and no interpretation by HASL is attempted.

1. The New Zealand Department of Scientific and Industrial Research

Since November 1958, precipitation collections at Lower Hutt have been analyzed for strontium-90, barium-140 and cesium-137. Beginning in September 1961, cerium-144 was also determined. Results for August 1, 1963 to January 2, 1964 and January 2, 1964 to March 31, 1964 are reported on pages 193 and 194.

2. National Radiation Laboratory, Christchurch, New Zealand

Formerly the Dominion X-Ray and Radium Laboratory, the National Radiation Laboratory's Quarterly Report, October-December 1963 and Annual Summary on Fallout in New Zealand, is reprinted in this quarterly on pages 195 through 218.

1. RADIOISOTOPES IN RAINWATER

Report No. 52

Period: 1 August 1963 to 2 January 1964

Station: Gracefield, Lower Hutt, New Zealand. S.41°14' E.174°55' Polythene Collector 10.1 sq. ft.

Sampling Period		Activity: Microcuries/sq. mile				Ba^{140}/Sr^{90}	Cs^{137}/Sr^{90}	Cumulative Sr^{90} Millicuries/sq. mile	Rain Inches	Remarks
Start	Finish	Sr^{90}	Ce^{144}	Ba^{140}	Cs^{137}					
8 - 1	9 - 2	880 ± 10	5950 ± 30	less than 6	1680 ± 20	less than 0.007	1.91	3.967	9.67	Pot Sample lost
Accumulated Total or Average for 1963.		3665			7853		2.14		37.60	
9 - 2	10 - 1	561 ± 2		less than 4	1000 ± 30	less than 0.009	2.17	4.428	4.03	
9 - 2	10 - 1	558 ± 8	3550 ± 30	less than 70		less than 0.13			4.03	Monthly Pot Sample
Accumulated Total or Average for 1963		4126			8853		2.15		41.63	
10 - 1	11 - 4	28 ± 1		less than 4	387 ± 20	less than 0.14	13.8	4.456	0.56	Dry Period
10 - 1	11 - 4	132 ± 5	1110 ± 20	less than 50		less than 0.4			0.56	Monthly Pot Sample
Accumulated Total or Average for 1963		4154			9240		2.22		42.19	
11 - 4	12 - 3	518 ± 4			950 ± 30		1.83	4.974	3.56	
11 - 4	12 - 3	488 ± 10	2720 ± 20		905 ± 130		1.87		3.56	Monthly Pot Sample
Accumulated Total or Average for 1963		4672			10190		2.18		45.75	
12 - 3	1 - 2	282 ± 3						5.256	2.19	
12 - 3	1 - 2	304 ± 8	1690 ± 30		695 ± 70		2.29		2.19	Monthly Pot Sample
Accumulated Total or Average for 1963		4976			10885		2.19		47.94	

RADIOISOTOPES IN RAINWATER

Report No. 53

Period: 2 January to 31 March 1964

Station: Gracefield, Lower Hutt, New Zealand. S.41°14' E.174°55'

Polythene Collector 10.1 sq. ft.

Sampling Period		Activity: Microcuries/sq. mile				Ba^{140}/Sr^{90}	Cs^{137}/Sr^{90}	Cumulative Sr^{90}	Rain	Remarks
Start	Finish	Sr^{90}	Ce^{144}	Ba^{140}	Cs^{137}			Millicuries/sq. mile	Inches	
1 - 2	1 - 31	520 ± 10	2510 ± 50		1280 ± 70		2.46	0.520	2.58	Monthly Pot Sample
1 - 2	1 - 31	500 ± 3			1100 ± 25		2.2		2.58	
Accumulated Total or Average for 1964		520			1280		2.46		2.58	
1 - 31	3 - 2	190 ± 5	1160 ± 15		680 ± 140		3.58	0.710	1.03	Monthly Pot Sample
1 - 31	3 - 2	190 ± 2			690 ± 70		3.63		1.03	Dry Period
Accumulated Total or Average for 1964		710			1960		2.76		3.61	
3 - 2	3 - 31	415 ± 7	2050 ± 30		800 ± 55		1.93	1.125	3.76	Monthly Pot Sample
3 - 2	3 - 31	425 ± 3			600 ± 300		1.41		3.76	
Accumulated Total or Average for 1964		1125			2760		2.45		7.37	

REPORT No.
N.R.L.-F 11

QUARTERLY REPORT
OCT. — DEC. 1963
and
ANNUAL SUMMARY
on

FALLOUT IN NEW ZEALAND

NATIONAL RADIATION LABORATORY,
(FORMERLY DOMINION X-RAY & RADIUM LABORATORY)
DEPARTMENT OF HEALTH,
P.O. BOX 1456, CHRISTCHURCH, NEW ZEALAND

FALLOUT IN NEW ZEALAND

QUARTERLY REPORT OCTOBER - DECEMBER 1963

AND SUMMARY FOR THE YEAR 1963

REPORT NO. NRL-F11

13 MARCH 1964

CONTENTS

SUMMARY

The results of total gamma activity measurements on air filter samples from Auckland and Christchurch for the fourth quarter 1963 are similar to those for the previous quarter. The total beta activity of Christchurch rain during the fourth quarter 1963, however, was lower on the average than for the previous quarter.

The New Zealand station average for Sr^{90} in rain during the fourth quarter 1963 (0.46 mc./km^2.) was lower than the average deposited during the third quarter 1963 (0.51 mc/$km.^2$). The station average for the entire year 1963 was 1.83 mc./km^2., however, and as shown in Table 5, Page 9, this is the highest yearly average deposition recorded in the last four years.

SUMMARY - CONTINUED

The seasonal increase in the average Sr^{90} level in milk (9.2 Strontium Units) for July-August 1963 mentioned in our previous report, has dropped to 7.0 Strontium Units for September-October 1963 and 6.3 Strontium Units for November-December 1963. The average level for all stations for the entire year 1963 was 7.1 Strontium Units. The average levels for the years 1962 and 1961 were 6.1 and 4.9 Strontium Units respectively.

A measure of the significance of the level of Sr^{90} in New Zealand milk can be derived from a comparison of these levels with the recommendations made by the British Medical Research Council on the "permissible levels" for the concentration of Sr^{90} in the human bone. A "cautionary level" was set at one half of the "permissible level" and the Council stated that this "cautionary level" would not be exceeded if the following levels were maintained indefinitely in the diet: 400 Strontium Units for individuals in the general population, or 130 Strontium Units as average for the population as a whole. The 1963 level of 7.1 Strontium Units in milk is thus 1.8% of the "cautionary level" for individuals in the general population, or 5.5% for the population as a whole. As stated above, the "cautionary level" itself is one half of the permissible level which can be maintained indefinitely.

INTRODUCTION

The present report continues the series of quarterly reports on "Fallout in New Zealand" issued by the Department of Health.

The results of routine monitoring for total beta or gamma activity of air filters and of rain samples for the quarter ending December 31, 1963 are given. The results of the strontium-90 measurements in rain and in milk are also given for the same period.

Some further results for strontium-90 in human bone are included and results for caesium-137 in milk samples are published for the first time.

As this report is an end of year report, recent levels of fallout in New Zealand are compared with past levels, and comparisons are also made between levels in this country and levels in some places in the Northern Hemisphere.

NOTE ON CHANGE OF UNITS

In line with current overseas practice, we are now reporting our results in the metric system. The activity in rain is given in millicuries per square kilometre instead of millicuries per square mile and rainfall is given in centimetres instead of inches. In addition, picocurie is used in place of micromicrocurie.

UNITS AND ABBREVIATIONS

Centimetre	cm.		
Square kilometre	km^2		
Cubic metre	m^3		
Litre	l.		
Gram	g.		
Millicurie	mc.	=	10^{-3} curies
Picocurie	pc.	=	10^{-12} curies
Strontium Unit	S.U.	=	1 pc./g. of calcium

CONVERSION FACTORS

Multiply inches	by	2.54	to obtain	cm.
Multiply cm.	by	0.394	to obtain	inches
Multiply mc./sq.mile	by	0.386	to obtain	$mc./km^2$
Multiply $mc./km^2$	by	2.59	to obtain	mc./sq. mile

NOTE

1. 1 curie = 3.7×10^{10} disintegrations per second
   1 picocurie = 2.22 disintegrations per minute

2. Specific activity (pc./l.) = $\frac{\text{deposition } (mc./km^2)}{\text{rainfall (cm.)}} \times 100$

3. 1 litre of whole milk contains approx. 1.2 g. of calcium

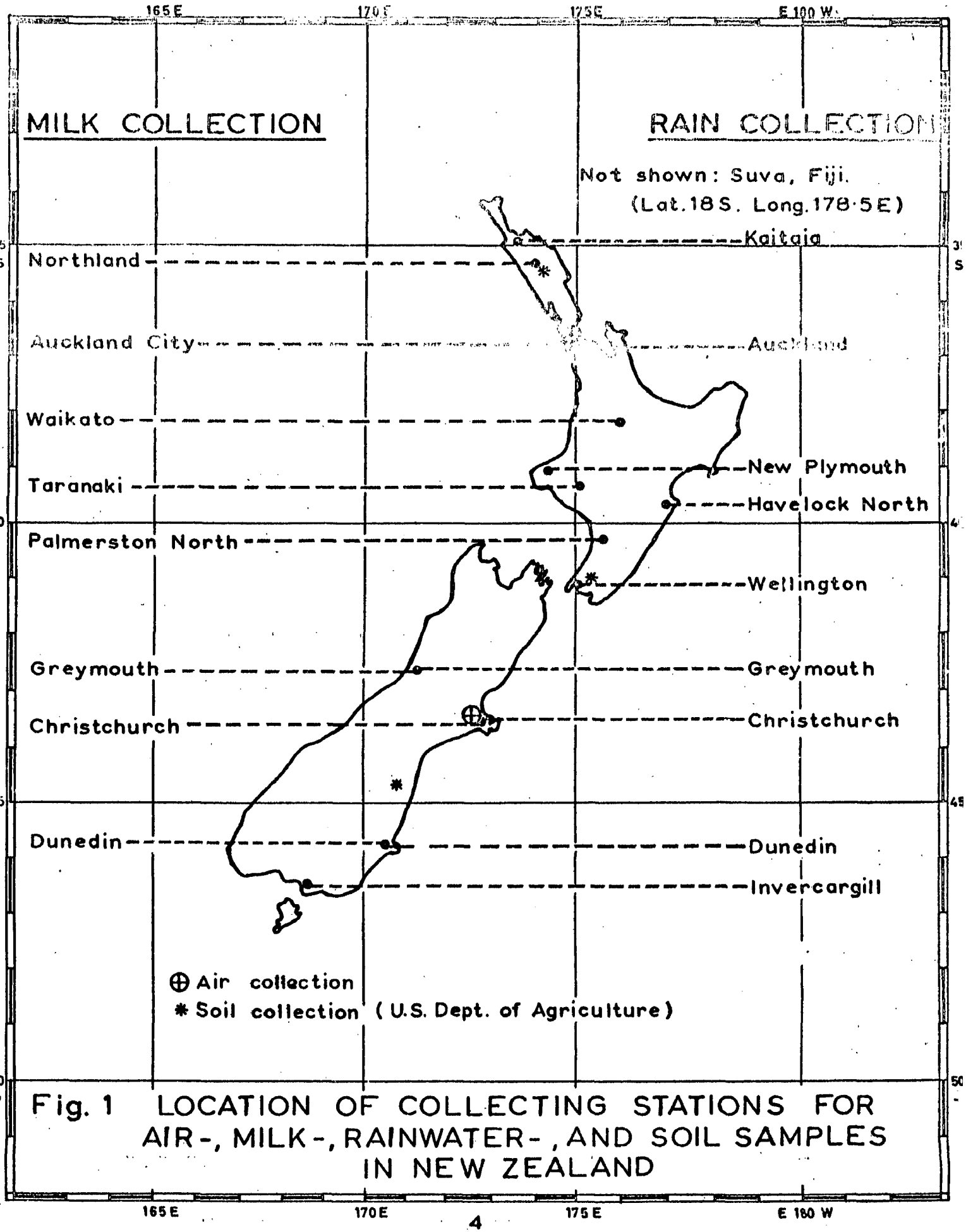


Fig. 1 LOCATION OF COLLECTING STATIONS FOR AIR-, MILK-, RAINWATER-, AND SOIL SAMPLES IN NEW ZEALAND

4

SECTION A

MEASUREMENT OF TOTAL BETA AND TOTAL GAMMA ACTIVITY

1. TOTAL GAMMA ACTIVITY OF AIR FILTER SAMPLES COLLECTED NEAR GROUND LEVEL

The total gamma activities of air filter samples from Auckland and Christchurch are listed in Table 2, page 6. As in past reports, the values are tabulated in multiples of 0.1 pc./m^3 for simplicity of recording. At the present low levels of air activity, however, the statistical error in the measurement is of the same order.

2. TOTAL BETA ACTIVITY OF FALLOUT DEPOSITED ON THE GROUND

Christchurch - Stainless Steel Pot Collection

The results for the individual weekly collections together with the monthly totals are given in Table 1 below in millicuries per square kilometre. The average monthly specific activities as calculated from the formula on page 3 are as follows:

October 1963	75 picocuries per litre
November 1963	18 picocuries per litre
December 1963	14 picocuries per litre

TABLE 1: TOTAL BETA ACTIVITY OF FALLOUT DEPOSITED ON THE GROUND

In Millicuries per Square Kilometre

COLLECTING STATION:CHRISTCHURCH

Date of Collection		Rainfall	Total Beta Activity
From	To	Centimetres	mc./$km.^2$
1.10.63	9.10.63	0.66	0.3
9.10.63	17.10.63	Trace*	0.3
17.10.63	25.10.63	0.05	0.2
25.10.63	1.11.63	1.17	0.6
1.10.63	1.11.63	1.88	1.4
1.11.63	8.11.63	2.95	0.2
8.11.63	18.11.63	0.94	0.4
18.11.63	25.11.63	0.48	<0.1
25.11.63	2.12.63	0.74	0.2
1.11.63	2.12.63	5.11	0.9
2.12.63	9.12.63	0.03	<0.1
9.12.63	16.12.63	Trace*	0.1
16.12.63	24.12.63	9.29	0.9
24.12.63	2.1.64	0.23	0.3
2.12.63	2.1.64	9.55	1.4

* Trace <0.013 cm

TABLE 2: TOTAL GAMMA ACTIVITY OF AIR SAMPLES

In Picocuries per Cubic Metre Eight Days After Collection

AUCKLAND			CHRISTCHURCH		
Date of Collection		Total Gamma Activity	Date of Collection		Total Gamma Activity
From	To	pc./m.^{3}	From	To	pc./m.^{3}
30. 9.63	2.10.63	0.2	30. 9.63	2.10.63	<0.1
2.10.63	4.10.63	0.2	2.10.63	4.10.63	<0.1
4.10.63	7.10.63	<0.1	4.10.63	7.10.63	<0.1
7.10.63	9.10.63	0.1	7.10.63	9.10.63	<0.1
9.10.63	11.10.63	<0.1	9.10.63	11.10.63	<0.1
11.10.63	14.10.63	<0.1	11.10.63	14.10.63	<0.1
14.10.63	16.10.63	0.2	14.10.63	16.10.63	<0.1
16.10.63	18.10.63	0.1	16.10.63	18.10.63	<0.1
18.10.63	21.10.63	0.1	18.10.63	21.10.63	<0.1
21.10.63	23.10.63	0.2	21.10.63	23.10.63	<0.1
23.10.63	25.10.63	0.1	23.10.63	25.10.63	<0.1
25.10.63	28.10.63	<0.1	25.10.63	26.10.63	<0.1
28.10.63	30.10.63	<0.1	26.10.63	30.10.63	0.1
30.10.63	1.11.63	<0.1	30.10.63	1.11.63	<0.1
30. 9.63	1.11.63	Average 0.1	30. 9.63	1.11.63	Average <0.1
1.11.63	4.11.63	<0.1	1.11.63	4.11.63	<0.1
4.11.63	6.11.63	<0.1	4.11.63	6.11.63	<0.1
6.11.63	8.11.63	0.2	6.11.63	8.11.63	<0.1
8.11.63	11.11.63	<0.1	8.11.63	11.11.63	<0.1
11.11.63	13.11.63	0.1	11.11.63	13.11.63	<0.1
13.11.63	15.11.63	0.1	13.11.63	14.11.63	<0.1
15.11.63	18.11.63	0.1	14.11.63	18.11.63	<0.1
18.11.63	20.11.63	0.2	18.11.63	20.11.63	<0.1
20.11.63	22.11.63	0.2	20.11.63	22.11.63	<0.1
22.11.63	25.11.63	0.1	22.11.63	25.11.63	<0.1
25.11.63	27.11.63	0.1	25.11.63	27.11.63	<0.1
27.11.63	29.11.63	<0.1	27.11.63	29.11.63	<0.1
1.11.63	29.11.63	Average 0.1	1.11.63	29.11.63	Average <0.1
29.11.63	2.12.63	<0.1	29.11.63	2.12.63	<0.1
2.12.63	4.12.63	0.1	2.12.63	4.12.63	<0.1
4.12.63	6.12.63	0.2	4.12.63	6.12.63	<0.1
6.12.63	9.12.63	0.1	6.12.63	9.12.63	<0.1
9.12.63	11.12.63	<0.1	9.12.63	11.12.63	<0.1
11.12.63	13.12.63	0.2	11.12.63	13.12.63	<0.1
13.12.63	16.12.63	0.1	13.12.63	16.12.63	<0.1
16.12.63	18.12.63	0.3	16.12.63	18.12.63	<0.1
18.12.63	20.12.63	0.2	18.12.63	20.12.63	<0.1
20.12.63	23.12.63	<0.1	20.12.63	23.12.63	<0.1
23.12.63	25.12.63	<0.1	23.12.63	27.12.63	<0.1
25.12.63	27.12.63	0.1	27.12.63	30.12.63	<0.1
27.12.63	30.12.63	0.1			
30.12.63	1. 1.64	0.2			
29.11.63	1. 1.64	Average 0.1	29.11.63	30.12.63	Average <0.1

SECTION B
MEASUREMENT OF SPECIFIC RADIOISOTOPES

1. STRONTIUM-90 IN RAIN

Table 3, page 8, gives the results of strontium-90 measurements on rain collected from the nine New Zealand collecting stations and from Fiji during the last quarter of 1963. The results of the measurements made by the United Kingdom Atomic Energy Authority on rain collected at Ohakea are also included. No further results have been received from the Institute of Nuclear Sciences for rain collected at Gracefield. Past and present results for strontium-90 and rainfall are given in graphical form in Fig. 2, a,b,c,d,e, pages 19 - 23.

