

Mail Station L- 232

Ext: 8721

May 7, 1973

REPOSITORY DOE History Division

COLLECTION R6326 Tommy McCraw (# 1320)

BOX No. 5

MEMORANDUM

TO: W. E. Nervik, Division Leader, Radiochemistry ~~Division~~ Radiological Survey

FROM: R. W. Hoff, Radiochemistry Division

SUBJECT: Eniwetok sample analytical program. Progress Report No. 7.  
Status as of 4 May 1973.

-----

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

I. Initial processing.

Soil, sediment, and core samples:\*

- Estimate 2,800 soil samples to be processed.
- Collected 224 sediment samples - initial processing complete.
- Collected 165 core samples - initial processing complete.

Initial processing (LLL, Bldg. 412) - samples in process or completed; cumulative number includes soil, sediment, and core samples,

as of 4 May 1973	-	3,020
as of 20 April 1973	-	2,700
as of 6 April 1973	-	2,470

Current rate for completed samples: 180 samples per week.

\* The sediment and core samples were collected from the lagoon floor.

Fish samples (441 samples to be processed; breakdown - 407 fish, 28 seawater filters, 3 algae, 2 sediment, 1 coral):

Initial processing phase at UW, Seattle, complete as of 23 February 1973.

Dried samples subsequently dry-ashed at LLL - 20.

Terrestrial animals, eggs, etc. (estimate 200 samples to be processed):

Initial processing (LLL) - 26 samples (eggs, egg shells, hermit crab tails) completed as of 4 May 1973.

Seawater (58 samples collected):

Chemical separation (LLL) - initial separation chemistry completed on 50 samples as of 4 May 1973.

Initial processing completed on the following samples prior to 20 April 1973:

- Vegetation (208 samples)
- Plankton (16 samples)
- Air filters (61 samples).

II. Gamma counting, precision Ge(Li) detector spectroscopy:

Samples counted and data in computer bank (LLL)

	<u>6 April 1973</u>	<u>20 April 1973</u>	<u>4 May 1973</u>
Soils	990	1387	1726
Sediments	224	224	224
Cores	2	4	16
Fish	346	384	401
Algae	1	1	2
Seawater (hydroxide fraction)	0	0	28
Plankton	0	6	16
Coral	1	1	1
Vegetation	46	89	158
Air Filters	<u>11</u>	<u>27</u>	<u>61</u>
TOTAL	1621	2123	2633

III. Chemical analyses, samples dissolved and elements isolated chemically:

McClellan Laboratory (MCL) -

	<u>6 April 1973</u>	<u>20 April 1973</u>	<u>4 May 1973</u>
Samples received (4 May - 943 soils, 208 sediments, 20 fish, 53 air filters)	872	1086	1224
Data reported on <sup>90</sup> Sr and Pu (4 May - 471 soils, 208 sediments, 24 air filters)	602	662	703
Chemistry complete, samples counting	123	244	263
In process	147	180	258

LFE Environmental Analysis Laboratory (LFE) -

	<u>6 April 1973</u>	<u>20 April 1973</u>	<u>4 May 1973</u>
Samples received			
Soils	423	615	615
Sediments	0	3	3
Fish	4	4	4
TOTAL	<u>427</u>	<u>622</u>	<u>622</u>
Pu data reported			
Soils	25	64	123
Fish	0	4	4
Sr data reported			
Soils	0	47	101
<sup>55</sup> Fe data reported (analyses required only on fish samples)			
Fish	0	0	4

Eberline Instrument Company (EIC) -

Analyses began on 2 April 1973. Two batches (102 samples) of soils have been shipped to EIC for  $^{239}\text{Pu}$  and  $^{90}\text{Sr}$  analysis.

There have been problems with low chemical yields for Pu; analyses have been repeated with some improvement in chemical yield. Preliminary results will be reported to LLL by 14 May 1973.

University of Washington, Seattle (UW) -

Analysis of a set of 12 selected fish samples for  $^{239}\text{Pu}$ ,  $^{90}\text{Sr}$ , and  $^{55}\text{Fe}$  is in progress at UW and MCL. Data will be compared to assure accurate calibration of tracers, etc. Ashing has been completed on many of the 188 fish samples to be handled at UW;  $^{55}\text{Fe}$  analyses have been performed on these samples. Analysis for plutonium has presented some problems with chemical yield. These problems have been worked out and they will proceed with the calibration samples.

A progress report will be issued every two weeks.



---

Dr. Richard W. Hoff  
Deputy Division Leader  
Radiochemistry Division

RWH:mb