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October 12, 1973

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411562

MEMORANDUM

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

FROM: R. W. Hoff, Radiochemistry Division

SUBJECT: Eniwetok sample analytical program. Progress Report No. 18. Status as of 5 October 1973.

Operation Roadrunner

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, 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. All efforts completed prior to 29 June 1973.

Details on completion rates, numbers of samples, laboratories involved, etc. in initial processing are available in earlier issues of this report.

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

Gamma counting of all samples has been completed as of 27 July 1973, with the exception of a few late soil and coconut samples. There is no backlog of uncounted samples now.

The data have been checked for accuracy; correction sheets on errors are being processed by Bill Phillips. Very few errors in these data remain in the data bank.

Samples counted and data in computer bank (LLL):

Soils	3,057
Sediments, cores	345
Fish	410
Algae	3
Seawater	54
Plankton	16
Coral	2
Vegetation	216
Air Filters	67
Animals, birds, eggs, etc.	274
Freshwater	4
Seawater Filters	28
TOTAL	4,476

Unwanted duplication of entries in the data bank has been eliminated. Hence, the tally of samples listed above is very close to final form.

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

As of 5 October 1973, the status of soil sample delivery to contract labs is the following:

Sample type	Delivered for chem. anal.	Remain to be delivered
Soils, sediments, cores	1911 (MCL) 1007 (LFE) 486 (EIC)	none
TOTAL	3404	

Status of wet chemical analyses of fish, vegetation, and animal samples

	Samples delivered	Total	Data in computer bank, as of 10/5/73 ^{239}Pu	^{90}Sr	^{55}Fe	Fe (stable)	^{241}Am	^{113}Cd
Fish	MCL (20 - 4/4/73, 101 - 6/26/73)	121	110	120	117	121	9	14
	LFE (4 - 3/16/73, 192 - 6/20/73)	196	177	183	111	0		
	UW (12 - 2/20/73, 43 - 5/24/73, 13 - 6/19/73) ^{55}Fe requested on all samples	114	96	113	128	19		
	Undelivered	0	LLL: 10 - ^{3}H, 10 - ^{14}C					
Vegetation	MCL	130	130	130	16		7	1
	8/2/73 - 24 20 (PriorityI)							
	8/8/73 - 98 110 (Priority II)							
	8/14/73 - 7							
	8/21/73 - 1 29 - ^{55}Fe requested							
	LFE	51	29	39	0			
	5/21/73 - 40 40 (Priority I)							
	7/23/73 - 11 11 (Priority I) ^{55}Fe requested							
	Undelivered (Priority III)	18	LLL: 11 - ^{3}H, 11 - ^{14}C					

nalyses table continued.

tatus of wet chemical analyses of fish, vegetation, and animal samples

	Samples delivered	TOTAL	Data in computer bank, as of 10/5/73 ^{239}Pu	^{90}Sr	^{55}Fe	^{Fe} (stable)	^{241}Am	^{113}Cd
Animals	MCL	53	42	47	21	0		
	8/8/73 - 4 (Priority II)							
	8/30/73 - 49 (Priority II) ^{55}Fe requested							
	LFE	163	57	72	0	0		
	8/1/73 - 105 (Priority I)							
	8/30/73 - 58 (Priority II)							
	116 - ^{55}Fe requested							
	Undelivered	0						
			LLL: 15 - ^{3}H					

McClellan Laboratory (MCL) - The analytical work at MCL began in December 1972.

	7 September 1973	21 September 1973	5 October 1973
Samples received			
Soil	1,647	1,647	1,647
Sediment, core	264	264	264
Fish	121	121	121
Vegetation	130	130	130
Animal	53	53	53
Air Filter	58	58	58
Plankton	16	16	16
Distilled H_2O	1	1	1
TOTAL	2,290	2,290	2,290
Pu, Sr data reported			
Soil	1,443	1,609	1,609
Sediment, core	244	250	264
Fish	108	110	117
Vegetation	21 (Pu)	38	130
Animal	0	29	42
Air Filter	54 (Pu)	54 (Pu)	54 (Pu)
Plankton	0	0	12
TOTAL	1,870	2,090	2,228
Chemistry complete, samples counting	175	150	29
In process	245	50	33

LFE Environmental Analysis Laboratory (LFE) - The analytical work at LFE began on March 5, 1973.

	7 September 1973	21 September 1973	5 October 1973
Samples received			
Soils	963	963	963
Sediments	44	44	44
Fish	200	200	200
Vegetation	51	51	51
Animals	163	163	163
Algae	3	3	3
Water plant residues	2	2	2
Seawater (Sr fraction)	65	65	65
TOTAL	1,491	1,491	1,491
Pu data reported			
Soils, sediments	946	974	975
Fish	171	177	177
Vegetation	12	29	29
Animal	13	57	57
Coral	0	1	1
Algae	0	0	1
Sr data reported			
Soils, sediments	889	967	969
Fish	102	179	183
Vegetation	6	30	39
Animal	0	67	72
Coral	0	1	1
^{55}Fe data reported (analyses required only on fish samples)			
Fish	4	111	111
Algae	0	1	1
Coral	0	1	1

Eberline Instrument Company (EIC) - The analytical work at EIC began on April 2, 1973.

	7 September 1973	21 September 1973	5 October 1973
Samples received			
Soils	486	486	486
Pu data reported	481	481	481
Sr data reported	485	485	485
University of Washington			
Samples received (114 marine, 28 filter media)	142	142	142
Pu data reported (marine)	64	95	96
Sr data reported (marine)	(7)	113	113
^{55}Fe data reported (marine)	128	128	128
Fe (stable) data reported (marine)	19	19	19

A progress report will be issued every two weeks.

Richard W. Hoff

Dr. Richard W. Hoff
Deputy Division Leader
Radiochemistry Division

RWH:mb