SUMMARY

DEPOSITION

The average yearly deposition of strontium-90 at the nine New Zealand collecting stations, measured by this Laboratory (excluding results from Ohakea and Gracefield) was 1.83mc./km^2 for 1963. Greymouth was again the station with the highest deposition for the year, 3.70 mc./km^2 Havelock North was the lowest with 1.00 mc./km^2

The annual deposition, annual rainfall and average specific activity for individual stations for 1963, and the average of these results for all collecting stations are given in Table 4 below:

TABLE 4: STRONTIUM-90 IN RAIN 1963

STATION	Annual Rainfall cm.	Sr^{90} Annual Deposition mc./km^2	Sr^{90} Average Specific Activity pc./l
North Island: Kaitaia	110	1.82	1.65
Auckland	120	1.95	1.63
New Plymouth	112	1.98	1.77
Havelock North	68	1.00	1.47
Wellington	117	2.03	1.74
South Island: Greymouth	233	3.70	1.59
Christchurch	67	1.24	1.84
Dunedin	58	1.02	1.77
Invercargill	102	1.70	1.67
ALL STATION AVERAGE	110	1.83	1.67

These results show that the deposition of strontium-90 in a particular area in New Zealand is almost entirely dependent on the amount of rainfall in that area. Although there is a range of about 4 to 1 in the values for rainfall, there is a corresponding range in strontium-90 deposition and the concentration of strontium-90 in the rain, as shown by the specific activity results, remains reasonably constant for all collecting stations at approximately 1.7 pc./l.

TABLE 3: STRONTIUM-90 IN RAIN 1963

In Millicuries per Square Kilometre

To Obtain Millicuries per Square Mile Multiply by 2.59

Station		October	November	December
Kaitaia	Rainfall cm. Sr^{90} mc./km.^{2}	2.1 0.07	3.2 0.12	9.2 0.18
Auckland	Rainfall cm. Sr^{90} mc./km.^{2}	3.1 0.08	13.1 0.35	7.5 0.22
New Plymouth	Rainfall cm. Sr^{90} mc./km.^{2}	1.9 0.07	7.5 0.20	6.7 0.18
Havelock North	Rainfall cm. Sr^{90} mc./km.^{2}	1.2 0.04	3.9 (0.08)	4.3 0.12
Wellington	Rainfall cm. Sr^{90} mc./km.^{2}	2.1 0.08	8.9 0.23	9.1 (0.20)
Greymouth	Rainfall cm. Sr^{90} mc./km.^{2}	11.9 0.37	29.6 0.42	13.3 0.17
Christchurch	Rainfall cm. Sr^{90} mc./km.^{2}	1.9 0.08	5.1 0.07	9.5 0.11
Dunedin	Rainfall cm. Sr^{90} mc./km.^{2}	2.9 0.05	3.8 0.07	5.7 0.14
Invercargill	Rainfall cm. Sr^{90} mc./km.^{2}	10.4 0.12	9.1 0.10	10.2 0.19

		1 October 1963 - 1 January 1964
Fiji	Rainfall cm. Sr^{90} mc./km.^{2}	81.3 0.83

		Jan., Feb., Mar., 1963	April, May, June 1963
Ohakea Measured by U.K. Atomic Energy Auth.	Rainfall cm. Sr^{90} mc./km.^{2}	13.9 0.25	22.8 0.43

Bracketed values are estimates.

The increase in the average yearly deposition of strontium-90 at our nine stations over the past four years is shown in Table 5 below:-

TABLE 5: STRONTIUM-90 IN RAIN 1960 - 1963
AVERAGE OF ALL N.Z. COLLECTING STATIONS

	1960	1961	1962	1963
Annual Deposition mc./km.^{2}	0.86	1.16	1.59	1,83
Average Specific Activity pc./l.	0.70	.89	1.19	1.67

Fig. 3, page 10, shows New Zealand's total accumulation of strontium-90 from rain compared with that of New York City and Milford Haven in the United Kingdom. The dotted portion of the curve for New Zealand is based on soil measurements undertaken by the United States Department of Agriculture on samples from three different collecting sites in the country. The part of the curve from July 1959 to July 1962 is derived from the average deposition at six collecting stations. From July 1962 the average result from our network of nine collecting stations has been used. The values for the cumulative deposits have been corrected for radioactive decay.

Regular measurement of strontium-90 deposition in New Zealand was begun at this Laboratory in 1959. An estimate of the rate of deposition prior to this is being made by the analysis of rabbit bones collected from 1951-1958 by the Animal Ecology Division of the Department of Scientific and Industrial Research. Twenty three samples have been received, seventeen of which have been analysed. The complete results will be published later this year.

The total quarterly strontium-90 fallout in each hemisphere is shown graphically for the years 1959 to 1962 inclusive in Fig. 4, page 11. The increase in strontium-90 deposition resulting from the restart of nuclear tests in the atmosphere in September 1961 is most apparent, particularly in the Northern Hemisphere.

Fig. 5, page 12 shows the total strontium-90 deposition for 1962 against latitude. The much greater level of fallout in the Northern Hemisphere is also most apparent from this figure. Figs. 4 and 5 have been adapted from the quarterly summary report dated October 1963 of the United States Atomic Energy Commission's Health and Safety Laboratory. (HASL - 140).

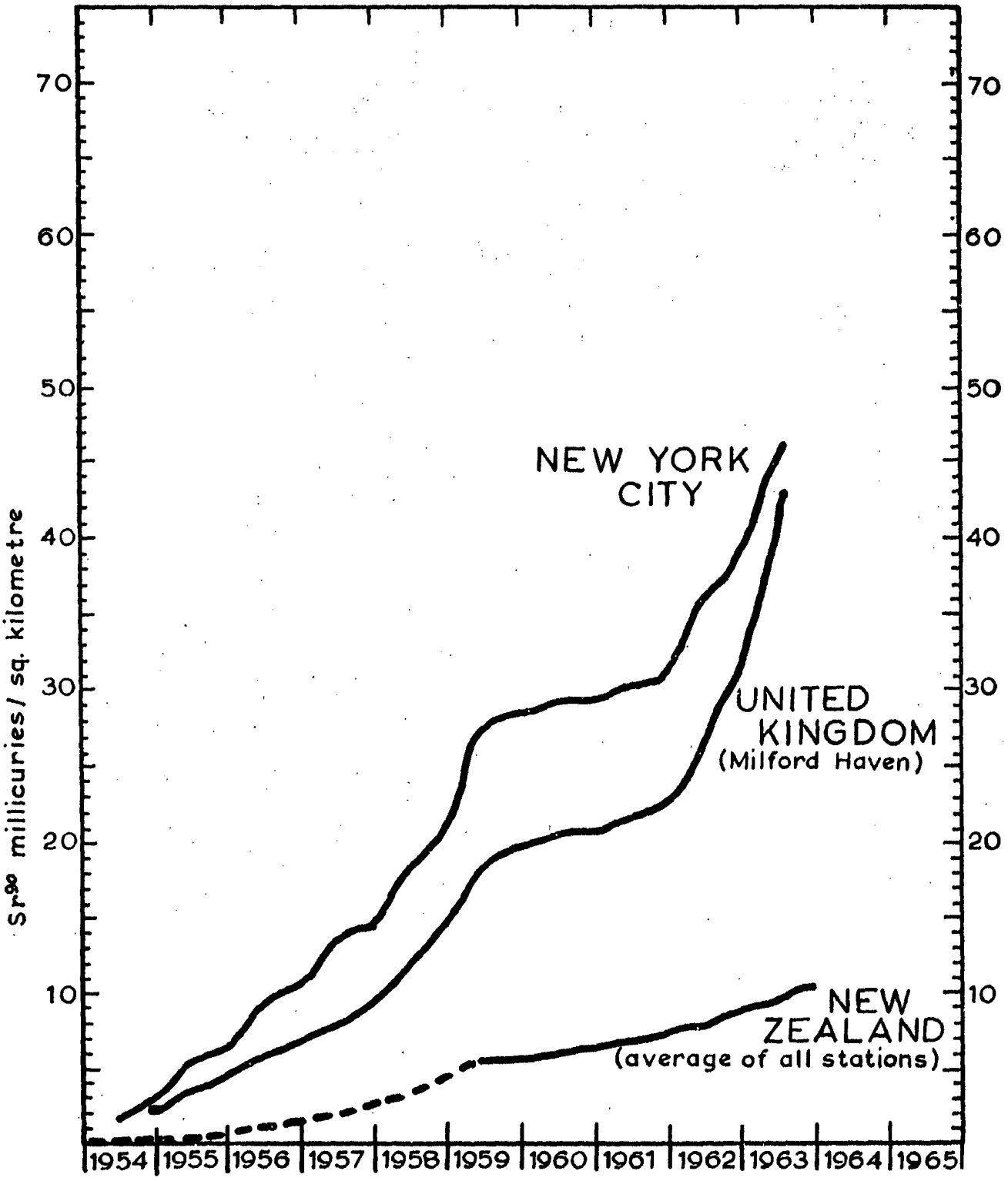


FIG. 3. TOTAL ACCUMULATION OF Sr^{90} FROM RAIN.

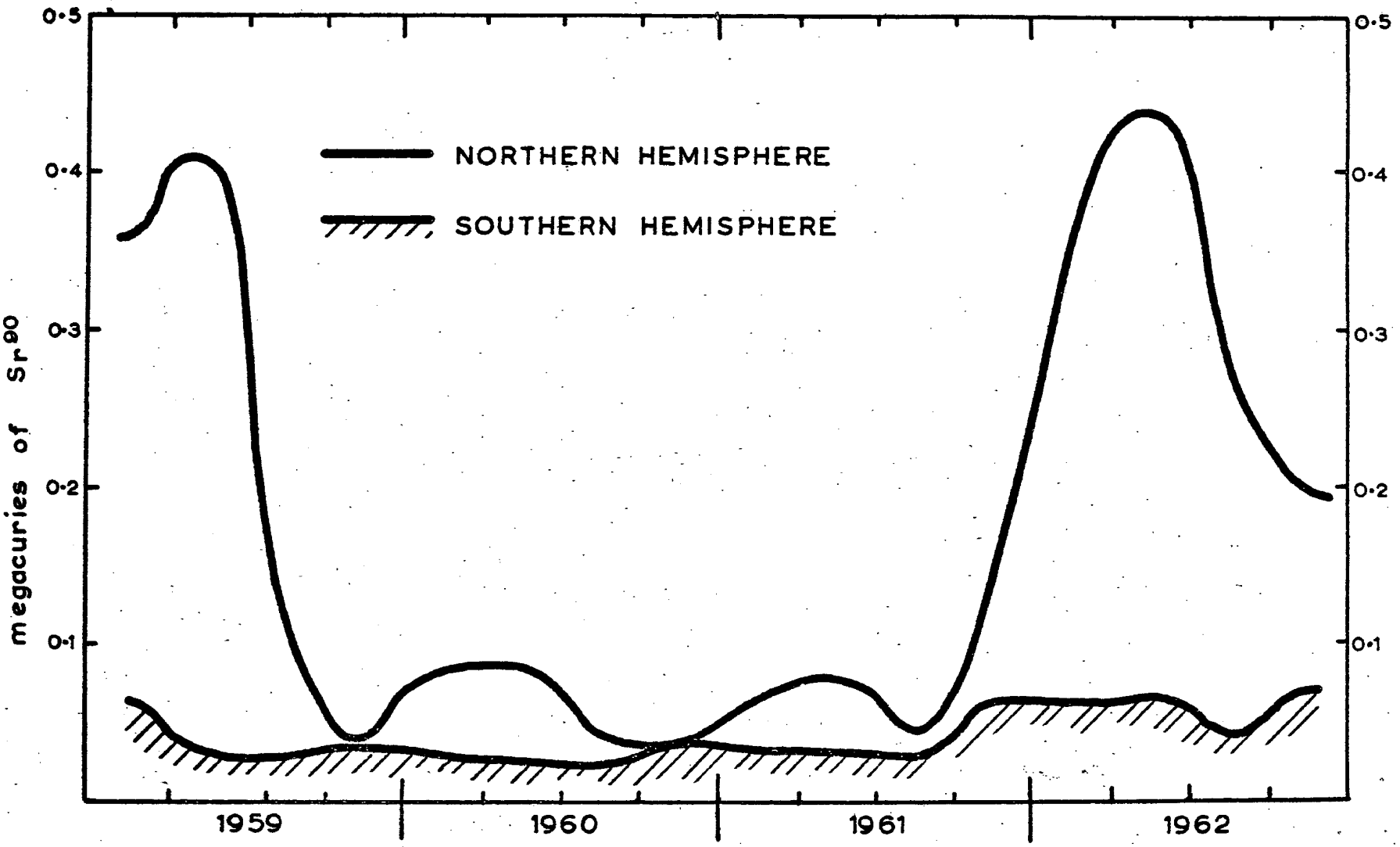


Fig. 4. AVERAGE QUARTERLY DEPOSITION OF Sr^{90} FROM 1959 to 1962

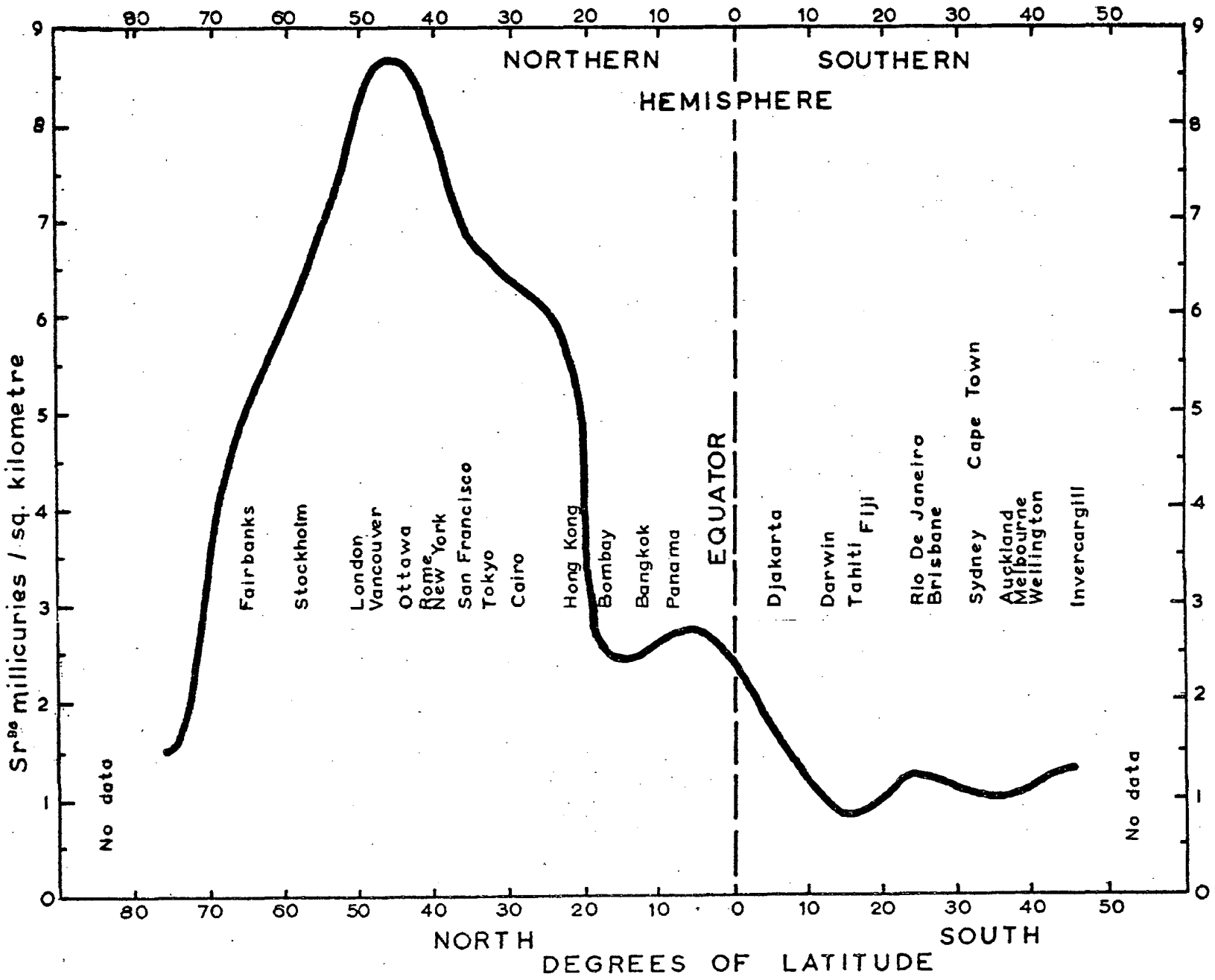


Fig. 5. STRONTIUM ^{90} DEPOSITION DURING 1962

Names of well known places have been inserted at the appropiate latitudes as a help to orientation. The deposition at the places listed is not necessarily identical with the deposition over the entire latitude band.

