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September 26, 1956

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C. L. Dunham, M.D., Director
Division of Biology and Medicine
Biophysics Branch, Atomic Energy Commission
Washington 25, D. C.

Dear Dr. Dunham:

As requested in your letter of February 3, 1956, an air monitoring program was activated at Los Alamos to make radiological measurements of fallout.

Measurements were started on April 20 and have been continuous to date. The methods of measurement followed those developed by Mr. William Johnson of this laboratory. Data is reported in the same units as used in the Public Health Service reports.

Since the measurements were started at approximately the same time as the Eniwetok tests we do not have adequate background information.

The unusually high readings of July 9 and July 10 were not reported as being greater than five times background since we were not sure of our background and methods of measurement at that time.

Sincerely,

Dean D. Meyer,
Group Leader, H-1

DDM:phf

Enclosures: (1) Counting Methods Used in Los Alamos Air Sampling
(2) Summary of Los Alamos Air Sampling
(3) Beta Activity in Rain Water Collected at Los Alamos

cc: T.L. Shipman, Jr.
File

Counting Methods Used in Los Alamos Air Sampling

1. Gamma Background

External gamma background determinations are made daily using a portable G-M survey meter with the shield closed (Victoreen 263B beta-gamma survey meter). In addition a recording gamma meter is operated, the shielded probe being located three feet above the Administration Building roof.

2. Beta Activity of Particulate Matter in Air

Twenty-four hour air samples are collected seven days a week. The sampler was fabricated at Los Alamos; the particulate matter is collected on a MSA all dust filter, Cat. No. CR17651, approval No. 2133. Approximately 1400 cubic meters of air is sampled daily. Five to eight days after collection the filters are counted for beta activity in a thin-window gas (methane) flow counter having an overall efficiency of 44% for $Sr\text{-}Y^{90}$. Results are reported in terms of microcuries per cubic meter of air, equivalent to $Sr\text{-}Y^{90}$ beta activity. The results indicate only the beta activity resulting from relatively long half-lived emitters.

3. Beta Activity in Rain Water

One hundred cubic centimeters of rain water was evaporated after adding dilute nitric acid. The residue was dissolved in distilled water and transferred to a four inch by nine inch aluminum foil dish and evaporated to dryness with an infra-red lamp. The foil was counted in the same thin-window gas flow counter used for filter paper counting.

SUMMARY OF LOS ALAMOS AIR SAMPLING

Date, Start of Collection	Gamma Background MR/Hour--A.M.	Beta Activity of Air μμc/M3
4/20/56	0.01	0.72
4/21	0.01	0.54
4/22	0.01	0.59
4/23	0.01	0.50
4/24	0.01	0.90
4/25	0.01	0.81
4/26	0.02	0.45
4/27	0.02	0.99
4/28	0.01	0.77
4/29	0.01	0.95
4/30	0.01	1.17
5/1	0.01	0.99
5/2	0.01	0.81
5/3	0.01	0.77
5/4	0.02	0.68
5/5	0.02	*
5/6	0.02	0.68
5/7	0.02	0.41
5/8	0.01	0.14
5/9	0.01	0.32
5/10	0.01	0.63
5/11	0.02	0.68
5/12	0.02	*
5/13	0.01	1.81
5/14	0.01	0.77
5/15	0.01	0.99
5/16	0.01	1.22
5/17	0.01	1.44
5/18	0.01	1.08
5/19	0.01	0.99
5/20	0.01	0.81
5/21	0.02	0.72
5/22	0.01	1.40
5/23	0.01	1.13
5/24	0.01	0.72
5/25	0.01	0.59
5/26	0.01	0.77
5/27	0.01	1.49
5/28	0.02	0.90
5/29	0.01	0.95
5/30	0.02	0.77
5/31	0.02	0.72

*Sample lost.

Date, Start of Collection	Gamma Background MR/Hour--A.M.	Beta Activity of Air uuc/M^3
6/1	0.03	0.45
6/2	0.01	1.13
6/3	0.01	0.99
6/4	0.02	0.99
6/5	0.01	2.43
6/6	0.01	1.76
6/7	0.01	1.98
6/8	0.02	1.08
6/9	0.02	1.08
6/10	0.01	2.03
6/11	0.01	1.94
6/12	0.02	1.71
6/13	0.02	2.79
6/14	0.02	2.30
6/15	0.02	2.03
6/16	0.01	0.72
6/17	0.01	0.86
6/18	0.01	0.63
6/19	0.01	1.13
6/20	0.02	1.31
6/21	0.02	0.99
6/22	0.02	0.70
6/23	0.01	0.60
6/24	0.01	0.59
6/25	*	0.55
6/26	0.01	0.51
6/27	0.01	0.82
6/28	0.01	*
6/29	0.01	1.75
6/30	0.01	1.70
7/1	0.01	3.92
7/2	*	*
7/3	0.01	1.51
7/4	0.02	2.08
7/5	0.02	3.71
7/6	0.03	3.66
7/7	0.02	3.16
7/8	0.02	3.69
7/9	0.02	22.10
7/10	0.02	11.35
7/11	0.02	6.27
7/12	0.02	2.12
7/13	0.02	2.88
7/14	0.02	3.13
7/15	0.01	2.64
7/16	0.02	2.36

*Sample lost.

Date, Start of Collection	Gamma Background MR/Hour - A.M.	Beta Activity of Air uuc/M3
7/17/56	0.01	2.11
7/18	0.01	1.11
7/19	0.02	10.04
7/20	0.03	6.48
7/21	0.02	4.70
7/22	0.02	3.28
7/23	0.02	2.60
7/24	0.02	1.98
7/25	0.02	1.93
7/26	0.02	1.72
7/27	0.02	1.86
7/28	0.02	1.58
7/29	0.01	2.23
7/30	0.01	1.55
7/31	0.02	1.17
8/1	0.02	1.49
8/2	0.01	2.17
8/3	0.02	4.00
8/4	0.00	3.85
8/5	0.01	3.13
8/6	0.00	3.08
8/7	0.00	2.63
8/8	0.00	2.76
8/9	0.02	2.34
8/10	0.02	2.05
8/11	0.02	2.16
8/12	0.02	2.25
8/13	0.02	1.62
8/14	0.02	1.87
8/15	0.02	1.33
8/16	0.02	0.96
8/17	0.01	1.37
8/18	0.01	1.09
8/19	0.01	0.65
8/20	0.01	1.08
8/21	0.01	2.12
8/22	0.02	2.16
8/23	0.02	2.34
8/24	0.02	2.05
8/25	0.02	1.41
8/26	0.01	1.98
8/27	0.01	1.86
8/28	0.02	2.03
8/29	0.01	1.88
8/30	0.01	1.80
8/31	0.02	1.94

Beta Activity in Rain Water Collected at Los Alamos

Date of Precipitation	Beta d/m/ml
5/14/56	0.1
5/23/56	1.3
5/24/56	2.2
5/26/56	1.0
6/1/56	1.0
6/10/56	1.6
6/24/56	3.1
6/28/56	1.2
7/2/56	2.4
7/18/56	2.4
7/23/56 (weekend)	26.6
7/23/56	41.0
7/30/56	6.5
7/31/56	3.5
8/1/56	1.9
8/2/56 (morning)	1.6
8/2/56 (afternoon)	3.5
8/7/56	8.7
8/14/56	1.8
8/20/56	0.8