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Mail Station L 231

Ext: 8711

September 12, 1973

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~~CDR Wolff~~

~~Major Johnson~~

~~Major Giannotta~~ SFG

~~Mr. Cornwall~~

MEMORANDUM

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

FROM: R. W. Hoff, Radiochemistry Division

SUBJECT: Eniwetok sample analytical program. Progress Report No. 16.  
Status as of 7 September 1973.

*Operation Radiol*

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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. 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.

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Collection Tommy McCraw (#1320)  
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Box 5 **LAWRENCE LIVERMORE LABORATORY**

Folder Radiological Survey

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Retention	
Recommended by	

Samples counted and data in computer bank (LLL):

Soils	3073
Sediments, cores	348
Fish	420
Algae	3
Seawater (Hydroxide fraction)	77
Plankton	16
Coral	2
Vegetation	218
Air Filters	27
Animals, birds, eggs, etc.	<u>274</u>
TOTAL	4498

The numbers listed here are taken from a computer listing which summarizes sample entries. The actual count of samples which appears in our final report may differ slightly from the above. We are in the process of eliminating certain entry duplications due to mistakes in Sample ID numbers. Until these corrections have been completed, the above listing is subject to revision. Another uncertainty lies in the designation of sediment samples and core samples. Sediment sample designation refers to grab samples taken from the bottom of the lagoon while core sample designation implies sectioning as a function of depth. Since we haven't attempted to keep these two categories separate, the proportion of each is somewhat uncertain but the total number is accurate.

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

As of 7 September 1973, the status of soil sample delivery to contract labs is the following:

<u>Sample type</u>	<u>Delivered for chem. anal.</u>	<u>Remain to be delivered</u>
Soils, sediments, cores	1911 (MCL) 1007 (LFE) 486 (EIC)	
TOTAL	<u>3404</u>	

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

<u>Samples delivered</u>		Data in computer bank, as of 9/7/73						
		<u><sup>239</sup>Pu</u>	<u><sup>90</sup>Sr</u>	<u><sup>55</sup>Fe</u>	<u>Fe (stable)</u>	<u><sup>241</sup>Am</u>	<u><sup>113</sup>Cd</u>	
	<u>Total</u>							
Fish	MCL (20 - 4/4/73, 101 - 6/26/73)	121	108	120	117	121	9	14
	LFE (4 - 3/16/73, 192 - 6/20/73)	196	171	102	4	0		
	UW (12 - 2/20/73, 43 - 5/24/73, 13 - 6/19/73)	114	64	(7)	128	19		
	Undelivered	0						
Vegetation	MCL	130	21	0	2			
	8/2/73 - 24	20 (Priority I)						
	8/8/73 - 98	110 (Priority II)						
	8/14/73 - 7							
	8/21/73 - 1							
	LFE	51	12	6	0			
	5/21/73 - 40	40 (Priority I)						
7/23/73 - 11	11 (Priority I)							
Undelivered (Priority III)	18							

Analyses table continued.

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

<u>Samples delivered</u>		Data in computer bank, as of 9/7/73			
		<u><sup>239</sup>Pu</u>	<u><sup>90</sup>Sr</u>	<u><sup>55</sup>Fe</u>	<u>Fe (stable)</u>
	<u>TOTAL</u>				
Animals	MCL	53	0	0	0
	8/8/73 - 4 (Priority II)				
	8/30/73 - 49 (Priority II)				
	LFE	163	13	0	0
	8/1/73 - 105 (Priority I)				
	8/30/73 - 58 (Priority II)				
	Undelivered	0			

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

	<u>10 August 1973</u>	<u>24 August 1973</u>	<u>7 September 1973</u>
Samples received			
Soil	1,597	1,597	1,647
Sediment, core	264	264	264
Fish	121	121	121
Vegetation	122	130	130
Animal	4	4	53
Air Filter	58	58	58
Plankton	16	16	16
Distilled H <sub>2</sub> O	0	0	1
TOTAL	<u>2,182</u>	<u>2,190</u>	<u>2,290</u>
Pu, Sr data reported			
Soil	1,282	1,392	1,443
Sediment, core	231	231	244
Fish	74	104	108
Vegetation	0	0	21 (Pu)
Animal	0	0	0
Air Filter	53	53	54 (Pu)
Plankton	0	0	0
TOTAL	<u>1,640</u>	<u>1,780</u>	<u>1,870</u>
Chemistry complete, samples counting	202	151	175
In process	340	216	245

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

	<u>10 August 1973</u>	<u>24 August 1973</u>	<u>7 September 1973</u>
Samples received			
Soils	963	963	963
Sediments	44	44	44
Fish	197	200	200
Vegetation	51	51	51
Animals	105	105	163
Algae	3	3	3
Water plant residues	2	2	2
Seawater (Sr fraction)	0	0	65
TOTAL	<u>1,365</u>	<u>1,368</u>	<u>1,491</u>
Pu data reported			
Soils	848	931	946
Fish	70	141	171
Vegetation	11	11	12
Animal			13
Sr data reported			
Soils	697	850	889
Fish	4	14	102
Vegetation	4	5	6
<sup>55</sup> Fe data reported (analyses required only on fish samples)			
Fish	4	4	4

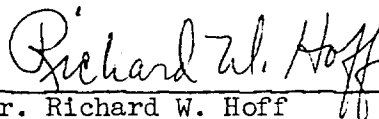
Eberline Instrument Company (EIC) - The analytical work at EIC was begun on April 2, 1973.

	<u>10 August 1973</u>	<u>24 August 1973</u>	<u>7 September 1973</u>
Samples received - soils	486	486	486
Pu data reported	319	319	481
Sr data reported	323	323	485

University of Washington

Samples received (114 marine, 28 filter media)	142	142	142
Pu data reported	(22)	(22)	64
Sr data reported	(7)	(7)	(7)
<sup>55</sup> Fe data reported	(24)	(128)	128
Fe (stable) data reported	19	19	19

A progress report will be issued every two weeks.



Dr. Richard W. Hoff  
Deputy Division Leader  
Radiochemistry Division

RWH:mb