2. STRONTIUM-90 IN MILK

Table 6 below gives the recent results of the measurements of strontium-90 in milk from the eight New Zealand collecting stations. The last column in the Table gives the average strontium-90 activity for each station for the year 1963. Past and present results are given in graphical form in Fig. 6, a, b, pages 16 - 17.

TABLE 6: STRONTIUM-90 IN MILK, 1963

Strontium Units ($pc.Sr^{90}/g.$ Milk Calcium)

STATION	Sept-Oct	Nov-Dec	1963 Average
Northland	6.3	5.4	7.5
Auckland City	5.3	4.8	5.3
Waikato	5.1	5.0	5.6
Taranaki	11.3	9.2	9.9
Palmerston North	4.8	4.6	4.9
Greymouth	14.9	16.5	17.2
Christchurch	2.9	1.8	2.7
Dunedin	4.3	3.1	3.7
AVERAGE OF ALL STATIONS	7.0	6.3	7.1

Table 7 below shows the average level of strontium-90 in milk from the station with the highest level Greymouth, the station with the lowest level Christchurch, and the average level for all stations for the years 1961, 1962 and 1963.

TABLE 7: STRONTIUM-90 IN MILK - YEARLY AVERAGE VALUES

Strontium Units ($pc.Sr^{90}/g.$ Milk Calcium)

Year	Highest	Lowest	Average of all Stations
1961	12.7	1.6	4.9
1962	13.5	2.1	6.1
1963	17.2	2.7	7.1

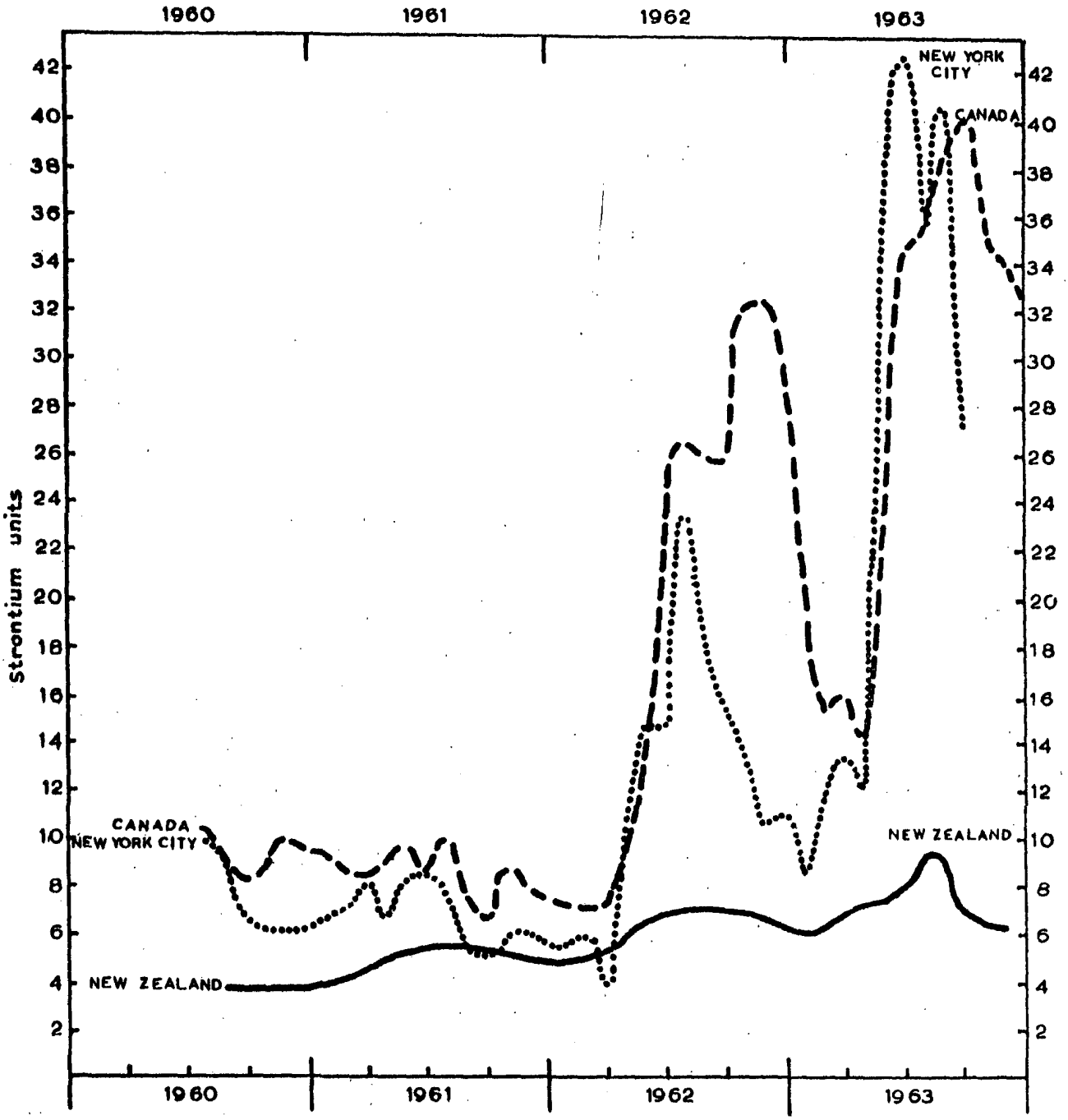


Fig.7. STRONTIUM^{90} LEVELS IN MILK DURING PAST THREE YEARS

Fig. 7 above, gives a graphical comparison of the levels of Sr^{90} in Canadian, New York City and New Zealand milk during the past three years. The values shown for Canada and New Zealand are the averages of the results for all collecting stations. The New York City values are the monthly averages of results for samples collected daily from the local milk supply.

3. CAESIUM-137 IN MILK

Since July the monthly composite samples from each milk station have been measured in bulk without radiochemical separation for caesium-137 and potassium-40 content on a single channel gamma-ray spectrometer. The results are presented in picocuries of Cs-137 per gram of natural potassium present. Counting times have been arranged so that the total statistical counting errors amount to the following relative standard errors in the results.

Value (pc.Cs^{137}/g.K)	5	10	20	50	100
Percentage error	25	15	10	5	3

Table 8. gives the values obtained.

TABLE 8: CAESIUM-137 IN MILK, 1963
UNITS pc.Cs^{137}/g. Potassium

STATION	July	Aug.	Sept.	Oct.	Nov.	Dec.	Average
NORTHLAND	37	44	40	32	26	23	34
AUCKLAND	41	54	36	27	32	40	38
WAIKATO	52	63	53	48	56	56	55
TARANAKI	-	117	140	125	140	118	128
PALMERSTON NTH	-	15	15	16	21	12	16
GREYMOUTH	-	-	25	40	46	42	38
CHRISTCHURCH	8	7	5	4	5	3	5
DUNEDIN	9	10	8	8	6	12	9
Average	-	-	40	38	42	38	40

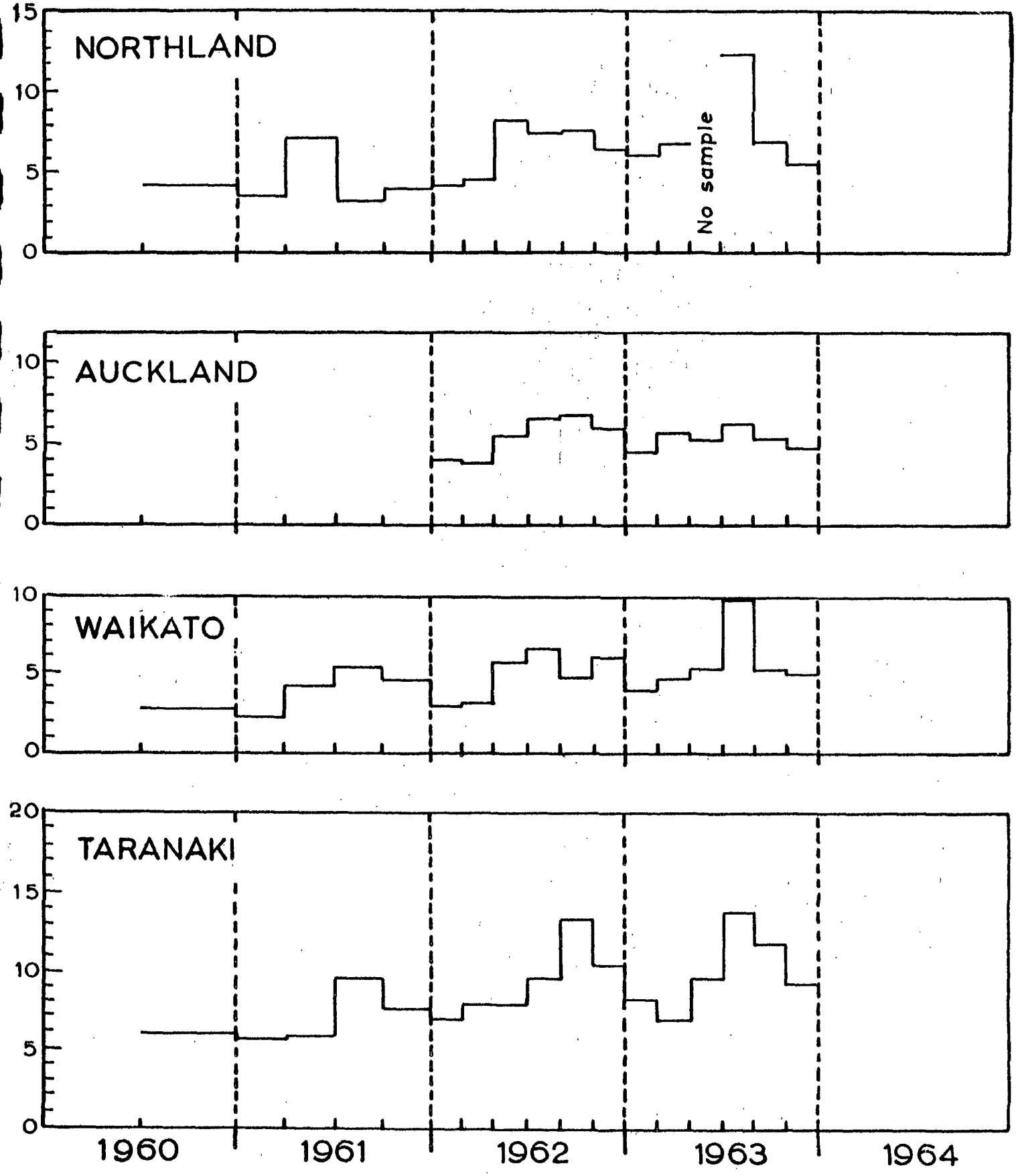
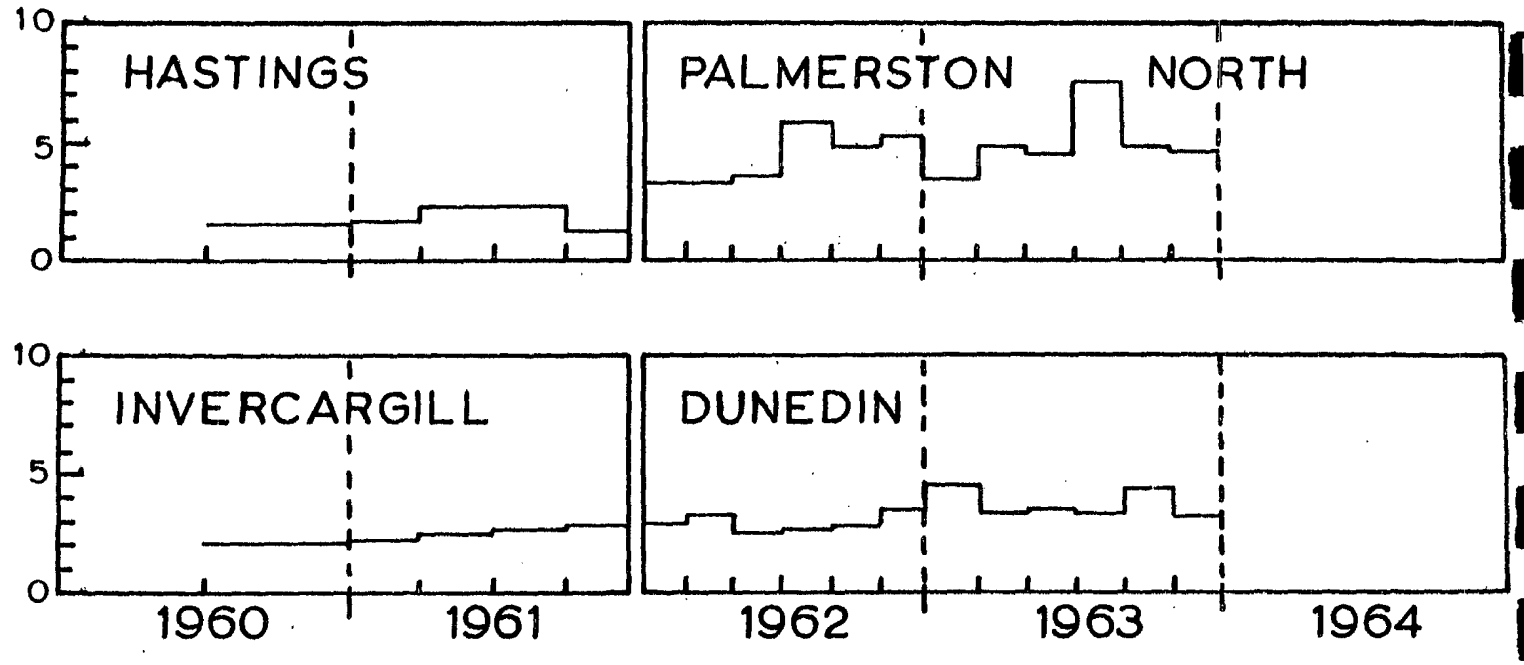


FIG. 6a Sr^{90} IN MILK (Strontium Units = pc.Sr^{90}/g. calcium)



STATIONS WITH HIGHEST AND LOWEST VALUES AND AVERAGE OF ALL NEW ZEALAND STATIONS

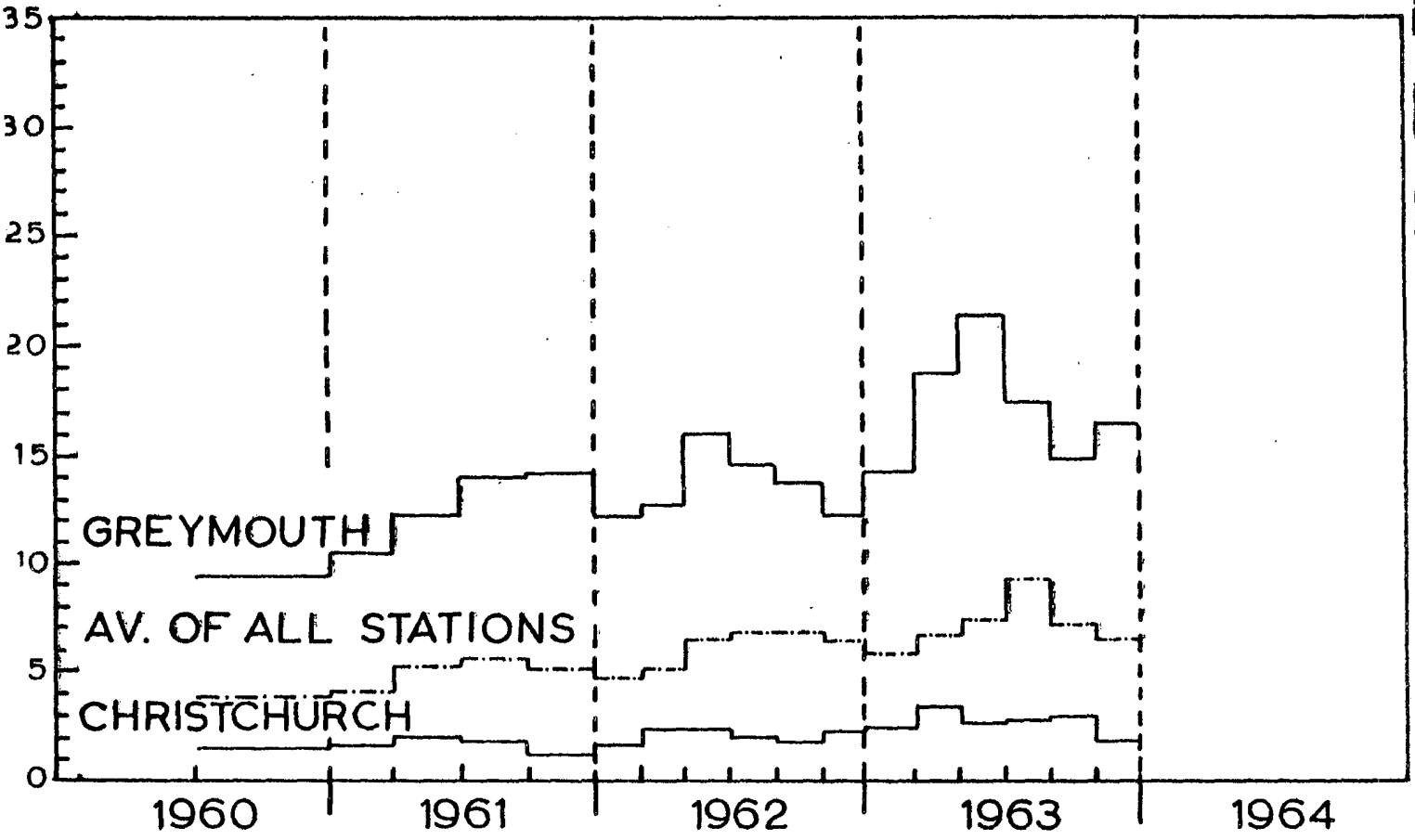


FIG. 6b Sr^{90} IN MILK (Strontium Units = pc. Sr^{90}/g. calcium)

4. STRONTIUM-90 IN HUMAN BONE

Results of strontium-90 measurements in human bone samples from New Zealand were given for the first time in our quarterly report DXRL-F7, page 25 and subsequently in DXRL-F8, page 8. Further results are given in Table 9 below.

