

February 26, 1973

411590

Ext: 8721

MEMORANDUM

TO: W. E. Nervik, Division Leader, Radiochemistry

FROM: ^{JK} R. W. Hoff, Radiochemistry Division L-232 LLL 94550

SUBJECT: Progress report number 2, Eniwetok sample analytical program, status as of 23 February 1973.

This progress report summarizes the laboratory analytical effort being carried on at LLL by members of the Radiochemistry Division, Biomedical Division, and Hazards Control Department, at the University of Washington (Dr. Allyn Seymour, Dr. Victor Nelson), at McClellan Laboratory (Col. R. McBryde, Maj. W. Myers), at LFE Environmental (Mr. Leon Leventhal, Mr. William Major), and at Eberline Instrument Corporation (Dr. Eric Geiger, Mr. Ernest Sanchez).

Soil and sediment samples (estimate 2500 samples to be processed):

Initial processing (LLL, Bldg. 412) - Samples in process
or completed, as of 23 Feb. '73: 1,325
as of 9 Feb. '73: 1,050

Current rate: ≥ 100 samples per week.

Fish samples (456 samples to be processed):

Initial processing (UW, Seattle) - following list of samples prepared, shipped, and received at LLL as of 23 Feb. '73:

431 fish, other aquatic animals
27 Al₂O₃ filters from large volume water sampling
2 sediment samples
460 TOTAL

Initial processing phase complete as of 23 Feb. '73.

REPOSITORY DOE History Division
COLLECTION R6 326, Tommy McCraw (#1320)
BOX No. 5
FOLDER Radiological Survey

Vegetation, terrestrial biota (300 samples to be processed):

Initial processing (LLL) - 85 samples completed.

Seawater (50 samples collected):

Chemical separation (LLL) - total of 50 samples; adding carriers and tracers, sequential separation of various elements; in process, anticipate 6 weeks of additional effort.

Plankton (17 samples collected):

17 samples in process (LLL) - dry, weigh, package.

Core samples (40 samples collected):

Total of 40 collected. Still frozen and stored at LLL. Will be sectioned and processed in same manner as sediment samples.

Air filters (61 samples collected):

High-volume samples gamma counted (LLL) - 11 samples.

Wet chemical analysis for ^{239}Pu (MCL) - 7 (in process).

Gamma counting, precision Ge(Li) detector spectroscopy:

Samples counted and data in computer bank (LLL) -

	<u>9 Feb. '73</u>	<u>23 Feb. '73</u>
Soils	278	371
Sediments	218	218
Fish	144	186
Vegetation	15	16
Air filters	<u>7</u>	<u>11</u>
TOTAL	662	802

Chemical analyses, samples dissolved and elements isolated chemically:

McClellan Laboratory (MCL) - data reported for ^{90}Sr + ^{239}Pu in 166 soil and sediment samples (9 Feb. '73), in 297 samples (23 Feb. '73).

LFE Environmental Analysis Laboratory (LFE) - Contract complete on 26 Feb. '73. Analysis of 55 soil samples began on 26 Feb. '73. Plan to deliver second batch of 50 samples to LFE on 27 Feb. '73.

Eberline Instrument Corporation (EIC) - They have reported ^{90}Sr and ^{239}Pu data on 6 qualification samples. In addition, they have analyzed a second set of 6 qualification samples and have reported ^{239}Pu data. This last set of data showed a systematic bias of 25%. A standard solution of pure $^{239} + ^{240}\text{Pu}$ has been shipped to EIC for calibration purposes. We expect standardization of their tracer solution with the standard ^{239}Pu will eliminate the bias. Samples of this standard solution will also be shipped to MCL, LFE, and UW for interlab calibration.

University of Washington, Seattle (UW) -

Analysis of a set of 12 selected samples for ^{239}Pu , ^{90}Sr , and ^{55}Fe (is in progress) at UW and MCL. Data will be compared to assure accurate calibration of tracers, etc.

A progress report will be issued every two weeks.

for Hugh D. Wilson
Richard W. Hoff
Radiochemistry Division

RWH:mb

cc: W. E. Nervik
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D. W. Wilson
P. H. Gudiksen
R. W. Hoff