The areas from which bone samples have been obtained are classified according to mean annual rainfall as follows:

Low rainfall up to 80 cm. per year

Medium rainfall 80 to 180 cm. per year

High rainfall over 180 cm. per year

TABLE 9: STRONTIUM-90 IN HUMAN BONE

AREA	YEAR OF DEATH	AGE AT DEATH YEARS	AGE AT DEATH MONTHS	BONE TYPE	Sr^{90} pc./g.Ca.
Low Rainfall	1963	4		Femur Spine	2.3 2.5
High Rainfall	1963	0	9	Femur	3.2
" "		1	[illegible]	Femur	2.1
" "		5	0	Femur	1.3
" "		5	6	Femur	1.4
" "		7		Femur	0.9
" "		8		Femur	1.6
" "		19		Femur	1.4

FIG. 2a STRONTIUM 90 IN RAIN Millicuries Sr^{90} / sq. kilometre per month.
Shaded portions indicate centimetres of rain as shown by scale on right.

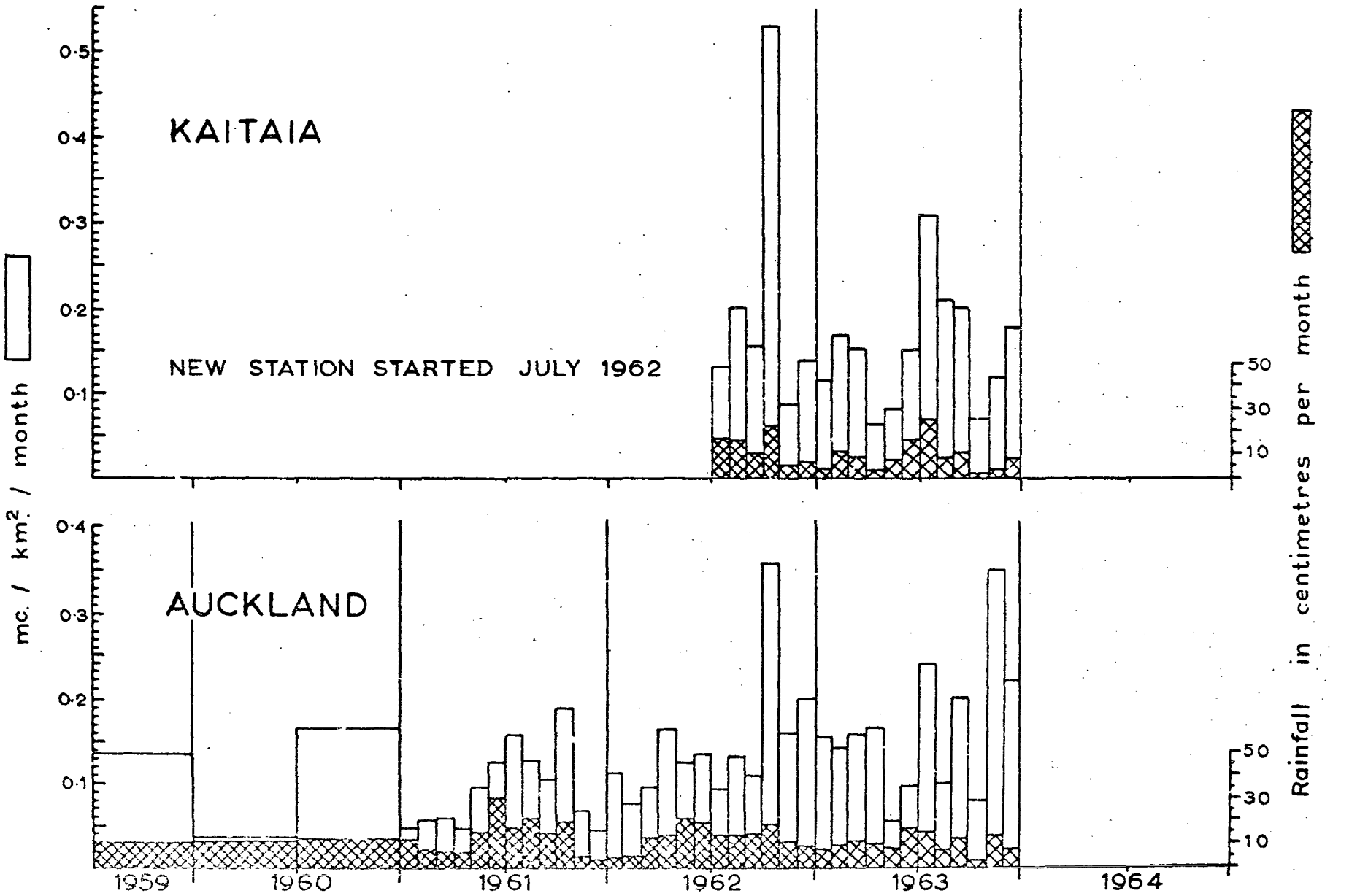


FIG. 2b **STRONTIUM 90 IN RAIN** Millicuries Sr^{90}/sq. kilometre per month.
Shaded portions indicate centimetres of rain as shown by scale on right.

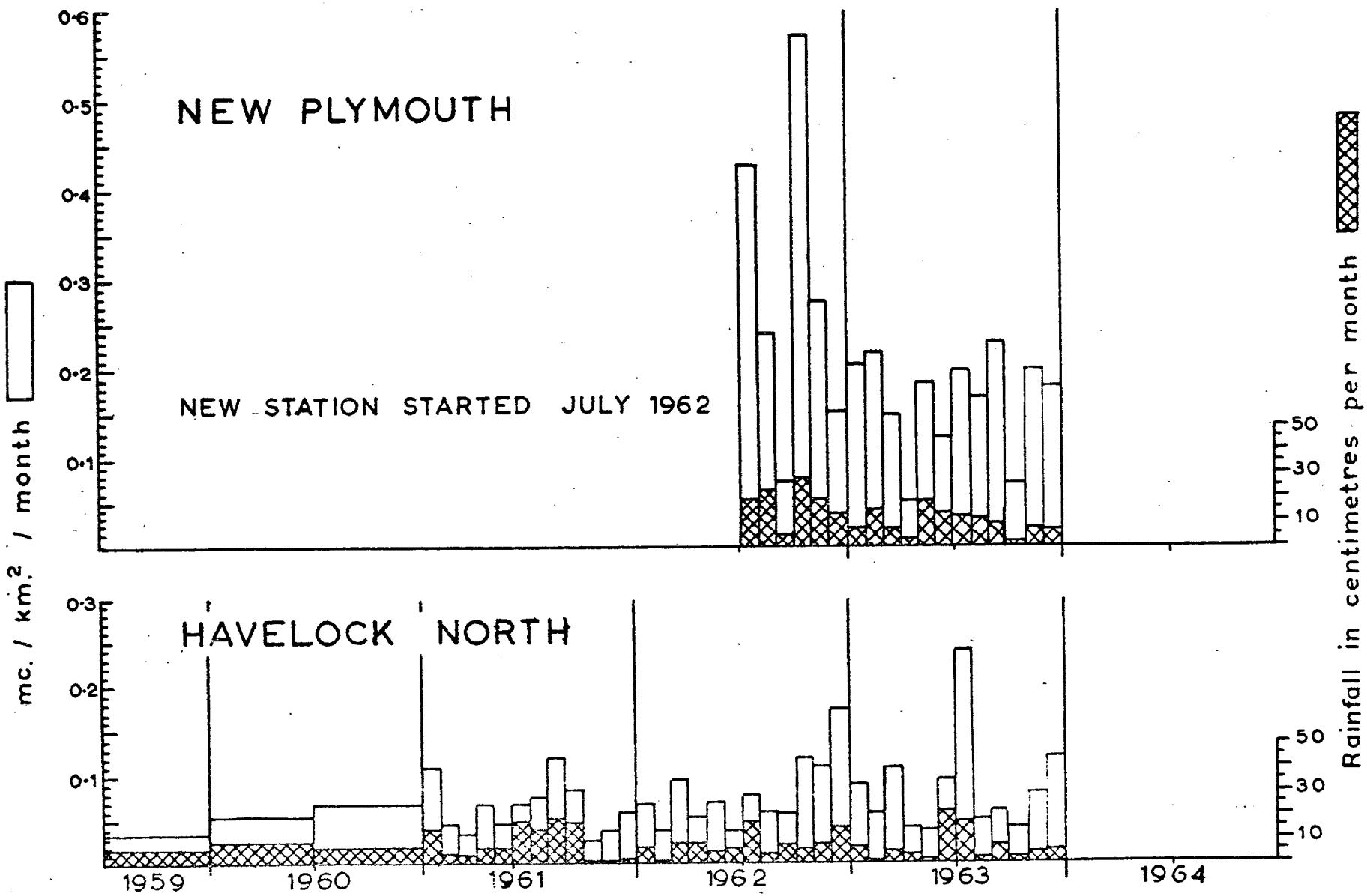


FIG. 2c STRONTIUM 90 IN RAIN Millicuries Sr^{90}/sq. kilometre per month.

Shaded portions indicate centimetres of rain as shown by scale on right.

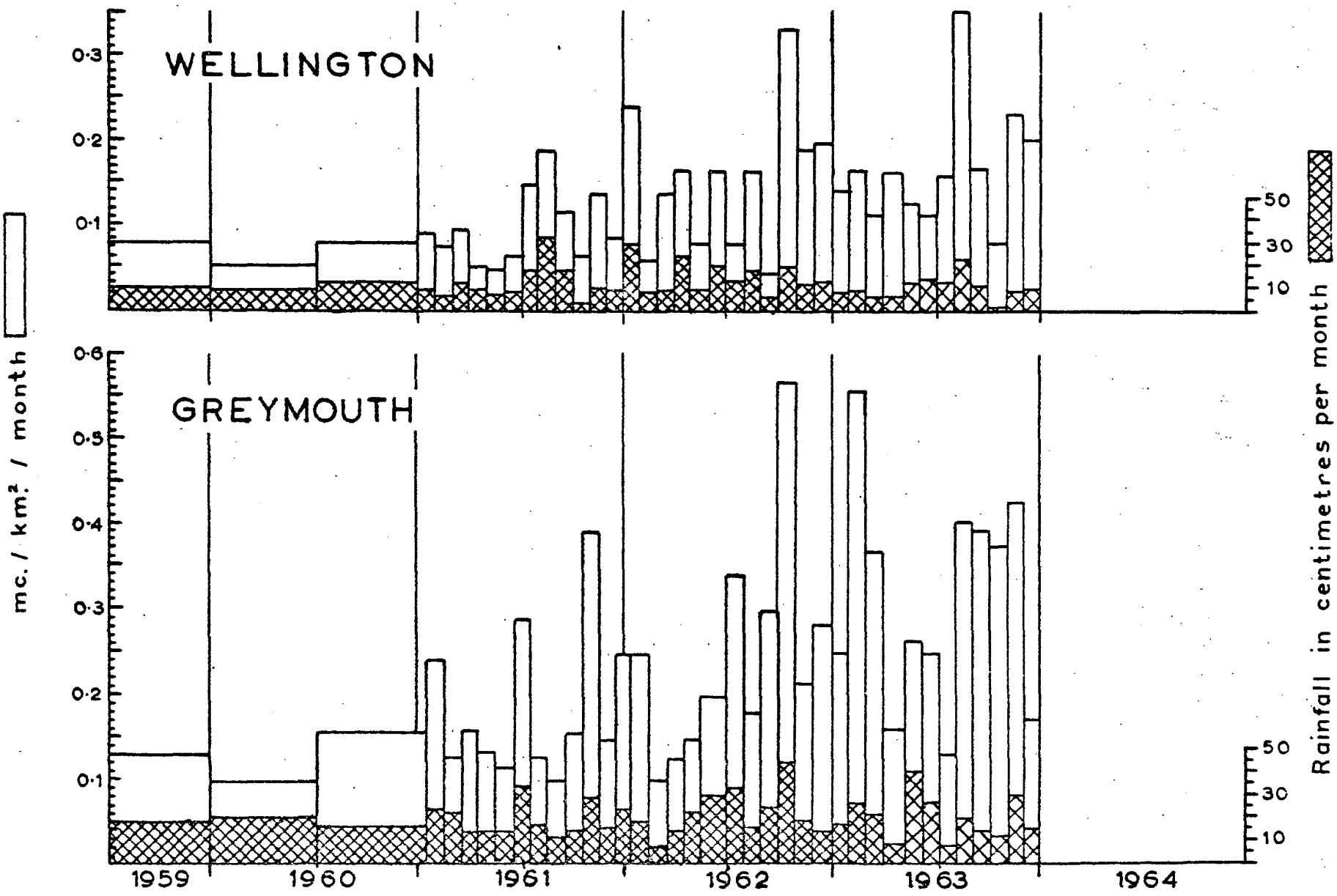


FIG.2d STRONTIUM 90 IN RAIN Millicuries Sr^{90} / sq. kilometre per month.
Shaded portions indicate centimetres of rain as shown by scale on right.

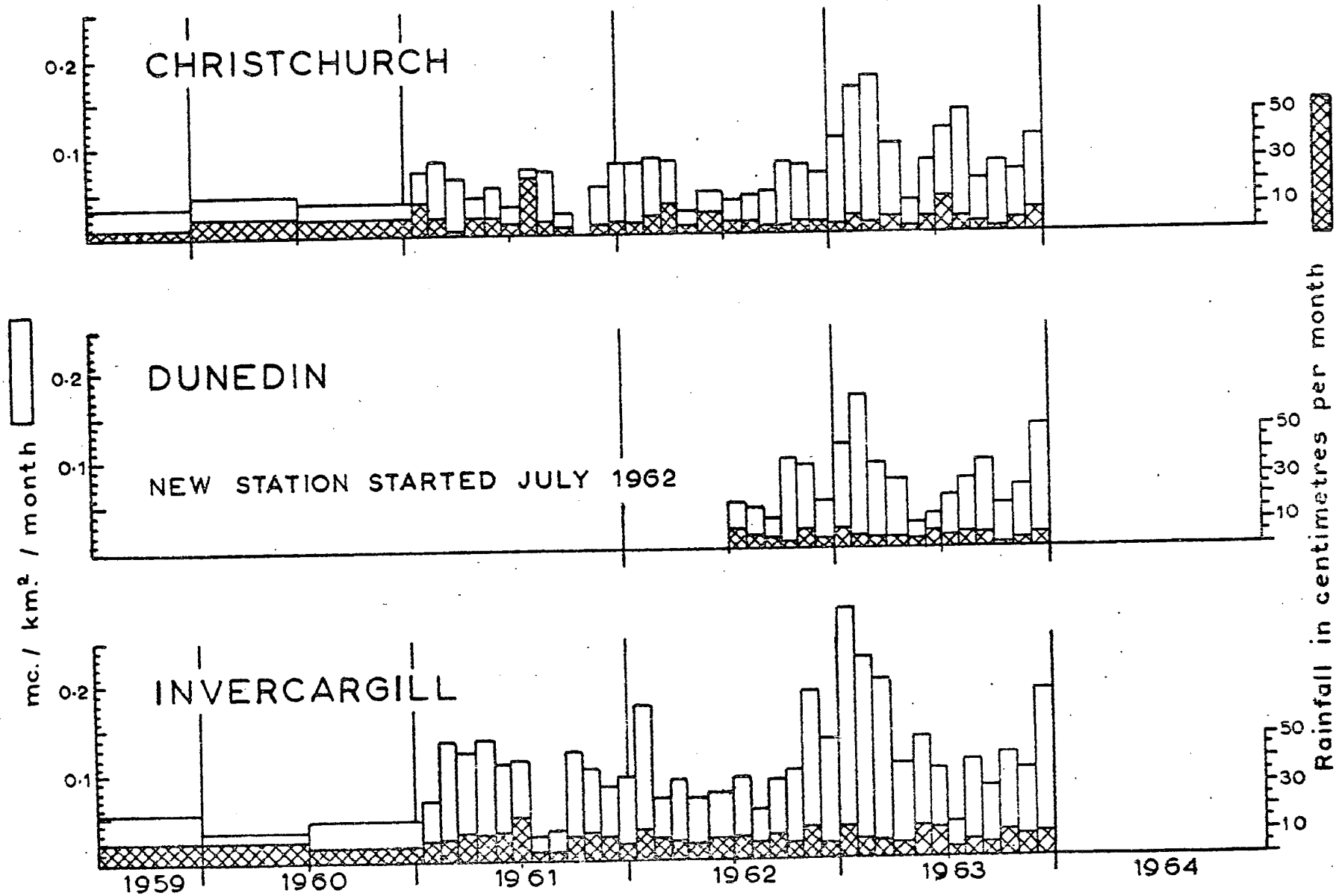
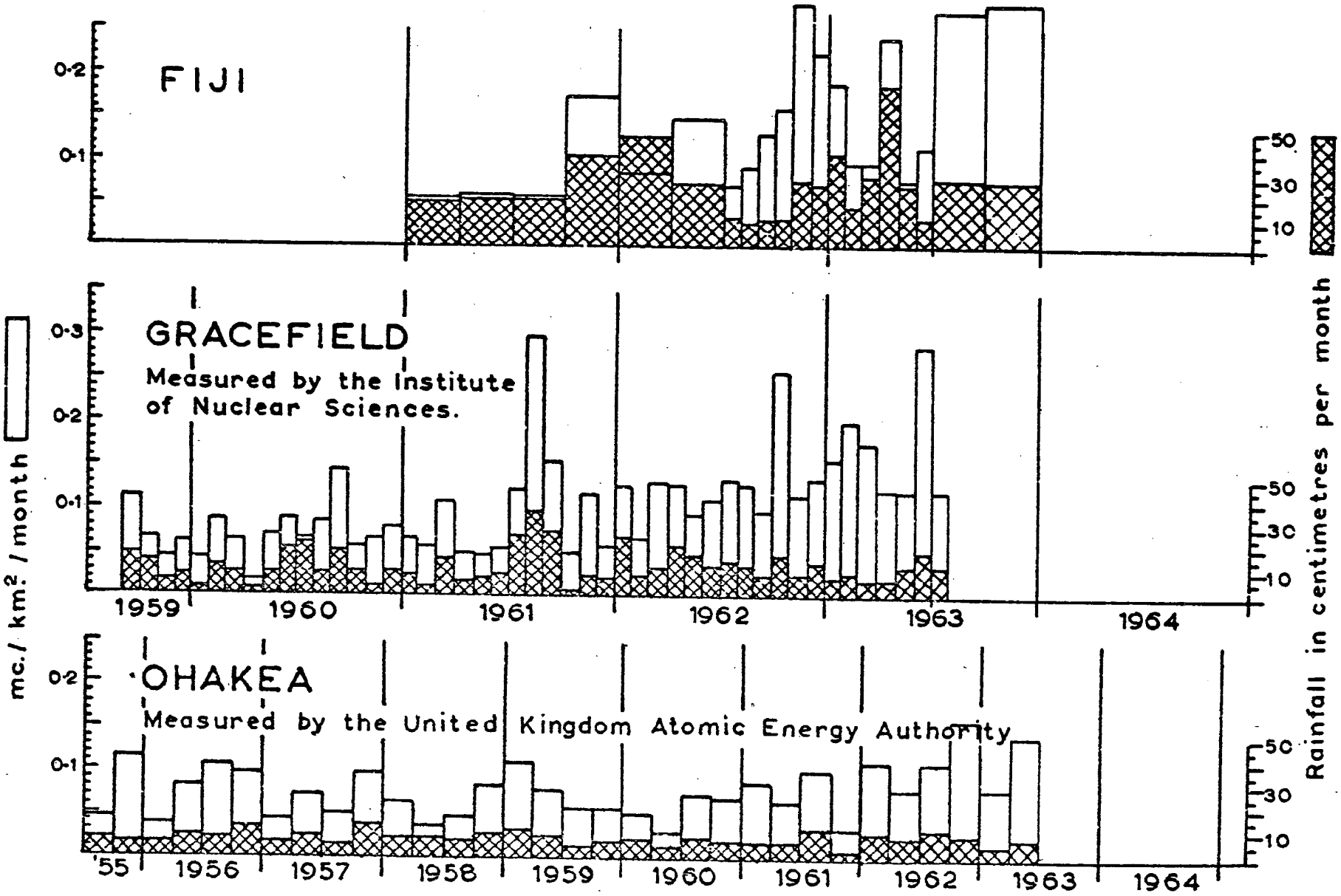


FIG.2e STRONTIUM 90 IN RAIN Millicuries Sr^{90}/sq. kilometre per month.
Shaded portions indicate centimetres of rain as shown by scale on right.



Part III - Interpretive Reports and Notes

"Radioactivity Concentrations in Air Along the Slopes of Mauna Loa Volcano, Hawaii", by G. Hamada and P. Kruger, Hazleton-Nucelar Science Corp.

"Cs-137 in Various Chicago Foods", by S.S. Brar, P.F. Gustafson, and S.E. Muniak, Division of Biological and Medical Research, Argonne National Laboratory.

"Cs-137 in Tri-City Diets - 1962 Results" by J. Rivera and J.J. Kelly, Health and Safety Laboratory, USAEC.

"Strontium-90 in Human Vertebrae", by J. Rivera, Health and Safety Laboratory, USAEC.

"Sr-90 Deposition on the Earth's Surface from 1958 Through 1963", by William R. Collins Jr., Health and Safety Laboratory, USAEC.

RADIOACTIVITY CONCENTRATIONS IN AIR ALONG THE SLOPES OF MAUNA LOA VOLCANO, HAWAII

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During our orographic rainfall collection program in April and July, 1963, high volume Staplex air filters were placed at three locations along the slopes of Mauna Loa Volcano on the Island of Hawaii. These data were taken to measure the air concentration of radioactive debris below, near, and above the normal altitude of the Trade Wind inversion. The air filters were run with microsorban filters for periods of three to four hours each, when practical, at flow rates of about 60 standard cubic feet per minute. The filters were sealed, and taken to our laboratories in Palo Alto for gross radioactivity measurement. The April set of filters were measured with low-background beta counters after dissolving the microsorban filter in CCl_4 and collecting the filtered debris on two-inch filter papers. However, examination of the filtrates showed that 5 to 15% of the debris either dissolved in the CCl_4, or was of sufficiently small particle size to pass through the two-inch filter. The data are corrected for these losses. The July set of data were measured directly on an eight-inch NaI scintillation-counter assembly in thick shielding with multichannel analysis of the gamma-ray spectra. In each case, the counting data were converted to disintegration rates with the overall efficiency factor determined for Cs-137.

Although these data will be included as part of our evaluation of orographic precipitation and inversion effects on fallout deposition in a forthcoming report under contract no. AT(04-3)-457, they are given here for those interested in air concentration data as a function of altitude and for the two periods covered.

RADIOACTIVITY CONCENTRATIONS IN AIR

ALONG THE SLOPES OF MAUNA LOA VOLCANO, HAWAII, APRIL 8 - 12, 1963

Altitude (meters)	Sampling date	Period (HST) from	to	Volume (KSCF)	Gross Activity (cpm)	Concentration (pc/KSCF)*
Sea Level	4/8	1100	1400	10.8	646	63
	4/8	1400	1700	10.8	590	57
	4/9	0600	0900	10.8	601	59
	4/9	0905	1202	10.6	387	38
	4/9	1205	2115	33.0	1470	47
	4/10	0905	1850	35.1	1340	40
	4/11	0925	1507	20.5	1380	71
	4/11	1510	2113	21.8	1620	78
	4/12	0815	1420	21.9	1600	77
1500	4/8	1221	1526	6.9	239	36
	4/8	1534	1652	2.9	30.5	11
	4/9	0835	1200	7.7	620	85
3400	4/8	1100	1400	6.4	316	47
	4/8	1404	1704	6.4	332	54
	4/9	0602	0902	6.4	381	62
	4/9	0903	1405	10.8	678	66
	4/9	1406	1806	8.6	603	74
	4/10	0600	0901	6.5	808	130
	4/10	0905	1308	8.7	439	53
	4/10	1310	1700	8.2	537	69
	4/10	1705	2100	8.4	657	83
	4/11	0600	0900	6.4	637	100
	4/11	0903	1500	12.7	1180	98
	4/11	1508	2145	14.2	2670	200
	4/12	0610	0913	6.5	324	52
	4/12	0918	1119	4.3	277	67

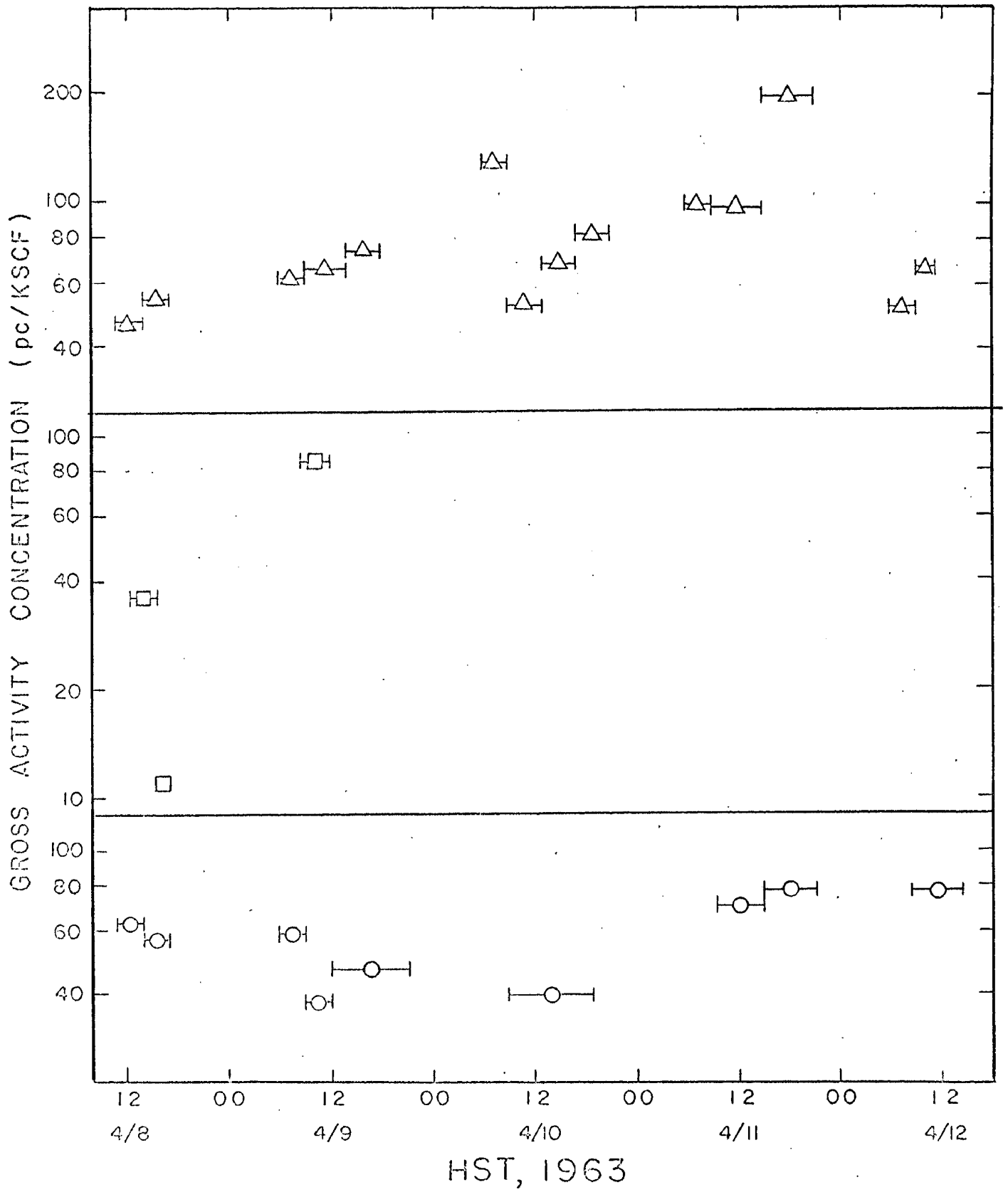
* Concentration in picocuries per 1000 standard cubic feet calculated with the counter efficiency for Cs^{137}.

RADIOACTIVITY CONCENTRATIONS IN AIR

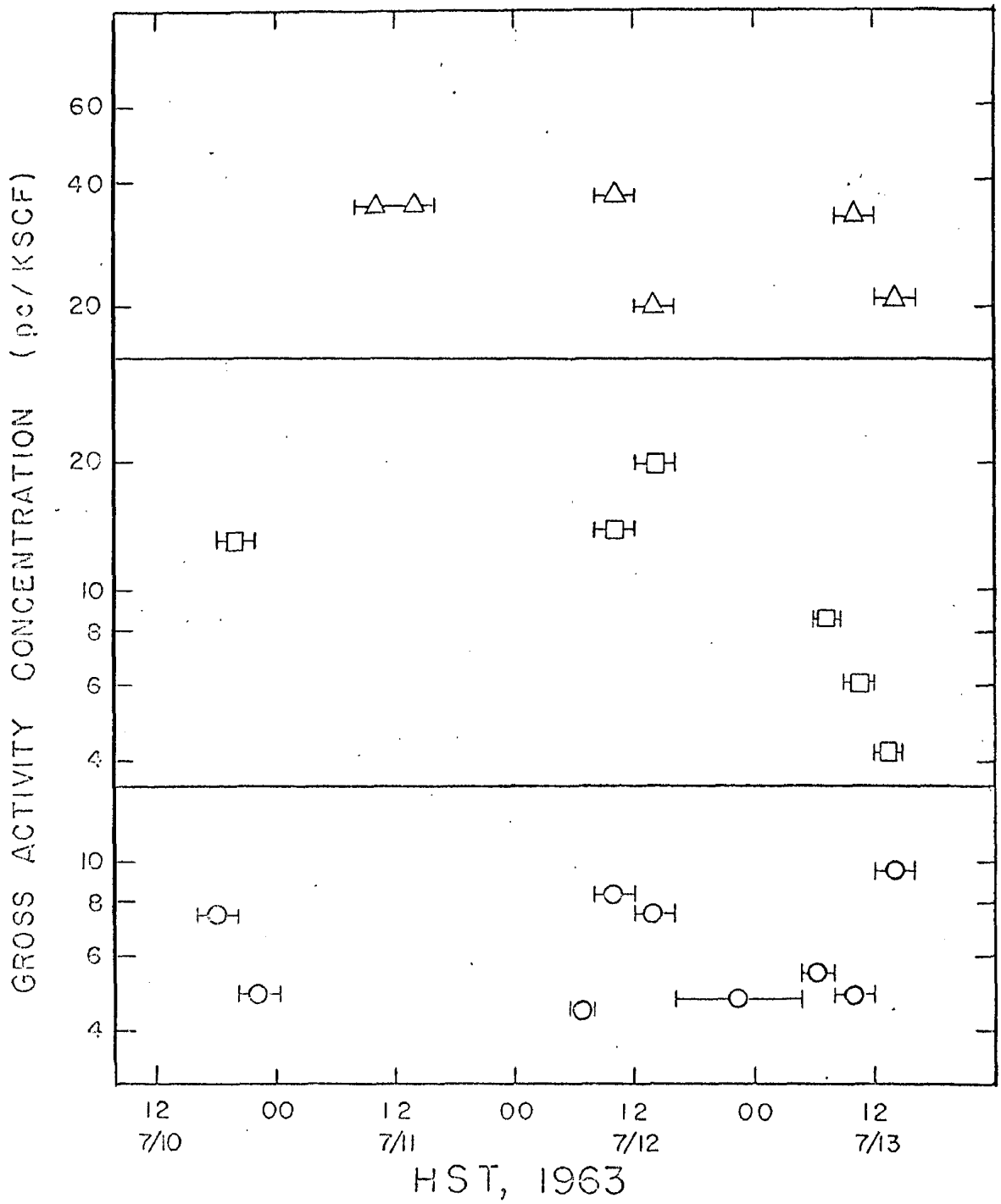
ALONG THE SLOPES OF MAUNA LOA VOLCANO, HAWAII, JULY 10 - 13, 1963

Altitude (meters)	Sampling Period (HST) date	from	to	Volume (KSCF)	Gross Activity (cpm)	Concentration (pc/KSCF)*
Sea Level	7/10	1615	2015	14.4	55	7.5
	7/10	2016	2416	14.4	36	4.9
	7/12	0529	0759	9.8	23	4.5
	7/12	0800	1200	15.6	67	8.4
	7/12	1200	1600	15.6	61	7.6
	7/13	1600	0440	49.4	120	4.8
	7/13	0450	0800	12.4	35	5.5
	7/13	0804	1200	15.3	39	4.9
	7/13	1202	1602	15.6	76	9.6
1500	7/10	1810	2150	8.3	54	13
	7/12	0800	1200	9.4	69	14
	7/12	1200	1600	9.4	95	20
	7/13	0554	0834	6.0	26	8.6
	7/13	0900	1200	6.8	21	6.1
	7/13	1205	1505	6.8	14	4.2
3400	7/11	0800	1200	8.8	156	35
	7/11	1204	1604	9.1	160	35
	7/12	0800	1200	9.3	173	37
	7/12	1202	1602	8.4	85	20
	7/13	0802	1200	8.5	142	33
	7/13	1204	1604	8.6	91	21

* Concentration in picocuries per 1000 standard cubic feet calculated with the counter efficiency for Cs^{137}.



Radioactivity Concentrations in Air Along the Slopes of Mauna Loa Volcano, Hawaii April 8 - 12, 1963.



Radioactivity Concentrations in Air Along the Slopes of Mauna Lao Volcano, Hawaii July 10-13, 1963.

Cs-137 in Various Chicago Foods

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It is well known that Sr-90 and Cs-137 are the two isotopes from fall-out which are of concern to the population as a whole because of their long half lives, relatively high fission yeilds, and chemical similarities to stable elements of biological importance. A program for the measurement in air and soil of fission products emitting gamma rays has been in progress at Argonne National Laboratory (ANL) for the last several years. In 1961 Argonne began collecting foodstuffs in Chicago for Health and Safety Laboratory (HASL) as part of a tri-city program already under way at that time. Since April, 1961, Cs-137 measurements have been made on replicates (insofar as possible) of the foods purchased for HASL.

Food was purchased approximately every 3 months for both HASL and ANL in 2 chain stores located in Westmont ($\sim$ 20 miles southwest of Chicago, Illinois). Not every item on the food list was procured each time, usually because of seasonal unavailability. Even though an effort was made to get samples which were from the same lot for both purchases, it was not always possible to do so because of the size of purchases involved.

The concentration of Cs-137 in various foodstuffs was determined by a nondestructive method involving gamma-ray spectrometry. Foods were

placed in a stainless steel container which is built in the form of an inverted cup (hat). This hat with its contents was lowered onto a NaI(Tl) crystal for analysis. The measurements were made inside low background shields located on the service floor of the Biology Building at Argonne. Pulse height analyses were carried out using either 256 channel RCL (Argonne type) or a 400 channel RIDL analyzer. In most cases fresh foods were homogenized in a Waring blender before putting them into a hat. The size of the sample required to fill the hat varied from half a kilogram (baby cereals) to two kilograms (meat muscle).

The data were analyzed by the method of determinants applied to a mixture of gamma-emitting isotopes. The amount of Cs-137 in picocuries per kilogram of sample found in various foods are given in Table I. The daily ingestion of this isotope by an individual can be derived if the amount and composition of the food intake are known.

In order to get some notion of the variability of Cs-137 concentration in foodstuffs, a representative meal consisting of hamburger, fresh whole milk, spaghetti, bread, and salad greens was purchased from 5 different grocery stores in April, 1964. The foods from each store were homogenized together and measured. The results varied from 90 to 142 picocuries per kilogram with an average value of 116 ± 10 picocuries.

In the case of fresh milk 2 samples (one of homogenized and the other of skimmed milk) were obtained at each sampling period except in April and July, 1961, when only homogenized milk was purchased. The results indicated in the table are average values of the two samples since no significant differences between Cs-137 content of homogenized and skimmed milk were observed. By and large these results agree quite well within experimental error with those obtained by the Public Health Service for

the Chicago area. The biggest discrepancy is in the 1962 results, and this may be explained by extreme variability of fission product deposition during that time.

Examination of the table indicates that at present grain products, meat, and milk (in that order) contain the highest concentration of Cs-137 in dietary constituents. Fish fillet and spinach show the widest variation in its values.

Uncertainties in these measurements are not shown in Table I; however, the counting errors have been evaluated. The majority of the samples were measured for a period of 100 minutes, and the estimated error varied from ± 165 per cent for 5 picocuries to ± 2 per cent for 700 picocuries of Cs-137. The extremes and some intermediate percentage errors are given below:

picocuries of Cs-137	per cent error
5	165
10	85
20	43
30	30
50	12
100	10
200	5
700	2

In the course of analysis for Cs-137 in foodstuffs, other gamma-emitting fission products were also encountered commencing with October, 1961, sampling. Now they have become trace quantities except in spinach. Mn-54, an activation product, has been present in measurable quantity since the middle of 1963, and its concentration has increased since that time,

This work was done under the auspices of the United States Atomic Energy Commission. We gratefully acknowledge the assistance of U. C. Mishra and M. A. Kerrigan for the early part of this work.

Cs-137 in Various Chicago Foods, pc/Kg

Month of Collection	4-61	7-61	10-61	2-62	4-62	7-62	10-62	1-63	4-63	7-63	11-63	1-64	4-64
White Bread (dry)	38	36	76	43	43	32	168		178	132	241	393	238
Whole Grain Bread (dry)	118		115	51	138	226				321	443	749	765
Eggs	29	18	26	20	12		13		T	35	44	45	30
Fresh Vegetables:													
Cabbage	39	33	27	27	36				9	33	30	12	15
Lettuce	44	18	37	16	49		13		24	27	27	58	18
Onions		15	25	12	40	113			T	T	22	10	T
Peas (frozen)			T	40	15	14	28	11	16	21	48	54	53
Spinach	18		178	8	346	76			33	216	118		334
String Beans		9	43	8	26		65		29	14	58	74	53
Tomatoes	29	T	24	35	11	15	T		30	12	19	50	86
Root Vegetables:													
Carrots	49	15	34	32	41	20			14	5	21	23	15
Turnips, etc.	40	26	30	29	25	158	9		6		18	44	18
Milk (fresh)	5	23	60	38	25	111	55	37	93	140	112	139	150

Table (continued)

Month of Collection	4-61	7-61	10-61	2-62	4-62	7-62	10-62	1-63	4-63	7-63	11-63	1-64	4-64
Poultry Muscle	69	29	20	26	16	50	14	42	25	22	91	99	121
Fresh Fish (frozen):													
Fillet	44	22	31	34	282	T	184		165	5	30	112	19
Halibut	45	48	30	45	27		55		65	20	46	54	55
Flour (white)	21	51	36	60	25	48	35	54	45	33	122	139	123
Macaroni	53	64	70	67	41	59	93	187	180	165	241	306	294
Rice	36	25	29	20	11	28	26	26	30	30	44	56	82
Meat Muscle:													
Beef	55	44	27	34	61	70	82	98	149	182	355	254	146
Pork	58	38	46	20	38	81				136	176	229	206
Shell Fish (frozen):													
Oysters	61	29	42	47	53	17			44			71	89
Shrimps	87	9	16	14	26				4	6	9	28	6
Dried Beans	40	24	90	28	11	66	67	22	151	31	39	105	329

Table (continued)

Month of Collection	4-61	7-61	10-61	2-62	4-62	7-62	10-62	1-63	4-63	7-63	11-63	1-64	4-64
Fresh Fruits:													
Apples		134	20	18	19	120	104		25	19	138	90	50
Bananas		13		37	81	125	74		19	74	33	72	19
Berries		70	224	64	129	32	325		24	30			66
Melons	24	9			8	19	25		8	9	11		
Oranges	33	22	27	25	38	32	T		31	24	95	43	25
Potatoes	57	13	40	26	42	46			15	47	32	16	25
Canned Fruits:													
Apple Sauce	88	8	6	27	6	9	9	13	22	22	34	55	47
Peaches	40	8	21	T	T	T	6	5	T	T	12	11	12
Pears	48	5	5	T	T	T	33	19	12	15	T	28	15
Pineapple	46	T	39	14	13	15	29	51	68	41	83	81	102
Canned Juices:													
Grapefruit	53	14	19	11	11	11	10	22	32	49	26	60	61
Orange	98		T	17	13	21	7	42	33	43	45	52	82
Pineapple	74	23	24	16	19	18	19	58	59	61	83	181	201
Tomato	14	T	T	T	T	T	10	9	13	10	32	29	22

Table (continued)

Month of Collection	4-61	7-61	10-61	2-62	4-62	7-62	10-62	1-63	4-63	7-63	11-63	1-64	4-64
Canned Vegetables:													
Peas	T	8	5	T	6	10	17	20	13	16	32	21	45
String Beans	32	T	6	T	6	9	16	7	9	10	22	30	18
Tomatoes	21	T	6	T	18	10	78	6	16	T	47	25	8
Baby Foods:													
Canned Milk					27	168	130	147	162	278	184	258	292
Formula Milk					55	21	116	78	84	283	177	129	227
Cereals											227	235	491
Fruits											13	29	23
Meats											100	181	267
Vegetables											13	15	21

T means trace (< 5 pico curies)

Cesium-137 in Tri-City Diets - 1962 Results

by J. Rivera and J.J. Kelly - (HASL)

In a previous report we presented data on the Cs-137 content of foods purchased in New York City, Chicago and San Francisco during the last quarter of 1963(1). Estimates of the annual intakes of Cs-137 based on these single samplings were also given. We have now completed the analyses of a second set of samples purchased at each of the cities exactly one year earlier. Results of these analyses and the estimated annual intake of Cs-137 based on these samples are presented in table 1.

As was expected from the Sr-90 fallout levels, the concentrations of Cs-137 in foods purchased at the end of 1962 were very much less than at the end of 1963. The estimated daily intakes of Cs-137 from the 1962 and 1963 samplings were 63 and 156 pc/day in New York City, 57 and 116 pc/day in Chicago and 33 and 278 pc/day in San Francisco. With no other information available we would conclude that the best estimate of Cs-137 intake during the entire year of 1963 would therefore be the arithmetic average which was 110 pc/day in New York City, 90 pc/day in Chicago and 160 pc/day in San Francisco. From the data of Brar et al.,(2) we conclude that the Cs-137 intake in Chicago during 1963 was about 160 pc/kg. For individual components Brar's results are usually higher than our results by a factor somewhat less than two. Reasons for this discrepancy are under investigation.

We are continuing experiments to establish the precision and accuracy of our Cs-137 analyses. The reproducibility of six pairs of blind duplicates analyzed with the samples reported here was, as in the last report, better than ± 10%.

Some estimate of the accuracy of interlaboratory calibrations of standard solutions used in determining the efficiency of the counters for Cs-137 activity may be seen from the following intercomparison table:(3)

Intercomparison of Cs-137 Standards by 4π β Counting

	dpm/sample
N.B.S. Standard	
NBS	3.38×10^8*
HASL	2.93×10^8
LASL	3.22×10^8
I.Inc.	3.08×10^8
AECL Standard	
AECL	1.49×10^5
HASL	1.48×10^5
LASL	1.46×10^5
I.Inc.	1.48×10^5

Intercomparison of Cs-137 Standards by 4π β Counting - cont'd.

	dpm/sample
AERE Standard	
AERE	2.39×10^5
HASL	2.35×10^5
Nuclear Chicago Standard	
N.C.	$7.20 \times 10^{5*}$
HASL	6.61×10^5
I.A.E.A. Standard	
IAEA	2.242×10^7
HASL	2.177×10^7

*Calculated from gamma activity measurements.

From this table it is evident that calibration differences among laboratories of about 10% may exist.

As was discussed in the previous report, there is a possibility that our Cs-137 values may be low due to ashing at high temperatures. To test this possibility a milk sample was divided into two parts, half was wet ashed prior to analysis while the other half was dry ashed in the usual way before analysis. The entire wet milk sample was also analyzed by γ-ray spectroscopy for Cs-137 before ashing.

	pc Cs-137
γ-spectroscopy - wet milk	200 ± 5
Chemical analysis - wet ashed	172 ± 2
Chemical analysis - dry ashed	176 ± 3

From this experiment we conclude that no appreciable Cs-137 was lost due to the ashing temperature, but that γ-spectroscopy may yield a higher Cs-137 value than chemical analysis. Many more experiments of this type will of course have to be done to establish this with certainty.

References

(1) USAEC Report No. HASL-144, p. 288, April 1, 1964.
(2) Brar, S.S., Gustafson, P. and Muniak S., USAEC Report No. HASL-146, "Cs-137 in Various Chicago Foods", p. 225, July 1, 1964.
(3) Memorandum, J.H. Harley to S.A. Lough, April 8, 1964.

Cesium-137 in Tri-City Diets

Food Category	kg/yr	NEW YORK CITY 11/62 pc/kg	NEW YORK CITY 11/62 pc/yr	CHICAGO 10/62 pc/kg	CHICAGO 10/62 pc/yr	SAN FRANCISCO 12/62 pc/kg	SAN FRANCISCO 12/62 pc/yr
White Bread	37	11.9 ± 2.0	440	53.3 ± 2.7	1972	39.9 ± 2.1	1476
Whole Wheat Bread	11	63.4 ± 3.3	697	45.0 ± 2.5	495	59.1 ± 2.6	650
Eggs	16	6.2 ± 0.4	99	13.8 ± 0.3	221	0.5 ± 0.8	8
Fresh Vegetables	43	10.3 ± 0.9	443	5.5 ± 0.2	237	3.2 ± 0.6	138
Root Vegetables	17	14.9 ± 0.8	253	4.8 ± 0.8	82	3.9 ± 0.5	66
Milk	221	59.7 ± 1.5	13194	37.4 ± 1.3	8265	17.1 ± 0.9	3779
Poultry	17	15.2 ± 0.4	258	5.9 ± 0.3	100	18.1 ± 0.4	308
Fresh Fish	8	9.6 ± 0.4	77	63.2 ± 1.6	506	20.8 ± 0.5	166
Flour	43	40.5 ± 1.0	1742	45.7 ± 1.1	1965	23.6 ± 0.8	1015
Macaroni	3	56.9 ± 1.3	171	39.3 ± 1.5	118	53.2 ± 1.9	160
Rice	3	36.0 ± 1.5	108	18.9 ± 1.1	57	16.0 ± 0.7	48
Meat	73	35.1 ± 0.6	2562	57.5 ± 0.9	4198	42.1 ± 0.8	3073
Shellfish	1	10.4 ± 0.6	10	8.0 ± 0.3	8	3.8 ± 0.2	4
Dried Beans	3	11.9 ± 2.3	36	24.8 ± 3.0	74	59.8 ± 4.7	179
Fresh Fruit	68	20.9 ± 0.9	1421	11.4 ± 1.1	748	4.1 ± 0.5	279
Potatoes	45	16.2 ± 1.0	729	8.9 ± 0.6	401	7.8 ± 0.9	351
Canned Fruit	26	7.2 ± 0.3	187	24.5 ± 1.7	637	8.4 ± 0.4	218
Fruit Juices	19	11.7 ± 0.5	222	14.0 ± 0.9	266	8.7 ± 0.5	165
Canned Vegetables	20	10.2 ± 1.0	204	31.4 ± 1.5	628	4.1 ± 0.8	82
pc/year			22853		20978		12165
pc/day			63		57		33

Strontium-90 in Human Vertebrae

by J. Rivera - (HASL)

Since March of 1961, samples of human vertebrae have been obtained by HASL for strontium-90 analyses. The specimens are from accident victims who lived in New York City, Chicago, San Francisco, or San Juan, Puerto Rico prior to death. Results of the analyses of specimens obtained during 1963 are presented in table 1. For comparative purposes results obtained from the analyses of 1962 samples are presented in table 2. The results of the analyses of samples from San Juan will be reported in the near future. In each case it has been assumed that the calcium content of vertebrae was 0.37 g Ca/g ash, since this was the average result found from the analyses of over 115 samples (standard deviation ± 0.02 g/g ash).

On the average, the Sr-90 content of vertebrae at each age was highest in New York City and lowest in San Francisco. This result is the same as that found for samples collected during 1961 and 1962, and is to be expected from the estimated dietary intakes of Sr-90 at the three cities since 1960.

As in the previous years, the variation of Sr-90/Ca ratios with age was similar to that found by Kulp et al., and other investigators.(1) Highest strontium-90 concentrations were found in the bones of children 0-1 year of age at death and lowest concentrations were found in the bones of individuals greater than 20 years of age. There was also an indication of increased bone Sr-90 concentrations during adolescence.

As compared with 1962, the average Sr-90 concentrations of human vertebrae were higher for both children and adults. This result was also expected since average dietary Sr-90 levels during 1963 were higher than 1962.

Since the Sr-90 content of the diet was increasing rapidly during the year, data on the Sr-90 content of bone were tabulated as average values for each age during the first and second halves of 1963. The observed bone Sr-90 concentrations were on the average higher for each age during the second half of the year than the first. The differences were particularly great for the youngest individuals whose rate of bone formation was presumably higher than that of older people.

The Sr-90 content of adult vertebrae containing one gram of calcium, can be given by the following expression:(2)

$$X_n = X_{n-1} - f X_{n-1} + f K Z$$

where:

X_n is the concentration of Sr-90 for year 'n',
X_{n-1} is the concentration of Sr-90 for year 'n-1',
f is the fraction of the bone Sr-90 exchanged during the year,

K is the diet-bone observed ratio,

and Z is the Sr-90/Ca in the diet during the year.

In this equation all of the variables are known except 'f'. The Tri-City diet studies yield estimates of Z for the three cities; X_n and X_{n-1} are given in tables 1 and 2 (20 year old); and K has been established by numerous studies to be about 0.25.[3] Solving for 'f' and inserting the appropriate values for the other variables we have:

$$f = \frac{X_n - X_{n-1}}{KZ - X_{n-1}}$$

New York City

$$f = \frac{1.55 - 0.90}{(.25)(30)-.90} = \frac{0.65}{6.60} = 0.10$$

Chicago

$$f = \frac{1.11 - 0.79}{(.25)(19)-.79} = \frac{0.32}{3.96} = 0.08$$

San Francisco

$$f = \frac{0.94 - 0.66}{(.25)(14)-.66} = \frac{0.28}{2.84} = 0.10$$

These results are in excellent agreement with the previously estimated value of 9% annual turnover for Sr in adult human vertebrae.[4]

A principle objective of the HASL bone sampling program is to see how well bone Sr-90 concentrations can be predicted from diet Sr-90 estimates. The data presented in this report indicate that:

1. The absolute levels of Sr-90 in bone specimens collected in New York City, Chicago and San Francisco are proportional to the dietary Sr-90/Ca ratios estimated from the Tri-City diet studies.

2. The variation of Sr-90 levels in bone with time parallels the variations in Sr-90 intake with time as estimated from the Tri-City Diet studies.

3. Calculations of strontium turnover rates in human adult vertebrae using observed bone levels and estimated dietary intakes are consistent among the three cities.

The conclusions therefore reached are that the HASL Tri-City estimates do represent fairly accurately the actual average Sr-90 intake at the respective cities, and that the Sr-90 content of adult vertebrae can be calculated using these diet estimates, a turnover rate of 9% per year and a diet-bone observed ratio of 0.25.

References

(1) Kulp, J.L. and Schulert, A.R., "Sr-90 in Man and His Environment", Report No. NYO9934, Columbia University (1962).

(2) USAEC Report No. HASL-138, p. 239, July 1, 1963.

(3) Report of the United Nations Scientific Committee on the Effects of Atomic Radiation, Supplement No. 17 (A/3838), New York, 1958.

(4) USAEC Report No. HASL-140, p. 303, October 1, 1963.

Table 1

Sr-90 IN HUMAN VERTEBRAE

(1963 - pc/g Ca)

E - deceased January 1, 1963 - June 30, 1963

F - deceased July 1, 1963 - December 31, 1963

Age Category	NEW YORK CITY			CHICAGO			SAN FRANCISCO		
	E	F	E + F	E	F	E + F	E	F	E + F
0 - 1		6.81 (10)	6.81 (10)	-	3.51 (2)	3.51 (2)	1.31 (11)	2.43 (21)	2.04 (32)
1 - 2	3.49 (1)	9.84 (1)	6.66 (2)	-	-	-	2.72 (2)	-	2.72 (2)
2 - 3	2.44 (3)	5.03 (3)	3.73 (6)	-	3.70 (2)	3.70 (2)	1.40 (6)	3.51 (1)	1.70 (7)
3 - 4	1.54 (1)	3.41 (2)	2.79 (3)	-	2.76 (3)	2.76 (3)	1.13 (5)	-	1.13 (5)
4 - 5	2.22 (1)	-	2.22 (1)	-	-	-	1.64 (2)	1.72 (3)	1.69 (5)
5 - 6	1.87 (2)	3.46 (1)	2.40 (3)	-	2.10 (1)	2.10 (1)	-	2.37 (3)	2.37 (3)
6 - 7	1.83 (2)	2.11 (1)	1.92 (3)	-	-	-	1.24 (1)	-	1.24 (1)
7 - 8	-	-	-	-	-	-	1.00 (1)	1.63 (3)	1.47 (4)
8 - 9	1.89 (4)	-	1.89 (4)	-	-	-	0.82 (2)	-	0.82 (2)
9 - 10	-	1.62 (1)	1.62 (1)	-	-	-	-	2.05 (1)	2.05 (1)
10 - 12	1.35 (1)	2.84 (1)	2.10 (2)	-	-	-	0.89 (1)	1.91 (2)	1.57 (3)
12 - 14	-	2.59 (1)	2.59 (1)	-	2.73 (1)	2.73 (1)	1.00 (1)	1.31 (4)	1.25 (5)
14 - 16	1.22 (1)	2.92 (1)	2.07 (2)	-	-	-	1.17 (1)	-	1.17 (1)
16 - 18	2.00 (4)	2.23 (2)	1.70 (6)	-	-	-	1.20 (3)	1.43 (2)	1.29 (5)
18 - 20	1.82 (2)	2.04 (2)	1.93 (4)	1.32 (1)	-	1.32 (1)	0.92 (1)	0.32 (1)	0.62 (2)
20 - 40	2.16 (1)	1.51 (11)	1.56 (12)	0.74 (2)	1.01 (4)	0.92 (6)	0.73 (3)	1.00 (11)	0.94 (14)
40 - 60	0.95 (1)	1.58 (5)	1.48 (6)	-	1.24 (4)	1.24 (4)	0.66 (2)	0.97 (4)	0.87 (6)
> 60	-	1.61 (5)	1.61 (5)	-	1.43 (2)	1.43 (2)	-	1.21 (2)	1.21 (2)
0 - 4	2.47 (5)	6.24 (16)	5.34 (21)	-	3.24 (7)	3.24 (7)	1.41 (24)	2.48 (22)	1.92 (46)
4 - 20	1.85 (17)	2.41 (10)	1.97 (27)	1.32 (1)	2.41 (2)	2.05 (3)	1.13 (13)	1.66 (19)	1.44 (32)
> 20	1.55 (2)	1.55 (21)	1.55 (23)	0.74 (2)	1.19 (10)	1.11 (12)	0.70 (5)	1.02 (17)	0.94 (22)

( ) Number of samples.

Table 2

Sr-90 IN HUMAN VERTEBRAE

(1962 - pc/g Ca)

C - deceased January 1, 1962 - June 30, 1962
D - deceased July 1, 1962 - December 31, 1962

Age Category	NEW YORK CITY			CHICAGO			SAN FRANCISCO		
	C	D	C + D	C	D	C + D	C	D	C + D
0 - 1	4.03 (3)	3.58 (11)	3.68 (14)	1.40 (1)	--	1.40 (1)	1.24 (5)	0.99 (16)	1.05 (21)
1 - 2	2.83 (3)	4.24 (2)	3.39 (5)	-	2.32 (1)	2.32 (1)	1.00 (2)	0.90 (2)	0.95 (4)
2 - 3	2.11 (1)	2.87 (4)	2.72 (5)	-	-	-	0.77 (2)	1.54 (4)	1.28 (6)
3 - 4	2.28 (3)	2.78 (6)	2.61 (9)	0.68 (1)	-	0.68 (1)	1.18 (2)	1.49 (1)	1.22 (3)
4 - 5	2.03 (3)	-	2.03 (3)	0.96 (2)	-	0.96 (2)	1.92 (2)	0.76 (1)	1.53 (3)
5 - 6	-	-	-	1.89 (1)	1.46 (1)	1.68 (2)	0.65 (2)	0.57 (1)	0.62 (3)
6 - 7	1.54 (2)	2.86 (1)	1.98 (3)	1.49 (1)	-	1.49 (1)	1.25 (1)	1.03 (2)	1.10 (3)
7 - 8	1.83 (2)	1.65 (1)	1.77 (3)	-	-	-	0.97 (2)	-	0.97 (2)
8 - 9	-	1.67 (5)	1.67 (5)	-	-	-	-	-	-
9 - 10	0.89 (1)	1.46 (1)	1.18 (2)	1.43 (1)	-	1.43 (1)	-	0.51 (1)	0.51 (1)
10 - 12	1.55 (1)	-	1.55 (1)	1.10 (3)	-	1.10 (3)	0.53 (2)	-	0.53 (2)
12 - 14	1.13 (2)	1.93 (3)	1.61 (5)	0.73 (1)	1.43 (1)	1.08 (2)	1.20 (1)	-	1.20 (1)
14 - 16	1.32 (6)	-	1.32 (6)	1.27 (1)	1.78 (1)	1.53 (2)	1.28 (2)	0.97 (1)	1.18 (3)
16 - 18	1.34 (2)	1.98 (3)	1.72 (5)	-	1.51 (1)	1.51 (1)	-	1.10 (1)	1.10 (1)
18 - 20	1.31 (2)	2.05 (2)	1.68 (4)	0.76 (1)	-	0.76 (1)	-	0.97 (4)	0.97 (4)
20 - 40	0.66 (3)	1.32 (2)	0.92 (5)	0.54 (11)	1.22 (7)	0.80 (18)	0.96 (2)	0.92 (3)	0.94 (5)
40 - 60	0.50 (2)	0.91 (2)	0.70 (4)	0.63 (29)	0.90 (6)	0.68 (35)	-	0.54 (4)	0.54 (4)
> 60	1.02 (3)	1.08 (2)	1.04 (5)	1.47 (5)	0.94 (1)	1.38 (6)	-	0.59 (11)	0.59 (11)
0 - 4	2.95 (10)	3.31 (23)	3.20 (33)	1.04 (2)	2.32 (1)	1.47 (3)	1.10 (11)	1.10 (23)	1.10 (33)
4 - 20	1.46 (21)	1.88 (16)	1.64 (37)	1.16 (11)	1.55 (4)	1.26 (15)	1.10 (12)	0.90 (11)	1.00 (23)
> 20	0.76 (8)	1.10 (6)	0.90 (14)	0.70 (45)	1.06 (14)	0.79 (59)	0.96 (2)	0.63 (18)	0.66 (20)

( ) Number of samples.

Sr-90 Deposition on the Earth's Surface from 1958 Through 1963

by W. R. Collins Jr. (HASL)

Yearly deposits of Sr-90 on the earth's surface have been calculated from data derived from HASL's world-wide pot and column fallout sampling network since 1958 (see map on page 4). In practice the sites are grouped by latitude and average monthly Sr-90 deposits are calculated for each of the 13 ten-degree latitude bands between 80°N and 50°S latitude. Total Sr-90 deposits within the bands are then calculated by multiplying the mean band values by the band area. A summary of results obtained through the end of 1962 and a brief interpretation of measurements of Sr-89 from U. S. and Soviet test series during 1961 and 1962 were presented in HASL-140 (p.240). This note updates the previous report through the end of 1963.

Average monthly and yearly Sr-90 deposits calculated for the ten-degree latitude bands during 1963 are listed in Table 1. The yearly values are also illustrated in Figure 1 as an activity-latitude profile. Total quarterly Sr-90 deposits calculated from these data for each latitude band and summed by hemisphere are compared with similar calculations for 1959, 1960, 1961, and 1962 in Table 2 and Figure 2.

From the data it is seen that almost twice as much Sr-90 was deposited on the earth's surface during 1962 and 1963 as was deposited in the 1958 - 1959 period. This is not unreasonable since the total fission yield of the tests conducted during the earlier period was about one-half that of the latter tests. However, from Figure 2 it is apparent that peak depositions from the earlier test series occurred in the first and second quarters of the year while peak depositions during 1963 occurred during the second and and third quarters. Another dissimilarity in the data for the two groups of test series is that the 1963 deposition was almost twice as high as the 1962 deposition while the 1959 deposition was not appreciably higher than that of 1958. These differences were caused presumably by the large number of high altitude debris injections that occurred during the 1961 and 1962 tests and the lengths and scheduling of the later test series relative to the 1957-1958 test series.

Predominate sources of the Sr-90 deposits reported for different latitude bands on the earth's surface may be inferred from Sr-89 to Sr-90 ratios observed in the 1961 and 1962 samples which were reported previously and the 1963 ratios which are listed in Table 3. These ratios are also averaged for the Northern Hemisphere above 10°N latitude (10° - 80°N), the Equatorial

region (10°N - 10°S) and the Southern Hemisphere (10° - 50° S) and ploted versus sampling month in Figure 3. These data indicate that through the end of 1962 fallout in the Southern Hemisphere originated primarily from the U. S. tests and debris in the Northern Hemisphere from the Soviet tests. During 1963 there is some indication of Soviet debris in the Southern Hemisphere but debris from the arctic tests during 1962 seems to have predominated in Northern Hemisphere fallout at least through June 1963.

Table 1. Average Sr^{90} Deposits in 10° Latitude bands during 1963

Latitude Bands	80-70°N	70-60°N	60-50°N	50-40°N	40-30°N	30-20°N	20-10°N	10-0°N	0-10°S	10-20°S	20-30°S	30-40°S	40-50°S
no. of sites	2	4	6	19	24	11	11	7	7	7	8	9	5
1963 Monthly Deposition (mc/mi^2)													
January	0.12	1.21	0.76	1.59	1.92	1.10	0.53	0.45	0.41	0.23	0.31	0.39	0.23
February	0.23	1.74	0.88	1.38	1.63	1.49	0.47	0.55	0.44	0.16	0.22	0.22	0.20
March	0.01	1.87	2.66	3.05	3.12	4.19	0.98	0.87	0.58	0.10	0.20	0.29	0.23
April	0.05	2.49	5.36	5.83	4.49	2.71	1.34	1.36	0.13	0.06	0.18	0.23	0.39
May	0.18	1.62	4.46	6.07	3.45	3.95	2.61	1.23	0.25	0.05	0.14	0.22	0.36
June	0.51	4.81	6.52	7.02	3.72	4.90	1.89	1.67	0.18	0.07	0.22	0.34	0.46
July	2.15	4.55	6.38	5.94	3.04	2.31	1.24	1.57	0.08	0.07	0.31	0.29	0.34
August	5.23	5.25	5.24	4.57	1.57	2.04	1.03	0.49	0.10	0.32	0.25	0.46	0.36
September	0.49	1.67	2.38	2.18	0.97	2.13	0.56	0.32	0.10	0.22	0.12	0.46	0.08
October	1.17	1.45	2.17	1.84	1.29	1.81	0.45	0.37	0.13	0.19	0.39	0.33	0.18
November	0.16	0.37	1.19	1.82	1.32	0.85	0.30	0.43	0.16	0.31	0.26	0.40	0.27
December	0.17	0.41	0.67	0.90	1.64	1.00	0.35	0.38	0.47	0.24	0.16	0.30	0.66
1963 Total Deposition (mc/mi^2)	10.47	27.44	38.67	42.19	28.16	28.48	11.75	9.69	3.03	2.02	2.76	3.93	3.76

Table 2

Megacuries of Strontium-90

	Northern Hemisphere				Southern Hemisphere				Northern and Southern Hemisphere			
quarter:	1	2	3	4	1	2	3	4	1	2	3	4
1958									0.14	0.24	0.18	0.21
										Total =	0.77	
1959	0.36	0.41	0.12	0.04	0.066	0.025	0.025	0.033	0.43	0.43	0.14	0.08
		Total =	0.93			Total =	0.149			Total =	1.08	
1960	0.079	0.086	0.036	0.029	0.027	0.022	0.022	0.035	0.106	0.108	0.058	0.064
		Total =	0.230			Total =	0.106			Total =	0.336	
1961	0.064	0.082	0.045	0.124	0.028	0.030	0.027	0.062	0.092	0.112	0.072	0.186
		Total =	0.315			Total =	0.147			Total =	0.462	
1962	0.344	0.455	0.265	0.195	0.062	0.063	0.041	0.067	0.406	0.518	0.306	0.262
		Total =	1.259			Total =	0.233			Total =	1.492	
1963	0.417	0.974	0.679	0.274	0.065	0.047	0.052	0.066	0.482	1.021	0.731	0.340
		Total =	2.344			Total =	0.230			Total =	2.574	

TABLE 3. 1963 Average Sr^{89}/Sr^{90} at Midpoint of Collection Month By 10° Bands of Latitude

Latitude Bands	80-70°N	70-60°N	60-50°N	50-40°N	40-30°N	30-20°N	20-10°N	10°N-0	0-10°S	10-20°S	20-30°S	30-40°S	40-50°S
1963 Monthly Sr^{89}/Sr^{90}													
January	31	33	32	33	30	31	24	38	26	8	11	9	7
February	23	24	29	26	27	24	21	24	18	6	6	3	4
March	10	15	19	17	17	18	14	17	15	5	10	5	4
April	8	11	10	10	11	11	9	9	7	5	3	4	2
May	7	7	8	7	8	7	7	8	7	4	2	2	1
June	1	3	1	2	2	1	1	2	1	1	<1	<1	<1
July	<1	3	2	2	1	<1	1	1	1	<1	<1	<1	<1
August	<1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
September	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
October	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
November	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
December	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

FIGURE 1

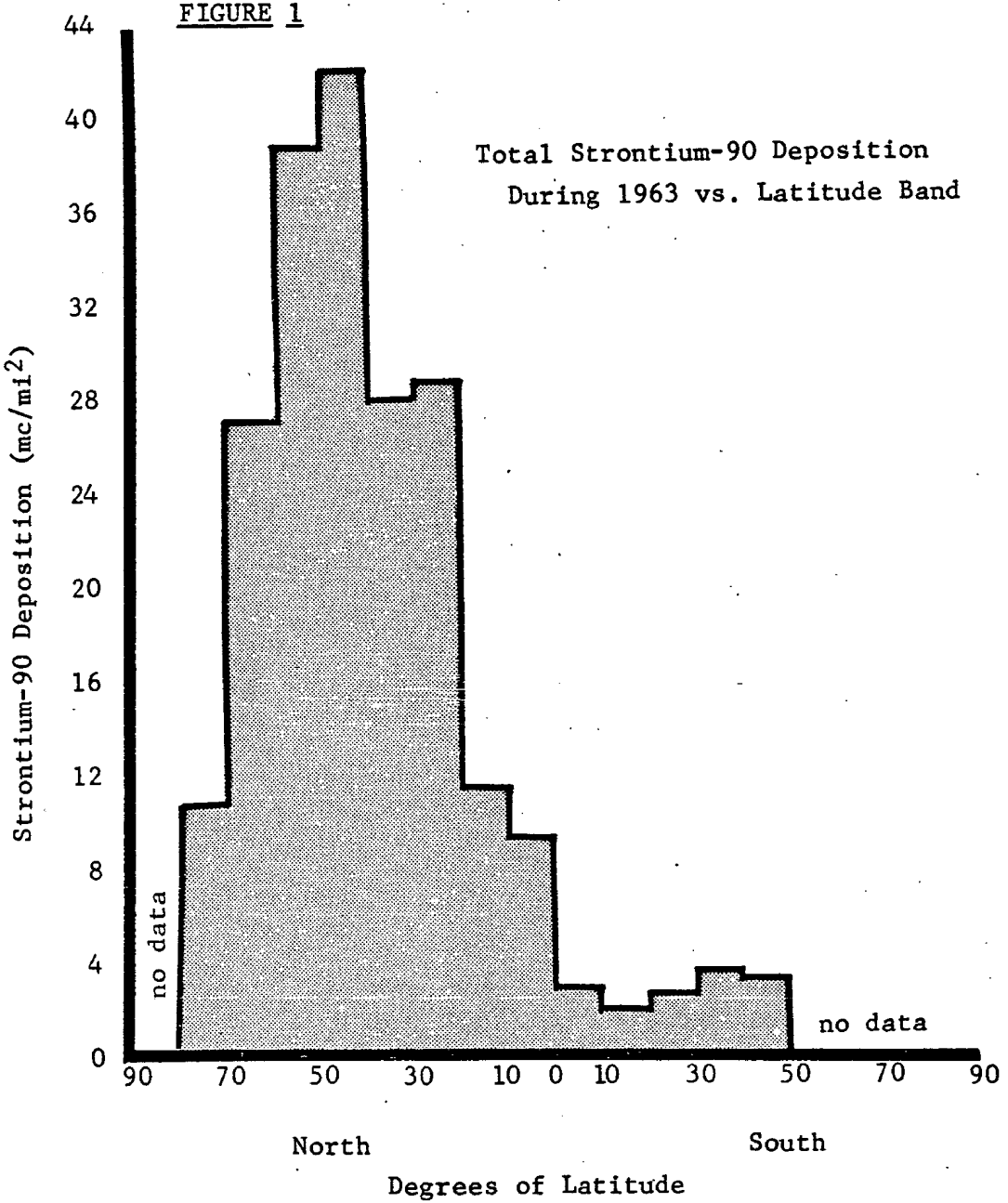

Total Strontium-90 Deposition
During 1963 vs. Latitude Band
Strontium-90 Deposition (mc/mi²)
44
40
36
32
28
24
20
16
12
8
4
0
no data
no data
90
70
50
30
10
0
10
30
50
70
90
North
South
Degrees of Latitude

FIGURE 2

QUARTERLY DEPOSITION OF Sr-90

1959 - 1963

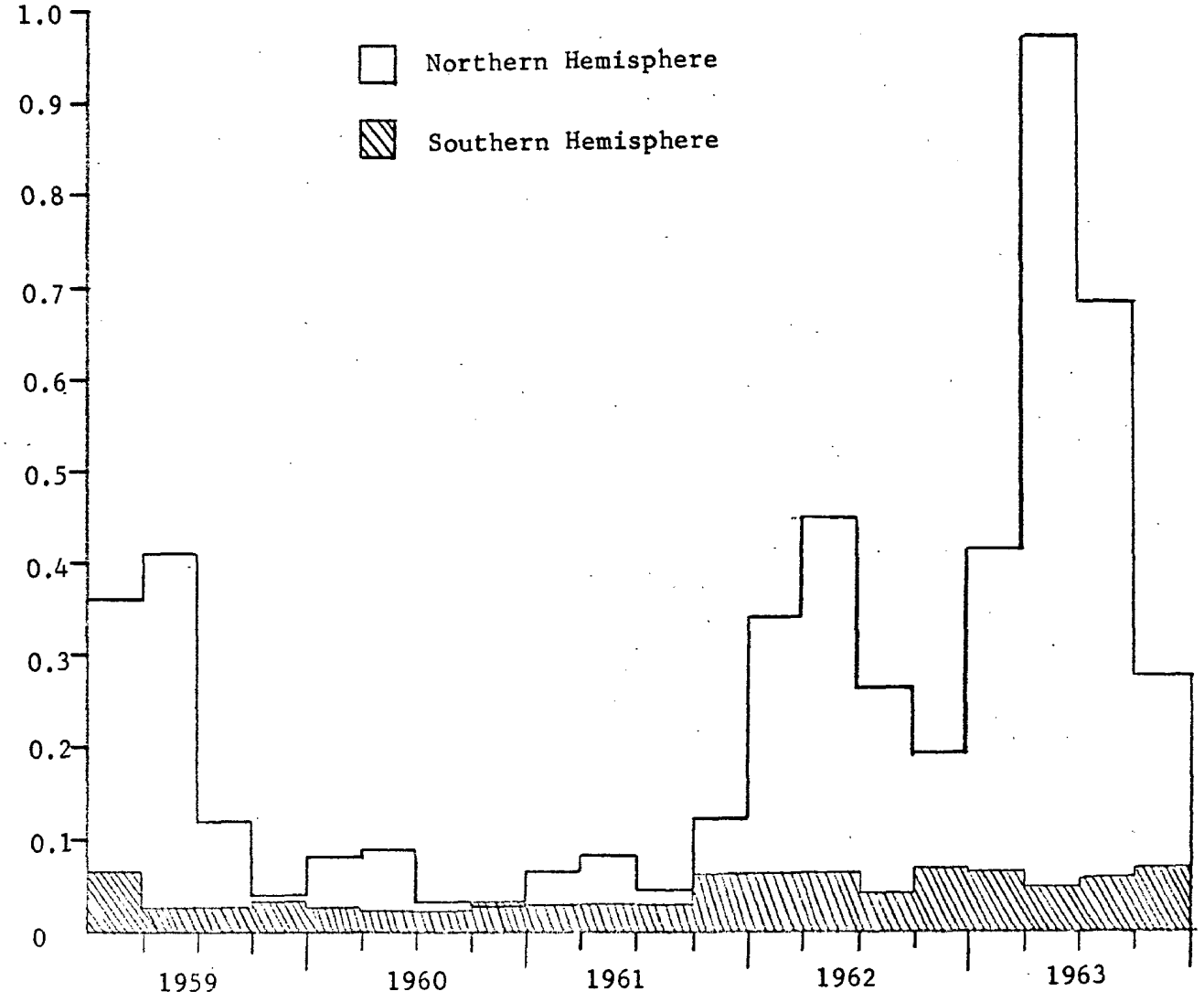
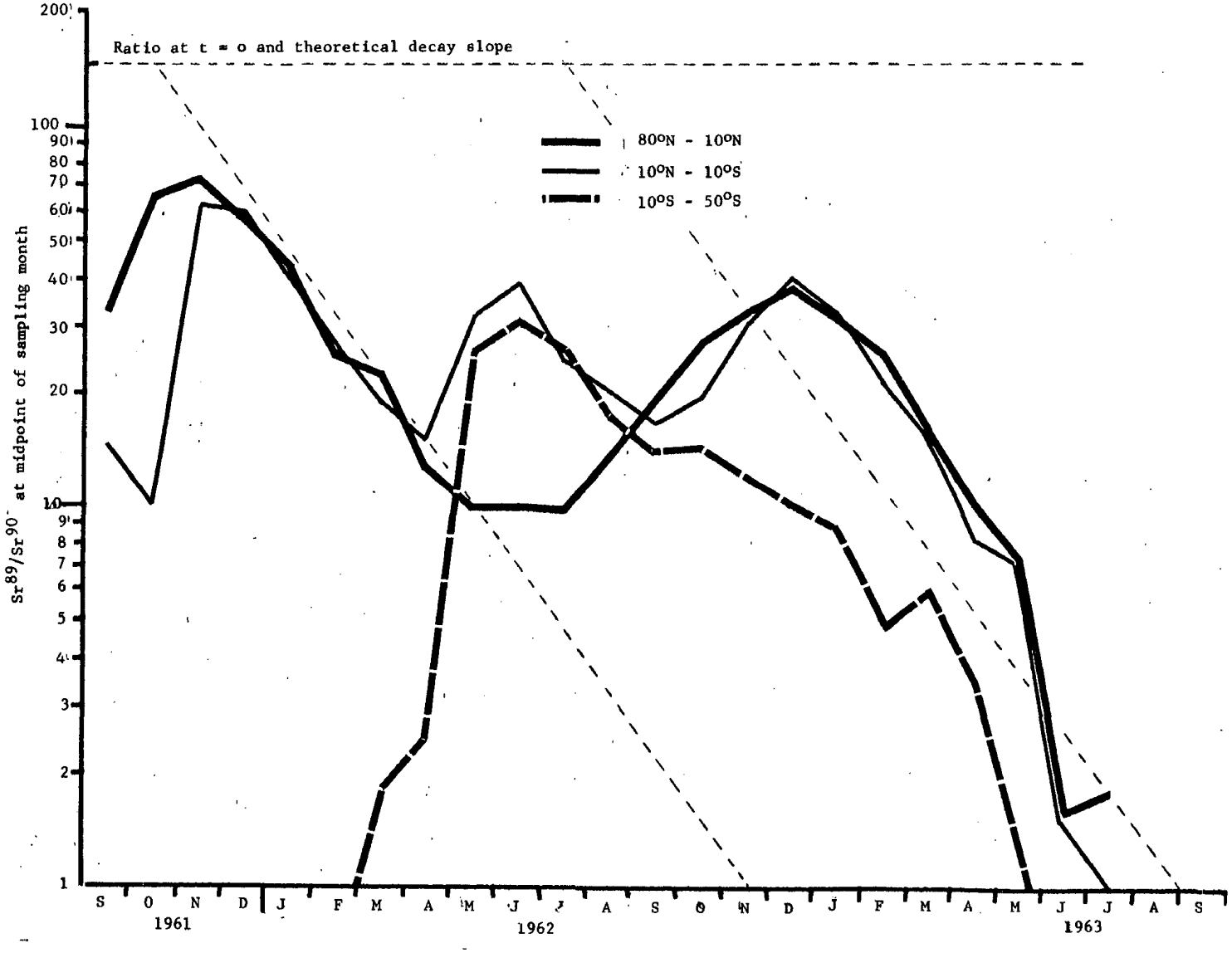


FIGURE 3

Ratio of Sr^{89} and Sr^{90} in World-Wide Fallout Since 1961



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2. Ardouin, B., et al., "Measurements of Radioactivity of Artificial Origin in the Southern Hemisphere", Science et Technique, Bist. #56, November 1961.

3. Auerbach, S.I., et al., "Landscape Investigations Using Cs-137", Nature 201, No. 4921, p. 761, February 22, 1964.

4. Bains, M.E.D., The Determination of Plutonium Alpha Activity in Urine, Faeces and Biological Materials, AEEW-R-292, July 1963.

5. Bibron, R., et al., "Increase in Atmospheric Tritium Due to Thermonuclear Explosions", Science et Technique, Bist. #54, September 1961.

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10. Corsbie, R.L., "The Problem of Nuclear Shelters", Archives of Environmental Health 8, p. 613-621, April 1964.

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13. Delibrias, G., et al., "Measurement of Atmospheric Radioactivity Due to Krypton-85", Science et Technique, Bist. #54, September 1961.

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15. Eisenbud, M. and Mochizucki, Y., The Distribution of Radionuclides in Human Tissues, TID-19 436

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19. Feige, Y., "On Biological Factors Affecting Secondary Radiation Protection Standards", Health Physics 10, No. 3, p. 204, March 1964.

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TABLE OF CONVERSION FACTORS

The following abbreviation listing and conversion table involve units of measurement used in the HASL fallout and air sampling programs.

ABBREVIATIONS:

in. - inches
ft. - feet
mi. - miles
lb. - pounds
liq.qt.-liquid quarts

mm - millimeters
cm - centimeters
m - meters
km - kilometers
kg - kilograms
l - liters

pc - picocuries (micro-microcuries - μμc)
nc - nanocuries (milli-microcuries - mμc)
μc - microcurie
mc - millicurie
d/m - disintegrations per minute

SCF - standard cubic feet at 1 atmosphere (1013 mb) and 15°C (59°F)
SCM - standard cubic meters at 1 atmosphere (1013 mb) and 15°C (59°F)
kg air - kilograms air at 1 atmosphere (1013 mb) and 15°C (59°F)

CONVERSION TABLE

Multiply	by	to obtain	Multiply	by	to obtain
in.	25.4	mm	mm	0.0394	in.
in.	2.54	cm	cm	0.394	in.
ft.	0.305	m	m	3.28	ft.
mi.	1.61	km	km	0.621	mi.
lb.	0.4536	kg	kg	2.205	lb.
liq.qt.-U.S.	0.946	l	l	1.057	liq.qt.-U.S.
$mi.^2$	2.59	km^2	km^2	0.386	$mi.^2$
$mc/mi.^2$	0.386	mc/km^2 (nc/m^2)	mc/km^2	2.59	$mc/mi.^2$
$mc/mi.^2/in.$	15.2	pc/l	pc/l	0.0657	$mc/mi.^2/in.$
pc/l	0.01	$mc/km^2/cm$	$mc/km^2/cm$	100	pc/l
d/m	0.450	pc	pc	2.22	d/m
nc	1×10^3	pc	pc	1×10^{-3}	nc
d/m/l	0.45×10^{-9}	μc/cc	μc/cc	2.22×10^9	d/m/l
$d/m/ft.^2$	0.01256	$mc/mi.^2$	$mc/mi.^2$	79.6	$d/m/ft.^2$
10^3 SCF	28.3	SCM	SCM	0.0353	10^3 SCF
10^3 SCF	34.7	kg air	kg air	0.0288	10^3 SCF
SCM	1.226	kg air	kg air	0.816	SCM

AREA OF THE EARTH

	Area	
	$mi.^2$	km^2
land	57.470×10^6	148.847×10^6
ocean	139.480×10^6	361.254×10^6
total	196.950×10^6	510.101×10^6

latitude band	Area $mi.^2$	Area km^2
0-10	17.142×10^6	44.398×10^6
10-20	16.621×10^6	43.048×10^6
20-30	15.595×10^6	40.392×10^6
30-40	14.096×10^6	36.508×10^6
40-50	12.167×10^6	31.512×10^6
50-60	9.870×10^6	25.565×10^6
60-70	7.271×10^6	18.833×10^6
70-80	4.454×10^6	11.536×10^6
80-90	1.258×10^6	3.257×10^6

TABLE OF RADIONUCLIDES

The following table is a listing of radionuclides of interest in the HASL fallout program. The half-life values are those currently in use at HASL and are subject to change as new data become available. The energy values for each nuclide are listed in order of decreasing abundance and include the most prominent radiations observed. Radiations which occur in less than 10 per cent of the disintegrations are given in parentheses. X-rays are listed only if electron capture or internal conversion are an important feature of the decay scheme.

Abbreviations:
CE: conversion electron
EC: electron capture

Nuclide	Radioactive Daughter	HALF-LIFE days	HALF-LIFE other units	Emitted Radiations (Mev.) electrons	photons	X-rays
Fission Products						
38 Sr-89		50.5		1.46		
38 Sr-90	39 Y-90	10120. 2.675	27.7y 64.2h	0.54 2.27		
39 Y-91		57.5		1.54	(1.2)	
40 Zr-95	41 Nb-95	65 35		0.40,0.36 0.16	0.72, 0.76 0.77	
44 Ru-103	45 Rh-103m	39.8	 57m	0.21,0.12,(0.70) 0.037 CE	0.50,(0.61)	 0.003
44 Ru-106	45 Rh-106	365	1.00y 0.50m	0.039 3.55,2.4,3.1,(2.0)	 0.51,0.62,(1.04,1.55,0.87,1.13 sum)	
48 Cd-115m		43		1.63	(0.94,1.3,0.49)	
51 Sb-125 (21%)	52 Te-125m	730 58	2.0y	0.30,0.12,0.61,0.44 0.078 CE, 0.105 CE	0.43,0.60,0.46,0.64,0.18	 0.027,0.004
53 I-131		8.08		0.61,0.34,(0.25)	0.364,(0.64,0.28,0.72)	
55 Cs-136		12.9		0.34,(0.66)	0.83,1.07,0.34,1.25,0.17,0.15,0.27, other sum	0.032
55 Cs-137 (92%)	56 Ba-137m	11150	30.5y 2.6m	0.51,(1.18) 0.62 CE	 0.662	 0.032
56 Ba-140	57 La-140	12.8 1.675	 40.2h	1.02,0.48,0.6,(0.9) 1.38,1.10,0.83,1.71,(2.20)	0.54,(0.16,0.43,0.30) 1.60,0.49,0.82,0.33,0.92,(0.44,2.5)	
58 Ce-141		33.1		0.44,0.58,(0.10 CE)	0.145	0.036
59 Pr-143		13.8		0.93		
58 Ce-144	59 Pr-144	285	 17.3m	0.32,0.19,(0.24,0.09 CE,0.04 CE) 2.98,(2.29,0.80)	(0.134,0.081) (0.69,2.18,1.48)	0.036
60 Nd-147	61 Pm-147	11.1 964	 2.64y	0.81,0.38,(0.23,0.046 CE) 0.22	0.091,0.53,(0.28-0.44)	0.039
Other Radionuclides						
1 H-3		4480	12.3y	0.018		
4 Be-7		53.6		EC	0.48	
6 C-14		2.0×10^6	5500y	0.155		
25 Mn-54		310		EC		0.005
26 Fe-55		986	2.70y	EC		0.006
30 Zn-65		245		(0.32),EC	1.11,0.51 Annihilation Rad.	0.008
39 Y-88		104		EC	1.85,0.91,(2.76 sum)	0.014
45 Rh-102 45 Rh-102m		210 ~900	 ~2½y	1.15,1.28,(0.81),EC EC	0.48,1.08,0.63,0.72,0.77,(0.42)	0.021
48 Cd-109	49 Ag-109m	470	1.65y 0.65m	EC 0.062 CE,0.084 CE	 (0.088)	 0.022,0.003
48 Cd-113m		~5000	~14y	0.57		
51 Sb-124		60		0.61,2.3,0.25,(1.6,0.9)	0.60,1.69,0.72,(2.09,1.0,1.3-1.5)	
74 W-181		145		EC		0.058
74 W-185		74		0.43		
81 Tl-204		1416	3.88y	0.76,(EC)		0.071